APPENDIX E

TRANSMISSION LINE CONSTRUCTION EMISSIONS

- Transmission Line Daily Maximum Construction Emissions
- Transmission Line Construction Combustion Emissions
- Transmission Line Fugitive Construction Emissions

City of Riverside ERC
Transmission Line Daily Maximum Construction-Related Emissions (lb/day)
February

	NOx	CO	VOC	SOx	PM10
Construction Equipment Combustion Emissions	15.13	12.20	1.81	0.02	0.8928
Unpaved Road Travel Fugitive PM Emissions					0.0001
Grading / Bulldozing Fugitive PM Emissions					0.1110
Earth Loading Fugitive PM Emissions					0.0532
Disturbed Soil Wind Erosion PM Emissions					0.1110
Fugitive PM10 Travel on Paved Roads					1.86
Total Max. Pounds per Day	**15.13**	**12.20**	**1.81**	**0.02**	**1.17**

City of Riverside ERC
Transmission Line Project On-site Construction Emissions
(lbs/project)

	NOx	CO	VOC	SOx	PM10
Construction Equipment Combustion Emissions	780	562	88	1	44.831
Unpaved Road Travel Fugitive PM Emissions					0.006
Grading / Bulldozing Fugitive PM Emissions					6.103
Earth Loading Fugitive PM Emissions					2.395
Disturbed Soil Wind Erosion PM Emissions					0.001
Fugitive PM10 Travel on Paved Roads					102
Total Pounds per Project	**780**	**562**	**88**	**1**	**156**
Total Tons per Project	**0.390**	**0.281**	**0.044**	**0.000**	**0.078**

Transmission Line Construction Combustion Emissions
Riverside Energy Resource Center Project

Equipment	Gasoline/ Diesel?	Number of Units	Hrs/Day Per Unit	Gals/Hr Per Unit	Total Fuel Use (Gals/day)	January Days	January Gal/month	January Gal/day	February Days	February Gal/ month	February Gal/day	March Days	March Gal/ month	March Gal/day	Total Project Fuel Use	Total Project Operating Hours
Truck Crane - Greater than 300 ton	D	0	0	7.50	0.00		0			0			0		0	0
Truck Crane - Greater than 200 ton	D	0	0	5.00	0.00		0			0			0		0	0
Crane - Mobile 65 ton	D	0	0	4.00	0.00		0			0			0		0	0
Cranes - Mobile 45 ton	D	0	0	4.00	0.00		0			0			0		0	0
Cranes - Mobile 35 ton	D	1	6	4.00	24.00	15	360	24	20	480	24	20	480	24	1320	330
Bulldozer D6H	D	0	0	5.50	0.00		0			0			0		0	0
Bulldozer D4C	D	0	0	3.00	0.00	0	0		0	0		0	0		0	0
Auger	D	1	2	2.00	4.00	20	80	20	4	16	4	16	64	4	160	78
Excavator - Earth Scraper	D	0	0	9.00	0.00		0			0			0		0	0
Excavator - Motor Grader	D	0	0	5.00	0.00		0			0			0		0	0
Excavator - Backhoe/loader	D	1	2	2.50	5.00	15	75	5	20	100	5	16	75	5	250	100
Excavator - loader	D	0	0	2.50	0.00		0			0			0		0	0
Vibratory Roller	D	1	2	10.00	20.00	0	0		0	0		0	0		0	0
Portable Compaction Roller	D	0	0	10.00	0.00		0			0			0		0	0
Truck - Water	D	1	1	3.13	3.13	16	50.05	3.13	20	62.6	3.13	20	62.6	3.13	175.25	55
Forklift	D	0	0	2.50	0.00		0			0			0		0	0
Dump Truck	D	1	6	3.13	18.78	15	281.7	18.78	20	375.6	18.78	20	375.6	18.78	1032.9	330
Service Truck - 1 ton -	D	1	6	1.56	9.36	15	140.4	9.36	20	187.2	9.36	10	93.6	9.36	421.2	270
Truck - Fuel/Lube	D	0	0	3.13	0.00		0			0			0		0	0
Concrete Pumper Truck	D	1	3	3.13	9.39	15	140.85	9.39	20	187.8	9.39	10	93.9	9.39	422.55	165
Tractor Truck 5th Wheel	D	0	0	3.13	0.00	0	0		0	0		0	0		0	0
Trucks - Pickup 3/4 ton	G	3	3	0.78	7.02	20	140.4	7.02	20	140.4	7.02		0		280.8	360
Trucks - 3 ton delivery	D	1	1	1.56	1.56	15	23.4	1.56	4	6.24	1.56	4	6.24	1.56	35.88	12
Diesel Powered Welder	D	1	1	1.27	1.27	15	19.05	1.27	20	25.4	1.27	10	12.7	1.27	57.15	45
Light Plants	D	0	0	1.27	0.00		0			0			0		0	0
Portable Compaction - Vibratory Plate	G	1	2	0.25	0.50		0			0			0		0	0
Portable Compaction - Vibratory Ram	D	0	0	0.25	0.00		0			0			0		0	0
Articulating Boom Platform	D	0	0	0.25	0.00	0	0		0	0		0	0		0	0
Pumps	G	0	0	0.13	0.00		0			0			0		0	0
Air Compressor 185 CFM	D	1	1	1.27	1.27	15	19.05	1.27	20	25.4	1.27	20	25.4	1.27	69.85	55
Air Compressor 750 CFM	D	0	0	1.27	0.00		0			0			0		0	0
Concrete Vibrators	D	0	0	0.25	0.00	0	0			0			0		0	0
Concrete Trowel Machine	D	0	0	1.27	0.00	0	0			0			0		0	0
Fusion Welder	D	0	0	1.27	0.00		0			0			0		0	0
Portable Power Generators	D	0	0	1.27	0.00		0			0			0		0	0
Total =					105		1510	101		1607	85		1879	78	4996	1800

