

DOCKETED

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Document Title:	Air Quality Quarterly Emissions Report- First Quarter 2019
Description:	N/A
Filer:	Anwar Ali
Organization:	Watson Cogen Company
Submitter Role:	Applicant
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Watson Cogeneration Company

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VIA EMAIL

April 30th, 2019

Mr. Anwar Ali
Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, California 95814-5512

**Subject: Watson Cogeneration Company (Facility #06755)
Quarterly Emissions Report – AQ 28 – 1st Quarter 2019
Submittal # 390**

Dear Mr. Ali:

Attached is Watson Cogeneration Company's (Facility #06755) Quarterly Emissions Report for the first quarter of 2019. The report contains a table of emission limits (Table 1), a table of daily fuel and ammonia usage (Table 2A), a table of daily emissions (Table 2B), and a table of emissions during start up mode (Table 2C) for each of the site's four gas turbines. A CEC permit has been issued for a fifth train, but it has been removed from Table 1 since the unit has not been built. Along with the quarterly emissions report, please find copies of the last sulfur content analysis in the quarter for our refinery fuel gas and butane.

During the first quarter of 2019, Watson Cogeneration Company (WCC) experienced two breakdown events.

WCC experienced a breakdown event on March 19, 2019 resulting in the violation of CEC permit conditions AQ-13, AQ-15 and AQ-17. An AQMD breakdown notification was made and a subsequent report was submitted on April 18, 2019. The AQMD breakdown report is attached to this CEC report.

WCC experienced a breakdown event on March 31, 2019 resulting in the violation of CEC permit condition AQ-14, AQ-16 and AQ-20. An AQMD breakdown notification was made and a subsequent report was submitted on April 30, 2019. The AQMD breakdown report is attached to this CEC report.

If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Michael Alexander', is written over a light blue horizontal line.

Michael Alexander
Cogeneration Engineer

bcc: Connie Chow, Marathon Los Angeles Refinery
Jimmie Espie, WCC
Hakan Civan, WCC

Table 1

Emission Limits as required by the California Energy Commission Conditions of Certification

Turbine Number	Concentration Limits (ppmv @ 15% O ₂)				Maximum Daily Emission Limits ⁴ (lbs/day)					Start-Up/Shutdown Emission Limits ⁵ (lbs/day)				
	NO _x	SO ₂	CO	NH ₃	NO _x	SO ₂	CO	PM	ROG	NO _x	SO ₂	CO	PM	ROG
1 - 4	8	2	2.5 ¹ 4.5 ²	20	2600	246	568	1244	531	2156	59	82	186	108
5	5	---	2.5 ³	20	209	10	64	95	18	449	8	296	92	32

Notes:

1. Limit applies when turbine is operated at or above 85% capacity, except during startup and shutdown.
2. Limit applies when turbine is operated below 85% capacity, except during startup and shutdown.
3. Limit applies when turbine is operated at or above 50% capacity.
4. Limits do not apply on days when a start-up or shutdown has occurred. Limits pertain to combined emissions from Units 1-4.
5. Limits apply only on days when a start-up or shutdown has occurred. Limits pertain to stack emissions from individual Units.

