

**Air Liquide Rodeo Hydrogen Plant
Title V Semi-Annual Monitoring Report**

Site ID: B7419
Address: 1391 San Pablo Avenue
Rodeo, CA 94572

Date: March 29, 2013
Period: September 1, 2012 to February 28, 2013

During the reporting period specified above, all required monitoring of the applicable limits as listed in Section VII of the Title V Major Facility Review Permit was conducted, except where indicated below. If a "No" is indicated in the column "Monitoring Compliance (Y or N)," see Attachment A for the deviation details.

Source	Source ID	Source Name	FE	FE Description	Emission Limits	Monitoring Requirements	Monitoring Frequency	Monitoring Type	Monitoring Compliance (Y or N)
1	SO2	BAAQMD 9-1-301	Y		Ground level SO2 concentrations (0.5 ppm for 3 min; 0.25 ppm for 60 min; 0.05 ppm for 24 hr)	9-1-501 requires compliance with BAAQMD 1-510	C	SO2 GLM	Y
2	NH3	BAAQMD Condition 23178, part A.2	Y		Ammonia solution less than 20% by weight	BAAQMD Condition 23178, part A.2	P/E	Records	Y
3	Organic compounds	BAAQMD 8-2-301	Y		Emission streams with 15 lb/day AND 300 ppm total carbon on a dry basis prohibited	None	N	None	Y
Section 8.1 Hydrogen Plant									
1	POC	BAAQMD 8-10-301	Y		Abatement of emissions from process vessel depressurization is required until pressure is reduced to less than 1000 mm Hg	8-10-401.2 (SIP) and 8-10-501 & 502 (non-SIP)	P/E	Records	Y
2	POC	BAAQMD Condition 23178, part 4	Y		Deaerator vent POC emissions < 4.35 lb/day	BAAQMD Condition 23178, part 9a	P/A	Source test	Y
3	POC	BAAQMD Condition 23178, part 6	Y		Fugitive mass emissions < 3,000 lb/yr	BAAQMD Condition 23178, part 18	P/O	Inspection and calculations	Y
4	POC	BAAQMD Condition 23181, part 2d	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Annual source tests, inspection data, and calculations	Y
5	Organic compounds	BAAQMD 8-2-301	Y		Emission streams with 15 lb/day AND 300 ppm total carbon on a dry basis prohibited	BAAQMD Condition 23178, part 9a	P/A	Source test	Y
6	Throughput	BAAQMD Condition 23178, part 1	Y		120 MMscf H2/day, annual average	BAAQMD Condition 23178, part 1	P/D	Records	Y
7	NH3	BAAQMD 7-303	N		5000 ppm	BAAQMD Condition 23178, part 9b	P/A	Source test	Y
8	NH3	BAAQMD Condition 23178, part 5	N		0.64 lb/hr	BAAQMD Condition 23178, part 9b	P/A	Source test	Y
9	Electrical production	BAAQMD Condition 23178, part 2	Y		< 12 MW	BAAQMD Condition 23178, part 2	C	Records	Y
10	Hydrogen production	BAAQMD Condition 23178, part 1	Y		120 MMscf H2/day	BAAQMD Condition 23178, part 1	C	Hydrogen flow monitoring	Y

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Source	Type of Emission Limit	EMISSIION LIMIT Citation	FE Monitoring Compliance Y or N?	EMISSIION LIMITS	Monitoring Requirements and Frequency (P/C/N)	Monitoring Compliance Y or N?
11	NOx	BAAQMD Condition 23181, part 2a	Y	30.9 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	CEM data and calculations Y
12	SO2	BAAQMD Condition 23181, part 2b	Y	5.0 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	CEM and calculations Y
13	PM10	BAAQMD Condition 23181, part 2c	Y	13.8 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	Annual source test at S2 and calculations Y
14	CO	BAAQMD Condition 23181, part 2e	Y	46.2 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	CO CEM, annual source tests, and calculations Y
15	Sulfuric acid mist	BAAQMD Condition 23181, part 2f	Y	0.43 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	Annual source tests, and calculations Y
Source S2 Hydrogen Plant Furnace						
1	Heat input	BAAQMD Condition 23179, part 2	Y	9,636,000 MMBtu (HHV) in any 12 months	BAAQMD Condition 23179, part 20 C	Fuel meters, fuel analyzers, and records Y
2	Heat input	BAAQMD Condition 23179, part 3	Y	1,072 MMBtu (HHV) during any clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 20 C	Fuel meters, fuel analyzers, and records N
3	NOx	BAAQMD Condition 23179, part 5a	Y	5 ppmv @ 3% O2 on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 13 C	CEM Y
4	NOx	BAAQMD Condition 23179, part 7a.1	Y	7.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 13 C	CEM Y
5	NOx	BAAQMD Condition 23179, part 7b	Y	50 lb per clock hour	BAAQMD Condition 23179, part 13 C	CEM Y
6	NOx	BAAQMD Condition 23179, part 10a	Y	28.1 tons per any consecutive 12 months	BAAQMD Condition 23179, part 13 C	CEM Y
7	NOx	BAAQMD Condition 23181, part 2a	Y	30.9 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4 P/A	CEM data and calculations Y
8	NOx	40 CFR 60.102a(g)(2)	Y	40 ppmv, dry, @ 0% O2 on a 24-hr rolling average basis Stayed until further notice. [Effective date 11/11/12 - Stay Lifted during reporting period]	40 CFR 60.107a(c) (Monitoring not stayed) C	CEM N