Transmission Line Combustion Emissions - High February Daily & Project Total

			Base Factors g/bhp, if Tier 1 >50 hp (1)						Appendix A Table A3 Adjustment (2)						Adjustment (3)	Adjusted Factors					
Equipment	HP Cat.	Tier	BSFC lb/hp-hr	NOx	CO	POC	SOx	PM10	Adj. Type	NOx	CO	POC	SOx	PM10	PM10 Fuel S	BSFC	NOx	CO	POC	SOx	PM10
Crawler Crane- Greater than 300 ton	175-300	1	0.367	5.5772	0.7475	0.3085	0.00499	0.2521	None	1	1	1	1	1	-0.086	0.367	5.58	0.75	0.31	0.0049	0.17
Crawler Crane- Greater than 200 ton	175-300	1	0.367	5.5772	0.7475	0.3085	0.00499	0.2521	None	1	1	1	1	1	-0.086	0.367	5.58	0.75	0.31	0.0049	0.17
Crane - Mobile 65 ton	175-300	1	0.367	5.5772	0.7475	0.3085	0.00499	0.2521	None	1	1	1	1	1	-0.086	0.367	5.58	0.75	0.31	0.0049	0.17
Cranes -Mobile 45 ton	100-175	1	0.367	5.6523	0.8667	0.3384	0.00499	0.2799	None	1	1	1	1	1	-0.086	0.367	5.65	0.87	0.34	0.0049	0.19
Cranes - Mobile 35 ton	100-175	1	0.367	5.6523	0.8667	0.3384	0.00499	0.2799	None	1	1	1	1	1	-0.086	0.367	5.65	0.87	0.34	0.0049	0.19
Bulldozer D8H	100-175	1	0.367	5.6523	0.8667	0.3384	0.00499	0.2799	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.087	0.371	5.37	1.33	0.36	0.0049	0.26
Bulldozer D4C	50-100	1	0.408	5.5988	2.3655	0.5213	0.00555	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	5.32	3.62	0.55	0.0055	0.49
Excavator- Trencher	50-100	1	0.408	5.5988	2.3655	0.5213	0.00555	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	5.32	3.62	0.55	0.0055	0.49
Excavator- Earth Scraper	175-300	1	0.367	5.5772	0.7475	0.3085	0.00499	0.2521	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.087	0.371	5.30	1.14	0.32	0.0049	0.22
Excavator-Motor Grader	100-175	1	0.367	5.6523	0.8667	0.3384	0.00499	0.2799	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.087	0.371	5.37	1.33	0.36	0.0049	0.26
Excavator- Backhoe/loader	50-100	1	0.408	5.5988	2.3655	0.5213	0.00555	0.473	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.113	0.481	6.16	6.06	1.19	0.0084	0.82
Excavator - loader	50-100	1	0.408	5.5988	2.3655	0.5213	0.00555	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	5.32	3.62	0.55	0.0055	0.49
Vibratory Roller	100-175	1	0.367	5.6523	0.8667	0.3384	0.00499	0.2799	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.087	0.371	5.37	1.33	0.36	0.0049	0.26
Portable Compaction roller	175-300	1	0.367	5.5772	0.7475	0.3085	0.00499	0.2521	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.087	0.371	5.30	1.14	0.32	0.0049	0.22
Truck- Water	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Forklift	50-100	1	0.408	5.5988	2.3655	0.5213	0.00555	0.473	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	5.32	3.62	0.55	0.0055	0.49
Dump Truck	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Service Truck- 1 ton	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Truck- Fuel/Lube	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Concrete Pumper Truck	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Tractor Truck 5th Wheel	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Trucks- Pickup 3/4 ton	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Trucks- 3 ton	Onroad	na	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad	Onroad
Diesel Powered Welder	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.094	0.40	7.59	12.85	4.12	0.0052	1.48
Light Plants	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.094	0.40	6.90	5.00	1.80	0.0053	0.71
Portable Compaction- Vibratory Plate	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.095	0.408	6.90	5.00	1.80	0.0054	0.70
Portable Compaction- Vibratory Ram	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.095	0.408	6.90	5.00	1.80	0.0054	0.70
Articulating Boom Platforms	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.113	0.481	7.59	12.85	4.12	0.0063	1.46
Pumps	Gasoline	na	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Air Compressor 185 CFM	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.094	0.40	6.90	5.00	1.80	0.0053	0.71
Air Compressor 750 CFM	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.094	0.40	6.90	5.00	1.80	0.0053	0.71
Concrete Vibrators	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	6.56	7.65	1.89	0.0054	0.89
Concrete Trowel Machine	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	Hi LF	0.95	1.53	1.05	1.01	1.23	-0.096	0.412	6.56	7.65	1.89	0.0054	0.89
Fusion Welder	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	Lo LF	1.1	2.57	2.29	1.18	1.97	-0.113	0.481	7.59	12.85	4.12	0.0063	1.46
Portable Power Generators	25-50	0	0.408	6.9	5	1.8	0.00555	0.8	None	1	1	1	1	1	-0.095	0.408	6.90	5.00	1.80	0.0054	0.70

