APPENDIX B

AIR QUALITY MODELING

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Maximum Peak Daily Construction and Operation Equipment and Fugitive Dust Emissions

2023

Emission Source	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Changes to Operations Phases between Zone 1 and Zone 4						
Fugitive Dust—Material Handling	–	–	–	–	0.20	0.11
Fugitive Dust—Unpaved Roads	–	–	–	–	11.52	3.04
Vehicle, Equipment, and Truck Emissions	7.32	42.88	88.70	0.38	2.90	2.68
San Onofre Breccia Area						
Fugitive Dust—Material Handling	–	–	–	–	1.72	0.60
Fugitive Dust—Unpaved Roads	–	–	–	–	35.91	9.48
Vehicle, Equipment, and Truck Emissions	1.49	3.74	17.47	0.09	0.18	0.17
Imported Soil Truck Trips for Liner Installation						
Fugitive Dust—Material Handling	–	–	–	–	0.20	0.11
Fugitive Dust—Unpaved Roads	–	–	–	–	4.98	1.31
Vehicle, Equipment, and Truck Emissions	0.03	0.35	4.51	0.02	0.02	0.02
TOTAL	**8.85**	**46.97**	**110.67**	**0.50**	**57.64**	**17.52**
Significance Threshold	75	550	100	150	150	55
Above Threshold?	*No*	*No*	**Yes**	*No*	*No*	*No*

2043

Emission Source	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Changes to Operations Phases between Zone 1 and Zone 4						
Fugitive Dust—Material Handling	–	–	–	–	0.20	0.11
Fugitive Dust—Unpaved Roads	–	–	–	–	54.69	5.47
Vehicle, Equipment, and Truck Emissions	0.18	5.63	27.15	0.19	0.13	0.13
San Onofre Breccia Area						
Fugitive Dust—Material Handling	–	–	–	–	0.00	0.00
Fugitive Dust—Unpaved Roads	–	–	–	–	0.00	0.00
Vehicle, Equipment, and Truck Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Imported Soil Truck Trips for Liner Installation						

Fugitive Dust—Material Handling	–	–	–	–	0.20	0.11
Fugitive Dust—Unpaved Roads	–	–	–	–	23.64	2.36
Vehicle, Equipment, and Truck Emissions	0.03	0.34	3.76	0.02	0.02	0.02
TOTAL	**0.21**	**5.97**	**30.91**	**0.21**	**78.89**	**8.20**
Significance Threshold	75	550	100	150	150	55
Above Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

2058

Emission Source	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Changes to Operations Phases between Zone 1 and Zone 4						
Fugitive Dust—Material Handling	–	–	–	–	0.20	0.11
Fugitive Dust—Unpaved Roads	–	–	–	–	54.69	5.47
Vehicle, Equipment, and Truck Emissions	0.18	5.60	27.22	0.19	0.13	0.13
San Onofre Breccia Area						
Fugitive Dust—Material Handling	–	–	–	–	0.00	0.00
Fugitive Dust—Unpaved Roads	–	–	–	–	0.00	0.00
Vehicle, Equipment, and Truck Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Imported Soil Truck Trips for Liner Installation						
Fugitive Dust—Material Handling	–	–	–	–	0.00	0.00
Fugitive Dust—Unpaved Roads	–	–	–	–	0.00	0.00
Vehicle, Equipment, and Truck Emissions	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	**0.18**	**5.60**	**27.22**	**0.19**	**55.03**	**5.71**
Significance Threshold	75	550	100	150	150	55
Above Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

TABLE A-2a
Vehicular & Heavy Construction Equipment Emissions

Equipment	Fuel	Engine Tier Level	HP	Load Factor[2]	Max. No. of Equipment per Day	Hours per Vehicle per Day	Vehicle Hours per Year (@ 260 days per Year)	CO_2 Emission Factor (lb/hr or lb/mi)	CH_4 Emission Factor (lb/hr or lb/mi)	CO_2 Emissions (tons/year)	CH_4 Emissions (tons/year)	Emission Factors[3] (lb/hr or lb/mi)						Maximum Daily Emission Rates (lbs/day)						Maximum Annual Emission Rates (tons/yr)					
												CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
657E Scraper	Diesel	T3	577	48	30	8	2,080	89.9757	0.0000	1,347.48	0.00	0.1834	0.0468	0.4400	0.0008	0.0192	0.0177	21.13	5.39	50.68	0.10	2.22	2.04	2.75	0.70	6.59	0.01	0.29	0.27
834K Wheel Dozer	Diesel	T4F	562	40	2	8	2,080	200.3907	0.0000	166.73	0.00	0.3840	0.0361	0.1036	0.0019	0.0038	0.0035	2.46	0.23	0.66	0.01	0.02	0.02	0.32	0.03	0.09	0.00	0.00	0.00
345CL Excavator	Diesel	T3	345	38	1	8	2,080	16.3536	0.0000	6.46	0.00	0.0336	0.0088	0.0803	0.0002	0.0040	0.0036	0.10	0.03	0.24	0.00	0.01	0.01	0.01	0.00	0.03	0.00	0.00	0.00
440 Backhoe Loader	Diesel	T4F	118	36	4	8	2,080	46.5689	0.0000	69.74	0.00	0.2583	0.0067	0.0003	0.0000	0.0000	0.0000	2.98	0.08	0.00	0.00	0.00	0.00	0.39	0.01	0.00	0.00	0.00	0.00
140M3 Motor Grader	Diesel	T4F	183	41	1	8	2,080	40.0148	0.0000	17.06	0.00	0.0761	0.0062	0.0204	0.0004	0.0007	0.0007	0.25	0.02	0.07	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
Ejector Truck	Diesel	T3	250	50	3	8	2,080	12.0860	0.0000	18.85	0.00	0.0253	0.0071	0.0602	0.0001	0.0031	0.0028	0.30	0.09	0.72	0.00	0.04	0.03	0.04	0.01	0.09	0.00	0.00	0.00
8,000 Gallon Water Truck	Diesel	T3	250	50	1	8	2,080	12.0860	0.0000	6.28	0.00	0.0253	0.0071	0.0602	0.0001	0.0031	0.0028	0.10	0.03	0.24	0.00	0.01	0.01	0.01	0.00	0.03	0.00	0.00	0.00
1-Ton Pickup Truck with Service Bed	Diesel	T3	250	50	8	8	2,080	14.4697	0.0000	60.19	0.00	0.0332	0.0095	0.0736	0.0001	0.0039	0.0036	1.06	0.31	2.35	0.00	0.12	0.11	0.14	0.04	0.31	0.00	0.02	0.01
Total[4]										**285.13**	**0.00**	**1.02**	**0.13**	**0.84**	**0.00**	**0.04**	**0.03**	**28.39**	**6.16**	**54.98**	**0.12**	**2.43**	**2.23**	**3.69**	**0.80**	**7.15**	**0.01**	**0.32**	**0.29**

Blsating Equipment	Fuel	Engine Tier Level	HP	Load Factor[2]	Max. No. of Equipment per Day	Hours per Vehicle per Day	Vehicle Hours per Year (@ 260 days per Year)	CO_2 Emission Factor (lb/hr or lb/mi)	CH_4 Emission Factor (lb/hr or lb/mi)	CO_2 Emissions (tons/year)	CH_4 Emissions (tons/year)	Emission Factors[3] (lb/hr or lb/mi)						Maximum Daily Emission Rates (lbs/day)						Maximum Annual Emission Rates (tons/yr)					
												CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Drill/Boring Rig	Diesel	T3	300	50	2	8	2,080	0.9870	0.0000	1.03	0.00	0.0019	0.0004	0.0001	0.0000	0.0002	0.0002	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dozers	Diesel	T3	562	40	2	8	2,080	25.3145	0.0000	21.06	0.00	0.0546	0.0167	0.1287	0.0002	0.0068	0.0062	0.35	0.11	0.82	0.00	0.04	0.04	0.05	0.01	0.11	0.00	0.01	0.01
Excavators	Diesel	T3	345	38	2	8	2,080	16.3536	0.0000	12.93	0.00	0.0336	0.0088	0.0048	0.0002	0.0040	0.0036	0.20	0.05	0.03	0.00	0.02	0.02	0.03	0.01	0.00	0.00	0.00	0.00
Loaders	Diesel	T3	118	36	2	8	2,080	46.5689	0.0000	34.87	0.00	0.2583	0.0067	0.0236	0.0004	0.0009	0.0008	1.49	0.04	0.14	0.00	0.01	0.00	0.19	0.01	0.02	0.00	0.00	0.00
150-HP Generators	Diesel	T3	150	74	2	8	2,080	5.8446	0.0000	9.00	0.00	0.0354	0.0027	0.0281	0.0001	0.0017	0.0016	0.42	0.03	0.33	0.00	0.02	0.02	0.05	0.00	0.04	0.00	0.00	0.00
Rock Crusher	Diesel	T3			1	8	2,080		0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total[4]										**77.85**	**0.00**	**0.38**	**0.04**	**0.19**	**0.00**	**0.01**	**0.01**	**2.48**	**0.23**	**1.32**	**0.01**	**0.09**	**0.09**	**0.32**	**0.03**	**0.17**	**0.00**	**0.01**	**0.01**
											Net Total	**1.40**	**0.16**	**1.02**	**0.00**	**0.05**	**0.05**	**30.86**	**6.40**	**56.30**	**0.12**	**2.52**	**2.32**	**4.01**	**0.83**	**7.32**	**0.02**	**0.33**	**0.30**

[1]Maximum miles per vehicle per day determined by the required number of 20-mile round trips required for the seven trucks to make a total of at least 54 trips in a day.

[2]CalEEMod version 2016.3.2 Default Load Factors

[3]Emissions factors are conservatively assumed to be the 2023 scenario year presented in OFFROAD2017 Emission Inventory in CARB's web database

[4]The total presented in boldface font is the sum of the unrounded data displayed in this table in its rounded form.

[5]Emission factor calculated per SCAQMD methodology outlined in the CEQA Air Quality Handbook (1993), page A9-101.

[6]$PM_{2.5}$ calculated as a fraction of PM_{10} emissions based on guidelines found at http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

[7]Assumes compliance with SCAQMD Rules 403 and 1186

TABLE A-2b

Vehicular & Heavy Equipment
Average Daily Emissions

Equipment	Fuel	Engine Tier Level	HP	Load Factor[2]	Max. No. of Equipment per Day	Max. Hours per Vehicle per Day (6:00am to 6:00pm)	Vehicle Hours per Year (@ 307 days per Year)	CO_2 Emission Factor (lb/hr or lb/mi)	CH_4 Emission Factor (lb/hr or lb/mi)	Max CO_2 Emissions (lbs/day)	Max CH_4 Emissions (lbs/day)	Emission Factors[3] (lb/hr or lb/mi)						Maximum Emission Rates (lbs/day)						Maximum Annual Emission Rates (tons/yr)					
												CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
D10T Trash Dozer	Diesel	T3	580	40	2	12	3,684	100.0440	0.0000	147	0.00	0.1831	0.0132	0.0502	0.0009	0.0018	0.0016	1.76	0.13	0.48	0.01	0.02	0.02	0.27	0.02	0.07	0.00	0.00	0.00
657E Scraper	Diesel	T3	577	48	2	12	3,684	89.9757	0.0000	159	0.00	0.1834	0.0468	0.4400	0.0008	0.0192	0.0177	2.11	0.54	5.07	0.01	0.22	0.20	0.32	0.08	0.78	0.00	0.03	0.03
D7E Tractor	Diesel	T4F	252	44	1	12	3,684	31.3891	0.0000	50,880.44	0.00	0.0593	0.0045	0.0159	0.0003	0.0006	0.0005	0.31	0.02	0.08	0.00	0.00	0.00	0.05	0.00	0.01	0.00	0.00	0.00
D5K2 XL Crawler Tracto	Diesel	T4I	104	43	1	12	3,684	0.1393	0.0000	220.63	0.00	0.0677	0.0000	0.0001	0.0000	0.0000	0.0000	0.35	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
836K Compactor	Diesel	T4F	562	43	1	12	3,684	100.0440	0.0000	158,481.75	0.00	0.1831	0.0132	0.0502	0.0009	0.0018	0.0016	0.94	0.07	0.26	0.00	0.01	0.01	0.15	0.01	0.04	0.00	0.00	0.00
966H Wheel Loader	Diesel	T3	286	36	1	12	3,684	1.0840	0.0000	1,437.60	0.00	0.0020	0.0004	0.0050	0.0000	0.0002	0.0002	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IT38H Tool Carrier	Diesel	T3	197	42	1	12	3,684	3.8546	0.0000	5,964.16	0.00	0.0080	0.0018	0.0185	0.0000	0.0009	0.0008	0.04	0.01	0.09	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
440 Backhoe Loader	Diesel	T4F	118	37	1	12	3,684	46.5689	0.0000	63,477.16	0.00	0.2583	0.0067	0.0236	0.0004	0.0009	0.0008	1.15	0.03	0.10	0.00	0.00	0.00	0.18	0.00	0.02	0.00	0.00	0.00
140M3 Motor Grader	Diesel	T4F	183	41	1	12	3,684	40.0148	0.0000	60,439.88	0.00	0.0761	0.0062	0.0204	0.0004	0.0007	0.0007	0.37	0.03	0.10	0.00	0.00	0.00	0.06	0.00	0.02	0.00	0.00	0.00
Water Truck	Diesel	T4F	250	38	2	12	3,684	34.0242	0.0000	47,631.10	0.00	0.0627	0.0047	0.0172	0.0003	0.0006	0.0006	0.57	0.04	0.16	0.00	0.01	0.01	0.09	0.01	0.02	0.00	0.00	0.00
Total[4]										**51,407.61**	**0.00**	**1.08**	**0.10**	**0.64**	**0.00**	**0.03**	**0.02**	**4.53**	**0.69**	**5.63**	**0.02**	**0.24**	**0.22**	**1.17**	**0.13**	**0.98**	**0.00**	**0.04**	**0.04**

[1]Emissions rates calculated per CARB methodology.

[2]Load factors are presented in CalEEMod Version 2016.3.2 model.

[3]Emissions factors are conservatively assumed to be the 2023 scenario year presented in OFFROAD2017 Emission Inventory in CARB's web database

[4]The total presented in boldface font is the sum of the unrounded data displayed in this table in its rounded form.

[5]$PM_{2.5}$ calculated as a fraction of PM_{10} emissions based on guidelines found at http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

EQUIPMENT LIST

Landfill Use Equipment						
Quantity	Model	Description	Engine Tier Level	Operating Hours	Zone 1	Zone 4
2	D10T	D10T Trash Dozer	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
2	657E	657E Scraper	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	D7E	D7E Tractor	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	D5K2	D5K2 XL Crawler Tractor	T4I	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	836K	836K Compactor	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	966H	966H Wheel Loader	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	IT38H	IT38H Tool Carrier	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	440	440 Backhoe Loader	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
2	730-04A	6,000 Gallon Water Truck	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	140M3	140M3 Motor Grader	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I

Construction Use Equipment						
Quantity	Model	Description	Engine Tier Level	Operating Hours	Zone 1	Zone 4
30	657E	657E Scraper	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
2	834K	834K Wheel Dozer	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	345CL	345CL Excavator	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
4	740E	Ejector Truck	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	440	440 Backhoe Loader	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
3	740EJ	8,000 Gallon Water Truck	T3	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
1	140M3	140M3 Motor Grader	T4F	6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I
8		1-Ton Pickup Truck with Service Bed		6AM to 6PM	B, C, D	A, B, C, D, E, F, G, H, I

Blasting Equipment						
Quantity	Model	Description	Engine Tier Level	Operating Hours	Zone 1	Zone 4
2		Drill/Boring Rig	T3	6AM to 6PM		
2		Dozers		6AM to 6PM		
2		Excavators		6AM to 6PM		
2		Loaders		6AM to 6PM		
2		150-HP Generators		6AM to 6PM		
1		Rock Crusher		6AM to 6PM		
5				6AM to 6PM		

2 drills
2 dozers
2 excavators
2 loaders
on-site crushers
Electrically powered crushers and screening plants

Region | Calendar Y(Vehicle Category | Model Year Horsepowe Fuel | HC_tpd | ROG_tpd | ROG lbs/day | TOG_tpd | CO_tpd | CO lbs/day | NOx_tpd | Nox lbs/day | CO2_tpd | CO2 lbs/day | PM10_tpd | PM10 lbs/day | PM2.5_tpd | PM2.5 lbs/day | SOx_tpd | Sox lbs/day | NH3_tpd | Fuel Consumption | Total_Activity_hpy | Total_Population | Horsepower_Hours_hh

