BAYOU STEEL CORPORATION

P.O. BOX 5000

LA PLACE, LOUISIANA 70069-1156

EMISSION COMPLIANCE TESTS

BAGHOUSE STACK (source ID 1-77)

JULY 23, 2004

PERMIT NUMBER : 885 (M-2)

Testing conducted by :

E T S

EMISSION TESTING SERVICES, INC.

P.O. BOX 15075

BATON ROUGE, LOUISIANA 70895

(225) 925-8405

FINAL File : 24104 issued 09-07-04 (117 pages)
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EMISSION TEST REPORT CERTIFICATION

for

BAYOU STEEL CORPORATION

EMISSION COMPLIANCE TESTS

BAGHOUSE STACK (source ID 1-77)

JULY 23, 2004

Testing conducted by :

EMISSION TESTING SERVICES, INC.

Emission Testing Services, Inc. is certified by the Louisiana Department of Environmental Quality (LDEQ) as a qualified environmental testing laboratory under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

I certify that I have personally examined and am familiar with the information submitted herein, and based on my inquiries of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete.

Wendy Stehling
Bayou Steel Corporation
Plant Representative

Troy LeSage
Emission Testing Services, Inc.
Project Leader

Barry Gipson
Emission Testing Services, Inc.
Manager

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≤ or < None detected. Stated result is the minimum detection limit. Actual result may be less including the result 0.

▲ or ! Stated result is the sum or average of multiple component results; or a result based on the sum of individual component results from a multi-part sampling train. At least one of the component results has a detectable quantity and at least one of the component results has a none detectable quantity; and the value of the minimum detection limit for the none detectable component(s) is significant in comparison with the value of the detectable component(s). The actual result may be less; however, not less than the result computed with the detectable component(s) only.

I. INTRODUCTION

Emission Testing Services, Inc. (ETS) was contracted by Bayou Steel Corporation (Bayou Steel) to conduct emission testing at Bayou Steel's plant located near the town of LaPlace, Louisiana in St.James Parish, Louisiana. Emissions from the Baghouse Stack were tested to determine the emission rates of lead and mercury. Tests were conducted in order to demonstrate compliance with emission permit limits. The Baghouse Stack, source ID 1-77, operates under permit number 885 (M-2) issued by the Louisiana Department of Environmental Quality (LDEQ).

All tests were conducted using EPA test methods. The emission rates of lead and mercury were determined using EPA Method 29. EPA Methods 1 - 4 were used to determine the number and location of sample points, and the velocity, moisture, molecular weight, and volumetric flow rate of the stack gas.

The ETS test team consisted of Project Leader Troy LeSage and a test crew consisting of Ronald McCabe and Joel Richard. Wendy Stehling represented Bayou Steel and coordinated testing with plant operations. During the emission tests, the LDEQ was represented onsite by Jim Stone (SERO), Tim Bergeron (ECS-Technology) and Cedric Mellion (EED-TRI).

Emissions from the Baghouse Stack were tested on July 23, 2004. Three, 72-min duration tests were conducted.

II. SUMMARY

Test Results Summary

On July 23, 2004 emissions from the Baghouse Stack at Bayou Steel were tested to determine the emission rates of lead and mercury. Results of the tests are presented in Table I.

Test Method Modifications, Deviations and Unusual Conditions

EPA methods were used to determine all pollutant and stack gas data. All modifications to and deviations from the standard test methods have been documented above. All unusual conditions have been noted above.

Test Conclusions

Quality assurance procedures meeting EPA and LDEQ requirements were used during the emission tests. All quality indicators, with the exception of those noted above, were within the range of acceptable results. Test data are complete, accurate, and representative of source conditions. Overall, the quality of data gathered are acceptable to meet project objectives.

TABLE I

EMISSION TEST RESULTS SUMMARY

BAYOU STEEL CORPORATION

BAGHOUSE STACK (source ID 1-77)

PARAMETER	Permit Limit Max./Avg.	RUN 1	RUN 2	RUN 3	AVERAGE
DATE		7-23-04	7-23-04	7-23-04	
TIME		0934-1047	1158-1314	1605-1723	
MERCURY					
ug/dscf		0.0670	0.0696	0.1908	0.1091
lb/hr		0.00133	0.00140	0.00403	0.00225
LEAD					
ug/dscf		9.735	10.66	10.53	10.31
lb/hr		0.1938	0.2151	0.2124	0.2071
STACK GAS DATA					
Temperature, F		241	241	240	241
Moisture, vol%		4.08	3.05	4.64	3.92
Velocity, ft/sec		66.33	66.43	67.52	66.76
Flow Rate, acfm		208477	208786	212216	209826
, dscfm		150510	152492	152533	151845

PROCESS DESCRIPTION

Bayou Steel operates a steel mill, which includes two separate Electric Arc Furnaces (EAF) and a Ladle Metallurgical Facility (LMF). The EAF steel melting process consists of melting scrap steel, carbon sources, lime, flux, alloys, and other iron bearing material in a refractory lined vessel using three high voltage electrodes to produce a recovered steel product. Liquid steel is transferred either to the LMF for further refining or, to the continuous casting area where it is poured into the billet molds. The continuous strand is cooled and cut into various lengths. Billets are either sold as products or processed in the Rolling Mill by reheating followed by shaping using various rolling operations. Steel sections, angles, channels, and I-beams are cut or sheared to various lengths and transferred to the shipping warehouse for storage and loading.

ELECTRIC ARC FURNACE STEEL MILL

The EAF steel melting process is a batch operation. Each batch is called a heat and requires approximately 60 minutes. A heat consists of the following steps:

EAF Preparation – In preparation for charging and melting the scrap steel, the furnace electrodes are aligned and the furnace is coated with a protective layer of gunnite at the slag zone.

First Charge and Melt – The furnace is loaded with the initial charge of scrap steel and other materials. The roof is placed on the furnace and electrical current is applied to the electrodes to melt the first charge of scrap material.

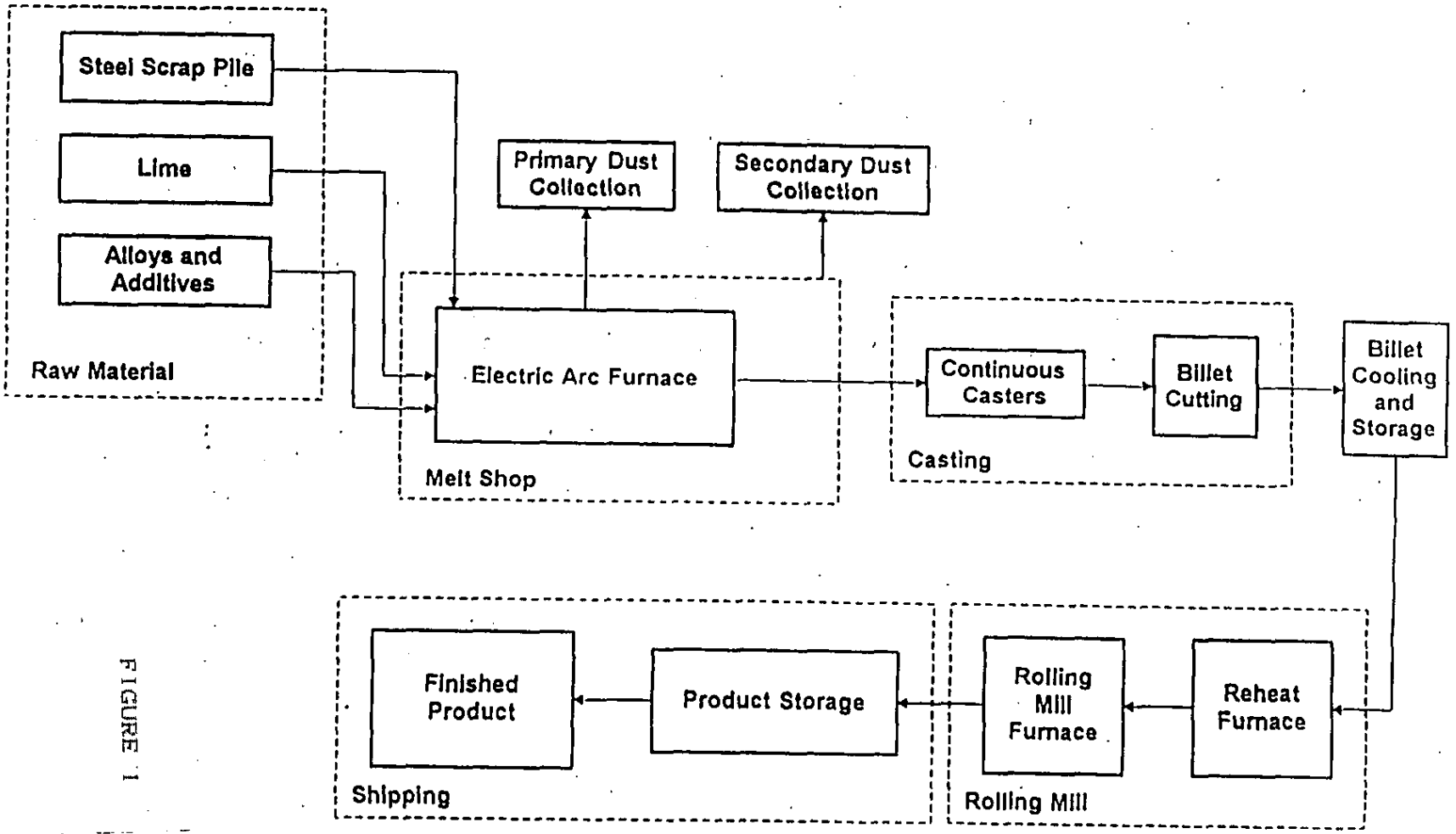
Potential Intermediate Charges and Melts – The furnace roof is removed and the intermediate charge of scrap material and additives are added to the furnace. The roof is lowered onto the furnace and current is applied to melt the second charge of material.

Final Charge and Melt – The furnace roof is removed and the final charge of scrap material and additives are added to the furnace. The roof is lowered onto the furnace and current is applied to melt the final charge of material.

Oxidizing and Refining – Oxygen is injected into the molten steel to oxidize impurities and carbon. Electrical current is applied to refine the molten steel to meet product specifications.

Slagging and Tapping – The EAF is tilted backward to empty slag into a slag pot. Slag is cooled and transferred to a material stockpile. Following slagging, the EAF is tilted forward to pour the molten steel into a teeming ladle.

Figure -1
Bayou Steel
Process Flow Diagram



Bayou Steel Title V Draft 8/21/96 f:\users\title5\bayoult5genfig.vsd

FIGURE 1

III. PROCEDURE

Emissions were determined using EPA methods found in Appendix A, Part 60, Title 40 of the Code of Federal Regulations. A brief description of each method used follows.

LOCATION of SAMPLE POINTS

Stack gas flow rate, moisture, lead, and mercury determinations were conducted at test points selected per EPA Method 1.

Oxygen and carbon dioxide samples were collected from a point located at the center of the stack. This test point is in conformance with the applicable test methods.

EPA METHOD 1:

SAMPLE and VELOCITY TRAVERSES for STATIONARY SOURCES

Method 1 is applicable to stacks having a diameter greater than 12 in. The method recommends that sampling points be located 8 diameters downstream and 2 diameters upstream from the nearest flow disturbances; however, any distances greater than the minimum 2 diameters downstream and 0.5 diameters upstream are acceptable. These distances help insure the collection of a representative sample in the absence of cyclonic flow. Cyclonic flow is detected by measuring the stack gas flow Yaw angle at each test point. The average yaw angle is required to be less than 20 degrees.

The Baghouse Stack has a stack diameter of 98.0 in. The sampling point was located 6.73 stack diameters downstream and 7.96 stack diameters upstream from the nearest flow disturbances. During testing, 16 sample points were used, divided into 8 traverse points located across 2 perpendicular diameters of the stack with access to the points through 2 sampling ports. Cyclonic flow was not detected.

EPA METHOD 2:

DETERMINATION of STACK GAS VELOCITY and VOLUMETRIC FLOW RATE (Type S pitot tube)

The average gas velocity in the stack was determined from the gas molecular weight, moisture content, and the average velocity head measured using a type S pitot tube. Volumetric flow rate was determined from the velocity and stack cross-sectional area.

EPA METHOD 3:

GAS ANALYSIS FOR CARBON DIOXIDE, OXYGEN, EXCESS AIR, and DRY MOLECULAR WEIGHT

Molecular weight of the stack gas was calculated from the oxygen, carbon dioxide, moisture, and nitrogen concentration data. Oxygen concentration data were obtained using EPA Method 3A and moisture concentration data were obtained using EPA Method 4. Balance of the stack gas composition was assumed to be nitrogen.

GRAB SAMPLE

Carbon dioxide concentration data were obtained from an analysis of stack gas samples using an Orsat analyzer. A sample of the stack gas was continuously extracted from the stack and was transferred through a heated, Teflon sample line to a sample conditioning unit where particulate and moisture was removed. A portion of the conditioned sample was introduced to the Orsat for analysis.

EPA METHOD 4:

DETERMINATION of MOISTURE CONTENT in STACK GASES

Moisture of the stack gas was determined by extracting a gas sample from the stack throughout the duration of the test while traversing the stack with the sample probe. Sample gas passed from the heated probe, through a heated sample line to a particulate filter and a series of four impingers immersed in an ice bath. The first two impingers initially contained known weights of water, the third was empty, and the fourth contained a known weight of silica gel. Water vapor in the gas sample was condensed and trapped in the impingers. Sample volume was measured using a dry gas meter located downstream of the impinger train.

EPA METHOD 29 :

DETERMINATION of METALS EMISSIONS from STATIONARY SOURCES

A gas sample was extracted from the stack isokinetically using a heated glass probe fitted with a particulate filter. Sample gas passed from the probe, through a series of four impingers immersed in an ice bath. The first and second impingers contained a nitric acid solution, the third was empty, and the fourth impinger contained silica gel. Sample flow rate was established using a diaphragm pump and was controlled using a valve. A calibrated dry gas meter was used to determine the total gas sample volume.

After sampling, the filter was recovered from the filter holder. The front half of the filter holder and probe were washed and the washings were collected as the probe wash sample. The contents of the first, second, and third impingers were collected as a single impinger sample. The impingers and connecting glassware were washed with the washings added to the impinger sample. Sample containers were labeled and sealed for shipment to the laboratory for analyses.

IV. ANALYTICAL TECHNIQUE

All sample analyses were conducted following EPA methodology. Presented below are brief descriptions of each method used.

EPA METHOD 3:
GAS ANALYSIS FOR CARBON DIOXIDE, OXYGEN, EXCESS AIR, and DRY MOLECULAR WEIGHT

The concentration of carbon dioxide in the stack gas was determined using an Orsat analyzer. Analysis was based on the differential sample volume of the gas sample before and after passing the sample through an oxygen absorbing reagent.

Oxygen concentration was determined using EPA Method 3A.

EPA METHOD 4:
DETERMINATION of MOISTURE CONTENT in STACK GASES

The mass of water vapor condensed from the sample gas was determined gravimetrically.

EPA METHOD 29 :
DETERMINATION of METALS EMISSIONS from STATIONARY SOURCES

Prior to analysis, the filter was digested in nitric acid. The mass of metals collected in the various samples was analyzed using an atomic adsorption spectrometer (AA).

V. QUALITY ASSURANCE/ QUALITY CONTROL

Test results have been validated by following rigorous quality assurance (QA) and quality control (QC) procedures documented in ETS' Standard Operating Procedures. These procedures meet and/or exceed EPA requirements and have approval by the LDEQ under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

The QA/QC programs ensure that the test data are representative of the source conditions by verifying the completeness, accuracy, and precision of the test data. QA/QC functions cover all aspects of the test including field testing, sampling, and analysis, sample transport and laboratory analysis, and data processing and reporting.

Emission testing at Bayou Steel included a series of QA/QC functions. All QA/QC functions were completed satisfactorily within the required limits.

CHAIN of CUSTODY

For those samples being transported to the laboratory for analysis, a Chain of Custody form was prepared during the sample recovery process. The sample ID, number of samples, liquid level when applicable, name of the sample recovery supervisor, name of the person responsible for sample recovery and the signature of the sample trustee were recorded on the custody form.

During all subsequent handing, the custody form accompanied the samples. As personnel relinquished responsibility for the samples, the receiving sample trustee verified the number and integrity of the samples and signed the custody form.

Upon receipt at the analytical laboratory, the lab sample trustee verified the number, type, and integrity of the samples. These data were recorded on the custody form along with the date of receipt and lab sample trustees signature.

At the time of analysis, the laboratory analyst recorded the analysis date and the laboratory supervisors name on the custody form. The analyst signed the custody form and attached it to the analytical results.

Chain of Custody forms for samples collected during testing follow on the next pages along with the analytical request forms.

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL	SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
PW-R1	P4070973	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
PW-R2	P4070974	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
PW-R3	P4070975	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 1&2-R1	P4070976	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 1&2-R2	P4070977	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 1&2-R3	P4070978	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 3-R1	P4070979	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 3-R2	P4070980	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 3-R3	P4070981	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
BLANK 0.1N HNO3	P4070982	BLANK	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
BLANK DI H2O	P4070983	BLANK	7/23/2004	DI H2O	N/A	Y	Y	Y
BLANK HNO3/H2O2	P4070984	BLANK	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 12	FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe
SAMPLES COLLECTED BY: Ron McCabe	SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LAB NAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	12	Good		KC McAuley

ANALYSIS REQUIRED: LEAD AND MERCURY AS PER EPA METHOD 29	DATE of ANALYSIS: 07/29/04 ANALYST:- HARSHA REPORT DATE: 08/02/04 REPORT NUMBER: P4070973

NOTES

SAMPLE SET____ OF____ PAGE____ OF____

5.3

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL	SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
IMP 4&5-R1	P4070985	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R2	P4070986	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R3	P4070987	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R1-HCL	P4070988	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
IMP 4&5-R2-HCL	P4070989	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
IMP 4&5-R3-HCL	P4070990	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
BLANK KMnO4	P4070991	BLANK	7/23/2004	KMnO4	N/A	Y	Y	Y
BLANK 8 N HCL	P4070992	BLANK	7/23/2004	8 N HCL	N/A	Y	Y	Y

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 8	FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe
SAMPLES COLLECTED BY: Ron McCabe	SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LAB NAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	8	Good		KC McCabe

ANALYSIS REQUIRED: MERCURY AS PER EPA METHOD 29	DATE of ANALYSIS: 07/29/04 ANALYST:- HARUA REPORT DATE: 08/02/04 REPORT NUMBER: P4070985

NOTES

SAMPLE SET____ OF____ PAGE____ OF____

5.4

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL	SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
FILTER-R1	P4070993	#5396	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
FILTER-R2	P4070994	#5243	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
FILTER-R3	P4070995	#5246	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
BLANK FILTER	P4070996	#5249	7/23/2004	QUARTZ	N/A	N/A	N/A	Y

5.5

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 4	FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe
SAMPLES COLLECTED BY: Ron McCabe	SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LAB NAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	4	Good		KCMobley

ANALYSIS REQUIRED: MERCURY AND LEAD AS PER EPA REFERENCE METHOD 29	DATE of ANALYSIS: ANALYST: REPORT DATE: REPORT NUMBER:

NOTES

SAMPLE SET____ OF____ PAGE____ OF ____

VI. TEST DATA and CALCULATIONS

All emission test field data, unit operations data, and laboratory data are presented in this section along with the associated data reduction calculations.

Data from the field data forms were manually input into a computer for data processing and calculations. Integrity of data input is maintained by using a double entry system. The computer performed all calculations and produced the calculations and results summary pages. Input data accuracy were further verified by comparison of raw field data to the computer data printed on the summary pages. Computer program integrity and calculations verification are validated by processing a known set of data. Further controls on the computer program are conducted by comparison of manual spot calculations of the raw data input to computer calculations results.

EMISSION TESTS

on the BAGHOUSE STACK

Emission tests were conducted on the Baghouse Stack to determine the concentration of oxygen and carbon dioxide; and the concentration and mass emission rates of lead and mercury.

Flow rate, lead, and mercury emissions were determined following EPA Methods 2, 4, and 29 using a combined sampling train. Oxygen and carbon dioxide emissions were determined using EPA Method 3. Prior to the emission tests, the absence of cyclonic flow at the sampling point was determined using EPA Method 1.

Lead, mercury, stack gas velocity, and moisture samples and measurements were obtained at sample traverse points, Figure II, selected per EPA Method 1. Oxygen and carbon dioxide samples and measurements were obtained from a single sample point, Figure III, located near the center of the stack.

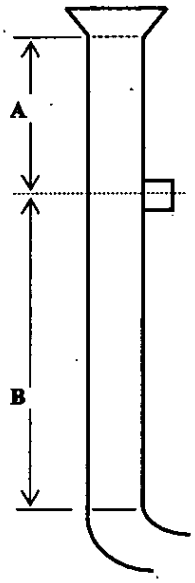
Test data and associated calculations are presented on the following pages.

ETS

EMISSION TESTING SERVICES INC.

TRAVERSE POINT LAYOUT

METHODS-1-4 & 29



CLIENT:	BAYOU STEEL		
DATE:	7/22/2004		
UNIT TESTED:	BAGHOUSE STACK		
LOCATION:	LAPLACE, LA		
UPSTREAM DIST. (A): (INCHES)	780	DIAMETERS:	7.96
DOWNSTREAM DIST. (B): (INCHES)	660	DIAMETERS:	6.73
INSIDE DIAMETER (INCHES):	98		
COUPLING LENGTH (INCHES):	6		
COUPLING TYPE:	4" SCREW ON		

CROSS SECTIONAL LAYOUT

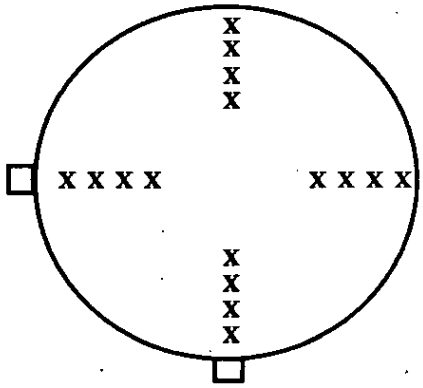


FIGURE 11

TOTAL TRAVERSE POINTS= 16

TRAVERSE POINT	DISTANCE % OF DIAMETER	STACK DIAMETER	COUPLING LENGTH	TRAVERSE POINTS
1	3.2	98	6	9.14
2	10.5	98	6	16.29
3	19.4	98	6	25.01
4	32.3	98	6	37.65
5	67.7	98	6	72.35
6	80.6	98	6	84.99
7	89.5	98	6	93.71
8	96.8	98	6	100.86

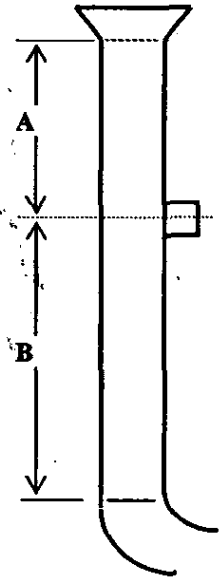
SIGNATURE: Ron McCabe

ETS

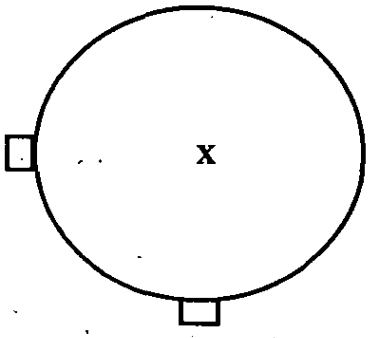
EMISSION TESTING SERVICES INC.

TRAVERSE POINT LAYOUT

METHODS 3



CLIENT:	BAYOU STEEL
DATE:	07/22/04
UNIT TESTED:	BAGHOUSE STACK
LOCATION:	LAPLACE, LA
UPSTREAM DIST. (A):	780
DOWNSTREAM DIST. (B):	660
INSIDE DIAMETER (INCHES):	98
COUPLING LENGTH (INCHES):	6
COUPLING TYPE:	4" SCREW ON



CROSS SECTIONAL LAYOUT

FIGURE 111

TOTAL TRAVERSE POINTS= 1

TRAVERSE POINT	DISTANCE % OF DIAMETER	STACK DIAMETER	COUPLING LENGTH	TRAVERSE POINTS
1	0.500	98	6	55.00

SIGNATURE: Ronald M. Cate

E T S
EMISSION TESTING SERVICES, INC.

VERIFICATION OF ABSENCE of CYCLONIC FLOW

COMPANY: Bayou Steel
DATE: 7-23-04
SOURCE: Baghouse Stack
STACK DIAMETER 98"
LOCATION: Norco, La.
OPERATOR: Joel Richard

	REFERENCE ANGLE		REFERENCE ANGLE
1	0	13	1
2	1	14	2
3	2	15	1
4	1	16	1
5	2	17	
6	0	18	
7	1	19	
8	2	20	
9	1	21	
10	2	22	
11	0	23	
12	1	24	

AVERAGE 1.125 *

* THE AVERAGE IS THE ABSOLUTE VALUE OF EACH DEGREE POINT DIVIDED BY THE NUMBER OF POINTS.

REFERENCE ANGLE CANNOT EXCEED 20 DEGREES OF AVERAGE OVERALL VALUE.

FORMS:CYCLONIC

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4 & 29

PLANT: Bayou Steel
DATE: 7-23-04
LOCATION: Norco, La.
STACK ID.: BagHouse Stack
RUN NO.: 1

SAMPLE BOX NO.: 3rd RM
METER BOX NO.: 3
BAROMETRIC PRESSURE: 29.95
AMBIENT TEMP.: 87°F
OPERATOR: Joel Richard

PITOT TUBE ID.: P-105
PITOT TUBE FACTOR: .832
FILTER ID.:
FILTER TYPE:
NOZZLE DIAMETER, IN: .170

STACK DIAMETER, in.: 98"
METER Δ H@: 1.8127
METER D.G.M.F.: 1.0309
K-FACTOR: .6580
T-FACTOR: 461.91

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head (ΔPs)	Velocity Head ($\sqrt{\Delta P_s}$)	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
1	9:34	-.650	234	1.20	1.095	.800	.798	879.203	105	97	~~105~~ 240	~~97~~ 248	58	3.5
2	9:38.5		246	1.10	1.048	.720	.719	881.510	108	97	242	245	57	3.5
3	9:43		251	1.00	1.000	.650	.649	883.810	110	98	241	244	56	3.5
4	9:47.5		253	.940	.9695	.610	.608	885.810	112	99	245	240	56	3.5
5	9:52		258	.960	.9797	.620	.617	887.825	114	101	242	247	56	3.5
6	9:56.5		248	1.05	1.024	.690	.685	889.820	116	104	245	248	57	3.5
7	10:01		231	1.20	1.095	.800	.802	892.050	117	105	247	251	56	3.5
8	~~10:05~~	~~10.20~~	230	1.10	1.048	.740	.736	894.350	118	104	243	250	56	3.5
9	10:16		233	1.10	1.048	.730	.733	896.553	118	104	242	248	57	3.5
10	10:20.5		238	1.20	1.095	.790	.794	898.875	121	110	242	248	57	3.5
11	10:25		240	1.20	1.095	.790	.790	901.210	119	107	242	249	58	3.5
12	10:29.5		236	1.05	1.024	~~.700~~	.696	903.670	121	111	243	250	58	3.5
13	10:34		237	.900	.948	.600	.596	905.515	122	112	242	253	59	3.5
14	10:38.5		245	.940	.969	.620	.615	907.505	119	109	240	256	60	3.5
15	10:43		238	.960	.979	.640	.635	909.520	121	109	242	255	60	3.5
16	10:47.5	10.52	240	.980	.989	.650	.646	911.735	120	109	241	253	60	3.5
~~17~~	~~10:52~~							913.670						
~~18~~	~~10:56.5~~													
AVERAGE	9 min	-.650	241.125		1.025	.709		34.467	110.53					

	IMPINGER WEIGHTS				
LIQUID COLLECTED	1	2	3	4	29.7 5
FINAL					
INITIAL					
TOTAL WEIGHT					

Avg.

ORSAT MEASUREMENT			
CO2	O2	CO	N2
0.1	19.8		

Orsat leak check ✓
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 3.5" H20
Pitot tube leak check, static side good @ 4.0" H20
Pre-leak Rate @ 10 in.Hg 0.001 ft3/min.
Post-leak Rate @ 10 in.Hg 0.002 ft3/min.

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 1

DETERMINATION of STACK GAS MOISTURE, MOLECULAR WEIGHT, VELOCITY, and VOLUMETRIC FLOW RATE

A - Cross-sectional area of the stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bws - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orific pressure differential, in. H2O
dP - Stack gas velocity head, in. H2O
F1 - Conversion factor, 13.6 in. H2O/ in. Hg
Kp - Pitot tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mole
Md - Stack gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2, 28.01 lb/lb mole
MO2 - Molecular weight of O2, 32.00 lb/lb mole
Ms - Stack gas molecular weight, wet lb/lb mole

Pbar - Barometric pressure, in. Hg
Ps - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry scfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R

Vi - Water vapor condensed, impinger 1, g
Vii - Water vapor condensed, impinger 2, g
Viii - Water vapor condensed, impinger 3, g
Viv - Water vapor condensed, impinger 4, g
Vm - Gas meter sample volume, dry ft3
Vmstd - Gas meter sample volume, dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Stack gas N2 concentration, %/100
O2 - Stack gas O2 concentration, %/100

$$Vw = \left\{\frac{(\ Vi + Vii + Viii + Viv\ )\ R\ Tstd}{(\ 453.6\ g/lb\ )\ Pstd\ MH2O}\right\} = \left\{\frac{(\ 23.9 + 1.1 + -2.9 + 7.6\ )(\ 21.85\ )(\ 528\ )}{(\ 453.6\ )(\ 29.92\ )(\ 18.02\ )}\right\} = 1.40105$$

$$Vmstd = Vm\ Y \left\{\frac{(\ Pb + dH/\ F1\ )\ Tstd}{Pstd\ \ Tm}\right\} = (\ 34.467\ )(\ 1.0309\ )\left\{\frac{(\ 29.950 + .6969/13.6\ )(\ 528\ )}{(\ 29.92\ )\ \ (\ 571\ )}\right\} = 32.97250$$

$$Bws = \left\{\frac{Vw}{Vw + Vmstd}\right\} = \left\{\frac{(\ 1.40105\ )}{(\ 1.40105 + 32.97250\ )}\right\} = .0408$$

$$Md = (\ MCO2\ )(\ \%CO2\ ) + (\ MO2\ )(\ \%O2\ ) + (\ MN2\ )(\ \%N2\ )$$
$$= (\ 44.01\ )(\ .001\ ) + (\ 32.00\ )(\ .198\ ) + (\ 28.01\ )(\ .801\ ) = 28.816$$

$$Ms = Md\ (\ 1 - Bws\ ) + (\ MH2O\ Bws\ ) = (\ 28.816\ )(\ 1 - .0408\ ) + (\ 18.02\ )(\ .0408\ ) = 28.376$$

$$Vs = Kp\ Cp\ (\ dP\ )^{1/2}\left\{\frac{Ts}{Ps\ Ms}\right\}^{1/2} = (\ 85.49\ )(\ .8320\ )(\ 1.0259\ )\left\{\frac{(\ 701\ )}{(\ 29.902\ )(\ 28.376\ )}\right\}^{1/2} = 66.3327$$

$$Acf = (\ 60\ sec/min\ )(\ Vs\ \ A\ ) = (\ 60\ )(\ 66.3327\ )(\ \ 52.3817\ ) = 208476.9$$

$$Qsd = (\ 3600\ sec/hr\ )(\ 1 - Bws\ )(\ Vs\ A\ )\left\{\frac{Tstd\ Ps}{Ts\ Pstd}\right\}$$

$$= (\ 3600\ )(\ 1 - .0408\ )(\ \ 66.3327\ )(\ \ 52.3817\ )\left\{\frac{(\ \ 528\ )(\ 29.902\ )}{(\ \ 701\ \ )(\ 29.92\ )}\right\} = 9030603.0\ dscf/hr$$
$$= 150510.0\ dscf/min$$

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4 & 29

PLANT: Bayou Steel | SAMPLE BOX NO.: 35 A1 | PITOT TUBE ID.: P-10-5 | STACK DIAMETER, in.: 98"
DATE: 4-23-04 | METER BOX NO.: 3 | PITOT TUBE FACTOR: .832 | METER Δ H@: 1.8127
LOCATION: Norco, La. | BAROMETRIC PRESSURE: 29.95 | FILTER ID.: | METER D.G.M.F.: 1.0309
STACK ID.: Highest Stacks | AMBIENT TEMP.: 91°F | FILTER TYPE: | K-FACTOR: .6750
RUN NO.: 2 | OPERATOR: Joel Richard | NOZZLE DIAMETER, IN: .170 | T-FACTOR: 473.27

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head (ΔPs)	Velocity Head ($\sqrt{\Delta P_s}$)	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
on@ 1	11:58	-.640	233	1.30	1.14	.890	.887	919.715	111	104	243	245	55	3.0
2	12:02.5		243	1.05	1.02	.710	.706	921.950	115	103	240	248	55	3.5
3	12:07		240	.980	.989	.660	.658	924.350	117	105	241	250	55	3.5
4	12:11.5		242	.960	.979	.650	.647	926.430	117	106	245	251	55	3.5
5	12:16		246	1.05	1.024	.700	.703	928.470	116	106	242	253	56	3.5
6	12:20.5		243	1.00	1.000	.670	.673	930.680	117	106	242	252	56	3.5
7	12:25		242	.970	.984	.650	.653	932.748	117	107	243	250	56	3.0
8	12:29.5		247	.990	.994	.660	.662	934.875	118	107	244	249	56	3.0
off@	12:34							936.960						
on@ 9	12:38		241	1.25	1.118	.840	.843	936.960	118	107	242	250	57	3.0
10	12:42.5		243	1.20	1.095	.810	.807	939.330	118	107	240	247	57	3.5
11	12:47		231	1.15	1.072	.790	.787	941.810	121	109	241	248	57	3.5
12	12:51.5		235	1.10	1.048	.750	.749	944.020	121	109	243	252	58	3.5
13	12:56		242	1.05	1.024	.710	.707	946.250	122	110	242	251	58	3.5
14	13:00.5		240	.980	.989	.660	.662	948.460	122	110	240	250	59	3.5
15	13:05		239	1.00	1.00	.680	.677	949.610	123	111	239	251	59	3.0
16	13:09.5		241	.990	.994	.670	.668	952.680	123	112	240	252	59	3.0
off@	13:14							954.865						
AVERAGE	72 min	-.640	240.5		1.029	.718		35.150	112.96					

	IMPINGER WEIGHTS				
LIQUID COLLECTED	1	2	3	4	223
FINAL					
INITIAL					
TOTAL WEIGHT					

ORSAT MEASUREMENT			
CO2	O2	CO	N2
0.2	19.8		

Orsat leak check ✓
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 4.0" H2O
Pitot tube leak check, static side good @ 3.5" H2O
Pre-leak Rate @ 10 in.Hg 0.001 ft3/min.
Post-leak Rate @ 10 in.Hg 0.001 ft3/min.

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 2

DETERMINATION of STACK GAS MOISTURE, MOLECULAR WEIGHT, VELOCITY, and VOLUMETRIC FLOW RATE

A - Cross-sectional area of the stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bws - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orific pressure differential, in. H2O
dP - Stack gas velocity head, in. H2O
F1 - Conversion factor, 13.6 in. H2O/ in. Hg
Kp - Pitot tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mole
Md - Stack gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2, 28.01 lb/lb mole
MO2 - Molecular weight of O2, 32.00 lb/lb mole
Ms - Stack gas molecular weight, wet lb/lb mole

Pbar - Barometric pressure, in. Hg
Ps - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry scfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R

Vi - Water vapor condensed, impinger 1, g
Vii - Water vapor condensed, impinger 2, g
Viii - Water vapor condensed, impinger 3, g
Viv - Water vapor condensed, impinger 4, g
Vm - Gas meter sample volume, dry ft3
Vmstd - Gas meter sample volume, dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Stack gas N2 concentration, %/100
O2 - Stack gas O2 concentration, %/100

$$Vw = \left\{\frac{(\ Vi + Vii + Viii + Viv\ )\ R\ Tstd}{(\ 453.6\ g/lb\ )\ Pstd\ MH2O}\right\} = \left\{\frac{(\ 19.4 + 1.9 + -3.7 + 4.7\ )(\ 21.85\ )(\ 528\ )}{(\ 453.6\ )(\ 29.92\ )(\ 18.02\ )}\right\} = 1.05196$$

$$Vmstd = Vm\ Y \left\{\frac{(\ Pb + dH/\ F1\ )\ Tstd}{Pstd\ \ Tm}\right\} = (\ 35.150\ )(\ 1.0309\ )\left\{\frac{(\ 29.950 + .7188/13.6\ )(\ 528\ )}{(\ 29.92\ )\ \ (\ 573\ )}\right\} = 33.48461$$

$$Bws = \left\{\frac{Vw}{Vw + Vmstd}\right\} = \left\{\frac{(\ 1.05196\ )}{(\ 1.05196 + 33.48461\ )}\right\} = .0305$$

$$Md = (\ MCO2\ )(\ \%CO2\ ) + (\ MO2\ )(\ \%O2\ ) + (\ MN2\ )(\ \%N2\ )$$
$$= (\ 44.01\ )(\ .002\ ) + (\ 32.00\ )(\ .198\ ) + (\ 28.01\ )(\ .800\ ) = 28.832$$

$$Ms = Md\ (\ 1 - Bws\ ) + (\ MH2O\ Bws\ ) = (\ 28.832\ )(\ 1 - .0305\ ) + (\ 18.02\ )(\ .0305\ ) = 28.503$$

$$Vs = Kp\ Cp\ (\ dP\ )^{1/2}\left\{\frac{Ts}{Ps\ Ms}\right\}^{1/2} = (\ 85.49\ )(\ .8320\ )(\ 1.0302\ )\left\{\frac{(\ 701\ )}{(\ 29.903\ )(\ 28.503\ )}\right\}^{1/2} = 66.4312$$

$$Acf = (\ 60\ sec/min\ )(\ Vs\ \ A\ ) = (\ 60\ )(\ 66.4312\ )(\ 52.3817\ ) = 208786.4$$

$$Qsd = (\ 3600\ sec/hr\ )(\ 1 - Bws\ )(\ Vs\ A\ )\left\{\frac{Tstd\ Ps}{Ts\ Pstd}\right\}$$

$$= (\ 3600\ )(\ 1 - .0305\ )(\ 66.4312\ )(\ 52.3817\ )\left\{\frac{(\ 528\ )(\ 29.903\ )}{(\ 701\ )(\ 29.92\ )}\right\} = 9149506.0\ dscf/hr$$
$$= 152491.8\ dscf/min$$

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4 + 29

PLANT: Bayou Steel | SAMPLE BOX NO.: A. AIR | PITOT TUBE ID.: P-10-5 | STACK DIAMETER, in.: 98"
DATE: 7-23-04 | METER BOX NO.: 3 | PITOT TUBE FACTOR: .832 | METER Δ H@: 1.8127
LOCATION: Norco, La. | BAROMETRIC PRESSURE: 29.95 | FILTER ID.: | METER D.G.M.F.: 1.0309
STACK ID.: Baghouse Stack | AMBIENT TEMP.: 90°F | FILTER TYPE: | K-FACTOR: .6750
RUN NO.: 3 | OPERATOR: Joel Richard | NOZZLE DIAMETER, IN: .170 | T-FACTOR: 473.27

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head √ΔPs	Velocity Head $(\sqrt{\Delta P_s})$	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
one@1	16:05	-.650	240	1.40	1.18	.950	.946	973.448	97	88	243	253	53	3.0
2	16:09.5		238	1.30	1.14	.880	.881	975.890	100	88	242	252	53	3.5
3	16:14		235	1.10	1.04	.750	.749	978.285	102	88	240	251	54	3.0
4	16:18.5		238	1.05	1.02	.710	.711	980.600	102	88	245	250	54	3.5
5	16:23		240	1.10	1.04	.740	.743	982.785	102	90	247	249	54	3.5
6	16:27.5		241	1.10	1.04	.740	.743	984.915	104	90	242	250	55	3.0
7	16:32		240	1.00	1.00	.680	.676	987.150	107	92	241	252	55	3.0
8	16:36.5		237	1.05	1.02	.710	.712	989.350	108	92	240	257	56	3.0
leak@	16:41							991.476						
one@9	16:47		238	1.20	1.09	.810	.813	991.476	99	91	239	256	56	3.0
10	16:51.5		240	1.10	1.04	.740	.743	993.770	103	93	240	253	57	3.5
11	16:56		242	1.10	1.04	.740	.743	996.000	104	92	242	254	57	3.0
12	17:00.5		241	1.00	1.00	.680	.675	998.240	106	92	241	252	58	3.0
13	17:05		247	1.05	1.02	.700	.702	1000.330	106	93	243	251	59	3.0
14	17:09.5		243	1.00	1.00	.670	.673	1002.490	108	93	242	250	60	3.0
15	17:14		240	.970	.984	.660	.655	1004.610	110	93	241	250	60	3.0
16	17:18.5		241	.960	.979	.650	.648	1006.565	110	94	240	252	60	3.0
leak@	17:23							1008.673						
AVERAGE	72 min	-.650	240.06		1.039	.738		35.225	92.03					

	IMPINGER WEIGHTS				
	1	2	3	4	5 (35.6)
LIQUID COLLECTED					
FINAL					
INITIAL					
TOTAL WEIGHT					

ORSAT MEASUREMENT			
CO2	O2	CO	N2
0.2	19.2		

Orsat leak check ✓
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 4.0" H2O
Pitot tube leak check, static side good @ 4.5" H2O
Pre-leak Rate @ 10 in.Hg 0.002 ft3/min.
Post-leak Rate @ 10 in.Hg 0.001 ft3/min.

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 3

DETERMINATION of STACK GAS MOISTURE, MOLECULAR WEIGHT, VELOCITY, and VOLUMETRIC FLOW RATE

A - Cross-sectional area of the stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bws - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orific pressure differential, in. H2O
dP - Stack gas velocity head, in. H2O
F1 - Conversion factor, 13.6 in. H2O/ in. Hg
Kp - Pitot tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mole
Md - Stack gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2, 28.01 lb/lb mole
MO2 - Molecular weight of O2, 32.00 lb/lb mole
Ms - Stack gas molecular weight, wet lb/lb mole

Pbar - Barometric pressure, in. Hg
Pa - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry scfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R

Vi - Water vapor condensed, impinger 1, g
Vii - Water vapor condensed, impinger 2, g
Viii - Water vapor condensed, impinger 3, g
Viv - Water vapor condensed, impinger 4, g
Vm - Gas meter sample volume, dry ft3
Vmstd - Gas meter sample volume, dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Stack gas N2 concentration, %/100
O2 - Stack gas O2 concentration, %/100

$$Vw = \left\{\frac{(\ Vi + Vii + Viii + Viv\ )\ R\ Tstd}{(\ 453.6\ g/lb\ )\ Pstd\ MH2O}\right\} = \left\{\frac{(\ 31.1 + .8 + .0 + 3.7\ )(\ 21.85\ )(\ 528\ )}{(\ 453.6\ )(\ 29.92\ )(\ 18.02\ )}\right\} = 1.67937$$

$$Vmstd = Vm\ Y \left\{\frac{(\ Pb + dH/\ F1\ )\ Tstd}{Pstd\ \ Tm}\right\} = (\ 35.225\ )(\ 1.0309\ )\left\{\frac{(\ 29.950 + .7381/13.6\ )(\ 528\ )}{(\ 29.92\ )\ \ (\ 558\ )}\right\} = 34.47911$$

$$Bws = \left\{\frac{Vw}{Vw + Vmstd}\right\} = \left\{\frac{(\ 1.67937\ )}{(\ 1.67937 + 34.47911\ )}\right\} = .0464$$

$$Md = (\ MCO2\ )(\ \%CO2\ ) + (\ MO2\ )(\ \%O2\ ) + (\ MN2\ )(\ \%N2\ )$$
$$= (\ 44.01\ )(\ .002\ ) + (\ 32.00\ )(\ .192\ ) + (\ 28.01\ )(\ .806\ ) = 28.808$$

$$Ms = Md\ (\ 1 - Bws\ ) + (\ MH2O\ Bws\ ) = (\ 28.808\ )(\ 1 - .0464\ ) + (\ 18.02\ )(\ .0464\ ) = 28.307$$

$$Vs = Kp\ Cp\ (\ dP\ )^{1/2} \left\{\frac{Ts}{Ps\ Ms}\right\}^{1/2} = (\ 85.49\ )(\ .8320\ )(\ 1.0439\ )\left\{\frac{(\ 700\ )}{(\ 29.902\ )(\ 28.307\ )}\right\}^{1/2} = 67.5224$$

$$Acf = (\ 60\ sec/min\ )(\ Vs\ \ A\ ) = (\ 60\ )(\ 67.5224\ )(\ \ 52.3817\ ) = 212216.0$$

$$Qsd = (\ 3600\ sec/hr\ )(\ 1 - Bws\ )(\ Vs\ A\ )\left\{\frac{Tstd\ Ps}{Ts\ Pstd}\right\}$$

$$= (\ 3600\ )(\ 1 - .0464\ )(\ \ 67.5224\ )(\ \ 52.3817\ )\left\{\frac{(\ \ 528\ )(\ 29.902\ )}{(\ \ 700\ \ )(\ 29.92\ )}\right\} = 9151957.0\ dscf/hr$$
$$= 152532.6\ dscf/min$$

METALS EMISSIONS per EPA METHOD 29

During emission tests for the metals, lead and mercury samples were collected in sampling train combined with the moisture and flow rate sample train. Sample volume, etc. are recorded on test data sheets presented beginning on page 6.1.5.

A summary of the metals sample collection data and the emission concentration and emission rate calculations are presented on the following pages.

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 1

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bws - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter orifice press. diff., in-H20
Eri - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr
St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA, 528 R
Vm - Volume of gas sample, actual dry ft3
Vmstd - Sample vol, dry, std ft3, 68F, 29.92 in.Hg
Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{\frac{(\ Tstd)(\ Pbar + dH/13.6\ )}{(\ \ Tm\ \ )(\ Pstd\ )}\right\} = (\ 34.467)(\ 1.0309)\left\{\frac{(\ 528)(\ 29.950+\ \ .6969/13.6\ )}{(\ 571\ )(\ 29.92\ )}\right\} = \ 32.97250$$

$$I = \left\{\frac{Ts\ Vmstd\ Pstd\ (\ 100\ )}{Tstd\ Vs\ An\ St\ Ps\ (60)(\ 1\text{-}Bws)}\right\} = \left\{\frac{(\ \ 701\ )(\ 32.97250\ )(\ 29.92\ )(\ 100\ )}{(528)(\ 66.3327)(.00015762)(\ 72.00)(29.902)\ 60\ (1\ -\ .0408)}\right\} = 101.11$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲321.00 / 32.97250) = ▲9.7354
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲321.00)(2.2046 X 10-9)(9030603.0)] /(32.97250) = ▲.19382

---------- MERCURY --------

Csi = (Msi / Vmstd) = (▲2.21 / 32.97250) = ▲.0670
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲2.21)(2.2046 X 10-9)(9030603.0)] /(32.97250) = ▲.00133

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 2

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bws - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter orifice press. diff., in-H20
Eri - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr
St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA, 528 R
Vm - Volume of gas sample, actual dry ft3
Vmstd - Sample vol, dry, std ft3, 68F, 29.92 in.Hg
Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{\frac{(\ Tstd)(\ Pbar + dH/13.6\ )}{(\ \ Tm\ \ )(\ Pstd\ )}\right\} = (\ 35.150)(\ 1.0309)\left\{\frac{(\ 528)(\ 29.950+\ \ .7188/13.6\ )}{(\ 573\ )(\ 29.92\ )}\right\} = \ 33.48462$$

$$I = \left\{\frac{Ts\ Vmstd\ Pstd\ (\ 100\ )}{Tstd\ Vs\ An\ St\ Ps\ (60)(\ 1\text{-}Bws)}\right\} = \left\{\frac{(\ \ 701\ )(\ 33.48462\ )(\ 29.92\ )(\ 100\ )}{(528)(\ 66.4312)(.00015762)(\ 72.00)(29.903)\ 60\ (1\ -\ .0305)}\right\} = 101.35$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲357.00 / 33.48462) = ▲10.6616
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲357.00)(2.2046 X 10-9)(9149506.0)] /(33.48462) = ▲.21506

---------- MERCURY --------

Csi = (Msi / Vmstd) = (▲2.33 / 33.48462) = ▲.0696
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲2.33)(2.2046 X 10-9)(9149506.0)] /(33.48462) = ▲.00140

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 3

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bws - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter orifice press. diff., in-H20
Eri - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr
St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA, 528 R
Vm - Volume of gas sample, actual dry ft3
Vmstd - Sample vol, dry, std ft3, 68F, 29.92 in.Hg
Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{ \frac{(\ Tstd)(\ Pbar + dH/13.6\ )}{(\ Tm\ )(\ Pstd\ )} \right\} = (\ 35.225)(\ 1.0309) \left\{ \frac{(\ 528)(\ 29.950 + \ .7381/13.6\ )}{(\ 558\ )(\ 29.92\ )} \right\} = 34.47912$$

$$I = \left\{ \frac{Ts\ Vmstd\ Pstd\ (\ 100\ )}{Tstd\ Vs\ An\ St\ Ps\ (60)(\ 1-Bws)} \right\} = \left\{ \frac{(\ 700\ )(\ 34.47912\ )(\ 29.92\ )(\ 100\ )}{(528)(\ 67.5224)(.00015762)(\ 72.00)(29.902)\ 60\ (1\ -\ .0464)} \right\} = 104.33$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲363.00 / 34.47912) = ▲10.5281
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲363.00)(2.2046 X 10-9)(9151957.0)] /(34.47912) = ▲.21242

---------- MERCURY --------

Csi = (Msi / Vmstd) = (▲6.58 / 34.47912) = ▲.1908
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲6.58)(2.2046 X 10-9)(9151957.0)] /(32.97250) = ▲.00403

LABORATORY ANALYSES of METALS SAMPLES

During the emission tests, metals samples were collected in the probe wash, filter, and impinger samples. These samples were transported to Chemtex Environmental and Industrial Hygiene Services located in Port Arthur, Texas for analyses. A summary of analytical results are presented on the following page followed by the complete analytical report.