Table 2A
Daily Fuel & Ammonia Usage

Date	Unit Start-Up or Shutdown	Fuel Usage - By Unit (mmbtu/hr)					Fuel Usage - By Fuel Type (mmbtu/hr)			Ammonia Usage - By Unit (lbs/day)			
		GTG #1	GTG #2	GTG #3	GTG #4	Boiler #42	Natural Gas	Refinery Gas	Butane	GTG #1	GTG #2	GTG #3	GTG #4
1/1/19		917	917	877	889	0	3166	310	123	2177	2201	2321	2320
1/2/19		929	923	900	914	0	3242	315	110	2076	2201	2363	2288
1/3/19		894	887	857	877	0	3195	214	106	1978	2201	2225	2120
1/4/19		964	960	925	940	0	3357	317	115	1843	2201	2097	2004
1/5/19		970	973	921	939	0	3306	358	140	1877	2201	2249	2109
1/6/19		945	945	893	913	0	3147	432	117	1846	2201	2215	2029
1/7/19		968	965	930	943	0	3206	467	134	1837	2201	2186	2031
1/8/19		983	978	935	942	0	3156	565	117	1818	2201	2117	2015
1/9/19		1136	1129	1060	1101	0	3690	628	109	1731	2201	2139	1900
1/10/19		1111	1109	1058	1079	0	3644	609	105	1732	2201	1949	1782
1/11/19	Y	1131	1122	1086	978	0	3602	579	135	1719	2201	1833	1650
1/12/19		1342	1346	1287	0	0	3384	469	131	1820	2212	1951	0
1/13/19		1127	1139	1085	0	0	2705	513	141	2133	2201	2334	0
1/14/19		1133	1155	1111	0	0	2793	468	137	2165	2223	2338	0
1/15/19		1165	1178	1134	0	0	2912	420	144	2046	2201	2223	0
1/16/19		1158	1166	1125	0	0	2854	446	150	1962	2201	2160	0
1/17/19		1176	1174	1116	0	0	2908	415	151	1967	2201	2160	0
1/18/19		1027	1030	991	0	0	2542	377	134	2037	2201	2358	0
1/19/19		1173	1168	1110	0	0	2897	446	115	2080	2201	2361	0
1/20/19		1128	1127	1071	0	0	2753	455	124	2094	2201	2362	0
1/21/19		1103	1129	1062	0	0	2776	422	103	2253	2201	2362	0
1/22/19		1150	1151	1117	0	0	2877	419	129	2301	2201	2362	0
1/23/19		1175	1181	1141	0	0	2944	443	117	2228	2201	2350	0
1/24/19		1113	1113	1074	0	0	2809	378	120	2234	2201	2358	0
1/25/19		1090	1092	1048	0	0	2770	352	115	2245	2201	2361	0
1/26/19		1124	1122	1068	0	0	2883	322	117	2147	2201	2362	0
1/27/19		1079	1084	1055	0	0	2793	330	119	2147	2201	2362	0
1/28/19		1123	1126	1082	0	0	2818	395	124	2126	2288	2302	0
1/29/19		1178	1183	1135	0	0	2931	454	129	1940	2362	2143	0
1/30/19		1165	1164	1106	0	0	2853	456	142	2015	2242	2203	0
1/31/19	Y	1012	1021	966	585	0	2970	470	144	1988	2201	2255	84
2/1/19		1017	1026	990	985	0	3033	855	130	1875	2201	2046	627
2/2/19		979	983	926	932	0	2907	783	130	2001	2201	2102	1246
2/3/19		896	894	842	845	0	2753	593	131	1879	2201	2163	1865
2/4/19		1079	1079	1018	1024	0	2809	1253	138	2062	2201	2357	2335
2/5/19		1080	1116	1060	1073	0	3020	1210	99	1988	2201	2362	2364
2/6/19		1017	1045	999	1012	0	3046	950	77	2094	2201	2362	2362
2/7/19		874	883	851	850	0	2786	584	88	2078	2201	2330	2348
2/8/19		908	907	874	878	0	2953	516	97	2036	2201	2286	2298
2/9/19		849	852	807	814	0	2870	348	104	1951	2201	2281	2258
2/10/19		863	871	813	821	0	2864	400	104	1890	2201	2298	2255
2/11/19		908	920	876	887	0	2873	631	88	2055	2201	2281	2321
2/12/19		1038	1052	1003	1014	0	2881	1117	108	2145	2485	2392	2403
2/13/19		997	1012	965	964	0	2787	1033	117	2032	2736	2309	2415
2/14/19		1067	1069	998	1021	0	2977	1033	145	1759	2258	2016	2030
2/15/19		1042	1045	994	1000	0	2977	983	121	2040	2389	2201	2339
2/16/19		1025	1030	964	993	0	3086	838	89	2074	2677	2350	2523
2/17/19		992	1004	938	959	0	3052	745	96	2081	2876	2417	2590
2/18/19		981	1000	938	966	0	3004	798	83	2194	3137	2640	2802
2/19/19		1009	1013	974	993	0	2995	896	97	2272	2847	2600	2674
2/20/19		929	941	897	898	0	3023	528	114	2089	2207	2325	2361
2/21/19		886	898	843	865	0	3020	390	81	2095	2201	2354	2362
2/22/19		982	985	945	961	0	3164	612	98	2114	2201	2362	2362
2/23/19		952	960	905	920	0	3096	545	96	2099	2201	2362	2362
2/24/19		928	927	872	898	0	3028	513	84	2084	2201	2362	2362
2/25/19		1002	1006	955	975	0	2998	831	108	1961	2201	2155	2204
2/26/19		1012	1022	966	980	0	3140	735	105	1864	2202	2007	2021
2/27/19		1084	1085	1023	1050	0	3409	739	95	1813	2201	2034	1963
2/28/19	Y	1514	1517	874	928	0	3785	813	234	1950	2202	1344	1195
3/1/19	Y	1458	1478	828	733	0	3532	849	116	2145	2201	1282	1063
3/2/19		1674	1675	1587	0	0	3761	1027	158	2299	2201	2348	0
3/3/19	Y	1443	1457	1370	505	0	3613	1118	44	2052	2201	2362	704

