

APPENDIX 5.1E

Construction Emissions and Impact Analysis

Construction Emissions and Impact Analysis

5.1E.1 Construction Phases

Construction of MMC is expected to last approximately 7 months. The construction will occur in the following four main phases:

- Site preparation;
- Foundation work;
- Construction/installation of major structures; and,
- Installation of major equipment.

The site is approximately 3.82 acres in size and is essentially flat. The site is currently used as a power generation site. The existing power blocks will be demolished by MMC as part of its re-powering plans. As such, the site will require only minimum grading and leveling prior to construction of the power blocks, support systems, and site buildings. Site preparation includes finish grading, excavation of footings and foundations, and backfilling operations. After site preparation is finished, the construction of the foundations and structures is expected to begin. Once the foundations and structures are finished, installation and assembly of the mechanical and electrical equipment are scheduled to commence.

Fugitive dust emissions from the construction of MMC will result from:

- Dust entrained during site preparation and finish grading/excavation at the construction site;
- Dust entrained during onsite travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations; and
- Wind erosion of areas disturbed during construction activities.

Combustion emissions during construction will result from:

- Exhaust from the Diesel construction equipment used for site preparation, grading, excavation, and construction of onsite structures;
- Exhaust from water trucks used to control construction dust emissions;
- Exhaust from Diesel-powered welding machines, electric generators, air compressors, and water pumps;
- Exhaust from pickup trucks and Diesel trucks used to transport workers and materials around the construction site;
- Exhaust from Diesel trucks used to deliver concrete, fuel, and construction supplies to the construction site; and,
- Exhaust from automobiles used by workers to commute to the construction site.

To determine the potential worst-case daily construction impacts, exhaust and dust emission rates have been evaluated for each source of emissions. Worst-case daily dust

emissions are expected to occur during the first 2 months of construction when site preparation occurs. The worst-case daily exhaust emissions are expected to occur during the middle of the construction schedule during the installation of the major mechanical equipment. Annual emissions are based on the average equipment mix during the 7-month construction period.

5.1E.2 Available Mitigation Measures

The following mitigation measures are proposed to control exhaust emissions from the Diesel heavy equipment used during construction of MMC:

- Operational measures, such as limiting time spent with the engine idling by shutting down equipment when not in use;
- Regular preventive maintenance to prevent emission increases due to engine problems;
- Use of low sulfur and low aromatic fuel meeting California standards for motor vehicle Diesel fuel; and
- Use of low-emitting gas and diesel engines meeting state and federal emissions standards (Tier I and II) for construction equipment, including, but not limited to catalytic converter systems and particulate filter systems.

The following mitigation measures are proposed to control fugitive dust emissions during construction of the project:

- Use either water application or chemical dust suppressant application to control dust emissions from on-site unpaved road travel and unpaved parking areas;
- Use vacuum sweeping and/or water flushing of paved road surface to remove buildup of loose material to control dust emissions from travel on the paved access road (including adjacent public streets impacted by construction activities) and paved parking areas;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard;
- Limit traffic speeds on all unpaved site areas to 5 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Use wheel washers or wash off tires of all trucks exiting construction site; and
- Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant.

5.1E.3 Estimation of Emissions with Mitigation Measures

Tables 5.1E-1 through 5.1E-3 show the estimated maximum daily and annual heavy equipment exhaust and fugitive dust emissions with recommended mitigation measures. Detailed emission calculations are included in Table 5.1E-5.

TABLE 5.1E-1 MAXIMUM DAILY EMISSIONS DURING CONSTRUCTION (FUGITIVE DUST), POUNDS PER DAY

	NO _x	CO	VOC	SO _x	PM ₁₀	PM _{2.5}
Onsite						
Construction Fugitive Dust	0	0	0	0	6.1	1.3
Offsite						
Worker Travel, Truck/Rail Deliveries	0	0	0	0	4.11	0.09
Total =	0	0	0	0	10.2	1.4

TABLE 5.1E-2 MAXIMUM DAILY EMISSIONS DURING CONSTRUCTION (EXHAUST EMISSIONS), POUNDS PER DAY

	NO _x	CO	VOC	SO _x	PM ₁₀	PM _{2.5}
Onsite and Offsite						
Construction Equipment, Worker Travel, Truck/Rail Deliveries	39.3	44.9	7.2	8.3	2.18	2.01
Total =	39.3	44.9	7.2	8.3	2.2	2.0

TABLE 5.1E-3 ANNUAL EMISSIONS DURING CONSTRUCTION, TONS PER CONSTRUCTION PERIOD (7-8 MONTHS)

	NO _x	CO	VOC	SO _x	PM ₁₀	PM _{2.5}
Onsite and Offsite						
Construction Equipment, Fugitive Dust, Worker Travel, Truck/Rail Deliveries	2.6	3.3	0.55	0.60	0.56	0.20
Total =	2.6	3.3	0.55	0.60	0.56	0.20
Construction Period Total Emissions (including offsite linears)	2.6	3.3	0.55	0.60	0.56	0.20
Total Construction Period =	2.6	3.3	0.55	0.60	0.56	0.20

5.1E.4 Analysis of Ambient Impacts from Facility Construction

Ambient air quality impacts from emissions during the construction of MMC were estimated using an air quality dispersion modeling analysis. The modeling analysis considers the construction site location, the surrounding topography, and the sources of emissions during construction, including vehicle and equipment exhaust emissions and fugitive dust.

