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FRONTIER REFINING - CHEYENNE REFINERY (H
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February 28, 2014

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Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Chief
Mail Code 8 ENF-T
Office of Enforcement, Compliance, and
Environmental Justice
U.S. EPA Region 8
1595 Wynkoop St.
Denver , CO 80202-1129

Wyoming Department of Environmental
Quality
Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

2H13 Semi Annual

RE: Frontier Refining LLC, Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: July 1, 2013 through December 31, 2013

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refining LLC is hereby submitting the semi-annual progress report for July 1, 2013 through December 31, 2013 (see attached).

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Frontier Refining LLC
300 Morrie Ave. • Cheyenne, WY 82007
(307) 634-3551 • http://www.hollyfrontier.com

Please contact me at (307) 771-8706 if you have any questions.

Sincerely,

Glenn Travis
Environmental Manager
Frontier Refining LLC

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
26 Columbia TPKE STE 200
Florham Park, NJ 07932-2213

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Frontier Refining LLC
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Table 1
Report Cross Reference

Paragraph	Requirements	Comments	Attachment
216	FRI and FEDRC shall submit to EPA and the Applicable Intervenor, semi-annual reports due on August 31st (covering the prior period from January 1st to June 30th) and February 28th (covering the prior period from July 1st to December 31st), with the first such report due on August 31, 2009. The semi-annual reports shall contain the following information for each relevant Covered Refinery:		See below
216a	For the period covered by the report, a summary of the emissions data for the Covered Refinery that is specifically required by the reporting requirements of the Consent Decree;	Emissions reported per Paragraph 217 below	See below
216b	A description of any problems anticipated with respect to meeting the requirements of this Consent Decree at each Covered Refinery;	There are no problems anticipated. Some information on future plans is included in the summary of additional requirements.	H
216c	A description of all Supplemental Environmental Projects and implementation activity in accordance with this Consent Decree;	SEPs are all completed.	F
216d	Any such additional matters as FRI or FEDRC believes should be brought to the attention of the Applicable Federal and State Agencies;	See summary of additional requirements.	H
216e	Any additional items required by any other Paragraph of this Consent Decree to be submitted with a semi-annual report including but not limited to reports required under Paragraphs 137, 152, 170, and 205.		137: A, 150 & 172: E, 205: F
217	In the semi-annual report required to be submitted on August 31st of each year, FRI and FEDRC shall provide a summary of annual emissions data for each Covered Refinery for the prior calendar year, to include:	Not included in the February Report	N/A
217a	NOx emissions in tons per year for each heater and boiler greater than 40 mmBTU/hr maximum fired duty;	Not included in the February Report	N/A
217b	NOx emissions in tons per year as a sum for all heaters and boilers less than 40 mmBTU/hr maximum fired duty;	Not included in the February Report	N/A
217c	SO2, CO and PM emissions in tons per year as a sum for all heaters and boilers;	Not included in the February Report	N/A
217d	SO2 emissions from all Sulfur Recovery Plants in tons per year;	Not included in the February Report	N/A
217e	SO2 emissions from all Acid Gas Flaring and Tail Gas Incidents by flare in tons per year;	Not included in the February Report	N/A
217f	NOx, SO2, PM and CO emissions in tons per year as a sum at each Covered Refinery for all other emissions units for which emissions information is required to be included in the facilities' annual emissions summaries and that are not identified above;	Not included in the February Report	N/A
217g	SO2, NOx, CO and PM emissions in tons per year for each FCCU,	Not included in the February Report	N/A
217h	for each of the estimates or calculations in Subparagraphs 217.a. through 217.g. above, the basis for the emissions estimate or calculation (i.e. stack tests, CEMS, emission factor, etc.).	Not included in the February Report	N/A
217	To the extent that the required emissions summary data is available in other reports generated by FRI and/or FEDRC, as appropriate, such other reports can be attached or the appropriate information can be extracted from such other reports and attached to the semi-annual report to satisfy the requirement.	Not included in the February Report	N/A
218	In each semi-annual report required under Paragraph 216 for each Covered Refinery, FRI and FEDRC shall provide a summary of all exceedances of emission limits required or established by this Consent Decree, which shall include:		See below
218a	for operating units emissions limits that are required by this Consent Decree and monitored with CEMS, for each CEMS:	CEM monitoring data is contained in each applicable section.	FCCU: B, Heaters: D, SRP: G
218b	for any exceedance of an emissions limit required by this Consent Decree from an operating unit *monitored through stack testing:*	No exceedances of an emission limit from an operating unit *monitored through stack* testing occurred in this reporting period.	N/A
219	Each Covered Refinery's semi-annual report shall be certified by either the person responsible for environmental management and compliance for that Covered Refinery, or by a person responsible for overseeing implementation of this Consent Decree. The certification shall state: I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.	Certification contained on the cover letter.	Cover Letter

Paragraph	Attachment A - BWON	Comments
137	Record Keeping and Reporting Requirements for this Section VI.L: As part of either the reports required under 40 C.F.R. § 61.357 or the progress report procedures of Part IX of this Consent Decree (Record Keeping and Reporting), for their respective Covered Refinery, FRI and FEDRC shall submit the following information as part of the quarterly report required pursuant to 40 C.F.R. § 61.357(d)(6) and (7) ("Section 61.357 Reports") (for FEDRC) or in the reports due pursuant to Paragraph 216 of this Decree:	The information is reported as described below.
137a	Sampling Results under Paragraphs 123, 124, and 125. The report shall include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the quarterly and projected calendar year TAB (for the FRI Refinery) and the quarterly and projected calendar year uncontrolled benzene quantity (for the FEDRC Refinery);	This information is included in the reports under §61.357, which are also included in this section. Because Frontier has been determined to be >10 Mg/yr facility, the report includes the uncontrolled benzene quantity as opposed to the TAB.
123	The Sampling Plan shall commit FRI and/or FEDRC, as appropriate, to analyze, in each calendar quarter at least three representative samples from all waste streams identified in Paragraph 122.a and all locations identified in Paragraph 122.b.	Results from this sampling is included in the quarterly reports.
124	For Covered Refineries with a TAB greater than or equal to 10 Mg/yr, the Sampling Plans shall identify:	See below for sampling results details. As part of the recent audit and work following, Frontier has done a thorough review of the BWON Sampling Plan and is in the process of determining how the plan needs to be updated. After it is determined how to update the plan to properly reflect operations, it will be submitted and implemented. update
124a	each uncontrolled waste stream that contains greater than 0.05 Mg/yr of benzene at the point of generation;	Results from this sampling is included in the quarterly reports.
124c	the proposed End-of-Line sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity calculations under the terms of Paragraph 129.	Results from EOL sampling is included in the quarterly reports.

Paragraph	Attachment A - BWON	Comments
125	The Sampling Plan required under Paragraph 124 shall commit FRI and/or FEDRC, as appropriate, to analyze, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraphs 124.a and 124.b and all locations identified in Subparagraph 124.c.	Results from this sampling is included in the quarterly reports.
137b	Training. Initial and/or subsequent training conducted by FRI and FEDRC in accordance with Paragraphs 115 - 117;	See below
115	Benzene Waste Sample Training. By the later of the Date of Entry or March 31, 2009, FRI and FEDRC shall develop and begin annual (i.e., once each calendar year) training for all employees asked to draw BWON samples at either of the Covered Refineries.	Training completed as required. Training records are attached.
116	Standard Operating Procedures for BWON Equipment. By the later of the Date of Entry or March 31, 2009, FEDRC shall complete the development of standard operating procedures for all control equipment used to comply with the BWON at the Covered Refinery.	Frontier recently voluntarily disclosed audit findings that identified these procedures and training were deficient. Frontier is in the process of correcting those deficiencies.
116a	On or before June 1, 2009, FEDRC shall complete an initial training program regarding these procedures for all operators assigned to this equipment. FEDRC shall provide comparable training to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, "refresher" training in these procedures shall be performed at a minimum on a three (3) year cycle.	Frontier recently voluntarily disclosed audit findings that identified these procedures and training were deficient. Frontier is in the process of correcting those deficiencies.
116b	The FRI Refinery shall comply with the provisions of Paragraph 116 if and when its TAB reaches 10 Mg/yr. FRI shall propose a schedule for training at the same time that FRI proposes a plan, pursuant to Paragraph 94, that identifies the compliance strategy and schedule that FRI shall implement to maintain compliance with the waste benzene NESHAP.	Frontier recently voluntarily disclosed audit findings that identified these procedures and training were deficient. Frontier is in the process of correcting those deficiencies.
117	Training: Contractors. As part of their training program, FRI and FEDRC must ensure that the employees of any contractors hired to perform the requirements of Paragraphs 115 and 116 are properly trained to implement all applicable provisions of this Section VI.L.	Frontier recently voluntarily disclosed audit findings that identified these procedures and training were deficient. Training is now completed. Training records are attached.

Paragraph	Attachment A - BWON	Comments
137c	Laboratory Audits. Initial and subsequent audits conducted by FRI and FEDRC pursuant to Paragraphs 110 - 113, through the calendar quarter for which the quarterly report is due, including in each such report, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit.	See below
110	Laboratory Audits. FRI and FEDRC shall conduct audits as required by Paragraphs 111 - 112, below, of all laboratories that perform analyses of their respective BWON samples to ensure that proper analytical and quality assurance/quality control procedures are followed.	Initial on-site audits were conducted by Sage Environmental Consulting, L.P. of the Technology Laboratories, Inc. facility located in Fort Collins, Colorado on August 13, 2013 and the TestAmerica Laboratories, Inc. facility located in Arvada, Colorado on August 17th, 2013. The results of all audits indicate that Energy Laboratories Inc., Technology Laboratories, Inc. and TestAmerica Laboratories, Inc. are both capable of reliable analysis of benzene-containing wastewater and organic samples as listed in 40 CFR §61.355(c)(3)(iv).
111	Within one year from the Date of Entry, FRI and FEDRC shall complete audits of all of the laboratories they each use to perform analyses of BWON samples. Thereafter, FRI and FEDRC shall audit any new laboratory to be used for analyses of BWON samples prior to such use.	Completed previously.

Paragraph	Attachment A - BWON	Comments
112	Until this Consent Decree is terminated, FRI and FEDRC shall conduct subsequent audits of each of their respective laboratories used for BWON analyses at least once every two years.	Initial on-site audits were conducted by Sage Environmental Consulting, L.P. of the Technology Laboratories, Inc. facility located in Fort Collins, Colorado on August 13, 2013 and the TestAmerica Laboratories, Inc. facility located in Arvada, Colorado on August 17th, 2013. The results of all audits indicate that Energy Laboratories Inc., Technology Laboratories, Inc. and TestAmerica Laboratories, Inc. are both capable of reliable analysis of benzene-containing wastewater and organic samples as listed in 40 CFR §61.355(c)(3)(iv).
113	FRI and FEDRC may retain third parties to conduct these audits or use audits conducted by others, but it is the sole responsibility and obligation of FRI and FEDRC to ensure that the Covered Refineries comply with this Consent Decree and Subpart FF.	Frontier utilizes a third party to conduct the audits.
130	In making the calculations required under Paragraph 129, FRI and FEDRC shall use the average of the three (3) samples collected at each sampling location. If these calculations do not identify any potential violations of the BWON, FRI and FEDRC shall submit these calculations in the reports due under Section XI. (Reporting and Record Keeping) of this Decree.	The calculations are submitted in the required reports and included in the quarterly reports.

2013 Q3 UNCONTROLLED QUANTITY BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS
FRONTIER REFINING LLC, CHEYENNE REFINERY, CHEYENNE, WYOMING

Quarter	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Quarterly Estimated Uncontrolled BQ (Mg/yr)	Total Annual Estimated Uncontrolled BQ (Mg/yr)
1Q 2013	API Effluent (Total)	99.80	0.20	53.76	2.28	531.00	3.20	460.97	0.0264	0.1056
	Desalter Effluent (Controlled)	99.22	0.78	53.76	14.97	1496.67	24.97	35.43		
	Coker API Effluent (Controlled)	99.25	0.01	53.76	1.73	172.60	1.74	268.57		
	Groundwater (Controlled)	99.95	0.05	53.76	1.51	151.00	1.57	46.77		
2Q 2013	API Effluent (Total)	99.82	0.18	53.76	3.56	1664.67	6.10	550.00	0.1779	0.4086
	Desalter Effluent (Controlled)	99.22	0.78	53.76	21.93	2193.33	36.59	47.62		
	Coker API Effluent (Controlled)	99.50	0.50	53.76	6.41	640.53	9.14	129.68		
	Groundwater (Controlled)	99.95	0.05	53.76	1.51	151.00	1.57	46.77		
3Q 2013	API Effluent (Total)	99.72	0.28	53.76	2.45	528.67	3.71	574.3	0.2131	0.5564
	Desalter Effluent (Controlled)	99.22	0.78	53.76	16.60	1660.00	27.69	40.01		
	Coker API Effluent (Controlled)	99.50	0.50	53.76	8.16	816.00	11.64	112.34		
	Groundwater (Controlled)	99.95	0.05	53.76	1.78	178.00	1.86	46.77		

quarterly limit = 1.5 Mg

2013 Q4 UNCONTROLLED QUANTITY BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS
FRONTIER REFINING LLC, CHEYENNE REFINERY, CHEYENNE, WYOMING

Quarter	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Quarterly Estimated Uncontrolled BQ (Mg/yr)	Total Annual Estimated Uncontrolled BQ (Mg/yr)
1Q 2013	API Effluent (Total)	99.80	0.20	53.76	2.28	531.00	3.20	460.97	0.0264	0.1056
	Desalter Effluent (Controlled)	99.22	0.78	53.76	14.97	1496.67	24.97	35.43	x4 =	
	Coker API Effluent (Controlled)	99.25	0.01	53.76	1.73	172.60	1.74	268.57		
	Groundwater (Controlled)	99.95	0.05	53.76	1.51	151.00	1.57	46.77		
2Q 2013	API Effluent (Total)	99.82	0.18	53.76	3.56	1664.67	6.10	550.00	+ 0.1779	0.4086
	Desalter Effluent (Controlled)	99.22	0.78	53.76	21.93	2193.33	36.59	47.62		
	Coker API Effluent (Controlled)	99.50	0.50	53.76	6.41	640.53	9.14	129.68	0.2043 x2 =	
	Groundwater (Controlled)	99.95	0.05	53.76	1.51	151.00	1.57	46.77		
3Q 2013	API Effluent (Total)	99.72	0.28	53.76	2.45	528.67	3.71	574.31	+ 0.2131	0.5564
	Desalter Effluent (Controlled)	99.22	0.78	53.76	16.60	1660.00	27.69	40.01		
	Coker API Effluent (Controlled)	99.50	0.50	53.76	8.16	816.00	11.64	112.34	0.4174 x $\frac{3}{4}$ =	
	Groundwater (Controlled)	99.95	0.05	53.76	1.78	178.00	1.86	46.77		
4Q 2013	API Effluent (Total)	99.71	0.29	53.76	3.26	145.93	3.61	561.4	+ 0.7336	1.1509
	Desalter Effluent (Controlled)	99.22	0.78	53.76	15.73	1573.33	26.25	14.92		
	Coker API Effluent (Controlled)	99.50	0.50	53.76	1.43	143.37	2.05	38.99	1.1509 x 1 =	
	Groundwater (Controlled)	99.95	0.05	53.76	2.63	263.37	2.75	30.00		

quarterly limit = 1.5 Mg

Paragraph	Attachment B - FCCU	Comments
218a	In each semi-annual report required under Paragraph 216 for each Covered Refinery, FRI and FEDRC shall provide a summary of all exceedances of emission limits required or established by this Consent Decree, which shall include: for operating units emissions limits that are required by this Consent Decree and monitored with CEMS, for each CEMS:	CEM monitoring data is included in this section.

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (lb/hr) CEMS
7-day rolling average = 21.9 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	91.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	11.0
C. Process Problem	0.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	103.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	4.7%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (lb/hr) CEMS
365-day rolling average = 10.9 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	91.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	11.0
C. Process Problem	1960.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	1960.0	II. Total CMS Downtime	103.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	89.1%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	4.7%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx lbs 7-Day Rolling Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of NOx lbs 7-Day Rolling excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx lbs 365-Day Rolling Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
Emission Exceedence - NOx Lb/Hr 365-Day Rolling Average	1960 hours

Total duration of NOx lbs 365-Day Rolling excess emissions	1960 hours
Total operating time	2199 hours
Operating time with excess emissions	89.1%

FCCU CEMS Downtime Summary

Frontier Refining LLC

NOx lbs CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
Corrective Maintenance - Plugged Sample Sample Line	1 hour
Cylinder Gas Audit (CGA)	1 hour
Failed Morning NOx Span Calibration Drift	63 hours
Failed Morning Wet O2 Span Calibration	5 hours
NOx and SO2 Lb/Hr Data Invalid - Formula Input Out of Range	3 hours
NOx, SO2 and CO Lb/Hr Data Invalid - Formula Input Out of Range	8 hours
Power Outage Start-Up Issues - O2 Analyzer Fault	4 hours
Power Outage Start-Up Issues - Wet O2 Failed Manual Calibration	5 hours
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	17 hours
Wet O2% Analyzer Fault	6 hours
Total duration of NOx lbs CEMS downtime	103 hours
Total operating time	2199 hours
Operating time with CEMS downtime	4.7%

FCCU CEMS Downtime Summary

Frontier Refining LLC

NOx ppm @0% O2 CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
Cylinder Gas Audit (CGA)	1 hour
Failed Morning NOx Span Calibration Drift	53 hours
Power Outage Start-Up Issues - O2 Analyzer Fault	4 hours
Total duration of NOx ppm @0% O2 CEMS downtime	58 hours
Total operating time	2199 hours
Operating time with CEMS downtime	2.6%

3Q13

EMISSION SUMMARY REPORT
FCCU SO2 (lb/hr) CEMS
1-hr average = 320 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	39.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	11.0
C. Process Problem	0.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	51.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.3%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FCCU Excess Emissions Summary

Frontier Refining LLC

SO2 lbs 1-Hr Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of SO2 lbs 1-Hr excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

SO2 lbs CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
Corrective Maintenance - Plugged Sample Sample Line	1 hour
Cylinder Gas Audit (CGA)	1 hour
Failed Morning Wet O2 Span Calibration	5 hours
NOx and SO2 Lb/Hr Data Invalid - Formula Input Out of Range	3 hours
NOx, SO2 and CO Lb/Hr Data Invalid - Formula Input Out of Range	8 hours
Power Outage Start-Up Issues - O2 Analyzer Fault	4 hours
Power Outage Start-Up Issues - Wet O2 Failed Manual Calibration	5 hours
SO2 Analyzer Fault	1 hour
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	17 hours
Wet O2% Analyzer Fault	6 hours
Total duration of SO2 lbs CEMS downtime	51 hours
Total operating time	2199 hours
Operating time with CEMS downtime	2.3%

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) (1-hr average) CEMS
1-hr average limit = 500 ppm

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	7.0	A. Monitor Equipment Malfunction	8.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	10.0
C. Process Problem	11.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	18.0	II. Total CMS Downtime	19.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.8%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.9%

Total time of excess emission events due to emergency/abnormal operations: 7.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm 1-Hr Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
Emission Exceedance - Power Outage Start-Up Issues - FCCU blower began periodic surging and then shut down	7 hours
Emission Exceedance - CO ppm, CO ppm @ 0% O2 and CO Lb/Hr - Low Excess O2	2 hours
FCCU CO went out of compliance due to loss of heat in the Regenerator	2 hours
Process Upset - Boiler Shutdown - Start-up with ESD and slide valve issues	6 hours
Process Upset - Scanfiner Heater Shutdown and would not relight. - Low Excess O2.	1 hour

Total duration of CO ppm 1-Hr excess emissions	18 hours
Total operating time	2199 hours
Operating time with excess emissions	0.8%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO ppm CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
CO Analyzer Fault - Bad Pressure Sensor Board	1 hour
CO Analyzer Fault - CO Analyzer Overranged	2 hours
CO Analyzer Malfunction - Low Excess O2	1 hour
CO ppm, CO ppm @ 0% O2 & CO Lb/Hr Data Invalid - Low Excess O2	4 hours
Cylinder Gas Audit (CGA)	1 hour
Power Outage Start-Up Issues - CO Analyzer Fault	8 hours
Power Outage Start-Up Issues - CO Analyzer Fault - CO Analyzer Overranged	2 hours
Total duration of CO ppm CEMS downtime	19 hours
Total operating time	2199 hours
Operating time with CEMS downtime	0.9%

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppmvd) @ 0% O_2 (1-hr average) CEMS
1-hr average limit = 500 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	8.0	A. Monitor Equipment Malfunction	8.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	10.0
C. Process Problem	13.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	23.0	II. Total CMS Downtime	19.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	1.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.9%

Total time of excess emission events due to emergency/abnormal operations: 10 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppmvd) @ 0% O_2 (365-day rolling average) CEMS
365-day rolling average = 100 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	8.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	10.0
C. Process Problem	0.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	19.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.9%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm @0% O2 1-Hr Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
Emission Exceedance - Power Outage Start-Up Issues - FCCU blower began periodic surging and then shut down	10 hours
Emission Exceedance - CO ppm @ 0% O2 and CO Lb/Hr - Low Excess O2	1 hour
Emission Exceedance - CO ppm, CO ppm @ 0% O2 and CO Lb/Hr - Low Excess O2	2 hours
FCCU CO went out of compliance due to loss of heat in the Regenerator	2 hours
Process Upset - Boiler Shutdown - Start-up with ESD and slide valve issues	7 hours
Process Upset - Scanfiner Heater Shutdown and would not relight. - Low Excess O2.	1 hour
Total duration of CO ppm @0% O2 1-Hr excess emissions	23 hours
Total operating time	2199 hours
Operating time with excess emissions	1.0%

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm @0% O2 365-Day Rolling Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	
Total duration of CO ppm @0% O2 365-Day Rolling excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO ppm @0% O2 CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
CO Analyzer Fault - Bad Pressure Sensor Board	1 hour
CO Analyzer Fault - CO Analyzer Overranged	2 hours
CO Analyzer Malfunction - Low Excess O2	1 hour
CO ppm, CO ppm @ 0% O2 & CO Lb/Hr Data Invalid - Low Excess O2	4 hours
Cylinder Gas Audit (CGA)	1 hour
Power Outage Start-Up Issues - CO Analyzer Fault	4 hours
Power Outage Start-Up Issues - CO Analyzer Fault - CO Analyzer Overranged	2 hours
Power Outage Start-Up Issues - O2 & CO Analyzer Faults	4 hours

Total duration of CO ppm @0% O2 CEMS downtime	19 hours
Total operating time	2199 hours
Operating time with CEMS downtime	0.9%

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (lb/hr) CEMS
1-hr average limit = 30 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	5.0	A. Monitor Equipment Malfunction	30.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	25.0
C. Process Problem	18.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	23.0	II. Total CMS Downtime	56.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	1.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.5%

Total time of excess emission events due to emergency/abnormal operations: 5.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (lb/hr) CEMS
365-day rolling average = 18.2 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	30.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	255.0
C. Process Problem	0.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	56.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**
4. **Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.**

FCCU Excess Emissions Summary

Frontier Refining LLC

CO lbs 1-Hr Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
Cut the MAB back at around 10:00 PM on 7/7/13 to reduce excess O2. At around 4:00 AM the excess oxygen dropped down too low and no air rate adjustment was made until the CO went high.	2 hours
Emission Exceedance - Power Outage Start-Up Issues - FCCU blower began periodic surging and then shut down	5 hours
Emission Exceedance - CO Lb/Hr - Ambient Air Temperature affected Blower Speed and Capacity.	1 hour
Emission Exceedance - CO ppm @ 0% O2 and CO Lb/Hr - Low Excess O2	1 hour
Emission Exceedance - CO ppm, CO ppm @ 0% O2 and CO Lb/Hr - Low Excess O2	5 hours
Emission Exceedance- CO Lb/Hr - Ambient air temperature affecting blower speed and capacity	1 hour
FCCU CO went out of compliance due to loss of heat in the Regenerator	3 hours
Process Upset - Scanfiner Heater Shutdown and would not relight. - Low Excess O2.	1 hour
The condensate pump 34-P-190 Breaker tripped. The main air blower surface condenser water boot filled and partially flooded the surface condenser bundle before they could re-establish condensate flow. This resulted in a reduction in vacuum on the surface condenser. The main air blower slowed down reducing air rate to the regenerator. Excess O2 dropped and CO increased.	1 hour
We are having difficulty controlling unit pressure due to wet gas compressor limits. This ultimately causes the Regenerator to pressure up and back out air from the main air blower. When this happens we need to reduce coke make.	3 hours

Total duration of CO lbs 1-Hr excess emissions	23 hours
Total operating time	2199 hours
Operating time with excess emissions	1.0%

FCCU Excess Emissions Summary

Frontier Refining LLC

CO lbs/hr 365-Day Rolling Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of CO lbs/hr 365-Day Rolling excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO lbs CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
CO Analyzer Fault - Bad Pressure Sensor Board	1 hour
CO Analyzer Fault - CO Analyzer Overranged	1 hour
CO Analyzer Malfunction - Low Excess O2	1 hour
CO ppm, CO ppm @ 0% O2 & CO Lb/Hr Data Invalid - Low Excess O2	4 hours
Corrective Maintenance - Plugged Sample Sample Line	1 hour
Cylinder Gas Audit (CGA)	1 hour
Failed Morning Wet O2 Span Calibration	5 hours
NOx, SO2 and CO Lb/Hr Data Invalid - Formula Input Out of Range	8 hours
Power Outage Start-Up Issues - CO Analyzer Fault	5 hours
Power Outage Start-Up Issues - CO Analyzer Fault - CO Analyzer Overranged	2 hours
Power Outage Start-Up Issues - O2 & CO Analyzer Faults	4 hours
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	17 hours
Wet O2% Analyzer Fault	6 hours
Total duration of CO lbs CEMS downtime	56 hours
Total operating time	2199 hours
Operating time with CEMS downtime	2.5%

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU PM (lb/hr) CEMS
3-hr average limit = 70.8 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	21.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	21.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.0%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**
4. The correlation curve testing was completed in December and has been applied to the previous data. This data is considered valid for this report.

FCCU Excess Emissions Summary

Frontier Refining LLC

PM lbs 3-Hr Rolling Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of PM lbs 3-Hr Rolling excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

PM lbs CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
Particulate Analyzer Fault	21 hours

Total duration of PM lbs CEMS downtime	21 hours
Total operating time	2199 hours
Operating time with CEMS downtime	1.0%

3Q13

EXCESS EMISSION SUMMARY REPORT
FCCU PM (Ni lb/hr) CEMS
1-hr average limit = 0.029 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	21.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	21.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.0%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. CEMS Performance Report contains the reportable data as if the analyzer were certified.

FCCU Excess Emissions Summary

Frontier Refining LLC

Nickle lbs 1-Hr Excess Emissions for 7/1/2013 thru 9/30/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of Nickle lbs 1-Hr excess emissions	0
Total operating time	2199 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

Nickel lbs CEMS Downtime for 7/1/2013 thru 9/30/2013

Reason	Duration
Particulate Analyzer Fault	21 hours
Total duration of Nickel lbs CEMS downtime	21 hours
Total operating time	2199 hours
Operating time with CEMS downtime	1.0%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (lb/hr) CEMS
7-day rolling average = 21.9 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	54.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	15.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	71.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.2%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx lbs 7-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of NOx lbs 7-Day Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (lb/hr) CEMS
365-day rolling average = 10.9 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	54.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	15.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	71.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.2%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx lbs 365-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of NOx lbs 365-Day Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

NOx lbs CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Failed Manual O2 Calibration Checks	23 hours
Formula Input Out of Range - Low Excess O2 - FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	8 hours
Low Excess O2 (Formula Out of Range);	7 hours
Maintenance - Panelview Taken Out of Service	2 hours
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	7 hours
Total duration of NOx lbs CEMS downtime	71 hours
Total operating time	2208 hours
Operating time with CEMS downtime	3.2%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS
7-day Rolling Average = 120 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	47.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	47.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.1%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx ppm @0% O2 7-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	
Total duration of NOx ppm @0% O2 7-Day Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS
365-day rolling average = 60 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	47.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	2208.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	2208.0	II. Total CMS Downtime	47.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	100.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.1%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

NOx ppm @0% O2 365-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
Emission Exceedence - NOx ppm @ 0% O2 365-Day Rolling Average	2208 hours
Total duration of NOx ppm @0% O2 365-Day Rolling excess emissions	2208 hours
Total operating time	2208 hours
Operating time with excess emissions	100.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

NOx ppm @0% O2 CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Failed Manual O2 Calibration Checks	23 hours
Total duration of NOx ppm @0% O2 CEMS downtime	47 hours
Total operating time	2208 hours
Operating time with CEMS downtime	2.1%

4Q13

EMISSION SUMMARY REPORT
FCCU SO2 (lb/hr) CEMS
1-hr average = 320 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	65.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	15.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	82.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.7%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

SO2 lbs 1-Hr Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of SO2 lbs 1-Hr excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

SO2 lbs CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Failed Morning & Manual SO2 Span Calibration Checks	26 hours
Failed Morning Span Calibration Drift Check	7 hours
Formula Input Out of Range - Low Excess O2 - FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	8 hours
Low Excess O2 (Formula Out of Range);	7 hours
Maintenance - Panelview Taken Out of Service	2 hours
SO2 Analyzer Fault	1 hour
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	7 hours

Total duration of SO2 lbs CEMS downtime	82 hours
Total operating time	2208 hours
Operating time with CEMS downtime	3.7%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) (1-hr average) CEMS
1-hr average limit = 500 ppm

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	4.0	A. Monitor Equipment Malfunction	24.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	19.0
C. Process Problem	3.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	7.0	II. Total CMS Downtime	43.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.3%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.9%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm 1-Hr Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	1 hour
FCCU Shutdown for ESD Work	3 hours
Process Upset - Low Excess O2	1 hour
Process Upset - The CO on the FCCU stack bounced in and out of compliance from 12:00 PM to 2:30 PM while adjusting rates for maintenance on the CGO pump.	2 hours

Total duration of CO ppm 1-Hr excess emissions	7 hours
Total operating time	2208 hours
Operating time with excess emissions	0.3%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO ppm CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Formula Input Out of Range - Low Excess O2 - FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	8 hours
Low Excess O2 (Formula Out of Range);	10 hours
Process - Ran Low Excess O2 - Wet O2 > Dry O2 causing % Moisture, Dry Stack Flow and Lb/Hr to be invalid	1 hour
Total duration of CO ppm CEMS downtime	43 hours
Total operating time	2208 hours
Operating time with CEMS downtime	1.9%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppmvd) @ 0% O_2 (1-hr average) CEMS
1-hr average limit = 500 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	11.0	A. Monitor Equipment Malfunction	47.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	19.0
C. Process Problem	5.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	16.0	II. Total CMS Downtime	66.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.7%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.0%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm @0% O2 1-Hr Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	4 hours
FCCU Shutdown for ESD Work	7 hours
Process Upset - Low Excess O2	2 hours
Process Upset - The CO on the FCCU stack bounced in and out of compliance from 12:00 PM to 2:30 PM while adjusting rates for maintenance on the CGO pump.	3 hours
Total duration of CO ppm @0% O2 1-Hr excess emissions	16 hours
Total operating time	2208 hours
Operating time with excess emissions	0.7%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppmvd) @ 0% O_2 (365-day rolling average) CEMS
365-day rolling average = 100 ppmvd @ 0% O_2

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	47.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	19.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	66.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.0%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2 Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

CO ppm @0% O2 365-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	
Total duration of CO ppm @0% O2 365-Day Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO ppm @0% O2 CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Failed Manual O2 Calibration Checks	23 hours
Formula Input Out of Range - Low Excess O2 - FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	8 hours
Low Excess O2 (Formula Out of Range);	10 hours
Process - Ran Low Excess O2 - Wet O2 > Dry O2 causing % Moisture, Dry Stack Flow and Lb/Hr to be Invalid	1 hour
Total duration of CO ppm @0% O2 CEMS downtime	66 hours
Total operating time	2206 hours
Operating time with CEMS downtime	3.0%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (lb/hr) CEMS
1-hr average limit = 30 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	9.0	A. Monitor Equipment Malfunction	54.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	19.0
C. Process Problem	7.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	16.0	II. Total CMS Downtime	75.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.7%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.4%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

CO lbs 1-Hr Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	3 hours
FCCU Shutdown for ESD Work	6 hours
Process Upset - Low Excess O2	3 hours
Process Upset - The CO on the FCCU stack bounced in and out of compliance from 12:00 PM to 2:30 PM while adjusting rates for maintenance on the CGO pump.	3 hours
Process Upset - Unit Ramping CGO	1 hour

Total duration of CO lbs 1-Hr excess emissions	16 hours
Total operating time	2208 hours
Operating time with excess emissions	0.7%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU CO (lb/hr) CEMS
365-day rolling average = 18.2 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	54.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	19.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	75.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.4%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)
4. Rolling 7-day and 365-day averages are calculated for each day the emission source is operating, including days when the analyzer has downtime. A null value is used for days in a rolling average period where the unit is not operating or the CEMS downtime causes insufficient data for a valid daily average. This can result in a day where the data is considered to be both an excess emission and analyzer downtime.

FCCU Excess Emissions Summary

Frontier Refining LLC

CO lbs/hr 365-Day Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of CO lbs/hr 365-Day Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

CO lbs CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Failed Manual & Morning Span Calibration Drift Checks	14 hours
Failed Manual Calibration Drift Check	10 hours
Failed Manual O2 Calibration Checks	23 hours
Formula Input Out of Range - Low Excess O2 - FCCU shut down automatically with the emergency shut down due to issues with the pressures and temperatures within the unit	8 hours
Low Excess O2 (Formula Out of Range);	10 hours
Maintenance - Panelview Taken Out of Service	2 hours
Process - Ran Low Excess O2 - Wet O2 > Dry O2 causing % Moisture, Dry Stack Flow and Lb/Hr to be invalid	1 hour
Wet O2 Analyzer Fault - Failed Morning & Manual Span Calibration Drift Checks	7 hours

Total duration of CO lbs CEMS downtime	75 hours
Total operating time	2208 hours
Operating time with CEMS downtime	3.4%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU PM (lb/hr) CEMS
3-hr average limit = 70.8 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	36.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	38.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.7%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

PM lbs 3-Hr Rolling Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	

Total duration of PM lbs 3-Hr Rolling excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

PM lbs CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Maintenance - Paneliview Taken Out of Service	2 hours
Particulate Analyzer Fault	36 hours
Total duration of PM lbs CEMS downtime	38 hours
Total operating time	2208 hours
Operating time with CEMS downtime	1.7%

4Q13

EXCESS EMISSION SUMMARY REPORT
FCCU PM (Ni lb/hr) CEMS
1-hr average limit = 0.029 lb/hr

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	36.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	2.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	38.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.7%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

FCCU Excess Emissions Summary

Frontier Refining LLC

Nickle lbs 1-Hr Excess Emissions for 10/1/2013 thru 12/31/2013

Reason	Duration
There are no excess emissions for this report.	
Total duration of Nickle lbs 1-Hr excess emissions	0
Total operating time	2208 hours
Operating time with excess emissions	0.0%

FCCU CEMS Downtime Summary

Frontier Refining LLC

Nickel lbs CEMS Downtime for 10/1/2013 thru 12/31/2013

Reason	Duration
Maintenance - Panelview Taken Out of Service	2 hours
Particulate Analyzer Fault	36 hours
Total duration of Nickel lbs CEMS downtime	38 hours
Total operating time	2208 hours
Operating time with CEMS downtime	1.7%

Paragraph	Attachment C - Flaring	Comments
84	Semi-Annual Reporting. Within thirty (30) calendar days after the end of the first semi-annual period after the Date of Entry of this Consent Decree (i.e., January 31st or July 31st), and on each subsequent January 31st and July 31st thereafter, FRI and FEDRC shall submit to EPA and the Applicable Intervenor a Semi-Annual report that includes copies of each and every report of all Acid Gas Flaring Incidents and Tail Gas Incidents that FRI and FEDRC was required to prepare under Paragraphs 71 and 82 during the previous six month period (e.g., July to December). FRI and/or FEDRC may elect to submit the Semi-Annual report required by this Paragraph with the Semi-Annual progress report required by Paragraph 216. Each Semi-Annual report shall also include a summary of the Incidents including the following:	A table summarizing all of the incidents is included in this section. The report for each incident is also included.
84a	a. Date;	See table.
84b	b. Summary of root cause(s);	See table.
84c	c. Duration;	See table.
84d	d. Amount of SO2 released;	See table.
84e	e. Any associated penalties for each Incident;	See table.
84f	f. Corrective Action completed; and	See table.
84g	g. A list of all Acid Gas Flaring Incidents, Tail Gas Incidents, and Hydrocarbon Flaring Incidents for which corrective actions are still outstanding.	See table.
84	Such Semi-Annual report shall also include a summary analysis of any trends identified by FRI and/or FEDRC, as appropriate, in the number, Root Cause, types of corrective action, or other relevant information regarding Acid Gas and Tail Gas Incidents during the previous six-month period.	After reviewing the incidents, there were 3 acid gas flaring events on consecutive days that were all tied to the same root cause.

Flaring reports pulled and placed in Flaring RCFA file

Paragraph	Attachment C - Flaring	Comments
85	85. For Hydrocarbon Flaring Incidents occurring more than 180 days after the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall follow the same investigative, reporting, and corrective action procedures as those set forth in Section VI.J., Paragraphs 71 through 72 for Acid Gas Flaring Incidents; provided however, that in lieu of analyzing possible corrective actions under Paragraph 71.e and taking interim and/or long-term corrective action under Paragraph 72 for a Hydrocarbon Flaring Incident attributable to the Startup or Shutdown of a unit that FRI and/or FEDRC has previously analyzed under this Paragraph, FRI and/or FEDRC, as applicable, may identify such prior analysis when submitting the report required under this Paragraph. At their respective Covered Refineries, FRI and FEDRC shall submit the Hydrocarbon Flaring Incident(s) reports as part of the Semi-Annual Reports required pursuant to Paragraph 84. Stipulated penalties under Paragraphs 74 through 76 shall not apply to Hydrocarbon Flaring Incident(s). The formulas at Paragraph 80, used for calculating the quantity and rate of sulfur dioxide emissions during AG Flaring Incidents, shall be used to calculate the quantity and rate of sulfur dioxide emissions during Hydrocarbon Flaring Incidents.	The table summarizing all incidents includes hydrocarbon flaring events is attached. All incident reports have been completed and are included here.

Paragraph	Attachment D - Heaters and Boilers	Comments
44	For their respective Covered Refineries, FRI and FEDRC shall each submit a detailed NOx control plan ("Control Plan") to EPA and the Applicable Intervenor for review by no later than one hundred and eighty (180) days after Date of Entry, with annual updates, covering the prior calendar year, on August 31st of each year thereafter until implementation of the Control Plan is complete. The Control Plan and its updates shall describe the achieved and anticipated progress of the NOx emissions reductions program for heaters and boilers and shall contain the following information for each heater and boiler greater than 40 mmBTU/hr that FRI and FEDRC plan to use to satisfy the requirements of Paragraphs 42, 45 and 46:	The updated NOx Control Plan is included in this section as the plan has been completed as of December 31, 2013. The CO Boiler was permanently shut down on December 17, 2013.
44a	All of the information in Appendix A;	See NOx Control Plan.
44b	Identification of the type of Qualifying Controls installed or planned with date installed or planned (including identification of the heaters and boilers to be permanently shut down);	See NOx Control Plan. The NO_x CEMS for the Crude Charge Heater was installed prior to December 31, 2013.
44c	To the extent limits exist or are planned, the allowable NOx emission rates (in lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr (HHV)) obtained or planned with dates obtained or planned;	See NOx Control Plan.
44d	The results of emissions tests and annual average CEMS or PEMs data (in ppmvd at 3% O2, lbs/mmBTU) conducted pursuant to Paragraph 47 and tons per year; and	No annual emission tests or CEMs or PEMs data was required in this reporting period.
44e	The amount in tons per year applied or to be applied toward satisfying Paragraph 42.	See NOx Control Plan.
218a	In each semi-annual report required under Paragraph 216 for each Covered Refinery, FRI and FEDRC shall provide a summary of all exceedances of emission limits required or established by this Consent Decree, which shall include: for operating units emissions limits that are required by this Consent Decree and monitored with CEMS, for each CEMS:	There were no NOx CEMs required during the reporting period. Attached is the CEM data for the H2S analyzer on the fuel gas. A NOx CEMS was installed on the Crude Charge Heater in December 2013 per paragraph 218.

FR NOx Control Plan - 2013 Update

Source	Maximum or Allowable Annual Heat Input Capacity	2003 Utilization Rate	2003 NOx Emission Rate	2003 NOx Emissions	2004 Utilization Rate	2004 NOx Emission Rate	2004 NOx Emissions	2003 - 2004 Average NOx Emissions	Type of data used to derive emission estimate	Qualifying Controls		Amount Applied to Paragraph 42 Requirement
	mmBTU/hr (HHV)	mmBTU/hr (HHV)	lb/mmBTU	tons/yr	mmBTU/hr (HHV)	lb/mmBTU	tons/yr	tons/yr		Type	date	
FR												
21	200	148.5	0.031	23.4	162.7	0.031	21.43	22.4	stack test	ULNB*	Pre-2003	0
23	40.1	33.6	0.043	14.39	32.6	0.043	5.42	9.9	stack test			
34a	186.9	119.5	0.22	113.02	107.1	0.22	138.01	125.5	stack test	Shutdown	12/17/13	125.5
50	61.7	35.7	0.03	4.68	53.4	0.03	6.62	5.7	stack test			
58	177.6	138.7	0.078	44.41	148.9	0.078	52.8	48.6	CEMS			
59	177.6	140.3	0.081	53.79	149.0	0.081	58.24	56.0	CEMS			
Total	**843.9**			**253.69**			**282.52**	**268.1**				**125.5**
FEDRC												
B-105	361.00	121.2	0.2359	125.2	133.1	0.2468	143.9	134.6	AP-42			
B-107	233.00	114.6	0.2000	100.4	107.3	0.2000	94.0	97.2	Stack Test			
B-2306	184.00	136.8	0.0530	31.8	145.9	0.0530	33.9	32.8	Stack Test			
B-301	175.10	169.9	0.3090	229.9	163.0	0.3090	220.6	225.3	Stack Test	Shutdown	03/31/08	225.3
B-304	170.40	147.5	0.3090	199.6	153.9	0.3090	208.3	204.0	Stack Test	Shutdown	03/31/08	204.0
B-109	148.40	85.4	0.0720	26.9	85.5	0.0720	27.0	26.9	Stack Test			
B-2601	97.00	68.2	0.1200	35.8	72.9	0.1200	38.3	37.1	Permit Limit	Shutdown	12/31/12	
B-2104	86.53	31.8	0.0841	11.7	43.4	0.0879	16.7	14.2	AP-42			
B-2901	79.00	25.7	0.0855	9.6	23.6	0.0889	9.2	9.4	AP-42			
B-2401	74.70	74.2	0.3090	100.4	85.9	0.3090	116.3	108.3	Stack Test	Shutdown	03/31/08	108.3
B-3501	73.70	60.7	0.0100	2.7	65.9	0.0100	2.9	2.8	Permit Limit	SCR	02/28/11	
B-1002	72.50	37.1	0.0830	13.5	34.8	0.0878	13.4	13.4	AP-42	ULNB**	11/12/09	0.0
B-2106	72.50	56.6	0.0842	20.9	55.3	0.0878	21.3	21.1	AP-42			
B-1001	70.00	45.9	0.0829	16.7	48.5	0.0879	18.7	17.7	AP-42			
B-140	69.00	29.0	0.0851	10.8	21.7	0.0880	8.4	9.6	AP-42			
B-2105	59.27	29.4	0.0841	10.8	34.8	0.0877	13.4	12.1	AP-42			
B-2607	57.50	25.6	0.0841	9.4	23.2	0.0885	9.0	9.2	AP-42	Shutdown	12/31/12	
B-2503	43.00	28.8	0.0839	10.6	26.9	0.0881	10.4	10.5	AP-42			
B-2001	54.00	31.7	0.0840	11.7	35.2	0.0885	13.6	12.7	AP-42			
B-3401	50.00	34.0	0.0669	10.0	33.1	0.0669	9.7	9.8	Stack Test			
B-2304	48.00	10.4	0.0823	3.8	10.2	0.0893	4.0	3.9	AP-42			
B-2006	46.50	33.3	0.0841	12.3	32.7	0.0885	12.7	12.5	AP-42			
B-2802	45.40	38.3	0.0849	14.2	39.2	0.0889	15.3	14.7	AP-42			
Total	**2,370.50**			**1,018.7**			**1,060.7**	**1,039.7**				**537.6**

** Controls installed prior to CD and only utilized for Paragraph 46 compliance. CEMS required to be installed by 12/31/2013. The CEMS was installed prior to the deadlines as required.

* Performance testing required under Paragraph 47c was conducted on April 28, 2011

Paragraph 42 NOx Reductions - FEDRC & FRI Combined			
Total Required NOx Reductions by December 31, 2013	649 tpy	Reduction achieved by December 31, 2009	537.6 tpy
Two-Thirds Reduction by December 31, 2009	432 tpy	Reduction planned by December 31, 2013	663.1 tpy

Paragraph 46 NOx Control Requirements - FRI	
30% of maximum heat capacity	253.17 mmBTU/hr
Control already achieved or planned	386.9 mmBTU/hr
Amount left to achieve (undefined)	0 mmBTU/hr

Paragraph	Attachment E - LDAR	Comments
216e	Any additional items required by any other Paragraph of this Consent Decree to be submitted with a semi-annual report including but not limited to reports required under Paragraphs 137, 152, 170, and 205.	See Below
152	Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to Paragraphs 147 - 150 identify any areas of non-compliance, FRI and FEDRC, as applicable, shall implement all steps necessary to correct the area(s) of non-compliance as soon as possible and to prevent a recurrence of the cause of the non-compliance. For purposes of this Paragraph, a ratio of the process unit valve leak percentage established through a comparative monitoring audit conducted under Paragraphs 147 through 150 to determine the average valve leak percentage reported for the process unit for the four quarters immediately preceding the audit in excess of 3.0 shall be cause for corrective action and shall be subject to stipulated penalties as provided in Paragraph 294. If the calculated ratio yields an infinite result, FRI and FEDRC shall assume 1 leaking valve was found during the 4-quarter period and shall recalculate the ratio. Until two years after termination of this Consent Decree FRI and FEDRC shall retain the audit reports generated pursuant to Paragraphs 147 through 150 and shall maintain a written record of the corrective actions taken at each of the Covered Refineries in response to any deficiencies identified in any audits. In the semi-annual report submitted pursuant to the provisions of Paragraph 216 of this Consent Decree (Reporting and Record Keeping) for the first calendar half of each year, FRI and FEDRC shall submit the audit reports and corrective action records for audits performed and actions taken during the previous calendar year.	The last Consent Decree required LDAR audit was conducted in August of 2013. A copy of the audit report and findings are included in this semi-annual report.
170	Record Keeping and Reporting. Consistent with the requirements of Section XI. (Reporting and Record Keeping), FRI and FEDRC shall maintain records to demonstrate compliance with the requirements of Section VI.M. of this Consent Decree, and shall include the information set forth below in the designated semi-annual progress report(s):	See Below
170a	First Semi-Annual Progress Report Due under this Consent Decree. At the later of the first semi-annual progress report due under this Consent Decree, or the first semi-annual progress report in which the requirement becomes due, for their respective Covered Refinery, FRI and FEDRC shall include the following:	See Below
170a.i	Copies of the written Refinery-wide LDAR Program required by Paragraph 144;	Initial plan submitted Feb. 26, 2010.
170a.ii	A certification of the implementation of the lower leak definitions and monitoring frequencies in Paragraphs 153, 154, 155, 158, and 159;	Certification submitted Aug. 31, 2009.
170a.iii	A certification of the implementation of the "initial attempt at repair" or "optical imaging" program of Paragraphs 156 and 157;	Certification submitted Apr. 15, 2009.

Paragraph	Attachment E - LDAR	Comments
170a.iv	A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 162;	Certification submitted Aug. 31, 2009.
170a.v	An identification of the individual at each of the Covered Refineries responsible for LDAR performance as required by Paragraph 144. g.;	Certification submitted Aug. 31, 2009.
170a.vi	A certification of the development of a tracking program for new valves and pumps added during maintenance and construction as required by Paragraph 164;	Certification submitted Aug. 31, 2009.
170a.vii	A certification of the implementation of the calibration drift assessment procedures of Paragraph 166;	Certification submitted Aug. 31, 2009.
170a.viii	A certification of the implementation of the "delay of repair" procedures of Paragraph 167; and	Certification submitted Aug. 31, 2009.
170a.ix	report of the implementation of the "chronic leaker" program of Paragraph 169.	Report submitted on Feb. 26, 2010.
170b	b. Semi-Annual Progress Report for the First Calendar Half of Each Year. In the semi-annual progress report that FRI and FEDRC submit pursuant to Section XI. (Reporting and Record Keeping) for the first calendar half of each year, they shall include an identification of each audit that was conducted pursuant to the requirements of Paragraphs 147 - 150 in the previous calendar year including an identification of the auditors, a summary of the audit results, and a summary of the actions that each took or intends to take to correct all deficiencies identified in the audits.	The last Consent Decree required LDAR audit was conducted in August of 2013. A copy of the audit report and findings are included in this semi-annual report.

Attachment E - LDAR Corrective Actions

Finding No.	Citation	Unit	Findings	Corrective action plan
1	60.482-7(c) (1)/ CD SECTION M paragraph 164	Tank Farm	EMSI identified forty (40) components that missed their second consecutive monthly monitoring requirement.	Frontier has given LDAR Contactor control of database and scheduling of components in LDAR database. There are at least 3 people within the contractors organization doing QA / QC on the database weekly and scheduling components for monitoring.
2	60.482-6(1)(a)	Gas Con Platformer	EMSI identified five (5) open-ended lines that needed either a plug/cap or make sure the second valve stays in the closed position when not in use.	Frontier has implemented a new OEL plan. This plan will have new OEL tags, Operator sign off and Unit Superintendent sign off that the OEL have been corrected.

AUDIT REPORT
CONSENT DECREE LDAR AUDIT REPORT

Prepared for:

HOLLYFRONTIER
CORPORATION

Frontier Refining LLC
300 Morrie Ave.
Cheyenne WY, 82007
(307) 634-3551

Prepared By:

emsi
ENVIRONMENTAL SERVICES

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Field Audit Date(s): August 5th – 8th, 2013

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SECTIONONE Introduction

Emission Monitoring Service, Inc. (EMSI) conducted an external third-party, Consent Decree audit of the Leak Detection and Repair (LDAR) program at Frontier Refining LLC - Cheyenne facility. The onsite audit began August 5, 2013 and closes with the issuance of this audit report. The EMSI field audit team included a Project Supervisor, LDAR specialist, Environmental Technician, and a data administrator: Matthew Gobert, Caitlin Dolan, Tyrone Hamilton, and Rachel Miranda. The audit focused on the following areas in accordance with Section M paragraph 140-171 of the Consent Decree:

- Data Management/Record Review
- Technician Observation Monitoring/Daily Calibration
- Field Audit to Ensure Affected Equipment has been Identified and Included in the Facility LDAR Program
- Comparative Monitoring

SECTIONTWO Methodology

2.1 Data Review

EMSI was provided LDAR monitoring data for the January 2011 thru to present. EMSI assessed the following items for regulatory and Consent Decree compliance and best practices:

- Monitoring
  - *Review Current Leak Rates In Each Unit (4 Quarter Average)*
  - *Observe Monitoring Techniques*
  - *TVA Response Times*
  - *Observe Daily Calibration Techniques*
- Data Management
  - *Written LDAR Plan*
  - *Consent Decree/Method 21 Training Records*
  - *Daily Calibration Records*
  - *Daily Drift Check Records*
  - *Precision Calibration Records*
  - *DOR Sign Off Sheets and Justifications*
  - *Five (5) First Attempt*
  - *Monitoring without Time Date Stamps*
  - *Thirty day (30) Final Repair*
  - *Fast Monitor Times*
  - *Difficult to Monitor*
  - *Unsafe to Monitor List*
  - *Technician Monitoring times*
  - *Chronic Leakers*
- Field Review
  - *Component Identification*
  - *Missing Tags*
  - *OEL Tracking*
  - *Sample Systems*
  - *Comparative Monitoring*
- Tagging Procedures
  - *MOC Procedures (Documentation Provided)*

The records review also included interviews with Frontier Refining LLC personnel to understand coordination efforts with LDAR personnel regarding the following areas:

1. Component identification and tagging procedures
2. Management of process and equipment changes
3. QA/QC of monitoring data

2.2 Data Management Evaluation

EMSI evaluated the facility's methods for electronic monitoring, storing, and reporting of LDAR data, specifically, data acquisition and electronic data storage.

2.3 Observation of Calibration and Monitoring Techniques

This task encompassed the observation of calibration and monitoring techniques of onsite LDAR monitoring personnel. The details are listed below:

Calibration Techniques used by onsite monitoring personnel, including daily calibrations, and drift assessments, response time tests, verification of acceptable monitoring equipment and calibration gases being utilized.

Monitoring Techniques used by onsite monitoring personnel, including probe positioning, monitoring event duration and proper monitoring point identification for valves and pumps.

Database
Upon review of Frontier Refining LLC Cheyenne's data, the EMSI audit team discovered forty (40) components that missed their second consecutive monthly monitoring requirement.
60.482-7(c) (1)/ CD SECTION M paragraph 164.

2.4 Field Inspection

EMSI conducted a field review of current inventory of monitored components in the Gas Con, FCCU, Platformer, NHT, and TNK Farm units at the Cheyenne facility.

Tagging Evaluation
The component tagging evaluation was performed by reviewing all components in the identified units with the likelihood of meeting the regulatory applicability requirements. The review included looking for missing component tags (components being monitored but identification tags could not be located), missing shutdown tags, inaccurate tag information, new components that need to be identified and added to the program, sample systems and components not correctly identified for monitoring.

Comparative Monitoring
EMSI performed comparative monitoring of valves subject to quarterly monitoring requirements at the Frontier Refining LLC facility. Method 21 monitoring was performed utilizing a TVA–1000B FID analyzer. A precision calibration test was performed on the analyzer prior to comparative monitoring. Multi-point calibration was also performed on the analyzer using Dexter's (site LDAR contractor) Hydrogen, Zero Air and Methane/Air mix calibration gases.

Difficult to Monitor (DTM) Evaluation
EMSI reviewed the number of components identified as difficult to monitor to determine if the process unit has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.

SECTIONTHREE Audit Summary

Table 3-1 Summary of Consent Decree Audit Results*

	Audit Area	Comments
2.1	Review of Routine Quarterly Valve Monitoring in Light Liquid/Gas Vapor Service	**No Findings – 60.482-7(c)(1) (i)/ CD SECTION M paragraph 159**
2.1	Review of Valves in Light Liquid/Gas Vapor Service for Two Successive Months of Monitoring After a Leak was Found	**No Findings – 60.482-7(c)(1) (i)**
2.1	Review of Routine Monthly Pump Monitoring in Light Liquid Service	**No Findings – 60.482-2 (a)(1)/CD SECTION M paragraph 158**
2.1	Review of New Valves in Light Liquid/Gas Vapor Service for Two Successive Months of Monitoring	**Finding(s)** EMSI identified forty (40) components that missed their second consecutive monthly monitoring requirement. **60.482-7(c) (1)/ CD SECTION M paragraph 164.**
2.1	Weekly Pump Visuals	**No Findings – 60.482-2(a)(2)**
2.1	Review of First Attempts on "Action Items" Valves with Readings Greater than 200ppm and Less than 500ppm	**No Findings – CD SECTION M paragraph 157ai**
2.1	Review of Written LDAR Plan	**No Findings – CD SECTION M paragraph 144**
2.2	Data Management	**No Findings** – The refinery uses the LeakDAS database to store, upload and download data **CD SECTION M paragraph 160**

SECTIONTHREE Audit Summary

Table 3-1 Summary of Consent Decree Audit Results*

2.3	Review of Daily/Quarterly Calibration and Drift Assessment	**No Findings – 40 C.F.R Part 60 appendix A (Method 21) / CD SECTION M Paragraph 166**
2.3	Review of Technicians Method 21 Monitoring Techniques.	**No Findings – 40 C.F.R Part 60 appendix A / CD SECTION M 147**
2.1	Technician Training Records Review	**No Findings – CD SECTION M paragraph 146 a-e**
2.4	Review of Delay of Repair Tags	**No Findings** - The proper personnel signed off All DOR documentation correctly. **60.486(1)/ CD SECTION M paragraph 167I** **No Findings – 60.486(1)/ CD SECTION M 167II**
2.4	Review of Field Inventory	**Finding(s)** – EMSI identified five (5) open-ended lines that needed either a plug/cap or make sure the second valve stays in the closed position when not in use. **60.482-6(1)(a)**
2.4	Difficult To Monitor Component Review	**No Findings** - EMSI visually identified six (6) DTM components, in which all were found to be true DTM's– **60.482-7(1)**
2.4	Review of Leak Tags	**No Findings - 60.486 (1)(2)**

**Note: Finding is defined as a direct deviation from the LDAR program.*

SECTIONFOUR

Comparative Monitoring Results

Gas Con	Historical Leak % 3Q12 thru 2Q13			EMSI (08/13)			Ratio
	Monitored	Leak	%	Monitored	Leak	%	%
Four Quarter Average*	4073	11	0.27%	400	9	2.25%	
2nd Quarter 2013	1017	3	.29%				
1st Quarter 2013	1024	8	1%				
4th Quarter 2012	1016	0	0%				
3rd Quarter 2012	1016	0	0%				

FCCU	Historical Leak % 3Q12 thru 2Q13			EMSI (08/13)			Ratio
	Monitored	Leak	%	Monitored	Leak	%	%
Four Quarter Average*	2743	8	0.29%	400	3	0.75%	
2nd Quarter 2013	693	0	0%				
1st Quarter 2013	691	2	.64%				
4th Quarter 2012	677	5	1.91%				
3rd Quarter 2012	682	1	.24%				

SECTIONFOUR

Comparative Monitoring Results

Platformer	*Historical Leak % 3Q12 thru 2Q13*			*EMSI (08/13)*			*Ratio*
	Monitored	**Leak**	**%**	**Monitored**	**Leak**	**%**	**%**
Four Quarter Average*	2677	41	1.53%	410	6	1.46%	
2n Quarter 2013	659	7	2.2%				
1st Quarter 2013	676	9	2.74%				
4th Quarter 2012	685	24	7.22%				
3rd Quarter 2012	657	1	.32%				

Paragraph	Attachment F - Supplemental Environmental Projects/Environmentally Beneficial Projects	Comments
216c	A description of all Supplemental Environmental Projects and implementation activity in accordance with this Consent Decree;	Per paragraph 189, geodesic domes were installed on tanks TK 2-70 and TK 2-71. The project was completed on Feb. 18, 2010.
216e	Any additional items required by any other Paragraph of this Consent Decree to be submitted with a semi-annual report including but not limited to reports required under Paragraphs 137, 152, 170, and 205.	See below.
205	FRI and FEDRC shall include in each Report required by Paragraph 216 of this Consent Decree a progress report for each SEP being performed under Paragraphs 188 through 199 of this Consent Decree. In addition to the information required by Paragraph 216 of this Consent Decree, for the reporting period in which any SEP identified in Paragraphs 188 through 199 of this Consent Decree is completed, the following information with respect to each completed SEP shall be included in the report required by Paragraph 216:	See below.
205a	A report containing a detailed description of the SEP as implemented;	Per paragraph 189, geodesic domes were installed on tanks TK 2-70 and TK 2-71. The project was completed on Feb. 18, 2010.
205b	A brief description of any significant operating problems encountered, including any that had an impact on the environment, and the solutions for each problem;	N/A - Work completed.
205c	Certification, in the form required by Paragraph 219 of this Consent Decree, that the SEP has been fully implemented pursuant to the provisions of this Consent Decree together with a statement of the total SEP cost upon completion; and	Certification previously submitted Aug. 31, 2010.
205d	A description of the environmental and public health benefits resulting from implementation of each project (including quantification of the benefits and pollutant reductions, if feasible).	Per paragraph 189, installation of the geodesic domes resulted in an expected reduction of 49,490 pounds per year.

Paragraph	Attachment G - SRPs	Comments
218a	In each semi-annual report required under Paragraph 216 for each Covered Refinery, FRI and FEDRC shall provide a summary of all exceedances of emission limits required or established by this Consent Decree, which shall include: for operating units emissions limits that are required by this Consent Decree and monitored with CEMS, for each CEMS:	CEM monitoring data is included in this section.