Table 2A
Daily Fuel & Ammonia Usage

Date	Unit Start-Up or Shutdown	Fuel Usage - By Unit (mmbtu/hr)					Fuel Usage - By Fuel Type (mmbtu/hr)			Ammonia Usage - By Unit (lbs/day)			
		GTG #1	GTG #2	GTG #3	GTG #4	Boiler #42	Natural Gas	Refinery Gas	Butane	GTG #1	GTG #2	GTG #3	GTG #4
3/4/19		1031	1031	992	1020	0	3057	999	19	1980	2201	2327	1876
3/5/19		1091	1108	1052	1087	0	3274	1038	25	1921	2201	2236	1855
3/6/19		1115	1118	1067	1100	0	3204	1178	18	1671	2201	1889	1974
3/7/19		1131	1128	1084	1112	0	3478	960	16	1804	2201	1947	2064
3/8/19		1202	1193	1159	1198	0	3897	839	16	1952	2201	2051	2255
3/9/19		1153	1179	1122	1165	0	3848	762	10	2025	2201	2196	2333
3/10/19		1172	1198	1146	1191	0	3761	936	10	2040	2201	2255	2362
3/11/19		1213	1255	1193	1243	0	3759	1136	10	2055	2201	2300	2318
3/12/19		1280	1303	1255	1302	0	3790	1340	11	2005	2201	2325	2261
3/13/19		1287	1322	1281	1327	0	3907	1298	11	1986	2201	2362	2362
3/14/19		1307	1360	1294	1341	0	3902	1390	11	2005	2201	2362	2362
3/15/19		1244	1250	1190	1234	0	3869	1033	15	2080	2201	2355	2354
3/16/19		1399	1410	1290	1359	0	3911	1471	76	2311	2201	2362	2363
3/17/19		1257	1315	1189	1230	0	3336	1519	134	2501	2201	2362	2363
3/18/19		1284	1313	1220	1255	0	3474	1436	162	2088	2202	2272	2203
3/19/19		1380	1409	1346	1377	0	3932	1412	168	1941	2201	2129	2057
3/20/19		1374	1421	1340	1356	0	3876	1493	123	1996	2201	2219	2216
3/21/19		1339	1370	1281	1317	0	3824	1367	116	2099	2201	2362	2362
3/22/19		1295	1331	1260	1272	0	3830	1234	94	2135	2201	2356	2362
3/23/19		1295	1323	1239	1271	0	3841	1182	105	2018	2201	2362	2362
3/24/19		1262	1289	1205	1234	0	3886	1014	90	2019	2201	2362	2362
3/25/19		1250	1280	1222	1250	0	3791	1133	79	1904	2202	2276	2232
3/26/19		1256	1283	1216	1249	0	3760	1162	82	1852	2201	2249	2085
3/27/19		1249	1272	1201	1227	0	3755	1097	97	1701	2201	2162	2026
3/28/19		1246	1271	1208	1246	0	3793	1096	83	1824	2201	2261	2145
3/29/19		1233	1258	1196	1230	0	3874	961	82	1880	2201	2322	2150
3/30/19		1276	1298	1213	1261	0	3910	1061	77	1860	2201	2361	2192
3/31/19		1359	1381	1285	1342	0	3763	1517	88	2252	2296	2362	2352

**Table 2B
Daily Emissions**

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4 Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
1/1/19		1372.1	4.3	87.6	340.5	228.2
1/2/19		1218.7	2.9	111.7	346.8	232.4
1/3/19		1173.9	2.6	115.8	332.2	222.5
1/4/19		1151.5	1.9	132.6	358.3	240.1
1/5/19		1114.8	2.4	120.5	359.8	241.1
1/6/19		1188.0	3.3	99.1	349.7	234.4
1/7/19		1106.0	3.8	114.9	360.4	241.6
1/8/19		1095.4	3.2	103.0	363.5	243.8
1/9/19		1125.3	4.7	97.9	419.0	281.0
1/10/19		1158.9	1.5	130.6	412.5	276.6
1/11/19	Y	1247.0	5.0	134.4	408.7	274.0
1/12/19		1643.8	4.3	68.6	377.1	252.8
1/13/19		1389.3	4.3	68.2	318.3	213.5
1/14/19		1362.3	4.0	89.2	321.9	215.8
1/15/19		1302.2	3.6	62.6	329.2	220.7
1/16/19		1106.6	2.6	56.4	326.7	219.1
1/17/19		1148.5	2.8	67.2	328.9	220.5
1/18/19		944.1	2.0	79.2	289.2	193.9
1/19/19		1002.3	3.6	64.6	327.4	219.5
1/20/19		1000.5	2.2	66.6	315.6	211.6
1/21/19		1158.9	5.5	74.7	312.5	209.5
1/22/19		1104.2	2.4	77.9	324.3	217.4
1/23/19		1043.2	2.8	90.3	331.7	222.4
1/24/19		1030.3	1.8	95.2	313.0	209.8
1/25/19		994.6	2.8	98.4	306.2	205.3
1/26/19		1142.0	3.1	88.5	314.3	210.6
1/27/19		1256.9	3.5	87.5	306.8	205.6
1/28/19		1145.4	2.0	90.1	315.9	211.8
1/29/19		1039.0	3.9	91.8	332.8	223.1
1/30/19		1092.8	2.3	71.1	326.8	219.1
1/31/19	Y	1120.4	4.2	117.3	339.4	227.6
2/1/19		1189.6	10.1	139.4	381.1	255.7
2/2/19		1143.1	6.6	115.0	362.3	243.1
2/3/19		1137.1	10.1	115.6	329.6	221.1
2/4/19		1085.1	21.1	118.9	399.1	268.1
2/5/19		1297.0	10.3	131.0	411.1	276.0
2/6/19		1414.5	5.6	139.5	386.5	259.4
2/7/19		1242.1	4.2	139.5	327.6	219.7

