

TABLE 3

CONSTRUCTION ⁽¹⁾ EMISSIONS SUMMARY FOR CUESTA GRADE WORKAROUND

Construction Engine Emissions

SOURCE	SIZE / GROSS HP	DAILY AMOUNT (hrs or trips) ⁽²⁾	DAYS OF ACTIVITY	NUMBER OF UNITS	ONE-WAY DISTANCE (miles)	NO _x			ROG			PM ₁₀			SO _x			CO			NOTES	
						EF (g/hr) ⁽³⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽³⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽³⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽³⁾	Daily (lbs/day)	Total (tons)	EF (g/hr) ⁽³⁾	Daily (lbs/day)	Total (tons)		
Surveying & Potholing (10 tons)																						
Backhoe Loader	78	10	1	1	-	774	17	0.009	64	1.4	0.001	13	0.3	0.0001	58	1.3	0.001	79	1.7	0.001	5	
Vac Truck	C6500	1	1	-	15	2.2	0.15	0.0001	0.66	0.04	0.00002	0.05	0.003	0.000002	0.3	0.02	0.00001	9.6	0.6	0.0003	6	
Surveying Lt-Heavy Duty Truck	3/4 - 1 ton	1	1	-	15	2.2	0.15	0.0001	0.66	0.04	0.00002	0.05	0.003	0.000002	0.3	0.02	0.00001	9.6	0.6	0.0003	6	
Lt-Heavy Duty Truck	3/4 - 1 ton	3	1	-	15	2.2	0.44	0.0002	0.66	0.13	0.0001	0.05	0.010	0.000005	0.3	0.06	0.00003	9.6	1.9	0.001	6	
Worker Light Truck	Light	8	1	-	15	1.0	0.53	0.0003	0.35	0.19	0.0001	0	0	0	0.06	0.032	0.00002	7.2	3.8	0.0019	6	
Subtotals (Surveying & Potholing)							18	0.009		1.8	0.001		0.31	0.0002		1.41	0.001		8.72	0.004		
Boring & Clearing (3300 feet)																						
Boring Rig (Rock)	DD6	10	4	1	-	2.8	0.06	0.0001	0.20	0.004	0.00001	0.40	0.009	0.000018	1.36	0.0300	0.0001	1.0	0.02	0.00004	7	
Rig Truck & Trailer	HH Truck	1	4	-	15	11.3	0.7	0.001	2.2	0.15	0.0003	0.6	0.04	0.0001	0.3	0.0	0.0000	14.0	0.9	0.002	6	
Water Truck	4500 gal.	1	4	-	15	11.3	0.7	0.001	2.2	0.15	0.0003	0.6	0.04	0.0001	0.3	0.02	0.0000	14.0	0.9	0.002	5	
Skid Truck	3/4 - 1 ton	1	4	-	15	2.24	0.15	0.0003	0.66	0.04	0.0001	0.05	0.003	0.00001	0.31	0.02	0.0000	9.57	0.6	0.001	6	
Dozer (D4)	D4	10	4	1	-	977	22	0.04	69	1.5	0.003	11	0.25	0.001	72	1.6	0.003	77	2	0.003	5	
Dozer (D6)	D6	10	4	1	-	1660	37	0.07	110	2.4	0.005	15	0.33	0.001	105	2.3	0.005	110	2	0.005	5	
Backhoe Loader	416C	10	4	1	-	774	17	0.03	64	1.4	0.003	13	0.29	0.001	58	1.3	0.003	79	1.7	0.003	5	
Flatbed	3/4 ton	2	4	-	15	2.24	0.3	0.001	0.66	0.09	0.0002	0.05	0.01	0.00001	0.31	0.04	0.0001	9.57	1.3	0.003	6	
Lt-Heavy Duty Truck	3/4 - 1 ton	7	4	-	15	2.24	1.0	0.002	0.66	0.31	0.0006	0.05	0.02	0.00005	0.31	0.14	0.0003	9.57	4.4	0.009	6	
Worker Light Truck	Light	12	4	-	15	1.0	0.79	0.0016	0.4	0.28	0.0006	0	0	0	0.06	0.05	0.0001	7.2	5.7	0.011	6	
Subtotals (Boring & Clearing)							77	0.15		6.08	0.012		0.91	0.002		5.43	0.01		18	0.04		
Plowing, Spider (5 miles)																						
Backhoe Loader	78	10	2	1	-	774	17	0.017	64	1.4	0.0014	13	0.3	0.0003	58	1.3	0.001	79	1.7	0.002	5	
Dozer (D9) ⁽⁵⁾	401	10	2	1	-	2520	56	0.056	250	5.5	0.006	55	1.2	0.001	270	6.0	0.006	305	6.7	0.007	5	
Ag. Tractor	225	10	2	1	-	1238	27	0.03	75	1.7	0.002	9.0	0.2	0.0002	90	2.0	0.002	75	2	0.002	5	
Spiderplow	FSP17	10	2	1	-	1238	27	0.027	75	1.7	0.0017	9.0	0.2	0.0002	90	2.0	0.002	75	1.7	0.002	6	
Water Truck	132	10	2	1	-	1310	29	0.029	40	0.9	0.0009	50	1.1	0.0011	125	2.8	0.003	170	3.7	0.004	7	
Lt-Heavy Duty Truck	3/4 - 1 ton	10	2	-	15	2.24	1.48	0.0015	0.66	0.44	0.0004	0.05	0.03	0.000033	0.31	0.21	0.00021	9.57	6.3	0.006	6	