3Q13

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS
12-hr rolling average = 250 ppm @ 0 % O_2

FORM B

Emission Data Summary (12-hour average ppm)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	6.0	A. Monitor Equipment Malfunction	51.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0.0	D. Other Known Causes	7.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	6.0	II. Total CMS Downtime	58.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.3%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.6%

Total time of excess emission events due to emergency/abnormal operations: 6 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q13 TGTU Incinerator CEMS

Incinerator SO2 ppm (12-Hour)

Form C - Excess Emissions Summary

No.	Start Time	End Time	Max	Periods	Reason	Action
1	9/3/2013 3:00:00 PM	9/3/2013 9:00:00 PM	1000.4	6	Total Plant Power Outage - Start-Up Issues	Adjusted Process
		Total Periods Excess Emissions		6		

3Q13 TGTU Incinerator CEMS

Incinerator SO2 ppm (12-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	8/15/2013 4:00:00 AM	8/15/2013 7:00:00 PM	15	Failed daily CD check (excessive drift)	Ran Manual Calibration to Ensure Compliance
2	9/3/2013 11:00:00 PM	9/4/2013	1	Total Plant Power Outage - Start-Up Issues	Adjusted Process
3	9/4/2013 3:00:00 AM	9/4/2013 9:00:00 AM	6	Total Plant Power Outage - Start-Up Issues	Adjusted Process
4	9/5/2013 4:00:00 AM	9/5/2013 9:00:00 PM	17	Failed daily CD check (excessive drift)	Replaced Lamp and Ran Manual Calibration
5	9/30/2013 4:00:00 AM	9/30/2013 11:00:00 PM	19	Failed daily CD check (excessive drift)	Ran Manual Calibration to Ensure Compliance
		Total Hours Monitor Unavailable	58		

3Q13

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS
1-hr average = 18.6 lb/hr

FORM B

Emission Data Summary (lb/hr)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	22.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	22.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time *minus* Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.0%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q13 TGTU Incinerator CEMS

Incinerator SO2 lbs/hr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	8/28/2013 7:00:00 PM	8/28/2013 8:00:00 PM	1	SO2 Analyzer Malfunction	No Action Taken - Self Corrected
2	9/3/2013 3:00:00 PM	9/4/2013 4:00:00 AM	13	Total Plant Power Outage - Start-Up Issues	Passed Morning Cal
3	9/5/2013 4:00:00 AM	9/5/2013 12:00:00 PM	8	Failed daily CD check (excessive drift)	Replaced Lamp and Ran Manual Calibration
		Total Hours Monitor Unavailable	22		

4Q13

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS
12-hr rolling average = 250 ppm @ 0 % O_2

FORM B

Emission Data Summary (12-hour average ppm)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	476.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	42.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	42.0	II. Total CMS Downtime	476.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	2.4%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	21.6%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

4Q13 TGTU Incinerator CEMS

Incinerator SO2 ppm (12-Hour)

Form C - Excess Emissions Summary

No.	Start Time	End Time	Max	Periods	Reason	Action
1	10/16/2013 12:00:00 PM	10/16/2013 5:00:00 PM	444.3	29	Process Upset - Too much Acid Gas going to SRU #1 during warm-up which did not convert in the RX	Adjusted Process
2	11/5/2013 10:00:00 AM	11/5/2013 11:00:00 PM	342.3	13	Process Upset - Boiler #3 Shutdown. Amine #3 Flash Drum to Flare. Crude VRU wouldn't pull pressure.	Adjusted Process
		Total Periods Excess Emissions		42		

4Q13 TGTU Incinerator CEMS

Incinerator SO2 ppm (12-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	9/30/2013 11:00:00 PM	10/1/2013 9:00:00 PM	22	Failed daily CD check (excessive drift)	Ran Manual Calibration to Ensure Compliance
2	10/2/2013 4:00:00 AM	10/3/2013	20	Failed daily CD check (excessive drift)	Ran Manual Calibration to Ensure Compliance
3	10/13/2013 4:00:00 AM	10/14/2013 3:00:00 PM	35	Failed daily CD check (excessive drift)	Passed Morning Calibration Drift Check
4	11/1/2013 4:00:00 PM	11/5/2013 1:00:00 AM	81	SO2 Analyzer Malfunction	Analyzer dashed out. Computer locked up causing heaters to fail. Rebooted computer. Ran manual cal.
5	11/12/2013 4:00:00 AM	11/12/2013 8:00:00 PM	16	Failed daily CD check (excessive drift)	Ran Manual Calibration
6	12/6/2013 4:00:00 AM	12/7/2013 3:00:00 PM	35	Failed daily CD check (excessive drift)	Passed Morning Cal
7	12/8/2013 4:00:00 AM	12/9/2013 3:00:00 PM	35	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
8	12/10/2013 4:00:00 AM	12/10/2013 10:00:00 PM	18	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
9	12/11/2013 4:00:00 AM	12/18/2013 3:00:00 PM	179	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
10	12/28/2013 4:00:00 AM	12/29/2013 3:00:00 PM	35	Failed daily CD check (excessive drift)	Passed Morning Cal
		Total Hours Monitor Unavailable	476		

4Q13

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS
1-hr average = 18.6 lb/hr

FORM B

Emission Data Summary (lb/hr)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	205.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	3.0
C. Process Problem	0.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0.0	II. Total CMS Downtime	208.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	9.4%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include detailed excess emission information and causes in the Excess Emission Table (Form C).
2. Only report CEM downtime which occurs while the unit/process is operating. Report time in hours to one decimal point. Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).
3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. (See Instructions for further details.)

4Q13 TGTU Incinerator CEMS

Incinerator SO2 lbs/hr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	11/1/2013 11:00:00 AM	11/4/2013 1:00:00 PM	74	SO2 Analyzer Malfunction	Analyzer dashed out. Computer locked up causing heaters to fail. Rebooted computer. Ran manual cal.
2	11/25/2013 9:00:00 AM	11/25/2013 1:00:00 PM	4	Maintenance - sample system cleaned and filter(s) replaced	Cleared Probe, changed Filters and Steel Wool
3	12/7/2013 6:00:00 PM	12/7/2013 9:00:00 PM	3	Freezing Temperatures - SRU #1 & SRU #2 Shutdown	Changed Steam Supply from 40# to 180# to thaw out unit
4	12/8/2013 6:00:00 AM	12/8/2013 10:00:00 AM	4	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
5	12/8/2013 2:00:00 PM	12/8/2013 3:00:00 PM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
6	12/8/2013 5:00:00 PM	12/8/2013 6:00:00 PM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
7	12/11/2013 12:00:00 PM	12/11/2013 1:00:00 PM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
8	12/11/2013 5:00:00 PM	12/11/2013 9:00:00 PM	4	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
9	12/11/2013 11:00:00 PM	12/15/2013 5:00:00 PM	90	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
10	12/16/2013 10:00:00 AM	12/16/2013 11:00:00 AM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
11	12/16/2013 2:00:00 PM	12/16/2013 4:00:00 PM	2	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
12	12/16/2013 8:00:00 PM	12/16/2013 9:00:00 PM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System

4Q13 TGTU Incinerator CEMS

Incinerator SO2 lbs/hr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
13	12/17/2013 3:00:00 AM	12/17/2013 5:00:00 AM	2	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
14	12/17/2013 7:00:00 AM	12/17/2013 8:00:00 AM	1	Failed Calibration Checks - Amine overflow to Incinerator contaminated CEMS Sample System	Passed Calibration Check - Amine had to evaporate from Incinerator - Cleaned/Replaced Sample System
15	12/20/2013 1:00:00 PM	12/20/2013 2:00:00 PM	1	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
16	12/22/2013 2:00:00 AM	12/22/2013 6:00:00 AM	4	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
17	12/22/2013 10:00:00 AM	12/22/2013 12:00:00 PM	2	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
18	12/22/2013 3:00:00 PM	12/22/2013 4:00:00 PM	1	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
19	12/23/2013 8:00:00 AM	12/23/2013 10:00:00 AM	2	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
20	12/23/2013 1:00:00 PM	12/23/2013 3:00:00 PM	2	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
21	12/24/2013 11:00:00 PM	12/25/2013	1	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
22	12/25/2013 3:00:00 AM	12/25/2013 8:00:00 AM	5	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System
23	12/25/2013 11:00:00 AM	12/25/2013 12:00:00 PM	1	SO2 Analyzer Malfunction	Troubleshoot Analyzer and Sample System

Total Hours Monitor Unavailable 208

Paragraph	Attachment H - Miscellaneous	Comments
216d	Any such additional matters as FRI or FEDRC believes should be brought to the attention of the Applicable Federal and State Agencies;	See summary of additional requirements included in this attachment.

Paragraph	Attachment H - Miscellaneous	Comments
11	FRI and FEDRC shall implement programs to reduce NOx emissions from the FCCUs at their respective Covered Refineries, as specified in this Section VI.A. FRI and FEDRC shall incorporate lower NOx emission limits established for their respective Covered Refineries under this Consent Decree into federally enforceable permits and shall each demonstrate future compliance with the lower emission limits through the use of CEMS.	Frontier has submitted a permit application to WDEQ incorporate Consent Decree conditions. Many of these conditions were incorporated into an NSR permit, though still need to be incorporated into a Title V Permit.
12	FRI FCCU NOx Emission Limits. By no later than one hundred and eighty (180) days from the Date of Entry of this Consent Decree, FRI shall notify EPA and the Applicable Intervenor as to which one of the following two options that it shall comply with: a. Paragraph 13 of this Consent Decree; or b. Paragraph 14 of this Consent Decree.	Frontier chose to comply with Paragraph 14.
14	If FRI elects to comply with Paragraph 12.b above, then FRI shall:	
14a	By no later than one hundred and eighty (180) days from the Date of Entry, comply with interim FCCU NOx concentration emission limits of 60 ppmvd on a 365-day rolling average basis, and 120 ppmvd on a 7-day rolling average basis, both at 0% oxygen; and	Periods of non-compliance with these requirements are found in Attachment B CEMs Data.
14b	By no later than December 31, 2015, comply with FCCU NOx concentration emission limits of 40 ppmvd on a 365-day rolling average basis, and 80 ppmvd on a 7-day rolling average basis, both at 0% oxygen.	Frontier anticipates meeting this requirement at the required time.
17	At FRI and/or FEDRC, NOx emissions during periods of Startup, Shutdown, or Malfunction of an FCCU controlled by catalyst additives, or NOx emissions during periods of Malfunction of an FCCU, or during periods of Malfunction of a NOx Control Technology used to meet NOx emissions limits required by this Consent Decree, shall not be used in determining compliance with the seven (7)-day rolling average NOx emission limits established pursuant to Paragraphs 11 - 16, provided that during such periods FRI or FEDRC, as appropriate, implements good air pollution control practices to minimize NOx emissions.	Frontier manages the CEMs data appropriately.
18	Demonstrating Compliance With FCCU Emissions Limits. For each FCCU at FRI and FEDRC, beginning no later than the Date of Entry, FRI and FEDRC shall each use NOx, SO2, CO and O2 CEMS to monitor the performance of their respective FCCUs and to report upon compliance with the terms and conditions of this Consent Decree. CEMS shall be used to demonstrate compliance with the respective NOx emission limits established pursuant to Paragraphs 11 - 16 of this Decree, the SO2 emission limits established pursuant to Paragraphs 19 - 25 of this Decree, and CO emission limits established pursuant to Paragraphs 32 - 35 of this Decree. FRI and FEDRC shall, upon request, each make all CEMS data available to EPA and the Applicable Intervenor.	CEMs have been installed to monitor NOx, SO2, CO and O2.

Paragraph	Attachment H - Miscellaneous	Comments
18a	FRI and FEDRC each shall install, certify, calibrate, maintain, and operate all CEMS required by Paragraph 18 in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems), 40 C.F.R. Part 60 Appendices A and F, and the applicable performance specification tests of 40 C.F.R. Part 60 Appendix B.	Frontier recently voluntarily disclosed audit findings indicating the QA/QC manuals for the FCCU and SRU CEMs were out-of-date. These manuals have since been updated and submitted to WDEQ.
18b	Unless 40 C.F.R. Part 60 Appendix F requirements are specifically mandated by Subpart J or the applicable Intervenor, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, FRI or FEDRC may opt to conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three (3) years. If FRI or FEDRC elect such an option, they must conduct a Cylinder Gas Audit ("CGA") each calendar quarter during which an RAA or RATA is not performed.	RATA tests are conducted annually on the CEMs.
B.	SO2 Emissions Reductions From FCCUs	
19	FRI and FEDRC shall implement those programs identified under this Section VI.B. of this Consent Decree to reduce SO2 emissions from the FRI and FEDRC FCCUs. FRI and FEDRC each shall incorporate lower SO2 emission limits into federally enforceable permits and each shall demonstrate future compliance with the lower emission limits through the use of CEMS.	Frontier has submitted a permit application to WDEQ incorporate Consent Decree conditions. Many of these conditions were incorporated into an NSR permit, though still need to be incorporated into a Title V Permit.
20	FRI FCCU SO2 Emission Limits. By no later than one hundred and eighty (180)days from the Date of Entry, FRI shall notify EPA and the Applicable Intervenor of which one of the following two options that FRI shall comply with: a. Paragraph 21 of this Consent Decree; or b. Paragraph 22 of this Consent Decree.	Frontier chose to comply with Paragraph 22.
22	If FRI elects to comply with Paragraph 20.b above, then FRI shall:	
22a	By no later than one hundred and eighty (180) days from the Date of Entry, and continuing until FRI begins to comply with Paragraph 22.b., infra, FRI shall add an EPA approved SO2 reducing additive at a rate of 396 pounds per day (based on 10% of total catalyst added to the FCCU for a period from August 2006 to September 2008); and	Catalyst injection rates were less than 396 lbs on 1 day during the reporting period.
22b	By no later than September 30, 2015, comply with FCCU SO2 concentration emission limit of 25 ppmvd on a 365-day rolling average basis and a FCCU SO2 concentration emission limit of 50 ppmvd on a 7-day rolling average basis, both at 0% oxygen.	Frontier anticipates meeting this requirement at the required time.

Paragraph	Attachment H - Miscellaneous	Comments
22a	If the SO2 Reducing Catalyst Additive addition rate required by this Paragraph 22.a. limits the processing rate or the conversion capability of the FRI FCCU in a manner that cannot be reasonably compensated for by adjustment of other parameters, FRI may, up until 12 months from the Date of Entry, submit a request to EPA to reduce the SO2 Reducing Catalyst Additive addition rate to a level at which the additive no longer causes such limits or effects. Such a request shall include all data that demonstrates the limit on processing rate or conversion capability with evidence that links these limits to the SO2 Reducing Catalyst Additive and that documents all efforts made to compensate by adjustment of other parameters. If EPA provides written approval, FRI may reduce the SO2 Reducing Catalyst Additive addition rate required by this Paragraph 22.a. to the level that EPA allows in its approval.	Frontier did not elect to adjust the catalyst injection rate under this Paragraph.
24	Startup, Shutdown, or Malfunction. At FRI and/or FEDRC, SO2 emissions during periods of Startup, Shutdown, or Malfunction of an FCCU or during periods of a Malfunction of an FCCU catalyst additive system or other SO2 emission control device shall not be used by FRI or FEDRC in determining compliance with the 7-day rolling average SO2 emission limits established pursuant to Paragraphs 20 - 25, provided that during such periods FRI and FEDRC, as applicable, implement good air pollution control practices to minimize SO2 emissions.	Frontier manages the CEMs data appropriately.
C.	Particulate Matter Emissions Reductions From FCCUs	
26	FRI and FEDRC shall maintain particulate matter ("PM") emissions from their FCCUs in accordance with the requirements of this Section VI.C. of this Consent Decree and shall incorporate those requirements into federally enforceable permits.	Frontier has submitted a permit application to WDEQ incorporate Consent Decree conditions. Many of these conditions were incorporated into an NSR permit, though still need to be incorporated into a Title V Permit.
28	By the second turnaround of the FRI FCCU or December 31, 2015, whichever occurs first, FRI shall accept and comply with an emission limit of 1.0 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis. By the second turnaround of the FRI FCCU or December 31, 2015, whichever occurs first, upon prior written notice to EPA pursuant to Section XIX (General Provisions) Paragraph 356 (Notice), FRI may choose to accept and comply with an emission limit of 0.50 pounds of PM per 1,000 pounds of coke burned, in which case FRI shall receive the release from liability provided in Paragraph 331.	Frontier anticipates meeting this requirement at the required time.

Paragraph	Attachment H - Miscellaneous	Comments
29	PM Testing. To measure PM emissions from their FCCUs, FRI and FEDRC shall each follow the test protocol specified in 40 C.F.R. § 60.106(b)(2) and use EPA Reference Method 5B or 5F to measure PM emissions identified in Paragraphs 26 - 28 from each of their FCCUs. FEDRC shall conduct its first stack test by June 30, 2010 and submit a stack test protocol to the Applicable Intervenor for approval no later than sixty (60) days prior to the stack test. FRI shall conduct its first stack test one hundred and eighty (180) days from the second FCCU turnaround after entry of this Consent Decree but no later than June 30, 2016. FRI shall submit a stack test protocol to the Applicable Intervenor for approval no later than sixty (60) days prior to the stack test. FRI and FEDRC shall thereafter conduct annual stack tests for their FCCUs and include stack test results in the semi-annual reports required under Paragraph 216, Section XI. (Reporting and Record Keeping) of this Consent Decree for the period in which such stack test(s) occurred. Not less than forty-five (45) days before the conduct of any stack test, FRI or FEDRC, shall give notice to EPA and the Applicable Intervenor pursuant to Section XIX.(General Provisions), Paragraph 356 (Notice) of the time and date upon which the test shall be conducted. Within sixty (60) days of completion of any stack test, test reports shall be sent to EPA and the Applicable Intervenor. Upon demonstrating through at least three (3) annual tests that a particular FCCU's PM limits are not being exceeded, FRI or FEDRC, as appropriate, may request EPA approval to conduct these stack tests less frequently than annually at such FCCU.	This requirement does not apply until after the Dec. 31, 2015 compliance deadline for the FCCU PM emission reductions.
30	Neither FRI nor FEDRC shall use PM emissions during periods of Startup, Shutdown, or Malfunction of an FCCU or Malfunction of a PM control device to determine compliance with the emission limits established in Paragraphs 27 and 28 provided that during such periods FRI or FEDRC, as applicable, implement good air pollution control practices to minimize PM emissions.	This requirement does not apply until after the Dec. 31, 2015 compliance deadline for the FCCU PM emission reductions.
31	Opacity Monitoring At FCCUs. FRI, by June 30, 2015, and FEDRC, by December 31, 2009, shall each install and operate a Continuous Opacity Monitoring System ("COMS") to monitor opacity at each of the Covered Refineries' FCCUs. If Wet Gas Scrubber(s) are installed at either Covered Refinery, FRI and FEDRC, as applicable, shall operate the Wet Gas Scrubber(s) pursuant to an EPA-approved Alternative Monitoring Plan for opacity. FRI and FEDRC, as appropriate, shall install, certify, calibrate, maintain, and operate all COMS required by this Consent Decree in accordance with 40 C.F.R. §§ 60.11, 60.13 and Part 60 Appendix A, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B.	This requirement does not apply until June 30, 2015. A PM CEM is currently in place on the FCCU stack, and an AMP is in place addressing the PM CEM use in place of the COMS.
D	CO Emissions Reductions From FCCUs	

Paragraph	Attachment H - Miscellaneous	Comments
32	FRI and FEDRC shall operate the FCCUs at the Covered Refineries in a manner that minimizes CO emissions and shall reduce emissions further at each FCCU in accordance with the requirements of this Section VI.D of this Consent Decree. FRI and FEDRC shall incorporate the requirements of this Section VI.D. into federally enforceable permits for their respective Covered Refineries.	Frontier has submitted a permit application to WDEQ incorporate Consent Decree conditions. Many of these conditions were incorporated into an NSR permit, though still need to be incorporated into a Title V Permit.
33	FRI CO Emissions Limits. By no later than the Date of Entry of this Consent Decree, the FRI FCCU shall meet an emission limit of 500 ppmvd CO corrected to 0% O2 on a 1-hour block average basis and 100 ppmvd CO corrected to 0% O2 on a 365-day rolling average basis.	Periods of non-compliance with these requirements are found in Attachment B CEMs Data.
35	CO emissions during periods of Startup, Shutdown, or Malfunction of an FCCU or Malfunction of a CO control device shall not be used in determining compliance with the emission limit of 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis, provided that during such periods FRI or FEDRC, as appropriate, implement good air pollution control practices to minimize CO emissions.	Frontier manages the CEMs data appropriately.
E	**NSPS Applicability to FCCU Regenerators.**	
36	FRI FCCU Catalyst Regenerators. By no later than the dates specified below for each pollutant, the FRI FCCU Catalyst Regenerator shall be an "affected facility," as defined in 40 C.F.R.§ 60.2, under NSPS Subpart J, and shall comply with the applicable requirements of NSPS Subparts A and J for each of the following pollutants by the specified dates: SO2 September 30, 2015; PM September 30, 2015; and CO Date of Entry.	Frontier has submitted a permit application to WDEQ incorporate Consent Decree conditions. Many of these conditions were incorporated into an NSR permit, though still need to be incorporated into a Title V Permit.
38	For FCCU Catalyst Regenerators that become "affected facilities," as defined in 40 C.F.R. § 60.2, under NSPS Subpart J pursuant to this Section VI.E., entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree at the Covered Refineries' FCCUs shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a). a. If prior to the termination of this Consent Decree, the FCCU becomes subject to NSPS Subpart Ja for a particular pollutant due to a "modification" (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja in lieu of NSPS, Subpart J for that regulated pollutant to which a standard applies as a result of the modification. b. If prior to the termination of this Consent Decree, the FCCU becomes subject to NSPS Subpart Ja due to a "reconstruction" (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.	The FCCU has not triggered NSPS Ja.
F	**NOx Emission Reductions From Heaters and Boilers**	

Paragraph	Attachment H - Miscellaneous	Comments
40	FRI and FEDRC shall each implement programs to reduce NOx emissions from refinery heaters and boilers at their respective Covered Refineries to meet the requirements of Paragraphs 42, 45 and 46 through the installation of NOx controls and the acceptance of federally enforceable permit emission limits on the units controlled, or the shut down of certain units. Further, at their respective Covered Refineries, FRI and FEDRC shall monitor compliance with the emission limits through stack testing, use of CEMS, or PEMS.	Per the NOx Control Plan, the CO Boiler was permanently shut down on December 2013. FRI has met the intent of this requirement.
41	Installation of NOx Control Technology. For each Covered Refinery, FRI and FEDRC shall select one or any combination of the following "Qualifying Controls" to satisfy the requirements of Paragraphs 42, 45 and 46: a. SCR or SNCR; b. Current Generation or Next Generation Ultra-Low NOx Burners; c. Other technologies or combination of technologies which FRI or FEDRC, as appropriate, demonstrates to EPA's satisfaction shall reduce NOx emissions to 0.040 lbs. per mmBTU or lower; or d. Permanent shutdown of a heater or boiler with revocation of its federally enforceable operating permit.	Per the NOx Control Plan, the CO Boiler was permanently shut down on December 17, 2013. FRI has met the intent of this requirement.
42	On or before December 31, 2013, for each Covered Refinery, FRI and FEDRC shall use Qualifying Controls to reduce the aggregate NOx emissions (i.e. combined NOx emissions of both Covered Refineries) from the Heaters and Boilers listed in Appendix A by at least 649 tons per year, so as to satisfy the following inequality: n 3 [(E actual)i - (E allowable)i] $ 649 tons of NOx per year i = 1 Where: (E allowable)i = [(The permitted allowable pounds of NOx per million BTU for heater or boiler i, or, the requested portion of the permitted reduction pursuant to Paragraph 213(a) /(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate 33 capacity in million BTU per hour for heater or boiler i) x (the lower of 8760 or permitted hours per year)]; (E actual)i = The tons of NOx per year prior actual emissions during calendar years 2003 and 2004 (unless prior actual emissions exceed allowable emissions, then use allowable) as shown in Appendix A for heater or boiler i and n = The number of heaters and boilers with Qualifying Controls from those listed in Appendix A that are selected by FRI or FEDRC, as appropriate, to satisfy the requirements of the equation set forth in this Paragraph 42 of this Consent Decree. Federally enforceable permit limits established to implement this Paragraph 42 may use a 365 - day rolling average for heaters and boilers that use a CEMS or PEMS to monitor compliance.	Per the NOx Control Plan, the CO Boiler was permanently shut down on December 2013. FRI has met the intent of this requirement.
45	By December 31, 2009, FRI and FEDRC each shall install at their respective Covered Refineries Qualifying Controls and have by December 31, 2009 also applied for emission limits from the appropriate permitting authority sufficient to achieve, in the aggregate, two-thirds of the NOx emissions reductions required by Paragraph 42. No later than March 31, 2010, FRI and FEDRC shall each provide to EPA and the Applicable Intervenor a report showing how they have satisfied the requirement of this Paragraph 45 at their respective Covered Refineries.	The NOx Control Plan identifies dates of NOx emission reductions and identifies how the aggregate two-thirds reduction was accomplished by Dec. 31, 2009.

Paragraph	Attachment H - Miscellaneous	Comments
46	By no later than December 31, 2013, heaters and boilers with Qualifying Controls shall represent at least 30% of the total maximum heat input capacity or, if less, the allowable heat input capacity, as shown in Appendix A, of all heaters and boilers greater than 40 mmBTU/hr at each Covered Refinery. Any Qualifying Controls can be used to satisfy this requirement, regardless of when the Qualifying Controls were installed.	The NOx Control Plan identifies dates of NOx emission reductions and identifies how the 30% reqiurement will be accomplished by Dec. 31, 2013.
47	Beginning no later than one hundred and eighty (180) days after installing Qualifying Controls on and commencing operation of a heater or boiler that shall be used to satisfy the requirements of Paragraphs 42, 45, and 46, at each Covered Refinery FRI and FEDRC shall monitor the heaters or boilers as follows:	See below
47a	For heaters and boilers with a capacity greater than 150 mmBTU/hr (HHV), install or continue to operate a NOx CEMS;	No applicable sources.
47b	For heaters and boilers with a capacity greater than 100 mmBTU/hr (HHV) but less than or equal to 150 mmBTU/hr (HHV), install or continue to operate a NOx CEMS, or monitor NOx emissions with a predictive emissions monitoring system ("PEMS") developed and operated pursuant to the requirements of Appendix B (Predictive Emissions Monitoring Systems for Heaters and Boilers with Capacities Between 100 and 150 Mmbtu/hr) of this Consent Decree;	No applicable sources.
47c	For heaters and boilers with a capacity of less than or equal to 100 mmBTU/hr (HHV), conduct an initial performance test and any periodic tests that may be required by EPA or by the applicable State or local permitting authority under other applicable regulatory authority. FRI and FEDRC shall report the results of the initial performance testing at their respective Covered Refinery to EPA and the Applicable Intervenor;	No applicable sources.
47d	FRI and FEDRC shall use Method 7E in conjunction with Method 19 or an EPA-approved alternative test method to conduct initial performance testing for NOx emissions required by Subparagraph 47.c. Monitoring with a PEMS that is required by this Paragraph shall be conducted in accordance with the requirements of Appendix B. Units with Qualifying Controls installed before the Date of Entry that are subject to this Paragraph shall comply with this Paragraph by Date of Entry; and	No applicable sources.
47e	Any heater or boiler included in Appendix A that (i) already had Qualifying Controls installed prior to January 1, 2003, and (ii) is used solely to meet the heat input capacity requirement in Paragraph 46, shall install CEMS by December 31, 2013.	The Crude Charge Heater is covered by this requirement. FRI met this requirement by installing the NOx CEMS on the Crude Charge Heater by December 31, 2013.

? none

? none

Paragraph	Attachment H - Miscellaneous	Comments
48	Beginning no later than one hundred and eighty (180) days after installing Qualifying Controls and commencing operation of a heater or boiler that shall be monitored by use of a NOx CEMS that is required by Paragraph 47, at their respective Covered Refineries, FRI and FEDRC shall each install, certify, calibrate, maintain, and operate these CEMS in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMs (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. Unless Appendix F requirements are specifically required by NSPS or state regulations, with respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, FRI and/or FEDRC, as appropriate, must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three (3) years. At their respective Covered Refinery, FRI and FEDRC each shall conduct a Cylinder Gas Audit ("CGA") each calendar quarter during which a RAA or a RATA is not performed.	Frontier currently has no sources subject to this and anticipates meeting this requirement at the required time.
50	For their respective Covered Refineries, FRI and FEDRC shall retain all records required to support their reporting requirements under this Section VI.F. this Consent Decree 38 until termination of this Consent Decree, Section XX. (Termination). Upon request, FRI and FEDRC shall submit said records to EPA or the Applicable Intervenor.	Records required to support this section are maintained as required.
G	**SO2 Emissions Reductions from and, NSPS Applicability to, Heaters and Boilers and Other Specified Equipment.**	
53	NSPS Applicability to Heaters and Boilers and Other Specified Equipment.	
53a	Upon the Date of Entry, all heaters and boilers at each Covered Refinery shall be "affected facilities" as defined by 40 C.F.R. § 60.2 under NSPS Subpart J, and shall comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices, except for those heaters and boilers listed in Appendix C, which shall be "affected facilities" as defined by 40 C.F.R. § 60.2, and shall be subject to and comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix C.	All heaters and boilers listed in Appendix C are affected facilities under NSPS Subparts A and J.
53b	Upon the Date of Entry all equipment listed in Appendix D shall be "affected facilities" as defined by 40 C.F.R. § 60.2, under NSPS Subpart J, and shall comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix D.	All heaters and boilers listed in Appendix D are affected facilities under NSPS Subparts A and J.

not complete

Paragraph	Attachment H - Miscellaneous	Comments
53c	Where Appendix C or D specifies an alternative monitoring plan ("AMP") submittal date (rather than a final NSPS Subpart J compliance date), FRI and FEDRC shall submit to EPA and the Applicable Intervenor a timely and complete AMP application. Such an AMP may be based on alternative monitoring for H2S or SO2. If an AMP is not approved, FRI and/or FEDRC, as appropriate, shall, within ninety (90) days of receiving notice of such disapproval submit to EPA for approval, and send a copy to the Applicable Intervenor, a plan and schedule that provide for compliance with the monitoring requirements of NSPS Subpart J in accordance with the schedules contained in Appendices C and D. The plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.	An AMP for an inherently-low sulfur stream at the Butamer unit was filed prior to the revisions to J/Ja exempting those streams. No action has been taken by EPA on this AMP at this time. A different AMP was filed and approved for flares in Appendix D.
53f	If prior to the termination of this Consent Decree, any heater, boiler or other specified equipment becomes subject to NSPS Subpart Ja for a particular pollutant due to a "modification" (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja in lieu of NSPS Subpart J for that regulated pollutant to which a standard applies as a result of the modification.	No heaters or boilers identified in Appendix C have triggered NSPS Ja.
53g	If prior to the termination of this Consent Decree, any heater, boiler or other specified equipment becomes subject to NSPS Subpart Ja due to a "reconstruction" (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.	No heaters or boilers identified in Appendix C have triggered NSPS Ja.
54	Elimination/Reduction of Fuel Oil Burning. Effective on the Date of Entry, neither FRI nor FEDRC shall burn Fuel Oil in any Combustion Unit at their respective Covered Refineries except that: a. Either FRI or FEDRC may burn Fuel Oil at their respective Covered Refineries during periods of Natural Gas Curtailment, test runs, and operator training; and b. Either FRI or FEDRC may burn Torch Oil in FCCU regenerators at their respective Covered Refineries to assist in starting, restarting, hot standby, or to maintain regenerator heat balance.	No fuel oils burning occurs other than those identified in 54a and 54b.
H	**Sulfur Recovery Plants**	
56	Claus Sulfur Recovery Plant NSPS Applicability. Upon the Date of Entry of this Consent Decree, the FRI SRP and the FEDRC SRP shall continue to be "affected facilities," as defined by 40 C.F.R. § 60.2, under NSPS, 40 C.F.R. Part 60, Subparts A and J and shall, except as provided below in Paragraphs 57, 57.a. and 57.b., comply with all provisions applicable to such an "affected facility" as defined in 40 C.F.R. Part 60, Subparts A and J.	The SRP is an affected facility under NSPS Subparts A and J.
56a	Except as provided in Paragraph 58 of this Consent Decree, the FRI SRP shall fully comply with all provisions under NSPS, 40 C.F.R. Part 60, Subparts A and J, in effect on the Date of Entry, including periods of TGTU maintenance turnarounds; and	Excess emissions are included in Attachment G CEMs information.

Paragraph	Attachment H - Miscellaneous	Comments
56c	If prior to the termination of this Consent Decree, a SRP becomes subject to NSPS Subpart Ja for a particular pollutant due to a "modification" (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Ja in lieu of NSPS Subpart J for that regulated pollutant to which a standard applies as a result of the modification.	The SRP has not triggered NSPS Ja.
56d	If prior to the termination of this Consent Decree, a SRP becomes subject to NSPS Subpart Ja due to a "reconstruction" (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Ja for all pollutants in lieu of Subpart J.	The SRP has not triggered NSPS Ja.
57	Claus Sulfur Recovery Plant NSPS Compliance. Except as provided for the two scheduled tail gas unit maintenance turnarounds set forth in Paragraphs 58 and 59 below, the FRI and FEDRC SRPs shall comply with all applicable provisions of NSPS set forth at 40 C.F.R. Part 60, Subparts A and J, including, but not limited to, the following:	See below
57a	Emission Limit. FRI and FEDRC shall, for all periods of operation of the SRPs at the Covered Refineries, comply with 40 C.F.R. § 60.104(a)(2) at each SRP except during periods of Startup, Shutdown, or Malfunction of that SRP, or during a Malfunction of a TGTU serving as a control device for that SRP. For the purpose of determining compliance with the Sulfur Recovery Plant emission limits of 40 C.F.R. § 60.104(a)(2), the "Startup/Shutdown" provisions set forth in NSPS Subpart A shall apply to each SRP and not to the independent start-up or shutdown of a TGTU serving as a control device for that SRP. However, the Malfunction exception set forth in NSPS Subpart A, 40 C.F.R. § 60.8 shall apply to each SRP and to the TGTU serving as the control device for that SRP.	Excess emissions are included in Attachment F CEMs information.
57b	Monitoring. At their respective refineries, FRI and FEDRC shall monitor tail gas emissions points (stacks) for tail gas emissions and shall report excess emissions from each of these emissions points as required by 40 C.F.R. §§ 60.7(c), 60.13, and 60.105(a)(5), (6) or (7). FRI and FEDRC shall monitor emissions from their respective SRPs with CEMS at all of the emission points, unless an SO2 alternative monitoring procedure has been approved by EPA, per 40 C.F.R. § 60.13(i.), for any of the emission points. The requirement for continuous monitoring of the SRP emission points is not applicable to the Acid Gas Flaring Devices used to flare the Acid Gas or Sour Water Stripper Gas diverted from the SRPs.	Monitoring of the tail gas emissions is conducted per these requirements.
58	Interim SRP Requirements for the FRI TGTU Maintenance Turnarounds. FRI shall implement the following interim measures at the FRI SRP for any two maintenance turnarounds of the existing TGTU scheduled between June 30, 2008 and March 31, 2016:	Frontier has not had one of the maintenance turnarounds to date. Frontier anticipates complying with this when required.
58a	FRI shall monitor the emissions from the FRI Claus Trains during the TGTU maintenance turnaround in accordance with 40 C.F.R. Part 60, Subpart A, § 60.13 or other EPA approved alternative monitoring plan.	Frontier has not had one of the maintenance turnarounds to date. Frontier anticipates complying with this when required.

Paragraph	Attachment H - Miscellaneous	Comments
58b	By no later than one hundred and eighty (180) days after Date of Entry, FRI shall complete an optimization study, or submit a copy of a recent optimization study, to identify ways to minimize emissions and maximize sulfur recovery efficiencies at FRI SRU No.1 and SRU No.2 and shall submit a copy of that study to EPA and WDEQ. This study shall meet the requirements set forth in Paragraph 60 (Optimization). FRI shall promptly implement the physical improvements and operating parameters recommended in the study to optimize performance of FRI SRU No. 1 and SRU No. 2 during TGTU maintenance turnarounds in accordance with the schedule submitted under Paragraph 58.c, as applicable.	Optimization study has been completed. Some physical improvements will be completed during the next scheduled maintenance turnaround.
58c	By no later than ninety (90) days after completion of the optimization study in Paragraph 58.b above, FRI shall submit a report to EPA and WDEQ that proposes an appropriate interim performance standard (percent recovery efficiency and/or emission limitation) and, if necessary, a schedule for implementing related optimization study recommendations that are necessary to comply with FRI's proposed interim standard. Beginning with the date of such submission, FRI shall comply with its proposed interim performance standard and, if necessary, its proposed optimization study implementation schedule during TGTU turnarounds.	Frontier is in the process of complying. The optimization plan is expected to be addressed by the completion of the next scheduled turnaround.
58d	If, within thirty (30) days of receipt of the report required under Subparagraph 58.c., EPA, after consultation with WDEQ, determines that a more stringent interim performance standard and/or a different implementation schedule is appropriate and can be achieved with a reasonable certainty of compliance, EPA shall notify FRI of its determination. Unless FRI disputes EPA's determination(s) within ninety (90) days of FRI's receipt of EPA's notice, FRI shall, within that ninety (90) day period, comply with such new interim performance standard and/or a different implementation schedule or, if necessary, such other period as may be established by EPA based upon the approved implementation schedule. FRI shall comply with the appropriate interim performance standard for the two scheduled TGTU maintenance turnarounds that occur prior to March 31, 2016.	Frontier is in the process of complying. The optimization plan is expected to be addressed by the completion of the next scheduled turnaround.

Paragraph	Attachment H - Miscellaneous	Comments
60	Optimization. Each optimization study required for SRPs at FRI or FEDRC under Paragraph 58.b. or Paragraph 59.b of this Consent Decree shall: a. contain a detailed evaluation of plant design and capacity, operating parameters and efficiencies - including catalytic activity, and material balances; b. contain an analysis of the composition of the acid gas and sour water stripper gas resulting from the processing of crude slate actually used, or expected to be used, in those Claus trains; c. contain a review of each critical piece of process equipment and instrumentation within the Claus train that is designed to correct deficiencies or problems that prevent the Claus train from achieving its optimal sulfur recovery efficiency and expanded periods of operation; d. establish baseline data through testing and measurement of key parameters throughout the Claus train; e. establish a thermodynamic process model of the Claus train; f. for any key parameters that have been determined to be at less than optimal levels, identify each change necessary to move such parameters toward their optimal values and a schedule for the implementation of those change(s); g. verify through testing, analysis of continuous emission monitoring data or other means, of incremental and cumulative improvements in sulfur recovery efficiency, if any; h. establish new operating procedures, if needed, for long-term efficient operation; and i. be conducted to optimize the performance of the Claus trains in light of the actual characteristics of the feeds to the trains.	The optimization plan contained the necessary information.
61	Sulfur Pit Emissions. FRI and FEDRC shall continue to route or re-route all sulfur pit emissions at their respective refineries so that sulfur pit emissions are eliminated, controlled, or included and monitored as part of the SRPs' emissions subject to the NSPS Subpart J limit for SO2, 40 C.F.R. § 60.104(a)(2).	Sulfur pit vents are routed to the TGTU incinerator.
62	62. Good Operation and Maintenance. By no later than two hundred and seventy (270) days after the Date of Entry of this Consent Decree, FRI and FEDRC shall submit to EPA and the Applicable Intervenor a summary of the plans, implemented or to be implemented, at the their respective refineries for enhanced maintenance and operation of the FRI and FEDRC SRPs and the appropriate Upstream Process Units. The plans shall be entitled "Preventive Maintenance and Operation Plan" ("PMO Plan"). The PMO Plan shall be a compilation of approaches for exercising good air pollution control practices and for minimizing SO2 emissions from sulfur processing through applying good operating practices at the sulfur processing equipment and other production processes at the Covered Refineries. PMO Plans shall have as their goals the elimination of Acid Gas Flaring and the minimization of emissions from SRPs between scheduled maintenance turnarounds. The PMO Plan shall include as appropriate, but not be limited to: a. sulfur shedding procedures; b. Startup and Shutdown procedures for SRPs; c. control devices and Upstream Process Units; d. emergency procedures and schedules to coordinate maintenance turnarounds of the SRPs' Claus trains; and e. any control devices to coincide with scheduled turnarounds of major Upstream Process Units.	The PMO plan was developed and submitted as required.

Paragraph	Attachment H - Miscellaneous	Comments
62	At their respective Covered Refineries, FRI and FEDRC shall implement the PMO Plans at all times, including periods of Startup, Shutdown, upset, and Malfunction of its SRPs. Changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO2 emissions shall be summarized and reported by FRI and FEDRC to EPA and the Applicable Intervenor in the semi-annual report required under Paragraph 216.	The PMO plan was implemented at all times during the reporting period.
I	**Hydrocarbon Flaring**	
65	NSPS Applicability to Hydrocarbon Flaring Devices. FRI and FEDRC, at their respective Covered Refineries, own and operate the Hydrocarbon Flaring Devices identified in Appendix G to this Consent Decree. FRI and FEDRC agree that each Hydrocarbon Flaring Device identified in Appendix G shall be an "affected facility," as that term is used in NSPS, 40 C.F.R. Part 60, and shall be subject to and required to comply with, the requirements of 40 C.F.R. Part 60, Subparts A and J, for fuel gas combustion devices used as emergency control devices for the quick and safe release of gases. FRI and FEDRC shall by the dates specified in Appendix G meet the NSPS Subparts A and J requirements for each Hydrocarbon Flaring Device identified in Appendix G. FRI and FEDRC shall achieve compliance with Subparts A and J requirements for each Hydrocarbon Flaring Device identified in Appendix G through the use of one or any combination of the following methods identified in Subparagraphs 65.a. - 65.e.:	See below
65a	Operating and maintaining a flare gas recovery system to prevent continuous or routine combustion in the Hydrocarbon Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor emissions as otherwise required by 40 C.F.R. § 60.105(a)(4);	Flare gas recovery compressors are utilized on portions of the flares. Those streams which are managed by the compressors are considered to be covered by this requirement.
65b	Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an Hydrocarbon Flaring Device and operating the Flaring Device such that it receives only non-routinely generated gases, process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other Malfunctions;	Frontier is currently conducting a voluntary audit of sources to the flare and has preliminarily identified some minor intermittent or low flow streams which potentially may not be characterized as process upset gases.

Paragraph	Attachment H - Miscellaneous	Comments
65c	Operating the Hydrocarbon Flaring Device as a fuel gas combustion device, monitoring it for the continuous or intermittent, routinely-generated refinery fuel gas streams put into the flare header, with a CEMS as required by 40 C.F.R. § 60.105(a)(4) or with a parametric monitoring system approved by EPA as an alternative monitoring system under 40 C.F.R. § 60.13(i.) and complying with emission limits when and as required by Paragraph 68.a.; or	Frontier operates the Main Plant Flare as a fuel gas combustion device, however all of the streams which require monitoring are covered by an AMP.
65d	*d. During the term of this Consent Decree eliminate to the extent practicable routes of continuous or* intermittent routinely generated fuel gases to a Flaring Device and monitor the mass flow of sulfur dioxide emitted by use of a CEMS and flow meter; provided however, that this compliance method may not be used unless FRI and/or FEDRC, as appropriate: i. demonstrates to EPA and the Applicable Intervenor that the Flaring Device in question emits less than 500 pounds per day of SO2 under normal conditions; and by the dates specified in Appendix G;ii. secures EPA and the Applicable Intervenor's approval for use of this method as the selected compliance method; and iii. uses this compliance method for only one of the Flaring Devices listed in Appendix G at each Covered Refinery;	Frontier does not utilize this option.
65e	FRI and/or FEDRC may submit to EPA and the Applicable Intervenor a timely and complete application for an Alternative Monitoring Plan ("AMP") for a Flaring Device listed in Appendix E and Appendix G, by the applicable date listed in those appendices (rather than a final NSPS Subpart J compliance date). Such an AMP may be based on alternative monitoring for H2S or SO2. If an AMP is not approved by EPA, FRI and/or FEDRC, as appropriate, shall, within ninety (90) days of receiving notice of such disapproval submit to EPA for approval, with a copy to the Applicable Intervenor, a plan and schedule that provide for compliance with the monitoring requirements of NSPS Subpart J in accordance with the schedules contained in Appendices E and G. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.	Frontier does not utilize this option.
65f	For Flaring Devices that combust low-flow VOC streams from vents, pump seals, and other sources, it is anticipated that some of the AMP applications shall rely in part on calculating a weighted average H2S concentration of all VOC and fuel gas streams that are burned in a single Flaring Device and demonstrating with alternative monitoring that either the SO2 emissions from the Flaring Device shall not exceed 20 ppm or that the weighted average H2S concentration is not likely to exceed 162 ppm H2S. EPA shall not reject an AMP solely due to the AMP's use of one of these approaches to demonstrating compliance with NSPS Subpart J.	Frontier does not utilize this option.

Paragraph	Attachment H - Miscellaneous	Comments
65g	If prior to the termination of this Consent Decree, a Flaring Device becomes subject to NSPS Subpart Ja for a particular pollutant due to a "modification" (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja in lieu of NSPS, Subpart J for that regulated pollutant to which a standard applies as a result of the modification.	The Main Flare is now subject to NSPS Ja as a modified flare.
65h	If prior to the termination of this Consent Decree, a Flaring Device becomes subject to NSPS Subpart Ja due to a "reconstruction" (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.	The flares did not trigger the reconstruction definition of NSPS Ja.
66	At their respective Covered Refineries, FRI and FEDRC shall implement the compliance option chosen for each Hydrocarbon Flaring Device according to the schedule in Appendix G and identify the option that was implemented for each Hydrocarbon Flaring Device in the first Semi-Annual Report due under Paragraph 216 after such compliance option is chosen. The Parties recognize that periodic maintenance may be required for properly designed and operated flare gas recovery systems. At their respective Covered Refineries, FRI and FEDRC shall take all reasonable measures to minimize emissions while such periodic maintenance is being performed on any flare gas recovery system installed. FRI may request from WDEQ permission to temporarily operate the Old Flare (identified in Appendix G) at the FRI Refinery for only those periods of maintenance scheduled for the Main Flare. During such periods of operation, FRI must operate the Old Flare in compliance with NSPS Subpart J.	The Old Flare was utilized during this reporting period.
67	Within one hundred and eighty (180) days after bringing an Hydrocarbon Flaring Device into compliance with 40 C.F.R. Part 60, Subparts A and J, at their respective Covered Refineries, FRI and FEDRC shall conduct a flare performance test pursuant to 40 C.F.R.§ 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, FRI and FEDRC may submit velocity calculations to EPA and the Applicable Intervenor which demonstrate that the NSPS Hydrocarbon Flaring Device meets the performance specification required by 40 C.F.R. § 60.18. Operation of an adequately sized flare gas recovery unit that recovers all routine continuous and intermittent gases sent to the flare obviates the need to conduct a performance test pursuant to methods in 40 C.F.R. 60.18(f) on the associated flare(s).	The required information has previously been submitted.
68	Compliance With the Emissions Limit at 40 C.F.R. § 60.104(a)(1). a. Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases. For continuous or intermittent, routinely-generated refinery fuel gases that are combusted in any of the NSPS Hydrocarbon Flaring Devices at their respective Covered Refineries, FRI and FEDRC shall comply with the emission limit at 40 C.F.R. § 60.104(a)(1) by the dates specified in Appendix G. b. Non-Routinely Generated Gases. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other Malfunction is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).	Frontier is currently conducting a voluntary audit of sources to the flare and has preliminarily identified some minor intermittent or low flow streams which potentially may not be characterized as process upset gases.

Paragraph	Attachment H - Miscellaneous	Comments
J	**Control of Acid Gas Flaring and Tail Gas Incidents**	
71	Investigation and Reporting. Commencing upon the Date of Entry and thereafter, no later than sixty (60) days following the end of any Acid Gas Flaring Incident, at their respective Covered Refineries, FRI and FEDRC shall conduct an investigation into the root cause(s) of the incident and record the findings of the investigation in a report (the "Incident Report"). Each Incident Report shall be included in the Semi-Annual Report required by Paragraph 84. The Incident Report for each incident shall include the following:	Incident Reports have been completed for all acid gas and tail gas flaring incidents during the reporting period.
72	Corrective Action. In response to any AG Flaring Incident occurring after the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that AG Flaring Incident.	Information on corrective actions is included in the Incident Reports.
72a	After a review of any report required to be prepared by Paragraph 71 and submitted to EPA and the Applicable Intervenor as required by Paragraph 84, EPA shall notify FRI and/or FEDRC, as applicable, in writing of (1) any deficiencies in the corrective action(s) listed in the findings and/or (2) any objections to the schedule(s) of implementation, and explain the basis for EPA's objection(s). FRI and/or FEDRC, as applicable, will implement an alternative or revised corrective action or implementation schedule based on EPA's comments. If a corrective action that EPA has identified as deficient is already completed, then FRI and/or FEDRC, as applicable, is not obligated to implement the corrective action identified by EPA for that Flaring Incident. However, FRI and/or FEDRC, as applicable, will be put on notice that such corrective action is deficient and not acceptable for remedying any subsequent, similar root cause(s) of any incident.	No deficiencies have been identified by EPA/WDEQ on incident reports
78	In the event a dispute under Paragraphs 74 through 77 is brought to the Court pursuant to the Dispute Resolution provisions of this Consent Decree, Section XVII. (Retention of Jurisdiction/Dispute Resolution), FRI and/or FEDRC, as appropriate, may also assert a Startup, Shutdown and/or upset defense (including an individual sulfur recovery unit within an SRP), but the United States shall be entitled to assert that such defenses are not available. If FRI, or FEDRC, as appropriate, prevails in persuading the Court that the defenses of Startup, Shutdown and/or upset are available for AG Flaring Incidents under 40 C.F.R. § 60.104(a)(1), FRI, or FEDRC, as appropriate, shall not be liable for stipulated penalties for emissions resulting from such Startup, Shutdown and/or upset. If the United States prevails in persuading the Court that the defenses for Startup, Shutdown and/or upset are not available, FRI or FEDRC, as appropriate, shall be liable for such stipulated penalties.	No disputes arose during the reporting period.

36-month exemption

Paragraph	Attachment H - Miscellaneous	Comments
79	Other than for a Malfunction or force majeure, if no Acid Gas Flaring Incident occurs at either the FEDRC or FRI Refinery for a rolling 36-month period, then the stipulated penalty provisions of Paragraph 254 of Section XIII. (Stipulated Penalties) shall no longer apply to that refinery. EPA may elect to reinstate the stipulated penalty provision if such refinery has an Acid Gas Flaring Incident that would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall continue for the remaining life of this Consent Decree for that Covered Refinery.	Frontier is not utilizing this option.
80	Emissions Calculations.	See below
80a	Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring. For purposes of this Consent Decree, FRI and FEDRC shall calculate the quantity of SO2 emissions resulting from an AG Flaring Incident by applying the following formula: Tons of SO2 = [FR][TD][ConcH2S][8.44 x 10-5] The quantity of SO2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO2 emitted shall be rounded to 10.1 tons.) For purposes of determining the occurrence of, or the total quantity of SO2 emissions resulting from, an AG Flaring Incident that consists of intermittent AG Flaring, the quantity of SO2 emitted shall be equal to the sum of the quantities of SO2 flared during each 24-hour period starting when the Acid Gas was first flared.	There were 3 acid flaring events during the reporting period.
80b	Calculation of the Rate of SO2 Emissions During AG Flaring. For purposes of this Consent Decree, the rate of SO2 emissions resulting from an AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula: ER = [FR][ConcH2S][0.169] The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO2 per hour, the emission rate shall be rounded to 20.0 pounds of SO2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO2 per hour, the emission rate shall be rounded to 20.1.)	There were 3 acid flaring events during the reporting period.

Paragraph	Attachment H - Miscellaneous	Comments
82	Tail Gas Incidents: Investigation, Reporting, Corrective Action and Stipulated Penalties. For Tail Gas Incidents, FRI and/or FEDRC, as appropriate, shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Paragraphs 71 through 79 for Acid Gas Flaring Incidents. Those procedures shall be applied to TGTU shutdowns, bypasses of a TGTU, or other events which result in a Tail Gas Incident, including unscheduled Shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, during the interim periods identified in Paragraphs 58 and 59, stipulated penalties shall not apply to a Tail Gas Incident attributable to the scheduled Startup or Shutdown of an individual train at the FRI SRP or at the FEDRC SRP, provided that FRI and/or FEDRC, as appropriate, demonstrate in their Tail Gas Incident Report that they have implemented good air pollution control practices. This Paragraph 82 shall apply without the exemption from stipulated penalties for all Tail Gas Incidents that occur after the effective dates of full NSPS applicability for SRPs, as provided in Paragraph 56 above.	Tail Gas incidents are investigated as discussed above.
83	Calculation of the Quantity of SO2 Emissions Resulting From A Tail Gas Incident. For the purposes of this Consent Decree, the quantity of SO2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event: a. If Tail Gas is combusted in a flare, the SO2 emissions are calculated using the methods outlined in Paragraph 80; or b. If Tail Gas exceeding the 250 ppmvd (NSPS J limit) is emitted from a monitored SRP incinerator, then the following formula applies: ERTGI = [FRInc.]i [Conc. SO2 – 250]i [0.169 x 10-6] TD i TGI Σ = 1 209 209 . % 2 . O Where: ERTGI = Emissions from Tail Gas Unit at the SRP incinerator, pounds of SO2 over a 24 hour period TDTGI = Hours when the incinerator CEM was exceeding 250 ppmvd SO2 on a rolling twelve hour average, corrected to 0% O2, in each 24 hour period of the Incident i = Each hour within TDTGI FRInc. = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident Conc. SO2 = The average SO2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O2, for each hour of the Incident % O2 = O2 concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident 0.169 x 10-6 = [1.0 lb mole of SO2 / 379 SO2] [64 lbs SO2 / 1.0 lb mole SO2] [1 x 10-6] Standard conditions = 60 degree F; 14.7 lbforce/sq.in. absolute In the event the concentration SO2 data point is inaccurate or not available or a flow meter for FRInc does not exist or is inoperable, then either FRI or FEDRC, as applicable, shall estimate emissions based on best engineering judgment.	Emissions are calculated using the pounds/hour output from the CEM and subtracting the SRP SO2 permit limit. Going forward, Frontier will utilize the equations in paragraph 83.
K	**Control of Hydrocarbon Flaring Incidents**	
L	**Benzene Waste NESHAP Program Enhancements**	

Paragraph	Attachment H - Miscellaneous	Comments
86	At each of the Covered Refineries, FRI and FEDRC agree to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste Operations NESHAP" or "Subpart FF" or "BWON") and to undertake the measures set forth in this Section VI.L. for ensuring future compliance with Subpart FF and minimizing or eliminating fugitive benzene waste emissions.	Frontier recently voluntarily disclosed audit findings indicating various deficiencies in the BWON program. The specific issues related to Consent Decree items are identified below.
88	88. FRI Refinery Compliance Status Changes. FRI has reported a Total Annual Benzene ("TAB") of less than 10 Mg/yr. If at any time from the Date of Entry of this Consent Decree through its termination, FRI is determined to have a TAB equal to or greater than 10 Mg/yr, FRI shall utilize the appropriate compliance option specified below. a. If the TAB exceeds 10 Mg/yr based on errors, omissions, or mischaracterization of waste streams existing at the refinery as of the Date of Entry, FRI shall utilize the compliance option set forth at 40 C.F.R. § 61.342(e) (the "6 BQ compliance option"). b. If the TAB exceeds 10 Mg/yr based on increased throughput/capacity expansion, FRI may select either the 2 Mg or 6 BQ compliance option.	Frontier determined the facility TAB was over 10 Mg/yr, and is complying with the 6BQ compliance option.
89	FRI shall consult with EPA and the Applicable Intervenor before making any change in compliance strategy required by Paragraph 88. All changes must be undertaken in accordance with the regulatory provisions of the BWON.	No change in compliance status occurred during this reporting peroid.
90	90. One-Time Review and Verification of Each Covered Refinery's TAB: Phase One of the Review and Verification Process. By no later than 12 months after the Date of Entry, FRI and FEDRC shall complete a Phase One review and verification of each Covered Refinery's TAB and compliance with the 2 Mg compliance option at the FEDRC Refinery. For each Covered Refinery, the Phase One review and verification process shall include, at a minimum: a. an identification of each waste stream as defined in Subpart FF that is required to be included in the Covered Refinery's TAB; b. a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream; c. an identification of the benzene concentration in each waste stream. FRI and FEDRC shall be required to sample for benzene concentration at no less than ten (10) waste streams per Covered Refinery consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3). FRI and FEDRC may use previous analytical data or documented knowledge of waste streams in accordance with 40 C.F.R. § 61.355(c)(2) for any remaining waste streams not sampled; and d. an identification of whether or not the waste stream is controlled consistent with the requirements of Subpart FF.	Previously submitted.
91	Phase One Report. By no later than fifteen (15) months after Date of Entry FRI and FEDRC shall submit to EPA and the Applicable Intervenor a BWON Compliance Review and Verification Report for their respective Covered Refinery that sets forth the results of Phase One, including but not limited to the items identified in (a) through (d) of Paragraph 90.	Previously submitted.

Paragraph	Attachment H - Miscellaneous	Comments
92	One-Time Review and Verification of Each Covered Refinery's TAB: Phase Two of the Review and Verification Process. Based on EPA's review of the BWON Compliance Review and Verification Reports and after an opportunity for consultation with the Applicable Intervenor, EPA may select up to twenty (20) additional waste streams at each Covered Refinery for sampling for benzene concentration. At their respective Covered Refinery, FRI and FEDRC shall conduct the required sampling and submit the results to EPA within sixty (60) days of receipt of EPA' s request. FRI and FEDRC shall use the results of this additional sampling to reevaluate the TAB and the uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification Report, as needed. To the extent that EPA requires FRI and FEDRC to sample a waste stream as part of the Phase Two review that FRI and/or FEDRC sampled and included as part of its Phase One review, each may average the results of such sampling at their respective Covered Refinery. FRI and FEDRC shall submit an amended BWON Compliance Review and Verification Report within one-hundred twenty (120) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA. This amended BWON Compliance Review and Verification Report shall supercede and replace the originally-submitted BWON Compliance Review and Verification Report. If Phase Two sampling is not required by EPA, the originally-submitted BWON Compliance Review and Verification Report shall constitute the final report.	Previously submitted.
93	Amended TAB Reports. If the results of the BWON Compliance Review and Verification Report indicate that a Covered Refinery's TAB report filed most recently before this Consent Decree does not satisfy the requirements of Subpart FF, the Covered Refinery shall submit, by no later than one-hundred twenty (120) days after completion of the BWON Compliance Review and Verification Report, an amended TAB report to EPA. The BWON Compliance Review and Verification Report submitted by FRI and/or FEDRC, as appropriate, shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.	Previously submitted.
94	Implementation of Actions Necessary to Correct Non-Compliance: FRI. If the results of the BWON Compliance Review and Verification Report indicate that FRI has a TAB of over 10 Mg/yr, FRI shall submit to EPA, by no later than one-hundred eighty (180) days after completion of the BWON Compliance Review and Verification Report, a Compliance Plan that identifies with specificity: a. the actions it shall take to ensure that the FRI's TAB remains below 10 Mg/yr for 2009 and each calendar year thereafter; or b. a compliance strategy and schedule that FRI shall implement to ensure that FRI complies with the 6 BQ or the 2Mg compliance option as soon as practicable but by no later than December 31, 2010, if it cannot ensure a consistent TAB below 10 Mg/yr.	Previously submitted.

Paragraph	Attachment H - Miscellaneous	Comments
96	Implementation of Actions Necessary to Correct Non-Compliance: Review and Approval of Plans. Any plans submitted pursuant to Paragraphs 94 and 95 shall be subject to the approval of, disapproval of, or modification by EPA, after an opportunity for consultation with the Applicable Intervenor. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, FRI and/or FEDRC, as appropriate, shall submit to EPA and the Applicable Intervenor a revised plan that responds to all identified deficiencies. Unless EPA disapproves or requests modifications of the revised plan within sixty (60) days, FRI and/or FEDRC, as appropriate, shall implement its proposed plan.	EPA did not disapprove or request a modification of the plan.
97	Implementation of Actions Necessary to Correct Non-Compliance: Certification of Compliance. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 94 and 95 to come into compliance with the applicable compliance option, FRI and FEDRC shall for their respective Covered Refinery submit, pursuant to Paragraph 139 of this Consent Decree, their certifications and a report, pursuant to Section XIX (General Provisions), Paragraph 356 (Notice), to EPA and the Applicable Intervenor that such refinery complies with the BWON.	Previously submitted.
101	Prohibition of Use of Single Canisters. Except as expressly allowed in Paragraph 105, FRI and FEDRC shall not use single carbon canisters for any new units or installations that require vapor control pursuant to the BWON at any of their Covered Refineries.	Frontier does not currently utilize single canisters.
102	Definition of "Breakthrough" in Dual Canister Systems. For dual carbon canister systems in series and depending upon the parameter that FRI and/or FEDRC decide to monitor, "breakthrough" between the primary and secondary canister shall be defined as any reading equal to or greater than either 50 ppm VOC or 5 ppm benzene.	Frontier utilizes a breakthrough definition of 50 ppm VOC.
103	Monitoring for Breakthrough in Dual Canister Systems. By the later of either the Date of Entry or seven (7) days after the installation of any new dual canister, FRI and FEDRC shall start to monitor for Breakthrough between the primary and secondary carbon canisters at times when there is actual flow into the carbon canister, in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and shall monitor the outlet of the secondary canister on a monthly basis or at its design replacement interval (whichever is less) to verify the proper functioning of the system.	Frontier recently voluntarily disclosed audit findings indicating monitoring had not been conducted per these requirements. Monitoring is now conducted per this requirement.

