

Energy and Fuel Calculations
3880 Mission

Summary of Energy Use during Construction	
Electricity	
Fugitive Dust Control	3,613 kWh
Gasoline	
On Road (Worker)	929 gallons
Diesel	
On Road (Haul)	180,882 gallons
Off Road	10,718 gallons
Total	191,600 gallons
Total Mobile	192,529 gallons

Calculation of Gas Usage During Construction (On-road workers)						
Phase	Trips	Days	Length (miles)	Total (miles)	MPG	Gallons
Soil Import	10	123	18.5	22,755	24.5	929
Worker Miles Per Gallon per EMFAC2021 (v.1.02) Emissions Inventory: South Coast Air Quality Management District, Year 2023, Season Annual, Aggregate, LDA, LDT1, LDT2, MDV, LHD1, LHD2 vehicle categories.						

Calculation of Gas Usage During Construction (On-road haul)						
Phase	Trips	Days	Length (miles)	Total (miles)	MPG	Gallons
Soil Import	400	123	25	1,230,000	6.8	180,882
Haul Miles Per Gallon per EMFAC2021 (v.1.02) Emissions Inventory: South Coast Air Quality Management District, Year 2023, Season Annual, Aggregate, LDA, LDT1, LDT2, MDV, LHD1, LHD2 vehicle categories.						

Calculation of Diesel Usage During Construction (Off-road equipment)								
Phase	Equipment	Units	Hours	HP	Load Factor	Ave. Daily Factor	Days	HP-hours
Soil Import	Rubber Tired Dozers	2	6	367	0.40	0.6	123	130,006
	Off-Highway Trucks	2	4	376	0.38	0.6	123	84,356
Total								214,362
HP = horsepower gallons of diesel fuel per HP-hour= 0.05 Equipment assumptions are provide in the CalEEMod output files and fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E. 214,362 HP-hours = 10,718 gallons.								

Water Usage for fugitive dust control during construction					
Phase	Days	Acres	Water Rate	Electrical Rate	Total
Soil Import	123 days	1 acre	3,020 gallons / acre	0.009727 kWh / gallon	3,613 kWh
kWh – kilowatt hours Conservatively assumes the total amount of site that would be disturbed. Gallons per year of water usage for dust control is calculated based on a minimum control efficiency of 66% (three times daily) with an application rate of 3,020 gallons/acre/day (Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition)) and average of 26 construction days per month. CalEEMod Default: Each gallon of delivered potable water in Southern California is associated with 0.009727 kWh of electricity).					