EAST BAY
MUNICIPAL UTILITY DISTRICT

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DIRECTOR OF WASTEWATER
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BAY AREA AIR QUALITY
MANAGEMENT DISTRICT

July 27, 2018

Mr. Jeff Gove, Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn. Title V Reports

Dear Mr. Gove:

RE: Semiannual Major Facility Review (Title V) Monitoring Report for EBMUD Main Wastewater Treatment Plant (Facility #A0591)

Attached is the semiannual monitoring report for the East Bay Municipal Utility District (EBMUD) Main Wastewater Treatment Plant (Facility #A0591) as required under Section I.F of the facilities Major Facility Review Permit issued December 19, 2012. The report covers the period from January 1 – June 30, 2018. No issues of non-compliance were identified during this reporting period.

Please note that the new enclosed flares A-194 and A-195 that are permitted as abatement devices to S-180, anaerobic digesters, did not operate during this reporting period.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this report are true, accurate and complete.

If you have any questions about this report, please call Chris Dembiczak at (510) 287-0509.

Sincerely,

Eileen M. White

Eileen M. White, P.E.

EMW:CD:bmy

Attachment

O:\WTD - Admin\Regulatory Compliance\BAAQMD\Transmittal letter Jan - June 2018.docx

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Major Facility Review (Title V)
Semi-Annual Monitoring Report

for

East Bay Municipal Utility District
Main Wastewater Treatment Plant
Facility #A0591

Reporting Period: January 1, 2018 – June 30, 2018

Source	Monitoring Requirement	Limit	Monitoring Results
S-55 Boiler	**Condition 20651**		
	2. Shall not operate S-55 boiler when more than two of the three cogen engines S-37, S-38, or S-39 are operating		Condition met. See Attachment 1 for boiler and engine data.
	3. Boiler gross heat input	20.41 MMBtu/hr	Condition met. See Attachment 2. Heat input ranged from 8.2-12.0 MMBtu/hr.
	5a. NOx emission from boiler 5b. CO emission from boiler	30ppm 50ppm	See 19 for test results if annual tests run in monitoring period
	18. Daily records of hours of operation, fuel consumption		See Attachment 1 for hours and gas consumption.
	19. Annual performance test for emission limits in 5		Annual performance test last completed on 12/20/17. No results to evaluate this period.
S-37, S-38, S-39 Cogeneration Engines	**Condition 20651**		
	Emission limits –		
	6. NOx emissions from S-38 7. POC emissions from S-38 8. CO emissions from S-38 9. Filterable particulate emissions from S-38 10. NOx emissions from S-37 & S-39 11. CO emissions from S-37 & S-39	1.25 g/hp-hr 0.6 g/hp-hr 3.0 g/hp-hr 0.085 g/hp-hr 70 ppmvd 2000 ppmvd	For items 6-11 see 19 for test results if annual tests run in monitoring period
	13. Thermal throughput per engine	25 MMBtu/hr	Condition met. See Attachment 2.
	14. Combined hours of operation for S-37, S-38, and S-39	25,316 hours in any rolling 365 day period	Condition met. 15,213 hours in last year. See Attachment 2. Jul-Dec 2017: 7,829 hours Jan-Jun 2018: 7,384 hours
	15. Combined diesel consumption for S-37, S-38, and S-39	150,000 gallons in any rolling 365 day period	Condition met. 26,887 gallons in last year. See Attachment 2. Jul-Dec 2017: 13,834 gallons Jan-Jun 2018: 13,053 gallons

Source	Monitoring Requirement	Limit	Monitoring Results
S-37, S-38, S-39 Cogeneration Engines **(continued)**	18. Daily records of hours of operation, fuel consumption 19. Annual performance test for emission limits in 6-11		Condition met. See Attachment 1 for records. Condition met. Annual performance tests completed 2/7/18 and 4/20/18 for engine #1. See Attachment 3 for summary reports.
S-48 Gasoline Dispensing Facility	**Condition 25723** The Static Pressure Performance Test (CARB TP 201.3B) shall be successfully conducted at least once in each 12-month period.		Condition met. Completed on 11/6/17.
	Condition 21663 Annual gasoline throughput	334,000 gal per year	Condition met. 28,222 gal in last year. See Attachment 4. Jan-June 2018: 14,399 gal July-Dec 2017: 13,823 gal
S-50 Diesel Engine Back-up Generator	**Condition 22830** 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 0.1 hours in last 12 months. Refer to Attachment 5.
S-51 Diesel Engine Back-up Generator	**Condition 22850** 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 7.3 hours in last 12 months. Refer to Attachment 5.
S-53 Diesel Engine Back-up Generator	**Condition 22830** 1. Hours of operation	30 hours/year reliability-related hours	Condition met. Generator ran 6.8 hours in last 12 months. Refer to Attachment 5.
S-54 Diesel Engine Back-up Generator	**Condition 22850** 1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 0 hours in last 12 months. Refer to Attachment 5.

Source	Monitoring Requirement	Limit	Monitoring Results
S-56 Turbine	**Condition 24050**		
	2. Total combined heat input	389,820 MMBtu in any 12-month period	Condition met. 303,190 MMBtu in last 12 months. Refer to Attachment 2. Jul-Dec 2017: 127,567 MMBtu Jan-Jun 2018: 175,623 MMBtu
	3. NOx emission limits	23 ppm (15-min) 34,400 lb (12-mo)	Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 4,106 lb
	4. CO emission limit	100 ppm (15-min) 92,200 lb (12-mo)	Emission limits met. Refer to Attachments 2 and 6. Annual mass emission: 747 lb
	5. SO2 emission limit	150 ppmv	Emission limit met. Refer to Attachments 2 and 6.
	7. Annual turbine source test		Condition met. Turbine annual test done on 12/12/17 by Blue Sky Environmental.
	8. Monthly NOx and CO test		Condition met. Monthly test results are located in Attachment 6.
S-58 Diesel Engine Back-up Generator	**Condition 22850**		
	1. Hours of operation	50 hours/year reliability-related hours	Condition met. Generator ran 2.6 hours in last 12 months. Refer to Attachment 5.
S-100 Municipal Wastewater Treatment Plant	**Condition 21759**		
	1. Total wastewater flow	120 MGD monthly dry weather average 325 MGD monthly wet weather average	Condition met. Maximum wet weather monthly flow in period was 75 MGD influent. Maximum dry weather monthly flow was 49 MGD. See Attachment 7.
S-110 Headworks	**Condition 17335**		
A-461 & A-462 Carbon Bed Scrubbers	3. Inlet and outlet H2S concentrations of carbon beds, as well as any other appropriate operating parameters shall be continuously monitored and reviewed on a daily basis to determine when carbon adsorption bed breakthrough is imminent or has been reached.		Monitoring results for inlet and outlet H2S and any noted outages are in Attachment 8. Maintenance records for scrubber are in Attachment 9.

Source	Monitoring Requirement	Limit	Monitoring Results
S-170 Sludge handling	**Condition 18006** 1. Monitor and record on a daily basis the activated sewage sludge throughput through S-170.		Sludge throughput is recorded in Attachment 10. Maintenance records for the scrubber are in Attachment 9.
S-180 Anaerobic Digesters Note: A-194, A-195 are enclosed flares A-190, A-191, A-192, and A-193 are older "candlestick" flares	**Condition 18860** 2. Monthly inspection of digesters and gas management/venting prevention		Inspections conducted by Operations on daily rounds. No violations for venting.
	3. Sulfur content of digester gas	<200 ppmv annual average	Condition met. Refer to Attachment 11 for the H2S gas sampling records.
	4. Combined digester gas flow rate to combustion sources	<3,400 scfm annual average	Condition met. See Attachment 12 for combined digester gas flow rates.
	5. Combustion zone temperature monitoring to A-194, A-195	>1,500F, 3-hr average	A-194 and A-195 not operated in reporting period.
	6. Gas flow to A-194, A-195	<3,000 cfm, 1-hr average	A-194 and A-195 not operated in reporting period.
	7. Source testing of A-194, A-195 (every 8,760 hours of use or 5 years)		A-194 and A-195 not operated in reporting period.
	Emission limits for A-194, A-195 9. NOx limit 10. CO limit 11. H2S limit	 0.06 lb/MMBtu 0.20 lb/MMBtu 0.032 lb/hour	A-194 and A-195 not operated in reporting period.
	12. Weekly sampling and testing of digester gas for H2S		Refer to Attachment 11.
	13. Hours of flaring per day		Refer to Attachment 1 for the hours of flaring per day.

Attachment Index:

1 Combustion Source Air Permit Data
2 Combustion Summaries – Boiler, Engines, Turbine, Flares
3 Annual Source Test Summaries: Engine #1
4 Gasoline Facility Throughput
5 Hours of Operation for Stand-by Emergency Generators
6 Turbine Monthly Test Results
7 Monthly Wastewater Summary
8 IPS Carbon Bed Inlet/Outlet H2S Readings
9 Odor Scrubber Maintenance Records for S-170 and S-110
10 Activated Sludge Throughput for S-170
11 Digester Gas H2S Sampling
12 Combined Digester Gas Combustion Volumes

ATTACHMENT 1

COMBUSTION SOURCE AIR PERMIT DATA

(engines, turbine, boiler, flares)

DAILY REPORTS
JANUARY – JUNE 2018

EBMUD

January - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	5.0	71,035	0	0	0	24	94,292	1,504,806	5.5	77,890	18	24
2nd	8.0	90,398	0	0	0	24	100,345	1,612,334	11.2	156,541	13	24
3rd	13	206,448	0	0	0	24	100,774	1,606,424	0	0	40	40
4th	14	548,690	0	0	0	21	86,615	1,347,699	1.0	14,490	48	49
5th	24	882,729	0	0	0	24	104,104	1,642,640	0	0	48	48
6th	22	563,090	0	0	0	24	105,693	1,641,797	0	0	48	48
7th	11	139,322	0	0	0	24	101,554	1,569,546	0	0	29	29
8th	11	146,132	0	0	0	24	97,378	1,587,172	0	0	34	34
9th	14	191,645	0	0	0	24	101,858	1,622,599	0	0	38	38
10th	16	303,391	0	0	0	24	101,149	1,618,947	0	0	49	49
11th	21	406,634	0	0	0	24	106,047	1,679,102	0	0	48	48
12th	15	260,866	0	0	0	24	102,981	1,594,352	0	0	32	32
13th	6.8	105,461	0	0	0	24	98,762	1,562,204	0	0	34	34
14th	9.2	146,523	0	0	0	24	97,968	1,540,435	7.0	103,772	18	25
15th	8.4	93,296	0	0	0	24	93,080	1,518,824	0	0	23	23
16th	11	173,031	0	0	0	24	101,032	1,598,149	0	0	32	32
17th	15	262,774	0	0	0	24	103,954	1,596,295	0	0	34	34
18th	7.5	139,087	0	0	0	24	94,877	1,487,870	0	0	48	48
19th	6.3	67,448	0	0	0	24	93,667	1,480,760	0	0	48	48
20th	9.4	103,246	0	0	0	24	97,489	1,548,690	0	0	37	37
21st	4.5	72,360	0	0	0	24	89,414	1,447,461	0	0	29	29
22nd	6.9	92,460	0	0	0	24	87,241	1,421,734	0	0	37	37
23rd	24	1,124,614	0	0	0	10	44,524	714,777	9.8	140,019	47	57
24th	15	173,872	0	0	0	24	102,976	1,617,806	0	0	46	46
25th	14	168,707	0	0	0	24	104,974	1,646,784	0	0	48	48
26th	24	826,919	0	0	0	21	93,347	1,460,906	1.9	25,216	48	50
27th	5.0	48,929	0	0	0	24	92,738	1,449,243	0	0	45	45
28th	8.8	138,201	0	0	0	24	95,447	1,533,383	0	0	36	36
29th	12	192,398	0	0	0	24	98,192	1,561,177	0	0	35	35
30th	22	794,347	0	0	0	18	70,773	1,151,660	5.7	83,591	35	41
31st	20	457,579	0	0	0	24	103,883	1,634,615	0	0	45	45
Totals	403	8,991,630	0	0		719	2,967,131	47,000,190	42	601,519	1,170	1,212
				Maximum	0	Minimum					Maximum	57