Paragraph	Attachment H - Miscellaneous	Comments
104	Replacing Canisters in Dual Canister Systems. FRI and FEDRC shall replace each original primary carbon canister (or route the flow to an appropriate alternative control device) immediately when any Breakthrough is detected. The original secondary carbon canister shall become the new primary carbon canister and a fresh carbon canister shall become the secondary canister unless both the primary and secondary carbon canisters are replaced. For purposes of this Paragraph, "immediately" shall mean within twenty-four (24) hours. As an alternative, FRI and FEDRC may continue to operate the dual carbon canister system after Breakthrough is detected provided VOC monitoring is conducted at the outlet of the secondary carbon canister on a daily basis. If any VOC reading is detected at the outlet of the secondary carbon canister, both canisters must be replaced within twelve (12) hours.	Frontier recently voluntarily disclosed audit findings indicating replacement had not been conducted per these requirements. Replacement of dual canisters now occurs per this requirement.
105	Limited Use of Single Canisters. FRI and FEDRC may utilize properly sized single canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For canisters operated as part of a single canister system, Breakthrough is defined for purposes of this Decree as any reading of VOC or benzene above background. Beginning no later than the Date of Entry, FRI and FEDRC shall monitor for Breakthrough from each single carbon canister each day there is actual flow to the carbon canister.	Frontier does not currently utilize single canisters.
106	Replacing Canisters in Single Canister Systems. FRI and FEDRC shall replace each single carbon canister with a fresh carbon canister, discontinue flow, or route the stream to an alternate, appropriate device immediately when any Breakthrough is detected. For this Paragraph, "immediately" shall mean within eight (8) hours for canisters of 55 gallons or less and within twenty-four (24) hours for canisters greater than 55 gallons. If flow to a single canister is discontinued under this Paragraph, such canister may not be placed back into BWON vapor control service until it has been appropriately regenerated or replaced.	Frontier does not currently utilize single canisters.
107	Maintaining Canister Supplies. At their respective Covered Refineries, FRI and FEDRC shall maintain a supply of fresh activated carbon canisters at all times.	Frontier maintains a supply of fresh activated carbon at all times.
108	Records Relating to Canisters. FRI and FEDRC shall maintain records for the requirements of Paragraphs 98 - 107 in accordance with 40 C.F.R. § 61.356(j)(10). Additionally, all VOC and/or benzene measurements used to calculate removal efficiencies through control carbon canisters shall be maintained in a logbook or electronic database. The date, time, monitoring instrument type, instrument reading, and canister location shall be maintained in the logbook or database.	Frontier recently voluntarily disclosed audit findings indicating records had not been maintained as required. Records are now maintained as directed by this requirement.

Paragraph	Attachment H - Miscellaneous	Comments
109	Annual Review. By no later than sixty (60) days after Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall modify existing Management of Change ("MOC") procedures or develop a new program to annually review process and project information for each Covered Refinery, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Covered Refinery's waste stream inventory during the life of this Consent Decree.	Frontier recently voluntarily disclosed audit findings indicating previous reviews were not as comprehensive as they could have been. An annual review was conducted prior to the submission of the BWON annual report this year.
112	Until this Consent Decree is terminated, FRI and FEDRC shall conduct subsequent audits of each of their respective laboratories used for BWON analyses at least once every two years.	Initial on-site audits were conducted by Sage Environmental Consulting, L.P. of the Technology Laboratories, Inc. facility located in Fort Collins, Colorado on August 13, 2013 and the TestAmerica Laboratories, Inc. facility located in Arvada, Colorado on August 17th, 2013. The results of all audits indicate that Energy Laboratories Inc., Technology Laboratories, Inc. and TestAmerica Laboratories, Inc. are both capable of reliable analysis of benzene-containing wastewater and organic samples as listed in 40 CFR §61.355(c)(3)(iv).
114	Benzene Spills. Beginning no later than the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall continue to review spills to determine whether more than ten (10) pounds of benzene waste was generated in any twenty-hour (24) hour period at either Covered Refinery. FRI and FEDRC shall continue to include the benzene generated by such spills in the TAB and in the uncontrolled benzene quantity calculations for each Covered Refinery in accordance with the applicable compliance option as required by Subpart FF.	Benzene spills are evaluated per this requirement.

Paragraph	Attachment H - Miscellaneous	Comments
118	Wastes Subject to Subpart FF: Schematics. By no later than one hundred and eighty (180) days after the Date of Entry, FRI and FEDRC shall each submit to EPA and the Applicable Intervenor schematics for their respective Covered Refineries that: a. depict the waste management units (including sewers) that handle, store, and transfer wastes subject to Subpart FF; b. identify the control status of each waste management unit; and c. show how such waste is transferred within the Covered Refinery. FRI and FEDRC shall include with the schematics a quantification of all uncontrolled wastes subject to Subpart FF. If requested by EPA, FRI and/or FEDRC, as appropriate, shall submit to EPA within ninety (90) days of the request, revised schematics regarding the characterization of these wastes and the appropriate control standards.	Previously Submitted. As part of the recent audit and work following, Frontier has done a thorough review of the BWON system and is in the process of determining how the schematic needs to be updated. After it is determined how to update the schematic to properly reflect operations, it will be submitted.
119	Wastes Subject to Subpart FF: Non-Aqueous Benzene Waste Streams. By Date of Lodging, all waste management units at each Covered Refinery handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, shall meet the applicable control standards of Subpart FF.	Frontier recently voluntarily disclosed audit findings indicating that this requirement was not being met. Non-Aqueous Benzene Wastes are now managed per this requirement.
120	Wastes Subject to Subpart FF: Aqueous Benzene Waste Streams. For purposes of calculating each Covered Refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), FRI and FEDRC shall include all wastes subject to Subpart FF that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments shall be made to such calculations to avoid the double-counting of benzene. For purposes of complying with the 2 Mg or 6 BQ compliance option, by Date of Lodging, all waste management units at each Covered Refinery handling BWON waste streams either shall meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 2 Mg or 6 BQ limit.	Aqueous Benzene Wastes are managed per this requirement.
121	BWON Sampling Plans: General. By no later than the completion of the BWON training specified in Paragraph 115, FRI and FEDRC shall each submit to EPA and the Applicable Intervenor, for approval, BWON Sampling Plans for their respective Covered Refineries to describe the sampling of BWON streams that FRI and FEDRC shall undertake to estimate quarterly and annual TABs (for FRI) or quarterly and annual uncontrolled benzene quantities for Covered Refineries with a TAB greater than or equal to 10 Mg/yr (for FEDRC and FRI if and when FRI's TAB exceeds 10 Mg/yr).	A plan was previously submitted. As part of the recent audit and work following, Frontier has done a thorough review of the BWON Sampling Plan and is in the process of determining how the plan needs to be updated. After it is determined how to update the plan, it will be submitted and implemented.

Paragraph	Attachment H - Miscellaneous	Comments
122	122. BWON Sampling Plans: Content Requirements. For a Covered Refinery with a TAB less than 10 Mg/yr, the Sampling Plan shall identify: a. annually, each waste stream that has contributed 0.05 Mg/yr or more at the point of generation to the previous year's TAB calculations; and b. quarterly, the proposed End-of-Line ("EOL") sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 129.	A plan was previously submitted. As part of the recent audit and work following, Frontier has done a thorough review of the BWON Sampling Plan and is in the process of determining how the plan needs to be updated. After it is determined how to update the plan, it will be submitted and implemented.
127	BWON Sampling Plans: Timing for Implementation. At their respective Covered Refineries, FRI and FEDRC shall implement the sampling required under their Sampling Plan during the first full calendar quarter after they submit that plan. FRI and FEDRC shall, at their respective Covered Refinery, continue to implement the Sampling Plan: a. unless and until EPA disapproves the plan; or b. unless and until FRI and/or FEDRC modifies a plan, with EPA's approval, under Paragraph 128.	Implemented as required.
128	BWON Sampling Plans: Modifications.	
128a	Changes in Processes, Operations, or Other Factors. If changes in processes, operations, or other factors lead FRI and/or FEDRC to conclude that a Sampling Plan for a Covered Refinery may no longer provide an accurate basis for estimating that Covered Refinery's quarterly or annual TABs or benzene quantities under Paragraph 129, then by no later than ninety (90) days after FRI and/or FEDRC, as appropriate, determine that the plan no longer provides an accurate measure, they shall submit to EPA and the Applicable Intervenor a revised Sampling Plan for EPA approval. In the first full calendar quarter after submitting the revised plan, FRI and/or FEDRC, as appropriate shall implement the revised plan. FRI and/or FEDRC, as appropriate, shall continue to implement the revised plan unless and until EPA disapproves the revised plan after an opportunity for consultation with the Applicable Intervenor.	As part of the recent audit and work following, Frontier has done a thorough review of the BWON Sampling Plan and is in the process of determining how the plan needs to be updated. After it is determined how to update the plan, it will be submitted and implemented.
128b	Requests for Modifications. After two (2) years of implementing a Sampling Plan, FRI and/or FEDRC, as appropriate, may submit a request to EPA for approval, with a copy to the Applicable Intervenor, to revise a Covered Refinery's sampling plan, including sampling frequency. EPA shall not unreasonably withhold its consent. FRI and FEDRC shall not implement any proposed revisions under this Subparagraph until EPA provides its approval after an opportunity for consultation with the Applicable Intervenor.	Frontier has not requested a modification to the sampling plan requirements.

Paragraph	Attachment H - Miscellaneous	Comments
129	Quarterly and Annual Estimations of TABs and Uncontrolled Benzene Quantities. At the end of each calendar quarter and based on sampling results and approved flow calculations, FRI and FEDRC shall calculate a quarterly and projected annual: a. TAB for each Covered Refinery with a TAB less than 10 Mg/yr; and b. uncontrolled benzene quantity for each Covered Refinery with a TAB greater than or equal to 10 Mg/yr.	Frontier calculates these values and reports them as required. See Attachment A for details.
131	Corrective Measures: Basis. Except as set forth in Paragraph 132, FRI and FEDRC shall implement corrective measures specified in Paragraph 133 of this Consent Decree at the applicable Covered Refinery if:	No corrective measures are required to be reported during this reporting period.
131c	For any Covered Refinery with a TAB greater than or equal to 10 Mg/yr and electing the 6 BQ compliance option, the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year.	No corrective measures are required to be reported during this reporting period.
132	Exception to Implementing Corrective Measures. If, at their respective Covered Refineries, FRI and/or FEDRC can identify the reason(s) in any particular calendar quarter that the quarterly and projected annual calculations result in benzene quantities in excess of those identified in Paragraph 133 and state that they do not expect such reason or reasons to recur, then FRI and/or FEDRC, as appropriate, may exclude the benzene quantity attributable to the identified reason(s) from the projected calendar year quantity. EPA and the Applicable Intervenor may dispute any determination made by FRI or FEDRC. If that exclusion results in no potential violation of the BWON, FRI and/or FEDRC, as appropriate, shall not be required to implement corrective measures under Paragraph 131, and may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 133. At any time that either FRI or FEDRC proceeds under this Paragraph, they shall describe how they have satisfied the conditions in this Paragraph in the reports due under Section XI. (Reporting and Record Keeping) of this Decree.	No corrective measures are required to be reported during this reporting period.
133	Compliance Assurance Plan - Corrective Measures. If at their respective Covered Refineries, FRI and/or FEDRC meets one or more conditions in Paragraph 131 (except as provided under Paragraph 132), then by no later than sixty (60) days after the end of the calendar quarter in which one or more of the conditions were met, FRI and/or FEDRC, as appropriate, shall submit a Compliance Assurance Plan to EPA for approval, with a copy to the Applicable Intervenor. In that Compliance Assurance Plan, FRI and/or FEDRC shall identify the quantity and cause(s) of the potentially-elevated benzene quantities, all corrective measures that they have taken or plan to take to ensure that the cause(s) shall not recur, and the schedule of actions that they shall take to ensure that the subject refinery complies with the BWON for the calendar compliance year. At their respective Covered Refinery, FRI and/or FEDRC shall implement the plan unless and until EPA disapproves after an opportunity for consultation with the Applicable Intervenor.	No corrective measures are required to be reported during this reporting period.

Paragraph	Attachment H - Miscellaneous	Comments
134	Third-Party Assistance. If the projected annual benzene quantity under Paragraph 129 exceeds, in two consecutive quarters, 10 Mg/yr for a Covered Refinery subject to Paragraph 131.a, 2 Mg/yr for a Covered Refinery subject to Paragraph 131.b, or 6 Mg/yr for a Covered Refinery subject to Paragraph 131.c., and FRI and/or FEDRC cannot identify the reason for the exceedances as allowed under Paragraph 132, they shall within thirty (30) days retain a third-party contractor during the following quarter to undertake a TAB study and compliance review at that Covered Refinery. By no later than ninety (90) days after they receive the results of the third-party TAB study and compliance review, FRI and/or FEDRC, as appropriate, shall submit such results and a plan and schedule for remedying any deficiencies identified in the third-party study and compliance review to EPA and the Applicable Intervenor. At their respective Covered Refinery, FRI and FEDRC shall implement their proposed plan unless and until EPA disapproves after an opportunity for consultation with the Applicable Intervenor. By no later than thirty (30) days after completion of the implementation of all actions, if any, required to come into compliance with the applicable compliance option, FRI and FEDRC shall submit their respective certifications, pursuant to Paragraph 139 of this Consent Decree, and a report, pursuant to Section XIX (General Provisions), Paragraph 356 (Notice), to EPA and the Applicable Intervenor that such Covered Refinery complies with the BWON.	No corrective measures are required to be reported during this reporting period.
135	Miscellaneous Measures.	
135a	For the FRI Refinery, by no later than the date FRI submits a Compliance Plan under Paragraph 94.a, FRI shall:	
135a.i	Conduct monthly visual inspections of all Subpart FF water traps within the FRI Refinery's individual drain systems;	Frontier recently voluntarily disclosed audit findings indicating these inspections previously were not complete. Monthly visual inspections of all Subpart FF water traps are now being conducted.

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135a.ii	On a weekly basis, visually inspect all Subpart FF conservation vents on process sewers for detectable leaks; reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, FRI may submit a request to the Applicable EPA Region to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent. Nothing in this Subparagraph shall require FRI to monitor conservation vents on fixed roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has occurred, FRI may elect to visually inspect such indicators on a monthly basis and, if flow is then detected, FRI shall then visually inspect that indicator on a weekly basis for four (4) weeks. If flow is detected during any two (2) of those four (4) weeks, FRI shall install a carbon canister on that vent until appropriate corrective action(s) can be implemented to prevent such flow;	Frontier recently voluntarily disclosed audit findings indicating these inspections previously were not complete. Monthly visual inspections of all Subpart FF water traps are now being conducted.
135a.iii	Conduct quarterly monitoring of the controlled oil-water separators in benzene service in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347, or quarterly measurements of the oil-water separator seal gap if using the alternative control requirements allowed under 40 C.F.R. § 61.352, if the separator is a control device under Subpart FF; and	Frontier recently voluntarily disclosed audit findings indicating these inspections previously were not complete. Quarterly inspection of controlled oil-water separators in benzene service are now being conducted.
135a.iv	Continue to manage all groundwater remediation wastes that are covered by Subpart FF at the FRI Refinery in appropriate waste management units under and as required by the BWON.	As part of the recent voluntary audit and work following, Frontier has determined the groundwater remediation sump is not a controlled WMU. Frontier included the uncontrolled emissions in the 6BQ calculations. An action plan is currently being developed to control the groundwater remediation wastes.
136	Reporting and Record Keeping Requirements for this Section VI.L. Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Section XI (Reporting and Record Keeping). At the times specified in the applicable provisions of this Section VI.L. for their respective Covered Refineries, FRI and FEDRC shall submit, as and to the extent required, copies of the following reports to EPA and the Applicable Intervenor:	Previously submitted.
136a	A BWON Compliance Review and Verification Report, Paragraph 90, as amended, if necessary, by Paragraph 92;	Previously submitted.

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136b	An Amended TAB Report, if necessary (Paragraph 93);	Previously submitted.
136c	A Plan for the FRI Refinery to come into compliance with the 6 BQ or the 2Mg compliance option if and when FRI discovers that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (Paragraph 94), or through sampling (Paragraph 133);	Previously submitted.
136d	A compliance certification, if necessary (Paragraph 97);	Previously submitted.
136f	Schematics of Subpart FF waste movements (Paragraph 118), as revised, if necessary;	Previously submitted.
136g	Sampling Plans (Paragraph 121), and revised Sampling Plans, if necessary (Paragraph 128); and	Previously submitted.
136h	A Compliance Assurance Plan to ensure that uncontrolled benzene does not equal or exceed, as applicable, 6 BQ or 2 Mg/yr (Paragraph 133).	Not required.
138	At any time after two years of reporting pursuant to the requirements of Paragraphs 136 and 137, FRI or FEDRC may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories. This request may include a request to report the previous year's projected calendar year TAB and uncontrolled benzene quantity in the Part XI report due on February 28th of each year, rather than semi-annually on February 28th and August 31st of each year. FRI and FEDRC shall not change the due dates for their reports under Paragraphs 136 and 137 unless and until EPA approves their request after an opportunity for consultation with the Applicable Intervenor.	Frontier has not requested a modification of the reporting requirements.
139	Certifications Required in Section VI.L. Certifications required under this Section shall include the following statement: I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete	Certifications are included as required.
M	**Leak Detection and Repair ("LDAR") Program Enhancements**	
142	FRI - Affected Facilities. Upon the Date of Entry, all equipment, as defined by 40 C.F.R. § 60.591, within each process unit and all compressors at FRI shall become "affected facilities" for purposes of 40 C.F.R. Part 60, Subpart GGG, and shall become subject to and comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of Section VI.M. of this Consent Decree.	All process units are affected facilities under NSPS Subparts A and GGG.

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144	144. Written Refinery-Wide LDAR Program. No later than one-hundred and eighty (180) days after the Date of Entry FRI and FEDRC shall for each Covered Refinery develop and maintain a written refinery-wide program for compliance with all applicable federal and state LDAR regulations. FRI and FEDRC shall implement this program on a refinery-wide basis and update such program as may be necessary to ensure continuing compliance through and after termination of this Consent Decree. The refinery-wide program shall include at a minimum: a. A facility-wide leak rate goal that includes specific process-unit leak rate goals that shall be targets for achievement; b. An identification of all equipment in light liquid and/or in gas/vapor service in each of the Covered Refineries that has the potential to leak VOCs, HAPs, VHAPs, and benzene; c. Procedures for identifying leaking equipment within process units in each of the Covered Refineries; d. Procedures for repairing and keeping track of leaking equipment; e. Procedures (e.g., a Management of Change program) to ensure that components subject to LDAR requirements that are added to each facility during scheduled maintenance and construction activities are integrated into the LDAR program; f. A process for evaluating new and replacement LDAR equipment that includes active consideration of equipment or techniques that shall minimize leaks and/or eliminate chronic leakers; and g. A definition of "LDAR Personnel" and a process for accountability, identifying for each facility the person or position that shall be the "LDAR Coordinator." Consistent with FRI and FEDRC management authorities, this person shall have the responsibility to implement improvements to the LDAR program.	Frontier recently voluntarily disclosed audit findings indicating the written LDAR plan had not been kept up-to-date. The plan was updated in December 2012 to address this.
145	FRI and FEDRC shall submit a copy of each Covered Refinery's initial written LDAR Program to EPA and to the Applicable Intervenor with the first Semi-Annual Progress Report required by Paragraph 170(a). EPA shall review and may comment on the written program after an opportunity for consultation with the Applicable Intervenor. FRI and/or FEDRC, as appropriate, shall address EPA's comments (if any). A description of program changes shall be maintained on-site during the term of this Consent Decree but need not be submitted to the agencies.	Previously submitted.
146	Training. If not already in place, FRI and FEDRC shall commence implementation of the following training programs at each Covered Refinery:	Training is conducted as required and records are maintained.
146a	As of the Date of Entry of this Consent Decree, for any employee newly-assigned to LDAR responsibilities, FRI and FEDRC shall require that each such employee satisfactorily complete LDAR training prior to beginning any LDAR work;	Training is conducted as required and records are maintained.
146b	By no later than the Date of Entry, for all FRI and FEDRC employees assigned specific LDAR responsibilities as a primary job function, such as monitoring technicians, database users, quality assurance/quality control ("QA/QC") personnel and the LDAR Coordinator, FRI and FEDRC shall provide and require completion of annual LDAR refresher training and initial training before the employee begins LDAR responsibilities;	Training is conducted as required and records are maintained.

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146c	By no later than the Date of Entry, for all other FRI and FEDRC employee operations and maintenance personnel, FRI and FEDRC shall provide and require completion of an initial training program that includes instruction on aspects of LDAR that are relevant to the person's duties. Refresher training for these personnel shall be performed every three years;	Training is conducted as required and records are maintained.
146d	If contract employees are performing LDAR work, FRI and/or FEDRC, as appropriate, shall maintain all training records, as required under this Paragraph, for the contract employees; and e. Training records shall be kept for a period of five (5) years.	Training is conducted as required and records are maintained.
147	LDAR Audits. At their respective Covered Refineries, FRI and FEDRC shall implement the refinery-wide audits set forth in Paragraphs 147 - 150 to ensure each Covered Refinery's compliance with all applicable LDAR requirements. The LDAR audits shall include but not be limited to, comparative monitoring, observation of the LDAR technicians' calibration and monitoring techniques, records review to ensure monitoring and repairs were completed in the required periods, a field audit to ensure affected equipment has been identified and included in the facility LDAR program, and a review to ensure records and reports have been maintained and submitted as required. During the LDAR audits, leak rates shall be calculated for each process unit where comparative monitoring was performed. Each LDAR audit shall be conducted by personnel with expertise in LDAR regulations.	LDAR audit program was implemented. See below for details.
148	148. Initial Compliance Audit. By no later than the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall engage a third-party contractor to undertake a refinery-wide audit of its compliance with the LDAR regulations at each of the Covered Refineries, including, at a minimum, each of the audit requirements set forth in Paragraph 147. No later than sixty (60) days after completion of each audit, FRI and FEDRC shall report to EPA and the Applicable Intervenor any areas of non-compliance identified as a result of its refinery-wide audits and submit in writing proposed compliance schedule for correcting any non-compliance. If the proposed compliance schedule(s) extends for more than sixty (60) days beyond the audit completion date, FRI and/or FEDRC, as applicable, must seek approval of the compliance schedule from EPA. At their respective Covered Refineries, FRI and FEDRC shall implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA. Unless the request for a schedule extension is approved by EPA, within ninety (90) days of completing each audit and by no later than two hundred and forty (240) days after the Date of Entry, FRI and FEDRC shall certify to EPA that each Covered Refinery: a. is in compliance; b. has completed related corrective action (if necessary) and/or is on a compliance schedule; and c. specifically certify that all affected equipment has been identified and included in the facility LDAR program to the extent of the program as of the Date of Entry.	Previously completed.

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149	Third-Party Audits. FRI and FEDRC shall retain one or more independent contractor(s) to perform a third-party audit of each of the Covered Refineries' LDAR programs, including compliance with LDAR regulations and the LDAR requirements under Section VI.M. of this Consent Decree, at least once every four (4) years.	Third-Party audits are conducted as required.
150	Internal Audits. FRI and FEDRC shall conduct internal audits of each of the Covered Refineries' LDAR programs by sending personnel from one Covered Refinery to audit the other Covered Refinery's LDAR program. The audits, among other things, shall include a review of compliance with LDAR regulations and the LDAR requirements under Section VI.M. of this Consent Decree. FRI and FEDRC shall complete the first internal LDAR audit at each Covered Refinery by no later than two years after the initial third-party audit for the Covered Refinery was conducted according to Paragraph 148. Internal audits of each of the Covered Refineries shall be conducted at least once every four years thereafter. FRI and/or FEDRC may elect to retain third-parties to undertake these internal audits, provided that an audit of each of the Covered Refineries occurs every two (2) years.	Audits are conducted by third-parties every 2 years. The last audit was completed in August 2013.
151	Audit Every Two Years. To ensure that an audit at each of the Covered Refineries occurs every two years, third-party and internal audits shall be separated by two years.	Internal audits are conducted by third-parties every 2 years. The last audit was completed in August 2013.
153	Internal Leak Definition for Valves and Pumps. Except as provided in Subparagraph 153.c., on and after the Date of Entry, for the Covered Refineries FRI and FEDRC shall utilize the following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions:	Implemented as required.
153a	Leak Definition for Valves. 500 ppm VOCs for all the Covered Refinery's valves, excluding pressure relief devices; and	Implemented as required.
153b	Leak Definition for Pumps. 2,000 ppm VOCs for all of the Covered Refinery's pumps.	Implemented as required.
154	Reporting of Valves and Pumps Based on the Internal Leak Definitions. For regulatory reporting purposes, FRI and FEDRC may continue to report leak rates in valves and pumps against the applicable regulatory leak definition or use the lower, internal leak definitions specified in Paragraph 153. FRI and FEDRC shall identify in the report which definition is being used.	Frontier includes in applicable regulatory reports both the applicable regulatory leak definition and the internal leak definition.

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155	Recording, Tracking, Repairing and Re-Monitoring Leaks Based on the Internal Leak Definitions. By no later than the date FRI and FEDRC implement the lower leak definitions under Paragraph 153, each shall record, track, repair and re-monitor all leaks in excess of the internal leak definitions in Paragraph 153. FRI and FEDRC shall have five (5) days to make an initial repair attempt and re-monitor the component under Paragraph 157.a and thirty (30) days either to make repairs and re-monitor leaks that are greater than the internal leak definitions but less than the applicable regulatory leak definitions or to place the component on the delay of repair list according to Paragraph 167. All records of repairs, repair attempts, and re-monitoring shall be maintained for the life of this Consent Decree.	Implemented as required.
156	Election of Compliance for Initial Attempt at Repair or Use of IR Camera. Within thirty (30) days of the Date of Entry of this Consent Decree, for each Covered Refinery, FRI and FEDRC shall notify EPA and the Applicable Intervenor as to which one of the following options it shall comply with: a. FRI and/or FEDRC shall comply with Paragraph 157.a. of this Consent Decree; or b. FRI and/or FEDRC shall comply with Paragraph 157.b. of this Consent Decree. If either FRI or FEDRC elects the option in Paragraph 156.a., above, at any time after the Date of Entry of this Consent Decree, either may, at its option, conduct a study of the efficacy of reducing VOC emissions from utilizing the 200 ppm of VOCs leak level for the initial attempt at repair. FRI or FEDRC may submit the results of such study to EPA with a request for EPA approval to change its election to the option in Paragraph 156.b. above.	Frontier elected to comply with 156b. The program to conduct initial attempt at repair has been implemented as required.
157	Additional VOC Monitoring. Upon the election of the compliance option under Paragraph 156, FRI and FEDRC shall comply with at least one of the following additional VOC monitoring requirements:	Frontier elected to comply with 156b. The program to conduct initial attempt at repair has been implemented as required.
157a	Initial Attempt at Repair. No later than sixty (60) days after the Date of Entry, FRI and FEDRC shall promptly make an "initial attempt" at repair on all valves that have a reading greater than 200 ppm of VOCs, excluding control valves. FRI and FEDRC, shall re-monitor the leaking valve within five (5) days of identification. i. If the re-monitored leak rate is below the applicable leak definition, Paragraph 153, no further action shall be necessary. ii. If the re-monitored leak reading is greater than the applicable leak definition, Paragraph 153, repair the leaking valve according to the requirements under Paragraph 155. All records of repairs, repair attempts, and re-monitoring shall be maintained for the life of this Consent Decree. iii. If FRI or FEDRC can demonstrate with sufficient monitoring and repair data that this "initial attempt" at repair requirement at 200 ppm does not reduce emissions, after two (2) years of implementing the "initial attempt" requirement, either may request that the EPA reconsider or amend this requirement;	Frontier elected to comply with 156b. The program to conduct initial attempt at repair has been implemented as required.

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158	LDAR Monitoring Frequency: Pumps. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for pumps becomes applicable pursuant to the provisions of Paragraph 153, FRI and FEDRC shall begin monitoring pumps in light liquid service, other than dual-mechanical seal pumps or pumps vented to a control device, at the lower leak definition on a monthly basis.	Pumps monitored as required.
159	LDAR Monitoring Frequency: Valves. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for valves becomes applicable pursuant to the provisions of Paragraph 153, FRI and FEDRC shall monitor valves, other than difficult-to-monitor or unsafe-to-monitor valves, on a quarterly basis.	Valves monitored as required.
160	Electronic Storing and Reporting of LDAR Data. FRI and FEDRC have and shall continue to maintain an electronic database for record keeping of all LDAR monitoring and repair data from each of the Covered Refineries.	Data is managed electronically as required.
161	Electronic Data Collection During LDAR Monitoring and Transfer. Beginning no later than the Date of Entry, FRI and FEDRC shall use data loggers and/or electronic data collection devices during LDAR monitoring. FRI and FEDRC, or their respective designated contractor(s), shall use their best efforts to transfer, on a daily basis, electronic data from electronic data logging devices to the electronic database required by Paragraph 160. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, and instrument and operator identification. FRI and FEDRC may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when data loggers are not available or broken), and shall record, at a minimum, the identification of the technician undertaking the monitoring, the date, the daily start and end time for monitoring, and the identification of the monitoring equipment. FRI and FEDRC shall transfer any manually recorded monitoring data to the electronic database required by Paragraph 160 within seven (7) days of monitoring. FRI and FEDRC shall maintain the LDAR information required by this Paragraph for the life of this Consent Decree.	Data is managed electronically as required.
162	QA/QC of LDAR Data. If not already in place, beginning no later than the Date of Entry, FRI and FEDRC shall develop and implement a procedure to ensure a QA/QC review of all data generated by LDAR monitoring technicians. At their respective Covered Refineries, FRI and FEDRC shall ensure that monitoring collected by monitoring technicians is reviewed for QA/QC by the technician daily. At least once per calendar quarter, FRI and FEDRC shall QA/QC the monitoring data collected during the quarter which shall include, but not be limited to, an evaluation of the number of components monitored per technician, time between monitoring events, and abnormal data patterns. Results from LDAR monitoring indicating any leaks requiring a first-attempt repair shall be reported to unit supervisors daily.	QA/QC program is in place.

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163	LDAR Personnel. By no later than one-hundred and eighty (180) days after the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall establish a program that shall hold LDAR personnel accountable for LDAR performance. FRI and FEDRC shall maintain a position responsible for LDAR management, with authority to implement improvements, ("LDAR Coordinator") at each Covered Refinery .	Contained in the LDAR sitewide monitoring plan.
164	Adding New Valves and Pumps. By no later than one-hundred and eighty (180) days after the Date of Entry, FRI and FEDRC shall establish a tracking program for maintenance records (e.g., a Management of Change program) to ensure that new valves and pumps added to each of the Covered Refineries during maintenance and construction are integrated into the LDAR program.	The MOC program has been updated at the facility and is utilized to track new valves and pumps.
165	Calibration. FRI and FEDRC shall conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, Appendix A, EPA Reference Test Method 21, and shall maintain records of the calibrations for the life of this Consent Decree.	Calibrations are conducted as required.
166	Calibration Drift Assessment. Beginning no later than the Date of Entry, FRI and FEDRC shall, at each Covered Refinery, at a minimum conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift. FRI and FEDRC shall conduct the calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, FRI and FEDRC shall re-monitor all valves that were monitored since the last calibration that had a reading greater than 100 ppm and shall re-monitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm.	Calibration drift assessments are conducted as required. Frontier recently voluntarily disclosed audit findings indicating that these requirements may have been missed on a few monitoring events. Details are in the disclosure.
167	Delay of Repair. Beginning no later than the Date of Entry, at their respective Covered Refinery, FRI and FEDRC shall implement the following requirements:	Program previously implemented.
167a	For all equipment: i. Require sign-off by the unit supervisor that the piece of equipment is technically infeasible to repair without a process unit shutdown, before the component is eligible for inclusion on the "delay of repair" list; and ii. Include equipment that is placed on the "delay of repair" list in regular LDAR monitoring.	Program previously implemented.
167b	For valves: For valves (other than control valves) leaking at a rate of 10,000 ppm or greater that cannot otherwise be repaired, FRI and FEDRC shall use "drill and tap" or similarly effective repair methods to repair such leaking valves unless they can document that there is a safety, mechanical, or major environmental concern posed by repairing the leak in this manner. FRI and FEDRC shall make two repair attempts (if necessary) using "drill and tap" or similarly effective repair method within thirty (30) days of identification of the leak.	Program previously implemented.

Paragraph	Attachment H - Miscellaneous	Comments
168	New Method of Repair for Leaking Valves. If a new valve repair method not currently in use by the refining industry is planned to be used by FRI or FEDRC, they shall advise EPA pursuant to Section XIX (General Provisions), Paragraph 356 (Notice) prior to implementing such a method or, if prior notice is not practicable, as soon as practicable after implementation.	No new methods of repair are being utilized or proposed.
169	Chronic Leaker Program. FRI and FEDRC shall replace, re-pack, or perform similarly effective repairs on all chronically leaking non-control valves at the next process unit turnaround. A chronic leaker shall be defined as any component that leaks above 10,000 ppm twice in any consecutive four (4) quarters. If a component has not leaked above 10,000 ppm for a period of twelve (12) consecutive quarters or more prior to a turnaround, it is exempt from the requirements in this Paragraph.	Program previously implemented.
171	171. Reports due under 40 C.F.R. § 63.654. In each report due under 40 C.F.R. § 63.654, FRI and FEDRC shall include: a. Training. Information identifying the measures implemented to comply with the provisions of Paragraphs 146 and 163; and b. The following information on LDAR monitoring and repairs: i. the number of valves and pumps present in each process unit during the quarter; ii. the number of valves and pumps monitored in each process unit; iii. an explanation for missed monitoring if the number of valves and pumps present exceeds the number of valves and pumps monitored during the quarter; iv. the number of valves and pumps found leaking via Method 21; v. the number of leaks identified through optical imaging (if performing); vi. the number of "difficult to monitor" pieces of equipment monitored; vii. a list of all equipment currently on the "delay of repair" list and the date each component was placed on the list; viii. the number of repair attempts not completed promptly according to Paragraph 155 or completed within five (5) days pursuant to Paragraph 157; ix. the number of repairs not completed within thirty (30) days or placed on the delay of repair list according to Paragraph 155 and/or Paragraph 167; x. the number of chronic leakers that do not get repaired according to the requirements of Paragraph 169; and xi. the number of repairs to leaks identified through optical imaging which are not performed within five (5), or fifteen (15), or forty-five (45) days, respectively, according to Paragraphs 157.b.	Information included in reports. See those reports for details.
N	CERCLA/EPCRA Reviews	
172	CERCLA/EPCRA Compliance Review. FRI and FEDRC shall each conduct a CERCLA/EPCRA Compliance Review at their respective Covered Refinery of the five (5) year period prior to the Date of Entry of this Consent Decree to identify any releases that may have been reportable under Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Section 304 of EPCRA, 42 U.S.C. § 11004, or similar or corresponding state reporting regulations. Upon completion of this review, FRI and FEDRC shall resolve their respective liability for potential violations of Section 103(a) of CERCLA and Section 304 of EPCRA, or similar or corresponding state reporting regulations, with respect to the events identified in its Compliance Review by completing the following activities no later than one hundred and twenty (120) days after the Date of Entry:	Previously completed.

Paragraph	Attachment H - Miscellaneous	Comments
172	For all releases for which FRI and FEDRC seek a resolution of liability, submit a CERCLA/EPCRA Compliance Review Report to EPA and the Applicable Intervenor that identifies potential violations of Section 103(a) of CERCLA and Section 304 of EPCRA, or similar or corresponding state reporting regulations;	Previously completed.
172b	Based on the Compliance Review Report, correct and/or update release reporting procedures and identify specific steps FRI and FEDRC shall take to ensure compliance in the future. FRI and FEDRC shall submit a copy of the corrected reporting procedures to EPA and the Applicable Intervenor; and	Previously completed.
172c	Conduct training for the environmental compliance staffs at FRI and FEDRC to instruct them on the reporting requirements of Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Section 304 of EPCRA, 42 U.S.C. § 11004, or similar or corresponding state reporting regulations, and to acquaint the compliance staffs with the procedures adopted by FRI and FEDRC to meet those requirements.	Most recent training completed August 2013.
VII	**ENVIRONMENTALLY BENEFICIAL PROJECTS**	
188	FRI SEP. In accordance with the requirements set forth in Paragraphs 200 - 206 of this Consent Decree, FRI shall at its Cheyenne, Wyoming Refinery spend no less than $405,000 to implement and complete the Supplemental Environmental Project ("SEP") described in Paragraphs 189 and 190, infra.	SEP project to install two geodesic domes completed in Feb 2010.
189	FRI shall install a geodesic dome fixed roof on two 70 foot diameter finished gasoline storage tank which are designated Tank 2-70 and 2-71. Installing the geodesic dome roofs will convert the current external floating roof tank to an internal floating roof tank which FRI represents will reduce the amount of VOC and other hazardous air pollutants from the converted tank by approximately 49,490 pounds per year ("lb/yr").	SEP project to install two geodesic domes completed in Feb 2010.
190	FRI shall submit a detailed description of the SEP, a work plan, and SEP implementation schedule to EPA and WDEQ for review and approval within one hundred and eighty (180) days of the Date of Entry of this Consent Decree. Installing the fixed roofs requires that the tanks be taken out of service for approximately four to six weeks. This has the potential to impact gasoline supplies in the area. FRI shall develop a work plan to minimize any such impacts. Within thirty (30) days of final approval by EPA, FRI shall implement the SEP in accordance with the approved work plan and schedule. FRI shall complete implementation of the project in accordance with the election made under Paragraph 220 unless an alternative schedule is approved in writing by EPA and WDEQ.	SEP project to install two geodesic domes completed in Feb 2010.
200	SEP Performance. SEPs described in this Section VII. shall conform to the requirements of EPA's "EPA Supplemental Projects Policy" (effective May 1, 1998). SEP work plans submitted under this Section VII are incorporated by reference herein and are enforceable as part of this Consent Decree.	SEP project to install two geodesic domes completed in Feb 2010.

Paragraph	Attachment H - Miscellaneous	Comments
201	If at any time prior to the completion of the projects identified in Paragraphs 188 through 199, either FEDRC or FRI is required to perform any of those projects pursuant to a federal, state, or local statute, regulation, or permit, then FEDRC and/or FRI, as applicable, shall not receive SEP credit for the amounts expended on that project. Within one hundred and twenty (120) days of any event that invalidates a specific SEP: a. For FEDRC, FEDRC shall propose for approval by EPA and KDHE an additional SEP of equal or greater value to be performed at FEDRC or in the same community as the invalidated SEP; and b. For FRI, FRI shall propose for approval by EPA and WDEQ an additional SEP of equal or greater value to be performed at FRI or in the same community as the invalidated SEP.	SEP project to install two geodesic domes completed in Feb 2010.
202	FRI and FEDRC are responsible for the satisfactory completion of the SEPs identified in Paragraphs 188 through 199 of this Consent Decree. Upon completion of each SEP, FEDRC and/or FRI, as applicable, shall submit to EPA and the Applicable Intervenor a SEP construction completion and cost report (documenting SEP expenditures and including copies of invoices, receipts, purchase orders, etc.) accompanied by a certification by a responsible corporate official in the form required pursuant to Paragraph 219 of this Consent Decree. a. If FRI and/or FEDRC do not expend the entire projected cost of any SEP, then FRI and/or FEDRC, as applicable, shall pay a stipulated penalty equal to the difference between the amount expended as demonstrated in the certified cost report and the projected cost with one half of that amount payable to EPA and the remaining half payable to the Applicable Intervenor. The stipulated penalty shall be paid as provided in Section XIII (Stipulated Penalties) of this Consent Decree. b. If FRI and/or FEDRC withdraw a SEP, or otherwise do not implement a SEP required under this Consent Decree, then FRI and/or FEDRC, as applicable, shall either: (i.) Notwithstanding the election in Paragraph 220, pay a stipulated penalty equal to one hundred and ten percent (110%) of the full cost of the withdrawn SEP. This stipulated penalty shall apply in lieu of stipulated penalties under Paragraph 298 of this Consent Decree. One half of the foregoing amount shall be payable to EPA and the remaining half payable to the Applicable Intervenor; or (ii.) Propose for approval by EPA and the Applicable Intervenor a substitute SEP or SEPs of equal or greater value to be performed at the Covered Refinery or in the same community as the withdrawn SEP.	SEP project to install two geodesic domes completed in Feb 2010.
203	Should FEDRC or FRI, as applicable, fail to implement any SEP in accordance with the schedule approved by EPA and the Applicable Intervenor, FEDRC or FRI, as applicable, shall be liable for the payment of stipulated penalties in accordance with the provisions of Section XIII. (Stipulated Penalties) of this Consent Decree as specified in Paragraph 298 of this Consent Decree.	SEP project to install two geodesic domes completed in Feb 2010.

Paragraph	Attachment H - Miscellaneous	Comments
204	By signing this Consent Decree, FRI and FEDRC each certifies for its respective refinery that it is not required, and has no liability under any federal, state or local law or regulation or pursuant to any agreement or order of any court, to perform or develop any of the SEP projects identified in Paragraphs 188 through 199 of this Consent Decree. Further, FRI and FEDRC each certifies for its respective refinery that it has not applied for or received, and will not in the future apply for or receive credit as a SEP or other penalty offset in any other enforcement action for any project set forth in Paragraphs 188 through 199 of this Consent Decree and, except as otherwise specifically provided in this Consent Decree, credit for any emissions reduction resulting from any SEP project set forth in Paragraphs 188 through 199 of this Consent Decree in any federal, state or local emissions netting, trading, or early reduction program, or similar emissions compliance program. For federal income tax purposes, FRI and FEDRC each agree for its respective refinery that it will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing SEPs.	SEP project to install two geodesic domes completed in Feb 2010.
206	FRI and FEDRC each agree that in any public statements regarding these SEPs, FRI and FEDRC shall clearly indicate that these projects are being undertaken as part of the settlement of an enforcement action for alleged violations of the CAA and corollary state statutes.	Frontier does not issue public statements regarding the SEPs.
VII	**INCORPORATION OF CONSENT DECREE REQUIREMENTS INTO FEDERALLY ENFORCEABLE PERMITS.**	
207	Obtaining Permit Limits for Consent Decree Emission Limits That Are Effective Upon Entry. By no later than one hundred and twenty (120) days after the Date of Entry of this Consent Decree, FRI and FEDRC shall submit applications to the Applicable Intervenor(s) to incorporate the emission limits and standards required by this Consent Decree that are effective as of the Date of Entry into federally enforceable minor or major new source review permits or other permits (other than CAA Title V permits). Following submission of the permit applications, FRI and FEDRC shall cooperate with the Applicable Intervenor by promptly submitting to the Applicable Intervenor all information that the Applicable Intervenor seeks following their receipt of the permit applications. Upon issuance of such permits or in conjunction with such permitting, FRI and FEDRC shall file any applications necessary to incorporate the requirements of those permits into the CAA Title V permit for the relevant Covered Refinery.	Frontier has applied for the limits and is working with WDEQ to incorporate them as needed.

Paragraph	Attachment H - Miscellaneous	Comments
208	Obtaining Permit Limits for Consent Decree Emission Limits That Become Effective After Date of Entry. As soon as practicable, but in no event later than ninety (90) days after the effective date or establishment of any emission limits and/or standards under Section VI. (Affirmative Relief) of this Consent Decree, FRI and FEDRC, as appropriate, shall submit applications to the Applicable Intervenor to incorporate those emission limits and/or standards, identified in Appendix J, into federally enforceable minor or major new source review permits or other permits, other than CAA Title V permits, which are federally enforceable. Following submission of the permit application(s), FRI and FEDRC, as appropriate, shall cooperate with the Applicable Intervenor by promptly submitting to the Applicable Intervenor all information that the Applicable Intervenor seeks following its receipt of the permit application. Upon issuance of such permit or in conjunction with such permitting, FRI and FEDRC, as applicable, shall file any applications necessary to incorporate the requirements of that permit into the Title V permit of the appropriate Covered Refinery.	Frontier has applied for the limits and is working with WDEQ to incorporate them as needed.
209	Mechanism For Title V Incorporation. The Parties agree that the incorporation of any emission limits or other standards into the CAA Title V permits for the Covered Refineries where required by this Consent Decree shall be in accordance with the applicable state or local CAA Title V rules.	Frontier has applied for the limits and is working with WDEQ to incorporate them as needed.
210	Construction Permits. FRI and FEDRC each agree to use best efforts to obtain all required, federally enforceable permits for the construction of the pollution control technology and/or the installation of equipment necessary to implement the affirmative relief and environmental projects set forth in Section VI. (Affirmative Relief) and Section VII (Environmentally Beneficial Projects) of this Consent Decree. To the extent that FRI and/or FEDRC must submit permit applications for this construction or installation to the Applicable Intervenor(s), they each shall cooperate with the Applicable Intervenor by promptly submitting to the Applicable Intervenor all information that the Applicable Intervenor seeks following its receipt of the permit application.	Frontier has applied for the limits and is working with WDEQ to incorporate them as needed.

FRONTIER

FRONTIER REFINING INC.
a Subsidiary of Frontier Refining & Marketing Inc.

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February 28, 2011

Chief
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Environment and Natural Resources Division
U.S. Department of Justice
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Director, Air Enforcement Division
Office of Civil Enforcement
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Chief
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U.S. EPA Region 8
1595 Wynkoop St.
Denver , CO 80202-1129

Wyoming Department of Environmental
Quality
Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

Semi Annual 2H10

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: July 1, 2010 through December 31, 2010

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refinery, Inc. (FRI) is hereby submitting the semi-annual progress report for (July 1, 2010 through December 31, 2010) see attached.

In accordance with the requirements of Section XI of the NPRI Consent Decree dated March 26, 2009, Frontier Refining, Inc. (FRI) is submitting the following "semi-annual report". This progress report lists the status of requirements with a completion deadline of December 31, 2010 or earlier. This report covers the time period from July 1, 2010 through December 31, 2010. The following information is listed in table format to aid in the review process. Any attachments that are required to be submitted with this semi-annual report are provided behind the respective section.

SECTION	CATEGORY	TABLES/ATTACHMENTS
A	Benzene Waste Operations NESHAPS (BWON)	Quarterly Sampling
B	FCCU	Continuous Emissions Monitoring Systems (CEMS) Data
C	FLARING	Root Cause Failure Analysis (RCFA) Reports*
D	HEATERS AND BOILERS	CEMS Data
E	LEAK DETECTION AND REPAIR (LDAR)	
F	SUPPLEMENTAL ENVIRONMENTAL PROJECTS (SEP)	
G	Sulfur Recovery Plant (SRP)	CEMS Data
H	CERCLA/ EPCRA	
I	SEMI-ANNUAL REPORT ITEMS	

* Due to sudden personnel changes in recent history, the RCFAs for our Sulfur Recovery Plants are not properly documented to date. Other RCFAs during this reporting period are still being investigated for the root cause. Therefore, Frontier commits to submittal of all RCFAs during the reporting period within 30 days of this submittal under a separate cover.

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining, Inc.

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Section A – BWON

Quarterly Sampling

Frontier Refining Inc.

FRI Semi-annual Report
BWON Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
BWON	115, 137b	Develop and begin annual training for all employees asked to draw BWON samples	Annually	FRI implemented the training after the BWON sampling plan was drafted in June 2008. Both consulting companies, as well as those employees involved with BWON, have gone through the necessary BWON training for taking samples. Trihydro is the only company currently taking samples; therefore, only Trihydro's current certifications are attached.	X	2/26/10 Trihydro's certificates are valid through 12/2010; therefore they have not been included in this submittal	
BWON	121, 136	EPA Approval Submit BWON Sampling Plan	3/31/09	FRI completed the initial sampling plan in June 2008; however it was not formally submitted until April of the following year. FRI submitted the revised BWON Sampling Plan on 12/30/2010. The plan was revised to better represent the samples needed to demonstrate compliance with 6BQ after the audit showed that the Cheyenne Refinery was >10 Mg/yr.	X	4/9/09 12/30/2010	
BWON	127	Implement the BWON Sampling Plan during the first full calendar quarter after the plan is submitted.	Quarterly	For this reporting period, FRI performed the required quarterly sampling per the BWON sampling plan. Sampling results for 3Q10 & 4Q10 are attached to this report. A new sampling plan will be utilized going forward to more accurately access compliance with 6BQ option.	X	NA for reporting period	

FRI Semi-annual Report
BWON Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
BWON	123, 129, 130, 132, 137a	Calculate and submit quarterly and projected annual TAB based on sampling results. Corrective measures are needed if quarterly TAB exceeds ~~2.5~~ Mg or projected annual TAB exceeds ~~10~~ Mg/yr 1.5 + .6	Quarterly	The quarterly projected benzene concentration based on our 3Q10 End of Line (EOL) sampling results was 1.5 Mg. The quarterly projected benzene concentration based on our 2Q10 End of Line (EOL) sampling results was 1.4 Mg. The projected annual benzene based on the EOL sampling is 2.2 Mg/yr. Because the quarterly & annual projected calculations are less than the 2.5 Mg and 10 Mg respectively, no corrective actions are warranted.	? X	2/28/2011	A
BWON	137c, 216e	Submittal of initial and/or subsequent audits	3/26/10	The initial BWON lab audit, which was conducted by Trihydro was previously submitted.	X	7/21/2009	

CONSENT DECREE SAMPLING RESULTS, THIRD QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	9/8/10	10:20	--	1700.00
			9/8/10	10:40	--	1800.00
			9/8/10	10:59	--	1600.00
	Average:					**1700.00**
API	API Water	End-of-Line	9/8/10	10:35	0.65	--
			9/8/10	10:54	0.66	--
			9/8/10	11:13	0.66	--
	Average:				**0.66**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

2010 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS,
THIRD QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.93	0.07	50.67	0.66	1700.00	1.65	460	1.51 ÷4 =	0.38	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
4Q09	3.33	0.83
1Q10	2.68	0.67
2Q10	6.39 ÷4	1.60
3Q10	1.51	0.38
Yearly	13.91	3.10

rolling

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the third quarter 2010.

[d] Organic benzene concentration based on samples collected during the third quarter 2010.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable,

PT 131 "then current compliance year"

CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	12/22/10	20:33	--	1520.00
			12/22/10	22:55	--	1230.00
			12/23/11	1:17	--	1470.00
	Average:					**1406.67**
API	API Water	End-of-Line	12/17/10	3:23	0.632	--
			12/17/10	5:11	0.912	--
			12/17/10	7:35	0.72	--
	Average:				**0.75**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

2010 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.93	0.07	50.67	0.75	1406.67	1.57	460	1.44	0.36	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
1Q10	2.68	0.67
2Q10	6.39	1.60
3Q10	1.51	0.38
4Q10	1.44	0.36
Yearly		**2.27**

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the fourth quarter 2010.

[d] Organic benzene concentration based on samples collected during the fourth quarter 2010.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable,

Section B – FCCU

CEMS Data

Frontier Refining Inc.

FRI Semi-annual Report
FCCU Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
FCCU	12	Notify EPA which option (paragraph 13 or 14) FRI will comply with for NOx.	9/22/09	FRI chose to comply with paragraph 14. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	20	Notify EPA which option (paragraph 21 or 22) FRI will comply with for SO_2.	9/22/09	FRI chose to comply with paragraph 22. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	38	Satisfy the notification requirements of 40 CFR 60.7(a) for FCCU Catalyst Regenerators that become "affected facilities" under NSPS Subpart J.	3/26/09	FRI became an "affected facility" under NSPS Subpart J for CO on Date of Entry. The notification was attached to the previous semi-annual report. In accordance with MACT Subpart UUU requirements, FRI conducts annual RATA performance test on CO. These tests satisfy the requirements of NSPS 60.8(a) for an initial performance test.	X	8/31/2009	
FCCU	217g, 217h	Calculate SO2, NO_x, CO and PM emissions from the FCCU for the prior calendar year.	8/31/11	Data submitted for calendar year emissions inventory required in August submittal.		NA for reporting period	
FCCU	218a	CEMS - Report total periods when emissions were exceeded as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	B
FCCU	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	B
FCCU	218a	Report total downtime of the CEMS, expressed as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	B

FRI Semi-annual Report
FCCU Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
FCCU	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	B

3Q10

FORM B
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS
7-day Rolling Average

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	305.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	7.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	74.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	386.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	17.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10 FCCU

NOx ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	7/13/2010 4:00:00 AM	7/13/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
2	7/15/2010 3:00:00 AM	7/15/2010 9:00:00 AM	6	Unknown	
3	7/16/2010 2:00:00 AM	7/16/2010 6:00:00 AM	4	Unknown	
4	7/21/2010 9:00:00 AM	7/21/2010 10:00:00 AM	1	Manual calibration drift check	
5	8/1/2010 4:00:00 AM	8/1/2010 5:00:00 AM	1	Failed daily CD check (excessive drift)	
6	8/1/2010 8:00:00 AM	8/1/2010 9:00:00 AM	1	Manual calibration drift check	
7	8/19/2010 4:00:00 AM	8/19/2010 1:00:00 PM	9	Failed daily CD check (excessive drift)	
8	8/22/2010 5:00:00 AM	8/24/2010 11:00:00 AM	54	Failed daily CD check (excessive drift)	
9	8/26/2010 4:00:00 AM	8/26/2010 8:00:00 AM	4	Failed daily CD check (excessive drift)	
10	8/27/2010 8:00:00 PM	8/30/2010 11:00:00 AM	63	Unknown	
11	8/31/2010 10:00:00 PM	9/1/2010 10:00:00 AM	12	CEMS Analyzer problems	
12	9/2/2010 9:00:00 AM	9/2/2010 11:00:00 AM	2	Manual calibration drift check	
13	9/5/2010 4:00:00 AM	9/6/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
14	9/8/2010 4:00:00 AM	9/8/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
15	9/10/2010 9:00:00 AM	9/10/2010 10:00:00 AM	1	Manual calibration drift check	
16	9/13/2010 9:00:00 AM	9/13/2010 11:00:00 AM	2	Manual calibration drift check	
17	9/15/2010 4:00:00 AM	9/15/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
18	9/18/2010 9:00:00 AM	9/18/2010 10:00:00 AM	1	Unknown	
19	9/19/2010 4:00:00 AM	9/20/2010 2:00:00 PM	34	Failed daily CD check (excessive drift)	
20	9/21/2010 4:00:00 AM	9/21/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
21	9/23/2010 4:00:00 AM	9/27/2010 11:00:00 AM	103	Failed daily CD check (excessive drift)	
22	9/28/2010 4:00:00 AM	9/29/2010 10:00:00 AM	30	Failed daily CD check (excessive drift)	

3Q10 FCCU

NOx ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
23	9/29/2010 11:00:00 PM	9/30/2010 8:00:00 AM	9	Sample system failure	
		Total Hours Monitor Unavailable	386		

3Q10

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	192.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	15.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	64.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	271.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	12.3%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10 FCCU

SO2 ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	7/13/2010 9:00:00 AM	7/13/2010 10:00:00 AM	1	Manual calibration drift check	
2	7/21/2010 9:00:00 AM	7/21/2010 10:00:00 AM	1	Manual calibration drift check	
3	8/1/2010 4:00:00 AM	8/1/2010 5:00:00 AM	1	Failed daily CD check (excessive drift)	
4	8/1/2010 8:00:00 AM	8/1/2010 9:00:00 AM	1	Manual calibration drift check	
5	8/19/2010 12:00:00 PM	8/19/2010 1:00:00 PM	1	Manual calibration drift check	
6	8/22/2010 5:00:00 AM	8/24/2010 11:00:00 AM	54	Failed daily CD check (excessive drift)	
7	8/26/2010 7:00:00 AM	8/26/2010 8:00:00 AM	1	Manual calibration drift check	
8	8/27/2010 8:00:00 PM	8/30/2010 11:00:00 AM	63	Unknown	
9	9/2/2010 9:00:00 AM	9/2/2010 11:00:00 AM	2	Manual calibration drift check	
10	9/8/2010 9:00:00 AM	9/8/2010 10:00:00 AM	1	Manual calibration drift check	
11	9/10/2010 9:00:00 AM	9/10/2010 10:00:00 AM	1	Manual calibration drift check	
12	9/13/2010 9:00:00 AM	9/13/2010 11:00:00 AM	2	Manual calibration drift check	
13	9/15/2010 9:00:00 AM	9/15/2010 10:00:00 AM	1	Manual calibration drift check	
14	9/18/2010 9:00:00 AM	9/18/2010 10:00:00 AM	1	Unknown	
15	9/19/2010 4:00:00 AM	9/20/2010 2:00:00 PM	34	Failed daily CD check (excessive drift)	
16	9/21/2010 9:00:00 AM	9/21/2010 10:00:00 AM	1	Manual calibration drift check	
17	9/23/2010 4:00:00 AM	9/27/2010 11:00:00 AM	103	Failed daily CD check (excessive drift)	
18	9/28/2010 7:00:00 AM	9/28/2010 8:00:00 AM	1	Manual calibration drift check	
19	9/29/2010 9:00:00 AM	9/29/2010 10:00:00 AM	1	Manual calibration drift check	
		Total Hours Monitor Unavailable	271		

3Q10

FORM B
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	154.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	14.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	104.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	272.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	12.3%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10 FCCU

CO ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	7/13/2010 9:00:00 AM	7/13/2010 10:00:00 AM	1	Manual calibration drift check	
2	7/21/2010 9:00:00 AM	7/21/2010 10:00:00 AM	1	Manual calibration drift check	
3	8/1/2010 4:00:00 AM	8/1/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
4	8/19/2010 12:00:00 PM	8/19/2010 1:00:00 PM	1	Manual calibration drift check	
5	8/22/2010 5:00:00 AM	8/22/2010 5:00:00 PM	12	Failed daily CD check (excessive drift)	
6	8/22/2010 6:00:00 PM	8/24/2010 11:00:00 AM	41		
7	8/26/2010 7:00:00 AM	8/26/2010 8:00:00 AM	1	Manual calibration drift check	
8	8/27/2010 8:00:00 PM	8/30/2010 10:00:00 AM	62	Unknown	
9	9/2/2010 9:00:00 AM	9/2/2010 11:00:00 AM	2	Manual calibration drift check	
10	9/8/2010 9:00:00 AM	9/8/2010 10:00:00 AM	1	Manual calibration drift check	
11	9/10/2010 9:00:00 AM	9/10/2010 10:00:00 AM	1	Manual calibration drift check	
12	9/13/2010 9:00:00 AM	9/13/2010 11:00:00 AM	2	Manual calibration drift check	
13	9/15/2010 9:00:00 AM	9/15/2010 10:00:00 AM	1	Manual calibration drift check	
14	9/18/2010 9:00:00 AM	9/18/2010 10:00:00 AM	1	Unknown	
15	9/19/2010 4:00:00 AM	9/20/2010 2:00:00 PM	34	Failed daily CD check (excessive drift)	
16	9/21/2010 9:00:00 AM	9/21/2010 10:00:00 AM	1	Manual calibration drift check	
17	9/23/2010 4:00:00 AM	9/27/2010 11:00:00 AM	103	Failed daily CD check (excessive drift)	
18	9/28/2010 7:00:00 AM	9/28/2010 8:00:00 AM	1	Manual calibration drift check	
19	9/29/2010 9:00:00 AM	9/29/2010 10:00:00 AM	1	Manual calibration drift check	
		Total Hours Monitor Unavailable	272		

4Q10

EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS
7-day Rolling Average

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	522.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	3.0
D. Other Known Causes	0	D. Other Known Causes	1.0
E. Unknown Causes	0	E. Unknown Causes	37.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	563.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	25.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10 FCCU

NOx ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	10/5/2010 4:00:00 AM	10/5/2010 8:00:00 AM	4	Failed daily CD check (excessive drift)	
2	10/5/2010 11:00:00 PM	10/6/2010 4:00:00 AM	5	Unknown	
3	10/8/2010 4:00:00 AM	10/8/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
4	10/8/2010 1:00:00 PM	10/9/2010 1:00:00 PM	24	Failed daily CD check (excessive drift)	
5	10/16/2010 4:00:00 AM	10/17/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
6	10/18/2010 11:00:00 PM	10/19/2010 9:00:00 AM	10	Unknown	
7	10/25/2010 4:00:00 PM	10/26/2010 9:00:00 AM	17	Unknown	
8	10/28/2010 4:00:00 AM	10/28/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
9	10/30/2010 4:00:00 AM	11/1/2010 10:00:00 AM	54	Failed daily CD check (excessive drift)	
10	11/6/2010 4:00:00 AM	11/6/2010 10:00:00 PM	18	Failed daily CD check (excessive drift)	
11	11/7/2010 11:00:00 PM	11/8/2010 10:00:00 AM	11	CEMS Analyzer problems	
12	11/8/2010 7:00:00 PM	11/10/2010 4:00:00 PM	45	Sample system failure	
13	11/11/2010 4:00:00 AM	11/11/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	
14	11/12/2010 4:00:00 AM	11/12/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
15	11/15/2010 9:00:00 AM	11/15/2010 11:00:00 AM	2	Manual calibration drift check	
16	11/17/2010 4:00:00 AM	11/17/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
17	11/19/2010 4:00:00 AM	11/19/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
18	11/20/2010 4:00:00 AM	11/20/2010 11:00:00 AM	7	Failed daily CD check (excessive drift)	
19	11/21/2010 7:00:00 AM	11/21/2010 12:00:00 PM	5	CEMS Analyzer problems	
20	11/21/2010 3:00:00 PM	11/22/2010 8:00:00 AM	17	CEMS Analyzer problems	
21	11/25/2010 4:00:00 AM	11/26/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
22	11/30/2010 4:00:00 AM	12/1/2010 3:00:00 PM	35	Failed daily CD check (excessive drift)	

4Q10 FCCU

NOx ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
23	12/2/2010 7:00:00 AM	12/2/2010 9:00:00 AM	2	Unknown	
24	12/6/2010 1:00:00 AM	12/6/2010 4:00:00 AM	3	Unknown	
25	12/9/2010 4:00:00 AM	12/10/2010 9:00:00 AM	29	Failed daily CD check (excessive drift)	
26	12/11/2010 4:00:00 AM	12/13/2010 4:00:00 AM	48	Failed daily CD check (excessive drift)	
27	12/16/2010 4:00:00 AM	12/16/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
28	12/20/2010 12:00:00 PM	12/20/2010 1:00:00 PM	1	Datalogger program maintenance	
29	12/22/2010 4:00:00 AM	12/23/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
30	12/24/2010 9:00:00 AM	12/24/2010 10:00:00 AM	1	Manual calibration drift check	
31	12/25/2010 4:00:00 AM	12/26/2010 4:00:00 AM	24	Failed daily CD check (excessive drift)	
32	12/27/2010 4:00:00 AM	12/29/2010 10:00:00 AM	54	Failed daily CD check (excessive drift)	
33	12/31/2010 4:00:00 AM	12/31/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	
		Total Hours Monitor Unavailable	563		

4Q10

EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	263.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	13.0
D. Other Known Causes	0	D. Other Known Causes	1.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	277.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	12.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10 FCCU

SO2 ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	10/5/2010 7:00:00 AM	10/5/2010 8:00:00 AM	1	Manual calibration drift check	
2	10/8/2010 8:00:00 AM	10/8/2010 10:00:00 AM	2	Manual calibration drift check	
3	10/9/2010 12:00:00 PM	10/9/2010 1:00:00 PM	1	Manual calibration drift check	
4	10/28/2010 9:00:00 AM	10/28/2010 10:00:00 AM	1	Manual calibration drift check	
5	10/30/2010 11:00:00 AM	11/1/2010 10:00:00 AM	47	Failed daily CD check (excessive drift)	
6	11/6/2010 9:00:00 AM	11/6/2010 10:00:00 PM	13	CEMS Analyzer problems	
7	11/8/2010 7:00:00 PM	11/10/2010 4:00:00 PM	45	Sample system failure	
8	11/11/2010 4:00:00 AM	11/11/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	
9	11/12/2010 4:00:00 AM	11/12/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
10	11/15/2010 9:00:00 AM	11/15/2010 11:00:00 AM	2	Manual calibration drift check	
11	11/17/2010 9:00:00 AM	11/17/2010 10:00:00 AM	1	Manual calibration drift check	
12	11/19/2010 8:00:00 AM	11/19/2010 9:00:00 AM	1	Manual calibration drift check	
13	11/30/2010 10:00:00 AM	11/30/2010 11:00:00 AM	1	Manual calibration drift check	
14	12/1/2010 10:00:00 AM	12/1/2010 11:00:00 AM	1	Manual calibration drift check	
15	12/9/2010 4:00:00 AM	12/10/2010 9:00:00 AM	29	Failed daily CD check (excessive drift)	
16	12/16/2010 4:00:00 AM	12/16/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
17	12/20/2010 12:00:00 PM	12/20/2010 1:00:00 PM	1	Datalogger program maintenance	
18	12/22/2010 8:00:00 AM	12/22/2010 9:00:00 AM	1	Manual calibration drift check	
19	12/24/2010 9:00:00 AM	12/24/2010 10:00:00 AM	1	Manual calibration drift check	
20	12/25/2010 4:00:00 AM	12/26/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
21	12/27/2010 4:00:00 AM	12/29/2010 11:00:00 AM	55	Failed daily CD check (excessive drift)	
22	12/31/2010 4:00:00 AM	12/31/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	

4Q10 FCCU

SO2 ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
		Total Hours Monitor Unavailable	277		

4Q10

EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	261.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	11.0
D. Other Known Causes	0	D. Other Known Causes	25.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	297.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	13.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10 FCCU

CO ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
1	10/5/2010 7:00:00 AM	10/5/2010 8:00:00 AM	1	Manual calibration drift check	
2	10/9/2010 12:00:00 PM	10/9/2010 1:00:00 PM	1	Manual calibration drift check	
3	10/28/2010 9:00:00 AM	10/28/2010 10:00:00 AM	1	Manual calibration drift check	
4	10/30/2010 11:00:00 AM	11/1/2010 10:00:00 AM	47	Failed daily CD check (excessive drift)	
5	11/6/2010 9:00:00 AM	11/6/2010 10:00:00 PM	13	CEMS Analyzer problems	
6	11/8/2010 7:00:00 PM	11/10/2010 4:00:00 PM	45	Sample system failure	
7	11/11/2010 4:00:00 AM	11/11/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	
8	11/12/2010 4:00:00 AM	11/12/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
9	11/15/2010 9:00:00 AM	11/15/2010 11:00:00 AM	2	Manual calibration drift check	
10	11/17/2010 9:00:00 AM	11/17/2010 10:00:00 AM	1	Manual calibration drift check	
11	11/17/2010 2:00:00 PM	11/18/2010 2:00:00 PM	24	Datalogger program maintenance	
12	11/19/2010 8:00:00 AM	11/19/2010 9:00:00 AM	1	Manual calibration drift check	
13	11/30/2010 10:00:00 AM	11/30/2010 11:00:00 AM	1	Manual calibration drift check	
14	12/1/2010 10:00:00 AM	12/1/2010 11:00:00 AM	1	Manual calibration drift check	
15	12/9/2010 4:00:00 AM	12/10/2010 9:00:00 AM	29	Failed daily CD check (excessive drift)	
16	12/16/2010 4:00:00 AM	12/16/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
17	12/20/2010 12:00:00 PM	12/20/2010 1:00:00 PM	1	Datalogger program maintenance	
18	12/22/2010 8:00:00 AM	12/22/2010 9:00:00 AM	1	Manual calibration drift check	
19	12/24/2010 9:00:00 AM	12/24/2010 10:00:00 AM	1	Manual calibration drift check	
20	12/25/2010 4:00:00 AM	12/26/2010 4:00:00 AM	24	Failed daily CD check (excessive drift)	
21	12/27/2010 4:00:00 AM	12/29/2010 10:00:00 AM	54	Failed daily CD check (excessive drift)	
22	12/31/2010 4:00:00 AM	12/31/2010 11:00:00 PM	19	Failed daily CD check (excessive drift)	

4Q10 FCCU

CO ppm corr (1-Hour)

Form D - Monitor Downtime Summary

No.	Start Time	End Time	Hours	Reason	Action
		Total Hours Monitor Unavailable	297		

Section C – FLARING

RCFA Reports

Frontier Refining Inc.