Chemtex Environmental and Industrial Hygiene Services is certified by the Louisiana Department of Environmental Quality (LDEQ) as a qualified environmental testing laboratory under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method 29

Analytical Laboratory : Chemtex Environmental & Industrial Hygiene Services

Client Name : Bayou Steel
Source Name : Baghouse Stack
Run No. : 1

	HNO3 PROBE WASH					IMPINGERS 1 & 2, HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	170.00	0.172000	210.000	< 0.011000	172.000	274.00	< 0.014000	102.000	< 0.005000	< 14.000
Mercury	170.00	0.000187	210.000	< 0.000210	0.187	274.00	< 0.000270	102.000	< 0.000100	< 0.270

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	90.00	< 0.005000	210.000	< 0.011000	< 5.000	430.00	0.022000	60.000	< 0.005000	22.000
Mercury	90.00	< 0.000090	210.000	< 0.000210	< 0.090	430.00	< 0.000430	60.000	< 0.000060	< 0.430

	IMPINGERS 4 & 5, HCl RINSE					FILTERS			
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	RESULT	CONC.		Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ug/sample	ug/sample		ug/sample
Lead	234.00	< 0.012000	105.000	< 0.005000	< 12.000	96.00	< 3.00		96.00
Mercury	234.00	< 0.000230	105.000	< 0.000110	< 0.230	< 1.00	< 1.00		< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	! 321.00
Mercury	! 2.21

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method 29

Analytical Laboratory : Chemtex Environmental & Industrial Hygiene Services

Client Name : Bayou Steel
Source Name : Baghouse Stack
Run No. : 2

	HNO3 PROBE WASH					IMPINGERS 1 & 2, HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	260.00	0.213000	210.000	< 0.011000	213.000	294.00	< 0.015000	102.000	< 0.005000	< 15.000
Mercury	260.00	0.000290	210.000	< 0.000210	0.290	294.00	< 0.000290	102.000	< 0.000100	< 0.290

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	90.00	< 0.005000	210.000	< 0.011000	< 5.000	430.00	0.039000	60.000	< 0.005000	39.000
Mercury	90.00	< 0.000090	210.000	< 0.000210	< 0.090	430.00	< 0.000430	60.000	< 0.000060	< 0.430

	IMPINGERS 4 & 5, HCl RINSE					FILTERS			
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	RESULT		CONC.	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ug/sample		ug/sample	ug/sample
Lead	234.00	< 0.012000	105.000	< 0.005000	< 12.000	73.00		< 3.00	73.00
Mercury	234.00	< 0.000230	105.000	< 0.000110	< 0.230	< 1.00		< 1.00	< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	! 357.00
Mercury	! 2.33

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method 29

Analytical Laboratory : Chemtex Environmental & Industrial Hygiene Services

Client Name : Bayou Steel
Source Name : Baghouse Stack
Run No. : 3

	HNO3 PROBE WASH					IMPINGERS 1 & 2, HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	234.00	0.171000	210.000	< 0.011000	171.000	314.00	< 0.016000	102.000	< 0.005000	< 16.000
Mercury	234.00	0.004450	210.000	< 0.000210	4.450	314.00	< 0.000310	102.000	< 0.000100	< 0.310

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	105.00	< 0.005000	210.000	< 0.011000	< 5.000	470.00	0.028000	60.000	< 0.005000	28.000
Mercury	105.00	< 0.000110	210.000	< 0.000210	< 0.110	470.00	< 0.000470	60.000	< 0.000060	< 0.470

	IMPINGERS 4 & 5, HCl RINSE					FILTERS			
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	RESULT	CONC.		Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ug/sample	ug/sample		ug/sample
Lead	240.00	< 0.012000	105.000	< 0.005000	< 12.000	131.00	< 3.00		131.00
Mercury	240.00	< 0.000240	105.000	< 0.000110	< 0.240	< 1.00	< 1.00		< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	! 363.00
Mercury	! 6.58

CHEMTEX
Environmental & Industrial Hygiene Services

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138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-0405

Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225) 925-8405; Fax (225) 925-2343

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070973

AIHA *Laboratory # 101478* | NVLAP *Lab Code 200635-0* | nelap *certificate # 02077*

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results mg/Sample	Results mg/l	MDL mg/Sample	MDL mg/l
P4070973	PW-R1	Lead	170	0.172	1.01	0.009	0.05
P4070974	PW-R2	Lead	260	0.213	0.82	0.013	0.05
P4070975	PW-R3	Lead	234	0.171	0.73	0.012	0.05
P4070976	IMP 1&2-R1	Lead	274	< 0.014	< 0.05	0.014	0.05
P4070977	IMP 1&2-R2	Lead	294	< 0.015	< 0.05	0.015	0.05
P4070978	IMP 1&2-R3	Lead	314	< 0.016	< 0.05	0.016	0.05
P4070979	IMP 3-R1	Lead	90	< 0.005	< 0.05	0.005	0.05
P4070980	IMP 3-R2	Lead	90	< 0.005	< 0.05	0.005	0.05
P4070981	IMP 3-R3	Lead	105	< 0.005	< 0.05	0.005	0.05
P4070982	BLANK 0.1N HNO3	Lead	210	< 0.011	< 0.05	0.011	0.05
P4070983	BLANK DI H2O	Lead	184	< 0.009	< 0.05	0.009	0.05
P4070984	BLANK HNO3/H2O2	Lead	102	< 0.005	< 0.05	0.005	0.05
Method Blank	DI Water	Lead	---		< 0.05	---	0.05

MDL: Method Detection Limit

CHEMTEX
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Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070973

AIHA *Laboratory # 101478* | NVLAP *Lab Code 200635-0* | nelap *certificate # 02077*

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results ug/Sample	Results ug/l	MDL ug/Sample	MDL ug/l
P4070973	PW-R1	Mercury	170	0.19	1.1	0.17	1.0
P4070974	PW-R2	Mercury	260	0.29	1.1	0.26	1.0
P4070975	PW-R3	Mercury	234	4.45	19.0	0.23	1.0
P4070976	IMP 1&2-R1	Mercury	274	< 0.27	< 1.0	0.27	1.0
P4070977	IMP 1&2-R2	Mercury	294	< 0.29	< 1.0	0.29	1.0
P4070978	IMP 1&2-R3	Mercury	314	< 0.31	< 1.0	0.31	1.0
P4070979	IMP 3-R1	Mercury	90	< 0.09	< 1.0	0.09	1.0
P4070980	IMP 3-R2	Mercury	90	< 0.09	< 1.0	0.09	1.0
P4070981	IMP 3-R3	Mercury	105	< 0.11	< 1.0	0.11	1.0
P4070982	BLANK 0.1N HNO3	Mercury	210	< 0.21	< 1.0	0.21	1.0
P4070983	BLANK DI H2O	Mercury	184	< 0.18	< 1.0	0.18	1.0
P4070984	BLANK HNO3/H2O2	Mercury	102	< 0.10	< 1.0	0.10	1.0
Method Blank	DI Water	Mercury	---		< 1.0	---	1.0

MDL: Method Detection Limit

CHEMTEX
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Client: ***E T S***
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04

Phone: (225) 925-8405; Fax (225) 925-2343

CHEMTEX FILE #: P4070973

LABORATORY QUALITY ASSURANCE/QUALITY CONTROL DATA

Parameter	Units	True Value	Obtained Value	% Recovery
Total Lead	mg/l	0.250	0.268/0.299*	105
Total Mercury	ug/l	5.0	4.8/4.8*	100

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

CNReddy

Dr. C. N. Reddy, Ph.D, CIH, ASP
Director

bmb/amd/CNR

CHEMTEX
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Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225) 925-8405; Fax (225) 925-2343

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070985

AIHA *Laboratory # 101478* | NVLAP *Lab Code 200635-0* | nelap *certificate # 02077*

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results mg/Sample	Results mg/l	MDL mg/Sample	MDL mg/l
P4070985	IMP 4&5-R1	Lead	430	< 0.022	< 0.05	0.022	0.05
P4070986	IMP 4&5-~~R1~~ R2	Lead	430	0.039	0.09	0.022	0.05
P4070987	IMP 4&5-~~R1~~ R3	Lead	470	0.028	0.06	0.024	0.05
P4070988	IMP 4&5-R1-HCL	Lead	234	< 0.012	< 0.05	0.012	0.05
P4070989	IMP 4&5-~~R1~~ R2-HCL	Lead	234	< 0.012	< 0.05	0.012	0.05
P4070990	IMP 4&5-~~R1~~ R3-HCL	Lead	240	< 0.012	< 0.05	0.012	0.05
P4070991	BLANK KmnO4	Lead	60	0.005	0.08	0.003	0.05
P4070992	BLANK 8 N HCL	Lead	105	< 0.005	< 0.05	0.005	0.05
Method Blank	DI Water	Lead	---		< 0.05	---	0.05

MDL: Method Detection Limit

CHEMTEX
Environmental & Industrial Hygiene Services

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Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225) 925-8405; Fax (225) 925-2343

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070985

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results ug/Sample	Results ug/l	MDL ug/Sample	MDL ug/l
P4070985	IMP 4&5-R1	Mercury	430	< 0.43	< 1.0	0.43	1.0
P4070986	IMP 4&5-~~R1~~ R2	Mercury	430	< 0.43	< 1.0	0.43	1.0
P4070987	IMP 4&5-~~R1~~ R3	Mercury	470	< 0.47	< 1.0	0.47	1.0
P4070988	IMP 4&5-R1-HCL	Mercury	234	< 0.23	< 1.0	0.23	1.0
P4070989	IMP 4&5-~~R1~~ R2-HCL	Mercury	234	< 0.23	< 1.0	0.23	1.0
P4070990	IMP 4&5-~~R1~~ R3-HCL	Mercury	240	< 0.24	< 1.0	0.24	1.0
P4070991	BLANK KmnO4	Mercury	60	< 0.06	< 1.0	0.06	1.0
P4070992	BLANK 8 N HCL	Mercury	105	< 0.11	< 1.0	0.11	1.0
Method Blank	DI Water	Mercury	Blank		< 1.0	---	1.0

MDL: Method Detection Limit

CHEMTEX
Environmental & Industrial Hygiene Services

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138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-0405

Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04

Phone: (225) 925-8405; Fax (225) 925-2343

CHEMTEX FILE #: P4070985

LABORATORY QUALITY ASSURANCE/QUALITY CONTROL DATA

Parameter	Units	True Value	Obtained Value	% Recovery
Total Lead	mg/l	0.250	0.268/0.299*	105
Total Mercury	ug/l	5.0	4.8/4.8*	100

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

Dr. C. N. Reddy, Ph.D, CIH, ASP
Director

bmb/amd/CNR

CHEMTEX
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138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-0405

Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225) 925-8405; Fax (225) 925-2343

Report Date: 07/30/04
Sample Matrix: Quartz
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070993

AIHA *Laboratory # 101478* | NVLAP *Lab Code 200635-0* | nelap *certificate # 02077*

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample ID.	Parameter	Result (ug/sample)	MDL (ug/sample)
P4070993	Filter-R1	Total Lead	96.0	3.0
		Total Mercury	< 1.0	1.0
P4070994	Filter-R2	Total Lead	73.0	3.0
		Total Mercury	< 1.0	1.0
P4070995	Filter-R3	Total Lead	131.0	3.0
		Total Mercury	< 1.0	1.0
P4070996	Blank Filter	Total Lead	< 3.0	3.0
		Total Mercury	< 1.0	1.0
Method Blank	Blank Filter	Total Lead	< 3.0	3.0
		Total Mercury	< 1.0	1.0

LABORATORY QUALITY ASSURANCE/QUALITY CONTROL DATA

Parameter	Units	True Value	Obtained Value
Total Lead	ug/l	250	268/302*
Total Mercury	ug/l	5.0	4.8/4.8*

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

Dr. C. N. Reddy, Ph.D, CIH, ASP
Director

bmb/CNR

UNIT OPERATING DATA

During the emission tests, unit operating data were recorded by Bayou Steel. These data are presented on the following pages.

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duca | Heat #: 27245
Date: 7/23/04 | 1st Helper: wayne
Grade: A3644w | Ladleman: Jeff

Electrodes	Ad	Slp	Brk
A			
B			
C			

Pulse Counters
1st Charge 7122828
Last Charge 7126096

Tap To Tap Time 52

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Previous Heat Tap 8:06

	PON	POFF	kWh/ton
Headr	B12	B25	(220)
1 Back	B27	B34	(220)
2 Back	B36		
3 Back			

Tap Start 8:58 Tap Finish 9:01

		LMF	
Power On	39.4	kWh	
kWh	31260	kWh/Ton	
kWh/Ton	327	Plan	(25)
Plan	(360)		

Ladle Data: Ladle No. 5; Heats 9; Temp
Slr Info: # Hts Plg 9; Slr OK

Temperature Data (250) (0 0 0 0 0)

	Time	kWh	Temp	Carbon	O2ppm
1			2918	15	
2			2980		
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1300
Chg C		
Foamy		2888
Oxgyn		1048
N Gas		209

Ladle Additions

	Tap	Trim
SiMn	1670	
FeSi	338	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CaAl	200	

Grinding Data: Material; Location; Amount

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000		

Ladle Sent To

To LMF	St to C
✓	

Never Be Satisfied Always a Better Way

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/18	2/85	40	50	18/26	59					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	3	1	A1-8
Power On	11	13	2	A9-6
First BackCharge	2	2		
Power On	8	7		
Second BackCharge	2	2		
Power On	6		2	AB-2
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27245 Date 7-22-04 Turn C

Oper Cowboy Foreman Dick

Header

Layer	Description	Alm Scrap Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	8		9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	16		16%
	Barge / Plate	1		17000	13		22%
	#1 Heavy	7		13000	15		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	99		

First BackChg

Layer	Description	Alm Scrap Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	8		15%
3	Barge / Plate	1		14000	5		22%
	#1 Heavy	1		16000	17		25%
	Mixed 1&2	7		8000	13		12%
							0%
							0%
5	Shredded	10		15000	14		23%
		Total		65000	56		

Second BackChg

Layer	Description	Alm Scrap Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Mixed 1&2	7		14000	15		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	5		12%
	#1 Heavy	1		4000	10		24%
	Shredded			4000	5		
		Total		33000	35		

150

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27246
Date: 7/23/04 | 1st Helper: Wayne
Grade: A36 | Ladleman: Tebb

Tap To Tap Time 64

Pulse Counters
1st Charge 7126096
Last Charge 7129187

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Previous Heat Tap 8:56

	PON	POFF	kWh/ton
Headr	9:05	9:16	(220)
1 Back	9:18	9:26	(220)
2 Back	9:28		
3 Back			

Tap Start 9:52 | Tap Finish 9:55

Power On	37.7
kWh	29810
kWh/Ton	321
Plan	(360)

LMF

kWh	
kWh/Ton	
Plan	(25)

Ladle Data
Ladle No. 10
Heats 6
Temp

Stir Info
Hts Plg 5
Stir OK

Temperature Data (2950) (10:08-9:10)

	Time	kWh	Temp	Carbon	O2ppm
1			2989	12	
2					
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1300
Chg C		
Foamy		2667
Oxgyn		996
N Gas		207

Ladle Additions

	Tap	Trim
SiMn	1675	
FeSi	325	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Cooling Data
Material | Location
Amount

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000	84	

Ladle Sent To:

To LMF	St to C
✓	

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8/16 65/80 25 40-50 18/26 35

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/40	74/85	40	50	18/26	59					
Rin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	4	2	A1-8
Power On	11	11		
First BackCharge	2	2		
Power On	8	8		
Second BackCharge	2			
Power On	6			
Third Back Charge	0			A1-2 9:60-9:62
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

9434 1ST Test (OF-29Q)

BEST COPY

Bayou Steel Corporation

Scrap Blend Procedure

nd #65 3-Buckets

eat# 37246 Date 7-22 Turn C

per Cowboy Foreman D. Isk

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	15		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	90		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	10		22%
	#1 Heavy	1		16000	20		25%
	Mixed 1&2	7		8000	10		12%
							0%
							0%
5	Shredded	10		15000	20		23%
		Total		65000	60		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000	10		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000	5		24%
	Shredded			4000	5		
		Total		33000	40		

190

Bayou Steel Corporation

Heat Record

Heat #: 27247

Crew: C
Date: 7/23/04
Grade: A36 4/w

Melter: Duck
1st Helper: Wayne
Ladleman: J 4/5

Electrodes	Ad	Slp	Brk
A			
B			
C			

Pulse Counter
1st Charge 7129187
Last Charge 7132630

Tap To Tap Time 54

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!!

Previous Heat Tap 9:52

	PON	POFF	kWh/ton
Headr	10:00	10 11	(220)
1 Back	10 13	10 22	(220)
2 Back	10 24		
3 Back			

Tap Start 10:46 Tap Finish 1049

		LMF	
Power On	40.2		
kWh	32100	kWh	
kWh/Ton	345	kWh/Ton	
Plan	(360)	Plan	(25)

Ladle Data		Stir Info	
Ladle No.	8	#Hts Plg	1
Heats	45	Stir OK	
Temp			

Temperature Data (2950) (0.08-0.10)

	Time	kWh	Temp	Carbon	O2ppm
1			3026	11	
2			3100		
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1300
Chg C		
Foamy		3057
Oxgyn		1067
N Gas		216

Ladle Additions

	Tap	Trim
SiMn	1676	
FeSi	330	
FeMn		
Coke	50	
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CAl.	200	

Gunning Data
Material | Location
Amount

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge Deviation					

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Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000	83	

Ladle Sent To

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/18	70/85	40	50	18/26	59					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	5	3	A1-3
Power On	11	11		
First BackCharge	2	2		
Power On	8	9	1	A4-6
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Record
247

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Bucket

Heat# 27247 Date 7-22 Turn C

Oper Cook Foreman Ark

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	5		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	22		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	85		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	10		15%
3	Barge / Plate	1		14000	10		22%
	#1 Heavy	1		16000	20		25%
	Mixed 1&2	7		8000	10		12%
							0%
							0%
5	Shredded	10		15000	14		23%
		Total		65000	54		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	30		42%
	Turnings	11		8000	10		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000	5		24%
	Shredded			4000	5		
		Total		33000	54		

190

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27248
Date: 7-23-04 | 1st Helper: WS
Grade: A36-44W | Ladleman: JB

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Pulse Counters
1st Charge 7124187
Last Charge 7125551

Tap To Tap Time 53

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Previous Heat Tap 10:46

	PON	POFF	kWh/ton
Headr	10:53	11:04	(220)
1 Back	11:08	11:15	(220)
2 Back	11:17		
3 Back			

Tap Start 11:39 | Tap Finish 11:48

		LMF	
Power On	37.2	kWh	
kWh	29040	kWh/Ton	
kWh/Ton	310	Plan	(25)
Plan	(360)		

Ladle Data
Ladle No. 7
Heats 89
Temp

Stir Info
Hts Plg 42
Stir OK

Temperature Data (2950 - Min 2910)

	Time	kWh	Temp	Carbon	O2ppm
1			3000	12	
2					
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1300
Chg C		
Foamy		2618
Oxgyn		971
N Gas		200

Ladle Additions

	Tap	Trim
SiMn	1676	
FeSi	826	
FeMn		
Coke	50	
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Gunning Data
Material | Location
Amount

Scrap Compliance

Charge	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Deviation					

Process Weights

Charge lbs	Tap Tons	Cast Tons
185,000	86	

Ladle Sent To

To LMF	St to C
✓	

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Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/17	70/86	40	50	1824	54					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	4	2	A1-B
Power On	11	11		
First BackCharge	2	4	2	A4-1
Power On	8	7		
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 2724 B Date 7-22-04 Turn C

Oper Low Boy Foreman Pruitt

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	11		16%
	Barge / Plate	1		17000	15		22%
	#1 Heavy	7		13000	13		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	86		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	15		15%
3	Barge / Plate	1		14000	8		22%
	#1 Heavy	1		16000	15		25%
	Mixed 1&2	7		8000	15		12%
							0%
							0%
5	Shredded	10		15000	20		23%
		Total		65000	73		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000	8		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	26		

185

3 Heats

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Buck | Heat #: 27249
Date: 7-23-04 | 1st Helper: WS
Grade: A36 | Ladleman: JB

Tap To Tap Time: 55

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes	Ad	Slp	Brk
A			
B			
C			

Pulse Counters
1st Charge 7135551
Last Charge 7138686

Previous Heat Tap 11:39

	PON	POFF	kWh/ton
Headr	11:50	12:01	(220)
1 Back	12:03	12:13	(220)
2 Back	12:15		
3 Back			

Tap Start 12:34 | Tap Finish 12:37

		LMF	
Power On	38.4	kWh	
kWh	29670	kWh/Ton	
kWh/Ton	316	Plan	(25)
Plan	(360)		

Ladle Data		Stir Info	
Ladle No.	5	# Hts Plg	10
Heats	10	Stir OK	
Temp			

Temperature Data (2950) (3080-3110)

	Time	kWh	Temp	Carbon	O2ppm
1			3040	12	
2					
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1300
Chg C		
Foamy		2697
Oxgyn		1010
N Gas		208

Ladle Additions

	Tap	Trim
SiMn	1665	
FeSi	336	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CaL	200	

Gunning Data
Material | Location
Amount

Scrap Compliance

Charge	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Deviation					

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Process Weights

Charge lbs	Tap Tons	Cast Tons
180,000	81	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	.13	.85	.40	.50	.26	.50					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	8	6	A4-3(4) A4-1(2)
Power On	11	11		
First BackCharge	2	2		
Power On	8	10	2	A4-6
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:
Test #2 11:58 : OB min into Header

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27248 Date 7-22 Turn C

Oper Eaching Foreman Duck

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	3		6%
4	Turnings	1		12000	10		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	25		17%
	Mixed 1&2	11		8000	25		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	103		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	14		22%
	#1 Heavy	1		16000	18		25%
	Mixed 1&2	7		8000	12		12%
							0%
							0%
5	Shredded	10		15000	6		23%
		Total		65000	55		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	15		42%
	Turnings	11		8000	7		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	22		

180

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Dick | Heat #: 27250
Date: 7-23-04 | 1st Helper: WE
Grade: A36 | Ladleman: SB

Pulse Counter: 1st Charge 7438656 | Last Charge 7441332
Tap To Tap Time 2:38 - 158 min.
Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes: Ad | Slp | Brk
A
B
C

Previous Heat Tap 12:34

	PON	POFF	kWh/ton
Headr	1''	1:24	(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start 3:12 | Tap Finish

		LMF	
Power On	36.0		
kWh	27420	kWh	
kWh/Ton	310	kWh/Ton	
Plan	(360)	Plan	(25)

Ladle Data: Ladle No. 8 | Heats 46 | Temp
Stir Info: # Hts Plg 2 | Stir OK

Temperature Data (2950) (0 08 0 10)

	Time	kWh	Temp	Carbon	O2ppm
1			2977	9	
2			3150		
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1800
Chg C		
Foamy		2619
Oxgyn		771
N Gas		128

Ladle Additions

	Tap	Trim
SiMn	960	
FeSi	175	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CAL	200	

Gunning Data: Material | Location | Amount

Scrap Compliance: Dest

Charge	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
27000	81	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	8/13	70/85	40	50	10/26	50					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	4		
Turn Around	2	33	31	Add & slp Bt Cf Clean slow line
Power On	11	13	2	A4-6
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			A1-2 3:09
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers: Test # 3 2:00

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27250 Date 7-22 Turn C

Oper Cassidy Foreman Duke

Header

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000			16%
	Barge / Plate	1		17000	13		22%
	#1 Heavy	7		13000	25		17%
	Mixed 1&2	11		8000	17		10%
							0%
6	Shredded	10		15000	15		19%
		Total		77000	60		

First BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		2000	2		3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	19		22%
	#1 Heavy	1		16000	24		25%
	Mixed 1&2	7		8000	8		12%
							0%
							0%
5	Shredded	10		15000	15		23%
		Total		65000	65		

Second BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000	5		
		Total		33000	25		

180

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duek | Heat #: 27251
Date: 7-23-09 | 1st Helper: WS
Grade: A36 | Ladleman: SB

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Pulse Counter
1st Charge 7141532
Last Charge 7142634

Tap To Tap Time :46

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Previous Heat Tap: 3:12

	PON	POFF	kWh/ton
Headr			(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start: 3:57 | Tap Finish: 3:59

		LMF	
Power On	12.7		
kWh	10690	kWh	
kWh/Ton		kWh/Ton	
Plan	(360)	Plan	(25)

Ladle Data

Ladle No.	8
Heats	44
Temp	

Stir Info

# Hts Plg	
Stir OK	

Temperature Data (2950) (0:08-0:10)

	Time	kWh	Temp	Carbon	O2ppm
1			3064	10	
2			3150		
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1800
Chg C		
Foamy		1026
Oxgyn		352
N Gas		106

Ladle Additions

	Tap	Trim
SiMn	576	
FeSi	176	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Gunning Data
Material | Location
Amount

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
27,000	85	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	8/13	70/85	40	50	18/26	50					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3			
Turn Around	2			
Power On	11			
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27257 Date 7-22 Turn C

Oper Coco Soo Foreman DUCK

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	5		9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	15		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	16		19%
		Total		77000	96		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000	3		3%
2	Turnings			10000	7		15%
3	Barge / Plate	1		14000	2		22%
	#1 Heavy	1		16000	15		25%
	Mixed 1&2	7		8000	13		12%
							0%
							0%
5	Shredded	10		15000	10		23%
		Total		65000	57		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	14		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	6		12%
	#1 Heavy	1		4000	4		24%
	Shredded			4000	3		
		Total		33000	27		

180

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27252
Date: 7-23-04 | 1st Helper: WS
Grade: A36/2950 | Ladleman: JB

Tap To Tap Time 135

Electrodes

	Ad	Slp	Brk
A	✓		
B			
C			

Pulse Counter
1st Charge 7142634
Last Charge 7144603

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Previous Heat Tap 3:57

	PON	POFF	kWh/ton
Headr	4:03		(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start 432 | Tap Finish

		LMF	
Power On	22.6	kWh	
kWh	18402	kWh/Ton	
kWh/Ton		Plan	(25)
Plan	(360)		

Ladle Data
Ladle No. 4
Heats 87
Temp

Stir Info
Hts Plg 39
Stir OK

Temperature Data (2950) (0.08 0.10)

	Time	kWh	Temp	Carbon	O2ppm
1	424		3050	7	
2					
3			3020	10	
4					
Ldl					

EAF Additions

	Lbs
Lime	5000
MgO	1500
Chg C	—
Foamy	928
Oxgyn	372
N Gas	75

Ladle Additions

	Tap	Trim
SiMn	1180	
FeSi	320	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Gunning Data
Material | Location
Amount

Scrap Compliance

Charge	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
96000	74	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	8/13	80/90	30	60	20/27	50					30/40
Rtn											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	3		
Power On	11			43-2
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45	35		

Action Items:

Maintenance Barriers: 4th Test 4:04 p.m. (D.E.Q.)

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27253 Date 7-23-04 Turn C

Oper Cowboy Foreman Dick

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	6		9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	10		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	96		

See Heat # 25?

"1st 2nd

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000			22%
	#1 Heavy	1		16000			25%
	Mixed 1&2	7		8000			12%
							0%
							0%
5	Shredded	10		15000			23%
		Total		65000	57		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000			42%
	Turnings	11		8000			9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	97		

180

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27253
Date: 7-23-04 | 1st Helper: WS
Grade: A36 2950 | Lademan: JB

Tap To Tap Time: :58

Pulse Counter
1st Charge 7144603
Last Charge 7149585

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes	Ad	Slp	Brk
A			
B			
C			

Previous Heat Tap: 432

	PON	POFF	kWh/ton
Headr	442	454	(220) 175
1 Back	456	506	(220) 213
2 Back	508		
3 Back			

Tap Start: 530 | Tap Finish:

		LMF	
Power On	28680	kWh	
kWh	319	kWh/Ton	
kWh/Ton		Plan	(25)
Plan	(360)		

Ladle Data: Ladle No. 95 | Heats 11 | Temp 1486
Stir Info: # Hts Plg 4 | Stir OK

Temperature Data (2950 / 40 08 0 10)

	Time	kWh	Temp	Carbon	O2ppm
1	523	319	3045	12	
2					
3			3010		
4					
Ldl					

2960

Never Be Satisfied *Always a Better Way*

EAF Additions

	Plan
Lime	5000
MgO	1000
Chg C	
Foamy	7226
Oxgyn	6908
N Gas	173

Ladle Additions

	Tap	Trim
SiMn	1165	
FeSi	260	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Gunning Data: Material | Location | Amount

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation	96	57	27		180

Process Weights

Charge lbs	Tap Tons	Cast Tons
180	87	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	.13	.80	30	50	.20	.20					.30-.40
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3	—	
Turn Around	2	7	5	#1-3 Rebuilds
Power On	11	12	1	#4-C
First BackCharge	2	2	—	
Power On	8	10	2	#4-B Burn
Second BackCharge	2	2	—	
Power On	6			
Third Back Charge	0		5	#4 C-C heavy heat
Power On	0			
Refine	11			
Total	45	58	13	

456

Action Items:

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27253 Date 7-23 Turn C

Oper Cave Sag Foreman Dick

Header

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	10		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	90		

First BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	16		22%
	#1 Heavy	1		16000	8		25%
	Mixed 1&2	7		8000	21		12%
							0%
							0%
5	Shredded	10		15000	17		23%
		Total		65000	60		

Second BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Mixed 1&2	7		14000	17		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	10		12%
	#1 Heavy	1		4000	6		24%
	Shredded			4000	8		
		Total		33000	41		

191,000

END DATE	END TIME	AVG	MAX	MIN
07/23/04	00:00:57	113,799.76	116,068.38	111,843.71
07/23/04	00:02:27	113,540.63	117,435.90	109,841.27
07/23/04	00:03:58	115,219.65	117,216.12	113,137.98
07/23/04	00:05:28	113,433.19	117,118.44	111,037.85
07/23/04	00:06:59	111,420.43	114,847.38	108,498.17
07/23/04	00:08:29	111,034.32	114,822.95	109,499.39
07/23/04	00:09:59	109,752.81	112,771.67	107,350.43
07/23/04	00:11:29	107,390.31	110,964.59	105,372.41
07/23/04	00:12:58	108,607.79	110,622.71	105,372.41
07/23/04	00:14:28	106,911.68	111,697.20	101,929.18
07/23/04	00:16:00	105,303.22	119,389.50	101,245.42
07/23/04	00:17:29	108,828.38	118,901.10	91,746.03
07/23/04	00:18:99	105,455.98	109,548.23	96,166.05
07/23/04	00:20:30	110,128.34	112,527.47	107,936.51
07/23/04	00:22:00	116,280.83	125,909.65	111,599.51
07/23/04	00:23:30	121,566.68	125,909.65	113,137.98
07/23/04	00:25:00	127,663.55	138,901.09	108,595.85
07/23/04	00:26:29	122,307.96	135,213.67	118,412.70
07/23/04	00:28:01	124,499.25	130,280.83	118,412.70
07/23/04	00:29:30	121,444.04	126,666.66	116,410.26
07/23/04	00:31:00	116,694.62	120,903.54	113,992.67
07/23/04	00:32:31	114,827.30	118,241.76	112,600.73
07/23/04	00:34:01	116,739.38	119,023.20	114,334.55
07/23/04	00:35:31	113,813.32	116,752.14	111,257.63
07/23/04	00:37:01	112,672.63	116,434.68	109,865.69
07/23/04	00:38:30	111,369.15	117,509.16	109,157.51
07/23/04	00:40:02	109,806.81	111,306.47	107,643.47
07/23/04	00:41:31	103,418.26	112,478.63	90,744.81
07/23/04	00:43:01	110,545.92	124,957.27	79,096.46
07/23/04	00:44:32	114,684.30	123,980.46	109,890.11
07/23/04	00:46:02	110,379.87	115,238.09	107,448.11
07/23/04	00:47:32	108,935.83	112,258.85	106,031.74
07/23/04	00:49:02	108,861.21	110,476.19	105,811.97
07/23/04	00:50:33	110,736.95	113,479.85	105,543.34
07/23/04	00:52:03	109,708.31	113,382.17	107,081.80
07/23/04	00:53:32	99,998.10	112,429.79	89,035.41
07/23/04	00:55:02	111,537.65	126,080.59	82,319.90
07/23/04	00:56:33	111,760.95	115,286.94	109,499.39
07/23/04	00:58:03	115,833.67	120,952.38	110,598.29
07/23/04	00:59:33	111,517.02	113,504.27	109,304.03
07/23/04	01:01:02	108,835.71	113,626.38	105,641.02
07/23/04	01:02:33	108,997.15	112,136.75	104,664.23
07/23/04	01:04:03	112,094.97	114,114.77	109,059.83
07/23/04	01:05:34	109,267.95	111,477.41	107,032.97
07/23/04	01:07:04	109,026.45	114,578.76	107,032.97
07/23/04	01:08:34	106,242.03	115,286.94	100,634.92
07/23/04	01:10:04	109,588.39	116,337.00	101,050.06
07/23/04	01:11:33	110,203.77	119,951.16	102,222.22
07/23/04	01:13:03	107,521.64	113,089.13	95,042.73
07/23/04	01:14:34	102,347.58	109,084.25	91,086.69
07/23/04	01:16:04	108,452.59	112,576.31	104,786.33
07/23/04	01:17:35	114,318.00	123,858.37	103,785.10
07/23/04	01:19:05	122,761.63	125,396.83	115,457.88

END DATE	END TIME	AVG	MAX	MIN
07/23/04	01:20:35	125,521.09	137,753.36	105,006.10
07/23/04	01:22:05	126,494.91	133,455.44	122,197.80
07/23/04	01:23:34	119,804.09	123,467.64	115,628.81
07/23/04	01:25:06	115,115.45	117,704.52	112,039.07
07/23/04	01:26:35	118,042.05	122,783.88	114,188.03
07/23/04	01:28:05	116,005.97	118,998.78	113,308.91
07/23/04	01:29:36	116,844.39	119,780.22	114,310.13
07/23/04	01:31:06	115,585.40	119,560.44	111,965.81
07/23/04	01:32:36	117,140.14	120,048.84	114,285.71
07/23/04	01:34:06	113,241.89	120,317.46	103,418.80
07/23/04	01:35:37	116,621.90	132,674.00	100,244.20
07/23/04	01:37:07	128,470.22	134,139.19	122,442.00
07/23/04	01:38:36	119,835.57	127,032.97	114,871.80
07/23/04	01:40:06	116,649.03	120,952.38	114,896.22
07/23/04	01:41:37	116,735.59	120,952.38	111,819.29
07/23/04	01:43:07	116,562.74	122,026.86	114,236.88
07/23/04	01:44:37	115,189.52	117,338.22	113,431.02
07/23/04	01:46:07	107,330.08	119,169.72	93,919.41
07/23/04	01:47:38	112,600.19	127,374.84	98,144.08
07/23/04	01:49:08	118,873.70	124,737.48	114,114.77
07/23/04	01:50:37	115,863.52	119,316.24	112,136.75
07/23/04	01:52:07	115,333.60	119,218.56	111,941.39
07/23/04	01:53:38	115,762.85	118,559.22	113,137.98
07/23/04	01:55:08	115,648.08	118,021.98	110,622.71
07/23/04	01:56:38	116,897.30	118,852.26	113,211.23
07/23/04	01:58:08	114,200.52	118,779.00	110,549.45
07/23/04	01:59:39	113,815.22	117,020.76	108,937.73
07/23/04	02:01:09	113,255.73	116,288.16	109,719.17
07/23/04	02:02:38	112,691.36	116,874.23	109,865.69
07/23/04	02:04:08	117,175.15	120,830.28	113,015.88
07/23/04	02:05:39	121,146.66	125,689.87	116,385.84
07/23/04	02:07:09	119,957.40	124,371.19	114,554.34
07/23/04	02:08:38	114,070.27	120,366.30	106,666.66
07/23/04	02:10:08	119,374.84	126,837.61	115,360.20
07/23/04	02:11:40	115,308.91	121,416.36	107,277.16
07/23/04	02:13:10	117,237.28	120,781.44	111,452.99
07/23/04	02:14:39	105,604.94	118,632.48	95,848.59
07/23/04	02:16:09	113,497.22	117,509.16	110,989.01
07/23/04	02:17:40	119,636.41	130,085.47	108,034.19
07/23/04	02:19:10	125,164.29	129,279.61	118,827.84
07/23/04	02:20:39	129,477.41	141,953.61	103,003.66
07/23/04	02:22:11	127,739.25	134,798.53	121,660.56
07/23/04	02:23:41	120,086.55	125,299.15	116,776.55
07/23/04	02:25:11	118,068.10	126,178.27	116,190.48
07/23/04	02:26:40	118,913.85	126,178.27	115,018.31
07/23/04	02:28:10	117,956.86	119,926.74	114,676.44
07/23/04	02:29:41	115,074.21	120,537.24	112,722.84
07/23/04	02:31:11	112,335.64	118,852.26	109,987.79
07/23/04	02:32:40	103,516.48	116,263.73	92,039.07
07/23/04	02:34:12	107,429.66	120,610.50	94,261.30
07/23/04	02:35:42	125,435.90	137,680.09	107,741.15
07/23/04	02:37:12	117,657.58	124,224.66	114,969.48
07/23/04	02:38:41	113,782.12	117,777.78	111,623.93

END DATE	END TIME	AVG	MAX	MIN
07/23/04	02:40:11	114,029.30	116,996.34	111,062.27
07/23/04	02:41:42	112,124.00	114,505.49	108,766.79
07/23/04	02:43:12	102,842.77	114,505.49	92,551.89
07/23/04	02:44:41	107,334.96	110,891.33	103,614.16
07/23/04	02:46:13	114,513.09	128,083.03	105,152.63
07/23/04	02:47:42	121,482.84	123,394.38	115,213.67
07/23/04	02:49:13	120,795.28	126,080.59	117,411.48
07/23/04	02:50:43	122,256.14	128,742.37	118,192.92
07/23/04	02:52:12	123,604.66	127,008.55	120,146.52
07/23/04	02:53:43	118,111.79	121,221.00	114,749.70
07/23/04	02:55:13	115,936.23	117,948.72	114,090.35
07/23/04	02:56:44	114,987.66	117,240.54	110,964.59
07/23/04	02:58:14	115,524.63	121,758.24	112,087.91
07/23/04	02:59:43	116,120.47	121,758.24	112,210.02
07/23/04	03:01:13	113,608.20	116,361.41	110,549.45
07/23/04	03:02:44	112,603.45	117,362.64	110,354.09
07/23/04	03:04:14	110,460.45	117,362.64	104,102.56
07/23/04	03:05:44	110,706.01	120,683.76	97,313.80
07/23/04	03:07:14	110,806.95	115,824.18	106,910.87
07/23/04	03:08:45	117,554.20	123,125.77	112,478.63
07/23/04	03:10:15	122,218.15	131,819.30	111,721.61
07/23/04	03:11:44	124,764.62	129,792.43	119,755.80
07/23/04	03:13:14	129,368.61	141,465.20	109,181.93
07/23/04	03:14:45	127,805.73	133,357.75	124,981.69
07/23/04	03:16:15	124,209.20	129,157.51	120,439.56
07/23/04	03:17:45	119,557.18	124,420.02	116,459.09
07/23/04	03:19:15	118,425.72	122,612.95	115,579.98
07/23/04	03:20:46	121,082.08	123,492.06	117,631.26
07/23/04	03:22:16	121,606.84	126,617.83	118,266.18
07/23/04	03:23:45	121,071.50	124,078.14	117,753.36
07/23/04	03:25:15	118,800.16	120,879.12	115,677.66
07/23/04	03:26:46	110,345.41	119,072.04	98,852.26
07/23/04	03:28:16	115,062.54	119,682.54	109,865.69
07/23/04	03:29:47	123,608.47	137,118.44	104,664.23
07/23/04	03:31:17	120,651.74	125,641.02	118,779.00
07/23/04	03:32:47	128,875.32	137,655.67	119,511.60
07/23/04	03:34:17	123,997.55	129,768.01	118,925.52
07/23/04	03:35:46	119,812.23	121,587.30	117,826.62
07/23/04	03:37:18	121,281.51	123,956.05	117,216.12
07/23/04	03:38:47	124,694.62	126,446.88	121,514.04
07/23/04	03:40:17	118,707.91	123,467.64	112,380.95
07/23/04	03:41:48	109,639.67	118,754.58	99,462.76
07/23/04	03:43:18	118,132.41	129,059.83	99,316.24
07/23/04	03:44:48	125,266.86	131,062.27	120,170.94
07/23/04	03:46:18	118,773.03	121,904.77	116,483.52
07/23/04	03:47:49	117,366.71	120,952.38	109,328.45
07/23/04	03:49:19	119,162.94	123,223.45	114,358.98
07/23/04	03:50:48	115,132.00	117,558.00	110,134.31
07/23/04	03:52:18	115,501.29	118,974.36	110,647.13
07/23/04	03:53:49	117,460.05	123,052.50	114,920.63
07/23/04	03:55:19	114,487.86	118,412.70	112,673.99
07/23/04	03:56:49	113,637.50	115,433.45	112,283.27
07/23/04	03:58:19	113,780.22	117,069.59	112,234.43

END DATE	END TIME	AVG	MAX	MIN
07/23/04	03:59:50	113,397.91	115,311.35	108,693.53
07/23/04	04:01:19	103,785.65	108,693.53	96,581.20
07/23/04	04:02:50	109,491.79	115,238.09	106,959.70
07/23/04	04:04:20	117,574.28	131,282.05	109,890.11
07/23/04	04:05:50	122,492.20	125,592.19	115,604.40
07/23/04	04:07:20	126,603.99	133,064.72	121,343.10
07/23/04	04:08:49	129,477.41	133,431.02	124,053.73
07/23/04	04:10:19	128,084.38	131,746.03	123,223.45
07/23/04	04:11:50	133,962.56	136,581.20	129,670.33
07/23/04	04:13:20	133,937.33	137,191.70	131,135.53
07/23/04	04:14:51	134,768.69	139,194.14	132,503.05
07/23/04	04:16:21	135,828.78	138,901.09	131,550.67
07/23/04	04:17:51	135,926.47	138,949.94	132,576.31
07/23/04	04:19:21	137,007.19	138,779.00	135,360.20
07/23/04	04:20:50	135,910.73	140,390.72	132,796.09
07/23/04	04:22:20	136,193.45	141,050.06	130,451.77
07/23/04	04:23:51	136,063.77	139,633.70	132,991.45
07/23/04	04:25:21	136,757.56	143,174.61	133,601.95
07/23/04	04:26:52	138,527.20	150,280.83	119,633.70
07/23/04	04:28:22	139,115.19	148,669.11	133,089.14
07/23/04	04:29:52	130,961.34	134,822.95	127,301.59
07/23/04	04:31:22	126,419.21	130,256.41	121,880.34
07/23/04	04:32:51	124,495.45	126,788.77	122,271.06
07/23/04	04:34:23	127,247.32	130,378.51	125,250.30
07/23/04	04:35:52	122,821.60	125,860.80	120,341.88
07/23/04	04:37:22	121,609.01	126,105.01	119,072.04
07/23/04	04:38:53	113,595.71	121,245.42	99,194.14
07/23/04	04:40:23	115,921.59	121,709.40	110,769.23
07/23/04	04:41:53	122,726.36	137,777.78	117,118.44
07/23/04	04:43:23	132,191.30	144,786.33	107,887.66
07/23/04	04:44:52	125,062.54	129,841.27	121,978.02
07/23/04	04:46:24	121,745.49	124,493.28	120,317.46
07/23/04	04:47:53	123,188.98	126,275.95	117,924.30
07/23/04	04:49:23	122,789.85	126,349.20	118,656.90
07/23/04	04:50:54	116,648.76	120,268.62	112,551.89
07/23/04	04:52:24	111,313.80	120,317.46	96,043.95
07/23/04	04:53:54	107,668.98	115,042.73	92,893.77
07/23/04	04:55:24	122,594.22	130,989.01	92,893.77
07/23/04	04:56:53	118,329.40	121,123.32	114,529.91
07/23/04	04:58:25	116,601.82	120,366.30	112,307.70
07/23/04	04:59:54	116,614.84	119,145.30	113,455.43
07/23/04	05:01:24	115,254.10	119,194.14	111,452.99
07/23/04	05:02:55	112,373.63	116,849.82	109,914.53
07/23/04	05:04:25	112,185.32	115,482.30	109,694.75
07/23/04	05:05:54	112,016.55	115,482.30	109,426.13
07/23/04	05:07:25	113,930.54	116,849.82	112,161.17
07/23/04	05:08:56	109,194.68	115,384.62	105,421.24
07/23/04	05:10:26	111,262.52	118,510.38	106,959.70
07/23/04	05:11:55	104,779.81	111,819.29	98,485.96
07/23/04	05:13:25	102,627.05	112,112.34	85,225.88
07/23/04	05:14:56	113,902.86	118,437.12	103,882.78
07/23/04	05:16:26	112,200.52	117,191.70	102,808.30
07/23/04	05:17:55	112,662.05	116,459.09	109,157.51

END DATE	END TIME	AVG	MAX	MIN
07/23/04	05:19:25	116,338.35	121,172.16	111,501.83
07/23/04	05:20:57	124,637.09	131,404.16	114,798.53
07/23/04	05:22:27	125,795.96	128,595.85	121,587.30
07/23/04	05:23:56	127,941.39	141,001.22	123,492.06
07/23/04	05:25:26	131,479.31	143,003.66	105,689.87
07/23/04	05:26:57	126,696.24	133,260.08	122,490.84
07/23/04	05:28:27	119,833.67	123,907.20	117,020.76
07/23/04	05:29:56	120,957.80	123,931.63	118,388.28
07/23/04	05:31:26	122,754.58	128,034.19	117,631.26
07/23/04	05:32:58	121,644.28	126,031.74	119,413.92
07/23/04	05:34:28	116,209.20	120,000.00	113,040.30
07/23/04	05:35:57	108,928.77	118,437.12	96,825.40
07/23/04	05:37:27	115,045.72	120,293.04	109,304.03
07/23/04	05:38:58	119,555.55	124,932.84	114,065.94
07/23/04	05:40:28	128,306.88	137,680.09	109,523.81
07/23/04	05:41:57	128,254.78	133,382.17	124,542.13
07/23/04	05:43:27	122,107.99	126,715.51	118,608.06
07/23/04	05:44:58	121,359.38	125,763.13	117,899.88
07/23/04	05:46:29	121,842.09	125,152.63	119,316.24
07/23/04	05:47:58	118,023.06	124,688.65	113,772.89
07/23/04	05:49:28	116,163.07	119,877.90	98,290.60
07/23/04	05:50:59	107,594.36	114,139.20	98,266.18
07/23/04	05:52:29	112,798.80	117,704.52	103,931.63
07/23/04	05:53:58	118,792.30	122,393.16	113,748.48
07/23/04	05:55:30	122,115.86	135,824.17	106,813.19
07/23/04	05:57:00	131,442.14	141,050.06	124,029.30
07/23/04	05:58:30	122,860.40	127,203.91	117,289.38
07/23/04	05:99:99	122,309.59	126,349.20	116,166.05
07/23/04	06:01:30	122,949.66	126,788.77	120,610.50
07/23/04	06:03:00	120,799.62	124,981.69	117,484.73
07/23/04	06:04:30	116,792.56	119,072.04	114,505.49
07/23/04	06:06:00	115,095.10	116,703.30	112,527.47
07/23/04	06:07:31	113,915.07	115,677.66	111,330.89
07/23/04	06:09:01	112,256.14	115,091.58	107,155.07
07/23/04	06:10:30	110,850.36	114,505.49	107,155.07
07/23/04	06:12:00	111,699.63	113,431.02	108,937.73
07/23/04	06:13:31	112,302.80	115,311.35	110,061.05
07/23/04	06:15:01	109,930.81	112,063.49	106,642.25
07/23/04	06:16:31	102,446.62	107,301.59	94,017.09
07/23/04	06:18:01	104,700.59	107,838.83	99,438.34
07/23/04	06:19:32	110,501.97	116,776.55	103,369.96
07/23/04	06:21:02	116,377.42	119,926.74	112,576.31
07/23/04	06:22:31	119,053.32	124,151.41	114,920.63
07/23/04	06:24:01	121,437.52	124,957.27	117,264.96
07/23/04	06:25:32	126,727.45	146,788.77	103,809.52
07/23/04	06:27:02	129,346.36	134,285.72	123,247.86
07/23/04	06:28:32	128,137.30	132,503.05	123,980.46
07/23/04	06:30:03	122,983.86	126,568.98	118,192.92
07/23/04	06:31:33	119,580.79	121,636.14	117,655.68
07/23/04	06:33:03	118,641.70	122,173.38	116,361.41
07/23/04	06:34:32	119,060.38	122,173.38	116,727.72
07/23/04	06:36:02	117,685.52	122,466.42	114,358.98
07/23/04	06:37:33	116,027.95	119,780.22	113,235.66