5.1E.4.1 Existing Ambient Levels

As with the modeling analysis of project operating impacts (Section 5.1.6), monitoring stations delineated in Section 5.1.6 were used to establish the ambient background levels for the construction impact modeling analysis. Table 5.1-20 showed the maximum concentrations of NO_x, SO₂, CO and PM₁₀ recorded for 2003 through 2005 at those monitoring stations.

5.1E.4.2 Dispersion Model

As in the analysis of project operating impacts, the USEPA-approved AERMOD model was used to estimate ambient impacts from construction activities. A detailed discussion of the AERMOD dispersion model is included elsewhere.

The emission sources for the construction site were grouped into two categories: exhaust emissions and dust emissions. Exhaust emissions were modeled as 10' high point sources placed at regular 20-meter intervals around the construction site. Dust emissions were modeled as an area source with an effective plume height of 0.5 meters that covered the total area of the construction site. The construction impacts modeling analysis used the same receptor locations as used for the project operating impact analysis. A detailed discussion of the receptor locations is included in Section 5.1.6.

To determine the construction impacts on short-term ambient standards (24 hours and less), the worst-case daily onsite construction emission levels shown in Tables 5.1E-1 and 5.1E-2 were used. For pollutants with annual average ambient standards, the annual onsite emission levels shown in Table 5.1E-3 were used. The same meteorological data and modeling options used in the project operating impact analysis was used for the construction emission impacts analysis.

5.1E.4.3 Modeling Results

Based on the emission rates of NO_x, SO₂, CO, and PM₁₀ and the meteorological data, the ISCST3 model calculates hourly and annual ambient impacts for each pollutant. As mentioned above, the modeled 1-hour, 3-hour 8-hour, and 24-hour ambient impacts are based on the worst-case daily emission rates of NO_x, SO₂, CO, and PM₁₀. The annual impacts are based on the annual emission rates of these pollutants.

The one-hour and annual average concentrations of NO₂ were computed following the revised USEPA guidance for computing these concentrations (August 9, 1995 Federal Register, 60 FR 40465). The annual average NO₂ concentration was calculated using the ambient ratio method (ARM) with the national default value of 0.75 for the annual average NO₂/NO_x ratio. The one-hour NO₂ concentration was calculated using the ozone limiting method (OLM) with a maximum 1-hour background ozone concentration of 0.100 ppm.

The modeling analysis results are shown in Table 5.1E-4. Also included in the table are the maximum background levels that have occurred in the last three years and the resulting total ambient impacts. As shown in Table 5.1E-4, maximum-modeled construction impacts alone for all modeled pollutants are expected to be below the most stringent state and national standards except for the 24-hour state standard for PM₁₀. In addition, maximum modeled construction impacts plus maximum background concentrations are less than all state and federal standards except the 24-hour and annual state standards for PM₁₀ and the annual state standard for PM_{2.5}. However, it must be noted that the state PM₁₀ and PM_{2.5}

standards are already exceeded by background concentrations even in the absence of the construction emission impacts for MMC.

TABLE 5.1E-4 MODELED MAXIMUM CONSTRUCTION IMPACTS

Pollutant	Averaging Time	Maximum Construction Impacts (µg/m ³)	Background (µg/m ³)	Total Impact (µg/m ³)	State Standard (µg/m ³)	Federal Standard (µg/m ³)
NO ₂ ^a	1-hour	62	192	254	470	-
	Annual	1.2	34	35.2	56	100
SO ₂	1-hour	15	110	125	650	-
	3-hour	10	55	65	-	1300
	24-hour	2.1	39	41	109	365
	Annual	0.4	11	11.4	-	80
CO	1-hour	26	7,886	7,912	23,000	40,000
	8-hour	7.7	6,000	6,008	10,000	10,000
PM ₁₀	24-hour	83	65	148	50	150
	Annual ^b	1.5	27	28.5	20	-
PM _{2.5}	24-hour	18	41	59	-	65
	Annual ^b	0.4	14	14.4	12	15

Notes:

^aARM applied for annual average, using national default 0.75 ratio. OLM applied for 1-hour average, using maximum background ozone concentration of 0.100 ppm.

^bAnnual Arithmetic Mean.

^cBased on maximum daily emissions.

^dBased on maximum daily emissions.

The AERMOD model over predicts construction emission impacts due to the cold plume (i.e., ambient temperature) effect of dust emissions. Most of the plume dispersion characteristics in the AERMOD model are derived from observations of hot plumes associated with typical smoke stacks. The AERMOD model does compensate for plume temperature; however, for ambient temperature plumes the model assumes negligible buoyancy and dispersion. In addition, deposition of particulate matter was not considered in the AERMOD construction modeling analysis. Consequently, the modeled ambient particulate matter concentrations in cold plumes remain high even at significant distances from a source. Modeled MMC construction site impacts are not unusual in comparison to modeling results obtained for most construction sites; however, actual ambient concentrations at construction sites that use good dust suppression techniques and low-emitting vehicles typically do not cause violations of air quality standards. The input and output modeling files are being provided electronically.

