

DOCKETED

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Description:	N/A
Filer:	Craig Chi
Organization:	Watson Cogeneration Company
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Watson Cogeneration Company

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VIA EMAIL

April 30, 2021

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 2021
Submittal # 396**

Dear Mr. Ali:

Attached is Watson Cogeneration Company's (Facility #06755) Quarterly Emissions Report for the first quarter of 2021. 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 2021, Watson Cogeneration Company (WCC) experienced zero breakdown / excess emissions incident as currently required by the SCAQMD.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Craig Chi', is written over a horizontal line.

Craig Chi
Watson Cogeneration Operations Engineer

bcc: Shelley Zhang, Marathon Los Angeles Refinery
Jimmie Espie, WCC
Mike Nour, 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		---	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
1/1/21		1040	1096	988	1036	0	3822	225	113	2040	1453	2241	2255
1/2/21		935	980	877	940	0	3471	135	126	2137	1398	2126	2246
1/3/21		919	946	848	911	0	3293	203	127	1986	1318	2066	2219
1/4/21		972	1008	901	960	0	3441	281	119	1922	1308	1983	2097
1/5/21		986	1031	929	982	0	3660	152	116	1953	1321	1795	2153
1/6/21		1011	1058	963	1005	0	3824	99	114	1845	1305	1842	2077
1/7/21		1054	1102	1001	1048	0	3897	199	110	1848	1329	1962	2063
1/8/21		1088	1136	1002	1079	0	3832	352	121	1906	1354	1882	2084
1/9/21		1118	1169	1041	1103	0	3820	487	125	2053	1475	2136	2205
1/10/21		891	942	846	888	0	3120	335	112	2254	1565	2219	2255
1/11/21		826	865	785	819	0	2929	256	111	2131	1407	2087	2226
1/12/21		831	877	798	829	0	2989	237	110	2116	1407	2052	2218
1/13/21		829	873	792	824	0	2890	322	106	2032	1408	2030	2202
1/14/21		823	872	798	815	0	2834	370	104	2047	1338	1900	2160
1/15/21	Y	844	896	720	832	0	2817	379	95	2011	1378	1827	2101
1/16/21		1160	1200	0	1151	0	2865	551	108	2255	1645	133	2255
1/17/21	Y	925	972	455	917	0	2708	457	105	2229	1542	1109	2253
1/18/21		781	817	790	765	0	2778	244	132	2008	1308	2174	2217
1/19/21		859	911	885	861	0	2914	474	128	2040	1412	2202	2201
1/20/21		827	881	833	805	0	2894	346	106	2008	1363	2255	2254
1/21/21		820	867	825	805	0	2964	237	115	1914	1325	2083	2195
1/22/21		857	881	862	836	0	2913	380	142	1911	1342	2061	2125
1/23/21		808	857	831	801	0	2905	273	119	2040	1351	2255	2255
1/24/21		882	926	905	869	0	3116	333	132	1988	1321	2255	2255
1/25/21		915	962	919	907	0	3081	494	129	2129	1472	2255	2255
1/26/21		862	910	870	857	0	3087	288	124	2255	1558	2255	2255
1/27/21		833	867	860	817	0	2982	251	143	2154	1502	2195	2255
1/28/21		873	912	887	859	0	3035	358	139	2024	1456	2164	2255
1/29/21		941	985	943	932	0	3185	473	144	2206	1533	2237	2255
1/30/21		1054	1118	1067	1062	0	3705	488	108	2254	1562	2255	2255
1/31/21		1065	1120	1064	1058	0	3743	459	105	2255	1593	2255	2255
2/1/21		1032	1090	1049	1028	0	3685	407	105	2239	1526	2189	2221
2/2/21		1016	1069	1016	1007	0	3712	292	103	2187	1369	2166	2157
2/3/21		1079	1130	1089	1067	0	3847	399	119	2209	1376	2173	2123
2/4/21		1108	1154	1121	1091	0	3860	491	123	2213	1398	1952	2119
2/5/21		1075	1122	1086	1069	0	3777	468	107	2312	1409	2177	2203
2/6/21		1018	1072	1014	1007	0	3705	297	109	2255	1427	2245	2147
2/7/21		1017	1066	1009	998	0	3451	518	121	2255	1413	2250	2128
2/8/21		1104	1141	1104	1075	0	3797	485	142	2242	1405	2201	2149
2/9/21		899	946	917	888	0	3248	277	124	2274	1410	2165	2175
2/10/21		863	911	872	854	0	3039	350	110	2224	1382	2182	2166
2/11/21		958	1001	959	943	0	3195	551	115	2193	1375	2163	2129
2/12/21	Y	1190	1223	748	1165	0	3866	339	120	2178	1466	1436	2076
2/13/21	Y	1430	1412	796	1686	0	3574	1294	456	2255	1966	1160	2256
2/14/21		960	830	2514	2537	0	4092	1792	957	2469	2058	2469	2469
2/15/21		980	365	2915	2944	0	4038	2223	942	2684	2116	2684	2684
2/16/21		1024	204	3267	3270	0	4228	2580	958	2620	2016	2694	2693
2/17/21		1018	162	3220	3204	0	3856	2781	967	2641	1961	2610	2665
2/18/21		999	156	2933	2960	0	3756	2324	968	2703	2151	2753	2694
2/19/21		1304	949	1505	1513	0	3973	809	489	2525	1838	2487	2396
2/20/21		993	1052	986	991	0	3895	30	97	2255	1523	2257	2255
2/21/21		944	1030	964	974	0	3775	40	97	2255	1589	2255	2255
2/22/21		1008	1097	1040	1032	0	3865	181	131	2228	1501	2255	2255
2/23/21		1056	1105	1055	1043	0	3823	334	102	2245	1477	2255	2255
2/24/21		1038	1079	1043	1035	0	3826	255	114	2185	1436	2179	2206
2/25/21		999	1049	1001	999	0	3849	100	99	2234	1462	2231	2204
2/26/21	Y	1037	977	1046	1039	0	3853	142	105	2107	1341	2190	2185
2/27/21		1362	0	1375	1375	0	3912	123	136	2260	-106	2249	2254
2/28/21	Y	1140	640	1146	1180	0	3832	163	112	2269	719	2264	2262