FRI Semi-annual Report
Flaring Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Flaring - All	84, 85	Submit a Semi-Annual Flaring Report	Once	FRI notified the respective agencies that it would submit the semi-annual flaring report with each semi-annual report.	X	7/6/2009	
Flaring - All	84	Submit Semi-Annual Flaring Report. Include: Copies of each incident report (date, root cause, duration, amount of SO2 released, associated penalties, corrective actions completed, outstanding corrective actions)	Semi-annually	All of the RCFA reports will be submitted by 3/31/2011 under a separate cover as explained in the this cover letter.	X		
Flaring - HC	66	Identify compliance option chosen in the first Semi-Annual Report. A. Operating and maintaining a flare gas recovery system. B. Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an Hydrocarbon Flaring Device. C. Operating the Hydrocarbon Flaring Device as a fuel gas combustion device. D. Eliminate to the extent practicable routes of continuous or intermittent routinely generated fuel gases to a Flaring Device and monitor the mass flow of sulfur dioxide emitted by use of a CEMS and flow meter.	8/31/09	FRI chose Option C to operate both the Main Flare & Main Standby as fuel gas combustion devices. The Coker Flare is compliant with Option A to operate and maintain a flare gas recovery system. Although the AMP was previously submitted, Frontier has not received final approval.	X	8/31/2009	
Flaring-AG/TG	217	Calculate SO2 emissions from all acid gas flaring and tail gas flaring incidents from the prior calendar year.	8/31/11	Data submitted for calendar year emissions inventory required in August submittal.		NA for reporting period	

AMP approval needed?

2/28/2011

Section D – HEATERS AND BOILERS

CEMS Data

Frontier Refining Inc.

FRI Semi-annual Report
Heaters and Boilers Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Heaters and Boilers	44	Submit NOx control plan and updates	9/22/09	The NOx control plan for FRI and FEDRC was previously submitted with the first semi-annual report. FRI has not done any work related to the shut down of the CO Boiler	X	8/31/2009	
Heaters and Boilers	217a	Calculate NOx emissions (tpy) for each heater and boiler >40 MMBtu/hr for the prior calendar year	8/31/11	Data submitted for calendar year emissions inventory required in August submittal.		NA for reporting period	
Heaters and Boilers	217b	Calculate NOx emissions (tpy) for the sum of all heaters and boilers <40 MMBtu/hr for the prior calendar year	8/31/11	Data submitted for calendar year emissions inventory required in August submittal.	X	NA for reporting period	
Heaters and Boilers	217c	Calculate SO2, CO and PM emissions (tpy) for all heaters and boilers for the prior calendar year.	8/31/11	Data submitted for calendar year emissions inventory required in August submittal.	X	NA for reporting period	
Heaters and Boilers	218a	CEMS - Report total periods when emissions were exceeded as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	D
Heaters and Boilers	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	No exceedances >1%
Heaters and Boilers	218a	Report total downtime of the CEMS, expressed as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	D
Heaters and Boilers	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	No downtime >5%

#3 Boiler

3Q10

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #1 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	1.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	6.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	10.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #2 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	14.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	17.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.9%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10

EXCESS EMISSION SUMMARY REPORT
#3 Boiler NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	78.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	79.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	7.2%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10

EXCESS EMISSION SUMMARY REPORT
#3 Boiler CO CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0
C. Process Problem	0	C. Quality Assurance Calibration	0
D. Other Known Causes	0	D. Other Known Causes	0
E. Unknown Causes	0	E. Unknown Causes	0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.0%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #1 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	2.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	6.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	8.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.4%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #2 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	2.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	6.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	8.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.4%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Section E – LDAR

Frontier Refining Inc.

FRI Semi-annual Report
LDAR Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	142	Written LDAR program for refinery to comply with all applicable federal and state regulations (Submit to EPA and WDEQ)	2/28/10	The written LDAR program is an evergreen document, which has been updated in May 2010 to reflect the most recent re-organization of FRI.	X	2/26/2010	
LDAR	144, 170.a.i	Submit the initial written refinery-wide LDAR program	2/28/10		X	2/26/2010	
LDAR	148, 170b	Certify refinery is 1) in compliance, 2) completed corrective action items, 3) is on a compliance schedule, 4) all equipment has been identified	11/21/09	FRI received the final draft audit report on August 21, 2009.	X	11/20/2009	
LDAR	156, 170.a.iii, 216.e	Report that FRI has chosen the initial attempt at repair for our additional VOC monitoring chosen	5/25/09	The notification that FRI chooses to comply with the initial attempt at repair was previously submitted.	X	4/15/2009	
LDAR	170.a.ii, 216.e	Certification of the implementation of lower leak definitions and monitoring frequencies	8/31/09	FRI has been using the lower leak rates as the compliance target from Date of Entry. Monitoring frequencies for valves and pumps are compliant with the Consent Decree.	X	8/31/2009	
LDAR	170.a.iv, 216.e	Certification of LDAR data QA/QC program	8/31/09	FRI LDAR Coordinator has a rigorous QA/QC program which has been followed since Date of Entry.	X	8/31/2009	
LDAR	170.a.v, 216.e	Naming of LDAR Coordinator	8/31/09	The naming of the LDAR Coordinator, Kenton Stobbe, occurred prior to Date of Entry in the organization chart.	X	8/31/2009	
LDAR	170.a.vi, 216.e	Certification new valve and pump tracking system for new valves and pumps added during maintenance and construction	8/31/09	LDAR program has been implemented as part of the Management of Change (MOC) process.	X	8/31/2009	
LDAR	170.a.vii, 216.e	Certification of calibration drift assessment procedures	8/31/09	LDAR Contractor completes a daily work record document that the technicians complete and sign off on daily drift checks.	X	8/31/2009	

FRI Semi-annual Report
LDAR Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	170.a.viii, 216.e	Certification of "delay of repair" procedures	8/31/09	All "delay of repair" valves have a signed form from the Unit Superintendent that are completed within the specified time frame. During the reporting period, there were 9 valves that were applicable to the "drill and tap" method.	X	8/31/2009	
LDAR	170.a.ix, 216.e	Report of the implementation of "chronic leaker" program	2/28/10	Frontier Refining Inc. implemented the chronic leaker program that follows the FRI Site Plan. The LDAR Coordinator manages an evergreen list of all non control valves that have leaked over 10,000 ppm. Frontier tracks all valves on this list for statistics such as manufacturer, type, size, etc. and assess future rates of failure for "like kind" valves. Frontier Refining will replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification.	X	2/26/2010	
LDAR	152, 216.e	Implementation of any actions necessary to correct non-compliance from any audit findings	Varies	FRI received the final audit and submitted the corrective actions schedule with the final audit.	X	11/20/2009	

different than CD language

Final LDAR Audit

Section F – SEP

SEP

Frontier Refining Inc.

FRI Semi-annual Report
SEP Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SEP	205, 216.c	Description of all SEPs and implementation activity	8/31/09	Permit application to WDEQ for geodome approval submitted on 5/12/09. WDEQ permit waiver AP-9413 issued on 6/11/09. The geodomes were for TK 2-70 and TK 2-71, completed on 2/18/10.	X	7/6/2009	
SEP	205,219	Submit a SEP construction completion and cost report (documenting SEP expenditures and including copies of invoices, receipts, purchase orders, etc.) accompanied by a certification by the responsible corporate official in the form required pursuant to Paragraph 219.	Upon SEP Completion	Paragraph 219 certification is provided in the semi-annual cover letter.	X	8/31/2010	
SEP	189	FRI shall determine whether it will convert Tank 2-70 or Tank 2-71 and shall inform EPA and WDEQ of FRI's election	9/22/09	This paragraph has become a mute point as FRI has committed to converting both Tank 2-70 and Tank 2 71 into geodesic dome roof tanks. The amendment to the Consent Decree was finalized on 5/21/09.	X	NA for reporting period	
SEP	190	FRI shall submit a detailed description of the SEP, work plan and SEP implementation schedule to EPA and WDEQ for review	9/22/09	FRI submitted the SEP work plan, which included the detailed decription and the implementation schedule.	X	7/6/2009	
SEP	220a	Determine whether the SEP project will be completed within 12 or 24 months after the DOE.	9/22/09	FRI notified the respective agencies that the SEP project would complete within 12 months.	X	4/6/2009	

Section G – SRP

CEMS Data

Frontier Refining Inc.

FRI Semi-annual Report
SRP Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SRP	217d	Calculate SO2 emissions from both SRUs for the prior calendar year.	8/31/11	Data submitted for calendar year required in August submittal.	X	NA for reporting period	
SRP	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	G
SRP	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	G
SRP	218a	Total downtime of the CEMS, expressed as a percentage	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	G
SRP	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/11	Data provided in excerpts from 3Q10 and 4Q10 CEMS Report	X	2/28/2011	G

3Q10

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – see lb/hr**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	54.0	A. Monitor Equipment Malfunction	
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	
C. Process Problem	48.0	C. Quality Assurance Calibration	
D. Other Known Causes	14.0	D. Other Known Causes	
E. Unknown Causes	25.0	E. Unknown Causes	
II. Total Duration of Excess Emission	141.0	II. Total CMS Downtime	
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	6.5%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10 TGTU Incinerator

Incinerator SO2 lbs/hr (1-Hour)

Form C - Excess Emissions Summary

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	7/6/2010 1:00:00 PM	7/6/2010 2:00:00 PM	110.1	1	SRU #2 shut down	
2	8/3/2010 8:00:00 PM	8/3/2010 9:00:00 PM	32.6	1	Process upset	
3	8/4/2010 2:00:00 AM	8/4/2010 3:00:00 AM	31.8	1	SRU #2 shut down	
4	8/4/2010 4:00:00 AM	8/4/2010 3:00:00 PM	65.8	11	Acid Gas/Tail Gas Event (see incident report)	
5	8/4/2010 6:00:00 PM	8/5/2010 4:00:00 AM	95.9	10	Acid Gas/Tail Gas Event (see incident report)	
6	8/23/2010 9:00:00 PM	8/24/2010	156.8	3	SRU #2 shut down	
7	8/24/2010 3:00:00 AM	8/24/2010 4:00:00 AM	23.9	1	SRU #2 Startup	
8	8/25/2010 3:00:00 PM	8/25/2010 6:00:00 PM	86.4	3	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
9	9/10/2010 8:00:00 PM	9/10/2010 9:00:00 PM	37.8	1	SRU #1 Startup	
10	9/11/2010 1:00:00 PM	9/11/2010 2:00:00 PM	23.4	1	SRU #1 Startup	
11	9/12/2010 3:00:00 AM	9/12/2010 5:00:00 AM	232.5	2	SRU #1 Startup	
12	9/14/2010 4:00:00 PM	9/14/2010 8:00:00 PM	61.6	4	Unknown	
		Total Periods Excess Emissions		39		

3Q10

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS

FORM B

Emission Data Summary (lb/hr)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	10.0	A. Monitor Equipment Malfunction	27.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	22.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	7.0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	39.0	II. Total CMS Downtime	28.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	1.8%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.3%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

3Q10 TGTU Incinerator

Incinerator SO2 ppm (12-Hour)

Form C - Excess Emissions Summary

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	7/6/2010 1:00:00 PM	7/7/2010 1:00:00 AM	310.1	12	SRU #2 shut down	
2	8/3/2010 10:00:00 AM	8/3/2010 3:00:00 PM	271.3	5	Process upset	
3	8/3/2010 8:00:00 PM	8/5/2010 3:00:00 PM	3005.4	43	Process upset	
4	8/23/2010 5:00:00 AM	8/23/2010 4:00:00 PM	272.6	11	FCC shut down from loss of Indeck boilers	
5	8/23/2010 8:00:00 PM	8/24/2010 3:00:00 PM	1719.1	19	SRU #2 shut down	
6	8/25/2010 2:00:00 PM	8/26/2010 4:00:00 AM	906.8	14	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
7	9/10/2010 8:00:00 PM	9/11/2010 6:00:00 AM	282.4	10	SRU #1 Startup	
8	9/12/2010 3:00:00 AM	9/12/2010 4:00:00 PM	883.8	13	SRU #1 Startup	
9	9/14/2010 5:00:00 PM	9/15/2010 7:00:00 AM	558.4	14	CEMS Analyzer problems	
		Total Periods Excess Emissions		141		

4Q10

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		CMS Performance Report – see lb/hr	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	52.0	A. Monitor Equipment Malfunction	
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	
C. Process Problem	20.0	C. Quality Assurance Calibration	
D. Other Known Causes	0.0	D. Other Known Causes	
E. Unknown Causes	10.0	E. Unknown Causes	
II. Total Duration of Excess Emission	82.0	II. Total CMS Downtime	
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	3.8%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10 TGTU

Incinerator SO2 ppm (12-Hour)

Form C - Excess Emissions Summary

No.	Start Time	End Time	Max	Periods	Reason	Action
1	10/30/2010 2:00:00 AM	10/30/2010 5:00:00 AM	265.6	3	Process upset	
2	11/1/2010 2:00:00 PM	11/2/2010 2:00:00 AM	392.7	12	SRU #1 shut down	
3	11/2/2010 9:00:00 AM	11/2/2010 9:00:00 PM	374.0	12	Process upset	
4	11/7/2010 1:00:00 PM	11/7/2010 2:00:00 PM	254.6	1	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
5	11/13/2010 2:00:00 AM	11/13/2010 7:00:00 AM	271.2	5	Process upset	
6	11/15/2010 9:00:00 AM	11/16/2010 5:00:00 AM	3075.8	20	SRU #2 shut down	
7	11/16/2010 1:00:00 PM	11/16/2010 10:00:00 PM	278.8	9	Maintenance - sample system cleaned and filter(s) replaced	
8	12/31/2010 3:00:00 AM	12/31/2010 11:00:00 PM	3629.0	20	SRU #1 shut down	
		Total Periods Excess Emissions		82		

4Q10

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS

FORM B

Emission Data Summary (lb/hr)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	10.0	A. Monitor Equipment Malfunction	123.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	16.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	0.0
E. Unknown Causes	5.0	E. Unknown Causes	6.0
II. Total Duration of Excess Emission	31.0	II. Total CMS Downtime	129.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	1.5%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	5.8%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

4Q10 TGTU

Incinerator SO2 lbs/hr (1-Hour)

Form C - Excess Emissions Summary

No.	Start Time	End Time	Max	Periods	Reason	Action
1	10/29/2010 5:00:00 PM	10/29/2010 6:00:00 PM	70.8	1	Process upset	
2	10/30/2010 5:00:00 PM	10/30/2010 6:00:00 PM	27.3	1	Unknown	
3	11/1/2010 2:00:00 PM	11/1/2010 3:00:00 PM	157.4	1	SRU #1 shut down	
4	11/2/2010 7:00:00 AM	11/2/2010 8:00:00 AM	37.4	1	Process upset	
5	11/2/2010 9:00:00 AM	11/2/2010 10:00:00 AM	103.1	1	Process upset	
6	11/2/2010 11:00:00 AM	11/2/2010 12:00:00 PM	23.7	1	Process upset	
7	11/2/2010 8:00:00 PM	11/2/2010 9:00:00 PM	26.1	1	Process upset	
8	11/3/2010 7:00:00 AM	11/3/2010 8:00:00 AM	41.5	1	Process upset	
9	11/3/2010 10:00:00 AM	11/3/2010 11:00:00 AM	25.9	1	Process upset	
10	11/5/2010 9:00:00 AM	11/5/2010 10:00:00 AM	43.9	1	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
11	11/7/2010 12:00:00 PM	11/7/2010 1:00:00 PM	44.6	1	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
12	11/12/2010 7:00:00 PM	11/12/2010 8:00:00 PM	97.3	1	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
13	11/15/2010 9:00:00 AM	11/15/2010 12:00:00 PM	489.6	3	SRU #2 shut down	
14	11/15/2010 4:00:00 PM	11/15/2010 6:00:00 PM	474.4	2	SRU #2 shut down	
15	11/18/2010 6:00:00 PM	11/18/2010 7:00:00 PM	26.9	1	Process upset	
16	12/23/2010 2:00:00 AM	12/23/2010 3:00:00 AM	23.7	1	Unknown	
17	12/31/2010 3:00:00 AM	12/31/2010 7:00:00 AM	298.2	4	SRU #2 shut down	
18	12/31/2010 8:00:00 AM	12/31/2010 10:00:00 AM	168.7	2	Refinery boiler(s) shut down causing plantwide upsets and/or shut downs	
19	12/31/2010 4:00:00 PM	12/31/2010 5:00:00 PM	23.3	1	Refinery boiler(s) shut down causing plantwide upsets and/or shut downs	
20	12/31/2010 6:00:00 PM	12/31/2010 11:00:00 PM	161.2	5	Refinery boiler(s) shut down causing plantwide upsets and/or shut downs	

4Q10 TGTU

Incinerator SO2 lbs/hr (1-Hour)

Form C - Excess Emissions Summary

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
		Total Periods Excess Emissions		31		

4Q10 TGTU

Incinerator SO2 lbs/hr (1-Hour)

Form D - Monitor Downtime Summary

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/1/2010 7:00:00 AM	10/3/2010 12:00:00 PM	53	CEMS Analyzer problems	
2	11/1/2010 3:00:00 PM	11/1/2010 9:00:00 PM	6	SRU #1 shut down	
3	11/11/2010 4:00:00 AM	11/12/2010 3:00:00 PM	35	Failed daily CD check (excessive drift)	
4	11/16/2010 9:00:00 AM	11/16/2010 1:00:00 PM	4	Maintenance - sample system cleaned and filter(s) replaced	
5	11/17/2010 9:00:00 AM	11/17/2010 10:00:00 AM	1	Maintenance - sample system cleaned and filter(s) replaced	
6	11/24/2010 4:00:00 AM	11/25/2010 10:00:00 AM	30	Failed daily CD check (excessive drift)	
		Total Hours Monitor Unavailable	129		

Section H – CERCLA / EPCRA

CERCLA / EPCRA

Frontier Refining Inc.

FRI Semi-annual Report
CERCLA/EPCRA Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
CERCLA/ EPCRA	172c	Conduct annual training for the environmental compliance staff	Annually	Environmental annual staff training occurred on 8/25/10, which followed FRI's written procedures. This documentation is provided in this report.	X	8/31/2010	
CERCLA/ EPCRA	172a	Complete CERCLA/ EPCRA Compliance Review for the 5 years prior to the Date of Entry	7/24/09	Submitted the initial CERCLA/ EPCRA Compliance Review.	X	7/24/2009	

Section I – SEMI-ANNUAL REPORT ITEMS

Frontier Refining Inc.

FRI Semi-annual Report
Semi-annual Report Requirements

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Semi-annual Report	207	Submit applications to the Applicable Intervenor to incorporate the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry into federally enforceable minor and major new source review permits.	7/24/09	The application was submitted to WDEQ, which covered incorporating all of the emission limits and standards required by the Consent Decree that are applicable or would become applicable within the next 5 years.	X	7/21/2009	
Semi-annual Report	216	Submit semi-annual report every six months	2/28/11	This semi-annual report covers the time period from 7/1/10 through 12/31/10.	X	2/28/2011	
Semi-annual Report	216a	Summary of emissions data specifically required	2/28/11	Emission data required in this semi-annual report is attached in the respective categories.	X	2/28/2011	
Semi-annual Report	216b	Description of any problems anticipated with respect to meeting requirements of the Consent Decree	2/28/11	No problems anticipated.	NA for reporting period		
Semi-annual Report	216d	Any additional matters that should be brought to the attention of the applicable federal and state agencies	2/28/11		NA for reporting period		
Semi-annual Report	216e	Any additional items required by any other paragraph of the Consent Decree to be submitted with a semi-annual report including but not limited to reports required under 137, 152, 170, 205	2/28/11	No other items to address. Please see respective categories.	NA for reporting period		
Semi-annual Report	217f	Calculate SO2, NOx, CO and PM for all other emissions units for which emissions information is required to be included in the annual emissions summary	8/31/11	Data submitted for calendar year required in August submittal.	X	NA for reporting period	
Semi-annual Report	220	Payment of Civil Penalties	4/26/09	Payment submitted to the respective agencies on 4/9/09.	X	4/9/2009	

FRONTIER

FRONTIER REFINING INC.
a Subsidiary of Frontier Refining & Marketing Inc.

P.O. BOX 1588
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August 31, 2010

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
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Washington, D.C. 20460-0001

Chief
Mail Code 8 ENF-T
Office of Enforcement, Compliance, and
Environmental Justice
U.S. EPA Region 8
1595 Wynkoop St.
Denver , CO 80202-1129

Wyoming Department of Environmental
Quality
Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

Semi Annual 1 HD

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: January 1, 2010 through June 30, 2010

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refinery, Inc. (FRI) is hereby submitting the semi-annual progress report for (January 1, 2010 through June 30, 2010) see attached.

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining, Inc.

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Introduction

In accordance with the requirements of Section XI of the NPRI Consent Decree dated March 26, 2009, Frontier Refining, Inc. (FRI) is submitting the following "semi-annual report". This progress report lists the status of requirements with a completion deadline of June 30, 2010 or earlier. This report covers the time period from January 1, 2010 through June 30, 2010. The following information is listed in table format to aid in the review process. Any attachments that are required to be submitted with this semi-annual report are provided behind the respective section.

SECTION / CATEGORY		TABLES/ATTACHMENTS
A	BWON	Quarterly Sampling
B	FCCU	CEMS Data
C	FLARING	RCFA Reports
D	HEATERS AND BOILERS	CEMS Data
E	LDAR	
F	SEP	SEP
G	SRP	CEMS Data
H	CERCLA/ EPCRA	CERCLA/EPCRA
I	SEMI-ANNUAL REPORT ITEMS	

Section A – BWON

Quarterly Sampling

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	BWON	115, 137b	Develop and begin annual training for all employees asked to draw BWON samples	Annually	FRI implemented the training after the BWON sampling plan was drafted in June 2008. Both consulting companies, as well as those employees involved with BWON, have gone through the necessary BWON training for taking samples. Trihydro is the only company currently taking samples; therefore, only Trihydro's current certifications are attached.	X	2/26/10 Trihydro's certificates are valid through 12/2010; therefore they have not been included in this submittal	
	BWON	121, 136	Submit BWON Sampling Plan	3/31/09	FRI submitted the BWON Sampling Plan on 4/9/2009.	X	4/9/2009	
	BWON	127	Implement the BWON Sampling Plan during the first full calendar quarter after the plan is submitted.	Quarterly	For this reporting period, FRI performed the required quarterly sampling per the BWON sampling plan on 3/25/10 & 6/8/10. Sampling results for 1Q10 & 2Q10 are attached to this report. A new sampling plan will be developed for 4Q10 going forward to more accurately access compliance with 6BQ option.	X	N/A	
X	BWON	123, 129, 130, 132, 137a	Calculate and submit quarterly and projected annual TAB based on sampling results. Corrective measures are needed if quarterly TAB exceeds 2.5 Mg or projected annual TAB exceeds 10 Mg/yr	2/28/10	The quarterly projected benzene concentration based on our 1Q10 End of Line (EOL) sampling results was 1.6 Mg. The projected annual benzene based on the 1Q10 EOL sampling is 6.5 Mg/yr. The quarterly projected benzene concentration based on our 2Q10 End of Line (EOL) sampling results was 1.0 Mg. The projected annual benzene based on the 2Q10 EOL sampling is 5.96 Mg/yr. Because the quarterly & annual projected calculations are less than the 2.5 Mg and 10 Mg respectively, no corrective actions are warranted.	X	8/31/2010	A

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	BWON	137c, 216e	Submittal of initial and/or subsequent audits	3/26/10	The initial BWON lab audit, which was conducted by Trihydro was previously submitted.	X	7/21/2009	

CONSENT DECREE SAMPLING RESULTS,
FIRST QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	3/30/10	17:21	--	555.00
			3/30/10	17:57	--	580.00
			3/30/10	18:33	--	587.00
	Average:					**574.00**
API	API Water	End-of-Line	3/29/10	17:03	2.6	--
			3/29/10	17:38	2.86	--
			3/29/10	18:14	2.7	--
	Average:				**2.72**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

2010 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, FIRST QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.93	0.07	50.67	2.72	574.00	3.07	440	2.68	0.67	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
2Q09	8.33	2.08
3Q09	6.49	1.62
4Q09	3.33	0.83
1Q10	2.68	0.67
		5.21

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the fourth quarter 2009.

[d] Organic benzene concentration based on samples collected during the fourth quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable,

CONSENT DECREE SAMPLING RESULTS, SECOND QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	6/18/10	12:29	--	1900.00
			6/18/10	13:04	--	1600.00
			6/18/10	13:39	--	1600.00
	Average:					**1700.00**
API	API Water	End-of-Line	6/15/10	20:12	7	--
			6/15/10	20:47	5.5	--
			6/15/10	21:23	6.3	--
	Average:				**6.27**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

2010 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, SECOND QUARTER 2010
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.93	0.07	50.67	6.27	1700.00	7.30	440	6.39	1.60	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
3Q09	6.49	1.62
4Q09	3.33	0.83
1Q10	2.68	0.67
2Q10	6.39	1.60
Yearly		**4.72**

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the fourth quarter 2009.

[d] Organic benzene concentration based on samples collected during the fourth quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable,

Section B – FCCU

CEMS Data

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	FCCU	12	Notify EPA which option (paragraph 13 or 14) FRI will comply with for NOx.	9/22/09	FRI chose to comply with paragraph 14. The notification was attached to the previous semi-annual report.	X	8/31/2009	
	FCCU	20	Notify EPA which option (paragraph 21 or 22) FRI will comply with for SO_2.	9/22/09	FRI chose to comply with paragraph 22. The notification was attached to the previous semi-annual report.	X	8/31/2009	
	FCCU	38	Satisfy the notification requirements of 40 CFR 60.7(a) for FCCU Catalyst Regenerators that become "affected facilities" under NSPS Subpart J.	3/26/09	FRI became an "affected facility" under NSPS Subpart J for CO on Date of Entry. The notification was attached to the previous semi-annual report. In accordance with MACT Subpart UUU requirements, FRI conducts annual RATA performance test on CO. These tests satisfy the requirements of NSPS 60.8(a) for an initial performance test.	X	8/31/2009	
X	FCCU	217g, 217h	Calculate SO2, NO_x, CO and PM emissions from the FCCU for the prior calendar year.	8/31/10	Data submitted for 2009 calendar year emissions inventory is attached.	X	8/31/2010	B
X	FCCU	218a	CEMS - Report total periods when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	B
X	FCCU	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	B
X	FCCU	218a	Report total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	B
X	FCCU	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	B

B - FCCU

FCCU SOURCE EMISSIONS DATA FOR 2009

	Actual Emissions		Method of Determination	Date of Latest Test
	lbs/hr	tons/yr		
PM	**14.40**	**57.80**	**Source test (feed rate averaged 10,997 bpd)**	**Dec-09**
SO2	**25.30**	**101.55**	**SO2 CERMS data (8.82% moisture)**	**2009**
NOx	**10.40**	**41.75**	**NOx CERMS data (8.82% moisture)**	**2009**
CO	**3.90**	**15.65**	**CO CERMS data**	**2009**

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 1Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	16
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	16.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.7%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 1Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	0.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.04%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 1Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	1.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.04%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 2Q10

There is currently not a permit limit for the ppm concentration.

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	178.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	24.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	204.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	9.3%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/5/2010 1:00:00 PM	4/5/2010 2:00:00 PM	1	Instrument maintenance - unspecified	
2	4/21/2010 11:00:00 AM	4/21/2010 1:00:00 PM	2	Maintenance - sample system cleaned and filter(s) replaced	
3	4/26/2010 11:00:00 AM	4/26/2010 12:00:00 PM	1	Replaced moly converter (NOx analyzer) and ran manual CD check	
4	5/8/2010 11:00:00 PM	5/10/2010 5:00:00 AM	30	Failed daily CD check (excessive drift)	
5	5/17/2010 8:00:00 AM	5/17/2010 9:00:00 AM	1	Manual calibration drift check	
6	5/24/2010 4:00:00 AM	5/25/2010 1:00:00 PM	33	Failed daily CD check (excessive drift)	
7	5/27/2010 4:00:00 AM	5/27/2010 11:00:00 AM	7	Failed daily CD check (excessive drift)	
8	5/28/2010 8:00:00 AM	5/28/2010 10:00:00 AM	2	Manual calibration drift check	
9	5/30/2010 8:00:00 AM	5/30/2010 10:00:00 AM	2	Manual calibration drift check	
10	5/30/2010 11:00:00 AM	5/31/2010 3:00:00 AM	16	Failed daily CD check (excessive drift)	
11	5/31/2010 4:00:00 AM	5/31/2010 11:00:00 AM	7	Failed daily CD check (excessive drift)	
12	6/1/2010 2:00:00 AM	6/1/2010 11:00:00 AM	9	CEMS Analyzer problems	
13	6/1/2010 2:00:00 PM	6/1/2010 11:00:00 PM	9	CEMS Analyzer problems	
14	6/3/2010 4:00:00 AM	6/3/2010 4:00:00 PM	12	Daily CD check	
15	6/4/2010 7:00:00 AM	6/4/2010 9:00:00 AM	2	Manual calibration drift check	
16	6/9/2010 4:00:00 AM	6/10/2010 1:00:00 PM	33	Failed daily CD check (excessive drift)	
17	6/11/2010 4:00:00 AM	6/11/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
18	6/12/2010 4:00:00 AM	6/13/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
19	6/14/2010 11:00:00 AM	6/14/2010 12:00:00 PM	1	Manual calibration drift check	
20	6/18/2010 9:00:00 AM	6/18/2010 10:00:00 AM	1	Manual calibration drift check	
21	6/21/2010 11:00:00 AM	6/21/2010 12:00:00 PM	1	Manual calibration drift check	
22	6/22/2010 11:00:00 AM	6/22/2010 12:00:00 PM	1	Manual calibration drift check	

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
23	6/24/2010 9:00:00 AM	6/24/2010 10:00:00 AM	1	Manual calibration drift check	
24	6/26/2010 7:00:00 AM	6/26/2010 8:00:00 AM	1	CEMS Analyzer problems	
		Total Hours Monitor Unavailable	204		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 2Q10
7-day Rolling Average

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	185.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	432	C. Quality Assurance Calibration	11.0
D. Other Known Causes	0	D. Other Known Causes	4.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	432	II. Total CMS Downtime	198.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	19.8%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	9.1%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

FORM C
FCCU NOx 7-day Rolling Average
Limit = 120 ppm

Date	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Daily Average	Rolling 7-day Average
3/23/2010	136	73	73	101	138	74	74	77	75	74	104	141	72	71	68	65	64	65	64	65	88	120	63	86	85	
3/24/2010	118	65	87	119	66	66	65	87	121	64	57	69	39	52	72	40	42	40	43	42	35	41	39	54	63	
3/25/2010	74	40	54	76	41	49	39	53	73	33	53	59	46	67	77	62	60	58	59	57	80	84	58	57	59	
3/26/2010	58	56	54	53	76	80	58	68	65	64	63	62	62	63	62	63	60	61	61	59	61	60	56	39	61	
3/27/2010	35	34	57	55	47	41	41	56	50	52	47	51	50	49	50	50	52	51	53	53	52	54	54	53	49	
3/28/2010	54	53	52	52	53	51	51	51	51	55	58	59	67	66	72	73	68	70	75	60	57	57	57	58	59	
3/29/2010	48	46	46	45	44	43	45	51	69	81	92	93	96	93	94	97	95	94	93	93	101	85	89	96	76	65
3/30/2010	82	81	81	82	81	82	82	80	83	90	98	114	146	151	138	146	144	145	137	124	115	110	111	108	109	68
3/31/2010	108	109	98	99	101	97	98	98	99	110	109	110	108	108	109	109	109	108	105	105	105	106	104	105	105	74
4/1/2010	103	104	102	100	101	101	102	100	101	101	102	102	101	96	89	78	57	29	23	23	26	23	23	23	75	76
4/2/2010	24	23	23	22	27	57	54	50	48	47	46	45	46	44	46	46	46	46	48	48	48	42	29	39	41	74
4/3/2010	34	31	29	26	29	28	30	28	28	29	28	27	28	24	26	25	24	25	22	23	23	22	23	22	27	70
4/4/2010	24	24	23	22	25	24	35	53	77	75	74	73	71	73	73	73	76	92	92	91	92	92	91	90	64	71
4/5/2010	91	92	90	87	87	90	91	96	97	96	94	96	96	97		152	94	94	92	90	86	87	87	88	94	74
4/6/2010	88	88	89	88	88	87	86	88	83	81	81	81	81	82	87	74	62	64	63	63	62	62	62	64	77	69
4/7/2010	64	63	56	39	19	15	63	58	53	52	49	51	53	53	52	53	52	51	50	49	49	49	51	51	50	61
4/8/2010	51	52	50	50	49	49	50	50	51	49	50	50	53	53	54	55	56	57	58	56	54	53	52	50	52	58
4/9/2010	50	50	49	49	49	49	49	49	47	47	50	50	50	51	52	53	54	47	35	35	35	41	48	46	47	59
4/10/2010	46	46	45	44	51	54	57	63	85	80	77	73	71	74	76	75	76	76	72	73	72	71	68	67	66	64
4/11/2010	66	64	65	64	63	63	64	65	89	213	95	253	297	349	346	356	361	373	371	350	321	301	278	282	215	86
4/12/2010	280	278	265	274	267	232	100	264	282	317	318	326	339	352	352	371	379	409	414	380	324	296	284	267	307	116
4/13/2010	261	257	237	200	200	172	76	220	230	238	233	220	221	237	231	228	224	241	207	201	195	207	202	184	213	136
4/14/2010	164	163	174	153	163	141	60	174	216	249	217	240	254	242	195	192	246	300	271	272	243	222	198	199	206	158
4/15/2010	189	171	137	142	138	113	48	119	40	54	132	99	87	225	121	75	103	165	182	157	135	132	129	123	126	169
4/16/2010	109	100	82	84	88	69	43	66	76	57	42	56	30	33	32	35	47	69	33	50	70	33	44	58	59	170
4/17/2010	29	29	29	25	26	23	24	24	24	39	58	31	46	64	33	31	29	29	26	29	42	62	31	44	34	166
4/18/2010	60	31	41	56	28	28	41	64	35	40	62	81	59	71	79	79	79	84	110	151	95	77	73	63	66	145
4/19/2010	53	56	50	68	97	45	59	81	52	94	163	107	110	147	135	128	148	117	115	112	105	94	123	119	99	115
4/20/2010	75	98	97	66	71	71	69	68	71	74	76	82	82	83	85	96	101	91	128	130	66	60	61	60	82	96
4/21/2010	62	62	56	59	61	58	58	59	56	57	27	45			120	126	131	132	130	133	123	113	107	96	85	79
4/22/2010	91	84	84	85	88	86	81	79	79	78	49	44	33	40	199	122	47	44	39	32	33	31	32	32	67	70
4/23/2010	31	33	32	34	33	31	29	27	26	26	26	26	33	41	43	44	44	39	33	27	27	27	26	27	32	66
4/24/2010	26	26	25	24	25	25	25	26	24	25	27	27	29	29	32	38	44	46	48	37	31	30	26	25	30	66
4/25/2010	25	27	24	23	22	21	22	22	23	25	26	27	28	30	30	24	21	18	17	14	14	14	14	15	22	60
4/26/2010	14	15	15	15	15	15	15	16	16	24	30	25		39	24	25	26	24	26	23	23	13	10	17	20	48
4/27/2010	36	37	34	28	19	19	19	23	22	23	24	30	37	45	53	66	77	70	61	61	50	41	40	32	39	42
4/28/2010	26	27	23	25	31	30	30	40	49	59	66	83	101	118	117	111	104	106	87	36	21	20	17	17	56	38
4/29/2010	15	14	13	13	14	15	15	16	16	17	18	20	20	21	23	25	25	21	20	19	17	17	16	16	18	31
4/30/2010	16	16	16	15	15	15	15	16	17	15	14	13	12	12	13	13	13	12	13	12	14	13	14	16	14	29
5/1/2010	15	16	14	15	15	16	16	15	15	15	16	16	17	22	28	32	30	39	36	29	23	18	16	16	20	27
5/2/2010	15	15	15	16	15	15	15	16	16	16	15	17	21	28	27	26	28	29	30	22	19	18	17	16	19	27
5/3/2010	16	16	14	14	15	15	15	16	16	16	15	17	28	37	41	43	52	61	59	47	38	35	36	33	29	28
5/4/2010	32	32	31	33	32	29	31	38	43	48	35	36	51	46	45	51	63	75	69	52	33	25	21	18	40	28
5/5/2010	17	17	15	15	14	13	14	13	14	17	16	17	22	31	33	31	30	29	37	87	85	27	59	54	29	24
5/6/2010	59	60	45	48	15	17	21	48	21	55	59	58	59	50	51	58	102	82	55	60	51	43	47	44	50	29
5/7/2010	47	52	54	65	120	80	47	146	208	196	202	201	240	345	342	356	367	357	337	339	361	357	313	288	226	59
5/8/2010	271	254	235	227	224	194	90	208	219	243	232	241	255	273	317	320	348	371	355	347	345	295	128	298	262	94
5/9/2010	278	285	263	259	250	219	100	264	567	373	301	238	456	496	528	543	519	511	504	492	468	351	367	293	372	144
5/10/2010	257	315	304	152	126	88	61	109	136	148	173	185	231	212	133	166	175	160	149	140	109	98	89	87	158	163
5/11/2010	86	86	81	81	86	73	56	98	85	50	46	79	56	93	77	39	53	79	38	36	31	31	35	31	63	166
5/12/2010	46	67	33	31	32	30	34	33	33	33	47	76	78	87	108	121	116	120	159	193	67	107	156	81	79	173
5/13/2010	80	80	76	75	100	139	72	71	70	71	82	100	148	214	117	139	148	148	147	130	120	114	112	115	111	182
5/14/2010	107	107	112	125	100	101	99	100	111	125	145	161	175	175	165	153	133	124	120	116	116	112	152	156	129	168
5/15/2010	102	144	152	102	95	94	95	97	138	150	105	108	113	114	102	99	103	82	86	65	48	55	53	56	97	144
5/16/2010	60	56	62	57	59	59	59	64	67	69	83	97	117	137	159	190	206	187	147	143	126	122	108	88	105	106
5/17/2010	84	82	79	80	86						71	88	126	152	178	210	239	246	237	206	149	107	77	54	134	103
5/18/2010	50	51	56	48	44	46	40	46	43	42	41	38	37	47	61	79	76	101	54	42	36	35	33	34	49	101
5/19/2010	33	34	34	34	37	35	34	34	36	39	50	60	56	62	70	83	83	84	79	73	70	43	42	50	52	97
5/20/2010	51	43	37	37	36	35	35	35	35	41	51	45	68	58	83	101	112	129	125	98	71	47	42	39	61	90
5/21/2010	38	39	36	32	34	31	32	33	34	39	52	66	83	95	114	128	138	135	149	133	120	111	95	81	77	82
5/22/2010	63	60	57	51	38	44	41	57	89	117	158	202	257	314	273	268	191	140	107	58	34	27	23	23	112	84
5/23/2010	23	24	24	23	22	24	22	26	25	25	26	31	31	34	43	54	67	79	79	87	78	68	60	63	43	76
5/24/2010	58	43	36	26	24	28	27	32	41	65	86	108	110	100	45	37	36	26	22	23	22	13	32	28	45	63
5/25/2010	28	35	35	35	36	36	35	34	32	28	13	31	111		34	40	48	55	54	45	34	30	29	28	39	61
5/26/2010	27	29	27	29	28	27	27	26	26	26	29	27	30	32	31	49	36	58	67	62	41	30	27	24	34	59
5/27/2010	30	51	80	72	67								108	130	177	225	272	301	318	305	280	233	192	158	176	75
5/28/2010	134	123	105	99	89							125	252	327	358	387	460	520	572	509	348	248	189	163	278	104
5/29/2010	127	92	86	69	57	50																			80	99
5/30/2010												49	132	128	118	120	127	152	130	133	129	118	123	110	121	110
5/31/2010		116	103	121	123	104	30	81	111	290			142	149	174	351	517	547	709	841	509	314	184	160	270	143
6/1/2010	200	148	112																						153	159
6/2/2010																										180
6/3/2010																		53	61	61	62	60	59	56	59	160
6/4/2010	55	56	55	58	56	40	47	54			63	42	13	14	14	13	11	13	14	13	51	54	57	60	39	120
6/5/2010	43	48	56	55	52	37	41	37	40	41	49	37	42	46	33	29	32	31	28	27	32	39	42	72	41	114

FORM C
FCCU NOx 7-day Rolling Average
Limit = 120 ppm

6/6/2010	69	54	38	50	49	43	42	43	45	57	50	44	44	60	54	46	47	46	49	49	48	55	89	73	52	102
6/7/2010	61	60	68	56	60	51	47	47	48	46	50	50	51	50	51	57	61	61	61	65	65	62	56	55	56	67
6/8/2010	55	55	52	49	48	45	40	40	63	94	74	57	59	88	73	59	61	105	90	73	81	84	83	83	67	52
6/9/2010	84	86	76	68	56																				74	55
6/10/2010															44	45	42	43	43	42	41	40	38	36	41	53
6/11/2010	35	38	37	33	33							56	56	58	57	75	69	62	57	54	51	47	44	42	50	55
6/12/2010	42	43	38	36	38																				39	54
6/13/2010							34	34	32	33	32	32	29	32	33	34	34	34	34	35	34	34	34	34	33	52
6/14/2010	33	34	32	32	32	33	33	34	35	35	36	36		83	54	47	48	50	48	50	50	45	46		42	50
6/15/2010	43	44	41	41	41	40	41	42	45	48	53	59	64	64	66	69	70	73	69	70	61	55	51	48	54	48
6/16/2010	48	45	44	42	44	42	43	44	50	59	67	74	77	78	80	86	89	87	88	83	74	74	73	65	65	46
6/17/2010	63	63	53	51	50	46	43	38	39	41	43	46	56	60	61	66	73	81	87	90	80	69	63	62	59	49
6/18/2010	55	49	45	42	39	36	34	37	42	43		51	56	60	64	71	73	76	79	77	74	69	66	60	56	50
6/19/2010	56	56	56	52	51	47	47	43	45	45	46	50	56	61	65	70	73	74	73	73	69	68	68	67	59	53
6/20/2010	63	63	56	52	52	50	50	52	52	53	54	56	63	65	67	71	74	72	72	66	59	56	52	52	59	56
6/21/2010	49	52	50	48	47	42	37	43	47	39	38	45		153	65	68	66	43	86	75	66	58	52	47	57	59
6/22/2010	45	46	40	36	31	29	29	30	33	39	45	48		77	66	65	69	65	66	66	58	48	37	32	48	58
6/23/2010	28	24	20	19	18	19	16	14	13	23	28	31	38	42	44	47	47	44	47	44	34	27	20	15	29	53
6/24/2010	6	0	0	0	0							77	294	292	262	313	122	341	92	127	337	83	77	70	139	64
6/25/2010	66	67	64	53	56	51	52	55	62	68	77	84	84	93	97	103	110	121	123	113	112	109	100	109	85	68
6/26/2010	101	95	90	86	83					59	53	76	82	81	73	64	53	43	48	51	46	47	48	44	66	69
6/27/2010	40	40	34	32	31	24	28	30	34	42	45	47	47	47	47	52	56	59	58	51	48	44	45	45	43	67
6/28/2010	48	48	43	39	32	28	28	27	40	45	49	53	60	64	69	79	73	71	67	61	59	69	55	45	52	66
6/29/2010	62	54	48	41	33	30	31	53	60	51	49	54	88	85	65	67	72	79	84	69	59	58	78	72	60	68
6/30/2010	47	47	44	38	52	52	40	42	43	44	51	54	56	62	68	73	74	79	79	70	62	58	57	50	56	71

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/5/2010 1:00:00 PM	4/5/2010 2:00:00 PM	1	Instrument maintenance - unspecified	
2	4/21/2010 11:00:00 AM	4/21/2010 1:00:00 PM	2	Maintenance - sample system cleaned and filter(s) replaced	
3	4/26/2010 11:00:00 AM	4/26/2010 12:00:00 PM	1	Replaced moly converter (NOx analyzer) and ran manual CD check	
4	5/17/2010 4:00:00 AM	5/17/2010 9:00:00 AM	5	Failed daily CD check (excessive drift)	
5	5/25/2010 12:00:00 PM	5/25/2010 1:00:00 PM	1	Manual calibration drift check	
6	5/27/2010 4:00:00 AM	5/27/2010 11:00:00 AM	7	Failed daily CD check (excessive drift)	
7	5/28/2010 4:00:00 AM	5/28/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
8	5/29/2010 5:00:00 AM	5/30/2010 10:00:00 AM	29	CEMS Analyzer problems	
9	5/30/2010 11:00:00 PM	5/31/2010	1	Manual calibration drift check	
10	5/31/2010 9:00:00 AM	5/31/2010 11:00:00 AM	2	Manual calibration drift check	
11	6/1/2010 2:00:00 AM	6/3/2010 4:00:00 PM	62	CEMS Analyzer problems	
12	6/4/2010 7:00:00 AM	6/4/2010 9:00:00 AM	2	Manual calibration drift check	
13	6/9/2010 4:00:00 AM	6/10/2010 1:00:00 PM	33	Failed daily CD check (excessive drift)	
14	6/11/2010 4:00:00 AM	6/11/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
15	6/12/2010 4:00:00 AM	6/13/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
16	6/14/2010 11:00:00 AM	6/14/2010 12:00:00 PM	1	Manual calibration drift check	
17	6/14/2010 10:00:00 PM	6/14/2010 11:00:00 PM	1	Manual calibration drift check	
18	6/18/2010 9:00:00 AM	6/18/2010 10:00:00 AM	1	Manual calibration drift check	
19	6/21/2010 11:00:00 AM	6/21/2010 12:00:00 PM	1	Manual calibration drift check	
20	6/22/2010 11:00:00 AM	6/22/2010 12:00:00 PM	1	Manual calibration drift check	
21	6/24/2010 4:00:00 AM	6/24/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
22	6/26/2010 4:00:00 AM	6/26/2010 8:00:00 AM	4	CEMS Analyzer problems	

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
		Total Hours Monitor Unavailable	198		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 2Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	100.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	15.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	117.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	7.2%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/5/2010 1:00:00 PM	4/5/2010 2:00:00 PM	1	Instrument maintenance - unspecified	
2	4/21/2010 11:00:00 AM	4/21/2010 1:00:00 PM	2	Maintenance - sample system cleaned and filter(s) replaced	
3	4/26/2010 11:00:00 AM	4/26/2010 12:00:00 PM	1	Replaced moly converter (NOx analyzer) and ran manual CD check	
4	5/17/2010 8:00:00 AM	5/17/2010 9:00:00 AM	1	Manual calibration drift check	
5	5/25/2010 12:00:00 PM	5/25/2010 1:00:00 PM	1	Manual calibration drift check	
6	5/27/2010 4:00:00 AM	5/27/2010 11:00:00 AM	7	Failed daily CD check (excessive drift)	
7	5/28/2010 8:00:00 AM	5/28/2010 10:00:00 AM	2	Manual calibration drift check	
8	5/30/2010 8:00:00 AM	5/30/2010 10:00:00 AM	2	Manual calibration drift check	
9	5/31/2010 9:00:00 AM	5/31/2010 11:00:00 AM	2	Manual calibration drift check	
10	6/1/2010 2:00:00 AM	6/1/2010 11:00:00 AM	9	CEMS Analyzer problems	
11	6/1/2010 2:00:00 PM	6/1/2010 10:00:00 PM	8	CEMS Analyzer problems	
12	6/3/2010 5:00:00 AM	6/3/2010 3:00:00 PM	10	CEMS Analyzer problems	
13	6/4/2010 7:00:00 AM	6/4/2010 9:00:00 AM	2	Manual calibration drift check	
14	6/9/2010 4:00:00 AM	6/10/2010 1:00:00 PM	33	Failed daily CD check (excessive drift)	
15	6/11/2010 4:00:00 AM	6/11/2010 10:00:00 AM	6	Failed daily CD check (excessive drift)	
16	6/12/2010 4:00:00 AM	6/13/2010 5:00:00 AM	25	Failed daily CD check (excessive drift)	
17	6/14/2010 11:00:00 AM	6/14/2010 12:00:00 PM	1	Manual calibration drift check	
18	6/18/2010 9:00:00 AM	6/18/2010 10:00:00 AM	1	Manual calibration drift check	
19	6/21/2010 11:00:00 AM	6/21/2010 12:00:00 PM	1	Manual calibration drift check	
20	6/22/2010 11:00:00 AM	6/22/2010 12:00:00 PM	1	Manual calibration drift check	
21	6/24/2010 9:00:00 AM	6/24/2010 10:00:00 AM	1	Manual calibration drift check	

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
		Total Hours Monitor Unavailable	117		

Section C – FLARING

RCFA Reports

(pulled and placed in Flaring folder

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	Flaring - All	84, 85	Submit a Semi-Annual Flaring Report	2/28/10	FRI notified the respective agencies that it would submit the semi-annual flaring report with each semi-annual report.	X	7/6/2009	
X	Flaring - All	84	Submit Semi-Annual Flaring Report. Include: Copies of each incident report (date, root cause, duration, amount of SO2 released, associated penalties, corrective actions completed, outstanding corrective actions)	2/28/10	There was one Acid Gas Flaring event which occurred during the reporting period and 5 Tail Gas incidents. All of these reports are attached to this semi-annual report.	X	8/31/2010	C
	Flaring - HC	66	Identify compliance option chosen in the first Semi-Annual Report. A. Operating and maintaining a flare gas recovery system. B. Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an Hydrocarbon Flaring Device. C. Operating the Hydrocarbon Flaring Device as a fuel gas combustion device. D. Eliminate to the extent practicable routes of continuous or intermittent routinely generated fuel gases to a Flaring Device and monitor the mass flow of sulfur dioxide emitted by use of a CEMS and flow meter.	8/31/09	FRI chose Option C to operate both the Main Flare & Main Standby as fuel gas combustion devices. The Coker Flare is compliant with Option A to operate and maintain a flare gas recovery system. Although the AMP was previously submitted, Frontier has not received final approval.	X	8/31/2009	

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Section D – HEATERS AND BOILERS

CEMS Data

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	Heaters and Boilers	44	Submit NOx control plan and updates	9/22/09	The NOx control plan for FRI and FEDRC was previously submitted with the first semi-annual report.	X	8/31/2009	
X	Heaters and Boilers	217a	Calculate NOx emissions (tpy) for each heater and boiler >40 MMBtu/hr for the prior calendar year	2/28/10	Data submitted for 2009 calendar year in attached table	X	8/31/2010	D
X	Heaters and Boilers	217b	Calculate NOx emissions (tpy) for the sum of all heaters and boilers <40 MMBtu/hr for the prior calendar year	2/28/10	Data submitted for 2009 calendar year in attached table	X	8/31/2010	D
X	Heaters and Boilers	217c	Calculate SO2, CO and PM emissions (tpy) for all heaters and boilers for the prior calendar year.	2/28/10	Data submitted for 2009 calendar year in attached table	X	8/31/2010	D
X	Heaters and Boilers	218a	CEMS - Report total periods when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	D
X	Heaters and Boilers	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	No exceedance for report period.
X	Heaters and Boilers	218a	Report total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	D
X	Heaters and Boilers	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	D

FRI HEATERS AND BOILERS EMISSIONS SUMMARY

	Actual Emissions
	tons/yr
PM	**10.98**
SO2	**8.14**
NOx	**325.56**
CO	**165.94**

D - HEATERS & BOILERS 40> MMBtu/hr

CRUDE CHARGE HEATER (ID 21) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.27	1.16	0.002	lb/MMBtu	B (AP-42)	
SO2	0.20	0.86	8	ppmv	A, C	
NOx	4.02	17.37	0.030	lb/MMBtu	E	Dec-09
CO	0.05	0.23	0.000	lb/MMBtu	E	Dec-09

COKER "A" HEATER (ID 23) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.05	0.15	0.002	lb/MMBtu	B (AP-42)	
SO2	0.02	0.07	8	ppmv	A, C	
NOx	0.93	3.03	0.041	lb/MMBtu	E	Sep-09
CO	0.00	0.00	0.001	lb/MMBtu	E	Sep-09

CO BOILER (ID 34A) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.42	1.34	0.004	lb/MMBtu	B (AP-42)	
SO2	0.10	0.33	8	ppmv	A, C	
NOx	20.93	66.85	0.200	lb/MMBtu	E	Jun-08
CO	11.51	36.77	0.110	lb/MMBtu	E	Jun-08

HYDROGEN PLANT FURNACE (ID 50) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.09	0.20	0.002	lb/MMBtu	B (AP-42)	
SO2	0.01	0.02	0.4	ppmv	C	
NOx	2.35	5.07	0.050	lb/MMBtu	E	Jan-08
CO	3.85	8.32	0.082	lb/MMBtu	B (AP-42)	

INDECK "1" BOILER (ID 58) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	**0.55**	**2.36**	**0.004**	**lb/MMBtu**	**B (AP-42)**	
SO2	**0.14**	**0.58**	**8**	**ppmv**	**A, C**	
NOx	**12.59**	**54.18**	**0.092**	**lb/MMBtu**	**A**	**2009**
CO	**5.48**	**23.56**	**0.040**	**lb/MMBtu**	**B (Title V)**	

INDECK "2" BOILER (ID 59) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	**0.53**	**2.27**	**0.004**	**lb/MMBtu**	**B (AP-42)**	
SO2	**0.13**	**0.56**	**8**	**ppmv**	**A, C**	
NOx	**11.91**	**51.04**	**0.090**	**lb/MMBtu**	**A**	**2009**
CO	**5.29**	**22.69**	**0.040**	**lb/MMBtu**	**B (Title V)**	

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 1Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	1.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	2.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.1%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #1 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	51.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	8.0
D. Other Known Causes	0	D. Other Known Causes	1.0
E. Unknown Causes	0	E. Unknown Causes	4.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	64.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.9%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #2 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	51.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	23.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	9.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	83.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.8%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 2Q10

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	34.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	34.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	1.6%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #1 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	31.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	6.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	39.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	2.0%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Indeck Boiler #2 NOx CEMS (lb/MMBtu)

FORM B

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	31.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	94.0
D. Other Known Causes	0	D. Other Known Causes	2.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	127.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	5.8%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary

Stack 2 NOx #/mmbtu (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/1/2010 7:00:00 AM	4/1/2010 8:00:00 AM	1	Daily CD check	
2	4/2/2010 7:00:00 AM	4/2/2010 8:00:00 AM	1	Daily CD check	
3	4/3/2010 7:00:00 AM	4/3/2010 8:00:00 AM	1	Daily CD check	
4	4/4/2010 7:00:00 AM	4/4/2010 8:00:00 AM	1	Daily CD check	
5	4/5/2010 7:00:00 AM	4/5/2010 8:00:00 AM	1	Daily CD check	
6	4/6/2010 7:00:00 AM	4/6/2010 8:00:00 AM	1	Daily CD check	
7	4/7/2010 7:00:00 AM	4/7/2010 8:00:00 AM	1	Daily CD check	
8	4/8/2010 7:00:00 AM	4/8/2010 8:00:00 AM	1	Daily CD check	
9	4/9/2010 7:00:00 AM	4/9/2010 8:00:00 AM	1	Daily CD check	
10	4/10/2010 7:00:00 AM	4/10/2010 8:00:00 AM	1	Daily CD check	
11	4/11/2010 7:00:00 AM	4/11/2010 8:00:00 AM	1	Daily CD check	
12	4/12/2010 7:00:00 AM	4/12/2010 8:00:00 AM	1	Daily CD check	
13	4/13/2010 7:00:00 AM	4/13/2010 8:00:00 AM	1	Daily CD check	
14	4/14/2010 7:00:00 AM	4/14/2010 8:00:00 AM	1	Daily CD check	
15	4/15/2010 7:00:00 AM	4/15/2010 8:00:00 AM	1	Daily CD check	
16	4/16/2010 7:00:00 AM	4/16/2010 8:00:00 AM	1	Daily CD check	
17	4/17/2010 7:00:00 AM	4/17/2010 8:00:00 AM	1	Daily CD check	
18	4/18/2010 7:00:00 AM	4/18/2010 8:00:00 AM	1	Daily CD check	
19	4/19/2010 7:00:00 AM	4/19/2010 8:00:00 AM	1	Daily CD check	
20	4/20/2010 7:00:00 AM	4/20/2010 8:00:00 AM	1	Daily CD check	
21	4/21/2010 7:00:00 AM	4/21/2010 8:00:00 AM	1	Daily CD check	
22	4/22/2010 7:00:00 AM	4/22/2010 8:00:00 AM	1	Daily CD check	
23	4/23/2010 7:00:00 AM	4/23/2010 8:00:00 AM	1	Daily CD check	