**Attachment 5.1E-1
Detailed Emission Calculations**

Table 5.1E-5 Construction Emissions Calculations (total of 8 pages)

Construction Emission Totals

Table 5.1E-5

Construction Activity	lbs/day							tons per const period						tons per year					
	NOx	CO	VOC	SOx	PM10	PM2.5	NOx	CO	VOC	SOx	PM10	PM2.5	NOx	CO	VOC	SOx	PM10	PM2.5	
<i>Main Site</i>																			
Construction Equipment	33.5	14.0	4.0	8.3	1.83	1.79	2.2	0.9	0.30	0.60	0.10	0.10	3.8	1.5	0.5	1.0	0.2	0.2	
Construction Dust	0.000	0.000	0.000	0.000	6.10	3.70	0.000	0.000	0.000	0.000	0.10	0.02	0.0	0.0	0.0	0.0	0.2	0.0	
Site Delivery	2.68	0.77	0.19	0.003	0.12	0.11	0.21	0.06	0.01	0.000	0.009	0.008	0.4	0.1	0.0	0.0	0.0	0.0	
Site Support	0.792	6.960	0.660	0.006	0.053	0.049	0.060	0.540	0.051	0.001	0.004	0.004							
Worker Travel	2.30	23.2	2.40	0.018	0.18	0.16	0.18	1.78	0.19	0.001	0.014	0.013	0.3	3.1	0.3	0.0	0.0	0.0	
Paved Roads	0.000	0.000	0.000	0.000	4.11	0.090	0.000	0.000	0.000	0.000	0.32	0.05	0.0	0.0	0.0	0.0	0.5	0.1	
Laydown Area(s)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
Unpaved Roads	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
Wind Blown Dust	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Linears</i>																			
Gas Line	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
Sewer Line	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
Water Line	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
Transmission Line	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	39.3	44.9	7.2	8.3	12.4	5.9	2.6	3.3	0.55	0.60	0.54	0.19	4.4	4.7	0.86	1.03	0.92	0.32	
					DPM =	1.92					DPM =	0.11					DPM =	0.1	
Total Const Months:	7																		
Total Const Years:	0.58																		

DPM is diesel particulate matter. DPM totals include only site and linear const equipment emissions.

CONSTRUCTION PHASE EMISSIONS

Equipment Exhaust

Project:

MMC

Projected Construction Year(s):

2007

Equip. Type	Avg # on Site	Avg. HP	Fuel Type	Avg. Load Factor %	Load Adj HP	Avg. Daily Equip. Op. Hours	Equipment Category	Estimated Avg Days on Site	Load Adjusted Construction		
									Hourly HP/Hrs	Daily HP/Hrs	Period HP/HRs
		(a)	(b)	(c)		(d)	(e)	(f)			
Bore/Drill Rigs/Pile Drivers	0	209	D	75.0	157	0	0.00	0	0	0	0
Cement Mixers	0	11	D	56.0	6	0	0.00	0	0	0	0
Industrial/Concrete Saws	0	56	D	73.0	41	0	0.00	0	0	0	0
Cranes	0	194	D	43.0	83	0	0.00	0	0	0	0
Crawler Tractors/Dozers	1	103	D	59.0	61	8	8.00	88	61	486	42782
Crushing/Processing Eq.	0	127	D	78.0	99	0	0.00	0	0	0	0
Dump and Tender Trucks	1	150	D	38.0	57	5	5.00	132	57	285	37620
Excavators	2.3	152	D	58.0	88	8	18.40	110	203	1622	178436
Forklifts/Aerial Lifts/Booms	4.14	83	D	50.5	42	8	33.12	154	174	1388	213787
Generators/Compressors	4	50	D	74.0	37	10	40.00	154	148	1480	227920
Graders	0	157	D	57.5	90	0	0.00	0	0	0	0
Off Highway Tractors	0	69	D	46.5	32	0	0.00	0	0	0	0
Off Highway Trucks	1.71	489	D	41.0	200	5	8.55	132	343	1714	226273
Other Const. Eq.	0	161	D	62.0	100	0	0.00	0	0	0	0
Pavers	0.26	99	D	53.0	52	6	1.56	44	14	82	3602
Paving Eq./Surfacing Eq.	0	91	D	59.0	54	0	0.00	0	0	0	0
Plate Compactors	4.7	8	D	43.0	3	6	28.20	132	16	97	12805
Rollers/Compactors	1	99	D	57.5	57	8	8.00	132	57	455	60113
Rough Terrain Forklifts	1.86	93	D	47.5	44	0	0.00	154	82	0	0
Rubber Tired Dozers	0	356	D	59.0	210	0	0.00	0	0	0	0
Rubber Tired Loaders	0	147	D	54.0	79	0	0.00	0	0	0	0
Scrapers	0	267	D	66.0	176	0	0.00	0	0	0	0
Signal Boards/Light Sets	0	15	D	82.0	12	0	0.00	0	0	0	0
Skid Steer Loaders	0	40	D	51.5	21	0	0.00	0	0	0	0
Tractors/Loaders/Backhoes	0	79	D	46.5	37	0	0.00	0	0	0	0
Trenchers	0	60	D	69.5	42	0	0.00	0	0	0	0
Welders	3.43	50	D	45.0	23	8	27.44	154	77	617	95080
Utility Trucks (gas or diesel)	see site delivery and support sheet calcs										

Fuel Use Rates: 0.05 gal/hp-hr

Ref: SCAQMD, PR XXI, Staff Report, 3-15-95

Estimated Project Equip Fuel Use Rates

	Gals	mGals
Hr:	62	0.062
Day:	411	0.411
Period:	54921	54.921

- (a) Ref: South Coast AQMD-CEQA Handbook, Table A9-8-C.
- (b) D=diesel, G=gasoline
- (c) Ref: NTIS PB92-126960, EPA 460/3-91-02, EPA 21A-2001, and SCAQMD CEQA Manual, Table A9-8-D.
- (d) Per construction engineering estimate.
- (e) Estimated daily hours for this equipment/operation category.
- (f) Total estimated days on site from construction schedule for this equipment category.