Model Output: OFFROAD2017 (v1.0.1) Emissions Inventory
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2023
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2017 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Y(	Vehicle Category	Model Year	Horsepowe	Fuel	HC_tpd	ROG_tpd	Construction ROG 8 lbs/day	Operational ROG lbs/12 hr day	TOG_tpd	CO_tpd	Construction CO lbs/8hr day	Operational CO lbs/12 hr day	NOx_tpd	Construction NOx lbs/8	Operational NOx lbs/12 hr	CO2_tpd	Construction CO2 lbs/8hr	Operational CO2 lbs/12 hr	PM10_tpd	Construction PM10 lbs/8 hr	Operational PM10 lbs/12 hr	PM2.5_tpd	Construction PM2.5 lbs/8 hr day	Operational PM2.5 lbs/12 hr	SOx_tpd	Construction SOx lbs/ 8 hr day	Operational SOx lbs/12 hr day	NH3_tpd	Fuel Consumption	Total_Activity_hpy	Total_Population	Horsepower_Hours_hh	
Orange (SC)	2023	ConstMin - Bore/Drill Rigs	2008	50	Diesel	2.75E-06	3.32251E-06	0.000830627		3.95406E-06	5.29E-05	0.013219821		6.55E-05	0.016371		0.007682	1.920416		2.28E-06	0.000569		2.09E-06	0.0005235		7.09E-08	1.77346E-05		6.26967E-08	249.2230766	189.1451842	0.312688754	8653.392	0.000831
Orange (SC)	2023	ConstMin - Bore/Drill Rigs	2008	100	Diesel	3.43E-06	4.14762E-06	0.001036906		4.93601E-06	7.45E-05	0.018627727		6.31E-05	0.01578		0.011445	2.861216		4.18E-06	0.001045		3.85E-06	0.0009614		1.06E-07	2.64277E-05		9.34115E-08	371.3160711	189.9581291	0.469033131	14278.52	
Orange (SC)	2023	ConstMin - Bore/Drill Rigs	2008	175	Diesel	5.54E-06	6.69903E-06	0.001674757		7.9724E-06	0.000106	0.026621229		8.64E-05	0.021598		0.018485	4.621291		5.26E-06	0.001315		4.84E-06	0.0012101		1.71E-07	4.26846E-05		1.50873E-07	599.7308161	150.3948098	0.390860943	22499.06	
Orange (SC)	2023	ConstMin - Bore/Drill Rigs	2008	300	Diesel	3.55E-06	4.29236E-06	0.001073091		5.10827E-06	2.32E-05	0.005811373		5.53E-05	0.013834		0.011844	2.961065		2.45E-06	0.000614		2.26E-06	0.0005644		1.09E-07	2.73499E-05		9.66712E-08	384.2739166	69.46162687	0.390860943	14962.03	
Orange (SC)	2023	ConstMin - Bore/Drill Rigs	2008	600	Diesel	3.69E-06	4.46171E-06	0.001115427		5.3098E-06	2.35E-05	0.005870476		5.75E-05	0.01438		0.012312	3.077887		2.55E-06	0.000637		2.34E-06	0.0005859		1.14E-07	2.84289E-05		1.00485E-07	399.4345668	46.51851475	0.390860943	16216.35	
Orange (SC)	2023	ConstMin - Crawler Tractors	2008	100	Diesel	4.92E-05	5.95128E-05	0.014878198	0.009918799	7.08251E-05	0.000819	0.204726897	0.136484598	0.000667	0.166858	0.111239	0.11575	28.9376	19.29173	4.7E-05	0.011738	0.007826	4.32E-05	0.0107994	0.0071996	1.07E-06	0.000267174	0.000178116	9.44739E-07	3755.393699	1970.591117	3.398283295	170127.7	
Orange (SC)	2023	ConstMin - Crawler Tractors	2008	175	Diesel	2.37E-05	2.86838E-05	0.007170955	0.004780637	3.41361E-05	0.000349	0.087282346	0.058188231	0.000273	0.068132	0.045421	0.055789	13.94727	9.298178	1.9E-05	0.004747	0.003165	1.75E-05	0.0043673	0.0029115	5.15E-07	0.000128772	8.58477E-05	4.55343E-07	1810.0149	545.3056148	0.95849016	82390.72	
Orange (SC)	2023	ConstMin - Crawler Tractors	2008	300	Diesel	8.86E-05	0.00010723	0.026807383	0.017871589	0.000127612	0.000445	0.111156164	0.074104109	0.001018	0.254542	0.169695	0.208558	52.13946	34.75964	4.79E-05	0.011975	0.007984	4.41E-05	0.0110174	0.0073449	1.93E-06	0.000481391	0.000320927	1.70222E-06	6766.429429	1476.231707	2.526928604	303951	
Orange (SC)	2023	ConstMin - Crawler Tractors	2008	600	Diesel	0.000319	0.00038653	0.096632387	0.064421591	0.000460002	0.001529	0.382304722	0.254869815	0.00367	0.917546	0.611697	0.751787	187.9467	125.2978	0.000176	0.043911	0.029274	0.000162	0.0403977	0.0269318	6.94E-06	0.001735265	0.001156843	6.13598E-06	24390.90121	2766.801753	4.792450801	1102735	
Orange (SC)	2023	ConstMin - Crawler Tractors	2015	50	Diesel	5.8E-07	7.0175E-07	0.000175437	0.000116958	8.3514E-07	1.08E-05	0.002692847	0.001795232	7.84E-06	0.00196	0.001307	0.001508	0.376892	0.251261	3.59E-08	8.98E-06	5.98E-06	3.3E-08	8.258E-06	5.505E-06	1.39E-08	3.4802E-06	2.32013E-06	1.23046E-08	48.91134304	43.29420501	0.174270938	2034.828	
Orange (SC)	2023	ConstMin - Crawler Tractors	2015	100	Diesel	1.95E-05	2.36387E-05	0.005909672	0.003939781	2.8132E-05	0.00058	0.144990435	0.09666029	0.000237	0.059218	0.039478	0.087932	21.98292	14.65528	2.21E-06	0.000552	0.000368	2.03E-06	0.0005076	0.0003384	8.12E-07	0.000203097	0.000135398	7.17687E-07	2852.847011	1486.400811	3.659689703	128042.8	
Orange (SC)	2023	ConstMin - Crawler Tractors	2015	175	Diesel	2.14E-05	2.58503E-05	0.006462566	0.004308377	3.07639E-05	0.000813	0.203194912	0.135463275	7.25E-05	0.018131	0.012087	0.139279	34.81966	23.2131	2.85E-06	0.000712	0.000475	2.62E-06	0.0006549	0.0004366	1.29E-06	0.000321765	0.00021451	1.13677E-06	4518.74164	1373.131088	3.833960641	199728.2	
Orange (SC)	2023	ConstMin - Crawler Tractors	2015	300	Diesel	1.71E-05	2.07264E-05	0.005181591	0.003454394	2.46661E-05	0.000222	0.055504883	0.037003255	5.81E-05	0.014537	0.009691	0.111672	27.91789	18.61193	2.16E-06	0.000541	0.00036	1.99E-06	0.0004974	0.0003316	1.03E-06	0.000257986	0.000171991	9.11448E-07	3623.060943	766.9115339	2.091251259	160923.6	
Orange (SC)	2023	ConstMin - Crawler Tractors	2015	600	Diesel	0.000102	0.000123118	0.030779408	0.020519605	0.00014652	0.001278	0.319474582	0.212983055	0.000345	0.086353	0.057569	0.663345	165.8364	110.5576	1.28E-05	0.003212	0.002141	1.18E-05	0.0029549	0.0019699	6.13E-06	0.001532476	0.001021651	5.41414E-06	21521.51308	2445.921215	5.83807643	958668.1	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	50	Diesel	9.75E-07	1.17999E-06	0.000294999	0.000196666	1.40429E-06	2.29E-05	0.005734041	0.003822694	1.94E-05	0.004845	0.00323	0.00393	0.982485	0.65499	7.45E-08	1.86E-05	1.24E-05	6.86E-08	1.715E-05	1.143E-05	3.63E-08	9.07624E-06	6.05083E-06	3.20756E-08	127.5025172	130.5874044	0.261406407	5310.554	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	100	Diesel	2.95E-05	3.56669E-05	0.008916713	0.005944475	4.24465E-05	0.001165	0.29113912	0.194092747	0.000491	0.122705	0.081803	0.188787	47.19666	31.46444	3.86E-06	0.000964	0.000643	3.55E-06	0.000887	0.0005913	1.74E-06	0.000436135	0.000290757	1.54085E-06	6124.974812	3101.476026	5.750940961	275655.4	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	175	Diesel	2.69E-05	3.25746E-05	0.008143661	0.005429107	3.87665E-05	0.001349	0.337131735	0.22475449	0.000124	0.030999	0.020666	0.247015	61.75383	41.16922	4.5E-06	0.001124	0.000749	4.14E-06	0.001034	0.0006893	2.28E-06	0.000570743	0.000380495	2.01611E-06	8014.140282	2537.040414	4.356773455	365384.6	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	300	Diesel	3.21E-05	3.88793E-05	0.009719834	0.006479889	4.62696E-05	0.000548	0.137097701	0.091398467	0.000148	0.036998	0.024666	0.294824	73.70604	49.13736	5.21E-06	0.001303	0.000869	4.8E-06	0.0011991	0.0007994	2.72E-06	0.000681208	0.000454139	2.40632E-06	9565.244743	2158.367146	3.398283295	432614.3	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	600	Diesel	0.000131	0.000158317	0.039579309	0.026386206	0.000188411	0.002198	0.549395224	0.366263482	0.000603	0.150658	0.100439	1.200528	300.1321	200.0881	2.12E-05	0.005307	0.003538	1.95E-05	0.0048828	0.0032552	1.11E-05	0.002773889	0.001849259	9.79855E-06	38949.8214	4369.291443	7.057972998	1754316	
Orange (SC)	2023	ConstMin - Crawler Tractors	2020	9999	Diesel	1.1E-05	1.33649E-05	0.003341229	0.002227486	1.59054E-05	0.000186	0.046379168	0.030919445	0.000443	0.110844	0.073896	0.101347	25.33673	16.89115	3.69E-06	0.000922	0.000615	3.39E-06	0.0008484	0.0005656	9.37E-07	0.000234168	0.000156112	8.2718E-07	3288.088851	157.1680326	0.261406407	147938.4	
Orange (SC)	2023	ConstMin - Excavators	2008	50	Diesel	4.67E-05	5.65367E-05	0.014134167	0.009422778	6.72833E-05	0.000735	0.183650232	0.122433488	0.000763	0.190813	0.127209	0.082941	20.73514	13.82343	3.03E-05	0.007567	0.005045	2.78E-05	0.0069619	0.0046413	7.65E-07	0.000191356	0.000127571	6.7695E-07	2690.914921	3436.060216	4.802033914	124385.4	
Orange (SC)	2023	ConstMin - Excavators	2008	100	Diesel	2.48E-05	2.9985E-05	0.007496258	0.004997506	3.56847E-05	0.000401	0.100148593	0.066765729	0.000325	0.081212	0.054142	0.055994	13.99861	9.332405	2.35E-05	0.005876	0.003918	2.16E-05	0.0054063	0.0036042	5.17E-07	0.000129238	8.61588E-05	4.57019E-07	1816.677546	1154.231332	1.658884443	91488.02	
Orange (SC)	2023	ConstMin - Excavators	2008	175	Diesel	3.6E-05	4.35212E-05	0.01088029	0.007253527	5.17938E-05	0.000514	0.128572728	0.085715152	0.000399	0.099857	0.066572	0.081272	20.31799	13.54533	2.83E-05	0.007075	0.004717	2.6E-05	0.0065088	0.0043392	7.5E-07	0.00018758	0.000125053	6.63331E-07	2636.779262	870.036798	1.484265028	133883.3	
Orange (SC)	2023	ConstMin - Excavators	2008	300	Diesel	3.46E-05	4.18874E-05	0.010471842	0.006981228	4.98494E-05	0.000169	0.042155723	0.028103815	0.000384	0.096046	0.06403	0.078221	19.55525	13.03683	1.8E-05	0.004506	0.003004	1.66E-05	0.0041457	0.0027638	7.22E-07	0.000180538	0.000120359	6.38429E-07	2537.794116	627.4071019	1.135026198	128811.5	
Orange (SC)	2023	ConstMin - Excavators	2008	600	Diesel	8.68E-05	0.000105088	0.026272055	0.017514703	0.000125064	0.000403	0.100670471	0.067113648	0.000964	0.240962	0.160641	0.196243	49.06076	32.70718	4.75E-05	0.011882	0.007921	4.37E-05	0.0109315	0.0072876	1.81E-06	0.00045294	0.00030196	1.60171E-06	6366.889947	951.9558471	1.658884443	333580	
Orange (SC)	2023	ConstMin - Graders	2020	100	Diesel	6.68E-06	8.0886E-06	0.00202215	0.001348100	9.6261E-06	0.000231	0.057800032	0.038533355	9.61E-05	0.024036	0.016024	0.036436	9.109075	6.072717	8.15E-07	0.000204	0.000136	7.5E-07	0.0001874	0.0001249	3.37E-07	8.41678E-05	5.61119E-05	2.97388E-07	1182.135652	609.9030091	1.140591053	55032.02	
Orange (SC)	2023	ConstMin - Graders	2020	175	Diesel	5E-05	6.05307E-05	0.01513268	0.010088454	7.20366E-05	0.002205	0.551372681	0.367581788	0.0002	0.050053	0.033369	0.392783	98.19586	65.46391	7.51E-06	0.001878	0.001252	6.91E-06	0.0017281	0.001152	3.63E-06	0.000907494	0.000604996	3.20585E-06	12743.42628	4035.639808	5.966168586	602497.3	
Orange (SC)	2023	ConstMin - Graders	2020	300	Diesel	6.12E-05	7.39987E-05	0.018499673	0.012333115	8.80646E-05	0.000913	0.228363565	0.152242377	0.000245	0.06119	0.040793	0.480177	120.0443	80.0295	8.83E-06	0.002206	0.001471	8.12E-06	0.0020299	0.0013533	4.44E-06	0.00110941	0.000739607	3.91914E-06	15578.81464	3330.033933	4.211413119	731471.3	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2008	50	Diesel	3.97E-05	4.80357E-05	0.012008935	0.008005957	5.71665E-05	0.0006	0.149976484	0.099984322	0.000597	0.149246	0.099498	0.06346	15.86506	10.5767	2.45E-05	0.006119	0.004079	2.25E-05	0.0056295	0.003753	5.86E-07	0.000146383	9.75884E-05	5.17954E-07	2058.89697	2289.781744	3.445904683	81802.45	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2008	100	Diesel	5.54E-05	6.70341E-05	0.016758524	0.011172349	7.97761E-05	0.000838	0.209512028	0.139674685	0.000671	0.167866	0.111911	0.11404	28.50994	19.00663	4.98E-05	0.012438	0.008292	4.58E-05	0.011443	0.0076287	1.05E-06	0.000263173	0.000175449	9.30777E-07	3699.89493	2019.921364	2.92901898	163435.4	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2008	175	Diesel	3.37E-05	4.07328E-05	0.010183207	0.006788805	4.84754E-05	0.00045	0.112596878	0.075064585	0.000346	0.086404	0.057603	0.069296	17.32388	11.54925	2.55E-05	0.006365	0.004243	2.34E-05	0.0058559	0.0039039	6.4E-07	0.000159915	0.00010661	5.65581E-07	2248.216899	629.0106003	0.947623788	99726.77	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2008	300	Diesel	1.91E-05	2.30991E-05	0.005774775	0.003849850	2.74898E-05	8.7E-05	0.021751586	0.014501057	0.000196	0.048963	0.032642	0.039297	9.824166	6.549444	9.96E-06	0.00249	0.00166	9.16E-06	0.002291	0.0015273	3.63E-07	9.06861E-05	6.04574E-05	3.20734E-07	1274.936996	264.186443	0.430738085	56535.9	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2008	600	Diesel	7.05E-05	8.52518E-05	0.021312957	0.014208638	0.000101457	0.000304	0.075984848	0.050656565	0.000723	0.180707	0.120471	0.145032	36.25804	24.17203	3.67E-05	0.009168	0.006112	3.37E-05	0.0084346	0.005623	1.34E-06	0.000334695	0.00022313	1.18373E-06	4705.408503	571.6739797	0.947623788	210005.7	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	25	Diesel	0	0	0	0.000000000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	50	Diesel	2.57E-05	3.11097E-05	0.007777429	0.005184953	3.70231E-05	0.000454	0.113589934	0.075726623	0.000318	0.079464	0.052976	0.060138	15.0344	10.02293	1.52E-06	0.000381	0.000254	1.4E-06	0.0003505	0.0002336	5.55E-07	0.000138808	9.25385E-05	4.90835E-07	1951.098507	1980.900609	3.101314214	77970.45	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	75	Diesel	3.63E-05	4.39276E-05	0.010981889	0.007321259	5.22774E-05	0.001006	0.251462227	0.167641485	0.000407	0.101761	0.06784	0.149468	37.3671	24.9114	3.97E-06	0.000993	0.000662	3.65E-06	0.0009132	0.0006088	1.38E-06	0.000345205	0.000230137	1.21994E-06	4849.337305	3034.560556	4.651971322	216577.7	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	175	Diesel	1.02E-05	1.23462E-05	0.00308655	0.002057700	1.4693E-05	0.000363	0.090768412	0.060512275	3.21E-05	0.008028	0.005352	0.060983	15.24576	10.16384	1.29E-06	0.000322	0.000215	1.19E-06	0.0002966	0.0001978	5.64E-07	0.000140878	9.39187E-05	4.97735E-07	1978.527673	545.3946952	0.861476171	87808.55	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	300	Diesel	1.64E-05	1.98062E-05	0.004951542	0.003301028	2.3571E-05	0.000198	0.049608164	0.03307211	5.15E-05	0.012879	0.008586	0.097831	24.45774	16.30516	1.95E-06	0.000487	0.000324	1.79E-06	0.0004477	0.0002985	9.04E-07	0.000226001	0.000150667	7.98483E-07	3174.017191	645.3356104	1.033771405	140306.7	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2015	600	Diesel	5.03E-05	6.09158E-05	0.01522895	0.010152634	7.24948E-05	0.000589	0.147174726	0.098116484	0.000158	0.039611	0.026407	0.300889	75.22251	50.1481	5.99E-06	0.001497	0.000998	5.51E-06	0.0013769	0.0009179	2.78E-06	0.000695089	0.000463392	2.45581E-06	9761.999839	1300.028239	2.06754281	433678.4	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2020	50	Diesel	2.74E-05	3.3107E-05	0.008276743	0.005517829	3.94E-05	0.000619	0.154772288	0.103181525	0.000512	0.128089	0.085392	0.103198	25.79949	17.19966	2.02E-06	0.000505	0.000337	1.86E-06	0.0004646	0.0003097	9.53E-07	0.000238324	0.000158883	8.42288E-07	3348.144161	3371.71183	4.307380853	134059.3	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2020	75	Diesel	1.93E-05	2.33577E-05	0.005839417	0.003892944	2.77976E-05	0.000731	0.182692799	0.121795199	0.000307	0.076684	0.051123	0.117454	29.36359	19.57572	2.47E-06	0.000617	0.000411	2.27E-06	0.0005675	0.0003784	1.09E-06	0.000271336	0.000180891	9.58647E-07	3810.676818	2278.234786	3.101314214	169475.4	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2020	175	Diesel	8.18E-06	9.90344E-06	0.002475859	0.001650573	1.17859E-05	0.000394	0.098388422	0.065592281	3.6E-05	0.009011	0.006008	0.071476	17.86899	11.91266	1.32E-06	0.00033	0.00022	1.22E-06	0.0003038	0.0002025	6.61E-07	0.000165146	0.000110098	5.83377E-07	2318.958686	656.384855	0.861476171	101805.3	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2020	300	Diesel	8.64E-06	1.04566E-05	0.002614161	0.001742774	1.24443E-05	0.000142	0.03539466	0.02359644	3.81E-05	0.009515	0.006343	0.075469	18.86716	12.5781	1.35E-06	0.000338	0.000225	1.24E-06	0.0003106	0.0002071	6.97E-07	0.000174371	0.000116248	6.15965E-07	2448.496423	516.9254704	0.689180937	108102	
Orange (SC)	2023	ConstMin - Off-Highway Tractors	2020	600	Diesel	4.68E-05	5.65711E-05	0.014142772	0.009428514	6.73243E-05	0.000752	0.188062858	0.125375239	0.000206	0.051475	0.034317	0.40829	102.0725	68.04831	7.31E-06	0.001826	0.001218	6.72E-06	0.0016803	0.0011202	3.77E-06	0.00094336	0.000628907	3.33241E-06	13246.51531	1726.170726	2.239838044	584972.7	
Orange (SC)	2023	ConstMin - Off-Highway Trucks	2008	50	Diesel	3.74E-06	4.52209E-06	0.001130522	0.000753681	5.38166E-06	5.4E-05	0.013495671	0.008997114	5.09E-05	0.012726	0.008484	0.005253	1.313349	0.875566	2.18E-06	0.000544	0.000363	2E-06	0.0005006	0.0003337	4.85E-08	1.21145E-05	8.07636E-06	4.28775E-08	170.4406634	301.8017026	0.25606792	7746.244	
Orange (SC)	2023	ConstMin - Off-Highway Trucks	2008	175	Diesel	2.91E-05	3.52231E-05	0.008805781	0.005870521	4.19184E-05	0.000363	0.090783157	0.060522105	0.000275	0.068834	0.045889	0.053371	13.34268	8.895118	2.13E-05	0.005323	0.003549	1.96E-05	0.0048971	0.0032647	4.93E-07	0.000123141	8.20942E-05	4.35605E-07	1731.553871	583.6805478	0.597491813	87098.75	
Orange (SC)	2023	ConstMin - Off-Highway Trucks	2008	300	Diesel	9.47E-05	0.000114595	0.028648812	0.019099208	0.000136378	0.000398	0.099606578	0.066404385	0.000883	0.220683	0.147122	0.173637	43.40919	28.93946	4.66E-05	0.011646	0.007764	4.29E-05	0.0107146	0.0071431	1.6E-06	0.000400629	0.000267086	1.4172E-06	5633.453674	1377.636007	1.2803396	285813.6	
Orange (SC)	2023	ConstMin - Off-Highway Trucks	2008	600	Diesel	0.000238	0.000288119	0.072029818	0.048019879	0.000342886	0.000941	0.235304021	0.156869348	0.002219	0.554849	0.369899	0.436563	109.1409	72.76058	0.000108	0.027123	0.018082	9.98E-05	0.0249529	0.0166353	4.03E-06	0.001007276	0.000671517	3.56317E-06	14163.82112	1861.209128	1.621763493	725087.9	
Orange (SC)	2023	ConstMin - Off-Highway Trucks	2008	750	Diesel	0.00013	0.000157587	0.039396817	0.026264545	0.000187542	0.000515	0.128699886	0.085799924	0.001214	0.303475	0.202317	0.238779	59.69476	39.79651	6.39E-05	0.015972	0.010648	5.88E-05	0.0146944	0.0097963	2.2E-06	0.000550931	0.000367287	1.94888E-06	7746.923136	541.8622727	0.426779867	385805.9	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	25	Diesel	0	0	0	0.000000000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	50	Diesel	3.77E-05	4.5614E-05	0.011403501	0.007602334	5.42844E-05	0.00064	0.159957136	0.106638091	0.000716	0.178995	0.11933	0.080551	20.13774	13.42516	2.68E-05	0.006709	0.004473	2.47E-05	0.0061725	0.004115	7.44E-07	0.000185901	0.000123934	6.57446E-07	2613.387208	2718.514436	4.757034268	108594.9	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	100	Diesel	2.63E-05	3.17849E-05	0.007946224	0.005297483	3.78267E-05	0.000479	0.119647844	0.079765229	0.000396	0.09893	0.065953	0.069806	17.45145	11.6343	2.5E-05	0.006241	0.00416	2.3E-05	0.0057413	0.0038276	6.45E-07	0.00016115	0.000107434	5.69746E-07	2264.772205	1290.744686	3.058093458	105841.1	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	175	Diesel	2.64E-05	3.19348E-05	0.00798369	0.005322460	3.8005E-05	0.000425	0.106345892	0.070897262	0.000337	0.084216	0.056144	0.070135	17.53373	11.68915	2.06E-05	0.00514	0.003427	1.89E-05	0.0047292	0.0031528	6.48E-07	0.00016191	0.00010794	5.72432E-07	2275.45054	692.0943562	1.444099689	106460.4	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	300	Diesel	1.74E-05	2.10616E-05	0.005265391	0.003510261	2.5065E-05	9.56E-05	0.023894108	0.015929405	0.000222	0.055513	0.037008	0.046255	11.56382	7.709214	1.05E-05	0.002617	0.001744	9.63E-06	0.0024073	0.0016048	4.27E-07	0.000106783	7.11885E-05	3.77529E-07	1500.701674	314.4901883	0.679576324	69659.58	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	600	Diesel	9.72E-05	0.000117654	0.029413386	0.019608924	0.000140017	0.000513	0.128223768	0.085482512	0.00124	0.310103	0.206735	0.25839	64.5975	43.065	5.7E-05	0.014247	0.009498	5.24E-05	0.0131073	0.0087382	2.39E-06	0.000596507	0.000397671	2.10894E-06	8383.179283	1137.622123	2.548411215	400898	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	750	Diesel	4.52E-05	5.46531E-05	0.013663276	0.009108850	6.50417E-05	0.000238	0.059563244	0.039708829	0.000576	0.144051	0.096034	0.120029	30.0072	20.0048	1.47E-05	0.003686	0.002457	1.36E-05	0.0033908	0.0022605	1.11E-06	0.000277093	0.000184728	9.79659E-07	3894.202737	299.8650203	0.594629284	185445.1	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2008	9999	Diesel	1.14E-05	1.3745E-05	0.003436255	0.002290837	1.63577E-05	5.78E-05	0.01444872	0.00963248	0.000246	0.061409	0.040939	0.029116	7.279081	4.852721	6.65E-06	0.001663	0.001108	6.12E-06	0.0015296	0.0010197	2.69E-07	6.72135E-05	4.4809E-05	2.37644E-07	944.6471233	57.51911683	0.084947041	44002.12	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	25	Diesel	0	0	0	0.000000000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	50	Diesel	6.06E-06	7.33684E-06	0.001834209	0.001222806	8.73144E-06	0.000118	0.029438163	0.019625442	8.86E-05	0.022143	0.014762	0.017247	4.311798	2.874532	3.9E-07	9.76E-05	6.51E-05	3.59E-07	8.981E-05	5.987E-05	1.59E-07	3.98192E-05	2.65462E-05	1.40769E-07	559.566159	660.7827551	1.529046729	23274.24	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	100	Diesel	1.75E-05	2.12336E-05	0.005308404	0.003538936	2.52698E-05	0.000553	0.138156983	0.092104656	0.000227	0.056842	0.037895	0.085125	21.28113	14.18742	2.04E-06	0.00051	0.00034	1.88E-06	0.0004692	0.0003128	7.86E-07	0.000196623	0.000131082	6.94775E-07	2761.771469	1530.538547	3.992510904	129314.2	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	175	Diesel	9.91E-06	1.19946E-05	0.002998643	0.001999096	1.42745E-05	0.000399	0.099818882	0.066545922	3.59E-05	0.008969	0.00598	0.069508	17.37698	11.58465	1.38E-06	0.000346	0.000231	1.27E-06	0.0003181	0.0002121	6.42E-07	0.000160584	0.000107056	5.67314E-07	2255.107912	663.8255753	1.868834891	106151.7	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	300	Diesel	1.06E-05	1.2831E-05	0.003207751	0.002138500	1.527E-05	0.000146	0.036379434	0.024252956	3.84E-05	0.009595	0.006397	0.074355	18.58875	12.3925	1.41E-06	0.000352	0.000235	1.3E-06	0.0003242	0.0002162	6.87E-07	0.000171783	0.000114522	6.06875E-07	2412.36568	537.4994603	1.69894081	111799.9	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	600	Diesel	4.92E-05	5.94724E-05	0.014868111	0.009912074	7.07771E-05	0.000656	0.163976693	0.109317795	0.000178	0.044473	0.029648	0.34464	86.15992	57.43995	6.53E-06	0.001633	0.001089	6.01E-06	0.0015028	0.0010019	3.18E-06	0.000796223	0.000530815	2.8129E-06	11181.45464	1493.533928	3.652722742	514991.3	
Orange (SC)	2023	ConstMin - Other Construction Equipment	2015	750	Diesel	4.67E-06	5.65566E-06	0.001413914	0.000942609	6.7307E-06	6.24E-05	0.015593707	0.010395805	1.69E-05	0.004229	0.002819	0.032774	8.193558	5.462372	6.21E-07	0.000155	0.000104	5.72E-07	0.0001429	9.528E-05	3.03E-07	7.57185E-05	5.0479E-05	2.67499E-07	1063.323859	81.86167822	0.169894081	49730.97	136.2492
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	50	Diesel	9.17E-06	1.10953E-05	0.002773822	0.001849215	1.32043E-05	0.000223	0.055646977	0.037097985	0.000191	0.047778	0.031852	0.038954	9.738617	6.492411	7.21E-07	0.00018	0.00012	6.64E-07	0.0001659	0.0001106	3.6E-07	8.99696E-05	5.99797E-05	3.17941E-07	1263.834826	1453.093866	2.633358256	52967.62	145.1168
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	100	Diesel	2.45E-05	2.97017E-05	0.007425427	0.004950285	3.53475E-05	0.001003	0.250785597	0.167190398	0.000424	0.106026	0.070684	0.163678	40.91944	27.27963	3.27E-06	0.000818	0.000545	3.01E-06	0.0007526	0.0005017	1.51E-06	0.000378136	0.000252091	1.33592E-06	5310.344512	3050.770768	5.351663552	245030.2	671.3155
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	175	Diesel	1.06E-05	1.28778E-05	0.003219457	0.002146305	1.53257E-05	0.000551	0.137659038	0.091772692	5.08E-05	0.012695	0.008463	0.101516	25.37898	16.91932	1.83E-06	0.000457	0.000304	1.68E-06	0.00042	0.00028	9.38E-07	0.000234561	0.000156374	8.28559E-07	3293.571883	1011.001542	2.038728972	153925	421.7123
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	300	Diesel	1.66E-05	2.01435E-05	0.005035867	0.003357245	2.39724E-05	0.000293	0.073365338	0.048910225	7.94E-05	0.019858	0.013238	0.158791	39.69774	26.46516	2.78E-06	0.000696	0.000464	2.56E-06	0.0006401	0.0004267	1.47E-06	0.0003669	0.0002446	1.29603E-06	5151.797903	1085.010781	2.293570094	238300.5	652.8781
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	600	Diesel	5.73E-05	6.93876E-05	0.017346889	0.011564592	8.25769E-05	0.000996	0.249089097	0.166059398	0.000274	0.068403	0.045602	0.546982	136.7455	91.16368	9.59E-06	0.002397	0.001598	8.82E-06	0.0022049	0.0014699	5.06E-06	0.00126385	0.000842567	4.46439E-06	17746.23153	1932.485277	3.567775701	821282.3	2250.089
Orange (SC)	2023	ConstMin - Other Construction Equipment	2020	9999	Diesel	2.48E-06	3.00127E-06	0.000750318	0.000500212	3.57176E-06	4.31E-05	0.010774034	0.00718269	0.000103	0.025793	0.017196	0.023659	5.914755	3.94317	8.51E-07	0.000213	0.000142	7.83E-07	0.0001958	0.0001305	2.19E-07	5.46662E-05	3.64442E-05	1.93102E-07	767.590845	44.26812575	0.084947041	35724.38	97.87501
Orange (SC)	2023	ConstMin - Rubber Tired Dozers	2008	25	Diesel	0	0	0	0.000000000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange (SC)	2023	ConstMin - Rubber Tired Dozers	2008	175	Diesel	3.09E-06	3.73649E-06	0.000934122	0.000622748	4.44673E-06	4.31E-05	0.010781213	0.007187476	3.4E-05	0.008503	0.005669	0.005662	1.415398	0.943599	2.6E-06	0.00065	0.000433	2.39E-06	0.0005977	0.0003985	5.23E-08	1.30629E-05	8.7086E-06	4.62091E-08	183.6840927	85.55822838	0.083383952	8983.614	24.61264
Orange (SC)	2023	ConstMin - Rubber Tired Dozers	2008	600	Diesel	0.000166	0.000200482	0.050120448	0.033413632	0.00023859	0.000655	0.163731398	0.109154265	0.001544	0.38608	0.257387	0.303774	75.9434	50.62893	8.13E-05	0.02032	0.013546	7.48E-05	0.0186941	0.0124628	2.8E-06	0.000700892	0.000467261	2.47936E-06	9855.599663	1332.704296	1.500911145	478144.7	1309.985
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	50	Diesel	8.99E-06	1.08834E-05	0.002720841	0.001813894	1.29521E-05	0.00017	0.04254315	0.0283621	0.000126	0.031402	0.020935	0.024283	6.070743	4.047162	5.66E-07	0.000142	9.43E-05	5.21E-07	0.0001302	8.679E-05	2.24E-07	5.60596E-05	3.7373E-05	1.98194E-07	787.8342371	945.0013408	0.695290744	38036.3	104.2091
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	100	Diesel	9.27E-05	0.000112108	0.028027101	0.018684734	0.000133418	0.00282	0.704901273	0.469934182	0.001155	0.288805	0.192537	0.430415	107.6037	71.73582	1.06E-05	0.002648	0.001765	9.74E-06	0.0024362	0.0016242	3.98E-06	0.000994155	0.00066277	3.51299E-06	13964.33716	8767.121897	7.474375502	755705.5	2070.426
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	175	Diesel	0.000147	0.000177526	0.044381617	0.029587745	0.000211271	0.005717	1.42933139	0.952887594	0.000512	0.127922	0.085281	0.986385	246.5962	164.3975	1.99E-05	0.004984	0.003322	1.83E-05	0.0045849	0.0030566	9.12E-06	0.002278804	0.001519203	8.05074E-06	32002.17347	11433.71282	10.16862714	1719748	4711.637
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	300	Diesel	0.000273	0.000330083	0.08252071	0.055013807	0.000392826	0.003622	0.905432482	0.603621655	0.000948	0.236956	0.157971	1.834029	458.5073	305.6716	3.52E-05	0.008799	0.005866	3.24E-05	0.0080954	0.0053969	1.69E-05	0.004237082	0.002824721	1.49691E-05	59503.06089	15393.98146	12.42832206	3190107	8740.018
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	600	Diesel	0.000358	0.000432788	0.108197087	0.072131391	0.000515054	0.004608	1.152087883	0.768058588	0.001243	0.310695	0.20713	2.404689	601.1722	400.7815	4.61E-05	0.011537	0.007691	4.25E-05	0.0106142	0.0070761	2.22E-05	0.005555453	0.003703635	1.96267E-05	78017.48024	12747.47558	10.60318385	4187128	11471.58
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	750	Diesel	5.29E-05	6.39657E-05	0.015991426	0.010660951	7.61245E-05	0.000681	0.170277492	0.113518328	0.000184	0.046092	0.030728	0.355411	88.85268	59.23512	6.82E-06	0.001705	0.001137	6.28E-06	0.0015688	0.0010458	3.28E-06	0.000821091	0.000547394	2.90081E-06	11530.90929	1009.574759	0.782202087	625151.1	1712.743
Orange (SC)	2023	ConstMin - Rubber Tired Loaders	2020	9999	Diesel	6.02E-05	7.28268E-05	0.018206689	0.012137792	8.66699E-05	0.000775	0.193865712	0.129243808	0.001825	0.456143	0.304096	0.404645	101.1613	67.44085	1.64E-05	0.004089	0.002726	1.5E-05	0.0037618	0.0025078	3.74E-06	0.000934835	0.000623223	3.30266E-06	13128.26443	835.2365729	0.608379401	700882.8	1920.227
Orange (SC)	2023	ConstMin - Scrapers	2008	25	Diesel	0	0	0	0.000000000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange (SC)	2023	ConstMin - Scrapers	2008	175	Diesel	1.32E-05	1.59416E-05	0.003985408	0.002656939	1.89719E-05	0.000192	0.048120773	0.032080515	0.00015	0.037512	0.025008	0.030666	7.666584	5.111056	1.05E-05	0.002625	0.00175	9.66E-06	0.0024154	0.0016103	2.83E-07	7.07826E-05	4.71884E-05	2.50295E-07	994.9354839	235.7257969	0.601531117	39467.23	108.1294
Orange (SC)	2023	ConstMin - Scrapers	2008	300	Diesel	2.51E-05	3.03883E-05	0.007597075	0.005064717	3.61646E-05	0.000125	0.031248897	0.020832598	0.000286	0.071461	0.047641	0.058457	14.61422	9.74281	1.4E-05	0.0035	0.002334	1.29E-05	0.0032204	0.0021469	5.4E-07	0.000134927	8.99515E-05	4.77117E-07	1896.568538	360.0428558	0.687464133	76599.12	209.8606
Orange (SC)	2023	ConstMin - Scrapers	2008	600	Diesel	0.000464	0.000561277	0.140319251	0.093546167	0.000667966	0.002201	0.550346053	0.366897368	0.00528	1.319897	0.879931	1.079708	269.927	179.9514	0.000231	0.05771	0.038474	0.000212	0.0530935	0.0353957	9.97E-06	0.00249213	0.00166142	8.81243E-06	35029.94039	3124.707289	6.7027753	1383098	3789.308
Orange (SC)	2023	ConstMin - Skid Steer Loaders	2008	50	Diesel	1.85E-06	2.23721E-06	0.000559301	0.000372868	2.66246E-06	3.69E-05	0.009225157	0.006150104	4.68E-05	0.011711	0.007807	0.005547	1.386687	0.924458	1.6E-06	0.0004	0.000267	1.47E-06	0.0003678	0.0002452	5.12E-08	1.28067E-05	8.53783E-06	4.52718E-08	179.9581119	182.2781212	0.443615233	8311.882	22.77228
Orange (SC)	2023	ConstMin - Skid Steer Loaders	2008	75	Diesel	2.78E-05	3.35936E-05	0.0083984	0.005598933	3.99792E-05	0.000632	0.157967204	0.10531147	0.000538	0.134563	0.089709	0.098193	24.54813	16.36542	3.52E-05	0.008809	0.005873	3.24E-05	0.0081041	0.0054027	9.07E-07	0.000226751	0.000151168	8.01434E-07	3185.748618	2270.58258	6.831674594	167964.1	460.1757
Orange (SC)	2023	ConstMin - Skid Steer Loaders	2008	600	Diesel	3.68E-06	4.45016E-06	0.001112539	0.000741693	5.29605E-06	2.46E-05	0.006147263	0.004098176	6.04E-05	0.015101	0.010068	0.013008	3.2519	2.167934	2.64E-06	0.000659	0.00044	2.43E-06	0.0006066	0.0004044	1.2E-07	3.00378E-05	2.00252E-05	1.06166E-07	422.0172997	41.72508173	0.088723047	22114.29	60.5871
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	50	Diesel	5.91E-05	7.15114E-05	0.017877852	0.011918568	8.51045E-05	0.001298	0.324420473	0.216280316	0.001056	0.263972	0.175982	0.21147	52.8675	35.245	4.25E-06	0.001062	0.000708	3.91E-06	0.0009767	0.0006511	1.95E-06	0.000488343	0.000325562	1.72599E-06	6860.911157	8613.38589	12.3044449	331890.3	909.2884
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	100	Diesel	0.000688	0.000832617	0.208154261	0.138769508	0.000990883	0.025175	6.293693606	4.195795737	0.010531	2.632751	1.755167	4.017302	1004.325	669.5503	8.64E-05	0.021592	0.014395	7.95E-05	0.0198651	0.0132434	3.71E-05	0.009280326	0.006186884	3.27887E-05	130336.9286	82494.9426	100.6171984	6826188	18701.89
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	175	Diesel	6.66E-05	8.05823E-05	0.020145572	0.013430382	9.58996E-05	0.003099	0.774761336	0.516507558	0.000283	0.07073	0.047153	0.558827	139.7068	93.13784	1.05E-05	0.002615	0.001743	9.62E-06	0.0024054	0.0016036	5.16E-06	0.001291159	0.000860772	4.56107E-06	18130.52694	6698.739945	9.424681201	957423.6	2623.078
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	300	Diesel	4.49E-05	5.43153E-05	0.01357882	0.009052547	6.46397E-05	0.000712	0.17792388	0.11861592	0.000191	0.047674	0.031783	0.376669	94.16724	62.77816	6.81E-06	0.001702	0.001134	6.26E-06	0.0015654	0.0010436	3.48E-06	0.000870286	0.000580191	3.07432E-06	12220.60924	3142.507946	4.4505439	641441.3	1757.374
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	600	Diesel	7.6E-05	9.19233E-05	0.022980826	0.015320550	0.000109396	0.001181	0.295233952	0.196822635	0.000323	0.080684	0.053789	0.637475	159.3688	106.2459	1.15E-05	0.00288	0.00192	1.06E-05	0.0026494	0.0017662	5.89E-06	0.001472874	0.000981916	5.20299E-06	20682.18625	3172.859138	4.276012767	1073766	2941.824
Orange (SC)	2023	ConstMin - Tractors/Loaders/Backhoes	2020	9999	Diesel	1.51E-05	1.82669E-05	0.004566732	0.003044488	2.17392E-05	0.000235	0.058668669	0.039112446	0.000559	0.139639	0.093093	0.126679	31.66966	21.1131	4.74E-06	0.001185	0.00079	4.36E-06	0.0010905	0.000727	1.17E-06	0.000292688	0.000195126	1.03393E-06	4109.948522	148.4284196	0.174531133	215549.8	590.5475
Orange (SC)	2023	OFF - ConstMin - Excavators	2020	25	Diesel	2.98E-05	3.54352E-05	0.008858802	0.005905868	4.28766E-05	0.000146	0.0365859	0.0243906	0.000271	0.067736	0.045158	0.035541	8.88537	5.92358	1.01E-05	0.002531	0.001687	9.31E-06	0.0023285	0.0015523	4.51E-07	0.000112739	0.000075159	2.97505E-07	1182.6	1580.45	1.13	36350.35	99.59
Orange (SC)	2023	OFF - ConstMin - Other Construction Equipm	2015	25	Diesel	2.05E-06	2.44127E-06	0.000610319	0.000406879	2.95394E-06	1.01E-05	0.00252055	0.001680367	1.87E-05	0.004667	0.003111	0.002449	0.612149	0.408099	6.97E-07	0.000174	0.000116	6.42E-07	0.0001604	0.0001069	3.11E-08	7.76701E-06	5.17801E-06	2.0201E-08	80.3	135.05	0.2	2295.85	6.29
Orange (SC)	2023	OFF - ConstMin - Other Construction Equipm	2020	25	Diesel	4.46E-05	5.30623E-05	0.013265568	0.008843712	6.42054E-05	0.0003	0.074957843	0.049971895	0.000403	0.100806	0.067204	0.054549	13.63721	9.091472	1.55E-05	0.003885	0.00259	1.43E-05	0.0035738	0.0023825	8.01E-07	0.000200201	0.000133467	4.57276E-07	1817.7	3657.3	5.3	51238.7	140.38
Orange (SC)	2023	OFF - ConstMin - Rubber Tired Loaders	2015	25	Diesel	4.8E-07	5.71658E-07	0.000142915	0.000095276	6.91707E-07	2.36E-06	0.000590222	0.000393481	4.37E-06	0.001093	0.000729	0.000573	0.143343	0.095562	1.63E-07	4.08E-05	2.72E-05	1.5E-07	3.756E-05	2.504E-05	7.28E-09	1.81875E-06	1.2125E-06	4.59113E-09	18.25	25.55	0.03	638.75	1.75
Orange (SC)	2023	OFF - ConstMin - Rubber Tired Loaders	2020	25	Diesel	7.04E-06	8.37631E-06	0.002094079	0.001396052	1.01353E-05	3.46E-05	0.008648318	0.005765545	6.4E-05	0.016012	0.010675	0.008401	2.100359	1.400239	2.39E-06	0.000598	0.000399	2.2E-06	0.0005504	0.0003669	1.07E-07	2.66496E-05	1.77664E-05	7.07033E-08	281.05	361.35	0.38	9033.75	24.75
Orange (SC)	2023	OFF - ConstMin - Tractors/Loaders/Backhoes	2008	25	Diesel	8.37E-07	9.96637E-07	0.000249159	0.000166106	1.20593E-06	4.12E-06	0.001029001	0.000686001	7.62E-06	0.001905	0.00127	0.001	0.249906	0.166604	2.67E-07	6.68E-05	4.46E-05	2.46E-07	6.149E-05	4.1E-05	1.27E-08	3.17084E-06	2.11389E-06	8.26403E-09	32.85	47.45	0.05	1091.35	2.99
Orange (SC)	2023	OFF - ConstMin - Tractors/Loaders/Backhoes	2015	25	Diesel	2.81E-05	3.34543E-05	0.008363574	0.005575716	4.04797E-05	0.000138	0.034540675	0.023027117	0.000256	0.06395	0.042633	0.033555	8.388658	5.592438	9.56E-06	0.00239	0.001593	8.79E-06	0.0021983	0.0014656	4.26E-07	0.000106436	7.09575E-05	2.80977E-07	1116.9	1543.95	1.64	35510.85	97.29
Orange (SC)	2023	OFF - ConstMin - Tractors/Loaders/Backhoes	2020	25	Diesel	9.22E-05	0.000109768	0.027441942	0.018294628	0.000132819	0.000453	0.1133323	0.075554867	0.000839	0.209828	0.139885	0.110097	27.52425	18.3495	3.14E-05	0.00784	0.005227	2.89E-05	0.007213	0.0048087	1.4E-06	0.000349231	0.00023282	9.2098E-07	3660.95	5069.85	5.38	116606.6	319.47

EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: ORANGE (SC)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	Calenda	Vehicle Ca	Model Year	Speed	Fuel	VMT	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10_RUNEX	PM2_5_RUNEX	Fuel %
Orange (SC)	2023	LDA	Aggregate	5	Gasolin	161,746	0.047357755	1.057426095	0.054874975	0.005980042	0.009344104	0.008591579	
Orange (SC)	2023	LDA	Aggregate	5	Diesel	1,690	0.167934563	3.208230192	0.123506651	0.004687597	0.016722385	0.015998982	
Orange (SC)	2023	LDA	Aggregate	15	Gasolin	608,476	0.020132243	0.881112153	0.041436199	0.003986452	0.00391181	0.003596775	98.97%
Orange (SC)	2023	LDA	Aggregate	15	Diesel	6,356	0.063407446	1.184487307	0.079196019	0.003212025	0.010386879	0.009937548	1.03%
Orange (SC)	2023	LDA	Aggregate	40	Gasolin	5,222,910	0.005860795	0.577670215	0.028418647	0.002250873	0.001128348	0.001037479	98.97%
Orange (SC)	2023	LDA	Aggregate	40	Diesel	54,559	0.009426152	0.151735256	0.045212611	0.001618358	0.004872153	0.004661386	1.03%
Orange (SC)	2023	MDV	Aggregate	5	Gasolin	35,655	0.103805638	1.666858857	0.141377925	0.009274636	0.009610848	0.008837146	
Orange (SC)	2023	MDV	Aggregate	5	Diesel	951	0.173320414	3.468669255	0.124518885	0.007914425	0.011244374	0.010757947	
Orange (SC)	2023	MDV	Aggregate	15	Gasolin	134,133	0.044810353	1.358783812	0.105103247	0.006174659	0.004041953	0.003716592	97.40%
Orange (SC)	2023	MDV	Aggregate	15	Diesel	3,579	0.064272144	1.274608892	0.076515758	0.005700091	0.007816376	0.007478243	2.60%
Orange (SC)	2023	MDV	Aggregate	40	Gasolin	1,151,340	0.013376551	0.880898734	0.071997995	0.003488838	0.001174879	0.001080325	97.40%
Orange (SC)	2023	MDV	Aggregate	40	Diesel	30,717	0.008380239	0.155749979	0.03823931	0.002934292	0.003902247	0.003733437	2.60%
Orange (SC)	2023	MHDT	Aggregate	5	Gasolin	1,239	0.20151114	1.490451853	0.435101173	0.039074106	0.005960325	0.005480299	
Orange (SC)	2023	MHDT	Aggregate	5	Diesel	4,776	0.054136998	0.772647348	6.399744022	0.021979464	0.005331866	0.005101212	
Orange (SC)	2023	MHDT	Aggregate	15	Gasolin	4,315	0.084796524	1.206507878	0.334297125	0.025941122	0.002492436	0.002291702	20.28%
Orange (SC)	2023	MHDT	Aggregate	15	Diesel	16,964	0.019179204	0.258712273	3.441614712	0.014308499	0.003618517	0.003461981	79.72%
Orange (SC)	2023	MHDT	Aggregate	40	Gasolin	43,370	0.024767889	0.788889702	0.22991288	0.014675842	0.000718652	0.000660774	17.25%
Orange (SC)	2023	MHDT	Aggregate	40	Diesel	207,996	0.005698007	0.057651255	0.878145549	0.007657332	0.004457806	0.004264964	82.75%
Orange (SC)	2023	HHDT	Aggregate	5	Gasolin	3.836197	2.857859125	51.65199796	6.054742133	0.045000476	0.008099642	0.007447322	
Orange (SC)	2023	HHDT	Aggregate	5	Diesel	3484.799	0.116879602	1.739044183	16.86251359	0.040173298	0.017113825	0.016373488	
Orange (SC)	2023	HHDT	Aggregate	15	Gasolin	13.35771	1.20878135	41.59849867	4.770255839	0.029959362	0.003427557	0.003151512	0.13%
Orange (SC)	2023	HHDT	Aggregate	15	Diesel	10478.1	0.046633145	0.662701534	7.914558478	0.023242324	0.010261517	0.009817608	99.87%
Orange (SC)	2023	HHDT	Aggregate	40	Gasolin	134.2601	0.357165774	27.14046707	3.501705814	0.016990975	0.001015311	0.000933541	0.10%
Orange (SC)	2023	HHDT	Aggregate	40	Diesel	128224.4	0.014121539	0.156443256	2.023474276	0.011478324	0.011209909	0.010724974	99.90%