Form D - Monitor Downtime Summary Stack 2 NOx #/mmbtu (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
24	4/24/2010 7:00:00 AM	4/24/2010 8:00:00 AM	1	Daily CD check	
25	4/25/2010 7:00:00 AM	4/25/2010 8:00:00 AM	1	Daily CD check	
26	4/26/2010 7:00:00 AM	4/26/2010 8:00:00 AM	1	Daily CD check	
27	4/27/2010 7:00:00 AM	4/27/2010 8:00:00 AM	1	Daily CD check	
28	4/28/2010 7:00:00 AM	4/28/2010 8:00:00 AM	1	Daily CD check	
29	4/29/2010 7:00:00 AM	4/29/2010 8:00:00 AM	1	Daily CD check	
30	4/30/2010 7:00:00 AM	4/30/2010 8:00:00 AM	1	Daily CD check	
31	5/1/2010 7:00:00 AM	5/1/2010 8:00:00 AM	1	Daily CD check	
32	5/2/2010 7:00:00 AM	5/2/2010 8:00:00 AM	1	Daily CD check	
33	5/3/2010 7:00:00 AM	5/3/2010 8:00:00 AM	1	Daily CD check	
34	5/4/2010 7:00:00 AM	5/4/2010 8:00:00 AM	1	Daily CD check	
35	5/5/2010 7:00:00 AM	5/5/2010 8:00:00 AM	1	Daily CD check	
36	5/6/2010 7:00:00 AM	5/7/2010 2:00:00 PM	31	Failed daily CD check (excessive drift)	
37	5/8/2010 7:00:00 AM	5/8/2010 8:00:00 AM	1	Daily CD check	
38	5/9/2010 7:00:00 AM	5/9/2010 8:00:00 AM	1	Daily CD check	
39	5/10/2010 7:00:00 AM	5/10/2010 8:00:00 AM	1	Daily CD check	
40	5/11/2010 7:00:00 AM	5/11/2010 8:00:00 AM	1	Daily CD check	
41	5/12/2010 7:00:00 AM	5/12/2010 2:00:00 PM	7	Cylinder Gas Audit	
42	5/13/2010 7:00:00 AM	5/13/2010 8:00:00 AM	1	Daily CD check	
43	5/14/2010 7:00:00 AM	5/14/2010 8:00:00 AM	1	Daily CD check	
44	5/15/2010 7:00:00 AM	5/15/2010 8:00:00 AM	1	Daily CD check	
45	5/16/2010 7:00:00 AM	5/16/2010 8:00:00 AM	1	Daily CD check	
46	5/17/2010 7:00:00 AM	5/17/2010 8:00:00 AM	1	Daily CD check	

Form D - Monitor Downtime Summary Stack 2 NOx #/mmbtu (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
47	5/18/2010 7:00:00 AM	5/18/2010 8:00:00 AM	1	Daily CD check	
48	5/19/2010 7:00:00 AM	5/19/2010 8:00:00 AM	1	Daily CD check	
49	5/20/2010 7:00:00 AM	5/20/2010 8:00:00 AM	1	Daily CD check	
50	5/21/2010 7:00:00 AM	5/21/2010 8:00:00 AM	1	Daily CD check	
51	5/22/2010 7:00:00 AM	5/22/2010 8:00:00 AM	1	Daily CD check	
52	5/23/2010 7:00:00 AM	5/23/2010 8:00:00 AM	1	Daily CD check	
53	5/24/2010 7:00:00 AM	5/24/2010 8:00:00 AM	1	Daily CD check	
54	5/25/2010 7:00:00 AM	5/25/2010 8:00:00 AM	1	Daily CD check	
55	5/26/2010 7:00:00 AM	5/26/2010 8:00:00 AM	1	Daily CD check	
56	5/27/2010 7:00:00 AM	5/27/2010 8:00:00 AM	1	Daily CD check	
57	5/28/2010 7:00:00 AM	5/28/2010 8:00:00 AM	1	Daily CD check	
58	5/29/2010 7:00:00 AM	5/29/2010 8:00:00 AM	1	Daily CD check	
59	5/30/2010 7:00:00 AM	5/30/2010 8:00:00 AM	1	Daily CD check	
60	5/31/2010 7:00:00 AM	5/31/2010 8:00:00 AM	1	Daily CD check	
61	6/1/2010 7:00:00 AM	6/1/2010 8:00:00 AM	1	Daily CD check	
62	6/2/2010 7:00:00 AM	6/2/2010 8:00:00 AM	1	Daily CD check	
63	6/3/2010 7:00:00 AM	6/3/2010 8:00:00 AM	1	Daily CD check	
64	6/4/2010 7:00:00 AM	6/4/2010 8:00:00 AM	1	Daily CD check	
65	6/5/2010 7:00:00 AM	6/5/2010 8:00:00 AM	1	Daily CD check	
66	6/6/2010 7:00:00 AM	6/6/2010 8:00:00 AM	1	Daily CD check	
67	6/7/2010 7:00:00 AM	6/7/2010 8:00:00 AM	1	Daily CD check	
68	6/8/2010 7:00:00 AM	6/8/2010 8:00:00 AM	1	Daily CD check	
69	6/9/2010 7:00:00 AM	6/9/2010 8:00:00 AM	1	Daily CD check	

Form D - Monitor Downtime Summary Stack 2 NOx #/mmbtu (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
70	6/10/2010 7:00:00 AM	6/10/2010 8:00:00 AM	1	Daily CD check	
71	6/11/2010 7:00:00 AM	6/11/2010 8:00:00 AM	1	Daily CD check	
72	6/12/2010 7:00:00 AM	6/12/2010 8:00:00 AM	1	Daily CD check	
73	6/13/2010 7:00:00 AM	6/13/2010 8:00:00 AM	1	Daily CD check	
74	6/14/2010 7:00:00 AM	6/14/2010 8:00:00 AM	1	Daily CD check	
75	6/15/2010 7:00:00 AM	6/15/2010 8:00:00 AM	1	Daily CD check	
76	6/16/2010 7:00:00 AM	6/16/2010 8:00:00 AM	1	Daily CD check	
77	6/17/2010 7:00:00 AM	6/17/2010 8:00:00 AM	1	Daily CD check	
78	6/18/2010 7:00:00 AM	6/18/2010 9:00:00 AM	2	Datalogger program maintenance	
79	6/19/2010 7:00:00 AM	6/19/2010 8:00:00 AM	1	Daily CD check	
80	6/20/2010 7:00:00 AM	6/20/2010 8:00:00 AM	1	Daily CD check	
81	6/21/2010 7:00:00 AM	6/21/2010 8:00:00 AM	1	Daily CD check	
82	6/22/2010 7:00:00 AM	6/22/2010 8:00:00 AM	1	Daily CD check	
83	6/23/2010 7:00:00 AM	6/23/2010 8:00:00 AM	1	Daily CD check	
84	6/24/2010 7:00:00 AM	6/24/2010 8:00:00 AM	1	Daily CD check	
85	6/25/2010 7:00:00 AM	6/25/2010 8:00:00 AM	1	Daily CD check	
86	6/26/2010 7:00:00 AM	6/26/2010 8:00:00 AM	1	Daily CD check	
87	6/27/2010 7:00:00 AM	6/27/2010 8:00:00 AM	1	Daily CD check	
88	6/28/2010 7:00:00 AM	6/28/2010 8:00:00 AM	1	Daily CD check	
89	6/29/2010 7:00:00 AM	6/29/2010 8:00:00 AM	1	Daily CD check	
90	6/30/2010 7:00:00 AM	6/30/2010 8:00:00 AM	1	Daily CD check	
		Total Hours Monitor Unavailable	127		

Section E – LDAR

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	LDAR	142	Written LDAR program for refinery to comply with all applicable federal and state regulations (Submit to EPA and WDEQ)	2/28/10	The written LDAR program is an evergreen document, which has been updated in May 2010 to reflect the most recent re-organization of FRI.	X	2/26/2010	
	LDAR	144, 170.a.i	Submit the initial written refinery-wide LDAR program	2/28/10		X	2/26/2010	
	LDAR	148, 170b	Certify refinery is 1) in compliance, 2) completed corrective action items, 3) is on a compliance, 4) all equipment has been identified	11/21/09	FRI received the final draft audit report on August 21, 2009.	X	11/20/2009	
	LDAR	156, 170.a.iii, 216.e	Report that FRI has chosen the initial attempt at repair for our additional VOC monitoring chosen	5/25/09	The notification that FRI chooses to comply with the initial attempt at repair was previously submitted.	X	4/15/2009	
	LDAR	170.a.ii, 216.e	Certification of the implementation of lower leak definitions and monitoring frequencies	8/31/09	FRI has been using the lower leak rates as the compliance target from Date of Entry. Monitoring frequencies for valves and pumps are compliant with the Consent Decree.	X	8/31/2009	
	LDAR	170.a.iv, 216.e	Certification of LDAR data QA/QC program	8/31/09	FRI LDAR Coordinator has a rigorous QA/QC program which has been followed since Date of Entry.	X	8/31/2009	
	LDAR	170.a.v, 216.e	Naming of LDAR Coordinator	8/31/09	The naming of the LDAR Coordinator, Kenton Stobbe, occurred prior to Date of Entry in the organization chart.	X	8/31/2009	
	LDAR	170.a.vi, 216.e	Certification new valve and pump tracking system for new valves and pumps added during maintenance and construction	8/31/09	LDAR program has been implemented as part of the Management of Change (MOC) process.	X	8/31/2009	
	LDAR	170.a.vii, 216.e	Certification of calibration drift assessment procedures	8/31/09	LDAR Contractor completes a daily work record document that the technicians complete and sign off on daily drift checks.	X	8/31/2009	

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	LDAR	170.a.viii, 216.e	Certification of "delay of repair" procedures	8/31/09	All "delay of repair" valves have a signed form from the Unit Superintendent that are completed within the specified time frame. During the reporting period, there were 9 valves that were applicable to the "drill and tap" method.	X	8/31/2009	
	LDAR	170.a.ix, 216.e	Report of the implementation of "chronic leaker" program	2/28/10	Frontier Refining Inc. implemented the chronic leaker program that follows the FRI Site Plan. The LDAR Coordinator manages an evergreen list of all non control valves that have leaked over 10,000 ppm. Frontier tracks all valves on this list for statistics such as manufacturer, type, size, etc. and assess future rates of failure for "like kind" valves. Frontier Refining will replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification.	X	2/26/2010	
	LDAR	152, 216.e	Implementation of any actions necessary to correct non-compliance from any audit findings	Varies	FRI received the final audit and submitted the corrective actions schedule with the final audit.	X	11/20/2009	

Section F – SEP

SEP

Cost Completion Rpt
pulled and placed in "all other" file

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	SEP	205, 216.c	Description of all SEPs and implementation activity	8/31/09	Permit application to WDEQ for geodome approval submitted on 5/12/09. WDEQ permit waiver AP-9413 issued on 6/11/09. The geodomes were for TK 2-70 and TK 2-71, completed on 2/18/10.	X	7/6/2009	
X	SEP	205,219	Submit a SEP construction completion and cost report (documenting SEP expenditures and including copies of invoices, receipts, purchase orders, etc.) accompanied by a certification by the responsible corporate official in the form required pursuant to Paragraph 219.	Upon SEP Completion	Paragraph 219 certification is provided in the semi-annual cover letter.	8/31/2010	8/31/2010	F
	SEP	189	FRI shall determine whether it will convert Tank 2-70 or Tank 2-71 and shall inform EPA and WDEQ of FRI's election	9/22/09	This paragraph has become a mute point as FRI has committed to converting both Tank 2-70 and Tank 2-71 into geodesic dome roof tanks. The amendment to the Consent Decree was finalized on 5/21/09.	X	N.A.	
	SEP	190	FRI shall submit a detailed description of the SEP, work plan and SEP implementation schedule to EPA and WDEQ for review	9/22/09	FRI submitted the SEP work plan, which included the detailed decription and the implementation schedule.	X	7/6/2009	
	SEP	220a	Determine whether the SEP project will be completed within 12 or 24 months after the DOE.	9/22/09	FRI notified the respective agencies that the SEP project would complete within 12 months.	X	4/6/2009	

Section G – SRP

CEMS Data

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
X	SRP	217d	Calculate SO2 emissions from both SRUs for the prior calendar year.	2/28/10	Data submitted for 2009 calendar year in attached table	X	8/31/2010	G
X	SRP	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	G
X	SRP	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	G
X	SRP	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	G
X	SRP	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 1Q10 and 2Q10 CEMS Report	X	8/31/2010	G

G - SRP

SRP SOURCE EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination
	lbs/hr	tons/yr			
SO2	**3.90**	**16.10**	**3.9**	**lb/hr**	**CEMS**

1Q10

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – see lb/hr**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	95.0	A. Monitor Equipment Malfunction	
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	
C. Process Problem	66.0	C. Quality Assurance Calibration	
D. Other Known Causes	157.0	D. Other Known Causes	
E. Unknown Causes	0.0	E. Unknown Causes	
II. Total Duration of Excess Emission	318	II. Total CMS Downtime	
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	16.2%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	2/14/2010 5:00:00 AM	2/14/2010 4:00:00 PM	308.5	11	SRU #1 shut down	
2	2/15/2010 1:00:00 PM	2/16/2010 2:00:00 AM	1021.3	13	SRU #2 shut down	
3	2/20/2010 2:00:00 PM	2/21/2010 3:00:00 AM	592.6	13	SRU #1 shut down	
4	2/21/2010 6:00:00 PM	2/22/2010 6:00:00 AM	325.4	12	SWS on circulation	
5	2/22/2010 4:00:00 PM	2/24/2010 5:00:00 AM	1905.4	37	Unit start up	
6	3/3/2010 7:00:00 PM	3/4/2010 12:00:00 PM	371.9	17	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
7	3/4/2010 4:00:00 PM	3/5/2010 4:00:00 AM	269.2	12	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
8	3/5/2010 6:00:00 PM	3/5/2010 7:00:00 PM	250.8	1	Training on PLC	
9	3/6/2010 4:00:00 AM	3/6/2010 5:00:00 AM	255.0	1	Training on PLC	
10	3/8/2010 8:00:00 PM	3/12/2010 6:00:00 PM	1552.1	94	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
11	3/14/2010 2:00:00 AM	3/14/2010 5:00:00 AM	589.9	3	SRU #2 shut down	
12	3/18/2010 9:00:00 PM	3/19/2010 1:00:00 AM	464.7	4	SRU #2 Startup	
13	3/25/2010 11:00:00 AM	3/26/2010 9:00:00 PM	309.6	34	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
14	3/29/2010 5:00:00 AM	3/31/2010 11:00:00 PM	6518.9	66	SCOT unit catalyst changeout	
		Total Periods Excess Emissions		318		

1Q10 Revised ?

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS

FORM B

Emission Data Summary (lb/hr)		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	40.0	A. Monitor Equipment Malfunction	95.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	66.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0.0	D. Other Known Causes	46.0
E. Unknown Causes	1.0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	107	II. Total CMS Downtime	141.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	5.3%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	6.5%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 lbs/hr (1-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	2/14/2010 5:00:00 AM	2/14/2010 7:00:00 AM	26.6	2	SRU #1 shut down	
2	2/15/2010 1:00:00 PM	2/15/2010 3:00:00 PM	148.8	2	SRU #2 shut down	
3	2/17/2010 2:00:00 PM	2/17/2010 11:00:00 PM	355.3	9	SRU #2 shut down	
4	2/20/2010 2:00:00 PM	2/20/2010 4:00:00 PM	82.9	2	SRU #1 shut down	
5	2/21/2010 6:00:00 PM	2/21/2010 7:00:00 PM	48.6	1	SWS on circulation	
6	2/22/2010 4:00:00 PM	2/22/2010 6:00:00 PM	20.4	2	Unit start up	
7	2/23/2010 9:00:00 AM	2/23/2010 4:00:00 PM	61.3	7	Unit start up	
8	3/3/2010 11:00:00 PM	3/4/2010	28.2	1	SRU #2 Startup	
9	3/6/2010 11:00:00 AM	3/6/2010 12:00:00 PM	30.7	1	SRU #2 shut down	
10	3/8/2010 6:00:00 PM	3/8/2010 7:00:00 PM	20.1	1	Sulfur Unit problems caused high SO2, knocking CEMS out of calibration	
11	3/11/2010 1:00:00 PM	3/11/2010 2:00:00 PM	22.4	1	Training on PLC	
12	3/11/2010 7:00:00 PM	3/12/2010 2:00:00 AM	183.2	7	SRU #2 Startup	
13	3/14/2010 2:00:00 AM	3/14/2010 4:00:00 AM	82.1	2	SRU #2 shut down	
14	3/15/2010 2:00:00 PM	3/15/2010 3:00:00 PM	24.8	1	SRU #2 shut down	
15	3/18/2010 11:00:00 AM	3/18/2010 1:00:00 PM	65.1	2	SRU #2 Startup	
16	3/29/2010 5:00:00 AM	3/31/2010 11:00:00 PM	451.6	66	SCOT unit catalyst changeout	
		Total Periods Excess Emissions		107		

Form D - Monitor Downtime Summary

Incinerator SO2 lbs/hr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	2/16/2010 5:00:00 AM	2/17/2010 11:00:00 AM	30	Failed daily CD check (excessive drift)	
2	3/6/2010 5:00:00 AM	3/6/2010 11:00:00 AM	6	Failed daily CD check (excessive drift)	
3	3/6/2010 12:00:00 PM	3/8/2010 10:00:00 AM	46	SRU #2 shut down	
4	3/14/2010 5:00:00 AM	3/15/2010 10:00:00 AM	29	Failed daily CD check (excessive drift)	
5	3/17/2010 5:00:00 AM	3/18/2010 11:00:00 AM	30	Failed daily CD check (excessive drift)	
		Total Hours Monitor Unavailable	141		

1010

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		CMS Performance Report – see lb/hr	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	36	A. Monitor Equipment Malfunction	
B. Control Equipment Problems	47	B. Non-Monitor Equipment Malfunctions	
C. Process Problem	14	C. Quality Assurance Calibration	
D. Other Known Causes	13	D. Other Known Causes	
E. Unknown Causes	0	E. Unknown Causes	
II. Total Duration of Excess Emission	110	II. Total CMS Downtime	
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	5.2%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	3/31/2010 11:00:00 PM	4/1/2010 10:00:00 PM	5281.3	23	SCOT unit shut down for repairs	
2	4/6/2010 2:00:00 PM	4/7/2010 2:00:00 AM	433.6	12	SRU #2 shut down	
3	4/21/2010 4:00:00 AM	4/21/2010 4:00:00 PM	339.4	12	Installing new Coalescer	
4	4/23/2010 11:00:00 AM	4/23/2010 11:00:00 PM	427.5	12	SRU #2 shut down	
5	4/29/2010 2:00:00 PM	4/30/2010 2:00:00 AM	616.2	12	SCOT unit shut down for repairs	
6	5/15/2010 3:00:00 AM	5/15/2010 3:00:00 PM	367.3	12	Hydrocarbon carryover into the amine system	
7	5/24/2010 1:00:00 PM	5/25/2010 2:00:00 AM	1215.2	13	Power outage	
8	5/26/2010 5:00:00 PM	5/27/2010 5:00:00 AM	443.9	12	SRU #1 Startup	
9	6/4/2010 9:00:00 PM	6/4/2010 11:00:00 PM	252.0	2	Amine Unit upset - unspecified	
		Total Periods Excess Emissions		110		

2 Q 10 Revised ?

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (lb/hr) CEMS

FORM B

Emission Data Summary (lb/hr)		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	4	A. Monitor Equipment Malfunction	64
B. Control Equipment Problems	15	B. Non-Monitor Equipment Malfunctions	0
C. Process Problem	4	C. Quality Assurance Calibration	3
D. Other Known Causes	2	D. Other Known Causes	0
E. Unknown Causes	0	E. Unknown Causes	2
II. Total Duration of Excess Emission	25	II. Total CMS Downtime	69
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	1.2%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	3.2%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 lbs/hr (1-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	3/31/2010 11:00:00 PM	4/1/2010 12:00:00 PM	130.1	13	SCOT unit shut down for repairs	
2	4/6/2010 2:00:00 PM	4/6/2010 3:00:00 PM	68.9	1	SRU #2 shut down	
3	4/23/2010 11:00:00 AM	4/23/2010 12:00:00 PM	77.7	1	SRU #2 shut down	
4	4/29/2010 2:00:00 PM	4/29/2010 4:00:00 PM	109.5	2	SCOT unit shut down for repairs	
5	5/15/2010 2:00:00 AM	5/15/2010 4:00:00 AM	66.2	2	Hydrocarbon carryover into the amine system	
6	5/24/2010 1:00:00 PM	5/24/2010 3:00:00 PM	308.5	2	Power outage	
7	5/26/2010 5:00:00 PM	5/26/2010 6:00:00 PM	141.5	1	SRU #1 Startup	
8	5/27/2010 7:00:00 AM	5/27/2010 8:00:00 AM	34.4	1	SRU #1 Startup	
9	6/4/2010 8:00:00 PM	6/4/2010 9:00:00 PM	73.3	1	Amine Unit upset - unspecified	
10	6/9/2010 3:00:00 PM	6/9/2010 4:00:00 PM	43.3	1	Foaming on the absorber	
		Total Periods Excess Emissions		25		

Section H – CERCLA / EPCRA

CERCLA / EPCRA

Training Artification
pulled + placed in "all Other" file

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
X	CERCLA/ EPCRA	172c	Conduct annual training for the environmental compliance staff	7/24/09	Environmental annual staff training occurred on 8/25/10, which followed FRI's written procedures. This documentation is provided in this report.	X	8/31/2010	H
	CERCLA/ EPCRA	172a	Complete CERCLA/ EPCRA Compliance Review for the 5 years prior to the Date of Entry	7/24/09	Submitted the initial CERCLA/ EPCRA Compliance Review.	X	7/24/2009	

Section I – SEMI-ANNUAL REPORT ITEMS

Frontier Refining Inc.

Updated From Previous Submittal	Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
	Semi-annual Report	207	Submit applications to the Applicable Intervenor to incorporate the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry into federally enforceable minor and major new source review permits.	7/24/09	The application was submitted to WDEQ, which covered incorporating all of the emission limits and standards required by the Consent Decree that are applicable or would become applicable within the next 5 years.	X	7/21/2009	
X	Semi-annual Report	216	Submit semi-annual report every six months	2/28/10	This semi-annual report covers the time period from 1/1/10 through 6/30/10.	X	8/31/2010	
X	Semi-annual Report	216a	Summary of emissions data specifically required	2/28/10	Emission data required in this semi-annual report is attached in the respective categories.	X	8/31/2010	
	Semi-annual Report	216b	Description of any problems anticipated with respect to meeting requirements of the Consent Decree	2/28/10	No problems anticipated.	N.A.		
	Semi-annual Report	216d	Any additional matters that should be brought to the attention of the applicable federal and state agencies	2/28/10		N.A.		
	Semi-annual Report	216e	Any additional items required by any other paragraph of the Consent Decree to be submitted with a semi-annual report including but not limited to reports required under 137, 152, 170, 205	2/28/10	No other items to address. Please see respective categories.	N.A.		
X	Semi-annual Report	217f	Calculate SO2, NOx, CO and PM for all other emissions units for which emissions information is required to be included in the annual emissions summary	2/28/10	Data submitted for 2009 calendar year in attached table.	X	8/31/2010	I
	Semi-annual Report	220	Payment of Civil Penalties	4/26/09	Payment submitted to the respective agencies on 4/9/09.	X	4/9/2009	

Possible hours of operation in period: 8760 hours

Permitted sulfur content of fuel gas: 0.1 gr/dscf

	Gross Btu/sc	ppm H2S	
Natural Gas (CITYGAS)	1,040	4	(Based on AP-42 factor of 2,000 grains S per MMscf gas)
Refinery Fuel Gas (61FG)	1,366	8	(From CEMS monitoring data) updated 4/27/10

2009 EMISSIONS INVENTORY SUMMARY
FRONTIER REFINING INC.

Source Type	Code	Emissions (tons)				
		PM	SO2	NOx	CO	NMHC
External Combustion Units	EC	10	8	311	157	16
Fluid Catalytic Cracking Unit	FCCU	58	102	42	16	<1
Flares*	FL		<1	1	6	2
Hydrogen Plant	H2	<1	<1	5	8	1
Internal Combustion Engines	IC	<1	2	7	9	0
Loading	L					<1
Process Fugitives	PF					79
Sulfur Recovery Unit	SRU	18	16	11	4	<1
Tanks	T					124
Material Handling	MH	2				
Wastewater	WW					163
Cooling Towers	CT					8
Excess Emissions	EXCESS	<1	104	10	4	13
Grand Total		**89**	**231**	**386**	**204**	**408**

* Frontier's flares are permitted for emergency/malfunction and the Main Flare is used for excess refinery fuel gas only.

FRONTIER

FRONTIER REFINING INC.
a Subsidiary of Frontier Refining & Marketing Inc.

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February 26, 2010

Chief
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122 W. 25th Street
Cheyenne, WY 82002

Semi Annual 2 H 09

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: July 1, 2009 through December 31, 2009

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refinery, Inc. (FRI) is hereby submitting the semi-annual progress report for (July 1, 2009 through December 31, 2009) see attached.

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Compliance Manager
Frontier Refining, Inc.

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Introduction

In accordance with the requirements of Section XI of the NPRI Consent Decree dated March 26, 2009, Frontier Refining, Inc. (FRI) is submitting the following "semi-annual report". This progress report lists the status of requirements with a completion deadline of December 31, 2009 or earlier. This report covers the time period from July 1, 2009 through December 31, 2009. The following information is listed in table format to aid in the review process. Any attachments that are required to be submitted with this semi-annual report are provided behind the respective section.

SECTION / CATEGORY		TABLES/ATTACHMENTS
A	BWON	Training Certifications Quarterly Sampling
B	FCCU	CEMS Data
C	FLARING	RCFA Reports
D	HEATERS AND BOILERS	CEMS Data
E	LDAR	LDAR
F	SEP	SEP
G	SRP	CEMS Data
H	CERCLA/ EPCRA	CERCLA/EPCRA
I	SEMI-ANNUAL REPORT ITEMS	216d – Additional Matters

Section A – BWON

Training Certifications

Quarterly Sampling

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
BWON	115, 137b	Develop and begin annual training for all employees asked to draw BWON samples	Annually	FRI implemented the training after the BWON sampling plan was drafted in June 2008. Both consulting companies, as well as those employees involved with BWON, have gone through the necessary BWON training for taking samples. Trihydro is the only company currently taking samples; therefore, only Trihydro's current certifications are attached.	X		A
BWON	121, 136	Submit BWON Sampling Plan	3/31/09	FRI submitted the BWON Sampling Plan on 4/9/2009.	X	4/9/2009	
BWON	127	Implement the BWON Sampling Plan during the first full calendar quarter after the plan is submitted.	Quarterly	FRI performed the required quarterly sampling per the BWON sampling plan on 5/19/09, 9/4/09 & 11/18/09. Sampling results for 3Q09 & 4Q09 are attached to this report.	X		A
BWON	123, 129, 130, 132, 137a	Calculate and submit quarterly and projected annual TAB based on sampling results. Corrective measures are needed if quarterly TAB exceeds 2.5 Mg or projected annual TAB exceeds 10 Mg/yr	2/28/10	The quarterly projected benzene concentration based on our 3Q09 End of Line (EOL) sampling results was 1.6 Mg. The projected annual benzene based on the 3Q09 EOL sampling is 6.5 Mg/yr. The quarterly projected benzene concentration based on our 4Q09 End of Line (EOL) sampling results was 1.0 Mg. The projected annual benzene based on the 4Q09 EOL sampling is 5.96 Mg/yr. Because the quarterly & annual projected calculations are less than the 2.5 Mg and 10 Mg respectively, no corrective actions are warranted.	X	3Q09 & 4Q09 attached	A
BWON	137c, 216e	Submittal of initial and/or subsequent audits	3/26/10	The initial BWON lab audit, which was conducted by Trihydro was previously submitted.	X	7/21/2009	

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Tyson Markham

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Regina Mitchell

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

Trihydro CORPORATION

Certificate of Completion

is hereby granted to

Chelsea Neuman

to certify the completion of

METHOD 25D TRAINING

Awarded: December 8, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Sean Ukele

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

TABLE A-1. CONSENT DECREE SAMPLING RESULTS, THIRD QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	9/4/09	13:35	--	832.00
			9/4/09	13:37	--	848.00
			9/4/09	13:39	--	856.00
	Average:					**845.33**
API	API Water	End-of-Line	9/4/09	13:21	8.98	--
			9/4/09	13:44	6.40	--
			9/4/09	14:00	5.96	--
	Average:				**6.11**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

TABLE A-2. 2009 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, THIRD QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Inlet	99.93	0.07	50.67	6.11	845.33	6.57	496.53	6.48515	1.621286877	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
1Q09	5.14	1.28
2Q09	8.33	2.08
3Q09	6.49	1.62
4Q09	NA	1.66
2009 Total		6.65

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the third quarter 2009.

[d] Organic benzene concentration based on samples collected during the third quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable, future quarterly sampling which has not been completed is based on the average of the previous quarters to obtain the annual TAB.

TABLE A-3. CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	11/18/09	11:11	--	631.00
			11/18/09	11:40	--	604.00
			11/18/09	12:11	--	575.00
	Average:					**603.33**
API	API Water	End-of-Line	11/18/09	11:30	2.35	--
			11/18/09	12:08	3.450	--
			11/18/09	12:25	4.14	--
	Average:				**3.31**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

TABLE A-4. 2009 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.94	0.06	50.67	3.31	603.33	3.60	560.00	4.01	1.00	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
1Q09	5.14	1.28
2Q09	8.33	2.08
3Q09	6.49	1.62
4Q09	4.01	1.00
2009 Total		6.65

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the fourth quarter 2009.

[d] Organic benzene concentration based on samples collected during the fourth quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable.

Section B – FCCU

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
FCCU	12	Notify EPA which option (paragraph 13 or 14) FRI will comply with for NOx.	9/22/09	FRI chose to comply with paragraph 14. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	20	Notify EPA which option (paragraph 21 or 22) FRI will comply with for SO_2.	9/22/09	FRI chose to comply with paragraph 22. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	38	Satisfy the notification requirements of 40 CFR 60.7(a) for FCCU Catalyst Regenerators that become "affected facilities" under NSPS Subpart J.	3/26/09	FRI became an "affected facility" under NSPS Subpart J for CO on Date of Entry. The notification was attached to the previous semi-annual report. In accordance with MACT Subpart UUU requirements, FRI conducts annual RATA performance test on CO. These tests satisfy the requirements of NSPS 60.8(a) for an initial performance test.	X	8/31/2009	
FCCU	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report.	X		B

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 3Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 3Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 3Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 4Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	585.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	17.0
C. Process Problem	0	C. Quality Assurance Calibration	34.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	636.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	28.9%

Total time of excess emission events due to emergency/abnormal operations: _0_.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/21/2009 11:00:00 PM	11/22/2009 9:00:00 AM	10	FCCU startup	
6	11/28/2009 4:00:00 AM	11/28/2009 9:00:00 AM	5	Failed daily CD check (excessive drift)	
7	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
8	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
9	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
10	12/26/2009 4:00:00 AM	12/27/2009 11:00:00 AM	31	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
11	12/28/2009 5:00:00 AM	12/29/2009 2:00:00 PM	33	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	636		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 4Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	579.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	7
C. Process Problem	0	C. Quality Assurance Calibration	36
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	622.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	28.2%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/28/2009 8:00:00 AM	11/28/2009 9:00:00 AM	1	Daily CD check	
6	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
7	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
8	12/22/2009 4:00:00 AM	12/22/2009 5:00:00 AM	1	Daily CD check	
9	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
10	12/26/2009 4:00:00 AM	12/27/2009 10:00:00 AM	30	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
11	12/28/2009 5:00:00 AM	12/29/2009 2:00:00 PM	33	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	622		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 4Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	599.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	9.0
C. Process Problem	2	C. Quality Assurance Calibration	35.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	2	II. Total CMS Downtime	644.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.1%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	29.2%

Total time of excess emission events due to emergency/abnormal operations: __0__.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/28/2009 8:00:00 AM	11/28/2009 9:00:00 AM	1	Daily CD check	
6	12/4/2009 5:00:00 AM	12/4/2009 7:00:00 AM	2	Process upset	
7	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
8	12/16/2009 10:00:00 AM	12/16/2009 11:00:00 AM	1	Unknown	
9	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
10	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
11	12/26/2009 4:00:00 AM	12/27/2009 11:00:00 AM	31	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
12	12/28/2009 5:00:00 AM	12/30/2009 9:00:00 AM	52	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	644		

Section C – FLARING

RCFA Reports

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Flaring - All	84, 85	Submit a Semi-Annual Flaring Report	2/28/10	FRI notified the respective agencies that it would submit the semi-annual flaring report with each semi-annual report.	X	7/6/2009	
Flaring - All	84	Submit Semi-Annual Flaring Report. Include: Copies of each incident report (date, root cause, duration, amount of SO2 released, associated penalties, corrective actions completed, outstanding corrective actions)	2/28/10	There were no Acid Gas Flaring events which occurred during the reporting period and 4 Tail Gas incidents. All of these reports are attached to this semi-annual report.	X		C
Flaring - HC	66	Identify compliance option chosen in the first Semi-Annual Report. A. Operating and maintaining a flare gas recovery system. B. Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an Hydrocarbon Flaring Device. C. Operating the Hydrocarbon Flaring Device as a fuel gas combustion device. D. Eliminate to the extent practicable routes of continuous or intermittent routinely generated fuel gases to a Flaring Device and monitor the mass flow of sulfur dioxide emitted by use of a CEMS and flow meter.	8/31/09	FRI chose Option C to operate both the Main Flare & Main Standby as fuel gas combustion devices. The Coker Flare is compliant with Option A to operate and maintain a flare gas recovery system. Although the AMP was previously submitted, Frontier has not received final approval.	X	8/31/2009	C

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11/4/09

RELEASE REPORT FOR 9/20/2009

TAIL GAS INCIDENT

Release Start Time: 4:37 am
Release Start Date: 9/20/09

Release End Time: 8:00 am
Release End Date: 9/20/2009

Release/Flaring Duration: 5 hours

Estimate of Quantity of Sulfur Dioxide Emitted: 0.3 tons
CEMS data showed an exceedance for 4 hours which totaled 590 lbs SO2 (for tail gas emissions)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On September 20, 2009 at approximately 4:37 am and again at 5:00 am, Frontier's SRU#1 shut down. The shut down was caused by a large "bounce" in the acid gas flow to the units. After the second shutdown of SRU#1, operators had difficulty re-lighting the unit with acid gas, so city gas was used to relight.

Prior to this event, there were problems evident with hydrocarbon in the Sour Water Stripper (SWS) carrying over into the Sulfur Recovery Units. The sulfur recovery plant is designed to withstand minor "bounces" in the system. However, prior to this event, there had not been any oil skimming on Tk 103 for quite some time, which caused the "bounce" to be more than the system could handle. The reason for the lack of skimming was that the gauge in Tk 103 floats on liquid and does not distinguish between water and hydrocarbon. Therefore, the amount of hydrocarbon in the tank was unknown. some of this hydrocarbon made its way to the SWS and finally to the sulfur recovery plants, where it overwhelmed the system and caused the TGTU Incinerator to experience exceedances of the SO_2 lb/hr permit limit for 4 hours. The SO_2 12-hour ppm NSPS/MACT standard was also exceeded during this time frame. No acid gas was flared during this event.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- The Sour Water Stripper was minimized

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Excess hydrocarbon in Tk 103 carried over from the SWS into the Sulfur Recovery Plant.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
Skim hydrocarbon off of Tk 103 on a weekly basis to avoid accumulation	10/1/09	11/6/09

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STIPULATED PENALTY CALCULATIONS

The root cause of this tail gas incident was subject to Paragraph 76a(ii) – the first occurrence of a sudden and infrequent event, which would have been reasonably preventable through the exercise of good engineering practices. FRI has begun implementing the corrective actions and stipulated penalties shall not apply.

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11/9/09

RELEASE REPORT FOR 9/22/2009

HYDROCARBON FLARING INCIDENT

Release Start Time: 5:46
Release Start Date: 9/22/09

Release End Time: 10:15
Release End Date: 9/22/09

Flaring Duration: 3 hours 27 minutes
Release Duration: 4 ½ hours

Estimate of Quantity of Sulfur Dioxide Emitted: 535 lbs

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On September 22, 2009, there were a series of shutdowns of the Crude VRU Compressors . The shutdowns occurred due to a high high water level in the VRU Separator Drum. Normally, water from the VRU can be routed to the vacuum Seal Drum or the Sour Water Stripper. At the time of the event, the Crude unit was off-line and the vacuum seal drum was out of service. This resulted in water being unable to get out of the separator drum, which eventually caused the VRU Compressors to shutdown. As a result of the compressors shutting down, off-gas was flared in the Main Flare for approximately 3 ½ hours.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Sour water from the VRU was routed to the Sour Water Stripper rather than the Vacuum Seal Drum which alleviated the water level issue.

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Without water flowing to seal drum, the level in the VRU Separator Drum increased and caused the automatic VRU compressors shutdown level.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
The shutdown procedures for the Crude Unit were revised so that the water to the seal drum would be switched to the Sour Water Stripper if the VRU were to remain in operation when the level in the VRU Separator Drum exceeded normal operating levels.	9/22/09	11/1/09

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STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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11/9/09

RELEASE REPORT FOR 9/24/2009

HYDROCARBON FLARING INCIDENT

Release Start Time: 3:05
Release Start Date: 9/24/09

Release End Time: 6:52
Release End Date: 9/24/09

Flaring/Release Duration: 3 hours 47 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 540 lbs

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On September 24, 2009, operators were trying to restart the Crude VRU from being offline for 2 days when it shutdown during the normal startup procedures. Operators could not get the VRU restarted as it kept shutting down from the large amount of light ends in the system. The failed startups caused all of the off gas in the system to be flared in the Main Flare until the VRU was online and stable.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Charge rates were already at reduced rates due to the VRU being offline for 2 days prior – no further actions were taken as it was supposed to be a routine startup.

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: It was determined that there are too many light ends in the system upon startup for the vacuum tower and VRU to handle. The large amount of light ends are from placing the vacuum tower in service before the excess light ends in the system have been burned off, which causes the system to overload.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
New procedure will be put into place so the vacuum tower will not be turned on during startup procedures until all the excess light ends in the unit have burned off in the system; and therefore will not overload the vacuum tower.	9/24/09	11/15/09

STIPULATED PENALTY CALCULATIONS

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11/9/09

RELEASE REPORT FOR 10/9/2009

HYDROCARBON FLARING INCIDENT

Release Start Time: 23:18
Release Start Date: 10/9/09

Release End Time: 23:40
Release End Date: 10/9/09

Flaring/ Release Duration: 23 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 0.5 tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

The FCCU Wet Gas Compressor (WGC) shut down due to the failure of a redundant vibration sensor. This caused the control logic to think that the vibrations on the WGC were too high and shut down the WGC. Once the compressor shut down, operators were able to by-pass the shutdown logic for the switch and were able to get the compressor restarted within a few minutes. Flaring of FCC wet gas in the Main Flare occurred for approximately 23 minutes as the WGC was returning to full operation.

The vibration switch that failed was a redundant switch on the WGC. When the mechanics went out to the compressor after it was restarted, they confirmed that the vibration reading was in error.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Due to the short duration and the ability to restart the compressor within a few minutes, no rate reductions were taken for this event.

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: A mechanical failure of the WGC failed causing the it to shut down.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
Operators bypassed the proximity switch to prevent another shutdown of the WGC	10/9/09	10/9/09
Vibration proximity switch was replaced	10/9/09	10/12/09
The bypass for the WGC was placed back into the logic sequence.	10/12/09	10/12/09
Set the switches up such that the shutdown logic would not shut down the WGC until both switches see a vibration. This eliminates the ability for the compressor to shutdown on a false reading.	10/12/09	10/16/09

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STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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11/4/09

RELEASE REPORT FOR 10/10/2009

TAIL GAS INCIDENT

Release Start Time: 4:10 am
Release Start Date: 10/10/09

Release End Time: 11:00 am
Release End Date: 10/10/2009

Release Duration: 7 hours
Flaring Duration: 4 hours 50 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 0.7 tons
CEMS data showed an exceedance for 7 hours which totaled 1475 lbs SO2 (for tail gas emissions)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

Prior to the incident, the refinery had been experiencing multiple freeze up issues the evening of October 9th. These eventually caused the fuel gas pressure within the refinery to become unstable. A fuel gas pressure "bounce" around 6:30 pm on October 9th caused several heaters in the Hydroprocessing Area to shut down. Operators were able to restart all heaters except the Hot Oil Skid, which was not restarted until 9:40 pm by maintenance workers. Due to the continuing upsets, all of the acid gas load was being sent through SRU#2 by 11 pm.

At 11:05 pm, the Hot Oil Skid shut down again and operators were unable to restart the unit. Appropriate maintenance personnel could not be reached in order to restart of the Hot Oil Skid.

The Hot Oil Skid supplies necessary heat to the SCOT Unit, so when the Hot Oil Skid was offline for an extended amount of time, the SCOT Unit became to lose the required internal temperatures needed to maintain operation. By 4:10 am on October 10, the SCOT Unit was getting cold and operators had no choice but to start sending the material from SRU#2 directly to the TGTU Incinerator. Finally, electricians arrived at 5:30 am. By 6:45 am, the hot oil skid was relit and started to warm up. At approximately 9 am, SRU#2 tail gas was sent back through the SCOT Unit and tail gas flaring ceased.

During this incident, the TGTU Incinerator experienced exceedances of the SO_2 lb/hr permit limit for 7 hours. The SO_2 12-hour ppm NSPS/MACT standard was also exceeded during this time frame. No acid gas was flared during this event.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Charge rates for the DHDS and the FCCU were reduced to minimum by 5:30 am.

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ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: The Hot Oil Skid shut down initially on high high burner pressure. It was later discovered that the pilot gas line which can either bring fuel gas or city gas into the hot oil skid was still connected to the fuel gas line. This allowed water in the fuel gas system to pass into the city gas line and onto the Hot Oil Skid. Once the Hot Oil Skid shutdown, the excess water in the fuel gas collected in a low point of the line and froze.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
Fuel gas line as pilot was disconnected and now the Hot Oil Skid can only be started with city gas. This eliminated the low point in the line where standing water was accumulating.	10/12/09	10/12/09

STIPULATED PENALTY CALCULATIONS

The root cause of this tail gas incident was subject to Paragraph 76a(ii) - the first occurrence of a sudden and infrequent event, which would have been reasonably preventable through the exercise of good engineering practices. FRI has begun implementing the corrective actions and stipulated penalties shall not apply.

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11/10/09

RELEASE REPORT FOR 10/13/2009

TAIL GAS/ HYDROCARBON FLARING INCIDENT

Release Start Time: 12:30 PM
Release Start Date: 10/13/09
Release End Time: 16:15
Release End Date: 10/13/09
Flaring/Release Duration: 3 hours 45 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 3 tons
CEMS Data shows an exceedance for 10 hours which totaled 610 lbs SO2 (for tail gas emissions)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On October 13, 2009, at approximately 12:30 pm, most of the City of Cheyenne experienced a power outage due to the loss of one of the main sub-stations supplying electricity. As a result, much of the refinery was either shut down or put onto circulation until power was restored. There were three main sources of emission exceedances during this outage that were not preventable due to the sudden loss of power to the entire facility: Coker, Sulfur Recovery Plant and FCCU.

The electric Coker Compressor, C-408, lost power, causing Coker wet gas to be flared in the Coker Flare for approximately 167 minutes. The Coker FGRU also lost power during a blowdown cycle and the blowdown gases were sent directly to the Coker Flare.

The FCCU Wet Gas Compressor lost power and FCC wet gas was flared in the Main Flare until power was restored and the WGC was back online.

SRU#1 was shutdown immediately following the outage, and SRU#2 continued to run until the acid gas supply was exhausted. Although operators tried to keep SRU#2 running by lighting it with sweet fuel gas, they were unsuccessful and SRU#2 had to be shut down. Because there was no acid gas in the system, no flaring of Acid gas occurred. The only emission exceedance was at the TGTU Incinerator as the SRU's shut down.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- All units were put into circulation or shut down

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Loss of Cheyenne's sub-station caused city-wide electricity loss.

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Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
None – All emergency shutdown/circulation procedures were followed for event outside of the refinery's control.	NA	NA

STIPULATED PENALTY CALCULATIONS

The root cause of this tail gas incident was subject to Paragraph 76a(i) - a sudden and infrequent event, not reasonably preventable through the exercise of good engineering practices, then that cause shall be designated as an agreed-upon Malfunction for purposes of reviewing subsequent events. Stipulated penalties shall not apply.

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11/2/09

RELEASE REPORT FOR 10/24/2009

HYDROCARBON FLARING INCIDENT

Release Start Time: 18:57
Release Start Date: 10/24/09

Release End Time: 19:21
Release End Date: 10/24/09

Flaring/ Release Duration: 24 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 0.3 tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On October 24, 2009, Coker Compressor C-407 shutdown to due low lube oil level. The sight glass for the lube oil did not show a problem. The compressor would not immediately restart. Operators were able to add oil and restart the compressor.

There is a separate oil tank which feeds the lube oil to the compressor. This system was blocked in and therefore no lube oil was able to make it to the compressor.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- At the time of the event, the Coker was at reduced rates, which was further reduced after the event began
- Operators started prepping C-408 for startup at 19:15 in case C-407 would not come back online.

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Operator error caused the oil feeding the lube oil on C-407 to remain closed, which eventually shut down the compressor.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
Train operators on the oil tank	10/24/09	11/6/09
Warning signs for the operators	10/24/09	10/27/09
Procedure to include opening of the oil line prior to startup of C-407.	10/24/09	11/15/09

STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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1/20/2010

RELEASE REPORT FOR 11/20/09

HYDROPROCESSING

Release Start Time: 12:00 am
Release Start Date: 11/20/2009

Release End Time: 8:40 am
Release End Date: 11/20/2009

Release Duration: At least 8 hours

Estimate of Quantity Emitted: 80 lbs H_2S

Prepared by: Kelli Wilber

SUMMARY OF EVENT

The fixed hydrogen sulfide (H_2S) ambient alarms in the Hydroprocessing Area were intermittently alarming the morning of Friday, November 20, 2009. After surveying much of the Hydroprocessing area with portable gas detection equipment, personnel climbed TK103 (Sour Water Tank) stairs at 8:05 am. Near the top rim of the tank, the equipment went into alarm with a reading of 11ppm H_2S. A visual inspection revealed vapors escaping from the tank roof seal in the northwest quadrant of the tank roof.

After all areas were notified and directed to check the status of connected sour water transfer systems in their respective units, it was discovered that the source of the problem was located at the Coker Unit.

Emergency response activities were initiated:

- Laramie County Sheriff Dept. was requested at 8:30 AM to assist and close Campstool Road just North of the refinery – Reopened @ 9:18AM
- Laramie County Emergency Management Agency (LCEMA) was notified and was in contact with Cheyenne School District. The Cheyenne School District chose to contact two nearby elementary schools. The schools were instructed to bring children inside and turn off HVAC systems (shelter in – place).

Monitoring activities:

- Fenceline air monitoring was conducted, highest level reported was 9ppm H_2S
- Community air monitoring was conducted, highest reading was 2.8 ppm south of the VFW building on Nationway.
- WDEQ met with Frontier personnel and also conducted an offsite air monitoring survey in addition to a downwind odor survey.

MITIGATING ACTIONS

Steps taken to limit the duration and /or quantity of emissions:

Onsite Mitigation

- A layer of foam was applied to TK103 to help with residual vapor suppression and for added safety against ignition hazards. D-732 high pressure receiver sour water boot level controller was isolated.

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ROOT CAUSE ANALYSIS

ROOT CAUSE: The sour water boot level control for the Coker high pressure receiver (D-732) was open because the level indication froze above the set point, resulting in the level control valve opening, thus sending accumulated sour water, unstabilized naphtha, and olefin directly to TK103.

Contributing factors

- A temporary fix of routing Coker sour water directly to TK103 on same pipe used to transfer sour water tank to tank bypassed the SWS Unit Degassing Drum
- The level indication problems on the High Pressure Receiver D-732 water boot, was on ongoing problem which was steamed regularly
- Prior to this incident, roof seal damage on TK103 was noted on the annual tank inspection (11/10/09) and had not yet been repaired. (The repair due date was 12/25/09).

Table 1: Corrective action implementation schedule

Corrective Actions	Commencement Date	Completion Date
Repair tank seal	11/10/09	12/18/09
Repair Coker unit sour water line transfer	8/13/09	1/27/09
Develop procedure to steam out level bridle for D-732 water boot	11/20/09	11/20/09

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1/14/10

RELEASE REPORT FOR 11/21/2009

TAIL GAS/ HYDROCARBON FLARING INCIDENT

Release Start Time: 7:40 AM
Release Start Date: 11/21/09
Release End Time: 11:00 PM
Release End Date: 11/21/09
Flaring/Release Duration: 15 hours 20 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 4.7 tons

TGTU Incinerator CEMS Data shows an exceedance for 3 hours which totaled 610 lbs SO2 (for tail gas emissions)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On November 21, 2009, at approximately 7:40 am, Frontier experienced a power loss in the external power supply (Cheyenne Light Fuel and Power). The power interruption shut down all of the boilers supplying steam to the refinery and activated the steam contingency plan. As a result, much of the refinery shut down and flaring of off gases occurred. There were four main sources of emission exceedances during this outage that were not preventable due to the sudden loss of power to the entire facility: Coker, Crude, Sulfur Recovery Plant and FCCU.

The Coker FGRU lost power during a blowdown cycle and emissions were sent directly to the Coker Flare, which resulted in the emission of 630 lbs SO_2.

The Crude VRU shut down and off-gas was flared for 190 minutes in the Main Flare. This resulted in the emission of 290 lbs of SO_2.

The FCCU Wet Gas Compressor lost power and FCC wet gas was flared in the Main Flare until power was restored and the FCC was back online and stable. This resulted in emissions of 8, 350 lbs SO_2 for the 410 minutes of flaring. In addition, the CO CEMS showed exceedances which totaled 290 lbs CO during the event.

The Sulfur Recovery Plant shutdown immediately following the outage, and the small amount of acid gas in the system was released (72 lbs SO2) to the Main Flare. In addition, the emission exceedances from the Incinerator lasted for approximately 3 hours and totaled 140 lbs SO_2.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- All units were put into circulation or shut down, which was consistent with the steam contingency plan following the loss of a boiler

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Loss of external power supplied by Cheyenne Light, Fuel and Power due to a switch outside of the plant boundaries.

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Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
None – All emergency shutdown/circulation procedures were followed for event outside of the refinery's control.	NA	NA

STIPULATED PENALTY CALCULATIONS

The root cause of this tail gas incident was subject to Paragraph 76a(i) - a sudden and infrequent event, not reasonably preventable through the exercise of good engineering practices, then that cause shall be designated as an agreed-upon Malfunction for purposes of reviewing subsequent events. Stipulated penalties shall not apply.

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02/01/2010

RELEASE REPORT FOR 12/3/2009

Hydrocarbon Flaring Incident

Release Start Time: 5:45 am
Release Start Date: 12/3/2009

Release End Time: 20:18 am
Release End Date: 12/4/2009

Flaring Duration: 1009 minutes
Release Duration: 38 ½ hrs

Estimate of Quantity of Sulfur Dioxide Emitted: 0.6 Tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

Beginning on the morning of December 3, 2009, the Crude Unit experienced a series of upsets which continued through the evening on December 4th due to extreme cold temperatures. The upsets caused the Crude Heater, 25-H-1101, to shut down. After the heater shut down, the Crude VRU compressor, 25-C-0402A froze, which subsequently shut down the Crude VRU. Crude off-gas usually processed in the VRU was sent directly to the Main Flare intermittently during this time frame. The compressor was sufficiently thawed and it was back online by 10:50 am on December 3rd. The Crude Unit was not stable until the evening of December 4th due to the continued cold temperatures.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- A steam lance was placed on the Crude VRU compressor in order to thaw the unit and get it restarted.
- Crude charge was reduced to minimum until the Crude VRU compressor was brought online and stable.

ROOT CAUSE ANALYSIS

ROOT CAUSE: Although the Crude VRU compressor has an insulation blanket, the protection from the extreme cold temperatures was not adequate when the Crude Heater, 25-H-1101, shut down from the weather conditions.

Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
More robust insulation and steam tracing for the compressor will be placed on the Crude VRU compressor, 25-C-0402A	12/4/09	12/31/09

STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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01/20/2010

RELEASE REPORT FOR 12/7/2009

Hydrocarbon Flaring Event

Release Start Time: 11:55 pm
Release Start Date: 12/7/2009

Release End Time: 1:00 am
Release End Date: 12/8/2009

Flaring / Release Duration: 42 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 1.2 Tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

At approximately midnight on December 7, 2009, the #3 Boiler shutdown due to moisture in the instrument air causing the flame sensors, or "fire eyes" to fog up. This caused an erroneous fault reading which shut #3 Boiler down. Because of the extreme cold temperatures that evening, the refinery needed the steam input of this boiler and was faced with implementing the steam contingency plan to avoid a complete plant shut down. The FCCU Unit could not maintain some of the pumps, therefore operators shut down the FCCU Wet Gas Compressor (WGC) to sustain the rest of the unit during reduced steam production.

By 12:05, #3 Boiler was restarted and the FCCU WGC was restarted at 12:55am. While the WGC was down, FCCU wet gas was sent directly to the Main Flare for combustion.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- The Steam contingency plan was immediately put into place to preserve as much of the plant as possible.
- #3 Boiler was restarted as soon as possible to regain the necessary steam for the plant.
- The moisture in the instrument air which caused the shutdown of #3 boiler was removed by purging the instrument air system.

ROOT CAUSE ANALYSIS

ROOT CAUSE: #3 Boiler accumulated moisture in the instrument air fogging up the fire eyes which caused the boiler to shut down. The moisture was caused by a restriction in the system at a broken air flow indicator.

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Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
Remove broken air flow indicator to the fire eyes	12/7/09	12/7/09
Change the desiccant on the instrument air dryer, and place on a yearly schedule to change out.	12/7/09	12/10/09

STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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02/12/2010

RELEASE REPORT FOR 12/16/2009

Hydrocarbon Flaring incident

Release Start Time: 9:32 am
Release Start Date: 12/16/2009

Release End Time: 11:15 am
Release End Date: 12/16/2009

Flaring Duration: 83 minutes
Release Duration: 103 minutes

Estimate of Quantity of Sulfur Dioxide Emitted: 1.1 Tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

The morning of December 16, 2009, an instrument technician was conducting maintenance on a plug in the impulse line of Indeck Boiler #1 level bridle. The Crude operator switched the input level controller into manual control in order for the impulse line to be removed from service. Immediately, the output level controller signal dropped significantly, which caused the boiler to shut down on low steam drum level.

The sudden loss of the boiler forced the plant into the steam contingency plan. The boardman for the FCCU was not able to control the unit properly with the reduction in steam and pulled feed in the FCCU. This caused the wet gas compressor (WGC) to shut down and wet gas began flaring at 9:44 am. Feed was re-introduced into the FCCU at 10:15 am and the WGC was on-line shortly after 11:00 am. At 11:15 am , wet gas flaring at the Main Flare ceased.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Immediately following the loss of the boiler, the refinery began the steam contingency plan
- The FCCU boardman pulled feed to the unit to prevent a potentially larger excess emission / flaring event.

ROOT CAUSE ANALYSIS

ROOT CAUSE: There was a communication failure between operations and maintenance which led to the inability to prevent the boiler shutdown.

Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
Develop a contingency plan for the plant when critical equipment is being worked on by Maintenance to alleviate unnecessary shut downs if the critical equipment fails.	12/17/09	12/18/09
Ensure bypass procedures are adequate within the computer logic	12/17/09	4/1/10

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STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

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02/24/2010

RELEASE REPORT FOR 12/25/2009

Hydrocarbon Flaring Event

Release Start Time: 9:30 am
Release Start Date: 12/25/2009

Release End Time: 14:48 pm
Release End Date: 12/29/2009

Flaring Duration: 995 minutes
Release Duration: 4 days

Estimate of Quantity of Sulfur Dioxide Emitted: 1.4 Tons

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On the morning of December 25, 2009, there was a significant increase of hydrocarbon flow from Hydroprocessing which adversely impacted the Crude Unit. Eventually, the Crude VRU could not process all of the increased hydrocarbon flow and the Crude VRU compressors shut down. Subsequently, the compressors shutting down caused the Crude VRU to also shut down. Crude off-gas was sent to the Main Flare for combustion while the VRU was offline. Flaring from the specific event ceased by 3:00 pm, but because the VRU was still unstable intermittent flaring occurred through December 29th.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Feed to the Crude was reduced to minimum until the unit was stable
- Scheduled a change out of the Crude compressor. (25-C-0402A)

ROOT CAUSE ANALYSIS

ROOT CAUSE: The excess hydrocarbon saturated the Crude VRU compressors' water seals, which caused minor cavitation on the impellar and cone, eventually causing the compressors to shut down.

ALTERNATIVES TO ADDRESS ROOT CAUSE: All units were required to trace the source of the excess hydrocarbon, however no one was able to determine where the excess flow originated.

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Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
Develop a checklist of all sour water streams which drain to the system. During future high flow, Shift Supervisors must have each unit check each drain on this list.	12/26/09	2/9/10
Split the VRU compressors from the existing service to better handle excess hydrocarbon. One compressor takes the flow from the Crude Vacuum Tower and the other compressor manages all the sour water degassing streams.	12/26/09	2/24/10

STIPULATED PENALTY CALCULATIONS

Stipulated penalties for Hydrocarbon Flaring events are considered a deviation from NSPS Subpart J, with a daily fine of $500. FRI has implemented the corrective actions from this event to prevent a recurrence.

Section D – HEATERS AND BOILERS

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Heaters and Boilers	44	Submit NOx control plan and updates	9/22/09	The NOx control plan for FRI and FEDRC was previously submitted with the first semi-annual report.	X	8/31/2009	
Heaters and Boilers	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report.	X		D

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 3Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	0.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.0%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 4Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	2.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	2.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.1%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. **Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary** including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary Fuel Gas H2S ppm (3-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	11/18/2009 12:00:00 PM	11/18/2009 2:00:00 PM	2	Cylinder Gas Audit	
		Total Hours Monitor Unavailable	2		

Section E – LDAR

LDAR

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	142	Written LDAR program for refinery to comply with all applicable federal and state regulations (Submit to EPA and WDEQ)	2/28/10	The final written LDAR program is attached to this semi-annual report.	X		E
LDAR	144, 170.a.i	Submit the initial written refinery-wide LDAR program	2/28/10	The final written LDAR program is attached to this semi-annual report.	X		E
LDAR	148, 170b	Certify refinery is 1) in compliance, 2) completed corrective action items, 3) is on a compliance, 4) all equipment has been identified	11/21/09	FRI received the final draft audit report on August 21, 2009.	X	11/20/2009	
LDAR	156, 170.a.iii, 216.e	Report that FRI has chosen the initial attempt at repair for our additional VOC monitoring chosen	5/25/09	The notification that FRI chooses to comply with the initial attempt at repair was previously submitted.	X	4/15/2009	
LDAR	170.a.ii, 216.e	Certification of the implementation of lower leak definitions and monitoring frequencies	8/31/09	FRI has been using the lower leak rates as the compliance target from Date of Entry. Monitoring frequencies for valves and pumps are compliant with the Consent Decree.	X	8/31/2009	
LDAR	170.a.iv, 216.e	Certification of LDAR data QA/QC program	8/31/09	FRI LDAR Coordinator has a rigorous QA/QC program which has been followed since Date of Entry.	X	8/31/2009	
LDAR	170.a.v, 216.e	Naming of LDAR Coordinator	8/31/09	The naming of the LDAR Coordinator, Kenton Stobbe, occurred prior to Date of Entry in the organization chart.	X	8/31/2009	
LDAR	170.a.vi, 216.e	Certification new valve and pump tracking system for new valves and pumps added during maintenance and construction	8/31/09	LDAR program has been implemented as part of the Management of Change (MOC) process.	X	8/31/2009	
LDAR	170.a.vii, 216.e	Certification of calibration drift assessment procedures	8/31/09	LDAR Contractor completes a daily work record document that the technicians complete and sign off on daily drift checks.	X	8/31/2009	

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	170.a.viii, 216.e	Certification of "delay of repair" procedures	8/31/09	All "delay of repair" valves have a signed form from the Unit Superintendent that are completed within the specified time frame. During the reporting period, there were 9 valves that were applicable to the "drill and tap" method.	X	8/31/2009	
LDAR	170.a.ix, 216.e	Report of the implementation of "chronic leaker" program	2/28/10	Frontier Refining Inc. implemented the chronic leaker program that follows the FRI Site Plan. The LDAR Coordinator manages an evergreen list of all non control valves that have leaked over 10,000 ppm. Frontier tracks all valves on this list for statistics such as manufacturer, type, size, ect and assess future rates of failure for "like kind" valves. Frontier Refining will replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification.	X		
LDAR	152, 216.e	Implementation of any actions necessary to correct non-compliance from any audit findings	Varies	FRI received the final audit and submitted the corrective actions schedule with the final audit.	X	11/20/2009	

Frontier Refining Inc.