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January - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	18	0	0	18	30,994	0	0	30,994	59	0	0	59	557,440	0	0	557,440
2nd	13	0	0	13	25,171	0	0	25,171	44	0	0	44	433,007	0	0	433,007
3rd	24	0	16	40	50,659	0	32,305	82,965	42	0	64	105	876,475	0	558,928	1,435,403
4th	24	0	24	48	49,014	0	46,719	95,732	38	0	29	67	848,929	0	809,178	1,658,107
5th	24	0	24	48	51,038	0	48,147	99,186	41	0	42	83	870,497	0	821,189	1,691,686
6th	24	0	24	48	50,807	0	48,499	99,306	39	0	32	70	863,370	0	824,159	1,687,528
7th	24	0	5	29	47,739	0	5,938	53,676	20	0	8	29	820,569	0	102,058	922,627
8th	24	0	10	34	44,219	0	20,551	64,770	39	0	51	90	784,955	0	364,813	1,149,768
9th	24	0	14	38	46,673	0	27,990	74,663	46	0	48	94	817,432	0	490,214	1,307,646
10th	24	0	25	49	48,521	0	46,076	94,596	40	0	34	74	849,335	0	806,530	1,655,865
11th	24	0	24	48	51,020	0	46,578	97,598	43	0	34	77	888,315	0	810,979	1,699,295
12th	24	0	8	32	48,892	0	11,530	60,422	39	0	34	73	841,085	0	198,351	1,039,436
13th	20	0	14	34	36,743	0	26,249	62,992	51	0	40	91	640,807	0	457,795	1,098,602
14th	0	0	18	18	0	0	30,713	30,713	0	0	67	67	0	0	557,118	557,118
15th	0	0	23	23	0	0	44,022	44,022	0	0	30	30	0	0	796,311	796,311
16th	9	0	23	32	17,582	0	38,551	56,133	21	0	45	66	318,333	0	697,970	1,016,303
17th	24	0	10	34	50,441	0	24,002	74,443	41	0	48	89	857,736	0	408,140	1,265,877
18th	24	0	24	48	45,247	0	45,825	91,072	41	0	32	73	793,214	0	803,336	1,596,550
19th	24	0	24	48	46,917	0	47,012	93,929	39	0	37	76	811,424	0	813,070	1,624,494
20th	13	0	24	37	21,456	0	46,787	68,243	32	0	38	70	368,329	0	803,185	1,171,514
21st	12	0	17	29	23,861	0	28,642	52,503	44	0	46	90	408,340	0	490,155	898,496
22nd	24	0	13	37	44,245	0	25,998	70,244	42	0	37	79	771,285	0	453,204	1,224,489
23rd	23	0	24	47	50,931	0	49,953	100,884	39	0	42	81	851,548	0	835,193	1,686,741
24th	24	0	22	46	49,944	0	46,572	96,515	60	0	47	107	834,788	0	778,429	1,613,218
25th	24	0	24	48	49,547	0	49,316	98,863	38	0	39	78	835,793	0	831,889	1,667,682
26th	24	0	24	48	51,005	0	51,194	102,199	41	0	36	77	846,250	0	849,381	1,695,631
27th	24	0	21	45	46,328	0	39,317	85,644	36	0	42	78	780,309	0	662,219	1,442,529
28th	20	0	16	36	37,069	0	34,669	71,739	56	0	49	105	614,192	0	574,429	1,188,620
29th	11	0	24	35	23,264	0	48,040	71,304	20	0	36	55	389,884	0	805,121	1,195,006
30th	11	0	24	35	12,337	0	39,945	52,282	95	0	71	166	200,528	0	649,276	849,804
31st	21	0	24	45	45,921	0	49,360	95,280	49	0	44	92	765,455	0	822,781	1,588,236
Totals	603	0	567	1,170	1,197,585	0	1,100,498	2,298,082	1,233	0	1,202	2,435	20,539,628	0	18,875,403	39,415,030
	Sum of Engines			1,170		Sum of Engines		2,298,082		Sum of Engines		2,435		Sum of Engines		39,415,030

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February - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	17	315,107	0	0	0	24	100,268	1,590,268	0	0	48	48
2nd	16	305,347	0	0	0	24	97,142	1,525,079	0	0	48	48
3rd	2.3	18,318	0	0	0	24	85,232	1,375,482	0	0	46	46
4th	5.6	72,128	0	0	0	24	92,307	1,502,083	0	0	32	32
5th	15	249,339	0	0	0	24	94,753	1,543,722	0	0	24	24
6th	24	860,378	0	0	0	24	101,872	1,612,487	0.3	4,125	48	48
7th	20	322,109	0	0	0	24.0	99,751	1,565,323	0	0	48	48
8th	23	568,232	0	0	0	24	104,082	1,613,484	0	0	48	48
9th	21	470,599	0	0	0	24	100,076	1,567,832	0	0	48	48
10th	13	189,153	0	0	0	24	97,949	1,508,688	0	0	47	47
11th	8.4	97,611	0	0	0	24	96,327	1,526,691	0	0	31	31
12th	6.6	77,585	0	0	0	24	90,775	1,426,828	0	0	36	36
13th	16	336,469	0	0	0	24	102,040	1,590,961	0	0	48	48
14th	24	1,036,692	0	0	0	24	106,742	1,635,242	0	0	48	48
15th	21	538,357	0	0	0	24	103,750	1,587,882	0	0	48	48
16th	16	332,241	0	0	0	24	101,763	1,578,651	0	0	48	48
17th	5.9	46,724	0	0	0	24	93,635	1,448,697	0	0	48	48
18th	4.9	41,942	0	0	0	24	95,196	1,481,394	2.2	32,773	23	25
19th	13	212,118	0	0	0	24	101,259	1,590,707	8.3	124,580	15	23
20th	19	1,010,690	0	0	0	15	67,176	1,052,951	10	157,528	36	46
21st	18	328,688	0	0	0	22	92,681	1,412,228	2.1	32,511	48	50
22nd	21	996,349	0	0	0	24	104,684	1,640,380	0	0	48	48
23rd	24	1,606,325	0	0	0	24	107,974	1,637,915	0	0	48	48
24th	19	763,306	0	0	0	24	104,576	1,573,286	0	0	47	47
25th	7.5	82,099	0	0	0	24	95,649	1,501,582	4.6	69,923	19	24
26th	17	169,937	0	0	0	24	102,170	1,631,325	0	0	35	35
27th	17	315,746	0	0	0	24	106,837	1,687,636	0	0	48	48
28th	21	567,335	0	0	0	24	104,440	1,632,901	3.2	48,684	48	51
Totals	435	11,930,925	0	0		661	2,751,107	43,041,705	31	470,123	1,159	1,190
				Maximum	0	Minimum					Maximum	51

EBMUD

February - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	24	0	24	48	49,827	0	50,095	99,922	40	0	37	77	827,508	0	831,963	1,659,471
2nd	24	0	24	48	50,841	0	50,385	101,227	36	0	28	64	845,812	0	838,230	1,684,042
3rd	24	0	22	46	43,823	0	39,681	83,504	41	0	52	93	755,975	0	684,510	1,440,485
4th	21	0	11	32	35,702	0	20,249	55,951	53	0	32	85	616,541	0	349,675	966,217
5th	1	0	23	24	4,193	0	46,756	50,948	14	0	43	57	70,583	0	787,111	857,693
6th	24	0	24	48	51,052	0	51,424	102,477	40	0	29	69	833,573	0	839,647	1,673,220
7th	24	0	24	48	49,519	0	50,957	100,477	36	0	37	73	812,211	0	835,800	1,648,011
8th	24	0	24	48	51,102	0	51,678	102,780	34	0	28	62	835,843	0	845,275	1,681,118
9th	24	0	24	48	51,115	0	51,438	102,553	38	0	35	72	837,613	0	842,902	1,680,516
10th	24	0	23	47	48,584	0	44,042	92,626	38	0	49	87	797,228	0	722,690	1,519,918
11th	24	0	7	31	46,950	0	12,587	59,537	40	0	43	83	793,014	0	212,601	1,005,615
12th	24	0	12	36	41,417	0	22,279	63,696	39	0	17	56	726,016	0	390,537	1,116,553
13th	24	0	24	48	50,915	0	50,741	101,656	38	0	35	72	844,779	0	841,900	1,686,680
14th	24	0	24	48	51,020	0	51,996	103,016	38	0	31	68	835,447	0	851,434	1,686,881
15th	24	0	24	48	51,006	0	52,591	103,597	37	0	38	75	826,377	0	852,063	1,678,441
16th	24	0	24	48	50,450	0	51,644	102,094	34	0	30	64	825,401	0	844,948	1,670,349
17th	24	0	24	48	48,124	0	49,505	97,629	40	0	39	78	796,713	0	819,581	1,616,294
18th	23	0	0.1	23	43,381	0	46	43,427	29	0	7	36	733,043	0	0	733,043
19th	0	0	15	15	0	0	32,337	32,337	0	0	24	24	0	0	526,023	526,023
20th	12	0	24	36	26,414	0	49,212	75,626	44	0	44	88	441,318	0	822,225	1,263,543
21st	24	0	24	48	51,013	0	51,132	102,145	41	0	38	79	843,177	0	845,136	1,688,313
22nd	24	0	24	48	50,999	0	50,447	101,446	38	0	28	66	849,012	0	839,822	1,688,835
23rd	24	0	24	48	51,005	0	52,623	103,628	36	0	37	72	824,414	0	850,564	1,674,977
24th	23	0	24	47	45,493	0	51,969	97,461	42	0	34	76	731,340	0	835,445	1,566,785
25th	0	0	19	19	0	0	39,270	39,270	0	0	35	35	0	0	625,760	625,760
26th	11	0	24	35	25,321	0	49,891	75,211	56	0	42	98	410,786	0	809,385	1,220,172
27th	24	0	24	48	50,912	0	51,357	102,269	35	0	17	52	827,624	0	834,869	1,662,493
28th	24	0	24	48	50,415	0	50,723	101,138	42	0	35	77	827,963	0	833,021	1,660,985
Totals	571	0	588	1,159	1,170,592	0	1,227,057	2,397,649	997	0	943	1,940	19,369,310	0	20,213,121	39,582,431
	Sum of Engines		1,159			Sum of Engines	2,397,649			Sum of Engines	1,940			Sum of Engines	39,582,431	

EBMUD

March - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	24	836,352	0	0	0	24	105,902	1,653,887	0	0	48	48
2nd	23	513,255	0	0	0	24	107,433	1,652,609	2.1	34,746	48	50
3rd	13	160,703	0	0	0	24	100,955	1,566,009	0	0	48	48
4th	11	136,380	0	0	0	24	97,959	1,525,240	0	0	48	48
5th	8.6	114,194	0	0	0	24	96,453	1,514,595	8.2	129,672	39	47
6th	14	339,662	0	0	0	24	98,164	1,553,294	0	0	48	48
7th	22	392,774	0	0	0	24	103,858	1,627,422	0	0	48	48
8th	21	378,780	0	0	0	24	105,032	1,642,184	0	0	48	48
9th	21	291,550	0	0	0	24	106,876	1,669,703	0	0	48	48
10th	6.9	146,668	0	0	0	21	77,088	1,265,075	5.7	101,074	44	50
11th	13	141,552	0	0	0	23	93,878	1,466,646	0	0	29	29
12th	10.1	139,974	0	0	0	23	91,821	1,485,718	0.5	8,578	34	34
13th	24	1,717,818	0	0	0	8	35,668	579,166	16	282,950	48	64
14th	24	1,762,730	0	0	0	12	53,689	836,904	6.9	129,929	48	55
15th	24	2,108,635	0	0	0	4	15,441	256,402	21	400,278	48	69
16th	23	808,568	0	0	0	24	106,708	1,660,977	0	0	48	48
17th	18	639,940	0	0	0	24	104,321	1,588,064	0	0	48	48
18th	6.3	79,045	0	0	0	24	92,790	1,463,538	7	109,531	38	45
19th	12	118,329	0	0	0	24	94,104	1,486,145	12	221,603	24	36
20th	15	187,204	0	0	0	24	95,072	1,500,169	0	0	48	48
21st	22	540,905	0	0	0	24	100,928	1,564,654	0	0	48	48
22nd	24	562,416	0	0	0	24	104,765	1,613,667	0	0	48	48
23rd	24	793,999	0	0	0	24	107,046	1,651,942	0	0	48	48
24th	16	246,556	0	0	0	24	91,629	1,462,986	4.6	73,849	48	53
25th	7.6	96,027	0	0	0	24	96,718	1,524,814	12	154,750	23	35
26th	9.5	119,771	0	0	0	24	97,546	1,554,764	11	143,393	21	32
27th	15	576,933	0	0	0	24	101,655	1,614,465	0	0	36	36
28th	21	564,710	0	0	0	24	102,614	1,571,788	0	0	48	48
29th	24	893,299	0	0	0	24	101,608	1,561,054	0	0	48	48
30th	20	576,032	0	0	0	24	98,489	1,532,995	0	0	48	48
31st	7.6	130,179	0	0	0	24	93,434	1,452,281	0	0	48	48
Totals	525	16,114,941	0	0		692	2,879,644	45,099,156	105	1,790,354	1,344	1,449
				Maximum	0	Minimum					Maximum	69

