

1

2

Appendix C

3

Air Quality Calculations

1
2
3
4
5
6
7
8

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**Disposition of Offshore Cooling Water Conduits
SONGS Unit 1 EIR
Air Pollutant Emissions**

Equipment	Quantity	HP ⁽¹⁾	Load Factor ⁽²⁾	Hours/Day	Days	Total Hours	Base Emission Factors (g/hp-hr) ⁽³⁾⁽⁴⁾				Adjusted Emission Factors (lbs/hr)				Estimated Emissions (lbs/day)				
							VOC	NOX	CO	PM10	VOC	NOX	CO	PM10	VOC	NOX	CO	PM10	
Pre-Dispositioning work																			
Support Tugboat	1	340	80%	24	60	1440	1.00	3.80	2.60	0.15	0.60	2.28	1.56	0.09	14.4	54.6	37.4	2.2	
Total Emissions (tons)														0.43	1.64	1.12	0.06		
On-shore work																			
High Pressure Water Blasting Unit	1	150	30%	10	10	100	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2	
Rough Terrain Crane	1	325	43%	10	45	450	1	3.8	2.6	0.15	0.31	1.17	0.80	0.05	3.1	11.7	8.0	0.5	
Hydraulic Pump	1	85	48%	10	2	20	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3	
Diving Air Compressor	1	54	75%	12	3	36	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	1.1	6.0	4.0	0.3	
Cement Pump	1	100	56%	10	20	200	0.68	4.90	3.70	0.22	0.08	0.60	0.46	0.03	0.8	6.0	4.6	0.3	
10 CY Cement Truck	2	300	41%	10	20	400	1	3.9	2.6	0.15	0.54	2.11	1.41	0.08	5.4	21.1	14.1	0.8	
120 bbl Vacuum Truck	1	300	41%	10	20	200	1	3.9	2.6	0.15	0.27	1.06	0.70	0.04	2.7	10.6	7.0	0.4	
Total Emissions														14.7	65.3	44.7	2.8		
Total Emissions (tons)														0.16	0.68	0.46	0.03		
Nearshore Work																			
High Pressure Water Blasting Unit	1	150	30%	10	30	300	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2	
Industrial Air Compressor	1	85	48%	10	30	300	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3	
Diving Air Compressor	1	54	75%	10	30	300	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3	
Jet Pump	1	150	30%	10	30	300	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2	
Hydraulic Pump	1	85	74%	10	30	300	0.99	5.60	3.70	0.30	0.14	0.78	0.51	0.04	1.4	7.8	5.1	0.4	
Diesel Powered Welder	1	54	45%	10	30	300	0.99	5.60	3.70	0.30	0.05	0.30	0.20	0.02	0.5	3.0	2.0	0.2	
Excavator	1	188	58%	10	10	100	1.00	3.80	2.60	0.15	0.24	0.91	0.62	0.04	2.4	9.1	6.2	0.4	
Bulldozer	1	240	59%	10	10	100	1.00	3.80	2.60	0.15	0.31	1.19	0.81	0.05	3.1	11.9	8.1	0.5	
Spooling Truck	1	150	41%	10	10	100	0.68	4.90	3.70	0.22	0.09	0.66	0.50	0.03	0.9	6.6	5.0	0.3	
Beach Winch	1	700	20%	10	10	100	1.00	6.90	8.50	0.40	0.31	2.13	2.62	0.12	3.1	21.3	26.2	1.2	
Derrick Barge Crane	1	220	80%	10	15	150	1.00	3.80	2.60	0.15	0.39	1.47	1.01	0.06	3.9	14.7	10.1	0.6	
Derrick Barge Generator Set	1	155	74%	24	60	1440	0.68	4.90	3.70	0.22	0.17	1.24	0.93	0.06	4.1	29.7	22.4	1.3	
Support Tugboat	1	340	80%	24	60	1440	1.00	3.80	2.60	0.15	0.60	2.28	1.56	0.09	14.4	54.6	37.4	2.2	
Crew Boat	1	350	90%	6	60	360	1.00	3.80	2.60	0.15	0.69	2.64	1.80	0.10	4.2	15.8	10.8	0.6	
Crew Boat Generator Set	1	50	74%	24	60	1440	0.99	5.60	3.70	0.30	0.08	0.46	0.30	0.02	1.9	11.0	7.2	0.6	
Total Daily Emissions														43.0	205.2	154.6	9.2		
Total Emissions (tons)														0.89	4.15	2.96	0.18		
Onshore														14.67	65.32	44.65	2.76		
Nearshore														43.03	205.25	154.60	9.19		
Total Daily Emissions														57.69	270.57	199.26	11.95		
Total Emissions (tons)														1.05	4.83	3.42	0.21		
Offshore Work																			
High Pressure Water Blasting Unit	1	150	30%	10	10	100	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2	
Industrial Air Compressor	1	85	48%	10	45	450	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3	
Diving Air Compressor	1	54	75%	10	45	450	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3	
Jet Pump	1	150	30%	10	45	450	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2	
Hydraulic Pump	1	85	74%	10	45	450	0.99	5.60	3.70	0.30	0.14	0.78	0.51	0.04	1.4	7.8	5.1	0.4	
Diesel Powered Welder	1	54	45%	10	45	450	0.99	5.60	3.70	0.30	0.05	0.30	0.20	0.02	0.5	3.0	2.0	0.2	
Derrick Barge	1	220	80%	10	45	450	1.00	3.80	2.60	0.15	0.39	1.47	1.01	0.06	3.9	14.7	10.1	0.6	
Derrick Barge Generator	1	155	74%	24	45	1080	0.68	4.90	3.70	0.22	0.17	1.24	0.93	0.06	4.1	29.7	22.4	1.3	
Support Tugboat	1	340	80%	24	45	1080	1.00	3.80	2.60	0.15	0.60	2.28	1.56	0.09	14.4	54.6	37.4	2.2	
Crew Boat	1	350	90%	6	45	270	1.00	3.80	2.60	0.15	0.69	2.64	1.80	0.10	4.2	15.8	10.8	0.6	
Crew Boat Generator	1	50	74%	24	45	1080	0.99	5.60	3.70	0.30	0.08	0.46	0.30	0.02	1.9	11.0	7.2	0.6	
Total Daily Emissions														33.5	156.4	109.0	6.8		
Total Emissions (tons)														0.74	3.43	2.39	0.15		