Transmission Line Combistion Emissions - High February Daily & Project Total

Equipment	Tier	Adjusted factors lbs/gallon (4) NOx	CO	POC	SOx	PM10	Total Fuel Use (Gals/day)	Daily Emissions Lbs/day (November - High Fuel Consumption Month) NOx	CO	POC	SOx	PM10	Total Fuel Use (Gals/yr)	Annual Emissions Lbs/yr (Based upon projected project fuel consumption) NOx	CO	POC	SOx	PM10
Truck Crane- Greater than 300 ton	1	237.87	31.88	13.16	0.21	7.09	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Truck Crane- Greater than 200 ton	1	237.87	31.88	13.16	0.21	7.09	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Crane - Mobile 65 ton	1	237.87	31.88	13.16	0.21	7.09	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Cranes -Mobile 45 ton	1	241.07	36.96	14.43	0.21	8.28	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Cranes - Mobile 35 ton	1	241.07	36.96	14.43	0.21	8.28	24	5.79	0.89	0.35	0.00	0.20	1320	318.21	48.79	19.05	0.27	10.92
Bulldozer D6H	1	226.75	56.00	15.00	0.21	10.88	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Bulldozer D4C	1	202.03	137.47	20.79	0.21	18.44	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Auger	1	202.03	137.47	20.79	0.21	18.44	4	0.81	0.55	0.08	0.00	0.07	156	31.52	21.45	3.24	0.03	2.88
Excavator- Earth Scraper	1	223.74	48.29	13.68	0.21	9.43	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Excavator-Motor Grader	1	226.75	56.00	15.00	0.21	10.88	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Excavator- Backhoe/loader	1	200.23	197.65	38.81	0.21	26.63	5	1.00	0.99	0.19	0.00	0.13	250	50.06	49.41	9.70	0.05	6.66
Excavator - loader	1	202.03	137.47	20.79	0.21	18.44	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Vibratory Roller	1	226.75	56.00	15.00	0.21	10.88	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Portable Compaction roller	1	223.74	48.29	13.68	0.21	9.43	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Truck- Water	na	170.68	106.79	15.33	0.21	9.59	3.2	0.55	0.34	0.05	0.00	0.03	172	29.36	18.37	2.64	0.04	1.65
Forklift	1	202.03	137.47	20.79	0.21	18.44	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Dump Truck	na	170.68	106.79	15.33	0.21	9.59	19	3.24	2.03	0.29	0.00	0.18	1033	176.31	110.31	15.83	0.22	9.91
Service Truck- 1 ton	na	74.40	59.47	5.57	0.21	4.83	10	0.74	0.59	0.06	0.00	0.05	421	31.32	25.03	2.34	0.09	2.03
Truck- Fuel/Lube	na	170.68	106.79	15.33	0.21	9.59	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Concrete Pumper Truck	na	170.68	106.79	15.33	0.21	9.59	10	1.71	1.07	0.15	0.00	0.10	516	88.07	55.10	7.91	0.11	4.95
Tractor Truck 5th Wheel	na	170.68	106.79	15.33	0.21	9.59	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Trucks- Pickup 3/4 ton	na	62.81	677.30	46.28	0.27	1.56	7	0.44	4.74	0.32	0.00	0.01	280	17.59	189.64	12.96	0.08	0.44
Trucks- 3 ton	na	74.40	59.47	5.57	0.21	4.83	1.6	0.12	0.10	0.01	0.00	0.01	19	1.41	1.13	0.11	0.00	0.09
Diesel Powered Welder	0	297.01	502.84	161.30	0.20	58.01	1.3	0.39	0.65	0.21	0.00	0.08	58	17.23	29.16	9.36	0.01	3.36