Table 2B
Daily Emissions

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4 Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
2/8/19		1179.2	8.2	133.1	337.8	226.5
2/9/19		1147.3	7.9	115.4	314.3	210.7
2/10/19		1196.7	9.4	97.1	318.7	213.6
2/11/19		1255.1	12.8	136.8	340.3	228.3
2/12/19		1151.1	23.4	154.3	389.9	261.8
2/13/19		1048.5	25.0	120.0	373.8	251.0
2/14/19		1141.3	17.3	102.2	394.5	264.8
2/15/19		1133.6	7.7	101.9	387.3	260.0
2/16/19		1213.2	9.1	104.8	380.5	255.3
2/17/19		1178.3	3.3	108.1	369.0	247.6
2/18/19		1103.2	11.0	109.0	368.4	247.1
2/19/19		1128.2	11.5	123.8	378.4	253.9
2/20/19		1226.4	4.4	120.8	347.1	232.7
2/21/19		1230.0	10.5	123.1	330.3	221.4
2/22/19		1258.6	26.3	143.3	366.9	246.0
2/23/19		1248.2	6.2	137.1	353.8	237.3
2/24/19		1199.8	2.8	134.8	343.2	230.1
2/25/19		1128.8	7.1	133.4	373.4	250.6
2/26/19		1146.3	4.9	124.6	377.2	253.0
2/27/19		1209.6	7.4	101.4	401.9	269.6
2/28/19	Y	1193.1	9.0	87.0	458.1	307.3
3/1/19	Y	1174.6	13.8	82.6	426.2	285.9
3/2/19		1163.6	16.1	56.0	469.0	314.7
3/3/19	Y	1062.9	8.9	89.7	452.9	303.9
3/4/19		1171.6	27.8	178.2	386.6	259.4
3/5/19		1132.9	15.1	152.7	411.4	276.1
3/6/19		1186.8	11.3	144.0	417.6	280.3
3/7/19		1368.4	6.2	146.1	422.3	283.3
3/8/19		1350.5	12.2	137.8	450.0	301.8
3/9/19		1289.2	4.9	129.0	437.4	293.3
3/10/19		1260.9	6.6	145.0	446.0	299.2
3/11/19		1220.1	23.0	152.2	465.0	312.0
3/12/19		1183.9	58.9	135.3	487.7	327.4
3/13/19		1223.6	34.4	116.3	494.9	332.1
3/14/19		1324.9	47.9	105.1	503.1	337.7
3/15/19		1224.5	13.8	98.4	466.1	312.7
3/16/19		1361.1	39.4	88.3	518.1	347.8
3/17/19		1286.6	28.9	90.5	474.2	318.5

**Table 2B
Daily Emissions**

Date	Unit Start-Up or Shutdown	Total Mass Emissions - GTG's #1 - 4 Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM ¹	ROG ¹
3/18/19		1019.6	24.3	102.1	481.9	323.6
3/19/19		1140.4	18.3	111.2	523.4	351.4
3/20/19		1169.8	6.7	87.1	521.4	350.1
3/21/19		1184.9	7.9	88.3	503.8	338.2
3/22/19		1208.1	6.5	95.0	489.4	328.4
3/23/19		1137.6	3.8	100.9	486.5	326.5
3/24/19		1042.0	6.9	105.3	473.0	317.4
3/25/19		1102.3	9.8	120.3	474.4	318.4
3/26/19		1098.4	6.9	121.1	474.7	318.5
3/27/19		1125.3	21.8	114.9	469.4	315.0
3/28/19		1169.4	34.8	136.6	471.5	316.4
3/29/19		1052.3	9.8	157.9	466.1	312.6
3/30/19		1060.0	31.1	156.5	478.6	321.1
3/31/19		1322.6	259.2	137.6	509.7	342.2

1. PM & ROG emission estimates were calculated using fuel based emission factors and fuel usage data.

Fuel	PM	ROG
Natural Gas:	0.00393	0.00263
Refinery Gas:	0.00402	0.00272
Butane:	0.00402	0.00272

The foregoing fuel based emission factors have been updated based on 1997 & 1998 stack testing.

**Table 2C
Daily Emissions for Individual Units during Startup**

Date	Unit	Total Mass Emissions - GTG's #1				
	Start-Up	Midnight - Midnight				
	or Shutdown	(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
	NONE					

Date	Unit	Total Mass Emissions - GTG's #2				
	Start-Up	Midnight - Midnight				
	or Shutdown	(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
	NONE					

Date	Unit	Total Mass Emissions - GTG's #3				
	Start-Up	Midnight - Midnight				
	or Shutdown	(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
2/28/19	Y	192.2	1.5	13.3	83.1	55.8
3/1/19	Y	213.9	3.3	24.4	78.5	52.7

Date	Unit	Total Mass Emissions - GTG's #4				
	Start-Up	Midnight - Midnight				
	or Shutdown	(lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
1/11/19	Y	231.5	0.6	18.5	92.6	62.0
1/31/19	Y	169.5	1.4	8.4	55.4	37.1
2/28/19	Y	238.3	1.0	19.3	87.9	59.0
3/1/19	Y	138.1	2.1	6.3	69.4	46.6
3/3/19	Y	68.5	1.0	6.6	47.9	32.2