EMISSIONS FACTORS (g)

Composite Emissions Factors (h)

Equip.	lbs/hp-hr	g/hp-hr								
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Type	HP	CO	VOC	NOx	SOx	PM10					
Bore/Drill Rigs/Pile Drivers	209	0.002	0.9	0.0003	0.1	0.0053	2.4	0.0014	0.6	0.0002	0.1
Cement Mixers	11	0.0023	1.0	0.0005	0.2	0.0038	1.7	0	0.0	0.0003	0.1
Industrial/Concrete Saws	56	0.0049	2.2	0.0013	0.6	0.0084	3.8	0.0014	0.6	0.0008	0.4
Cranes	194	0.0012	0.5	0.0003	0.1	0.0033	1.5	0.0006	0.3	0.0002	0.1
Crawler Tractors/Dozers	103	0.0021	0.0	0.0005	0.2	0.0049	2.2	0.0008	0.4	0.0003	0.1
Crushing/Processing Eq.	127	0.0028	1.3	0.0007	0.3	0.0057	2.6	0.0009	0.4	0.0004	0.2
Dump and Tender Trucks	150	0.0018	0.8	0.001	0.5	0.0031	1.4	0.001	0.5	0.0001	0.0
Excavators	152	0.0018	0.8	0.0004	0.2	0.0043	2.0	0.0009	0.4	0.0002	0.1
Forklifts/Aerial Lifts/Booms	83	0.0012	0.5	0.0004	0.2	0.0021	1.0	0.001	0.5	0.0002	0.1
Generators/Compressors	50	0.0014	0.6	0.0004	0.2	0.0028	1.3	0.001	0.5	0.0002	0.1
Graders	157	0.0018	0.8	0.0004	0.2	0.0047	2.1	0.0009	0.4	0.0002	0.1
Off Highway Tractors	69	0.0021	1.0	0.0005	0.2	0.006	2.7	0.001	0.5	0.0003	0.1
Off Highway Trucks	489	0.0015	0.7	0.0004	0.2	0.0065	2.9	0.0012	0.5	0.0002	0.1
Other Const. Eq.	161	0.0038	1.7	0.0008	0.4	0.0094	4.3	0.0015	0.7	0.0004	0.2
Pavers	99	0.0023	1.0	0.0005	0.2	0.0043	2.0	0.0009	0.4	0.0003	0.1
Paving Eq./Surfacing Eq.	91	0.0033	1.5	0.0009	0.4	0.0073	3.3	0.0012	0.5	0.0005	0.2
Plate Compactors	8	0.0017	0.8	0.0006	0.3	0.0026	1.2	0.001	0.5	0.0001	0.0
Rollers/Compactors	99	0.0022	1.0	0.0005	0.2	0.0043	2.0	0.0009	0.4	0.0003	0.1
Rough Terrain Forklifts	93	0.002	0.9	0.0005	0.2	0.0037	1.7	0.0007	0.3	0.0003	0.1
Rubber Tired Dozers	356	0.0024	1.1	0.0005	0.2	0.0067	3.0	0.0011	0.5	0.0003	0.1
Rubber Tired Loaders	147	0.0016	0.7	0.0004	0.2	0.0042	1.9	0.0008	0.4	0.0002	0.1
Scrapers	267	0.0023	1.0	0.0006	0.3	0.0079	3.6	0.0014	0.6	0.0003	0.1
Signal Boards/Light Sets	15	0.0008	0.4	0.0002	0.1	0.0015	0.7	0.0002	0.1	0.0001	0.0
Skid Steer Loaders	40	0.0031	1.4	0.0007	0.3	0.0044	2.0	0.001	0.5	0.0004	0.2
Tractors/Loaders/Backhoes	79	0.0034	1.5	0.001	0.5	0.0066	3.0	0.0009	0.4	0.0007	0.3
Trenchers	60	0.0015	0.7	0.0004	0.2	0.0025	1.1	0.0005	0.2	0.0002	0.1
Welders	50	0.003	1.4	0.001	0.5	0.0041	1.9	0.001	0.5	0.0004	0.2

(g) SCAQMD off-road emissions factor database, website, October 2006.

(h) EFs are for inventory year 2007.

Equip. Type	Construction Equipment Exhaust Emissions														
	lbs/hr	CO lbs/day	tons*	lbs/hr	VOC lbs/day	tons*	lbs/hr	NOx lbs/day	tons*	lbs/hr	SOx lbs/day	tons*	lbs/hr	PM10 lbs/day	tons*
Bore/Drill Rigs/Pile Drivers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cement Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial/Concrete Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crawler Tractors/Dozers	0.13	1.02	0.04	0.03	0.24	0.01	0.30	2.38	0.10	0.05	0.39	0.02	0.02	0.15	0.01
Crushing/Processing Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump and Tender Trucks	0.10	0.51	0.03	0.06	0.29	0.02	0.18	0.88	0.06	0.06	0.29	0.02	0.01	0.03	0.00
Excavators	0.36	2.92	0.16	0.08	0.65	0.04	0.87	6.98	0.38	0.18	1.46	0.08	0.04	0.32	0.02
Forklifts/Aerial Lifts/Booms	0.21	1.67	0.13	0.07	0.56	0.04	0.36	2.92	0.22	0.17	1.39	0.11	0.03	0.28	0.02
Generators/Compressors	0.21	2.07	0.16	0.06	0.59	0.05	0.41	4.14	0.32	0.15	1.48	0.11	0.03	0.30	0.02
Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Highway Trucks	0.51	2.57	0.17	0.14	0.69	0.05	2.23	11.14	0.74	0.41	2.06	0.14	0.07	0.34	0.02
Other Const. Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavers	0.03	0.19	0.00	0.01	0.04	0.00	0.06	0.35	0.01	0.01	0.07	0.00	0.00	0.02	0.00
Paving Eq./Surfacing Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.03	0.16	0.01	0.01	0.06	0.00	0.04	0.25	0.02	0.02	0.10	0.01	0.00	0.01	0.00
Rollers/Compactors	0.13	1.00	0.07	0.03	0.23	0.02	0.24	1.96	0.13	0.05	0.41	0.03	0.02	0.14	0.01
Rough Terrain Forklifts	0.16	0.00	0.00	0.04	0.00	0.00	0.30	0.00	0.00	0.06	0.00	0.00	0.02	0.00	0.00
Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Signal Boards/Light Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welders	0.23	1.85	0.14	0.08	0.62	0.05	0.32	2.53	0.19	0.08	0.62	0.05	0.03	0.25	0.02