END DATE	END TIME	AVG	MAX	MIN
07/23/04	06:39:03	113,168.36	116,141.63	109,621.49
07/23/04	06:40:33	103,337.95	114,432.23	95,091.58
07/23/04	06:42:04	112,558.41	126,886.45	96,239.31
07/23/04	06:43:34	116,668.30	121,611.72	111,282.05
07/23/04	06:45:04	113,954.15	116,996.34	108,913.31
07/23/04	06:46:33	113,741.42	115,457.88	111,697.20
07/23/04	06:48:03	115,058.20	118,119.66	111,575.09
07/23/04	06:49:34	116,249.09	118,070.82	114,627.59
07/23/04	06:51:04	113,222.09	118,534.80	109,474.97
07/23/04	06:52:34	102,605.34	110,183.15	91,159.95
07/23/04	06:54:05	112,049.38	128,327.23	95,555.55
07/23/04	06:55:35	117,648.35	122,930.41	114,481.08
07/23/04	06:57:05	111,670.05	114,481.08	108,424.91
07/23/04	06:58:34	116,317.73	119,658.12	112,625.16
07/23/04	07:00:05	115,629.09	118,803.42	112,600.73
07/23/04	07:01:35	112,051.28	114,969.48	109,450.55
07/23/04	07:03:05	110,574.41	113,846.16	106,910.87
07/23/04	07:04:34	108,220.05	111,159.95	105,909.65
07/23/04	07:06:06	110,206.48	112,796.09	106,446.88
07/23/04	07:07:35	107,519.20	110,769.23	105,128.20
07/23/04	07:09:05	107,140.69	111,819.29	103,809.52
07/23/04	07:10:36	97,324.11	105,909.65	89,328.45
07/23/04	07:12:06	98,616.74	107,985.35	89,328.45
07/23/04	07:13:36	105,886.85	112,625.16	100,512.82
07/23/04	07:15:06	113,240.80	120,781.44	107,301.59
07/23/04	07:16:37	116,539.14	127,301.59	112,063.49
07/23/04	07:18:07	124,595.58	133,528.69	86,739.93
07/23/04	07:19:36	121,367.25	128,107.45	116,581.20
07/23/04	07:21:06	115,913.98	118,119.66	113,162.39
07/23/04	07:22:37	114,758.65	118,827.84	112,503.05
07/23/04	07:24:07	113,874.91	119,365.08	109,206.35
07/23/04	07:25:37	113,205.80	117,631.26	109,133.09
07/23/04	07:27:07	113,395.20	118,144.08	109,499.39
07/23/04	07:28:38	114,295.21	117,387.05	111,184.38
07/23/04	07:30:08	114,439.56	119,877.90	110,964.59
07/23/04	07:31:37	108,165.78	115,482.30	96,630.04
07/23/04	07:33:07	112,335.37	116,971.91	108,009.77
07/23/04	07:34:38	113,587.30	118,656.90	109,670.33
07/23/04	07:36:08	119,418.80	122,051.28	116,605.62
07/23/04	07:37:38	125,200.38	143,174.61	108,058.61
07/23/04	07:39:08	129,942.75	143,174.61	122,979.24
07/23/04	07:40:39	120,599.65	125,470.09	117,704.52
07/23/04	07:42:09	118,339.71	122,832.73	114,822.95
07/23/04	07:43:38	119,320.58	123,833.95	115,995.12
07/23/04	07:45:08	118,421.38	122,832.73	115,360.20
07/23/04	07:46:39	114,745.90	116,947.50	112,380.95
07/23/04	07:48:09	108,437.12	115,921.86	92,087.91
07/23/04	07:49:39	104,813.19	116,849.82	89,768.01
07/23/04	07:51:10	119,514.86	123,565.32	111,575.09
07/23/04	07:52:40	113,758.24	118,046.40	112,063.49
07/23/04	07:54:10	112,538.87	117,875.46	108,009.77
07/23/04	07:55:39	115,720.26	118,876.68	111,379.73
07/23/04	07:57:09	112,066.20	118,632.48	108,498.17

END DATE	END TIME	AVG	MAX	MIN
07/23/04	07:58:40	111,698.82	115,409.04	108,766.79
07/23/04	08:00:10	108,213.00	112,503.05	104,664.23
07/23/04	08:01:39	109,128.20	112,967.03	105,030.52
07/23/04	08:03:11	108,121.83	110,085.47	106,202.69
07/23/04	08:04:41	103,032.97	109,719.17	98,876.68
07/23/04	08:06:11	101,964.45	105,836.38	99,511.60
07/23/04	08:07:40	106,322.62	111,868.13	101,831.50
07/23/04	08:09:10	97,921.86	104,908.42	93,504.27
07/23/04	08:10:41	100,797.45	107,765.57	96,947.50
07/23/04	08:12:11	107,000.13	109,133.09	104,420.02
07/23/04	08:13:40	110,661.51	122,612.95	91,990.23
07/23/04	08:15:12	122,735.59	133,724.05	81,416.36
07/23/04	08:16:41	117,785.38	124,200.24	114,652.02
07/23/04	08:18:12	114,354.63	117,826.62	107,203.91
07/23/04	08:19:41	108,720.12	114,700.85	102,148.96
07/23/04	08:21:11	110,897.57	116,166.05	104,981.69
07/23/04	08:22:42	112,626.78	116,678.88	109,328.45
07/23/04	08:24:12	108,273.51	111,282.05	104,713.06
07/23/04	08:25:41	108,065.12	110,109.89	105,909.65
07/23/04	08:27:13	100,245.55	108,205.13	89,255.19
07/23/04	08:28:42	103,292.63	118,779.00	83,858.37
07/23/04	08:30:13	108,862.02	116,825.40	99,609.28
07/23/04	08:31:44	109,329.27	113,333.34	100,683.76
07/23/04	08:33:15	106,704.66	112,796.09	99,658.12
07/23/04	08:34:45	107,605.48	111,965.81	99,169.72
07/23/04	08:36:15	109,801.93	112,405.38	107,350.43
07/23/04	08:37:44	96,913.58	110,427.35	85,885.23
07/23/04	08:39:14	108,495.45	118,363.86	82,222.22
07/23/04	08:40:45	115,126.85	117,167.27	112,234.43
07/23/04	08:42:15	110,062.41	114,456.66	108,498.17
07/23/04	08:43:46	110,648.48	114,529.91	107,374.84
07/23/04	08:45:16	107,231.04	109,523.81	104,786.33
07/23/04	08:46:46	106,837.61	109,670.33	103,760.69
07/23/04	08:48:16	106,005.97	109,890.11	103,101.34
07/23/04	08:49:45	101,265.77	105,665.45	96,239.31
07/23/04	08:51:17	105,438.88	111,990.23	96,019.54
07/23/04	08:52:46	103,950.62	106,813.19	101,025.64
07/23/04	08:54:16	102,862.57	107,326.01	98,461.54
07/23/04	08:55:47	104,375.26	110,354.09	95,262.52
07/23/04	08:57:17	97,711.30	107,106.23	90,671.55
07/23/04	08:58:47	102,041.79	116,190.48	80,903.54
07/23/04	09:00:16	108,582.28	115,335.77	101,123.32
07/23/04	09:01:47	96,357.34	105,689.87	81,611.72
07/23/04	09:03:18	101,543.89	109,963.37	86,691.09
07/23/04	09:04:48	109,563.16	115,213.67	105,030.52
07/23/04	09:06:17	111,918.33	124,273.51	97,313.80
07/23/04	09:07:48	120,888.62	130,622.71	93,284.49
07/23/04	09:09:18	119,507.53	124,468.87	116,874.23
07/23/04	09:10:47	114,287.07	119,487.18	110,915.75
07/23/04	09:12:17	113,743.05	117,020.76	111,037.85
07/23/04	09:13:48	110,061.05	112,429.79	106,666.66
07/23/04	09:15:18	109,957.95	113,162.39	102,783.88
07/23/04	09:16:49	111,183.02	117,704.52	106,544.57

END DATE	END TIME	AVG	MAX	MIN
07/23/04	09:18:18	105,410.39	109,694.75	88,669.11
07/23/04	09:19:49	99,342.02	102,954.82	91,208.79
07/23/04	09:21:19	110,014.92	115,897.44	84,884.01
07/23/04	09:22:48	111,999.73	114,603.17	110,500.61
07/23/04	09:24:18	109,461.41	112,234.43	104,957.27
07/23/04	09:25:49	105,882.52	111,379.73	101,294.26
07/23/04	09:27:19	112,606.16	120,170.94	107,399.27
07/23/04	09:28:50	107,841.54	116,630.04	93,357.75
07/23/04	09:30:20	107,286.66	121,245.42	94,163.62
07/23/04	09:31:50	119,618.77	125,738.70	113,089.13
07/23/04	09:33:20	115,504.00	119,169.72	110,647.13
07/23/04	09:34:49	110,291.69	113,333.34	107,155.07
07/23/04	09:36:19	109,160.22	112,112.34	104,688.65
07/23/04	09:37:50	107,054.67	112,722.84	99,780.22
07/23/04	09:39:20	104,396.96	109,865.69	97,728.94
07/23/04	09:40:51	107,855.11	110,061.05	105,543.34
07/23/04	09:42:21	104,661.51	110,451.77	94,554.34
07/23/04	09:43:51	101,014.79	108,278.39	96,556.77
07/23/04	09:45:21	105,691.22	108,840.05	101,489.63
07/23/04	09:46:50	104,376.61	107,936.51	99,658.12
07/23/04	09:48:20	104,592.32	109,670.33	101,001.22
07/23/04	09:49:51	102,737.76	107,252.75	94,822.95
07/23/04	09:51:21	97,983.99	102,979.24	94,725.27
07/23/04	09:52:52	92,553.25	106,031.74	77,558.00
07/23/04	09:54:22	94,566.55	105,836.38	67,448.11
07/23/04	09:55:52	102,448.79	112,893.77	90,573.87
07/23/04	09:57:22	108,038.26	115,604.40	102,564.10
07/23/04	09:58:51	109,325.73	114,945.05	104,664.23
07/23/04	10:00:21	117,286.66	121,880.34	109,523.81
07/23/04	10:01:52	115,757.70	128,766.79	93,333.34
07/23/04	10:03:22	127,363.99	134,529.92	111,452.99
07/23/04	10:04:53	118,521.23	122,954.82	113,455.43
07/23/04	10:06:23	117,171.34	121,001.22	113,821.73
07/23/04	10:07:52	112,307.70	115,506.72	109,084.25
07/23/04	10:09:23	110,123.45	115,653.23	101,294.26
07/23/04	10:10:52	112,383.66	118,876.68	105,763.13
07/23/04	10:12:22	109,918.60	111,990.23	105,177.05
07/23/04	10:13:53	103,880.07	111,721.61	94,407.81
07/23/04	10:15:23	100,009.50	102,002.45	94,725.27
07/23/04	10:16:54	96,058.88	118,412.70	46,837.61
07/23/04	10:18:24	114,074.07	119,389.50	109,426.13
07/23/04	10:19:53	109,023.20	113,894.99	102,661.78
07/23/04	10:21:24	113,808.16	116,727.72	108,888.89
07/23/04	10:22:54	112,010.58	116,923.08	106,739.93
07/23/04	10:24:25	109,959.30	117,460.32	105,470.09
07/23/04	10:25:54	100,127.52	109,670.33	93,601.95
07/23/04	10:27:24	108,134.58	116,971.91	90,109.89
07/23/04	10:28:55	113,021.03	114,896.22	109,816.85
07/23/04	10:30:25	112,719.58	115,702.08	107,838.83
07/23/04	10:31:56	109,467.64	113,113.55	106,666.66
07/23/04	10:33:26	110,204.31	112,820.52	107,765.57
07/23/04	10:34:56	110,859.86	114,749.70	108,400.49
07/23/04	10:36:26	108,195.36	111,452.99	105,909.65

END DATE	END TIME	AVG	MAX	MIN
07/23/04	10:37:55	106,339.44	109,108.67	102,930.41
07/23/04	10:39:25	105,823.63	108,693.53	102,124.54
07/23/04	10:40:56	105,244.34	110,061.05	99,853.48
07/23/04	10:42:26	102,211.37	107,960.93	94,920.63
07/23/04	10:43:57	101,326.82	104,639.80	95,995.12
07/23/04	10:45:27	102,278.66	105,860.80	97,948.72
07/23/04	10:46:57	103,480.13	109,279.61	97,191.70
07/23/04	10:48:27	103,148.55	110,573.87	94,188.03
07/23/04	10:49:56	98,348.94	102,759.46	90,866.91
07/23/04	10:51:28	97,853.75	103,614.16	88,693.53
07/23/04	10:52:57	108,947.77	116,923.08	98,705.74
07/23/04	10:54:27	112,530.73	124,200.24	105,543.34
07/23/04	10:55:58	118,811.02	130,818.07	93,431.02
07/23/04	10:57:28	113,422.60	123,540.91	97,362.64
07/23/04	10:58:58	112,289.52	117,387.05	99,145.30
07/23/04	11:00:27	111,766.11	115,115.99	107,277.16
07/23/04	11:01:58	109,178.40	113,040.30	105,128.20
07/23/04	11:03:28	108,397.23	112,283.27	103,003.66
07/23/04	11:04:59	103,261.70	107,277.16	99,096.46
07/23/04	11:06:29	103,969.88	111,746.03	96,141.63
07/23/04	11:07:59	95,055.76	106,398.05	76,971.91
07/23/04	11:09:29	107,305.38	117,411.48	100,366.30
07/23/04	11:11:01	113,014.79	125,616.61	91,306.47
07/23/04	11:12:30	110,752.95	115,286.94	106,251.52
07/23/04	11:14:00	105,558.00	113,382.17	98,217.34
07/23/04	11:15:31	107,406.32	110,402.93	102,442.00
07/23/04	11:17:01	109,349.07	113,846.16	105,738.70
07/23/04	11:18:30	96,989.55	109,304.03	81,538.46
07/23/04	11:20:01	97,898.52	114,822.95	81,440.78
07/23/04	11:21:31	106,878.04	112,869.35	98,339.44
07/23/04	11:23:02	108,009.77	112,918.20	104,004.88
07/23/04	11:24:31	105,566.41	111,575.09	98,998.78
07/23/04	11:26:01	106,792.56	115,238.09	101,978.02
07/23/04	11:27:32	106,790.66	110,427.35	104,371.19
07/23/04	11:29:02	106,808.84	108,937.73	103,272.28
07/23/04	11:30:31	103,779.68	108,522.59	100,146.52
07/23/04	11:32:01	101,603.04	103,882.78	98,827.84
07/23/04	11:33:32	103,349.07	106,935.29	99,047.62
07/23/04	11:35:03	99,651.06	102,319.90	95,409.04
07/23/04	11:36:32	101,769.09	107,985.35	96,068.38
07/23/04	11:38:02	101,152.90	103,980.46	99,023.20
07/23/04	11:39:33	98,361.15	102,637.36	91,452.99
07/23/04	11:41:03	95,039.48	101,587.30	87,326.01
07/23/04	11:42:32	97,791.34	105,787.55	88,449.33
07/23/04	11:44:02	106,493.55	113,992.67	100,586.08
07/23/04	11:45:33	107,849.41	114,212.45	103,052.50
07/23/04	11:47:04	111,359.92	118,388.28	105,250.30
07/23/04	11:48:33	117,484.47	124,053.73	109,450.55
07/23/04	11:50:03	118,073.53	126,398.05	111,599.51
07/23/04	11:51:34	115,049.52	132,551.89	104,688.65
07/23/04	11:53:04	131,892.83	142,319.91	120,854.70
07/23/04	11:54:33	120,384.48	123,663.00	113,284.49
07/23/04	11:56:03	112,704.38	114,017.09	111,111.11

END DATE	END TIME	AVG	MAX	MIN
07/23/04	11:57:34	110,716.87	113,821.73	106,129.43
07/23/04	11:59:05	111,226.97	113,724.05	106,129.43
07/23/04	12:00:35	113,238.09	116,459.09	108,229.55
07/23/04	12:02:05	110,153.58	114,261.30	105,250.30
07/23/04	12:03:35	103,684.16	111,941.39	86,227.11
07/23/04	12:05:05	97,268.48	100,366.30	92,454.21
07/23/04	12:06:34	106,751.59	119,365.08	50,940.17
07/23/04	12:08:04	114,004.61	118,461.54	107,228.33
07/23/04	12:09:35	110,729.07	113,772.89	106,471.30
07/23/04	12:11:05	105,660.84	108,595.85	98,803.42
07/23/04	12:12:36	105,310.54	110,427.35	99,755.80
07/23/04	12:14:06	105,612.80	108,498.17	103,272.28
07/23/04	12:15:36	98,183.15	108,302.80	88,424.91
07/23/04	12:17:06	108,221.95	117,387.05	88,131.87
07/23/04	12:18:35	112,482.70	116,727.72	105,323.56
07/23/04	12:20:05	107,568.30	114,212.45	103,443.23
07/23/04	12:21:36	108,036.90	111,501.83	103,565.32
07/23/04	12:23:06	108,751.59	112,918.20	104,688.65
07/23/04	12:24:37	105,897.71	110,842.49	101,514.04
07/23/04	12:26:07	107,267.95	112,576.31	100,830.28
07/23/04	12:27:37	105,227.52	112,576.31	99,975.58
07/23/04	12:29:07	103,620.67	109,426.13	97,484.73
07/23/04	12:30:36	102,500.88	109,450.55	98,388.28
07/23/04	12:32:06	103,540.91	108,205.13	99,047.62
07/23/04	12:33:37	105,361.55	108,009.77	102,686.20
07/23/04	12:35:07	101,825.53	105,152.63	97,777.78
07/23/04	12:36:38	102,316.10	108,131.87	95,164.84
07/23/04	12:38:08	101,067.97	104,004.88	99,072.04
07/23/04	12:39:38	101,645.64	109,670.33	91,233.21
07/23/04	12:41:08	110,024.42	117,680.10	94,529.91
07/23/04	12:42:37	115,562.34	119,438.34	110,402.93
07/23/04	12:44:07	120,172.02	127,081.80	113,846.16
07/23/04	12:45:38	115,677.93	119,609.28	111,819.29
07/23/04	12:47:08	118,437.39	123,199.02	114,383.39
07/23/04	12:48:39	120,405.10	123,638.59	112,136.75
07/23/04	12:50:09	123,791.62	128,131.87	118,583.64
07/23/04	12:51:39	121,747.66	127,423.69	116,581.20
07/23/04	12:53:09	128,772.48	134,358.97	119,731.38
07/23/04	12:54:38	128,722.02	131,916.97	122,246.64
07/23/04	12:56:08	130,843.30	133,968.25	128,302.80
07/23/04	12:57:39	130,350.29	136,947.50	126,471.30
07/23/04	12:59:09	131,676.58	137,094.02	127,863.25
07/23/04	13:00:40	130,524.48	136,703.30	119,853.48
07/23/04	13:02:10	128,301.45	138,681.31	120,293.04
07/23/04	13:03:39	136,471.58	142,832.72	132,063.48
07/23/04	13:05:09	136,498.72	142,393.16	130,231.99
07/23/04	13:06:40	136,221.41	139,487.17	131,623.94
07/23/04	13:08:10	141,083.44	145,518.92	137,973.14
07/23/04	13:09:41	141,400.08	144,810.75	139,120.88
07/23/04	13:11:11	142,623.25	145,958.48	140,024.42
07/23/04	13:12:41	139,660.02	152,771.67	129,084.25
07/23/04	13:14:11	143,266.58	154,505.50	132,918.19
07/23/04	13:15:40	134,204.05	136,385.84	131,746.03

END DATE	END TIME	AVG	MAX	MIN
07/23/04	13:17:10	133,255.45	135,775.33	129,450.55
07/23/04	13:18:41	133,100.80	139,560.44	127,032.97
07/23/04	13:20:11	131,181.66	136,630.03	125,738.70
07/23/04	13:21:42	126,507.39	129,719.17	122,148.96
07/23/04	13:23:12	123,121.96	125,811.97	119,291.82
07/23/04	13:24:42	119,783.48	122,271.06	118,217.34
07/23/04	13:26:12	114,265.37	119,755.80	99,926.74
07/23/04	13:27:41	110,150.59	124,566.55	103,076.92
07/23/04	13:29:11	115,090.76	124,566.55	102,442.00
07/23/04	13:30:42	123,626.91	126,495.73	120,561.66
07/23/04	13:32:12	123,370.51	126,520.15	121,172.16
07/23/04	13:33:43	127,247.32	130,891.33	123,418.80
07/23/04	13:35:13	131,054.13	135,750.92	128,107.45
07/23/04	13:36:43	134,021.44	136,923.08	131,916.97
07/23/04	13:38:13	136,160.09	138,412.70	134,065.94
07/23/04	13:39:42	138,440.64	141,587.30	134,285.72
07/23/04	13:41:12	140,377.70	144,615.39	136,752.14
07/23/04	13:42:43	140,718.77	151,062.27	128,376.07
07/23/04	13:44:13	141,343.92	144,737.48	138,779.00
07/23/04	13:45:44	142,282.19	145,616.61	140,586.08
07/23/04	13:47:14	140,736.67	144,200.25	138,339.44
07/23/04	13:48:44	141,613.89	145,567.77	138,779.00
07/23/04	13:50:14	143,302.13	145,934.06	141,636.14
07/23/04	13:51:43	144,249.89	145,738.70	142,222.22
07/23/04	13:53:13	144,588.25	147,081.81	142,637.36
07/23/04	13:54:44	147,832.59	149,768.02	144,395.61
07/23/04	13:56:14	146,837.88	150,402.94	144,493.28
07/23/04	13:57:45	147,072.31	149,645.91	144,297.92
07/23/04	13:59:15	147,657.84	151,892.55	143,028.08
07/23/04	14:00:44	148,827.03	158,730.16	137,802.20
07/23/04	14:02:14	148,043.69	151,941.39	146,031.75
07/23/04	14:03:45	148,425.72	153,455.44	145,934.06
07/23/04	14:05:15	149,205.81	152,136.75	145,641.03
07/23/04	14:06:45	150,364.94	153,479.86	147,032.97
07/23/04	14:08:15	150,163.08	153,943.83	146,739.92
07/23/04	14:09:46	151,674.94	156,190.47	149,206.34
07/23/04	14:11:16	149,459.50	152,576.31	146,813.19
07/23/04	14:12:45	149,805.72	152,356.53	147,057.39
07/23/04	14:14:15	151,610.64	155,189.25	149,279.61
07/23/04	14:15:46	152,813.19	154,676.44	148,595.84
07/23/04	14:17:16	151,414.19	155,726.50	148,595.84
07/23/04	14:18:47	151,616.33	153,992.67	148,864.47
07/23/04	14:20:16	152,254.52	155,457.88	148,913.31
07/23/04	14:21:47	151,413.64	154,627.59	148,327.23
07/23/04	14:23:17	152,711.17	155,116.00	150,989.02
07/23/04	14:24:46	153,920.23	155,970.70	151,379.73
07/23/04	14:26:16	151,868.13	154,065.94	149,328.45
07/23/04	14:27:47	151,677.11	153,357.75	150,085.47
07/23/04	14:29:17	153,300.23	155,286.94	150,989.02
07/23/04	14:30:48	153,487.17	156,117.22	151,282.05
07/23/04	14:32:17	153,286.66	156,605.61	151,135.53
07/23/04	14:33:48	154,145.98	157,802.20	151,868.13
07/23/04	14:35:18	154,532.36	156,825.39	152,527.47

END DATE	END TIME	AVG	MAX	MIN
07/23/04	14:36:47	154,751.05	157,973.14	152,649.58
07/23/04	14:38:17	153,358.03	156,776.56	150,256.41
07/23/04	14:39:48	154,388.00	157,826.63	150,354.09
07/23/04	14:41:18	153,768.83	156,410.25	151,233.22
07/23/04	14:42:49	152,787.69	156,483.52	150,109.89
07/23/04	14:44:19	154,730.97	157,045.17	152,576.31
07/23/04	14:45:49	154,849.81	165,738.70	145,470.08
07/23/04	14:47:19	156,090.89	159,706.95	154,285.72
07/23/04	14:48:48	153,973.95	155,848.59	151,062.27
07/23/04	14:50:18	152,856.33	155,116.00	150,842.48
07/23/04	14:51:49	151,428.58	155,116.00	149,743.59
07/23/04	14:53:19	151,548.77	158,095.23	143,833.94
07/23/04	14:54:50	141,555.56	147,887.67	136,190.47
07/23/04	14:56:20	136,456.92	140,586.08	134,578.75
07/23/04	14:57:50	131,737.63	134,822.95	128,644.69
07/23/04	14:59:20	130,350.56	132,503.05	127,252.75
07/23/04	15:00:49	124,790.40	130,598.29	121,611.72
07/23/04	15:02:19	124,240.40	127,228.33	120,830.28
07/23/04	15:03:50	121,990.50	126,495.73	118,730.16
07/23/04	15:05:20	121,674.40	123,956.05	118,827.84
07/23/04	15:06:51	117,336.86	121,562.88	112,405.38
07/23/04	15:08:21	122,536.97	126,056.16	114,993.90
07/23/04	15:09:51	118,428.16	122,393.16	112,576.31
07/23/04	15:11:21	111,984.27	115,042.73	107,203.91
07/23/04	15:12:50	115,315.16	119,316.24	111,013.43
07/23/04	15:14:20	119,524.08	122,881.56	112,551.89
07/23/04	15:15:51	121,318.41	125,543.34	112,551.89
07/23/04	15:17:21	126,217.07	129,548.23	123,101.34
07/23/04	15:18:52	129,078.01	133,235.66	125,567.77
07/23/04	15:20:22	132,934.20	135,360.20	129,987.79
07/23/04	15:21:52	136,189.39	144,713.06	129,548.23
07/23/04	15:23:22	138,544.56	149,768.02	126,300.37
07/23/04	15:24:51	137,873.56	139,584.86	136,239.31
07/23/04	15:26:21	137,337.95	139,804.64	135,506.72
07/23/04	15:27:52	135,463.58	137,362.64	133,626.38
07/23/04	15:29:22	136,269.16	139,438.34	132,478.63
07/23/04	15:30:53	136,292.77	140,317.45	134,505.50
07/23/04	15:32:23	136,348.39	138,705.73	135,042.73
07/23/04	15:33:52	138,115.59	140,927.95	136,385.84
07/23/04	15:35:23	139,928.64	142,246.64	137,582.42
07/23/04	15:36:53	142,388.83	145,689.86	139,194.14
07/23/04	15:38:22	142,689.73	145,641.03	139,120.88
07/23/04	15:39:53	145,081.81	149,816.84	138,339.44
07/23/04	15:41:23	138,758.38	142,295.48	133,357.75
07/23/04	15:42:54	137,747.11	144,615.39	131,843.72
07/23/04	15:44:24	134,174.47	141,098.91	128,131.87
07/23/04	15:45:53	125,848.87	129,352.87	121,318.68
07/23/04	15:47:23	118,695.43	123,345.55	113,382.17
07/23/04	15:48:54	122,526.93	127,374.84	118,534.80
07/23/04	15:50:24	126,167.14	129,230.77	121,807.08
07/23/04	15:51:54	131,042.20	133,235.66	128,351.65
07/23/04	15:53:24	135,925.66	141,221.00	129,255.19
07/23/04	15:54:55	129,950.08	135,579.97	125,396.83

END DATE	END TIME	AVG	MAX	MIN
07/23/04	15:56:25	121,907.20	127,960.93	118,266.18
07/23/04	15:57:54	127,539.27	130,744.81	121,514.04
07/23/04	15:59:24	117,326.01	128,205.13	107,472.53
07/23/04	16:00:55	119,497.76	124,346.77	115,775.34
07/23/04	16:02:25	126,458.01	130,940.17	122,417.59
07/23/04	16:03:56	134,399.67	141,904.77	128,888.89
07/23/04	16:05:26	135,618.50	151,892.55	112,600.73
07/23/04	16:06:56	136,427.63	141,416.36	132,478.63
07/23/04	16:08:26	128,400.76	133,650.80	122,124.54
07/23/04	16:09:55	122,803.96	125,396.83	120,268.62
07/23/04	16:11:25	121,838.83	124,175.82	119,096.46
07/23/04	16:12:56	120,435.22	125,299.15	116,337.00
07/23/04	16:14:26	118,682.13	121,636.14	113,968.26
07/23/04	16:15:57	119,540.36	122,222.22	115,726.49
07/23/04	16:17:27	120,338.08	124,395.60	117,509.16
07/23/04	16:18:57	123,530.32	127,521.37	116,752.14
07/23/04	16:20:27	120,783.34	122,735.04	118,388.28
07/23/04	16:21:56	119,123.05	122,124.54	114,456.66
07/23/04	16:23:26	117,695.02	121,050.06	115,457.88
07/23/04	16:24:57	116,407.00	118,705.74	113,992.67
07/23/04	16:26:27	115,879.80	117,582.41	113,333.34
07/23/04	16:27:58	114,771.67	118,168.50	112,210.02
07/23/04	16:29:28	109,121.15	115,775.34	101,196.58
07/23/04	16:30:58	112,083.03	116,605.62	109,230.77
07/23/04	16:32:28	118,421.11	120,024.42	116,605.62
07/23/04	16:33:57	118,881.02	122,686.20	111,672.77
07/23/04	16:35:27	122,376.34	127,228.33	117,948.72
07/23/04	16:36:58	126,204.59	128,742.37	120,854.70
07/23/04	16:38:28	128,431.70	141,562.88	114,749.70
07/23/04	16:39:59	132,401.30	135,677.66	129,841.27
07/23/04	16:41:29	134,301.72	138,705.73	131,477.41
07/23/04	16:42:59	132,775.75	138,681.31	126,471.30
07/23/04	16:44:30	138,412.70	154,993.89	113,797.31
07/23/04	16:46:00	133,043.83	140,830.28	128,253.97
07/23/04	16:47:30	123,939.77	128,400.49	119,536.02
07/23/04	16:49:00	119,963.64	124,297.92	118,070.82
07/23/04	16:50:29	119,014.79	122,222.22	117,460.32
07/23/04	16:51:99	117,983.18	122,393.16	113,724.05
07/23/04	16:53:30	115,225.34	120,317.46	112,356.53
07/23/04	16:55:00	113,436.17	117,484.73	107,741.15
07/23/04	16:56:31	109,501.02	115,506.72	99,242.98
07/23/04	16:58:01	108,279.48	128,913.31	94,261.30
07/23/04	16:59:31	119,325.20	125,054.95	113,943.84
07/23/04	17:01:01	114,440.10	117,094.02	109,255.19
07/23/04	17:02:31	112,034.19	117,924.30	107,936.51
07/23/04	17:04:00	114,238.77	116,971.91	111,770.45
07/23/04	17:05:31	114,230.36	118,070.82	110,085.47
07/23/04	17:07:01	110,676.44	114,774.12	103,516.48
07/23/04	17:08:32	98,175.55	109,304.03	84,151.41
07/23/04	17:10:02	113,614.16	124,664.23	98,681.32
07/23/04	17:11:31	113,303.48	117,875.46	110,573.87
07/23/04	17:13:01	111,851.85	117,753.36	107,277.16
07/23/04	17:14:32	116,320.17	120,073.26	108,791.21

END DATE	END TIME	AVG	MAX	MIN
07/23/04	17:16:02	116,794.73	119,584.86	114,456.66
07/23/04	17:17:32	112,733.69	115,457.88	110,549.45
07/23/04	17:19:02	109,785.10	112,112.34	106,715.51
07/23/04	17:20:33	109,452.18	111,892.55	105,958.48
07/23/04	17:22:03	109,854.56	111,013.43	108,034.19
07/23/04	17:23:32	105,654.87	110,134.31	102,832.73
07/23/04	17:25:02	100,882.11	106,666.66	96,288.16
07/23/04	17:26:33	101,687.70	104,029.30	98,974.36
07/23/04	17:28:03	104,982.50	123,467.64	99,731.38
07/23/04	17:29:33	110,297.92	116,166.05	100,708.18
07/23/04	17:31:03	114,514.18	117,704.52	109,719.17
07/23/04	17:32:34	115,674.13	119,853.48	110,378.51
07/23/04	17:34:04	120,828.11	126,227.11	116,874.23
07/23/04	17:35:33	123,315.16	127,423.69	117,606.84
07/23/04	17:37:03	124,858.50	140,708.19	105,958.48
07/23/04	17:38:34	127,643.20	132,747.25	122,051.28
07/23/04	17:40:04	134,703.30	148,791.20	104,737.48
07/23/04	17:41:35	124,318.00	129,206.35	118,461.54
07/23/04	17:43:04	118,973.00	120,879.12	115,848.59
07/23/04	17:44:35	115,924.02	119,780.22	112,942.61
07/23/04	17:46:05	114,907.07	119,780.22	111,037.85
07/23/04	17:47:34	114,446.07	117,118.44	111,965.81
07/23/04	17:49:04	113,784.29	116,800.98	111,746.03
07/23/04	17:50:35	104,249.36	112,551.89	95,506.72
07/23/04	17:52:06	106,455.02	110,964.59	100,537.24
07/23/04	17:53:36	116,948.85	126,202.69	83,760.69
07/23/04	17:55:05	116,797.18	121,440.78	114,456.66
07/23/04	17:56:36	110,828.92	114,529.91	107,814.41
07/23/04	17:58:06	107,986.98	112,332.11	103,980.46
07/23/04	17:59:35	111,916.43	113,040.30	110,451.77
07/23/04	18:01:05	108,444.72	112,332.11	105,787.55
07/23/04	18:02:36	101,752.55	110,842.49	88,278.39
07/23/04	18:04:06	100,187.77	113,821.73	82,881.56
07/23/04	18:05:37	114,361.96	120,439.56	109,841.27
07/23/04	18:07:07	110,591.78	114,407.81	108,595.85
07/23/04	18:08:37	110,113.41	113,137.98	106,984.13
07/23/04	18:10:07	110,627.05	112,722.84	106,324.79
07/23/04	18:11:36	106,220.32	109,279.61	102,808.30
07/23/04	18:13:06	107,906.66	109,914.53	105,323.56
07/23/04	18:14:37	103,794.88	105,787.55	100,854.70
07/23/04	18:16:07	106,727.72	111,355.31	100,854.70
07/23/04	18:17:38	106,996.88	109,865.69	104,957.27
07/23/04	18:19:08	106,260.48	108,498.17	102,808.30
07/23/04	18:20:38	98,668.30	103,565.32	93,015.88
07/23/04	18:22:08	107,813.05	119,291.82	95,555.55
07/23/04	18:23:37	108,116.13	119,145.30	98,949.94
07/23/04	18:25:07	102,784.42	108,791.21	96,971.91
07/23/04	18:26:38	111,506.98	119,145.30	100,415.14
07/23/04	18:28:08	112,983.31	121,538.46	105,128.20
07/23/04	18:29:39	120,094.42	129,206.35	111,721.61
07/23/04	18:31:09	125,506.45	138,925.52	92,722.84
07/23/04	18:32:39	121,037.04	124,786.33	117,216.12
07/23/04	18:34:09	116,039.88	122,564.10	111,672.77

END DATE	END TIME	AVG	MAX	MIN
07/23/04	18:35:38	111,347.45	112,796.09	109,426.13
07/23/04	18:37:08	112,019.80	114,456.66	108,766.79
07/23/04	18:38:39	111,362.91	114,676.44	107,179.48
07/23/04	18:40:09	108,899.74	113,577.53	105,885.23
07/23/04	18:41:40	107,539.82	113,577.53	101,733.82
07/23/04	18:43:10	100,975.17	111,037.85	93,943.84
07/23/04	18:44:40	107,283.13	122,661.78	88,131.87
07/23/04	18:46:10	112,533.45	117,753.36	109,230.77
07/23/04	18:47:39	108,729.34	110,256.41	106,031.74
07/23/04	18:49:09	108,799.35	112,356.53	105,641.02
07/23/04	18:50:40	111,210.42	115,384.62	106,837.61
07/23/04	18:52:10	107,594.63	109,059.83	105,836.38
07/23/04	18:53:41	106,409.71	110,109.89	91,892.55
07/23/04	18:55:11	100,905.98	112,112.34	91,892.55
07/23/04	18:56:40	111,978.56	120,488.40	87,179.48
07/23/04	18:58:11	111,371.32	116,190.48	108,620.27
07/23/04	18:59:41	112,009.23	113,870.57	108,522.59
07/23/04	19:01:11	112,795.55	116,166.05	106,471.30
07/23/04	19:02:42	111,658.12	113,675.21	108,034.19
07/23/04	19:04:12	109,704.25	113,577.53	105,518.92
07/23/04	19:05:42	107,653.51	112,844.93	104,566.55
07/23/04	19:07:12	110,639.53	112,136.75	108,424.91
07/23/04	19:08:41	107,879.26	110,964.59	104,322.34
07/23/04	19:10:11	105,643.47	107,130.65	103,663.00
07/23/04	19:11:42	108,230.09	112,576.31	105,250.30
07/23/04	19:13:12	110,144.08	116,483.52	104,932.84
07/23/04	19:14:43	104,355.17	115,164.84	96,166.05
07/23/04	19:16:13	107,405.51	111,843.71	100,683.76
07/23/04	19:17:43	113,401.44	125,738.70	107,545.79
07/23/04	19:19:13	119,060.38	127,643.47	110,231.99
07/23/04	19:20:42	119,051.69	131,990.23	94,871.80
07/23/04	19:22:12	128,472.39	139,096.45	94,871.80
07/23/04	19:23:43	120,271.34	125,152.63	115,140.41
07/23/04	19:25:13	113,765.02	115,824.18	111,159.95
07/23/04	19:26:44	113,598.70	116,923.08	110,769.23
07/23/04	19:28:14	114,606.43	117,997.55	111,013.43
07/23/04	19:29:44	111,629.09	114,603.17	107,179.48
07/23/04	19:31:14	110,212.73	115,409.04	106,984.13
07/23/04	19:32:43	105,153.16	112,551.89	92,649.57
07/23/04	19:34:13	103,707.23	121,196.58	86,080.59
07/23/04	19:35:44	115,170.27	121,929.18	107,912.09
07/23/04	19:37:14	110,060.23	115,311.35	105,787.55
07/23/04	19:38:45	107,283.68	111,306.47	105,299.15
07/23/04	19:40:15	109,061.73	114,017.09	105,079.37
07/23/04	19:41:45	109,078.82	113,455.43	105,567.77
07/23/04	19:43:15	104,174.74	112,063.49	86,862.02
07/23/04	19:44:44	99,473.88	111,501.83	78,705.74
07/23/04	19:46:14	114,310.13	121,562.88	78,705.74
07/23/04	19:47:45	112,059.96	115,579.98	105,567.77
07/23/04	19:49:15	107,781.85	113,235.66	101,391.94
07/23/04	19:50:46	112,417.31	114,652.02	109,914.53
07/23/04	19:52:16	109,349.07	113,943.84	104,810.74
07/23/04	19:53:46	106,407.27	110,573.87	100,781.44

END DATE	END TIME	AVG	MAX	MIN
07/23/04	19:55:16	104,103.11	107,594.63	101,343.10
07/23/04	19:56:45	103,071.23	109,035.41	101,001.22
07/23/04	19:58:15	107,409.85	110,354.09	104,078.14
07/23/04	19:59:46	105,034.32	108,864.47	101,269.84
07/23/04	20:01:16	105,811.70	107,594.63	103,736.27
07/23/04	20:02:47	105,173.52	107,716.73	101,147.74
07/23/04	20:04:17	100,169.31	106,715.51	89,719.17
07/23/04	20:05:46	104,745.09	112,454.21	96,923.08
07/23/04	20:07:16	109,973.41	121,587.30	96,141.63
07/23/04	20:08:47	113,518.66	118,534.80	108,107.45
07/23/04	20:10:17	119,150.45	130,451.77	84,908.42
07/23/04	20:11:48	120,589.61	124,908.42	117,118.44
07/23/04	20:13:18	114,776.55	119,120.88	111,575.09
07/23/04	20:14:48	111,870.84	116,019.54	107,960.93
07/23/04	20:16:18	112,860.40	116,361.41	109,914.53
07/23/04	20:17:47	112,480.80	119,389.50	108,083.03
07/23/04	20:19:17	112,175.28	116,043.95	108,034.19
07/23/04	20:20:48	104,120.20	115,384.62	94,334.55
07/23/04	20:22:18	115,071.50	125,177.05	93,260.07
07/23/04	20:23:49	115,303.48	118,608.06	111,330.89
07/23/04	20:25:19	110,711.16	113,699.63	107,179.48
07/23/04	20:26:49	110,741.28	114,407.81	108,253.97
07/23/04	20:28:19	110,771.95	113,772.89	107,594.63
07/23/04	20:29:48	103,291.01	111,135.53	89,865.69
07/23/04	20:31:18	104,560.03	121,538.46	82,637.36
07/23/04	20:32:49	113,827.70	120,024.42	109,768.01
07/23/04	20:34:19	107,632.88	111,965.81	100,024.42
07/23/04	20:35:50	109,064.45	114,993.90	100,024.42
07/23/04	20:37:20	111,369.15	114,041.52	107,692.30
07/23/04	20:38:50	100,669.65	110,061.05	91,892.55
07/23/04	20:40:20	111,874.10	121,733.82	87,912.09
07/23/04	20:41:49	112,616.74	116,800.98	109,890.11
07/23/04	20:43:19	109,485.28	111,111.11	105,421.24
07/23/04	20:44:50	111,805.73	115,140.41	107,350.43
07/23/04	20:46:20	110,833.54	113,870.57	103,736.27
07/23/04	20:47:51	108,562.48	112,454.21	104,786.33
07/23/04	20:49:21	108,036.90	110,866.91	104,835.16
07/23/04	20:50:51	109,716.73	114,188.03	107,057.39
07/23/04	20:52:21	108,387.46	111,770.45	103,223.45
07/23/04	20:53:50	103,033.24	108,669.11	94,432.23
07/23/04	20:55:20	106,444.72	117,558.00	95,531.13
07/23/04	20:56:51	108,938.81	113,333.34	106,080.59
07/23/04	20:58:21	113,204.45	125,323.56	98,632.48
07/23/04	20:59:52	118,041.24	122,173.38	113,772.89
07/23/04	21:01:22	119,050.06	123,565.32	114,481.08
07/23/04	21:02:51	123,560.71	139,804.64	99,340.66
07/23/04	21:04:22	128,216.52	137,264.95	121,782.66
07/23/04	21:05:52	119,187.63	124,542.13	116,263.73
07/23/04	21:07:21	113,819.02	118,241.76	110,793.65
07/23/04	21:08:52	113,374.30	119,829.06	109,474.97
07/23/04	21:10:22	110,581.47	113,064.71	109,181.93
07/23/04	21:11:53	108,501.42	111,477.41	106,862.02
07/23/04	21:13:23	102,845.48	108,595.85	93,406.59

END DATE	END TIME	AVG	MAX	MIN
07/23/04	21:14:52	102,020.63	116,312.58	89,963.37
07/23/04	21:16:23	107,284.49	118,901.10	87,619.05
07/23/04	21:17:53	111,514.59	117,851.04	109,548.23
07/23/04	21:19:22	111,843.98	114,481.08	107,374.84
07/23/04	21:20:53	111,025.10	113,992.67	107,032.97
07/23/04	21:22:23	107,787.27	109,206.35	106,446.88
07/23/04	21:23:54	110,460.18	113,675.21	107,179.48
07/23/04	21:25:24	103,884.95	110,500.61	92,161.17
07/23/04	21:26:53	107,760.14	112,014.65	103,833.95
07/23/04	21:28:23	116,789.31	130,695.97	94,432.23
07/23/04	21:29:54	122,822.68	128,083.03	117,728.94
07/23/04	21:31:24	114,788.23	118,705.74	111,184.38
07/23/04	21:32:54	114,922.53	118,852.26	111,086.69
07/23/04	21:34:24	110,988.74	113,284.49	108,693.53
07/23/04	21:35:55	109,104.33	113,675.21	105,763.13
07/23/04	21:37:25	108,919.28	113,260.07	105,421.24
07/23/04	21:38:54	110,824.31	116,068.38	106,202.69
07/23/04	21:40:24	107,574.28	111,941.39	102,246.64
07/23/04	21:41:55	105,990.23	109,670.33	102,905.98
07/23/04	21:43:25	110,513.91	113,772.89	107,399.27
07/23/04	21:44:55	110,089.54	113,675.21	102,490.84
07/23/04	21:46:25	105,729.21	112,210.02	96,385.84
07/23/04	21:47:56	109,216.93	110,695.97	104,566.55
07/23/04	21:49:26			

Records selected: 958
Records sorted: 958
Lines printed: 1053
Pages printed: 19

108,765.43	116,190.48	97,680.10

07/23/04	21:50:55	106,868.81	112,234.43	96,410.26
07/23/04	21:52:25	112,163.62	126,422.47	100,122.10
07/23/04	21:53:56	123,698.27	134,334.55	91,623.93
07/23/04	21:55:27	117,146.38	125,836.38	114,188.03
07/23/04	21:56:56	113,416.09	116,605.62	110,476.19
07/23/04	21:58:26	109,487.72	112,429.79	105,445.66
07/23/04	21:59:57	109,169.72	113,504.27	106,202.69
07/23/04	22:01:27	109,208.25	111,697.20	107,081.80
07/23/04	22:02:56	103,207.70	109,279.61	88,766.79
07/23/04	22:04:26	102,681.05	116,678.88	97,753.36
07/23/04	22:05:57	111,611.18	128,864.47	96,874.23
07/23/04	22:07:27	116,079.50	119,633.70	112,991.45
07/23/04	22:08:58	112,771.95	117,460.32	111,257.63
07/23/04	22:10:28	113,903.41	118,315.02	109,426.13
07/23/04	22:11:58	112,065.94	114,163.62	110,695.97
07/23/04	22:13:28	112,230.36	116,605.62	108,766.79
07/23/04	22:14:57	109,118.98	115,164.84	89,597.07
07/23/04	22:16:27	100,432.77	112,527.47	88,498.17
07/23/04	22:17:58	111,454.08	132,161.17	88,498.17
07/23/04	22:19:28	117,751.19	122,490.84	113,968.26
07/23/04	22:20:59	116,745.35	119,780.22	112,014.65
07/23/04	22:22:29	114,721.48	117,484.73	111,306.47
07/23/04	22:23:59	111,945.19	114,432.23	109,108.67

07/23/04	22:25:29	115,035.14	118,803.42	112,429.79
07/23/04	22:26:58	113,157.23	117,435.90	108,840.05
07/23/04	22:28:28	108,179.89	111,086.69	103,492.06
07/23/04	22:30:00	105,510.24	108,840.05	100,146.52
07/23/04	22:31:29	109,427.76	112,185.59	106,422.47
07/23/04	22:32:99	108,233.62	112,551.89	103,174.60

END DATE	END TIME	AVG	MAX	MIN
07/23/04	22:34:30	107,986.98	114,603.17	92,307.70
07/23/04	22:36:00	104,042.60	109,816.85	99,780.22
07/23/04	22:37:30	109,126.03	123,516.48	95,042.73
07/23/04	22:39:00	113,108.94	119,242.98	95,042.73
07/23/04	22:40:29	116,178.27	119,242.98	113,186.81
07/23/04	22:42:01	117,638.31	122,271.06	114,358.98
07/23/04	22:43:30	121,811.97	129,597.07	116,117.22
07/23/04	22:45:00	129,148.83	141,611.72	98,339.44
07/23/04	22:46:31	127,097.27	135,335.78	120,659.34
07/23/04	22:48:01	120,265.63	122,710.63	117,924.30
07/23/04	22:49:31	118,353.82	120,854.70	114,993.90
07/23/04	22:51:01	117,635.05	122,857.14	114,871.80
07/23/04	22:52:30	118,845.75	121,440.78	115,970.70
07/23/04	22:54:02	113,726.23	117,948.72	97,899.88
07/23/04	22:55:31	108,694.07	121,245.42	97,948.72
07/23/04	22:57:01	118,847.91	129,890.11	97,484.73
07/23/04	22:58:32	117,127.66	120,048.84	113,553.12
07/23/04	23:00:02	117,249.49	118,949.94	114,822.95
07/23/04	23:01:31	118,067.84	121,733.82	113,284.49
07/23/04	23:03:01	117,727.31	121,733.82	114,700.85
07/23/04	23:04:32	114,283.27	117,167.27	112,356.53
07/23/04	23:06:02	104,751.32	113,284.49	93,162.39
07/23/04	23:07:33	108,471.03	120,488.40	95,628.81
07/23/04	23:09:03	115,176.23	128,644.69	99,365.08
07/23/04	23:10:33	117,513.50	129,304.03	106,813.19
07/23/04	23:12:03	128,677.25	134,432.23	122,051.28
07/23/04	23:13:32	122,102.29	126,886.45	118,119.66
07/23/04	23:15:02	117,980.73	121,611.72	113,821.73
07/23/04	23:16:33	119,446.21	121,074.48	116,971.91
07/23/04	23:18:03	119,287.20	122,368.74	116,605.62
07/23/04	23:19:34	122,757.56	126,642.25	117,069.59
07/23/04	23:21:04	122,189.12	125,543.34	119,072.04
07/23/04	23:22:34	119,045.72	121,953.60	117,142.86
07/23/04	23:24:04	116,332.93	118,046.40	114,334.55
07/23/04	23:25:33	114,345.13	117,167.27	111,721.61
07/23/04	23:27:03	110,720.66	114,285.71	104,884.01
07/23/04	23:28:34	111,976.39	115,921.86	105,665.45
07/23/04	23:30:04	103,021.57	112,332.11	95,531.13
07/23/04	23:31:35	107,314.88	116,507.94	103,345.55
07/23/04	23:33:05	115,334.69	119,511.60	102,783.88
07/23/04	23:34:35	118,216.25	124,639.80	112,380.95
07/23/04	23:36:05	123,540.09	139,633.70	98,974.36
07/23/04	23:37:34	123,894.72	133,772.89	119,829.06
07/23/04	23:39:04	125,883.60	130,036.63	120,903.54
07/23/04	23:40:35	122,930.41	125,763.13	118,803.42
07/23/04	23:42:05	120,017.37	121,831.50	117,069.59
07/23/04	23:43:36	117,132.55	121,221.00	115,018.31
07/23/04	23:45:06	120,105.28	123,907.20	116,019.54
07/23/04	23:46:36	112,464.80	119,218.56	100,659.34
07/23/04	23:48:06	109,968.26	126,886.45	97,509.16
07/23/04	23:49:35	122,827.84	128,278.39	117,704.52
07/23/04	23:51:07	117,981.82	119,804.64	115,286.94
07/23/04	23:52:36	116,102.29	119,438.34	113,260.07

END DATE	END TIME	AVG	MAX	MIN
07/23/04	23:54:06	116,503.87	119,951.16	113,406.59
07/23/04	23:55:37	115,567.77	117,924.30	112,185.59
07/23/04	23:57:07	114,627.59	116,727.72	111,770.45
07/23/04	23:58:37	104,412.43	114,139.20	94,700.85

VII. APPENDIX

The following appendices are presented as supporting documentation to the emission test report.