Light Plants	0	270.01	195.66	70.44	0.21	27.64	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Portable Compaction- Vibratory Plate	0	264.71	191.82	69.06	0.21	27.03	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Portable Compaction- Vibratory Ram	0	264.71	191.82	69.06	0.21	27.03	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Articulating Boom Platforms	0	246.77	417.78	134.01	0.20	47.58	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Pumps	na	79.44	13813.38	748.58	0.27	2.35	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Air Compressor 185 CFM	0	270.01	195.66	70.44	0.21	27.64	1.3	0.35	0.25	0.09	0.00	0.04	70	18.90	13.70	4.93	0.01	1.94
Air Compressor 750 CFM	0	270.01	195.66	70.44	0.21	27.64	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Concrete Vibrators	0	248.99	290.58	71.79	0.21	33.71	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Concrete Trowel Machine	0	248.99	290.58	71.79	0.21	33.71	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Fusion Welder	0	246.77	417.78	134.01	0.20	47.58	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Portable Power Generators	0	264.71	191.82	69.06	0.21	27.03	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
							Totals	15.13	12.20	1.81	0.02	0.89		779.98	562.10	88.07	0.91	44.83
													Tons/yr	0.39	0.28	0.04	0.0005	0.02

(1) - Steady State Emission Factors from Table A2 of EPA November 2002 NR-009b Publication.
(2) - In use adjustment factors per Table A3 EPA November 2002 NR-009b Publication.
(3) - PM10 and SO2 adjustments due to Equation 5 and Equation 7 on pages 18 and 19, Respectively of EPA Report No. NR-009b
(4) - Calculation uses adjusted BSFC and assumed 7.1 lbs/gallon. The onroad and gasoline powered pump emission factors are not adjusted, except for SO2 adjusted for pumps per the gasoline powered 3/4 ton pickup value.

Transmission Line Fugitive Construction Emissions

On-site Vehicle Travel on Unpaved Roads

PM10 (lb) = VMT x F x (1-water suppression control efficiency)

$F = 2.1 \times (G/12) \times (H/30) \times ((I/3)^{0.7}) \times ((J/4)^{0.5}) \times ((365-K)/365)$ in lb/mile traveled

								28	35	5	6	10	9.73684				
Truck Type		Trips or Hours /day	Trips Project	VMT/Trip	VMT/Day	VMT/Project	G (Silt Loading %)	H (Mean Vehicle Speed MPH)	I (Mean Vehicle Weight tons)	J (# Wheels)	K (# days/year w/ 0.01 inch precipitation)	F Uncontrolled Emission Factor (lb/VMT)	Daily Water Suppression Control Efficiency	Annual Water Suppression Control Efficiency	Daily Emissions (lbs)	Project Emissions (lbs)
Auger		1	55	0.005	0.005	0.275	8.5	3.5	4	4	10	0.20644	90%	90%	0.00010	0.00568
Excavator - Backhoe/loader 45 min work/hr, 10% travel during cycle	hours	2	11	0.0005	0.001	0.0055	8.5	3.5	2	4	10	0.12708	90%	90%	0.00001	0.00007
Total															0.00012	0.00575
Source							*US EPA AP-42, 13.2.2-1, Dec. 2003 - for construction sites*		*SCAQMD CEQA Table A9-9-D3 or actual known typical weights*	*SCAQMD CEQA Table A9-9-D3*	*SCAQMD CEQA A9-9-D-4 (drought SCAB)*					