Prima Deshecha Landfill GDP Project

Project Trip Generation

Landfill Construction and Operatio

Summary of Vehicle Types	Incremental Daily Trips
Trip Generation (Cars)	214
Trip Generation (2-Axle Trucks)	30
Trip Generation (3-Axle Trucks)	611
Trip Generation (4+ Axle Trucks)	208
Trips/Unit (Total)	1,063

Land Use	Size	Units	ADT
Existing Uses			
Landfill	2,120	TPD	688
Landfill Employees[2]	25	Vehicles	50
Landfill Material Deliveries	5	Trucks	10
HHW Collection Center[3]	80	Vehicles	160
HHW Employees[3]	2	Vehicles	4
Subtotal			**912**
Approved Uses			
Max Permitted Landfill Operation	1,880	TPD	611
Capistrano Greenery	15	Trucks	30
Subtotal			**641**
Proposed Project			
Breccia Removal	81	Trucks	162
SSO Trucks		Trucks	
SSO Construction Workers		Vehicles	
SSO Material Deliveries		Trucks	
Soil Import for Liner Install	23	Trucks	46
Subtotal			**208**
Total			**1,761**

Source: LSA Traffic Impact Analysis Report (October 2020)

Note: Trip generation is in passenger car equivalents.

[1] Based on information from the OC Waste & Recycling.

[2] Landfill employee schedules are 6:30 a.m. to 4:30 p.m.
Although landfill employees arrive prior to the a.m. peak hour, they depart during the p.m. peak hour.

[3] The HHW collection center is open from 9 a.m. to 3 p.m.
Although HHW employees arrive during the a.m. peak hour, all other HHW trips occur outside of the a.m. and p.m. peak hours.

ADT = average daily traffic

FEIR = Final Environmental Impact Report

GDP = General Development Plan

HHW = household hazardous waste

SSO = source-separate organic waste

TPD = tons per day

Estimated on-site travel distance

Zone	Cell	Estimated Off-Road Roundtrip	Converted to Feet
1	B	1.4	7,392
1	C	1.6	8,448
1	D	1.6	8,448
4	A	0.7	3,696
4	B	0.9	4,752
4	C	1.3	6,864
4	D	1.8	9,504
4	E	2.0	10,560
4	F	1.0	5,280
4	G	1.8	9,504
4	H	1.9	10,032
4	I	1.4	7,392

Employee Vehicles and Trucks Trip Emissions - Prima Deshecha Landfill GDP Project

Vehicle Class	ADT	Speed (mph)	Miles per day	Emission Factors (g/mi)) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$		Emission Rates (lbs/day) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Landfill Activities																
LDV	214	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.055	5.465	0.268	0.021	0.011	0.010
MDV	30	15	0.6	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.003	0.051	0.003	0.000	0.000	0.000
MDV	30	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.011	0.206	0.051	0.004	0.005	0.005
MHDT	611	15	0.6	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.016	0.209	2.782	0.012	0.003	0.003
MHDT	611	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.154	1.553	23.657	0.206	0.120	0.115
HHDT	0	15	0.6	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.238	7.484	26.761	0.243	0.139	0.133
Breccia Removal																
LDV	0	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.6	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.6	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	162	15	0.6	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.010	0.142	1.696	0.005	0.002	0.002
HHDT	162	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.101	1.117	14.453	0.082	0.080	0.077
										Subtotal	0.111	1.259	16.149	0.087	0.082	0.079
Soil Import for Liner Install																
LDV	0	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.5	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.5	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	46	15	0.5	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.002	0.034	0.401	0.001	0.001	0.000
HHDT	46	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.029	0.317	4.104	0.023	0.023	0.022
										Subtotal	0.031	0.351	4.505	0.024	0.023	0.022
										Total	**0.38**	**9.09**	**47.42**	**0.35**	**0.24**	**0.23**
										SCAQMD Threshold	**55**	**550**	**55**	**150**	**150**	**55**

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars) - Includes EMFAC Off-Model Adjustment Factors to Account for the SAFE Rule for gasoline vehicle only.

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Truck route		
Unpaved	2,640	feet
Paved	500	feet
Total	0.6	mile
# Trips	20	per day

Employee Vehicles and Trucks Trip Emissions - Prima Deshecha Landfill GDP Project

Vehicle Class	ADT	Speed (mph)	Miles per day	Emission Factors (g/mi)) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$		Emission Rates (lbs/day) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Landfill Activities																
LDV	214	40	20	0.001382	0.383898	0.015479	0.001712	0.000436	0.000401		0.013	3.622	0.146	0.016	0.004	0.004
MDV	30	15	0.6	0.033193	1.074748	0.026817	0.004269	0.001667	0.001595		0.001	0.043	0.001	0.000	0.000	0.000
MDV	30	40	20	0.003851	0.124367	0.008921	0.002197	0.000892	0.000853		0.005	0.165	0.012	0.003	0.001	0.001
MHDT	611	15	0.6	0.018307	0.265296	3.730104	0.011436	0.003378	0.003231		0.015	0.214	3.015	0.009	0.003	0.003
MHDT	611	40	20	0.00558	0.058693	0.890001	0.006134	0.004611	0.004412		0.150	1.581	23.977	0.165	0.124	0.119
HHDT	0	15	0.6	0.042546	0.684706	7.017069	0.015658	0.007582	0.007254		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.012957	0.152167	1.677844	0.008311	0.010223	0.00978		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.185	5.625	27.150	0.194	0.132	0.126
Breccia Removal																
LDV	0	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.6	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.6	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	15	0.6	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.000	0.000	0.000	0.000	0.000	0.000
Soil Import for Liner Install																
LDV	0	40	20	0.001382	0.383898	0.015479	0.001712	0.000436	0.000401		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.5	0.033193	1.074748	0.026817	0.004269	0.001667	0.001595		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.003851	0.124367	0.008921	0.002197	0.000892	0.000853		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.5	0.018307	0.265296	3.730104	0.011436	0.003378	0.003231		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.00558	0.058693	0.890001	0.006134	0.004611	0.004412		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	46	15	0.5	0.042546	0.684706	7.017069	0.015658	0.007582	0.007254		0.002	0.035	0.356	0.001	0.000	0.000
HHDT	46	40	20	0.012957	0.152167	1.677844	0.008311	0.010223	0.00978		0.026	0.309	3.403	0.017	0.021	0.020
										Subtotal	0.028	0.343	3.759	0.018	0.021	0.020
										Total	**0.21**	**5.97**	**30.91**	**0.21**	**0.15**	**0.15**
										SCAQMD Threshold	**55**	**550**	**55**	**150**	**150**	**55**

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars) - Includes EMFAC Off-Model Adjustment Factors to Account for the SAFE Rule for gasoline vehicle only.

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Truck route		
Unpaved	2,640	feet
Paved	500	feet
Total	0.6	mile
# Trips	20	per day

Employee Vehicles and Trucks Trip Emissions - Prima Deshecha Landfill GDP Project

Vehicle Class	ADT	Speed (mph)	Miles per day	Emission Factors (g/mi)) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$		Emission Rates (lbs/day) VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Landfill Activities																
LDV	214	40	20	0.001329	0.381	0.015557	0.001702	0.000411	0.000377		0.013	3.595	0.147	0.016	0.004	0.004
MDV	30	15	0.6	0.031983	1.066716	0.02527	0.004218	0.001444	0.001382		0.001	0.042	0.001	0.000	0.000	0.000
MDV	30	40	20	0.0037	0.123302	0.008156	0.002171	0.000775	0.000742		0.005	0.163	0.011	0.003	0.001	0.001
MHDT	611	15	0.6	0.018294	0.265692	3.752154	0.011229	0.003382	0.003236		0.015	0.215	3.032	0.009	0.003	0.003
MHDT	611	40	20	0.00558	0.058769	0.891885	0.006025	0.004626	0.004426		0.150	1.583	24.027	0.162	0.125	0.119
HHDT	0	15	0.6	0.042427	0.688374	6.977921	0.015174	0.007494	0.00717		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.012932	0.152407	1.659324	0.008123	0.01023	0.009787		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.184	5.598	27.218	0.190	0.132	0.126
Breccia Removal																
LDV	0	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.6	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.6	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	15	0.6	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.000	0.000	0.000	0.000	0.000	0.000
Soil Import for Liner Install																
LDV	0	40	20	0.005865	0.579172	0.028433	0.002251	0.001136	0.001044		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	15	0.5	0.064272	1.274609	0.076516	0.0057	0.007816	0.007478		0.000	0.000	0.000	0.000	0.000	0.000
MDV	0	40	20	0.00838	0.15575	0.038239	0.002934	0.003902	0.003733		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	15	0.5	0.019179	0.258712	3.441615	0.014308	0.003619	0.003462		0.000	0.000	0.000	0.000	0.000	0.000
MHDT	0	40	20	0.005698	0.057651	0.878146	0.007657	0.004458	0.004265		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	15	0.5	0.046633	0.662702	7.914558	0.023242	0.010262	0.009818		0.000	0.000	0.000	0.000	0.000	0.000
HHDT	0	40	20	0.014122	0.156443	2.023474	0.011478	0.01121	0.010725		0.000	0.000	0.000	0.000	0.000	0.000
										Subtotal	0.000	0.000	0.000	0.000	0.000	0.000
										Total	**0.18**	**5.60**	**27.22**	**0.19**	**0.13**	**0.13**
										SCAQMD Threshold	**55**	**550**	**55**	**150**	**150**	**55**

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars) - Includes EMFAC Off-Model Adjustment Factors to Account for the SAFE Rule for gasoline vehicle only.

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Truck route		
Unpaved	2,640	feet
Paved	500	feet
Total	0.6	mile
# Trips	20	per day

Drilling and Blasting - Breccia Removal

			Blast Frequency			
ID	Source	holes/blast	blasts/day	blasts/month	blasts/ year	Tons ANFO/ Blast
B-1	Blasting Activity	2	2	5	50	2

Notes

3,600 x 1,800 = 6,840,000 sf area of drilling

18,000,000 pounds (or 9,000,000cy) rocks to be blasted

Blasting Emissions - Criteria Pollutants and GHG emissions

			CO EF	NOx EF	SO2 EF	Amount of	CO Emissions			NOx Emissions			SO2 Emissions		
ID	Source	Area (ft2)	blasting	blasting	blasting	rocks blasted	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
B-1	Blasting	1,000	67	17	2	6,500	1.2596	10.07948	0.5695	0.3196	2.55748	0.1445	0.0376	0.30088	0.017

1. Emissions Factor Source: AP-42 5th Edition, Section 13.3, Table 13.3-1, January 1995.
2. Total area to be blasted 9,000,000 cy of material / 20 years (2023-2042) = 450,000 cf per year.
3. 9,000,000 cy of material / 20 years (2023-2042) / 50 blasts annually = 9,000 cy/blast for export
4. 9,000,000 cubic yards/6140 operating days (i.e., 307 operating days per year x 20 years) = 1,466 cubic yards per day; 18 cy load = 81 truck trips per day

Dust - PM10

			PM10 EF Drilling	PM2.5 EF Drilling	Drilling Control	PM10 EF Blasting	PM10 EF Blasting	PM10 Emissions			PM2.5 Emissions			Source Type
ID	Source	Area (ft2)	(lb/hole)	(lb/hole)	Efficiency	(lb/blast)	(lb/blast)	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY	
B-1	Blasting	1,000	-	-	-	0.2302	0.0133	0.4604	0.4604	0.0058	0.0266	0.0266	0.0003	Area
D-1	Drilling	1,000	0.65	0.12	75%	-	-	0.1625	0.325	0.008125	0.03	0.06	0.0015	Area
							Total	0.62	0.79	0.01	0.06	0.09	0.00	

Notes:

1. Blasting Source: AECOM. Assumes 1.0 pounds of ANFO per cubic yard of rock blasted. Estimated 18,000,000 lbs (or 9,000,000cy) rocks to be blasted.
2. Emissions Factor Source: AP-42 5th Edition, Section 11.9, Table 11.9-4, October 1998. Assumes PM10 = TSP/2 = 1.3 lbs/hole / 2 = 0.65 lb/hole.
3. Emissions factor for PM2.5 is calculated based on a similar mechanical process for aggregate rock crushing. The emission factors for tertiary rock crushing will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The tertiary crushing emission factor for PM10 is 0.00054 lb/ton and the emissions factor for PM2.5 us 0.00010 lb/ton. The ratio of PM2.5 to PM10 is 0.00010/0.00054 = 0.185. Since the PM10 emission factor is estimated to be 0.65 lb/hole (see note 1), the emission factor for PM2.5 is estimated to be 0.65 lb/hole x 0.185 = 0.12 lb/hole.
4. Control Efficiency estimated to be between 63% and 88%, based on drill rotoclone or similar dust shroud device. Assumed midpoint of range reported.
5. AP-42 5th Edition, Section 11.9, Table 11.9-1. Also referenced Appendix E.2 of Background document to AP-42 5th Edition, Section 11.9.

PM10 EF = $0.000014(A)^{1.5}(0.52)$, where A = horizontal area in ft2 with a scaling factor for $\leq$10um of 0.52

PM2.5 EF = $0.000014(A)^{1.5}(0.03)$, where A = horizontal area in ft2 with a scaling factor for $\leq$2.5um of 0.03

Drill goes 90 feet deep. Total of 2 drilling holes. 180 ft/day drilling.

Example Calculation

Blasting PM10 = (7.28 lb/blast) x (1 blast/hr) = 7.28 lb/hr

Blasting PM10 = (1.57 lb/day) x (1 blast/day) = 1.57 lb/day

Blasting PM10 = (1.57 lb/day) x (250 blast/year) / (2,000 lb/ton) = 0.2 ton/year

5. Daily drilling emissions based on ability to drill one hole per hour per drill rig for 8 hours per day with one drill rig.
6. Based on 1 blast for the worst hourly potential to emit (PTE). However, modeled emission rate will be based on average of 1 blast in an 8-hour day.
7. Based on 1 blast per day, for the maximum daily PTE.

Storage Piles and Loading Operations

Storage Piles - Breccia Removal

ID	Source	PM10 EF lb/acre/day	PM2.5 EF lb/acre/day	Control Method	Control Efficiency	-	Pile Size (acres)	PM 10 Emissions lb/hr	PM 10 Emissions lb/day	PM 10 Emissions TPY	PM2.5 Emissions lb/hr	PM2.5 Emissions lb/day	PM2.5 Emissions TPY
SP1	Primary Storage Pile	5.6544	3.1248	Wet Suppr	90%	-	0.406	0.022957	0.229569	0.041896	0.012687	0.126867	0.023153
SP2	Active Storage Pile	5.6544	3.1248	Wet Suppr	90%	-	0.18	0.010178	0.101779	0.018575	0.005625	0.056246	0.010265
							total	**0.063**	**0.633**	**0.088**	**0.035**	**0.349**	**0.049**

Notes:

1. Storage piles are active 52 weeks.
2. Total area to be stored 3,300,000 cy of material / 20 years (2023-2042) = 165,000 cy per year.
3. Emissions Factor Source: AP-42 5th Edition, Section 11.9, Table 11.9-1 (Storage Piles), dated July 1998, as follows:

   TSP (<=30 mm) = 0.72 x u lb TSP/acre-hr, where u (wind speed) = 3.44 mph

   0.72 x 3.44 = 2.48 lb TSP/acre-hr

   PM10 = TSP x SF, where SF (Scaling Factor) = 0.19

   PM10 = 2.48 x 0.19 = 0.42 lb PM10/acre-hr x 12 operating hrs/day = 5.65 lb PM10/acre-day

   PM2.5 = TSP x SF, where SF (Scaling Factor) = 0.105

   PM2.5 = 2.48 x 0.105 = 0.2604 lb PM10/acre-hr x 12 operating hrs/day = 3.1248 lb PM2.5/acre-day

a) Annual average wind speed of 3.44 mph obtained from Mission Viejo Station #93184

4. AP-42 Section 13.2.4-4 states wet suppression results in 90% control.

Example Calculation: Storage Pile PM10 = 0.406 acres x 5.7 lb/acres/day x (1 - 0.9) = 0.2296 lb/day

Truck Loading Operation (Aggregate Loadout)

ID	Source	Material Loaded TPD	Material Loaded TPY	PM10 EF lb/ton	PM2.5 EF lb/ton	PM10 Emissions lb/hr	PM10 Emissions lb/day	PM10 Emissions TPY	PM2.5 Emissions lb/hr	PM2.5 Emissions lb/day	PM2.5 Emissions TPY
TL1	Loading to haul trucks	3,000	549,000	0.00010	0.000055	0.030	0.302	0.028	0.017	0.166	0.015

6. The following calculation procedures to estimate transfer point toxic emissions is based on AP-42 5th Ed. Section 13.2.4.3 Equation 1, January 1995, for the calculation of particulate matter. This equation has been modified by the San Diego Air Pollution Control District to incorporate toxic emissions, based on trace metal concentrations in aggregate dust, based upon test results from several San Diego County mineral product facilities provided to the District by AWR Consultants in July 1996.

