

APPENDIX E
Construction Air Quality Emission Model

Table 1 Estimated Peak Daily Construction Emissions Summary

Criteria Emissions	Year 2	Year 3	Year 5	Year 9	Year 14	Highest Day	Threshold	Significant	Worst Case
	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day		lbs/day
Volatile Organic Compounds (VOC as CH ₄)	8.8	8.8	3.7	3.7	6.1	8.8	10	No	24.3
Carbon Monoxide (CO)	41.1	41.1	18.7	18.7	29.7	41.1	550	No	117.9
Oxides of Nitrogen (NO _x as NO ₂)	66.6	66.6	21.8	21.8	39.0	66.6	10	Yes	171.1
Sulfur Dioxide (SO _x as SO ₂)	0.1	0.1	0.0	0.0	0.1	0.1	80	No	0.3
Combustion Particulates (C-PM ₁₀)	4.0	4.0	1.5	1.5	2.5	4.0	80	No	10.5
Combustion Particulates (C-PM _{2.5})	3.5	3.5	1.4	1.4	2.3	3.5	80	No	9.3
Fugitive Dust (F-PM ₁₀)	46.6	46.6	11.0	11.0	18.6	46.6	n/a	n/a	133.7
Fugitive Dust (F-PM _{2.5})	9.2	9.2	3.0	3.0	4.0	9.2	n/a	n/a	23.6

Sources: SCAQMD 2008, EPA 2011

Notes:

Year X (lbs/day) is the estimated peak daily emissions for applicable phases independently

Highest Day (lbs/day) is the highest estimated peak daily emissions for applicable phases independently

Worst Case (lbs/day) assumes concurrent (simultaneous) applicable phases to generate maximum hypothetical composite emissions (unlikely)

Fugitive dust and combustion particulates determined separately (thresholds do not apply to fugitive dust)

Table 2 Estimated Annual Construction Emissions Summary

Criteria Emissions	Year 2	Year 3	Year 5	Year 9	Year 14	Highest Year	Threshold	Significant	Project Total
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr		tons
Volatile Organic Compounds (VOC as CH ₄)	0.25	0.39	0.04	0.04	0.07	0.39	25	No	0.79
Carbon Monoxide (CO)	1.40	2.22	0.20	0.20	0.33	2.22	100	No	4.34
Oxides of Nitrogen (NO _x as NO ₂)	1.32	1.93	0.23	0.23	0.42	1.93	25	No	4.13
Sulfur Dioxide (SO _x as SO ₂)	0.003	0.004	0.000	0.000	0.001	0.004	40	No	0.008
Combustion Particulates (C-PM ₁₀)	0.09	0.13	0.02	0.02	0.03	0.13	15	No	0.28
Combustion Particulates (C-PM _{2.5})	0.08	0.11	0.01	0.01	0.02	0.11	10	No	0.25
Fugitive Dust (F-PM ₁₀)	0.90	1.39	0.10	0.10	0.20	1.39	n/a	n/a	2.69
Fugitive Dust (F-PM _{2.5})	0.17	0.25	0.03	0.03	0.04	0.25	n/a	n/a	0.51

Sources: SCAQMD 2008, EPA 2011

Notes:

Year X (tons/yr) is the estimated annual emissions for applicable phases

Highest Year (tons/yr) is the highest estimated annual emissions for applicable phases

Project Total (tons/yr) is the estimated emissions for all phases combined

Fugitive dust and combustion particulates determined separately (thresholds do not apply to fugitive dust)

Table 3 Estimated Fugitive Dust Emissions Summary

Fugitive Dust Emissions	Year 2	Year 3	Year 5	Year 9	Year 14	Highest Day	Worst Case	Highest Year	Project Total
	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	tons/yr	tons
Fugitive Dust (F-PM ₁₀) - Equipment (offroad)	5.1	5.1	3.5	3.5	6.4	6.4	12.0	0.19	0.46
Fugitive Dust (F-PM ₁₀) - Vehicles (unpaved)	19.9	19.9	4.3	4.3	6.7	19.9	69.5	0.72	1.31
Fugitive Dust (F-PM ₁₀) - Vehicles (paved)	21.7	21.7	3.1	3.1	5.4	21.7	52.2	0.48	0.92
Fugitive Dust (F-PM ₁₀) - Combined	46.6	46.6	11.0	11.0	18.6	46.6	133.7	1.39	2.69
Fugitive Dust (F-PM _{2.5}) - Equipment (offroad)	1.9	1.9	1.8	1.8	2.0	2.0	3.8	0.06	0.15
Fugitive Dust (F-PM _{2.5}) - Vehicles (unpaved)	2.0	2.0	0.4	0.4	0.7	2.0	6.9	0.07	0.13
Fugitive Dust (F-PM _{2.5}) - Vehicles (paved)	5.3	5.3	0.8	0.8	1.3	5.3	12.8	0.12	0.22
Fugitive Dust (F-PM _{2.5}) - Combined	9.2	9.2	3.0	3.0	4.0	9.2	23.6	0.25	0.51

Notes:

Year X (lbs/day) is the estimated peak daily emissions for applicable phases independently

Highest Day (lbs/day) is the highest estimated peak daily emissions for applicable phases independently

Worst Case (lbs/day) assumes concurrent (simultaneous) applicable phases to generate maximum hypothetical composite emissions (unlikely)

Fugitive dust and combustion particulates determined separately (thresholds do not apply to fugitive dust)

Table 4 Estimated Annual Construction Greenhouse Gas Emissions

Greenhouse Gas Emissions	Year 2	Year 3	Year 5	Year 9	Year 14	Highest Year	Project Total
	tonnes/yr	tonnes/yr	tonnes/yr	tonnes/yr	tonnes/yr	tonnes/yr	tonnes
Carbon Dioxide (GHG - CO ₂)	231	358	31	31	56	358	707
Methane (GHG - CH ₄)	0.02	0.03	0.00	0.00	0.00	0.03	0.06
Nitrous Oxide (GHG - N ₂ O)	0.01	0.02	0.00	0.00	0.00	0.02	0.03
Carbon Dioxide Equivalents (CO ₂ eqv)	234	363	31	31	57	363	717

Sources: SCAQMD 2008, EPA 2011

Notes:

Units are metric tonnes (1,000 kilograms or 2,204.6 pounds)

Year X (tonnes/yr) is the estimated annual emissions for applicable phases

Highest Year (tonnes/yr) is the highest estimated annual emissions for applicable phases

Project Total (tonnes/yr) is the estimated emissions for all phases combined

Table 5 Attainment Status and Emissions Significance Thresholds					
Criteria Emissions	Federal		Placer County		
	Status ^a	tons/yr ^{b,c}	Status ^d	tons/yr ^e	lbs/day ^e
Ozone (O ₃) 1-hour (as VOC or NO _x)	<i>Standard Revoked June 15, 2005</i>		Nonattainment	40	10
Ozone (O ₃) 8-hour (as VOC or NO _x)	Nonattainment - Severe 15 ^f	25 ^b	Nonattainment		
Carbon Monoxide (CO)	Unclassified ^g	100 ^c	Unclassified	100	550
Oxides of Nitrogen (NO _x as NO ₂)	Unclassified/Attainment	25 ^b	Attainment	40	10
Sulfur Dioxide (SO _x as SO ₂)	Unclassified	40 ^c	Attainment	40	80
Particulates (PM ₁₀)	Unclassified	15 ^c	Nonattainment	15	80
Particulates (PM _{2.5})	Nonattainment	10 ^c	Unclassified	10	80
Lead (Pb)	Attainment	0.6 ^c	Attainment	0.6	3.3
Sources & Notes: Assumes all 15 project sites are located in Mountain Counties Air Basin a EPA Green Book (http://www.epa.gov/air/oaqps/greenbk) b General Conformity (40 CFR 51.853) c Prevention of Significant Deterioration (40 CFR 51.166) d Placer County status per CARB (http://www.arb.ca.gov/desig/adm/adm.htm) with nonattainment further defined by 40 CFR 81.305 (July 27, 2010) e Placer County Air Pollution Control District (PCAPCD): tons/yr: Definition of significant from Rule 502 New Source Review (as amended 2/11/10) lbs/day: Project-level CEQA thresholds for short-term construction emissions; PM ₁₀ from fuel combustion only (excludes fugitive dust) per Rule 502 f applies for Sacramento Metro area g applies for Lake Tahoe North Shore area					

Estimated Construction Schedule							
Equipment and Vehicles		Rating	Planned	Activity Schedule			
Type	Category	BHP	quantity	days	hrs/day	mi/day	
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3							
Backhoe (John Deere 410 J)	offroad	98	1	35	6		
Bulldozer (John Deere Model 700 J)	offroad	115					
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	21	6		
Concrete pumper (Schwing SP 260)	offroad	68	1	8	4		
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1	8			150
Electrical boom type line truck (Ford F650 XL)	onroad MD		1	10			150
Electrical boom type truck-mounted aerial lift	offroad	50	1	10	6		
Excavator (John Deere 160 D LC)	offroad	121					
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	66			150
Forklift (Case 586G Series 3)	offroad	80	1	42	4		
Front loader (John Deere 444 K)	offroad	117	1	21	6		
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	80	10		
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	10			150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	21	6		
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3			120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10	80			120
Welder genset (Hobart Champion Elite)	offroad	23					
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2							
Backhoe (John Deere 410 J)	offroad	98	1	15	4		
Bulldozer (John Deere Model 700 J)	offroad	115	1	30	6		
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	20	6		
Concrete pumper (Schwing SP 260)	offroad	68	1	14	4		
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		8	14			150
Electrical boom type line truck (Ford F650 XL)	onroad MD						
Electrical boom type truck-mounted aerial lift	offroad	50					
Excavator (John Deere 160 D LC)	offroad	121	1	38	6		
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	66			150
Forklift (Case 586G Series 3)	offroad	80	1	32	4		
Front loader (John Deere 444 K)	offroad	117					
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	80	10		
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	10			150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	21	5		
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3			120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10	80			120
Welder genset (Hobart Champion Elite)	offroad	23					

Equipment and Vehicles		Rating	Planned	Activity Schedule		
Type	Category	BHP	quantity	days	hrs/day	mi/day
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3						
Backhoe (John Deere 410 J)	offroad	98	1	15	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	30	6	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	20	6	
Concrete pumper (Schwing SP 260)	offroad	68	1	14	4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		8	14		150
Electrical boom type line truck (Ford F650 XL)	onroad MD					
Electrical boom type truck-mounted aerial lift	offroad	50				
Excavator (John Deere 160 D LC)	offroad	121	1	38	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	66		150
Forklift (Case 586G Series 3)	offroad	80	1	32	4	
Front loader (John Deere 444 K)	offroad	117				
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	80	10	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	10		150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	21	5	
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3		120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10	80		120
Welder genset (Hobart Champion Elite)	offroad	23				
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3						
Backhoe (John Deere 410 J)	offroad	98	1	15	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	30	6	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	20	6	
Concrete pumper (Schwing SP 260)	offroad	68	1	14	4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		8	14		150
Electrical boom type line truck (Ford F650 XL)	onroad MD					
Electrical boom type truck-mounted aerial lift	offroad	50				
Excavator (John Deere 160 D LC)	offroad	121	1	38	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	66		150
Forklift (Case 586G Series 3)	offroad	80	1	32	4	
Front loader (John Deere 444 K)	offroad	117				
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	80	10	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	10		150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	21	5	
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3		120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10	80		120
Welder genset (Hobart Champion Elite)	offroad	23				

Equipment and Vehicles		Rating	Planned	Activity Schedule		
Type	Category	BHP	quantity	days	hrs/day	mi/day
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	1	3	4	
Bulldozer (John Deere Model 700 J)	offroad	115				
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130				
Concrete pumper (Schwing SP 260)	offroad	68	1	1	4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1	1		150
Electrical boom type line truck (Ford F650 XL)	onroad MD					
Electrical boom type truck-mounted aerial lift	offroad	50				
Excavator (John Deere 160 D LC)	offroad	121				
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	20		150
Forklift (Case 586G Series 3)	offroad	80				
Front loader (John Deere 444 K)	offroad	117				
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	20	8	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	3		150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	2	4	
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3		120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		4	20		120
Welder genset (Hobart Champion Elite)	offroad	23	1	4	4	
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	1	35	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	14	6	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	20	6	
Concrete pumper (Schwing SP 260)	offroad	68	1	7	4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1	7		150
Electrical boom type line truck (Ford F650 XL)	onroad MD					
Electrical boom type truck-mounted aerial lift	offroad	50				
Excavator (John Deere 160 D LC)	offroad	121	1	38	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	40		150
Forklift (Case 586G Series 3)	offroad	80	1	33	4	
Front loader (John Deere 444 K)	offroad	117				
Generator (Magnum MMG25 23 KVA diesel)	offroad	40				
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	40		150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	32	5	
Oversize load tractor trailer (5 axles or more)	onroad HHD					
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10	40		120
Welder genset (Hobart Champion Elite)	offroad	23				
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	1	5	4	
Bulldozer (John Deere Model 700 J)	offroad	115				
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130				
Concrete pumper (Schwing SP 260)	offroad	68	1	5	4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1	5		150
Electrical boom type line truck (Ford F650 XL)	onroad MD					
Electrical boom type truck-mounted aerial lift	offroad	50				
Excavator (John Deere 160 D LC)	offroad	121				
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	20		150
Forklift (Case 586G Series 3)	offroad	80				
Front loader (John Deere 444 K)	offroad	117				
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	1	20	8	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	5		150
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	1	10	4	
Oversize load tractor trailer (5 axles or more)	onroad HHD		1	3		120
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		4	20		120
Welder genset (Hobart Champion Elite)	offroad	23	1	20	5	

Equipment and Vehicles		Rating	Planned	Activity Schedule		
Type	Category	BHP	quantity	days	hrs/day	mi/day
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3						
Chainsaw (2-stroke, professional grade)	offroad	4	1	2	5	
Generator (2.2 KVA)	offroad	5	1	7	10	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		2	7		120
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3						
Chainsaw (2-stroke, professional grade)	offroad	4	1	2	5	
Generator (2.2 KVA)	offroad	5	1	7	10	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		2	7		120
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2						
Chainsaw (2-stroke, professional grade)	offroad	4	1	2	5	
Generator (2.2 KVA)	offroad	5	1	7	10	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		2	7		120
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2						
Chainsaw (2-stroke, professional grade)	offroad	4	1	2	5	
Generator (2.2 KVA)	offroad	5	1	7	10	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		2	7		120
RECREATION - Ellicott Bridge Parking Area - YEAR 14						
Asphalt paver (Caterpillar AP500E)	offroad	142	1	10	6	
Asphalt roller (Caterpillar CB54)	offroad	137	1	10	6	
Backhoe (John Deere 410 J)	offroad	98	1	10	4	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	10	6	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1	10		150
Drilling rig (mid-size)	offroad	120	1	10	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	10		150
Forklift (Case 586G Series 3)	offroad	80	1	10	4	
Generator (30 KVA diesel)	offroad	50	1	10	10	
Grader (John Deere 670G/GP)	offroad	195	1	10	4	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	10		150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		6	10		120
RECREATION - French Meadows Reservoir Trail - YEAR 14						
Backhoe (John Deere 410 J)	offroad	98	1	14	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	14	6	
Chainsaw (2-stroke, professional grade)	offroad	4	2	14	8	
Chipper (Vermeer BC1500)	offroad	125	1	14	8	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	14		150
Forest Machine (Caterpillar 324D FM)	offroad	188	1	14	8	
Generator (30 KVA diesel)	offroad	50	1	14	10	
Log transport truck (Mack or Oshkosh as typical)	onroad HHD		1	14		150
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	14		150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		6	14		120
SUPPLY - French Meadows North Shore Water Supply - YEAR 9						
Backhoe (John Deere 410 J)	offroad	98	1	21	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	21	6	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	21	6	
Drilling rig (mid-size)	offroad	120	1	21	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	21		150
Generator (30 KVA diesel)	offroad	50	1	21	10	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	21		150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		4	21		120