EBMUD

March - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	24	0	24	48	51,019	0	51,714	102,733	32	0	28	60	840,558	0	851,999	1,692,557
2nd	24	0	24	48	51,055	0	52,028	103,083	35	0	34	70	838,120	0	854,104	1,692,224
3rd	24	0	24	48	49,800	0	51,269	101,069	34	0	26	60	819,343	0	843,506	1,662,849
4th	24	0	24	48	48,379	0	49,710	98,089	35	0	34	70	806,617	0	828,814	1,635,430
5th	24	0	15	39	48,178	0	29,182	77,360	37	0	32	70	792,268	0	479,892	1,272,160
6th	24	0	24	48	48,490	0	49,132	97,623	32	0	33	65	795,465	0	805,993	1,601,459
7th	24	0	24	48	51,078	0	51,777	102,855	39	0	28	68	824,147	0	835,427	1,659,575
8th	24	0	24	48	51,070	0	51,010	102,080	34	0	32	66	831,986	0	831,009	1,662,995
9th	24	0	24	48	51,042	0	50,599	101,641	36	0	29	65	836,190	0	828,930	1,665,121
10th	24	0	20	44	46,617	0	38,944	85,561	43	0	33	76	780,402	0	651,957	1,432,359
11th	24	0	5	29	45,865	0	6,904	52,770	39	0	6	45	782,039	0	117,726	899,765
12th	23	0	11	34	48,816	0	24,610	73,425	32	0	23	55	821,097	0	413,940	1,235,037
13th	24	0	24	48	50,995	0	49,073	100,068	35	0	29	64	858,403	0	826,039	1,684,442
14th	24	0	24	48	51,015	0	50,590	101,605	36	0	27	63	846,149	0	839,113	1,685,262
15th	24	0	24	48	50,984	0	49,703	100,688	32	0	33	65	853,415	0	831,974	1,685,390
16th	24	0	24	48	50,944	0	50,421	101,366	53	0	27	80	845,183	0	836,503	1,681,686
17th	24	0	24	48	50,462	0	50,706	101,168	33	0	35	68	832,952	0	836,978	1,669,930
18th	19	0	19	38	34,451	0	32,436	66,887	44	0	87	131	584,406	0	550,226	1,134,632
19th	14	0	10	24	28,584	0	20,873	49,457	38	0	19	57	486,840	0	355,500	842,340
20th	24	0	24	48	49,710	0	48,788	98,499	35	0	36	71	836,268	0	820,757	1,657,024
21st	24	0	24	48	50,911	0	50,457	101,368	34	0	29	63	845,434	0	837,884	1,683,318
22nd	24	0	24	48	51,110	0	51,318	102,428	37	0	29	66	837,940	0	841,346	1,679,286
23rd	24	0	24	48	50,988	0	51,761	102,749	32	0	33	65	834,459	0	847,103	1,681,562
24th	24	0	24	48	45,598	0	49,237	94,835	40	0	28	68	760,349	0	821,028	1,581,377
25th	0	0	23	23	0	0	42,295	42,295	0	0	51	51	0	0	707,780	707,780
26th	9	0	12	21	16,491	0	24,982	41,473	37	0	21	58	286,842	0	434,540	721,382
27th	12	0	24	36	26,815	0	49,024	75,839	34	0	30	64	448,794	0	820,504	1,269,298
28th	24	0	24	48	50,987	0	52,118	103,106	37	0	31	68	826,203	0	844,526	1,670,729
29th	24	0	24	48	50,987	0	52,449	103,436	31	0	32	63	821,593	0	845,144	1,666,736
30th	24	0	24	48	49,387	0	51,191	100,578	41	0	33	74	802,387	0	831,683	1,634,069
31st	24	0	24	48	50,132	0	51,364	101,495	32	0	30	61	816,189	0	836,247	1,652,436
Totals	677	0	667	1,344	1,401,962	0	1,385,665	2,787,627	1,089	0	981	2,070	23,192,036	0	22,908,174	46,100,210
	Sum of Engines		1,344			Sum of Engines	2,787,627			Sum of Engines	2,070			Sum of Engines	46,100,210	

EBMUD

April - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	10	176,140	0	0	0	24	94,178	1,472,037	0	0	29	29
2nd	4.7	58,355	0	0	0	24	83,129	1,357,392	4.9	77,782	31	36
3rd	18	569,929	0	0	0	24	99,417	1,535,853	0	0	42	42
4th	24	781,748	0	0	0	24	105,296	1,611,747	0	0	48	48
5th	17	366,606	0	0	0	24	101,025	1,522,645	0	0	48	48
6th	22	519,549	0	0	0	23	97,552	1,510,341	0.7	7,207	48	49
7th	5.0	66,896	0	0	0	24	93,995	1,476,863	4.8	76,150	40	45
8th	5.5	61,391	0	0	0	24	96,855	1,542,889	17	275,556	8	25
9th	15	222,320	0	0	0	24	101,335	1,589,450	8	91,436	28	36
10th	15	644,869	0	0	0	24	98,010	1,534,435	0	0	48	48
11th	24	1,107,561	0	0	0	24	105,316	1,597,797	0	0	48	48
12th	21	892,064	0	0	0	24	106,580	1,595,859	0	0	48	48
13th	24	1,112,529	0	0	0	24	105,318	1,604,107	0	0	48	48
14th	17	229,730	0	0	0	24	101,037	1,576,746	1.8	28,338	45	47
15th	16	268,469	0	0	0	24	100,384	1,595,420	20	289,512	11	31
16th	14	261,855	0	0	0	24	104,793	1,577,463	7.9	118,272	27	35
17th	20	412,676	0	0	0	24	103,981	1,597,023	0	0	48	48
18th	19	443,281	0	0	0	24	103,237	1,570,011	0	0	47	47
19th	6	57,660	0	0	0	24	98,341	1,521,998	0	0	48	48
20th	13	145,443	0	0	0	24	95,144	1,481,384	0	0	48	48
21st	11	242,580	0	0	0	24	90,641	1,442,722	0	0	48	48
22nd	13	191,334	0	0	0	24	94,257	1,490,227	0	0	27	27
23rd	18	212,665	0	0	0	24	98,345	1,562,838	10	132,274	24	34
24th	11	219,669	0	0	0	24	97,025	1,533,767	2.0	24,172	45	47
25th	22	693,896	0	0	0	24	105,094	1,595,729	0	0	48	48
26th	22	381,146	0	0	0	24	103,679	1,576,399	0	0	48	48
27th	16	208,938	0	0	0	24	97,357	1,492,894	0	0	48	48
28th	9.2	143,236	0	0	0	24	88,909	1,404,229	0	0	43	43
29th	8.5	121,550	0	0	0	24	94,688	1,496,994	4.6	65,469	20	25
30th	12	177,208	0	0	0	24	98,133	1,554,794	11	147,877	22	33
Totals	454	10,991,295	0.0	0		719	2,963,051	46,022,051	93	1,334,046	1,161	1,254
				Maximum	0	Minimum					Maximum	49

EBMUD

April - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	24	0	5	29	48,948	0	6,469	55,417	41	0	3	44	801,817	0	105,964	907,780
2nd	20	0	11	31	34,263	0	21,863	56,126	61	0	72	133	588,322	0	375,397	963,718
3rd	18	0	24	42	34,748	0	49,110	83,858	47	0	38	85	577,355	0	815,972	1,393,327
4th	24	0	24	48	50,944	0	52,090	103,034	37	0	30	68	828,196	0	846,816	1,675,011
5th	24	0	24	48	50,991	0	52,248	103,239	38	0	36	74	825,331	0	845,677	1,671,008
6th	24	0	24	48	50,982	0	51,608	102,590	39	0	30	69	835,093	0	845,334	1,680,427
7th	19	0	21	40	36,451	0	39,196	75,647	39	0	57	96	607,275	0	653,003	1,260,278
8th	8	0	0	8	13,013	0	0	13,013	26	0	0	26	216,252	0	0	216,252
9th	16	0	12	28	33,782	0	25,885	59,668	44	0	50	94	566,589	0	434,143	1,000,732
10th	24	0	24	48	50,212	0	50,995	101,207	35	0	30	65	824,390	0	837,236	1,661,626
11th	24	0	24	48	51,078	0	52,602	103,680	38	0	37	74	821,229	0	845,729	1,666,958
12th	24	0	24	48	50,985	0	52,540	103,525	27	0	28	54	819,964	0	844,966	1,664,930
13th	24	0	24	48	50,971	0	52,609	103,580	40	0	37	77	821,136	0	847,535	1,668,672
14th	21	0	24	45	41,306	0	48,211	89,517	45	0	28	73	670,624	0	782,732	1,453,357
15th	11	0	0	11	21,460	0	0	21,460	81	0	0	81	349,004	0	0	349,004
16th	17	0	10	27	35,398	0	19,869	55,267	41	0	38	79	577,232	0	324,003	901,235
17th	24	0	24	48	50,977	0	52,104	103,081	36	0	29	65	830,147	0	848,515	1,678,662
18th	23	0	24	47	50,705	0	52,064	102,769	39	0	39	78	824,205	0	846,298	1,670,503
19th	24	0	24	48	50,698	0	51,478	102,177	39	0	31	70	828,909	0	841,662	1,670,571
20th	24	0	24	48	49,820	0	50,762	100,582	34	0	39	74	817,164	0	832,608	1,649,772
21st	24	0	24	48	47,422	0	48,232	95,654	43	0	33	76	788,469	0	801,948	1,590,416
22nd	3	0	24	27	2,394	0	50,015	52,409	5	0	34	39	39,172	0	818,319	857,490
23rd	0	0	24	24	0	0	48,567	48,567	0	0	44	44	0	0	794,469	794,469
24th	21	0	24	45	42,723	0	47,221	89,944	59	0	37	96	716,771	0	792,220	1,508,991
25th	24	0	24	48	50,943	0	51,620	102,564	39	0	34	72	833,387	0	844,467	1,677,854
26th	24	0	24	48	50,897	0	52,401	103,298	30	0	35	66	824,937	0	849,310	1,674,247
27th	24	0	24	48	49,783	0	51,128	100,910	43	0	27	70	813,864	0	835,852	1,649,717
28th	19	0	24	43	33,108	0	47,899	81,007	71	0	35	106	549,874	0	795,541	1,345,415
29th	0	0	20	20	0	0	39,802	39,802	0	0	36	36	0	0	650,717	650,717
30th	9	0	13	22	19,744	0	27,262	47,005	29	0	43	72	327,974	0	452,863	780,836
Totals	565	0	596	1,161	1,154,748	0	1,245,848	2,400,595	1,147	0	1,008	2,155	18,924,681	0	20,409,295	39,333,976
	Sum of Engines		1,161			Sum of Engines		2,400,595		Sum of Engines		2,155		Sum of Engines		39,333,976

EBMUD

May - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	2.5	22,364	0	0	0	24	93,847	1,462,319	0	0	48	48
2nd	2.1	18,526	0	0	0	24	85,794	1,426,137	0	0	48	48
3rd	12.9	166,210	0	0	0	24	98,677	1,556,034	0	0	48	48
4th	19.6	974,082	0	0	0	24	102,300	1,580,910	0	0	48	48
5th	20.6	617,110	0	0	0	24	101,462	1,551,301	0	0	48	48
6th	10.6	180,644	0	0	0	24	94,819	1,500,429	0	0	33	33
7th	6.6	76,692	0	0	0	24	95,872	1,510,366	0	0	31	31
8th	18.3	533,759	0	0	0	24	101,573	1,601,769	0	0	43	43
9th	16.2	301,920	0	0	0	24	100,170	1,546,159	0	0	48	48
10th	6.1	56,180	0	0	0	24	94,247	1,495,798	0	0	48	48
11th	11.3	173,475	0	0	0	24	93,012	1,472,744	0	0	48	48
12th	5.2	59,729	0	0	0	24	92,648	1,473,247	0	0	47	47
13th	5.0	48,652	0	0	0	24	93,013	1,490,516	6.2	80,597	18	24
14th	14.6	159,203	0	0	0	24	100,779	1,612,879	10	127,477	21	31
15th	2.7	23,887	0	0	0	24	95,584	1,522,025	0	0	48	48
16th	4.2	38,624	0	0	0	24	99,578	1,516,989	0	0	48	48
17th	23.2	438,763	0	0	0	24	101,552	1,584,310	0	0	48	48
18th	11.6	120,904	0	0	0	24	103,352	1,599,155	0	0	48	48
19th	2.0	14,749	0	0	0	24	89,776	1,453,765	0	0	42	42
20th	4.9	58,101	0	0	0	24	85,531	1,402,659	4.0	47,895	21	25
21st	5.6	70,691	0	0	0	24	90,248	1,483,522	1.0	11,252	26	27
22nd	5.1	60,010	0	0	0	24	91,306	1,467,018	0	0	42	42
23rd	6.9	72,179	0	0	0	24	95,573	1,495,397	0	0	48	48
24th	16.6	409,161	0	0	0	24	101,833	1,596,706	0	0	48	48
25th	19.1	604,193	0	0	0	24	100,344	1,593,348	0	0	48	48
26th	10.3	137,922	0	0	0	24	91,394	1,483,819	0	0	48	48
27th	6.7	68,521	0	0	0	24	92,680	1,516,358	4.7	59,109	27	32
28th	7.1	86,801	0	0	0	24	94,936	1,548,878	3.5	42,248	27	30
29th	11.1	119,626	0	0	0	24	97,165	1,540,201	0	0	37	37
30th	7.7	92,091	0	0	0	24	98,125	1,550,600	0	0	48	48
31st	5.0	67,810	0	0	0	24	95,497	1,512,501	0	0	43	43
Totals	301	5,872,578	0	0		744	2,972,688	47,147,861	29	368,578	1,274	1,303
				Maximum	0	Minimum					Maximum	48