A. Resumes of Test Personnel

B. Test Equipment Calibrations

C. Correspondence, Bayou Steel and LDEQ

D. Permit Number 885 (M-2) Excerpts

Troy W. LeSage
Assistant Manager
Senior Project Team Leader
Emission Testing Services, Incorporated
Baton Rouge, Louisiana

EDUCATION

U. S. EPA Round Robin sample integrity audits

Completed Emission Testing Services Air Sampling Techniques Seminar

Participates in on going Air-Pollution Training Institute Courses (APTI)

EPA - Sampling and evaluation of Airborne Asbestos, Temple University

NIOSH - Supervision of Asbestos Abatement Projects, Texas A & M

High School Graduate

CERTIFICATIONS

EPA Certified Opacity Reader (Method 9)
General Safety & Health Orientation Program
Respiratory Equipment Medical Certification
MSA Qualitative Fit Test Record

EXPERIENCE

1992 to Present - Senior Project Team Leader.
Responsibilities include planning and performing source testing projects.

1987 to 1992 - Testing Specialist for Emission Testing Services, Inc.
Performs EPA approved reference methods for compliance testing as well as other non-routine source evaluations. Responsibilities also include job preparation, equipment calibration, and equipment maintenance.

1985 to 1987 - Industrial Hygiene Technician for an environmental firm.
Performed metal analysis with atomic adsorption spectrophotometer, fiber analysis for asbestos and overseeing asbestos abatement projects.

Ronald L. McCabe, II
Senior Sampling Specialist
Emission Testing Services, Incorporated
Baton Rouge, Louisiana

EDUCATION

Louisiana State University
B.S. ---- Environmental Engineering

CERTIFICATIONS

General Safety & Health Orientation Program
Respiratory Equipment Medical Certification
MSA Qualitative Fit Test Record
EPA Certified Opacity Reader (Method 9)

EXPERIENCE

EXPERIENCE

08/98 to Present - Sampling Specialist for Emission Testing Services, Inc.

Performs EPA approved reference methods for compliance testing as well as other non-routine source evaluations.

Responsibilities also include job preparation, equipment calibration, and equipment maintenance.

Responsibilities include planning and performing source testing projects.

Joel S. Richard
Sampling Technician Grade 2
Emission Testing Services, Incorporated
Baton Rouge, Louisiana

EDUCATION

High School Graduate

CERTIFICATIONS

General Safety & Health Orientation Program
Respiratory Equipment Medical Certification
MSA Qualitative Fit Test Record

EXPERIENCE

09/01 to Present -- Sampling Technician Grade 2
Able to perform all procedures required in 40 CFR 60, Method 2 and Method 4 testing without the use of a computer. Able to prepare and load for an emission test which requires a sample train. Proficient in completion of project field logs and data sheets. Responsible for the calibration and maintenance of consoles, pitot tubes, thermacouples and barometers. Proficient in the collection of orgain samples by EPA Reference Method 18. Is well-versed in the calculation of stack gas flow rates with and without the use of a computer. Helps in training a Grade 1 technician. Will have accumulated, at least, 240 field hours as a Sampling Technician Grade 1.

05/00 to 09/01 -- Sampling Technician Grade 1
Able to perform all procedures required in 40 CFR 60, Method 1 without use of a computer. All to perform all procedures required in 40 CFR 60, Method 3 (orsat analysis). Competent in the calibration of consoles, pitot tubes, thermal couples and barometers. Able to setup and assist in leak-check as well as weigh-in of a M4 sample train. Will have accumulated, at least, 480 hours of field experience.

10/99 to 05/00 - Testing trainee technician for Emission Testing Services, Inc. Supports in performing EPA approved reference methods for compliance testing as well as other non-routine source evaluations. Responsibilities also include job preparation, equipment calibration and equipment maintenance.

ETS
EMISSION TESTING SERVICES

METER BOX CALIBRATION DATA AND CALCULATIONS FORM

(English Units)

Gas meter Reads in	
liters	✓ ft3

One Revolution of meter =	0.1	ft3	Wet Test Meter Cal Factor:	1.007	
Leak Check Good @:	0.0123		Meter Box Number:	3	
Barometric Pres., Pb:	29.821		Date Calibrated:	6/15/04	

Orifice Setting ΔH in. H20	Wet Test Meter Reading (Vwm), ft3	Dry Gas Meter Readings			Wet Test Meter Reading (Twm), ft3	Wet Test Meter Pressure (Pw) in. H2O	Dry Gas Meter			Run Time (Θ), Min.
		Initial (Vdi), ft3	Final (Vdf), ft3	Total (Vdm), ft3			Inlet (Tdi), deg. F	Outlet (Tdf), deg. F	Avg (Tdm), deg. F	
0.50	5	839.575	844.628	5.053	74	0.5	86.5	83.0	84.8	13.15
1.00	5	844.628	849.678	5.050	74	1.125	97.0	85.5	91.3	9.02
1.50	5	849.678	854.734	5.056	74	1.5	98.5	86.5	92.5	7.32
2.00	5	854.734	859.768	5.034	74	2.125	100.0	87.0	93.5	6.37
3.00	5	859.768	864.788	5.020	74	2.875	101.0	88.0	94.5	5.25

Dry Gas Meter Gauge Pressure in. H20 (Gp)	Dry Gas Meter Gp Pdm=——+ Pb 13.6 (Pdm)	Wet Test Meter Pw Pwm=——+ Pb 13.6 (Pwm)
0.5	29.8578	29.8578
1.0	29.8945	29.9037
1.5	29.9313	29.9313
2.0	29.9681	29.9773
3.0	30.0416	30.0324

$$Ydm = \frac{(Vwm)*(Ywm)*(Twm)*(Pwm)}{(Vdm)*(Tdm)*(Pdm)}$$

	Ydm	Tolerance
	1.0165	0.0144
	1.0296	0.0014
	1.0303	0.0006
	1.0370	-0.0061
	1.0412	-0.0103
Average	**1.0309**	

$$\Delta H@ = \frac{0.0317*\Delta H}{Pb*(tda+460)} * \frac{(TW+460)^2}{VW}$$

	ΔH@	Tolerance
	1.9244	-0.1117
	1.7896	0.0232
	1.7638	0.0489
	1.7778	0.0350
	1.8081	0.0047
Average	**1.8127**	

Ydm = Ratio of reading of wet test meter to dry test meter; tolerance for individual values *0.02 from average.

ΔH@ = Orifice pressure differential that equates to 0.75 cfm of air @ 68oF and 29.92 inches of mercury, in H20: tolerance for individual values *0.20 from average.

Serial #:	10-006		
Calibration: +/- 5% from previous	(pass)	fail	

Calibrated by: Boyd Barker

ETS

EMISSION TESTING SERVICES, INC.

THERMOCOUPLE CALIBRATION

Meter Box Number: 3 Date: 06/15/04

Barometric Pressure: 29.821 Calibrated By: Boyd Barbier

Serial #: 0 +\- 1.5% from previous: ☑ PASS ☐ FAIL

LOW CHECK POINT

	Omga CL27 Reading				Thermocouple Reading			
Channel Type	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
Stack	100	100	100	100	100	100	100	100.00
Probe	100	100	100	100	100	100	101	100.33
Hot Box	100	100	100	100	100	101	100	100.33
Umbilical	100	100	100	100	100	100	100	100.00

	Average Reading			% Error (Diff / Avg CL27) * 100
Channel Type	Omega CL27	Thermocouple	Difference	-1.5 % < %Error < +1.5 %
Stack	100	100.00	0.00	0.00
Probe	100	100.33	0.33	0.33
Hot Box	100	100.33	0.33	0.33
Umbilical	100	100.00	0.00	0.00

MID CHECK POINT

	Omega CL27 Reading				Thermocouple Reading			
Channel Type	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
Stack	500	500	500	500	500	500	500	500.00
Probe	500	500	500	500	500	500	501	500.33
Hot Box	500	500	500	500	500	501	500	500.33
Umbilical	500	500	500	500	500	500	500	500.00

	Average Reading			% Error (Diff / Avg CL27) * 100
Channel Type	Omega CL27	Thermocouple	Difference	-1.5 % < %Error < +1.5 %
Stack	500	500.00	0.00	0.00
Probe	500	500.33	0.33	0.07
Hot Box	500	500.33	0.33	0.07
Umbilical	500	500.00	0.00	0.00

HIGH CHECK POINT

	Omega CL27 Reading				Thermocouple Reading			
Channel Type	Trial 1	Trial 2	Trial 3	Average	Trial 1	Trial 2	Trial 3	Average
Stack	950	950	950	950	950	950	951	950.33
Probe	950	950	950	950	950	950	950	950.00
Hot Box	950	950	950	950	951	951	951	951.00
Umbilical	950	950	950	950	951	950	951	950.67

	Average Reading			% Error (Diff / Avg CL27) * 100
Channel Type	Omega CL27	Thermocouple	Difference	-1.5 % < %Error < +1.5 %
Stack	950	950.33	0.33	0.04
Probe	950	950.00	0.00	0.00
Hot Box	950	951.00	1.00	0.11
Umbilical	950	950.67	0.67	0.07

ETS

EMISSION TESTING SERVICES, INC.

Pitot Tube Number: P-10-5 | CP(std): STD - 0.99

Calibrated By: B.Barbier | Date Calibrated: 06/18/04

Point Number	Stardard Pitot "P (in. H2O)	"S" Type Pitot "P, in H2O Impact Side	Static Side
Low	0.280	0.410	0.400
Mid	0.580	0.810	0.800
High	0.740	1.050	1.050

CALCULATIONS

$$Cp(s) = Cp(std) \times \left(\frac{\text{"P(std)}}{\text{"P(s)}} \right)^{1/2}$$

$$\text{Deviation} = |Cp(s) - Cp| \quad \text{(Impact Side or Static Side)}$$

$$\text{Avg. Dev.} = \frac{\text{Low deviation + Mid deviation + High deviation}}{3} \quad \text{(Impact Side or Static Side)}$$

	Impact Side Cp (s)	Deviation	Static Side Cp(s)	Deviation
Low	0.8181	0.011	0.8283	0.006
Mid	0.8377	0.009	0.8430	0.009
High	0.8311	0.002	0.8311	0.003
Cp =	0.8290		Cp = 0.8341	

|Cp(Static Side) - Cp(Impact Side)|	=	0.005	(Must be <= 0.01)
Average Deviation (Impact Side)	=	0.007	(Must be <= 0.01)
Average Deviation (Static Side)	=	0.006	(Must be <= 0.01)

Cp = 0.832

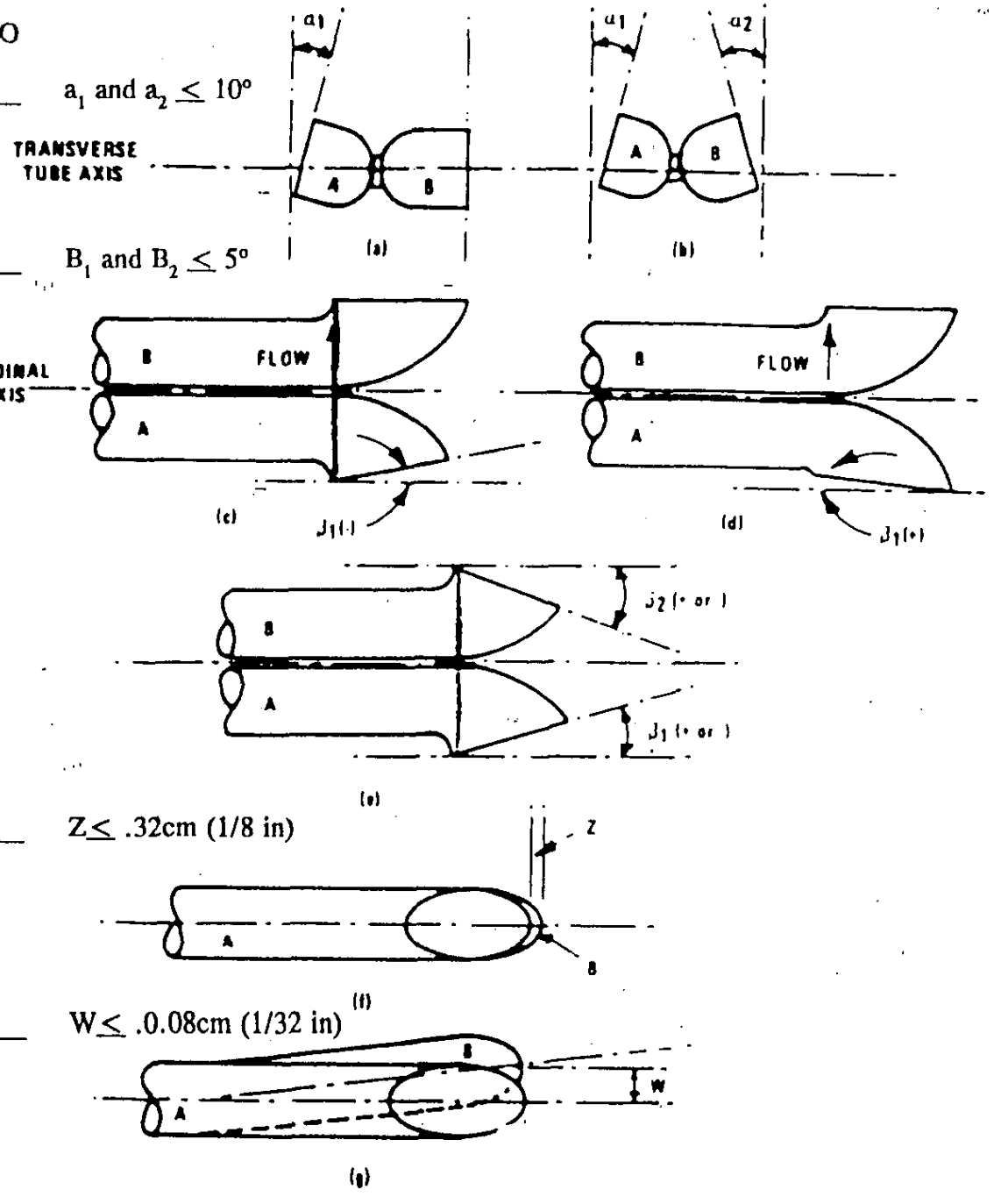
itot Tube Leak Check ☑ PASSED ☐ FAILED

ETS
EMISSION TESTING SERVICES, INC.

TUBE NUMBER P-10-5 DATE 7-23-04

INSPECTOR NAME Joel Richard

	YES	NO	
1	✓		a_1 and $a_2 \leq 10°$
2	✓		B_1 and $B_2 \leq 5°$
3	✓		$Z \leq .32$cm (1/8 in)
4	✓		$W \leq .0.08$cm (1/32 in)



SIGNATURE _____

C:\WS\FORMS\TUBE

ETS

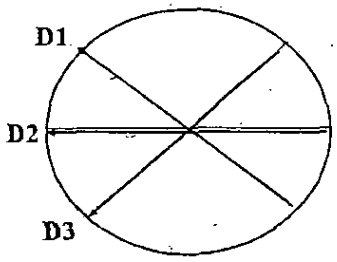
EMISSION TESTING SERVICES, INC.

SAMPLING NOZZLE CALIBRATION DATA FORM

NOZZLE I.D. NO. .170
COMPANY NAME Bayou Steel
SOURCE I.D. Baghouse Stack

DATE CALIBRATED	CALIBRATED BY	NOZZLE MEASUREMENTS[a]			MAXIMUM ΔD[b]	D avg.[c]
		D1	D2	D3		
7-23-04	Joel Rickard	.170	.170	.170	Ø	.170

[a]CORRECT NOZZLE DIAMETER MEASUREMENTS AS INDICATED IN THE DIAGRAM TO THE NEAREST 0.001 INCH
[b]MAXIMUM DIFFERENCE BETWEEN ANY TWO DIAMETERS. ACCEPTANCE LIMIT: MAXIMUM Δ ≤0.004 INCH
[c]AVERAGE OF D1 PLUS D2 PLUS D3.



SIGNATURE

ETS$_R$

EMISSION TESTING SERVICES, INC.

BAROMETER CALIBRATION SHEET

CLIENT: BAYOU STEEL DATE: 7-22-04

SOURCE ID: BAGHOUSE STACK

OPERATOR: RON MCCABE

**************BAROMETER**************

BAROMETER ID: UNIT #1

CALIBRATION DATA:

INITIAL CALIBRATION: 29.95 INITIAL 29.95 FINAL

ADJUSTMENT: ☐ Yes ☒ No

*******************CALIBRATION REFERENCE*******************

ID: PRINCO, HG

ELEVATION: BATON ROUGE ELEVATION DIFF: N/A

BAROMETER READING: 29.96

COMMENTS: _____

BAYOU STEEL CORPORATION

July 12, 2004

FAXSIMILE
225/219-3474

Mr. Jim Courville
Office of Environmental Assessment
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

RE: Bayou Steel Corporation Notification of Intent to Test and Summary of Pretest Meeting

Dear Mr. Courville:

This is a summary of the pretest meeting held the DEQ office on July 12, 2004. The list of meeting attendees is appended as Exhibit 1.

On Friday, July 23, 2004, ETS will perform a stack test at Bayou Steel Corporation on the main stack, source 1-77, for mercury and lead. The test methods to be utilized are EPA Methods 1-4 and Method 29. The detection limit for mercury will be 0.1 lbs/hr. The plant operating data at the time of the test to be supplied includes: tons/hour of scrap melted, the scrap mix utilized, the electrical power, natural gas, carbon and oxygen utilized. The testing duration will be 3 hours and will include one complete melting cycle from charge to tap per hour.

At the time of the test a sample will also be collected from the Secondary Dust Collection System, sources 2-77A-F. This sample will be analyzed for mercury and the results will be provided to DEQ.

Bayou Steel will also investigate previous sampling events at the shredder cyclones and will provide DEQ with an estimated mercury value.

Attached is the Notification of Intent to Test for the stack test to occur on July 23.

APPENDIX C

If you have any questions or require additional information, please do not hesitate to contact me.

Respectfully,
BAYOU STEEL CORPORATION

Wendy Stehling
Manager, Environmental, Health & Safety

c: Barry Gipson, ETS
Linda Brown, LDEQ
Freddie Touro, LDEQ
Jennifer Pelloat, LDEQ
Al Pulliam, Bayou Steel Corporation

NOTIFICATION OF INTENT TO TEST

FACILITY INFORMATION

Facility Name: Bayou Steel Corporation

Street Address: 138 Highway 3217 70068
Post Office Box PO Box 5000
City/State/Zip: LaPlace LA 70069

Contact name for testing purposes: Wendy Stehling
Contact's phone number: 985/652-0322
Contact's fax number: 985/652-0373
E-Mail: wendys@bayousteel.com

Type of Permit: State ✓ NSPS ___ Other ___

State Permit Number: 885 (m-2)
State Permit Writer: Eus Von Bodungen - issued permit

Federal Permit Number: _____
Federal Permit Writer: _____

If Other, Explain: _____

NOTIFICATION

30-Day Notice Given: Yes X No ___

TO Whom: LADEQ

Was a pretest meeting required: Yes ✓ No ___ (if answer was yes, see Exhibit 1)

PROPOSED TEST DATE(S): July 23, 2004

TEST COMPANY INFORMATION

Emission Testing Services, Inc. (ETS)
Post Office Box 15075
Baton Rouge, LA 70895

10461 Mammoth Drive
Baton Rouge, LA 70814

Contact Person: Barry Gipson
General Manager
Phone No. (225)925-8405
Fax No. (225)925-2343
E-Mail: bgipson@emissiontesting.com
Home Page: www.Emissiontesting.com

File:\forms\NOTI-TEST

EXHIBIT 1

PRETEST MEETING ATTENDEES

DATE OF MEETING: 7/12/04

Bayou Steel

NAME	PHONE	AFFILIATION
Jennifer Pellant	225-219-3432	LDEQ / Eng Group I
Cedric Mellion	225-219-3999	DEQ - EED - TEDI
Nicholas LaCroix	225-219-3501	DEQ - EED - TRI
Timothy Bergeron	225/219-3431	LDEQ / Eng I
Freddie Laura	(225)291-7122	LDEQ/Permits
Denise Bennett	(225) 219-3086	LDEQ / Permits-Air
Clay Robinson	(225)219-3760	LDEQ / Enforcement-Air
Jim Courcelle	(225)219-3628	LDEQ / Eng #1
Jim Orgeron	(225) 275-3231	LDEQ / PLANS
Trevor Tellers	(225) 219-3105	LDEQ / Permits
Barry Gipson	(225) 925-8405	ETS
Wendy Stehling	985/652-0322	Bayou Steel Corp.
Linda Brown	(225) 219-3535	DEQ / EED/TRI & TEDI
Al Pulliam	985 652-0409	Bayou Steel

File:\forms\NOTI-TEST

State of Louisiana

Department of Environmental Quality

Edwin W. Edwards
Governor

William A. Kucharski
Secretary

Mr. Al Pulliam
Environmental Manager
Bayou Steel Corporation
P. O. Box 5000
LaPlace LA 70069

Dear Mr. Pulliam:

RE: Permit modification, Bayou Steel Corporation, LaPlace, St. John the Baptist Parish, Louisiana

This is to inform you that the permit modification requested for the above referenced facility has been approved under LAC 33:III.501. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the design scheme presented will be capable of controlling the emissions to the types and quantities stated. A revised application must be submitted if the reported emissions are exceeded after operation begins. The synopsis, data sheets, and conditions are attached herewith.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application.

The permit number cited below should be referenced in future correspondence regarding this subject.

Done this 5th day of MAY, 1995.

Permit No.: 885 (M-2)

Very truly yours,

Gustave Von Bodungen

Gustave A. Von Bodungen, P.E.
Assistant Secretary

GVB/WL

c: Southeast Regional Office

AIR PERMIT BRIEFING SHEET
AIR QUALITY DIVISION
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

I. BACKGROUND

Bayou Steel Corporation operates an Electric Arc Furnace (EAF) steel mill in LaPlace, Louisiana. It was originally permitted on February 28, 1978 (Permit No. 885). A PSD permit (PSD-LA-66), issued February 15, 1983, for NO_x emissions, was later rescinded. Permit No. 885(M-1) was issued October 28, 1983. Nitrogen oxides (NO_x) emissions from the electric arc furnace (EAF) during melting and refining operations were not included in the referenced permit as NO_x was not recognized as a precursor to ozone formation at that time. Accounting for fugitive emissions in permitting began only after 1990. The application for the present modification was first submitted in December, 1993, but later withdrawn because fugitive emissions were not included. The revised submittal was dated August 4, 1994. Supplemental information was received March 22, 1995.

II. ORIGIN

A permit application and Emission Inventory Questionnaire for this modification was received August 5, 1994. The commitment to submit an updated air permit application and EIQ was made in response to a Notice of Violation (NOV), issued by DEQ on June 3, 1994. The purpose of this submittal is to provide speciation of hazardous air pollutants (HAP) and to include fugitive emissions. Electric arc furnace (EAF) NO_x emissions, missing from the previous permit modification, are included in this modification.

III. DESCRIPTION

Bayou Steel operates two separate EAFs. Scrap steel, coke lime, flux, and alloys are melted in a refractory-lined kettle using three high-voltage electrodes to produce a recovered steel product.

In preparation for charging and melting of the steel, the furnace electrodes are aligned and the furnace lining is coated with a protective layer of gunite at the slag zone. The furnace is loaded with the initial charge of scrap steel and other materials. The roof, in which the electrodes are

housed, is placed onto the furnace and the electrical current is applied. After the first charge is melted, the EAF roof is removed from the furnace and a second charge of scrap steel, coke, lime and flux is added. The furnace roof is lowered onto the furnace and current again applied to melt the second charge. A third charge is added repeating the steps of the second charge. After the final meltdown, the molten steel is subjected to an oxygen injection period to further oxidize impurities and combine with any excess carbon to form carbon dioxide.

In a final refining stage, oxygen flow is discontinued with the electrical current still applied. The EAF vessel is first tilted backwards to empty slag into the slag pot, where it is water cooled and then placed on a slag pile. Liquid molten steel is poured into a teeming ladle when the vessel is tilted forward, completing a single EAF heat.

Molten steel is poured from the ladle to the continuous casting machine via an overhead crane. The ladle is placed on a turret which rotates to position the ladle over the continuous casting tundish. The ladle empties into four individual water-cooled copper billet molds. Steel leaves the mold as a solid steel casing with a liquid core. A continuous strand of steel is further cooled by water sprays as it is drawn from the mold and cut into various lengths by an oxygen cutting torch. The billets are transferred to the finishing area where they are allowed to cool.

Billets are sold or further processed in the hot forming rolling mill into angles, channels and I beams. A maximum of 600,000 tons of billets is anticipated to be produced, requiring 1.4 MM BTU of natural gas for each ton of billets charged.

Particulate emissions from the slag piles are controlled by wetting with water.

The Primary Dust Collection system (Emission Point No. 1-77) captures particulates during melting and refining operations (when the roof and electrodes are in place). The Secondary Dust Collection System (Emission Points 2-77A through F) collects particulates during charging and tapping operations (when the roof is removed). A canopy system around the EAF

captures emissions from the uncovered furnace and routes them to the Secondary Dust Collection System baghouse for collection. Although it has been shown as a single point source in previous EIQ submittals, this baghouse actually has six separate vents. The furnace house vacuuming operations collects dust from the furnace house floor. Baghouse filters and vacuum bags are periodically dumped into an EAF during a routine charging sequence.

Bayou Steel's operation is regulated under New Source Performance Standards, 40 CFR 60 Subpart AA-Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983, for particulate emissions. Compliance with 0.0052 gr/dscf limit for the Primary Dust Collection System was demonstrated during a stack test performed during March, 1984. The average value obtained was 0.0029 gr/dscf which corresponds to an average rate of 2.15 pounds per hour total suspended particulates (TSP or 1.63 for PM_{10}).

EIQ sheets were submitted for five diesel and two gasoline storage tanks ranging in size from 200 to 9,000 gallons. Total emission from the seven tanks is less than one ton. All of the tanks storing VOCs are equipped with submerged fill pipes. Only the two gasoline tanks are included in this permit. The diesel tanks meet the criteria for insignificant sources and, therefore, are not included in the permit.

Emissions summary, in tons per year (TPY), is as follows:

Pollutant	Permitted Before	Proposed	Change
TSP*	62.9	58.2	- 4.7
PM_{10}	-	37.2	+ 37.2
SO_2	0.9	0.3	- 0.6
NO_x	119.7**	149.1	+ 29.4
VOC	1.0	2.2	+ 1.2
CO	5.4	15.0	+ 9.6

*See Attachment A for speciation of solid HAPs. Total particulates only were permitted previously.
**This figure is adjusted for inclusion of NO_x emissions omitted in error from the M-1 modification of Permit No. 885.

Increases are due to increase in operating hours which results in an increase in the annual charge rate to the furnace. Since there was no modification, PSD review is not triggered. Decreases are due to differences in emission factors.

IV. TYPE OF REVIEW

The permit was reviewed for compliance with the Louisiana Air Quality Regulations and NSPS. Prevention of Significant Deterioration and NESHAP do not apply.

This facility is a major source of toxic air pollutants (TAP) because their potential to emit is above the 10/25 threshold. The compliance plan for the facility was approved April 13, 1995. This permit establishes limits within the constraints of said compliance plan.

V. PUBLIC NOTICE

Public notice is not required for a minor modification to an existing source.

SPECIFIC CONDITIONS

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

1. Permittee shall comply with all applicable provisions of 40 CFR 60 Subpart AA - Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983.

2. Permittee shall maintain the dust filters of the baghouse, Emission Point No. 1-77, and the baghouse serving Emission Point Nos. 2-77A thru F, so that particulate removal efficiencies of 99% are maintained. Filter vents shall be visually inspected for opacity on a daily basis. The filter elements (bags) shall be inspected every six months and changed as necessary. Records of opacity checks and maintenance inspections of the dust filters shall be kept on site and available for inspection by the Air Quality Division.

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

ATTACHMENT A

HAP Speciation in tons per year X 10^{-2} (TPY X 10^{-2}):

Emission Pt.No.	As	Ba	Cd	Cr	Cu	Pb	Mn	Ni	Zn	Total
1-77	0.042	0.323	0.444	3.099	2.834	19.72	29.66	0.399	134.3	190.8
2-77A	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1
2-77B	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1
2-77C	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1
2-77D	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.94	24.1
2-77E	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.94	24.1
2-77F	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.94	24.1
1-94	0.178	1.360	1.871	13.06	11.94	83.10	124.9	1.682	565.9	804.0
2-94	0.003	0.021	0.029	0.204	0.187	1.299	1.954	0.026	8.85	12.6
Totals	0.253	1.95	2.68	18.7	17.1	119.1	179.0	2.4	810.8	1152

*The concentrations were derived from analyses of baghouse dust averaged over a 21-month period. They are amounts contained in total suspended particulates (TSP), not just PM_{10}.

APPENDIX D
7.4.7

AIR QUALITY DATA SHEET
PAGE 1

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

Location of plant: 15 UTM: 744.7 km E 3325.5 km N

Description of location: Between River Road and Airline Highway approximately 2 miles south of LaPlace

Estimated starting date of construction operating

Estimated starting operation will begin _____

Dispersion Model(s) Used: NA

NEW____ OR MODIFIED X EMISSION SOURCES Scrap Metal Recovery
(Type of Source)

Emission Point No.	Description	Operating Rate (Max) or Tank Capacity	Operating Schedule H/D	D/W	W/Y
1-77	Primary Dust Collection System	292,000 cu ft/min	24	7	52
2-77A	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77B	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77C	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77D	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77E	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77F	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
4-77	Rolling Mill Furnace	77.2 MM BTU/hr	24	7	52
1-94	Furnace House Fugitives	N/A	24	7	52
2-94	Slag Pile Fugitives	N/A	24	7	52
3-94	A Bay Heater No. 1	1.5 MM BTU/hr	24	7	22
4-94	A Bay Heater No. 2	1.5 MM BTU/hr	24	7	22

AIR QUALITY DATA SHEET
PAGE 1 (CONTINUED)

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

Emission Point No.	Description	Operating Rate (Max) or Tank Capacity	Operating Schedule H/D	D/W	W/Y
5-94	A Bay Heater No. 3	1.5 MM BTU/hr	24	7	22
6-94	B Bay Heater No. 4	3.0 MM BTU/hr	24	7	22
7-94	B Bay Heater No. 5	3.0 MM BTU/hr	24	7	52
8-94	B Bay Heater No. 6	3.0 MM BTU/hr	24	7	52
11-94	Mechanic Shop Gasoline Tank No.3	1100 gal	24	7	52
14-94	IMS Gasoline Tank No. 6	800 gal	24	7	52

AIR QUALITY DATA SHEET
PAGE 2

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

MAXIMUM/AVERAGE EMISSIONS ARE LISTED IN LBS/HR

Emission Point No.	Permitted Emissions PM_{10}	SO_2	NO_X	VOC	CO	OTHER	HEIGHT Feet	TEMP °F	FLOW RATE CFM
1-77	2.93/1.63	0.01/0.01	20.36/20.36	-	-	-	162.5	257	292,000
2-77A	0.258/0.21	-	-	-	-	-	143.2	104	68,333
2-77B	0.258/0.21	-	-	-	-	-	143.2	104	68,333
2-77C	0.258/0.21	-	-	-	-	-	143.2	104	68,333
2-77D	0.258/0.21	-	-	-	-	-	143.2	104	68,333
2-77E	0.258/0.21	-	-	-	-	-	143.2	104	68,333
2-77F	0.258/0.21	-	-	-	-	-	143.2	104	68,333
4-77	0.44/0.28*	0.09/0.06	20.36/12.91	0.41/0.26	5.08/3.22	-	143.3	700	44,490
1-94	6.57/5.25	-	-	-	-	-	NA	ambient	NA
2-94	0.064/0.064	-	-	-	-	-	NA	ambient	NA
3-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
4-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
5-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
6-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10	-	NA	375	570
7-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10	-	NA	375	570
8-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10	-	NA	375	570
11-94	-	-	-	0.12/0.12	-	-	NA	ambient	NA
14-94	-	-	-	0.09/0.09	-	-	NA	ambient	NA

*PM_{10} emissions due to combustion of natural gas and process.

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

Permitted emissions are listed in tons per year

Emission Point No.	PM_{10}*	SO_2	NO_X	VOC	CO	OTHER
1-77	7.2	0.04	89.2	-	-	-
2-77A	0.90	-	-	-	-	-
2-77B	0.90	-	-	-	-	-
2-77C	0.90	-	-	-	-	-
2-77D	0.90	-	-	-	-	-
2-77E	0.90	-	-	-	-	-
2-77F	0.90	-	-	-	-	-
4-77	1.22	0.24	56.5	1.13	14.1	-
1-94	23.0	-	-	-	-	-
2-94	0.28	-	-	-	-	-
3-94	0.01	<0.01	0.37	0.01	0.09	-
4-94	0.01	<0.01	0.37	0.01	0.09	-
5-94	0.01	<0.01	0.37	0.01	0.09	-
6-94	0.02	<0.01	0.75	0.02	0.19	-
7-94	0.02	<0.01	0.75	0.02	0.19	-
8-94	0.02	<0.01	0.75	0.02	0.19	-
11-94	-	-	-	0.54	-	-
14-94	-	-	-	0.41	-	-
TOTALS	37.2	0.28	149.1	2.2	15.0	-

*See Attachment A for speciation of HAP in particulates.

685 M-2

SPECIFIC CONDITIONS

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

1. Permittee shall comply with all applicable provisions of 40 CFR 60 Subpart AA - Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983.

2. Permittee shall maintain the dust filters of the baghouse, Emission Point No. 1-77, and the baghouse serving Emission Point Nos. 2-77A thru F, so that particulate removal efficiencies of 99% are maintained. Filter vents shall be visually inspected for opacity on a daily basis. The filter elements (bags) shall be inspected every six months and changed as necessary. Records of opacity checks and maintenance inspections of the dust filters shall be kept on site and available for inspection by the Air Quality Division.

STONE, PIGMAN, WALTHER, WITTMANN & HUTCHINSON
COUNSELLORS AT LAW
1000 WHITNEY BANK BUILDING
NEW ORLEANS, LOUISIANA 70130-2662
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PAUL L. ZIMMERING
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STEPHEN H. KUPPERMAN
JO HARRIET STRICKLER*
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SARAH S. VANCE

*A PROFESSIONAL CORPORATION

KYLE SCHONEKAS
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DOUGLAS D. DODD
RANDALL A. SMITH
CHARLES R. PENOT, JR.
LINDA R. GALLAGHER
NOEL J. DARCE

November 9, 1983

OUR FILE NUMBER
40,728-D

Mr. Dietmar Sainitzer
Mr. Bruce Eskew
Mr. Mike McEarl
Bayou Steel Corporation
P. O. Box 5000
LaPlace, Louisiana 70068

Re: Louisiana Permit 885-M-1

Gentlemen:

I enclose herewith a copy of State Air Permit 885-M-1. Larry Schumer of Waldemar S. Nelson and Company advises that this permit is an interim step toward rescission and replacement of the PSD Permit.

Before the PSD Permit can be rescinded by the Environmental Protection Agency, an operating permit must be in place, and therefore Permit 885-M-1 has been issued. If, and after, the PSD Permit is rescinded, Larry advises that we can anticipate issuance of a more stringent and more detailed state permit as the permanent Air Quality Permit.

Sincerely,

Original Signed
CLINTON W. SHINN

Clinton W. Shinn

CWS/sh
Encl.

cc: Larry Schumer
Harold Himmelman, Esq.
John Guttmann, Esq.
Paul Shorb, Esq.

APPENDIX D
7.4.13

40727

State of Louisiana

FRANK P. SIMONEAUX
SECRETARY

B. JIM PORTER
ASSISTANT SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF ENVIRONMENTAL AFFAIRS
AIR QUALITY DIVISION

GUSTAVE VON BODUNGEN
PROGRAM ADMINISTRATOR

October 28, 1983

Mr. Ewell P. Walther, Jr.
Bayou Steel Corporation
Post Office Box 5000
LaPlace, Louisiana 70068

Dear Mr. Walther:

RE: Revision of State Permit 885 issued February 28, 1978. Total Emissions: Particulates 65.98 TPY, Sulfur Dioxide 1.002 TPY, Oxides of Nitrogen 77.80 TPY, Hydrocarbons 1.58 TPY, and Carbon Monoxide 9.22 TPY.

This is to confirm that the permit request for the above referenced project at the LaPlace Facility, LaPlace, St. John the Baptist Parish, Louisiana has been approved by the Assistant Secretary, Office of Environmental Affairs, Department of Natural Resources, under Air Quality Regulation 6.1.1. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the design scheme presented will be capable of controlling the emissions to the types and quantities stated. A new application must be submitted if the reported emissions are exceeded after operation begins. The emission and operating limitations are described in attached synopsis, data sheets and conditions.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application, and/or the attached condition are not satisfied.

The permit number cited below should be referenced in future correspondence regarding this subject.

Date: October 28, 1983
Permit No.: 885-M-1

Approved by: Gus Von Bodungen/for
B. JIM PORTER
Assistant Secretary

BJP/PD/bap

Enclosures

cc: Southeast Regional Office
U.S. EPA, Region
Waldmar S. Nelsen and Company

APPENDIX D
7.4.14

LOUISIANA AIR CONTROL COMMISSION

BAYOU STEEL CORPORATION

LaPlace (St. John the Baptist)

Bayou Steel Corporation requests a permit to construct and operate a steel manufacturing and forming facility on the Mississippi River in St. John the Baptist Parish, Louisiana. The facility will process scrap steel and produce billets, sections, rods, rounds and angles for both export and domestic purposes.

The process units will consist of two Electric Arc Furnaces, two Continuous Casting Units and Hot Rolling Mill Equipment.

Scrap steel and scale recovered from within the steel works will be recycled to the furnaces whereas the environmentally stable slag, wastewater treatment sludge and dust from the fabric filters will be used as landfill on Bayou Steel's property. A variance to start construction was approved by the Commission at the January 24, 1978 hearing.

Overall emissions of the facility are summarized as follows:

Particulate	65.98	tons/year
HC	1.58	tons/year
SO_2	1.002	tons/year
CO	9.22	tons/year
NO_x	77.80	tons/year

The greatest sources of air pollution in the steel mill will be the electric arc furnaces when power is on and/or when oxyugen is injected.

To control and limit the emissions, the company will install:

1) A primary dust control system which will provide for carbon monixide incineration, cooling, and high efficiency (99%) dust removal by means of a fabric filter baghouse.

2) A secondary dust control system with fabric filter baghouses to collect dust emissions when the primary dust control system is disengaged during the electric arc furnaces charging and tapping operations.

Fugitive dust emissions primarily due to lime and additive receiving, transferring and feeding system will be collected and cleaned by a fabric filter baghouse.

Sulfur dioxide emissions will be controlled by firing the rolling mill furnace with natural gas, a clean fuel.

Hydrocarbon emissions will consist of those associated with storing kerosene (a non-volatile organic compound), which is required for auxiliary heat input to the electric arc furnaces, in a 1500 barrel cone roof tank.

The company has stated that all the mentioned emission control schemes and equipment will comply with both LACC Regulations and EPA New Source Performance Standards and will also conduct necessary tests, monitoring and reporting as required.

A significant air quality derterioration analysis for particulate and sulfur dioxide area increments was submitted to EPA and indicate that the standards will be met.

Submitted dispersion calculations indicate that ambient air quality standards will not be violated.

BAYOU STEEL CORPORATION

LaPlace (St. John the Baptist)

RECOMMENDATION:

Approval provided the following conditions are met.

1) The synopsis sheets and the attached data sheets establish the emission and operating limitations and are a part of the permit. The synopsis and data sheets are based on the application for approval of emissions dated June 21, 1983 with supplemental information submitted July 15, 1983. The application and supplemental information are also considered part of this permit be reference.

2) Construction must commence within two years after the date of approval.

3) The permittee will submit to the Technical Secretary seminannual reports of progress defining the status of construction, noting any design changes, modifications or alterations in the construction schedule whichhave or may have an effect upon the emission rates or ambient air quality levels. Such reports shall continue to be submitted until such time as construction is certified as being complete.

4) Any emission testing performed for purposes of demonstrating compliance with the limitations set forth in Condition 1 shall be conducted in accordance with the methods described and referenced in Table 4 of the current Louisiana Air Control Commission Regulations.

5) The permittee shall, within 180 days after certifying the completion of construction prepare and submit to the Technical Secretary a report detailing the actual emission rates as compared to those limitations specified in Condition 1. The report shall also include, but not be limited to, malfunctions and upsets.

6) The permittee shall comply with all applicable New Source Performance Standards for Electric Arc Furnaces (40 CFR, Subpart AA).

7) The permittee shall maintain records of the hours of operation per calendar year for each source. These records shall be kept at the plant site for at least two years and made available to Air Quality Division.

LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air Quality Data Sheet

Bayou Steel Corporation

LaPlace, St. John the Baptist Parish

Location of plant: 15 UTM 744.7 Km E 3325.5 Km N

Description of location: The facility is located between River Road and Airline Highway, approximately 2 miles south of LaPlace, and 2.3 miles north of Montz.

Estimated starting date of construction: Existing

Estimated date operation will begin:

Type of Dispersion Calculations Used: Computer calculations using dispersion model PTMAX

EFFECTS ON AMBIENT AIR

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Air Quality Standard
Particulate	Annual 24 hour	43 ug/m^3 100 ug/m^3	60 ug/m^3 150 ug/m^3
SO_2	Annual 24 hour	1.86 ug/m^3 34.1 ug/m^3	60ug/m^3 260 ug/m^3
NO_x	Annual	18.5 ug/m^3	100ug/m^3

NEW [ ] OR MODIFIED [X] EMISSION SOURCES Steel Mill (Type of Source)

Stack I.D. #	Description	Operating Rate (Maximum)	Operating Schedule		
			Hrs/Day	Days/Wk	Wks/Yr
1-77	Primary Dust Collection	203,580 lbs.hr	24	7	42.5
2-77	Secondary Dust Collection		8	7	42.5
4-77	Rolling Mill Furnace	145.5 mscf/hr	24	6	50

LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air Quality Data Sheet - Page 2

Bayou Steel Corporation (Company's Name) — La Place, St. John the Baptist (Nearest Town) (Parish)

EMISSIONS ARE LISTED USING THE UNITS LBS/HR

STACK ID	PERMITTED EMISSIONS						Feet	F°	CFM
	TSP	SO_2	NO_X	HC	CO		Height	Temperature	Flow Rate
1-77	9.66	0.193					162.5	257	291,122
2-77	19.84						133.5	104	470,500
4-77	1.33	0.087	21.61	0.44	2.56		143.3	700	44,490

APPENDIX D
7.4.20

LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air Quality Data Sheet

Page 3

	Tons per Year					
Stack I.D.	TSP	SO_2	NO_x	HC	CO	OTHER
1-77	34.49	0.689				
2-77	23.61					
4-77	7.88	0.313	77.80	1.58	9.22	

APPENDIX D
7.4.21

3.1

BAYOU STEEL CORPORATION

P.O. BOX 5000

LA PLACE, LOUISIANA 70069-1156

EMISSION COMPLIANCE TESTS

BAGHOUSE STACK (source ID 1-77)

JULY 23,2004

PERMIT NUMBER : 885 (M-2)

Testing conducted by :

E T S

EMISSION TESTING SERVICES, INC.

P.O. BOX 15075

BATON ROUGE, LOUISIANA 70895

(225) 925-8405

FINAL File : 24104 issued 09-07-04 (117 pages)
Draft File : 24104 issued 08-19-04 (95 pages)

EMISSION TEST REPORT CERTIFICATION

for

BAYOU STEEL CORPORATION

EMISSION COMPLIANCE TESTS

BAGHOUSE STACK (source ID 1-77)

JULY 23. 2004

Testing conducted by :

EMISSION TESTING SERVICES, INC.

Emission Testing Services, Inc. is certified by the Louisiana Department of Environmental Quality (LDEQ) as a qualified environmental testing laboratory under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

I certify that I have personally examined and am familiar with the information submitted herein, and based on my inquiries of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete.

Wendy Stehling
Bayou Steel Corporation
Plant Representative

Troy LeSage
Emission Testing Services, Inc.
Project Leader

Barry Gipson
Emission Testing Services, Inc.
Manager

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LIST of FIGURES

LIST of STANDARD RESULT NOTATIONS

≤ or < None detected. Stated result is the minimum detection limit. Actual result may be less including the result 0.

▲ or ! Stated result is the sum or average of multiple component results; or a result based on the sum of individual component results from a multi-part sampling train. At least one of the component results has a detectable quantity and at least one of the component results has a none detectable quantity; and the value of the minimum detection limit for the none detectable component(s) is significant in comparison with the value of the detectable component(s). The actual result may be less; however, not less than the result computed with the detectable component(s) only.

I. INTRODUCTION

Emission Testing Services, Inc. (ETS) was contracted by Bayou Steel Corporation (Bayou Steel) to conduct emission testing at Bayou Steel's plant located near the town of LaPlace, Louisiana in St. James Parish, Louisiana. Emissions from the Baghouse Stack were tested to determine the emission rakes of lead and mercury. Tests were conducted in order to demonstrate compliance with emission permit limits. The Baghouse Stack, source ID 1-77, operates under permit number 885 (M-2) issued by the Louisiana Department of Environmental Quality (LDEQ).

All tests were conducted using EPA test methods. The emission rates of lead and mercury were determined using EPA Method 29. EPA Methods 1 - 4 were used to determine the number and location of sample points, and the velocity, moisture, molecular weight, and volumetric flow rate of the stack gas.

The ETS test team consisted of Project Leader Troy LeSage and a test crew consisting of Ronald McCabe and Joel Richard. Wendy Stehling represented Bayou Steel and coordinated testing with plant operations. During the emission tests, the LDEQ was represented onsite by Jim Stone (SERO), Tim Bergeron (ECS-Technology) and Cedric Mellion (EED-TRI).

Emissions from the Baghouse Stack were tested on July 23, 2004. Three, 72-min duration tests were conducted.

II. SUMMARY

Test Results Summary

On July 23, 2004 emissions from the Baghouse Stack at Bayou Steel were tested to determine the emission rates of lead and mercury. Results of the tests are presented in Table I.

Test Method Modifications, Deviations and Unusual Conditions

EPA methods were used to determine all pollutant and stack gas data. All modifications to and deviations from the standard test methods have been documented above. All unusual conditions have been noted above.

Test Conclusions

Quality assurance procedures meeting EPA and LDEQ requirements were used during the emission tests. All quality indicators, with the exception of those noted above, were within the range of acceptable results. Test data are complete, accurate, and representative of source conditions. Overall, the quality of data gathered are acceptable to meet project objectives.

TABLE I

EMISSION TEST RESULTS SUMMARY

BAYOU STEEL CORPORATION

BAGHOUSE STACK (source ID 1-77)

PARAMETER	Permit Limit Max./Avg.	RUN 1	RUN2	RUN 3	AVERAGE
DATE		7-23-04	7-23-04	7-23-04	
TIME		0934-1047	1158-1314	1605-1723	
MERCURY					
ug/dscf		0.0670	0.0696	0.1908	0.1091
lb/hr		0.00133	0.00140	0.00403	0.00225
LEAD					
ug/dscf		9.735	10.66	10.53	10.31
lb/hr		0.1938	0.2151	0.2124	0.2071
STACK GAS DATA					
Temperature, F		241	241	240	241
Moisture, vol%		4.08	3.05	4.64	3.92
Velocity, ft/sec		66.33	66.43	67.52	66.76
Flow Rate, acfm		208477	208786	212216	209826
, dscfm		150510	152492	152533	151845

PROCESS DESCRIPTION

Bayou Steel operates a steel mill, which includes two separate Electric Arc Furnaces (EAF) and a Ladle Metallurgical Facility (LMF). The EAF steel melting process consists of melting scrap steel, carbon sources, lime, flux, alloys, and other iron bearing material in a refractory lined vessel using three high voltage electrodes to produce a recovered steel product. Liquid steel is transferred either to the LMF for further refining or, to the continuous casting area where it is poured into the billet molds. The continuous strand is cooled and cut into various lengths. Billets are either sold as products or processed in the Rolling Mill by reheating followed by shaping using various rolling operations. Steel sections, angles, channels, and I-beams are cut or sheared to various lengths and transferred to the shipping warehouse for storage and loading.

ELECTRIC ARC FURNACE STEEL MILL

The EAF steel melting process is a batch operation. Each batch is called a heat and requires approximately 60 minutes. A heat consists of the following steps:

EAF Preparation – In preparation for charging and melting the scrap steel, the furnace electrodes are aligned and the furnace is coated with a protective layer of gunnite at the slag zone.