Unit	Cogeneration Unit
Sample Point	Eff.Before Compress

Profile #	9007
Date	3/31/2019
Time	19:03
Sample No.	164199
Status	Complete

H2S - SCD-HiLvl	4	ppm
COS - SCD-HiLvl	8	ppm
MeSH - SCD-HiLvl	65	ppm
EtSH - SCD-HiLvl	1	ppm
DMDS - SCD-HiLvl	30	ppm
Other S Compds-SCD-HiLvl	5	ppm
Sulfur (sum)-SCD-Calc	114	ppm

Unit	Cogeneration Unit
Sample Point	Butane - TK 79

Profile #	9010
Date	3/31/2019
Time	19:00
Sample No.	1641700
Status	Complete

H2S - SCD-LoLvl	<0.1	ppm
COS - SCD-LoLvl	<0.1	ppm
MeSH - SCD-LoLvl	<0.1	ppm
EtSH - SCD-LoLvl	0.3	ppm
DMDS - SCD-LoLvl	0.1	ppm
Other S Compds-SCD-LoLvl	1.1	ppm
Sulfur (sum)-SCD-Calc	1.5	ppm

Tesoro Refining & Marketing LLC
Tesoro Los Angeles Refinery - Carson Operations
2350 East 223rd Street
Carson, California 90810
(310) 816-8100

CERTIFIED MAIL NO. 7018 0040 0000 1883 6284
RETURN RECEIPT REQUESTED

April 18, 2019

Title V Administrator
South Coast Air Quality Management District
PO Box #4944
Diamond Bar, CA 91765


Subject: Title V Deviation Breakdown Report for Cogen
Notification # 553372
Facility ID No. 174655

Dear Title V Administrator:

Tesoro Los Angeles Refinery, Carson Operations is providing the enclosed Form 500-N for the Title V deviation notification made on March 19th, 2019 at 9:43 AM (Notification No. 553372). Please note that a breakdown extension was requested and granted by Supervising Inspector Eduardo Esparza with a due date of April 18th, 2019.

Please contact me at (310) 847-5633 if you have questions or comments regarding this report.

Sincerely,



Connie Chow
Senior Environmental Engineer

Attachments
A - SCAQMD Form 500N

CC: ENV File 3E05-0046708

ECC: ECC 2019-03-19 Cogen NOx Exceedance
George Lamont, SCAQMD
Hakan Civan, Tesoro
Robin Schott, Tesoro
Michael Alexander, Tesoro
Connie Chow, Tesoro

Attachment A

SCAQMD Form 500N



South Coast Air Quality Management District

**Form 500-N
Deviations, Emergencies, & Breakdowns**

Mail Application To:
PO Box 4944
Diamond Bar, CA 91765

Tel: (909) 396-3385

www.aqmd.gov

*This written report is in addition to requirements to verbally report certain types of incidents. Verbal reports may be made by calling AQMD at 1-800-288-7664 (1-800-CUT-SMOG) or AQMD enforcement personnel.

Section I - Facility Information

1. Permit to be issued to (Business name of operator to appear on permit): Tesoro Refining & Marketing Company LLC		2. Valid AQMD Facility ID (Available on Permit or Invoice Issued by AQMD): 174655	
3. Address (where incident occurred): 2350 E. 223rd St			
City: Carson	State: CA	Zip Code: 90810	
4. Mailing Address (if different from Item 2): 2350 E. 223rd St			
City: Carson	State: CA	Zip Code: 90810	
5. Provide the name, title, and phone number of the person to contact for further information			
Connie Chow	Senior Environmental Engineer	310-847-5633	
Name	Title	Phone	

Section II - Reporting of Breakdowns, Deviations, and Emergencies

1. This written notification is to report a(n):

Type of Incident	Verbal Report Due*	Written Report Due
a. <input type="checkbox"/> Emergency under Rule 3002 (g)	Within 1 hour of discovery	Within 2 working days from when the emission limit was exceeded
b. <input checked="" type="checkbox"/> Breakdown under: <input checked="" type="checkbox"/> Rule 430 (Non-RECLAIM) <input type="checkbox"/> Rule 2004 (RECLAIM) <input type="checkbox"/> Rule 218 (Non-RECLAIM) [See Rule 218 (f)(3)]	For Rules 430 2004 - Within 1 hour of discovery For Rule 218 - Within 24 hours or next business day for failure/shutdown exceeding 24 hours.	For Rules 430 2004 - Within 7 calendar days after breakdown is corrected, but no later than 30 days from the start of the breakdown, unless a written extension is granted For Rule 218 - With required semi-annual reports
c. <input type="checkbox"/> Deviation with excess emissions [See Title V Permit, Section K, Condition No. 22B]	Within 72 hours of discovery of the deviation or shorter reporting period if required by an applicable State or Federal Regulation	Within 14 days of discovery of the deviation
d. <input type="checkbox"/> Other Deviation [See Title V Permit, Section K, Condition Nos. 22D & 23]	None	With required semi-annual reports