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
3/1/21		996	1049	987	1013	0	3820	121	103	2283	1501	2352	2350
3/2/21		1070	1129	1061	1041	0	3868	326	108	2132	1459	2272	2209
3/3/21		1042	1097	1057	1020	0	3851	239	125	2025	1458	2175	2066
3/4/21		998	1052	1005	970	0	3727	176	121	1956	1438	2159	2084
3/5/21	Y	1073	1130	1076	919	0	3807	277	113	2233	1373	2253	2093
3/6/21		1435	1493	1433	0	0	3916	354	101	2416	1557	2469	0
3/7/21		1422	1485	1431	0	0	3893	350	105	2398	1586	2464	0
3/8/21		1425	1483	1441	0	0	3801	450	99	2372	1607	2437	0
3/9/21		1425	1492	1455	0	0	3836	436	100	2225	1599	2350	0
3/10/21		1409	1475	1448	0	0	3804	425	103	2290	1637	2394	0
3/11/21		1425	1490	1466	0	0	3843	437	101	2382	1671	2346	0
3/12/21		1427	1490	1465	0	0	3837	447	99	2362	1691	2255	0
3/13/21		1492	1547	1495	0	0	4006	436	102	2362	1677	2399	0
3/14/21		1442	1497	1438	0	0	3844	440	104	2362	1675	2443	0
3/15/21		1435	1492	1474	0	0	3657	650	104	2362	1746	2425	0
3/16/21		1572	1629	1589	0	0	3773	926	105	2362	1800	2454	0
3/17/21		1609	1637	1612	0	0	3822	944	102	2362	1784	2453	0
3/18/21		1592	1646	1610	0	0	3896	860	100	2390	1672	2333	0
3/19/21	Y	1457	1518	1471	0	0	3606	820	98	2469	1638	2426	0
3/20/21	Y	1388	1448	1409	631	0	3900	879	97	2416	1548	2421	1405
3/21/21	Y	1282	1345	1282	1282	0	4194	905	91	2469	1465	2476	1597
3/22/21	Y	1328	1946	1872	454	0	3818	1111	670	2469	2052	2764	1664
3/23/21		1660	1735	1673	0	0	3994	986	108	2442	1834	2640	0
3/24/21		1627	1655	1616	0	0	3944	869	97	2480	1958	2551	0
3/25/21		1587	1643	1592	0	0	3965	791	103	2469	1876	2577	0
3/26/21		1660	1726	1665	0	0	4006	971	100	2518	1832	2503	0
3/27/21		1709	1782	1714	0	0	3988	1148	95	2449	1840	2504	0
3/28/21		1699	1784	1717	0	0	3983	1144	99	2366	1770	2537	0
3/29/21	Y	1466	1530	1478	711	0	3989	1094	102	2365	1550	2436	1148
3/30/21		1239	1308	1260	1283	0	3972	984	134	2348	1401	2338	1592
3/31/21		1303	1359	1292	1325	0	4002	1176	101	2306	1463	2362	1703