Equipment and Vehicles		Rating	Planned	Activity Schedule		
Type	Category	BHP	quantity	days	hrs/day	mi/day
SUPPLY - French Meadows South Shore Water Supply - YEAR 5						
Backhoe (John Deere 410 J)	offroad	98	1	21	4	
Bulldozer (John Deere Model 700 J)	offroad	115	1	21	6	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	1	21	6	
Drilling rig (mid-size)	offroad	120	1	21	6	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1	21		150
Generator (30 KVA diesel)	offroad	50	1	21	10	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1	21		150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		4	21		120
Source: Christensen Associates 2010, -11						
Notes:						
LD = light duty; MD = medium duty, HHD = heavy heavy duty, BHP = brake horsepower						
Contractor will generally work 5 x 10-hr days per week (50 hrs/wk onsite time)						
Estimated daily equipment operating hours account for downtime related to staging, breaks, lunch, maintenance, repairs, etc.						
Not all equipments used on all 7 phases of RESERVOIR, DIVERSIONS, or OUTLETS (standard list used for simplicity)						

Estimated Construction Activity						
Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3						
Backhoe (John Deere 410 J)	offroad	98	6		210	
Bulldozer (John Deere Model 700 J)	offroad	115	0		0	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		126	
Concrete pumper (Schwing SP 260)	offroad	68	4		32	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			150		1200
Electrical boom type line truck (Ford F650 XL)	onroad MD			150		1500
Electrical boom type truck-mounted aerial lift	offroad	50	6		60	
Excavator (John Deere 160 D LC)	offroad	121	0		0	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		9900
Forklift (Case 586G Series 3)	offroad	80	4		168	
Front loader (John Deere 444 K)	offroad	117	6		126	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	10		800	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		1500
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	6		126	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			1200		96000
Welder genset (Hobart Champion Elite)	offroad	23	0		0	
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	4		60	
Bulldozer (John Deere Model 700 J)	offroad	115	6		180	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		120	
Concrete pumper (Schwing SP 260)	offroad	68	4		56	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			1200		16800
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	6		228	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		9900
Forklift (Case 586G Series 3)	offroad	80	4		128	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	10		800	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		1500
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	5		105	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			1200		96000
Welder genset (Hobart Champion Elite)	offroad	23	0		0	
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3						
Backhoe (John Deere 410 J)	offroad	98	4		60	
Bulldozer (John Deere Model 700 J)	offroad	115	6		180	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		120	
Concrete pumper (Schwing SP 260)	offroad	68	4		56	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			1200		16800
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	6		228	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		9900
Forklift (Case 586G Series 3)	offroad	80	4		128	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	10		800	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		1500
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	5		105	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			1200		96000
Welder genset (Hobart Champion Elite)	offroad	23	0		0	

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3						
Backhoe (John Deere 410 J)	offroad	98	4		60	
Bulldozer (John Deere Model 700 J)	offroad	115	6		180	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		120	
Concrete pumper (Schwing SP 260)	offroad	68	4		56	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			1200		16800
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	6		228	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		9900
Forklift (Case 586G Series 3)	offroad	80	4		128	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	10		800	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		1500
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	5		105	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			1200		96000
Welder genset (Hobart Champion Elite)	offroad	23	0		0	
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	4		12	
Bulldozer (John Deere Model 700 J)	offroad	115	0		0	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0		0	
Concrete pumper (Schwing SP 260)	offroad	68	4		4	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			150		150
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	0		0	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		3000
Forklift (Case 586G Series 3)	offroad	80	0		0	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	8		160	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		450
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	4		8	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			480		9600
Welder genset (Hobart Champion Elite)	offroad	23	4		16	
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	4		140	
Bulldozer (John Deere Model 700 J)	offroad	115	6		84	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		120	
Concrete pumper (Schwing SP 260)	offroad	68	4		28	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			150		1050
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	6		228	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		6000
Forklift (Case 586G Series 3)	offroad	80	4		132	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0		0	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		6000
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	5		160	
Oversize load tractor trailer (5 axles or more)	onroad HHD			0		0
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			1200		48000
Welder genset (Hobart Champion Elite)	offroad	23	0		0	

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2						
Backhoe (John Deere 410 J)	offroad	98	4		20	
Bulldozer (John Deere Model 700 J)	offroad	115	0		0	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0		0	
Concrete pumper (Schwing SP 260)	offroad	68	4		20	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			150		750
Electrical boom type line truck (Ford F650 XL)	onroad MD			0		0
Electrical boom type truck-mounted aerial lift	offroad	50	0		0	
Excavator (John Deere 160 D LC)	offroad	121	0		0	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		3000
Forklift (Case 586G Series 3)	offroad	80	0		0	
Front loader (John Deere 444 K)	offroad	117	0		0	
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	8		160	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		750
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	4		40	
Oversize load tractor trailer (5 axles or more)	onroad HHD			120		360
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			480		9600
Welder genset (Hobart Champion Elite)	offroad	23	5		100	
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3						
Chainsaw (2-stroke, professional grade)	offroad	4	5		10	
Generator (2.2 KVA)	offroad	5	10		70	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			240		1680
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3						
Chainsaw (2-stroke, professional grade)	offroad	4	5		10	
Generator (2.2 KVA)	offroad	5	10		70	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			240		1680
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2						
Chainsaw (2-stroke, professional grade)	offroad	4	5		10	
Generator (2.2 KVA)	offroad	5	10		70	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			240		1680
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2						
Chainsaw (2-stroke, professional grade)	offroad	4	5		10	
Generator (2.2 KVA)	offroad	5	10		70	
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			240		1680
RECREATION - Ellicott Bridge Parking Area - YEAR 14						
Asphalt paver (Caterpillar AP500E)	offroad	142	6		60	
Asphalt roller (Caterpillar CB54)	offroad	137	6		60	
Backhoe (John Deere 410 J)	offroad	98	4		40	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		60	
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD			150		1500
Drilling rig (mid-size)	offroad	120	6		60	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		1500
Forklift (Case 586G Series 3)	offroad	80	4		40	
Generator (30 KVA diesel)	offroad	50	10		100	
Grader (John Deere 670G/GP)	offroad	195	4		40	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		1500
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			720		7200

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
RECREATION - French Meadows Reservoir Trail - YEAR 14						
Backhoe (John Deere 410 J)	offroad	98	4		56	
Bulldozer (John Deere Model 700 J)	offroad	115	6		84	
Chainsaw (2-stroke, professional grade)	offroad	4	16		224	
Chipper (Vermeer BC1500)	offroad	125	8		112	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		2100
Forest Machine (Caterpillar 324D FM)	offroad	188	8		112	
Generator (30 KVA diesel)	offroad	50	10		140	
Log transport truck (Mack or Oshkosh as typical)	onroad HHD			150		2100
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		2100
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			720		10080
SUPPLY - French Meadows North Shore Water Supply - YEAR 9						
Backhoe (John Deere 410 J)	offroad	98	4		84	
Bulldozer (John Deere Model 700 J)	offroad	115	6		126	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		126	
Drilling rig (mid-size)	offroad	120	6		126	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		3150
Generator (30 KVA diesel)	offroad	50	10		210	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		3150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			480		10080
SUPPLY - French Meadows South Shore Water Supply - YEAR 5						
Backhoe (John Deere 410 J)	offroad	98	4		84	
Bulldozer (John Deere Model 700 J)	offroad	115	6		126	
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	6		126	
Drilling rig (mid-size)	offroad	120	6		126	
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD			150		3150
Generator (30 KVA diesel)	offroad	50	10		210	
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD			150		3150
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD			480		10080
Source: Christensen Associates 2010, -11						
Notes:						
LD = light duty; MD = medium duty, HHD = heavy heavy duty, BHP = brake horsepower						
Contractor will generally work 5 x 10-hr days per week (50 hrs/wk onsite time)						
Estimated daily equipment operating hours account for downtime related to staging, breaks, lunch, maintenance, repairs, etc.						
Not all equipments used on all 7 phases of RESERVOIR, DIVERSIONS, or OUTLETS (standard list used for simplicity)						
CHECKSUM1				18990	640770	

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
Onroad Fugitive Dust Calculations Inputs	Onroad			Daily		Project
	Category			VMT		VMT
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		1860
Cement Truck (concrete/pumping)	onroad HHD			150		1200
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			300		11400
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			1200		96000
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		1860
Cement Truck (concrete/pumping)	onroad HHD			1200		16800
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		9900
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			1200		96000
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		1860
Cement Truck (concrete/pumping)	onroad HHD			1200		16800
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		9900
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			1200		96000
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		1860
Cement Truck (concrete/pumping)	onroad HHD			1200		16800
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		9900
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			1200		96000

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		810
Cement Truck (concrete/pumping)	onroad HHD			150		150
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		3000
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			480		9600
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			150		6000
Cement Truck (concrete/pumping)	onroad HHD			150		1050
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		6000
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			1200		48000
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			270		1110
Cement Truck (concrete/pumping)	onroad HHD			150		750
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		3000
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			480		9600
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD					
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD					
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			240		1680
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD					
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD					
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			240		1680

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD					
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD					
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			240		1680
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2 (PHASE 11)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD					
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD					
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			240		1680
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			150		1500
Cement Truck (concrete/pumping)	onroad HHD			150		1500
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		1500
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			720		7200
RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)						
Tractor Trailer (materials/hauling)	onroad HHD			150		2100
Tractor Trailer (equipment/supplies)	onroad HHD			150		2100
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		2100
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			720		10080
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			150		3150
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		3150
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			480		10080

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)						
Tractor Trailer (materials/hauling)	onroad HHD					
Tractor Trailer (equipment/supplies)	onroad HHD			150		3150
Cement Truck (concrete/pumping)	onroad HHD					
Dump Truck (soil/sand/gravel transport)	onroad HHD					
Water Truck (dust control)	onroad HHD					
Work Truck (all trades)	onroad MD			150		3150
Pickup/SUV (managers/engineers)	onroad LD					
Pickup/SUV (supervisors/foremen)	onroad LD					
Pickup/SUV (operators/drivers)	onroad LD					
Pickup/SUV (tradesmen/laborers)	onroad LD			480		10080
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Offroad Fugitive Dust Calculations Inputs		Offroad		Daily		Project	
	Category			hours		hours	
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)							
Asphalt roller (Caterpillar CB54)	offroad						
Backhoe (John Deere 410 J)	offroad			6		210	
Bulldozer (John Deere Model 700 J)	offroad			0		0	
Drilling rig (mid-size)	offroad						
Excavator (John Deere 160 D LC)	offroad			0		0	
Forest Machine (Caterpillar 324D FM)	offroad						
Forklift (Case 586G Series 3)	offroad			4		168	
Front loader (John Deere 444 K)	offroad			6		126	
Grader (John Deere 670G/GP)	offroad						
Mobile crane (Link-Belt RTC-8030 Series II)	offroad			6		126	
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)							
Asphalt roller (Caterpillar CB54)	offroad						
Backhoe (John Deere 410 J)	offroad			4		60	
Bulldozer (John Deere Model 700 J)	offroad			6		180	
Drilling rig (mid-size)	offroad						
Excavator (John Deere 160 D LC)	offroad			6		228	
Forest Machine (Caterpillar 324D FM)	offroad						
Forklift (Case 586G Series 3)	offroad			4		128	
Front loader (John Deere 444 K)	offroad			0		0	
Grader (John Deere 670G/GP)	offroad						
Mobile crane (Link-Belt RTC-8030 Series II)	offroad			5		105	
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)							
Asphalt roller (Caterpillar CB54)	offroad						
Backhoe (John Deere 410 J)	offroad			4		60	
Bulldozer (John Deere Model 700 J)	offroad			6		180	
Drilling rig (mid-size)	offroad						
Excavator (John Deere 160 D LC)	offroad			6		228	
Forest Machine (Caterpillar 324D FM)	offroad						
Forklift (Case 586G Series 3)	offroad			4		128	
Front loader (John Deere 444 K)	offroad			0		0	
Grader (John Deere 670G/GP)	offroad						
Mobile crane (Link-Belt RTC-8030 Series II)	offroad			5		105	

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		60	
Bulldozer (John Deere Model 700 J)	offroad		6		180	
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad		6		228	
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad		4		128	
Front loader (John Deere 444 K)	offroad		0		0	
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad		5		105	
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		12	
Bulldozer (John Deere Model 700 J)	offroad		0		0	
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad		0		0	
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad		0		0	
Front loader (John Deere 444 K)	offroad		0		0	
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad		4		8	
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		140	
Bulldozer (John Deere Model 700 J)	offroad		6		84	
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad		6		228	
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad		4		132	
Front loader (John Deere 444 K)	offroad		0		0	
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad		5		160	
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		20	
Bulldozer (John Deere Model 700 J)	offroad		0		0	
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad		0		0	
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad		0		0	
Front loader (John Deere 444 K)	offroad		0		0	
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad		4		40	
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad					
Bulldozer (John Deere Model 700 J)	offroad					
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad					
Bulldozer (John Deere Model 700 J)	offroad					
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad					
Bulldozer (John Deere Model 700 J)	offroad					
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2 (PHASE 11)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad					
Bulldozer (John Deere Model 700 J)	offroad					
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)						
Asphalt roller (Caterpillar CB54)	offroad		6		60	
Backhoe (John Deere 410 J)	offroad		4		40	
Bulldozer (John Deere Model 700 J)	offroad					
Drilling rig (mid-size)	offroad		6		60	
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad		4		40	
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad		4		40	
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					
RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		56	
Bulldozer (John Deere Model 700 J)	offroad		6		84	
Drilling rig (mid-size)	offroad					
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad		8		112	
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					

Equipment and Vehicles		Rating	Daily Max		Project Total	
Type	Category	BHP	hours	VMT	hours	VMT
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		84	
Bulldozer (John Deere Model 700 J)	offroad		6		126	
Drilling rig (mid-size)	offroad		6		126	
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					
SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)						
Asphalt roller (Caterpillar CB54)	offroad					
Backhoe (John Deere 410 J)	offroad		4		84	
Bulldozer (John Deere Model 700 J)	offroad		6		126	
Drilling rig (mid-size)	offroad		6		126	
Excavator (John Deere 160 D LC)	offroad					
Forest Machine (Caterpillar 324D FM)	offroad					
Forklift (Case 586G Series 3)	offroad					
Front loader (John Deere 444 K)	offroad					
Grader (John Deere 670G/GP)	offroad					
Mobile crane (Link-Belt RTC-8030 Series II)	offroad					

Emission Estimation Factors for Construction (fuel combustion)												
Equipment and Vehicles		Rating	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	BHP	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831

Equipment and Vehicles		Rating	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	BHP	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831