Totals	2.1 lbs/hr	CO 14.0 lbs/day	0.9 tons*	0.6 lbs/hr	VOC 4.0 lbs/day	0.3 tons*	5.3 lbs/hr	NOx 33.5 lbs/day	2.2 tons*	1.2 lbs/hr	SOx 8.3 lbs/day	0.6 tons*	0.3 lbs/hr	PM10 1.83 lbs/day	0.12 tons*
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*tons = tons emitted during construction phase

CARB-CEIDARS, Summary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 92% of PM10 : Diesel Vehicle Exhaust

CO2 EF: CCAR General Protocol, June 2006, for CA-Low Sulfur Diesel combustion.

CO2 603 tons per const period

PM2.5 = 1.69 0.11

CONSTRUCTION PHASE-Main Project Site Fugitive Dust Emissions

MRI Level 2 Analysis

Total Site Acreage:	3.82	Avg Acres Subject to Construction Activity/Month:	3.82	Type	PM10 Control Techniques *	
Emission Factor:	0.0144	tons/acre/month of activity PM10 Uncontrolled (MRI Level 2 Adjusted Analysis Factor)		Watering	Used	Avg. % PM10 Reduction
	0.055	tons per const month (uncontrolled) PM10		Surface Sealant	Yes	70
	0.385	tons per const period (uncontrolled) PM10		Dust Suppressant	No	0
	0.039	ton per const period Controlled PM10 =	0.006 tons/month PM10	Speed Control	No	0
	0.008	ton per const period Controlled PM2.5 =	0.001 tons/month PM2.5		Yes	20
Activity Levels						
Hrs/Day:	10		0.50 lbs/day PM10 controlled			
Days/Wk:	5		0.11 lbs/day PM2.5 controlled		% Control:	90
Day/Month:	22	Cut and Fill Activity:	1 total months		Release Factor:	0.10
Worst Case Month:	2	Total Cut and Fill:	20840 cu.yds. Avg month			
Annual Const Hours:	2640		20.84 10^3 cu.yds. Avg month		* Control techniques are additive.	
Total Construction Hrs:	1540	MRI Ef:	0.059 tons/10^3 cu.yds. uncontrolled		Per SCAQMD CEQA Manual, 11/93.	
			1.23 tons PM10 month uncontrolled			
Total Const Period:	7 months	Control Technique:	Watering and speed control			
		Control Factor, %	95			
		Cut/Fill	0.061 tons/month PM10 controlled =	0.061 tons/const period	Totals (Activity+Cut/Fill)	0.100 tons/period PM10
			0.013 tons/month PM2.5 controlled =	0.013 tons/const period		0.021 tons/period PM2.5
			5.59 lbs/day PM10 controlled			6.09 lbs/day PM10
			1.17 lbs/day PM2.5 controlled			1.28 lbs/day PM2.5

Months 1 - 3 will be worst case construction emissions months. After month 3, construction related dust emissions will be well below the max daily and max monthly values calculated above, probably on the order of less than 30% of the maximum values.

Ref: MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.
 MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity. For a monthly activity rate of approx 220 hours, the adjusted factor would be 0.0144 tons/acre/month.
 SCAQMD CEQA Manual: watering twice daily yields 50% reduction, watering three times daily yields 65% reduction, Table 11-4, 11/93.
 Typical watering schedule for MMC activities is 3 times per day.
 *** Although not all of the site area will be disturbed on any one work day, due to the size of this site, the worst case assumption was made that at least 100% of the construction area would be disturbed over the entire construction period. Acreage does not include access roads which are paved.
 CARB-CEIDARS, Statewide Summary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 21% of PM10 : Construction Dust
 Cut and fill value is for the main power block area portion of the site.

CONSTRUCTION PHASE-Laydown Area Fugitive Dust Emissions

MRI Level 2 Analysis

Total Site Acreage:	0	Laydown area acreage subject to vehicle movement activity:	0
Emission Factor:	0.011	tons/acre/month of activity PM10 Uncontrolled (MRI Level 2 Adjusted Analysis Factor)	
	0.000	tons per const month (uncontrolled) PM10	
	0.000	tons per const period (uncontrolled) PM10	
	0.000	ton per const period Controlled PM10 =	0.00 tons/month PM10
	0.000	ton per const period Controlled PM2.5 =	0.00 tons/month PM2.5
Activity Levels			
Hrs/Day:	10		0.00 lbs/day PM10 controlled
Days/Wk:	5		0.00 lbs/day PM2.5 controlled
Day/Month:	22		
Worst Case Month:	2		
Annual Const Hours:	2640		
Total Construction Hrs:	1540		
Total Const Period:	7	months	

Type	PM10 Control Techniques *	
	Used	Avg. % PM10 Reduction
Watering	No	0
Surface Sealant	No	0
Dust Suppressant	No	0
Gravel Access Roads	No	0
	% Control:	0
	Release Factor:	1

* Control techniques are additive.
Per SCAQMD CEQA Manual, 11/93.