EBMUD

May - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	24	0	24	48	46,418	0	47,333	93,751	30	0	29	59	779,042	0	794,397	1,573,439
2nd	24	0	24	48	42,681	0	43,726	86,406	39	0	38	77	732,447	0	750,375	1,482,822
3rd	24	0	24	48	47,296	0	47,196	94,492	34	0	30	64	795,071	0	793,386	1,588,457
4th	24	0	24	48	51,032	0	50,486	101,519	40	0	35	75	839,103	0	830,124	1,669,227
5th	24	0	24	48	50,471	0	51,742	102,214	34	0	31	65	814,645	0	835,159	1,649,805
6th	23	0	10	33	43,074	0	17,657	60,731	45	0	61	106	718,630	0	294,580	1,013,210
7th	7	0	24	31	12,109	0	45,646	57,755	32	0	30	62	206,224	0	777,344	983,568
8th	19	0	24	43	36,999	0	47,703	84,702	44	0	35	79	621,850	0	801,745	1,423,595
9th	24	0	24	48	50,460	0	50,722	101,183	34	0	30	64	824,838	0	829,122	1,653,961
10th	24	0	24	48	48,757	0	48,607	97,364	40	0	29	70	811,763	0	809,257	1,621,020
11th	24	0	24	48	45,479	0	45,180	90,659	36	0	37	73	776,067	0	770,970	1,547,038
12th	24	0	23	47	45,849	0	42,388	88,236	39	0	45	84	769,013	0	710,961	1,479,974
13th	18	0	0	18	34,461	0	0	34,461	65	0	0	65	575,167	0	0	575,167
14th	7	0	14	21	13,532	0	26,687	40,220	23	0	22	45	233,293	0	460,083	693,376
15th	24	0	24	48	46,900	0	47,524	94,424	39	0	31	71	783,936	0	794,373	1,578,309
16th	24	0	24	48	49,911	0	50,647	100,558	18	0	31	49	811,784	0	823,767	1,635,550
17th	24	0	24	48	50,633	0	51,750	102,383	37	0	36	73	814,764	0	832,739	1,647,503
18th	24	0	24	48	50,944	0	51,886	102,830	36	0	15	51	818,812	0	833,949	1,652,761
19th	18	0	24	42	32,374	0	47,288	79,662	43	0	33	77	539,946	0	788,686	1,328,632
20th	0	0	21	21	0	0	34,416	34,416	0	0	25	25	0	0	603,601	603,601
21st	5	0	21	26	7,423	0	40,405	47,828	26	0	69	95	126,649	0	689,391	816,040
22nd	18	0	24	42	32,416	0	44,147	76,563	55	0	35	90	568,218	0	773,857	1,342,076
23rd	24	0	24	48	44,715	0	45,783	90,498	62	0	28	89	764,567	0	782,837	1,547,404
24th	24	0	24	48	48,233	0	48,204	96,437	34	0	36	69	808,406	0	807,928	1,616,334
25th	24	0	24	48	50,253	0	49,694	99,947	38	0	29	67	835,602	0	826,296	1,661,898
26th	24	0	24	48	45,348	0	45,223	90,571	35	0	37	72	777,167	0	775,037	1,552,204
27th	6	0	21	27	6,736	0	36,288	43,023	11	0	27	38	115,682	0	623,238	738,920
28th	8	0	19	27	11,556	0	36,931	48,487	46	0	43	89	203,579	0	650,634	854,213
29th	13	0	24	37	28,060	0	47,137	75,197	45	0	42	87	472,799	0	794,253	1,267,052
30th	24	0	24	48	49,640	0	49,622	99,263	44	0	36	80	822,696	0	822,394	1,645,091
31st	21	0	22	43	37,172	0	41,822	78,995	41	0	41	81	628,531	0	707,152	1,335,683
Totals	595	0	679	1,274	1,160,931	0	1,333,840	2,494,770	1,147	0	1,045	2,192	19,390,294	0	22,387,634	41,777,929
	Sum of Engines		1,274		Sum of Engines		2,494,770		Sum of Engines		2,192		Sum of Engines		41,777,929	

EBMUD

June - 2018

Daily Data for Air Permit

SD1 Flare Burners, Turbine, and Boiler

Date	Flares A-190,191,192,193		Flares A-194,195			Turbine			Boiler		Run Time Check	
	Run Time Hrs	Gas cu ft	Run Time Hrs	Gas cu ft	Peak 1-hr Flow, SCFM	Run Time Hrs	Power KWh	Gas cu ft	Run Time Hrs	Gas cu ft	Engine Hrs	Eng + Boiler Hrs
1st	8	244,172	0	0	0	21	81,486	1,314,836	1	14,020	42	43
2nd	9	108,375	0	0	0	24	95,631	1,587,433	0	0	46	46
3rd	9	252,057	0	0	0	18	68,521	1,108,983	10	133,522	19	29
4th	18	426,262	0	0	0	11	43,582	736,047	13	249,584	31	44
5th	11	167,267	0	0	0	24	98,039	1,560,870	0	0	48	48
6th	7	75,147	0	0	0	24	95,985	1,505,189	0	0	48	48
7th	24	748,911	0	0	0	23.6	97,786	1,558,044	0	0	48	48
8th	21	740,011	0	0	0	24	99,684	1,566,673	0	0	48	48
9th	8	128,819	0	0	0	24	92,396	1,469,843	0	0	43	43
10th	5	75,195	0	0	0	18	63,333	1,070,825	5	63,235	37	42
11th	18	421,490	0	0	0	12	48,628	816,283	11	214,894	46	57
12th	8	73,039	0	0	0	24	95,050	1,502,579	0	0	48	48
13th	11	120,232	0	0	0	24	93,402	1,475,973	0	0	48	48
14th	3	39,466	0	0	0	24	90,503	1,440,751	0	0	48	48
15th	16	197,752	0	0	0	24	99,370	1,567,356	0	0	48	48
16th	18	379,856	0	0	0	24	98,687	1,552,943	0	0	48	48
17th	8	127,070	0	0	0	18	67,934	1,081,330	5	56,451	37	42
18th	23	489,972	0	0	0	13	55,147	900,052	5	92,385	24	29
19th	8	109,092	0	0	0	24	95,789	1,553,569	0	0	41	41
20th	21	495,568	0	0	0	24	98,757	1,580,789	0	0	48	48
21st	11	129,550	0	0	0	24	97,580	1,532,812	0	0	48	48
22nd	18	284,075	0	0	0	24	98,571	1,566,084	0	0	48	48
23rd	8	81,646	0	0	0	24	94,603	1,476,287	0	0	44	44
24th	10	121,009	0	0	0	18	67,036	1,081,688	4	53,937	32	36
25th	15	642,719	0	0	0	9	35,394	566,649	15	361,417	28	43
26th	20	483,123	0	0	0	24	100,819	1,575,007	0	0	48	48
27th	21	819,675	0	0	0	21	86,541	1,340,724	1	13,526	48	49
28th	13	180,205	0	0	0	24	97,342	1,513,043	0	0	48	48
29th	9	80,123	0	0	0	24	92,986	1,484,502	0	0	48	48
30th	3	38,816	0	0	0	24	91,979	1,442,865	0	0	38	38
Totals	382	8,280,690	0	0		639	2,542,561	40,530,027	69	1,252,971	1,276	1,345
				Maximum	0	Minimum					Maximum	57

EBMUD

June - 2018

Daily Data for Air Permit

Elmer E. Ross Power Station

Date	Run Time, Hours				KiloWatt Hours Generated				Fuel Oil Used, gal				Gas, FCI Meter, cu ft			
	Eng 1	Eng 2	Eng 3	Total	Gen. 1	Gen 2	Gen 3	Total	Eng. 1	Eng. 2	Eng. 3	Total	Eng. 1	Eng. 2	Eng. 3	Total
1st	20	0	22	42	36,944	0	35,377	72,321	47	0	62	108	640,350	0	613,196	1,253,546
2nd	22	0	24	46	40,641	0	45,080	85,721	109	0	55	164	701,162	0	777,743	1,478,905
3rd	0	0	19	19	602	0	36,571	37,173	4	0	36	40	10,143	0	616,617	626,760
4th	16	0	15	31	32,707	0	30,275	62,983	42	0	67	109	553,430	0	512,277	1,065,707
5th	24	0	24	48	49,242	0	49,044	98,286	40	0	32	72	820,364	0	817,055	1,637,419
6th	24	0	24	48	47,967	0	48,047	96,015	35	0	30	64	804,442	0	805,781	1,610,224
7th	24	0	24	48	50,975	0	50,256	101,231	37	0	33	69	841,068	0	829,198	1,670,266
8th	24	0	24	48	50,975	0	51,023	101,998	33	0	29	62	832,515	0	833,290	1,665,805
9th	24	0	19	43	47,872	0	35,492	83,364	37	0	20	56	803,570	0	595,757	1,399,327
10th	19	0	18	37	37,110	0	31,629	68,739	39	0	51	91	631,797	0	538,486	1,170,283
11th	24	0	22	46	49,211	0	33,480	82,691	39	0	69	108	795,280	0	541,061	1,336,341
12th	24	0	24	48	49,251	0	49,214	98,466	34	0	30	64	813,589	0	812,976	1,626,566
13th	24	0	24	48	47,475	0	47,642	95,117	35	0	36	70	791,231	0	794,019	1,585,250
14th	24	0	24	48	44,772	0	45,648	90,419	34	0	34	68	756,071	0	770,857	1,526,928
15th	24	0	24	48	50,878	0	50,868	101,746	38	0	34	72	832,416	0	832,267	1,664,683
16th	24	0	24	48	50,455	0	49,491	99,946	33	0	29	62	840,570	0	824,506	1,665,077
17th	13	0	24	37	22,294	0	47,410	69,704	42	0	32	74	379,386	0	806,806	1,186,192
18th	1	0	23	24	1,610	0	46,816	48,426	8	0	51	58	27,519	0	800,161	827,680
19th	17	0	24	41	36,323	0	47,197	83,520	41	0	39	80	621,685	0	807,811	1,429,497
20th	24	0	24	48	49,848	0	49,428	99,276	39	0	28	67	838,030	0	830,961	1,668,990
21st	24	0	24	48	50,390	0	50,532	100,922	30	0	36	66	829,623	0	831,952	1,661,574
22nd	24	0	24	48	50,935	0	50,105	101,040	40	0	31	70	840,465	0	826,769	1,667,233
23rd	24	0	20	44	47,457	0	38,206	85,663	34	0	33	68	788,270	0	634,618	1,422,888
24th	26	0	6	32	46,705	0	12,450	59,155	36	0	25	61	788,280	0	210,128	998,408
25th	20	0	8	28	41,451	0	13,033	54,485	50	0	38	89	709,431	0	223,064	932,495
26th	24	0	24	48	50,391	0	51,098	101,489	37	0	28	65	822,434	0	833,965	1,656,399
27th	24	0	24	48	48,787	0	50,294	99,081	37	0	33	70	796,033	0	820,615	1,616,648
28th	24	0	24	48	50,970	0	52,376	103,346	35	0	35	70	820,173	0	842,789	1,662,962
29th	24	0	24	48	48,677	0	49,531	98,208	37	0	33	70	800,714	0	814,768	1,615,483
30th	22	0	16	38	41,411	0	31,255	72,666	50	0	24	74	689,215	0	520,195	1,209,410
Totals	632	0	644	1,276	1,274,327	0	1,278,869	2,553,196	1,153	0	1,108	2,261	21,219,256	0	21,319,690	42,538,946
	Sum of Engines		1,276			Sum of Engines	2,553,196			Sum of Engines	2,261			Sum of Engines	42,538,946	

Attachment 2 - Combustion Device Summaries **EBMUD Main Wastewater Plant** **January 1 - June 30, 2018**