First Charge and Melt – The furnace is loaded with the initial charge of scrap steel and other materials. The roof is placed on the fumace and electrical current is applied to the electrodes to melt the first charge of scrap material.,:

Potential Intermediate Charges and Melts – The furnace roof is removed and the intermediate charge of scrap material and additives are added to the furnace. The roof is lowered onto the furnace and current is applied to melt the second charge of material.

Final ,Charge and Melt – The furnace roof is removed and the final charge of scrap material and additives are added to the fumace. The roof is lowered onto the furnace and current is applied to melt the final charge of material.

Oxidizing and Refining – Oxygen is injected into the molten steel to oxidize impurities and carbon. Electrical current is applied to refine the molten steel to meet product specifications.

Slagging and Tapping – The EAF is tilted backward to empty slag into a slag pot. Slag is cooled and transferred to a material stockpile. Following slagging, the EAF is tilted forward to pour the molten steel into a teeming ladle:

Figure -1
Bayou Steel
Process Flow Diagram

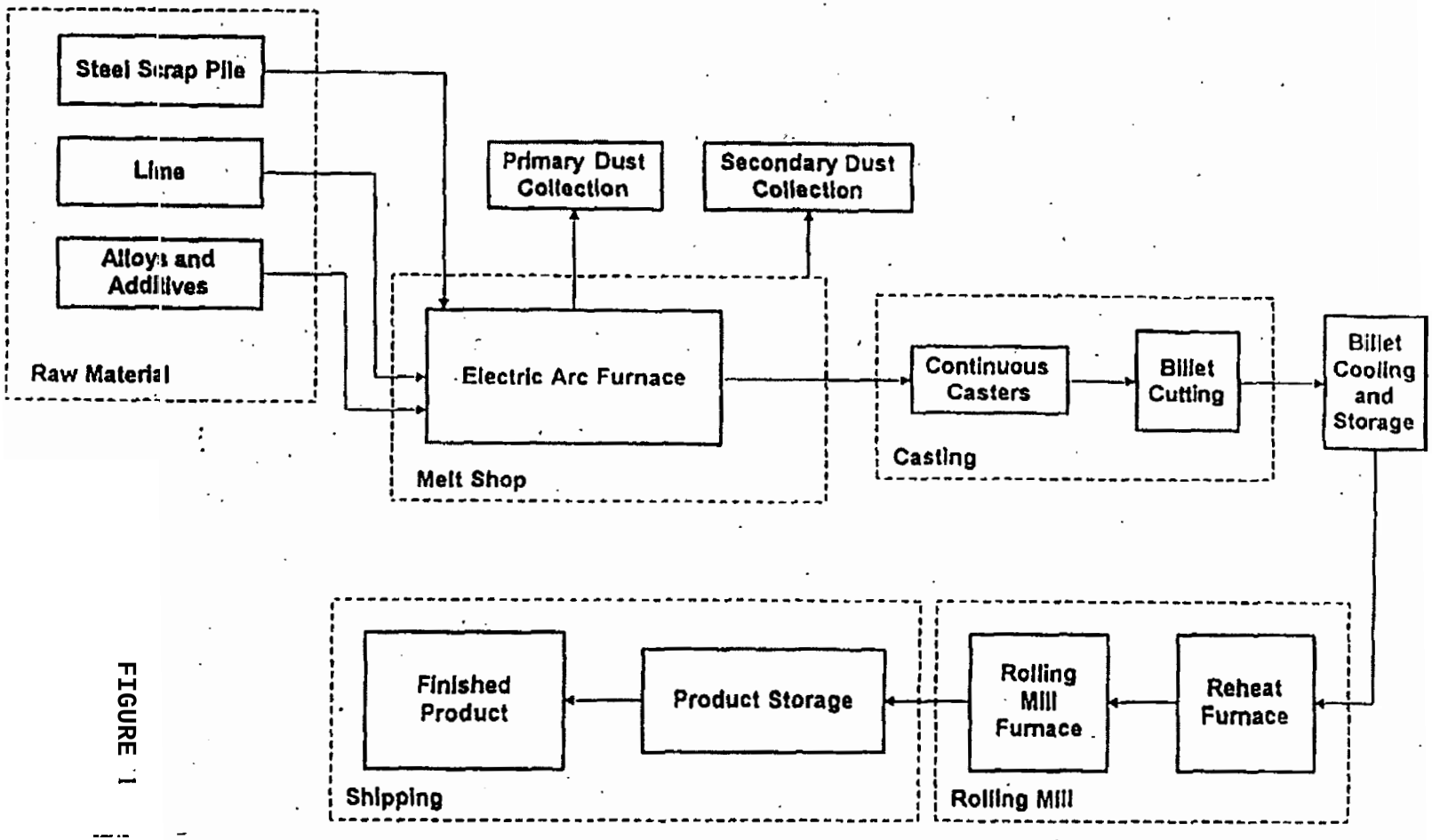


FIGURE 1

III. PROCEDURE

Emissions were determined using EPA methods found in Appendix A, Part 60, Title 40 of the Code of Federal Regulations. A brief description of each method used follows.

LOCATION of SAMPLE POINTS

Stack gas flow rate, moisture, lead, and mercury determinations were conducted at test points selected per EPA Method 1.

Oxygen and carbon dioxide samples were collected from a point located at the center of the stack. This test point is in conformance with the applicable test methods.

EPA METHOD I:

SAMPLE and VELOCITY TRAVERSES for STATIONARY SOURCES

Method 1 is applicable to stacks having a diameter greater than 12 in. The method recommends that sampling points be located 8 diameters downstream and 2 diameters upstream from the nearest flow disturbances; however, any distances greater than the minimum 2 diameters downstream and 0.5 diameters upstream are acceptable. These distances help insure the collection of a representative sample in the absence of cyclonic flow. Cyclonic flow is detected by measuring the stack gas flow Yaw angle at each test point. The average yaw angle is required to be less than 20 degrees.

The Baghouse Stack has a stack diameter of 98.0 in. The sampling point was located 6.73 stack diameters downstream and 7.96 stack diameters upstream from the nearest flow disturbances. During testing, 16 sample points were used, divided into 8 traverse points located across 2 perpendicular diameters of the stack with access to the points through 2 sampling ports. Cyclonic flow was not detected.

EPA METHOD 2:

DETERMINATION of STACK GAS VELOCITY and VOLUMETRIC FLOW RATE (Type S pitot tube)

The average gas velocity in the stack was determined from the gas molecular weight, moisture content, and the average velocity head measured using a type S pitot tube. Volumetric flow rate was determined from the velocity and stack cross-sectional area.

EPA METHOD 3:
GAS **ANALYSIS** FOR **CARBON DIOXIDE,** OXYGEN, EXCESS **AIR,** and DRY MOLECULAR WEIGHT

Molecular weight of the stack gas was calculated from the oxygen, carbon dioxide, moisture, and nitrogen concentration data. Oxygen concentration data were obtained using EPA Method 3A and moisture concentration data were obtained using EPA Method 4. Balance of the stack gas composition was assumed to be nitrogen.

GRAB SAMPLE
Carbon dioxide concentration data were obtained from **an analysis** of stack **gas** samples using **an Orsat** analyzer. A sample of the stack gas was continuously extracted from **the** stack and was transferred through a heated, Teflon sample line to a sample conditioning unit where particulate and moisture was removed. A portion of the conditioned sample was introduced to the **Orsat** for analysis.

EPA METHOD 4:
DETERMINATION of MOISTURE **CONTENT** in **STACK GASES**

Moisture of the stack gas was **determined** by extracting a gas **sample** from the stack throughout the duration of the test while traversing the stack with the sample probe. Sample gas passed from the heated probe, through a heated sample line to a particulate filter and a series of four impingers immersed in an ice bath. The first two impingers initially contained known weights of water, the third **was** empty; and the fourth **contained** a known weight of silica gel. Water vapor in the gas **sample** was condensed and trapped in the irnpingers. Sample volume was measured using a dry gas meter located **downstream** of the impinger train.

EPA METHOD *29* :
DETERMINATION of **METALS** EMISSIONS from STATIONARY SOURCES

A gas sample was extracted from the stack isokinetically using a heated glass probe fitted with a particulate **filter.** Sample **gas** passed from the probe, through a series of four impingers immersed in an ice bath. The first and second impingers contained a nitric acid solution, the third was empty, and the fourth impinger contained silica gel. Sample **flow** rate was established using a diaphragm pump and was controlled using a **valve.** A calibrated dry gas meter **was** used to determine the total gas sample volume.

After sampling, the filter **was** recovered from the filter holder. The front half of the filter holder and probe were washed and the washings were collected as the probe wash sample. The contents **of** the first, second, and third **impingers** were collected as a single impinger sample. The impingers and connecting glassware were washed with the washings added to the impinger sample. Sample containers were labeled **and** sealed for shipment to the laboratory for analyses.

IV. ANALYTICAL TECHNIQUE

All sample analyses were conducted following EPA methodology. Presented below are brief descriptions of each method used.

EPA METHOD 3:
GAS ANALYSIS FOR CARBON. DIOXIDE, **OXYGEN, EXCESS AIR, and DRY MOLECULAR** WEIGHT

The concentration of carbon dioxide in the stack gas was determined using an Orsat analyzer. Analysis was based on the differential sample volume of the gas sample before and after passing the sample through an oxygen absorbing reagent.

Oxygen concentration was determined using EPA Method 3A.

EPA METHOD 4:
DETERMINATION of MOISTURE CONTENT in **STACK GASES**

The mass of water vapor condensed from the sample gas was determined gravimetrically.

EPA METHOD 29 :
DETERMINATION of **METALS EMISSIONS** from **STATIONARY SOURCES**

Prior to analysis, the filter was digested in nitric acid. The mass of metals collected in the various samples was analyzed using an atomic adsorption spectrometer (AA).

V. QUALITY ASSURANCE/ QUALITY CONTROL

Test results have been validated by following rigorous quality assurance (QA) and quality control (QC) procedures documented in ETS' Standard Operating Procedures. These procedures meet and/or exceed EPA requirements and have approval by the LDEQ under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

The QA/QC programs ensure that the test data are representative of the source conditions by verifying the completeness, accuracy, and precision of the test data. QA/QC functions cover all aspects of the test including field testing, sampling, and analysis, sample transport and laboratory analysis, and data processing and reporting.

Emission testing at Bayou Steel included a series of QA/QC functions. All QA/QC functions were completed satisfactorily within the required limits.

CHAIN of CUSTODY

For those samples being transported to the laboratory for analysis, a Chain of Custody form was prepared during the sample recovery process. The sample ID, number of samples, liquid level when applicable, name of the sample recovery supervisor, name of the person responsible for sample recovery and the signature of the sample trustee were recorded on the custody form.

During all subsequent handing, the custody form accompanied the samples. As personnel relinquished responsibility for the samples, the receiving sample trustee verified the number and integrity of the samples and signed the custody form.

Upon receipt at the analytical laboratory, the lab sample trustee verified the number, type, and integrity of the samples. These data were recorded on the custody form along with the date of receipt and lab sample trustees signature.

At the time of analysis, the laboratory analyst recorded the analysis date and the laboratory supervisors name on the custody form. The analyst signed the custody form and attached it to the analytical results.

Chain of Custody forms for samples collected during testing' follow on the next pages along with the analytical q u e s t forms.

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL	SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
PW-R1	P4070973	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
PW-R2	P4070974	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
PW-R3	P4070975	PROBE WASH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 1&2-R1	P4070976	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 1&2-R2	P4070977	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 1&2-R3	P4070978	IMPINGER CATCH	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y
IMP 3-R1	P4070979	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 3-R2	P4070980	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
IMP 3-R3	P4070981	IMPINGER CATCH	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
BLANK 0.1N HNO3	P4070982	BLANK	7/23/2004	0.1N HNO3	N/A	Y	Y	Y
BLANK DI H2O	P4070983	BLANK	7/23/2004	DI H2O	N/A	Y	Y	Y
BLANK HNO3/H2O2	P4070984	BLANK	7/23/2004	HNO3/H2O2	N/A	Y	Y	Y

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 12	FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe
SAMPLES COLLECTED BY: Ron McCabe	SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LAB NAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	12	Good		KC McCabe

ANALYSIS REQUIRED: LEAD AND MERCURY AS PER EPA METHOD 29	DATE of ANALYSIS: 07/29/04 ANALYST:- HARSHA REPORT DATE: 08/02/04 REPORT NUMBER: P4070973

NOTES_____

SAMPLE SET_____ OF_____ PAGE_____ OF_____

5.3

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL	SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
IMP 4&5-R1	P4070985	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R2	P4070986	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R3	P4070987	IMPINGER CATCH	7/23/2004	KMnO4	N/A	Y	Y	Y
IMP 4&5-R1-HCL	P4070988	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
IMP 4&5-R2-HCL	P4070989	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
IMP 4&5-R3-HCL	P4070990	IMPINGER CATCH	7/23/2004	8 N HCL	N/A	Y	Y	Y
BLANK KMnO4	P4070991	BLANK	7/23/2004	KMnO4	N/A	Y	Y	Y
BLANK 8 N HCL	P4070992	BLANK	7/23/2004	8 N HCL	N/A	Y	Y	Y

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 8	FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe
SAMPLES COLLECTED BY: Ron McCabe	SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LAB NAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	8	Good		KCKNobody

ANALYSIS REQUIRED: MERCURY AS PER EPA METHOD 29	DATE of ANALYSIS: 07/29/04 ANALYST: HARWA REPORT DATE: 08/02/04 REPORT NUMBER: P4070985

NOTES

SAMPLE SET____ OF____ PAGE____ OF____

5.4

ETS

EMISSION TESTING SERVICES, INC.

CHAIN of CUSTODY and ANALYTICAL REQUIREMENTS

CLIENT: BAYOU STEEL | SOURCE: BAGHOUSE STACK

ETS SAMPLE ID	LAB ID NUMBER	SAMPLE DESCRIPTION	COLLECTION DATE	SAMPLE MEDIA	PRESERVATIVE/ TYPE & AMOUNT	STORE ON ICE	VOLUME MARKED	SEALED
FILTER-R1	P4070993	#5396	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
FILTER-R2	P4070994	#5243	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
FILTER-R3	P4070995	#5246	7/23/2004	QUARTZ	N/A	N/A	N/A	Y
BLANK FILTER	P4070996	#5249	7/23/2004	QUARTZ	N/A	N/A	N/A	Y

TOTAL NUMBER of SAMPLES including BLANKS and SPIKES: 4 | FIELD SAMPLE RECOVERY SUPERVISOR: Ron McCabe

SAMPLES COLLECTED BY: Ron McCabe | SAMPLE TRUSTEE FROM SAMPLE POINT: Joel Richard

SAMPLES TRANSFERRED TO (LABNAME)	TRANSFER DATE	TRANSFER METHOD	NUMBER OF SAMPLES	CONDITION OF SAMPLES	NOTES	RECEIVING SAMPLE TRUSTEE SIGNATURE
CHEMTEX	07/25/04	By hand	4	Good		KCMobley

ANALYSIS REQUIRED: MERCURY AND LEAD AS PER EPA REFERENCE METHOD 29

DATE of ANALYSIS: _____

ANALYST: - _____

REPORT DATE: _____

REPORT NUMBER:

NOTES _____

SAMPLE SET _____ OF _____ PAGE _____ OF _____

VI. TEST DATA and CALCULATIONS

All emission test field data, unit operations data, and laboratory data are presented in this section along with the associated data reduction calculations.

Data from the field data forms were manually input into a computer for data processing and calculations. Integrity of data input is maintained by using a double entry system. The computer performed all calculations and produced the calculations and results summary pages. Input data accuracy were further verified by comparison of raw field dab to the computer data printed on the summary pages. Computer program integrity and calculations verification are validated by processing a known set of data. Further controls on the computer program are conducted by comparison of manual spot calculations of the raw data input to computer calculations results.

EMISSION TESTS
on the BAGHOUSE STACK

Emission tests were conducted on the Baghouse Stack to determine the concentration of oxygen and carbon dioxide; and the concentration and mass emission rates of lead and mercury.

Flow rate, lead, and mercury emissions were determined following EPA Methods 2, 4, and 29 using a combined sampling train. Oxygen and carbon dioxide emissions were determined using EPA Method 3. Prior to the emission tests, the absence of cyclonic flow at the sampling point was determined using EPA Method 1.

Lead, mercury, stack gas velocity, and moisture samples and measurements were obtained at sample traverse points, Figure II, selected per EPA Method 1. Oxygen and carbon dioxide samples and measurements were obtained from a single sample point, Figure III, located near the center of the stack.

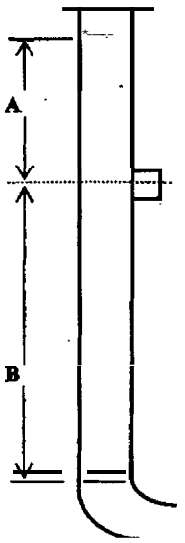
Test data and associated calculations are presented on the following pages.

ETS

EMISSION TESTING SERVICES INC.

TRAVERSE POINT AYOUT

METHODS-1-4 & 29



CLIENT:	BAYOU STEEL		
DATE:	7/22/2004		
UNIT TESTED:	BAGHOUSE STACK		
LOCATION:	LAPLACE, LA		
UPSTREAM DIST. (A): (INCHES)	780	DIAMETERS:	7.96
DOWNSTREAM DIST.(B): (INCHES)	660	DIAMETERS:	6.73
INSIDE DIAMETER (INCHES):	98		
COUPLING LENGTH (INCHES):	6		
COUPLING TYPE:	4" SCREW ON		

CROSS SECTIONAL LAYOUT

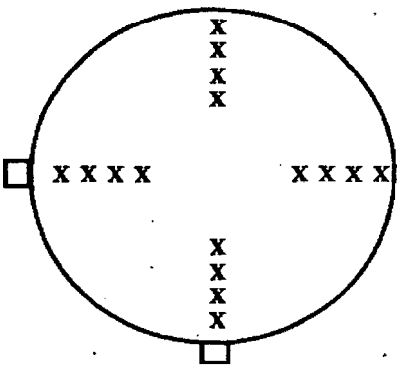


FIGURE 11

TOTAL TRAVERSE POINTS. 16

TRAVERSE POINT	DISTANCE % OF DIAMETER	STACK DIAMETER	COUPLING LENGTH	TRAVERSE POINTS
1	3 2	98	6	9.14
2	10.5	98	6	1629
3	19.4	98	6	25.01
4	323	98	6	37.65
5	67.7	98	6	72.35
6	80.6	98	6	84.99
7	89.5	98	6	93.71
8	%.8	98	6	100.86

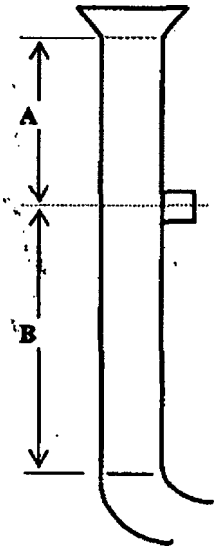
SIGNATURE: Tom McCabe

ETS

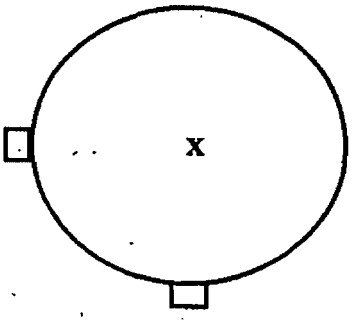
EMISSION TESTING SERVICES INC.

TRAVERSE POINT LAYOUT

METHODS 3



CLIENT:	BAYOU STEEL
DATE:	07/22/04
UNIT TESTED:	BAGHOUSE STACK
LOCATION:	LAPLACE, LA
UPSTREAM DIST. (A):	780
DOWNSTREAM DIST. (B):	660
INSIDE DIAMETER (INCHES):	98
COUPLING LENGTH (INCHES):	6
COUPLING TYPE:	4" SCREW ON



CROSS SECTIONAL LAYOUT

FIGURE 111

TOTAL TRAVERSE POINTS= 1

TRAVERSE POINT	DISTANCE % OF DIAMETER	STACK DIAMETER	COUPLING LENGTH	TRAVERSE POINTS
1	*0.500*	98	*6*	*55.00*

SIGNATURE: Ronald M. Cabe

ETS
EMISSION TESTING SERVICES, INC.

VERIFICATION OF ABSENCE of CYCLONIC FLOW

COMPANY: Bayou Steel
DATE: 7-23-04
SOURCE: Baghouse Stack
STACK DIAMETER 98"
LOCATION: Norco, La.
OPERATOR: Joel Richard

	REFERENCE ANGLE		REFERENCE ANGLE
1	0	13	1
2	1	14	2
3	2	15	1
4	1	16	1
5	2	17	
6	0	18	
7	1	19	
8	2	20	
9	1	21	
10	2	22	
11	0	23	
12	1	24	

AVERAGE 1.125 *

* THE AVERAGE IS THE ABSOLUTE VALUE OF EACH DEGREE POINT DIVIDED BY THE NUMBER OF POINTS.

REFERENCE ANGLE CANNOT EXCEED 26 DEGREES OF AVERAGE OVERALL VALUE.

FORMS:CYCLONIC

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4 & 29

PLANT: Bayou Steel | SAMPLE BOX NO.: 3rd RM | PITOT TUBE ID.: P-10-5 | STACK DIAMETER, in.: 98"
DATE: 7-23-04 | METER BOX NO.: 3 | PITOT TUBE FACTOR: .832 | METER Δ H@: 1.8127
LOCATION: Nucor, La. | BAROMETRIC PRESSURE: 29.95 | FILTER ID.: | METER D.G.M.F.: 1.0309
STACK ID.: Bag House Stack | AMBIENT TEMP.: 87°F | FILTER TYPE: | K-FACTOR: .6580
RUN NO.: 1 | OPERATOR: Joel Richard | NOZZLE DIAMETER, IN: .170 | T-FACTOR: 461.97

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head (ΔPs)	Velocity Head ($\sqrt{\Delta P_s}$)	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
1	9:34	-.650	234	1.20	1.095	.800	.798	879.203	105	97	242	248	58	3.5
2	9:38.5		246	1.10	1.048	.720	.719	881.510	108	97	242	245	57	3.5
3	9:43		251	1.00	1.000	.650	.649	883.810	110	98	241	244	56	3.5
4	9:47.5		253	.940	.9695	.610	.608	885.810	112	99	245	240	56	3.5
5	9:52		258	.960	.9797	.620	.617	887.825	114	101	242	247	56	3.5
6	9:56.5		248	1.05	1.024	.690	.685	889.820	116	104	245	248	57	3.5
7	10:01		231	1.20	1.095	.800	.802	892.050	117	105	247	251	56	3.5
8	10:05.5		230	1.10	1.048	.740	.736	894.350	118	104	243	250	56	3.5
9	10:16		233	1.10	1.048	.730	.733	896.553	118	104	242	248	57	3.5
10	10:20.5		238	1.20	1.095	.790	.794	898.875	121	110	242	248	57	3.5
11	10:25		240	1.20	1.095	.790	.790	901.210	119	107	242	249	58	3.5
12	10:29.5		236	1.05	1.024	.700	.696	903.670	121	111	243	250	58	3.5
13	10:34		237	.900	.948	.600	.596	905.515	122	112	242	253	59	3.5
14	10:38.5		245	.940	.969	.620	.615	907.505	119	109	240	256	60	3.5
15	10:43		238	.960	.979	.640	.635	909.520	121	109	242	255	60	3.5
16	10:47.5	5M	240	.980	.989	.650	.646	911.735	120	109	241	253	60	3.5
~~17~~	~~10:52~~	10:52						913.670						
~~18~~	~~10:56.5~~													
AVERAGE	9 min	-.650	241.125		1.025	.709		34.467	110.53					

	IMPINGER WEIGHTS				
LIQUID COLLECTED	1	2	3	4	29.7 5
FINAL					
INITIAL					
TOTAL WEIGHT					

ORSAT MEASUREMENT			
C02	02	CO	N2
0.1	19.8		

Orsat leak check ✓
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 3.5" H20
Pitot tube leak check, static side good @ 4.0" H20
Pre-leak Rate @ 10 in.Hg 0.001 ft3/min.
Post-leak Rate @ 10 in.Hg 0.002 ft3/min.

E T S
Emission Tasting Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 1

DETERMINATION of STACK GAS MOISTURE, MOLECULAR WEIGHT, VELOCITY, and VOLUMETRIC FLOW RATE

A - Cross-sectional area of the stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bws - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orific pressure differential, in. H20
dP - Stack gas velocity head, in. H2O
F1 - Conversion factor, 13.6 in. H2O/ in. Hg
Kp - Pitot tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mole
Md - Stack gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2, 28.01 lb/lb mole
MO2 - Molecular weight of O2, 32.00 lb/lb mole
Ms - Stack gas molecular weight, wet lb/lb mole

Pbar - Barometric pressure, in. Hg
Ps - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry scfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R

Vi - Water vapor condensed, impinger 1, g
Vii - Water vapor condensed, impinger 2, g
Viii - Water vapor condensed, impinger 3, g
Viv - Water vapor condensed, impinger 4, g
Vm - Gas meter sample volume, dry ft3
Vmstd - Gas meter sample volume, dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Stack gas N2 concentration, %/100
O2 - Stack gas O2 concentration, %/100

$$Vw = \left\{\frac{(\ Vi + Vii + Viii + Viv\ )\ R\ Tstd}{(\ 453.6\ g/lb\ )\ Pstd\ MH2O}\right\} = \left\{\frac{(\ 23.9 + 1.1 + -2.9 + 7.6\ )(\ 21.85\ )(\ 528\ )}{(\ 453.6\ )(\ 29.92\ )(\ 18.02\ )}\right\} = 1.40105$$

$$Vmstd = Vm\ Y \left\{\frac{(\ Pb - dH/\ Fl\ )\ Tstd}{Pstd\ Tm}\right\} = (\ 34.467\ )(\ 1.0309\ )\left\{\frac{(\ 29.950 + .6969/13.6\ )(\ 528\ )}{(\ 29.92\ )\ (\ 571\ )}\right\} = 32.97250$$

$$Bws = \left\{\frac{Vw}{Vw + Vmstd}\right\} = \left\{\frac{(\ 1.40105\ )}{(\ 1.40105 + 32.97250\ )}\right\} = .0408$$

$$Md = (\ MCO2\ )(\ \%CO2\ ) + (\ MO2\ )(\ \%O2\ ) + (\ MN2\ )(\ \%N2\ )$$
$$= (\ 44.01\ )(\ .001\ ) + (\ 32.00\ )(\ .198\ ) + (\ 28.01\ )(\ .801\ ) = 28.816$$

$$Ms = Md\ (\ 1 - Bws\ ) + (\ MH2O\ Bws\ ) = (\ 28.816\ )(\ 1 - .0408\ ) + (\ 18.02\ )(\ .0408\ ) = 28.376$$

$$Vs = Kp\ Cp\ (\ dP\ )^{1/2}\left\{\frac{Ts}{Ps\ Ms}\right\}^{1/2} = (\ 85.49\ )(\ .8320\ )(\ 1.0259\ )\left\{\frac{(\ 701\ )}{(\ 29.902\ )(\ 28.376\ )}\right\}^{1/2} = 66.3327$$

$$Acf = (\ 60\ sec/min\ )(\ Vs\ \ A\ ) = (\ 60\ )(\ 66.3327\ )(\ 52.3817\ ) = 208476.9$$

$$Qsd = (\ 3600\ sec/hr\ )(\ 1 - Bws\ )(\ Vs\ A\ )\left\{\frac{Tstd\ Ps}{Ts\ Pstd}\right\}$$

$$= (\ 3600\ )(\ 1 - .0408\ )(\ 66.3327\ )(\ 52.3817\ )\left\{\frac{(\ 528\ )(\ 29.902\ )}{(\ 701\ )(\ 29.92\ )}\right\} = 9030603.0\ dscf/hr$$
$$= 150510.0\ dscf/min$$

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4+29

PLANT: Bayou Steel | SAMPLE BOX NO.: 5 B A1 | PITOT TUBE ID.: P-10-5 | STACK DIAMETER, in.: 98"
DATE: 7-23-04 | METER BOX NO.: 3 | PITOT TUBE FACTOR: .832 | METER Δ H@: 1.8127
LOCATION: Norco, La. | BAROMETRIC PRESSURE: 29.95 | FILTER ID.: | METER D.G.M.F.: 1.0309
STACK ID.: Highest Stack | AMBIENT TEMP.: 91°F | FILTER TYPE: | K-FACTOR: .6750
RUN NO.: 2 | OPERATOR: Joel Richard | NOZZLE DIAMETER, IN.: .170 | T-FACTOR: 473.27

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head (ΔPs)	Velocity Head ($\sqrt{\Delta P_s}$)	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
on@ 1	11:58	-.640	233	1.30	1.14	.890	.887	919.715	111	104	243	245	55	3.0
2	12:02.5		243	1.05	1.02	.710	.706	921.950	115	103	240	248	55	3.5
3	12:07		240	.980	.989	.6660	.658	924.350	117	105	241	250	55	3.5
4	12:12.5		242	.960	.979	.650	.647	926.430	117	106	245	251	55	3.5
5	12:16		246	1.05	1.024	.700	.703	928.470	116	106	242	253	56	3.5
6	12:20.5		243	1.00	1.000	.670	.673	930.680	117	106	242	252	56	3.5
7	12:25		242	.970	.984	.650	.653	932.748	117	107	243	250	56	3.0
8	12:29.5		247	.990	.994	.660	.662	934.875	118	107	244	249	56	3.0
off@	12:34							936.960						
on@ 9	12:38		241	1.25	1.118	.840	.843	936.960	118	107	242	250	57	3.0
10	12:42.5		243	1.20	1.095	.810	.807	939.330	118	107	240	247	57	3.5
11	12:47		231	1.15	1.072	.790	.789	941.810	121	109	241	248	57	3.5
12	12:51.5		235	1.10	1.048	.750	.749	944.020	121	109	243	252	58	3.5
13	12:56		242	1.05	1.024	.710	.707	946.250	122	110	242	251	58	3.5
14	13:00.5		240	.980	.989	.660	.662	948.460	122	110	240	250	59	3.5
15	13:05		239	1.00	1.00	.680	.677	949.610	123	111	239	251	59	3.0
16	13:09.5		241	.990	.994	.670	.668	952.680	123	112	240	252	59	3.0
off@	13:14							954.865						
AVERAGE	72 min	-.640	240.5		1.029	.718		35.150	112.96					

LIQUID COLLECTED	IMPINGER WEIGHTS 1	2	3	4	223 5
FINAL					
INITIAL					
TOTAL WEIGHT					

ORSAT MEASUREMENT			
CO2	O2	CO	N2
0.2	19.8		

Orsat leak check ✓
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 4.0" H2O
Pitot tube leak check, static side good @ 3.5" H2O
Pre-leak Rate @ 10 in.Hg 0.003 ft3/min.
Post-leak Rate @ 10 in.Hg 0.001 ft3/min.

ETS
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 2

DETERMINATION of STACK GAS MOISTURE, MOLECULAR WEIGHT, VELOCITY, and VOLUMETRIC FLOW RATE

A - Cross-sectional area of the stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bws - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orific pressure differential, in. H2O
dP - Stack gas velocity bad. in. H2O
F1 - Conversion factor, 13.6 in. H2O/ in. Hg
Kp - Picot tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mole
Md - Stack gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2, 28.01 lb/lb mole
MO2 - Molecular weight of O2, 32.00 lb/lb mole
Ms - Smck gas molecular weight, wet lb/lb mole
Pbar - Barometric pressure, in. Hg
Ps - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry acfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R
Vi - Water vapor condensed, impinger 1, g
Vii - Water npor condensed, impinger 2. g
Viii - Water npor condensed, impinger 3, g
Viv - Water vapor condensed, impinger 4. g
Vm - Gas meter sample volume. dry ft3
Vmstd - Gas meter sample volume, dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Stack gas N2 concentration, %/100
02 - Stack gas 02 concentration, %/100

$$Vw = \left\{\frac{(Vi + Vii + Viii + Viv)\ R\ Tstd}{(453.6\ g/lb)\ Pstd\ MH2O}\right\} = \left\{\frac{(19.4 + 1.9 + -3.7 + 4.7)(21.85)(528)}{(453.6)(29.92)(18.02)}\right\} = 1.05196$$

$$Vmstd = Vm\ Y \left\{\frac{(Pb + dH/F1)\ Tstd}{Pstd\ Tm}\right\} = (35.150)(1.0309)\left\{\frac{(29.950 + .7188/13.6)(528)}{(29.92)(573)}\right\} = 33.48461$$

$$Bws = \left\{\frac{Vw}{Vw + Vmstd}\right\} = \left\{\frac{(1.05196}{(1.051\% + 33.48461)}\right\} = .0305$$

$$Md = (MCO2)(\%CO2) + (MO2)(\%O2) + (MN2)(\%N2)$$
$$= (44.01)(.002) + (32.00)(.198) + (28.01)(.800) = 28.832$$

$$Ms = Md(1 - Bws) + (MH2O\ Bws) = (28.832)(1 - .0305) + (18.02)(.0305) = 28.503$$

$$Vs = Kp\ Cp\ (dP)^{1/2}\left\{\frac{Ts}{Ps\ Ms}\right\}^{1/2} = (85.49)(.8320)(1.0302)\left\{\frac{(701)}{(29.903)(28.503)}\right\}^{1/2} = 66.4312$$

$$Acf = (60\ sec/min)(Vs\ A) = (60)(66.4312)(52.3817) = 208786.4$$

$$Qsd = (3600\ sec/hr)(1 - Bus)(Vs\ A)\left\{\frac{Tstd\ Ps}{Ts\ Pstd}\right\}$$

$$= (3600)(1 - .0305)(66.4312)(52.3817)\left\{\frac{(528)(29.903)}{(701)(29.92)}\right\} = 9149506.0\ dscf/hr$$
$$= 152491.8\ dscf/min$$

ETS® EMISSION TESTING SERVICES, INC., FIELD DATA, METHOD(S) 1-4 + 29

PLANT: B Steel | SAMPLE BOX NO.: K AIR | PITOT TUBE ID.: P-10-5 | STACK DIAMETER, in.: 98"
DATE: 7-23-04 | METER BOX NO.: 3 | PITOT TUBE FACTOR: .832 | METER ΔH@: 1.8127
LOCATION: Norco, La. | BAROMETRIC PRESSURE: 24.95 | FILTER ID.: | METER D.G.M.F.: 1.0309
STACK ID.: Baghouse Stack | AMBIENT TEMP.: 90°F | FILTER TYPE: | K-FACTOR: 6750
RUN NO.: 3 | OPERATOR: Joel Richard | NOZZLE DIAMETER, IN: .17 | T-FACTOR: 473.27

Traverse Point Number	Sampling Time (θ), min.	Static Pressure (in. H_2O)	Stack Temp. (Ts), °F	Velocity Head $\sqrt{\Delta Ps}$	Velocity Head $(\sqrt{\Delta P_s})$	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Actual	Pressure Differential Across Orifice Meter (ΔH) in., H_2O Desired	Dry Gas Meter Volume (Vm), ft^3	Gas Sample Temperature at Dry Gas Meter Inlet (Tm_{in}), °F	Gas Sample Temperature at Dry Gas Meter Outlet (Tm_{out}), °F	Probe Temp. °F	Sample Box Temp. °F	Temp of Gas Leaving Last Impinger °F	Pump Vacuum in. Hg gauge
one	16:05	-.65	240	1.40	1.18	.950	.946	973.448	97	88	243	253	53	3.0
2	16:09.5		238	1.30	1.14	.880	.881	975.890	100	88	242	252	53	3.5
3	16:14		235	1.10	1.04	.750	.749	978.285	102	88	240	251	54	3.0
4	16:18.5		238	1.05	1.02	.710	.711	980.600	102	88	245	250	54	3.5
5	16:23		240	1.10	1.04	.740	.743	982.785	102	90	247	249	54	3.5
6	16:27.5		241	1.10	1.04	.740	.743	984.915	104	90	242	250	55	3.0
7	16:32		240	1.00	1.00	.680	.676	987.150	107	92	241	252	55	3.0
8	16:36.5		237	1.05	1.02	.710	.712	989.350	108	92	240	257	56	3.0
leak	16:41							991.476						
one	16:47		238	1.20	1.09	.810	.813	991.476	99	91	239	256	56	3.0
10	16:51.5		240	1.10	1.04	.740	.743	993.770	103	93	240	253	57	3.5
11	16:56		242	1.10	1.04	.740	.743	996.000	104	92	242	254	57	3.0
12	17:00.5		241	1.00	1.00	.680	.675	998.240	106	92	241	252	58	3.0
13	17:05		247	1.05	1.02	.700	.702	1000.330	106	93	243	251	59	3.0
14	17:09.5		243	1.00	1.00	.670	.673	1002.490	108	93	242	250	60	3.0
15	17:14		240	.970	.984	.660	.655	1004.610	110	93	241	250	60	3.0
16	17:18.5		241	.960	.979	.650	.648	1006.565	110	94	240	252	60	3.0
leak	17:23							1008.673						
AVERAGE	72min	-.650	240.06		1.039	.738		35.225	92.03					

	IMPINGER WEIGHTS				
					35.6
LIQUID COLLECTED	1	2	3	4	5
FINAL					
INITIAL					
TOTAL WEIGHT					

ORSAT MEASUREMENT			
CO2	O2	CO	N2
0.2	19.2		

Orsat leak check /
Method (3 or 3A) 3
Barometer ID 1

COMMENTS:

Pitot tube leak check, impact side good @ 4.0" H2O
Pitot tube leak check, static side good @ 4.5" H2O
Pre-leak Rate @ 10 in.Hg 0.002 ft3/min.
Post-leak Rate @ 10 in.Hg 0.001 ft3/min.

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 3

DETERMINATION of **STACK GAS** MOISTURE, MOLECULAR **WEIGHT, VELOCITY,** and VOLUMETRIC FLOW RATE

A - Cross-sectional area of tho stack, ft3
Acf - Stack gas flow rate, actual, acfm
Bwr - Stack gas moisture fraction, %/100
Cp - Pitot tube coefficient
dH - Meter orifio preasure differential, in. H2O
dP - Stack gas velocity head, in. H2O
Fl - Conversion factor, 13.6 in. H2O/ in Hg
Kp - P i i tube constant, 85.49
MCO2 - Molecular weight of CO2, 44.01 lb/ lb mob
Md - Shck gas molecular weight, dry lb/lb mole
MH2O - Molecular weight of water, 18.02 lb/lb mole
MN2 - Molecular weight of N2. 28.01 lb/lb mole
MOZ - Molecular weight of 02. 32.00 lb/lb mole
Ms - Stack gas molecular weight. wet lb/lb mob

Pbar - Barometric preasure, in. Hg
Ps - Stack gas static pressure, in. H2O
Ps - Stack gas absolute pressure, in. Hg
Pstd Standard absolute pressure, 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry scfm
R - Ideal gas constant, 21.85
Tm - Meter temperature, R
Ts - Stack gas temperature, R
Tstd - Standard temperature, 528 R

Vi - Water vapor condensed, impinger I. g
Vii - Water vapor condensed, impinger 2. g
Viii - Water vapor condensed, impinger 3. g
Viv - Water vapor condensed, impinger 4, g
Vm - Gas meter sample volume, dry ft3
Vmstd - Gas meter sample volume. dry std. ft3
Vs - Stack gas velocity, ft/sec
Vw - Total water vapor condensed, ft3
Y - Dry gas meter calibration factor
%CO2 - Stack gas CO concentration, %/100
%N2 Shck gas NZ concentration, %/100
02 - Stack gas 02 concentration, %/100

$$Vw = \left\{\frac{(\,Vi + Vii + Viii + Viv\,)\,R\;Tstd}{(\,453.6\;g/lb\,)\;Pstd\;MH2O}\right\} = \left\{\frac{(\;31.1 + .8 + .0 + 3.7\;)(\;21.85\;)(\;528\;)}{(\;453.6\;)(\;29.92\;)(\;18.02}\right\} = 1.67937$$

$$Vmstd = Vm\;Y\left\{\frac{(\;Pb + dH/\;Fl\;)\;Tstd}{Pstd\;\;Tm}\right\} = (\;35.225\;)(\;1.0309\;)\left\{\frac{(\;29.950 + .7381/13.6\;)(\;528}{(\;29.92\;)\;(\;558\;)}\right\} = 34.47911$$

$$Bws = \left\{\frac{vu}{Vw + Vmstd}\right\} = \left\{\frac{(\;1.67937\;)}{(\;1.67937 + 34.47911\;)}\right\} = .0464$$

$$Md = (\;MCO2\;)(\;\%CO2\;) + (\;MO2\;)(\;\%02\;) + (\;MN2\;)(\;\%N2\;)$$
$$= (\;44.01\;)(\;.002\;) + (\;32.00\;)(\;.192\;) + (\;28.01\;)(\;.806\;) = 28.808$$

$$Ms = Md\;(\;1 - Bus\;) + (\;MH2O\;Bws\;) = (\;28.808\;)(\;1 - .0464\;) + (\;18.02\;)(\;.0464\;) = 28.307$$

$$Vs = Kp\;Cp\;(\;dP\;)^{1/2}\left\{\frac{Ts}{Ps\;Ms}\right\}^{1/2} = (\;85.49\;)(\;.8320\;)(\;1.0439\;)\left\{\frac{(\;700\;)}{(\;29.902\;)(\;28.307\;)}\right\}^{1/2} = 67.5224$$

$$Acf = (\;60\;sec/min\;)(\;Vs\;\;A\;) = (\;60\;)(\;67.5224\;)(\;\;52.3817\;) = 212216.0$$

$$Qsd = (\;3600\;sec/hr\;)(\;1 - Bws\;)(\;Vs\;A\;)\left\{\frac{Tstd\;Ps}{Ts\;Pstd}\right\}$$

$$= (\;3600\;)(\;1 - .0464\;)(\;\;67.5224\;)(\;\;52.3817\;)\left\{\frac{(\;\;528\;)(\;29.902\;)}{(\;\;700\;\;)(\;29.92\;)}\right\} = 9151957.0\;dscf/hr$$
$$= 152532.6\;dscf/min$$

METALS EMISSIONS per EPA METHOD 29

During emission tests for the metals, lead and mercury samples were collected in sampling train combined with the moisture and flow rate sample train. Sample volume, etc, are recorded on test data sheets presented beginning on page 6.1.5.

A summary of the metals sample collection data and the emission concentration and emission rate calculations are presented on the following pages.

E T S

Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 1

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bws - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter orifice press. diff., in-HZ0
Eri - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr
St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA, 528 R
Vm - Volume of gas sample, actual dry ft3
Vmstd - Sample vol, dry, std ft3, 68F, 29.92 in.Hg
Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{ \frac{(Tstd)(Pbar + dH/13.6)}{(Tm)(Pstd)} \right\} = (34.467)(1.0309) \left\{ \frac{(528)(29.950 + .6969/13.6}{(571)(29.92} \right\} = 32.97250$$

$$I = \left\{ \frac{Ts\ Vmstd\ Pstd\ (100)}{Tstd\ Vs\ An\ St\ Ps\ (60)(1-Bws)} \right\} = \left\{ \frac{(701)(32.97250)(29.92)(100)}{(528)(66.3327)(.00015762)(72.00)(29.902)\ 60\ (1 - .0408)} \right\} = 101.11$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲321.00 / 32.97250) = ~9.7354
Eri = (Msi F1 Qsd)/(Vmstd) = [(~321.00)(2.2046 X 10-9)(9030603.0)] /(32.97250) = ▲.19382

---------- MERCURY --------

Csi = (Msi / vmstd) = (▲2.21 / 32.97250) = ▲.0670
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲2.21)(2.2046 X 10-9)(9030603.0)] /(32.97250) = ▲.00133

E T S
Emission Testing Services, Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 2

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bus - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter oriffce press. diff., in-H20
Erf - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 in. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr

St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA 528 R
Vm - Volume of gas sample, actual dry ft3
Vmstd - Sample vol, dry, std ft3, 68F, 29.92 in.Hg

Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{\frac{(Tstd)(Pbar + dH/13.6}{(Tm)(Pstd)}\right\} = (35.150)(1.0309) \left\{\frac{(528)(29.950 + .7188/13.6)}{(573)(29.92)}\right\} = 33.48462$$

$$\left\{\frac{Ts\ Vmstd\ Pstd\ (100)}{Tstd\ Vs\ An\ St\ Ps\ (60)(1-Bws)}\right\} = \left\{\frac{(701)(33.48462)(29.92)(100)}{(528)(66.4312)(.00015762)(72.00)(29.903)\ 60\ (1 - .0305)}\right\} = 101.35$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲357.00 / 33.48462) = ▲10.6616
Eri = (Msi F1 Osd)/(Vmstd) = [(▲357.00)(2.2046 X 10-9)(9149506.0)] /(33.48462) = ▲.21506

.-.-.-.--- MERCURY --------

Csi = (Msi / Vmstd) = (▲2.33 / 33.48462) = ▲.0696
Erf = (Msi F1 Qsd)/(Vmstd) = [(▲2.33)(2.2046 X 10-9)(9149506.0)] /(33.48462) = ▲.00140

ETS
Emission Testing Services. Inc.

Client : BAYOU STEEL
Source : BAGHOUSE STACK
Test Date : 7-23-04
Run No. : 3

METALS EMISSIONS per EPA METHOD 29

An - Cross-sectional area of sampler nozzle, ft2
Bws - Stack gas moisture fraction, %/100
Csi - Conc. of metals emissions, ug/dscf
dH - Dry gas meter orifice press. diff., in-HZ0
Eri - Emission rate of metals emissions, lb/hr
F1 - Conversion factor, 2.2046 X 10-9 lb/ug
I - Percent isokinetic, % of ideal sampling rate
Msi - Mass of metal detected in sample, ug
Pbar - Barometric press. at sampling site, in. Hg
Ps - Stack gas pressure, absolute, in. Hg
Pstd - Standard absolute press., 29.92 In. Hg
Qsd - Stack gas volumetric flow rate, dry ft3/hr
St - Total sampling time, min
Tm - Average dry gas meter temperature, deg R
Ts - Stack gas temperature, deg R
Tstd - Std. absolute temp, EPA, 528 R
Vm - Volume of gas sample, actual dr ft3
Vmstd - Sample vol, dry, std ft3, 68F, 39.92 in.Hg
Vs - Stack gas velocity, ft/sec
Y - Dry gas meter calibration factor

$$Vmstd = Vm\ Y \left\{\frac{(Tstd)(Pbar + dH/13.6}{(Tm)(Pstd)}\right\} = (35.225)(1.0309) \left\{\frac{(528)(29.950 + .7381/13.6)}{(558)(29.92)}\right\} = 34.47912$$

$$I = \left\{\frac{Ts\ Vmstd\ Pstd\ (100)}{Tstd\ Vs\ An\ St\ Ps\ (60)(1-'BUS)}\right\} = \left\{\frac{(700)(34.47912)(29.92)(100)}{(528)(67.5224)(.D0015762)(72.00)(29.902)\ 60\ (1 - .0464)}\right\} = 104.33$$

---------- LEAD --------

Csi = (Msi / Vmstd) = (▲363.00 / 34.47912) = ▲10.5281
Eri = (Msi F1 Qsd)/(Vmstd) = [(▲363.00)(2.2046 X 10-9)(9151957.0)] /(34.47912) = r.21242

---------- MERCURY --------

Csi = (Msi / Vmstd) = (▲6.58 / 34.47912) = ▲.1908
Eri = (Msi F1 Qsd)/(Vmstd) = [(- ▲6.58)(2.2046 X 10-9)(9151957.0)] /(32.97250) = ▲.00403

LABORATORY ANALYSES of METALS SAMPLES

During the emission tests, metals samples were collected in the probe wash, filter, and impinger samples. These samples were transported to Chemtex Environmental and Industrial Hygiene Services located in Port Arthur, Texas for analyses. A summary of analytical results are presented on the following page followed by the complete analytical report.

Chemtex Environmental and Industrial Hygiene Services is certified by the Louisiana Department of Environmental Quality(LDEQ) as a qualified environmental testing laboratory under the Louisiana Environmental Laboratory Accreditation Program (LELAP).

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method 29

Analytical Laboratory : Chemtex Environmental & Industrial Hygiene Services

Client Name : Bayou Steel
Source Name : Baghouse Stack
Run No. : 1

	HNO3 PROBE WASH					IMPINGERS 1 & 2 HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
SAMPLE ID	VOLUME ml	RESULT mg/sample	VOLUME ml	RESULT mg/sample	Blank Corrected ug/sample	VOLUME ml	RESULT mg/sample	VOLUME ml	RESULT mg/sample	Blank Corrected ug/sample
Lend	170.00	0.172000	210.000	< 0.011000	172.000	274.00	< 0.014000	102.000	< 0.005000	< 14.000
Mercury	170.00	0.000187	210.000	< 0.000210	0.187	274.00	< 0.000270	102.000	< 0.000100	< 0.270

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
SAMPLE ID	VOLUME ml	RESULT mg/sample	VOLUME ml	RESULT mg/sample	Blank Corrected ug/sample	VOLUME ml	RESULT mg/sample	VOLUME ml	RESULT mg/sample	Blank Corrected ug/sample
Lead	90.00	< 0.005000	210.000	< 0.011000	< 5.000	430.00	0.022000	60.000	< 0.005000	22.000
Mercury	90.00	< 0.000090	210.000	< 0.000210	< 0.090	430.00	< 0.000430	60.000	< 0.000060	< 0.430

	IMPINGERS 4 & 5, HCl RINSE					FILTERS		
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK	SAMPLE
SAMPLE ID	VOLUME ml	RESULT mg/sample	VOLUME ml	RESULT mg/sample	Blank Corrected ug/sample	RESULT ug/sample	CONC. ug/sample	Blank Corrected ug/sample
Lead	234.00	< 0,012000	105.000	< 0.005000	< 12.000	96.00	< 3.00	96.00
Mercury	234.00	< 0.000230	105.000	< 0.000110	< 0.230	< 1.00	1.00	< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	! 321.00
Mercury	! 2.21

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method 29

Analytical Laboratory: Chemtox Environmental & Industrial Hygiene Services

Client Name: Bayou Steel
Source Name: Baghouse Stack
Run No.: 2

	HNO3 PROBE WASH					IMPINGERS 1 6 2 HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	260.00	0.213000	210.000	< 0.011000	213.000	294.00	< 0.015000	102.000	< 0.005000	< 15.000
Mercury	260.00	0.000290	210.000	< 0.000210	0.290	294.00	< 0.000290	102.000	< 0.000100	< 0.290

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME.	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	90.00	< 0.005000	210.000	< 0.011000	< 5.000	430.00	0.039000	60.000	< 0.005000	39.000
Mercury	90.00	< 0.000090	210.000	< 0.000210	< 0.090	430.00	< 0.000430	60.000	< 0.000060	< 0.430

	IMPINGERS 4 & 5, HCl RINSE					FILTERS		
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK	SAMPLE
	VOLUME	RESULT	.VOLUME	RESULT	Blank Corrected	RESULT	CONC.	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ug/sample	ug/sample	ug/sample
Lead	234.00	< 0.012000	105.000	< 0.005000	< 12.000	73.00	< 3.00	73.00
Mercury	234.00	< 0.000230	105.000	< 0.000110	< 0.230	< 1.00	< 1.00	< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	! 357.00
Mercury	! 2.33

ETS

Emission Testing Services, Inc.