Worker Light Truck	Light	10	2	-	15	1.00	0.66	0.0007	0.35	0.23	0.0002	0	0	0	0.06	0.04	0.00004	7.22	4.8	0.005	6	
Subtotals (Plowing, Spider)							158	0.16		12	0.012		3.0	0.003		14	0.014		27	0.027		
Proofing (10 tons)																						
Backhoe Loader	78	10	1	1	-	774	17	0.009	64	1.4	0.001	13	0.29	0.0001	58	1.3	0.001	79	1.7	0.001	5	
Lt-Heavy Duty Truck	3/4 - 1 ton	2	1	-	15	11	1.5	0.001	2	0.29	0.0001	0.6	0.08	0.00004	0.3	0.04	0.00002	14	1.9	0.001	6	
Worker Light Truck	Light	3	1	-	15	1.00	0.20	0.0001	0.35	0.07	0.00003	0	0	0	0.06	0.01	0.00001	7.2	1.4	0.001	6	
Subtotals (Proofing)							19	0.01		1.8	0.001		0.37	0.0002		1.33	0.001		5.0	0.003		
Cable Installation & Splicing (10 tons)																						
Backhoe Loader	78	10	1	1	-	774	17	0.009	64	1.4	0.001	13	0.29	0.0001	58	1.3	0.001	79	1.7	0.001	5	
Flatbed	3/4 ton	1	1	-	15	2.2	0.15	0.0001	0.7	0.04	0.00002	0.05	0.003	0.000002	0.31	0.02	0.00001	9.6	0.6	0.0003	6	
Lt-Heavy Duty Truck	3/4 - 1 ton	2	1	-	15	2.2	0.30	0.0001	0.7	0.09	0.00004	0.05	0.007	0.000003	0.31	0.04	0.00002	9.6	1.3	0.001	6	
Worker Light Truck	Light	5	1	-	15	1.0	0.33	0.0002	0.35	0.12	0.0001	0	0	0	0.06	0.02	0.00001	7.2	2.4	0.001	6	
Subtotals (Cable & Splicing)							18	0.01		1.7	0.001		0.30	0.0002		1.35	0.001		6.0	0.003		
Handholes (12 tons)																						
Backhoe Loader	78	10	1	1	-	774	17	0.009	64	1.4	0.001	13	0.29	0.0001	58	1.3	0.001	79	1.7	0.001	5	
Flatbed	3/4 ton	1	1	-	15	2.2	0.15	0.0001	0.7	0.04	0.00002	0.05	0.00	0.000002	0.31	0.02	0.00001	9.6	0.6	0.0003	6	
Lt-Heavy Duty Truck	3/4 - 1 ton	2	1	-	15	2.2	0.30	0.0001	0.7	0.09	0.00004	0.05	0.01	0.000003	0.31	0.04	0.00002	9.6	1.3	0.0006	6	
Worker Light Truck	Light	4	1	-	15	1.0	0.26	0.0001	0.35	0.09	0.00005	0	0	0	0.06	0.02	0.00001	7.2	1.9	0.0010	6	
Subtotals (Handholes)							18	0.01		1.6	0.001		0.30	0.0002		1.35	0.001		5.5	0.003		
Markers																						
Flatbed	3/4 ton	1	1	-	15	2.2	0.15	0.0001	0.7	0.04	0.00002	0.1	0.003	0.000002	0.3	0.02	0.00001	9.6	0.63	0.0003	6	
Worker Light Truck	Light	2	1	-	15	1.0	0.13	0.0001	0.4	0.05	0.00002	0	0	0	0.1	0.01	0.000004	7.2	0.96	0.0005	6	
Subtotals (Markers)							0.28	0.0001		0.09	0.00004		0.003	0.000002		0.03	0.00001		1.6	0.0008		
Restoration																						
Ag. Tractor	225	10	1	1	-	2370	52	0.026	180	4.0	0.002	15	0.33	0.0002	135	3.0	0.001	205	4.5	0.002	5	
Dozer (D6)	153	10	1	1	-	1660	37	0.018	110	2.4	0.001	15	0.33	0.0002	105	2.3	0.001	110	2.4	0.001	5	
Dozer (D4)	80	10	1	1	-	977	22	0.011	69	1.5	0.001	11	0.25	0.0001	72	1.6	0.001	77	1.7	0.001	5	
Water Truck	1,000 gal.	10	1	1	-	1310	29	0.014	40	0.88	0.0004	50	1.1	0.001	125	2.8	0.001	170	3.7	0.002	5	
Lt-Heavy Duty Truck	3/4 - 1 ton	2	1	-	15	11.3	1.5	0.001	2.2	0.29	0.0001	0.6	0.08	0.00004	0.3	0.04	0.00002	14.0	1.9	0.001	6	
Worker Light Truck	Light	6	1	-	15	1.0	0.40	0.0002	0.4	0.14	0.0001	0	0	0	0.1	0.02	0.00001	7.2	2.9	0.001	6	
Subtotals (Restoration)							141	0.07		9.23	0.005		2.09	0.001		9.7	0.00		17	0.01		
Subtotals, Construction Engine Emissions ⁽⁴⁾								158	0.42		11.8	0.03			0.01		14	0.03		27	0.08	
Total Construction Emissions (Fugitive plus exhaust)								0.42			0.03			1.59		0.03		0.08				
Construction Thresholds								185 lb/day			185 lb ROG/day			2.5 tpq		--		--				
Insignificant Impact ⁽⁸⁾								Yes			Yes			Yes		Yes		Yes			Yes	