Engine Thermal Throughput - Thermal Mass Meter, Common Engine Digester Gas Line

Turbine Operation			Data Source	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Semi-annual Totals	Limits	
Run Time	Total	hrs	metered	719	661	692	719	744	639	4,173		
Digester Gas	Total	cu ft	metered	47,000,190	43,041,705	45,099,156	46,022,051	47,147,861	40,530,027	268,840,990		
Thermal Throughput[3]	Total	MMBTU		30,612	28,382	29,241	30,110	30,570	26,708	175,623	389,820	MMBTU HHV per 12-Month period
	Total	MMBTU/hr		42.6	42.9	42.3	41.9	41.1	41.8	x		
Nitrogen Oxide[4]	Max	ppm	sampled	4.4	4.9	5.2	3.9	5.1	3.8	x	23	ppm at any time
Carbon Monoxide[4]	Max	ppm	sampled	1.9	2.8	2.3	1.4	2.6	1.8	x	100	
Sulfur Dioxide[4]	Max	ppm	sampled	5.1	5.8	1.5	5.0	1.9	1.7	x	150	
Nitrogen Oxide	Total	lbs	calc'd	Based on last annual source test mass load rate (0.55 lbs/hr) x run time (3,292+4,173hrs)-->						4,106	34,400	lbs per 12-Month period
Carbon Monoxide	Total	lbs	calc'd	Based on last annual source test mass flow rate (0.1 lbs/hr) x run time (3,292+4,173hrs)-->						747	92,200	
Engine Operation												
Run Time	Eng #1	hrs	metered	603	571	677	565	595	632	3,643		
	Eng #2	hrs	metered	-	-	-	-	-	-	-		
	Eng #3	hrs	metered	567	588	667	596	679	644	3,741		
	Total	hrs	sum	1,170	1,159	1,344	1,161	1,274	1,276	7,384	25,316	hr/365 days
Diesel Fuel[1]	Eng #1	gal	calc'd	1,233	997	1,089	1,147	1,147	1,153	6,766		
	Eng #2	gal	calc'd	-	-	-	-	-	-	-		
	Eng #3	gal	calc'd	1,202	943	981	1,008	1,045	1,108	6,287		
	Total	gal	sum	2,435	1,940	2,070	2,155	2,192	2,261	13,053	150,000	gal/365 days
Digester Gas[2]	Eng #1	cu ft	metered	20,539,628	19,369,310	23,192,036	18,924,681	19,390,294	21,219,256	122,635,205		
	Eng #2	cu ft	metered	-	-	-	-	-	-	-		
	Eng #3	cu ft	metered	18,875,403	20,213,121	22,908,174	20,409,295	22,387,634	21,319,690	126,113,317		
	Total	cu ft	sum	39,415,030	39,582,431	46,100,210	39,333,976	41,777,929	42,538,946	248,748,522		
Thermal Throughput[3]	Eng #1	MMBTU/hr		22.5	22.6	22.4	22.2	21.4	22.4	x	25	MMBTU/hr
	Eng #2	MMBTU/hr		-	-	-	-	-	-	x	25	MMBTU/hr
	Eng #3	MMBTU/hr		22.0	22.9	22.5	22.6	21.6	22.1	x	25	MMBTU/hr
Natural Gas	Total	cu ft	metered	-	-	-	-	-	-	-		
Boiler Operation												
Run Time	Boiler	hrs	metered	42	31	105	93	29	69	370		
Digester Gas	Boiler	cu ft	metered	601,519	470,123	1,790,354	1,334,046	368,578	1,252,971	5,817,591		
Thermal Thruput[3]	Boiler	MMBTU/hr		9.3	10.0	11.0	9.3	8.2	12.0	x	20.41	MMBTU/hr
Flare Operation (A-190,191,192,193)												
Run Time	Flares	hrs	metered	403	435	525	454	301	382	2,500		
Digester Gas	Flares	cu ft	metered	8,991,630	11,930,925	16,114,941	10,991,295	5,872,578	8,280,690	62,182,058		
Thermal Thruput[3]	Flares	MMBTU/hr		14.5	18.1	19.9	15.8	12.6	14.3	x		
Flare Operation (A-194,195)												
Run Time	Flares	hrs	metered	-	-	-	-	-	-	-		
Digester Gas	Flares	cu ft	metered	-	-	-	-	-	-	-		
Thermal Thruput[3]	Flares	MMBTU/hr		-	-	-	-	-	-	x		
Max Total Flow	Flares	scfm	metered	-	-	-	-	-	-	x	3,000	scfm
Digester Gas HHV	Grab	BTU/scf	sampled	651	659	648	654	648	659	x		

(1) Diesel use per engine (gal) = diesel withdrawn from common storage tank daily (gal) x ratio of fuel used per engine (single day tank level / sum of all day tanks)

(2) Digester gas usage (cf) = DCS/PI flow data from common engine line meter (scfm) x minutes of gas flow x (engine hours/sum of engine hours)

(3) Thermal Throughput calculations use High Heat Value of the monthly Digester Gas Sample combined with Diesel High Heat Value of 138,690 BTU/gal or Natural Gas HHV of 1020 BTU/scf as applicable

(4) Monthly turbine exhaust check - ppm corrected to 15% O2

ATTACHMENT 3

ANNUAL SOURCE TEST RESULTS

- Engine #1 (S-37), 2/7/18 by BAAQMD
- Engine #1 (S-37), 4/20/18 by Blue Sky Environmental

Distribution:	BAY AREA AIR QUALITY MANAGEMENT DISTRICT	Report No. 18124
Firm	375 Beale Street, Suite 600	Test Date: 2/7/18
Permit Services	San Francisco, California 94105	Test Times:
Requester	(415) 749-5000	Run A: 1107 - 1137
	SUMMARY OF SOURCE TEST RESULTS	Run B: 1159 - 1229
		Run C: 1250 - 1320

Source Information		BAAQMD
Firm Name and Address: East Bay Municipal Utility District 2020 Wake Avenue Oakland, CA 94607	Firm Representative and Title: Maura Bonnarens Wastewater Treatment Division Manager Phone No. (510) 287-1023	Source Test Team: B. Kino G. Bradbury
Permit Conditions: NOx < 70 ppmv at 15% O2 CO < 2000 ppmv at 15% O2 TRS in Fuel < 200 ppmv Heat Input < 25 MM BTU / Hr	Sources: Multi-Fuel Cogeneration Engine # 1 (S-37) Site No. A0591 Permit Con. # 20651/18860 Operates 24 hr/day & 365 day/year	Permit Services / Enforcement . Test Requested by: S. Dhoot (Title V)

Operating Parameters: The engine's average output was 1,754 KW. The engine consumed an estimated average of 482 SCFM of fuel, with an average heating value of 636 BTU/SCF.

Applicable Regulations:	2 – 6 – 307 ; 9 – 1 – 302 ; 9 – 8 – 302	Further Evaluation Recommended:	NO

Source Test Results and Comments:

METHOD	PARAMETER	OUTLET RESULTS	LIMITS
ST-17	Volumetric Flowrate; SCFM	7,653	
ST-14	Oxygen, %	14.6	
ST- 5	Carbon Dioxide, %	1.7	
	Carbon Dioxide, lb / hr	893	
ST- 6	Carbon Monoxide, ppmv	535	
	Carbon Monoxide, ppmv Corrected To 15% Oxygen	480	2,000
	Carbon Monoxide, lb / hr	17.8	
	Carbon Monoxide, g / hp – hr	3.44	
ST- 7	Methane; ppmv	3,134	
	Non-Methane Organic Compounds, ppmv (as C_1)	<100	
	Non-Methane Organic Compounds, lb / hr	<1.9	
	Non-Methane Organic Compounds, g / hp – hr	<0.37	
ST-13A	Oxides of Nitrogen, ppmv	26.1	
	Oxides of Nitrogen, ppmv Corrected To 15% Oxygen	24.5	70
	Oxides of Nitrogen, lb / hr	1.4	
	Oxides of Nitrogen, g / hp – hr	0.28	
	Nitric Oxide, ppmv	10.8	
	Nitrogen Dioxide, ppmv	15.3	
ST-19A	Sulfur Dioxide; ppmv	<3	300
	Sulfur Dioxide; lb / hr	<0.19	
	TRS in Fuel; ppmv	40.7	200
	Estimated Heat Input; mmbtu / hr	16	25

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Air Quality Engineer	Supervising Air Quality Engineer	Air Quality Engineering Manager
B. Kino 6/7/18	E. Ko for EK 6/11/18	J. Bovee 6/12/18

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TABLE #1

EBMUD
Engine #1 (S-37)
2077 kW

RUN	1	2	3	AVERAGE	LIMITS
Test Date	4/20/18	4/20/18	4/20/18		
Test Time	1124-1154	1210-1240	1254-1324		
Standard Temp., °F	70	70	70		
Generator kW	1,932	2,115	2,184	2,077	
Engine kW	2,034	2,226	2,299	2,186	
Engine BHp	2,725	2,983	3,081	2,930	
Fuel Flow Rate, DSCFM (nat gas)	0.0	0.0	0.0	0.0	
Fuel Flow Rate, DSCFM (dig gas)	550.1	573.4	607.5	577.0	
WOBBE Btu/cf	632	633	634	633	
Gas Fd-Factor @ 68°F, DSCFM	9,342	9,340	9,196	9,293	
Flow Rate, DSCFM (Method 19)	8,139	8,509	8,891	8,513	
Oxygen, O_2, %	12.5	12.5	12.5	12.5	
Carbon Dioxide, CO_2, %	8.6	8.6	8.5	8.6	
NOx, ppm	40.6	39.8	40.5	40.3	
NOx, ppm @ 15% O_2	**28.6**	**28.1**	**28.6**	**28.4**	**70**
NOx, lbs/hr (M19)	2.36	2.42	2.57	2.45	
NOx, lbs/day	56.58	58.07	61.67	58.77	
NOx, gm/BHp-hr	0.39	0.37	0.38	0.4	
CO, ppm	354.7	355.7	355.3	355.3	
CO, ppm @ 15% O_2	**249.9**	**251.0**	**250.7**	**250.5**	**2000**
CO, lbs/hr (M19)	12.54	13.15	13.72	13.14	
CO, lbs/day	301.03	315.58	329.36	315.3	
CO, gm/BHp-hr	2.09	2.00	2.02	2.04	

WHERE,

ppm = Parts Per Million Concentration
Lbs/hr = Pound Per Hour Emission Rate
Tstd. = Standard Temp. (°R = °F+460)
MW = Molecular Weight
DSCFM = Dry Standard Cubic Feet Per Minute
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
CO = Carbon Monoxide (MW = 28)
WOBBE = Btu/ft3 / SQRT (Specific Gravity)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)
PPM @ 3% O_2 = ppm * 17.9 / (20.9 - %O_2)
Lbs/hr = ppm x 8.223 E-05 x DSCFM x MW / Tstd. °R
Lbs/day = Lbs/hr * 24
gm/BHp-hr = Lbs/hr * 453.6 / BHp
Engine BHp = Engine kW * 1.34
Engine kW = Generator kW / 0.95

Attachment 4
Gasoline Facility Throughput (S-48)

SD-1 GASOLINE DISPENSING FACILITY
Maintenance Center (4,000 Gal)
As of June 30, 2018

MONTH	GALLONS RECEIVED	RECEIVED YR-TO-DATE	GALLONS ISSUED	ISSUED YR-TO-DATE	COMMENTS
JAN 18	3547	3547	2396	2396	
FEB 18	2250	5797	2162	4558	
MAR 18	1700	7497	2633	7191	
APR 18	2500	9997	2370	9561	
MAY 18	2000	11997	2539	12100	
JUN 18	2884	14881	2299	14399	
JUL 18					
AUG 18					
SEP 18					
OCT 18					
NOV 18					
DEC 18					
Total					

ATTACHMENT 5

Hours of Operation for Stand-by Emergency Generators

January 1, 2018 – June 30, 2018

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	138.0	138.0	0	0	30
S-51	Dechlorination	697.1	700.9	0	3.8	50
S-53	West of Admin Bldg	105.9	105.9	0	0	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	15.6	17.0	0	1.4	50

July 1, 2017 – December 31, 2017

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	137.9	138.0	0	0.1	30
S-51	Dechlorination	692.4	697.1	1.2	3.5	50
S-53	West of Admin Bldg	99.7	105.9	0	6.2	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	14.4	15.6	0	1.2	50

July 1, 2017 – June 30, 2018 (last 12 months total)

Source	Location	Hours Meter Begin	Hours Meter End	Emergency Use Hours	Reliability-related Hours	Limit on reliability-related Hours
S-50	North of PGS	137.9	138.0	0	0.1	30
S-51	Dechlorination	692.4	700.9	1.2	7.3	50
S-53	West of Admin Bldg	99.7	105.9	0	6.8	30
S-54	East Bayshore RWP	36	36	0	0	50
S-58	North of Maintenance	14.4	17.0	0	2.6	50