Ea = Ua x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)
Eh = Uh x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)

Where:
Ea = Annual emissions of each listed substance, (lbs/year)
Eh = Maximum hourly emissions of each listed substance, (lbs/hour)
Ua = Annual material throughput for each transfer point, (tons/year)
Uh = Maximum hourly throughput for each transfer point, (tons/hour)
k = Particulate size multiplier, (dimensionless), k = 0.35 for PM10
u = Mean wind speed, (miles/hour) = 3.44 mph.
m = Material moisture content, (weight %) = 7.9%
Ci = Concentration of each listed substance in each material processed, (lbs/lb)
e = Control equipment efficiency, (%) (none)
a) Annual average wind speed of 3.44 mph obtained from Mission Viejo Station #93184.

7. Includes overburden loadout.
8. Emissions factor for PM2.5 is calculated based on a ratio of controlled emission factors for a conveyor transfer point. The emissions factor for conveyor transfer point (controlled) will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The PM10 emission factor is 0.0000460 lb/ton and the emission factor for PM2.5 is 0.0000130 lb/ton. The ratio of PM2.5 to PM10 is 0.0000130/0.0000460 = 0.283. Since the PM10 emission factor is estimated to be 0.00009 lb/ton, the emission factor for PM2.5 is estimated to be 0.000047 lb/ton.

Onsite Vehicle Fugitive PM Emissions - Unpaved Roads

Vehicle Activity - Breecia Removal

Group ID	Source	Miles per round trip	Load Weight (tons)	Material Transferred (Tons) Annual	Material Transferred (Tons) Daily	VMT Annual	VMT Daily
ST	Off-Highway Trucks[1]	3.38	37	263,800	11,000	24,098.49	1,005
L1	Front End Loader	0.32	3.5	132,000	1,370	12,069	125
L2	Excavator	0.32	45	132,000	5,500	939	39
L3	Motor Grader	1.6	12.5	32,900	5,500	4,211	704
L4	Compactor	0.06	12.8	13,750	570	64	3
L5	Tractor with dozer	4.8	40	132,000	5,500	15,840	660
WT1	Water Truck					2,600	10
T2	Construction/Misc Truck					780	3

Notes:
(1) Includes off-road haul trucks only. Trucks hauling concrete travel on unpaved surface.

Emission Factors

ID	Source	k (PM10)	k (PM2.5)	s[1]	W[2]	% Control Efficiency[3]	Moisture[1]	PM10 EF lb/VMT	PM2.5 EF lb/VMT
ST	Off-Highway Trucks	0.36	0.095	6.4	102	98	8.5	0.020	0.005
L1	Front End Loader	0.36	0.095	6.4	6	98	8.5	0.006	0.002
L2	Excavator	0.36	0.095	6.4	55	98	8.5	0.015	0.004
L3	Motor Grader	0.36	0.095	6.4	13	98	8.5	0.008	0.002
L4	Compactor	0.36	0.095	6.4	9	98	8.5	0.007	0.002
L5	Tractor with dozer	0.36	0.095	6.4	43	98	8.5	0.013	0.004
WT1	Water Truck	0.36	0.095	6.4	19	98	8.5	0.009	0.002
T2	Construction/Misc Truck	0.36	0.095	6.4	1.5	98	8.5	0.003	0.001

Notes:

(1) Average silt content and moisture content for unpaved roads with routine watering.
(2) The vehicle weights are based on the average weight of unloaded and loaded weights for haul trucks and the water truck. The other vehicle weights are based on the estimated Gross Mean Vehicle Weight provided by manufacturers. The following table summarizes the weight basis:

ID	Vehicle Type	Advertised Empty GMVW (tons)	Load Weight (tons)	Ave Weight (tons)	Source
ST	Off-Highway Trucks	57.5	88.4	102	Caterpillar Advertised Weights and Capacities - http://www.cat.com/cda/layout?m=37840&x=7&location=drop
L1	Front End Loader	3.5	5.9	6	
L2	Excavator	32.5	45	55	
L3	Motor Grader	6.5	12.5	13	
L4	Compactor	3	12.8	9	
L5	Tractor with dozer	22.5	40	43	
WT1	Water Truck	8.5	20	19	
T2	Construction/Misc Truck	1.5	NA	1.5	Manufacturer Advertised Weight for vehicle class

(3) Control efficiency from Figure 13.2.2-2, AP-42 5th Ed., Section 13.2.2, Unpaved Roads, December 2003, revision. Uncontrolled moisture content was assumed to be 1.0% and control moisture 5.7% which gives an M of 5.7 (and control efficiency of 99.7%). To be conservative, used 98% control. The uncontrolled road moisture was based on Fugitive Particulate Matter Emissions Final Draft Report, U.S. Environmental Protection Agency, Research Triangle Park, NC, EPA Contract No. 68-D2-0159, Assignment 4-06, January 1997, which reported a uncontrolled moisture content of 0.52% on unpaved roads. A value of 1.0% was selected which results in a more conservative estimate of control efficiency.

Assume 98% control also applies to soil stabilization based on the frequency of water application.

Emission Factor Source: AP-42 5th Ed., Section 13.2.2, Unpaved Roads, Rev.: December, 2003.
E=k(s/12)^a(W/3)^b

E = emission factor in lb/VMT
k = particle size multiplier (0.36 for PM10, 0.095 for PM2.5)
s = silt content of road surface materials, %
W = mean vehicle weight, ton

a = 0.9 for PM10
b = 0.45 for PM10
a = 0.9 for PM2.5
b = 0.45 for PM2.5

PM10 Emissions - Unpaved Roads

		PM10 Emissions		PM2.5 Emissions		
Group ID	**Source**	**Daily lb/day**	**Annual TPY**	**Daily lb/day**	**Annual TPY**	**Source Type**
ST	Off-Highway Trucks	20.06	0.24	5.29	0.06	Area
L1	Front End Loader	0.72	0.03	0.19	0.01	Area
L2	Excavator	0.59	0.01	0.16	0.00	Area
L3	Motor Grader	5.52	0.017	1.46	0.004	Area
L4	Compactor	0.02	0.000	0.00	0.000	Area
L5	Tractor with dozer	8.90	0.107	2.35	0.028	Area
WT1	Water Truck	0.09	0.012	0.02	0.003	Area
	Sub-Total - Plant Area	**35.90**	**0.42**	**9.47**	**0.11**	
T2	Construction/Misc Truck	0.01	0.001	0.00	0.000	Area
	Total	**35.91**	**0.42**	**9.48**	**0.11**	
	Threshold Limits	**150.00**	**100.00**	**55.00**	**70.00**	
	Exceedance?	**No**	**No**	**No**	**No**	

Example Calculation: Loader PM10 = (44 VMT/day) x (0.103 lb/VMT) = 4.53 lb/day
Loader PM10 = (11,250 VMT/day) x (0.103 lb/VMT) / (2000 lb/ton) = 0.58 TPY

Truck Unloading Operation (Aggregate Load) - Soil Importation for Liner Installation

		Material Loaded		PM10 EF	PM2.5 EF	PM10 Emissions			PM2.5 Emissions		
ID	Source	TPD	TPY	lb/ton	lb/ton	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
TL2	Unloading	2,027	8,108	0.00010	0.000055	0.020	0.204	0.000	0.011	0.112	0.000

6. The following calculation procedures to estimate transfer point toxic emissions is based on AP-42 5th Ed. Section 13.2.4.3 Equation 1, January 1995, for the calculation of particulate matter. This equation has been modified by the San Diego Air Pollution Control District to incorporate toxic emissions, based on trace metal concentrations in aggregate dust, based upon test results from several San Diego County mineral product facilities provided to the District by AWR Consultants in July 1996.

Ea = Ua x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)
Eh = Uh x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)

Where:
Ea = Annual emissions of each listed substance, (lbs/year)
Eh = Maximum hourly emissions of each listed substance, (lbs/hour)
Ua = Annual material throughput for each transfer point, (tons/year)
Uh = Maximum hourly throughput for each transfer point, (tons/hour)
k = Particulate size multiplier, (dimensionless), k = 0.35 for PM10
u = Mean wind speed, (miles/hour) = 3.44 mph.
m = Material moisture content, (weight %) = 7.9%
Ci = Concentration of each listed substance in each material processed, (lbs/lb)
e = Control equipment efficiency, (%) (none)
a) Annual average wind speed of 3.44 mph obtained from Mission Viejo Station #93184.

7. Includes overburden loadout.
8. Emissions factor for PM2.5 is calculated based on a ratio of controlled emission factors for a conveyor transfer point. The emissions factor for conveyor transfer point (controlled) will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The PM10 emission factor is 0.0000460 lb/ton and the emission factor for PM2.5 is 0.0000130 lb/ton. The ratio of PM2.5 to PM10 is 0.0000130/0.0000460 = 0.283. Since the PM10 emission factor is estimated to be 0.00009 lb/ton, the emission factor for PM2.5 is estimated to be 0.000047 lb/ton.

Onsite Vehicle Fugitive PM Emissions - Unpaved Roads

Vehicle Activity - Soil Importation for Liner Installation

Group ID	Source	Miles per round trip	Load Weight (tons)	Material Transferred (Tons) Annual	Material Transferred (Tons) Daily	VMT Annual	VMT Daily
ST	Off-Highway Trucks[1]	2.96	37	8,108	2,027	649	162
L1	Front End Loader	0.32	3.5	8,108	2,027	741	185
L2	Excavator	0	45	-	-	-	-
L3	Motor Grader	0	12.5	-	-	-	-
L4	Compactor	0.6	12.8	8,108	2,027	380	95
L5	Tractor with dozer	0	40	-	-	-	-
WT1	Water Truck					120	2
T2	Construction/Misc Truck					80	1

Notes:
(1) Includes off-road haul trucks only. Trucks hauling concrete travel on unpaved surface.

Emission Factors

ID	Source	k (PM10)	k (PM2.5)	s[1]	W[2]	% Control Efficiency[3]	Moisture[1]	PM10 EF lb/VMT	PM2.5 EF lb/VMT
ST	Off-Highway Trucks	0.36	0.095	6.4	102	98	8..5	0.020	0.005
L1	Front End Loader	0.36	0.095	6.4	6	98	8..5	0.006	0.002
L2	Excavator	0.36	0.095	6.4	55	98	8..5	0.015	0.004
L3	Motor Grader	0.36	0.095	6.4	13	98	8..5	0.008	0.002
L4	Compactor	0.36	0.095	6.4	9	98	8..5	0.007	0.002
L5	Tractor with dozer	0.36	0.095	6.4	43	98	8..5	0.013	0.004
WT1	Water Truck	0.36	0.095	6.4	19	98	8..5	0.009	0.002
T2	Construction/Misc Truck	0.36	0.095	6.4	1.5	98	8..5	0.003	0.001

Notes:

(1) Average silt content and moisture content for unpaved roads with routine watering.
(2) The vehicle weights are based on the average weight of unloaded and loaded weights for haul trucks and the water truck. The other vehicle weights are based on the estimated Gross Mean Vehicle Weight provided by manufacturers. The following table summarizes the weight basis:

ID	Vehicle Type	Advertised Empty GMVW (tons)	Load Weight (tons)	Ave Weight (tons)	Source
ST	Off-Highway Trucks	57.5	88.4	102	Caterpillar Advertised Weights and Capacities - http://www.cat.com/cda/layout?m=37840&x=7&location=drop
L1	Front End Loader	3.5	5.9	6	
L2	Excavator	32.5	45	55	
L3	Motor Grader	6.5	12.5	13	
L4	Compactor	3	12.8	9	
L5	Tractor with dozer	22.5	40	43	
WT1	Water Truck	8.5	20	19	
T2	Construction/Misc Truck	1.5	NA	1.5	Manufacturer Advertised Weight for vehicle class

(3) Control efficiency from Figure 13.2.2-2, AP-42 5th Ed., Section 13.2.2, Unpaved Roads, December 2003, revision. Uncontrolled moisture content was assumed to be 1.0% and control moisture 5.7% which gives an M of 5.7 (and control efficiency of 99.7%). To be conservative, used 98% control. The uncontrolled road moisture was based on Fugitive Particulate Matter Emissions Final Draft Report, U.S. Environmental Protection Agency, Research Triangle Park, NC, EPA Contract No. 68-D2-0159, Assignment 4-06, January 1997, which reported a uncontrolled moisture content of 0.52% on unpaved roads. A value of 1.0% was selected which results in a more conservative estimate of control efficiency.

Assume 98% control also applies to soil stabilization based on the frequency of water application.

Emission Factor Source: AP-42 5th Ed., Section 13.2.2, Unpaved Roads, Rev.: December, 2003.
E=k(s/12)^a(W/3)^b

E = emission factor in lb/VMT
k = particle size multiplier (0.36 for PM10, 0.095 for PM2.5)
s = silt content of road surface materials, %
W = mean vehicle weight, ton

a = 0.9 for PM10
b = 0.45 for PM10
a = 0.9 for PM2.5
b = 0.45 for PM2.5

PM10 Emissions - Unpaved Roads

		PM10 Emissions		PM2.5 Emissions		
Group ID	**Source**	**Daily lb/day**	**Annual TPY**	**Daily lb/day**	**Annual TPY**	**Source Type**
ST	Off-Highway Trucks	3.24	0.01	0.85	0.00	Area
L1	Front End Loader	1.07	0.00	0.28	0.00	Area
L2	Excavator	-	-	-	-	Area
L3	Motor Grader	-	-	-	-	Area
L4	Compactor	0.65	0.001	0.17	0.000	Area
L5	Tractor with dozer	-	-	-	-	Area
WT1	Water Truck	0.02	0.001	0.00	0.000	Area
	Sub-Total - Plant Area	**4.97**	**0.01**	**1.31**	**0.00**	
T2	Construction/Misc Truck	0.00	0.000	0.00	0.000	Area
	Total	**4.98**	**0.01**	**1.31**	**0.00**	
	Threshold Limits	**150.00**	**100.00**	**55.00**	**70.00**	
	Exceedance?	**No**	**No**	**No**	**No**	

Example Calculation: Loader PM10 = (44 VMT/day) x (0.103 lb/VMT) = 4.53 lb/day
Loader PM10 = (11,250 VMT/day) x (0.103 lb/VMT) / (2000 lb/ton) = 0.58 TPY

Truck Unloading Operation (Aggregate Load) - Landfill

		Material Loaded		PM10 EF	PM2.5 EF	PM10 Emissions			PM2.5 Emissions		
ID	Source	TPD	TPY	lb/ton	lb/ton	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
TL2	Unloading	2,027	8,108	0.00010	0.000055	0.020	0.204	0.000	0.011	0.112	0.000

6. The following calculation procedures to estimate transfer point toxic emissions is based on AP-42 5th Ed. Section 13.2.4.3 Equation 1, January 1995, for the calculation of particulate matter. This equation has been modified by the San Diego Air Pollution Control District to incorporate toxic emissions, based on trace metal concentrations in aggregate dust, based upon test results from several San Diego County mineral product facilities provided to the District by AWR Consultants in July 1996.

Ea = Ua x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)
Eh = Uh x [k x 0.0032 x (u/5)1.3 / (m/2)1.4] x Ci x (1 - e)

Where:
Ea = Annual emissions of each listed substance, (lbs/year)
Eh = Maximum hourly emissions of each listed substance, (lbs/hour)
Ua = Annual material throughput for each transfer point, (tons/year)
Uh = Maximum hourly throughput for each transfer point, (tons/hour)
k = Particulate size multiplier, (dimensionless), k = 0.35 for PM10
u = Mean wind speed, (miles/hour) = 3.44 mph.
m = Material moisture content, (weight %) = 7.9%
Ci = Concentration of each listed substance in each material processed, (lbs/lb)
e = Control equipment efficiency, (%) (none)
a) Annual average wind speed of 3.44 mph obtained from Mission Viejo Station #93184.

7. Includes overburden loadout.
8. Emissions factor for PM2.5 is calculated based on a ratio of controlled emission factors for a conveyor transfer point. The emissions factor for conveyor transfer point (controlled) will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The PM10 emission factor is 0.0000460 lb/ton and the emission factor for PM2.5 is 0.0000130 lb/ton. The ratio of PM2.5 to PM10 is 0.0000130/0.0000460 = 0.283. Since the PM10 emission factor is estimated to be 0.00009 lb/ton, the emission factor for PM2.5 is estimated to be 0.000047 lb/ton.

Onsite Vehicle Fugitive PM Emissions - Unpaved Roads

Vehicle Activity - Landfill

Group ID	Source	Miles per round trip	Load Weight (tons)	Material Transferred (Tons) Annual	Material Transferred (Tons) Daily	VMT Annual	VMT Daily
ST	Off-Highway Trucks[1]	2.6	37	488,800	1,880	34,348.11	132
L1	Front End Loader	0.32	3.5	488,800	1,880	44,690	172
L2	Excavator	0.32	45	733,200	2,820	5,214	20
L3	Motor Grader	1.6	12.5	733,200	2,820	93,850	361
L4	Compactor	0.06	12.8	733,200	2,820	3,437	13
L5	Tractor with dozer	4.8	40	733,200	2,820	87,984	338
WT1	Water Truck					2,600	10
T2	Construction/Misc Truck					780	3

Notes:
(1) Includes off-road haul trucks only. Trucks hauling concrete travel on unpaved surface.

Emission Factors

ID	Source	k (PM10)	k (PM2.5)	s[1]	W[2]	% Control Efficiency[3]	Moisture[1]	PM10 EF lb/VMT	PM2.5 EF lb/VMT
ST	Off-Highway Trucks	0.36	0.095	6.4	102	98	8.5	0.020	0.005
L1	Front End Loader	0.36	0.095	6.4	6	98	8.5	0.006	0.002
L2	Excavator	0.36	0.095	6.4	55	98	8.5	0.015	0.004
L3	Motor Grader	0.36	0.095	6.4	13	98	8.5	0.008	0.002
L4	Compactor	0.36	0.095	6.4	9	98	8.5	0.007	0.002
L5	Tractor with dozer	0.36	0.095	6.4	43	98	8.5	0.013	0.004
WT1	Water Truck	0.36	0.095	6.4	19	98	8.5	0.009	0.002
T2	Construction/Misc Truck	0.36	0.095	6.4	1.5	98	8.5	0.003	0.001

Notes:

(1) Average silt content and moisture content for unpaved roads with routine watering.
(2) The vehicle weights are based on the average weight of unloaded and loaded weights for haul trucks and the water truck. The other vehicle weights are based on the estimated Gross Mean Vehicle Weight provided by manufacturers. The following table summarizes the weight basis:

ID	Vehicle Type	Advertised Empty GMVW (tons)	Load Weight (tons)	Ave Weight (tons)	Source
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L1	Front End Loader	3.5	5.9	6	
L2	Excavator	32.5	45	55	
L3	Motor Grader	6.5	12.5	13	
L4	Compactor	3	12.8	9	
L5	Tractor with dozer	22.5	40	43	
WT1	Water Truck	8.5	20	19	
T2	Construction/Misc Truck	1.5	NA	1.5	Manufacturer Advertised Weight for vehicle class

(3) Control efficiency from Figure 13.2.2-2, AP-42 5th Ed., Section 13.2.2, Unpaved Roads, December 2003, revision. Uncontrolled moisture content was assumed to be 1.0% and control moisture 5.7% which gives an M of 5.7 (and control efficiency of 99.7%). To be conservative, used 98% control. The uncontrolled road moisture was based on Fugitive Particulate Matter Emissions Final Draft Report, U.S. Environmental Protection Agency, Research Triangle Park, NC, EPA Contract No. 68-D2-0159, Assignment 4-06, January 1997, which reported a uncontrolled moisture content of 0.52% on unpaved roads. A value of 1.0% was selected which results in a more conservative estimate of control efficiency.

Assume 98% control also applies to soil stabilization based on the frequency of water application.