Equipment and Vehicles		Rating	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	BHP	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete pumper (Schwing SP 260)	offroad	68	0.10768	0.35963	0.43798	0.00056	0.03630	0.03339	45.55003	0.00972	0.00432	47.09268
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Electrical boom type line truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Electrical boom type truck-mounted aerial lift	offroad	50	0.05916	0.17575	0.18396	0.00025	0.01555	0.01431	19.61276	0.00534	0.00237	20.46025
Excavator (John Deere 160 D LC)	offroad	121	0.10886	0.52037	0.68302	0.00087	0.05850	0.05382	74.32485	0.00982	0.00437	75.88438
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Front loader (John Deere 444 K)	offroad	117	0.07029	0.35145	0.44931	0.00060	0.03767	0.03466	50.81169	0.00634	0.00282	51.81862
Generator (Magnum MMG25 23 KVA diesel)	offroad	40	0.06295	0.19464	0.23455	0.00033	0.01766	0.01625	25.42636	0.00568	0.00252	26.32818
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	164	0.10089	0.45804	0.73166	0.00084	0.04547	0.04183	74.30525	0.00910	0.00405	75.75059
Oversize load tractor trailer (5 axles or more)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Welder genset (Hobart Champion Elite)	offroad	23	0.01870	0.05481	0.09418	0.00013	0.00587	0.00540	10.27036	0.00169	0.00075	10.53831
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3												
Chainsaw (2-stroke, professional grade)	offroad	4	0.00314	0.01646	0.01965	0.00004	0.00076	0.00070	2.69529	0.00028	0.00013	2.74024
Generator (2.2 KVA)	offroad	5	0.00392	0.02057	0.02456	0.00005	0.00095	0.00088	3.36911	0.00035	0.00016	3.42530
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3												
Chainsaw (2-stroke, professional grade)	offroad	4	0.00314	0.01646	0.01965	0.00004	0.00076	0.00070	2.69529	0.00028	0.00013	2.74024
Generator (2.2 KVA)	offroad	5	0.00392	0.02057	0.02456	0.00005	0.00095	0.00088	3.36911	0.00035	0.00016	3.42530
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2												
Chainsaw (2-stroke, professional grade)	offroad	4	0.00314	0.01646	0.01965	0.00004	0.00076	0.00070	2.69529	0.00028	0.00013	2.74024
Generator (2.2 KVA)	offroad	5	0.00392	0.02057	0.02456	0.00005	0.00095	0.00088	3.36911	0.00035	0.00016	3.42530
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2												
Chainsaw (2-stroke, professional grade)	offroad	4	0.00314	0.01646	0.01965	0.00004	0.00076	0.00070	2.69529	0.00028	0.00013	2.74024
Generator (2.2 KVA)	offroad	5	0.00392	0.02057	0.02456	0.00005	0.00095	0.00088	3.36911	0.00035	0.00016	3.42530
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
RECREATION - Ellicott Bridge Parking Area - YEAR 14												
Asphalt paver (Caterpillar AP500E)	offroad	142	0.15432	0.61476	1.05219	0.00106	0.07450	0.06854	92.83203	0.01392	0.00619	95.04281
Asphalt roller (Caterpillar CB54)	offroad	137	0.10667	0.47234	0.74467	0.00085	0.05387	0.04956	74.18283	0.00962	0.00428	75.71102
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Drilling rig (mid-size)	offroad	120	0.04466	0.46978	0.45832	0.00090	0.02572	0.02366	77.12177	0.00403	0.00179	77.76160
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forklift (Case 586G Series 3)	offroad	80	0.10843	0.40129	0.44643	0.00056	0.03985	0.03666	46.11183	0.00978	0.00435	47.66522
Generator (30 KVA diesel)	offroad	50	0.08719	0.26386	0.28468	0.00040	0.02340	0.02152	30.62299	0.00787	0.00350	31.87212
Grader (John Deere 670G/GP)	offroad	195	0.14736	0.65415	1.19910	0.00154	0.05947	0.05471	136.77266	0.01330	0.00591	138.88379
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070

Equipment and Vehicles		Rating	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	BHP	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit	lbs/unit
RECREATION - French Meadows Reservoir Trail - YEAR 14												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Chainsaw (2-stroke, professional grade)	offroad	4	0.00314	0.01646	0.01965	0.00004	0.00076	0.00070	2.69529	0.00028	0.00013	2.74024
Chipper (Vermeer BC1500)	offroad	125	0.09994	0.53310	0.71147	0.00097	0.05537	0.05094	83.19121	0.00902	0.00401	84.62294
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Forest Machine (Caterpillar 324D FM)	offroad	188	0.09559	0.58472	0.82977	0.00125	0.04227	0.03889	112.42474	0.00862	0.00383	113.79415
Generator (30 KVA diesel)	offroad	50	0.08719	0.26386	0.28468	0.00040	0.02340	0.02152	30.62299	0.00787	0.00350	31.87212
Log transport truck (Mack or Oshkosh as typical)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
SUPPLY - French Meadows North Shore Water Supply - YEAR 9												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Drilling rig (mid-size)	offroad	120	0.04466	0.46978	0.45832	0.00090	0.02572	0.02366	77.12177	0.00403	0.00179	77.76160
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Generator (30 KVA diesel)	offroad	50	0.08719	0.26386	0.28468	0.00040	0.02340	0.02152	30.62299	0.00787	0.00350	31.87212
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
SUPPLY - French Meadows South Shore Water Supply - YEAR 5												
Backhoe (John Deere 410 J)	offroad	98	0.07569	0.34249	0.40395	0.00054	0.03375	0.03105	45.00830	0.00683	0.00304	46.09267
Bulldozer (John Deere Model 700 J)	offroad	115	0.12848	0.47424	0.73250	0.00074	0.06482	0.05963	62.88692	0.01159	0.00515	64.72751
Compressor (Sullair 375 H-AF trailer mounted)	offroad	130	0.08672	0.35787	0.56081	0.00063	0.04586	0.04219	54.50167	0.00782	0.00348	55.74400
Drilling rig (mid-size)	offroad	120	0.04466	0.46978	0.45832	0.00090	0.02572	0.02366	77.12177	0.00403	0.00179	77.76160
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Generator (30 KVA diesel)	offroad	50	0.08719	0.26386	0.28468	0.00040	0.02340	0.02152	30.62299	0.00787	0.00350	31.87212
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Sources: SCAQMD 2008, EPA 2011												
Notes:												
LD = light duty; MD = medium duty, HHD = heavy heavy duty, BHP = brake horsepower												
offroad units are lbs/hour, onroad units are lbs/mile												

Estimated Daily Emissions From Construction (Fuel combustion)													
Equipment and Vehicles		Daily Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3													
Backhoe (John Deere 410 J)	offroad	6		0.45415	2.05493	2.42370	0.00324	0.20249	0.18629	270.0	0.04098	0.01821	276.6
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Electrical boom type truck-mounted aerial lift	offroad	6		0.35494	1.05447	1.10376	0.00152	0.09332	0.08585	117.7	0.03203	0.01423	122.8
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Front loader (John Deere 444 K)	offroad	6		0.42172	2.10869	2.69588	0.00359	0.22605	0.20796	304.9	0.03805	0.01691	310.9
Generator (Magnum MMG25 23 KVA diesel)	offroad	10		0.62948	1.94635	2.34550	0.00327	0.17663	0.16250	254.3	0.05680	0.02524	263.3
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	6		0.60532	2.74824	4.38994	0.00505	0.27282	0.25099	445.8	0.05462	0.02427	454.5
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1200	0.89480	8.51074	0.85389	0.01286	0.10880	0.07001	1321.0	0.08049	0.03259	1332.8
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1200	2.71570	11.18148	32.91522	0.04903	1.60436	1.37555	5058.2	0.12530	0.11793	5097.4
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	6		0.65315	3.12224	4.09812	0.00523	0.35099	0.32291	445.9	0.05893	0.02619	455.3
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	10		0.62948	1.94635	2.34550	0.00327	0.17663	0.16250	254.3	0.05680	0.02524	263.3
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	5		0.50444	2.29020	3.65828	0.00420	0.22735	0.20916	371.5	0.04551	0.02023	378.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1200	0.89480	8.51074	0.85389	0.01286	0.10880	0.07001	1321.0	0.08049	0.03259	1332.8
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1200	2.71570	11.18148	32.91522	0.04903	1.60436	1.37555	5058.2	0.12530	0.11793	5097.4
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	6		0.65315	3.12224	4.09812	0.00523	0.35099	0.32291	445.9	0.05893	0.02619	455.3
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	10		0.62948	1.94635	2.34550	0.00327	0.17663	0.16250	254.3	0.05680	0.02524	263.3
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	5		0.50444	2.29020	3.65828	0.00420	0.22735	0.20916	371.5	0.04551	0.02023	378.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1200	0.89480	8.51074	0.85389	0.01286	0.10880	0.07001	1321.0	0.08049	0.03259	1332.8
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0

Equipment and Vehicles		Daily Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1200	2.71570	11.18148	32.91522	0.04903	1.60436	1.37555	5058.2	0.12530	0.11793	5097.4
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	6		0.65315	3.12224	4.09812	0.00523	0.35099	0.32291	445.9	0.05893	0.02619	455.3
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	10		0.62948	1.94635	2.34550	0.00327	0.17663	0.16250	254.3	0.05680	0.02524	263.3
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	5		0.50444	2.29020	3.65828	0.00420	0.22735	0.20916	371.5	0.04551	0.02023	378.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1200	0.89480	8.51074	0.85389	0.01286	0.10880	0.07001	1321.0	0.08049	0.03259	1332.8
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	8		0.50359	1.55708	1.87640	0.00262	0.14130	0.13000	203.4	0.04544	0.02019	210.6
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	4		0.40355	1.83216	2.92662	0.00336	0.18188	0.16733	297.2	0.03641	0.01618	303.0
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		480	0.35792	3.40430	0.34156	0.00514	0.04352	0.02801	528.4	0.03220	0.01304	533.1
Welder genset (Hobart Champion Elite)	offroad	4		0.07482	0.21926	0.37674	0.00054	0.02349	0.02161	41.1	0.00675	0.00300	42.2
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	6		0.65315	3.12224	4.09812	0.00523	0.35099	0.32291	445.9	0.05893	0.02619	455.3
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	5		0.50444	2.29020	3.65828	0.00420	0.22735	0.20916	371.5	0.04551	0.02023	378.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1200	0.89480	8.51074	0.85389	0.01286	0.10880	0.07001	1321.0	0.08049	0.03259	1332.8
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0

Equipment and Vehicles		Daily Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	8		0.50359	1.55708	1.87640	0.00262	0.14130	0.13000	203.4	0.04544	0.02019	210.6
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	4		0.40355	1.83216	2.92662	0.00336	0.18188	0.16733	297.2	0.03641	0.01618	303.0
Oversize load tractor trailer (5 axles or more)	onroad HHD		120	0.27157	1.11815	3.29152	0.00490	0.16044	0.13756	505.8	0.01253	0.01179	509.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		480	0.35792	3.40430	0.34156	0.00514	0.04352	0.02801	528.4	0.03220	0.01304	533.1
Welder genset (Hobart Champion Elite)	offroad	5		0.09352	0.27407	0.47092	0.00067	0.02936	0.02701	51.4	0.00844	0.00375	52.7
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3													
Chainsaw (2-stroke, professional grade)	offroad	5		0.01569	0.08229	0.09824	0.00021	0.00381	0.00351	13.5	0.00142	0.00063	13.7
Generator (2.2 KVA)	offroad	10		0.03922	0.20572	0.24560	0.00052	0.00953	0.00877	33.7	0.00354	0.00157	34.3
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		240	0.17896	1.70215	0.17078	0.00257	0.02176	0.01400	264.2	0.01610	0.00652	266.6
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3													
Chainsaw (2-stroke, professional grade)	offroad	5		0.01569	0.08229	0.09824	0.00021	0.00381	0.00351	13.5	0.00142	0.00063	13.7
Generator (2.2 KVA)	offroad	10		0.03922	0.20572	0.24560	0.00052	0.00953	0.00877	33.7	0.00354	0.00157	34.3
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		240	0.17896	1.70215	0.17078	0.00257	0.02176	0.01400	264.2	0.01610	0.00652	266.6
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2													
Chainsaw (2-stroke, professional grade)	offroad	5		0.01569	0.08229	0.09824	0.00021	0.00381	0.00351	13.5	0.00142	0.00063	13.7
Generator (2.2 KVA)	offroad	10		0.03922	0.20572	0.24560	0.00052	0.00953	0.00877	33.7	0.00354	0.00157	34.3
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		240	0.17896	1.70215	0.17078	0.00257	0.02176	0.01400	264.2	0.01610	0.00652	266.6
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2													
Chainsaw (2-stroke, professional grade)	offroad	5		0.01569	0.08229	0.09824	0.00021	0.00381	0.00351	13.5	0.00142	0.00063	13.7
Generator (2.2 KVA)	offroad	10		0.03922	0.20572	0.24560	0.00052	0.00953	0.00877	33.7	0.00354	0.00157	34.3
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		240	0.17896	1.70215	0.17078	0.00257	0.02176	0.01400	264.2	0.01610	0.00652	266.6
RECREATION - Ellicott Bridge Parking Area - YEAR 14													
Asphalt paver (Caterpillar AP500E)	offroad	6		0.92590	3.68856	6.31315	0.00639	0.44697	0.41122	557.0	0.08354	0.03713	570.3
Asphalt roller (Caterpillar CB54)	offroad	6		0.64002	2.83403	4.46799	0.00513	0.32320	0.29734	445.1	0.05775	0.02567	454.3
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Drilling rig (mid-size)	offroad	6		0.26797	2.81869	2.74994	0.00543	0.15429	0.14195	462.7	0.02418	0.01075	466.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forklift (Case 586G Series 3)	offroad	4		0.43372	1.60515	1.78573	0.00226	0.15940	0.14665	184.4	0.03913	0.01739	190.7
Generator (30 KVA diesel)	offroad	10		0.87192	2.63860	2.84677	0.00396	0.23396	0.21525	306.2	0.07867	0.03497	318.7
Grader (John Deere 670G/GP)	offroad	4		0.58944	2.61660	4.79640	0.00616	0.23789	0.21886	547.1	0.05318	0.02364	555.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		720	0.53688	5.10644	0.51234	0.00772	0.06528	0.04201	792.6	0.04829	0.01955	799.7

Equipment and Vehicles		Daily Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
RECREATION - French Meadows Reservoir Trail - YEAR 14													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Chainsaw (2-stroke, professional grade)	offroad	16		0.05020	0.26332	0.31437	0.00067	0.01220	0.01122	43.1	0.00453	0.00201	43.8
Chipper (Vermeer BC1500)	offroad	8		0.79950	4.26479	5.69174	0.00777	0.44296	0.40752	665.5	0.07214	0.03206	677.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Forest Machine (Caterpillar 324D FM)	offroad	8		0.76470	4.67775	6.63813	0.01000	0.33815	0.31110	899.4	0.06900	0.03067	910.4
Generator (30 KVA diesel)	offroad	10		0.87192	2.63860	2.84677	0.00396	0.23396	0.21525	306.2	0.07867	0.03497	318.7
Log transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		720	0.53688	5.10644	0.51234	0.00772	0.06528	0.04201	792.6	0.04829	0.01955	799.7
SUPPLY - French Meadows North Shore Water Supply - YEAR 9													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Drilling rig (mid-size)	offroad	6		0.26797	2.81869	2.74994	0.00543	0.15429	0.14195	462.7	0.02418	0.01075	466.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Generator (30 KVA diesel)	offroad	10		0.87192	2.63860	2.84677	0.00396	0.23396	0.21525	306.2	0.07867	0.03497	318.7
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		480	0.35792	3.40430	0.34156	0.00514	0.04352	0.02801	528.4	0.03220	0.01304	533.1
SUPPLY - French Meadows South Shore Water Supply - YEAR 5													
Backhoe (John Deere 410 J)	offroad	4		0.30276	1.36996	1.61580	0.00216	0.13499	0.12419	180.0	0.02732	0.01214	184.4
Bulldozer (John Deere Model 700 J)	offroad	6		0.77086	2.84546	4.39502	0.00444	0.38890	0.35778	377.3	0.06955	0.03091	388.4
Compressor (Sullair 375 H-AF trailer mounted)	offroad	6		0.52030	2.14725	3.36486	0.00379	0.27517	0.25315	327.0	0.04695	0.02086	334.5
Drilling rig (mid-size)	offroad	6		0.26797	2.81869	2.74994	0.00543	0.15429	0.14195	462.7	0.02418	0.01075	466.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		150	0.30944	2.11167	2.36597	0.00402	0.08993	0.07526	417.2	0.01456	0.02264	424.6
Generator (30 KVA diesel)	offroad	10		0.87192	2.63860	2.84677	0.00396	0.23396	0.21525	306.2	0.07867	0.03497	318.7
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		480	0.35792	3.40430	0.34156	0.00514	0.04352	0.02801	528.4	0.03220	0.01304	533.1
Sources: SCAQMD 2008, EPA 2011													
Notes:													
LD = light duty; MD = medium duty, HHD = heavy heavy duty, BHP = brake horsepower													