ATTACHMENT 6

TURBINE MONTHLY TEST RESULTS

TABLE # 1

EBMUD-JANUARY
DG TURBINE #1 (S-56)
4304 kW

RUN	1	LIMITS
Test Date	1/12/18	
Test Time	1100-1115	
Turbine kW	4,304	
Fuel Flow Rate, DSCFM	1,116	
Oxygen, O_2, %	16.5	
NOx, ppm	3.3	
NOx, ppm @ 15% O_2	**4.4**	**23**
CO, ppm	1.4	
CO, ppm @ 15% O_2	**1.9**	**100**
SO_2, ppm	3.8	
SO_2, ppm @ 15% O_2	**5.1**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-FEBRUARY
DG TURBINE #1 (S-56)
4247 kW

RUN	1	LIMITS
Test Date	2/9/18	
Test Time	1100-1115	
Turbine kW	4,247	
Fuel Flow Rate, DSCFM	1,109	
Oxygen, O_2, %	16.4	
NOx, ppm	3.7	
NOx, ppm @ 15% O_2	**4.9**	**23**
CO, ppm	2.1	
CO, ppm @ 15% O_2	**2.8**	**100**
SO_2, ppm	4.4	
SO_2, ppm @ 15% O_2	**5.8**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-MARCH
DG TURBINE #1 (S-56)
3787 kW

RUN	1	LIMITS
Test Date	3/20/18	
Test Time	1210-1225	
Turbine kW	3,787	
Fuel Flow Rate, DSCFM	1,001	
Oxygen, O_2, %	16.5	
NOx, ppm	3.9	
NOx, ppm @ 15% O_2	**5.2**	**23**
CO, ppm	1.7	
CO, ppm @ 15% O_2	**2.3**	**100**
SO_2, ppm	1.1	
SO_2, ppm @ 15% O_2	**1.5**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-APRIL 2018
DG TURBINE #1 (S-56)
42901 kW

RUN	1	LIMITS
Test Date	4/20/18	
Test Time	1418-1433	
PGS-2 Turbine kW	4,290	
PGS-2 Fuel Flow Rate, DSCFM	1,106	
Oxygen, O_2, %	16.1	
NOx, ppm	3.2	
NOx, ppm @ 15% O_2	**3.9**	**23**
CO, ppm	1.1	
CO, ppm @ 15% O_2	**1.4**	**100**
SO_2, ppm	4.0	
SO_2, ppm @ 15% O_2	**5.0**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-MAY
DG TURBINE #1 (S-56)
4345 kW

RUN	1	LIMITS
Test Date	5/23/18	
Test Time	1240-1255	
Turbine kW	4,345	
Fuel Flow Rate, DSCFM	1,143	
Oxygen, O_2, %	16.6	
NOx, ppm	3.7	
NOx, ppm @ 15% O_2	**5.1**	**23**
CO, ppm	1.9	
CO, ppm @ 15% O_2	**2.6**	**100**
SO_2, ppm	1.4	
SO_2, ppm @ 15% O_2	**1.9**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

TABLE # 1

EBMUD-JUNE
DG TURBINE #1 (S-56)
4109 kW

RUN	1	LIMITS
Test Date	6/26/18	
Test Time	1310-1325	
Turbine kW	4,109	
Fuel Flow Rate, DSCFM	1,088	
Oxygen, O_2, %	16.4	
NOx, ppm	2.9	
NOx, ppm @ 15% O_2	**3.8**	**23**
CO, ppm	1.4	
CO, ppm @ 15% O_2	**1.8**	**100**
SO_2, ppm	1.3	
SO_2, ppm @ 15% O_2	**1.7**	**150**

WHERE,

ppm = Parts Per Million Concentration

NOx = Oxides of Nitrogen as NO_2 (MW = 46)

CO = Carbon Monoxide (MW = 28)

SO_2 = Sulfur Dioxide (MW= 64)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)

ATTACHMENT 7

MAIN WASTEWATER TREATMENT PLANT FLOWS

East Bay Municipal Utility District
MONTHLY WASTEWATER MONITORING SUMMARY JUNE 2018

STATION: WWTP INFLUENT - INF-001
STATION: WWTP EFFLUENT - EFF-001
FLOWS & CONVENTIONAL POLLUTANTS (R2-2015-0018)

	INFLUENT (MGD)				EFFLUENT (MGD)				CBOD						TSS						Oil and Grease	
	Mo. Avg	Max Daily Avg	Min Daily Avg	3-mo Dry Season Avg	Mo. Avg	Max Daily Avg	Min Daily Avg	3-mo Dry Season Avg	Inf (INF-001) mg/L Month Avg	Eff mg/L Month Avg	Eff mg/L Max Week Avg	# excs/ # of Analyses Mo. Avg	# excs/ # of Analyses Week Avg	% Removal Month Avg	Inf (INF-001 mg/L Month Avg	Eff mg/L Month Avg	Eff mg/L Max Week Avg	# excs/ # of Analyses Mo. Avg	# excs/ # of Analyses Week Avg	% Removal Month Avg	Eff mg/L Month Avg	Eff mg/L Daily Max
Limits:				**120**						**25**	**40**			**Min 85**		**30**	**45**			**Min 85**	**10**	**20**
Jan	65	192	47		62	189	44		268	9	15	0/1	0/4	97%	349	11	15	0/1	0/4	97%		
Feb	50	56	46		49	53	45		356	9	13	0/1	0/4	98%	388	12	17	0/1	0/4	97%	< 2.3	< 2.3
Mar	75	122	51		72	124	51		271	11	13	0/1	0/5	96%	330	10	11	0/1	0/5	97%		
Apr	68	225	51		67	227	48		254	8	10	0/1	0/4	97%	351	12	17	0/1	0/4	97%		
May	49	53	44		49	52	44		316	9	10	0/1	0/4	97%	364	11	12	0/1	0/4	97%	< 2.4	< 2.4
Jun	46	51	42		46	50	41		343	10	13	0/1	0/5	97%	458	14	16	0/1	0/5	97%		
Jul																						
Aug																						
Sep																						
Oct																						
Nov																						
Dec																						
																					4x/year	
Avg	59	117	47		58	116	46		301	9	12			97%	373	12	15			97%	< 2.4	< 2.4
Max	75	225	51		72	227	51		356	11	15			98%	458	14	17			97%	< 2.4	< 2.4
Min	46	51	42		46	50	41		254	8	10			96%	330	10	11			97%	< 2.3	< 2.3
Exc/Analyses												0/6	0/26	0/6				0/6	0/26	0/6	0/2	0/2

Exc / Analyses = number of exceedances / number of analyses

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Jan-18	2.2	0.0	0.0	0.0	6.4	0.0	0.0	0.0
02-Jan-18	2.6	0.0	0.0	0.0	6.8	0.3	0.0	0.0
03-Jan-18	4.3	0.0	0.0	0.0	12.1	0.0	0.0	0.0
04-Jan-18	1.2	0.0	0.0	0.0	3.1	0.0	0.0	0.0
05-Jan-18	2.4	0.0	0.0	0.0	6.1	0.0	0.0	0.0
06-Jan-18	0.2	0.0	0.0	0.0	1.7	0.0	0.0	0.0
07-Jan-18	2.6	0.0	0.0	0.0	3.9	0.0	0.0	0.0
08-Jan-18	1.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0
09-Jan-18	0.1	0.0	0.0	0.0	1.5	0.0	0.0	0.0
10-Jan-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
11-Jan-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
12-Jan-18	0.1	0.0	0.0	0.0	1.8	0.0	0.0	0.0
13-Jan-18	0.7	0.0	0.0	0.0	1.8	0.0	0.0	0.0
14-Jan-18	0.5	0.0	0.0	0.0	1.7	0.0	0.0	0.0
15-Jan-18	0.8	0.0	0.0	0.0	2.7	0.0	0.0	0.0
16-Jan-18	1.6	0.0	0.0	0.0	6.9	0.0	0.0	0.0
17-Jan-18	1.5	0.0	0.0	0.0	3.4	0.0	0.0	0.0
18-Jan-18	2.7	0.0	0.0	0.0	6.0	0.0	0.0	0.0
19-Jan-18	1.3	0.0	0.0	0.0	3.0	0.0	0.0	0.0
20-Jan-18	2.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0
21-Jan-18	2.4	0.0	0.0	0.0	5.3	0.0	0.0	0.0
22-Jan-18	0.2	0.0	0.0	0.0	6.7	0.0	0.0	0.0
23-Jan-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
24-Jan-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
25-Jan-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
26-Jan-18	0.8	0.0	0.0	0.0	3.8	0.0	0.0	0.0
27-Jan-18	1.1	0.0	0.0	0.0	4.6	0.0	0.0	0.0
28-Jan-18	1.8	0.0	0.0	0.0	5.8	0.0	0.0	0.0
29-Jan-18	2.8	0.0	0.0	0.0	5.2	0.0	0.0	0.0
30-Jan-18	2.9	0.0	0.0	0.0	6.3	0.0	0.0	0.0
31-Jan-18	3.6	0.0	0.0	0.0	8.4	0.4	0.0	0.0
Monthly Avg	1.4	0.0	0.0	0.0				
Monthly Max					12.1	0.4	0.0	0.0

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Feb-18	1.6	0.0	0.0	0.0	19.2	0.0	0.0	0.0
02-Feb-18	0.4	0.0	0.0	0.0	3.2	0.4	0.0	0.0
03-Feb-18	2.9	0.0	0.0	0.0	8.4	0.3	0.0	0.0
04-Feb-18	3.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0
05-Feb-18	4.5	0.1	0.0	0.0	9.3	0.7	0.0	0.0
06-Feb-18	4.8	0.1	0.0	0.0	17.5	1.2	0.0	0.0
07-Feb-18	6.5	0.3	0.0	0.0	15.7	1.4	0.0	0.0
08-Feb-18	4.8	0.1	0.0	0.0	16.5	0.9	0.0	0.0
09-Feb-18	5.4	0.3	0.0	0.0	18.3	1.5	0.0	0.0
10-Feb-18	4.8	0.2	0.0	0.0	10.4	0.8	0.0	0.0
11-Feb-18	3.3	0.0	0.0	0.0	6.2	0.3	0.0	0.0
12-Feb-18	4.6	0.2	0.0	0.0	10.8	1.2	0.0	0.0
13-Feb-18	4.9	0.4	0.0	0.0	12.9	1.5	0.0	0.0
14-Feb-18	4.5	0.2	0.0	0.0	10.7	0.7	0.0	0.0
15-Feb-18	4.5	0.3	0.0	0.0	9.2	1.0	2.9	0.0
16-Feb-18	4.4	0.2	0.0	0.0	12.3	1.1	0.0	0.0
17-Feb-18	3.7	0.1	0.0	0.0	12.7	0.9	0.0	0.0
18-Feb-18	3.1	0.1	0.0	0.0	12.5	1.0	0.0	0.0
19-Feb-18	2.9	0.3	0.0	0.0	10.1	2.4	0.0	0.0
20-Feb-18	3.3	0.3	0.0	0.0	10.8	1.2	0.0	0.0
21-Feb-18	0.0	0.1	0.0	0.0	2.8	0.2	0.0	0.0
22-Feb-18	0.0	0.1	0.0	0.0	3.9	0.2	0.0	0.0
23-Feb-18	0.0	0.1	0.0	0.0	0.8	0.2	0.0	0.0
24-Feb-18	0.0	0.1	0.0	0.0	1.6	0.1	0.0	0.0
25-Feb-18	0.0	0.1	0.0	0.0	2.8	0.2	0.0	0.0
26-Feb-18	0.4	0.0	0.0	0.0	8.4	0.4	0.0	0.0
27-Feb-18	0.9	0.0	0.0	0.0	5.2	0.3	0.0	0.0
28-Feb-18	0.9	0.0	0.0	0.0	6.8	0.0	0.0	0.0
Monthly Avg	2.9	0.1	0.0	0.0				
Monthly Max					19.2	2.4	2.9	0.0

Coarse Scrubber readings from Feb 21st onward on new scrubber system.