Metals Analysis per EPA Method *29*

Analytical Laboratory : Chemtex Environmental & Industrial Hygiene Services

Client Name : Bayou Steel
Source Name : Baghouse Stack
Run No. : 3

	HNO3 PROBE WASH					IMPINGERS 1 & 2, HNO3/H2O2				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	234.00	0.171000	210.000	< 0.011000	171.000	314.00	< 0.016000	102.000	< 0.005000	< 16.000
Mercury	234.00	0.004450	210.000	< 0.000210	4.450	314.00	< 0.000310	102.000	< 0.000100	< 0.310

	IMPINGER 3, HNO3					IMPINGERS 4 & 5, KMnO4				
	SAMPLE		BLANK		SAMPLE	SAMPLE		BLANK		SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ml	mg/sample	ml	mg/sample	ug/sample
Lead	105.00	< 0.005000	210.000	< 0.011000	< 5.000	470.00	0.028000	60.000	< 0.005000	28.000
Mercury	105.00	< 0.000110	210.000	< 0.000210	< 0.110	470.00	< 0.000470	60.000	< 0.000060	< 0.470

	IMPINGERS 4 & 5, HM RINSE					FILTERS		
	SAMPLE		BLANK		SAMPLE	SAMPLE	BLANK	SAMPLE
	VOLUME	RESULT	VOLUME	RESULT	Blank Corrected	RESULT	CONC.	Blank Corrected
SAMPLE ID	ml	mg/sample	ml	mg/sample	ug/sample	ug/sample	ug/sample	ug/sample
Lead	240.00	< 0.012000	105.000	< 0.005000	< 12.000	131.00	< 3.00	131.00
Mercury	240.00	< 0.000240	105.000	< 0.000110	< 0.240	< 1.00	< 1.00	< 1.00

SAMPLE ID	TOTAL SAMPLE Blank Corrected ug/sample
Lead	1363.00
Mercury	16.58

CHEMTEX
Environmental & Industrial Hygiene Services

3082 25th Street, Port Arthur, Texas 77642 ı (403) 983-4575 FAX (409) 382-1522
5544 Leopard Street, Corpus Christi, Texas 78408 ı (361) 299-9900 FAX (361) 299-1155
138 S. Cities Service Hwy., Sulphur, Louisiana 70663 ı (337) 626-2121 FAX (337) 626-0405

Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070973

Phone: (225) 925-8405; Fax (225) 925-2343

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results mg/Sample	Results mg/l	MDL mg/Sample	MDL mg/l
P4070973	PW-R1	Lead	170	0.172	1.01	0.009	0.05
P4070974	PW-R2	Lead	260	0.213	0.82	0.013	0.05
P4070975	PW-R3	Lead	234	0.171	0.73	0.012	0.05
P4070976	IMP 1&2-R1	Lead	274	< 0.014	< 0.05	0.014	0.05
P4070977	IMP 1&2-R2	Lead	294	< 0.015	< 0.05	0.015	0.05
P4070978	IMP 1&2-R3	Lead	314	< 0.016	< 0.05	0.016	0.05
P4070979	IMP 3-R1	Lead	90	< 0.005	< 0.05	0.005	0.05
P4070980	IMP 3-R2	Lead	90	< 0.005	< 0.05	0.005	0.05
P4070981	IMP 3-R3	Lead	105	< 0.005	< 0.05	0.005	0.05
P4070982	BLANK 0.1N HN03	Lead	210	< 0.011	< 0.05	0.011	0.05
P4070983	BLANK DI H2O	Lead	184	< 0.009	< 0.05	0.009	0.05
P4070984	BLANK HNO3/H2O2	Lead	102	< 0.005	< 0.05	0.005	0.05
Method Blank	DI Water	Lead	---		< 0.05	---	0.05

MDL: Method Detection Limit

CHEMTEX
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Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070973

Phone: (225)925-8405; Fax (225)925-2343

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results ug/Sample	Results ug/l	MDL ug/Sample	MDL ug/l
P4070973	PW-R1	Mercury	170	0.19	1.1	0.17	1.0
P4070974	PW-R2	Mercury	260	0.29	1.1	0.26	1.0
P4070975	PW-R3	Mercury	234	4.45	19.0	0.23	1.0
P4070976	IMP 1&2-R1	Mercury	274	< 0.27	< 1.0	0.27	1.0
P4070977	IMP 1&2-R2	Mercury	294	< 0.29	< 1.0	0.29	1.0
P4070978	IMP 162-R3	Mercury	314	< 0.31	< 1.0	0.31	1.0
P4070979	IMP 3-R1	Mercury	90	< 0.09	< 1.0	0.09	1.0
P4070980	IMP 3-R2	Mercury	90	< 0.09	< 1.0	0.09	1.0
P4070981	IMP 3-R3	Mercury	105	< 0.11	< 1.0	0.11	1.0
P4070982	BLANK 0.1N HNO3	Mercury	210	< 0.21	< 1.0	0.21	1.0
P4070983	BLANK DI H20	Mercury	184	< 0.18	< 1.0	0.18	1.0
P4070984	BLANK HNO3/H2O2	Mercury	102	< 0.10	< 1.0		1.0
Method Blank	DI Water	Mercury	---		< 1.0	---	1.0

MDL: Method Detection Limit

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Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04

Phone: (225)925-8405; Fax (225)925-2343

CHEMTEX FILE #: P4070973

LABORATORY QUALITY ASSURANCE/QUALITY CONTROL DATA

Parameter	Units	True Value	Obtained Value	8 Recovery
Total Lead	mg/l	0.250	0.268/0.299*	105
Total Mercury	ug/l	5.0	4.8/4.8*	100

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

Dr. C. N. Reddy, Ph.D, CIH, ASP
Director

bmb/amd/CNR

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Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225) 925-8405; Fax (225) 925-2343

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070985

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results mg/Sample	Results mg/l	MDL mg/Sample	MDL mg/l
P4070985	IMP 4&5-R1	Lead	430	< 0.022	< 0.05	0.022	0.05
P4070986	IMP 4&5-~~R1~~ R2	Lead	430	0.039	0.09	0.022	0.05
P4070987	IMP 4&5-~~R1~~ R3	Lead	470	0.028	0.06	0.024	0.05
P4070988	IMP 4&5-R1-HCL	Lead	234	< 0.012	< 0.05	0.012	0.05
P4070989	IMP 4&5-~~R1~~ R2-HCL	Lead	234	< 0.012	< 0.05	0.012	0.05
P4070990	IMP 4&5-~~R1~~ R3-HCL	Lead	240	< 0.012	< 0.05	0.012	0.05
P4070991	BLANK KmnO4	Lead	60	0.005	0.08	0.003	0.05
P4070992	BLANK 8 N HCL	Lead	105	< 0.005	< 0.05	0.005	0.05
Method Blank	DI Water	Lead	---		< 0.05	---	0.05

MDL: Method Detection Limit

CHEMTEX
Environmental & Industrial Hygiene Services

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Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225)925-8405; Fax (225)925-2343

Report Date: 08/02/04
Sample Matrix: Liquid
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070985

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: *Bayou Steel*
SOURCE: *Baghouse* Staak

CHEMTEX #	Sample Identification	Parameter	Sampling Volume (mg/l)	Results ug/Sample	Results ug/l	MDL ug/Sample	MDL ug/l
P4070985	IMP 4&5-R1	Mercury	430	< 0.43	< 1.0	0.43	1.0
P4070986	IMP 4&5-~~R1~~ R2	Mercury	430	< 0.43	< 1.0	0.43	1.0
P4070987	IMP 4&5-~~R1~~ R3	Mercury	470	< 0.47	< 1.0	0.47	1.0
P4070988	IMP 4&5-R1-HCL	Mercury	234	< 0.23	< 1.0	0.23	1.0
P4070989	IMP 4&5-~~R1~~ R2-HCL	Mercury	234	c 0.23	< 1.0	0.23	1.0
P4070990	IMP 4&5-~~R1~~ R3-HCL	Mercury	240	< 0.24	< 1.0	0.24	1.0
P4070991	BLANK KmnO4	Mercury	60	< 0.06	< 1.0	0.06	1.0
P4070992	BLANK 8 NHCL	Mercury	105	< 0.11	< 1.0	0.11	1.0
Method Blank	DI Water	Mercury	Blank		< 1.0	---	1.0

MDL: Method Detection Limit

CHEMTEX
Environmental & Industrial Hygiene Services

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5544 Leopard Street, Corpus Christi, Texas 78408 •(361) 293-3300 FAX(361) 299-1155
138 S. Cities Service Hwy., Sulphur, Louisiana 70663 ı(337) 626-2121 FAX(337) 626-0405

Client: *E T S*
10461 Mammoth Dr.
Baton Rouge, LA 70814

Report Date: 08/02/04

Phone: *(225)*925-8405; Fax(225) 925-2343

CHEMTEX FILE #: P4070985

LABORATORY *QUALITY ASSURANCE/QUALITY CONTROL DATA*

Parameter	Units	True Value	Obtained Value	% Recovery
Total Lead	mg/l	0.250	0.268/0.299*	105
Total Mercury	ug/l	5.0	4.8/4.8*	100

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

Dr. C. El. Reddy, Ph.D, CIH, ASP
Director

bmb/amd/CNR

CHEMTEX
Environmental & Industrial Hygiene Services

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138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-0405

Client: E T S
10461 Mammoth Dr.
Baton Rouge, LA 70814

Phone: (225)925-8405; Fax (225)925-2343

Report Date: 07/30/04
Sample Matrix: Quartz
Date Collected: 07/23/04
Collected By: Ron McCabe
Date Received: 07/25/04
CHEMTEX FILE #: P4070993

AIHA Laboratory # 101478 | NVLAP Lab Code 200635-0 | nelap certificate # 02077

RESULTS OF ANALYSIS
CLIENT: Bayou Steel
SOURCE: Baghouse Stack

CHEMTEX #	Sample ID.	Parameter	Result (ug/sample)	MDL (ug/sample)
P4070993	Filter-R1	Total Lead	96.0	3.0
		Total Mercury	< 1.0	1.0
P4070994	Filter-R2	Total Lead	73.0	3.0
		Total Mercury	< 1.0	1.0
P4070995	Filter-R3	Total Lead	131.0	3.0
		Total Mercury	< 1.0	1.0
P4070996	Blank Filter	Total Lead	< 3.0	3.0
		Total Mercury	< 1.0	1.0
Method Blank	Blank Filter	Total Lead	< 3.0	3.0
		Total Mercury	< 1.0	1.0

LABORATORY QUALITY ASSURANCE/QUALITY CONTROL DATA

Parameter	Units	True Value	Obtained Value
Total Lead	ug/l	250	268/302*
Total Mercury	ug/l	5.0	4.8/4.8*

Parameter	Method Reference	Date Analyzed/Analysts
Total Lead	EPA Method 29	07/29/04 MHVR/NR
Total Mercury	EPA Method 29	07/29/04 MHVR/NR

C. N. Reddy, Ph.D., CIH, ASP
Director

bmb/CNR

6.1.25

UNIT **OPERATING DATA**

During the emission tests, unit operating data were recorded by Bayou Steel. These data are presented on the following pages.

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Dued | Heat #: 27245
Date: 7/23/04 | 1st Helper: Wayne
Grade: A1364W | Ladleman: Jeff

Pulse Counters
1st Charge 7122828
Last Charge 7176096

Tap To Tap Time 52

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Adds	Slp	Brk
A			
B			
C			

Previous Heat Tap: 8:06

	PON	POFF	kWh/ton
Headr	812	825	(220)
1 Back	827	834	(220)
2 Back	836		
3 Back			

Tap Start 8:56 | Tap Finish 9:01

		LMF	
Power On	394	kWh	
kWh	31260	kWh/Ton	
kWh/Ton	327	LMF Plan	(25)
Plan	(360)		

Ladle Data
Ladle No: 5
Heats: 9
Temp:

Stir Info
Hts Pig: 9
Stir OK:

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1			2918	18	
2			2980		
3					
4					
Ldl					

EAF Additions

	Lbs
Lime	5000
MgO	1300
Chg C	
Foamy	7888
Oxgyn	1048
N Gas	209

Ladle Additions

	Tap	Trim
SiMn	1620	
FeSi	336	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Comments
Material | Location
Amount

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Be Satisfied Always ! Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000		

Ladle Sent To

To LMF	St to Cr
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/18	26/85	40	50	18/26	59					
Rin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	3	1	A1-8
Power On	11	13	2	A4-6
First BackCharge	2	2		
Power On	8	7		
Second BackCharge	2	2		
Power On	6		2	AB-2
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

'Action Items:

Maintenance Barriers:'

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27245 Date 7-22-04 Turn C

Oper Cowboy Foreman Dick

Header

Layer	Description	Aim Grade	Sub Grade	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	8		9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	16		16%
	Barge / Plate	1		17000	13		22%
	#1 Heavy	7		13000	15		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	99		

First BackChg

Layer	Description	Aim Grade	Sub Grade	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	8		15%
3	Barge / Plate	1		14000	5		22%
	#1 Heavy	1		16000	17		25%
	Mixed 1&2	7		8000	13		12%
							0%
							0%
5	Shredded	10		15000	14		23%
		Total		65000	56		

Second BackChg

Layer	Description	Aim Grade	Sub Grade	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	15		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	5		12%
	#1 Heavy	1		4000	10		24%
	Shredded			4000	5		
		Total		33000	35		

150

Bayou Steel Corporation Heat Record

Crew: C Melter: Duck Heat #: 27246
Date: 7/23/04 1st Helper: Wayne
Grade: A36 [illegible] Ladleman: Jeff

Pulse Counters
1st Charge 7/26 096
Last Charge 7/29 187

Tap To Tap Time 64

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Add	Slip	Brk
A			
B			
C			

Previous Heat Tap 8:36

	PON	POFF	kWh/ton
Headr	9:05	9:16	(220)
1 Back	9:18	9:26	(220)
2 Back	9:28		
3 Back			

Tap Start 9:52 Tap Finish 9:55

		LMF	
Power On	37.7	kWh	
kWh	29810	kWh/Ton	
kWh/Ton	321	Plan	(25)
Plan	(360)		

Ladle Data		Stir Info	
Ladle No.	10	# Hts Pig	5
Heats	3	Stir OK	
Temp			

Temperature Data (1250) (1610)

	Time	kWh	Temp	Carbon	O2ppm
1			2989	12	
2					
3					
4					
Ldl					

EAF Addition

	Trim
Lime	5000
MgO	1300
Chg C	
Foamy	2667
Oxgyn	996
N Gas	207

Ladle Addition

	Tap	Trim
SiMn	1675	
FeSi	325	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Grinding Data
Material Location
Amount

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000	84	

Ladle Sent To

To LMF	St to Ct
✓	

B/15 15/80 25 40-50 10/26 36

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/19	75/85	40	50	18/26	59					
Rin											

Procedure Compliance Summary

	Goi	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	4	2	A1-B
Power On	11	11		
First BackCharge	2	2		
Power On	8	8		
Second BackCharge	2			
Power On	6			
Third Back Charge	0			A1-2 9:60-9:62
Power On	0			
Refine	11			
Total	45			

Acfion Items:

MainfenanceBarriers:

9434 1ST Test (EDEQ)

BEST COPY

Bayou Steel Corporation
Scrap Blend Procedure

nd #65 3-Buckets

Heat# 37246 Date 7-22 Turn C

per Cowboy Foreman

Header

Layer	Description	Alm Sub Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	15		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	90		

First BackChg

Layer	Description	Alm Sub Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	10		22%
	#1 Heavy	1		16000	20		25%
	Mixed 1&2	7		8000	10		12%
							0%
							0%
5	Shredded	10		15000	20		23%
		Total		65000	60		

Second BackChg

Layer	Description	Alm Sub Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000	10		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000	5		24%
	Shredded			4000	5		
		Total		33000	40		

190

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27247
Date: 7/23/04 | 1st Helper: Wayne
Grade: A36/40 | Ladleman: Jeff

Pulse Counters
1st Charge 7129187
Last Charge 7132630

Tap To Tap Time 54

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Previous Heat Tap 9:52

	PON	POFF	kWh/ton
Headr	10:00	10 11	(220)
1 Back	10 13	10 22	(220)
2 Back	10 24		
3 Back			

Tap Start 10:46 Tap Finish 10:49

		LMF	
Power On	40.2	kWh	
kWh	32100	kWh/Ton	
kWh/Ton	345	Plan	(25)
Plan	(360)		

Ladle Data		Stir Info	
Ladle No	8	# Hts Plg	1
Heats	96	Stir OK	
Temp			

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1			3026	11	
2			3100		
3					
4					
Ldl					

EAF Additions

	Plan	Act
Lime		5000
MgO		1800
Chg C		
Foamy		3057
Oxgyn		1067
N Gas		216

Ladle Additions

	Tap	Trim
SiMn	1675	
FeSi	330	
FeMn		
Coke	150	
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Grinding Data
Material | Location
Amount

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied Always a B Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
190,000	83	

Ladle Sent To

To LMF	St to Cr
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/18	70/85	40	50	18/26	59					
Pin											

Procedure Compliance Summary

	Goal	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	9		
Turn Around	2	5	3	A1-3
Power On	1	11		
Firs	1	2		
Power On	8	9	1	A4-6
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Record
247

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Bucket

Heat# 87247 Date 7-22 Turn C

Oper Cowick Foreman Rick

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	5		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	22		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	95		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	10		15%
3	Barge / Plate	1		14000	10		22%
	#1 Heavy	1		16000	10		25%
	Mixed 1&2	7		8000	10		12%
							0%
							0%
5	Shredded	10		15000	14		23%
		Total		65000	54		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	30		42%
	Turnings	11		8000	10		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000	5		24%
	Shredded			4000	5		
		Total		33000	54		

190

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27248
Date: 7-23-04 | 1st Helper: WS
Grade: A36-44W | Ladleman: JB

Pulse Counters:
1st Charge 7129187
Last Charge 7126557

Tap To Tap Time 53

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes:

	Ad	Slp	Brk
A			
B			
C			

Previous Heat Tap: 10:46

	PON	POFF	kWh/ton
Headr	10:53	11:04	(220)
1 Back	11:08	11:15	(220)
2 Back	11:17		
3 Back			

Tap Start 11:29 | Tap Finish 11:48

Power On	37.2
kWh	29040
kWh/Ton	310
Plan	(360)

LMF

kWh	
kWh/Ton	
Plan	(25)

Ladle Data

Ladle No.	7
Heats	89
Temp	

Stir Info

# Hts Plg	42
Stir OK	

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1			3000	12	
2					
3					
4					
Ldl					

EAF Additions

	Plus	
Lime		5000
MgO		1300
Chg C		
Foamy		2518
Oxgyn		971
N Gas		200

Ladle Additions

	Tap	Trim
SiMn	1675	
FeSi	825	
FeMn		
Coke	50	
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CaAl	200	

Grinding Data

Material	Location
Amount	

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

*Never Be **Satisfied** **Always** Better **Way***

Process Weights

Charge lbs	Tap Tons	Cast Tons
185,000	86	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	13/17	70/86	40	60	1826	54					
Pin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	4	2	A1-B
Power On	11	11		
First BackCharge	2	4	2	A4-1
Power On	8	8		
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27248 Date 7-22-04 Turn C

Oper Low Sco. Foreman Buck

Header

Layer	Description	Aim Code	Sub Code	Weight Aim	Weight Actual	Weight Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	5		6%
4	Turnings	1		12000	11		16%
	Barge / Plate	1		17000	15		22%
	#1 Heavy	7		13000	13		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	86		

First BackChg

Layer	Description	Aim Code	Sub Code	Weight Aim	Weight Actual	Weight Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000	15		15%
3	Barge / Plate	1		14000	8		22%
	#1 Heavy	1		16000	15		25%
	Mixed 1&2	7		8000	15		12%
							0%
							0%
5	Shredded	10		15000	20		23%
		Total		65000	73		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weight Aim	Weight Actual	Weight Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000	8		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	26		

185

3 Heats

Bayou Steel Corporation — Heat Record

Crew: C Melter: Buck Heat #: 27249
Date: 7-23-04 1st Helper: WS
Grade: A36 Ladleman: JB

Pulse Counter
1st Charge 1135551
Last Charge 1138686

Tap To Tap Time 55

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Ad	Sip	Brk
A			
B			
C			

Previous Heat Tap 11:39

	PON	POFF	kWh/ton
Headr	11:50	12:01	(220)
1 Back	12:03	12:13	(220)
2 Back	12:15		
3 Back			

Tap Start 12:34 Tap Finish 12:37

	EAF	LMF
Power On	38:4	
kWh	29670	
kWh/Ton	316	
Plan	(360)	(25)

Ladle Data
Ladle No 5
Heats 10
Temp

Stir Info
Hts Plg 10
Stir OK

Temperature Data (2350) (2410)

	Time	kWh	Temp	Carbon	O2ppm
1			3040	12	
2					
3					
4					
Ldl					

EAF Additions

	Plan	
Lime	5000	
MgO	1200	
Chg C		
Foamy	2697	
Oxgyn	1010	
N Gas	208	

Ladle Additions

	Tap	Trim
SiMn	1665	
FeSi	336	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CaAl	200	

Grinding Data
Material Location
Amount

Scrap Compliance

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
180,000	81	

Ladle Sent To

To LMF	St to C.
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	.13	.70/.85	.40	.60	.18/.26	.60					
Rtn											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	8	6	AR-3(4) A4-1(2)
Power On	11	11		
First BackCharge	2	2		
Power On	8	10	2	A4-6
Second BackCharge	2	2		
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:
Test #2 11:50 :08 min into Header

Maintenance Barriers:

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27249 Date. 2/20 Turn C

Oper Casting Foreman Dick

Header

Layer	Description	Alm Charge Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	Weights %
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000	3		6%
4	Turnings	1		12000	10		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	25		17%
	Mixed 1&2	11		8000	25		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	103		

First BackChg

Layer	Description	Alm Charge Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	Weights %
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	14		22%
	#1 Heavy	1		16000	18		25%
	Mixed 1&2	7		8000	17		12%
							0%
							0%
5	Shredded	10		15000	6		23%
		Total		65000	55		

Second BackChg

Layer	Description	Alm Charge Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	Weights %
1	Mixed 1&2	7		14000	15		42%
	Turnings	11		8000	7		9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	22		

180

Bayou Steel Corporation — Heat Record

Crew: C
Date: 7-23-09
Grade: 436
Melter: Duck
1st Helper: WE
Ladleman: SB
Heat #: 27250

Pulse Counters
1st Charge 7438656
Last Charge 7491332

Tap To Tap Time 2:38 - 158 min.

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Previous Heat Tap: 12:39

	PON	POFF	kWh/ton
Headr.	11"	1:24	(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start: 312 Tap Finish:

		LMF	
Power On	36.0	kWh	
kWh	27480	kWh/Ton	
kWh/Ton	310	Plan	(25)
Plan	(360)		

Ladle Data
Ladle No. 8
Heats 46
Temp

Stir Info
Hts Pig 2
Stir OK

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1			2911	9	
2			3150		
3					
4					
Ldl					

EAF Additions

	Tap
Lime	5000
MgO	1800
Chg C	
Foamy	2619
Oxgyn	1711
N Gas	128

Ladle Additions

	Tap	Trim
SiMn	960	
FeSi	1176	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Spring Data
Material Location
Amount

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied ays a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
27000	61	

Ladle Sent To

To LMF	St to C.
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	8/13	70/85	40	50	18/26	50					
Rtn											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	4		
Turn Around	2	33	31	Add + Slip Bd Cd Clear slag line
Power On	11	13	2	A9-6
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			A1-2 3:09
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action items:

Maintenance Barriers: Test # 3 2:00

Bayou Steel Corporation
Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27250 Date 7-22 Turn C

Oper [illegible] Foreman [illegible]

Header

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000			16%
	Barge / Plate	1		17000	13		22%
	#1 Heavy	7		13000	25		17%
	Mixed 1&2	11		8000	17		10%
							0%
6	Shredded	10		15000	15		19%
		Total		77000	60		

First BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Bushling	16		2000	2		3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	19		22%
	#1 Heavy	1		16000	26		25%
	Mixed 1&2	7		8000	8		12%
							0%
							0%
5	Shredded	10		15000	15		23%
		Total		65000	65		

Second BackChg

Layer	Description	Aim Code	Sub Code	Weights Aim	Actual	Deviation	%
1	Mixed 1&2	7		14000	20		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000	5		
		Total		33000	25		

180

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duek | Heat #: 27251
Date: 7-23-09 | 1st Helper: WS
Grade: A36 | Ladleman: SB

Pulse Counters
1st Charge 7141532
Last Charge 7142634

Tap To Tap Time :46

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Electrodes

	Ad	Slp	Brk
A			
B			
C			

Previous Heat Tap: 3:12

	PON	POFF	kWh/ton
Headr			(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start: 3:57 | Tap Finish: 3:59

Power On	2.7
kWh	10630
kWh/Ton	
Plan	(360)

LMF

kWh	
kWh/Ton	
Plan	(25)

Ladle Data

Ladle No	8
Heats	44
Temp	

Stir Info

# Hts Plg	
Stir OK	

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1			3044	10	
2			3150		
3					
4					
Ldl					

EAF Additions

	Plan	
Lime		5000
MgO		1800
Chg C		
Foamy		1026
Oxgyn		352
N Gas		166

Ladle Additions

	Tap	Trim
SiMn	376	
FeSi	178	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
CaAl	200	

Cupping Data

Material	Location
Amount	

Scrap Compliance

Charge	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Deviation					

Never Be Satisfied Always a Better Way

Process Weights

Charge lbs	Tap Tons	Cast Tons
27,000	85	

Ladle Sent To

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	8/13	70/85	40	50	18/26	50					
Rin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3			
Turn Around	2			
Power On	11			
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45			

Action Items:

Maintenance Barriers:

Bayou,Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27257 Date 7-23 Turn C

Oper [illegible] Foreman. DUCK

Header

Layer	Description	Alm Code	Sub Code	Weight Alm	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	5		9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	15		16%
	Barge / Plate	1		17000	22		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	16		19%
		Total		77000	96		

First BackChg

Layer	Description	Alm Code	Sub Code	Weight Alm	Actual	Deviation	%
1	Bushling	16		2000	3		3%
2	Turnings			10000	7		15%
3	Barge / Plate	1		14000	7		22%
	#1 Heavy	1		16000	15		25%
	Mixed 1&2	7		8000	15		12%
							0%
							0%
5	Shredded	10		15000	11		23%
		Total		65000	57		

Second BackChg

Layer	Description	Alm Code	Sub Code	Weight Alm	Actual	Deviation	%
1	Mixed 1&2	7		14000	14		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	6		12%
	#1 Heavy	1		4000	4		24%
	Shredded			4000	3		
		Total		33000	27		

150

Bayou Steel Corporation — Heat Record

Crew: C | Melter: Duck | Heat #: 27252
Date: 7-23-04 | 1st Helper: WS
Grade: A3652960 | Ladleman: JB

Tap To Tap Time: 135

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Pulse Counter	
1st Charge	7142634
Last Charge	7144603

Electrodes	Adj	Slp	Brk
A	✓		
B			
C			

Previous Heat Tap: 3:57

	PON	POFF	kWh/ton
Headr	4:03		(220)
1 Back			(220)
2 Back			
3 Back			

Tap Start: 4:32 | Tap Finish:

		LMF	
Power On	22.6		
kWh	1744	kWh	
kWh/Ton		kWh/Ton	
Plan	(360)	Plan	(25)

Ladle Data		Slr Info	
Ladle No	4	# Hts Pig	39
Heats	87	Slr OK	
Temp			

Temperature Data (Min 1500 / Max 3100)

	Time	kWh	Temp	Carbon	O2ppm
1	4:24		3050	7	
2					
3			3080	10	
4					
Ldl					

EAF Addition

	Plan	
Lime	5000	
MgO	1300	
Chg C	—	
Foamy	928	
Oxgyn	372	
N Gas	75	

Ladle Additions

	Tap	Trim
SiMn	1980	
FeSi	320	
FeMn		
Coke		
BPI		
Lime	800	
De-Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Grinding Data: Material | Location | Amount

Scrap Compliance (Scrap Mix)

	Header	1st Bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation					

Never Be Satisfied *Always a Better Way*

Process Weights		
Charge lbs	Tap Tons	Cast Tons
96000	94	

Ladle Sent To:	
To LMF	St to Cr
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	.13	.80/.90	.30	.60	.20/.27	.50					.30/.40
Pln											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3		
Turn Around	2	3		
Power On	11			A3-2
First BackCharge	2			
Power On	8			
Second BackCharge	2			
Power On	6			
Third Back Charge	0			
Power On	0			
Refine	11			
Total	45	35		

Action Items:

Maintenance Barriers: 4th Test 4:04 p.m. (D.E.Q.)

Bayou Steel Corporation

Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27252 Date 7-23-04 Turn C

Oper Cowboy Foreman Dick

Header

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000	6		9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	10		16%
	Barge / Plate	1		17000	20		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	96		

See Heat # 25?

"1st 2nd"

First BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000			22%
	#1 Heavy	1		16000			25%
	Mixed 1&2	7		8000			12%
							0%
							0%
5	Shredded	10		15000			23%
		Total		65060	57		

Second BackChg

Layer	Description	Alm Code	Sub Code	Weights Alm	Actual	Deviation	%
1	Mixed 1&2	7		14000			42%
	Turnings	11		8000			9%
	Mill Crop	15		3000			12%
	#1 Heavy	1		4000			24%
	Shredded			4000			
		Total		33000	97		

180

Bayou Steel Corporation — Heat Record.

Crew: C | Melter: Duck | Heat #: 27253
Date: 7-23-04 | 1st Helper: WS
Grade: A36 | Ladleman: JB

Tap To Tap Time: 58

Lost Time EQUALS Lost $MONEY$!!!!!!!!!!

Pulse Counter	
1st Charge	7144603
Last Charge	7149585

Electrodes	Adj	Slip	Brk
A			
B			
C			

Previous Heat Tap: 432

	PON	POFF	kWh/ton
Headr	442	454	(220) 75
1 Back	454	506	(220) 213
2 Back	508		
3 Back			

Tap Start: 520 Tap Finish:

		LMF	
Power On	2680	kWh	
kWh	324	kWh/Ton	
kWh/Ton		Plan	(25)
Plan	(360)		

Ladle Data		Stir Info	
Ladle No.	3	# Hts Plg	44
Heats	11	Stir OK	
Temp	1486		

Temperature Data

	Time	kWh	Temp	Carbon	O2ppm
1	523	717	3049	12	
2					
3			3010		
4					
Ldl					

2960

Never Be Satisfied *Always a Better Way*

EAF Additions

	Plan	
Lime	5000	
MgO	1000	
Chg C		
Foamy	2226	
Oxgyn	6958	
N Gas	1173	

Ladle Additions

	Tap	Trim
SiMn	1125	
FeSi	260	
FeMn		
Coke		
BPI		
Lime	800	
De Sul		
FeV		
FeAl		
CaC	50	
SiC	100	
Al.	200	

Cutting Data

Material		Location	
Amount			

Scrap Compliance

	Header	1st bck	2nd Bck	3rd Bck	TOTAL
Charge					
Deviation	96	57	27		180

Process Weights

Charge lbs	Tap Tons	Cast Tons
180	87	

Ladle Sent To:

To LMF	St to C
✓	

Chemistries

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V
Aim	513	8040	30	50	20027	<20					30-40
Rin											

Procedure Compliance Summary

	Gol	Act	Dev	Reason (Use Delay Code & Description)
Tap	3	3	–	
Turn Around	2	7	5	At 3 Debris
Power On	11	12	1	At 6
First BackCharge	2	2	–	
Power On	8	10	2	At 6 Runs
Second BackCharge	2	2	–	
Power On	6			
Third Back Charge	0		5	At 66 bring heat
Power On	0			
Refine	11			
Total	45	58	13	

456

Action Items:

Maintenance Barriers:

Bayou Steel Corporation
Scrap Blend Procedure

Blend #65 3-Buckets

Heat# 27253 Date 7-23 Turn C

Oper Cook Foreman Jack

Header

Layer	Description	Alm Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	%
1	Bushling	16		0			0%
2	Home Pit	12		7000			9%
3	#2 Bundles	5		5000			6%
4	Turnings	1		12000	15		16%
	Barge / Plate	1		17000	25		22%
	#1 Heavy	7		13000	20		17%
	Mixed 1&2	11		8000	20		10%
							0%
6	Shredded	10		15000	20		19%
		Total		77000	90		

First BackChg

Layer	Description	Alm Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	%
1	Bushling	16		2000			3%
2	Turnings			10000			15%
3	Barge / Plate	1		14000	16		22%
	#1 Heavy	1		16000	6		25%
	Mixed 1&2	7		8000	21		12%
							0%
							0%
5	Shredded	10		15000	17		23%
		Total		65000	60		

Second BackChg

Layer	Description	Alm Code	Sub Code	Weights Aim	Weights Actual	Weights Deviation	%
1	Mixed 1&2	7		14000	17		42%
	Turnings	11		8000			9%
	Mill Crop	15		3000	10		12%
	#1 Heavy	1		4000	6		24%
	Shredded			4000	8		
		Total		33000	41		

191,000

EVR0001 B A Y O U S T E E L C O R P O R A T I O N 1
07/28/04 FURNACE #1 & #2 TOTAL FLOW (SCFM) - EVERY 15 MIN 08:11

END DATE	END TIME	AVG	MAX	MIN
07/23/04	00:00:57	113,799.76	116,068.38	111,843.71
07/23/04	00:02:27	113,540.63	117,435.90	109,841.27
07/23/04	00:03:58	115,219.65	117,216.12	113,137.98
07/23/04	00:05:28	113,433.19	117,118.44	111,037.85
07/23/04	00:06:59	111,420.43	114,847.38	108,498.17
07/23/04	00:08:29	111,034.32	114,822.95	109,499.39
07/23/04	00:09:59	109,752.81	112,771.67	107,350.43
07/23/04	00:11:29	107,390.31	110,964.59	105,372.41
07/23/04	00:12:58	108,607.79	110,622.71	105,372.41
07/23/04	00:14:28	106,911.68	111,697.20	101,929.18
07/23/04	00:16:00	105,303.22	119,389.50	101,245.42
07/23/04	00:17:29	108,828.38	118,901.10	91,746.03
07/23/04	00:18:99	105,455.98	109,548.23	96,166.05
07/23/04	00:20:30	110,128.34	112,527.47	107,936.51
07/23/04	00:22:00	116,280.83	125,909.65	111,599.51
07/23/04	00:23:30	121,566.68	125,909.65	113,137.98
07/23/04	00:25:00	127,663.55	138,901.09	108,595.85
07/23/04	00:26:29	122,307.96	135,213.67	118,412.70
07/23/04	00:28:01	124,499.25	130,280.83	118,412.70
07/23/04	00:29:30	121,444.04	126,666.66	116,410.26
07/23/04	00:31:00	116,694.62	120,903.54	113,992.67
07/23/04	00:32:31	114,827.30	118,241.76	112,600.73
07/23/04	00:34:01	116,739.38	119,023.20	114,334.55
07/23/04	00:35:31	113,813.32	116,752.14	111,257.63
07/23/04	00:37:01	112,672.63	116,434.68	109,865.69
07/23/04	00:38:30	111,369.15	117,509.16	109,157.51
07/23/04	00:40:02	109,806.81	111,306.47	107,643.47
07/23/04	00:41:31	103,418.26	112,478.63	90,744.81
07/23/04	00:43:01	110,545.92	124,957.27	79,096.46
07/23/04	00:44:32	114,684.30	123,980.46	109,890.11
07/23/04	00:46:02	110,379.87	115,238.09	107,448.11
07/23/04	00:47:32	108,935.83	112,258.85	106,031.74
07/23/04	00:49:02	108,861.21	110,476.19	105,811.97
07/23/04	00:50:33	110,736.95	113,479.85	105,543.34
07/23/04	00:52:03	109,708.31	113,382.17	107,081.80
07/23/04	00:53:32	99,998.10	112,429.79	89,035.41
07/23/04	00:55:02	111,537.65	126,080.59	82,319.90
07/23/04	00:56:33	111,760.95	115,286.94	109,499.39
07/23/04	00:58:03	115,833.67	120,952.38	110,598.29
07/23/04	00:59:33	111,517.02	113,504.27	109,304.03
07/23/04	01:01:02	108,835.71	113,626.38	105,641.02
07/23/04	01:02:33	108,997.15	112,136.75	104,664.23
07/23/04	01:04:03	112,094.97	114,114.77	109,059.83
07/23/04	01:05:34	109,267.95	111,477.41	107,032.97
07/23/04	01:07:04	109,026.45	114,578.76	107,032.97
07/23/04	01:08:34	106,242.03	115,286.94	100,634.92
07/23/04	01:10:04	109,588.39	116,337.00	101,050.06
07/23/04	01:11:33	110,203.77	119,951.16	102,222.22
07/23/04	01:13:03	107,521.64	113,089.13	95,042.73
07/23/04	01:14:34	102,347.58	109,084.25	91,086.69
07/23/04	01:16:04	108,452.59	112,576.31	104,786.33
07/23/04	01:17:35	114,318.00	123,858.37	103,785.10
07/23/04	01:19:05	122,761.63	125,396.83	115,457.88

END DATE	END TIME	AVG	MAX	MIN
07/23/04	01:20:35	125,521.09	137,753.36	105,006.10
07/23/04	01:22:05	126,494.91	133,455.44	122,197.80
07/23/04	01:23:34	119,804.09	123,467.64	115,628.81
07/23/04	01:25:06	115,115.45	117,704.52	112,039.07
07/23/04	01:26:35	118,042.05	122,783.88	114,188.03
07/23/04	01:28:05	116,005.97	118,998.78	113,308.91
07/23/04	01:29:36	116,844.39	119,780.22	114,310.13
07/23/04	01:31:06	115,585.40	119,560.44	111,965.81
07/23/04	01:32:36	117,140.14	120,048.84	114,285.71
07/23/04	01:34:06	113,241.89	120,317.46	103,418.80
07/23/04	01:35:37	116,621.90	132,674.00	100,244.20
07/23/04	01:37:07	128,470.22	134,139.19	122,442.00
07/23/04	01:38:36	119,835.57	127,032.97	114,871.80
07/23/04	01:40:06	116,649.03	120,952.38	114,896.22
07/23/04	01:41:37	116,735.59	120,952.38	111,819.29
07/23/04	01:43:07	116,562.74	122,026.86	114,236.88
07/23/04	01:44:37	115,189.52	117,338.22	113,431.02
07/23/04	01:46:07	107,330.08	119,169.72	93,919.41
07/23/04	01:47:38	112,600.19	127,374.84	98,144.08
07/23/04	01:49:08	118,873.70	124,737.48	114,114.77
07/23/04	01:50:37	115,863.52	119,316.24	112,136.75
07/23/04	01:52:07	175,333.60	119,218.56	111,941.39
07/23/04	01:53:38	115,762.85	118,559.22	113,137.98
07/23/04	01:55:08	115,648.08	118,021.98	110,622.71
07/23/04	01:56:38	116,897.30	118,852.26	113,211.23
07/23/04	01:58:08	114,200.52	118,779.00	110,549.45
07/23/04	01:59:39	113,815.22	117,020.76	108,937.73
07/23/04	02:01:09	113,255.73	116,288.16	109,719.17
07/23/04	02:02:38	112,691.36	116,874.23	109,865.69
07/23/04	02:04:08	117,175.15	120,830.28	113,015.88
07/23/04	02:05:39	121,146.66	125,689.87	116,385.84
07/23/04	02:07:09	119,957.40	124,371.19	114,554.34
07/23/04	02:08:38	114,070.27	120,366.30	106,666.66
07/23/04	02:10:08	119,374.84	126,837.61	115,360.20
07/23/04	02:11:40	115,308.91	121,416.36	107,277.16
07/23/04	02:13:10	117,237.28	120,781.44	111,452.99
07/23/04	02:14:39	105,604.94	118,632.48	95,848.59
07/23/04	02:16:09	113,497.22	117,509.16	110,989.01
07/23/04	02:17:40	119,636.41	130,085.47	108,034.19
07/23/04	02:19:10	125,164.29	129,279.61	118,827.84
07/23/04	02:20:39	129,477.41	141,953.61	103,003.66
07/23/04	02:22:11	127,739.25	134,798.53	121,660.56
07/23/04	02:23:41	120,086.55	125,299.15	116,776.55
07/23/04	02:25:11	118,068.10	126,178.27	116,190.48
07/23/04	02:26:40	118,913.85	126,178.27	115,018.31
07/23/04	02:28:10	117,956.86	119,926.74	114,676.44
07/23/04	02:29:41	115,074.21	120,537.24	112,722.84
07/23/04	02:31:11	112,335.64	118,852.26	109,987.79
07/23/04	02:32:40	103,516.48	116,263.73	92,039.07
07/23/04	02:34:12	107,429.66	120,610.50	94,261.30
07/23/04	02:35:42	125,435.90	137,680.09	107,741.15
07/23/04	02:37:12	117,657.58	124,224.66	114,969.48
07/23/04	02:38:41	113,782.12	117,777.78	111,623.93

END DATE	END TIME	AVG	MAX	MIN
07/23/04	02:40:11	114,029.30	116,996.34	111,062.27
07/23/04	02:41:42	112,124.00	114,505.49	108,766.79
07/23/04	02:43:12	102,842.77	114,505.49	92,551.89
07/23/04	02:44:41	107,334.96	110,891.33	103,614.16
07/23/04	02:46:13	114,573.09	128,083.03	105,152.63
07/23/04	02:47:42	121,482.84	123,394.38	115,213.67
07/23/04	02:49:13	120,795.28	126,080.59	117,411.48
07/23/04	02:50:43	122,256.14	128,742.37	118,192.92
07/23/04	02:52:12	123,604.66	127,008.55	120,146.52
07/23/04	02:53:43	118,111.79	121,221.00	114,749.70
07/23/04	02:55:13	115,936.23	117,948.72	114,090.35
07/23/04	02:56:44	114,987.66	117,240.54	110,964.59
07/23/04	02:58:14	115,524.63	121,758.24	112,087.91
07/23/04	02:59:43	116,120.47	121,758.24	112,210.02
07/23/04	03:01:13	113,608.20	116,361.41	110,549.45
07/23/04	03:02:44	112,603.45	117,362.64	110,354.09
07/23/04	03:04:14	110,460.45	117,362.64	104,102.56
07/23/04	03:05:44	110,706.01	120,683.76	97,313.80
07/23/04	03:07:14	110,806.95	115,824.18	106,910.87
07/23/04	03:08:45	117,554.20	123,125.77	112,478.63
07/23/04	03:10:15	122,218.15	131,819.30	111,721.61
07/23/04	03:11:44	124,764.62	129,792.43	119,755.80
07/23/04	03:13:14	129,368.61	141,465.20	109,181.93
07/23/04	03:14:45	127,805.73	133,357.75	124,981.69
07/23/04	03:16:15	124,209.20	129,157.51	120,439.56
07/23/04	03:17:45	119,557.18	124,420.02	116,459.09
07/23/04	03:19:15	118,425.72	122,612.95	115,579.98
07/23/04	03:20:46	121,082.08	123,492.06	117,631.26
07/23/04	03:22:16	121,606.84	126,617.83	118,266.18
07/23/04	03:23:45	121,071.50	124,078.14	117,753.36
07/23/04	03:25:15	118,800.16	120,879.12	115,677.66
07/23/04	03:26:46	110,345.41	119,072.04	98,852.26
07/23/04	03:28:16	115,062.54	119,682.54	109,865.69
07/23/04	03:29:47	123,608.47	137,118.44	104,664.23
07/23/04	03:31:17	120,651.74	125,641.02	118,779.00
07/23/04	03:32:47	128,875.32	137,655.67	119,511.60
07/23/04	03:34:17	123,997.55	129,768.01	118,925.52
07/23/04	03:35:46	119,812.23	121,587.30	117,826.62
07/23/04	03:37:18	121,281.51	123,956.05	117,216.12
07/23/04	03:38:47	124,694.62	126,446.88	121,514.04
07/23/04	03:40:17	118,707.91	123,467.64	112,380.95
07/23/04	03:41:48	109,639.67	118,754.58	99,462.76
07/23/04	03:43:18	118,132.41	129,059.83	99,316.24
07/23/04	03:44:48	125,266.86	131,062.27	120,170.94
07/23/04	03:46:18	118,773.03	121,904.77	116,483.52.
07/23/04	03:47:49	117,366.71	120,952.38	109,328.45
07/23/04	03:49:19	119,162.94	123,223.45	114,358.98
07/23/04	03:50:48	115,132.00	117,558.00	110,134.31
07/23/04	03:52:18	115,501.29	118,974.36	110,647.13
07/23/04	03:53:49	117,460.05	123,052.50	114,920.63
07/23/04	03:55:19	114,487.86	118,412.70	112,673.99
07/23/04	03:56:49	113,637.50	115,433.45	112,283.27 .
07/23/04	03:58:19	113,780.22	117,069.59	112,234.43

END DATE	END TIME	AVG	MAX	MIN
07/23/04	03:59:50	113,397.91	115,311.35	108,693.53
07/23/04	04:01:19	103,785.65	108,693.53	96,581.20
07/23/04	04:02:50	109,491.79	115,238.09	106,959.70
07/23/04	04:04:20	117,574.28	131,282.05	109,890.11
07/23/04	04:05:50	122,492.20	125,592.19	115,604.40
07/23/04	04:07:20	126,603.99	133,064.72	121,343.10
07/23/04	04:08:49	129,477.41	133,431.02	124,053.73
07/23/04	04:10:19	128,084.38	131,746.03	123,223.45
07/23/04	04:11:50	133,962.56	136,581.20	129,670.33
07/23/04	04:13:20	133,937.33	137,191.70	131,135.53
07/23/04	04:14:51	134,768.69	139,194.14	132,503.05
07/23/04	04:16:21	135,828.78	138,901.09	131,550.67
07/23/04	04:17:51	135,926.47	138,949.94	132,576.31
07/23/04	04:19:21	137,007.19	138,779.00	135,360.20
07/23/04	04:20:50	135,910.73	140,390.72	132,796.09
07/23/04	04:22:20	136,193.45	141,050.06	130,451.77
07/23/04	04:23:51	136,063.77	139,633.70	132,991.45
07/23/04	04:25:21	136,757.56	143,174.61	133,601.95
07/23/04	04:26:52	138,527.20	150,280.83	119,633.70
07/23/04	04:28:22	139,115.19	148,669.11	133,089.14
07/23/04	04:29:52	130,961.34	134,822.95	127,301.59
07/23/04	04:31:22	126,419.21	130,256.41	121,880.34
07/23/04	04:32:51	124,495.45	126,788.77	122,271.06
07/23/04	04:34:23	127,247.32	130,378.51	125,250.30
07/23/04	04:35:52	122,821.60	125,860.80	120,341.88
07/23/04	04:37:22	121,609.01	126,105.01	119,072.04
07/23/04	04:38:53	113,595.71	121,245.42	99,194.14
07/23/04	04:40:23	115,921.59	121,709.40	110,769.23
07/23/04	04:41:53	122,726.36	137,777.78	117,118.44
07/23/04	04:43:23	132,191.30	144,786.33	107,887.66
07/23/04	04:44:52	125,062.54	129,841.27	121,978.02
07/23/04	04:46:24	121,745.49	124,493.28	120,317.46
07/23/04	04:47:53	123,188.98	126,275.95	117,924.30
07/23/04	04:49:23	122,789.85	126,349.20	118,656.90
07/23/04	04:50:54	116,648.76	120,268.62	112,551.89
07/23/04	04:52:24	111,313.80	120,317.46	96,043.95
07/23/04	04:53:54	107,668.98	115,042.73	92,893.77
07/23/04	04:55:24	122,594.22	130,989.01	92,893.77
07/23/04	04:56:53	118,329.40	121,123.32	114,529.91
07/23/04	04:58:25	116,601.82	120,366.30	112,307.70
07/23/04	04:59:54	116,614.84	119,145.30	113,455.43
07/23/04	05:01:24	115,254.10	119,194.14	111,452.99
07/23/04	05:02:55	112,373.63	116,849.82	109,914.53
07/23/04	05:04:25	112,185.32	115,482.30	109,694.75
07/23/04	05:05:54	112,016.55	115,482.30	109,426.13
07/23/04	05:07:25	113,930.54	116,849.82	112,161.17
07/23/04	05:08:56	109,194.68	115,384.62	105,421.24
07/23/04	05:10:26	111,262.52	118,510.38	106,959.70
07/23/04	05:11:55	104,779.81	111,819.29	98,485.96
07/23/04	05:13:25	102,627.05	112,112.34	85,225.88
07/23/04	05:14:56	113,902.86	118,437.12	103,882.78
07/23/04	05:16:26	112,200.52	117,191.70	102,808.30
07/23/04	05:17:55	112,662.05	116,459.09	109,157.51