Emissions from the laydown area will consist primarily of vehicle movement generated fugitives during the unloading and loading of project supplies to and from the laydown area. Only a small portion of the laydown area will experience vehicle movement on a daily basis.

Ref: MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.
MRI Report factor of 0.0144 tons/acre/month (uncontrolled) is assumed for the laydown area.
The laydown area vehicle lanes will most likely be gravelled and water will be used to enhance dust control.
SCAQMD CEQA Manual: watering twice daily yields 50% reduction, watering three times daily yields 65% reduction, Table 11-4, 11/93.
Typical watering schedule for MMC laydown area activities is 3 times per day.

CARB-CEIDARS, Summary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 21% of PM10 : Construction Dust

CONSTRUCTION PHASE - Truck Delivery and Site Support Vehicle Emissions

Avg # deliveries/day:	4.0		Emissions Factors (lbs/vmt)					
Avg Haul Distance (miles)	20	see note below	NOx	CO	VOC	SOx	PM10	
VMT/Day:	80.0		0.03351	0.009634	0.002315	0.0000377	0.001433	Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006
Work days/yr:	264		Daily Emissions (lbs)					On-Road Heavy Duty Diesels (1965-2007)
Total Const Work Days:	154		NOx	CO	VOC	SOx	PM10	PM2.5
Total # of Deliveries:	616		2.681	0.771	0.185	0.003	0.115	0.105
			Tons per Const Period					
			0.206	0.059	0.014	0.000	0.009	0.008

Site Support Vehicle Emissions

Total # of vehicles:	12		NOx	CO	VOC	SOx	PM10		PM2.5	
# of Pickups (gas):	12		0.00132	0.0116	0.0011	0.0000104	0.000088	lbs/vmt*	gasoline	
# of Pickups (diesel):	0		0.000053	0.0000207	0.0000029	0	0.0000029	lbs/vmt*	diesel	
Avg. pickup daily vmt:	50		0.7920	6.9600	0.6600	0.0062	0.0528	lbs/day	gasoline	0.049104
Total Gas VMT:	600		0.0000	0.0000	0.0000	0.0000	0.0000	lbs/day	diesel	0.0000
Total Diesel VMT:	0									
			0.0610	0.5359	0.0508	0.0005	0.0041	tons/period	gasoline	0.0038
			0.0000	0.0000	0.0000	0.0000	0.0000	tons/period	diesel	0.0000

Avg haul distance: one way distance from site to San Diego port area.
 These trucks will not be dedicated to the site, so backhaul distances are not included.
 Total deliveries for construction period = 616, from construction schedule data.

CARB EMFAC 2007 Summaries
 Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006
 On Road Vehicles (1965-2007)

CARB-CEIDARS, Summary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 92% of PM10 for Diesel Exhaust, and 93% for Gasoline Vehicles.

It should be noted that these emissions are not necessarily new emissions to the regional air shed. A significant portion of the truck services will be derived from the existing regional truck services vehicle pool, and as such these truck emissions would most likely be involved in deliveries in the area regardless of whether or not the proposed facility is constructed. As such, a major portion of the above estimated emissions would not be considered as additions to the air shed.

CONSTRUCTION PHASE - Unpaved Road Travel

Acres used for unpaved access roads:	0	Assumed roadway width (ft):	0	PM10 Control Techniques*	
Calculated length of unpaved road(s):	#DIV/0! miles	Avg travel distance on unpaved road (miles):	0	Used	Avg. % PM10 Reduction
Average daily traffic on road segment:	0 vehicles per day				
EF for PM10:	0 lbs/VMT			Watering	No 0
Road or surface material silt content:	0 %			Surface Sealant	No 0
	0 fraction			Dust Suppressant	No 0
Average vehicle weight using road:	0 tons			Speed Control	No 0
Days per year with >=0.01 in. rain:	0				
Avg surface material moisture content:	0 %				
	0 fraction			% Control:	0
Adjusted VMT per day:	0			Release Factor:	1
Int calc 1	0.00	Uncontrolled PM10 Emissions:	0.00 lbs/day	* Control techniques are additive.	
Int calc 2	0.00	PM2.5 Emissions:	0.00 lbs/day	Per SCAQMD CEQA Manual, 11/93.	
Int calc 3	1.00	Controlled PM10 Emissions:	0.00 lbs/day		
E final, lbs/VMT	0.00	PM2.5 Emissions:	0.00 lbs/day		
PM10	PM2.5	Total Construction Days:	0		
		Controlled PM10 Emissions:	0.00 tons per construction period		
		PM2.5 Emissions:	0.00 tons per construction period		

USEPA, AP-42, Section 13.2.2, draft dated 3-22-06.

Per SCAQMD CEQA Manual, watering 3 or more times per day yields 65% reduction.

There are no unpaved roads on site proposed for long term or permanent use. Construction fugitive emissions account for dust from equipment travel on site during the earthmoving and construction activities.