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Line #	Type of Limit	Emission Limit Citation	FE (Y/N)?	Future Effects Data?	Emission Limit	Monitoring Requirements Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Monitoring Compliance Year?
9	CO	BAAQMD Condition 23179, part 5b			10 ppmv @ 3% O2 on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 19b	C	CEM	Y
10	CO	BAAQMD Condition 23179, part 7a.2	Y		9.1 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 19b	C	CEM	Y
11	CO	BAAQMD Condition 23179, part 10b	Y		34.2 tons per any consecutive 12 months	BAAQMD Condition 23179, part 19b	C	CEM	Y
12	CO	BAAQMD Condition 23181, part 2e	Y		46.2 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	CO CEM, annual source tests, and calculations	Y
13	SO2	BAAQMD Condition 23179, part 5e	Y		0.0012 lb/MMbtu on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 17	P/A	Source test	N (determined by CEMS and fuel monitoring and not source test)
14	SO2	BAAQMD Condition 23179, part 7a.5	Y		1.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 17	P/A	Source test	Y
15	SO2	BAAQMD Condition 23179, part 10	E		5.0 tons per any consecutive 12 months	BAAQMD Condition 23179, part 17	P/A	Source test	Y
16	SO2	BAAQMD Condition 23181, part 2b	Y		5.0 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Sulfur monitoring or CEM and calculations	Y
17	SO2	40 CFR 60.102a(g)(1)	Y		20 ppmdv @ 0% O2 on a rolling 3 clock hour basis; 8 ppmdv @ 0% O2 on a rolling 365 calendar day basis <u>Stayed until further notice [Effective date 1/1/11-12 - Stay Lifted during reporting period]</u>	40 CFR 60.107a(a)(1) (Monitoring not stayed)	C	CEM	N
18	Sulfuric acid mist	BAAQMD Condition 23179, part 9	Y		0.098 lb/clock hour	BAAQMD Condition 23179, part 17	P/A	Source test	Y
19	Sulfuric acid mist	BAAQMD Condition 23179, part 12	Y		860 lb per any consecutive 12 months	BAAQMD Condition 23179, part 17	P/A	Annual source tests, and calculations	Y
20	Sulfuric acid mist	BAAQMD Condition 23181, part 2f	Y		0.43 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Annual source tests, and calculations	Y

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Unit	Type of Emission Limit	Emission Limit	FE (Y/N)	Equipment Design	Emission Limits	Monitoring Requirements	Monitoring Frequency (P/C/M)	Monitoring Type	Monitoring Compliance (Y or N)?
21	Sulfuric acid mist	BAAQMD Condition 23181, part 3	Y		2.35 lb/day for S1, S2, and S3 0.0027 lb/MWh on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Condition 23181, part 4	P/A	Annual source tests and calculations	Y
22	POC	BAAQMD Condition 23179, part 5c	Y		3.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 17	P/A	Source test	Y
23	POC	BAAQMD Condition 23179, part 7a.3	Y		11.5 tons per any consecutive 12 months	BAAQMD Condition 23179, part 17 and 28181, part B.4.f	P/A	Source test	Y
24	POC	BAAQMD Condition 23179, part 10c	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Annual source tests, inspection data, and calculations	Y
25	POC	BAAQMD Condition 23181, part 2d	Y		10 ppmv @ 3% O2, 1-hr average	BAAQMD Condition 23179, part 17a	P/A	Source test	Y
26	NH3	BAAQMD Condition 23179, parts 6 and 21	N		None	BAAQMD Condition 23179, part 22	C	Monitoring of ammonia injection rates	Y
27	NH3	N/A	N		6.5 lb/clock hour	BAAQMD Condition 23179, part 17a	P/A	Source test	Y
28	NH3	BAAQMD Condition 23179, part 8	N		48,200 lb per any consecutive 12 months	BAAQMD Condition 23179, part 23	P/A or 4 times per year	Annual or quarterly source tests and calculations	Y
29	NH3	BAAQMD Condition 23179, part 11	N		26.9 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Ammonia injection and heat input monitoring	Y
30	NH3	BAAQMD Condition 23181, part 2g	N		No limit	BAAQMD 1-520.1	C	O2 Monitor	Y
31	O2		Y		Ringelmann 1 for no more than 3 minutes in any hour	None	N	None	Y
32	Opacity	BAAQMD 6-1-301	N		Ringelmann 1 for no more than 3 minutes in any hour	None	N	None	Y
33	Opacity	SIP 6-301	Y		Prohibition of nuisance	None	N	None	Y
34	FP	BAAQMD 6-1-305	N		Prohibition of nuisance	None	N	None	Y
35	FP	SIP 6-305	Y		Prohibition of nuisance	None	N	None	Y