Emission Factor Source: AP-42 5th Ed., Section 13.2.2, Unpaved Roads, Rev.: December, 2003.
E=k(s/12)^a(W/3)^b

E = emission factor in lb/VMT	a = 0.9 for PM10
k = particle size multiplier (0.36 for PM10, 0.095 for PM2.5)	b = 0.45 for PM10
s = silt content of road surface materials, %	a = 0.9 for PM2.5
W = mean vehicle weight, ton	b = 0.45 for PM2.5

PM10 Emissions - Unpaved Roads

		PM10 Emissions		PM2.5 Emissions		
Group ID	**Source**	**Daily lb/day**	**Annual TPY**	**Daily lb/day**	**Annual TPY**	**Source Type**
ST	Off-Highway Trucks	2.64	0.34	0.70	0.09	Area
L1	Front End Loader	0.99	0.13	0.26	0.03	Area
L2	Excavator	0.30	0.04	0.08	0.01	Area
L3	Motor Grader	2.83	0.368	0.75	0.097	Area
L4	Compactor	0.09	0.012	0.02	0.003	Area
L5	Tractor with dozer	4.56	0.593	1.20	0.156	Area
WT1	Water Truck	0.09	0.012	0.02	0.003	Area
	Sub-Total - Plant Area	**11.51**	**1.50**	**3.04**	**0.39**	
T2	Construction/Misc Truck	0.01	0.001	0.00	0.000	Area
	Total	**11.52**	**1.50**	**3.04**	**0.40**	
	Threshold Limits	**150.00**	**100.00**	**55.00**	**70.00**	
	Exceedance?	**No**	**No**	**No**	**No**	

Example Calculation: Loader PM10 = (44 VMT/day) x (0.103 lb/VMT) = 4.53 lb/day
Loader PM10 = (11,250 VMT/day) x (0.103 lb/VMT) / (2000 lb/ton) = 0.58 TPY

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2043
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	VMT	ROG_RUNE	CO_RUNEX	NOx_RUNE	SOx_RUNE	PM10_RUN	PM2.5_RUNEX
Orange (SC	2043	LDA	Aggregate	5	Gasoline	190407.3	0.011497	0.696169	0.029512	0.004554	0.003606	0.003316
Orange (SC	2043	LDA	Aggregate	5	Diesel	2370.876	0.078816	2.597488	0.041897	0.003681	0.001638	0.001567
Orange (SC	2043	LDA	Aggregate	15	Gasoline	833938.1	0.004839	0.584484	0.022375	0.003039	0.001506	0.001385
Orange (SC	2043	LDA	Aggregate	15	Diesel	10383.87	0.028814	0.949489	0.02332	0.002522	0.001336	0.001278
Orange (SC	2043	LDA	Aggregate	40	Gasoline	5705427	0.00138	0.382903	0.015471	0.001712	0.000433	0.000398
Orange (SC	2043	LDA	Aggregate	40	Diesel	71041.72	0.003334	0.109761	0.007542	0.001271	0.000717	0.000686
Orange (SC	2043	MDV	Aggregate	5	Gasoline	38539.13	0.020413	0.840348	0.036345	0.00639	0.003931	0.003615
Orange (SC	2043	MDV	Aggregate	5	Diesel	1390.136	0.090766	2.939884	0.047943	0.005927	0.00206	0.001971
Orange (SC	2043	MDV	Aggregate	15	Gasoline	168792.2	0.00861	0.705044	0.027464	0.004257	0.001642	0.00151
Orange (SC	2043	MDV	Aggregate	15	Diesel	6088.46	0.033193	1.074748	0.026817	0.004269	0.001667	0.001595
Orange (SC	2043	MDV	Aggregate	40	Gasoline	1154800	0.002464	0.461873	0.018956	0.002402	0.000472	0.000434
Orange (SC	2043	MDV	Aggregate	40	Diesel	41654.49	0.003851	0.124367	0.008921	0.002197	0.000892	0.000853
Orange (SC	2043	MHDT	Aggregate	5	Gasoline	888.7042	0.061708	0.345923	0.154192	0.031137	0.00771	0.007089
Orange (SC	2043	MHDT	Aggregate	5	Diesel	7285.258	0.052446	0.796291	7.08814	0.017576	0.00485	0.00464
Orange (SC	2043	MHDT	Aggregate	15	Gasoline	3707.023	0.025822	0.288221	0.117786	0.020671	0.00322	0.002961
Orange (SC	2043	MHDT	Aggregate	15	Diesel	28431.99	0.018307	0.265296	3.730104	0.011436	0.003378	0.003231
Orange (SC	2043	MHDT	Aggregate	40	Gasoline	26722.03	0.007409	0.190205	0.080757	0.011694	0.000926	0.000851
Orange (SC	2043	MHDT	Aggregate	40	Diesel	248878.9	0.00558	0.058693	0.890001	0.006134	0.004611	0.004412
Orange (SC	2043	HHDT	Aggregate	5	Gasoline	8.048013	2.129931	55.30037	5.354862	0.035933	0.0078	0.007172
Orange (SC	2043	HHDT	Aggregate	5	Diesel	4590.548	0.120493	2.029548	13.51946	0.024662	0.011034	0.010557
Orange (SC	2043	HHDT	Aggregate	15	Gasoline	33.57042	0.891293	46.07593	4.090548	0.023979	0.003258	0.002995
Orange (SC	2043	HHDT	Aggregate	15	Diesel	15580.17	0.042546	0.684706	7.017069	0.015658	0.007582	0.007254
Orange (SC	2043	HHDT	Aggregate	40	Gasoline	241.9919	0.255727	30.40674	2.804573	0.013623	0.000937	0.000861
Orange (SC	2043	HHDT	Aggregate	40	Diesel	162064	0.012957	0.152167	1.677844	0.008311	0.010223	0.00978

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2050
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	VMT	ROG_RUNE	CO_RUNEX	NOx_RUNE	SOx_RUNE	PM10_RUN	PM2.5_RUNEX
Orange (SC	2050	LDA	Aggregate	5	Gasoline	191977.8	0.011059	0.690909	0.029662	0.004528	0.003396	0.003123
Orange (SC	2050	LDA	Aggregate	5	Diesel	2395.884	0.077591	2.592213	0.040901	0.003664	0.001524	0.001458
Orange (SC	2050	LDA	Aggregate	15	Gasoline	840816.7	0.004655	0.58007	0.022488	0.003022	0.001419	0.001304
Orange (SC	2050	LDA	Aggregate	15	Diesel	10493.4	0.028362	0.947516	0.022708	0.00251	0.001249	0.001195
Orange (SC	2050	LDA	Aggregate	40	Gasoline	5752488	0.001328	0.380012	0.015549	0.001702	0.000408	0.000375
Orange (SC	2050	LDA	Aggregate	40	Diesel	71791.09	0.003277	0.109477	0.007235	0.001265	0.000671	0.000642
Orange (SC	2050	MDV	Aggregate	5	Gasoline	38752.46	0.016124	0.799479	0.031669	0.006258	0.003495	0.003213
Orange (SC	2050	MDV	Aggregate	5	Diesel	1413.164	0.087487	2.918206	0.045415	0.005856	0.00177	0.001693
Orange (SC	2050	MDV	Aggregate	15	Gasoline	169726.5	0.006785	0.671022	0.024007	0.004169	0.00146	0.001342
Orange (SC	2050	MDV	Aggregate	15	Diesel	6189.317	0.031983	1.066716	0.02527	0.004218	0.001444	0.001382
Orange (SC	2050	MDV	Aggregate	40	Gasoline	1161192	0.001936	0.439727	0.016602	0.002352	0.00042	0.000386
Orange (SC	2050	MDV	Aggregate	40	Diesel	42344.51	0.0037	0.123302	0.008156	0.002171	0.000775	0.000742
Orange (SC	2050	MHDT	Aggregate	5	Gasoline	883.1548	0.04278	0.306683	0.14974	0.030683	0.007781	0.007155
Orange (SC	2050	MHDT	Aggregate	5	Diesel	7820.488	0.052431	0.797584	7.140025	0.01726	0.004854	0.004644
Orange (SC	2050	MHDT	Aggregate	15	Gasoline	3683.875	0.017902	0.255526	0.114385	0.02037	0.00325	0.002988
Orange (SC	2050	MHDT	Aggregate	15	Diesel	30520.82	0.018294	0.265692	3.752154	0.011229	0.003382	0.003236
Orange (SC	2050	MHDT	Aggregate	40	Gasoline	26555.17	0.005136	0.168629	0.078425	0.011524	0.000934	0.000859
Orange (SC	2050	MHDT	Aggregate	40	Diesel	267163.4	0.00558	0.058769	0.891885	0.006025	0.004626	0.004426
Orange (SC	2050	HHDT	Aggregate	5	Gasoline	8.164988	2.045034	52.81033	5.537111	0.035629	0.007801	0.007173
Orange (SC	2050	HHDT	Aggregate	5	Diesel	4960.797	0.121253	2.060603	13.31411	0.023456	0.010767	0.010302
Orange (SC	2050	HHDT	Aggregate	15	Gasoline	34.05835	0.855767	44.00124	4.229767	0.023772	0.003258	0.002996
Orange (SC	2050	HHDT	Aggregate	15	Diesel	17001.34	0.042427	0.688374	6.977921	0.015174	0.007494	0.00717
Orange (SC	2050	HHDT	Aggregate	40	Gasoline	245.5092	0.245534	29.0376	2.900025	0.013503	0.000937	0.000861
Orange (SC	2050	HHDT	Aggregate	40	Diesel	177457.1	0.012932	0.152407	1.659324	0.008123	0.01023	0.009787

SrcID	StkID	ProID	PollID	PolAbbrev	Multiplier	Max Hr Ems (lbs/yr	Max Hr Ems (lbs/hr)	MWAF
SLINE1	0	0	9901	diesel part.	1	1.885E-02	2.150E-06	1
SLINE1	0	0	88101	PM2.5	1	1.803E-02	2.057E-06	1
SLINE1	0	0	106990	1,3-butadiene	1	6.961E-05	7.941E-09	1
SLINE1	0	0	71432	benzene	1	3.336E-04	3.806E-08	1
SLINE1	0	0	100414	ethylbenzene	1	1.357E-04	1.548E-08	1
SLINE1	0	0	78933	MEK	1	2.405E-06	2.743E-10	1
SLINE1	0	0	91203	naphthalene	1	6.075E-06	6.930E-10	1
SLINE1	0	0	115071	propylene	1	3.959E-04	4.516E-08	1
SLINE1	0	0	100425	styrene	1	1.595E-05	1.819E-09	1
SLINE1	0	0	108883	toluene	1	7.442E-04	8.490E-08	1
SLINE1	0	0	1330207	m & p-xylene	1	4.607E-04	5.255E-08	1
SLINE2	0	0	9901	diesel part.	1	1.885E-02	2.151E-06	1
SLINE2	0	0	88101	PM2.5	1	1.804E-02	2.057E-06	1
SLINE2	0	0	106990	1,3-butadiene	1	6.963E-05	7.943E-09	1
SLINE2	0	0	71432	benzene	1	3.337E-04	3.807E-08	1
SLINE2	0	0	100414	ethylbenzene	1	1.357E-04	1.548E-08	1
SLINE2	0	0	78933	MEK	1	2.405E-06	2.744E-10	1
SLINE2	0	0	91203	naphthalene	1	6.076E-06	6.932E-10	1
SLINE2	0	0	115071	propylene	1	3.960E-04	4.517E-08	1
SLINE2	0	0	100425	styrene	1	1.595E-05	1.820E-09	1
SLINE2	0	0	108883	toluene	1	7.444E-04	8.491E-08	1
SLINE2	0	0	1330207	m & p-xylene	1	4.608E-04	5.257E-08	1
SLINE3	0	0	9901	diesel part.	1	7.398E-05	8.439E-09	1
SLINE3	0	0	88101	PM2.5	1	7.078E-05	8.074E-09	1
SLINE3	0	0	106990	1,3-butadiene	1	1.103E-04	1.258E-08	1
SLINE3	0	0	71432	benzene	1	5.287E-04	6.031E-08	1
SLINE3	0	0	100414	ethylbenzene	1	2.150E-04	2.453E-08	1
SLINE3	0	0	78933	MEK	1	3.811E-06	4.347E-10	1
SLINE3	0	0	91203	naphthalene	1	9.627E-06	1.098E-09	1
SLINE3	0	0	115071	propylene	1	6.273E-04	7.156E-08	1
SLINE3	0	0	100425	styrene	1	2.527E-05	2.883E-09	1
SLINE3	0	0	108883	toluene	1	1.179E-03	1.345E-07	1

SLINE3	0	0	1330207	m & p-xylene	1	7.300E-04	8.328E-08	1
SLINE4	0	0	9901	diesel part.	1	2.155E-05	2.458E-09	1
SLINE4	0	0	88101	PM2.5	1	2.061E-05	2.351E-09	1
SLINE4	0	0	106990	1,3-butadiene	1	1.365E-05	1.557E-09	1
SLINE4	0	0	71432	benzene	1	6.540E-05	7.461E-09	1
SLINE4	0	0	100414	ethylbenzene	1	2.660E-05	3.034E-09	1
SLINE4	0	0	78933	MEK	1	4.714E-07	5.378E-11	1
SLINE4	0	0	91203	naphthalene	1	1.191E-06	1.359E-10	1
SLINE4	0	0	115071	propylene	1	7.761E-05	8.853E-09	1
SLINE4	0	0	100425	styrene	1	3.126E-06	3.566E-10	1
SLINE4	0	0	108883	toluene	1	1.459E-04	1.664E-08	1
SLINE4	0	0	1330207	m & p-xylene	1	9.031E-05	1.030E-08	1
SLINE5	0	0	9901	diesel part.	1	1.751E-02	1.997E-06	1
SLINE5	0	0	88101	PM2.5	1	1.675E-02	1.911E-06	1
SLINE5	0	0	106990	1,3-butadiene	1	7.341E-05	8.374E-09	1
SLINE5	0	0	71432	benzene	1	3.518E-04	4.013E-08	1
SLINE5	0	0	100414	ethylbenzene	1	1.431E-04	1.632E-08	1
SLINE5	0	0	78933	MEK	1	2.536E-06	2.893E-10	1
SLINE5	0	0	91203	naphthalene	1	6.406E-06	7.308E-10	1
SLINE5	0	0	115071	propylene	1	4.175E-04	4.763E-08	1
SLINE5	0	0	100425	styrene	1	1.682E-05	1.918E-09	1
SLINE5	0	0	108883	toluene	1	7.848E-04	8.953E-08	1
SLINE5	0	0	1330207	m & p-xylene	1	4.858E-04	5.542E-08	1
SLINE6	0	0	9901	diesel part.	1	1.434E-02	1.635E-06	1
SLINE6	0	0	88101	PM2.5	1	1.372E-02	1.565E-06	1
SLINE6	0	0	106990	1,3-butadiene	1	4.700E-04	5.362E-08	1
SLINE6	0	0	71432	benzene	1	2.253E-03	2.570E-07	1
SLINE6	0	0	100414	ethylbenzene	1	9.161E-04	1.045E-07	1
SLINE6	0	0	78933	MEK	1	1.624E-05	1.852E-09	1
SLINE6	0	0	91203	naphthalene	1	4.102E-05	4.679E-09	1
SLINE6	0	0	115071	propylene	1	2.673E-03	3.049E-07	1
SLINE6	0	0	100425	styrene	1	1.077E-04	1.228E-08	1
SLINE6	0	0	108883	toluene	1	5.025E-03	5.732E-07	1
SLINE6	0	0	1330207	m & p-xylene	1	3.111E-03	3.549E-07	1

PAREA1	0	0	9901	diesel part.	1	1.601E+00	1.826E-04	1
PAREA1	0	0	88101	PM2.5	1	1.456E+00	1.660E-04	1
PAREA1	0	0	106990	1,3-butadiene	1	2.215E-02	2.527E-06	1
PAREA1	0	0	71432	benzene	1	1.062E-01	1.211E-05	1
PAREA1	0	0	100414	ethylbenzene	1	4.317E-02	4.925E-06	1
PAREA1	0	0	78933	MEK	1	7.651E-04	8.728E-08	1
PAREA1	0	0	91203	naphthalene	1	1.933E-03	2.205E-07	1
PAREA1	0	0	115071	propylene	1	1.260E-01	1.437E-05	1
PAREA1	0	0	100425	styrene	1	5.074E-03	5.788E-07	1
PAREA1	0	0	108883	toluene	1	2.368E-01	2.701E-05	1
PAREA1	0	0	1330207	m & p-xylene	1	1.466E-01	1.672E-05	1
PAREA2	0	0	9901	diesel part.	1	3.064E-01	3.495E-05	1
PAREA2	0	0	88101	PM2.5	1	3.064E-01	3.495E-05	1
PAREA2	0	0	106990	1,3-butadiene	1	5.476E-03	6.247E-07	1
PAREA2	0	0	71432	benzene	1	2.625E-02	2.994E-06	1
PAREA2	0	0	100414	ethylbenzene	1	1.067E-02	1.218E-06	1
PAREA2	0	0	78933	MEK	1	1.892E-04	2.158E-08	1
PAREA2	0	0	91203	naphthalene	1	4.779E-04	5.452E-08	1
PAREA2	0	0	115071	propylene	1	3.115E-02	3.553E-06	1
PAREA2	0	0	100425	styrene	1	1.255E-03	1.431E-07	1
PAREA2	0	0	108883	toluene	1	5.855E-02	6.679E-06	1
PAREA2	0	0	1330207	m & p-xylene	1	3.624E-02	4.135E-06	1

Prima Deshecha Landfill GDP Project

Facility	Hours per day Trucks Operate	Total Truck Trips per Day	Truck Trips per Hour	Diesel Idle Exhaust PM_{10} (gm/vh-hr)[2]	Diesel Idle Exhaust $PM_{2.5}$ (gm/vh-hr)[2]	Operating Time (min/trip)[3]	Idle Exhaust Diesel PM_{10} (gm/hr)	Idle Exhaust Diesel $PM_{2.5}$ (gm/hr)
Truck Main Engine	12	1,537	128	0.0038	0.0036	15	0.1217	0.1163

Number of Sources	Diesel PM10 lb/hr	Diesel PM10 lb/yr	Diesel PM2.5 lb/hr	Diesel PM2.5 lb/yr
10	2.7E-05	0.2352	2.6E-05	0.2248

[1] AADT from Traffic Study

[2] Source: EMFAC2017 idling emission factors for 2023 HHDT.

[3] It is assumed that each truck idles for 15 minute per trip to account for multiple stops, i.e. at an entry check-in, loading/unloading and miscellaneous tasks.

Prima Deshecha Landfill GDP Project

Project Trip Generation

Landfill Construction and Operations

Summary of Vehicle Types	Incremental Daily Trips
Trip Generation (Cars)	214
Trip Generation (2-Axle Trucks)	30
Trip Generation (3-Axle Trucks)	611
Trip Generation (4+ Axle Trucks)	208
Trips/Unit (Total)	1,063

Note: From LSA Traffic Impact Analysis Report (October 2020)

Land Use	Size	Units	ADT
Existing Uses			
Landfill	2,120	TPD	688
Landfill Employees[2]	25	Vehicles	50
Landfill Material Deliveries	5	Trucks	10
HHW Collection Center[3]	80	Vehicles	160
HHW Employees[3]	2	Vehicles	4
Subtotal			**912**
Approved Uses			
Max Permitted Landfill Operation	1,880	TPD	611
Capistrano Greenery	15	Trucks	30
Subtotal			**641**
Proposed Project			
Breccia Removal	81	Trucks	162
SSO Trucks		Trucks	
SSO Construction Workers		Vehicles	
SSO Material Deliveries		Trucks	
Soil Import for Liner Install	23	Trucks	46
Subtotal			208
Total			**1,761**

Note: Trip generation is in passenger car equivalents.

[1] Based on information from the OC Waste & Recycling.

[2] Landfill employee schedules are 6:30 a.m. to 4:30 p.m.
Although landfill employees arrive prior to the a.m. peak hour, they depart during the p.m. peak hour.

[3] The HHW collection center is open from 9 a.m. to 3 p.m.
Although HHW employees arrive during the a.m. peak hour, all other HHW trips occur outside of the a.m. and p.m. peak hours.