CONSTRUCTION PHASE - Worker Travel - Emissions

Max # of Workers/Day:	160	Month 5						
Avg # of Workers/Day:	120		Emissions Factors (lbs/VMT)					
Avg Occupancy/Vehicle:	1.15		NOx	CO	VOC	SOx	PM10	Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006
Round Trips/Day:	104		0.0011	0.0111	0.00115	0.0000088	0.000084	On Road Vehicles
Avg Roundtrip Distance:	20	miles						LDP/LDT Weighted Avg Efs
VMT/Day:	2087		Avg. Daily Emissions (lbs)					
VMT/Year:	550957		NOx	CO	VOC	SOx	PM10	PM2.5
VMT/Const Period:	321391		2.296	23.165	2.400	0.018	0.175	0.163
Total Const Days:	154		Tons per Const Period					
			0.1768	1.7837	0.1848	0.0014	0.0135	0.0126

It should be noted that these emissions are not necessarily new emissions to the regional air shed. A significant portion of the workers will be derived from the existing work force pool in the urban regional area, and as such these workers would most likely be involved in projects in the area regardless of whether or not the proposed facility is constructed. As such, a major portion of the above estimated emissions would not be considered as additions to the air shed.

CONSTRUCTION PHASE - Paved Road Travel - Particulate Emissions Including Trackout Emissions

Paved Road Length (miles):	0.038	estimated roundtrip distance			
Daily # of Vehicles:	10				
Avg Vehicle Weight (tons):	35		PM10	PM2.5	
Total Unadjusted VMT/day	0.4		0.351	0.351	
Particle Size Multipliers	PM10	PM2.5	39.849	39.849	
lb/VMT	0.016	0.0024	0.224	0.033	lb/VMT
C factor, lb/VMT	0.00047	0.00036	0.045	0.007	tons/month
Road Sfc Silt Loading (g/m ²):	0.4		0.316	0.047	tons/const period
# of Active Trackout Points:	1		4.11	0.09	lbs/day
Added Trackout Miles:	PM10	PM2.5			
Trackout VMT/day:	60	30			
Final Adjusted VMT/day	60	30			
Final Adjusted VMT/month	1328	668			
Control Applied to Trackout:	Sweeping and Cleaning (Water washing)				
Control Efficiency, %	70	0.7	Release Factor =	0.3	
Total Const Days:	154				

EPA, AP-42, Section 13.2.1, draft dated 3-22-06. Silt load factor from Table 13.2.1-3.
 Silt factor reduced to 0.4 due to road data and controls proposed.
 Main site access route is Main Street., with trackout affecting 100 ft from site access entrance in each direction.

LINEAR CONSTRUCTION ELEMENTS

Project: **MMC**

Natural Gas Pipeline

Equip	Rating	Units	Load Factor	# Units	Hrs/day	# Days	Emissions Factors (lbs/hp-hr)					Calc 1	Emissions (lbs/Period)				
							NOx	CO	VOC	SOx	PM10		NOx	CO	VOC	SOx	PM10
Tractors	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Loaders	147	hp	0.54	0	0	0	0.0042	0.0016	0.0004	0.0008	0.0002	0	0.00	0.00	0.00	0.00	0.00
Backhoes	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Forklifts	83	hp	0.505	0	0	0	0.0021	0.0012	0.0004	0.001	0.0002	0	0.00	0.00	0.00	0.00	0.00
Excavators	152	hp	0.58	0	0	0	0.0043	0.0018	0.0004	0.0009	0.0002	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total													0.00	0.00	0.00	0.00	0.00

Total Const Days: **0.01** Input 0.01 if no gas line construction required.
 Total Construction Period Emissions (lbs): 0.00 0.00 0.00 0.00 0.00
 Total Construction Period Emissions (tons): 0.00 0.00 0.00 0.00 0.00
 Avg lbs/day: 0.0 0.0 0.0 0.0 0.0

Fugitive Dust Emissions

Avg Activity Values	Process		PM10 EF	Control %	PM10 Emissions lbs/day	Construction Data:	
	Rate	Units				Length ft	Corridor Width ft
Sfc Area Impacted	0	ft2/day	0.000025	65	0.000	0	0
Trenching	0	yd3/day	0.0018	0	0.000	0	0
BackFill	0	yd3/day	0.0018	0	0.000	0	0
Grading	0	VMT/day	0.2754	0	0.000	0	0
Unpaved Sfc Travel							
Water Trk	0	VMT/day	0.1522	65	0.000		
Delivery Trk	0	VMT/day	0.1589	65	0.000		
Total:					0.00 lbs/day PM10		
					0.00 lbs/day PM2.5		
					0.00 lbs PM10/const period =	0.000	tons PM10/const period
					0.00 lbs PM2.5/const period =	0.000	tons PM2.5/const period

LINEAR CONSTRUCTION ELEMENTS

Project: **MMC**

Sewer Line

Equip	Rating	Units	Load Factor	# Units	Hrs/day	# Days	Emissions Factors (lbs/hp-hr)					Calc 1	Emissions (lbs/Period)				
							NOx	CO	VOC	SOx	PM10		NOx	CO	VOC	SOx	PM10
Tractors	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Loaders	147	hp	0.54	0	0	0	0.0042	0.0016	0.0004	0.0008	0.0002	0	0.00	0.00	0.00	0.00	0.00
Backhoes	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Forklifts	83	hp	0.505	0	0	0	0.0021	0.0012	0.0004	0.001	0.0002	0	0.00	0.00	0.00	0.00	0.00
Excavators	152	hp	0.58	0	0	0	0.0043	0.0018	0.0004	0.0009	0.0002	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total													0.00	0.00	0.00	0.00	0.00