LDAR Written Plan

Frontier Refinery
Cheyenne, Wyoming

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1.0 Purpose

Frontier Refining Inc.'s written LDAR plan describes LDAR program requirements and personnel responsibilities necessary to facilitate compliance with applicable federal and state LDAR regulations as well as minimize equipment leak emissions through the employment of LDAR Best Management Practices. Specific procedures that support implementation requirements of this plan are identified in Appendix A of this plan.

2.0 Scope

This plan applies to Frontier refinery personnel with direct LDAR responsibilities, operations and maintenance personnel with aspects of their job duties affected by applicable LDAR program requirements, and contract employees who perform LDAR work at the refinery. This plan describes the Frontier refinery-wide LDAR program implemented consistent with Consent Decree Civil Action No. 09-CV-1032-WEB-KMH

3.0 Reference Documents/Regulations

This section identifies reference documents and/or regulations that may be relied upon to clarify requirements of this plan.

Plan Appendix Summary

Appendix A – LDAR Program Implementation Procedures

Appendix B – Frontier Refinery Process Unit Summary

Appendix C – Equipment Monitoring and Leak Definitions

Appendix D – LDAR Leak Logic Flow Diagrams

Appendix E – LDAR Field Work Daily Record and QA/QC Forms

Appendix F – Consent Decree LDAR Elements Summary

Regulatory References

40 CFR 60, Subpart A, General Provisions for New Source Performance Standards (NSPS).

40 CFR 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006.

40 CFR 60, Subpart GGGa, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006.

40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced after January 5, 1981, and on or before November 7, 2006.

40 CFR 60, Subpart VVa, Standards of Performance for Equipment Leaks of VOC in Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced after November 7, 2006.

40 CFR 61, Subpart A, General Provisions for National Emission Standards for Hazardous Air Pollutants (NESHAP)

40 CFR 61, Subpart J, National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene.

40 CFR 61, Subpart V, National Emission Standards for Equipment Leaks (Fugitive Emission Sources)

40 CFR 63, Subpart A, General Provisions for National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT)

40 CFR 63, Subpart CC, National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.

40 CFR 63, Subpart F, National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

40 CFR 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

4.0 Definitions

Chronic Leaker - Any leaking non-control valve that leaks above 10,000 ppm twice in any consecutive four (4) quarters, unless the component had not leaked in the twelve consecutive calendar quarters immediately prior to the next process unit turnaround.

Component – Material processing equipment that are potential sources of fugitive emissions of volatile organic compounds (VOC), benzene, volatile hazardous air pollutants (VHAPs) and organic hazardous air pollutants (HAPs).

Connector - Flanged, screwed, or other joined fittings greater than or equal to 1-inch in diameter used to connect two pipelines or a pipeline to a piece of equipment. Welded connections are not included in this definition.

Date of Entry – March 26, 2009

Date of Lodging – February 10, 2009

Delay of Repair (DOR) Log - A record of all leaking components that were not repaired within specified time frames regardless of whether or not the components were taken out of service.

Electronic Database - Any software that stores LDAR monitoring information and allows such information to be queried and/or retrieved.

Enhanced First Attempt at Repair on Valves - An initial attempt taken to stop light liquid or vapor valve leaks, excluding control valves that are leaking in excess of 200 ppm.

Equipment – Equipment, for the purposes of this plan, includes the following, by service type:

Equipment – Service		
"In VOC"	"In HAP"	"In Benzene"
Valve	Valve	Valve
Pump	Pump	Pump
Pressure Relief Device	Pressure Relief Device	Pressure Relief Device
Sampling Connection System	Sampling Connection System	Sampling Connection System
Open-ended Valve or Line	Open-ended Valve or Line	Open-ended Valve or Line
Flange or Other Connector		Connector
Compressors	Compressor	Compressor
	Instrumentation System	
		Surge Control Vessel
		Bottoms Receiver

Existing Affected Source – The group of all equipment within a process unit built prior to January 4, 1983 and "modified or reconstructed"[1] or incorporated into EPA consent decree (Civil Action No. 09-CV-1032-WEB-KMH) after January 4, 1983.

[1] As defined in §60.14 and/or §60.15 of NSPS, Subpart A.

Extraordinary Efforts at Repair on Valves - Light liquid or vapor valves, other than control valves, leaking at a rate of 10,000 ppm or greater that can not be repaired by non-intrusive methods shall use the "drill and tap" or similarly effective method to repair the leaking valve, rather than placing the valve on the "delay of repair' list, unless defined exceptions and/or qualifications are met that warrant the valve to be placed on "delay of repair".

Facility – Facility or refinery refers to the petroleum refinery located in Cheyenne, Wyoming, owned and operated by Frontier Refining Inc.

Initial Attempt at Repair - An initial attempt to stop equipment leakage by tightening packing nut or other non-intrusive method. This attempt must be within 5 days of determining the equipment is leaking for the purpose of stopping or reducing leakage to the atmosphere using best practices.

FRI – Frontier Refining Inc.

In Benzene Service – A piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 wt% benzene.

In HAP Service – A piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 wt% of organic hazardous air pollutants (HAPs). A list of refinery HAPs regulated under MACT, Subpart CC, is provided below:

Benzene	Dibromoethane (1,2)	Naphthalene
Biphenyl	Dichloroethane (1,2)	Phenol
Butadiene (1,3)	Diethanolamine	Toluene
Carbon disulfide	Ethylbenzene	Trimethylpentane (2,2,4)
Carbonyl sulfide	Ethylene glycol	Xylene (mixed isomers[b])
Cresol (mixed isomers[b])	Hexane	xylene (m-)
Cresol (m-)	Methanol	xylene (o-)
Cresol (o-)	Methyl ethyl ketone	xylene (p-)
Cresol (p-)	Methyl isobutyl ketone	
Cumene	Methyl tert butyl ether	

In Heavy Liquid Service - A piece of equipment that is not in light liquid service or gas/vapor service.

In Gas/Vapor Service - A piece of equipment containing process fluid that is in the gaseous state at operating conditions.

In Light Liquid Service - A piece of equipment where the process fluid is a liquid at operating conditions and the vapor pressure of 20 wt% of the mixture components is greater than 0.0435 psi (0.3 kPa) at 68°F (20°C) or if the percent evaporated is greater than 10 % at 302°F (150°C) as determined by ASTM Method D86–78, 82, 90, 95, or 96.

In VOC Service – A piece of equipment contains or contacts a process fluid that is at least 10 wt% VOC.

LDAR - Leak detection and repair.

LDAR Coordinator - A Frontier Refinery employee designated by the Environmental Manager as having day-to-day responsibility of managing monitoring technicians, retagging or re-describing components, and having the authority and responsibility to implement improvements to the LDAR program.

LDAR Regulations or Requirements – LDAR regulations or requirements refer to applicable regulations codified in:

- 40 CFR 60, Subpart GGG (Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006),
- 40 CFR 60, Subpart GGGa (Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006),
- 40 CFR 61, Subpart J (related to National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene),
- 40 CFR 61, Subpart V (related to National Emission Standard for Equipment Leaks (Fugitive Emission Sources)), and
- 40 CFR 63, Subpart CC (related to National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries).

LDAR Leak Tag - A tag applied to components determined to be leaking above an applicable leak definition or determined to be leaking by audio, visual or olfactory means. These tags shall be attached whenever LDAR personnel discover hydrocarbon leaks on equipment covered under this plan.

LDAR Personnel - Frontier Refinery or contract personnel, such as monitoring technicians, database users, and QA/QC personnel, with job responsibilities related to routine scheduling, monitoring, and repair of regulated equipment components.

Leak Definition – A leak is identified if instrument monitoring shows that the concentration (ppm) is greater than the leak definition defined in Section 9.1 and/or Appendix C.

Method 21 - 40 C.F.R. Part 60, EPA Reference Test Method 21 for VOC instrument monitoring.

Monitoring Technician - individual charged with performing Method 21 on designated components. Monitoring technicians may be FRI or contract personnel.

New Affected Source – The group of all equipment within a process unit built after January 4, 1983.

Next Process Unit Turnaround - a shutdown of a process unit that: (1) is a regularly scheduled shut down of a process unit for planned inspection, testing, maintenance, and repair of equipment within a process unit, (2) typically occurs every 3 to 5 years and is scheduled at least 6 months in advance, (3) is not a "Process Unit Shutdown" (as defined in §60.481), and (4) is not an unplanned emergency or partial process unit shutdown.

Open Ended Line (OEL) - means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Permanent LDAR Tag - A metal or plastic tag affixed on or near equipment with instrument monitoring requirements.

Process Unit[2] - Process unit, as defined in §60.591, means the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. Process unit includes any feed,

[2] For purposes of this plan, since process unit is not defined in the FRI Consent Decree, the current definition contained in 40 CFR 60.591 has been adopted although §60.590(e) currently describes a stay in the standards as follows:

"Owners or operators are not required to comply with the definition of "process unit" in this subpart until the EPA takes final action to require compliance and publishes a document in the Federal Register. While the definition of "process unit" is stayed, owners or operators should use the following definition: Process unit means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product."

intermediate and final product storage vessels, product transfer racks and connected ducts and piping. A summary of process units is contained in Appendix B.

Regulated or Regulated Components - For purposes of this procedure, the terms "regulated" or "regulated components" means equipment, in light liquid or gas/vapor service, with fugitive emission monitoring, recordkeeping and/or or reporting requirements defined by applicable State rules, Federal rules, or agreed orders (or equivalent). In general, these are components that meet regulatory applicability definitions and have the potential to leak VOCs, HAPs, and benzene.

Routine or Routine Components - For purposes of this plan, the terms "routine" or "routine components" means equipment with monthly or quarterly Method 21 monitoring frequencies under applicable LDAR Regulations.

Shutdown - A scheduled or unscheduled event that stops production from a process unit or part of a process unit. A unit must be idle for at least 24 hrs for the event to be classified as a shutdown.

Type I Monitoring – Monitoring where leaks are determined based on measured VOC concentration.

Type II Monitoring – Monitoring where leaks are determined when referenced to an ambient background VOC concentration.

Unit Leak Rate - The unit leak rate is the percentage of leaking components in a given unit. The unit leak rate is determined by dividing the number of components for which leaks are detected, including the number of un-repairable components, by the total number of LDAR components in a given unit and then by multiplying by 100.

VHAP - Any VOC that is also listed in federal regulations as a hazardous air pollutant (HAP).

Volatile organic compound (VOC) - Any reactive organic compound which participates in atmospheric photochemical reactions.

Volatile - Any fluid which has a vapor pressure of 1.5 psi absolute or greater under actual flow or storage conditions.

5.0 Responsibilities

This section, in addition to other program implementation responsibilities referenced in applicable Appendix A procedures, identifies facility operational accountability and/or responsibilities for LDAR program execution.

5.1 FRI LDAR Non-Contract Personnel

5.1.1 LDAR Coordinator

- Periodically review the plan and support procedures and provide recommended changes to the Environmental Compliance Manager.
- Evaluate refinery performance as compared to leak rate goal.
- Identify barriers to the successful implementation of this plan (and associated procedures) and work with stakeholders to identify solutions.
- Review several LDAR monitoring budgets.
- Provide a program summary to FRI management at least annually.
- Coordinate and/or provide training to all FRI employees as prescribed within this plan.
- Ensure that all training curriculum adequately fulfills the requirements for this plan.
- Ensure personnel complete, at a minimum, the weekly LDAR inspections for detecting leaks by sight, sound, and smell.
- Ensure all Monitoring Technicians are trained as required by this plan.
- Ensure all contract personnel with LDAR program related job functions receive a copy of FRI's Consent Decree.
- Perform periodic QA/QC as noted in Section 11.0 of the plan.
- Facilitate solutions for Chronic Leakers.

- Ensure new components installations are incorporated into the LDAR program consistent with MOC guidelines described in section 10 of plan.
- Ensure all scheduled monitoring is performed.
- Provide Turnaround Planner and Maintenance Planner a regular update of leak repair status and copies of the shutdown and delay of repair logs.
- Ensure monitoring of visual leaks and open ended lines is completed.
- Authorize additional resources if necessary to complete repairs within prescribed time period.
- Require Unit Superintendents to sign off on delay of repair items that require process unit shutdown.
- Complete and signoff on delay of repair forms when needed.
- Generate work requests and give sufficient time to allow repairs within the prescribed time period.

5.1.2 Area Operations Manager

- Ensure all assigned personnel completed periodic LDAR training by this plan.
- Ensure personnel complete the weekly LDAR inspections for leaks by sight, sound and smell.
- Ensure all LDAR work orders are done within prescribed time periods of this plan.
- Ensure all shutdowns or delay of repair components are being repaired on the next outage scheduled or unscheduled if outage is more than 24 hours.

5.1.3 Operations Superintendent

- Ensure that all unit personnel completed periodic LDAR training required by this plan.

- Ensure personnel complete at a minimum the weekly LDAR inspections for leaks detected by sight, sound or smell.

- Ensure all weekly pump seal inspections are completed and weekly pump seal inspection sheets are completed, signed off and returned to the operation clerk by Wednesday of the week.

- Ensure FRI's open end line policy is being followed by unit Operators.

- Determine if leaking components can be put on "Delay of Repair" list and complete form with signature for "Delay of Repair" when needed.

- Track all "Delay of Repair" components with their unit to ensure they are repaired during next outage that is over 24 hours, scheduled or unscheduled.

- Ensure LDAR components planned for maintenance work are accessible to maintenance personnel.

- Authorize additional resources if necessary to complete repairs within the prescribed time period.

5.1.4 Maintenance Superintendent

- Supervises repairs of leaks within prescribed time period.

- Establish lines of communication between the LDAR Coordinator to alert LDAR Coordinator the maintenance work has been completed.

- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.5 Maintenance Planner

- Plan all repair attempts to leaking components within prescribed time period.

- Look at leaking component before scheduling repairs to ensure all necessary parts are available to make repair attempt.

- Plan and schedule lifts, scaffold, and all equipment needed for access.

- Generate work orders from the work request. Allowing sufficient time for repair and re-monitor component.

- Establish lines of communication between the LDAR Coordinator to alert LDAR Coordinator the maintenance work has been complete.

- Ensure all assigned repair personnel complete periodic LDAR training.

5.1.6 Maintenance Systems Administrator

- Coordinate all work orders and plan repairs for maintenance, to allow repair within the prescribed time period.

- Track work orders for completeness and input work order closing dates into maintenance tracking system EMPAC.

- Inform LDAR Coordinator if time frames are missed via email.

- Contact LDAR Coordinator that maintenance work has been performed on leaking component.

- Ensure assigned personnel complete periodic LDAR training required by the plan.

5.1.7 Turnaround Planner

- Track all delay of repair components to ensure they will be addressed during next scheduled or unscheduled outage lasting more than 24 hours.

- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.8 Design Engineers

- Design units with less than 3% difficult to monitor components.

- Engineer equipment to lower emissions.

- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.9 Maintenance Personnel

- Follow written work request instructions.
- Perform maintenance attempts on all leaking components by tightening valve packing, tightening bonnet bolts, and adjusting seals, etc.
- Fill out all areas on leak tag with date, who performed work with individuals initials, and what work was performed to repair the leak.
- Perform necessary maintenance within time frame.
- Complete all paperwork for work orders and return to Maintenance System Administrator as soon as work is completed.
- If fixing the leak requires adding another valve, contact LDAR Coordinator to notify of the new addition to system.
- Do not disturb, remove, or damage round blue I.D. tag. If component is removed, reattach round blue tag to new component before job is complete.
- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.10 Unit Operators

- Complete on a weekly basis the OCR for visual pump seal inspection sheets.
- Perform open end line surveys at least once during each daylight shift and complete bottom Environmental section of the Daily Processing Unit. Turnover Report with how many OEL's were found and corrected during shift in accordance with FRI-LDAR-OEL procedure.
- Initiate work requests for all OEL's that operations could not correct during their shift and contact LDAR Coordiantor with work request numbers for tracking.
- Monitor for leaks visually by sight, sound or smell. If there is a suspected leak contact LDAR Coordinator at X8839.

- Work with LDAR Contractors to resolve OEL's, steaming pumpseals, and other concerns they might find.

- Contact LDAR coordinator if any piping changes in unit that are completed by operators, (i.e., adding valves or other piping).

- (Do not disturb round blue I.D. tags or green leaker tags). Remove red OEL only if the OEL has been corrected.

- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.11 Operation Clerk

- Maintain, distribute, and collect weekly OCR for weekly visual pump seal inspections.

- Supply LDAR Coordinator with completed and signed weekly OCR for visual pump seal inspection.

- Ensure assigned personnel complete periodic LDAR training required by this plan.

5.1.12 Reliability Superintendent

- Schedule contractor when needed for drill and tap valves within the prescribed time period, (7 days after discovering leak >10,000ppm).

5.2 FRI LDAR Contract Personnel

5.2.1 Contractor Site Manager

- Perform periodic QA/QC as noted in Section 11.0 of the plan.

- Ensure all scheduled monitoring is performed.

- Monitor visual leaks.

- Establish lines of communication between the LDAR Coordinator, to allow prompt monitoring, after maintenance work was performed on leaking components.

- Conduct unit inspections to ensure all I.D. tags, leak tags and shutdown tags are in place and new equipment has been inventoried.

- Complete daily work record and QA.

- Ensure all calibration records are completed and forwarded to LDAR Coordinator by the end of every month.

- Ensure all calibration gases are within regulation specifications and are available.

- Audit monitoring personnel performance.

- Ensure all Monitoring Technicians are trained as required by this plan.

5.2.2 LDAR Technician

- Perform Method 21 monitoring which includes monitoring, instrumentation, and calibration.

- Complete daily work record and QA.

- Perform simple maintenance such as 1st attempt at repair and document repairs.

- Complete and install Leak Tags on all compliance leaks, and remove leak tags when appropriate.

- Monitor for visual leaks by sight, sound and smell.

- Communicate changes in routine components to LDAR Coordinator. Complete and install Leak Tags on all compliance leaks, and remove leak tags when appropriate.

- Complete all monitoring with electronic data logger, except when necessary or more feasible to use paper logs with technician name, the date, the daily start and end time for monitoring and machine serial number.

5.2.3 Contractor For LDAR Services

- Ensure that assigned personnel completed periodic LDAR training required by this plan.
- Communicate with LDAR Coordinator when work has been completed and with any issues.

6.0 Regulated Component Documentation and Leak Definitions

6.1 Regulated Components

LDAR standards for all refinery process units. Affected process units (and/or ancillary equipment) covered by this plan and/or applicable regulations are summarized in Appendix B. Additionally, the refinery has implemented an enhanced monitoring and repair program for valves and pumps consistent with best management practices, as described in Section 9.0 of this plan.

6.2 Regulated Component Master Component List(s)

A master equipment list for regulated light liquid and/or gas components identified in the field with a permanent LDAR tag is accessible through the refinery's electronic LDAR database. Regulated equipment not equipped with a permanent LDAR tag are identified with color coded Process Flow Diagrams (PFDs) and Piping and Instrumentation Diagrams (P&IDs) or are included in the electronic LDAR database.

The facility's electronic master component (or equipment) list (MEL) is currently accessible to FRI personnel via the "LeakDAS V4" database. The MEL is accessed at the "View Reports" screen located within the "Reports" menu of LeakDAS.

6.3 Leak Definitions and Leak Rate Goal

The facility is adhering to the leak definitions described in Section 9.0 and Appendix C. The refinery's process units' initial leak rate goal for calendar year 2009 was base-lined utilizing 2008 calendar year monitoring results. The LDAR Coordinator established leak rate goals for specific process units are documented in Appendix B. The facility-wide weighted average leak rate goal for light liquid and vapor service valves is 3 %.

Consistent with the refinery's capital budget schedule/program, future leak rate goals and/or adjustments beyond the initial leak rate goal determination will be assessed annually based on process unit monitoring data collected and chronic leak analysis for the 12 months prior to December 31st of each year.

7.0 Component Monitoring Data Acquisition and Storage

Consistent with consent decree requirements, Frontier's LDAR monitoring personnel will utilize an electronic database and dataloggers (or equivalent) to record and store facility monitoring results. Specific monitoring technician procedures describing datalogger operations, data transfer, and software installation are identified in Appendix A.

7.1 Electronic Database

An electronic database will be maintained for storing and reporting LDAR monitoring data for affected components. This database is currently housed in the Frontier LDAR Coordinator's PC.

7.2 Electronic Data Collection

LDAR monitoring personnel are expected to make maximum use of dataloggers and/or other electronic data collection devices for data collection for routine LDAR monitoring.

7.3 Electronic Data Transfer

On a daily basis and/or when contract personnel are onsite conducting monitoring, LDAR personnel will transfer monitoring data from electronic datalogger devices to the electronic database. For all monitoring events in which an electronic data collection device is used, the collected monitoring data will include an accurate time and date stamp for each monitoring event, the monitoring reading, and identifying information for the operating technician and the instrument used in the monitored event.

7.4 Exceptions to Electronic Data Collection and Transfer

Following prior approval from the LDAR Coordinator, paper logs for recording monitoring results may be used where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken), and shall record, at a minimum, the identification of the technician undertaking the monitoring, the date, daily start and end times for the monitoring conducted, each monitoring reading, and the identification of the monitoring equipment. Manually recorded monitoring data shall be transferred to the electronic database within seven days of monitoring.

8.0 Component Monitoring

Procedures for inspecting, certifying, calibrating and maintaining monitoring analyzers as well as procedure for implementing Method 21[3] and Audible, Visual, or Olfactory (AVO) monitoring, amongst other inspection requirements, are identified in Appendix A. Instrument and AVO monitoring frequencies, by component type, and leak definitions are summarized in Appendix C.

8.1 Instrument

8.1.1 Design Specifications and Performance Criteria

[3] EPA Method 21 located on the Dexter web portal as procedure A-006-201A.

LDAR technicians will use a portable monitoring instrument meeting the design specifications and performance criteria of Method 21, Section 6, to detect VOC leaks from affected components.

8.1.2 Performance Evaluations

For contract LDAR personnel, results of the daily calibration assessments and quarterly certifications described in this section are scanned electronically and posted on the Dexter portal within 30 days following the end of each calendar month. After logging in to the Dexter web-portal, the instrument performance evaluations can be accessed in the "Compliance Documents" site reports located in the "Customer" tab.

For non-contract LDAR personnel, results of the daily calibration assessments and quarterly certifications described in this section are retained onsite within the LDAR Coordinator's office filing system.

8.1.2.1 Calibration/Calibration Drift Assessment

LDAR Technicians shall perform an instrument calibration in accordance with Method 21, Section 10.1 prior to monitoring instrument use at the start of each work day.

Prior to data transfer, LDAR technicians shall perform a mid-day and an evening calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, all valves and pumps that were monitored having readings greater than 100 ppm and 500 ppm, respectively, since the last calibration, shall be remonitored.

8.1.2.2 Calibration Precision and Response Time Certifications

LDAR Technicians shall perform an instrument calibration precision and response time determination in accordance with Method 21, Section 8.1.2 and 8.1.3, respectively, utilizing the following frequency.

- Prior to placing the instrument into service.
- Quarterly.
- Following any modification to the sample pumping system or flow configuration that would change the response time.

8.2 Calibration Gas

8.2.1 Gas Specifications

Purchased certified calibration gas mixtures will be utilized with manufacturer's gas concentration, mixture analysis accuracy, and specified cylinder shelf life certifications shall be kept on file with LDAR Coordinator. The LDAR Coordinator is responsible for verifying that calibration gases have not exceeded the certified shelf life and ordering replacement gases. Shelf life documentation is retained onsite within the LDAR Coordinator's office filing system.

8.2.2 Gas Concentrations

Calibration gases currently used by the LDAR technician include the following:

- Zero air (less than 10 ppmv of hydrocarbon in air) and a mixture of methane gas with balance in air;
- 500 ppmv VOC;
- 2,000 ppmv VOC.
- 10,000 ppmv VOC;

- Other – contingent upon the refinery's implementation of lower leak definitions described in Section 9.0 of this procedure.

8.3 Instrument Monitoring Protocol

8.3.1 Type I Monitoring – Leak Definition Based

For each affected component requiring Type I monitoring, the LDAR technician will monitor consistent with Method 21, Section 4.3.1.

8.3.2 Type II Monitoring – No Detectable Emissions

For each affected component requiring Type II monitoring, the LDAR technician will monitor consistent with Method 21, Section 4.3.2.

8.4 Routine Instrument Monitoring

8.4.1 Component Monitoring Frequency

With the adoption of refinery LDAR best management practices, skip period provisions described in NSPS will not be implemented at the Frontier Refinery. Unless the component meets design criteria that exempt the component from routine monitoring, affected components are monitored with the following frequency.

- Pumps in light liquid service
  - Monthly
- Valves in light liquid or vapor service
  - Monthly unless a leak is not detected for 2 consecutive months; otherwise, quarterly;
  - If a quarterly valve is later determined to leak, the valve returns to monthly monitoring until 2 consecutive no leak months are re-demonstrated. NOTE: valves on delay of repair must be monitored monthly.

8.4.2 Monitoring Exempt Design Criteria

8.4.2.1 Pumps in Light Liquid Service

The following pump design specifications exempt the source from monthly instrument monitoring requirements.

- Dual mechanical seal with a barrier fluid system meeting §60.482-2(d) design criteria; or
- Equipped with a closed vent system for capturing and transporting any leakage from the seals; or

8.4.2.2 Valves in Light Liquid or Vapor Service

The following valve design specifications exempt the source from monthly instrument monitoring requirements.

- Unsafe to monitor valves with a written work plan for monitoring when safe to do so; or
- Difficult to monitor valves meeting the requirements of §60.482-7(h).

8.5 Routine Audio, Visual or Olfactory Monitoring

The following components or conditions require Audio, Visual or Olfactory monitoring.

- Pumps in light liquid service
  - Weekly
- Pumps equipped with non-audible alarm sensors on dual mechanical seal barrier fluid systems.
  - Daily
- Compressors not vented to a closed vent system and containing seals with a barrier fluid system not equipped with an audible sensor alarm.
  - Daily
- Atmospheric Pressure Relief Devices equipped with a rupture disk.

- Every 5 days to ensure 5 day rupture disk replacement not required due to a release.

- Closed Vent Systems
  - Hard-pipe construction
    - Annual

8.6 Routine Open Ended Line Monitoring

Monitoring for the existence of potentially open ended lines should be completed consistent with monitoring technician routine component monitoring and day shift operations personnel unit rounds. The procedures for identifying potentially open ended lines, notification and corrective action are identified in Appendix A, Procedure A-006-008.

8.7 Non-Routine Component Monitoring

Non-routine component monitoring events are categorized as "Non-routine Instrument" or "Non-routine Audio, Visual or Olfactory" monitoring. The following components or conditions require Method 21 monitoring at frequencies other than monthly or quarterly.

- Non-detect Compressors
  - Initial and Annual
- Unsafe Valves
  - As frequent as practicable (per written plan)
- Difficult to Monitor Valves
  - Once per calendar year (per written plan) for existing affected sources and new affected sources with less than 3% difficult to monitor valves (see Section 10.3.10).
- Pressure Relief Device not equipped with a rupture disk and not vented to a closed vent system.
  - No later than 5 days following a release

- Closed Vent Systems
  - Hard-pipe construction
    - Initial
  - Ductwork construction
    - Initial
    - Annual
  - Any other components with evidence of a potential leak found by audible, visual or olfactory (AVO) or any other detection method. Personnel detecting a leak by AVO means shall notify the LDAR Coordinator of the leak. The LDAR Coordinator or contract monitoring personnel will identify the leak by hanging a leak tag on the component. Method 21 monitoring is required within 5-days unless the operator chooses to eliminate the leak.

9.0 Leak Definitions and Repair

Procedures for maintaining leak tag inventories, managing delay of repair tags, and qualifying leaking components for delay of repair are identified in Appendix A. Logic diagrams for implementing leak repair requirements are contained in Appendix D.

9.1 Regulatory Leak Definitions

Regulatory leak definitions defined by rule are listed below. If a leak is determined, repair requirements contained in this section must be followed.

- Pumps in Light Liquid Service – other than non-detect.
  - 10,000 ppm or greater.
  - Indication of liquid dripping from pump seal.
  - For pumps equipped with dual mechanical seals, sensor indication of barrier fluid system or seal system failure.
- Valves in Gas or Light Liquid Service – other than non-detect
  - 10,000 ppm or greater

- Compressors – other than non-detect
  - Sensor indication of barrier fluid system or seal system failure.
- Closed Vent Systems, Non-detect Pumps, Non-detect Compressors, Non-detect Valves and Pressure Relief Device not equipped with a rupture disk and not vented to a closed vent system.
  - 500 ppm or greater
- Other Components
  - If chosen option, 10,000 ppm or greater following evidence of a potential leak found by visual, audible, olfactory or any other detection method.

9.2 Enhanced Program (Consent Decree) Leak Definitions

Consistent with Section 6.1, the Frontier Refinery will implement enhanced monitoring utilizing the following leak definitions.

- Pumps in Light Liquid Service
  - 2,000 ppm VOC or greater
- Valves in Gas or Light Liquid Service – excluding pressure relief valves.
  - 500 ppm VOC or greater

9.3 Repair Requirements

9.3.1 General Repair Schedule

For components meeting the leak criteria contained in Sections 9.1, the leak shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. For pumps and valves with leak concentrations greater than Section 9.2 concentrations but less than Section 9.1 concentrations, the leak shall be repaired not later than 30 calendar days after it is detected. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

9.3.2 Pressure Relief Device Schedule

For pressure relief devices equipped with a rupture disk upstream of the pressure relief device, after each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release.

9.3.3 Repair Practices for Valves

Where practicable, first attempt at repair should include the following methods:

- Tightening of bonnet bolts;
- Replacement of bonnet bolts;
- Tightening of packing gland nuts;
- Injection of lubricant into lubricant packing;
- Drill and Tap (Extraordinary Effort)

9.3.4 Enhanced Valve Repair

Any light liquid or vapor valve, excluding control valves, found to be leaking at a rate greater than 200 ppm shall be subject to a repair attempt utilizing the methods, or other practicable means, described in Section 9.3.3. The first attempt at repair and consequent remonitoring shall be conducted within five calendar days of identification. No action is required if it is determined that the leak has worsened unless it is found to leak at a rate greater than its Section 9.2 leak definition, in which case it will be handled as a leaking component under Section 9.3.1. In general, the re-monitoring will be conducted at the time of the repair unless delayed by an unforeseen circumstance. All remonitoring records will be maintained in the LDAR electronic database.

9.4 Regulatory Delay of Repair

In general, Delay of Repair is allowed for leaking equipment under the following conditions:

- If repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.
- Equipment which is isolated from the process and which does not remain in VOC, HAP, VHAP or benzene service.
- Valve repair may also be delayed if:
  - The Frontier Refinery can demonstrate that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
  - When repair procedures are executed, the purged material is collected and destroyed or recovered in a control device.
- Pump repair may also be delayed if:
  - Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
  - Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

Documentation identifying and/or explaining the conditions that allow a leaking component to be added to the Delay of Repair Log will be provided and signed off, consistent with the Delay of Repair Log, by the Unit Superintendent responsible for the leaking component.

Additionally, valve delay of repair may be extended beyond the next process unit shutdown provided that:

- If valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted.

- Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

The Unit Superintendent responsible for the leaking valve is required to notify the LDAR Coordinator when/if a valve delay of repair will be extended beyond the next process unit shutdown.

All equipment that remain in service and placed on the "delay of repair" list (pursuant to Sections 9.4 and 9.5) shall be included in regular LDAR monitoring. Pumps or valves may be considered repaired and no longer subject to delay or repair requirements if two consecutive monthly monitoring instrument readings are below the applicable leak definition.

9.5 Enhanced Program Delay Repair

All light liquid or vapor valves, other than control valves, leaking at a rate of 10,000 ppm or greater, require use of a "drill and tap" or equivalent method for fixing such leaking valves, rather than placing the valve on the "delay of repair" list, unless the Frontier Refinery, as applicable, can demonstrate that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. The Frontier Refinery shall perform two "drill and tap" (or equivalent repair method) within thirty (30) days after the leak is detected. After two unsuccessful attempts to repair a leaking valve through the drill and tap method, the Frontier Refinery, as applicable, may place the leaking valve on its "delay of repair" list.

9.6 Chronic Leaker Evaluation

The LDAR Coordinator will review annual monitoring data on a rolling four quarter basis to identify the existence of chronic leakers. Valve statistics such as, but not limited to, manufacturer, type, service, operating conditions, size, etc. will

be identified and recorded for assessing future rates of failure for "like-kind" valves. The Frontier Refinery shall replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification. For "like-kind" chronic leakers, Frontier shall implement a quality improvement program with maintenance and/or facility design personnel to modify the valve design specifications to eliminate or reduce the rate of chronic leakers for "like-kind" valves.

10.0 Management of Change

Procedures for routine tag maintenance are identified in Appendix A.

10.1 General Procedure

Frontier uses a Management of Change (MOCs) procedure for all process modifications. In order to capture any new LDAR components, deletion or modification of existing LDAR components, all MOCs incorporate a mandatory review by the Environmental Manager or his designee. If equipment tagging is required, the MOC drawings are marked to show the areas requiring new tags and distributed to LDAR Coordinator for completion. The LDAR Coordinator is responsible for ensuring that the electronic database and program documentation described in Section 7.0 is updated. MOCs are required for all process changes including new construction and modifications to existing units.

10.2 New Equipment Monitoring

For new equipment added to existing process units, as part of process improvements or similar, new components must be monitored within 30 days following start-up.

For new process units and process improvements to an existing process unit that constitutes a reconstruction or modification of the process unit, the new components will require monitoring with the following:

"In VOC" or "In HAP[4]" Service Only Equipment – 180 days, and

"In Benzene" or "VHAP" Service Only Equipment – 90 days

10.3 Equipment Design Considerations

10.3.1 Equipment LDAR Monitoring General Exclusions

In general the following equipment is excluded from the LDAR monitoring requirement procedures described herein.

- Equipment not "in VOC", "in Benzene", and "in HAP" service.
- Equipment that is in vacuum service.
- Existing reciprocating compressors in a process unit that becomes an affected facility under applicable NSPS or MACT LDAR regulations and FRI demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance.

10.3.2 Dual Mechanical Seal Pumps In Light Liquid Service

Dual mechanical seal pumps in light liquid service may be exempted from weekly and monthly monitoring requirements provided that the system meets the following design criteria.

<u>Dual Mechanical Seal System</u>

- Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

[4] Assuming installation of a new process unit or modification or reconstruction of an existing process unit does not by itself trigger new source (versus existing source) monitoring requirements under 40 CFR 63, Subpart CC (MACT).

- Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device; or
- Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

Barrier Fluid System

- The barrier fluid system is in heavy liquid service or is not in VOC service, and
- Barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- Each sensor is checked daily or is equipped with an audible alarm, and
- The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

10.3.3 Non-Detectable Emission Pumps

Non-Detectable Emission pumps may be exempted from weekly and monthly monitoring requirements provided that the system meets the following design criteria.

- Has no externally actuated shaft penetrating the pump housing,
- Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and
- Is tested (monitored) initially upon designation and annually.

10.3.4 Pumps Routed to a Closed Vent System

If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device, it is exempt from monitoring requirement.

10.3.5 Non-Detectable Emission Compressors

Non-Detectable Emission compressors may be exempted from the compressor design requirements stated in Section 10.3.7 provided that the system meets the following design criteria.

- Has no externally actuated shaft penetrating the pump housing,
- Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background, and
- Is tested (monitored) initially upon designation and annually. Compressors Routed to a Closed Vent System

If any compressor is equipped with a closed vent system capable of capturing and transporting any leakage from the compressor drive shaft to a process or to a fuel gas system or to a control device, it is exempt from compressor design requirements stated in Section 10.3.7.

10.3.6 "All Other" Compressor Design

Unless excluded under Sections 10.3.1, 10.3.5 or 10.3.6, regulated compressors must be the following design criteria:

- Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of pollutants to the atmosphere.

Barrier Fluid System

- Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
- Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device; or
- Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.
- Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- Each sensor shall be checked daily or shall be equipped with an audible alarm.
- The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

10.3.7 Pressure Relief Devices

Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device is exempt from LDAR monitoring and repair requirements.

10.3.8 Sampling Connection Systems

Sampling connection system should either be in-situ, non-purge systems or be equipped with a closed-purged, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured.

Each closed-purge, closed-loop, or closed-vent system should include one of the following designs:

- Return the purged process fluid directly to the process line; or
- Collect and recycle the purged process fluid to a process; or
- Be designed and operated to capture and transport all the purged process fluid to a control device or
- Collect, store, and transport the purged process fluid to any of the following systems or facilities:
    - A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;
    - A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
    - A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

10.3.9 Open-end Valves or Lines

- Open-ended valve or line should be equipped with a cap, blind flange, plug, or a second valve.

- The cap, blind flange, plug, or second valve should seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
- Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves.
- Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are not required to meet these design conditions.
- Open-ended valves or lines containing materials which would auto catalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system are not required to meet these design conditions.

10.3.10 Difficult to Monitor Valves

New affected facilities should be designed with less than 3% of the total number of valves as difficult to monitor; otherwise, routine component monitoring, as defined in Section 8.4.1, is required.

10.3.11 Closed Vent Systems and Control Devices

- Vapor recovery systems (for example, condensers and absorbers) should be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 % or greater, or to an exit

concentration of 20 parts per million by volume, whichever is less stringent.

- Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95% or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3% oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.
- Flares used to comply with this subpart shall comply with the requirements of §60.18.
- Control devices should be equipped with monitoring systems to ensure that they are operated and maintained in conformance with their design

11.0 Quality Assurance and Quality Control (QA/QC)

The QA/QC requirements defined herein are intended to ensure data collected by the monitoring technician is properly being obtained, transferred and communicated such that the total program is effectively and correctly implemented.

11.1 LDAR Coordinator

The LDAR Coordinator shall complete the following periodic quality control deliverables.

11.1.1 Daily Requirements

The LDAR Coordinator (or his designee) must ensure completion of the "Daily LDAR Field Work Record and QA" form (see Appendix E) and that unit monitoring data, specifically detected leaks, has been communicated with the unit operations supervisor at the end of each work day or prior to the start of work for the following work day.

Completion of this form certifies or identifies, by technician, the following:

- Whether or not all monitoring data was recorded electronically,
- Confirms all monitoring run components were inspected consistent with the daily schedule and uploaded for data processing,
- Verifies all calibration and negative drift assessments completed, and
- Documents production or monitoring rate, on a component per day basis, for each monitoring technician.

In addition to submission of the "Daily LDAR Field Work Record and QA" form, the LDAR Coordinator is also required to generate a daily leak log for proper facility management of identified leaks.

11.1.2 Weekly Requirements

On a weekly basis, at a minimum, the on-site LDAR Coordinator shall:

- If contract personnel were onsite monitoring, observe monitoring personnel performing at least one calibration drift assessment,
- If contract personnel were onsite monitoring, observe one technician, selected at random, for 30-minutes of monitoring to verify the correct implementation of Method 21.
- If contract personnel were onsite monitoring, review technician(s) weekly monitoring performance to identify possible data anomalies or monitoring efficiency issues (e.g. number of components monitored per technician per day).
- Review open leak status.

11.1.3 Monthly Requirements

On a monthly basis, at a minimum, the on-site LDAR Coordinator shall:

- Check the calibration gas certifications and verify the calibration gas shelf life,
- Confirm and/or review that all daily calibration and drift logs are on file for each instrument used each day of the month.

- Review monitoring results to ensure all monitoring for the month was completed as scheduled.
- Review first attempt at repair data to ensure that all information has been recorded,
- Confirm with the Operations and/or Maintenance Supervisor the status of all leaks identified for the prior month and proper shutdown or delay of repair records are in place

11.1.4 Quarterly Review

The LDAR Coordinator shall:

- Review the monitoring data to determine the number of components monitored per technician per day for each day of the quarter. The target is a daily monitoring rate of about 350 components per technician per day (based on a 8-hour work day).
- Shall spot check the time between monitoring events and evaluate for any abnormalities. In particular, the instrument response time and the estimated travel time between components shall be compared to the recorded monitoring events.

12.0 LDAR Training

12.1 Monitoring Contract Personnel

At a minimum, all LDAR contract monitoring personnel must be trained to perform Method 21 monitoring consistent with the curriculum identified in:

- APTI Course SI: 380, Introduction to Fugitive Emissions Monitoring
- APTI Course SI: 417, Controlling VOC Emissions from Leaking Process Equipment
- EPA600/R-97/013, Training and Certification of EPA Method 21 Operators.

Method 21 training and certification must be completed prior to monitoring technicians performing independent (i.e. unobserved) monitoring within the facility.

12.2 Non-Monitoring Contract Personnel

All contract personnel with LDAR related job responsibilities other than monitoring (e.g. leak repair contractors, tagging technicians, data management personnel, etc.) are required to be trained, consistent with their job duties, on the applicable elements and procedures required by the LDAR written plan prior to beginning facility LDAR work activity. Training must be provided initially and annually thereafter. Records of contractor training must be provided or be made available by the contractor to the LDAR Coordinator.

12.3 FRI LDAR Personnel Training

The LDAR Coordinator, or his designee, will provide training to other facility LDAR personnel, consistent with their specific job duties. Employee initial training is required prior to beginning any LDAR work or LDAR responsibilities and refresher training is to be provided annually thereafter. FRI LDAR personnel training records will be maintained by FRI's training department.

12.4 FRI Non-LDAR Personnel Training

The LDAR Coordinator, or his designee, will provide training to facility Operations and Maintenance personnel, consistent with aspects of their job duties related to LDAR program implementation. Training is required initially and every 3 years thereafter. FRI LDAR personnel training records will be maintained by FRI's training department. Training elements may include, but are not limited to:

- Regulated Components
- Leak Definitions
- Facility Leak Rate Goals
- Monitoring Requirements (AVO, OEL, Pump Seals, etc.)
- Repair Requirements
- Delay of Repair Procedures

- Management of Change

Training curriculum may change from year to year as LDAR program elements change and/or quality control or audit program findings dictate.

13.0 Auditing

Internal and third-party LDAR program auditing is to be carried out consistent with Paragraphs 147 through 152 of the Consent Decree (See Appendix F).

14.0 Recordkeeping and Reporting

Unless otherwise specified by provisions in the Consent Decree, recordkeeping and reporting will be consistent with requirements of applicable regulations. Records and reports required by rule or the consent decree are stored in electronic and hardcopy format in the LDAR Coordinator's office file system.

Specific recordkeeping and reporting requirements of the Consent Decree (See Appendix F) are identified in Paragraph 170 and 171.

15.0 Document Control

The LDAR written plan shall be updated whenever a program change occurs, which includes, but may not be limited to: construction of new affected facilities, changes in leak rate goals, organizational structure changes, procedure modifications, etc. Plan revisions will be recorded herein by updating Table 15.1 during the term of the Consent Decree. A copy of the original plan must be submitted with the first applicable semi-annual progress report. Following revision number "0", plan revisions do not require EPA or state agency approval, as part of consent decree compliance; however, a description of program changes must be retained on-site.

Table 15.1, LDAR Written Plan Revision Documentation

Rev. No.	Issuance Date	Description of Plan Revisions

Rev. No.	Issuance Date	Description of Plan Revisions
FRI-2009-04-30	4/30/09	Original plan issuance pursuant to CD Civil Action No. 09-CV-1032-WEB-KMH

Appendix A
LDAR Program Procedures

The procedures listed in Table A.1 describe the tasks necessary to implement specific LDAR Written Plan Requirements.

Table A.1 – LDAR Program Procedures

Procedure I.D.	Procedure Title	Written Plan Reference	Description
A-002-004	Program Management-Daily Facility Management Procedure	Section 5.0	Identifies LDAR contract personnel responsibilities for site monitoring implementation, including, but not limited to: site project management, scheduling, QA/QC, leak tracking, and routine reporting
A-005-001	Instrumentation-Preparation for Instrument Use	Section 8.0	Technician guidelines for inspecting the TVA-1000B, AIM cable, filters, and probe tip.
A-005-002	Instrumentation-Instrument Certification-TVA-1000B	Section 8.0	Procedure for certifying the TVA-1000B for use with Method 21 surveys.
A-005-003	Instrumentation-Instrument Calibration-TVA-1000B	Section 8.0	Procedure for calibrating the TVA-1000B.
A-005-004	Instrumentation-Instrument Maintenance-TVA-1000B	Section 8.0	Procedure for servicing the TVA-1000B sample system.
A-006-001	Inspections-Preparation for Method 21 Surveys	Section 8.0	Guidelines for preparing each day to begin monitoring in a facility.
A-006-002	Inspections-Method 21 Surveys	Section 8.0	Procedure is to provide guidelines for performing Method 21 surveys for leak detection. The instructions are provided as supplementary information for the method described at 40CFR Part 60 Appendix A Method 21. See Dexter Procedure A-006-201A.
A-006-005	Inspection-Audio, Visual, Olfactory _AVO_ Leaks	Section 8.0	The purpose of this procedure is to provide guidelines for identification of leaking components and corrective action detected by audio, visual, or olfactory means.
A-006-006	Inspection-Pressure Relief Device Releases	Section 8.0	The purpose of this procedure is to provide guidelines for identification of pressure relief device atmospheric releases and corrective action.
A-006-007	Inspection-Pump or Agitator Seal Inspection	Section 8.0	The purpose of this procedure is to provide guidelines for visual pump inspections and leak repair.
ENV - 007	Open Ended Line Surveys	Section 8.0	Monitoring and operations personnel inspection, notification, and corrective action procedures for potentially open ended lines.
A-006-201A	EPA Reference Method 21	Section 8.0	EPA Method 21 -- Determination of Volatile Organic Compound Leaks from process equipment.
A-008-003	Leak Management-First Attempts Data Entry and Leak List Regeneration	Section 9.0	Procedure provides instructions for entering first attempt data in ESS E6 FEMS for the purpose of generating an updated leak list.
A-008-005	Leak Management-Leak Tag	Section	Procedure for maintaining leak tag inventories.

Table A.1 – LDAR Program Procedures

Procedure I.D.	Procedure Title	Written Plan Reference	Description
	Management	9.0	
A-009-002	Delay of Repair Management-DOR Tag Management	Section 9.0	Procedure for managing delay of repair tags.
A-009-003	Delay of Repair Management-Assessing Qualification for DOR	Section 9.0	Procedure for evaluating items to be placed on the delay of repair (DOR) list.
A-004-004	Inventory-Data Collection Procedure Summary	Section 10.0	Procedure for identifying, tagging and documenting affected equipment in a new or modified process unit.

Appendix B
Frontier Process Unit Summary

Affected facilities covered under this plan include the following. Leak rates are based on calendar year statistics.

Affected Facility	LDAR Database I.D.	2008 Historical Valve Leak Rate (%)	Target Valve Leak Rate (%)
No. 1 SRU	#1SRUSCOT	0.75	3.00
Amine Unit	#21 Amine Unit	0.00	3.00
Gas Con	#28 GC	0.55	3.00
Coker	#36 Coker	0.27	3.00
Platformer/Reformer	31	2.10	3.00
Alkylation Unit	Alky #35	0.15	3.00
Amine Treater	Amine Treater	0.00	3.00
Utility – Boilers	Boiler Fuel Gas System	0.00	3.00
Butamer	BUTAMR	2.80	3.00
Crude	CR-25	0.28	3.00
Unifiner	DHDS	0.89	3.00
Fluidized Catalytic Cracking Unit	FCCU #34	0.20	3.00
Hydrobon, NHDS	NHT	1.12	3.00
Scanfiner	SCNFNR	0.77	3.00
No. 2 SRU	SRU #2	4.69	3.00
Tank Farm	TKNFRM	0.72	3.00
Facility Total (Weighted)		**0.65**	**3.00**

Appendix C
Equipment Monitoring and Leak Definitions

Monitoring Type	Component or Equipment Type	Physical State	Monitoring Frequency	Leak Definition		Repair Action Level[5]	Comments
				Reg	CD		
M21	Pumps	LL	Monthly	10,000 ppm	2,000 ppm	2,000 ppm	Indication of liquid dripping from pump seal is also a leak.
AVO	Pumps	LL	Weekly	Visual			
Sensor	DMS-Pumps	LL	Per Event	Alarm			Qualified Dual Mechanical Seal or Seal Closed Vent System Controlled. Sensor indication of barrier fluid or seal system failure is also a leak.
AVO	DMS-Pumps	LL	Daily	Visual			Dual Mechanical Seals design pumps not equipped with an audible alarm.
M21	ND-Pumps	LL	Initial and Annually	500 ppm		500 ppm	Non-detectable emission design. Initial required when source put in service.
M21	UNS-Pumps	LL	Per Written Plan	10,000 ppm	2,000 ppm	2,000 ppm	Unsafe to monitor design. Monitoring pursuant to required written plan.
M21	Valves	LL or Vapor	Monthly	10,000 ppm	500 ppm	200 ppm	Quarterly if a leak is not detected for 2 consecutive months.
M21	Valves	LL or Vapor	Quarterly	10,000 ppm	500 ppm	200 ppm	Monthly following detection of a leak.
M21	DTM Valves	LL or Vapor	Annually	10,000 ppm	500 ppm	200 ppm	Difficult to Monitor Design. Schedule required.
M21	ND-Valves	LL or Vapor	Initial and Annually	500 ppm	500 ppm	200 ppm	Non-detectable emission design. Initial required when component source put in service.
M21	UNS-Valves	LL or Vapor	Per Written Plan	10,000 ppm	500 ppm	200 ppm	Unsafe to monitor design. Monitoring pursuant to required written plan.

[5]200 ppm action level for valves excludes control valves and other valves that can not be worked on by LDAR personnel. Excluded valves default to the regulatory leak definition.

Appendix C
Equipment Monitoring and Leak Definitions

Monitoring Type	Component or Equipment Type	Physical State	Monitoring Frequency	Leak Definition		Repair Action Level[5]	Comments
				Reg	CD		
AVO	Compressor	Vapor	Daily	Visual			Applies to compressors not vented to a closed vent system with seal barrier fluid systems not equipped with an audible alarm.
Sensor	Compressor	Vapor	Per Event	Alarm			Sensor indication of barrier fluid or seal system failure is also a leak.
M21	ND-Compressor	Vapor	Initial and Annually	500 ppm			Non-detectable emission design. Initial required when component put in service.
M21	PRD	Any	5 days following a release	500 ppm			Pressure Relief Device vented to atmosphere without a rupture disk.
AVO	Atm. PRD with rupture disk	Any	Every 5 Days	500 ppm or gauge			Observe rupture disk and/or pressure gauge for 0 psig.
AVO	Closed Vent System	Vapor	Annually	Visual			Hard-piped Construction
M21	Closed Vent System	Vapor	Initial	500 ppm			Hard-piped Construction. Initial required when component put in service.
M21	Closed Vent System	Vapor	Initial and Annually	500 ppm			Duct Work Construction
M21	All Equipment	Any	within 5 days	10,000 ppm or lower component leak definition			Monitor any component, including, but not limited to heavy liquid components identified as leaking by AVO means. M21 monitoring not required if the component is repaired or taken out of service within 5 days.

Appendix D
LDAR Leak Logic Flow Diagrams

Appendix D currently contains the following logic flow diagrams:

- Figure 1, AVO Leak Repair Work Flow
- Figure 2, Method 21 Leak Repair Work Flow
- Figure 3, Delay of Repair Work Flow

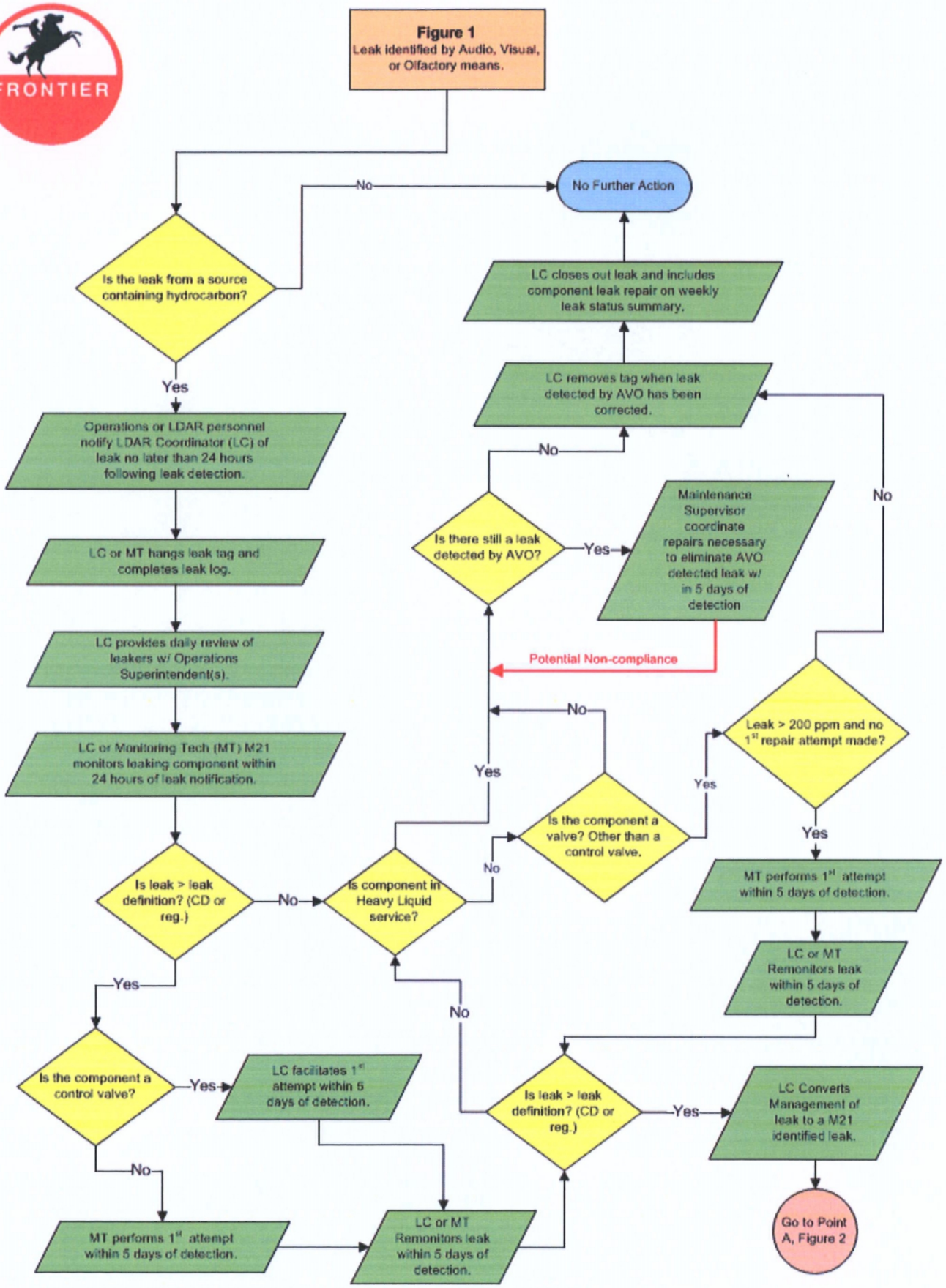


Figure 1
Leak identified by Audio, Visual, or Olfactory means.
Is the leak from a source containing hydrocarbon?
No
No Further Action
Yes
Operations or LDAR personnel notify LDAR Coordinator (LC) of leak no later than 24 hours following leak detection.
LC or MT hangs leak tag and completes leak log.
LC provides daily review of leakers w/ Operations Superintendent(s).
LC or Monitoring Tech (MT) M21 monitors leaking component within 24 hours of leak notification.
Is leak > leak definition? (CD or reg.)
No
Is component in Heavy Liquid service?
Yes
No
Is the component a valve? Other than a control valve.
No
Yes
Yes
Is the component a control valve?
Yes
LC facilitates 1st attempt within 5 days of detection.
No
MT performs 1st attempt within 5 days of detection.
LC or MT Remonitors leak within 5 days of detection.
Is leak > leak definition? (CD or reg.)
Yes
LC Converts Management of leak to a M21 identified leak.
Go to Point A, Figure 2
Leak > 200 ppm and no 1st repair attempt made?
Yes
MT performs 1st attempt within 5 days of detection.
LC or MT Remonitors leak within 5 days of detection.
No
LC removes tag when leak detected by AVO has been corrected.
LC closes out leak and includes component leak repair on weekly leak status summary.
No
Is there still a leak detected by AVO?
Yes
Maintenance Supervisor coordinate repairs necessary to eliminate AVO detected leak w/ in 5 days of detection
Potential Non-compliance

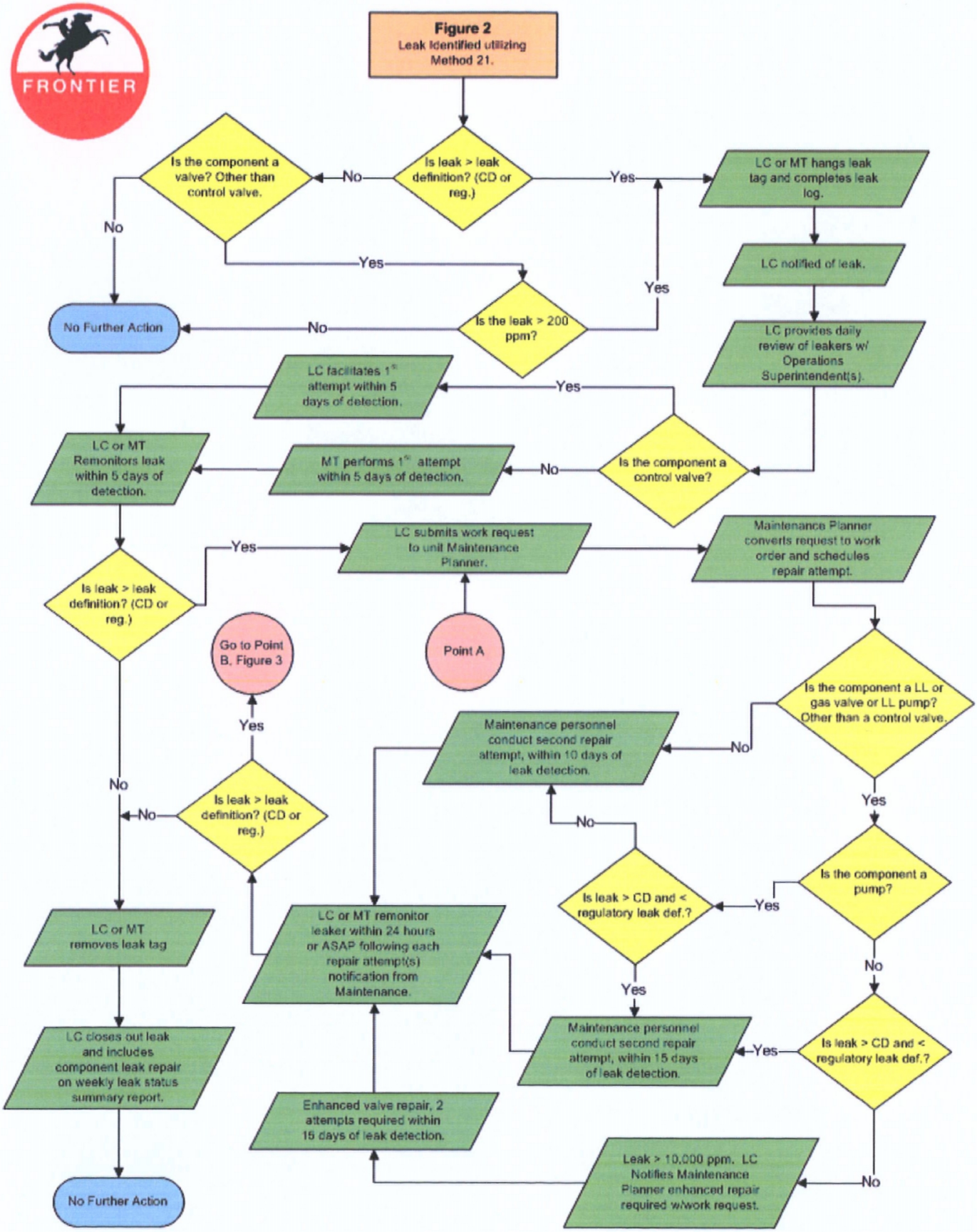
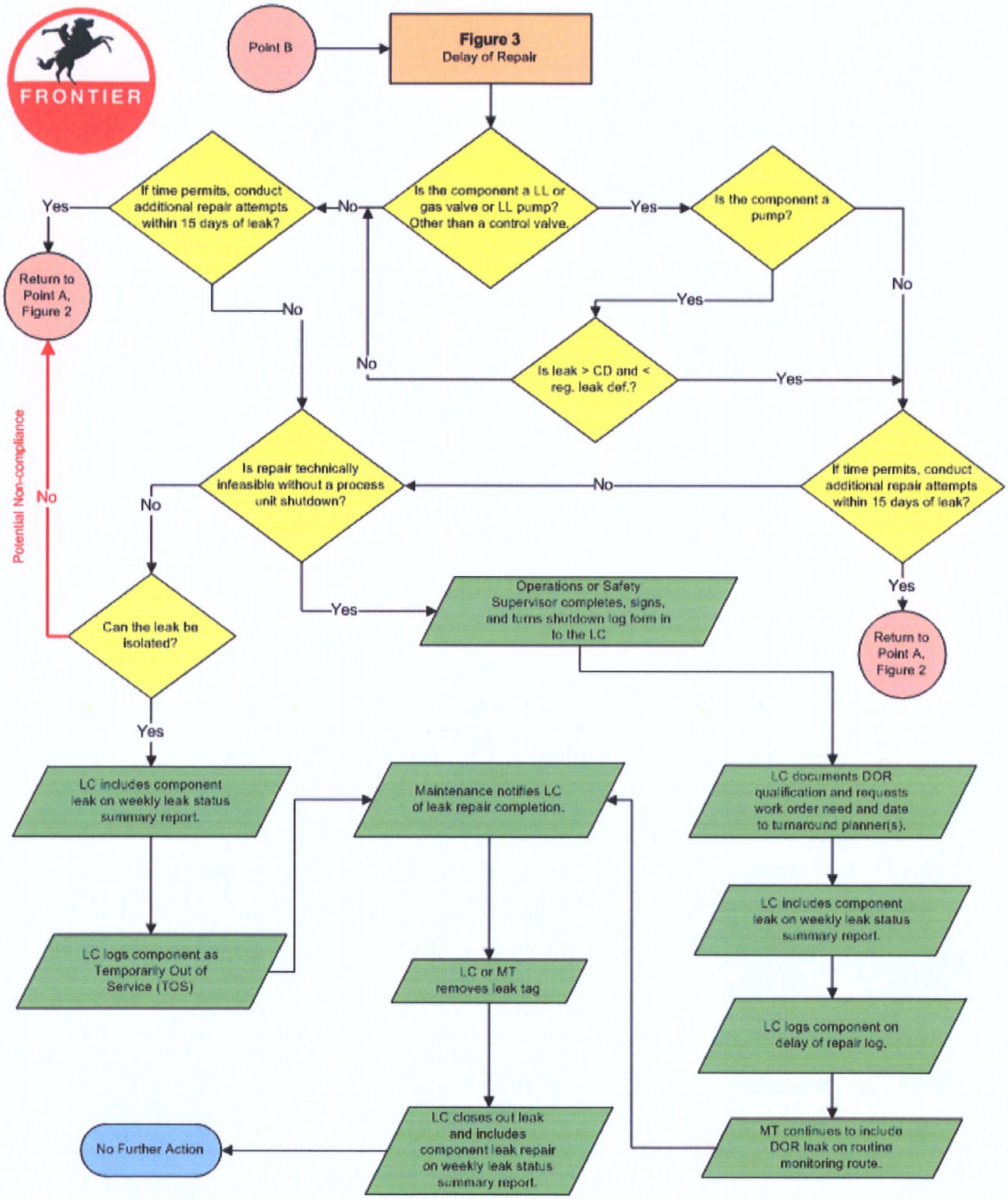


Figure 2
Leak Identified utilizing Method 21.
Is leak > leak definition? (CD or reg.)
Yes
No
LC or MT hangs leak tag and completes leak log.
LC notified of leak.
LC provides daily review of leakers w/ Operations Superintendent(s).
Is the component a valve? Other than control valve.
No
Yes
No Further Action
Is the leak > 200 ppm?
No
Yes
LC facilitates 1st attempt within 5 days of detection.
Yes
Is the component a control valve?
No
MT performs 1st attempt within 5 days of detection.
LC or MT Remonitors leak within 5 days of detection.
Is leak > leak definition? (CD or reg.)
Yes
LC submits work request to unit Maintenance Planner.
Maintenance Planner converts request to work order and schedules repair attempt.
Point A
Go to Point B, Figure 3
Is the component a LL or gas valve or LL pump? Other than a control valve.
No
Maintenance personnel conduct second repair attempt, within 10 days of leak detection.
Yes
Is leak > leak definition? (CD or reg.)
No
Yes
No
Is the component a pump?
Yes
Is leak > CD and < regulatory leak def.?
No
Yes
LC or MT remonitor leaker within 24 hours or ASAP following each repair attempt(s) notification from Maintenance.
LC or MT removes leak tag
Maintenance personnel conduct second repair attempt, within 15 days of leak detection.
Yes
Is leak > CD and < regulatory leak def.?
LC closes out leak and includes component leak repair on weekly leak status summary report.
Enhanced valve repair, 2 attempts required within 15 days of leak detection.
Leak > 10,000 ppm. LC Notifies Maintenance Planner enhanced repair required w/work request.
No
No Further Action


FRONTIER
Point B
Figure 3
Delay of Repair
Is the component a LL or gas valve or LL pump? Other than a control valve.
Yes
No
Is the component a pump?
Yes
No
If time permits, conduct additional repair attempts within 15 days of leak?
Yes
No
Return to Point A, Figure 2
Is leak > CD and < reg. leak def.?
No
Yes
Potential Non-compliance
No
Is repair technically infeasible without a process unit shutdown?
No
No
If time permits, conduct additional repair attempts within 15 days of leak?
Yes
Yes
Operations or Safety Supervisor completes, signs, and turns shutdown log form in to the LC
Return to Point A, Figure 2
Can the leak be isolated?
Yes
LC includes component leak on weekly leak status summary report.
Maintenance notifies LC of leak repair completion.
LC documents DOR qualification and requests work order need and date to turnaround planner(s).
LC logs component as Temporarily Out of Service (TOS)
LC or MT removes leak tag
LC includes component leak on weekly leak status summary report.
LC logs component on delay of repair log.
No Further Action
LC closes out leak and includes component leak repair on weekly leak status summary report.
MT continues to include DOR leak on routine monitoring route.