ADT = average daily traffic

FEIR = Final Environmental Impact Report

GDP = General Development Plan

HHW = household hazardous waste

SSO = source-separate organic waste

TPD = tons per day

Prima Deshecha Landfill GDP Project

Off-site trucks Inbound		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		0	15	306	104
		% of Vehicles That Are Diesel-Powered[5]			
Average Speed		1.0%	3%	83%	100%
		Diesel Exhaust PM10 & PM2.5 Emissions at 40 mph (g/mi)6			
40 mph	PM_{10}	0.0049	3.90E-03	4.46E-03	1.12E-02
	$PM_{2.5}$	0.0047	3.73E-03	4.26E-03	1.07E-02
		% of Vehicles That Are Gasoline-Powered[5]			
Total distance covered by Off-site trucks roadway sources		99%	97%	17%	0.1%
		Gasoline Exhaust ROG Emissions at 40 mph (g/mi)6			
	ROG	0.0059	1.34E-02	2.48E-02	3.57E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
7,441 meters	PM_{10}	0.00E+00	8.14E-08	6.03E-05	6.23E-05
	$PM_{2.5}$	0.00E+00	7.79E-08	5.77E-05	5.96E-05
	ROG	0.00E+00	1.05E-05	6.99E-05	2.08E-06

Percent of traffic on this road: 50%

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
453	2.7E-07	2.2E-06	0.0188
453	2.6E-07	2.1E-06	0.0180
453	1.8E-07	1.4E-06	0.0127

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.88E-02	2.15E-06
PM2.5	--	1.80E-02	2.06E-06
1,3-butadiene	0.0055	6.96E-05	7.94E-09
benzene	0.02636	3.34E-04	3.81E-08
ethylbenzene	0.01072	1.36E-04	1.55E-08
MEK	0.00019	2.40E-06	2.74E-10
naphthalene	0.00048	6.08E-06	6.93E-10
propylene	0.03127998	3.96E-04	4.52E-08
styrene	0.00126	1.59E-05	1.82E-09
toluene	0.05879998	7.44E-04	8.49E-08
m & p-xylene	0.03639998	4.61E-04	5.26E-08

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

Off-site trucks Outbound		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		0	15	306	104
		% of Vehicles That Are Diesel-Powered[5]			
Average Speed		1.0%	3%	83%	100%
		Diesel Exhaust PM10 & PM2.5 Emissions at 40 mph (g/mi)6			
40 mph	PM_{10}	0.0049	3.90E-03	4.46E-03	1.12E-02
	$PM_{2.5}$	0.0047	3.73E-03	4.26E-03	1.07E-02
		% of Vehicles That Are Gasoline-Powered[5]			
Total distance covered by Off-site trucks roadway sources		99%	97%	17%	0.1%
		Gasoline Exhaust ROG Emissions at 40 mph (g/mi)6			
	ROG	0.0059	1.34E-02	2.48E-02	3.57E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
7,525 meters	PM_{10}	0.00E+00	8.23E-08	6.10E-05	6.30E-05
	$PM_{2.5}$	0.00E+00	7.88E-08	5.83E-05	6.03E-05
	ROG	0.00E+00	1.06E-05	7.07E-05	2.10E-06

Percent of traffic on this road: 50%

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
458	2.7E-07	2.2E-06	0.0189
458	2.6E-07	2.1E-06	0.0180
458	1.8E-07	1.4E-06	0.0127

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.89E-02	2.15E-06
PM2.5	--	1.80E-02	2.06E-06
1,3-butadiene	0.0055	6.96E-05	7.94E-09
benzene	0.02636	3.34E-04	3.81E-08
ethylbenzene	0.01072	1.36E-04	1.55E-08
MEK	0.00019	2.41E-06	2.74E-10
naphthalene	0.00048	6.08E-06	6.93E-10
propylene	0.03127998	3.96E-04	4.52E-08
styrene	0.00126	1.60E-05	1.82E-09
toluene	0.05879998	7.44E-04	8.49E-08
m & p-xylene	0.03639998	4.61E-04	5.26E-08

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

Off-site travel Employees Inbound		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		107	0	0	0
		% of Vehicles That Are Diesel-Powered[5]			
Average Speed		1.0%	0%	3%	17%
		Diesel Exhaust PM10 & PM2.5 Emissions at 40 mph (g/mi)6			
40 mph	PM_{10}	0.0167	4.87E-03	7.82E-03	5.33E-03
	$PM_{2.5}$	0.0160	4.66E-03	7.48E-03	5.10E-03
		% of Vehicles That Are Gasoline-Powered[5]			
Total distance covered by Off-site travel roadway sources		99%	100%	97%	82.7%
		Gasoline Exhaust ROG Emissions at 40 mph (g/mi)6			
	ROG	0.0474	5.86E-03	2.02E-01	2.02E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
7,521 meters	PM_{10}	1.00E-06	0.00E+00	0.00E+00	0.00E+00
	$PM_{2.5}$	9.57E-07	0.00E+00	0.00E+00	0.00E+00
	ROG	2.71E-04	0.00E+00	0.00E+00	0.00E+00

Percent of traffic on this road: 50%

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
941	1.1E-09	8.4E-09	0.0001
941	1.0E-09	8.1E-09	0.0001
941	2.9E-07	2.3E-06	0.0201

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	7.40E-05	8.44E-09
PM2.5	--	7.08E-05	8.07E-09
1,3-butadiene	0.0055	1.10E-04	1.26E-08
benzene	0.02636	5.29E-04	6.03E-08
ethylbenzene	0.01072	2.15E-04	2.45E-08
MEK	0.00019	3.81E-06	4.35E-10
naphthalene	0.00048	9.63E-06	1.10E-09
propylene	0.03127998	6.27E-04	7.16E-08
styrene	0.00126	2.53E-05	2.88E-09
toluene	0.05879998	1.18E-03	1.35E-07
m & p-xylene	0.03639998	7.30E-04	8.33E-08

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

Off-site travel Employees Outbound		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		107	0	0	0
		% of Vehicles That Are Diesel-Powered[5]			
Average Speed		1.0%	3%	83%	100%
		Diesel Exhaust PM10 & PM2.5 Emissions at 40 mph (g/mi)6			
40 mph	PM_{10}	0.0049	3.90E-03	4.46E-03	1.12E-02
	$PM_{2.5}$	0.0047	3.73E-03	4.26E-03	1.07E-02
		% of Vehicles That Are Gasoline-Powered[5]			
Total distance covered by Off-site travel roadway sources		99%	97%	17%	0.1%
		Gasoline Exhaust ROG Emissions at 40 mph (g/mi)6			
	ROG	0.0059	1.34E-02	2.48E-02	3.57E-01
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
7,350 meters	PM_{10}	2.85E-07	0.00E+00	0.00E+00	0.00E+00
	$PM_{2.5}$	2.73E-07	0.00E+00	0.00E+00	0.00E+00
	ROG	3.28E-05	0.00E+00	0.00E+00	0.00E+00

Percent of traffic on this road: 50%

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
920	3.1E-10	2.5E-09	0.0000
920	3.0E-10	2.4E-09	0.0000
920	3.6E-08	2.8E-07	0.0025

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	2.15E-05	2.46E-09
PM2.5	--	2.06E-05	2.35E-09
1,3-butadiene	0.0055	1.36E-05	1.56E-09
benzene	0.02636	6.54E-05	7.46E-09
ethylbenzene	0.01072	2.66E-05	3.03E-09
MEK	0.00019	4.71E-07	5.38E-11
naphthalene	0.00048	1.19E-06	1.36E-10
propylene	0.03127998	7.76E-05	8.85E-09
styrene	0.00126	3.13E-06	3.57E-10
toluene	0.05879998	1.46E-04	1.66E-08
m & p-xylene	0.03639998	9.03E-05	1.03E-08

[1] AADT from project traffic study

[2] LDV assumed to LDA (Passenger Cars)

[3] 2 axle trucks are assumed to be MDV (Medium-Duty Truck GVW=5,574-8,500 lbs.)

[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

On-site Zone 4 Trucks		AADT by Truck Category[1]			
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]
		0	30	0	208
		% of Vehicles That Are Diesel-Powered[5]			
Average Speed		1.0%	3%	80%	100%
		Diesel Exhaust PM10 & PM2.5 Emissions at 15 mph (g/mi)6			
15 mph	PM_{10}	0.0104	7.82E-03	3.62E-03	1.03E-02
	$PM_{2.5}$	0.0099	7.48E-03	3.46E-03	9.82E-03
		% of Vehicles That Are Gasoline-Powered[5]			
Total distance covered by On-site Zone 4 driveway sources		99%	97%	20%	0.1%
		Gasoline Exhaust ROG Emissions at 15 mph (g/mi)6			
	ROG	0.0201	4.48E-02	8.48E-02	1.21E+00
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)			
2,439 meters	PM_{10}	0.00E+00	1.07E-07	0.00E+00	3.74E-05
	$PM_{2.5}$	0.00E+00	1.02E-07	0.00E+00	3.58E-05
	ROG	0.00E+00	2.30E-05	0.00E+00	5.62E-06

Percent of traffic on-site
100%

Number of Sources	Emission Rates per source		
	g/s	lb/hr	lb/yr
149	2.5E-07	2.0E-06	0.0175
149	2.4E-07	1.9E-06	0.0168
149	1.9E-07	1.5E-06	0.0133

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.75E-02	2.00E-06
PM2.5	--	1.68E-02	1.91E-06
1,3-butadiene	0.0055	7.34E-05	8.37E-09
benzene	0.02636	3.52E-04	4.01E-08
ethylbenzene	0.01072	1.43E-04	1.63E-08
MEK	0.00019	2.54E-06	2.89E-10
naphthalene	0.00048	6.41E-06	7.31E-10
propylene	0.03127998	4.17E-04	4.76E-08
styrene	0.00126	1.68E-05	1.92E-09
toluene	0.05879998	7.85E-04	8.95E-08
m & p-xylene	0.03639998	4.86E-04	5.54E-08

[1] AADT from project traffic study

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[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

On-site Zone 1 Trucks Inbound		AADT by Truck Category[1]							
		LDV[2]	2-Axle[3]	3-Axle[4]	4+-Axle[5]				
		0	0	611	0				
		% of Vehicles That Are Diesel-Powered[5]							
Average Speed		1.0%	3%	80%	100%				
		Diesel Exhaust PM10 & PM2.5 Emissions at 15 mph (g/mi)6							
15 mph	PM_{10}	0.0104	7.82E-03	3.62E-03	1.03E-02				
	$PM_{2.5}$	0.0099	7.48E-03	3.46E-03	9.82E-03				
		% of Vehicles That Are Gasoline-Powered[5]							
Total distance covered by On-site Zone 1 driveway sources		99%	97%	20%	0.1%				
		Gasoline Exhaust ROG Emissions at 15 mph (g/mi)6				Number			
	ROG	0.0201	4.48E-02	8.48E-02	1.21E+00	of	Emission Rates per source		
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				Sources	g/s	lb/hr	lb/yr
1,317 meters	PM_{10}	0.00E+00	0.00E+00	1.67E-05	0.00E+00	81	2.1E-07	1.6E-06	0.0143
	$PM_{2.5}$	0.00E+00	0.00E+00	1.60E-05	0.00E+00	81	2.0E-07	1.6E-06	0.0137
	ROG	0.00E+00	0.00E+00	9.95E-05	0.00E+00	81	1.2E-06	9.7E-06	0.0855

Percent of traffic on-site
100%

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.43E-02	1.64E-06
PM2.5	--	1.37E-02	1.56E-06
1,3-butadiene	0.0055	4.70E-04	5.36E-08
benzene	0.02636	2.25E-03	2.57E-07
ethylbenzene	0.01072	9.16E-04	1.05E-07
MEK	0.00019	1.62E-05	1.85E-09
naphthalene	0.00048	4.10E-05	4.68E-09
propylene	0.03127998	2.67E-03	3.05E-07
styrene	0.00126	1.08E-04	1.23E-08
toluene	0.05879998	5.02E-03	5.73E-07
m & p-xylene	0.03639998	3.11E-03	3.55E-07

[1] AADT from project traffic study

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[4] 3 axle trucks are assumed to be MHDT (Medium-Heavy Duty Truck GVW=14,001-33,000 lbs.)

[5] 4+ axle trucks are assumed to be HHDT (Heavy-Heavy Duty Truck GVW=33,001-60,000 lbs.)

[6] Source: EMFAC2017 fleet percentages.

[7] Source: EMFAC2017 emission factors for 2023 (model year aggregate).

Prima Deshecha Landfill GDP Project

On-site Zone 4 Area Source		Equipment Exhaust Emissions (tons/year)							
		ROG	PM_{10}	$PM_{2.5}$					
		0.83	0.33	0.30					
		Emission data was obtained from Construction Emission Table							
Surface area									
1669530	m^2								
Conversion factor									
0.0287666									
Tons Per Year to Grams Per Second									
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				Number of Acres	Emission Rates per acre		
							g/s	lb/hr	lb/yr
	PM_{10}	0.00E+00	9.49E-03	0.00E+00	0.00E+00	412.5	2.3E-05	1.8E-04	1.60E+00
	$PM_{2.5}$	0.00E+00	0.00E+00	8.63E-03	0.00E+00	412.5	2.1E-05	1.7E-04	1.46E+00
	ROG	2.39E-02	0.00E+00	0.00E+00	0.00E+00	412.5	5.8E-05	4.6E-04	4.03E+00

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	1.60E+00	1.83E-04
PM2.5	--	1.46E+00	1.66E-04
1,3-butadiene	0.0055	2.21E-02	2.53E-06
benzene	0.02636	1.06E-01	1.21E-05
ethylbenzene	0.01072	4.32E-02	4.92E-06
MEK	0.00019	7.65E-04	8.73E-08
naphthalene	0.00048	1.93E-03	2.21E-07
propylene	0.03127998	1.26E-01	1.44E-05
styrene	0.00126	5.07E-03	5.79E-07
toluene	0.05879998	2.37E-01	2.70E-05
m & p-xylene	0.03639998	1.47E-01	1.67E-05

Prima Deshecha Landfill GDP Project

On-site Zone 1 Area Source		Equipment Exhaust Emissions (tons/year)							
		ROG	PM10	PM2.5					
		0.13	0.04	0.04					
		Emission data was obtained from Construction Emission Table							
Conversion factor **0.0287666** Tons Per Year to Grams Per Second									
		PM_{10}, $PM_{2.5}$ & ROG Exhaust Emissions (g/s)				Number of Acres	Emission Rates per acre		
							g/s	lb/hr	lb/yr
	PM_{10}	0.00E+00	1.15E-03	0.00E+00	0.00E+00	261.3	4.4E-06	3.5E-05	3.06E-01
	$PM_{2.5}$	0.00E+00	0.00E+00	1.15E-03	0.00E+00	261.3	4.4E-06	3.5E-05	3.06E-01
	ROG	3.74E-03	0.00E+00	0.00E+00	0.00E+00	261.3	1.4E-05	1.1E-04	9.96E-01

Speciated Emissions Rates

		lb/yr	lb/hr
diesel part.	--	3.06E-01	3.50E-05
PM2.5	--	3.06E-01	3.50E-05
1,3-butadiene	0.0055	5.48E-03	6.25E-07
benzene	0.02636	2.62E-02	2.99E-06
ethylbenzene	0.01072	1.07E-02	1.22E-06
MEK	0.00019	1.89E-04	2.16E-08
naphthalene	0.00048	4.78E-04	5.45E-08
propylene	0.03127998	3.11E-02	3.55E-06
styrene	0.00126	1.25E-03	1.43E-07
toluene	0.05879998	5.85E-02	6.68E-06
m & p-xylene	0.03639998	3.62E-02	4.13E-06