Calibration days: max went 100 inlet, 10 outlet

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Mar-18	0.3	0.0	0.0	0.0	4.1	0.1	0.0	0.0
02-Mar-18	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
03-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
04-Mar-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
05-Mar-18	0.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0
06-Mar-18	0.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0
07-Mar-18	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
08-Mar-18	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
09-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
12-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Mar-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
16-Mar-18	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
17-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
18-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
19-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
24-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
26-Mar-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
27-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31-Mar-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly Avg	0.0	0.0	0.0	0.0				
Monthly Max					4.1	0.1	0.0	0.0

Calibration days: max went 100 inlet, 10 outlet

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02-Apr-18	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
03-Apr-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
04-Apr-18	0.2	0.0	0.0	0.0	5.1	0.0	0.0	0.0
05-Apr-18	0.6	0.0	0.0	0.0	5.5	0.0	2.6	0.0
06-Apr-18	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0
07-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-Apr-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
13-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16-Apr-18	0.1	0.0	0.0	0.0	3.2	0.0	0.0	0.0
17-Apr-18	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
18-Apr-18	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
19-Apr-18	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0
20-Apr-18	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0
21-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22-Apr-18	0.0	0.0	0.0	0.0	3.3	0.0	1.5	0.0
23-Apr-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
24-Apr-18	0.6	0.0	0.0	0.0	4.0	0.0	0.0	0.0
25-Apr-18	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0
26-Apr-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
27-Apr-18	0.3	0.0	0.0	0.0	4.0	0.0	0.0	0.0
28-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-18	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
Monthly Avg	0.1	0.0	0.0	0.0				
Monthly Max					5.5	0.0	2.6	0.0

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings, ppm

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-May-18	1.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0
02-May-18	1.1	0.0	0.0	0.0	8.9	0.0	0.0	0.0
03-May-18	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0
04-May-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
05-May-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
06-May-18	0.1	0.1	0.0	0.0	3.3	1.8	0.0	0.0
07-May-18	0.2	0.0	0.0	0.0	3.8	0.0	0.0	0.0
08-May-18	0.1	0.0	0.0	0.0	4.4	0.0	0.0	0.0
09-May-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
10-May-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-May-18	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
12-May-18	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0
13-May-18	0.1	0.0	0.0	0.0	3.4	0.0	0.0	0.0
14-May-18	0.3	0.0	0.0	0.0	4.6	0.0	0.0	0.0
15-May-18	0.1	0.0	0.0	0.0	4.4	0.0	0.0	0.0
16-May-18	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
17-May-18	0.1	0.0	0.0	0.0	4.9	0.0	0.0	0.0
18-May-18	0.4	0.0	0.0	0.0	4.5	0.0	0.0	0.0
19-May-18	0.1	0.0	0.0	0.0	3.3	0.0	0.0	0.0
20-May-18	0.6	0.0	0.0	0.0	3.6	0.0	0.0	0.0
21-May-18	0.7	0.0	0.0	0.0	5.3	0.0	0.0	0.0
22-May-18	0.1	0.0	0.0	0.0	7.1	0.0	0.0	0.0
23-May-18	0.2	0.0	0.0	0.0	6.4	0.0	0.0	0.0
24-May-18	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
25-May-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
26-May-18	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
27-May-18	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0
28-May-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
29-May-18	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0
30-May-18	0.5	0.0	0.0	0.0	5.3	0.0	0.0	0.0
31-May-18	0.7	0.0	0.0	0.0	6.7	0.0	0.0	0.0
Monthly Avg	0.2	0.0	0.0	0.0				
Monthly Max					10.3	1.8	0.0	0.0

	Coarse Scrubber		Fine Scrubber		Coarse Scrubber		Fine Scrubber	
	Inlet Avg	Outlet Avg	Inlet Avg	Outlet Avg	Inlet Max	Outlet Max	Inlet Max	Outlet Max
01-Jun-18	0.1	0.0	0.0	0.0	4.9	0.0	0.0	0.0
02-Jun-18	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0
03-Jun-18	1.4	0.0	0.0	0.0	7.4	0.0	0.0	0.0
04-Jun-18	1.6	0.0	0.0	0.0	7.7	0.0	0.0	0.0
05-Jun-18	6.4	0.0	0.0	0.0	20.5	0.0	0.0	0.0
06-Jun-18	1.6	0.0	0.0	0.0	13.5	0.0	0.0	0.0
07-Jun-18	0.2	0.0	0.0	0.0	12.2	0.0	0.0	0.0
08-Jun-18	0.9	0.0	0.0	0.0	6.0	0.0	0.0	0.0
09-Jun-18	0.4	0.0	0.0	0.0	5.4	0.0	0.0	0.0
10-Jun-18	0.6	0.0	0.0	0.0	6.1	0.0	0.0	0.0
11-Jun-18	0.5	0.0	0.0	0.0	6.8	0.0	0.0	0.0
12-Jun-18	1.9	0.0	0.0	0.0	21.3	0.0	0.0	0.0
13-Jun-18	1.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0
14-Jun-18	3.7	0.0	0.0	0.0	6.8	0.0	0.0	0.0
15-Jun-18	6.5	0.0	0.0	0.0	9.3	0.0	0.0	0.0
16-Jun-18	5.1	0.0	0.0	0.0	8.8	0.0	0.0	0.0
17-Jun-18	5.1	0.0	0.0	0.0	7.8	0.0	0.0	0.0
18-Jun-18	6.5	0.0	0.0	0.0	13.2	0.0	0.0	0.0
19-Jun-18	5.6	0.0	0.0	0.0	8.9	0.0	0.0	0.0
20-Jun-18	2.6	0.0	0.0	0.0	10.5	0.0	0.0	0.0
21-Jun-18	4.2	0.0	0.0	0.0	10.1	0.0	0.0	0.0
22-Jun-18	4.8	0.0	0.0	0.0	8.2	0.0	0.0	0.0
23-Jun-18	2.6	0.0	0.0	0.0	17.6	0.0	0.0	0.0
24-Jun-18	0.5	0.0	0.0	0.0	6.4	0.0	0.0	0.0
25-Jun-18	5.6	0.0	0.0	0.0	10.4	0.0	1.5	0.0
26-Jun-18	7.0	0.0	0.0	0.0	16.9	0.0	0.0	0.0
27-Jun-18	5.7	0.0	0.0	0.0	15.1	0.0	0.0	0.0
28-Jun-18	5.3	0.0	0.0	0.0	12.4	0.0	0.0	0.0
29-Jun-18	4.7	0.0	0.0	0.0	11.8	0.0	0.0	0.0
30-Jun-18	2.3	0.0	0.0	0.0	5.5	0.0	0.0	0.0
Monthly Avg	3.1	0.0	0.0	0.0				
Monthly Max					21.3	0.0	1.5	0.0

DCS upgrade - PI server outage. Data from DCS Historian

ATTACHMENT 8 -- IPS Scrubber Inlet and Outlet H2S Readings - Related Outages

Influent Pump Station Odor Scrubber Outage Table

Start	Finish	Duration	Reason
02-Mar-18 09:15	02-Mar-18 09:20	0:05	Contractor accidentally shut down new coarse scrubber
09-May-18 08:00	09-May-18 14:00	6:00	Contractor work on new scrubber
13-Jun-18 10:30	13-Jun-18 12:30	2:00	Coarse scrubber offline for contractor electrical work
	Total Down Time	8:05	

ATTACHMENT 9 - ODOR SCRUBBER MAINTENANCE RECORDS - S-170, S-11(

Headworks Odor Scrubber Maintenance Work Orders Jan - Jun 2018

Area	Wonum	Description	Assetnum	Dept	Status	Type	Report Date	Reported By
W-12	2018025923	Supply Fan #12 is running fine but differential pressure reads zero.	W-12-FAN-SF-12	IN	COMP	CM	3/21/2018	DGARCIA
W-12	2018025924	Supply Fan #3 is running fine but differential pressure reads zero.	W-12-FAN-SF-03	IN	COMP	CM	3/21/2018	DGARCIA
W-12	2018025926	Supply Fan #3 is running fine but differential pressure reads zero.	W-12-FAN-SF-03	IN	COMP	CM	3/21/2018	DGARCIA
W-12	2018025922	Breaker for Fine Screen Supply Fan #2 is stuck in the off position. Replace breaker	W-12-FAN-SF-02	EL	INPRG	CM	3/21/2018	DGARCIA
W-13	2018053192	supply fan 6. much noisier than normal. please inspect.	W-13-FAN-SP6-01	MEN	COMP	CM	5/1/2018	RBEDGOOD
W-12	2018053280	W12-Fan-S11-00.. Supply Fan above the hydrolic unit at IPS has a broken belt.	W-12-FAN-SF9-00	MEN	COMP	BD	5/11/2018	DGARCIA

Thickening/Dewatering Odor Scrubber Maintenance Work Orders Jan - Jun 2018

Area	Wonum	Description	Assetnum	Dept	Status	Type	Report Date	Reported By
W-30	2018000073	There is a rattling noise from odor scrubber exhaust fan #1-seems to be coming from a loose plate between the upper fan pulley and the fan.	W-30-TKS-301-00	MEN	CLOSE	CM	1/15/2018	LDUAN
W-25	2018012417	There is an unusual amount of foul air escaping from the seal for the cover of C4.	W-25-DSL-CTF-401	MEN	CLOSE	CM	2/10/2018	LDUAN

ATTACHMENT 10 -- S-170 Waste Activated Sludge Throughput

2018 January - June Gravity Belt Thickener Summary Flow Table

Note: Kgal=1,000 gallons

Daily Flows	January Kgal	February Kgal	March Kgal	April Kgal	May Kgal	June Kgal
1st	1,358	1,716	2,060	1,647	1,565	1,161
2nd	1,310	1,643	1,930	1,810	1,694	1,656
3rd	1,249	1,926	2,319	1,891	2,078	1,462
4th	1,376	1,794	2,076	2,082	1,960	938
5th	1,464	1,549	1,539	2,017	1,677	1,587
6th	1,361	1,313	2,169	2,016	1,817	1,287
7th	1,692	1,271	1,849	1,719	1,907	1,420
8th	2,080	1,306	2,047	1,790	1,692	1,342
9th	1,595	1,457	1,910	2,134	1,553	1,394
10th	2,155	1,464	1,561	2,790	1,534	1,465
11th	1,910	1,621	1,622	2,196	1,680	1,237
12th	905	1,498	2,020	1,998	1,535	1,640
13th	1,932	1,496	2,082	1,731	1,820	1,099
14th	1,768	1,487	1,847	1,888	1,782	917
15th	1,658	1,535	1,776	2,156	1,543	1,192
16th	1,656	1,700	1,895	2,132	1,744	985
17th	1,804	1,589	2,026	1,794	1,688	1,012
18th	1,720	1,829	2,069	2,044	1,710	990
19th	1,744	1,732	2,032	1,854	1,647	1,571
20th	1,773	1,577	1,925	1,931	1,839	1,394
21st	1,806	1,604	1,575	1,827	1,489	889
22nd	1,769	1,842	2,053	1,812	1,435	1,111
23rd	1,808	1,997	1,860	1,667	1,521	1,143
24th	1,922	2,057	2,086	1,907	1,627	1,101
25th	1,541	2,147	1,957	1,754	1,647	838
26th	2,133	2,151	1,660	1,722	1,605	1,313
27th	2,365	2,107	1,543	1,849	1,913	1,117
28th	1,868	2,201	1,404	1,739	1,889	1,221
29th	1,833		1,657	1,793	1,709	1,255
30th	1,881		1,400	1,759	1,502	1,349
31st	1,806		1,409		1,489	
Monthly Total	53,242	47,609	57,357	57,448	52,290	37,084
Semi-Annual Total	305,029					

Gravity Belt Thickener and Dewatering Centrifuge Odor Scrubber Outage Table

Start	Finish	Duration	Reason
18-Jan-18 11:15	18-Jan-18 14:15	3:00	THK scrubber fan on/off intermittently for troubleshooting
18-Jan-18 14:15	19-Jan-18 11:00	20:45	THK scrubber off-line for fan repair
			Foul Air crossover open to DWB scrubber.
10-Mar-18 07:20	10-Mar-18 17:05	9:45	Power failure at plant, DWB scubber blower found tripped at 1640, restarted
	Total Down Time	33:30	

ATTACHMENT 11 - DIGESTER GAS SAMPLING DATA

EBMUD Biogas H2S
January - June 2018

2018	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
1/1/2018	86	178
1/2/2018	80	178
1/3/2018	100	178
1/4/2018	92	177
1/5/2018	110	177
1/6/2018	110	177
1/7/2018	100	177
1/8/2018	84	177
1/9/2018	106	177
1/10/2018	84	177
1/11/2018	96	177
1/12/2018	94	176
1/13/2018	90	177
1/14/2018	68	177
1/15/2018	82	177
1/16/2018	78	177
1/17/2018	82	177
1/18/2018	72	177
1/19/2018	66	177
1/20/2018	76	177
1/21/2018	78	177
1/22/2018	80	177
1/23/2018	104	177
1/24/2018	106	176
1/25/2018	110	176
1/26/2018	116	176
1/27/2018	100	176
1/28/2018	86	176
1/29/2018	84	176
1/30/2018	80	176
1/31/2018	88	176
2/1/2018	114	176
2/2/2018	104	175
2/3/2018	102	175
2/4/2018	92	175
2/5/2018	92	175
2/6/2018	118	175
2/7/2018	98	175
2/8/2018	92	175
2/9/2018	104	175
2/10/2018	68	174
2/11/2018	72	174
2/12/2018	72	174
2/13/2018	78	174
2/14/2018	92	174
2/15/2018	88	174
2/16/2018	86	173
2/17/2018	90	174
2/18/2018	76	174
2/19/2018	76	174
2/20/2018	78	174
2/21/2018	80	174
2/22/2018	86	174
2/23/2018	104	174
2/24/2018	92	174
2/25/2018	92	174
2/26/2018	82	174
2/27/2018	98	174
2/28/2018	104	174