Contract Monitoring Personnel

Daily LDAR Field Work Record and QA

Section 1, Daily Field Work Approval			
Facility Name/Location	Frontier Refinery, Cheyenne, WY	**Job Description**	Routine LDAR
Facility LDAR Coordinator		**Job Number**	
List of Units Work Conducted		**Work Order No.**	
Date of Work		**Tech 1 Name**	
		Tech 2 Name	
Daily Field Work Approval		**Tech 3 Name**	

Section 2, Daily Labor Hour Summary							
Facility Gate Entry/Exit	Technician 1		Technician 2		Technician 3		
	Time In	Time Out	Time In	Time Out	Time In	Time Out	
Job Site In/Out							
Job Site In/Out							
Job Site In/Out							
Job Site In/Out							
Work Activity	Technician 1		Technician 2		Technician 3		
	Quantity	Hours	Quantity	Hours	Quantity	Hours	
LDAR Equipment Prep							
LDAR Equipment Maint.							
Safety Meetings							
Monitoring							
Remonitoring							
Leak Repair							
DTM							
UTM							
Tagging							
Documenting							
MOC Tag Maintenance							
Other _____							

Section 3, Daily LDAR QA Checklist				
Sign-Off (Initials)				
Tech 1	Tech 2	Tech 3	LC	Daily QA Item
				Initial if all routine monitoring data recorded electronically..
				Initial if all monitoring run data QA/QC'd or uploaded for QA/QC.
				Initial if all start & end-run calibration drift assessments completed.
				Initial if all end of run calibration(s) showed negative drift < 10%.
				Initial to confirm 1st attempt repair reported to Unit Superint. daily.

LDAR Coordinator Weekly QA Checklist

LDAR Program
Frontier Refinery Inc.

Week of: _____

#	Description	Complete	Information/Comments	
1	Observe monitoring personnel performing at least one calibration drift assessment.		**Date:**	
			Tech. Observed:	
			Instrument I.D.	
			Comments	
2	Observer at least one technician, selected at random, for 30-minutes of monitoring to verify the correct implementation of Method 21.		**Date:**	
			Tech. Observed:	
			Comments	
3	Review technician(s) weekly monitoring performance to identify possible data anomalies or monitoring efficiency issues		**Date:**	
			Comments	
4	*Intentionally Blank*		**Date:**	
			Comments	
5	*Intentionally Blank*		**Date:**	
			Comments	
LDAR Coordinator Signature:			**Date:**	

LDAR Coordinator Monthly QA Checklist

LDAR Program
Frontier Refinery Inc.

Week of: _____

#	Description	Complete	Information/Comments	
1	Check the calibration gas certifications and verify the calibration gas shelf life		Date:	
			Comments	
2	Review first attempt at repair data to ensure that all information has been recorded		Date:	
			Comments	
3	Verify that a daily calibration and drift log is on file for each instrument used each day of the month.		Date:	
			Comments	
4	Review monitoring results to ensure all monitoring for the month was completed as scheduled.		Date:	
			Comments	
5	Confirm with the Operations and/or Maintenance Supervisor the status of all leaks identified for the prior month and proper shutdown or delay of repair records are in place.		Date:	
			Comments	
LDAR Coordinator Signature:			Date:	

LDAR Coordinator Quarterly QA Checklist

LDAR Program
Frontier Refinery Inc.

Week of: _____

#	Description	Complete	Information/Comments	
1	Review the monitoring data to determine the number of components monitored per technician per day for each day of the quarter. The target is a daily monitoring rate of about 350 components per technician per day (based on a 8-hour work day).		**Date:**	
			Comments	
2	LDAR Coordinator shall spot check the time between monitoring events and evaluate for any abnormalities. In particular, the instrument response time and the estimated travel time between components shall be compared to the recorded monitoring events.		**Date:**	
			Comments	
3	*Intentionally Blank*		**Date:**	
			Comments	
4	*Intentionally Blank*		**Date:**	
			Comments	
5	*Intentionally Blank*		**Date:**	
			Comments	
LDAR Coordinator Signature:			**Date:**	
Environmental Manager Signature:			**Date:**	

Paragraph 8 of the Frontier Refining Inc.'s Consent Decree requires that all contractors be provided with a copy of applicable consent decree provisions. Table F.1 should meet this requirement for LDAR contractors.

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
6.1 and Appendix B	140		FRI and FEDRC shall undertake the following measures to improve each Covered Refinery's LDAR program, to minimize or eliminate fugitive emissions from equipment in light liquid and/or in gas/vapor service at each Covered Refinery, and to make all existing facilities at FRI and FEDRC "affected facilities," within the meaning of 40 C.F.R. §§ 60.2 and 60.590(a)(3), subject to NSPS Subpart GGG.
Entire Plan	141		In order to minimize or eliminate fugitive emissions of volatile organic compounds ("VOCs"), benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from equipment in light liquid and/or in gas/vapor service, FRI and FEDRC shall, for each of the Covered Refinery's LDAR programs under 40 C.F.R. Part 60, Subpart GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC, implement the enhancements required by Paragraph 142 through Paragraph 171 of this Consent Decree. The terms "equipment," "in light liquid service" and "in gas/vapor service" shall have the definitions set forth in the applicable provisions of Title 40 C.F.R. Part 60, Subparts VV and GGG; Part 61, Subparts J and V; and Part 63, Subparts F, H and CC.
	142	DOE	FRI - Affected Facilities. Upon the Date of Entry, all equipment, as defined by 40 C.F.R. §60.591, within each process unit and all compressors at FRI shall become "affected facilities" for purposes of 40 C.F.R. Part 60, Subpart GGG, and shall become subject to and comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of Section VI.M. of this Consent Decree.
Entire Plan	144	180 Days After DOE	Written Refinery-Wide LDAR Program. No later than one-hundred and eighty (180) days after the Date of Entry FRI and FEDRC shall for each Covered Refinery develop and maintain a written refinery-wide program for compliance with all applicable federal and state LDAR regulations. FRI and FEDRC shall implement this program on a refinery-wide basis and update such program as may be necessary to ensure continuing compliance through and after termination of this Consent Decree. The refinery-wide program shall include at a minimum:
6.3 and Appendix B			(a) A facility-wide leak rate goal that includes specific process-unit leak rate goals that will be targets for achievement;
6.1, 6.2, and Appendix B			(b) An identification of all equipment in light liquid and/or in gas/vapor service in each of the Covered Refineries that has the potential to leak VOCs, HAPs, VHAPs, and benzene;
8.0 and Appendix A			(c) Procedures for identifying leaking equipment within process units in each of the Covered Refineries;
9.3, 9.4, 9.5 and Appendix A			(d) Procedures for repairing and keeping track of leaking equipment;
10.0 and Appendix A			(e) Procedures (e.g., a Management of Change program) to ensure that components subject to LDAR requirements that are added to each facility during scheduled

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
			maintenance and construction activities are integrated into the LDAR program;
9.6 and 10.0			(f) A process for evaluating new and replacement LDAR equipment that includes active consideration of equipment or techniques that shall minimize leaks and/or eliminate chronic leakers; and
4.0, 5.0, and Appendix A			(g) A definition of "LDAR Personnel" and a process for accountability, identifying for each facility the person or position that shall be the "LDAR Coordinator." Consistent with FRI and FEDRC management authorities, this person shall have the responsibility to implement improvements to the LDAR program.
14.0	145	See Pgh 170(a)	FRI and FEDRC shall submit a copy of each Covered Refinery's initial written LDAR Program to EPA and to the Applicable Intervenor with the first Semi-Annual Progress Report required by Paragraph 170(a). EPA shall review and may comment on the written program after an opportunity for consultation with the Applicable Intervenor. FRI and/or FEDRC, as appropriate, shall address EPA's comments (if any). A description of program changes shall be maintained on-site during the term of this Consent Decree but need not be submitted to the agencies.
12.0	146		Training. If not already in place, FRI and FEDRC shall commence implementation of the following training programs at each Covered Refinery:
		DOE	(a) As of the Date of Entry of this Consent Decree, for any employee newly-assigned to LDAR responsibilities, FRI and FEDRC shall require that each such employee satisfactorily complete LDAR training prior to beginning any LDAR work;
		DOE	(b) By no later than the Date of Entry, for all FRI and FEDRC employees assigned specific LDAR responsibilities as a primary job function, such as monitoring technicians, database users, quality assurance/quality control ("QA/QC") personnel and the LDAR Coordinator, FRI and FEDRC shall provide and require completion of annual LDAR refresher training and initial training before the employee begins LDAR responsibilities;
		DOE	(c) By no later than the Date of Entry, for all other FRI and FEDRC employee operations and maintenance personnel, FRI and FEDRC shall provide and require completion of an initial training program that includes instruction on aspects of LDAR that are relevant to the person's duties. Refresher training for these personnel shall be performed every three years;
		DOE	If contract employees are performing LDAR work, FRI and/or FEDRC, as appropriate, shall maintain all training records, as required under this Paragraph, for the contract employees; and
		5 Years	Training records shall be kept for a period of five (5) years.
13.0	147		LDAR Audits. At their respective Covered Refineries, FRI and FEDRC shall implement the refinery-wide audits set forth in Paragraphs 147 - 150 to ensure each Covered Refinery's compliance with all applicable LDAR requirements. The LDAR audits shall include but not be limited to, comparative monitoring, observation of the LDAR technicians' calibration and monitoring techniques, records review to ensure monitoring and repairs were completed in the required periods, a field audit to ensure affected equipment has been identified and included in the facility LDAR program, and a review to ensure records and reports have been maintained and submitted as required. During

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
			the LDAR audits, leak rates shall be calculated for each process unit where comparative monitoring was performed. Each LDAR audit shall be conducted by personnel with expertise in LDAR regulations.
13.0	148	DOE	Initial Compliance Audit. By no later than the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall engage a third-party contractor to undertake a refinery-wide audit of its compliance with the LDAR regulations at each of the Covered Refineries, including, at a minimum, each of the audit requirements set forth in Paragraph 147.
		60 days after audit	No later than sixty (60) days after completion of each audit, FRI and FEDRC shall report to EPA and the Applicable Intervenor any areas of non-compliance identified as a result of its refinery-wide audits and submit in writing proposed compliance schedule for correcting any non-compliance. If the proposed compliance schedule(s) extends for more than sixty (60) days beyond the audit completion date, FRI and/or FEDRC, as applicable, must seek approval of the compliance schedule from EPA. At their respective Covered Refineries, FRI and FEDRC shall implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA.
		90 days after audit and no later than 240 days after DOE	Unless the request for a schedule extension is approved by EPA, within ninety (90) days of completing each audit and by no later than two hundred and forty (240) days after the Date of Entry, FRI and FEDRC shall certify to EPA that each Covered Refinery: a. is in compliance; b. has completed related corrective action (if necessary) and/or is on a compliance schedule; and c. specifically certify that all affected equipment has been identified and included in the facility LDAR program to the extent of the program as of the Date of Entry.
13.0	149	Once every 4 years	Third-Party Audits. FRI and FEDRC shall retain one or more independent contractor(s) to perform a third-party audit of each of the Covered Refineries' LDAR programs, including compliance with LDAR regulations and the LDAR requirements under Section VI.M. of this Consent Decree, at least once every four (4) years.
13.0	150	2 years after Initial Compliance Audit	FRI and FEDRC shall conduct internal audits of each of the Covered Refineries' LDAR programs by sending personnel from one Covered Refinery to audit the other Covered Refinery's LDAR program. The audits, among other things, shall include a review of compliance with LDAR regulations and the LDAR requirements under Section VI.M. of this Consent Decree. FRI and FEDRC shall complete the first internal LDAR audit at each Covered Refinery by no later than two years after the initial third-party audit for the Covered Refinery was conducted according to Paragraph 148. Internal audits of each of the Covered Refineries shall be conducted at least once every four years thereafter. FRI and/or FEDRC may elect to retain third-parties to undertake these internal audits, provided that an audit of each of the Covered Refineries occurs every two (2) years.
13.0	151	DOE and every 2 years	Audit Every Two Years. To ensure that an audit at each of the Covered Refineries occurs every two years, third-party and internal audits shall be separated by two years.
13.0	152	ASAP after audit.	Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to Paragraphs 147 - 150 identify any areas of non-compliance, FRI and FEDRC, as applicable, shall implement all steps necessary to

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
			correct the area(s) of non-compliance as soon as possible and to prevent a recurrence of the cause of the non-compliance. For purposes of this Paragraph, a ratio of the process unit valve leak percentage established through a comparative monitoring audit conducted under Paragraphs 147 through 150 to determine the average valve leak percentage reported for the process unit for the four quarters immediately preceding the audit in excess of 3.0 % shall be cause for corrective action and shall be subject to stipulated penalties as provided in Paragraph 294. If the calculated ratio yields an infinite result, FRI and FEDRC shall assume 1 leaking valve was found during the 4-quarter period and shall recalculate the ratio.
		2 years after CD termination	Until two years after termination of this Consent Decree FRI and FEDRC shall retain the audit reports generated pursuant to Paragraphs 147 through 150 and shall maintain a written record of the corrective actions taken at each of the Covered Refineries in response to any deficiencies identified in any audits.
		1st semi-annual report for first calendar half of each year	In the semi-annual report submitted pursuant to the provisions of Paragraph 216 of this Consent Decree (Reporting and Record Keeping) for the first calendar half of each year, FRI and FEDRC shall submit the audit reports and corrective action records for audits performed and actions taken during the previous calendar year.
9.2	153	DOE	Internal Leak Definition for Valves and Pumps. Except as provided in Subparagraph 153.c., on and after the Date of Entry, for the Covered Refineries FRI and FEDRC shall utilize the following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions: a. Leak Definition for Valves. 500 ppm VOCs for all the Covered Refinery's valves, excluding pressure relief devices; and b. Leak Definition for Pumps. 2,000 ppm VOCs for all of the Covered Refinery's pumps.
14.0	154	DOE	Reporting of Valves and Pumps Based on the Internal Leak Definitions. For regulatory reporting purposes, FRI and FEDRC may continue to report leak rates in valves and pumps against the applicable regulatory leak definition or use the lower, internal leak definitions specified in Paragraph 153. FRI and FEDRC shall identify in the report which definition is being used.
9.5 and Appendix A	155	DOE	Recording, Tracking, Repairing and Re-Monitoring Leaks Based on the Internal Leak Definitions. By no later than the date FRI and FEDRC implement the lower leak definitions under Paragraph 153, each shall record, track, repair and re-monitor all leaks in excess of the internal leak definitions in Paragraph 153.
		5 and 30 days after leak detection	FRI and FEDRC shall have five (5) days to make an initial repair attempt and re-monitor the component under Paragraph 157.a and thirty (30) days either to make repairs and re-monitor leaks that are greater than the internal leak definitions but less than the applicable regulatory leak definitions or to place the component on the delay of repair list according to Paragraph 167.
		Life of CD	All records of repairs, repair attempts, and re-monitoring shall be maintained for the life of this Consent Decree.

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
9.3.4	156	30 days after DOE	Election of Compliance for Initial Attempt at Repair or Use of IR Camera. Within thirty (30) days of the Date of Entry of this Consent Decree, for each Covered Refinery, FRI and FEDRC shall notify EPA and the Applicable Intervenor as to which one of the following options it shall comply with: a. FRI and/or FEDRC shall comply with Paragraph 157.a. of this Consent Decree; or b. FRI and/or FEDRC shall comply with Paragraph 157.b. of this Consent Decree. If either FRI or FEDRC elects the option in Paragraph 156.a., above, at any time after the Date of Entry of this Consent Decree, either may, at its option, conduct a study of the efficacy of reducing VOC emissions from utilizing the 200 ppm of VOCs leak level for the initial attempt at repair. FRI or FEDRC may submit the results of such study to EPA with a request for EPA approval to change its election to the option in Paragraph 156.b. above.
	157	30 days after DOE	Additional VOC Monitoring. Upon the election of the compliance option under Paragraph 156, FRI and FEDRC shall comply with at least one of the following additional VOC monitoring requirements:
		60 days after DOE and 5 days after leak detection	a. Initial Attempt at Repair. No later than sixty (60) days after the Date of Entry, FRI and FEDRC shall promptly make an "initial attempt" at repair on all valves that have a reading greater than 200 ppm of VOCs, excluding control valves. FRI and FEDRC, shall re-monitor the leaking valve within five (5) days of identification. i. If the re-monitored leak rate is below the applicable leak definition, Paragraph 153, no further action shall be necessary. ii, If the re-monitored leak reading is greater than the applicable leak definition, Paragraph 153, repair the leaking valve according to the requirements under Paragraph 155. All records of repairs, repair attempts, and re-monitoring shall be maintained for the life of this Consent Decree. iii. If FRI or FEDRC can demonstrate with sufficient monitoring and repair data that this "initial attempt" at repair requirement at 200 ppm does not reduce emissions, after two (2) years of implementing the "initial attempt" requirement, either may request that the EPA reconsider or amend this requirement; or
		60 days after DOE and at least once every 2 months	Use of Optical Imaging. At least once every two (2) months, commencing no later than sixty (60) days of the Date of Entry, or, if either FRI or FEDRC commence the program in this Subparagraph after, with EPA approval, opting out of the program in Subparagraph 157.a., two (2) months after such EPA approval it shall conduct optical imaging of process units and tanks in hydrocarbon service using an infrared camera capable of detecting hydrocarbons.
		5 days and 15 days after leak detection	i. Leaking equipment subject to regulation. For any leaks detected from equipment subject to regulation under provisions cited in Paragraph 141, FRI and/or FEDRC shall make a first attempt to repair the leaks within five (5) days of identification, and make final repairs to the leaks or place such equipment on a delay of repair list within fifteen (15) days and in accordance with applicable regulations and Paragraph 167 below.
		15 days and 45 days after	ii. Leaks from equipment not subject to regulation. For any leaks detected from currently unregulated equipment, FRI and FEDRC shall, unless a shorter time period applies under federal, state, or local law, (a) make a first attempt at repair within fifteen (15) calendar

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
		leak detection	days of identifying the leak and a second attempt at repair within forty-five (45) calendar days of identifying the leak, or (b) if necessary place the equipment on a delay of repair list until the next unit turnaround.
8.4.1	158	DOE and Monthly	LDAR Monitoring Frequency: Pumps. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for pumps becomes applicable pursuant to the provisions of Paragraph 153, FRI and FEDRC shall begin monitoring pumps in light liquid service, other than dual-mechanical seal pumps or pumps vented to a control device, at the lower leak definition on a monthly basis.
8.4.1	159	DOE and Quarterly	LDAR Monitoring Frequency: Valves. Unless more frequent monitoring is required by a federal or state regulation when the lower internal leak definition for valves becomes applicable pursuant to the provisions of Paragraph 153, FRI and FEDRC shall monitor valves, other than difficult-to-monitor or unsafe-to-monitor valves, on a quarterly basis.
7.0 and Appendix A	160	DOE	Electronic Storing and Reporting of LDAR Data. FRI and FEDRC have and shall continue to maintain an electronic database for record keeping of all LDAR monitoring and repair data from each of the Covered Refineries
7.0 and Appendix A	161	DOE	Electronic Data Collection During LDAR Monitoring and Transfer. Beginning no later than the Date of Entry, FRI and FEDRC shall use data loggers and/or electronic data collection devices during LDAR monitoring.
		Daily	FRI and FEDRC, or their respective designated contractor(s), shall use their best efforts to transfer, on a daily basis, electronic data from electronic data logging devices to the electronic database required by Paragraph 160. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, and instrument and operator identification.
		7 days after monitoring	FRI and FEDRC may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when data loggers are not available or broken), and shall record, at a minimum, the identification of the technician undertaking the monitoring, the date, the daily start and end time for monitoring, and the identification of the monitoring equipment. FRI and FEDRC shall transfer any manually recorded monitoring data to the electronic database required by Paragraph 160 within seven (7) days of monitoring.
		Life of CD	FRI and FEDRC shall maintain the LDAR information required by this Paragraph for the life of this Consent Decree.
11.0	162	DOE	QA/QC of LDAR Data. If not already in place, beginning no later than the Date of Entry, FRI and FEDRC shall develop and implement a procedure to ensure a QA/QC review of all data generated by LDAR monitoring technicians.
		Daily	At their respective Covered Refineries, FRI and FEDRC shall ensure that monitoring collected by monitoring technicians is reviewed for QA/QC by the technician daily.
		1 per Calendar Quarter	At least once per calendar quarter, FRI and FEDRC shall QA/QC the monitoring data collected during the quarter which shall include, but not be limited to, an evaluation of the number of components monitored per technician, time between monitoring events, and abnormal data patterns.
		Daily	Results from LDAR monitoring indicating any leaks requiring a first-attempt repair shall

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
			be reported to unit supervisors daily.
5.0	163	180 days after DOE	LDAR Personnel. By no later than one-hundred and eighty (180) days after the Date of Entry, at their respective Covered Refineries, FRI and FEDRC shall establish a program that shall hold LDAR personnel accountable for LDAR performance. FRI and FEDRC shall maintain a position responsible for LDAR management, with authority to implement improvements, ("LDAR Coordinator") at each Covered Refinery .
10.1	164	180 days after DOE	Adding New Valves and Pumps. By no later than one-hundred and eighty (180) days after the Date of Entry, FRI and FEDRC shall establish a tracking program for maintenance records (e.g., a Management of Change program) to ensure that new valves and pumps added to each of the Covered Refineries during maintenance and construction are integrated into the LDAR program.
8.1.2	165	DOE Life of CD	Calibration. FRI and FEDRC shall conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, Appendix A, EPA Reference Test Method 21, and shall maintain records of the calibrations for the life of this Consent Decree.
8.1.2	166	DOE and End of Monitoring Shift After negative drift > 10% of previous calibration	Calibration Drift Assessment. Beginning no later than the Date of Entry, FRI and FEDRC shall, at each Covered Refinery, at a minimum conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift. FRI and FEDRC shall conduct the calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, FRI and FEDRC shall re-monitor all valves that were monitored since the last calibration that had a reading greater than 100 ppm and shall re-monitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm.
9.4	167	DOE Per Event Per Event 30 days after	Delay of Repair. Beginning no later than the Date of Entry, at their respective Covered Refinery, FRI and FEDRC shall implement the following requirements: a. For all equipment: i. Require sign-off by the unit supervisor that the piece of equipment is technically infeasible to repair without a process unit shutdown, before the component is eligible for inclusion on the "delay of repair" list; and ii. Include equipment that is placed on the "delay of repair" list in regular LDAR monitoring. b. For valves: For valves (other than control valves) leaking at a rate of 10,000 ppm or greater that cannot otherwise be repaired, FRI and FEDRC shall use "drill and tap" or similarly effective repair methods to repair such leaking valves unless they can document that there is a safety, mechanical, or major environmental concern posed by repairing the leak in this manner. FRI and FEDRC shall make two repair attempts (if necessary) using "drill and tap" or

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
		leak detection	similarly effective repair method within thirty (30) days of identification of the leak.
	168	Per Event	New Method of Repair for Leaking Valves. If a new valve repair method not currently in use by the refining industry is planned to be used by FRI or FEDRC, they shall advise EPA pursuant to Section XIX (General Provisions), Paragraph 356 (Notice) prior to implementing such a method or, if prior notice is not practicable, as soon as practicable after implementation.
9.6	169	Per Event	Chronic Leaker Program. FRI and FEDRC shall replace, re-pack, or perform similarly effective repairs on all chronically leaking non-control valves at the next process unit turnaround. A chronic leaker shall be defined as any component that leaks above 10,000 ppm twice in any consecutive four (4) quarters. If a component has not leaked above 10,000 ppm for a period of twelve (12) consecutive quarters or more prior to a turnaround, it is exempt from the requirements in this Paragraph.
14.0	170		Record Keeping and Reporting. Consistent with the requirements of Section XI. (Reporting and Record Keeping), FRI and FEDRC shall maintain records to demonstrate compliance with the requirements of Section VI.M. of this Consent Decree, and shall include the information set forth below in the designated semi-annual progress report(s):
		1st Semi-Annual Report or Semi-annual Report due following requirement due date.	a. First Semi-Annual Progress Report Due under this Consent Decree. At the later of the first semi-annual progress report due under this Consent Decree, or the first semi-annual progress report in which the requirement becomes due, for their respective Covered Refinery, FRI and FEDRC shall include the following: i. Copies of the written Refinery-wide LDAR Program required by Paragraph 144; ii. A certification of the implementation of the lower leak definitions and monitoring frequencies in Paragraphs 153, 154, 155, 158, and 159; iii. A certification of the implementation of the "initial attempt at repair" or "optical imaging" program of Paragraphs 156 and 157; iv. A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 162; v. An identification of the individual at each of the Covered Refineries responsible for LDAR performance as required by Paragraph 144. g.; vi. A certification of the development of a tracking program for new valves and pumps added during maintenance and construction as required by Paragraph 164; vii. A certification of the implementation of the calibration drift assessment procedures of Paragraph 166; viii. A certification of the implementation of the "delay of repair" procedures of Paragraph 167; and ix. report of the implementation of the "chronic leaker" program of Paragraph

Table F.1, Frontier Refining Inc. – CD LDAR Elements

Written Plan Section	Frontier Consent Decree Summary		
	Pgh	FRI Due Date	Description
		1st Calendar half of each year	169. b. Semi-Annual Progress Report for the First Calendar Half of Each Year. In the semi-annual progress report that FRI and FEDRC submit pursuant to Section XI. (Reporting and Record Keeping) for the first calendar half of each year, they shall include an identification of each audit that was conducted pursuant to the requirements of Paragraphs 147 - 150 in the previous calendar year including an identification of the auditors, a summary of the audit results, and a summary of the actions that each took or intends to take to correct all deficiencies identified in the audits.
14.0	171	Semi-annual per applicable regulation.	Reports due under 40 C.F.R. § 63.654. In each report due under 40 C.F.R. § 63.654, FRI and FEDRC shall include: a.Training. Information identifying the measures implemented to comply with the provisions of Paragraphs 146 and 163; and b.The following information on LDAR monitoring and repairs: i. the number of valves and pumps present in each process unit during the quarter; ii. the number of valves and pumps monitored in each process unit; iii. an explanation for missed monitoring if the number of valves and pumps present exceeds the number of valves and pumps monitored during the quarter; iv. the number of valves and pumps found leaking via Method 21; v. the number of leaks identified through optical imaging (if performing); vi. the number of "difficult to monitor" pieces of equipment monitored; vii. a list of all equipment currently on the "delay of repair" list and the date each component was placed on the list; viii. the number of repair attempts not completed promptly according to Paragraph 155 or completed within five (5) days pursuant to Paragraph 157; ix. the number of repairs not completed within thirty (30) days or placed on the delay of repair list according to Paragraph 155 and/or Paragraph 167; x. the number of chronic leakers that do not get repaired according to the requirements of Paragraph 169; and xi. the number of repairs to leaks identified through optical imaging which are not performed within five (5), or fifteen (15), or forty-five (45) days, respectively, according to Paragraphs 157.b.

Section F – SEP

SEP

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SEP	205, 216.c	Description of all SEPs and implementation activity	8/31/09	Permit application to WDEQ for geodome approval submitted on 5/12/09. WDEQ permit waiver AP-9413 issued on 6/11/09. The geodomes were for TK 2-70 and TK 2-71, completed on 2/18/10.	X	7/6/2009	
SEP	189	FRI shall determine whether it will convert Tank 2-70 or Tank 2-71 and shall inform EPA and WDEQ of FRI's election	9/22/09	This paragraph has become a mute point as FRI has committed to converting both Tank 2-70 and Tank 2-71 into geodesic dome roof tanks. The amendment to the Consent Decree was finalized on 5/21/09.	X		
SEP	190	FRI shall submit a detailed description of the SEP, work plan and SEP implementation schedule to EPA and WDEQ for review	9/22/09	FRI submitted the SEP work plan, which included the detailed decription and the implementation schedule.	X	7/6/2009	
SEP	220a	Determine whether the SEP project will be completed within 12 or 24 months after the DOE.	9/22/09	FRI notified the respective agencies that the SEP project would complete within 12 months.	X	4/6/2009	

Section G – SRP

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SRP	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q009 and 4Q09 CEMS Report	X		G
SRP	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G
SRP	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G
SRP	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G

EXCESS EMISSION SUMMARY REPORT
3rd Quarter 2009 Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – (12-hour average ppm)**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	15.0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	49.0	C. Quality Assurance Calibration	3.0
D. Other Known Causes	0.0	D. Other Known Causes	4.0
E. Unknown Causes	0.0	E. Unknown Causes	9.0
II. Total Duration of Excess Emission	64.0	II. Total CMS Downtime	16.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	2.9%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.7%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors. Include** detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	9/15/2009 11:00:00 AM	9/16/2009 7:00:00 PM	616.6	32	Air demand analyzer (SRU controller) problems	
2	9/20/2009 3:00:00 AM	9/20/2009 6:00:00 PM	1637.3	15	SRU #1 shut down	
3	9/20/2009 11:00:00 PM	9/21/2009 4:00:00 PM	595.0	17	Pressure spikes within SWS	
		Total Periods Excess Emissions		64		

Form D - Monitor Downtime Summary Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/5/2009 10:00:00 AM	8/5/2009 1:00:00 PM	3	Instrument maintenance - unspecified	
2	8/6/2009 9:00:00 AM	8/6/2009 10:00:00 AM	1	Instrument maintenance - unspecified	
3	8/27/2009 7:00:00 AM	8/27/2009 8:00:00 AM	1	Daily CD check	
4	8/28/2009 7:00:00 AM	8/28/2009 8:00:00 AM	1	Daily CD check	
5	9/8/2009 11:00:00 PM	9/9/2009 8:00:00 AM	9	Unknown	
6	9/11/2009 7:00:00 AM	9/11/2009 8:00:00 AM	1	Daily CD check	

Total Hours Monitor Unavailable 16

EXCESS EMISSION SUMMARY REPORT
4th Quarter 2009 Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – see lb/hr**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	178.0
B. Control Equipment Problems	29.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	37.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	21.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	5.0
II. Total Duration of Excess Emission	87.0	II. Total CMS Downtime	183.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	15.6%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	8.3%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	10/10/2009 1:00:00 AM	10/10/2009 8:00:00 PM	4661.9	19	Hot oil skid shut down	
2	10/13/2009 2:00:00 PM	10/14/2009 11:00:00 AM	3304.7	21	Power outage	
3	11/21/2009 8:00:00 AM	11/22/2009 2:00:00 AM	1552.1	18	Process upset	
4	12/19/2009 3:00:00 PM	12/20/2009 7:00:00 PM	783.2	28	SCOT problems	
5	12/21/2009	12/21/2009 1:00:00 AM	258.2	1	SCOT problems	
		Total Periods Excess Emissions		87		

Form D - Monitor Downtime Summary Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	11/8/2009 11:00:00 AM	11/8/2009 4:00:00 PM	5	Maintenance - working on CEMs	
2	12/7/2009 7:00:00 AM	12/11/2009	89	Failed daily CD check (excessive drift)	
3	12/15/2009 4:00:00 AM	12/17/2009 2:00:00 AM	46	Failed daily CD check (excessive drift)	
4	12/17/2009 4:00:00 AM	12/18/2009 11:00:00 PM	43	Failed daily CD check (excessive drift)	
		Total Hours Monitor Unavailable	183		

Section H – CERCLA/EPCRA

CERCLA/EPCRA

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
CERCLA/ EPCRA	172c	Conduct annual training for the environmental compliance staff	7/24/09	Environmental staff training occurred on 7/15/09, which followed FRI's written procedures. This documentation was included in the Compliance Review Report	X	8/31/2009	
CERCLA/ EPCRA	172a	Complete CERCLA/ EPCRA Compliance Review for the 5 years prior to the Date of Entry	7/24/09	Submitted the CERCLA/ EPCRA Compliance Review.	X	7/24/2009	

Section I – SEMI – ANNUAL REPORT TIMES

216d – Additional Matters

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Semi-annual Report	207	Submit applications to the Applicable Intervenor to incorporate the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry into federally enforceable minor and major new source review permits.	7/24/09	The application was submitted to WDEQ, which covered incorporating all of the emission limits and standards required by the Consent Decree that are applicable or would become applicable within the next 5 years.	X	7/21/2009	
Semi-annual Report	216	Submit semi-annual report every six months	2/28/10	This semi-annual report covers the time period from 7/1/09 through 12/31/09.	X		
Semi-annual Report	216a	Summary of emissions data specifically required	2/28/10	Emission data required in this semi-annual report is attached in the respective categories.	X		
Semi-annual Report	216b	Description of any problems anticipated with respect to meeting requirements of the Consent Decree	2/28/10	No problems anticipated.	X		
Semi-annual Report	216d	Any additional matters that should be brought to the attention of the applicable federal and state agencies	2/28/10	All additional matters that were not reported elsewhere in this semi-annual report are included under this paragraph as Attachment I.	X		I
Semi-annual Report	216e	Any additional items required by any other paragraph of the Consent Decree to be submitted with a semi-annual report including but not limited to reports required under 137, 152, 170, 205	2/28/10	No other items to address. Please see respective categories.	X		
Semi-annual Report	220	Payment of Civil Penalties	4/26/09	Payment submitted to the respective agencies on 4/9/09.	X	4/9/2009	

Consent Decree Paragraph 216d – Additional Matters

BWON
Although the 3Q09 and 4Q09 end-of-line sampling for BWON (in accordance with the approved BWON sampling plan) shows compliance with <10 Mg/yr threshold, the initial findings from the 2008 TAB review and verification indicate FRI is >10 Mg/yr.
In accordance with paragraph 89, FRI consulted with Cindy Beeler at EPA to notify her of the change in BWON applicability. The phone record for this conversation is attached.

FCCU
FRI deviated from the daily addition of 396 lbs SO2 reducing additive, as required by paragraph 22a, for the dates listed below. Cindy Beeler at EPA was contacted regarding the proper reporting procedures for the first incident and she advised FRI to include the instances in the next semi-annual report.

- August 1, 2009 – loader was offline and FRI was unable to add the additive into the FCC

- November 21, 2009 through November 24, 2009 –mechanical problems with the catalyst loader did not allow additive to be added during this time period.

- December 17, 2009 – additive was less than the required amount due to a malfunction of the automated clock on the catalyst loader

- December 18, 2009 – addition was less than the required amount due to a malfunction of the automated clock on the catalyst loader. Issue was resolved by midnight on December 18th.

LDAR
During the second half of 2009, FRI did not perform the required "initial attempt" at repair on one control valve on the Truck Dock VRU within the 5 day window. The initial attempt was required by November 16, 2009, but the repair was not attempted until November 17, 2009. The 15 day final repair requirement was met.

Heaters and Boilers
In accordance with the AMP submitted, FRI has several bypass lines where gas from one collection or distribution system can enter another. The bypasses are maintained closed, sealed with car seals, and inspected monthly to ensure all natural gas and/or refinery-generated gases are routed to the Fuel Gas Balance Drum (FGBD).

During the reporting period, one carseal was removed to access the bypass line on December 15, 2009. The Environmental Department was notified of the removal and a new carseal was placed on the line during the next scheduled inspection on December 31, 2009.

Verbal Communication Record

Date: 11/10/09	Time: 8:30am	Author: KSW

Communication With:	Name	Affiliation	Communication:
	Cindy Beeler	EPA	☐ Meeting ☒ Telephone
	KSW		
	SCF		

Subject: Global Settlement items - SEP & BWON

Telephone Number Called: 303-312-6204

Other Pertinent Information:

Discussion Summary:

Frontier's first question for Cindy was the status of our SEP (geodome) work plan approval. She said she sent an approval letter out to us on 11/4. She thanked us for following through on her questions.

The next topic was to notify her that we have received our draft BWON TAB review & verification and we will be over 10 Mg, as eluded to in our semi-annual report. She said she was taking notes and it was duely noted. She very much appreciated us keeping her informed as it gave us more credibility in her eyes.

Action Items

Distribution List: GBF, WMK, SCF, G.S. file

Author's Signature: Kelli Wilber (Print name, then sign) 11/10/09 (Date)

Form Created by Martha Fida
11/10/2009

Verbal Communication Record

Date: 10/15/09	Time: 3:45pm	Author: KSW

Communication With:	Name	Affiliation	Communication:
	Cindy Beeler	EPA	☐ Meeting ☒ Telephone

Subject: DeSOx additive short for day

Telephone Number Called: 303-312-6204

Other Pertinent Information:

Discussion Summary:

Left Message: Loader for FCC DeSOx plugged up and addition was short for the 24 hr period. Operators got the line cleared and added the extra 210# @ 12:30am.

"Cindy: We have notified - so that is good ~ she appreciated the timely notice."

Breifly discussed geodome workplan - told her water issue may be non-issue if we leave tanks in gasolince service.

Action Items

Add to semi-annual report.

Corrective actions - operators check more frequently.

Distribution List:

Author's Signature: Kell Wilbee (Print name, then sign) 10/15/09 (Date)

Form Created by Martha Fida
10/19/2009

FRONTIER

FRONTIER REFINING INC.
a Subsidiary of Frontier Refining & Marketing Inc.

P.O. BOX 1588
CHEYENNE, WYOMING 82003-1588
(307) 634-3551
FAX (Main Office) (307) 771-8784
FAX (Purchasing) (307) 771-8795

Certified Mail
Return Receipt Requested

 # 7000 1670 0013 4598 7468

February 26, 2010

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Chief
Mail Code 8 ENF-T
Office of Enforcement, Compliance, and
Environmental Justice
U.S. EPA Region 8
1595 Wynkoop St.
Denver, CO 80202-1129

Wyoming Department of Environmental
Quality
Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

Semi-Annual 2H 09 (copy 1)

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: July 1, 2009 through December 31, 2009

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refinery, Inc. (FRI) is hereby submitting the semi-annual progress report for (July 1, 2009 through December 31, 2009) see attached..

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Compliance Manager
Frontier Refining, Inc.

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Introduction

In accordance with the requirements of Section XI of the NPRI Consent Decree dated March 26, 2009, Frontier Refining, Inc. (FRI) is submitting the following "semi-annual report". This progress report lists the status of requirements with a completion deadline of December 31, 2009 or earlier. This report covers the time period from July 1, 2009 through December 31, 2009. The following information is listed in table format to aid in the review process. Any attachments that are required to be submitted with this semi-annual report are provided behind the respective section.

SECTION / CATEGORY		TABLES/ATTACHMENTS
A	BWON	Training Certifications Quarterly Sampling
B	FCCU	CEMS Data
C	FLARING	RCFA Reports
D	HEATERS AND BOILERS	CEMS Data
E	LDAR	LDAR
F	SEP	SEP
G	SRP	CEMS Data
H	CERCLA/ EPCRA	CERCLA/EPCRA
I	SEMI-ANNUAL REPORT ITEMS	216d – Additional Matters

Section A – BWON

Training Certifications

Quarterly Sampling

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
BWON	115, 137b	Develop and begin annual training for all employees asked to draw BWON samples	Annually	FRI implemented the training after the BWON sampling plan was drafted in June 2008. Both consulting companies, as well as those employees involved with BWON, have gone through the necessary BWON training for taking samples. Trihydro is the only company currently taking samples; therefore, only Trihydro's current certifications are attached.	X		A
BWON	121, 136	Submit BWON Sampling Plan	3/31/09	FRI submitted the BWON Sampling Plan on 4/9/2009.	X	4/9/2009	
BWON	127	Implement the BWON Sampling Plan during the first full calendar quarter after the plan is submitted.	Quarterly	FRI performed the required quarterly sampling per the BWON sampling plan on 5/19/09, 9/4/09 & 11/18/09. Sampling results for 3Q09 & 4Q09 are attached to this report.	X		A
BWON	123, 129, 130, 132, 137a	Calculate and submit quarterly and projected annual TAB based on sampling results. Corrective measures are needed if quarterly TAB exceeds 2.5 Mg or projected annual TAB exceeds 10 Mg/yr	2/28/10	The quarterly projected benzene concentration based on our 3Q09 End of Line (EOL) sampling results was 1.6 Mg. The projected annual benzene based on the 3Q09 EOL sampling is 6.5 Mg/yr. The quarterly projected benzene concentration based on our 4Q09 End of Line (EOL) sampling results was 1.0 Mg. The projected annual benzene based on the 4Q09 EOL sampling is 5.96 Mg/yr. Because the quarterly & annual projected calculations are less than the 2.5 Mg and 10 Mg respectively, no corrective actions are warranted.	X	3Q09 & 4Q09 attached	A
BWON	137c, 216e	Submittal of initial and/or subsequent audits	3/26/10	The initial BWON lab audit, which was conducted by Trihydro was previously submitted.	X	7/21/2009	

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Tyson Markham

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Regina Mitchell

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Chelsea Neuman

to certify the completion of

METHOD 25D TRAINING

Awarded: December 8, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Sean Ukele

to certify the completion of

METHOD 25D TRAINING

Awarded: December 2, 2009

Calvin Niss, Vice President

TABLE A-1. CONSENT DECREE SAMPLING RESULTS, THIRD QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	9/4/09	13:35	--	832.00
			9/4/09	13:37	--	848.00
			9/4/09	13:39	--	856.00
	Average:					845.33
API	API Water	End-of-Line	9/4/09	13:21	5.98	--
			9/4/09	13:44	6.40	--
			9/4/09	14:00	5.96	--
	Average:				6.11	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

TABLE A-2. 2009 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, THIRD QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Inlet	99.93	0.07	50.67	6.11	845.33	6.57	496.53	6.46515	1.621286877	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
1Q09	5.14	1.28
2Q09	8.33	2.08
3Q09	6.49	1.62
4Q09	NA	1.66
2009 Total		6.65

Notes:

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the third quarter 2009.

[d] Organic benzene concentration based on samples collected during the third quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable, future quarterly sampling which has not been completed is based on the average of the previous quarters to obtain the annual TAB.

TABLE A-3. CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	11/18/09	11:11	--	631.00
			11/18/09	11:40	--	604.00
			11/18/09	12:11	--	575.00
	Average:					**603.33**
API	API Water	End-of-Line	11/18/09	11:30	2.35	--
			11/18/09	12:08	3.450	--
			11/18/09	12:25	4.14	--
	Average:				**3.31**	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

TABLE A-4. 2009 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, FOURTH QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Estimated Quarterly TAB (Mg/yr)	Estimated Total Annual Benzene (Mg/yr)	Notes
NA	API Effluent	99.94	0.06	50.67	3.31	603.33	3.60	560.00	4.01	1.00	a,b,c,d

	Estimated Quarterly (Mg/yr)	Estimated Total (Mg/yr)
1Q09	5.14	1.28
2Q09	8.33	2.08
3Q09	6.49	1.62
4Q09	4.01	1.00
2009 Total		6.65

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.

[b] Hydrocarbon density based on similar streams at other refineries.

[c] Aqueous benzene concentration based on samples collected during the fourth quarter 2009.

[d] Organic benzene concentration based on samples collected during the fourth quarter 2009.

Estimated annual Mg/yr are based on EOL sampling and include the previous quarters annual projection where applicable.

Section B – FCCU

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
FCCU	12	Notify EPA which option (paragraph 13 or 14) FRI will comply with for NOx.	9/22/09	FRI chose to comply with paragraph 14. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	20	Notify EPA which option (paragraph 21 or 22) FRI will comply with for SO_2.	9/22/09	FRI chose to comply with paragraph 22. The notification was attached to the previous semi-annual report.	X	8/31/2009	
FCCU	38	Satisfy the notification requirements of 40 CFR 60.7(a) for FCCU Catalyst Regenerators that become "affected facilities" under NSPS Subpart J.	3/26/09	FRI became an "affected facility" under NSPS Subpart J for CO on Date of Entry. The notification was attached to the previous semi-annual report. In accordance with MACT Subpart UUU requirements, FRI conducts annual RATA performance test on CO. These tests satisfy the requirements of NSPS 60.8(a) for an initial performance test.	X	8/31/2009	
FCCU	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		B
FCCU	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report.	X		B

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 3Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 3Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	-
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 3Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	11.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	11.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/26/2009	8/26/2009 11:00:00 AM	11	Unknown	
		Total Hours Monitor Unavailable	11		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 4Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	585.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	17.0
C. Process Problem	0	C. Quality Assurance Calibration	34.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	636.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	28.9%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary NOx ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/21/2009 11:00:00 PM	11/22/2009 9:00:00 AM	10	FCCU startup	
6	11/28/2009 4:00:00 AM	11/28/2009 9:00:00 AM	5	Failed daily CD check (excessive drift)	
7	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
8	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
9	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
10	12/26/2009 4:00:00 AM	12/27/2009 11:00:00 AM	31	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
11	12/28/2009 5:00:00 AM	12/29/2009 2:00:00 PM	33	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	636		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 4Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	579.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	7
C. Process Problem	0	C. Quality Assurance Calibration	36
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	622.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	28.2%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/28/2009 8:00:00 AM	11/28/2009 9:00:00 AM	1	Daily CD check	
6	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
7	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
8	12/22/2009 4:00:00 AM	12/22/2009 5:00:00 AM	1	Daily CD check	
9	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
10	12/26/2009 4:00:00 AM	12/27/2009 10:00:00 AM	30	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
11	12/28/2009 5:00:00 AM	12/29/2009 2:00:00 PM	33	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	622		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 4Q09

Emission Data Summary		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	599.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	9.0
C. Process Problem	2	C. Quality Assurance Calibration	35.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	2	II. Total CMS Downtime	644.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.1%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	29.2%

Total time of excess emission events due to emergency/abnormal operations: 0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm corr (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	10/10/2009 4:00:00 AM	10/13/2009 5:00:00 AM	73	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
2	10/18/2009 4:00:00 AM	10/19/2009 9:00:00 AM	29	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
3	10/20/2009 5:00:00 AM	11/3/2009 11:00:00 AM	342	O2 CEMS failed daily CD check - O2 Cell bad	Stock additional O2 cells in the warehouse
4	11/21/2009 7:00:00 AM	11/21/2009 2:00:00 PM	7	Power outage	
5	11/28/2009 8:00:00 AM	11/28/2009 9:00:00 AM	1	Daily CD check	
6	12/4/2009 5:00:00 AM	12/4/2009 7:00:00 AM	2	Process upset	
7	12/7/2009 9:00:00 AM	12/10/2009 9:00:00 AM	72	Sample system failure	Troubleshoot to determine cause of CEMS shutdown
8	12/16/2009 10:00:00 AM	12/16/2009 11:00:00 AM	1	Unknown	
9	12/20/2009 4:00:00 AM	12/21/2009 12:00:00 PM	32	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
10	12/22/2009 10:00:00 AM	12/22/2009 12:00:00 PM	2	Cylinder Gas Audit	
11	12/26/2009 4:00:00 AM	12/27/2009 11:00:00 AM	31	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
12	12/28/2009 5:00:00 AM	12/30/2009 9:00:00 AM	52	O2 CEMS failed daily CD check - O2 Cell bad	Replaced O2 cell
		Total Hours Monitor Unavailable	644		

Section C – FLARING

RCFA Reports

(pulled and placed in Flaring folder)

Frontier Refining Inc.

Section D – HEATERS AND BOILERS

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Heaters and Boilers	44	Submit NOx control plan and updates	9/22/09	The NOx control plan for FRI and FEDRC was previously submitted with the first semi-annual report.	X	8/31/2009	
Heaters and Boilers	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		D
Heaters and Boilers	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report.	X		D

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 3Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	0.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.0%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 4Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	2.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	2.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.1%

Total time of excess emission events due to emergency/abnormal operations: 0

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary Fuel Gas H2S ppm (3-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	11/18/2009 12:00:00 PM	11/18/2009 2:00:00 PM	2	Cylinder Gas Audit	
		Total Hours Monitor Unavailable	2		

Section E – LDAR

LDAR

LDAR Written Plan
pulled from report, in LDAR File

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	142	Written LDAR program for refinery to comply with all applicable federal and state regulations (Submit to EPA and WDEQ)	2/28/10	The final written LDAR program is attached to this semi-annual report.	X		E
LDAR	144, 170.a.i	Submit the initial written refinery-wide LDAR program	2/28/10	The final written LDAR program is attached to this semi-annual report.	X		E
LDAR	148, 170b	Certify refinery is 1) in compliance, 2) completed corrective action items, 3) is on a compliance, 4) all equipment has been identified	11/21/09	FRI received the final draft audit report on August 21, 2009.	X	11/20/2009	
LDAR	156, 170.a.iii, 216.e	Report that FRI has chosen the initial attempt at repair for our additional VOC monitoring chosen	5/25/09	The notification that FRI chooses to comply with the initial attempt at repair was previously submitted.	X	4/15/2009	
LDAR	170.a.ii, 216.e	Certification of the implementation of lower leak definitions and monitoring frequencies	8/31/09	FRI has been using the lower leak rates as the compliance target from Date of Entry. Monitoring frequencies for valves and pumps are compliant with the Consent Decree.	X	8/31/2009	
LDAR	170.a.iv, 216.e	Certification of LDAR data QA/QC program	8/31/09	FRI LDAR Coordinator has a rigorous QA/QC program which has been followed since Date of Entry.	X	8/31/2009	
LDAR	170.a.v, 216.e	Naming of LDAR Coordinator	8/31/09	The naming of the LDAR Coordinator, Kenton Stobbe, occurred prior to Date of Entry in the organization chart.	X	8/31/2009	
LDAR	170.a.vi, 216.e	Certification new valve and pump tracking system for new valves and pumps added during maintenance and construction	8/31/09	LDAR program has been implemented as part of the Management of Change (MOC) process.	X	8/31/2009	
LDAR	170.a.vii, 216.e	Certification of calibration drift assessment procedures	8/31/09	LDAR Contractor completes a daily work record document that the technicians complete and sign off on daily drift checks.	X	8/31/2009	

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
LDAR	170.a.viii, 216.e	Certification of "delay of repair" procedures	8/31/09	All "delay of repair" valves have a signed form from the Unit Superintendent that are completed within the specified time frame. During the reporting period, there were 9 valves that were applicable to the "drill and tap" method.	X	8/31/2009	
LDAR	170.a.ix, 216.e	Report of the implementation of "chronic leaker" program	2/28/10	Frontier Refining Inc. implemented the chronic leaker program that follows the FRI Site Plan. The LDAR Coordinator manages an evergreen list of all non control valves that have leaked over 10,000 ppm. Frontier tracks all valves on this list for statistics such as manufacturer, type, size, ect and assess future rates of failure for "like kind" valves. Frontier Refining will replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification.	X		
LDAR	152, 216.e	Implementation of any actions necessary to correct non-compliance from any audit findings	Varies	FRI received the final audit and submitted the corrective actions schedule with the final audit.	X	11/20/2009	

Section F – SEP

SEP

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SEP	205, 216.c	Description of all SEPs and implementation activity	8/31/09	Permit application to WDEQ for geodome approval submitted on 5/12/09. WDEQ permit waiver AP-9413 issued on 6/11/09. The geodomes were for TK 2-70 and TK 2-71, completed on 2/18/10.	X	7/6/2009	
SEP	189	FRI shall determine whether it will convert Tank 2-70 or Tank 2-71 and shall inform EPA and WDEQ of FRI's election	9/22/09	This paragraph has become a mute point as FRI has committed to converting both Tank 2-70 and Tank 2-71 into geodesic dome roof tanks. The amendment to the Consent Decree was finalized on 5/21/09.	X		
SEP	190	FRI shall submit a detailed description of the SEP, work plan and SEP implementation schedule to EPA and WDEQ for review	9/22/09	FRI submitted the SEP work plan, which included the detailed decription and the implementation schedule.	X	7/6/2009	
SEP	220a	Determine whether the SEP project will be completed within 12 or 24 months after the DOE.	9/22/09	FRI notified the respective agencies that the SEP project would complete within 12 months.	X	4/6/2009	

Section G – SRP

CEMS Data

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
SRP	218a	CEMS - Total period when emissions were exceeded as a percentage	2/28/10	Data provided in excerpts from 3Q009 and 4Q09 CEMS Report	X		G
SRP	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G
SRP	218a	Total downtime of the CEMS, expressed as a percentage	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G
SRP	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	2/28/10	Data provided in excerpts from 3Q09 and 4Q09 CEMS Report	X		G

EXCESS EMISSION SUMMARY REPORT
3rd Quarter 2009 Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – (12-hour average ppm)**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	15.0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	49.0	C. Quality Assurance Calibration	3.0
D. Other Known Causes	0.0	D. Other Known Causes	4.0
E. Unknown Causes	0.0	E. Unknown Causes	9.0
II. Total Duration of Excess Emission	64.0	II. Total CMS Downtime	16.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	2.9%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.7%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	9/15/2009 11:00:00 AM	9/16/2009 7:00:00 PM	616.6	32	Air demand analyzer (SRU controller) problems	
2	9/20/2009 3:00:00 AM	9/20/2009 6:00:00 PM	1637.3	15	SRU #1 shut down	
3	9/20/2009 11:00:00 PM	9/21/2009 4:00:00 PM	595.0	17	Pressure spikes within SWS	
		Total Periods Excess Emissions		64		

Form D - Monitor Downtime Summary Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	8/5/2009 10:00:00 AM	8/5/2009 1:00:00 PM	3	Instrument maintenance - unspecified	
2	8/6/2009 9:00:00 AM	8/6/2009 10:00:00 AM	1	Instrument maintenance - unspecified	
3	8/27/2009 7:00:00 AM	8/27/2009 8:00:00 AM	1	Daily CD check	
4	8/28/2009 7:00:00 AM	8/28/2009 8:00:00 AM	1	Daily CD check	
5	9/8/2009 11:00:00 PM	9/9/2009 8:00:00 AM	9	Unknown	
6	9/11/2009 7:00:00 AM	9/11/2009 8:00:00 AM	1	Daily CD check	
		Total Hours Monitor Unavailable	16		

EXCESS EMISSION SUMMARY REPORT
4th Quarter 2009 Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report – see lb/hr**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0.0	A. Monitor Equipment Malfunction	178.0
B. Control Equipment Problems	29.0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	37.0	C. Quality Assurance Calibration	0.0
D. Other Known Causes	21.0	D. Other Known Causes	0.0
E. Unknown Causes	0.0	E. Unknown Causes	5.0
II. Total Duration of Excess Emission	87.0	II. Total CMS Downtime	183.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	15.6%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	8.3%

Total time of excess emission events due to emergency/abnormal operations: 0.0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	10/10/2009 1:00:00 AM	10/10/2009 8:00:00 PM	4661.9	19	Hot oil skid shut down	
2	10/13/2009 2:00:00 PM	10/14/2009 11:00:00 AM	3304.7	21	Power outage	
3	11/21/2009 8:00:00 AM	11/22/2009 2:00:00 AM	1552.1	18	Process upset	
4	12/19/2009 3:00:00 PM	12/20/2009 7:00:00 PM	783.2	28	SCOT problems	
5	12/21/2009	12/21/2009 1:00:00 AM	258.2	1	SCOT problems	
		Total Periods Excess Emissions		87		

Form D - Monitor Downtime Summary Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	11/8/2009 11:00:00 AM	11/8/2009 4:00:00 PM	5	Maintenance - working on CEMs	
2	12/7/2009 7:00:00 AM	12/11/2009	89	Failed daily CD check (excessive drift)	
3	12/15/2009 4:00:00 AM	12/17/2009 2:00:00 AM	46	Failed daily CD check (excessive drift)	
4	12/17/2009 4:00:00 AM	12/18/2009 11:00:00 PM	43	Failed daily CD check (excessive drift)	
		Total Hours Monitor Unavailable	183		

Section H – CERCLA/EPCRA

CERCLA/EPCRA

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
CERCLA/ EPCRA	172c	Conduct annual training for the environmental compliance staff	7/24/09	Environmental staff training occurred on 7/15/09, which followed FRI's written procedures. This documentation was included in the Compliance Review Report	X	8/31/2009	
CERCLA/ EPCRA	172a	Complete CERCLA/ EPCRA Compliance Review for the 5 years prior to the Date of Entry	7/24/09	Submitted the CERCLA/ EPCRA Compliance Review.	X	7/24/2009	

Section I – SEMI – ANNUAL REPORT TIMES

216d – Additional Matters

Frontier Refining Inc.

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Date Submitted	Attachment?
Semi-annual Report	207	Submit applications to the Applicable Intervenor to incorporate the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry into federally enforceable minor and major new source review permits.	7/24/09	The application was submitted to WDEQ, which covered incorporating all of the emission limits and standards required by the Consent Decree that are applicable or would become applicable within the next 5 years..	X	7/21/2009	
Semi-annual Report	216	Submit semi-annual report every six months	2/28/10	This semi-annual report covers the time period from 7/1/09 through 12/31/09.	X		
Semi-annual Report	216a	Summary of emissions data specifically required	2/28/10	Emission data required in this semi-annual report is attached in the respective categories.	X		
Semi-annual Report	216b	Description of any problems anticipated with respect to meeting requirements of the Consent Decree	2/28/10	No problems anticipated.	X		
Semi-annual Report	216d	Any additional matters that should be brought to the attention of the applicable federal and state agencies	2/28/10	All additional matters that were not reported elsewhere in this semi-annual report are included under this paragraph as Attachment I.	X		I
Semi-annual Report	216e	Any additional items required by any other paragraph of the Consent Decree to be submitted with a semi-annual report including but not limited to reports required under 137, 152, 170, 205	2/28/10	No other items to address. Please see respective categories.	X		
Semi-annual Report	220	Payment of Civil Penalties	4/26/09	Payment submitted to the respective agencies on 4/9/09.	X	4/9/2009	

Consent Decree Paragraph 216d – Additional Matters

BWON
Although the 3Q09 and 4Q09 end-of-line sampling for BWON (in accordance with the approved BWON sampling plan) shows compliance with <10 Mg/yr threshold, the initial findings from the 2008 TAB review and verification indicate FRI is >10 Mg/yr.
In accordance with paragraph 89, FRI consulted with Cindy Beeler at EPA to notify her of the change in BWON applicability. The phone record for this conversation is attached.