Total Const Days: **0.01** Input 0.01 if no sewer line construction required.
 Total Construction Period Emissions (lbs): 0.00 0.00 0.00 0.00 0.00
 Total Construction Period Emissions (tons): 0.00 0.00 0.00 0.00 0.00
 Avg lbs/day: 0.0 0.0 0.0 0.0 0.0

Fugitive Dust Emissions

Avg Activity Values	Process Rate	Units	PM10 EF	Control %	PM10 Emissions lbs/day	Construction Data:	
						Length ft	Width ft
Sfc Area Impacted	0	ft2/day	0.000025	65	0.000	0	0
Trenching	0	yd3/day	0.0018	0	0.000	0	0
BackFill	0	yd3/day	0.0018	0	0.000	0	0
Grading	0	VMT/day	0.2754	0	0.000	0	0
Unpaved Sfc Travel							
Water Trk	0	VMT/day	0.1522	65	0.000		
Delivery Trk	0	VMT/day	0.1589	65	0.000		
Total:					0.00	lbs/day PM10	
					0.00	lbs/day PM2.5	
					0.00	lbs PM10/const period =	0.000 tons PM10/const period
					0.00	lbs PM2.5/const period =	0.000 tons PM2.5/const period

LINEAR CONSTRUCTION ELEMENTS

Project: **MMC**

Transmission Line

Equip	Rating	Units	Load Factor	# Units	Hrs/day	# Days	Emissions Factors (lbs/hp-hr)					Calc 1	Emissions (lbs/Period)				
							NOx	CO	VOC	SOx	PM10		NOx	CO	VOC	SOx	PM10
*	0	hp	0	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0.0042	0.0016	0.0004	0.0008	0.0002	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0.0021	0.0012	0.0004	0.001	0.0002	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0.0043	0.0018	0.0004	0.0009	0.0002	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*	0	hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total												0.00	0.00	0.00	0.00	0.00	

Total Const Days: **0.01** Input 0.01 if no trans line construction required.
 Total Construction Period Emissions (lbs): 0.00 0.00 0.00 0.00 0.00
 Total Construction Period Emissions (tons): 0.00 0.00 0.00 0.00 0.00
 Avg lbs/day: 0.0 0.0 0.0 0.0 0.0

Fugitive Dust Emissions

Avg Activity Values	Process Rate	Units	PM10 EF	Control %	PM10 Emissions lbs/day	Construction Data:	
						Length ft	Corridor Width ft
Sfc Area Impacted	0	ft2/day	0.000025	65	0.000	0	0
Trenching	0	yd3/day	0.0018	0	0.000	0	0
BackFill	0	yd3/day	0.0018	0	0.000	0	0
Grading	0	VMT/day	0.2754	0	0.000	0	0
Unpaved Sfc Travel							
Water Trk	0	VMT/day	0.1522	65	0.000		
Delivery Trk	0	VMT/day	0.1589	65	0.000		
Total:					0.00	lbs/day PM10	
					0.00	lbs/day PM2.5	
					0.00	lbs PM10/const period =	0.000 tons PM10/const period
					0.00	lbs PM2.5/const period =	0.000 tons PM2.5/const period

LINEAR CONSTRUCTION ELEMENTS

Project: **MMC**

Water Line

Equip	Rating	Units	Load Factor	# Units	Hrs/day	# Days	Emissions Factors (lbs/hp-hr)					Calc 1	Emissions (lbs/Period)				
							NOx	CO	VOC	SOx	PM10		NOx	CO	VOC	SOx	PM10
Tractors	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Loaders	147	hp	0.54	0	0	0	0.0042	0.0016	0.0004	0.0008	0.0002	0	0.00	0.00	0.00	0.00	0.00
Backhoes	79	hp	0.465	0	0	0	0.0091	0.0023	0.001	0.0014	0.0004	0	0.00	0.00	0.00	0.00	0.00
Forklifts	83	hp	0.505	0	0	0	0.0021	0.0012	0.0004	0.001	0.0002	0	0.00	0.00	0.00	0.00	0.00
Excavators	152	hp	0.58	0	0	0	0.0043	0.0018	0.0004	0.0009	0.0002	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
*		hp	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total													0.00	0.00	0.00	0.00	0.00

Total Const Days: **0.01** Input 0.01 if no water line construction required.
 Total Construction Period Emissions (lbs): 0.00 0.00 0.00 0.00 0.00
 Total Construction Period Emissions (tons): 0.00 0.00 0.00 0.00 0.00
 Avg lbs/day: 0.0 0.0 0.0 0.0 0.0

Fugitive Dust Emissions

Avg Activity Values	Process Rate	Units	PM10 EF	Control %	PM10 Emissions lbs/day	Construction Data:	
						Length ft	Width ft
Sfc Area Impacted	0	ft2/day	0.000025	65	0.000	0	0
Trenching	0	yd3/day	0.0018	0	0.000	0	0
BackFill	0	yd3/day	0.0018	0	0.000	0	0
Grading	0	VMT/day	0.2754	0	0.000	0	0
Unpaved Sfc Travel							
Water Trk	0	VMT/day	0.1522	65	0.000		
Delivery Trk	0	VMT/day	0.1589	65	0.000		
Total:					0.00 lbs/day PM10		
					0.00 lbs/day PM2.5		
					0.00 lbs PM10/const period =	0.000	tons PM10/const period
					0.00 lbs PM2.5/const period =	0.000	tons PM2.5/const period