2. The incident was first discovered by: Operations on? 3/19/2019 9:01:00 AM
Date Time

3. The incident was first reported to: AQMD Operator #7 on? 3/19/2019 9:43:00 AM
Date Time

a. Via Phone
b. In Person Notification Number (Required): 553372

4. When did the incident actually occur? 3/19/2019 9:01:00 AM
Date Time

Received By:	Assigned By:	Inspector:
Date/Time Received:	Date/Time Assigned:	Date/Time Received Assignment:
AQMD Date Delivered to Team:	Date Reviewed Inspector Repo:	Date Facility Inspected:
USE Team: Sector:	Breakdown/Deviation Notification:	Date Completed Report:
ONLY Recommended Action: Cancel Notification	Grant Relief Issue NOV No. _____	Other: _____
Final Action: Cancel Notification	Grant Relief Issue NOV No. _____	Other: _____

5. Has the incident stopped? a. Yes, on: 3/19/2019 Date Time b. No

6. What was the total duration of the incident? Days Hours

7. For equipment with an operating cycle, as defined in Rule 430 (b)(3)(A), when was the end of the operating cycle during which the incident occurred? N/A Date Time

8. Describe the incident and identify each piece of equipment (by permit, application, or device number) affected. Attach photos (when available) of the affected equipment and attach additional pages as necessary. Devices Affected: 1226, 1227

On March 19th, at approximately 9 am, Cogeneration Gas Turbine Generator (GTG) Unit 91's DeNOx steam system tripped off line, resulting in elevated NOx stack emissions. The 15-minute average concentration limit of 8 ppm corrected to 15% O2 was exceeded from 9:01 am to 9:17 am.

9. This incident may have resulted in a:
a. Violation of Permit Condition(s): A248 1, Administrative Condition E4, E73.1
b. Violation of AQMD Rule(s): R203(b), R2004(f)(1), R2005, R3002(c)(1), NOx: 8 PPMV (4) [RULE 2005, 6-3-2011]

10. What was the probable cause of the incident? Attach additional pages as necessary.
It was determined that a malfunctioning discrete output card and processor sent a faulty signal to the steam control valve, causing the steam valve to unexpectedly move too far open. This caused the DeNOx steam system to trip offline from high steam flow.

11. Did the incident result in excess emissions? No Yes (Complete the following and attach calculations.)
VOC lbs NOx 19.16 ppm lbs SOx lbs H2S lbs
CO lbs PM lbs Other lbs pollutant

12. For RECLAIM facilities Subject to Rule 2004 (i)(3) ONLY: If excess emissions of NOx and/or SOx were reported in Item 11, do you want these emissions to be counted when determining compliance with your annual allocations?

a. Yes, for: NOx SOx b. No, for: NOx SOx
If box 12(b) above is checked, include all information specified in Rule 2004(i)(3)(B) and (C), as applicable.

13. Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary.
See Attachment

14. Was the facility operating properly prior to the incident?
a. Yes b. No, because:

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?
a. Yes b. No, because: See Attachment

16. Has the facility returned to compliance?
a. No, because:
b. Yes (Attach evidence such as emissions calculations, contemporaneous operating logs or other credible evidence)

Section III - Certification Statement

I certify under penalty of law that based on 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.

For Title V Facilities ONLY: I also certify under penalty of law that that I am the responsible official for this facility as defined in AQMD Regulation XXX.

DLK Bradley J. Levi
Signature of Responsible Official

Vice President, Tesoro Los Angeles Refinery
Title

4/18/19
Date

Brad Levi
Type or Print Name of Responsible Official

310-816-8100
Phone

310-847-5475
Fax

2350 E 223rd St
Address

Carson
City:

CA
State

90810
Zip Code

Section IV - Attachments

13. Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary.

Operations immediately increased ammonia rates to reduce NOx emissions. Within a few minutes, DeNOx steam flow was re-established, bringing the NOx concentration down. The 15 min average NOx concentration dropped below the 8 ppm limit at 9:17 am on the same day. To prevent reoccurrence of similar incidents, Tesoro replaced the malfunctioning output card. The failed processor was also rebooted and was cleared of any errors. In addition, although the fault and error message was not detected at the other Cogen GTG units, Tesoro will be proactively replacing the similar output card on all other units during the next outages.

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?

No. The incident was a result of a malfunctioning digital output card and processor.

Tesoro Refining & Marketing LLC
Tesoro Los Angeles Refinery - Carson Operations
2350 East 223rd Street
Carson, California 90810
(310) 816-8100

CERTIFIED MAIL NO. 7018 0040 0000 1883 6253
RETURN RECEIPT REQUESTED

April 30, 2019

Title V Administrator
South Coast Air Quality Management District
PO Box #4944
Diamond Bar, CA 91765

Subject: Title V Deviation Breakdown Report for Cogen and Rule 1118 Specific Cause Analysis Report for the Coker Flare Notification # 555506 (Breakdown); #556198 (R1118) Facility ID No. 174655

Dear Title V Administrator:

Tesoro Los Angeles Refinery, Carson Operations is providing the enclosed Form 500-N for the Title V deviation notification made on March 31st, 2019 at 9:38 AM (Notification No. 555506). Please note that a breakdown extension was requested and granted by Supervising Inspector Eduardo Esparza with a due date of April 30th, 2019.

Please note that this report also meets the requirements of Rule 1118 for a specific cause analysis report for notification # 556198.

Please contact me at (310) 847-5633 if you have questions or comments regarding this report.