(Continued)

Construction Fugitive Dust Emissions

SOURCE	DAILY AMOUNT (hours)	DAYS OF ACTIVITY	AREA OF GRADING / TRENCHING	PM10 EMISSIONS			NOTES
				EF	(daily lbs)	(total tons)	
				General Construction Activities	10	12	
Trenching - Cable Installation	10	2	--	0.00 lb/hr	0.0	0.000	
Wind Erosion	24	2	0.67 acres	0.00 lb/acre-day	0.0	0.000	10
Subtotal, Construction Fugitive Emissions⁽⁴⁾					263	1.58	
Total PM10 Construction Emissions (Engine Exhaust and Fugitive)						1.587	

'- = Not applicable

Unit abbreviations: g/hr = grams per hour, lb/day = pounds per day, tpy = tons per year, tpq = tons per quarter

(1) Workarounds have no equipment operating after construction (trenching for long-haul fiber optic cable).

(2) Daily amount is measured in hours for off-road construction equipment (e.g., backhoe), and in number of trips for on-road vehicles (e.g., worker light-truck).

(3) Emission factors are in grams per hour for off-road equipment, and in grams per mile for on-road vehicles.

(4) Construction emission subtotals are for the complete set of equipment in an activity (e.g., plowing) or fugitive PM10 generating processes.

(5) Emission factors are from Caterpillar Corp.

(6) MVEI7G Emission Factors (1998, 15mph, 75°F)

(7) SCAQMD CEQA Handbook, Tables A9-8-A & A9-8-B

(8) Construction emissions have insignificant impact when emission of a set of off-road equipment used in one activity (e.g., plowing) does not exceed thresholds (i.e., each activity proceeds in one day, not all activities and equipment concurrently durin

(9) Area subjected to general construction activity is 29,111-foot length of workaround times 10-foot width. Period of time equals sum of days for all construction activities.

(10) Wind erosion applies to days for plowing/trenching fiber optic cable along full length of workaround.