FCCU
FRI deviated from the daily addition of 396 lbs SO2 reducing additive, as required by paragraph 22a, for the dates listed below. Cindy Beeler at EPA was contacted regarding the proper reporting procedures for the first incident and she advised FRI to include the instances in the next semi-annual report.

- August 1, 2009 – loader was offline and FRI was unable to add the additive into the FCC
- November 21, 2009 through November 24, 2009 –mechanical problems with the catalyst loader did not allow additive to be added during this time period.
- December 17, 2009 – additive was less than the required amount due to a malfunction of the automated clock on the catalyst loader
- December 18, 2009 – addition was less than the required amount due to a malfunction of the automated clock on the catalyst loader. Issue was resolved by midnight on December 18th.

LDAR
During the second half of 2009, FRI did not perform the required "initial attempt" at repair on one control valve on the Truck Dock VRU within the 5 day window. The initial attempt was required by November 16, 2009, but the repair was not attempted until November 17, 2009. The 15 day final repair requirement was met.

Heaters and Boilers
In accordance with the AMP submitted, FRI has several bypass lines where gas from one collection or distribution system can enter another. The bypasses are maintained closed, sealed with car seals, and inspected monthly to ensure all natural gas and/or refinery-generated gases are routed to the Fuel Gas Balance Drum (FGBD).

During the reporting period, one carseal was removed to access the bypass line on December 15, 2009. The Environmental Department was notified of the removal and a new carseal was placed on the line during the next scheduled inspection on December 31, 2009.

Verbal Communication Record

Date: 11/10/09	Time: 8:30am	Author: KSW

Communication With:	Name	Affiliation	Communication:
	Cindy Beeler	EPA	☐ Meeting ☒ Telephone
	KSW		
	SCF		

Subject: Global Settlement items - SEP & BWON

Telephone Number Called: 303-312-6204

Other Pertinent Information:

Discussion Summary:

Frontier's first question for Cindy was the status of our SEP (geodome) work plan approval. She said she sent an approval letter out to us on 11/4. She thanked us for following through on her questions.

The next topic was to notify her that we have received our draft BWON TAB review & verification and we will be over 10 Mg, as eluded to in our semi-annual report. She said she was taking notes and it was duely noted. She very much appreciated us keeping her informed as it gave us more credibility in her eyes.

Action Items

Distribution List: GBF, WMK, SCF, G.S. file

Author's Signature: Kelli Wilber (Print name, then sign) 11/10/09 (Date)

Form Created by Martha Fida 11/10/2009

Verbal Communication Record

Date: 10/15/09	Time: 3:45pm	Author: KSW

Communication With:	Name	Affiliation	Communication:
	Cindy Beeler	EPA	☐ Meeting ☒ Telephone

Subject: DeSOx additive short for day

Telephone Number Called: 303-312-6204

Other Pertinent Information:

Discussion Summary:

Left Message: Loader for FCC DeSOx plugged up and addition was short for the 24 hr period. Operators got the line cleared and added the extra 210# @ 12:30am.

"Cindy: We have notified - so that is good ~ she appreciated the timely notice."

Breifly discussed geodome workplan - told her water issue may be non-issue if we leave tanks in gasolince service.

Action Items

Add to semi-annual report.

Corrective actions - operators check more frequently.

Distribution List:

Author's Signature: Kell Wilbee (Print name, then sign) 10/15/09 (Date)

Form Created by Martha Fida
10/19/2009

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Certified Mail
Return Receipt Requested

 # 7000-1670-0013 4598 7598

August 31, 2009

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Wyoming Department of Environmental
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Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH
Submittal of Semi-annual Progress Report: March 26, 2009 through June 30, 2009

To Whom It May Concern:

Pursuant to Section XI of the referenced Consent Decree, Frontier Refinery, Inc. (FRI) is hereby submitting the semi-annual progress report for March 26, 2009 (Date of Entry) through June 30, 2009 (see attached).

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Compliance Manager
Frontier Refining, Inc.

Attachments

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

Electronic copy to
csullivan@matrixnewworld.com
foley.patrick@epa.gov

Introduction

In accordance with the requirements of Section XI of the NPRI Consent Decree dated March 26, 2009, Frontier Refining, Inc. (FRI) is submitting the following "semi-annual report". This progress report lists the status of requirements with a completion deadline of June 30, 2009 or earlier. This report covers the time period from March 26, 2009 through June 30, 2009. The following information is listed in table format to aid in the review process. Any attachments that are required to be submitted with this semi-annual report are provided behind the respective section.

SECTION / CATEGORY		TABLES/ATTACHMENTS
A	BWON	A1– Training Certifications A2 – Quarterly Sampling
B	FCCU	B1 – NOx Compliance B2 – SO_2 Compliance B3 – Affected Facility for CO B4 – 2008 Emissions B5 CEMS Data
C	FLARING	C1 – RCFA Reports C2 – Flaring Compliance Option C3 – 2008 Emissions
D	HEATERS AND BOILERS	D1 – NOx Control Plan D2 – 2008 Emissions - >40 MMBtu/hr D3 – 2008 Emissions - <40 MMBtu/hr D4 – 2008 Emissions – Summary of Heaters & Boilers D5 – CEMS Data
E	LDAR	E - LDAR
F	SEP	F - SEP
G	SRP	G1 – SRP Emissions G2 – CEMS Data
H	CERCLA/ EPCRA	H – CERCLA/EPCRA
I	SEMI-ANNUAL REPORT ITEMS	I1 – 2008 Emissions

Section A – BWON

A 1 – Training Certifications

A 2 – Quarterly Sampling

Frontier Refining Inc.

SECTION A - BWON REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
BWON	115, 137b	Develop and begin annual training for all employees asked to draw BWON samples	3/31/09	FRI implemented the training after the BWON sampling plan was drafted in June 2008. Both consulting companies, as well as those employees involved with BWON, have gone through the necessary BWON training for taking samples. Trihydro is the only company currently taking samples; therefore, only Trihydro's certifications are attached.	X	A1
BWON	121, 136	Submit BWON Sampling Plan	3/31/09	FRI submitted the BWON Sampling Plan on 4/9/2009.	X	
BWON	127	Implement the BWON Sampling Plan during the first full calendar quarter after the plan is submitted.	6/30/09	FRI performed the required quarterly sampling per the BWON sampling plan on 5/19/09.	X	A2
BWON	123, 129, 130, 132, 137a	Calculate and submit quarterly and projected annual TAB based on sampling results. Corrective measures are needed if quarterly TAB exceeds 2.5 Mg or projected annual TAB exceeds 10 Mg/yr	8/31/09	The quarterly projected benzene concentration based on our 2Q09 End of Line (EOL) sampling results was 2.08 Mg. The projected annual benzene based on the EOL sampling is 8.33 Mg/yr. Because the quarterly & annual projected calculations are less than the 2.5 Mg and 10 Mg respectively, no corrective actions are warranted.	X	A2
BWON	137c, 216e	Submittal of initial and/or subsequent audits	3/26/10	The initial BWON lab audit, which was conducted by Trihydro was submitted on 7/21/09.	X	

Section A – BWON

A 1 – Training Certifications

Frontier Refining Inc.

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Regina Mitchell

to certify the completion of

METHOD 25D TRAINING

Awarded: February 24, 2009

Calvin Niss, Vice President

Trihydro
CORPORATION

Certificate of Completion

is hereby granted to

Chelsea Neuman

to certify the completion of

METHOD 25D TRAINING

Awarded: February 24, 2009

Calvin Niss, Vice President

Section A – BWON

A 2 – Quarterly Sampling

Frontier Refining Inc.

TABLE 2. 2009 TAB BASED ON QUARTERLY END OF LINE CONSENT DECREE SAMPLING RESULTS, SECOND QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment Number	Equipment Description	Percent Aqueous	Percent Organic	Hydrocarbon Density (lbs/ft^3)	Benzene Concentration Aqueous (mg/L)	Benzene Concentration Organic (mg/kg)	Total Benzene in Waste (ppmw)	Flow (gal/min)	Total Annual Benzene (Mg/yr)	Quarterly TAB (Mg/yr)	Notes
NA	API Inlet	99.93	0.07	50.67	7.43	1966.67	8.55	490.19	8.33334	2.08333	a,b,c,d

Total (Mg/yr)	Quarterly (Mg/yr)
8.33334	2.08333

Notes

[a] Flow rates and phase percentage based on operator or unit engineer estimates.
[b] Hydrocarbon density based on similar streams at other refineries.
[c] Aqueous benzene concentration based on samples collected during the second quarter 2009.
[d] Organic benzene concentration based on samples collected during the second quarter 2009.

TABLE 1. CONSENT DECREE SAMPLING RESULTS, SECOND QUARTER 2009
FRONTIER REFINING COMPANY, CHEYENNE REFINERY, CHEYENNE, WYOMING

Equipment	Description	Sample Type	Date Sampled	Time Sampled	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)
API	API Oil	End-of-Line	5/19/09	0950	--	2100.00
			5/19/09	1035	--	1900.00
			5/19/09	1050	--	1900.00
	Average:					1966.67
API	API Water	End-of-Line	5/19/09	1040	7.90	--
			5/19/09	1100	7.10	--
			5/19/09	1120	7.30	--
	Average:				7.43	

Notes:

-- Denotes sample was not analyzed for particular parameter.
Sample list is based on Sampling Plan provided by Sage Environmental.

Section B - FCCU

B 1 – NO_x Compliance

B 2 – SO_2 Compliance

B 3 – Affected Facility for CO

B 4 – 2008 Emissions

B 5 – CEMS Data

Frontier Refining Inc.

SECTION B - FCCU REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
FCCU	12	Notify EPA which option (paragraph 13 or 14) FRI will comply with for NOx.	9/22/09	FRI is choosing to comply with paragraph 14. The notification has been attached to this semi-annual report.	X	B1
FCCU	20	Notify EPA which option (paragraph 21 or 22) FRI will comply with for SO2.	9/22/09	FRI is choosing to comply with paragraph 22. The notification has been attached to this semi-annual report.	X	B2
FCCU	38	Satisfy the notification requirements of 40 CFR 60.7(a) for FCCU Catalyst Regenerators that become "affected facilities" under NSPS Subpart J.	3/26/09	FRI became an "affected facility" under NSPS Subpart J for CO on Date of Entry. The notification has been attached to this semi-annual report. In accordance with MACT II requirements, FRI has been conducting annual RATA performance tests on CO. These tests satisfy the requirements of NSPS 60.8(a) for an initial performance test.	X	B3
FCCU	217g, 217h	Calculate SO2, NO_x, CO and PM emissions from the FCCU for the prior calendar year.	8/31/09	Data submitted for 2008 calendar year emissions inventory is attached.	X	B4
FCCU	218a	CEMS - Total period when emissions were exceeded as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	B5
FCCU	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	B5

P 14

P 22

SECTION B - FCCU REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
FCCU	218a	Total downtime of the CEMS, expressed as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	B5
FCCU	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report. During the reporting period, there was an exceedance of the 5% downtime because the oxygen analyzer failed. The equipment needed for the repairs was not readily available and the parts had to be ordered. Since the failure, FRI has ensured replacement parts are stocked in the warehouse.	X	B5

Section B - FCCU

B 1 – NO_x Compliance

Frontier Refining Inc.

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August 28, 2009

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Wyoming Department of Environmental
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Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH

To Whom It May Concern:

Pursuant to paragraph 12 of the referenced Consent Decree, Frontier Refining Inc. (FRI) is hereby notifying you of our intent to comply with paragraph 14a. In accordance with paragraph 12.b, by no later than one hundred and eighty (180) days from the Date of Entry, FRI shall comply with interim FCCU NOx concentration emission limits of 60 ppmvd on a 365-day rolling average basis, and 120 ppmvd on a 7-day rolling average basis, both at 0% oxygen.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining Inc.

2.2.3.1 GS 12

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering Inc.
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Section B - FCCU

B 2 – SO_2 Compliance

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August 28, 2009

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122 W. 25th Street
Cheyenne, WY 82002

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH

To Whom It May Concern:

Pursuant to paragraph 20 of the referenced Consent Decree, Frontier Refining Inc. (FRI) is hereby notifying you of our intent to comply with paragraph 22a. In accordance with paragraph 20.b, by no later than one hundred and eighty (180) days from the Date of Entry, and continuing until FRI begins to comply with Paragraph 22.b., FRI shall add an EPA-approved SO_2 reducing additive at a rate of 396 pounds per day.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining Inc.

2.2.3.1 GS 20

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering Inc.
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Section B - FCCU

B 3 – Affected Facility for CO

Frontier Refining Inc.

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August 28, 2009

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122 W. 25th Street
Cheyenne, WY 82002

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH

To Whom It May Concern:

Pursuant to paragraph 38 of the referenced Consent Decree, Frontier Refining Inc. (FRI) is hereby notifying you of our intent to comply with 40 CFR 60.7 (a), as the FCCU became an "affected facility" for Carbon Monoxide on March 26, 2009.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining Inc.

2.2.3.1 GS 38

cc: Director, Air Enforcement Division
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Section B - FCCU

B 4 – 2008 Emissions

Frontier Refining Inc.

B4 - FCCU

FCCU SOURCE EMISSIONS DATA FOR 2008

	Actual Emissions		Method of Determination	Date of Latest Test
	lbs/hr	tons/yr		
PM	21.52	94.52	Source test (feed rate averaged 11,995 bpd)	Oct-08
SO2	155.20	681.64	SO2 CERMS data (8.82% moisture)	2008
NOx	10.40	45.68	NOx CERMS data (8.82% moisture)	2008
CO	5.00	21.96	CO CERMS data	2008

Section B - FCCU

B 5 – CEMS Data

Frontier Refining Inc.

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU SO2 (ppm) CEMS - 2Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	332.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	24.0
D. Other Known Causes	0	D. Other Known Causes	4.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	360.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	16.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary SO2 ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/1/2009 9:00:00 AM	4/1/2009 10:00:00 AM	1	Manual calibration drift check	
2	4/2/2009 9:00:00 AM	4/2/2009 10:00:00 AM	1	Manual calibration drift check	
3	4/2/2009 12:00:00 PM	4/2/2009 2:00:00 PM	2	Manual calibration drift check	
4	4/10/2009 9:00:00 AM	4/10/2009 10:00:00 AM	1	Manual calibration drift check	
5	4/11/2009 9:00:00 AM	4/11/2009 1:00:00 PM	4	Instrument maintenance - unspecified	
6	4/12/2009 7:00:00 AM	4/12/2009 8:00:00 AM	1	Manual calibration drift check	
7	4/13/2009 9:00:00 AM	4/13/2009 10:00:00 AM	1	Manual calibration drift check	
8	4/19/2009 8:00:00 AM	4/19/2009 9:00:00 AM	1	Manual calibration drift check	
9	4/20/2009 7:00:00 AM	4/20/2009 8:00:00 AM	1	Manual calibration drift check	
10	4/21/2009 8:00:00 AM	4/21/2009 9:00:00 AM	1	Manual calibration drift check	
11	4/22/2009 9:00:00 AM	4/22/2009 10:00:00 AM	1	Manual calibration drift check	
12	4/23/2009 8:00:00 AM	4/23/2009 9:00:00 AM	1	Manual calibration drift check	
13	4/24/2009 7:00:00 AM	4/24/2009 8:00:00 AM	1	Manual calibration drift check	
14	4/24/2009 12:00:00 PM	4/24/2009 2:00:00 PM	2	Manual calibration drift check	
15	5/4/2009 8:00:00 AM	5/4/2009 9:00:00 AM	1	Manual calibration drift check	
16	5/5/2009 8:00:00 AM	5/5/2009 9:00:00 AM	1	Manual calibration drift check	
17	5/5/2009 12:00:00 PM	5/5/2009 1:00:00 PM	1	Manual calibration drift check	
18	5/7/2009 11:00:00 AM	5/7/2009 1:00:00 PM	2	Manual calibration drift check	
19	5/12/2009 9:00:00 AM	5/12/2009 10:00:00 AM	1	Manual calibration drift check	
20	5/15/2009 9:00:00 AM	5/15/2009 10:00:00 AM	1	Manual calibration drift check	
21	6/1/2009 9:00:00 AM	6/1/2009 11:00:00 AM	2	Manual calibration drift check	
22	6/8/2009 4:00:00 AM	6/20/2009 5:00:00 AM	289	Diluent sample system/analyzer failure	
23	6/29/2009 4:00:00 AM	6/30/2009 11:00:00 PM	43	Failed daily CD check (excessive drift)	

Form D - Monitor Downtime Summary SO2 ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
		Total Hours Monitor Unavailable	360		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU NOx (ppm) CEMS – 2Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	342.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	22.0
D. Other Known Causes	0	D. Other Known Causes	4.0
E. Unknown Causes	0	E. Unknown Causes	0.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	368.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	16.8%

Total time of excess emission events due to emergency/abnormal operations: _0_.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary NOx ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/1/2009 9:00:00 AM	4/1/2009 10:00:00 AM	1	Manual calibration drift check	
2	4/2/2009 9:00:00 AM	4/2/2009 10:00:00 AM	1	Manual calibration drift check	
3	4/2/2009 12:00:00 PM	4/2/2009 2:00:00 PM	2	Manual calibration drift check	
4	4/10/2009 9:00:00 AM	4/10/2009 10:00:00 AM	1	Manual calibration drift check	
5	4/11/2009 9:00:00 AM	4/11/2009 1:00:00 PM	4	Instrument maintenance - unspecified	
6	4/12/2009 7:00:00 AM	4/12/2009 8:00:00 AM	1	Manual calibration drift check	
7	4/13/2009 9:00:00 AM	4/13/2009 10:00:00 AM	1	Manual calibration drift check	
8	4/19/2009 8:00:00 AM	4/19/2009 9:00:00 AM	1	Manual calibration drift check	
9	4/20/2009 7:00:00 AM	4/20/2009 8:00:00 AM	1	Manual calibration drift check	
10	4/21/2009 8:00:00 AM	4/21/2009 9:00:00 AM	1	Manual calibration drift check	
11	4/22/2009 9:00:00 AM	4/22/2009 10:00:00 AM	1	Manual calibration drift check	
12	4/23/2009 8:00:00 AM	4/23/2009 9:00:00 AM	1	Manual calibration drift check	
13	4/24/2009 7:00:00 AM	4/24/2009 8:00:00 AM	1	Manual calibration drift check	
14	4/24/2009 12:00:00 PM	4/24/2009 2:00:00 PM	2	Manual calibration drift check	
15	5/4/2009 4:00:00 AM	5/4/2009 9:00:00 AM	5	Failed daily CD check (excessive drift)	
16	5/5/2009 4:00:00 AM	5/5/2009 9:00:00 AM	5	Failed daily CD check (excessive drift)	
17	5/5/2009 12:00:00 PM	5/5/2009 1:00:00 PM	1	Manual calibration drift check	
18	5/7/2009 11:00:00 AM	5/7/2009 1:00:00 PM	2	Manual calibration drift check	
19	5/12/2009 9:00:00 AM	5/12/2009 10:00:00 AM	1	Manual calibration drift check	
20	5/15/2009 9:00:00 AM	5/15/2009 10:00:00 AM	1	Manual calibration drift check	
21	6/1/2009 9:00:00 AM	6/1/2009 11:00:00 AM	2	Manual calibration drift check	
22	6/8/2009 4:00:00 AM	6/20/2009 5:00:00 AM	289	Diluent sample system/analyzer failure	
23	6/29/2009 4:00:00 AM	6/30/2009 11:00:00 PM	43	Failed daily CD check (excessive drift)	

Form D - Monitor Downtime Summary NOx ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
		Total Hours Monitor Unavailable	368		

FORM B5
EXCESS EMISSION SUMMARY REPORT
FCCU CO (ppm) CEMS – 2Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	322.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	8	C. Quality Assurance Calibration	23.0
D. Other Known Causes	0	D. Other Known Causes	4.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	8	II. Total CMS Downtime	360.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.4%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	16.5%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form D - Monitor Downtime Summary CO ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
1	4/1/2009 9:00:00 AM	4/1/2009 10:00:00 AM	1	Manual calibration drift check	
2	4/2/2009 9:00:00 AM	4/2/2009 10:00:00 AM	1	Manual calibration drift check	
3	4/2/2009 12:00:00 PM	4/2/2009 2:00:00 PM	2	Manual calibration drift check	
4	4/10/2009 9:00:00 AM	4/10/2009 10:00:00 AM	1	Unknown	
5	4/11/2009 9:00:00 AM	4/11/2009 1:00:00 PM	4	Instrument maintenance - unspecified	
6	4/12/2009 7:00:00 AM	4/12/2009 8:00:00 AM	1	Manual calibration drift check	
7	4/13/2009 9:00:00 AM	4/13/2009 10:00:00 AM	1	Manual calibration drift check	
8	4/19/2009 8:00:00 AM	4/19/2009 9:00:00 AM	1	Manual calibration drift check	
9	4/20/2009 7:00:00 AM	4/20/2009 8:00:00 AM	1	Manual calibration drift check	
10	4/21/2009 8:00:00 AM	4/21/2009 9:00:00 AM	1	Manual calibration drift check	
11	4/22/2009 9:00:00 AM	4/22/2009 10:00:00 AM	1	Manual calibration drift check	
12	4/23/2009 8:00:00 AM	4/23/2009 9:00:00 AM	1	Manual calibration drift check	
13	4/24/2009 7:00:00 AM	4/24/2009 8:00:00 AM	1	Manual calibration drift check	
14	4/24/2009 12:00:00 PM	4/24/2009 2:00:00 PM	2	Manual calibration drift check	
15	5/4/2009 8:00:00 AM	5/4/2009 9:00:00 AM	1	Manual calibration drift check	
16	5/5/2009 8:00:00 AM	5/5/2009 9:00:00 AM	1	Manual calibration drift check	
17	5/5/2009 12:00:00 PM	5/5/2009 1:00:00 PM	1	Manual calibration drift check	
18	5/7/2009 11:00:00 AM	5/7/2009 1:00:00 PM	2	Manual calibration drift check	
19	5/12/2009 9:00:00 AM	5/12/2009 10:00:00 AM	1	Manual calibration drift check	
20	5/15/2009 9:00:00 AM	5/15/2009 10:00:00 AM	1	Manual calibration drift check	
21	6/1/2009 9:00:00 AM	6/1/2009 11:00:00 AM	2	Manual calibration drift check	
22	6/8/2009 4:00:00 AM	6/20/2009 5:00:00 AM	289	Diluent sample system/analyzer failure	
23	6/29/2009 4:00:00 AM	6/30/2009 11:00:00 PM	43	Failed daily CD check (excessive drift)	

Form D - Monitor Downtime Summary CO ppm (1-Hour)

No.	*Start Time*	*End Time*	*Hours*	*Reason*	*Action*
		Total Hours Monitor Unavailable	360		

Section C - FLARING

C 1 – RCFA Reports

C 2 – Flaring Compliance Option

C 3 – 2008 Emissions

Frontier Refining Inc.

SECTION C - FLARING REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
Flaring - All	84, 85	Submit a Semi-Annual Flaring Report	8/31/09	FRI notified the respective agencies on 7/6/09 that it would submit the semi-annual flaring report with the semi-annual report.	X	
Flaring - All	84	Submit Semi-Annual Flaring Report. Include: Copies of each incident report (date, root cause, duration, amount of SO2 released, associated penalties, corrective actions completed, outstanding corrective actions)	8/31/09	There were 2 Acid Gas Flaring events which occurred during the reporting period and 1 Tail Gas incident. All of these reports have been attached to this semi-annual report.	X	C1
Flaring - HC	66	Identify compliance option chosen in the first Semi-Annual Report. A. Operating and maintaining a flare gas recovery system. B. Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an Hydrocarbon Flaring Device. C. Operating the Hydrocarbon Flaring Device as a fuel gas combustion device. D. Eliminate to the extent practicable routes of continuous or intermittent routinely generated fuel gases to a Flaring Device and monitor the mass flow of sulfur dioxide emitted by use of a CEMS and flow meter.	8/31/09	FRI is chosing Option C to operate both the Main Flare & Main Standby as fuel gas combustion devices. The Coker Flare is compliant with Option A to operate and maintain a flare gas recovery system.	X	C2
Flaring-AG/TG	217	Calculate SO2 emissions from all acid gas flaring and tail gas flaring incidents from the prior calendar year.	8/31/09	Data submitted for 2008 calendar year emissions inventory is attached.	X	C3

Section C - FLARING

C 1 – RCFA Reports

Frontier Refining Inc.

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6/1/09

RELEASE REPORT FOR 4/4/09 – 4/6/09 EVENT

ACID GAS FLARING	TAIL GAS INCIDENT
Release Start Time: 9:30 pm Release Start Date: 4/4/2009	Release Start Time: 11:00 pm Release Start Date: 4/4/2009
Release End Time: 4:00 pm Release End Date: 4/6/2009	Release End Time: 4:00 pm Release End Date: 4/6/2009
Release Duration: 8.95 hours	Release Duration: 19 hours
Estimate of Quantity of Sulfur Dioxide Emitted: Acid Gas = 24.4 tons	Tail Gas = 1.6 tons

Calculations Attached (see attachment)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On April 4, 2009 at approximately 9:30 pm, Frontier's Sulfur Recovery Plant #2 (SRU#2) shut down. The initial alarm indications pointed to a false SRU #2 fire eye (flame) indication. Power to the fire eyes was removed briefly and the Advanced Process Manager (APM) and Program Logic Controller (PLC) were both re-booted. This appeared to fix the problem as the fire eyes began operating correctly and SRU#2 was restarted. During the time of the shutdown, SRU#1 was unable to handle all of the acid gas and flaring of acid gas at the Main Flare occurred for approximately 135 minutes, from 10:00 pm until 12:45 am on April 5th.

The next evening (April 5), at approximately 10:00 pm, SRU#2 shut down due to the shutdown of the SRU#2 backup blower. Operators were unable to get the blower restarted. SRU#2 was taken offline until the backup blower was repaired, which was mid afternoon on April 6th. The night of April 5th, SRU#1 was operational but was unable to handle all of the acid gas load. Acid gas flaring occurred for a total duration of 387 minutes, from 10:04 pm until 4:30 am on April 6th. During this incident, the TGTU Incinerator experienced exceedances of the SO_2 lb/hr permit limit for 4 hours. The SO_2 12-hour ppm NSPS/MACT standard was also exceeded.

Repairs on SRU#2 backup blower were completed mid-afternoon on April 6th, and startup procedures began at 3:45 pm on April 6th. The startup sequence caused acid gas to be flared in the Main Flare from 3:45 pm until 4 pm, at which time SRU#2 was online. Once restarted, both sulfur plants operated normally, and rates throughout the plant were eventually increased back to normal operating conditions.

MITIGATING ACTIONS
April 4th

- DHDS feed rate, the Coker feed rate, Fluidized Catalytic Cracking Unit (FCCU) feed rate and the cracked stock feed (to the DHDS) were reduced to minimum rates
- Restarted SRU2

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April 5th through April 6th

- DHDS feed rate, the Coker feed rate, Fluidized Catalytic Cracking Unit (FCCU) feed rate and the cracked stock feed (to the DHDS) were reduced to minimum rates
- Circulated the Sour Water Stripper (SWS) and the DHDS (4:30 am on 4/6)
- Restarted SRU2

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Lack of proper preventative maintenance on the governor trip shoulder stud pin and linkage jamb nut for 23-C-0002 (SRU#2 backup blower).

ALTERNATIVES TO ADDRESS ROOT CAUSE: The backup steam turbine driven blower (23-C-0002) was in use because the primary electric motor driven blower (23-C-0001) had a substantial mechanical failure a few weeks prior to this event. The primary blower (23-C-0001) had been shipped offsite to the manufacturer for repairs. Normally, operators would be able to switch to the backup and SRU#2 would restart within minutes, with minimal to no flaring.

FRI was aware that the backup blower was a vital part of SRU#2 when the primary blower was out of commission. Maintenance was sent out to monitor the backup blower by conducting vibration analyses every other day during the time when the backup became the primary unit. However, this monitoring did not include inspection of the trip assembly.

Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
Pin to mechanism replaced, linkage jamb nut tightened, new bolts on shutdown mechanism linkage	4/6/09	4/6/09
Turbine for backup blower tested	4/6/09	4/6/09
Conduct vibration analyses every week on SRU#2 backup blower	4/6/09	4/13/09
Re-evaluate overspeed trip preventative maintenance procedures	4/6/09	4/13/09
Re-evaluate Sulfur Contingency Plan – New forms for better recordkeeping Immediate reduction of DHDS feed rate to minimum	4/6/09	4/15/09

STIPULATED PENALTY CALCULATIONS

The provisions of paragraphs 74c apply to this incident ("a failure of equipment that is due to a failure by FRI to operate and maintain that equipment in a manner consistent with good engineering practices"). Per this paragraph, stipulated penalties apply to this event.

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APRIL 4th

CEMS Data which calculates emissions in lb/hr showed an exceedance for 4 hours (11 pm through 2 am on 4/5/09) which totaled 623 lbs SO2 (of tail gas emissions)

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	7.4	Tons rounded to one decimal point
FR	41,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	2.25	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	6,567	Pounds per hour
FR	41,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

APRIL 5th

CEMS Data which calculates emissions in lb/hr showed an exceedance for 4 hours (11 pm through 2 am on 4/6/09) which totaled 423 lbs SO2 (of tail gas emissions)

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	15.5	Tons rounded to one decimal point
FR	30,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	6.45	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

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Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	4,805	Pounds per hour
FR	30,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

APRIL 6th

CEMS Data which calculates emissions in lb/hr showed an exceedance for 11 hours (10 am through 8 pm) which totaled 2203 lbs SO2 (of tail gas emissions)

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	1.5	Tons rounded to one decimal point
FR	69,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	0.27	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	11,054	Pounds per hour
FR	69,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

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7/21/2009

RELEASE REPORT FOR 5/22/09

ACID GAS FLARING

Release Start Time: 12:40 am
Release Start Date: 5/23/2009

Release End Time: 6:03 am
Release End Date: 5/23/2009

Release Duration: 9.1 hours

Estimate of Quantity of Sulfur Dioxide Emitted:
Acid Gas = 5.2 tons

Calculations Attached (see attachment)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On the evening of May 22nd, 2009, the Cheyenne area was hit by a significant rain/hail event, which dropped the temperature significantly in a short amount of time. The large amount of precipitation from the storm resulted in excess cold water and hail on the process transmitter sensor or capsule (dip legs) of the #1 and #2 boiler. This drastic change in the level differential pressure (dP) cells caused steam in the legs to condense quickly. Before operators were able to correct the condensing problems, the dip leg boiler levels read higher than actual. This in turn, increased the Boiler Feed Water (BFW) flow and #1 boiler shutdown at 17:21 and #2 boiler at 17:32. Next, the BFW level fell below safe operating limits, which caused the CO Boiler to shut down at 19:45.

Boiler #3 was not in operation due to operational issues. With none of the boilers online, there was a sudden and complete loss of steam, which caused the entire plant to shut down, (including the Sulfur Recovery Units (SRUs)) or discontinue additional feed and circulate existing flow without time to implement any steam contingency procedures. With the SRUs down, the remaining acid gas from the Amine Unit(s) was flared. There were three occurrences of acid gas flaring due to this event.

At approximately 22:32, the #3 boiler was started in order to produce steam for the other boiler turbines. The CO boiler was the next boiler to come on line, which occurred at 5:35 am on May 23rd. The #1 and #2 boilers were not able to be restarted until May 23rd at 12:37pm and 07:04 am respectively. SRU#1 was brought online at 10:00 am on May 23rd. SRU#2 did not restart until 3:45 am on May 24th.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- The loss of steam caused the shutdown of the FCC and the Coker, two major sources of SO2
- The Crude Unit was reduced to minimum rates
- The third major source of SO2, the DHDS, was put into circulation
- Started #3 Boiler as soon as possible

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ROOT CAUSE ANALYSIS

ROOT CAUSE: Inadequate insulation of the differential pressure cell's (60-LIC-400 and 60-LIC-440) tubing which allowed the sudden heat loss and caused excess water to accumulate in the dip legs of the #1 and #2 Boilers.

ALTERNATIVES TO ADDRESS ROOT CAUSE: Prior to the outage, Boiler #3 was not in operation due to operational issues. At the time of this event, #3 Boiler was only available for emergency usage.

Table 1: Corrective action implementation schedule

Corrective Action	Commencement Date	Completion Date
Temporary: Insulated dip legs for dP cells on #1 and #2 boiler to prevent future sudden temperature drops.	5/22/09	6/3/09
Permanent: Update the level controls of #1 and #2 boiler to re-configure the dP transmitters. This would eliminate the concern of the insulation on the dP cell dip legs by eliminating the long liquid legs to the transmitter on Boiler #1 and #2.	6/15/09	8/31/10

STIPULATED PENALTY CALCULATIONS

The root cause of this acid gas flaring event was subject to Paragraph 76a(ii) - a sudden and infrequent event, which would have been reasonably preventable through the exercise of good engineering practices. FRI has begun implementing the corrective actions and stipulated penalties shall not apply.

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May 23rd 12:40 am to 1:48 am

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	3.8	Tons rounded to one decimal point
FR	41,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	1.2	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	6567	Pounds per hour
FR	41,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

May 23rd 3:27 am to 4:07 am

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	0.9	Tons rounded to one decimal point
FR	17,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	0.7	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	1,272	Pounds per hour
FR	17,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

FRONTIER REFINING INC.
Subsidiary of Frontier Refining & Marketing Inc.

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(307) 634-3551
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May 23rd 4:53 am to 6:03 am

Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring

Tons of SO2	0.5	Tons rounded to one decimal point
FR	5,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
TD	1.2	Total duration of flaring incident in hours
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	8.44E-05	[1.0 lbmol H2S/379.6 scf H2S][64 lbs SO2/1.0 lbmol H2S][ton/2000 lbs]

Calculation of the Rate of Sulfur Dioxide Emissions During AG Flaring

ER	1,153	Pounds per hour
FR	5,000	Average concentration of hydrogen sulfide in gas during flaring incident in SCF
Conc H2S	0.95	Average concentration of hydrogen sulfide in gas during flaring incident (or immediately prior to flaring incident if all gas is being flared) expressed as a volume fraction SCF H2S/SCF gas
Conversion Factor	0.169	[1.0 lbmol H2S/379.6 scf H2S][1.0 lbmol SO2/1.0 lbmol H2S][64 lbs SO2/1.0 lbmol H2S]

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8/13/09

RELEASE REPORT FOR 6/19/2009

TAIL GAS INCIDENT

Release Start Time: 7:25 pm
Release Start Date: 6/19/09
Release End Time: 12:00 am
Release End Date: 6/20/2009
Release Duration: 4.5 hours

Estimate of Quantity of Sulfur Dioxide Emitted: 0.3 tons
CEMS Data shows an exceedance for 5 hours which totaled 664 lbs SO2 (for tail gas emissions)

Prepared by: Kelli Wilber

SUMMARY OF EVENT

On June 19, 2009 at approximately 6:00 pm, Frontier's Sulfur Recovery Plant #2 (SRU#2) was in the process of restarting after the completion of maintenance work. During this startup, there was not enough acid gas flow to allow SRU#1 to continue running because all of the acid gas was being used by SRU#2. SRU#1 shut down at 7:25 pm and was restarted at 7:35 pm. At 8:30 pm, there again was not enough acid gas in the system to allow both SRUs to continue running and SRU#1 again shut down, this time for 5 minutes.

During this incident, the TGTU Incinerator experienced exceedances of the SO_2 lb/hr permit limit for 5 hours. The SO_2 12-hour ppm NSPS/MACT standard was also exceeded during this time frame. No acid gas was flared during this event.

MITIGATING ACTIONS

Steps taken to limit the duration and/or quantity of Sulfur Dioxide Emissions:

- Restarted SRU1, kept SRU#2 online

ROOT CAUSE AND CORRECTIVE ACTIONS

ROOT CAUSE: Investigation of the event revealed that the subsequent startups of SRU#1 caused the exceedances in the Incinerator. Instead of sending the SRU#1 flow directly to the Incinerator (current procedure), the procedure should have operators utilize the nitrogen purge directly into the SCOT Unit, which would have minimal effects to the Incinerator.

Table 1: Corrective action implementation schedule

CORRECTIVE ACTION	COMMENCEMENT DATE	COMPLETION DATE
Review startup procedures and update to incorporate the nitrogen purge when starting up SRU#1	7/1/09	8/25/09

STIPULATED PENALTY CALCULATIONS

The root cause of this tail gas incident was subject to Paragraph 76a(ii) - a sudden and infrequent event, which would have been reasonably preventable through the exercise of good engineering practices. FRI has begun implementing the corrective actions and stipulated penalties shall not apply.

Section C - FLARING

C 2 – Flaring Compliance Option

Frontier Refining Inc.

FRONTIER REFINING INC.
a Subsidiary of Frontier Refining & Marketing Inc.

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August 28, 2009

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Chief
Mail Code 8 ENF-T
Office of Enforcement, Compliance, and
Environmental Justice
U.S. EPA Region 8
1595 Wynkoop St.
Denver, CO 80202-1129

Wyoming Department of Environmental
Quality
Air Quality Division
Herschler Building
122 W. 25th Street
Cheyenne, WY 82002

RE: Frontier Refining Inc., Cheyenne Refinery
NPRI Consent Decree dated March 26, 2009
DOJ Case No. 90-5-2-1-08660
Civil Case No. 09-CV-1032-WEB-KMH

To Whom It May Concern:

Pursuant to paragraph 66 of the referenced Consent Decree, Frontier Refining Inc. (FRI) is hereby notifying you of our intent to achieve compliance with NSPS Subparts A and J for the Hydrocarbon Flaring Devices identified in Appendix G. FRI will operate both the Main Plant Flare (44) and Main Plant Standby (Old Flare) as fuel gas combustion devices, monitoring them for the routinely-generated refinery fuel gas streams put into the flare header, with a parametric monitoring system approved by EPA as an alternative monitoring system under 40 C.F.R. & 60.13(i.) and complying with emission limits when and as required by Paragraph 68.a.

The Coker Flare (43) will comply with NSPS Subparts A and J by operating and maintaining a flare gas recovery system.

Please contact me at (307) 634-3551 if you have any questions.

Sincerely,

Stuart C. Fischbeck

Stuart C. Fischbeck, P.E.
Environmental Manager
Frontier Refining Inc.

cc: Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
c/o Matrix New World Engineering Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

foley.patrick@epa.gov
csullivan@matrixneworld.com

Section C - FLARING

C 3 – 2008 Emissions

Frontier Refining Inc.

C3 - FLARING

SRP EXCESS EMISSIONS DATA
(All Acid Gas and Tail Gas Incidents for 2008)

	Actual Emissions		Method of Determination
	lbs	tons/yr	
SO2	78,670	39.34	calculations for each exceedance based on engineering estimates

Section D – HEATERS & BOILERS

D 1 – NO_x Control Plan

D 2 - 2008 Emissions - >40 MMBtu/hr

D 3 - 2008 Emissions - <40 MMBtu/hr

D 4 - 2008 Emissions – Summary of Heaters & Boilers

D 5 - CEMS Data

Frontier Refining Inc.

SECTION D - HEATERS & BOILERS REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
Heaters and Boilers	44	Submit NOx control plan and updates	9/22/09	The NOx control plan for FRI and FEDRC is attached.	X	D1
Heaters and Boilers	217a	Calculate NOx emissions (tpy) for each heater and boiler >40 MMBtu/hr for the prior calendar year	8/31/09	Data submitted for 2008 calendar year in attached table	X	D2
Heaters and Boilers	217b	Calculate NOx emissions (tpy) for the sum of all heaters and boilers <40 MMBtu/hr for the prior calendar year	8/31/09	Data submitted for 2008 calendar year in attached table	X	D3
Heaters and Boilers	217c	Calculate SO2, CO and PM emissions (tpy) for all heaters and boilers for the prior calendar year.	8/31/09	Data submitted for 2008 calendar year in attached table	X	D4
Heaters and Boilers	218a	CEMS - Total period when emissions were exceeded as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	D5
Heaters and Boilers	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	D5
Heaters and Boilers	218a	Total downtime of the CEMS, expressed as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	D5

SECTION D - HEATERS & BOILERS REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
Heaters and Boilers	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report. During the reporting period, there was an exceedance of the 5% downtime because the oxygen analyzer failed. The equipment needed for the repairs was not readily available and the parts had to be ordered. Since the failure, FRI has ensured replacement parts are stocked in the warehouse.	X	D5

Section D – HEATERS & BOILERS

D 1 – NO_x Control Plan

Frontier Refining Inc.

Control Plan

Source	Maximum or Allowable Annual Heat Input Capacity	2003 Utilization Rate	2003 NOx Emission Rate	2003 NOx Emissions	2004 Utilization Rate	2004 NOx Emission Rate	2004 NOx Emissions	2003 - 2004 Average NOx Emissions	Type of data used to derive emission estimate	Qualifying Controls		Amount Applied to Paragraph 42 Requirement
	mmBTU/hr (HHV)	mmBTU/hr (HHV)	lb/mmBTU	tons/yr	mmBTU/hr (HHV)	lb/mmBTU	tons/yr	tons/yr		Type	Date	tons/yr
FRI												
21	200	148.5	0.031	23.4	162.7	0.031	21.43	22.4	stack test			
23	40.1	33.6	0.043	14.39	32.6	0.043	5.42	9.9	stack test			
34a	186.9	119.5	0.22	113.02	107.1	0.22	138.01	125.5	stack test	Shutdown	12/31/2013	125.5
50	61.7	35.7	0.03	4.68	53.4	0.03	6.62	5.7	stack test			
58	177.6	138.7	0.076	44.41	148.9	0.076	52.8	48.6	CEMS			
59	177.6	140.3	0.081	53.79	149.0	0.081	58.24	56.0	CEMS			
Total	843.9			253.69			282.52	268.1				125.5
FEDRC												
B-105	361.00	121.2	0.2359	125.2	133.1	0.2468	143.9	134.6	AP-42			
B-107	233.00	114.6	0.2000	100.4	107.3	0.2000	94.0	97.2	Stack Test			
B-2306	184.00	136.8	0.0530	31.8	145.9	0.0530	33.9	32.8	Stack Test			
B-301	175.10	169.9	0.3090	229.9	163.0	0.3090	220.6	225.3	Stack Test	Shutdown	3/31/2008	225.3
B-304	170.40	147.5	0.3090	199.6	153.9	0.3090	208.3	204.0	Stack Test	Shutdown	3/31/2008	204.0
B-109	148.40	85.4	0.0720	26.9	85.5	0.0720	27.0	26.9	Stack Test			
B-2601	97.00	68.2	0.1200	35.8	72.9	0.1200	38.3	37.1	Permit Limit			
B-2104	86.53	31.8	0.0841	11.7	43.4	0.0879	16.7	14.2	AP-42			
B-2901	79.00	25.7	0.0855	9.6	23.6	0.0889	9.2	9.4	AP-42			
B-2401	74.70	74.2	0.3090	100.4	85.9	0.3090	116.3	108.3	Stack Test	Shutdown	3/31/2008	108.3
B-3501	73.70	60.7	0.0100	2.7	65.9	0.0100	2.9	2.8	Permit Limit			
B-1002	72.50	37.1	0.0830	13.5	34.8	0.0878	13.4	13.4	AP-42			
B-2106	72.50	56.6	0.0842	20.9	55.3	0.0878	21.3	21.1	AP-42			
B-1001	70.00	45.9	0.0829	16.7	48.5	0.0879	18.7	17.7	AP-42			
B-140	69.00	29.0	0.0851	10.8	21.7	0.0880	8.4	9.6	AP-42			
B-2105	59.27	29.4	0.0841	10.8	34.8	0.0877	13.4	12.1	AP-42			
B-2607	57.50	25.6	0.0841	9.4	23.2	0.0885	9.0	9.2	AP-42			
B-2503	43.00	28.8	0.0839	10.6	26.9	0.0881	10.4	10.5	AP-42			
B-2001	54.00	31.7	0.0840	11.7	35.2	0.0885	13.6	12.7	AP-42			
B-3401	50.00	34.0	0.0669	10.0	33.1	0.0669	9.7	9.8	Stack Test			
B-2304	48.00	10.4	0.0823	3.8	10.2	0.0893	4.0	3.9	AP-42			
B-2006	46.50	33.3	0.0841	12.3	32.7	0.0885	12.7	12.5	AP-42			
B-2802	45.40	38.3	0.0849	14.2	39.2	0.0889	15.3	14.7	AP-42			
Total	2,370.50			1,018.7			1,060.7	1,039.7				537.6

CO Boiler

46.8 %

649 ?

Section D – HEATERS & BOILERS

D 2 – 2008 Emissions - >40 MMBtu/hr

Frontier Refining Inc.

D 2 - HEATERS & BOILERS 40> MMBtu/hr

CRUDE CHARGE HEATER (ID 21) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.27	1.16	0.002	lb/MMBtu	B (AP-42)	
SO2	0.20	0.86	14	ppmv	A, C	
NOx	4.02	17.37	0.030	lb/MMBtu	E	Jun-08
CO	0.05	0.23	0.000	lb/MMBtu	E	Jun-08

COKER "A" HEATER (ID 23) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.06	0.24	0.002	lb/MMBtu	B (AP-42)	
SO2	0.04	0.18	14	ppmv	A, C	
NOx	1.26	5.22	0.043	lb/MMBtu	E	Sep-08
CO	0.03	0.12	0.001	lb/MMBtu	E	Sep-08

CO BOILER (ID 34A) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.45	1.98	0.004	lb/MMBtu	B (AP-42)	
SO2	0.17	0.73	14	ppmv	A, C	
NOx	22.71	98.86	0.200	lb/MMBtu	E	Jun-08
CO	12.49	54.38	0.110	lb/MMBtu	E	Jun-08

HYDROGEN PLANT FURNACE (ID 50) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.10	0.42	0.002	lb/MMBtu	B (AP-42)	
SO2	0.01	0.04	0.4	ppmv	C	
NOx	2.45	10.55	0.050	lb/MMBtu	E	Jan-08
CO	4.02	17.30	0.082	lb/MMBtu	B (AP-42)	

INDECK "1" BOILER (ID 58) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.64	2.81	0.004	lb/MMBtu	B (AP-42)	
SO2	0.24	1.04	14	ppmv	A, C	
NOx	13.53	59.11	0.084	lb/MMBtu	A	2008
CO	6.44	28.15	0.040	lb/MMBtu	B (Title V)	

INDECK "2" BOILER (ID 59) EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination	Date of Latest Test
	lbs/hr	tons/yr				
PM	0.64	2.82	0.004	lb/MMBtu	B (AP-42)	
SO2	0.24	1.04	14	ppmv	A, C	
NOx	14.28	62.67	0.089	lb/MMBtu	A	2008
CO	6.42	28.17	0.040	lb/MMBtu	B (Title V)	

Section D – HEATERS & BOILERS

D 3 - 2008 Emissions - <40 MMBtu/hr

Frontier Refining Inc.

D 3 - HEATERS & BOILERS <40 MMBtu/hr

<40 MMBTU/HR HEATERS AND BOILERS EMISSIONS SUMMARY

	Actual Emissions		Emission Factor	Units	Method of Determination
	lbs/hr	tons/yr			
PM	1.68	4.18			B (AP-42)
SO2	1.70	6.59			C
NOx	36.70	126.48			E
CO	29.35	82.32			E, B (AP-42)

Section D – HEATERS & BOILERS

D 4 - 2008 Emissions – Summary of Heaters & Boilers

Frontier Refining Inc.

D 4 - HEATERS & BOILERS SUMMARY

FRI HEATERS AND BOILERS EMISSIONS SUMMARY

	Actual Emissions
	tons/yr
PM	13.61
SO2	10.47
NOx	380.26
CO	210.66

Section D – HEATERS & BOILERS

D 5 - CEMS Data

Frontier Refining Inc.

EXCESS EMISSION SUMMARY REPORT
Fuel Gas H2S CEMS – 2Q09

Emission Data Summary		CMS Performance Report	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	0	C. Quality Assurance Calibration	16.0
D. Other Known Causes	0	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	1.0
II. Total Duration of Excess Emission	0	II. Total CMS Downtime	17.0
III. Total Duration of Excess Emissions x 100 divided by Total Source Operating Time minus Total CMS Downtime	0.0%	III. Total CMS Downtime x 100 divided by Total Source Operating Time	0.8%

Total time of excess emission events due to emergency/abnormal operations: 0 .

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Section E - LDAR

Frontier Refining Inc.

SECTION E - LDAR REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
LDAR	142	Written LDAR program for refinery to comply with all applicable federal and state regulations (Submit to EPA and WDEQ)	9/22/09	The final written LDAR program will be submitted by the due date. It was not required during this reporting period.		
LDAR	144, 170.a.i	Submit the initial written refinery-wide LDAR program	2/28/10	The LDAR program was not required during this reporting period.		
LDAR	148, 170b	Certify refinery is 1) in compliance, 2) completed corrective action items, 3) is on a compliance, 4) all equipment has been identified	90 days after audit	FRI received the final draft audit report on August 21, 2009.		
LDAR	156, 170.a.iii, 216.e	Report that FRI has chosen the initial attempt at repair for our additional VOC monitoring chosen	5/25/09	The notification that FRI chooses to comply with the initial attempt at repair was submitted on 4/15/09.	X	
LDAR	170.a.ii, 216.e	Certification of the implementation of lower leak definitions and monitoring frequencies	8/31/09	FRI has been using the lower leak rates as the compliance target from Date of Entry. Monitoring frequencies for valves and pumps are compliant with the Consent Decree. *	X	
LDAR	170.a.iv, 216.e	Certification of LDAR data QA/QC program	8/31/09	FRI LDAR Coordinator has a rigorous QA/QC program which has been followed since Date of Entry. *	X	
LDAR	170.a.v, 216.e	Naming of LDAR Coordinator	8/31/09	The naming of the LDAR Coordinator, Kenton Stobbe, occurred prior to Date of Entry and was officially rolled out in the organization chart. *	X	

* Please refer to the cover letter of this report for the certifications required by this paragraph.

SECTION E - LDAR REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
LDAR	170.a.vi, 216.e	Certification new valve and pump tracking system for new valves and pumps added during maintenance and construction	8/31/09	LDAR program has been implemented as part of the Management of Change (MOC) process. *	X	
LDAR	170.a.vii, 216.e	Certification of calibration drift assessment procedures	8/31/09	LDAR Contractor completes a daily work record document that the technicians complete and sign off on daily drift checks. *	X	
LDAR	170.a.viii, 216.e	Certification of "delay of repair" procedures	8/31/09	All "delay of repair" valves have a signed form from the Unit Superintendent that are completed within the specified time frame. During the reporting period, there were no valves that were applicable to the "drill and tap" method. *	X	
LDAR	170.a.ix, 216.e	Report of the implementation of "chronic leaker" program		At this time, FRI does not have enough historic information to implement the chronic leaker program. *		
LDAR	152, 216.e	Implementation of any actions necessary to correct non-compliance from any audit findings		FRI has not received the final audit report at the time of this submittal; therefore currently there is no action necessary.		

* Please refer to the cover letter of this report for the certifications required by this paragraph.

Section F - SEP

Frontier Refining Inc.

SECTION F - SEP REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
SEP	205, 216.c	Description of all SEPs and implementation activity	8/31/09	Permit application to WDEQ for geodome approval was submitted on 5/12/09. WDEQ permit waiver AP-9413 was issued on 6/11/09. Contractor selection is complete. Tentative scheduled start of construction on site is 9/21/09. Scheduled completion date is on or before 2/28/10.	x	
SEP	189	FRI shall determine whether it will convert Tank 2-70 or Tank 2-71 and shall inform EPA and WDEQ of FRI's election	9/22/09	This paragraph has become a mute point as FRI has committed to converting both Tank 2-70 and Tank 2-71 into geodesic dome roof tanks. The amendment to the Consent Decree was finalized on 5/21/09.	X	
SEP	190	FRI shall submit a detailed descriptions of the SEP, work plan and SEP implementation schedule to EPA and WDEQ for review	9/22/09	FRI submitted the SEP work plan, which included the detailed decription and the implementation schedule, on 7/6/09.	X	
SEP	220a	Determine whether the SEP project will be completed within 12 or 24 months after the DOE.	9/22/09	FRI notified the respective agencies that it would complete the SEP within 12 months on 4/6/09.	X	

Section G - SRP

G 1 – SRP EMISSIONS

G 2 – CEMS DATA

Frontier Refining Inc.

SECTION G - SRP REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
SRP	217d	Calculate SO2 emissions from both SRUs for the prior calendar year.	8/31/09	Data submitted for 2008 calendar year in attached table	X	G1
SRP	218a	CEMS - Total period when emissions were exceeded as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	G2
SRP	218a	When >1% of calendar quarter in exceedance - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	G2
SRP	218a	Total downtime of the CEMS, expressed as a percentage	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	G2
SRP	218a	When >5% of calendar quarter as downtime - identify each averaging period by time and date, actual emissions (in the unit of the limit), identified cause for the exceedance, any corrective actions taken	8/31/09	Data provided in excerpts from 2Q09 CEMS Report	X	G2

Section G - SRP

G 1 – SRP EMISSIONS

Frontier Refining Inc.

G - SRP

SRP SOURCE EMISSIONS DATA

	Actual Emissions		Emission Factor	Units	Method of Determination
	lbs/hr	tons/yr			
SO2	4.05	17.79	4.9	lb/hr	CEMS

SO2 emissions based on CEMS data. SO2 CEMS data was the one-hour lb/hr average data. Any data over 18.6 lb/hr was recorded as 18.6 since the excess emissions are calculated elsewhere in this inventory.

Section G - SRP

G 2 – CEMS DATA

Frontier Refining Inc.

EXCESS EMISSION SUMMARY REPORT
Incinerator SO2 (ppm) CEMS

FORM B

Emission Data Summary (12-hour average ppm)		**CMS Performance Report**	
I. Duration of Excess Emission in Reporting Period Due to:		I. CMS Downtime in Reporting Period Due to:	
A. Startup/Shutdown	0	A. Monitor Equipment Malfunction	0.0
B. Control Equipment Problems	0	B. Non-Monitor Equipment Malfunctions	0.0
C. Process Problem	142	C. Quality Assurance Calibration	1.0
D. Other Known Causes	10	D. Other Known Causes	0.0
E. Unknown Causes	0	E. Unknown Causes	4.0
II. Total Duration of Excess Emission	152	II. Total CMS Downtime	5.0
III. Total Duration of Excess Emissions x 100 div by Total Source Operating Time minus Total CM Downtime	7.0%	III. Total CMS Downtime x 100 divided by Total Sc Operating Time	0.2%

Total time of excess emission events due to emergency/abnormal operations: 0.0.

NOTE:

1. Only report excess emissions which occur when the unit/process is operating. Include all excess emissions in the Emission Data Summary including those excess emissions associated with startup/shutdown and those excess emissions associated with Chapter 1 Section 5 (Emergency/Abnormal) operations. **Report times in hours for gaseous monitors and in tenths of an hour for opacity monitors.** Include detailed excess emission information and causes in the Excess Emission Table (Form C).

2. Only report CEM downtime which occurs while the unit/process is operating. **Report time in hours to one decimal point.** Include detailed CEM downtime and causes in the Monitor Outage Table (Form D).

3. Include an explanation of what corrective actions were taken for total excess emissions or monitor downtime for the quarter (Emission Data Summary and CMS Performance Summary, Item III) greater than 5%. **(See Instructions for further details.)**

Form C - Excess Emissions Summary

Incinerator SO2 ppm (12-Hour)

No.	*Start Time*	*End Time*	*Max*	*Periods*	*Reason*	*Action*
1	4/4/2009 9:00:00 PM	4/5/2009 12:00:00 PM	1711.5	15	Acid Gas/Tail Gas Event (see incident report)	
2	4/5/2009 9:00:00 PM	4/7/2009 5:00:00 AM	6066.3	32	Acid Gas/Tail Gas Event (see incident report)	
3	4/22/2009 6:00:00 AM	4/22/2009 9:00:00 AM	262.1	3	SWS spike in off-gas	
4	4/22/2009 11:00:00 AM	4/22/2009 11:00:00 PM	951.2	12	SWS spike in off-gas	
5	4/24/2009 12:00:00 PM	4/24/2009 11:00:00 PM	395.1	11	Hot oil skid shut down	
6	5/5/2009 3:00:00 PM	5/6/2009	320.0	9	Switch from electric blower to spare blower	
7	5/13/2009 1:00:00 PM	5/13/2009 11:00:00 PM	309.5	10	Power outage	
8	5/22/2009 7:00:00 PM	5/24/2009 2:00:00 PM	2903.1	43	Refinery boiler(s) shut down causing plantwide upsets and/or shut downs	
9	6/18/2009	6/18/2009 1:00:00 AM	250.2	1	SRU1 shut down due to control analyzer malfunction	
10	6/19/2009 5:00:00 PM	6/20/2009 9:00:00 AM	2513.0	16	SRU1 shut down due to low acid gas production at low refinery unit process rates.	
		Total Periods Excess Emissions		152		

Section H – CERCLA/EPCRA

Frontier Refining Inc.

SECTION H - CERCLA/EPCRA REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
CERCLA/ EPCRA	172c	Conduct annual training for the environmental compliance staff	7/24/09	Environmental staff training occurred on 7/15/09, which followed FRI's written procedures. This documentation was included in the Compliance Review Report	X	
CERCLA/ EPCRA	172a	Complete CERCLA/ EPCRA Compliance Review for the 5 years prior to the Date of Entry	7/24/09	Submitted the CERCLA/ EPCRA Compliance Review on 7/24/09.	X	

Section I – Semi-Annual

Frontier Refining Inc.

SECTION I - SEMI-ANNUAL REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
Semi-annual Report	207	Submit applications to the Applicable Intervenor to incorporate the emissions limits and standards required by the Consent Decree that are effective as of the Date of Entry into federally enforceable minor and major new source review permits.	7/24/09	The application was submitted to WDEQ on 7/21/09, which covered incorporating all of the emission limits and standards required by the Consent Decree that are applicable or would become applicable within the next 5 years.	X	
Semi-annual Report	216	Submit semi-annual report every six months	8/31/09	This semi-annual report covers the time period from Date of Entry (3/26/09) through 6/30/09.	X	
Semi-annual Report	216a	Summary of emissions data specifically required	8/31/09	Emission summaries required are attached in the respective categories.	X	
Semi-annual Report	216b	Description of any problems anticipated with respect to meeting requirements of the Consent Decree	8/31/09	No problems anticipated.	X	
Semi-annual Report	216d	Any additional matters that should be brought to the attention of the applicable federal and state agencies	8/31/09	Although the 2Q09 end-of-line sampling for BWON (in accordance with the approved BWON sampling plan) shows compliance with <10 Mg/yr threshold, the initial findings from the 2008 TAB review and verification indicate FRI may be >10 Mg/yr.	X	
Semi-annual Report	216e	Any additional items required by any other paragraph of the Consent Decree to be submitted with a semi-annual report including but not limited to reports required under 137, 152, 170, 205	8/31/09	No other items to address. Please see respective categories.	X	

SECTION I - SEMI-ANNUAL REQUIREMENTS

Category	Consent Decree Paragraph	Requirement	Consent Decree Due Date	Comments	Completed?	Attachment?
Semi-annual Report	217f	Calculate SO2, NOx, CO and PM for all other emissions units for which emissions information is required to be included in the annual emissions summary	8/31/09	Data submitted for 2009 calendar year in attached table.	X	I1
Semi-annual Report	220	Payment of Civil Penalties		Payment was submitted to the respective agencies on 4/9/09.		

Section I – Semi-Annual

I 1 – 2008 Emissions

Frontier Refining Inc.

I 1 - 2008 Emissions

Possible hours of operation in period: 8784 hours

Permitted sulfur content of fuel gas: 0.1 gr/dscf

	Gross Btu/scf	ppm H2S	
Natural Gas (CITYGAS)	1,040	4	(Based on AP-42 factor of 2,000 grains S per MMscf gas)
Refinery Fuel Gas (61FG)	1,600	14	(From CEMS monitoring data)

2008 EMISSIONS INVENTORY SUMMARY
FRONTIER REFINING INC.

Source Type	Code	Emissions (tons)				
		PM	SO2	NOx	CO	NMHC
External Combustion Units	EC	13	10	370	193	21
Fluid Catalytic Cracking Unit	FCCU	95	682	46	22	<1
Flares*	FL		<1	10	3	<1
Hydrogen Plant	H2	<1	<1	11	17	1
Internal Combustion Engines	IC	<1	3	6	8	1
Loading	L					<1
Process Fugitives	PF					127
Sulfur Recovery Unit	SRU	18	18	11	4	<1
Tanks	T					197
Material Handling	MH	2				
Wastewater	WW					154
Cooling Towers	CT					8
Excess Emissions	EXCESS	<1	73	14	5	2
Grand Total		129	786	468	253	513

* Frontier's flares are permitted for emergency/malfunction and the Main Flare is used for excess refinery fuel gas only.