Sincerely,



Connie Chow
Senior Environmental Engineer

Attachments

A - SCAQMD Form 500N

CC: ENV File 3E05-0046708

ECC: ECC 2019-03-31 Cogen SOx Exceedance & Flaring
George Lamont, SCAQMD
Hakan Civan, Tesoro
Robin Schott, Tesoro
Michael Alexander, Tesoro
Connie Chow, Tesoro
Maxine Sauer, Tesoro

Attachment A

SCAQMD Form 500N



South Coast Air Quality Management District

**Form 500-N
Deviations, Emergencies, & Breakdowns**

Mail Application To:
PO Box 4944
Diamond Bar, CA 91765

Tel: (909) 396-3385

www.aqmd.gov

*This written report is in addition to requirements to verbally report certain types of incidents. Verbal reports may be made by calling AQMD at 1-800-288-7664 (1-800-CUT-SMOG) or AQMD enforcement personnel.

Section I - Facility Information

1. Permit to be issued to (Business name of operator to appear on permit): Tesoro Refining & Marketing Company LLC		2. Valid AQMD Facility ID (Available on Permit or Invoice Issued by AQMD): 174655	
3. Address (where incident occurred): 2350 E. 223rd St			
City:	Carson	State:	CA
		Zip Code:	90810
4. Mailing Address (if different from Item 2): 2350 E. 223rd St			
City:	Carson	State:	CA
		Zip Code:	90810
5. Provide the name, title, and phone number of the person to contact for further information			
Connie Chow		Senior Environmental Engineer	310-847-5633
Name		Title	Phone

Section II - Reporting of Breakdowns, Deviations, and Emergencies

1. This written notification is to report a(n):			
Type of Incident	Verbal Report Due*	Written Report Due	
a. <input type="checkbox"/> Emergency under Rule 3002 (g)	Within 1 hour of discovery	Within 2 working days from when the emission limit was exceeded	
b. <input checked="" type="checkbox"/> Breakdown under:			
<input checked="" type="checkbox"/> Rule 430 (Non-RECLAIM)	For Rules 430 2004 - Within 1 hour of discovery	For Rules 430 2004 - Within 7 calendar days after breakdown is corrected, but no later than 30 days from the start of the breakdown, unless a written extension is granted	
<input type="checkbox"/> Rule 2004 (RECLAIM)	For Rule 218 - Within 24 hours or next business day for failure/shutdown exceeding 24 hours.	For Rule 218 - With required semi-annual reports	
<input type="checkbox"/> Rule 218 (Non-RECLAIM) [See Rule 218 (f)(3)]			
c. <input type="checkbox"/> Deviation with excess emissions [See Title V Permit, Section K, Condition No. 22B]	Within 72 hours of discovery of the deviation or shorter reporting period if required by an applicable State or Federal Regulation	Within 14 days of discovery of the deviation	
d. <input type="checkbox"/> Other Deviation [See Title V Permit, Section K, Condition Nos. 22D & 23]	None	With required semi-annual reports	

2. The incident was first discovered by:	Operations	on?	3/31/2019	9:13:00 AM
			Date	Time
3. The incident was first reported to:	AQMD Operator #5	on?	3/31/2019	9:38:00 AM
			Date	Time
a. <input checked="" type="radio"/> Via Phone				
b. <input type="radio"/> In Person	Notification Number (Required):		555506	
4. When did the incident actually occur?	3/31/2019		9:13:00 AM	
	Date		Time	

	Received By:	Assigned By:	Inspector:
	Date/Time Received:	Date/Time Assigned:	Date/Time Received Assignment:
AQMD USE ONLY	Date Delivered to Team:	Date Reviewed Inspector Repo	Date Facility Inspected:
	Team: Sector:	Breakdown/Deviation Notification	Date Completed Report:
	Recommended Action Cancel Notification	Grant Relief Issue NOV No _____	Other: _____
	Final Action Cancel Notification	Grant Relief Issue NOV No _____	Other: _____

5 Has the incident stopped? a Yes, on: See Additional Information b No

Date Time

6 What was the total duration of the incident? See Additional Information

Days Hours

7. For equipment with an operating cycle, as defined in Rule 430 (b)(3)(A), when was the end of the operating cycle during which the incident occurred? N/A Date Time

8. Describe the incident and identify each piece of equipment (by permit, application, or device number) affected. Attach photos (when available) of the affected equipment and attach additional pages as necessary. Devices Affected: 1226, 1227, 1233, 1234, 1236, 1237, 1239, 1240

See Attachment

9 This incident may have resulted in a:

- a. Violation of Permit Condition(s): A248.2, B61.1
- b. Violation of AQMD Rule(s): R203(b), R2004(f)(1), R3002(c)(1), R2005, SO2: 2 PPMV (4) [RULE 2005, 6-3-2011]

10. What was the probable cause of the incident? Attach additional pages as necessary

See Attachment

11. Did the incident result in excess emissions? No Yes (Complete the following and attach calculations)

VOC lbs NOx lbs SOx See Attach lbs H2S lbs
 CO lbs PM lbs Other lbs pollutant

12. For RECLAIM facilities Subject to Rule 2004 (i)(3) ONLY: If excess emissions of NOx and/or SOx were reported in Item 11, do you want these emissions to be counted when determining compliance with your annual allocations?

a. Yes, for: NOx SOx b. No, for: NOx SOx

If box 12(b) above is checked, include all information specified in Rule 2004(i)(3)(B) and (C), as applicable

13 Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary

See Attachment

14. Was the facility operating properly prior to the incident?

a. Yes b. No, because:

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?

a. Yes b. No, because: See Attachment

16. Has the facility returned to compliance?

a. No, because:
b. Yes (Attach evidence such as emissions calculations, contemporaneous operating logs or other credible evidence)

Section III - Certification Statement

I certify under penalty of law that based on 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.