* Carbon Changeouts

2018	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
3/1/2018	114	173
3/2/2018	94	173
3/3/2018	92	173
3/4/2018	72	173
3/5/2018	70	173
3/6/2018	86	172
3/7/2018	92	172
3/8/2018	134	172
3/9/2018	104	171
3/10/2018	32	171
3/11/2018	64	171
3/12/2018	58	171
3/13/2018	60	171
3/14/2018	58	171
3/15/2018	96	170
3/16/2018	82	170
3/17/2018	88	170
3/18/2018	76	169
3/19/2018	74	169
3/20/2018	92	168
3/21/2018	92	168
3/22/2018	98	167
3/23/2018	156	167
3/24/2018	134	167
3/25/2018	90	167
3/26/2018	84	166
3/27/2018	74	166
3/28/2018	82	165
3/29/2018	94	165
3/30/2018	106	165
3/31/2018	98	164
4/1/2018	76	164
4/2/2018	72	164
4/3/2018	68	164
4/4/2018	88	163
4/5/2018	100	163
4/6/2018	106	162
4/7/2018	*	162
4/8/2018	0*	161
4/9/2018	0*	161
4/10/2018	58	161
4/11/2018	84	160
4/12/2018	76	160
4/13/2018	82	159
4/14/2018	74	158
4/15/2018	58	158
4/16/2018	60	158
4/17/2018	68	157
4/18/2018	70	157
4/19/2018	68	156
4/20/2018	74	156
4/21/2018	58	155
4/22/2018	58	155
4/23/2018	62	154
4/24/2018	94	154
4/25/2018	110	153
4/26/2018	94	153
4/27/2018	98	153
4/28/2018	100	153
4/29/2018	110	152
4/30/2018	90	152

2018	Cogen Feed H2S (ppm)	365 Day Avg H2S (ppm)
5/1/2018	116	151
5/2/2018	102	151
5/3/2018	90	151
5/4/2018	112	151
5/5/2018	116	150
5/6/2018	90	150
5/7/2018	80	150
5/8/2018	84	150
5/9/2018	88	149
5/10/2018	76	149
5/11/2018	72	148
5/12/2018	100	148
5/13/2018	78	147
5/14/2018	80	147
5/15/2018	106	147
5/16/2018	100	147
5/17/2018	112	146
5/18/2018	146	146
5/19/2018	142	145
5/20/2018	130	145
5/21/2018	132	144
5/22/2018	146	144
5/23/2018	132	144
5/24/2018	104	142
5/25/2018	122	141
5/26/2018	126	140
5/27/2018	100	140
5/28/2018	126	139
5/29/2018	160	139
5/30/2018	208	139
5/31/2018	198	139
6/1/2018	154	139
6/2/2018	152	139
6/3/2018	128	139
6/4/2018	134	139
6/5/2018	186	139
6/6/2018	194	139
6/7/2018	164	139
6/8/2018	184	139
6/9/2018	122	139
6/10/2018	105	138
6/11/2018	100	138
6/12/2018	158	138
6/13/2018	148	138
6/14/2018	150	138
6/15/2018	198	138
6/16/2018	178	138
6/17/2018	164	138
6/18/2018	54	138
6/19/2018	148	137
6/20/2018	142	137
6/21/2018	138	137
6/22/2018	150	137
6/23/2018	154	137
6/24/2018	98	137
6/25/2018	200	137
6/26/2018	270	137
6/27/2018	246	137
6/28/2018	238	138
6/29/2018	142	138
6/30/2018	100	138

ATTACHMENT 12 - TOTAL DIGESTER GAS COMBUSTION

EBMUD Biogas to Combustion Devices
January - June 2018

2018	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
1/1/2018	1,992	1,531	2,245
1/2/2018	2,186	1,586	2,246
1/3/2018	2,693	2,254	2,248
1/4/2018	3,031	2,476	2,248
1/5/2018	3,179	2,929	2,250
1/6/2018	3,114	2,703	2,251
1/7/2018	2,321	1,827	2,250
1/8/2018	2,706	1,997	2,250
1/9/2018	2,824	2,164	2,251
1/10/2018	2,925	2,482	2,254
1/11/2018	3,031	2,627	2,255
1/12/2018	2,528	2,007	2,255
1/13/2018	2,500	1,919	2,254
1/14/2018	2,075	1,623	2,252
1/15/2018	1,990	1,666	2,252
1/16/2018	2,588	1,934	2,253
1/17/2018	2,592	2,165	2,253
1/18/2018	2,944	2,237	2,253
1/19/2018	2,625	2,198	2,253
1/20/2018	2,543	1,955	2,252
1/21/2018	2,580	1,675	2,251
1/22/2018	2,498	1,895	2,252
1/23/2018	3,582	2,545	2,255
1/24/2018	3,266	2,361	2,256
1/25/2018	2,720	2,418	2,256
1/26/2018	3,519	2,784	2,257
1/27/2018	2,528	2,040	2,256
1/28/2018	2,559	1,983	2,255
1/29/2018	2,842	2,046	2,256
1/30/2018	3,114	1,982	2,257
1/31/2018	3,045	2,554	2,257
2/1/2018	3,026	2,475	2,257
2/2/2018	3,913	2,438	2,256
2/3/2018	2,248	1,966	2,254
2/4/2018	2,421	1,762	2,252
2/5/2018	2,926	1,837	2,252
2/6/2018	3,549	2,882	2,255
2/7/2018	2,979	2,454	2,256
2/8/2018	2,979	2,682	2,257
2/9/2018	2,937	2,581	2,257
2/10/2018	2,865	2,233	2,256
2/11/2018	2,462	1,823	2,256
2/12/2018	2,449	1,816	2,256
2/13/2018	3,168	2,507	2,257
2/14/2018	3,226	3,027	2,260
2/15/2018	3,046	2,640	2,261
2/16/2018	3,194	2,485	2,262
2/17/2018	2,523	2,158	2,262
2/18/2018	1,972	1,588	2,260
2/19/2018	2,427	1,701	2,260
2/20/2018	3,352	2,419	2,262
2/21/2018	2,837	2,400	2,263
2/22/2018	3,815	2,999	2,265
2/23/2018	3,618	3,416	2,268
2/24/2018	3,443	2,710	2,270
2/25/2018	2,065	1,577	2,269
2/26/2018	2,689	2,093	2,270
2/27/2018	2,931	2,544	2,273
2/28/2018	3,125	2,713	2,273

3,400 Annual Average Limit starting 03/15/17

2018	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
3/1/2018	3,334	2,905	2,275
3/2/2018	3,081	2,703	2,276
3/3/2018	2,935	2,353	2,276
3/4/2018	2,718	2,284	2,275
3/5/2018	2,805	2,101	2,275
3/6/2018	3,080	2,426	2,276
3/7/2018	2,791	2,555	2,278
3/8/2018	3,013	2,556	2,276
3/9/2018	2,912	2,515	2,274
3/10/2018	4,690	2,039	2,273
3/11/2018	2,147	1,814	2,272
3/12/2018	3,196	1,988	2,272
3/13/2018	3,429	2,961	2,276
3/14/2018	3,808	3,066	2,278
3/15/2018	3,522	3,091	2,277
3/16/2018	3,753	2,875	2,278
3/17/2018	3,387	2,706	2,279
3/18/2018	2,610	1,932	2,279
3/19/2018	2,495	1,849	2,280
3/20/2018	2,782	2,322	2,281
3/21/2018	3,121	2,630	2,282
3/22/2018	3,122	2,677	2,284
3/23/2018	3,475	2,866	2,286
3/24/2018	2,817	2,334	2,286
3/25/2018	2,264	1,719	2,284
3/26/2018	2,567	1,759	2,284
3/27/2018	3,264	2,402	2,286
3/28/2018	3,160	2,644	2,287
3/29/2018	3,254	2,862	2,288
3/30/2018	3,177	2,599	2,288
3/31/2018	2,818	2,244	2,287
4/1/2018	2,417	1,773	2,285
4/2/2018	2,448	1,702	2,284
4/3/2018	3,131	2,427	2,285
4/4/2018	3,423	2,825	2,288
4/5/2018	3,051	2,471	2,288
4/6/2018	3,029	2,578	2,289
4/7/2018	2,517	1,998	2,289
4/8/2018	2,261	1,450	2,287
4/9/2018	2,860	2,014	2,287
4/10/2018	3,329	2,666	2,290
4/11/2018	3,680	3,036	2,293
4/12/2018	3,620	2,884	2,295
4/13/2018	3,655	3,045	2,297
4/14/2018	2,722	2,283	2,296
4/15/2018	2,281	1,736	2,294
4/16/2018	2,715	1,981	2,294
4/17/2018	3,391	2,559	2,296
4/18/2018	3,144	2,557	2,297
4/19/2018	2,605	2,251	2,296
4/20/2018	2,662	2,271	2,295
4/21/2018	2,916	2,273	2,293
4/22/2018	2,182	1,759	2,291
4/23/2018	2,461	1,874	2,291
4/24/2018	2,962	2,281	2,293
4/25/2018	3,223	2,754	2,294
4/26/2018	2,914	2,520	2,294
4/27/2018	2,832	2,325	2,295
4/28/2018	2,623	2,006	2,293
4/29/2018	2,137	1,620	2,291
4/30/2018	2,612	1,838	2,291

2018	Total Combustion, SCFM		
	Daily Max	Daily Avg	365-Day Avg
5/1/2018	2,570	2,121	2,292
5/2/2018	2,554	2,031	2,292
5/3/2018	2,824	2,294	2,288
5/4/2018	3,677	2,932	2,288
5/5/2018	3,082	2,651	2,288
5/6/2018	2,366	1,866	2,286
5/7/2018	2,370	1,781	2,286
5/8/2018	3,029	2,471	2,288
5/9/2018	3,043	2,430	2,287
5/10/2018	2,581	2,199	2,284
5/11/2018	2,788	2,216	2,282
5/12/2018	2,693	2,091	2,280
5/13/2018	1,969	1,522	2,278
5/14/2018	2,536	1,798	2,279
5/15/2018	2,541	2,167	2,279
5/16/2018	2,586	2,212	2,279
5/17/2018	2,889	2,548	2,279
5/18/2018	2,683	2,335	2,279
5/19/2018	2,511	1,941	2,278
5/20/2018	1,787	1,466	2,276
5/21/2018	2,487	1,650	2,275
5/22/2018	2,485	1,988	2,275
5/23/2018	2,504	2,160	2,272
5/24/2018	3,063	2,510	2,271
5/25/2018	3,096	2,680	2,271
5/26/2018	2,759	2,201	2,270
5/27/2018	2,089	1,650	2,268
5/28/2018	2,317	1,755	2,267
5/29/2018	2,627	2,030	2,268
5/30/2018	2,773	2,278	2,268
5/31/2018	2,494	2,022	2,268
6/1/2018	2,636	1,963	2,267
6/2/2018	2,667	2,205	2,266
6/3/2018	1,961	1,473	2,262
6/4/2018	2,749	1,721	2,260
6/5/2018	2,785	2,337	2,260
6/6/2018	2,637	2,216	2,259
6/7/2018	3,150	2,762	2,259
6/8/2018	3,086	2,759	2,259
6/9/2018	2,514	2,082	2,257
6/10/2018	2,206	1,653	2,253
6/11/2018	3,294	1,937	2,253
6/12/2018	2,530	2,224	2,253
6/13/2018	2,602	2,210	2,253
6/14/2018	2,518	2,088	2,250
6/15/2018	2,654	2,382	2,249
6/16/2018	3,041	2,499	2,248
6/17/2018	2,296	1,702	2,247
6/18/2018	4,142	1,604	2,246
6/19/2018	2,628	2,147	2,247
6/20/2018	3,098	2,601	2,247
6/21/2018	2,751	2,308	2,246
6/22/2018	2,821	2,443	2,245
6/23/2018	2,686	2,070	2,244
6/24/2018	2,033	1,566	2,241
6/25/2018	2,784	1,738	2,241
6/26/2018	2,948	2,580	2,242
6/27/2018	3,367	2,632	2,243
6/28/2018	2,745	2,331	2,243
6/29/2018	2,612	2,209	2,242
6/30/2018	2,412	1,869	2,239

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EAST BAY
MUNICIPAL UTILITY DISTRICT
P.O. Box 24055, Oakland, CA 94623

EBMUD

TO Jeff Gove, Director of Compliance & Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn Title V Reports

X-015 - 04/09 (097218)

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