END DATE	END TIME	AVG	MAX	MIN
07/23/04	05:19:25	116,336.35	121,172.16	111,501.83
07/23/04	05:20:57	124,637.09	131,404.16	114,798.53
07/23/04	05:22:27	125,795.96	128,595.85	121,587.30
07/23/04	05:23:56	127,941.39	141,001.22	123,492.06
07/23/04	05:25:26	131,479.31	143,003.66	105,689.87
07/23/04	05:26:57	126,696.24	133,260.08	122,490.84
07/23/04	05:28:27	119,833.67	123,907.20	117,020.76
07/23/04	05:29:56	120,957.80	123,931.63	118,388.28
07/23/04	05:31:26	122,754.58	128,034.19	117,631.26
07/23/04	05:32:58	121,644.28	126,031.74	119,413.92
07/23/04	05:34:28	116,209.20	120,000.00	113,040.30
07/23/04	05:35:57	108,928.77	118,437.12	96,825.40
07/23/04	05:37:27	115,045.72	120,293.04	109,304.03
07/23/04	05:38:58	119,555.55	124,932.84	114,065.94
07/23/04	05:40:28	128,306.88	137,680.09	109,523.81
07/23/04	05:41:57	128,254.78	133,382.17	124,542.13
07/23/04	05:43:27	122,107.99	126,715.51	118,608.06
07/23/04	05:44:58	121,359.38	125,763.13	117,899.88
07/23/04	05:46:29	121,842.09	125,152.63	119,316.24
07/23/04	05:47:58	118,023.06	124,688.65	113,772.89
07/23/04	05:49:28	116,163.07	119,877.90	98,290.60
07/23/04	05:50:59	107,594.36	114,139.20	98,266.18
07/23/04	05:52:29	112,798.80	117,704.52	103,931.63
07/23/04	05:53:58	118,792.30	122,393.16	113,748.48
07/23/04	05:55:30	122,115.86	135,824.17	106,813.19
07/23/04	05:57:00	131,442.14	141,050.06	124,029.30
07/23/04	05:58:30	122,860.40	127,203.91	117,289.38
07/23/04	05:99:99	122,309.59	126,349.20	116,166.05
07/23/04	06:01:30	122,949.66	126,788.77	120,610.50
07/23/04	06:03:00	120,799.62	124,981.69	117,484.73
07/23/04	06:04:30	116,792.56	119,072.04	114,505.49
07/23/04	06:06:00	115,095.10	116,703.30	112,527.47
07/23/04	06:07:31	113,915.07	115,677.66	111,330.89
07/23/04	06:09:01	112,256.14	115,091.58	107,155.07
07/23/04	06:10:30	110,850.36	114,505.49	107,155.07
07/23/04	06:12:00	111,699.63	113,431.02	108,937.73
07/23/04	06:13:31	112,302.80	115,311.35	110,061.05
07/23/04	06:15:01	109,930.81	112,063.49	106,642.25
07/23/04	06:16:31	102,446.62	107,301.59	94,017.09
07/23/04	06:18:01	104,700.59	107,838.83	99,438.34
07/23/04	06:19:32	110,501.97	116,776.55	103,369.96
07/23/04	06:21:02	116,377.42	119,926.74	112,576.31
07/23/04	06:22:31	119,053.32	124,151.41	114,920.63
07/23/04	06:24:01	121,437.52	124,957.27	117,264.96
07/23/04	06:25:32	126,727.45	146,788.77	103,809.52
07/23/04	06:27:02	129,346.36	134,285.72	123,247.86
07/23/04	06:28:32	128,137.30	132,503.05	123,980.46
07/23/04	06:30:03	122,983.86	126,568.98	118,192.92
07/23/04	06:31:33	119,580.79	121,636.14	117,655.68
07/23/04	06:33:03	118,641.70	122,173.38	116,361.41
07/23/04	06:34:32	119,060.38	122,173.38	116,727.72
07/23/04	06:36:02	117,685.52	122,466.42	114,358.98
07/23/04	06:37:33	116,027.95	119,780.22	113,235.66

END DATE	END TIME	AVG	MAX	MIN
07/23/04	06:39:03	113,168.36	116,141.63	109,621.49
07/23/04	06:40:33	103,337.95	114,432.23	95,091.58
07/23/04	06:42:04	112,558.41	126,886.45	96,239.31
07/23/04	06:43:34	116,668.30	121,611.72	111,282.05
07/23/04	06:45:04	113,954.15	116,996.34	108,913.31
07/23/04	06:46:33	113,741.42	115,457.88	111,697.20
07/23/04	06:48:03	115,058.20	118,119.66	111,575.09
07/23/04	06:49:34	116,249.09	118,070.82	114,627.59
07/23/04	06:51:04	113,222.09	118,534.80	109,474.97
07/23/04	06:52:34	102,605.34	110,183.15	91,159.95
07/23/04	06:54:05	112,049.38	128,327.23	95,555.55
07/23/04	06:55:35	117,648.35	122,930.41	114,481.08
07/23/04	06:57:05	111,670.05	114,481.08	108,424.91
07/23/04	06:58:34	116,317.73	119,658.12	112,625.16
07/23/04	07:00:05	115,629.09	118,803.42	112,600.73
07/23/04	07:01:35	112,051.28	114,969.48	109,450.55
07/23/04	07:03:05	110,574.41	113,846.16	106,910.87
07/23/04	07:04:34	108,220.05	111,159.95	105,909.65
07/23/04	07:06:06	110,206.48	112,796.09	106,446.88
07/23/04	07:07:35	107,519.20	110,769.23	105,128.20
07/23/04	07:09:05	107,140.69	111,819.29	103,809.52
07/23/04	07:10:36	97,324.11	105,909.65	89,328.45
07/23/04	07:12:06	98,616.74	107,985.35	89,328.45
07/23/04	07:13:36	105,886.85	112,625.16	100,512.82
07/23/04	07:15:06	113,240.80	120,781.44	107,301.59
07/23/04	07:16:37	116,539.14	127,301.59	112,063.49
07/23/04	07:18:07	124,595.58	133,528.69	86,739.93
07/23/04	07:19:36	121,367.25	128,107.45	116,581.20
07/23/04	07:21:06	115,913.98	118,119.66	113,162.39
07/23/04	07:22:37	114,758.65	118,827.84	112,503.05
07/23/04	07:24:07	113,874.91	119,365.08	109,206.35
07/23/04	07:25:37	113,205.80	117,631.26	109,133.09
07/23/04	07:27:07	113,395.20	118,144.08	109,499.39
07/23/04	07:28:38	114,295.21	117,387.05	111,184.38
07/23/04	07:30:08	114,439.56	119,877.90	110,964.59
07/23/04	07:31:37	108,165.78	115,482.30	96,630.04
07/23/04	07:33:07	112,335.37	116,971.91	108,009.77
07/23/04	07:34:38	113,587.30	118,656.90	109,670.33
07/23/04	07:36:08	119,418.80	122,051.28	116,605.62
07/23/04	07:37:38	125,200.38	143,174.61	108,058.61
07/23/04	07:39:08	129,942.75	143,174.61	122,979.24
07/23/04	07:40:39	120,599.65	125,470.09	117,704.52
07/23/04	07:42:09	118,339.71	122,832.73	114,822.95
07/23/04	07:43:38	119,320.58	123,833.95	115,995.12
07/23/04	07:45:08	118,421.38	122,832.73	115,360.20
07/23/04	07:46:39	114,745.90	116,947.50	112,380.95
07/23/04	07:48:09	108,437.12	115,921.86	92,087.91
07/23/04	07:49:39	104,813.19	116,849.82	89,768.01
07/23/04	07:51:10	119,514.86	123,565.32	111,575.09
07/23/04	07:52:40	113,758.24	118,046.40	112,063.49
07/23/04	07:54:10	112,538.87	117,875.46	108,009.77
07/23/04	07:55:39	115,720.26	118,876.68	111,379.73
07/23/04	07:57:09	112,066.20	118,632.48	108,498.17

END DATE	END TIME	AVG	MAX	MIN
07/23/04	07:58:40	111,698.82	115,409.04	108,766.79
07/23/04	08:00:10	108,213.00	112,503.05	104,664.23
07/23/04	08:01:39	109,128.20	112,967.03	105,030.52
07/23/04	08:03:11	108,121.83	110,085.47	106,202.69
07/23/04	08:04:41	103,032.97	109,719.17	98,876.68
07/23/04	08:06:11	101,964.45	105,836.38	99,511.60
07/23/04	08:07:40	106,322.62	111,868.13	101,831.50
07/23/04	08:09:10	97,921.86	104,908.42	93,504.27
07/23/04	08:10:41	100,797.45	107,765.57	96,947.50
07/23/04	08:12:11	107,000.13	109,133.09	104,420.02
07/23/04	08:13:40	110,661.51	122,612.95	91,990.23
07/23/04	08:15:12	122,735.59	133,724.05	81,416.36
07/23/04	08:16:41	117,785.38	124,200.24	114,652.02
07/23/04	08:18:12	114,354.63	117,826.62	107,203.91
07/23/04	08:19:41	108,720.12	114,700.85	102,148.96
07/23/04	08:21:11	110,897.57	116,166.05	104,981.69
07/23/04	08:22:42	112,626.78	116,678.88	109,328.45
07/23/04	08:24:12	108,273.51	111,282.05	104,713.06
07/23/04	08:25:41	108,065.12	110,109.89	105,909.65
07/23/04	08:27:13	100,245.55	108,205.13	89,255.19
07/23/04	08:28:42	103,292.63	118,779.00	83,858.37
07/23/04	08:30:13	108,862.02	116,825.40	99,609.28
07/23/04	08:31:44	109,329.27	113,333.34	100,683.76
07/23/04	08:33:15	106,704.66	112,796.09	99,658.12
07/23/04	08:34:45	107,605.48	111,965.81	99,169.72
07/23/04	08:36:15	109,801.93	112,405.38	107,350.43
07/23/04	08:37:44	96,913.58	110,427.35	85,885.23
07/23/04	08:39:14	108,495.45	118,363.86	82,222.22
07/23/04	08:40:45	115,126.85	117,167.27	112,234.43
07/23/04	08:42:15	110,062.41	114,456.66	108,498.17
07/23/04	08:43:46	110,648.48	114,529.91	107,374.84
07/23/04	08:45:16	107,231.04	109,523.81	104,786.33
07/23/04	08:46:46	106,837.61	109,670.33	103,760.69
07/23/04	08:48:16	106,005.97	109,890.11	103,101.34
07/23/04	08:49:45	101,265.77	105,665.45	96,239.31
07/23/04	08:51:17	105,438.88	111,990.23	96,019.54
07/23/04	08:52:46	103,950.62	106,813.19	101,025.64
07/23/04	08:54:16	102,862.57	107,326.01	98,461.54
07/23/04	08:55:47	104,375.26	110,354.09	95,262.52
07/23/04	08:57:17	97,711.30	107,106.23	90,671.55
07/23/04	08:58:47	102,041.79	116,190.48	80,903.54
07/23/04	09:00:16	108,582.28	115,335.77	101,123.32
07/23/04	09:01:47	96,357.34	105,689.87	81,611.72
07/23/04	09:03:18	101,543.89	109,963.37	86,691.09
07/23/04	09:04:48	109,563.16	115,213.67	105,030.52
07/23/04	09:06:17	111,918.33	124,273.51	97,313.80
07/23/04	09:07:48	120,888.62	130,622.71	93,284.49
07/23/04	09:09:18	119,507.53	124,468.87	116,874.23
07/23/04	09:10:47	114,287.07	119,487.18	110,915.75
07/23/04	09:12:17	113,743.05	117,020.76	111,037.85
07/23/04	09:13:48	110,061.05	112,429.79	106,666.66
07/23/04	09:15:18	109,957.95	113,162.39	102,783.88
07/23/04	09:16:49	111,183.02	117,704.52	106,544.57

END DATE	END TIME	AVG	MAX	MIN
07/23/04	09:18:18	105,410.39	log,694.75	88,669.11
07/23/04	09:19:49	99,342.02	102,954.82	91,208.79
07/23/04	09:21:19	110,014.92	115,897.44	84,884.01
07/23/04	09:22:48	111,999.73	114,603.17	110,500.61
07/23/04	09:24:18	109,461.41	112,234.43	104,957.27
07/23/04	09:25:49	105,882.52	111,379.73	101,294.26
07/23/04	09:27:19	112,606.16	120,170.94	107,399.27
07/23/04	09:28:50	107,841.54	116,630.04	93,357.75
07/23/04	09:30:20	107,286.66	121,245.42	94,163.62
07/23/04	09:31:50	119,618.77	125,738.70	113,089.13
07/23/04	09:33:20	115,504.00	119,169.72	110,647.13
07/23/04	09:34:49	110,291.69	113,333.34	107,155.07
07/23/04	09:36:19	109,160.22	112,112.34	104,688.65
07/23/04	09:37:50	107,054.67	112,722.84	99,780.22
07/23/04	09:39:20	104,396.96	109,865.69	97,728.94
07/23/04	09:40:51	107,855.11	110,061.05	105,543.34
07/23/04	09:42:21	104,661.51	110,451.77	94,554.34
07/23/04	09:43:51	101,014.79	108,278.39	96,556.77
07/23/04	09:45:21	105,691.22	108,840.05	101,489.63
07/23/04	09:46:50	104,376.61	107,936.51	99,658.12
07/23/04	09:48:20	104,592.32	109,670.33	101,001.22
07/23/04	09:49:51	102,737.76	107,252.75	94,822.95
07/23/04	09:51:21	97,983.99	102,979.24	94,725.27
07/23/04	09:52:52	92,553.25	106,031.74	77,558.00
07/23/04	09:54:22	94,566.55	105,836.38	67,448.11
07/23/04	09:55:52	102,448.79	112,893.77	90,573.87
07/23/04	09:57:22	108,038.26	115,604.40	102,564.10
07/23/04	09:58:51	109,325.73	114,945.05	104,664.23
07/23/04	10:00:21	117,286.66	121,880.34	109,523.81
07/23/04	10:01:52	115,757.70	128,766.79	93,333.34
07/23/04	10:03:22	127,363.99	134,529.92	111,452.99
07/23/04	10:04:53	118,521.23	122,954.82	113,455.43
07/23/04	10:06:23	117,171.34	121,001.22	113,821.73
07/23/04	10:07:52	112,307.70	115,506.72	109,084.25
07/23/04	10:09:23	110,123.45	115,653.23	101,294.26
07/23/04	10:10:52	112,383.66	118,876.68	105,763.13
07/23/04	10:12:22	109,918.60	111,990.23	105,177.05
07/23/04	10:13:53	103,880.07	111,721.61	94,407.81
07/23/04	10:15:23	100,009.50	102,002.45	94,725.27
07/23/04	10:16:54	96,058.88	118,412.70	46,837.61
07/23/04	10:18:24	114,074.07	119,389.50	109,426.13
07/23/04	10:19:53	109,023.20	113,894.99	102,661.78
07/23/04	10:21:24	113,808.16	116,727.72	108,888.89
07/23/04	10:22:54	112,010.58	116,923.08	106,739.93
07/23/04	10:24:25	109,959.30	117,460.32	105,470.09
07/23/04	10:25:54	100,127.52	109,670.33	93,601.95
07/23/04	10:27:24	108,134.58	116,971.91	90,109.89
07/23/04	10:28:55	113,021.03	114,896.22	109,816.85
07/23/04	10:30:25	112,719.58	115,702.08	107,838.83
07/23/04	10:31:56	109,467.64	113,113.55	106,666.66
07/23/04	10:33:26	110,204.31	112,820.52	107,765.57
07/23/04	10:34:56	110,859.86	114,749.70	108,400.49
07/23/04	10:36:26	108,195.36	111,452.99	105,909.65

END DATE	END TIME	AVG	MAX	MIN
07/23/04	10:37:55	106,339.44	109,108.67	102,930.41
07/23/04	10:39:25	105,823.63	108,693.53	102,124.54
07/23/04	10:40:56	105,244.34	110,061.05	99,853.48
07/23/04	10:42:26	102,211.37	107,960.93	94,920.63
07/23/04	10:43:57	101,326.82	104,639.80	95,995.12
07/23/04	10:45:27	102,278.66	105,860.80	97,948.72
07/23/04	10:46:57	103,480.13	109,279.61	97,191.70
07/23/04	10:48:27	103,148.55	110,573.87	94,188.03
07/23/04	10:49:56	98,348.94	102,759.46	90,866.91
07/23/04	10:51:28	97,853.75	103,614.16	88,693.53
07/23/04	10:52:57	108,947.77	116,923.08	98,705.74
07/23/04	10:54:27	112,530.73	124,200.24	105,543.34
07/23/04	10:55:58	118,811.02	130,818.07	93,431.02
07/23/04	10:57:28	113,422.60	123,540.91	97,362.64
07/23/04	10:58:58	112,289.52	117,387.05	99,145.30
07/23/04	11:00:27	111,766.11	115,115.99	107,277.16
07/23/04	11:01:58	109,178.40	113,040.30	105,128.20
07/23/04	11:03:28	108,397.23	112,283.27	103,003.66
07/23/04	11:04:59	103,261.70	107,277.16	99,096.46
07/23/04	11:06:29	103,969.88	111,746.03	96,141.63
07/23/04	11:07:59	95,055.76	106,398.05	76,971.91
07/23/04	11:09:29	107,305.38	117,411.48	100,366.30
07/23/04	11:11:01	113,014.79	125,616.61	91,306.47
07/23/04	11:12:30	110,752.95	115,286.94	106,251.52
07/23/04	11:14:00	105,558.00	113,382.17	98,217.34
07/23/04	11:15:31	107,406.32	110,402.93	102,442.00
07/23/04	11:17:01	109,349.07	113,846.16	105,738.70
07/23/04	11:18:30	96,989.55	109,304.03	81,538.46
07/23/04	11:20:01	97,898.52	114,822.95	81,440.78
07/23/04	11:21:31	106,878.04	112,869.35	98,339.44
07/23/04	11:23:02	108,009.77	112,918.20	104,004.88
07/23/04	11:24:31	105,566.41	111,575.09	98,998.78
07/23/04	11:26:01	106,792.56	115,238.09	101,978.02
07/23/04	11:27:32	106,790.66	110,427.35	104,371.19
07/23/04	11:29:02	106,808.84	108,937.73	103,272.28
07/23/04	11:30:31	103,779.68	108,522.59	100,146.52
07/23/04	11:32:01	101,603.04	103,882.78	98,827.84
07/23/04	11:33:32	103,349.07	106,935.29	99,047.62
07/23/04	11:35:03	99,651.06	102,319.90	95,409.04
07/23/04	11:36:32	101,769.09	107,985.35	96,068.38
07/23/04	11:38:02	101,152.90	103,980.46	99,023.20
07/23/04	11:39:33	98,361.15	102,637.36	91,452.99
07/23/04	11:41:03	95,039.48	101,587.30	87,326.01
07/23/04	11:42:32	97,791.34	105,787.55	88,449.33
07/23/04	11:44:02	106,493.55	113,992.67	100,586.08
07/23/04	11:45:33	107,849.41	114,212.45	103,052.50
07/23/04	11:47:04	111,359.92	118,388.28	105,250.30
07/23/04	11:48:33	117,484.47	124,053.73	109,450.55
07/23/04	11:50:03	118,073.53	126,398.05	111,599.51
07/23/04	11:51:34	115,049.52	132,551.89	104,688.65
07/23/04	11:53:04	131,892.83	142,319.91	120,854.70
07/23/04	11:54:33	120,384.48	123,663.00	113,284.49
07/23/04	11:56:03	112,704.38	114,017.09	111,111.11

END DATE	END TIME	AVG	MAX	MIN
07/23/04	11:57:34	110,716.87	113,821.73	106,129.43
07/23/04	11:59:05	111,226.97	113,724.05	106,129.43
07/23/04	12:00:35	113,238.09	116,459.09	108,229.55
07/23/04	12:02:05	110,153.58	114,261.30	105,250.30
07/23/04	12:03:35	103,684.16	111,941.39	86,227.11
07/23/04	12:05:05	97,268.48	100,366.30	92,454.21
07/23/04	12:06:34	106,751.59	119,365.08	50,940.17
07/23/04	12:08:04	114,004.61	118,461.54	107,228.33
07/23/04	12:09:35	110,729.07	113,772.89	106,471.30
07/23/04	12:11:05	105,660.84	108,595.85	98,803.42
07/23/04	12:12:36	105,310.54	110,427.35	99,755.80
07/23/04	12:14:06	105,612.80	108,498.17	103,272.28
07/23/04	12:15:36	98,183.15	108,302.80	88,424.91
07/23/04	12:17:06	108,221.95	117,387.05	88,131.87
07/23/04	12:18:35	112,482.70	116,727.72	105,323.56
07/23/04	12:20:05	107,568.30	114,212.45	103,443.23
07/23/04	12:21:36	108,036.90	111,501.83	103,565.32
07/23/04	12:23:06	108,751.59	112,918.20	104,688.65
07/23/04	12:24:37	105,897.71	110,842.49	101,514.04
07/23/04	12:26:07	107,267.95	112,576.31	100,830.28
07/23/04	12:27:37	105,227.52	112,576.31	99,975.58
07/23/04	12:29:07	103,620.67	109,426.13	97,484.73
07/23/04	12:30:36	102,500.88	109,450.55	98,388.28
07/23/04	12:32:06	103,540.91	108,205.13	99,047.62
07/23/04	12:33:37	105,361.55	108,009.77	102,686.20
07/23/04	12:35:07	101,825.53	105,152.63	97,777.78
07/23/04	12:36:38	102,316.10	108,131.87	95,164.84
07/23/04	12:38:08	101,067.97	104,004.88	99,072.04
07/23/04	12:39:38	101,645.64	109,670.33	91,233.21
07/23/04	12:41:08	110,024.42	117,680.10	94,529.91
07/23/04	12:42:37	115,562.34	119,438.34	110,402.93
07/23/04	12:44:07	120,172.02	127,081.80	113,846.16
07/23/04	12:45:38	115,677.93	119,609.28	111,819.29
07/23/04	12:47:08	118,437.39	123,199.02	114,383.39
07/23/04	12:48:39	120,405.10	123,638.59	112,136.75
07/23/04	12:50:09	123,791.62	128,131.87	118,583.64
07/23/04	12:51:39	121,747.66	127,423.69	116,581.20
07/23/04	12:53:09	128,772.48	134,358.97	119,731.38
07/23/04	12:54:38	128,722.02	131,916.97	122,246.64
07/23/04	12:56:08	130,843.30	133,968.25	128,302.80
07/23/04	12:57:39	130,350.29	136,947.50	126,471.30
07/23/04	12:59:09	131,676.58	137,094.02	127,863.25
07/23/04	13:00:40	130,524.48	136,703.30	119,853.48
07/23/04	13:02:10	128,301.45	138,681.31	120,293.04
07/23/04	13:03:39	136,471.58	142,832.72	132,063.48
07/23/04	13:05:09	136,498.72	142,393.16	130,231.99
07/23/04	13:06:40	136,221.41	139,487.17	131,623.94
07/23/04	13:08:10	141,083.44	145,518.92	137,973.14
07/23/04	13:09:41	141,400.08	144,810.75	139,120.88
07/23/04	13:11:11	142,623.25	145,958.48	140,024.42
07/23/04	13:12:41	139,660.02	152,771.67	129,084.25
07/23/04	13:14:11	143,266.58	154,505.50	132,918.19
07/23/04	13:15:40	134,204.05	136,385.84	131,746.03

END DATE	END TIME	AVG	MAX	MIN
07/23/04	13:17:10	133,255.45	135,775.33	129,450.55
07/23/04	13:18:41	133,100.80	139,560.44	127,032.97
07/23/04	13:20:11	131,181.66	136,630.03	125,738.70
07/23/04	13:21:42	126,507.39	129,719.17	122,148.96
07/23/04	13:23:12	123,121.96	125,811.97	119,291.82
07/23/04	13:24:42	119,783.48	122,271.06	118,217.34
07/23/04	13:26:12	114,265.37	119,755.80	99,926.74
07/23/04	13:27:41	110,150.59	124,566.55	103,076.92
07/23/04	13:29:11	115,090.76	124,566.55	102,442.00
07/23/04	13:30:42	123,626.91	126,495.73	120,561.66
07/23/04	13:32:12	123,370.51	126,520.15	121,172.16
07/23/04	13:33:43	127,247.32	130,891.33	123,418.80
07/23/04	13:35:13	131,054.13	135,750.92	128,107.45
07/23/04	13:36:43	134,021.44	136,923.08	131,916.97
07/23/04	13:38:13	136,160.09	138,412.70	134,065.94
07/23/04	13:39:42	138,440.64	141,587.30	134,285.72
07/23/04	13:41:12	140,377.70	144,615.39	136,752.14
07/23/04	13:42:43	140,718.77	151,062.27	128,376.07
07/23/04	13:44:13	141,343.92	144,737.48	138,779.00
07/23/04	13:45:44	142,282.19	145,616.61	140,586.08
07/23/04	13:47:14	140,736.67	144,200.25	138,339.44
07/23/04	13:48:44	141,613.89	145,567.77	138,779.00
07/23/04	13:50:14	143,302.13	145,934.06	141,636.14
07/23/04	13:51:43	144,249.89	145,738.70	142,222.22
07/23/04	13:53:13	144,588.25	147,081.81	142,637.36
07/23/04	13:54:44	147,832.59	149,768.02	144,395.61
07/23/04	13:56:14	146,837.88	150,402.94	144,493.28
07/23/04	13:57:45	147,072.31	149,645.91	144,297.92
07/23/04	13:59:15	147,657.84	151,892.55	143,028.08
07/23/04	14:00:44	148,827.03	158,730.16	137,802.20
07/23/04	14:02:14	148,043.69	151,941.39	146,031.75
07/23/04	14:03:45	148,425.72	153,455.44	145,934.06
07/23/04	14:05:15	149,205.81	152,136.75	145,641.03
07123104	14:06:45	150,364.94	153,479.86	147,032.97
07/23/04	14:08:15	150,163.08	153,943.83	146,739.92
07/23/04	14:09:46	151,674.94	156,190.47	149,206.34
07/23/04	14:11:16	149,459.50	152,576.31	146,813.19
07/23/04	14:12:45	149,805.72	152,356.53	147,057.39
07/23/04	14:14:15	151,610.64	155,189.25	149,279.61
07/23/04	14:15:46	152,813.19	154,676.44	148,595.84
07/23/04	14:17:16	151,414.19	155,726.50	148,595.84
07/23/04	14:18:47	151,616.33	153,992.67	148,864.47
07/23/04	14:20:16	152,254.52	155,457.88	148,913.31
07/23/04	14:21:47	151,413.64	154,627.59	148,327.23
07/23/04	14:23:17	152,711.17	155,116.00	150,989.02
07/23/04	14:24:46	153,920.23	155,970.70	151,379.73
07/23/04	14:26:16	151,868.13	154,065.94	149,328.45
07/23/04	14:27:47	151,677.11	153,357.75	150,085.47
07/23/04	14:29:17	153,300.23	155,286.94	150,989.02
07/23/04	14:30:48	153,487.17	156,117.22	151,282.05
07/23/04	14:32:17	153,286.66	156,605.61	151,135.53
07/23/04	14:33:48	154,145.98	157,802.20	151,868.13
07/23/04	14:35:18	154,532.36	156,825.39	152,527.47

END DATE	END TIME	AVG	MAX	MIN
07/23/04	14:36:47	154,751.05	157,973.14	152,649.58
07/23/04	14:38:17	153,358.03	156,776.56	150,256.41
07/23/04	14:39:48	154,388.00	157,826.63	150,354.09
07/23/04	14:41:18	153,768.83	156,410.25	151,233.22
07/23/04	14:42:49	152,787.69	156,483.52	150,109.89
07/23/04	14:44:19	154,730.97	157,045.17	152,576.31
07/23/04	14:45:49	154,849.81	165,738.70	145,470.08
07/23/04	14:47:19	156,090.89	159,706.95	154,285.72
07/23/04	14:48:48	153,973.95	155,848.59	151,062.27
07/23/04	14:50:18	152,856.33	155,116.00	150,842.48
07/23/04	14:51:49	151,428.58	155,116.00	149,743.59
07/23/04	14:53:19	151,548.77	158,095.23	143,833.94
07/23/04	14:54:50	141,555.56	147,887.67	136,190.47
07/23/04	14:56:20	136,456.92	140,586.08	134,578.75
07/23/04	14:57:50	131,737.63	134,822.95	128,644.69
07/23/04	14:59:20	130,350.56	132,503.05	127,252.75
07/23/04	15:00:49	124,790.40	130,598.29	121,611.72
07/23/04	15:02:19	124,240.40	127,228.33	120,830.28
07/23/04	15:03:50	121,990.50	126,495.73	118,730.16
07/23/04	15:05:20	121,674.40	123,956.05	118,827.84
07/23/04	15:06:51	117,336.86	121,562.88	112,405.38
07/23/04	15:08:21	122,536.97	126,056.16	114,993.90
07/23/04	15:09:51	118,428.16	122,393.16	112,576.31
07/23/04	15:11:21	111,984.27	115,042.73	107,203.91
07/23/04	15:12:50	115,315.16	119,316.24	111,013.43
07/23/04	15:14:20	119,524.08	122,881.56	112,551.89
07/23/04	15:15:51	121,318.41	125,543.34	112,551.89
07/23/04	15:17:21	126,217.07	129,548.23	123,101.34
07/23/04	15:18:52	129,078.01	133,235.66	125,567.77
07/23/04	15:20:22	132,934.20	135,360.20	129,987.79
07/23/04	15:21:52	136,189.39	144,713.06	129,548.23
07/23/04	15:23:22	138,544.56	149,768.02	126,300.37
07/23/04	15:24:51	137,873.56	139,584.86	136,239.31
07/23/04	15:26:21	137,337.95	139,804.64	135,506.72
07/23/04	15:27:52	135,463.58	137,362.64	133,626.38
07/23/04	15:29:22	136,269.16	139,438.34	132,478.63
07/23/04	15:30:53	136,292.77	140,317.45	134,505.50
07/23/04	15:32:23	136,348.39	138,705.73	135,042.73
07/23/04	15:33:52	138,115.59	140,927.95	136,385.84
07/23/04	15:35:23	139,928.64	142,246.64	137,582.42
07/23/04	15:36:53	142,388.83	145,689.86	139,194.14
07/23/04	15:38:22	142,689.73	145,641.03	139,120.88
07/23/04	15:39:53	145,081.81	149,816.84	138,339.44
07/23/04	15:41:23	138,758.38	142,295.48	133,357.75
07/23/04	15:42:54	137,747.11	144,615.39	131,843.72
07/23/04	15:44:24	134,174.47	141,098.91	128,131.87
07/23/04	15:45:53	125,848.87	129,352.87	121,318.68
07/23/04	15:47:23	118,695.43	123,345.55	113,382.17
07/23/04	15:48:54	122,526.93	127,374.84	118,534.80
07/23/04	15:50:24	126,167.14	129,230.77	121,807.08
07/23/04	15:51:54	131,042.20	133,235.66	128,351.65
07/23/04	15:53:24	135,925.66	141,221.00	129,255.19
07/23/04	15:54:55	129,950.08	135,579.97	125,396.83

END DATE	END TIME	AVG	MAX	MIN
07/23/04	15:56:25	121,907.20	127,960.93	118,266.18
07/23/04	15:57:54	127,539.27	130,744.81	121,514.04
07/23/04	15:59:24	117,326.01	128,205.13	107,472.53
07/23/04	16:00:55	119,497.76	124,346.77	115,775.34
07/23/04	16:02:25	126,458.01	130,940.17	122,417.59
07/23/04	16:03:56	134,399.67	141,904.77	128,888.89
07/23/04	16:05:26	135,618.50	151,892.55	112,600.73
07/23/04	16:06:56	136,427.63	141,416.36	132,478.63
07/23/04	16:08:26	128,400.76	133,650.80	122,124.54
07/23/04	16:09:55	122,803.96	125,396.83	120,268.62
07/23/04	16:11:25	121,838.83	124,175.82	119,096.46
07/23/04	16:12:56	120,435.22	125,299.15	116,337.00
07/23/04	16:14:26	118,682.13	121,636.14	113,968.26
07/23/04	16:15:57	119,540.36	122,222.22	115,726.49
07/23/04	16:17:27	120,338.08	124,395.60	117,509.16
07/23/04	16:18:57	123,530.32	127,521.37	116,752.14
07/23/04	16:20:27	120,783.34	122,735.04	118,388.28
07/23/04	16:21:56	119,123.05	122,124.54	114,456.66
07/23/04	16:23:26	117,695.02	121,050.06	115,457.88
07/23/04	16:24:57	116,407.00	118,705.74	113,992.67
07/23/04	16:26:27	115,879.80	117,582.41	113,333.34
07/23/04	16:27:58	114,771.67	118,168.50	112,210.02
07/23/04	16:29:28	109,121.15	115,775.34	101,196.58
07/23/04	16:30:58	112,083.03	116,605.62	109,230.77
07/23/04	16:32:28	118,421.11	120,024.42	116,605.62
07/23/04	16:33:57	118,881.02	122,686.20	111,672.77
07/23/04	16:35:27	122,376.34	127,228.33	117,948.72
07/23/04	16:36:58	126,204.59	128,742.37	120,854.70
07/23/04	16:38:28	128,431.70	141,562.88	114,749.70
07/23/04	16:39:59	132,401.30	135,677.66	129,841.27
07/23/04	16:41:29	134,301.72	138,705.73	131,477.41
07/23/04	16:42:59	132,775.75	138,681.31	126,471.30
07/23/04	16:44:30	138,412.70	154,993.89	113,797.31
07/23/04	16:46:00	133,043.83	140,830.28	128,253.97
07/23/04	16:47:30	123,939.77	128,400.49	119,536.02
07/23/04	16:49:00	119,963.64	124,297.92	118,070.82
07/23/04	16:50:29	119,014.79	122,222.22	117,460.32
07/23/04	16:51:99	117,983.18	122,393.16	113,724.05
07/23/04	16:53:30	115,225.34	120,317.46	112,356.53
07/23/04	16:55:00	113,436.17	117,484.73	107,741.15
07/23/04	16:56:31	109,501.02	115,506.72	99,242.98
07/23/04	16:58:01	108,279.48	128,913.31	94,261.30
07/23/04	16:59:31	119,325.20	125,054.95	113,943.84
07/23/04	17:01:01	114,440.10	117,094.02	109,255.19
07/23/04	17:02:31	112,034.19	117,924.30	107,936.51
07/23/04	17:04:00	114,238.77	116,971.91	111,770.45
07/23/04	17:05:31	114,230.36	118,070.82	110,085.47
07/23/04	17:07:01	110,676.44	114,774.12	103,516.48
07/23/04	17:08:32	98,175.55	109,304.03	84,151.41
07/23/04	17:10:02	113,614.16	124,664.23	98,681.32
07/23/04	17:11:31	113,303.48	117,875.46	110,573.87
07/23/04	17:13:01	111,851.85	117,753.36	107,277.16
07/23/04	17:14:32	116,320.17	120,073.26	108,791.21

END DATE	END TIME	AVG	MAX	MIN
07/23/04	17:16:02	116,794.73	119,584.86	114,456.66
07/23/04	17:17:32	112,733.69	115,457.88	110,549.45
07/23/04	17:19:02	109,785.10	112,112.34	106,715.51
07/23/04	17:20:33	109,452.18	111,892.55	105,958.48
07/23/04	17:22:03	109,854.56	111,013.43	108,034.19
07/23/04	17:23:32	105,654.87	110,134.31	102,832.73
07/23/04	17:25:02	100,882.11	106,666.66	96,288.16
07/23/04	17:26:33	101,687.70	104,029.30	98,974.36
07/23/04	17:28:03	104,982.50	123,467.64	99,731.38
07/23/04	17:29:33	110,297.92	116,166.05	100,708.18
07/23/04	17:31:03	114,514.18	117,704.52	109,719.17
07/23/04	17:32:34	115,674.13	119,853.48	110,378.51
07/23/04	17:34:04	120,828.11	126,227.11	116,874.23
07/23/04	17:35:33	123,315.16	127,423.69	117,606.84
07/23/04	17:37:03	124,858.50	140,708.19	105,958.48
07/23/04	17:38:34	127,643.20	132,747.25	122,051.28
07/23/04	17:40:04	134,703.30	148,791.20	104,737.48
07/23/04	17:41:35	124,318.00	129,206.35	118,461.54
07/23/04	17:43:04	118,973.00	120,879.12	115,848.59
07/23/04	17:44:35	115,924.02	119,780.22	112,942.61
07/23/04	17:46:05	114,907.07	119,780.22	111,037.85
07/23/04	17:47:34	114,446.07	117,118.44	111,965.81
07/23/04	17:49:04	113,784.29	116,800.98	111,746.03
07/23/04	17:50:35	104,249.36	112,551.89	95,506.72
07/23/04	17:52:06	106,455.02	110,964.59	100,537.24
07/23/04	17:53:36	116,948.85	126,202.69	83,760.69
07/23/04	17:55:05	116,797.18	121,440.78	114,456.66
07/23/04	17:56:36	110,828.92	114,529.91	107,814.41
07/23/04	17:58:06	107,986.98	112,332.11	103,980.46
07/23/04	17:59:35	111,916.43	113,040.30	110,451.77
07/23/04	18:01:05	108,444.72	112,332.11	105,787.55
07/23/04	18:02:36	101,752.55	110,842.49	88,278.39
07/23/04	18:04:06	100,187.77	113,821.73	82,881.56
07/23/04	18:05:37	114,361.96	120,439.56	109,841.27
07/23/04	18:07:07	110,591.78	114,407.81	108,595.85
07/23/04	18:08:37	110,113.41	113,137.98	106,984.13
07/23/04	18:10:07	110,627.05	112,722.84	106,324.79
07/23/04	18:11:36	106,220.32	109,279.61	102,808.30
07/23/04	18:13:06	107,906.66	109,914.53	105,323.56
07/23/04	18:14:37	103,794.88	105,787.55	100,854.70
07/23/04	18:16:07	106,727.72	111,355.31	100,854.70
07/23/04	18:17:38	106,996.88	109,865.69	104,957.27
07/23/04	18:19:08	106,260.48	108,498.17	102,808.30
07/23/04	18:20:38	98,668.30	103,565.32	93,015.88
07/23/04	18:22:08	107,813.05	119,291.82	95,555.55
07/23/04	18:23:37	108,116.13	119,145.30	98,949.94
07/23/04	18:25:07	102,784.42	108,791.21	96,971.91
07/23/04	18:26:38	111,506.98	119,145.30	100,415.14
07/23/04	18:28:08	112,983.31	121,538.46	105,128.20
07/23/04	18:29:39	120,094.42	129,206.35	111,721.61
07/23/04	18:31:09	125,506.45	138,925.52	92,722.84
07/23/04	18:32:39	121,037.04	124,786.33	117,216.12
07/23/04	18:34:09	116,039.88	122,564.10	111,672.77

END DATE	END TIME	AVG	MAX	MIN
07/23/04	18:35:38	111,347.45	112,796.09	109,426.13
07/23/04	18:37:08	112,019.80	114,456.66	108,766.79
07/23/04	18:38:39	111,362.91	114,676.44	107,179.48
07/23/04	18:40:09	108,899.74	113,577.53	105,885.23
07/23/04	18:41:40	107,539.82	113,577.53	101,733.82
07123104	18:43:10	100,975.17	111,037.85	93,943.84
07/23/04	18:44:40	107,283.13	122,661.78	88,131.87
07/23/04	18:46:10	112,533.45	117,753.36	109,230.77
07/23/04	18:47:39	108,729.34	110,256.41	106,031.74
07/23/04	18:49:09	108,799.35	112,356.53	105,641.02
07/23/04	18:50:40	111,210.42	115,384.62	106,837.61
07/23/04	18:52:10	107,594.63	109,059.83	105,836.38
07/23/04	18:53:41	106,409.71	110,109.89	91,892.55
07/23/04	18:55:11	100,905.98	112,112.34	91,892.55
07/23/04	18:56:40	111,978.56	120,488.40	87,179.48
07/23/04	18:58:11	111,371.32	116,190.48	108,620.27
07/23/04	18:59:41	112,009.23	113,870.57	108,522.59
07/23/04	19:01:11	112,795.55	116,166.05	106,471.30
07/23/04	19:02:42	111,658.12	113,675.21	108,034.19
07/23/04	19:04:12	109,704.25	113,577.53	105,518.92
07/23/04	19:05:42	107,653.51	112,844.93	104,566.55
07/23/04	19:07:12	110,639.53	112,136.75	108,424.91
07/23/04	19:08:41	107,879.26	110,964.59	104,322.34
07/23/04	19:10:11	105,643.47	107,130.65	103,663.00
07/23/04	19:11:42	108,230.09	112,576.31	105,250.30
07/23/04	19:13:12	110,144.08	116,483.52	104,932.84
07/23/04	19:14:43	104,355.17	115,164.84	96,166.05
07/23/04	19:16:13	107,405.51	111,843.71	100,683.76
07/23/04	19:17:43	113,401.44	125,738.70	107,545.79
07/23/04	19:19:13	119,060.38	127,643.47	110,233.99
07/23/04	19:20:42	119,051.69	131,990.23	94,871.80
07/23/04	19:22:12	128,472.39	139,096.45	94,871.80
07/23/04	19:23:43	120,271.34	125,152.63	115,140.41
07/23/04	19:25:13	113,765.02	115,824.18	111,159.95
07/23/04	19:26:44	113,598.70	116,923.08	110,769.23
07/23/04	19:28:14	114,606.43	117,997.55	111,013.43
07/23/04	19:29:44	111,629.09	114,603.17	107,179.48
07/23/04	19:31:14	110,212.73	115,409.04	106,984.13
07/23/04	19:32:43	105,153.16	112,551.89	92,649.57
07/23/04	19:34:13	103,707.23	121,196.58	86,080.59
07/23/04	19:35:44	115,170.27	121,929.18	107,912.09
07/23/04	19:37:14	110,060.23	115,311.35	105,787.55
07/23/04	19:38:45	107,283.68	111,306.47	105,299.15
07/23/04	19:40:15	109,061.73	114,017.09	105,079.37
07/23/04	19:41:45	109,078.82	113,455.43	105,567.77
07/23/04	19:43:15	104,174.74	112,063.49	86,862.02
07/23/04	19:44:44	99,473.88	111,501.83	78,705.74
07/23/04	19:46:14	114,310.13	121,562.88	78,705.74
07/23/04	19:47:45	112,059.96	115,579.98	105,567.77
07/23/04	19:49:15	107,781.85	113,235.66	101,391.94
07/23/04	19:50:46	112,417.31	114,652.02	109,914.53
07/23/04	19:52:16	109,349.07	113,943.84	104,810.74
07/23/04	19:53:46	106,407.27	110,573.87	100,781.44

END DATE	END TIME	AVG	MAX	MIN
07/23/04	19:55:16	104,103.11	107,594.63	101,343.10
07/23/04	19:56:45	103,071.23	109,035.41	101,001.22
07/23/04	19:58:15	107,409.85	110,354.09	104,078.14
07/23/04	19:59:46	105,034.32	108,864.47	101,269.84
07/23/04	20:01:16	105,811.70	107,594.63	103,736.27
07/23/04	20:02:47	105,173.52	107,716.73	101,147.74
07/23/04	20:04:17	100,169.31	106,715.51	89,719.17
07/23/04	20:05:46	104,745.09	112,454.21	96,923.08
07/23/04	20:07:16	109,973.41	121,587.30	96,141.63
07/23/04	20:08:47	113,518.66	118,534.80	108,107.45
07/23/04	20:10:17	119,150.45	130,451.77	84,908.42
07/23/04	20:11:48	120,589.61	124,908.42	117,118.44
07/23/04	20:13:18	114,776.55	119,120.88	111,575.09
07/23/04	20:14:48	111,870.84	116,019.54	107,960.93
07/23/04	20:16:18	112,860.40	116,361.41	109,914.53
07/23/04	20:17:47	112,480.80	119,389.50	108,083.03
07/23/04	20:19:17	112,175.28	116,043.95	108,034.19
07/23/04	20:20:48	104,120.20	115,384.62	94,334.55
07/23/04	20:22:18	115,071.50	125,177.05	93,260.07
07/23/04	20:23:49	115,303.48	118,608.06	111,330.89
07/23/04	20:25:19	110,711.16	113,699.63	107,179.48
07/23/04	20:26:49	110,741.28	114,407.81	108,253.97
07/23/04	20:28:19	110,771.95	113,772.89	107,594.63
07/23/04	20:29:48	103,291.01	111,135.53	89,865.69
07/23/04	20:31:18	104,560.03	121,538.46	82,637.36
07/23/04	20:32:49	113,827.70	120,024.42	109,768.01
07/23/04	20:34:19	107,632.88	111,965.81	100,024.42
07/23/04	20:35:50	109,064.45	114,993.90	100,024.42
07/23/04	20:37:20	111,369.15	114,041.52	107,692.30
07/23/04	20:38:50	100,669.65	110,061.05	91,892.55
07/23/04	20:40:20	111,874.10	121,733.82	87,912.09
07/23/04	20:41:49	112,616.74	116,800.98	109,890.11
07/23/04	20:43:19	109,485.28	111,111.11	105,421.24
07/23/04	20:44:50	111,805.73	115,140.41	107,350.43
07/23/04	20:46:20	110,833.54	113,870.57	103,736.27
07/23/04	20:47:51	108,562.48	112,454.21	104,786.33
07/23/04	20:49:21	108,036.90	110,866.91	104,835.16
07/23/04	20:50:51	109,716.73	114,188.03	107,057.39
07/23/04	20:52:21	108,387.46	111,770.45	103,223.45
07/23/04	20:53:50	103,033.24	108,669.11	94,432.23
07/23/04	20:55:20	106,444.72	117,558.00	95,531.13
07/23/04	20:56:51	108,938.81	113,333.34	106,080.59
07/23/04	20:58:21	113,204.45	125,323.56	98,632.48
07/23/04	20:59:52	118,041.24	122,173.38	113,772.89
07/23/04	21:01:22	119,050.06	123,565.32	114,481.08
07/23/04	21:02:51	123,560.71	139,804.64	99,340.66
07/23/04	21:04:22	128,216.52	137,264.95	121,782.66
07/23/04	21:05:52	119,187.63	124,542.13	116,263.73
07/23/04	21:07:21	113,819.02	118,241.76	110,793.65
07/23/04	21:08:52	113,374.30	119,829.06	109,474.97
07/23/04	21:10:22	110,581.47	113,064.71	109,181.93
07/23/04	21:11:53	108,501.42	111,477.41	106,862.02
07/23/04	21:13:23	102,845.48	108,595.85	93,406.59

END DATE	END TIME	AVG	MAX	MIN
07/23/04	21:14:52	102,020.63	116,312.58	89,963.37
07/23/04	21:16:23	107,284.49	118,901.10	87,619.05
07/23/04	21:17:53	111,514.59	117,851.04	109,548.23
07/23/04	21:19:22	111,843.98	114,481.08	107,374.84
07/23/04	21:20:53	111,025.10	113,992.67	107,032.97
07/23/04	21:22:23	107,787.27	109,206.35	106,446.88
07/23/04	21:23:54	110,460.18	113,675.21	107,179.48
07/23/04	21:25:24	103,884.95	110,500.61	92,161.17
07/23/04	21:26:53	107,760.14	112,014.65	103,833.95
07/23/04	21:28:23	116,789.31	130,695.97	94,432.23
07/23/04	21:29:54	122,822.68	128,083.03	117,728.94
07/23/04	21:31:24	114,788.23	118,705.74	111,184.38
07/23/04	21:32:54	114,922.53	118,852.26	111,086.69
07/23/04	21:34:24	110,988.74	113,284.49	108,693.53
07/23/04	21:35:55	109,104.33	113,675.21	105,763.13
07/23/04	21:37:25	108,919.28	113,260.07	105,421.24
07/23/04	21:38:54	110,824.31	116,068.38	106,202.69
07/23/04	21:40:24	107,574.28	111,941.39	102,246.64
07/23/04	21:41:55	105,990.23	109,670.33	102,905.98
07/23/04	21:43:25	110,513.91	113,772.89	107,399.27
07/23/04	21:44:55	110,089.54	113,675.21	102,490.84
07/23/04	21:46:25	105,729.21	112,210.02	96,385.84
07/23/04	21:47:56	109,216.93	110,695.97	104,566.55
07/23/04	21:49:26			

Records selected: 958
Records sorted: 958
Lines printed: 1053
Pages printed: 19

108,765.43	116,190.48	97,680.10

07/23/04	21:50:55	106,868.81	112,234.43	96,410.26
07/23/04	21:52:25	112,163.62	126,422.47	100,122.10
07/23/04	21:53:56	123,698.27	134,334.55	91,623.93
07/23/04	21:55:27	117,146.38	125,836.38	114,188.03
07/23/04	21:56:56	113,416.09	116,605.62	110,476.19
07/23/04	21:58:26	109,487.72	112,429.79	105,445.66
07/23/04	21:59:57	109,169.72	113,504.27	106,202.69
07/23/04	22:01:27	109,208.25	111,697.20	107,081.80
07/23/04	22:02:56	103,207.70	109,279.61	88,766.79
07/23/04	22:04:26	102,681.05	116,678.88	97,753.36
07/23/04	22:05:57	111,611.18	128,864.47	96,874.23
07/23/04	22:07:27	116,079.50	119,633.70	112,991.45
07/23/04	22:08:58	112,771.95	117,460.32	111,257.63
07/23/04	22:10:28	113,903.41	118,315.02	109,426.13
07/23/04	22:11:58	112,065.94	114,163.62	110,695.97
07/23/04	22:13:28	112,230.36	116,605.62	108,766.79
07/23/04	22:14:57	109,118.98	115,164.84	89,597.07
07/23/04	22:16:27	100,432.77	112,527.47	88,498.17
07/23/04	22:17:58	111,454.08	132,161.17	88,498.17
07/23/04	22:19:28	117,751.19	122,490.84	113,968.26
07/23/04	22:20:59	116,745.35	119,780.22	112,014.65
07/23/04	22:22:29	114,721.48	117,484.73	111,306.47
07/23/04	22:23:59	111,945.19	114,432.23	109,108.67

07/23/04	22:25:29	115,035.14	118,803.42	112,429.79
07/23/04	22:26:58	113,157.23	117,435.90	108,840.05
07/23/04	22:28:28	108,179.89	111,086.69	103,492.06
07/23/04	22:30:00	105,510.24	108,840.05	100,146.52
07/23/04	22:31:29	109,427.76	112,185.59	106,422.47
07/23/04	22:32:99	108,233.62	112,551.89	103,174.60

END DATE	END TIME	AVG	MAX	MIN
07/23/04	22:34:30	107,986.98	114,603.17	92,307.70
07/23/04	22:36:00	104,042.60	109,816.85	99,780.22
07/23/04	22:37:30	109,126.03	123,516.48	95,042.73
07/23/04	22:39:00	113,108.94	119,242.98	95,042.73
07/23/04	22:40:29	116,178.27	119,242.98	113,186.81
07/23/04	22:42:01	117,638.31	122,271.06	114,358.98
07/23/04	22:43:30	,121,811.97	129,597.07	116,117.22
07/23/04	22:45:00	129,148.83	141,611.72	98,339.44
07/23/04	22:46:31	127,097.27	135,335.78	120,659.34
07/23/04	22:48:01	120,265.63	122,710.63	117,924.30
07/23/04	22:49:31	118,353.82	120,854.70	114,993.90
07/23/04	22:51:01	117,635.05	122,857.14	114,871.80
07/23/04	22:52:30	118,845.75	121,440.78	115,970.70
07/23/04	22:54:02	113,726.23	117,948.72	97,899.88
07/23/04	22:55:31	108,694.07	121,245.42	97,948.72
07/23/04	22:57:01	118,847.91	129,890.11	97,484.73
07/23/04	22:58:32	117,127.66	120,048.84	113,553.12
07/23/04	23:00:02	117,249.49	118,949.94	114,822.95
07/23/04	23:01:31	118,067.84	121,733.82	113,284.49
07/23/04	23:03:01	117,727.31	121,733.82	114,700.85
07/23/04	23:04:32	114,283.27	117,167.27	112,356.53
07/23/04	23:06:02	104,751.32	113,284.49	93,162.39
07/23/04	23:07:33	108,471.03	120,488.40	95,628.81
07/23/04	23:09:03	115,176.23	128,644.69	99,365.08
07/23/04	23:10:33	117,513.50	129,304.03	106,813.19
07/23/04	23:12:03	128,677.25	134,432.23	122,051.28
07/23/04	23:13:32	122,102.29	126,886.45	118,119.66
07/23/04	23:15:02	117,980.73	121,611.72	113,821.73
07/23/04	23:16:33	119,446.21	121,074.48	116,971.91
07/23/04	23:18:03	119,287.20	122,368.74	116,605.62
07/23/04	23:19:34	122,757.56	126,642.25	117,069.59
07/23/04	23:21:04	122,189.12	125,543.34	119,072.04
07/23/04	23:22:34	119,045.72	121,953.60	117,142.86
07/23/04	23:24:04	116,332.93	118,046.40	114,334.55
07/23/04	23:25:33	114,345.13	117,167.27	111,721.61
07/23/04	23:27:03	110,720.66	114,285.71	104,884.01
07/23/04	23:28:34	111,976.39	115,921.86	105,665.45
07/23/04	23:30:04	103,021.57	112,332.11	95,531.13
07/23/04	23:31:35	107,314.88	116,507.94	103,345.55
07/23/04	23:33:05	115,334.69	119,511.60	102,783.88
07/23/04	23:34:35	118,216.25	124,639.80	112,380.95
07/23/04	23:36:05	123,540.09	139,633.70	98,974.36
07/23/04	23:37:34	123,894.72	133,772.89	119,829.06
07/23/04	23:39:04	125,883.60	130,036.63	120,903.54
07/23/04	23:40:35	122,930.41	125,763.13	118,803.42
07/23/04	23:42:05	120,017.37	121,831.50	117,069.59
07/23/04	23:43:36	117,132.55	121,221.00	115,018.31
07/23/04	23:45:06	120,105.28	123,907.20	116,019.54
07/23/04	23:46:36	112,464.80	119,218.56	100,659.34
07/23/04	23:48:06	109,968.26	126,886.45	97,509.16
07/23/04	23:49:35	122,827.84	128,278.39	117,704.52
07/23/04	23:51:07	117,981.82	119,804.64	115,286.94
07/23/04	23:52:36	116,102.29	119,438.34	113,260.07

END DATE	END TIME	AVG	MAX	MIN
07/23/04	23:54:06	116,503.87	119,951.16	113,406.59
07/23/04	23:55:37	115,567.77	117,924.30	112,185.59
07/23/04	23:57:07	114,627.59	116,727.72	111,770.45
07/23/04	23:58:37	104,412.43	114,139.20	94,700.85

VII. APPENDIX

The following appendices are presented as supporting documentation to the emission test report.