**Disposition of Offshore Cooling Water Conduits
SONGS Unit 1 EIR
Air Pollutant Emissions**

Post-Depositioning Survey																				
Survey Boat	1	350	90%	12	2	24	1.00	3.80	2.60	0.15	0.69	2.64	1.80	0.10	8.3	31.6	21.6	1.2		
Total Emissions (tons)															0.01	0.03	0.02	0.00		
Debris Cleanup																				
High Pressure Water Blasting Unit	1	150	30%	10	30	300	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2		
Industrial Air Compressor	1	85	48%	10	30	300	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3		
Diving Air Compressor	1	54	75%	10	30	300	0.99	5.60	3.70	0.30	0.09	0.50	0.33	0.03	0.9	5.0	3.3	0.3		
Jet Pump	1	150	30%	10	30	300	0.68	4.90	3.70	0.22	0.07	0.49	0.37	0.02	0.7	4.9	3.7	0.2		
Derrick Barge Crane	1	220	80%	10	15	150	1.00	3.80	2.60	0.15	0.39	1.47	1.01	0.06	3.9	14.7	10.1	0.6		
Derrick Barge Generator Set	1	155	74%	24	60	1440	0.68	4.90	3.70	0.22	0.17	1.24	0.93	0.06	4.1	29.7	22.4	1.3		
Support Tugboat	1	340	80%	24	60	1440	1.00	3.80	2.60	0.15	0.60	2.28	1.56	0.09	14.4	54.6	37.4	2.2		
Crew Boat	1	350	90%	6	60	360	1.00	3.80	2.60	0.15	0.69	2.64	1.80	0.10	4.2	15.8	10.8	0.6		
Crew Boat Generator Set	1	50	74%	24	60	1440	0.99	5.60	3.70	0.30	0.08	0.46	0.30	0.02	1.9	11.0	7.2	0.6		
Total Daily Emissions															31.6	145.6	101.9	6.3		
Total Emissions (tons)															0.82	3.77	2.64	0.16		
Total Quarterly Emissions (tons/qtr.)															2.62	12.03	8.45	0.52		

- (1) Horsepower ratings were provided by Southern California Edison
- (2) Load factors were taken from average load factors developed by the SCAQMD in the CEQA Air Quality Handbook (1993)
- (3) VOC, NOX, CO and PM10 emission factors taken from California Air Resources Board Offroad
- (4) SOX factors taken from SCAQMD CEQA Handbook