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Unit	Type of Limit	Emission Limit	EE (N/A) / Emissions (Y/N)	EE (N/A) / Emissions (Y/N)	Emission Limits	Monitoring Requirements Citation	Monitoring Frequency (P/O/N)	Monitoring Type	Monitoring Compliance (Y or N)?
36	FP	BAAQMD 6-1-310.3	N		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None	Y
37	FP	SIP 6-310.3	Y		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None	Y
38	PM10	BAAQMD Condition 23179, part 5d			0.037 lb/MMbtu on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 17	P/A	Source test	Y
39	PM10	BAAQMD Condition 23179, part 7a.4	Y		4.8 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Condition 23179, part 17	P/A	Source test	Y
40	PM10	BAAQMD Condition 23179, part 10d	Y		13.8 tons per any consecutive 12 months	BAAQMD Condition 23179, part 17, and part 23181, part B.4.f	P/A	Source test and calculations	Y
41	PM10	BAAQMD Condition 23181, part 2c	Y		13.8 tons per year for S1, S2, and S3	BAAQMD Condition 23181, part 4	P/A	Annual source test at S2 and calculations	Y
Source S3 Hydrogen Plant flare									
1	Opacity	BAAQMD 6-1-301	N		Ringelmann 1 for no more than 3 minutes in any hour	BAAQMD Condition 23180, parts 8-10	P/E	Visible emissions monitoring	Y
2	Opacity	SIP 6-301	Y		Ringelmann 1 for no more than 3 minutes in any hour	BAAQMD Condition 23180, parts 8-10	P/E	Visible emissions monitoring	Y
3	FP	BAAQMD 6-1-305	N		Prohibition of nuisance	None	N	None	Y
4	FP	SIP 6-305	Y		Prohibition of nuisance	None	N	None	Y
5	FP	BAAQMD 6-1-310.3	N		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None	Y
6	FP	SIP 6-310.3	Y		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None	Y
7	SO2	60.100a(g)(1)	Y		(Standard stayed until further notice)	60.100a(3)(iii) Exemption from monitoring for gas streams from hydrogen plants	N	None	N/A - Regulatory references not valid
8	NOx	BAAQMD Condition 23180, part 4a	Y		2.8 tons per any consecutive 12 months	BAAQMD Condition 23180, part 5	P/M	Flow data and calculations	Y
9	NOx	BAAQMD Condition 23180, part 4c	Y		129 lb per any consecutive 60 minutes	BAAQMD Condition 23180, part 5	P/M	Flow data and calculations	Y

