

APPENDIX M

Vehicle Emission Calculations

Appendix L - Table 1: Marsh Engine Emissions Per Site

	Engine # 1 54 Hp			Total Hrs	Total Engine #1	
	Emission Factor	Engine HP	Emissions		Emissions	Emissions
	(lb/hp-hr) (power output)		Lbs/hour		lbs	tons
NOx	0.03100	54.00	1.67	150	251.1	0.126
CO	0.00668	54.00	0.36	150	54.1	0.027
SO2	0.00205	54.00	0.11	150	16.6	0.008
PM10	0.00220	54.00	0.12	150	17.8	0.009
VOC	0.00247	54.00	0.13	150	20.0	0.010

	Engine # 2 54 Hp			Total Hrs	Total Engine #2	
	Emission Factor	Engine HP	Emissions		Emissions	Emissions
	(lb/hp-hr) (power output)		Lbs/hour		lbs	tons
NOx	0.03100	54.00	1.67	150	251.1	0.126
CO	0.00668	54.00	0.36	150	54.1	0.027
SO2	0.00205	54.00	0.11	150	16.6	0.008
PM10	0.00220	54.00	0.12	150	17.8	0.009
VOC	0.00247	54.00	0.13	150	20.0	0.010

	Engine # 3 118 Hp			Total Hrs	Total Engine #3	
	Emission Factor	Engine HP	Emissions		Emissions	Emissions
	(lb/hp-hr) (power output)		Lbs/hour		lbs	tons
NOx	0.03100	118.00	3.66	150	548.7	0.274
CO	0.00668	118.00	0.79	150	118.2	0.059
SO2	0.00205	118.00	0.24	150	36.3	0.018
PM10	0.00220	118.00	0.26	150	38.9	0.019
VOC	0.00247	118.00	0.29	150	43.7	0.022

	Engine # 4 190 Hp			Total Hrs	Total Engine #4	
	Emission Factor	Engine HP	Emissions		Emissions	Emissions
	(lb/hp-hr) (power output)		Lbs/hour		lbs	tons
NOx	0.03100	190.00	5.89	150	883.5	0.442
CO	0.00668	190.00	1.27	150	190.4	0.095
SO2	0.00205	190.00	0.39	150	58.4	0.029
PM10	0.00220	190.00	0.42	150	62.7	0.031
VOC	0.00247	190.00	0.47	150	70.4	0.035

	Engine # 5 320 Hp			Total Hrs	Total Engine #5	
	Emission Factor	Engine HP	Emissions		Emissions	Emissions
	(lb/hp-hr) (power output)		Lbs/hour		lbs	tons
NOx	0.03100	320.00	9.92	150	1488.0	0.744
CO	0.00668	320.00	2.14	150	320.6	0.160
SO2	0.00205	320.00	0.66	150	98.4	0.049
PM10	0.00220	320.00	0.70	150	105.6	0.053
VOC	0.00247	320.00	0.79	150	118.6	0.059

	Total Per Site	
	Emissions	Emissions
	lbs	tons
NOx	3422	1.711
CO	737	0.369
SO2	226	0.113
PM10	243	0.121
VOC	273	0.136

Table 1 - Marsh Engine Emissions Per Site: AP 42, Fifth Edition, Volume I Chapter 3: Stationary Internal Combustion Sources. Emission factors for uncontrolled gasoline and diesel industrial engines: <http://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>. Diesel Fuel (SCC 2-02-001-02, 2-03-001-01)

Table 2. Total Construction Emissions Estimated per Site for the Criteria Pollutants

All calculated PM₁₀ emissions were conservatively assumed to be PM_{2.5}.

Pollutant	Kobelco 70 SR Unit 1	Kobelco 70 SR Unit 2	Quality Dump Truck	Quality Ditcher	Piston Bully	Project Totals
	Tons	Tons	Tons	Tons	Tons	Tons
NOx	0.126	0.126	0.274	0.442	0.744	1.711
CO	0.027	0.027	0.059	0.095	0.160	0.369
SO ₂	0.008	0.008	0.018	0.029	0.049	0.113
PM _{2.5} *	0.009	0.009	0.019	0.031	0.053	0.121
VOC	0.010	0.010	0.022	0.035	0.059	0.136