

CVWD Reservoir 5B-2

Emissions

			Equation Variables		Emissions					
Operation		Emission Factor	Units	1	2	PM-10 lbs/day	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day
Equipment Exhaust Emissions				Pieces of Equipment	Operating Hours					
PM-10	Other Construction Equipment	0.009	lbs/hr	3	8	0.2				
	Rubber Tired Loader	0.016	lbs/hr	1	8	0.1				
	Rubber Tired Dozer	0.049	lbs/hr	1	8	0.4				
	Excavator	0.012	lbs/hr	1	8	0.1				
	Crane	0.018	lbs/hr	1	8	0.1				
	Paver	0.024	lbs/hr	1	8	0.2				
	Misc. Paving Equipment	0.024	lbs/hr	2	8	0.4				
ROG	Other Construction Equipment	0.048	lbs/hr	3	8		1.2			
	Rubber Tired Loader	0.062	lbs/hr	1	8		0.5			
	Rubber Tired Dozer	0.183	lbs/hr	1	8		1.5			
	Excavator	0.062	lbs/hr	1	8		0.5			
	Crane	0.075	lbs/hr	1	8		0.6			
	Paver	0.062	lbs/hr	1	8		0.5			
	Misc. Paving Equipment	0.062	lbs/hr	2	8		1.0			
CO	Other Construction Equipment	0.348	lbs/hr	3	8			8.4		
	Rubber Tired Loader	0.434	lbs/hr	1	8			3.5		
	Rubber Tired Dozer	0.708	lbs/hr	1	8			5.7		
	Excavator	0.510	lbs/hr	1	8			4.1		
	Crane	0.379	lbs/hr	1	8			3.0		
	Paver	0.402	lbs/hr	1	8			3.2		
	Misc. Paving Equipment	0.402	lbs/hr	2	8			6.4		
NOX	Other Construction Equipment	0.250	lbs/hr	3	8				6.0	
	Rubber Tired Loader	0.347	lbs/hr	1	8				2.8	
	Rubber Tired Dozer	1.262	lbs/hr	1	8				10.1	
	Excavator	0.282	lbs/hr	1	8				2.3	
	Crane	0.503	lbs/hr	1	8				4.0	
	Paver	0.383	lbs/hr	1	8				3.1	
	Misc. Paving Equipment	0.383	lbs/hr	2	8				6.1	
SOX	Other Construction Equipment	0.001	lbs/hr	3	8					0.0
	Rubber Tired Loader	0.001	lbs/hr	1	8					0.0
	Rubber Tired Dozer	0.003	lbs/hr	1	8					0.0
	Excavator	0.001	lbs/hr	1	8					0.0
	Crane	0.001	lbs/hr	1	8					0.0
	Paver	0.000	lbs/hr	1	8					0.0
	Misc. Paving Equipment	0.000	lbs/hr	2	8					0.0
					Total	1.5	5.7	34.3	34.3	0.1

Sources: Off-Road Mobile Source Emission Factors; SCAQMD 2023

**CVWD Reservoir 5B-2
Export Emissions**

Operation	Emission Factor	Units	Equation Variables		Emissions				
			1	2	PM-10 lbs/day	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day
Delivery Vehicle Emissions Onsite			# of trips per day	vmt					N/A
PM-10 Export Material	0.0009	lbs/mile	50	26	1.2 0.0				
ROG Export Material	0.0009	lbs/mile	50	26		1.2 0.0			
CO Export Material	0.0045	lbs/mile	50	26			5.9 0.0		
NOX Export Material	0.0103	lbs/mile	50	26				13.4 0.0	
				Total	1.2	1.2	5.9	13.4	----

Source: SCAQMD: Emission Factors for On-Road Heavy Heavy Duty Diesel Trucks 2023

Note: 16,000 CY (20 CY per load export, 800 trips)

**CVWD Reservoir 5B-2
Construction GHG Emissions**

Operation		Emission Factor	Units	Equation Variables		GHG Emissions		
				1	2	CO2 lbs/day	CH4 lbs/day	N2O g/day
Excavation Equipment Exhaust Emissions				Pieces of Equipment	Operating Hours			
CO2	Other Construction Equipment	123.0	lbs/hr	3	8	2952.0		
	Rubber Tired Loader	109.0	lbs/hr	1	8	872.0		
	Rubber Tired Dozer	239.0	lbs/hr	1	8	1912.0		
	Excavator	120.0	lbs/hr	1	8	960.0		
	Pavers	77.9	lbs/hr	1	8	623.2		
	Crane	129.0	lbs/hr	1	8	1032.0		
	Misc. Paving Equipment	68.9	lbs/hr	2	8	1102.4		
CH4	Other Construction Equipment	0.004	lbs/hr	3	8		0.1	
	Rubber Tired Loader	0.006	lbs/hr	1	8		0.0	
	Rubber Tired Dozer	0.017	lbs/hr	1	8		0.1	
	Excavator	0.006	lbs/hr	1	8		0.0	
	Pavers	0.007	lbs/hr	1	8		0.1	
	Crane	0.007	lbs/hr	1	8		0.1	
	Misc. Paving Equipment	0.006	lbs/hr	2	8		0.1	
N2O*	Other Construction Equipment	0.080	g/mile	Pieces of Equipment	Miles Per Day			0.5
	Rubber Tired Loader	0.520	g/mile	3	2			1.0
	Rubber Tired Dozer	0.520	g/mile	1	2			1.0
	Excavator	0.101	g/mile	1	2			0.2
	Pavers	0.131	g/mile	1	2			0.3
	Crane	0.131	g/mile	1	2			0.3
	Misc. Paving Equipment	0.100	g/mile	2	2			0.4
Total lbs/g/day						9453.60	0.53	3.69
Total lbs/day						10937.9		
Total MTCO2e						1,083		

Sources: Off-Road Mobile Source Emission Factors; SCAQMD 2023

Source N2O: California Climate Action Registry General Reporting Protocol, 2009I;

Table A9-8-C SCAQMD Handbook; Climate Leaders EPA, Section 3, Table 2

9 Month Construction Period (198 days)

**CVWD Reservoir 5B-2
GHG Export Emissions**

Operation	Emission Factor	Units	Equation Variables		GHG Emissions		
			1	2	CO2 lbs/day	CH4 lbs/day	N2O g/day
Delivery Vehicle Emissions Onsite			# of trips per day	vmt			
CO2 Export Material	4.214	lbs/mile	50	26	5478.2 0.0		
CH4 Export Material	0.000	lbs/mile	50	26		0.1 0.0	
N2O Export Material	0.000	g/mile	50	26			0.0 0.0
Total					5478.2	0.1	0.0
MTCO2e					43.8		

Source: SCAQMD: Emission Factors for On-Road Heavy Heavy Duty Diesel Trucks 2023

Note: 16,000 CY (20 CY per load export, 800 trips)

Source N2O: California Climate Action Registry General Reporting Protocol, 2009I;

Table A9-8-C SCAQMD Handbook; Climate Leaders EPA, Section 3, Table 2

9 month construction period (16-Day Export Period)