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10	11	12	13	14	15	16	17	18	19
NOx	POC	PM10	CO	CO	SO2	Sulfuric acid mist	VE	Presence of flame	Velocity and heat content requirements
BAQAQMD Condition 23181, part 2a	BAQAQMD Condition 23181, part 2d	BAQAQMD Condition 23181, part 2c BAQAQMD Condition 23180, part 4b	BAQAQMD Condition 23180, part 4b	BAQAQMD Condition 23181, part 2e	BAQAQMD Condition 23181, part 2b	BAQAQMD Condition 23181, part 2f	40 CFR 60.18(c)(1)	40 CFR 60.18(c)(2)	40 CFR 60.18(c)(3) (i) -- OR -- 40 CFR 60.18(c)(3) (ii) & (c)(4)(i) OR -- 40 CFR 60.18(c)(3) (ii) & (c)(4)(ii)
Y	Y	Y	Y	Y	Y	Y	Y	Y	
30.9 tons per year for S1, S2, and S3	13.9 tons per year for S1, S2, and S3	13.8 tons per year for S1, S2, and S3	12.1 tons per any consecutive 12 months	46.2 tons per year for S1, S2, and S3	5.0 tons per year for S1, S2, and S3	0.43 tons per year for S1, S2, and S3 No visible emissions except for 5 min in any two hours	Flame present at all times	1) If hydrogen content is equal to or greater than 8% by volume, velocity must be less than 122 ft/sec and less than Vmax, OR; 2) Net heating value of gas greater than 300 btu/scf and less than 1000 btu/scf and velocity less than 60 ft/sec; OR 3) Net heating value of gas greater than 1000 btu/scf and velocity greater than 60 ft/sec and less than 400 ft/sec	40 CFR 60.18(f)(3), (4), and 5
BAQAQMD Condition 23181, part 4	BAQAQMD Condition 23181, part 4	BAQAQMD Condition 23181, part 4 BAQAQMD Condition 23180, part 5	BAQAQMD Condition 23180, part 5	BAQAQMD Condition 23181, part 4	BAQAQMD Condition 23181, part 4	BAQAQMD Condition 23181, part 4	40 CFR 60.18(f)(1)	40 CFR 60.18(f)(2)	
P/A	P/A	P/A	P/M	P/A	P/A	P/A	P/E	C	C
CEM data and calculations	Annual source tests, inspection data, and calculations	Annual source test at S2 and calculations	Flow data and calculations	CO CEM, annual source tests, and calculations	Sulfur monitoring or CEM and calculations	annual source tests, and calculations	Method 22	Thermocouple or equivalent device	Volume measurements gas analysis
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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Item	Source	Limit	Monitoring Method	Frequency	Monitoring Type	Monitoring Compliance (Y or N)	
1	Opacity	BAAQMD Regulation 6-1-301	Ringelmann No. 1 for no more than 3 minutes/hour	None	N	None	Y
2	Opacity	SIP 6-301	any hour	None	N	None	Y
3	FP	BAAQMD 6-1-310	0.15 grain/dscf	None	N	None	Y
4	FP	SIP 6-310	0.15 grain/dscf	None	N	None	Y
5	FP	BAAQMD 6-1-311	40 lb/hr	None	N	None	Y
6	FP	SIP 6-311	4.10P0.67 lb/hr, where P is process weight, ton/hr	None	N	None	Y
7	PM	BAAQMD Condition 23414, part 2	300 ppm as carbon and 15 lb organic compounds/day	P/M	Visual inspection	Analysis of chlorine content	Y
8	Organic compounds	BAAQMD 8-2-301	300 ppm as carbon and 15 lb organic compounds/day	P/D	P/3 times per week	Analysis of chlorine content	Y
9	Organic compounds	BAAQMD 8-2-301	300 ppm as carbon and 15 lb organic compounds/day	P/M	P/M	Analysis of VOC content	Y
10	Organic compounds	BAAQMD 8-2-301	300 ppm as carbon and 15 lb organic compounds/day	P/M	P/M	Analysis of VOC content	Y
11	Organic compounds	BAAQMD 8-2-301	300 ppm as carbon and 15 lb organic compounds/day	P/M	P/M	Analysis of VOC content	Y
12	Chloroform	BAAQMD 8-2-301	300 ppm as carbon and 15 lb organic compounds/day	P/M	P/M	Analysis of VOC content	Y
Source Components							
1	POC	BAAQMD 8-18-301	General equipment leak < 100 ppm	P/Q	P/Q	Inspection	Y
2	POC	BAAQMD 8-18-302	Valve leak < 100 ppm	P/Q	P/Q	Inspection	Y
3	POC	BAAQMD 8-18-303	Pump and compressor leak < 500 ppm	P/Q	P/Q	Inspection	Y
4	POC	BAAQMD 8-18-304	Connection leak < 100 ppm	P/Q	P/Q	Inspection	Y
5	POC	BAAQMD 8-18-305	Pressure relief valve leak < 500 ppm	P/Q	P/Q	Inspection	Y
6	POC	BAAQMD 8-18-306.1	Valve, pressure relief, pump or compressor must be repaired within 5 years or at the next scheduled turnaround	P/quarterly	P/quarterly	Report	Y