Equipment and Vehicles		Daily Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Project Phase		Project Year	CE Year	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
				lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Hell Hole Reservoir Seasonal Storage Increase Improvement		3	2014	6.31	31.75	36.97	0.06	2.40	2.13	6012	0.50	0.27	6108
Duncan Creek Diversion Dam Modification		2	2013	8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
North Fork Long Canyon Diversion Dam Modification		3	2014	8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
South Fork Long Canyon Diversion Dam Modification		3	2014	8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
French Meadows Dam Outlet Works Modification		2	2013	3.33	15.85	22.78	0.04	1.32	1.16	3620	0.25	0.15	3670
Hell Hole Dam Outlet Works Modification		2	2013	5.50	28.24	32.12	0.05	2.28	2.04	5071	0.45	0.23	5152
Middle Fork Interbay Dam Outlet Works Modification		2	2013	3.35	15.90	22.87	0.04	1.33	1.17	3630	0.25	0.15	3681
North Fork Long Canyon Creek Gage Below Diversion Dam		3	2014	0.23	1.99	0.51	0.00	0.04	0.03	311	0.02	0.01	315
South Fork Long Canyon Creek Gage Below Diversion Dam		3	2014	0.23	1.99	0.51	0.00	0.04	0.03	311	0.02	0.01	315
Middle Fork American River Gage Below Interbay Dam		2	2013	0.23	1.99	0.51	0.00	0.04	0.03	311	0.02	0.01	315
North Fork American River Gage Above American River Pump Station		2	2013	0.23	1.99	0.51	0.00	0.04	0.03	311	0.02	0.01	315
Ellicott Bridge Parking Area		14	2025	6.08	29.73	39.05	0.06	2.52	2.27	5484	0.50	0.25	5573
French Meadows Reservoir Trail		14	2025	5.09	26.07	32.61	0.05	2.11	1.89	4946	0.42	0.21	5021
French Meadows North Shore Water Supply		9	2020	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
French Meadows South Shore Water Supply		5	2016	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
CHECKSUM1				64.41	316.22	431.70	0.70	27.21	24.11	67244	4.96	2.73	68194
CHECKSUM2				64.41	316.22	431.70	0.70	27.21	24.11	67244	4.96	2.73	68194
Peak Daily Emissions, lbs (fuel combustion)		2	2013	8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
Peak Daily Emissions, lbs (fuel combustion)		3	2014	8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
Peak Daily Emissions, lbs (fuel combustion)		5	2016	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
Peak Daily Emissions, lbs (fuel combustion)		9	2020	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
Peak Daily Emissions, lbs (fuel combustion)		14	2025	6.08	29.73	39.05	0.06	2.52	2.27	5484	0.50	0.25	5573
Highest Peak Daily Emissions, lbs (fuel combustion)				8.78	41.08	66.56	0.10	4.02	3.54	10257	0.63	0.37	10385
Worst Case Daily Emissions, lbs (fuel combustion)		2	2013	21.43	105.05	145.35	0.24	9.02	7.96	23202	1.62	0.91	23518
Worst Case Daily Emissions, lbs (fuel combustion)		3	2014	24.34	117.90	171.11	0.28	10.52	9.26	27150	1.81	1.03	27507
Worst Case Daily Emissions, lbs (fuel combustion)		5	2016	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
Worst Case Daily Emissions, lbs (fuel combustion)		9	2020	3.74	18.73	21.79	0.04	1.52	1.37	3231	0.31	0.16	3287
Worst Case Daily Emissions, lbs (fuel combustion)		14	2025	11.16	55.81	71.66	0.11	4.63	4.16	10430	0.92	0.47	10595
Highest Worst Case Daily Emissions, lbs (fuel combustion)				24.34	117.90	171.11	0.28	10.52	9.26	27150	1.81	1.03	27507
CHECKSUM3				64.41	316.22	431.70	0.70	27.21	24.11	67244	4.96	2.73	68194

Estimated Annual Emissions from Construction (fuel combustion)													
Equipment and Vehicles		Project Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3													
Backhoe (John Deere 410 J)	offroad	210		15.89510	71.92266	84.82935	0.11327	7.08718	6.52021	9451.7	1.43419	0.63742	9679.5
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	126		10.92632	45.09216	70.66209	0.07959	5.77849	5.31621	6867.2	0.98586	0.43816	7023.7
Concrete pumper (Schwing SP 260)	offroad	32		3.44574	11.50817	14.01524	0.01808	1.16145	1.06854	1457.6	0.31090	0.13818	1507.0
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1200	2.71570	11.18148	32.91522	0.04903	1.60436	1.37555	5058.2	0.12530	0.11793	5097.4
Electrical boom type line truck (Ford F650 XL)	onroad MD		1500	3.09443	21.11668	23.65967	0.04023	0.89934	0.75260	4172.5	0.14555	0.22641	4245.7
Electrical boom type truck-mounted aerial lift	offroad	60		3.54938	10.54472	11.03755	0.01521	0.93320	0.85855	1176.8	0.32025	0.14234	1227.6
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		9900	20.42324	139.37007	156.15383	0.26554	5.93563	4.96718	27538.2	0.96063	1.49432	28021.6
Forklift (Case 586G Series 3)	offroad	168		18.21613	67.41613	75.00053	0.09476	6.69488	6.15929	7746.8	1.64361	0.73049	8007.8
Front loader (John Deere 444 K)	offroad	126		8.85602	44.28250	56.61355	0.07530	4.74698	4.36722	6402.3	0.79906	0.35514	6529.1
Generator (Magnum MMG25 23 KVA diesel)	offroad	800		50.35863	155.70814	187.64001	0.26161	14.13048	13.00005	20341.1	4.54378	2.01946	21062.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	126		12.71181	57.71295	92.18868	0.10595	5.72917	5.27084	9362.5	1.14697	0.50976	9544.6
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		96000	71.58396	680.85915	68.31134	1.02899	8.70401	5.60112	105683.9	6.43916	2.60727	106627.4
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	60		4.54146	20.54933	24.23696	0.03236	2.02491	1.86292	2700.5	0.40977	0.18212	2765.6
Bulldozer (John Deere Model 700 J)	offroad	180		23.12574	85.36372	131.85049	0.13317	11.66686	10.73351	11319.6	2.08660	0.92738	11651.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	120		10.40602	42.94491	67.29723	0.07580	5.50333	5.06306	6540.2	0.93892	0.41730	6689.3
Concrete pumper (Schwing SP 260)	offroad	56		6.03005	20.13930	24.52668	0.03163	2.03254	1.86994	2550.8	0.54408	0.24181	2637.2
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		16800	38.01975	156.54069	460.81307	0.68641	22.46101	19.25775	70815.1	1.75417	1.65098	71363.8
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	228		24.81954	118.64510	155.72846	0.19856	13.33750	12.27050	16946.1	2.23943	0.99530	17301.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		9900	20.42324	139.37007	156.15383	0.26554	5.93563	4.96718	27538.2	0.96063	1.49432	28021.6
Forklift (Case 586G Series 3)	offroad	128		13.87895	51.36467	57.14326	0.07220	5.10086	4.69279	5902.3	1.25228	0.55657	6101.1
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	800		50.35863	155.70814	187.64001	0.26161	14.13048	13.00005	20341.1	4.54378	2.01946	21062.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	105		10.59317	48.09413	76.82390	0.08829	4.77431	4.39237	7802.1	0.95580	0.42480	7953.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		96000	71.58396	680.85915	68.31134	1.02899	8.70401	5.60112	105683.9	6.43916	2.60727	106627.4
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3													
Backhoe (John Deere 410 J)	offroad	60		4.54146	20.54933	24.23696	0.03236	2.02491	1.86292	2700.5	0.40977	0.18212	2765.6
Bulldozer (John Deere Model 700 J)	offroad	180		23.12574	85.36372	131.85049	0.13317	11.66686	10.73351	11319.6	2.08660	0.92738	11651.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	120		10.40602	42.94491	67.29723	0.07580	5.50333	5.06306	6540.2	0.93892	0.41730	6689.3
Concrete pumper (Schwing SP 260)	offroad	56		6.03005	20.13930	24.52668	0.03163	2.03254	1.86994	2550.8	0.54408	0.24181	2637.2
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		16800	38.01975	156.54069	460.81307	0.68641	22.46101	19.25775	70815.1	1.75417	1.65098	71363.8
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	228		24.81954	118.64510	155.72846	0.19856	13.33750	12.27050	16946.1	2.23943	0.99530	17301.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		9900	20.42324	139.37007	156.15383	0.26554	5.93563	4.96718	27538.2	0.96063	1.49432	28021.6
Forklift (Case 586G Series 3)	offroad	128		13.87895	51.36467	57.14326	0.07220	5.10086	4.69279	5902.3	1.25228	0.55657	6101.1
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	800		50.35863	155.70814	187.64001	0.26161	14.13048	13.00005	20341.1	4.54378	2.01946	21062.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	105		10.59317	48.09413	76.82390	0.08829	4.77431	4.39237	7802.1	0.95580	0.42480	7953.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		96000	71.58396	680.85915	68.31134	1.02899	8.70401	5.60112	105683.9	6.43916	2.60727	106627.4
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0

Equipment and Vehicles		Project Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3													
Backhoe (John Deere 410 J)	offroad	60		4.54146	20.54933	24.23696	0.03236	2.02491	1.86292	2700.5	0.40977	0.18212	2765.6
Bulldozer (John Deere Model 700 J)	offroad	180		23.12574	85.36372	131.85049	0.13317	11.66686	10.73351	11319.6	2.08660	0.92738	11651.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	120		10.40602	42.94491	67.29723	0.07580	5.50333	5.06306	6540.2	0.93892	0.41730	6689.3
Concrete pumper (Schwing SP 260)	offroad	56		6.03005	20.13930	24.52668	0.03163	2.03254	1.86994	2550.8	0.54408	0.24181	2637.2
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		16800	38.01975	156.54069	460.81307	0.68641	22.46101	19.25775	70815.1	1.75417	1.65098	71363.8
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	228		24.81954	118.64510	155.72846	0.19856	13.33750	12.27050	16946.1	2.23943	0.99530	17301.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		9900	20.42324	139.37007	156.15383	0.26554	5.93563	4.96718	27538.2	0.96063	1.49432	28021.6
Forklift (Case 586G Series 3)	offroad	128		13.87895	51.36467	57.14326	0.07220	5.10086	4.69279	5902.3	1.25228	0.55657	6101.1
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	800		50.35863	155.70814	187.64001	0.26161	14.13048	13.00005	20341.1	4.54378	2.01946	21062.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	105		10.59317	48.09413	76.82390	0.08829	4.77431	4.39237	7802.1	0.95580	0.42480	7953.8
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		96000	71.58396	680.85915	68.31134	1.02899	8.70401	5.60112	105683.9	6.43916	2.60727	106627.4
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	12		0.90829	4.10987	4.84739	0.00647	0.40498	0.37258	540.1	0.08195	0.03642	553.1
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Concrete pumper (Schwing SP 260)	offroad	4		0.43072	1.43852	1.75191	0.00226	0.14518	0.13357	182.2	0.03886	0.01727	188.4
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		150	0.33946	1.39768	4.11440	0.00613	0.20054	0.17194	632.3	0.01566	0.01474	637.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		3000	6.18886	42.23335	47.31934	0.08047	1.79867	1.50521	8344.9	0.29110	0.45282	8491.4
Forklift (Case 586G Series 3)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	160		10.07173	31.14163	37.52800	0.05232	2.82610	2.60001	4068.2	0.90876	0.40389	4212.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		450	1.01839	4.19305	12.34321	0.01839	0.60163	0.51583	1896.8	0.04699	0.04422	1911.5
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	8		0.80710	3.66431	5.85325	0.00673	0.36376	0.33466	594.4	0.07282	0.03237	606.0
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		9600	7.15840	68.08592	6.83113	0.10290	0.87040	0.56011	10568.4	0.64392	0.26073	10662.7
Welder genset (Hobart Champion Elite)	offroad	16		0.29926	0.87702	1.50696	0.00214	0.09395	0.08644	164.3	0.02700	0.01200	168.6
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	140		10.59673	47.94844	56.55290	0.07551	4.72479	4.34680	6301.2	0.95613	0.42495	6453.0
Bulldozer (John Deere Model 700 J)	offroad	84		10.79201	39.83640	61.53023	0.06215	5.44454	5.00897	5282.5	0.97375	0.43278	5437.1
Compressor (Sullair 375 H-AF trailer mounted)	offroad	120		10.40602	42.94491	67.29723	0.07580	5.50333	5.06306	6540.2	0.93892	0.41730	6689.3
Concrete pumper (Schwing SP 260)	offroad	28		3.01503	10.06965	12.26334	0.01582	1.01627	0.93497	1275.4	0.27204	0.12091	1318.6
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1050	2.37623	9.78379	28.80082	0.04290	1.40381	1.20361	4425.9	0.10964	0.10319	4460.2
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	228		24.81954	118.64510	155.72846	0.19856	13.33750	12.27050	16946.1	2.23943	0.99530	17301.6
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		6000	12.37772	84.46671	94.63869	0.16093	3.59735	3.01041	16689.8	0.58220	0.90565	16982.8
Forklift (Case 586G Series 3)	offroad	132		14.31267	52.96982	58.92899	0.07446	5.26027	4.83944	6086.8	1.29141	0.57396	6291.8
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		6000	13.57848	55.90739	164.57610	0.24515	8.02179	6.87777	25291.1	0.62649	0.58964	25487.1
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	160		16.14197	73.28629	117.06499	0.13454	7.27514	6.69313	11888.8	1.45646	0.64732	12120.1
Oversize load tractor trailer (5 axles or more)	onroad HHD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		48000	35.79198	340.42958	34.15567	0.51450	4.35200	2.80056	52842.0	3.21958	1.30363	53313.7
Welder genset (Hobart Champion Elite)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0