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

No	Vehicle Categ	Fuel	Population	VMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	pm2.5_RUNEX	pm2.5_IDLEX	pm2.5_STREX	pm2.5_PMTW	pm2.5_PMBW	pm10_RUNEX	pm10_IDLEX	pm10_STREX	pm10_PMTW	pm10_PMBW	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	tOG_RUNEX	ROG_IDLEX	tOG_STREX	3_HOTSOAK	3_RUNLOSS	_RESTLOSS	ROG_DIURN	TOG_RUNEX	TOG_IDLEX	TOG_STREX	3_HOTSOAK	3_RUNLOSS	_RESTLOSS	TOG_DIURN	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX
1	HHDT	Gasoline	5.81E+01	5.69E+03	1.16E+03	4.64E+00	0	8.32E-01	1.27E-03	0	8.53E-04	5.00E-03	2.65E-02	1.38E-03	0	9.27E-04	2.00E-02	6.17E-02	2.14E+03	0	4.82E+01	1.17E-01	0	2.63E-04	1.59E-01	0	2.17E-02	6.11E-01	0	1.39E-03	1.59E-01	8.73E-01	5.86E-02	8.35E-02	3.70E+01	0	5.25E+00	2.12E-02	0								
2	HHDT	Diesel	5.60E+04	6.67E+05	5.57E+05	4.17E+00	6.35E+01	1.92E+00	4.84E-02	8.72E-02	0	8.90E-03	2.62E-02	5.06E-02	9.12E-02	0	3.56E-02	6.10E-02	1.50E+03	1.15E+04	0	5.66E-03	2.16E-01	0	2.35E-01	1.81E+00	0	1.22E-01	4.65E+00	0	0	0	0	0	0	1.39E-01	5.25E+00	0	0	0	0	0	4.96E-01	5.90E+01	0	1.41E-02	1.09E-01	0
3	HHDT	Natural Gas	2.45E+03	9.97E+04	9.56E+03	3.64E+00	2.44E+01	0	7.04E-03	5.01E-02	0	9.00E-03	2.65E-02	7.36E-03	5.24E-02	0	3.60E-02	6.17E-02	3.46E+03	4.16E+03	0	5.29E+00	1.31E+00	0	7.06E-01	8.47E-01	0	3.98E-01	7.48E-02	0	0	0	0	0	5.77E+00	1.40E+00	0	0	0	0	0	1.32E+01	1.99E+01	0	0	0	0
4	LDA	Gasoline	3.91E+06	1.51E+08	1.94E+07	4.68E-02	0	2.00E-01	1.71E-03	0	1.84E-03	2.00E-03	1.58E-02	1.86E-03	0	2.00E-03	8.00E-03	3.68E-02	2.94E+02	0	5.63E+01	3.56E-03	0	5.53E-02	5.00E-03	0	2.66E-02	1.41E-02	0	2.53E-01	1.10E-01	2.26E-01	2.58E-01	2.75E-01	8.01E-01	0	2.22E+00	2.81E-03	0	5.57E-04							
5	LDA	Diesel	3.26E+04	1.30E+06	1.54E+05	9.37E-02	0	0	1.12E-02	0	0	2.00E-03	1.58E-02	1.17E-02	0	0	8.00E-03	3.68E-02	2.21E+02	0	0	1.13E-03	0	0	3.47E-02	0	0	2.43E-02	0	0	0	0	0	0	2.77E-02	0	0	0	0	0	0	3.12E-01	0	0	2.09E-03	0	0
6	LDA	Electricity	6.62E+04	2.65E+06	3.31E+05	0	0	0	0	0	0	2.00E-03	1.58E-02	0	0	0	8.00E-03	3.68E-02	0	0	0	0	0	0	0	0	0	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	0	0	0	0
7	LDT1	Gasoline	4.44E+05	1.67E+07	2.05E+06	1.39E-01	0	2.81E-01	2.68E-03	0	2.63E-03	2.00E-03	1.58E-02	2.92E-03	0	2.86E-03	8.00E-03	3.68E-02	3.29E+02	0	6.56E+01	8.94E-03	0	7.82E-02	9.89E-03	0	2.99E-02	4.01E-02	0	3.98E-01	2.19E-01	7.59E-01	5.41E-01	6.50E-01	5.84E-02	0	4.35E-01	2.19E-01	7.59E-01	5.41E-01	6.50E-01	1.64E+00	0	2.37E+00	3.26E-03	0	6.49E-04
8	LDT1	Diesel	2.91E+02	7.20E+03	1.04E+03	1.10E+00	0	0	1.44E-01	0	0	2.00E-03	1.58E-02	1.51E-01	0	0	8.00E-03	3.68E-02	4.73E+02	0	0	9.33E-03	0	0	7.43E-02	0	0	2.01E-01	0	0	0	0	0	0	2.29E-01	0	0	0	0	0	0	1.17E+00	0	0	4.47E-03	0	0
9	LDT1	Electricity	2.51E+03	9.96E+04	1.25E+04	0	0	0	0	0	0	2.00E-03	1.58E-02	0	0	0	8.00E-03	3.68E-02	0	0	0	0	0	0	0	0	0	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	0	0	0	0
10	LDT2	Gasoline	1.35E+06	5.15E+07	8.32E+06	9.95E-02	0	3.15E-01	1.84E-03	0	1.86E-03	2.00E-03	1.58E-02	2.00E-03	0	2.01E-03	8.00E-03	3.68E-02	3.57E+02	0	7.20E+01	5.67E-03	0	7.40E-02	7.83E-03	0	3.43E-02	2.37E-02	0	3.50E-01	1.33E-01	4.30E-01	3.67E-01	3.66E-01	3.45E-02	0	3.83E-01	1.33E-01	4.30E-01	3.67E-01	3.66E-01	1.13E+00	0	2.79E+00	3.53E-03	0	7.13E-04
11	LDT2	Diesel	8.03E+03	3.50E+05	3.98E+04	5.12E-02	0	0	6.46E-03	0	0	2.00E-03	1.58E-02	6.79E-03	0	0	8.00E-03	3.68E-02	3.01E+02	0	0	1.09E-03	0	0	4.73E-02	0	0	2.36E-02	0	0	0	0	0	0	2.68E-02	0	0	0	0	0	0	1.89E-01	0	0	2.85E-03	0	0
12	LDT2	Electricity	1.09E+04	3.84E+05	5.53E+04	0	0	0	0	0	0	2.00E-03	1.58E-02	0	0	0	8.00E-03	3.68E-02	0	0	0	0	0	0	0	0	0	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	0	0	0	0
13	LHDT1	Gasoline	1.06E+05	3.88E+06	1.57E+06	2.32E-01	3.93E-02	5.26E-01	1.29E-03	0	4.11E-04	2.00E-03	3.28E-02	1.40E-03	0	4.47E-04	8.00E-03	7.64E-02	8.21E+02	1.22E+02	1.91E+01	8.56E-03	1.26E-01	2.59E-02	1.39E-02	3.28E-03	4.23E-02	4.17E-02	4.48E-01	1.28E-01	1.27E-01	8.77E-01	3.66E-02	6.07E-02	6.08E-02	6.54E-01	1.41E-01	1.27E-01	8.77E-01	3.66E-02	6.07E-02	9.87E-01	3.75E+00	1.77E+00	8.12E-03	1.20E-03	1.89E-04
14	LHDT1	Diesel	5.93E+04	2.58E+06	7.46E+05	1.44E+00	2.02E+00	0	1.39E-02	2.67E-02	0	3.00E-03	3.28E-02	1.44E-02	2.79E-02	0	1.20E-02	7.64E-02	4.72E+02	1.32E+02	0	3.26E-03	5.10E-03	0	7.42E-02	2.08E-02	0	7.05E-02	1.16E-01	0	0	0	0	0	7.97E-02	1.26E-01	0	0	0	0	0	3.61E-01	9.16E-01	0	4.46E-03	1.25E-03	0
15	LHDT2	Gasoline	1.76E+04	6.25E+05	2.63E+05	2.35E-01	3.93E-02	5.40E-01	1.17E-03	0	3.48E-04	2.00E-03	3.62E-02	1.27E-03	0	3.79E-04	8.00E-03	8.92E-02	9.42E+02	1.41E+02	2.17E+01	6.45E-03	1.26E-01	2.67E-02	1.49E-02	3.17E-03	4.22E-02	2.92E-02	4.50E-01	1.32E-01	1.27E-01	8.47E-01	3.37E-02	5.54E-02	4.26E-02	6.56E-01	1.45E-01	1.27E-01	8.47E-01	3.37E-02	5.54E-02	7.28E-01	3.75E+00	1.78E+00	9.32E-03	1.39E-03	2.15E-04
16	LHDT2	Diesel	2.40E+04	1.00E+06	3.01E+05	1.37E+00	2.03E+00	0	1.51E-02	2.73E-02	0	3.00E-03	3.62E-02	1.58E-02	2.85E-02	0	1.20E-02	8.92E-02	5.22E+02	2.13E+02	0	3.20E-03	5.10E-03	0	8.21E-02	3.34E-02	0	6.88E-02	1.19E-01	0	0	0	0	0	7.84E-02	1.25E-01	0	0	0	0	0	3.52E-01	9.10E-01	0	4.93E-03	2.01E-03	0
17	MCY	Gasoline	1.70E+05	1.21E+06	3.40E+05	1.13E+00	0	2.63E-01	2.23E-03	0	3.17E-03	1.00E-03	5.04E-03	2.59E-03	0	3.36E-03	4.00E-03	1.18E-02	2.24E+02	0	5.99E+01	3.82E-01	0	2.36E-01	6.55E-02	0	1.51E-02	2.63E+00	0	1.82E+00	6.72E-01	2.07E+00	1.34E+00	2.18E+00	3.26E+00	0	1.98E+00	6.72E-01	2.07E+00	1.34E+00	2.18E+00	1.94E+01	0	8.40E+00	2.21E-03	0	5.93E-04
18	MDV	Gasoline	9.12E+05	3.22E+07	4.22E+06	1.39E-01	0	3.92E-01	2.00E-03	0	2.08E-03	2.00E-03	1.58E-02	2.17E-03	0	2.26E-03	8.00E-03	3.88E-02	4.37E+02	0	8.87E+01	8.17E-03	0	9.09E-02	1.01E-02	0	3.77E-02	3.83E-02	0	4.56E-01	1.53E-01	4.62E-01	4.42E-01	4.23E-01	5.36E-02	0	5.00E-01	1.53E-01	4.62E-01	4.42E-01	4.23E-01	1.48E+00	0	3.38E+00	4.33E-03	0	8.78E-04
19	MDV	Diesel	1.77E+04	7.16E+05	8.71E+04	5.42E-02	0	0	5.74E-03	0	0	2.00E-03	1.58E-02	6.00E-03	0	0	8.00E-03	3.68E-02	3.56E+02	0	0	8.03E-04	0	0	6.13E-02	0	0	1.73E-02	0	0	0	0	0	0	1.97E-02	0	0	0	0	0	0	2.86E-01	0	0	3.68E-03	0	0
20	MDV	Electricity	4.77E+03	1.65E+05	2.44E+04	0	0	0	0	0	0	2.00E-03	1.58E-02	0	0	0	8.00E-03	3.68E-02	0	0	0	0	0	0	0	0	0	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	4.89E-03	0	7.50E-03	2.24E-02	0	0	0	0	0	0	0
21	MH	Gasoline	1.88E+04	1.90E+05	1.88E+03	3.86E-01	0	3.25E-01	1.42E-03	0	3.62E-04	3.00E-03	5.59E-02	1.55E-03	0	3.94E-04	1.20E-02	1.36E-01	1.70E+03	0	2.59E+01	1.45E-02	0	3.14E-02	2.39E-02	0	3.52E-02	6.48E-02	0	1.31E-01	8.37E-02	2.10E+00	5.00E-02	1.21E-01	9.46E-02	0	1.43E-01	8.37E-02	2.10E+00	5.00E-02	1.21E-01	1.86E+00	0	2.94E+00	1.68E-02		2.58E-04
22	MH	Diesel	5.56E+03	5.90E+04	5.58E+02	3.62E+00	0	0	7.90E-02	0	0	4.00E-03	5.59E-02	8.26E-02	0	0	1.60E-02	1.30E-01	9.79E+02	0	0	3.27E-03	0	0	1.54E-01	0	0	7.04E-02	0	0	0	0	0	0	8.01E-02	0	0	0	0	0	0	2.97E-01	0	0	9.25E-03	0	0
23	MHDT	Gasoline	1.44E+04	7.90E+05	2.88E+05	5.54E-01	8.91E-02	3.76E-01	1.03E-03	0	4.25E-04	3.00E-03	5.59E-02	1.12E-03	0	4.63E-04	1.20E-02	1.36E-01	1.71E+03	5.50E+02	3.98E+01	1.65E-02	2.61E-01	4.14E-02	2.68E-02	7.48E-03	2.91E-02	8.09E-02	1.00E+00	2.24E-01	9.22E-02	4.95E-01	2.94E-02	4.66E-02	1.18E-01	1.46E+00	2.45E-01	9.22E-02	4.95E-01	2.94E-02	4.66E-02	2.66E+00	1.43E+01	4.86E+00	1.69E-02	5.44E-03	3.93E-04
24	MHDT	Diesel	6.45E+04	4.03E+06	6.34E+05	2.65E+00	8.67E+00	1.44E+00	6.95E-02	2.49E-02	0	3.00E-03	5.59E-02	7.27E-02	2.61E-02	0	1.20E-02	1.36E-01	9.87E+02	8.61E+02	0	5.86E-03	5.45E-03	0	1.55E-01	1.39E-01	0	1.26E-01	1.11E-01	0	0	0	0	0	1.44E-01	1.33E-01	0	0	0	0	0	4.39E-01	2.46E+00	0	9.33E-03	8.14E-03	0
25	OBUS	Gasoline	3.95E+03	1.67E+05	7.98E+04	5.35E-01	6.49E-02	3.28E-01	8.61E-04	0	2.47E-04	3.00E-03	5.59E-02	9.37E-04	0	2.69E-04	1.20E-02	1.36E-01	1.72E+03	3.82E+02	2.68E+01	1.44E-02	1.99E-01	3.07E-02	2.57E-02	5.42E-03	2.52E-02	6.93E-02	7.43E-01	1.62E-01	3.03E-02	3.61E-01	2.58E-02	5.11E-02	1.01E-01	1.08E+00	1.77E-01	3.03E-02	3.61E-01	2.58E-02	5.11E-02	1.73E+00	5.76E+00	3.39E+00	1.70E-02	3.78E-03	2.65E-04
26	OBUS	Diesel	3.05E+03	2.30E+05	2.99E+04	3.25E+00	2.23E+01	1.59E+00	6.86E-02	8.33E-02	0	3.00E-03	5.59E-02	7.17E-02	8.71E-02	0	1.20E-02	1.36E-01	1.21E+03	3.00E+03	0	6.76E-03	6.14E-02	0	1.91E-01	4.71E-01	0	1.40E-01	1.32E+00	0	0	0	0	0	1.66E-01	1.51E+00	0	0	0	0	0	5.29E-01	1.42E+01	0	1.15E-02	2.83E-02	0
27	SBUS	Gasoline	1.28E+03	5.23E+04	5.11E+03	4.22E-01	9.24E-01	5.93E-01	1.52E-03	0	4.03E-04	2.00E-03	3.19E-01	1.11E-03	0	4.39E-04	8.00E-03	7.45E-01	8.76E+02	2.61E+03	4.78E+01	1.16E-02	2.41E+00	5.65E-02	2.43E-02	8.61E-02	5.44E-02	5.81E-02	1.06E+01	3.26E-01	7.21E-02	4.88E-01	1.74E-02	3.34E-02	8.48E-02	1.55E+01	3.57E-01	7.21E-02	4.88E-01	1.74E-02	3.34E-02	1.26E+00	8.20E+01	7.85E+00	8.67E-03	2.59E-02	4.74E-04
28	SBUS	Diesel	3.42E+03	1.08E+05	3.95E+04	7.10E+00	4.20E+01	8.83E-01	4.10E-02	5.46E-02	0	3.00E-03	3.19E-01	4.29E-02	5.71E-02	0	1.20E-02	7.45E-01	1.23E+03	3.65E+03	0	5.43E-03	1.37E-02	0	1.94E-01	5.73E-01	0	1.17E-01	2.91E-01	0	0	0	0	0	1.33E-01	3.38E-01	0	0	0	0	0	3.34E-01	6.35E+00	0	1.16E-02	3.44E-02	0
29	UBUS	Gasoline	4.50E+02	3.28E+04	1.62E+03	3.00E-01	0	8.65E-01	9.01E-04	0	3.46E-04	2.84E-03	5.30E-02	9.80E-04	0	3.79E-04	1.13E-02	1.24E-01	2.06E+03	0	8.78E+01	5.97E-03	0	1.14E-01	2.46E-02	0	7.32E-02	2.00E-02	0	4.92E-01	8.84E-02	5.51E-01	2.07E-02	2.57E-02	2.91E-02	0	5.39E-01	8.84E-02	5.51E-01	2.07E-02	2.57E-02	3.72E-01	0	7.17E+00	2.04E-02	0	8.66E-04
30	UBUS	Diesel	1.01E+01	1.16E+03	4.06E+01	8.32E-01	0	0	8.87E-03	0	0	9.00E-03	2.65E-02	6.14E-03	0	0	3.60E-02	6.17E-02	1.80E+03	0	0	8.11E-02	0	0	2.82E-01	0	0	1.16E-03	0	0	0	0	0	0	8.28E-02	0	0	0	0	0	0	1.38E-01	0	0	1.70E-02	0	0
31	UBUS	Electricity	12	1.07E+03	4.80E+01	0	0	0	0	0	0	3.00E-03	5.59E-02	0	0	0	1.20E-02	1.36E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	UBUS	Natural Gas	4.10E+03	4.35E+05	1.64E+04	8.18E-01	0	0	3.42E-03	0	0	8.37E-03	2.95E-02	3.58E-03	0	0	3.35E-02	6.87E-02	1.99E+03	0	0	6.50E+00	0	0	4.06E-01	0	0	9.32E-02	0	0	0	0	0	0	6.64E+00	0	0	0	0	0	0	4.78E+01	0	0	0	0	0

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: Orange (SC)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calend	Vehicle Ca	Model Year	Speed	Fuel	Population	VMT	Trips	ROG_IDLEX	PM10_IDLEX	PM2_5_IDLEX
ORANGE (SC)	2023	HHDT	Aggregated	Aggregated	DSL	56000	6670000	557000	4.65	0.0912	0.0872

EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: ORANGE (SC)
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	Calenda	Vehicle Ca	Model Year	Speed	Fuel	VMT	ROG_RUNEX	PM10_RUNEX	PM2_5_RUNEX	Fuel %
Orange (SC)	2023	LDA	Aggregate	5	Gasolin	161,746	0.047357755	0.009344104	0.008591579	
Orange (SC)	2023	LDA	Aggregate	5	Diesel	1,690	0.167934563	0.016722385	0.015998982	
Orange (SC)	2023	LDA	Aggregate	15	Gasolin	608,476	0.020132243	0.00391181	0.003596775	98.97%
Orange (SC)	2023	LDA	Aggregate	15	Diesel	6,356	0.063407446	0.010386879	0.009937548	1.03%
Orange (SC)	2023	LDA	Aggregate	40	Gasolin	5,222,910	0.005860795	0.001128348	0.001037479	98.97%
Orange (SC)	2023	LDA	Aggregate	40	Diesel	54,559	0.009426152	0.004872153	0.004661386	1.03%
Orange (SC)	2023	MDV	Aggregate	5	Gasolin	35,655	0.103805638	0.009610848	0.008837146	
Orange (SC)	2023	MDV	Aggregate	5	Diesel	951	0.173320414	0.011244374	0.010757947	
Orange (SC)	2023	MDV	Aggregate	15	Gasolin	134,133	0.044810353	0.004041953	0.003716592	97.40%
Orange (SC)	2023	MDV	Aggregate	15	Diesel	3,579	0.064272144	0.007816376	0.007478243	2.60%
Orange (SC)	2023	MDV	Aggregate	40	Gasolin	1,151,340	0.013376551	0.001174879	0.001080325	97.40%
Orange (SC)	2023	MDV	Aggregate	40	Diesel	30,717	0.008380239	0.003902247	0.003733437	2.60%
Orange (SC)	2023	MHDT	Aggregate	5	Gasolin	1,239	0.20151114	0.005960325	0.005480299	
Orange (SC)	2023	MHDT	Aggregate	5	Diesel	4,776	0.054136998	0.005331866	0.005101212	
Orange (SC)	2023	MHDT	Aggregate	15	Gasolin	4,315	0.084796524	0.002492436	0.002291702	20.28%
Orange (SC)	2023	MHDT	Aggregate	15	Diesel	16,964	0.019179204	0.003618517	0.003461981	79.72%
Orange (SC)	2023	MHDT	Aggregate	40	Gasolin	43,370	0.024767889	0.000718652	0.000660774	17.25%
Orange (SC)	2023	MHDT	Aggregate	40	Diesel	207,996	0.005698007	0.004457806	0.004264964	82.75%
Orange (SC)	2023	HHDT	Aggregate	5	Gasolin	3.8361973	2.857859125	0.008099642	0.007447322	
Orange (SC)	2023	HHDT	Aggregate	5	Diesel	3484.7985	0.116879602	0.017113825	0.016373488	
Orange (SC)	2023	HHDT	Aggregate	15	Gasolin	13.357707	1.20878135	0.003427557	0.003151512	0.13%
Orange (SC)	2023	HHDT	Aggregate	15	Diesel	10478.099	0.046633145	0.010261517	0.009817608	99.87%
Orange (SC)	2023	HHDT	Aggregate	40	Gasolin	134.26008	0.357165774	0.001015311	0.000933541	0.10%
Orange (SC)	2023	HHDT	Aggregate	40	Diesel	128224.39	0.014121539	0.011209909	0.010724974	99.90%

Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	VMT	NOx_RUNE	PM2.5_RU	PM10_RUN	CO2_RUNE	CH4_RUNE	N2O_RUNE	ROG_RUNE	TOG_RUNE	CO_RUNEX	SOx_RUNEX
Orange (SC	2023	LDA	Aggregate	5	Gasoline	161745.8	0.054875	0.008592	0.009344	604.3004	0.013078	0.007001	0.047358	0.069098	1.057426	0.00598
Orange (SC	2023	LDA	Aggregate	5	Diesel	1689.603	0.123507	0.015999	0.016722	495.8534	0.0078	0.077941	0.167935	0.191182	3.20823	0.004688
Orange (SC	2023	LDA	Aggregate	15	Gasoline	608476.3	0.041436	0.003597	0.003912	402.8424	0.00554	0.005309	0.020132	0.029374	0.881112	0.003986
Orange (SC	2023	LDA	Aggregate	15	Diesel	6356.17	0.079196	0.009938	0.010387	339.7675	0.002945	0.053407	0.063407	0.072185	1.184487	0.003212
Orange (SC	2023	LDA	Aggregate	40	Gasoline	5222910	0.028419	0.001037	0.001128	227.4571	0.001605	0.003646	0.005861	0.008551	0.57767	0.002251
Orange (SC	2023	LDA	Aggregate	40	Diesel	54558.74	0.045213	0.004661	0.004872	171.1897	0.000438	0.026909	0.009426	0.010731	0.151735	0.001618
Orange (SC	2023	MDV	Aggregate	5	Gasoline	35655.28	0.141378	0.008837	0.009611	937.2285	0.026122	0.012311	0.103806	0.151357	1.666859	0.009275
Orange (SC	2023	MDV	Aggregate	5	Diesel	951.2457	0.124519	0.010758	0.011244	837.1867	0.00805	0.131594	0.17332	0.197314	3.468669	0.007914
Orange (SC	2023	MDV	Aggregate	15	Gasoline	134132.7	0.105103	0.003717	0.004042	623.9669	0.011214	0.009224	0.04481	0.065329	1.358784	0.006175
Orange (SC	2023	MDV	Aggregate	15	Diesel	3578.52	0.076516	0.007478	0.007816	602.9548	0.002985	0.094776	0.064272	0.07317	1.274609	0.0057
Orange (SC	2023	MDV	Aggregate	40	Gasoline	1151340	0.071998	0.00108	0.001175	352.5571	0.003318	0.006316	0.013377	0.019495	0.880899	0.003489
Orange (SC	2023	MDV	Aggregate	40	Diesel	30716.54	0.038239	0.003733	0.003902	310.389	0.000389	0.048789	0.00838	0.00954	0.15575	0.002934
Orange (SC	2023	MHDT	Aggregate	5	Gasoline	1239.2	0.435101	0.00548	0.00596	3948.55	0.044088	0.025879	0.201511	0.294045	1.490452	0.039074
Orange (SC	2023	MHDT	Aggregate	5	Diesel	4776.294	6.399744	0.005101	0.005332	2326.484	0.002515	0.365691	0.054137	0.061631	0.772647	0.021979
Orange (SC	2023	MHDT	Aggregate	15	Gasoline	4314.916	0.334297	0.002292	0.002492	2621.425	0.018522	0.01986	0.084797	0.123735	1.206508	0.025941
Orange (SC	2023	MHDT	Aggregate	15	Diesel	16963.82	3.441615	0.003462	0.003619	1514.527	0.000891	0.238063	0.019179	0.021834	0.258712	0.014308
Orange (SC	2023	MHDT	Aggregate	40	Gasoline	43369.79	0.229913	0.000661	0.000719	1483.036	0.00539	0.013615	0.024768	0.036141	0.78889	0.014676
Orange (SC	2023	MHDT	Aggregate	40	Diesel	207996	0.878146	0.004265	0.004458	810.5137	0.000265	0.127401	0.005698	0.006487	0.057651	0.007657
Orange (SC	2023	HHDT	Aggregate	5	Gasoline	3.836197	6.054742	0.007447	0.0081	4547.427	0.584827	0.24241	2.857859	4.170181	51.652	0.045
Orange (SC	2023	HHDT	Aggregate	5	Diesel	3484.799	16.86251	0.016373	0.017114	4252.266	0.005429	0.668397	0.11688	0.133059	1.739044	0.040173
Orange (SC	2023	HHDT	Aggregate	15	Gasoline	13.35771	4.770256	0.003152	0.003428	3027.479	0.246709	0.188014	1.208781	1.763851	41.5985	0.029959
Orange (SC	2023	HHDT	Aggregate	15	Diesel	10478.1	7.914558	0.009818	0.010262	2460.155	0.002166	0.386702	0.046633	0.053088	0.662702	0.023242
Orange (SC	2023	HHDT	Aggregate	40	Gasoline	134.2601	3.501706	0.000934	0.001015	1716.987	0.072465	0.132605	0.357166	0.521175	27.14047	0.016991
Orange (SC	2023	HHDT	Aggregate	40	Diesel	128224.4	2.023474	0.010725	0.01121	1214.958	0.000656	0.190975	0.014122	0.016076	0.156443	0.011478