A. Resumes of Test Personnel

B. Test Equipment Calibrations

C. Correspondence, Bayou Steel and LDEQ

D. Permit Number 885 (M-2) Excerpts

Troy **W. LeSage**
Assistant Manager
.Senior Project Team Leader
Emission Testing Services, Incorporated
Baton Rouge, Louisiana

EDUCATION

U. S. EPA Round Robin sample integrity audits

Completed Emission Testing Services Air Sampling Techniques Seminar

Participates in on going Air-Pollution Training Institute Courses (APTI)

EPA - Sampling and evaluation of Airborne Asbestos, Temple University

NIOSH - Supervision of Asbestos Abatement Projects, Texas A & M

High School Graduate

CERTIFICATIONS

EPA Certified Opacity Reader (Method 9)
General Safety & Health Orientation Program
Respiratory Equipment Medical Certification
MSA Qualitative Fit Test Record

EXPERIENCE

1992 to Present - **Senior Project** Team Leader.
Responsibilities include planning and performing source testing projects.

1987 to 1992 - Testing Specialist for Emission Testing Services, Inc.
Performs EPA approved reference methods for compliance testing as well as other'non-routine source evaluations. Responsibilities also include job preparation, equipment calibration, and equipment maintenance.

1985 to 1987 - Industrial Hygiene Technician for an environmental firm.
Performed metal analysis with atomic adsorption spectrophotometer, fiber analysis for asbestos and overseeing asbestos abatement projects.

Ronald L. **McCabe, II**
Senior Sampling Specialist
Emission Testing Services, Incorporated .
Baton Rouge, Louisiana

EDUCATION

Louisiana State University
B.S. ---- **Environmental** Engineering

CERTIFICATIONS

General Safety & Health Orientation Program
Respiratory Equipment **Medical** Certification
MSA Qualitative Fit Test Record
EPA Certified Opacity Reader (Method 9)

EXPERIENCE

EXPERIENCE

08/98 to Present - Sampling Specialist for Emission Testing Services, **Inc.**

Performs EPA approved reference methods for compliance testing as well as other non-routine source evaluations.

Responsibilities also include job preparation, equipment calibration, and equipment maintenance.

Responsibilities include planning and **performing** source testing projects.

Joel S. Richard
Sampling Technician Grade 2
Emission Testing Services, Incorporated
Baton Rouge, Louisiana

EDUCATION

High School Graduate

CERTIFICATIONS

General Safety & Health Orientation Program
Respiratory Equipment Medical Certification
MSA Qualitative Fit Test Record

EXPERIENCE

09/01 to Present -- Sampling Technician Grade 2
Able to perform all procedures required in 40 CFR 60, Method 2 and Method 4 testing without the use of a computer. Able to prepare and load for an emission test which requires a sample train. Proficient in completion of project field logs and data sheets. Responsible for the calibration and maintenance of consoles, pitot tubes, thermacouples and barometers. Proficient in the collection of orgain samples by EPA Reference Method 18. Is well-versed in the calculation of stack gas flow rates with and without the use of a computer, Helps in training a Grade 1 technician. Will have accumulated, at least, 240 field hours as a Sampling Technician Grade 1.

05/00 to 09/01 -- Sampling Technician Grade 1
Able to perform all procedures required in 40 CFR 60, Method 1 without use of a computer. All to perform all procedures required in 40 CFR 60, Method 3 (orsat analysis). Competent in the calibration of consoles, pitot tubes, thermal couples and barometers, Able to setup and assist in leak-check as well as weigh-in of a M4 sample train. Will have accumulated, at least, 480 hours of field experience.

10/99 to 05/00 - Testing trainee technician for Emission Testing Services, Inc. Supports in performing EPA approved reference methods for compliance testing as well as other non-routine source evaluations. Responsibilities also include job preparation, equipment calibration and equipment maintenance.

ETS
EMISSION TESTING SERVICES

METER BOX CALIBRATION DATA AND CALCULATIONS FORM
(English Units)

Gas meter Reads in	
☐ liters	☑ ft3

One Revolution of meter =	0.1	ft3	Wet Test Meter Cal Factor:	1.007
Leak Check Good @:	0.0123		Meter Box Number:	3
Barometric Pres., Pb:	29.821		Date Calibrated:	6/15/04

Orifice Setting ΔH in. H20	Wet Test Meter Reading (Vwm), A3	Dry Gas Meter Readings: Initial (Vdi), ft3	Final (Vdf), ft3	Total (Vdm), ft3	Wet Test Meter Reading (Twm), ft3	Wet Test Meter Pressure (Pw) in. H2O	Dry Gas Meter: Inlet (Tdi), deg. F	Outlet (Tdf), deg. F	Avg (Tdm), deg. F	Run Time (Θ), Min.
0.50	5	639.575	844.628	5.053	74	0.5	86.5	83.0	84.8	13.15
1.00	5	844.628	849.678	5.050	74	1.125	97.0	85.5	91.3	9.02
1.50	5	849.678	854.734	5.056	74	1.5	98.5	86.5	92.5	7.32
2.00	5	854.734	859.768	5.034	74	2.125	100.0	87.0	93.5	6.37
3.00	5	859.768	864.788	5.020	74	2.875	101.0	88.0	94.5	5.25

Dry Gas Meter Gauge Pressure in. H20 (Gp)	Dry Gas Meter Pdm = Gp/13.6 + Pb (Pdm)	Wet Test Meter Pwm = Pw/13.6 + Pb (Pwm)
0.5	29.8578	29.8578
1.0	29.8945	29.9037
1.5	29.9313	29.9313
2.0	29.9681	29.9773
3.0	30.0416	30.0324

$$Ydm = \frac{(Vwm)*(Ywm)*(Twm)*(Pwm)}{(Vdm)*(Tdm)*(Pdm)}$$

	Ydm	Tolerance
	1.0165	0.0144
	1.0296	0.0014
	1.0303	0.0006
	1.0370	-0.0061
	1.0412	-0.0103
Average	1.0309	

$$\Delta H@ = \frac{0.031\,PAH}{Pb*(tda+460)} * \frac{(TW+460)^2}{VW}$$

	ΔH@	Tolerance
	1.9244	-0.1117
	1.7896	0.0232
	1.7638	0.0489
	1.7778	0.0350
	1.8081	0.0047
Average	1.8127	

Ydm = Ratio of reading of wet test meter to dry test meter; tolerance for individual values ±0.02 from average.

ΔH@ = Orifice pressure differential that equates to 0.75 cfm of air @ 68oF and 29.92 inches of mercury, in H20; tolerance for individual values ±0.20 from average.

Serial #:	10-006	
Calibration: +/- 5% from previous	pass	fail

Calibrated by: Boyd Barbee

ETS

EMISSION TESTING SERVICES, INC.

THERMOCOUPLE CALIBRATION

Meter Box Number: 3
Barometric Pressure: 29.821
Serial #: 0

Date: 06/15/04
Calibrated By: Boyd Barbier
+\- 1.5% from previous: ☐ PASS ☐ FAIL

LOW CHECK POINT

Channel Type	Omga CL27 Reading Trial 1	Trial 2	Trial 3	Average	Thermocouple Reading Trial 1	Trial 2	Trial 3	Average
Stack	100	100	100	100	100	100	100	100.00
Probe	100	100	100	100	100	100	101	100.33
Hot Box	100	100	100	100	100	101	100	100.33
Umbilical	100	100	100	100	100	100	100	100.00

Channel Type	Average Reading Omega CL27	Thermocouple	Difference	% Error (Diff / Avg CL27) * 100 -1.5 % < %Error < +1.5 %
Stack	100	100.00	0.00	0.00
Probe	100	100.33	0.33	0.33
Hot Box	100	100.33	0.33	0.33
Umbilical	100	100.00	0.00	0.00

MID CHECKPOINT

Channel Type	Omega CL27 Reading Trial 1	Trial2	Trial 3	Average	Thermocouple Reading Trial 1	Trial 2	Trial 3	Average
	500	500	500	500	500	500	500	500.00
Probe	500	500	500	500	500	500	501	500.33
Hot Box	500	500	500	500	500	501	500	500.33
Umbilical	500	500	500	500	500	500	500	500.00

Channel Type	Average Beading Omega CL27	Thermocouple	Difference	% Error (Diff I Avg CL27) * 100 -1.5 % < %Error < +1.5 %
Stack	500	500.00	0.00	0.00
Probe	500	500.33	0.33	0.01
Hot Box	500	500.33	0.33	0.07
Umbilical	500	500.00	0.00	0.00

HIGH CHECK POINT

Channel Type	Omega CL27 Reading Trial 1	Trial 2	Trial 3	Average	Thermocouple Reading Trial 1	Trial 2	Trial 3	Average
Stack	950	950	950	950	950	950	951	950.33
Probe	950	950	950	950	950	950	950	950.00
Hot Box	950	950	950	950	951	951	951	951.00
Umbilical	950	950	950	950	951	950	951	950.67

Channel Type	Average Reading Omega CL27	Thermocouple	Difference	% Error (Diff / Avg CL27) * 100 -1.5 % < %Error < +1.5 %
ack	950	950.33	0.33	0.04
robe	950	950.0'0	0.00	0.00
Hot Box	950	951.00	1.00	0.11
Umbilical	950	950.67	0.67	0.07

ETS

EMISSION TESTING SERVICES, INC.

Pitot Tube Number: P-10-5 — CP(std): STD - 0.99

Calibrated By: B.Barbier — Date Calibrated: 06/18/04

Point Number	Stardard Pitot "P (in. H2O)	"S" Type Pitot "P, in H2O Impact Side	Static Side
Low	0.280	0.410	0.400
Mid	0.580	0.810	0.800
High	0.740	1.050	1.050

CALCULATIONS

$$Cp(s) = Cp(std) \times \left(\frac{"P(std)}{"P(s)} \right)^{1/2}$$

Deviation = |Cp(s) - Cp| (Impact Side or Static Side)

Avg. Dev. = (Low deviation + Mid deviation + High deviation) / 3 (Impact Side or Static Side)

	Impact Side Cp (s)	Deviation	Static Side Cp(s)	Deviation
Low	0.8181	0.011	0.8263	0.006
Mid	0.8377	0.009	0.8430	0.009
High	0.8311	0.002	0.8311	0.003
Cp =	0.8290		Cp = 0.8341	

"|Cp(Static Side) - Cp(Impact Side)|"	=	0.005	(Must be <= 0.01)
Average Deviation (Impact Side)	=	0.007	(Must be <= 0.01)
Average Deviation (Static Side)	=	0.006	(Must be <= 0.01)

Cp = 0.832

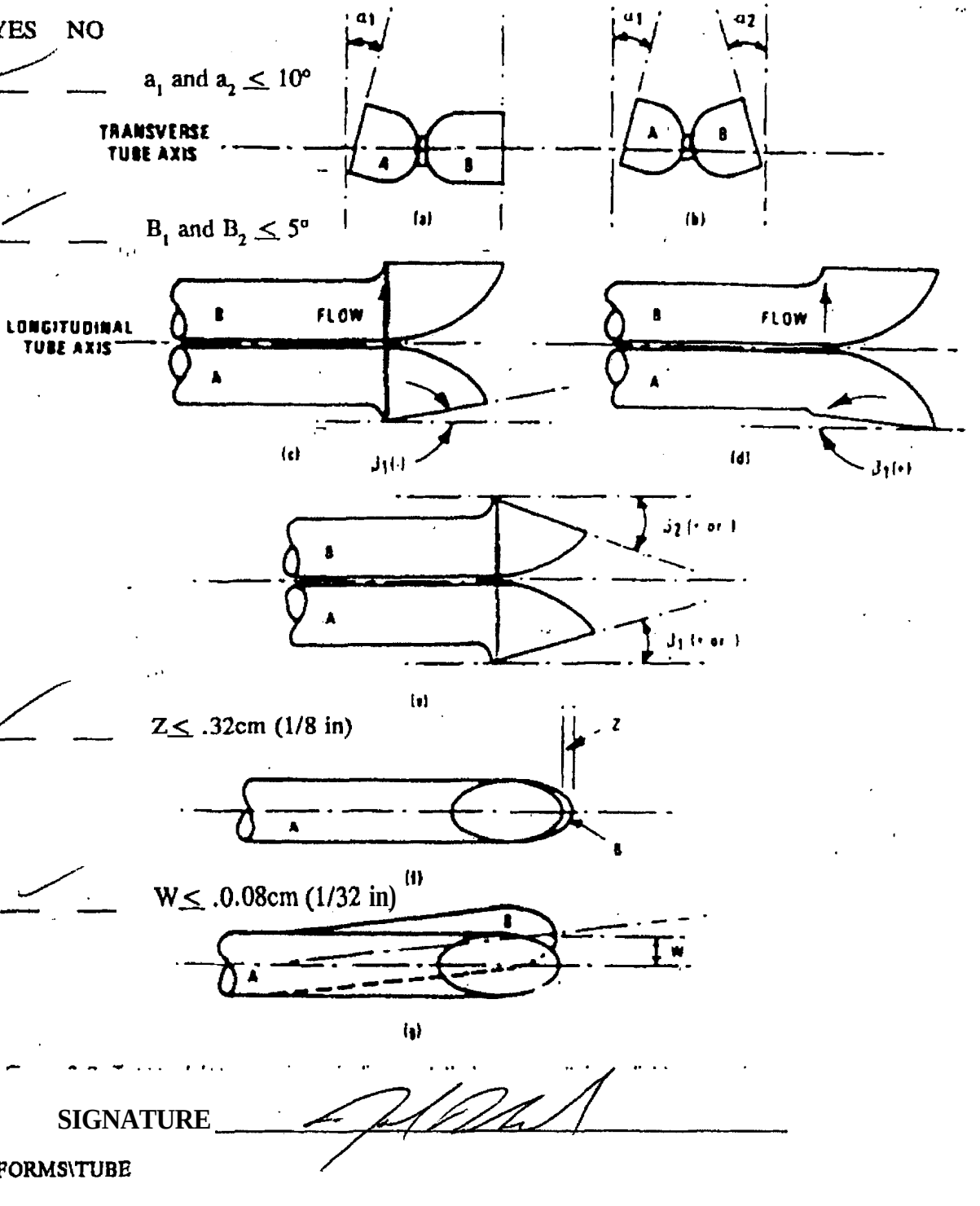
Pitot Tube Leak Check ☐ PASSED ☐ FAILED

ETS
EMISSION TESTING SERVICES, INC.

TUBE NUMBER P-10-5 DATE 7-23-04

INSPECTOR NAME Joel Richard

	YES	NO	
1	✓		a_1 and $a_2 \leq 10°$
2	✓		B_1 and $B_2 \leq 5°$
3	✓		$Z \leq .32cm$ (1/8 in)
4	✓		$W \leq .0.08cm$ (1/32 in)



SIGNATURE _____

C:\WS\FORMS\TUBE

ETS

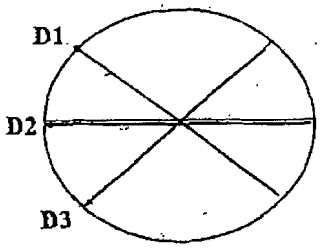
EMISSION TESTING SERVICES, INC.

SAMPLING NOZZLE CALIBRATION DATA FORM

NOZZLE I.D. NO. .170
COMPANY NAME Bayou Steel
SOURCE LD. Baghouse Stack

DATE CALIBRATED	CALIBRATED BY	NOZZLE MEASUREMENTS[a]			MAXIMUM AD[b]	D avg.[c]
		D1	D2	D3		
7-23-04	Joel Richard	.170	.170	.170	Ø	.170

[a]CORRECT NOZZLE DIAMETER MEASUREMENTS AS INDICATED IN THE DIAGRAM TO THE NEAREST 0.001 INCH
[b]MAXIMUM DEFERENCE BETWEEN ANY TWO DIAMETERS. ACCEPTANCE LIMIT: MAXIMUM Δ ≤0.004 INCH
[c]AVERAGE OF D1 PLUS D2 PLUS D3.



SIGNATURE

ETS
EMISSION TESTING SERVICES, INC.

BAROMETER CALIBRATION SHEET

CLIENT: BAYOU STEEL DATE: 7-22-04

SOURCE ID: BAGHOUSE STACK

OPERATOR: RON MCCABE

**********BAROMETER**********

BAROMETER ID: UNIT #1

CALIBRATION DATA:

INITIAL CALIBRATION: 29.95 INITIAL 29.95 *FINAL*

ADJUSTMENT : ☐ Yes ☒ No

**********CALIBRATION REFERENCE**********

ID: PRINCO, HG

ELEVATION: BATON ROUGE ELEVATION DIFF: N/A

BAROMETER READING: *29.96*

COMMENTS:_____

BAYOU STEEL CORPORATION

July 12,2004

FAXSIMILE
225/219-3474

Mr. Jim Courville
Office of Environmental Assessment
Louisiana Department of Environmental Quality
P.O. Box 4314
Baton Rouge, LA 70821-4314

RE: Bayou Steel Corporation Notification of Intent to Test and Summary of Pretest Meeting

Dear Mr. Courville:

This is a summary of the pretest meeting held the DEQ office on July 12, 2004. The list of meeting attendees is appended as Exhibit I.

On Friday, July 23,2004, ETS will perform a stack test at Bayou Steel Corporation on the main stack, source 1-77, for mercury and lead. The test methods lo be utilized are EPA Methods 1-4 and Method 29. The detection limit for mercury will be 0.1 lbs/hr. The plant operating data at the time of the test to be supplied includes: tons/hour of scrap melted, the scrap mix utilized,,the electrical power, natural gas, carbon and oxygen utilized. The testing duration will be 3 hours and will include one complete melting cycle from charge to tap per hour.

At the time of the test a sample will also be collected from the Secondary Dust Collection System, sources 2-77A-F. This sample will be analyzed for mercury and the results will be provided to DEQ.

Bayou Steel will also investigate previous sampling events at the shredder cyclones and will provide DEQ with an estimated mercury value.

Attached is the Notification of Intent to Test for the stack test to occur on July 23.

If you have any questions or require additional information, please do not hesitate to contact me,

Respectfully,
BAYOU STEEL CORPORATION

Wendy Stehling
Manager, Environmental, Health & Safety

c: Barry Gipson, ETS
Linda Brown, LDEQ
Freddie Touro, LDEQ
Jennifer Pelloat, LDEQ
Al Pulliam, Bayou Steel Corporation

NOTIFICATION OF INTENT TO TEST

FACILITY INFORMATION

Facility Name: Bayou Steel Corporation

Street Address: 138 Highway 3217 70068
Post Office Box PO Box 5000
City/State/Zip: LaPlace LA 70069

Contact name for testing purposes: Wendy Stehling
Contact's phone number: 985/652-0327
Contact's fax number: 985/652-0373
E-Mail: wendys@bayousteel.com

Type of Permit: State ✓ NSPS ___ Other ___

State Permit Number: 885 (m-2)
State Permit Writer: Gus Von Bodungen - Issued permit

Federal Permit Number: _____
Federal Permit Writer: _____

If Other, Explain: _____

NOTIFICATION

30-Day Notice Given: Yes X No ___

TO Whom: LADEQ

Was a pretest meeting required: Yes ✓ No (if answer was yes, see Exhibit 1)

PROPOSED TEST DATE(S): July 23, 2004

TEST COMPANY INFORMATION

Emission Testing Services, Inc. (ETS)
Post Office Box 15075
Baton Rouge, LA 70895

10461 Mammoth Drive
Baton Rouge, LA 70814

Contact Person: Barry Gipson
General Manager
Phone No. (225)925-8408
Fax No. (225)925-2343
E-Mail: bgipson@emissiontesting.com
Home Page: www.Emissiontesting.com

File:\forms\NOTI-TEST

APPENDIX C
7.3.3

EXHIBIT 1

PRETEST MEETING ATTENDEES

DATE OF MEETING: 7/12/04

Bayou Steel

NAME	PHONE	AFFILIATION
Jennifer Pellant	225-219-3432	LDEQ/Eng Group I
Cedric Mellion	225-219-3999	DEQ-EED-TEDI
Nicholas LaCroix	225-219-3501	DEQ-EED-TRI
Timothy Bergeron	225/219-3431	LDEQ/Eng I
Freddie Zaro	(225)291-7122	LDEQ/Permits
Denise Bennett	(225) 219-3086	LDEQ/Permits-Air
Clay Robinson	(225)219-3760	LDEQ/Enforcement-Air
Jim Courville	(225)219-3428	LDEQ/Eng #1
Jim Orgeron	(225) 275-3231	LDEQ/Plans
Trevor Tellez	(225) 219-3105	LDEQ/Permits
Barry Gipson	(225) 925-8405	ETS
Wendy Stehling	985/652-0322	Bayou Steel Corp.
Linda Brown	(225) 219-3535	DEQ/EED/TRI+TEDI
Al Pulliam	985 652-0409	Bayou Steel

File:\forms\NOTI-TEST

State of Louisiana

Department of Environmental Quality

Edwin W. Edwards
Governor

William A. Kucharski
Secretary

Mr. Al Pulliam
Environmental Manager
Bayou Steel Corporation
P. O. Box 5000
LaPlace LA 70069

Dear Mr. Pulliam:

RE: Permit modification, Bayou Steel Corporation, LaPlace, St. John the Baptist Parish, Louisiana

This is to inform you that the permit modification requested for the above referenced facility has been approved under LAC 33:III.501. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the design scheme presented will be capable of controlling the emissions to the types and quantities stated. A revised application must be submitted if the reported emissions are exceeded after operation begins. The synopsis, data sheets, and conditions are attached herewith.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application.

The permit number cited below should be referenced in future correspondence regarding this subject.

Done this 5th day of MAY, 1995.

Permit No.: 885 (M-2)

Very truly yours,

Gustave Von Bodungen

Gustave A. Von Bodungen, P.E.
Assistant Secretary

GVB/WL

c: Southeast Regional Office

AIR PERMIT BRIEFING SHEET
AIR QUALITY DIVISION
LOUISIANA DEPARTMENT OP ENVIRONMENTAL QUALITY

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

I. BACKGROUND

Bayou Steel Corporation operates an Electric Arc Furnace (EAF) steel mill in LaPlace, Louisiana. It was originally permitted on February 28; 1978 (Permit No. 885). A PSD' permit (PSD-LA-66), issued February 15, 1983, for NO, emissions, was later rescinded. Permit No. 885(M-1) was issued October 28, 1983. Nitrogen oxides (NO,) emissions from the electric arc. furnace (EAF) during melting and refining operations were not included in the referenced permit as NO_x was'not recognized as a precursor to ozone, formation at that time. Accounting for fugitive emissions in permitting began onlyafter 1990. The application for the present modification was first submitted in December, 1993, but later withdrawn because fugitive emissions were not included. The revised submittal was dated August 4, 1994. Supplemental information was received March 22, 1995.

If. ORIGIN

A permit application and Emission Inventory Questionnaire for this modification was received August 5, 1994.· The commitment to submit an updated air permit application and EIQ was made in response.to a.Notice of Violation (NOV), issued by DEQ on June 3, 1994. The ,purpose of this submittal is to provide speciation of hazardous air pollutants (HAP) and to include fugitive emissions. Electric arc furnace (EAF) NO, emissions, missing fromthe previous permit modification, are included in this modification.

III. DESCRIPTION

Bayou Steel operates two separate' EAFs. · Scrap steel, coke lime, flux, and alloys are melted in a refractory-lined kettle using three high-voltage electrodes to produce a recovered steel product.

In preparation for charging and melting of the steel, the furnace electrodes are aligned and the furnace lining is coated with a protective layer of gunite at the slag zone. The furnace is loaded with the initial charge of scrap steel and other materials. The roof, in which the electrodes are

housed, is placed onto the furnace and the electrical current is applied. After the first charge is melted, the EAF roof is removed from the furnace and a second charge of scrap steel, coke, lime and flux is added. The furnace roof is lowered onto the furnace and current again applied to melt the second charge. A third charge is added repeating the steps of the second charge. After the final meltdown, the molten steel is subjected to an oxygen injection period to further oxidize impurities and combine with any excess carbon to form carbon dioxide.

In a final refining stage, oxygen flow is discontinued with the electricdl current still applied. The EAF vessel is first tilted backwards to empty slag into the slag pot, where it is water cooled and then placed on a slag pile. Liquid molten steel is poured into a teeming ladle when the vessel is tilted forward, completing a single EAF heat.

Molten steel is poured from the ladle to the continuous casting machine via an overhead crane. The ladle is placed on a turret which rotates to position the ladle over the continuous casting tundish. The ladle empties into four individual water-cooled copper billet molds. Steel leaves the mold as a solid steel casing with a liquid core. A continuous strand of steel is further cooled by water sprays as it is drawn from the mold and cut into various lengths by an oxygen cutting torch. The billets are transferred to the finishing area where they are allowed to cool.

Billets are sold or further processed in the hot forming rolling mill into angles, channels and I beams. A maximum of 600,000 tans of billets is anticipated to be "produced, requiring 1.4 MM BTU of natural gas for each ton of billets charged.

~articulateemissions from the slag piles are controlled by wetting with water.

The Primary Dust Collection system (Emission Point No. 1-77) captures particulates during melting and refining operations (when the roof and electrodes are in place). The Secondary Dust Collection System (Emission Points 2-77A through F) col'lects particulates during charging and tapping operations (when the roof is removed). A canopy system around the EAF

captures emissions from the uncovered furnace and routes them to the Secondary Dust Collection System baghouse for collection. Although .it has been shown as a single point source in previous EIQ submittals, this baghouse actually has six separate vents. The furnace house vacuuming operations collects dust from the furnace house floor. Baghouse filters and vacuum bags are periodically dumped into an EAF during a routine charging sequence.

Bayou Steel's operation is regulated under New Source Performance Standards, 40 CFR 60 Subpart AA-Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983, for particulate emissions. Compliance with. 0.0052 gr/dscf limit for the Primary Dust Collection System 'was demonstrated during a stack test performed during March,, 1984. The average value obtained was' 0.0029 gr/dscf which corresponds to an average rate of 2.15 pounds per hour total suspended particulates (TSP or 1.63 for PM_{10}).

EIQ sheets were submitted for five diesel and two gasoline storage tanks ranging in 'size from 200 to 9,000 gallons. Total emission,from the seven tanks is less than one ton. All of the tanks storing VOCs are equipped with submerged fill pipes. Only the two gasoline tanks are included in this permit. The diesel tanks meet the criteria for insignificant sources and, therefore, are not included in the permit..

Emissions summary, in tons per year.(TPY), is as follows:

Pollutant	permitted Before	Proposed	Change
TSP*	62.9	58.2	- 4.7
PM_{10}	-	37.2	+ 37.2
SO_2	0.9	0.3	- 0.6'
NO_x	119.7**	149.1	+ 29.4
VOC	1.0	2.2	+ 1.2
CO	5.4	15.0	+ 9.6

*See Attachment A for speciation of solid HAPs. Total particulates only were permitted previously.
**This figure is adjusted for inclusion of NO_x emissions omitted in error from the M-lmodification of Permit No. 885.

Increases are due to increase in operating hours which results in an increase in the annual charge rate to the furnace. Since, there was no modification, PSD review is not triggered. Decreases are due to differences in emission factors.

IV. TYPE OF REVIEW'

The permit was reviewed for compliance with the Louisiana Air Quality Regulations and NSPS. Prevention of Significant Deterioration and NESHAP do not apply.

This facility is a major source of toxic air pollutants (TAP) because their potential to emit is above the 10/25 threshold. The compliance plan .for the facility was approved April 13, 1995. This permit establishes limits within the constraints of said compliance plan.

V. PUBLIC NOTICE

Public notice is not required for a minor modification to an existing source.

SPECIFIC CONDITIONS

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

1. Permittee shall comply with all applicable provisions of 40 CFR 60 Subpart AA - Steel Plants: Electric Arc Furnaces' Constructed After October 21, 1974 and on or Before August 17, 1983.

2. Permittee shall maintain the dust filters of the baghouse, Emission Point No.' 1-77, and the baghouse serving Emission Point Nos. 2-77A thru F, so that particulate removal efficiencies of 99% are maintained. Filter vents shall be visually inspected for opacity on a daily basis. The filter elements '(bags) shall be inspected every six months and changed as' necessary. Records of opacity checks and maintenance inspections of the dust filters shall be kept on site and available for inspection by the Air Quality Division.

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

ATTACHMENT A

HAP speciation in tons per year X 10^{-2} (TPY X 10^{-2}):

Emission Pt.No.	As	Ba	Cd	Cr	Cu	Pb	Mn	Ni	Zn	Total
1-77	0.042	0.323	0.444	3.099	2.834	19.72	29.66	0.399	134.3	190.8
2-77A	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1
2-77B	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1'
2-77C	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.96	24.1
2-77D	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.94	24.1
2-77E	0.005	0.041	0.056	0.391	0.358	2.490	'3.744	0.050	16.94	24.1
2-77F	0.005	0.041	0.056	0.391	0.358	2.490	3.744	0.050	16.94	24.1
1-94	0,178	1.360	1.871	13.06	11.94	83.10	124.9	1.682	565.9	804.0
2-94	0.003	0.021	0.029	0.204	0.187	1.299	1.954	0.026	8.85	12.6
Totals	0.253	1.95	2.68	18.7	17.1	119.1	179.0'	2.4'	810.8	1152

*The concentrations were derived from analyses of baghouse dust averaged over a 21-month period. They are amounts contained in total suspended particulates (TSP), not just PM,,.

APPENDIX D
7.4.7

AIR QUALITY DATA SHEET
PAGE 1

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

Location of plant: '15 UTM: 744.7 km E 3325.5 km N

Description of iocation: Between River Road and Airline Highway approximately 2 miles south of LaPlace

Estimated starting date of construction operating

Estimated starting operation will begin

Dispersion Model(s) Used: NA

NEW____ OR MODIFIED X EMISSION SOURCES Scrap Metal Recoverv
(Type of Source)

Emission Point No.	Description	Operating Rate (Max) or Tank Capacity	Operating Schedule H/D	D/W	W/Y
1-77	Primary Dust Collection System	292,000 cu ft/min	24	7	52
2-77A	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77B	Secondary Dust Collection System	68,333 cu ft/min	24	7	52
2-77C	Secondary Dust Collectfon System	68,333 cu ft/min	24	7	52
2-77D	Secondary Oust Collection System	68,333 cu ft/min	24	7	52
2-77E	Secondary Dust Collection System	68,333 cu ftfmfn	24	7	52
2-77F	Secondary Dust Collection System	68,333 cu ftfmin	24	7	52
4-77	Rolling Mill Furnace	77.2 MM BTU/hr	24	7	52
1-94	Furnace House Fugitives	N/A	24	7	52
2-94	Slag Pile Fugitives	N/A	24	7.	52
3-94	A Bay Heater No. 1	1.5 MM BTU/hr	24	7	22
4-94	A Bay Heater No. 2	1.5 MM BTU/hr	24	7	22

AIR QUALITY DATA SBEET
PAGE 1 (CONTINUED)

BAYOU STEEL CORPORATION
LAPLACE, ST. **JOHN THE** BAPTIST **PARISH,** LOUISIANA'

Emission Point No.	Description	Operating Rate (Max) or Tank Capacity	Operating Schedule' H/D	D/W	W/Y
5-94	A Bay Heater No. 3	1.5 MM BTU/hr	24	7	22
6-94	B Bay Heater No. 4	3.0 MM BTU/hr	24	7	22
7-94	B Bay Heater No. 5	3.0 MM BTU/hr	24	7	52
8-94	B Bay Heater No. 6	3.0 MM BTU/hr	24	7	52
11-94	Mechanic Shop Gasoline Tank No.3	1100 gal	24	7	52
14-94	IMS Gasoline Tank No. 6	800 gal	24	7	52

AIR QUALITY DATA SHEET
PAGE 2

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST, PARISH, LOUISIANA

MAXIMUM/AVERAGE EMISSIONS ARE LISTED IN LBS/HR

Emission Point No.	Permitted Emissions PM_{10}	SO_2	NOx	VOC	CO	OTHER	HEIGHT Feet	TEMP °F	FLOW RATE CFM
1-77	2.93/1.63	0.01/0.01	20.36/20.36		-	-	162.5	257	292,000
2-77A	0.258/0.21			-	-	-	143.2	104	68,333
2-77B	0.258/0.21				-	-	143.2	104	68,333
2-77C	0.258/0.21				-	-	143.2	104	68,333
2-77D	0.258/0.21				-	-	143.2	104	68,333
2-77E	0.258/0.21				-	-	143.2	104	68,333
2-77F	0.258/0.21				-	-	143.2	104	68,333
4-77	0.44/0.28*	0.09/0.06	20.36/12.91	0.41/0.26	5.08/3.22		143.3	700	44,490
1-94	6.57/5.25	-		-	-	-	NA	ambient	NA
2-94	0.064/0.064			-	-	-	NA	ambient	NA
3-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
4-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
5-94	0.004/0.004	<0.01/0.01	0.20/0.20	<0.01/<0.01	0.05/0.05	-	NA	375	285
6-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10		NA	375	570
7-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10	-	NA	375	570
8-94	0.01/0.01	<0.01/0.01	0.40/0.40	0.01/0.01	0.10/0.10	-	NA	375	570
11-94				0.12/0.12	-	-	NA	ambient	NA
14-94				0.09/0.09	-		NA	ambient	NA

*PM_{10} emissions due to combustion of natural gas and process.

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BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

Permitted emissions are listed in tons per year

Emission Point No.	PM_{10}*	SO_2	NO_X	VOC	CO	OTHER
1-77	7.2	0.04	89.2	-	-	-
2-77A	0.90	-	-	-	-	-
2-77B	0.90	-	-	-	-	-
2-77C	0.90	-	-	-	-	-
2-77D	0.90	-	-	-	-	-
2-77E	0.90	-	-	-	-	-
2-77F	0.90	-	-	-	-	-
4-77	1.22	0.24	56.5	1.13	14.1	-
1-94	23.0	-	-	-	-	-
2-94	0.28	-	-	-	-	-
3-94	0.01	<0.01	0.37	0.01	0.09	-
4-94	0.01	<0.01	0.37	0.01	0.09	-
5-94	0.01	<0.01	0.37	0.01	0.09	-
6-94	0.02	<0.01	0.75	0.02	0.19	-
7-94	0.02	<0.01	0.75	0.02	0.19	-
8-94	0.02	<0.01	0.75	0.02	0.19	-
11-94	-	-	-	0.54	-	-
14-94				*0.41*		
TOTALS	37.2	0.28	149.1	2.2	15.0	

*See Attachment A for speciation of HAP in particulates.

885 M-2

SPECIFIC CONDITIONS

BAYOU STEEL CORPORATION
LAPLACE, ST. JOHN THE BAPTIST PARISH, LOUISIANA

1. Permittee shall comply with all applicable provisions of 40 CFR 60 Subpart AA - Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983.

2. Permittee shall maintain the dust filters of the baghouse, Emission Point No. 1-77, and the baghouse serving Emission Point Nos. 2-77A thru F, so that particulate removal efficiencies of 99% are maintained. Filter vents shall be visually inspected for opacity on a daily basis. The filter elements (bags) shall be inspected every six months and changed as necessary. Records of opacity checks and maintenance inspections of the dust filters shall be kept on site and available for inspection by the Air Quality Division.

STONE, PIGMAN, WALTHER, WITTMANN & HUTCHINSON
COUNSELLORS AT LAW
1000 WHITNEY BANK BUILDING
NEW ORLEANS, LOUISIANA 70130-2662
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DOUGLAS D. DODD
RANDALL A. SMITH
CHARLES R. PENOT, JR.
LINDA R. GALLAGHER
NOEL J. DARCE

November 9, 1983

OUR FILE NUMBER
40,728-D

Mr. Dietmar Sainitzer
Mr. Bruce Eskew
Mr. Mike McEarl
Bayou Steel Corporation
P. O. Box 5000
LaPlace, Louisiana 70068

Re: Louisiana Permit 885-M-1

Gentlemen:

I enclose herewith a copy of State Air Permit 885-M-1. Larry Schumer of Waldemar S. Nelson and Company advises that this permit is an interim step toward rescission and replacement of the PSD Permit.

Before the PSD Permit can be rescinded by the Environmental Protection Agency, an operating permit must be in place, and therefore Permit 885-M-1 has been issued. If, and after, the PSD Permit is rescinded; Larry advises that we can anticipate issuance of a more stringent and more detailed state permit as the permanent Air Quality Permit.

Sincerely,

Original Signed
CLINTON W. SHINN

Clinton W. Shinn

CWS/sh
Encl.

cc: Larry Schumer
Harold Himmelman, Esq.
John Guttmann, Esq.
Paul Shorb, Esq.

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State of Louisiana

FRANK P. SIMONEAUX
SECRETARY

B. JIM PORTER
ASSISTANT SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF ENVIRONMENTAL AFFAIRS
AIR QUALITY DIVISION

GUSTAVE VON BODUNGEN
PROGRAM ADMINISTRATOR

October 28, 1983

Mr. Ewell P. Walther, Jr.
Bayou Steel Corporation
Post Office Box 5000
LaPlace, Louisiana 70068

Dear Mr. Walther:

RE: Revision of State Permit 885 issued February 28, 1978. Total Emissions: Particulates 65.98 TPY, Sulfur Dioxide 1.002 TPY, Oxides of Nitrogen 77.80 TPY, Hydrocarbons 1.58 TPY, and Carbon Monoxide 9.22 TPY.

This is to confirm that the permit request for the above referenced project at the LaPlace Facility, LaPlace, St. John the Baptist Parish, Louisiana has been approved by the Assistant Secretary, Office of Environmental Affairs, Department of Natural Resources, under Air Quality Regulation 6.1.1. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the' design scheme presented will be capable of controlling the emissions to the types and quantities stated. A new application must be submitted if the reported emissions are exceeded after operation begins. The emission and operating limitations are "described in attached synopsis, data sheets and conditions.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application, and/or the attached condition are not satisfied.

The permit number cited below should be referenced in, future correspondence regarding this subject.

Date: October 28, 1983
Permit No: 885-M-1

Approved by: Gus Von Bodungen for
B. JIM PORTER
Assistant Secretary

BJP/PD/bap

Enclosures

cc: Southeast Regional Office
U.S. EPA, Region
Waldmar S. Nelsen and Company

APPENDIX D
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LOUISIANA AIR CONTROL COMMISSION

BAYOU STEEL CORPORATION

LaPlace (St John the Baptist)

Bayou Steel Corporation requests a permit to construct and operate a steel manufacturing and forming facility on the Mississippi River in S t John the Baptist Parish, Louisiana. The facility will process scrap steel and produce billets, sections, rods, rounds and angles for both export and domestic purposes.

The process units will consist of two Electric Arc Furnaces, two Continuous Casting Units and Hot Rolling Mill Equipment.

Scrap steel and scale recovered from within the steel works will be recycled to the furnaces whereas the environmentally stable slag, wastewater treatment sludge and dust from the fabric filters will be used as landfill on Bayou Steel's property. A variance to start construction was approved by the Commission at the January 24, 1978 hearing.

Overall emissions of the facility are summarized as follows:

Particulate	65.98	tons/year
HC	1.58	tons/year
SO_2	1.002	tons/year
CO	9.22	tons/year
NO_x	77.80	tons/year

The greatest sources of air pollution in the steel mill will be the electric arc furnaces when power is on and/or when oxyugen is injected.

To control and limit the emissions, the company will install:

1) A primary dust control system which will provide for carbon monixide incineration, cooling, and high efficiency (99%) dust removal by means of a fabric filter baghouse.

2) A secondary dust control system with fabric filter baghouses to collect dust emissions when the primary dust control system is disengaged during the electric arc furnaces charging and tapping operations.

Fugitive dust emissions primarily due to lime and additive receiving, transferring and feeding system will be collected and cleaned by a fabric filter baghouse.

Sulfur dioxide emissions will be controlled by firing the rolling mill furnace with natural gas, a clean fuel.

Hydrocarbon emissions will consist of those associated with storing kerosene (a non-volatile organic compound), which is required for auxiliary heat input to the electric arc furnaces, in a 1500 barrel cone roof tank.

The company has stated that all the mentioned emission control schemes and equipment will comply with both LACC Regulations and EPA New Source Performance Standards and will also conduct necessary tests, monitoring and reporting as required.

A significant air quality derterioration analysis for particulate and sulfur dioxide area increments was submitted to EPA and indicate that the standards will be met.

Submitted dispersion calculations indicate that ambient air quality standards will not be violated.

BAYOU STEEL CORPORATION

LaPlace (St. John the **Baptist)**

RECOMMENDATION:

Approval provided the following conditions are met.

1) The synopsis sheets and the attached data sheets establish the emission and operating limitations and are a part of the permit. The synopsis and data sheets are based on the application for **approval** of emissions dated June 21, 1983 with supplemental information submitted July 15, 1983. The application and supplemental information ark also considered part of this permit be reference.

2) Construction must commence within two years after the date of approval.

3) The permittee will submit to. the Technical Secretary seminannual reports of progress defining. the-status. of construction, noting any design changes, modifications or alterations in the construction schedule whichhave or may have an effect upon the emission rates or ambient air quality levels. Such reports shall continue to be submitted until such time as construction is certified as being complete.'

4) Any emission testing performed for purposes of' demonstrating compliance with the limitations set forth in Condition 1 shall be conducted in' accordance with the methods described and referenced in Table 4 of the current Louisiana Air Control Commission Regulations.

5) The permittee shall, within **180** days after certifying the completion of construction prepare and submit to the Technical Secretary a report detailing the actual emission rates as compared to those limitations specified in Condition 1. The report shall also include, but not be limited to, malfunctions and upsets.

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6) The permittee shall comply with all applicable New Source Performance Standards for Electric Arc Furnaces (40 CFR, Subpart AA).

7) The permittee shall maintain records of the hours of operation per calendar year for each source. These records shall be kept at the plant site for at least two years and made available to Air Quality Division.

LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air Quality Data Sheet

Page 1

Bayou Steel Corporation

LaPlace, St. John the Baptist Parish

Location of plant: 15 UTM 744.7 Km E 3325.5 Km N

Description of location: The facility is located between River Road and Airline Highway, approximately 2 miles south of LaPlace, and 2.3 miles north of Montz.

Estimated starting date of construction: Existing

Estimated date operation will begin:

Type of Dispersion Calculations Used: Computer calculations using dispersion model PTMAX

EFFECTS ON AMBIENT AIR

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Air Quality Standard
Particulate	Annual	43 ug/m^3	60 ug/m^3
	24 hour	100 ug/m^3	150 ug/m^3
SO_2	Annual	1.86 ug/m^3	60ug/m^3
	24 hour	34.1 ug/m^3	260 ug/m^3
NO_x	Annual	18.5 ug/m^3	100ug/m^3

NEW [ ] OR MODIFIED [X] EMISSION SOURCES Steel Mill (Type of Source)

Stack I.D. #	Description	Operating Rate (Maximum)	Operating Schedule		
			Hrs/Day	Days/Wk	Wks/Yr
1-77	Primary Dust Collection	203,580 lbs.hr	24	7	42.5
2-77	Secondary Dust Collection		8	7	42.5
4-77	Rolling Mill Furnace	145.5 mscf/hr	24	6	50

LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air Quality Data Sheet - Page 2

Bayou Steel Corporation (Company's Name)

La Place, St. John the Baptist (Nearest Town) (Parish)

EMISSIONS ARE LISTED USING THE UNITS LBS/HR

STACK ID	PERMITTED EMISSIONS						Feet	F°	CFM
	TSP	SO_2	NO_X	HC	CO		Height	Temperature	Flow Rate
1-77	9.66	0.193					162.5	257	291,122
2-77	19.84						133.5	104	470,500
4-77	1.33	0.087	21.61	0.44	2.56		143.3	700	44,490

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LOUISIANA ENVIRONMENTAL CONTROL COMMISSION

Air quality Data Sheet

	Tons per Year					
Stack I.D.	TSP	SO_2	NO_x	HC	CO	OTHER
1–77	34.49	0.689				
2–77	23.61					
4-77	7.88	0.313	77.80	1.58	9.22	