Equipment and Vehicles		Project Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2													
Backhoe (John Deere 410 J)	offroad	20		1.51382	6.84978	8.07899	0.01079	0.67497	0.62097	900.2	0.13659	0.06071	921.9
Bulldozer (John Deere Model 700 J)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Compressor (Sullair 375 H-AF trailer mounted)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Concrete pumper (Schwing SP 260)	offroad	20		2.15359	7.19261	8.75953	0.01130	0.72591	0.66784	911.0	0.19431	0.08636	941.9
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		750	1.69731	6.98842	20.57201	0.03064	1.00272	0.85972	3161.4	0.07831	0.07370	3185.9
Electrical boom type line truck (Ford F650 XL)	onroad MD		0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Electrical boom type truck-mounted aerial lift	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Excavator (John Deere 160 D LC)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		3000	6.18886	42.23335	47.31934	0.08047	1.79867	1.50521	8344.9	0.29110	0.45282	8491.4
Forklift (Case 586G Series 3)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Front loader (John Deere 444 K)	offroad	0		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.0	0.00000	0.00000	0.0
Generator (Magnum MMG25 23 KVA diesel)	offroad	160		10.07173	31.14163	37.52800	0.05232	2.82610	2.60001	4068.2	0.90876	0.40389	4212.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		750	1.69731	6.98842	20.57201	0.03064	1.00272	0.85972	3161.4	0.07831	0.07370	3185.9
Mobile crane (Link-Belt RTC-8030 Series II)	offroad	40		4.03549	18.32157	29.26625	0.03363	1.81878	1.67328	2972.2	0.36412	0.16183	3030.0
Oversize load tractor trailer (5 axles or more)	onroad HHD		360	0.81471	3.35444	9.87457	0.01471	0.48131	0.41267	1517.5	0.03759	0.03538	1529.2
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		9600	7.15840	68.08592	6.83113	0.10290	0.87040	0.56011	10568.4	0.64392	0.26073	10662.7
Welder genset (Hobart Champion Elite)	offroad	100		1.87038	5.48140	9.41850	0.01339	0.58721	0.54023	1027.0	0.16876	0.07500	1053.8
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3													
Chainsaw (2-stroke, professional grade)	offroad	10		0.03137	0.16457	0.19648	0.00042	0.00762	0.00701	27.0	0.00283	0.00126	27.4
Generator (2.2 KVA)	offroad	70		0.27453	1.44001	1.71920	0.00367	0.06670	0.06136	235.8	0.02477	0.01101	239.8
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1680	1.25272	11.91504	1.19545	0.01801	0.15232	0.09802	1849.5	0.11269	0.04563	1866.0
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3													
Chainsaw (2-stroke, professional grade)	offroad	10		0.03137	0.16457	0.19648	0.00042	0.00762	0.00701	27.0	0.00283	0.00126	27.4
Generator (2.2 KVA)	offroad	70		0.27453	1.44001	1.71920	0.00367	0.06670	0.06136	235.8	0.02477	0.01101	239.8
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1680	1.25272	11.91504	1.19545	0.01801	0.15232	0.09802	1849.5	0.11269	0.04563	1866.0
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2													
Chainsaw (2-stroke, professional grade)	offroad	10		0.03137	0.16457	0.19648	0.00042	0.00762	0.00701	27.0	0.00283	0.00126	27.4
Generator (2.2 KVA)	offroad	70		0.27453	1.44001	1.71920	0.00367	0.06670	0.06136	235.8	0.02477	0.01101	239.8
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1680	1.25272	11.91504	1.19545	0.01801	0.15232	0.09802	1849.5	0.11269	0.04563	1866.0
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2													
Chainsaw (2-stroke, professional grade)	offroad	10		0.03137	0.16457	0.19648	0.00042	0.00762	0.00701	27.0	0.00283	0.00126	27.4
Generator (2.2 KVA)	offroad	70		0.27453	1.44001	1.71920	0.00367	0.06670	0.06136	235.8	0.02477	0.01101	239.8
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		1680	1.25272	11.91504	1.19545	0.01801	0.15232	0.09802	1849.5	0.11269	0.04563	1866.0
RECREATION - Ellicott Bridge Parking Area - YEAR 14													
Asphalt paver (Caterpillar AP500E)	offroad	60		9.25897	36.88562	63.13145	0.06386	4.46974	4.11216	5569.9	0.83542	0.37130	5702.6
Asphalt roller (Caterpillar CB54)	offroad	60		6.40024	28.34026	44.67990	0.05125	3.23198	2.97342	4451.0	0.57748	0.25666	4542.7
Backhoe (John Deere 410 J)	offroad	40		3.02764	13.69955	16.15797	0.02158	1.34994	1.24194	1800.3	0.27318	0.12141	1843.7
Compressor (Sullair 375 H-AF trailer mounted)	offroad	60		5.20301	21.47246	33.64861	0.03790	2.75166	2.53153	3270.1	0.46946	0.20865	3344.6
Concrete transport truck (Mack or Oshkosh as typical)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Drilling rig (mid-size)	offroad	60		2.67967	28.18687	27.49940	0.05428	1.54292	1.41949	4627.3	0.24178	0.10746	4665.7
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		1500	3.09443	21.11668	23.65967	0.04023	0.89934	0.75260	4172.5	0.14555	0.22641	4245.7
Forklift (Case 586G Series 3)	offroad	40		4.33717	16.05146	17.85727	0.02256	1.59402	1.46650	1844.5	0.39134	0.17393	1906.6
Generator (30 KVA diesel)	offroad	100		8.71916	26.38603	28.46772	0.03959	2.33962	2.15245	3062.3	0.78672	0.34965	3187.2
Grader (John Deere 670G/GP)	offroad	40		5.89444	26.16597	47.96396	0.06156	2.37888	2.18857	5470.9	0.53185	0.23638	5555.4
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		1500	3.39462	13.97685	41.14402	0.06129	2.00545	1.71944	6322.8	0.15662	0.14741	6371.8
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		7200	5.36880	51.06444	5.12335	0.07717	0.65280	0.42008	7926.3	0.48294	0.19555	7997.1

Equipment and Vehicles		Project Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
RECREATION - French Meadows Reservoir Trail - YEAR 14													
Backhoe (John Deere 410 J)	offroad	56		4.23869	19.17938	22.62116	0.03021	1.88992	1.73872	2520.5	0.38245	0.16998	2581.2
Bulldozer (John Deere Model 700 J)	offroad	84		10.79201	39.83640	61.53023	0.06215	5.44454	5.00897	5282.5	0.97375	0.43278	5437.1
Chainsaw (2-stroke, professional grade)	offroad	224		0.70279	3.68643	4.40115	0.00939	0.17075	0.15709	603.7	0.06341	0.02818	613.8
Chipper (Vermeer BC1500)	offroad	112		11.19298	59.70708	79.68432	0.10878	6.20142	5.70530	9317.4	1.00992	0.44886	9477.8
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		2100	4.33220	29.56335	33.12354	0.05633	1.25907	1.05364	5841.4	0.20377	0.31698	5944.0
Forest Machine (Caterpillar 324D FM)	offroad	112		10.70580	65.48845	92.93383	0.14004	4.73411	4.35538	12591.6	0.96597	0.42932	12744.9
Generator (30 KVA diesel)	offroad	140		12.20682	36.94044	39.85480	0.05542	3.27547	3.01343	4287.2	1.10140	0.48951	4462.1
Log transport truck (Mack or Oshkosh as typical)	onroad HHD		2100	4.75247	19.56759	57.60163	0.08580	2.80763	2.40722	8851.9	0.21927	0.20637	8920.5
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		2100	4.75247	19.56759	57.60163	0.08580	2.80763	2.40722	8851.9	0.21927	0.20637	8920.5
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10080	7.51632	71.49021	7.17269	0.10804	0.91392	0.58812	11096.8	0.67611	0.27376	11195.9
SUPPLY - French Meadows North Shore Water Supply - YEAR 9													
Backhoe (John Deere 410 J)	offroad	84		6.35804	28.76906	33.93174	0.04531	2.83487	2.60808	3780.7	0.57368	0.25497	3871.8
Bulldozer (John Deere Model 700 J)	offroad	126		16.18802	59.75460	92.29534	0.09322	8.16680	7.51346	7923.8	1.46062	0.64916	8155.7
Compressor (Sullair 375 H-AF trailer mounted)	offroad	126		10.92632	45.09216	70.66209	0.07959	5.77849	5.31621	6867.2	0.98586	0.43816	7023.7
Drilling rig (mid-size)	offroad	126		5.62730	59.19243	57.74874	0.11399	3.24013	2.98092	9717.3	0.50774	0.22566	9798.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		3150	6.49830	44.34502	49.68531	0.08449	1.88861	1.58047	8762.1	0.30566	0.47547	8916.0
Generator (30 KVA diesel)	offroad	210		18.31023	55.41066	59.78220	0.08313	4.91320	4.52015	6430.8	1.65210	0.73427	6693.1
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		3150	7.12870	29.35138	86.40245	0.12870	4.21144	3.61083	13277.8	0.32891	0.30956	13380.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10080	7.51632	71.49021	7.17269	0.10804	0.91392	0.58812	11096.8	0.67611	0.27376	11195.9
SUPPLY - French Meadows South Shore Water Supply - YEAR 5													
Backhoe (John Deere 410 J)	offroad	84		6.35804	28.76906	33.93174	0.04531	2.83487	2.60808	3780.7	0.57368	0.25497	3871.8
Bulldozer (John Deere Model 700 J)	offroad	126		16.18802	59.75460	92.29534	0.09322	8.16680	7.51346	7923.8	1.46062	0.64916	8155.7
Compressor (Sullair 375 H-AF trailer mounted)	offroad	126		10.92632	45.09216	70.66209	0.07959	5.77849	5.31621	6867.2	0.98586	0.43816	7023.7
Drilling rig (mid-size)	offroad	126		5.62730	59.19243	57.74874	0.11399	3.24013	2.98092	9717.3	0.50774	0.22566	9798.0
Flatbed utility truck or dump truck (Ford F650 XL)	onroad MD		3150	6.49830	44.34502	49.68531	0.08449	1.88861	1.58047	8762.1	0.30566	0.47547	8916.0
Generator (30 KVA diesel)	offroad	210		18.31023	55.41066	59.78220	0.08313	4.91320	4.52015	6430.8	1.65210	0.73427	6693.1
Lowboy tractor and trailer (International Paystar 5900 FSA)	onroad HHD		3150	7.12870	29.35138	86.40245	0.12870	4.21144	3.61083	13277.8	0.32891	0.30956	13380.7
Pickup trucks for workers (Ford, Chevrolet, GMC, Dodge)	onroad LD		10080	7.51632	71.49021	7.17269	0.10804	0.91392	0.58812	11096.8	0.67611	0.27376	11195.9
Sources: SCAQMD 2008, EPA 2011													
Notes:													
LD = light duty; MD = medium duty, HHD = heavy heavy duty, BHP = brake horsepower													

Equipment and Vehicles		Project Activity		ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
Type	Category	hours	VMT	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Project Phase		Project Year	CE Year	ROG	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ eqv
				lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Hell Hole Reservoir Seasonal Storage Increase Improvement		3	2014	225.99	1334.05	924.05	2.22	65.89	57.39	213099	19.05	9.60	216475
Duncan Creek Diversion Dam Modification		2	2013	277.99	1536.91	1461.54	2.95	98.16	85.84	285980	22.32	11.70	290076
North Fork Long Canyon Diversion Dam Modification		3	2014	277.99	1536.91	1461.54	2.95	98.16	85.84	285980	22.32	11.70	290076
South Fork Long Canyon Diversion Dam Modification		3	2014	277.99	1536.91	1461.54	2.95	98.16	85.84	285980	22.32	11.70	290076
French Meadows Dam Outlet Works Modification		2	2013	28.04	160.50	131.97	0.29	7.79	6.69	28509	2.16	1.31	28961
Hell Hole Dam Outlet Works Modification		2	2013	154.21	876.29	851.54	1.60	59.94	53.05	153570	12.67	6.51	155855
Middle Fork Interbay Dam Outlet Works Modification		2	2013	37.20	196.64	198.22	0.38	11.79	10.30	36632	2.90	1.68	37215
North Fork Long Canyon Creek Gage Below Diversion Dam		3	2014	1.56	13.52	3.11	0.02	0.23	0.17	2112	0.14	0.06	2133
South Fork Long Canyon Creek Gage Below Diversion Dam		3	2014	1.56	13.52	3.11	0.02	0.23	0.17	2112	0.14	0.06	2133
Middle Fork American River Gage Below Interbay Dam		2	2013	1.56	13.52	3.11	0.02	0.23	0.17	2112	0.14	0.06	2133
North Fork American River Gage Above American River Pump Station		2	2013	1.56	13.52	3.11	0.02	0.23	0.17	2112	0.14	0.06	2133
Ellicott Bridge Parking Area		14	2025	60.77	297.32	390.48	0.59	25.22	22.70	54841	5.05	2.54	55735
French Meadows Reservoir Trail		14	2025	71.19	365.03	456.52	0.74	29.50	26.44	69245	5.82	3.00	70298
French Meadows North Shore Water Supply		9	2020	78.55	393.41	457.68	0.74	31.95	28.72	67857	6.49	3.36	69035
French Meadows South Shore Water Supply		5	2016	78.55	393.41	457.68	0.74	31.95	28.72	67857	6.49	3.36	69035
CHECKSUM1				1574.71	8681.44	8265.21	16.24	559.41	492.20	1557998	128.15	66.71	1581368
CHECKSUM2				1574.71	8681.44	8265.21	16.24	559.41	492.20	1557998	128.15	66.71	1581368
Total Annual Emissions, tons (fuel combustion)		2	2013	0.250	1.399	1.325	0.003	0.089	0.078	254.5	0.020	0.011	258.2
Total Annual Emissions, tons (fuel combustion)		3	2014	0.393	2.217	1.927	0.004	0.131	0.115	394.6	0.032	0.017	400.4
Total Annual Emissions, tons (fuel combustion)		5	2016	0.039	0.197	0.229	0.000	0.016	0.014	33.9	0.003	0.002	34.5
Total Annual Emissions, tons (fuel combustion)		9	2020	0.039	0.197	0.229	0.000	0.016	0.014	33.9	0.003	0.002	34.5
Total Annual Emissions, tons (fuel combustion)		14	2025	0.066	0.331	0.424	0.001	0.027	0.025	62.0	0.005	0.003	63.0
Highest Annual Total Emissions, tons (fuel combustion)				0.393	2.217	1.927	0.004	0.131	0.115	394.6	0.032	0.017	400.4
Project Total Emissions, tons (fuel combustion)				0.787	4.341	4.133	0.008	0.280	0.246	779.0	0.064	0.033	790.7
CHECKSUM3				1574.71	8681.44	8265.21	16.24	559.41	492.20	1557998	128.15	66.71	1581368

Estimated Offroad Fugitive Dust Emissions																	
Earthmoving	Activity		Required Variables								Uncontrolled		Controlled Emissions				
	Pk. Daily	Project	EET	Moist (M)	Silt (s)	Drop (d)	Speed (S)	Wind (U)	Den (D)	Rate (V)	PM ₁₀	PM _{2.5}	Control	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}
	hours	hours	code	percent	percent	feet	mph	mph	ton/cy	cy/hr	lb/hr	lb/hr	%	lb/day	lb/day	lbs	lbs
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	6	210	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.81	0.13
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	168	C	7			3				0.83700	0.05612	56%	1.46	0.10	61.52	4.12
Front loader (John Deere 444 K)	6	126	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.03	0.01	0.73	0.11
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	6	126		7			1				0.03100	0.00120	56%	0.08	0.00	1.71	0.07
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	60	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.23	0.04
Bulldozer (John Deere Model 700 J)	6	180	A	7	9						1.32827	0.66775	56%	3.49	1.75	104.60	52.59
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	6	228	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.07	0.01	2.65	0.41
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	128	C	7			3				0.83700	0.05612	56%	1.46	0.10	46.87	3.14
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	5	105		7			1				0.03100	0.00120	56%	0.07	0.00	1.42	0.06
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	60	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.23	0.04
Bulldozer (John Deere Model 700 J)	6	180	A	7	9						1.32827	0.66775	56%	3.49	1.75	104.60	52.59
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	6	228	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.07	0.01	2.65	0.41
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	128	C	7			3				0.83700	0.05612	56%	1.46	0.10	46.87	3.14
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	5	105		7			1				0.03100	0.00120	56%	0.07	0.00	1.42	0.06
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	60	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.23	0.04
Bulldozer (John Deere Model 700 J)	6	180	A	7	9						1.32827	0.66775	56%	3.49	1.75	104.60	52.59
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	6	228	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.07	0.01	2.65	0.41
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	128	C	7			3				0.83700	0.05612	56%	1.46	0.10	46.87	3.14
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	5	105		7			1				0.03100	0.00120	56%	0.07	0.00	1.42	0.06

OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	12	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.05	0.01
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	4	8		7			1				0.03100	0.00120	56%	0.05	0.00	0.11	0.00
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	140	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.54	0.08
Bulldozer (John Deere Model 700 J)	6	84	A	7	9						1.32827	0.66775	56%	3.49	1.75	48.81	24.54
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	6	228	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.07	0.01	2.65	0.41
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	132	C	7			3				0.83700	0.05612	56%	1.46	0.10	48.34	3.24
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	5	160		7			1				0.03100	0.00120	56%	0.07	0.00	2.17	0.08
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	20	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.08	0.01
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	4	40		7			1				0.03100	0.00120	56%	0.05	0.00	0.54	0.02
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	0	0	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.00	0.00	0.00	0.00
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00

GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	0	0	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.00	0.00	0.00	0.00
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	0	0	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.00	0.00	0.00	0.00
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2 (PHASE 11)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	0	0	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.00	0.00	0.00	0.00
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)																	
Asphalt roller (Caterpillar CB54)	6	60	C	7			2				0.24800	0.01358	56%	0.65	0.04	6.51	0.36
Backhoe (John Deere 410 J)	4	40	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.15	0.02
Bulldozer (John Deere Model 700 J)	0	0	A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Drilling rig (mid-size)	6	60	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.01	0.00	0.12	0.02
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	4	40	C	7			3				0.83700	0.05612	56%	1.46	0.10	14.65	0.98
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	4	40	C	7			4				1.98400	0.15360	56%	3.47	0.27	34.72	2.69
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00

RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	56	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.22	0.03
Bulldozer (John Deere Model 700 J)	6	84	A	7		9					1.32827	0.66775	56%	3.49	1.75	48.81	24.54
Drilling rig (mid-size)	0	0	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	8	112	C	7			3				0.83700	0.05612	56%	2.93	0.20	41.01	2.75
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	84	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.33	0.05
Bulldozer (John Deere Model 700 J)	6	126	A	7		9					1.32827	0.66775	56%	3.49	1.75	73.22	36.81
Drilling rig (mid-size)	6	126	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.01	0.00	0.24	0.04
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)																	
Asphalt roller (Caterpillar CB54)	0	0	C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Backhoe (John Deere 410 J)	4	84	D	7				7.0	1.5	20	0.00885	0.00137	56%	0.02	0.00	0.33	0.05
Bulldozer (John Deere Model 700 J)	6	126	A	7		9					1.32827	0.66775	56%	3.49	1.75	73.22	36.81
Drilling rig (mid-size)	6	126	D	7				7.0	1.5	10	0.00442	0.00068	56%	0.01	0.00	0.24	0.04
Excavator (John Deere 160 D LC)	0	0	D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Forest Machine (Caterpillar 324D FM)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Forklift (Case 586G Series 3)	0	0	C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Front loader (John Deere 444 K)	0	0	D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Grader (John Deere 670G/GP)	0	0	C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
			C														
Mobile crane (Link-Belt RTC-8030 Series II)	0	0		7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
CHECKSUM1												41.24		13.46		0.46	
																0.15	

Onsite	lbs/day	lbs/day	tons	tons
PHASE 1	1.60	0.11	0.03	0.00
PHASE 2	5.10	1.87	0.08	0.03
PHASE 3	5.10	1.87	0.08	0.03
PHASE 4	5.10	1.87	0.08	0.03
PHASE 5	0.07	0.00	0.00	0.00
PHASE 6	5.10	1.87	0.05	0.01
PHASE 7	0.07	0.00	0.00	0.00
PHASE 8	-	-	0.00	0.00
PHASE 9	-	-	0.00	0.00
PHASE 10	-	-	0.00	0.00
PHASE 11	-	-	0.00	0.00
PHASE 12	5.61	0.41	0.03	0.00
PHASE 13	6.43	1.95	0.05	0.01
PHASE 14	3.51	1.76	0.04	0.02
PHASE 15	3.51	1.76	0.04	0.02
CHECKSUM2	41.24	13.46	0.46	0.15

Peak	lbs/day	lbs/day	tons	tons
YEAR 2	5.10	1.87	0.13	0.04
YEAR 3	5.10	1.87	0.19	0.06
YEAR 5	3.51	1.76	0.04	0.02
YEAR 9	3.51	1.76	0.04	0.02
YEAR 14	6.43	1.95	0.07	0.02
HIGHEST	6.43	1.95	0.19	0.06
TOTAL			0.46	0.15

Worst Case	lbs/day	lbs/day	tons	tons
YEAR 2	10.35	3.74	0.13	0.04
YEAR 3	11.81	3.84	0.19	0.06
YEAR 5	3.51	1.76	0.04	0.02
YEAR 9	3.51	1.76	0.04	0.02
YEAR 14	12.05	2.36	0.07	0.02
HIGHEST	12.05	3.84	0.19	0.06
TOTAL			0.46	0.15
CHECKSUM3	41.24	13.46	0.46	0.15

Construction Earthmoving	Activity		Required Variables								Uncontrolled		Controlled Emissions				
	Pk. Daily	Project	EET	Moist (M)	Silt (s)	Drop (d)	Speed (S)	Wind (U)	Den (D)	Rate (V)	PM ₁₀	PM _{2.5}	Control	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}
	hours	hours	code	percent	percent	feet	mph	mph	ton/cy	cy/hr	lb/hr	lb/hr	%	lb/day	lb/day	lbs	lbs
Bulldozer (tracked)			A	7	9						1.32827	0.66775	56%	0.00	0.00	0.00	0.00
Bulldozer (wheeled)			A	7	9						0.99621	0.50081	56%	0.00	0.00	0.00	0.00
Scraper			B+C	7		3	5			30	0.89477	0.15562	56%	0.00	0.00	0.00	0.00
Dump Truck/ADT			B	7		6				30	0.09385	0.00432	56%	0.00	0.00	0.00	0.00
Clamshell Derrick			B	7		9				30	0.12465	0.00675	56%	0.00	0.00	0.00	0.00
Dragline (small)			B	7		12				60	0.30491	0.01854	56%	0.00	0.00	0.00	0.00
Grader			C	7			4				1.98400	0.15360	56%	0.00	0.00	0.00	0.00
Tractor			C	7			3				0.83700	0.05612	56%	0.00	0.00	0.00	0.00
Compactor			C	7			2				0.24800	0.01358	56%	0.00	0.00	0.00	0.00
Crane			C	7			1				0.03100	0.00120	56%	0.00	0.00	0.00	0.00
Backhoe			D	7				7.0	1.5	20	0.00885	0.00137	56%	0.00	0.00	0.00	0.00
Bobcat			D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Drill auger			D	7				7.0	1.5	10	0.00442	0.00068	56%	0.00	0.00	0.00	0.00
Excavator			D	7				7.0	1.5	60	0.02654	0.00410	56%	0.00	0.00	0.00	0.00
Front end loader			D	7				7.0	1.5	30	0.01327	0.00205	56%	0.00	0.00	0.00	0.00
Concrete grinder			E	10					1.9	40	0.18240	0.03040	78%	0.00	0.00	0.00	0.00
Screener (coarse)			F	18					1.9	40	0.66120	0.04560	92%	0.00	0.00	0.00	0.00

EET Code A
AP-42 Chapter 11.9 for bulldozer, tractor dozer (Tables 11.9-1):
 $E = 0.75 * 1.0 * (s)^{1.5} / (M)^{1.4}$ for PM₁₀
 $E = 0.105 * 5.7 * (s)^{1.2} / (M)^{1.3}$ for PM_{2.5}
Simplifies to $E = 0.75 * (s)^{1.5} / (M)^{1.4}$ for PM₁₀
Simplifies to $E = 0.60 * (s)^{1.2} / (M)^{1.3}$ for PM_{2.5}
E = lb/hr fugitive
s = silt content, percent
M = moisture content, percent

EET Code B
AP-42 Chapter 11.9 for small dragline, clamshell, dumping, scraper (Table 11.9-1):
 $E = 0.75 * 0.0021 * (d)^{0.7} / (M)^{0.3}$ for PM₁₀
 $E = 0.017 * 0.0021 * (d)^{1.1} / (M)^{0.3}$ for PM_{2.5}
Simplifies to $E = 1.6e-3 * (d)^{0.7} / (M)^{0.3}$ for PM₁₀
Simplifies to $E = 3.6e-5 * (d)^{1.1} / (M)^{0.3}$ for PM_{2.5}
E = lb/cy * cy/hr = lb/hr fugitive
M = moisture content, percent
d = drop distance = 12 feet (small dragline)
d = drop distance = 9 feet (clamshell)
d = drop distance = 6 feet (dump truck/ADT)
d = drop distance = 3 feet (scraper)

EET Code C

AP-42 Chapter 11.9 for scraper, grader, tractor, compactor, crane (Table 11.9-1) :

$E = S * 0.60 * 0.051 \times (S)^{2.0}$ for PM₁₀

$E = S * 0.031 * 0.040 \times (S)^{2.5}$ for PM_{2.5}

Simplifies to $E = 0.031 \times (S)^{3.0}$ for PM₁₀

Simplifies to $E = 0.0012 \times (S)^{3.5}$ for PM_{2.5}

$E = \text{lb/VMT} * \text{VMT/hr} = \text{lb/hr fugitive}$

$S = \text{Mean Vehicle Speed} = 5 \text{ mph (scrapers)}$

$S = \text{Mean Vehicle Speed} = 4 \text{ mph (graders)}$

$S = \text{Mean Vehicle Speed} = 3 \text{ mph (tractors)}$

$S = \text{Mean Vehicle Speed} = 2 \text{ mph (compactors)}$

$S = \text{Mean Vehicle Speed} = 1 \text{ mph (cranes)}$

EET Code D

AP-42 Chapter 13.2.4 Loading/Handling (backhoe, Bobcat, drill auger, excavator, backhoe, front end loader):

$E = V * D * 0.35 * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ for PM₁₀

$E = V * D * 0.053 * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ for PM_{2.5}

Simplifies to $E = V * D * 1.1\text{e-}3 * (U/5)^{1.3} / (M/2)^{1.4}$ for PM₁₀

Simplifies to $E = V * D * 1.7\text{e-}4 * (U/5)^{1.3} / (M/2)^{1.4}$ for PM_{2.5}

$V = \text{cy/hr}$

$M = \text{moisture content, percent}$

$E = \text{lb/ton} * \text{tons/cy} * \text{cy/hr} = \text{lb/hr fugitive}$

$D = 1.3 \text{ tons/cy for sand or cinder concrete}$

$D = 1.5 \text{ tons/cy for soil (typical)}$

$D = 1.9 \text{ tons/cy for sandstone or stone concrete}$

$D = 2.1 \text{ tons/cy for granite rock}$

$U = \text{wind speed} = 1 \text{ m/s or } 2.2 \text{ mi/hr (light air)}$

$U = \text{wind speed} = 2 \text{ m/s or } 4.5 \text{ mi/hr (light breeze)}$

$U = \text{wind speed} = 3 \text{ m/s or } 6.7 \text{ mi/hr (light breeze)}$

$U = \text{wind speed} = 4 \text{ m/s or } 8.9 \text{ mi/hr (gentle breeze)}$

$U = \text{wind speed} = 5 \text{ m/s or } 11.2 \text{ mi/hr (gentle breeze)}$

$U = \text{wind speed} = 6 \text{ m/s or } 13.4 \text{ mi/hr (moderate breeze)}$

$U = \text{wind speed} = 7 \text{ m/s or } 15.7 \text{ mi/hr (moderate breeze)}$

EET Code E

AP-42 Chapter 11.19.2 Coarse Tertiary Crushing

$E = 0.0024 \text{ lb/ton uncontrolled PM}_{10}$

$E = 0.0004 \text{ lb/ton uncontrolled PM}_{2.5}$

$E = D * V * 0.0024 \text{ lb/hr uncontrolled PM}_{10}$

$E = D * V * 0.0004 \text{ lb/hr uncontrolled PM}_{2.5}$

$V = \text{cy/hr}$

$E = \text{lb/ton} * \text{tons/cy} * \text{cy/hr} = \text{lb/hr fugitive}$

$D = 1.3 \text{ tons/cy for sand or cinder concrete}$

$D = 1.9 \text{ tons/cy for sandstone or stone concrete}$

$D = 2.1 \text{ tons/cy for granite rock}$

Control efficiency = 78% where applicable (water spray)

EET Code F

AP-42 Chapter 11.19.2 Coarse Screening

E = 0.0087 lb/ton uncontrolled PM₁₀

E = 0.0006 lb/ton uncontrolled PM_{2.5}

E = D * V * 0.0087 lb/hr uncontrolled PM10

E = D * V * 0.0006 lb/hr uncontrolled PM2.5

V = cy/hr

E = lb/ton * tons/cy * cy/hr = lb/hr fugitive

D = 1.3 tons/cy for sand or cinder concrete

D = 1.9 tons/cy for sandstone or stone concrete

D = 2.1 tons/cy for granite rock

Control efficiency = 92% where applicable (water spray)

AP-42	Silt Content, percent			Moisture Content, percent		
Table	lower	upper	g-mean	lower	upper	g-mean
11.9-3	3.8	15.1	6.9	2.2	16.8	7.9
11.9-3	7.2	25.2	16.4	0.2	16.3	3.2
11.9-3	1.2	19.2	4.3	0.3	20.1	2.4
13.2.2-1	2.4	16.0	10.0			
13.2.2-1	5.0	15.0	8.3			
13.2.2-1	2.8	18.0	8.4			
13.2.2-1	0.6	23.0	8.5			
13.2.2-1	2.2	21.0	6.4			
13.2.4-1	3.8	15.0	7.5	2.8	20.0	6.9
13.2.4-1	5.1	21.0	15.0	0.8	6.4	3.4
13.2.4-1	5.0	16.0	9.0	8.9	16.0	12.0
13.2.4-1	4.5	7.4	6.0	8.9	11.0	10.0
Averages (rounded)	4	18	9	3	15	7
EET application as:	coarse	fine	typical	dry	moist	typical

AP-42 Figure 13.2.2-2		
Moisture (M)		Control
percent	ratio	%
0	0.00	0.00%
1	0.25	0.00%
2	0.50	0.00%
3	0.75	0.00%
4	1.00	0.00%
5	1.25	18.75%
6	1.50	37.50%
7	1.75	56.25%
8	2.00	75.00%
9	2.25	76.67%
10	2.50	78.33%
11	2.75	80.00%
12	3.00	81.67%
13	3.25	83.33%
14	3.50	85.00%
15	3.75	86.67%
16	4.00	88.34%
17	4.25	90.00%
18	4.50	91.67%
19	4.75	93.34%
20	5.00	95.00%
21	5.25	96.67%
22	5.50	98.34%
23	5.75	100.00%

Estimated Onroad Fugitive Dust Emissions

All Roads Travelled	Vehicle Category	Activity		Usage	
		Pk. Daily	Project	Unpaved	Paved
		VMT	VMT	%	%
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	1,860	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	150	1,200	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	300	11,400	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,200	96,000	10%	90%
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	1,860	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	1,200	16,800	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	9,900	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,200	96,000	10%	90%
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	1,860	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	1,200	16,800	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	9,900	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,200	96,000	10%	90%
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	1,860	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	1,200	16,800	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	9,900	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,200	96,000	10%	90%

OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	810	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	150	150	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	3,000	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	480	9,600	10%	90%
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	150	6,000	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	150	1,050	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	6,000	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,200	48,000	10%	90%
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	270	1,110	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	150	750	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	3,000	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	480	9,600	10%	90%
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD				
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD				
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	240	1,680	10%	90%
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD				
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD				
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	240	1,680	10%	90%

GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD				
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD				
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	240	1,680	10%	90%
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2 (PHASE 11)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD				
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD				
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	240	1,680	10%	90%
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	150	1,500	10%	90%
Cement Truck (concrete/pumping)	onroad HHD	150	1,500	10%	90%
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	1,500	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	720	7,200	10%	90%
RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)					
Tractor Trailer (materials/hauling)	onroad HHD	150	2,100	10%	90%
Tractor Trailer (equipment/supplies)	onroad HHD	150	2,100	10%	90%
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	2,100	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	720	10,080	10%	90%
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	150	3,150	10%	90%
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	3,150	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	480	10,080	10%	90%

SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)					
Tractor Trailer (materials/hauling)	onroad HHD				
Tractor Trailer (equipment/supplies)	onroad HHD	150	3,150	10%	90%
Cement Truck (concrete/pumping)	onroad HHD				
Dump Truck (soil/sand/gravel transport)	onroad HHD				
Water Truck (dust control)	onroad HHD				
Work Truck (all trades)	onroad MD	150	3,150	10%	90%
Pickup/SUV (managers/engineers)	onroad LD				
Pickup/SUV (supervisors/foremen)	onroad LD				
Pickup/SUV (operators/drivers)	onroad LD				
Pickup/SUV (tradesmen/laborers)	onroad LD	480	10,080	10%	90%

Unpaved Road Dust	Vehicle Category	Activity		Required Variables						Uncontrolled		Controlled Emissions					
		Pk. Daily	Project	EET	Moist (M)	Silt (s)	Weight (W)	Speed (S)	Precip (P)	PM ₁₀	PM _{2.5}	Control	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	
		VMT	VMT	code	percent	percent	tons	mph	days/yr	lb/VMT	lb/VMT	%	lb/day	lb/day	lbs	lbs	
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)																	
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Tractor Trailer (equipment/supplies)	onroad HHD	27	186	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	13.3	1.3	
Cement Truck (concrete/pumping)	onroad HHD	15	120	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	8.6	0.9	
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%					
Work Truck (all trades)	onroad MD	30	1,140	G	20	9	8	20	90	1.16343	0.11619	95%	1.7	0.2	50.0	5.0	
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (tradesmen/laborers)	onroad LD	120	9,600	G	20	9	3	20	90	0.84222	0.08407	95%	5.1	0.5	304.6	30.4	
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)																	
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Tractor Trailer (equipment/supplies)	onroad HHD	27	186	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	13.3	1.3	
Cement Truck (concrete/pumping)	onroad HHD	120	1,680	G	20	9	30	20	90	1.89491	0.18933	95%	11.4	1.1	119.9	12.0	
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%					
Work Truck (all trades)	onroad MD	15	990	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	43.4	4.3	
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (tradesmen/laborers)	onroad LD	120	9,600	G	20	9	3	20	90	0.84222	0.08407	95%	5.1	0.5	304.6	30.4	
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)																	
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Tractor Trailer (equipment/supplies)	onroad HHD	27	186	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	13.3	1.3	
Cement Truck (concrete/pumping)	onroad HHD	120	1,680	G	20	9	30	20	90	1.89491	0.18933	95%	11.4	1.1	119.9	12.0	
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%					
Work Truck (all trades)	onroad MD	15	990	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	43.4	4.3	
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (tradesmen/laborers)	onroad LD	120	9,600	G	20	9	3	20	90	0.84222	0.08407	95%	5.1	0.5	304.6	30.4	
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)																	
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Tractor Trailer (equipment/supplies)	onroad HHD	27	186	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	13.3	1.3	
Cement Truck (concrete/pumping)	onroad HHD	120	1,680	G	20	9	30	20	90	1.89491	0.18933	95%	11.4	1.1	119.9	12.0	
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%					
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%					
Work Truck (all trades)	onroad MD	15	990	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	43.4	4.3	
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%					
Pickup/SUV (tradesmen/laborers)	onroad LD	120	9,600	G	20	9	3	20	90	0.84222	0.08407	95%	5.1	0.5	304.6	30.4	

OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)																
Tractor Trailer (materials/hauling)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Tractor Trailer (equipment/supplies)	onroad HDD	27	81	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	5.8	0.6
Cement Truck (concrete/pumping)	onroad HDD	15	15	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	1.1	0.1
Dump Truck (soil/sand/gravel transport)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Water Truck (dust control)	onroad HDD			G	20	9	30	5	90	1.76315	0.17616	95%				
Work Truck (all trades)	onroad MD	15	300	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	13.1	1.3
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (tradesmen/laborers)	onroad LD	48	960	G	20	9	3	20	90	0.84222	0.08407	95%	2.0	0.2	30.5	3.0
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)																
Tractor Trailer (materials/hauling)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Tractor Trailer (equipment/supplies)	onroad HDD	15	600	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	42.8	4.3
Cement Truck (concrete/pumping)	onroad HDD	15	105	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	7.5	0.7
Dump Truck (soil/sand/gravel transport)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Water Truck (dust control)	onroad HDD			G	20	9	30	5	90	1.76315	0.17616	95%				
Work Truck (all trades)	onroad MD	15	600	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	26.3	2.6
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (tradesmen/laborers)	onroad LD	120	4,800	G	20	9	3	20	90	0.84222	0.08407	95%	5.1	0.5	152.3	15.2
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)																
Tractor Trailer (materials/hauling)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Tractor Trailer (equipment/supplies)	onroad HDD	27	111	G	20	9	30	20	90	1.89491	0.18933	95%	2.6	0.3	7.9	0.8
Cement Truck (concrete/pumping)	onroad HDD	15	75	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	5.4	0.5
Dump Truck (soil/sand/gravel transport)	onroad HDD			G	20	9	30	20	90	1.89491	0.18933	95%				
Water Truck (dust control)	onroad HDD			G	20	9	30	5	90	1.76315	0.17616	95%				
Work Truck (all trades)	onroad MD	15	300	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	13.1	1.3
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (tradesmen/laborers)	onroad LD	48	960	G	20	9	3	20	90	0.84222	0.08407	95%	2.0	0.2	30.5	3.0
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)																
Tractor Trailer (materials/hauling)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Tractor Trailer (equipment/supplies)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Cement Truck (concrete/pumping)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Dump Truck (soil/sand/gravel transport)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Water Truck (dust control)	onroad HDD			G	7	9	30	5	90	1.79393	0.17924	56%				
Work Truck (all trades)	onroad MD			G	7	9	8	20	90	1.22500	0.12234	56%				
Pickup/SUV (managers/engineers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (operators/drivers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (tradesmen/laborers)	onroad LD	24	168	G	7	9	3	20	90	0.90379	0.09022	56%	9.5	0.9	50.0	5.0
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)																
Tractor Trailer (materials/hauling)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Tractor Trailer (equipment/supplies)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Cement Truck (concrete/pumping)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Dump Truck (soil/sand/gravel transport)	onroad HDD			G	7	9	30	20	90	1.95649	0.19549	56%				
Water Truck (dust control)	onroad HDD			G	7	9	30	5	90	1.79393	0.17924	56%				
Work Truck (all trades)	onroad MD			G	7	9	8	20	90	1.22500	0.12234	56%				
Pickup/SUV (managers/engineers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (operators/drivers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%				
Pickup/SUV (tradesmen/laborers)	onroad LD	24	168	G	7	9	3	20	90	0.90379	0.09022	56%	9.5	0.9	50.0	5.0

GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)															
Tractor Trailer (materials/hauling)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Tractor Trailer (equipment/supplies)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Cement Truck (concrete/pumping)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Water Truck (dust control)	onroad HHD			G	7	9	30	5	90	1.79393	0.17924	56%			
Work Truck (all trades)	onroad MD			G	7	9	8	20	90	1.22500	0.12234	56%			
Pickup/SUV (managers/engineers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (supervisors/foremen)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (operators/drivers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (tradesmen/laborers)	onroad LD	24	168	G	7	9	3	20	90	0.90379	0.09022	56%	9.5	0.9	50.0
GAGES - North Fork American River Gage Above American River Pump Station - YEAR 2 (PHASE 11)															
Tractor Trailer (materials/hauling)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Tractor Trailer (equipment/supplies)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Cement Truck (concrete/pumping)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	7	9	30	20	90	1.95649	0.19549	56%			
Water Truck (dust control)	onroad HHD			G	7	9	30	5	90	1.79393	0.17924	56%			
Work Truck (all trades)	onroad MD			G	7	9	8	20	90	1.22500	0.12234	56%			
Pickup/SUV (managers/engineers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (supervisors/foremen)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (operators/drivers)	onroad LD			G	7	9	3	20	90	0.90379	0.09022	56%			
Pickup/SUV (tradesmen/laborers)	onroad LD	24	168	G	7	9	3	20	90	0.90379	0.09022	56%	9.5	0.9	50.0
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)															
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Tractor Trailer (equipment/supplies)	onroad HHD	15	150	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	10.7
Cement Truck (concrete/pumping)	onroad HHD	15	150	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	10.7
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%			
Work Truck (all trades)	onroad MD	15	150	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	6.6
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (tradesmen/laborers)	onroad LD	72	720	G	20	9	3	20	90	0.84222	0.08407	95%	3.0	0.3	22.8
RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)															
Tractor Trailer (materials/hauling)	onroad HHD	15	210	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	15.0
Tractor Trailer (equipment/supplies)	onroad HHD	15	210	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	15.0
Cement Truck (concrete/pumping)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%			
Work Truck (all trades)	onroad MD	15	210	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	9.2
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (tradesmen/laborers)	onroad LD	72	1,008	G	20	9	3	20	90	0.84222	0.08407	95%	3.0	0.3	32.0
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)															
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Tractor Trailer (equipment/supplies)	onroad HHD	15	315	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	22.5
Cement Truck (concrete/pumping)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%			
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%			
Work Truck (all trades)	onroad MD	15	315	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	13.8
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%			
Pickup/SUV (tradesmen/laborers)	onroad LD	48	1,008	G	20	9	3	20	90	0.84222	0.08407	95%	2.0	0.2	32.0

SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)																
Tractor Trailer (materials/hauling)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%				
Tractor Trailer (equipment/supplies)	onroad HHD	15	315	G	20	9	30	20	90	1.89491	0.18933	95%	1.4	0.1	22.5	2.2
Cement Truck (concrete/pumping)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%				
Dump Truck (soil/sand/gravel transport)	onroad HHD			G	20	9	30	20	90	1.89491	0.18933	95%				
Water Truck (dust control)	onroad HHD			G	20	9	30	5	90	1.76315	0.17616	95%				
Work Truck (all trades)	onroad MD	15	315	G	20	9	8	20	90	1.16343	0.11619	95%	0.9	0.1	13.8	1.4
Pickup/SUV (managers/engineers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (supervisors/foremen)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (operators/drivers)	onroad LD			G	20	9	3	20	90	0.84222	0.08407	95%				
Pickup/SUV (tradesmen/laborers)	onroad LD	48	1,008	G	20	9	3	20	90	0.84222	0.08407	95%	2.0	0.2	32.0	3.2

CHECKSUM1 152.94 15.27 1.31 0.13

Unpaved Roads	lbs/day	lbs/day	tons	tons
PHASE 1	10.78	1.08	0.19	0.02
PHASE 2	19.85	1.98	0.24	0.02
PHASE 3	19.85	1.98	0.24	0.02
PHASE 4	19.85	1.98	0.24	0.02
PHASE 5	6.87	0.69	0.03	0.00
PHASE 6	8.77	0.88	0.11	0.01
PHASE 7	6.87	0.69	0.03	0.00
PHASE 8	9.49	0.95	0.03	0.00
PHASE 9	9.49	0.95	0.03	0.00
PHASE 10	9.49	0.95	0.03	0.00
PHASE 11	9.49	0.95	0.03	0.00
PHASE 12	6.75	0.67	0.03	0.00
PHASE 13	6.75	0.67	0.04	0.00
PHASE 14	4.32	0.43	0.03	0.00
PHASE 15	4.32	0.43	0.03	0.00

CHECKSUM2 152.94 15.27 1.31 0.13

Peak	lbs/day	lbs/day	tons	tons
YEAR 2	19.85	1.98	0.46	0.05
YEAR 3	19.85	1.98	0.72	0.07
YEAR 5	4.32	0.43	0.03	0.00
YEAR 9	4.32	0.43	0.03	0.00
YEAR 14	6.75	0.67	0.06	0.01
HIGHEST	19.85	1.98	0.72	0.07
TOTAL			1.31	0.13

Worst Case	lbs/day	lbs/day	tons	tons
YEAR 2	61.35	6.13	0.46	0.05
YEAR 3	69.46	6.94	0.72	0.07
YEAR 5	4.32	0.43	0.03	0.00
YEAR 9	4.32	0.43	0.03	0.00
YEAR 14	13.49	1.35	0.06	0.01
HIGHEST	69.46	6.94	0.72	0.07
TOTAL			1.31	0.13

CHECKSUM3 152.94 15.27 1.31 0.13

Paved Road Dust	Vehicle Category	Activity		Required Variables						Uncontrolled		Controlled Emissions					
		Pk. Daily	Project	EET	Moist (M)	Silt (sL)	Weight (W)	Speed (S)	Precip (P)	PM ₁₀	PM _{2.5}	Control	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	
		VMT	VMT	code	percent	g/m ²	tons	mph	days/yr	lb/VMT	lb/VMT	%	lb/day	lb/day	lbs	lbs	
RESERVOIR - Hell Hole Reservoir Seasonal Storage Increase Improvement - YEAR 3 (PHASE 1)																	
Tractor Trailer (materials/hauling)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Tractor Trailer (equipment/supplies)	onroad HHD	243	1,674	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	23.3	5.7	
Cement Truck (concrete/pumping)	onroad HHD	135	1,080	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	15.0	3.7	
Dump Truck (soil/sand/gravel transport)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Water Truck (dust control)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Work Truck (all trades)	onroad MD	270	10,260	H	--	0.18	8	--	90	0.00385	0.00095	--	1.0	0.3	37.1	9.1	
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (tradesmen/laborers)	onroad LD	1,080	86,400	H	--	0.18	3	--	90	0.00142	0.00035	--	1.5	0.4	114.9	28.2	
DIVERSIONS - Duncan Creek Diversion Dam Modification - YEAR 2 (PHASE 2)																	
Tractor Trailer (materials/hauling)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Tractor Trailer (equipment/supplies)	onroad HHD	243	1,674	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	23.3	5.7	
Cement Truck (concrete/pumping)	onroad HHD	1,080	15,120	H	--	0.18	30	--	90	0.01484	0.00364	--	16.0	3.9	210.5	51.7	
Dump Truck (soil/sand/gravel transport)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Water Truck (dust control)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Work Truck (all trades)	onroad MD	135	8,910	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	32.2	7.9	
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (tradesmen/laborers)	onroad LD	1,080	86,400	H	--	0.18	3	--	90	0.00142	0.00035	--	1.5	0.4	114.9	28.2	
DIVERSIONS - North Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 3)																	
Tractor Trailer (materials/hauling)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Tractor Trailer (equipment/supplies)	onroad HHD	243	1,674	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	23.3	5.7	
Cement Truck (concrete/pumping)	onroad HHD	1,080	15,120	H	--	0.18	30	--	90	0.01484	0.00364	--	16.0	3.9	210.5	51.7	
Dump Truck (soil/sand/gravel transport)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Water Truck (dust control)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Work Truck (all trades)	onroad MD	135	8,910	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	32.2	7.9	
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (tradesmen/laborers)	onroad LD	1,080	86,400	H	--	0.18	3	--	90	0.00142	0.00035	--	1.5	0.4	114.9	28.2	
DIVERSIONS - South Fork Long Canyon Diversion Dam Modification - YEAR 3 (PHASE 4)																	
Tractor Trailer (materials/hauling)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Tractor Trailer (equipment/supplies)	onroad HHD	243	1,674	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	23.3	5.7	
Cement Truck (concrete/pumping)	onroad HHD	1,080	15,120	H	--	0.18	30	--	90	0.01484	0.00364	--	16.0	3.9	210.5	51.7	
Dump Truck (soil/sand/gravel transport)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Water Truck (dust control)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--					
Work Truck (all trades)	onroad MD	135	8,910	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	32.2	7.9	
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--					
Pickup/SUV (tradesmen/laborers)	onroad LD	1,080	86,400	H	--	0.18	3	--	90	0.00142	0.00035	--	1.5	0.4	114.9	28.2	