For Title V Facilities ONLY: I also certify under penalty of law that I am the responsible official for this facility as defined in AQMD Regulation XXX.

OK

Bradley Levi
Signature of Responsible Official

Vice President, Tesoro Los Angeles Refinery

Title

Date

Brad Levi

310-816-8100

310-847-5475

Type or Print Name of Responsible Official

Phone

Fax

2350 E. 223rd St

Carson

CA

90810

Address

City

State

Zip Code

Section IV - Attachments

8. Describe the incident and identify each piece of equipment (by permit, application, or device number) affected. Attach photos (when available) of the affected equipment and attach additional pages as necessary.

On March 31st, the Cogeneration Gas Turbine Generator (GTG) Unit 91 and Unit 92's stack SOx concentration exceeded the 15-minute average limit of 2 ppm corrected to 15% O2 from 9:13 am to 9:19 am. Refinery fuel gas samples feeding the Cogeneration unit also indicated a total sulfur concentration above the 100 ppm limit. Cogen reduced fuel gas rates to get back into compliance. However, this led to fuel gas imbalance and eventual flaring at the Coker Flare.

Please note that the flaring is permitted under Rule 1118(b)(3)(A)(i), under essential operating need. This breakdown report meets the requirements of the Rule 1118 specific cause analysis report for the flare event.

10. What was the probable cause of the incident? Attach additional pages as necessary.

A corroded leaking instrument air line in the North Area fuel gas mix drum (NAMD) analyzer caused low instrument air pressure, which caused the pneumatic solenoid sample valve to malfunction and the analyzer to report erroneously high H2S readings. As part of the Refinery's troubleshooting response to the erroneous H2S readings, adjustments were made that increased fuel flow rates to Cogen. Cogen's Merox unit, which removes sulfur from their feed, was unable to keep up with the higher than normal flows. This caused sulfur concentrations in the fuel gas feed to increase, eventually resulting in stack SOx exceedances at GTG 91 and 92.

13. Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary.

Cogen immediately responded by replacing their Merox caustic with fresh caustic to increase sulfur removal efficiency. In addition, Cogen reduced fuel gas feed rate to further lower the SOx concentration. However, when Cogen reduced their fuel gas feed rate, this led to a fuel gas imbalance with more fuel gas producers than available consumers. The fuel gas system over pressured and released to the flare gas recovery system and eventually to the Coker flare at 9:11 am. The Refinery reduced unit rates to balance the fuel gas system and flaring ended at 2:54 pm on the same day. Additionally, sulfur concentrations in the Cogen fuel gas feed dropped below 100 ppm at approximately 8:36 pm on the same day.

To minimize the potential of this reoccurring, Tesoro has replaced the corroded instrument air line in the NAMD analyzer. In addition, as a protective measure, Cogen will be evaluating existing Merox operating procedures to determine if changes can be made to improve sulfur removal efficiency.

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?

No. The incident was a result of a failed instrument air line on the fuel gas mix drum analyzer.

Additional Information:

5. Incident Stop Date/Time:

03/31/19 9:19 AM (Last 15-min period of SOx exceedance at Unit 91 & 92)

03/31/19 8:40 PM (Last minute of estimated total sulfur exceedance in fuel gas)

6. Duration:

6 mins (SOx exceedance); 27 mins (intermittent, total sulfur exceedance)

11. Excess Emissions:

No Mass Emission Limit; Only concentration limits (2 ppm SOx, 15 min avg and 100 ppm total sulfur in fuel gas feed)

0.17 (Unit 91) & 0.19 ppm (Unit 92) - Represents highest SOx concentration delta from the 2 ppm 15 min average limit

14 ppm (fuel gas) - Represents delta from 100 ppm total sulfur limit in fuel gas



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA, 91765
1-800-CLUT-SMOG www.sqmd.gov

Carson Flare Event Data - 3/31/2019-4/1/2019

Facility ID#	Flare Name	Flare Event Type	Flare Event Start Date	Flare Event Start Time	Flare Event Stop Date	Flare Event Stop Time	Date Representative Sample Obtained	Time Representative Sample Obtained	Total Flare Event Gas Flow Data Source	Total Flare Event Gas Flow	HHV Data Source	HHV	[S] as SO2 Data Source	[S] as SO2	PM10	NOx	ROG	CO	Total S as SO2
174855	COKER	1	3/31/2019	09:11	3/31/2019	14:54	3/31/2019	09:11	2	825.48	5	1209.65	5	1459.43	17.34	67.90	653.73	307.06	200.23