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Item	Type of Limit	Emission Limit Citation	Y or N?	Future Events Date	Emission Limits	Monitoring Requirements Citation	Monitoring Frequency P/C/M	Monitoring Type	Monitoring Compliance (Y or N)?
7	POC	BAAQMD 8-18-306.2	Y		Awaiting repair Valves: < 0.5% Pressure Relief < 1% Pump and Connector < 1%	BAAQMD 8-18-401.5	P/within 24 hours	Inspection	Y
8	POC	BAAQMD 8-18-306.3.2	Y		Mass emissions & non-repairable equipment allowed: Valve < 0.1 lb/day & <1.0%; Pressure Relief < 0.2 lb/day & < 5%; and Pump and Connector < 0.2 lb/day & < 5%	BAAQMD 8-18-401.3	P/D	Inspection	Y
9	POC	BAAQMD 8-18-306.3.3	Y		Total valve, pressure relief, pump or compressor leaks > 15 lb/day, they must be repaired within 7 days	BAAQMD 8-18-502.4	P/Q	Sampling or equivalent	Y
10	POC	BAAQMD 8-28-303	Y		Vent Pressure Relief Devices to an Abatement Device with at least 95% by weight control efficiency or Meet Prevention Measures Procedures	BAAQMD 8-28-405	P/turn-around	None	Y
11	POC	BAAQMD 8-28-304	Y		PHA within 90 days and meet Prevention Measures Procedures. After 2nd release Vent Pressure Relief Devices to an Abatement Device with at least 95% by weight control efficiency.	BAAQMD 8-28-405	P/release per 5 calendar year	None	Y
12	POC	40 CFR 60 Subpart VVa 60.482-2a (b)(1)	Y		Pump leak less than 2,000 ppm	40 CFR 60.482-2a (a)(1)	P/M	Measure for leaks	Y
13	POC	40 CFR 60 Subpart VVa 60.482-2a (b)(2)	Y		Pump leak indicated by dripping liquid	40 CFR 60.482-2a (a)(2)	P/W	Visual Inspection	Y
14	POC	40 CFR 60 Subpart VVa 60.482-2a (e)	Y		Designated "No detectable emissions" less than 500 ppm	40 CFR 60.482-2(e)(3)	P/A	Measure for leaks	Y
15	POC	40 CFR 60 Subpart VVa 60.482-3a (f)	Y		Leak is failure of seal or barrier system	40 CFR 60.482-3a(d)-(f)	C	Sensor for detection of seal or barrier system failure	Y
16	POC	40 CFR 60 Subpart VVa 60.482-7a (b)	Y		Valve leak > 500 ppm	40 CFR 60.482-7a (a)(1)	P/M unless 2 successive months w/o leak	Measure for leaks	Y

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17	POC	40 CFR 60 Subpart VVa - 60.482-7a	Y		Valve leak < 500 ppm: 2 successive months w/o leaking	40 CFR 60.482-7(c)	P/Q unless leak found, then monthly monitoring	Measure for leaks	Y
18	POC	40 CFR 60 Subpart VVa - 60.482-7(f)	Y		Designated "No detectable emissions" < 500 ppm	40 CFR 60.482-7 (f)(3)	P/A	Measure for leaks	Y
19	POC	40 CFR 60 Subpart VVa - 60.482-8a(a)	Y		Pumps and valves in heavy liquid service, Pressure Relief devices (light or heavy liquid), Flanges, Connectors leak shall be measured for leak in 5 days if detected by inspection	40 CFR 60.482-8a(a)	P/E	Visible, Audible, or olfactory inspection	Y
20	POC	40 CFR 60 Subpart VVa - 60.482-8a(b)	Y		Pressure Relief devices (liquid), Flanges, Connectors leak > 10,000 ppm	40 CFR 60.482-8a(b)	P/E	Measure for leaks	Y
21	POC	BAAQMD Condition 23178, part 6	Y		Fugitive emissions of POC from hydrogen plant components < 3,000 lb/yr	BAAQMD Condition 23178, part 18	P/Q	Method 21 and calculations	Y
22	TOC	BAAQMD Condition 23178, part 11b	Y		< 100 ppm of TOC (measured as C1) at valves	BAAQMD Condition 23178, part 17	P/Q	Method 21	Y
23	TOC	BAAQMD Condition 23178, part 15	Y		< 100 ppm of TOC (measured as C1) at pumps and compressors	BAAQMD Condition 23178, part 17	P/Q	Method 21	Y

1 FE = Federally enforceable
 2 Monitoring Frequency: P = Periodic; C = Continuous; N = None; Under Periodic; A = Annual; Q = Quarterly; M = Monthly; W = Weekly; D = Daily; H = Hourly; E = Per Event
 3 Monitoring Compliance: Y = All required monitoring of the applicable limit was conducted; N = Not all required monitoring of the applicable limit was conducted. See noted deviation in Attachment A for details.

I certify under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.



Jared Wilby
 Print Name

Plant Manager
 Title

3/28/13
 Date