Dirt Pushing / Bulldozing Operations

$E = ((0.45 \times (((G)^{1.5})/((H)1.4))) \times I) * J$

E = PM_{10} Emissions from Dirt Pushing
G = Silt content of aggregate in percent
H = Moisture Content of the surface material
I = 2.2046 - conversion factor from kg/hr to lb/hr
J = Hours of pushing operation per day

Truck Type	G (Silt Content %)	H (Moisture Content)	J (Hours of pushing operation/day)	Hours of pushing operation/ project	Daily PM_{10} Emissions (lb)	Project PM_{10} Emissions (lb)
Excavator - Backhoe/loader (Caterpillar 430D)	8.5	15	0.2	11	0.11	6.10
Total					0.11	6.10
Source:	*US EPA AP-42, 13.2.2-1, Dec. 2003 - for construction sites*	*SCAQMD CEQA Table A9-9-F-2*	10% utilization of total operations	10% utilization of total operations, 55 days		

Transmission Line Fugitive Construction Emissions

Wind Erosion

$E = (1.7 \times [G/1.5] \times [(365-H)/235] \times [I/15]) \times J$

E = PM_{10} Emissions from wind erosion in pounds per acre
G = Silt content of aggregate in percent
H = Number of Days with $\geq$ 0.25 mm (0.01 inch) of precipitation per year
I = Percentage of time that unobstructed wind speed exceeds 12 mph or 5.4 mps at mean pile height
J = Fraction of Total Suspended Particulated which is estimated at 0.5

Location	G (Silt Content %)	H (# days >0.01 inch precipitation)	I (% of time wind speed >12 mph)	Number of days during project	Daily PM_{10} Emissions per Acre (lbs)	Daily PM_{10} Emissions (0.1 acres)	Project PM_{10} Emissions per Acre (lbs)	Project PM_{10} Emissions (55 sites)
0.1 acres per site x 55 sites	8.5	10	1.7	10	0.01	0.0008	0.00825	0.45
Source:		*SCAQMD CEQA Table A9-9-E-2 (worst case - SCAB/drought)*						

Dirt Loading/Handling

$E = [0.00112 \times ([(G/5)^{1.3}]/[(H/2)^{1.4}])] \times [I/J]$

E = PM_{10} Emissions from dirt loading/handling
G = Mean wind speed in miles per hour
H = Moisture content of surface material
I = Pounds of dir loaded or handled per day
J = 2,000; convert lbs of dirt to tons of dirt

	m/s	mph
	1.73	3.87

Location	G (Mean wind speed mph)	H (Moisture content)	I (Lbs of dirt handled/day)	Number of days during project	Daily PM_{10} Emissions (lbs)	Project PM_{10} Emissions (lbs)
Loader Operations, load 130 - 150 cf per site	3.87	10	2,000	45	0.05	2.39
Source:		*SCAQMD CEQA Table A9-9-G-1 (worst case - SCAB/drought)*				

Transmission Line Fugitive Construction Emissions

Travel on Paved Roads

E = V x F

E = PM_{10} Emissions from travel on paved roads
V = Vehicle miles traveled = W x X
W = Travel distance in miles
X = Number of Vehicles
F = Emission factor for travel on paved roads (Table A9 -9-B-1 for passenger vehicles))

Vehicle Type	Total number of vehicles	Travel Distance (miles)	Vehicle miles traveled/day	Number of Project days	G (Paved Road silt content)	F (Emission Factor)	Daily PM_{10} Emissions (lbs)	Project PM_{10} Emissions (lbs)
Passenger vehicle	3	2	6	55	na	0.0021	0.0128	0.70
Truck concrete, delivery, fuel	3	2	6	55	0.1348	0.31	1.85	101.66
Total							1.86	102.36
Source:					SCAQMD CEQA Table A-9-C-1, 5% local, 5% collector, 90% freeway *SCAQMD CEQA Table A9-9-C-1 (Major Street/Hwy)*	SCAQMD CEQA Guide Table A9-9-B-1 Passenger - 5% local st, 5% collector st, 90% freeway		