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
1/1/21		973.4	2.3	82.5	393.1	263.3
1/2/21		812.9	2.6	102.8	352.6	236.1
1/3/21		868.8	2.9	93.1	342.5	229.4
1/4/21		853.8	1.9	82.8	363.2	243.3
1/5/21		878.1	3.3	101.4	371.1	248.5
1/6/21		881.9	3.2	125.2	381.2	255.3
1/7/21		866.7	6.0	113.3	397.4	266.2
1/8/21		892.4	4.6	89.1	407.2	272.8
1/9/21		910.9	4.2	75.2	419.3	281.0
1/10/21		853.2	3.3	81.0	337.4	226.1
1/11/21		893.4	1.7	91.1	311.6	208.8
1/12/21		866.7	1.6	98.1	315.4	211.3
1/13/21		873.7	1.8	95.4	313.9	210.3
1/14/21		865.5	1.9	96.6	313.0	209.8
1/15/21	Y	877.0	2.1	92.3	311.5	208.8
1/16/21		745.4	1.3	20.2	333.9	223.9
1/17/21	Y	785.1	1.5	51.9	309.6	207.6
1/18/21		833.9	1.5	88.0	298.2	199.8
1/19/21		976.2	1.6	78.2	332.9	223.2
1/20/21		902.6	3.0	68.5	316.6	212.2
1/21/21		849.7	3.0	79.1	313.5	210.1
1/22/21		872.0	2.5	79.2	325.1	217.9
1/23/21		862.1	4.9	85.5	311.8	209.0
1/24/21		913.4	2.3	87.2	338.8	227.0
1/25/21		952.8	1.8	78.0	350.7	235.2
1/26/21		755.7	2.3	75.6	331.0	221.8
1/27/21		820.5	3.3	78.9	319.3	214.0
1/28/21		810.3	1.7	73.9	334.1	224.0
1/29/21		902.9	2.4	67.3	359.9	241.3
1/30/21		842.1	2.4	70.9	407.0	272.8
1/31/21		843.0	1.8	63.2	407.4	273.1
2/1/21		838.5	1.5	66.3	397.0	266.1
2/2/21		782.5	2.2	81.8	388.3	260.1
2/3/21		787.7	3.1	87.3	412.8	276.6
2/4/21		820.7	1.4	105.7	423.3	283.7
2/5/21		787.3	1.3	109.1	411.7	275.9

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
2/6/21		787.2	2.5	104.3	388.7	260.4
2/7/21		786.4	3.4	95.5	387.1	259.5
2/8/21		768.8	3.1	105.5	418.7	280.6
2/9/21		771.2	11.4	99.8	345.1	231.2
2/10/21		778.0	10.3	121.9	331.0	221.9
2/11/21		922.0	5.6	171.9	365.6	245.1
2/12/21	Y	893.1	2.8	112.6	409.0	274.0
2/13/21	Y	951.0	3.3	89.5	505.9	339.8
2/14/21		1434.9	2.9	140.3	651.2	437.7
2/15/21		1558.2	3.1	135.0	686.3	461.5
2/16/21		1585.7	13.7	122.2	740.0	497.8
2/17/21		1582.9	4.2	119.3	725.3	488.1
2/18/21		1476.6	3.8	124.9	671.9	452.0
2/19/21		1055.5	2.5	139.1	500.0	335.5
2/20/21		976.2	3.6	161.2	379.6	254.1
2/21/21		956.5	2.4	150.0	369.3	247.2
2/22/21		870.3	2.5	117.2	394.7	264.3
2/23/21		802.8	2.6	110.9	402.6	269.8
2/24/21		801.1	5.7	108.1	396.4	265.5
2/25/21		819.5	5.1	153.2	382.2	255.9
2/26/21	Y	828.0	4.4	167.2	387.2	259.3
2/27/21		789.4	2.4	80.8	394.1	263.9
2/28/21	Y	894.8	1.7	103.7	387.9	259.8
3/1/21		932.5	2.5	116.7	382.0	255.8
3/2/21		908.3	1.6	125.8	406.6	272.4
3/3/21		837.9	2.3	111.9	398.4	266.9
3/4/21		787.8	2.9	110.5	380.2	254.7
3/5/21	Y	738.1	2.4	116.0	396.7	265.8
3/6/21		702.3	4.3	54.1	413.2	276.9
3/7/21		680.3	2.1	53.1	411.1	275.4
3/8/21		645.0	1.3	62.2	411.5	275.7
3/9/21		731.7	2.1	57.0	413.5	277.1
3/10/21		738.9	0.8	54.1	409.7	274.6
3/11/21		729.6	1.6	50.1	414.3	277.6
3/12/21		751.1	1.6	50.0	414.5	277.8
3/13/21		684.9	1.7	46.4	429.8	288.0

**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
3/14/21		681.2	1.1	44.5	415.0	278.1
3/15/21		754.4	1.2	49.0	417.7	280.1
3/16/21		693.6	2.6	49.0	455.3	305.4
3/17/21		657.9	3.4	59.6	461.5	309.6
3/18/21		678.0	1.6	46.4	460.1	308.6
3/19/21	Y	681.7	2.3	67.8	428.7	287.6
3/20/21	Y	813.6	1.5	61.5	462.0	309.9
3/21/21	Y	848.2	1.4	95.5	491.7	329.8
3/22/21	Y	875.4	1.8	78.2	532.0	357.3
3/23/21		713.2	2.0	60.2	482.3	323.5
3/24/21		831.3	2.1	67.2	465.1	312.0
3/25/21		820.3	3.9	69.0	460.3	308.7
3/26/21		844.8	2.3	60.8	481.3	322.8
3/27/21		819.8	0.9	64.3	496.1	332.9
3/28/21		836.9	1.4	56.9	495.6	332.5
3/29/21	Y	827.6	2.6	96.6	491.6	329.8
3/30/21		814.8	3.6	116.7	482.6	323.7
3/31/21		796.7	7.1	117.0	500.7	336.0

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 or Shutdown	Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
None						

Date	Unit	Total Mass Emissions - GTG's #2				
		Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
2/26/2021	SD	120.5	1.4	40.2	92.3	61.9
2/28/2021	SU	96.7	0.6	11.6	60.5	40.6

Date	Unit	Total Mass Emissions - GTG's #3				
		Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
1/15/2021	SD	208.4	0.5	42.8	68.1	45.7
1/17/2021	SU	118.6	0.1	22.7	0.0	0.0
2/12/2021	SD	140.8	0.5	51.6	70.8	47.4
2/13/2021	SU	156.6	0.4	39.5	75.5	50.7

Date	Unit	Total Mass Emissions - GTG's #4				
		Midnight - Midnight (lbs/day)				
		NOX	SO2	CO	PM 1	ROG 1
3/5/2021	SD	194.2	0.9	15.8	86.8	58.2
3/19/2021	SU	55.8	0.2	17.3	7.3	4.9
3/21/2021	SD	254.0	0.2	15.3	121.4	81.4
3/29/2021	SU	117.1	0.5	13.9	67.4	45.2

Unit	Cogeneration Unit
Sample Point	Eff.Before Compress

Profile #	9007
Date	3/29/2021
Time	06:00
Sample No.	1841562
Status	Complete

H2S - SCD-HiLvl	<1.0	ppm
COS - SCD-HiLvl	2	ppm
MeSH - SCD-HiLvl	<1.0	ppm
EtSH - SCD-HiLvl	<1.0	ppm
DMS - SCD-HiLvl	<1.0	ppm
Other S Compds-SCD-HiLvl	<1.0	ppm
Sulfur (sum)-SCD-Calc	2	ppm

Unit	Cogeneration Unit
Sample Point	Eff.Before Compress

Profile #	9010
Date	3/29/2021
Time	06:00
Sample No.	1841563
Status	Complete

H2S - SCD-LoLvl	<0.10	ppm
COS - SCD-LoLvl	<0.10	ppm
MeSH - SCD-LoLvl	2.9	ppm
EtSH - SCD-LoLvl	7	ppm
DMS - SCD-LoLvl	<0.10	ppm
Other S Compds-SCD-LoLvl	<0.10	ppm
Sulfur (sum)-SCD-Calc	9.9	ppm