OUTLETS - French Meadows Dam Outlet Works Modification - YEAR 2 (PHASE 5)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD	243	729	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	10.2	2.5
Cement Truck (concrete/pumping)	onroad HDD	135	135	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	1.9	0.5
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	2,700	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	9.8	2.4
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	432	8,640	H	--	0.18	3	--	90	0.00142	0.00035	--	0.6	0.2	11.5	2.8
OUTLETS - Hell Hole Dam Outlet Works Modification - YEAR 2 (PHASE 6)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD	135	5,400	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	75.2	18.5
Cement Truck (concrete/pumping)	onroad HDD	135	945	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	13.2	3.2
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	5,400	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	19.5	4.8
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	1,080	43,200	H	--	0.18	3	--	90	0.00142	0.00035	--	1.5	0.4	57.4	14.1
OUTLETS - Middle Fork Interbay Dam Outlet Works Modification - YEAR 2 (PHASE 7)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD	243	999	H	--	0.18	30	--	90	0.01484	0.00364	--	3.6	0.9	13.9	3.4
Cement Truck (concrete/pumping)	onroad HDD	135	675	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	9.4	2.3
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	2,700	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	9.8	2.4
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	432	8,640	H	--	0.18	3	--	90	0.00142	0.00035	--	0.6	0.2	11.5	2.8
GAGES - North Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 8)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD			H	--	0.18	8	--	90	0.00385	0.00095	--				
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	216	1,512	H	--	0.18	3	--	90	0.00142	0.00035	--	0.3	0.1	2.0	0.5
GAGES - South Fork Long Canyon Creek Gage Below Diversion Dam - YEAR 3 (PHASE 9)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD			H	--	0.18	8	--	90	0.00385	0.00095	--				
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	216	1,512	H	--	0.18	3	--	90	0.00142	0.00035	--	0.3	0.1	2.0	0.5

GAGES - Middle Fork American River Gage Below Interbay Dam - YEAR 2 (PHASE 10)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD			H	--	0.18	8	--	90	0.00385	0.00095	--				
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	216	1,512	H	--	0.18	3	--	90	0.00142	0.00035	--	0.3	0.1	2.0	0.5
GAGES - North Fork American River Pump Station - YEAR 2 (PHASE 11)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD			H	--	0.18	8	--	90	0.00385	0.00095	--				
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	216	1,512	H	--	0.18	3	--	90	0.00142	0.00035	--	0.3	0.1	2.0	0.5
RECREATION - Ellicott Bridge Parking Area - YEAR 14 (PHASE 12)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD	135	1,350	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	18.8	4.6
Cement Truck (concrete/pumping)	onroad HDD	135	1,350	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	18.8	4.6
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	1,350	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	4.9	1.2
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	648	6,480	H	--	0.18	3	--	90	0.00142	0.00035	--	0.9	0.2	8.6	2.1
RECREATION - French Meadows Reservoir Trail - YEAR 14 (PHASE 13)																
Tractor Trailer (materials/hauling)	onroad HDD	135	1,890	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	26.3	6.5
Tractor Trailer (equipment/supplies)	onroad HDD	135	1,890	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	26.3	6.5
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	1,890	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	6.8	1.7
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	648	9,072	H	--	0.18	3	--	90	0.00142	0.00035	--	0.9	0.2	12.1	3.0
SUPPLY - French Meadows North Shore Water Supply - YEAR 9 (PHASE 14)																
Tractor Trailer (materials/hauling)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HDD	135	2,835	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	39.5	9.7
Cement Truck (concrete/pumping)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HDD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	2,835	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	10.3	2.5
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	432	9,072	H	--	0.18	3	--	90	0.00142	0.00035	--	0.6	0.2	12.1	3.0

SUPPLY - French Meadows South Shore Water Supply - YEAR 5 (PHASE 15)																
Tractor Trailer (materials/hauling)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Tractor Trailer (equipment/supplies)	onroad HHD	135	2,835	H	--	0.18	30	--	90	0.01484	0.00364	--	2.0	0.5	39.5	9.7
Cement Truck (concrete/pumping)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Dump Truck (soil/sand/gravel transport)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Water Truck (dust control)	onroad HHD			H	--	0.18	30	--	90	0.01484	0.00364	--				
Work Truck (all trades)	onroad MD	135	2,835	H	--	0.18	8	--	90	0.00385	0.00095	--	0.5	0.1	10.3	2.5
Pickup/SUV (managers/engineers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (supervisors/foremen)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (operators/drivers)	onroad LD			H	--	0.18	3	--	90	0.00142	0.00035	--				
Pickup/SUV (tradesmen/laborers)	onroad LD	432	9,072	H	--	0.18	3	--	90	0.00142	0.00035	--	0.6	0.2	12.1	3.0

CHECKSUM4 111.1 27.3 0.9 0.2

Paved Roads	lbs/day	lbs/day	tons	tons
PHASE 1	8.18	2.01	0.10	0.02
PHASE 2	21.68	5.32	0.19	0.05
PHASE 3	21.68	5.32	0.19	0.05
PHASE 4	21.68	5.32	0.19	0.05
PHASE 5	6.74	1.65	0.02	0.00
PHASE 6	6.06	1.49	0.08	0.02
PHASE 7	6.74	1.65	0.02	0.01
PHASE 8	0.31	0.08	0.00	0.00
PHASE 9	0.31	0.08	0.00	0.00
PHASE 10	0.31	0.08	0.00	0.00
PHASE 11	0.31	0.08	0.00	0.00
PHASE 12	5.44	1.34	0.03	0.01
PHASE 13	5.44	1.34	0.04	0.01
PHASE 14	3.14	0.77	0.03	0.01
PHASE 15	3.14	0.77	0.03	0.01

CHECKSUM5 111.15 27.28 0.92 0.22

Peak	lbs/day	lbs/day	tons	tons
YEAR 2	21.68	5.32	0.31	0.08
YEAR 3	21.68	5.32	0.48	0.12
YEAR 5	3.14	0.77	0.03	0.01
YEAR 9	3.14	0.77	0.03	0.01
YEAR 14	5.44	1.34	0.06	0.02
HIGHEST	21.68	5.32	0.48	0.12
TOTAL			0.92	0.22

Worst Case	lbs/day	lbs/day	tons	tons
YEAR 2	41.83	10.27	0.31	0.08
YEAR 3	52.16	12.80	0.48	0.12
YEAR 5	3.14	0.77	0.03	0.01
YEAR 9	3.14	0.77	0.03	0.01
YEAR 14	10.89	2.67	0.06	0.02
HIGHEST	52.16	12.80	0.48	0.12
TOTAL			0.92	0.22

CHECKSUM6 111.15 27.28 0.92 0.22

EET Code G

Unpaved Road Dust (AP-42 Section 13.2.2):

$$E = [1.5 * (s/12)^{0.9} * (W/3)^{0.45}] * P_C * (1-CE) \text{ for } PM_{10}$$

$$E = [1.8 * (s/12)^{1.0} * (S/30)^{0.5} / (M/0.5)^{0.2} - 0.00047] * P_C * (1-CE) \text{ for } PM_{10}$$

$$E = [0.15 * (s/12)^{0.9} * (W/3)^{0.45}] * P_C * (1-CE) \text{ for } PM_{2.5}$$

$$E = [0.18 * (s/12)^{1.0} * (S/30)^{0.5} / (M/0.5)^{0.2} - 0.00036] * P_C * (1-CE) \text{ for } PM_{2.5}$$

Equation pairs calculated for average factoring of both vehicle weight and speed

s = silt content, percent

W = average vehicle weight (see below)

M = moisture content, percent

S = mean vehicle speed = 5-10 mph for watering trucks

S = mean vehicle speed = 15 mph for haul roads (general mitigation measure)

S = mean vehicle speed = 20 mph for graded dirt/gravel roads

E = lb/VMT fugitive

$$P_C = (365-P)/365$$

P = Number of wet days over 0.01 in precipitation for averaging period (from AP-42 Figure 13.2.1-2)

Note: precipitation correction not used ($P_C = 1$) for worst case day calculations

CE = control efficiency for watering (moisture content)

Light Duty = 3 tons average (loaded)

Medium Duty = 8 tons average (loaded)

Heavy Heavy Duty = 30 tons average (loaded 40 tons, unloaded 20 tons)

EET Code H

Paved Road Dust (New AP-42 Section 13.2.1):

$$E = 0.0022 * (sL)^{0.91} * (W)^{1.02} * P_C \text{ for } PM_{10}$$

$$E = 0.00054 * (sL)^{0.91} * (W)^{1.02} * P_C \text{ for } PM_{2.5}$$

E = lb/VMT fugitive

sL = Silt Loading from Table 13.2.1-2

W = Average weight of vehicles in tons (below)

$$P_C = (1-P/4N)$$

P = Number of wet days over 0.01 in precipitation for averaging period (from AP-42 Figure 13.2.1-2)

N = days of period = 365 days (4N = 1460)

Note: precipitation correction not used ($P_C = 1$) for worst case day calculations

Light Duty = 3 tons average (loaded)

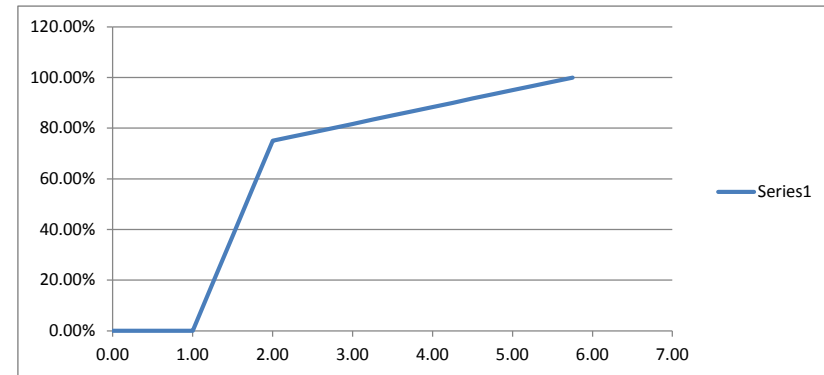
Medium Duty = 8 tons average (loaded)

Heavy Heavy Duty = 30 tons average (loaded 40 tons, unloaded 20 tons)

AP-42 Figure 13.2.1-2 (California)	
Values for Precipitation (P)	days/yr
Low Deserts	20
High Deserts & Inland SoCal	30
South/Central Coast/Valley & Mountains	40
Mid/Northern Central Valley	50
Bay & Delta Areas	60
Wine Country & Sierras	90
North Coast	120

AP-42 Table 13.2.1-2 (US)	
Values for Silt Loading (sL)	g/m ³
< 500 average daily traffic (ADT) count	0.6
500 - 5,000 ADT	0.2
5,000 - 10,000 ADT	0.06
> 10,000 ADT (surface streets)	0.03
> 10,000 ADT (limited access)	0.015
Average Rural	0.4
Average Mid-Range	0.13
Average Urban	0.023
Average for All Roads	0.18

AP-42 Figure 13.2.2-2		
Moisture (M)		Control
percent	ratio	%
0	0.00	0.00%
1	0.25	0.00%
2	0.50	0.00%
3	0.75	0.00%
4	1.00	0.00%
5	1.25	18.75%
6	1.50	37.50%
7	1.75	56.25%
8	2.00	75.00%
9	2.25	76.67%
10	2.50	78.33%
11	2.75	80.00%
12	3.00	81.67%
13	3.25	83.33%
14	3.50	85.00%
15	3.75	86.67%
16	4.00	88.34%
17	4.25	90.00%
18	4.50	91.67%
19	4.75	93.34%
20	5.00	95.00%
21	5.25	96.67%
22	5.50	98.34%
23	5.75	100.00%



SCAB Fleet Average Emission Factors (Diesel)

Offroad 2013

Air Basin SC

Extrapolation (down)

Interpolation

Extrapolation (up)

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM10	(lb/hr) PM2.5	(lb/hr) CO2	(lb/hr) CH4	(lb/hr) N2O	(lb/hr) CO2 eqv
Aerial Lifts	10	0.0068	0.0352	0.0424	0.0001	0.0018	0.0017	5.8	0.0006	0.0003	5.9
	15	0.0101	0.0528	0.0637	0.0001	0.0027	0.0025	8.7	0.0009	0.0004	8.8
	25	0.0166	0.0503	0.0937	0.0001	0.0051	0.0047	11.0	0.0015	0.0007	11.2
	50	0.0592	0.1757	0.1840	0.0003	0.0156	0.0143	19.6	0.0053	0.0024	20.5
	85	0.0575	0.2091	0.2799	0.0004	0.0227	0.0209	28.8	0.0052	0.0023	29.7
	120	0.0558	0.2425	0.3758	0.0004	0.0299	0.0275	38.1	0.0050	0.0022	38.9
	175	0.0650	0.2750	0.5430	0.0007	0.0320	0.0295	63.4	0.0059	0.0026	64.3
	500	0.1191	0.4671	1.5310	0.0021	0.0448	0.0413	213	0.0107	0.0048	214.6
	750	0.2221	0.8443	2.8534	0.0039	0.0825	0.0759	385	0.0200	0.0089	387.9
	800	0.2369	0.9006	3.0436	0.0041	0.0880	0.0810	410.4	0.0214	0.0095	413.8
Aerial Lifts Composite		0.0529	0.1925	0.3059	0.0004	0.0202	0.0186	34.7	0.0048	0.0021	35.5
Air Compressors	15	0.0122	0.0484	0.0732	0.0001	0.0048	0.0044	7.2	0.0011	0.0005	7.4
	25	0.0266	0.0744	0.1306	0.0002	0.0081	0.0074	14.4	0.0024	0.0011	14.8
	50	0.0921	0.2546	0.2221	0.0003	0.0220	0.0203	22.3	0.0083	0.0037	23.6
	120	0.0825	0.3251	0.4991	0.0006	0.0456	0.0419	47.0	0.0074	0.0033	48.1
	130	0.0867	0.3579	0.5608	0.0006	0.0459	0.0422	54.5	0.0078	0.0035	55.7
	175	0.1059	0.5054	0.8385	0.0010	0.0472	0.0434	88.5	0.0096	0.0042	90.0
	250	0.1007	0.2955	1.1320	0.0015	0.0347	0.0319	131	0.0091	0.0040	132.7
	500	0.1626	0.5399	1.7639	0.0023	0.0570	0.0525	232	0.0147	0.0065	234.1
	750	0.2547	0.8344	2.8139	0.0036	0.0898	0.0826	358	0.0230	0.0102	361.8
	1000	0.4190	1.4213	5.0841	0.0049	0.1474	0.1356	486	0.0378	0.0168	492.4
Air Compressors Composite		0.0913	0.3376	0.6065	0.0007	0.0434	0.0399	63.6	0.0082	0.0037	64.9
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0029	0.0027	10.3	0.0011	0.0005	10.5
	25	0.0193	0.0658	0.1226	0.0002	0.0049	0.0045	16.0	0.0017	0.0008	16.3
	50	0.0289	0.2282	0.2568	0.0004	0.0120	0.0110	31.0	0.0026	0.0012	31.5
	120	0.0447	0.4698	0.4583	0.0009	0.0257	0.0237	77.1	0.0040	0.0018	77.8
	175	0.0704	0.7538	0.6931	0.0016	0.0302	0.0277	141	0.0063	0.0028	142.1
	250	0.0795	0.3429	0.7632	0.0021	0.0221	0.0203	188	0.0072	0.0032	189.2
	300	0.0895	0.3846	0.8449	0.0023	0.0249	0.0229	212.7	0.0081	0.0036	214.0
	500	0.1295	0.5517	1.1717	0.0031	0.0361	0.0332	311	0.0117	0.0052	313.2
	750	0.2565	1.0899	2.3376	0.0062	0.0715	0.0658	615	0.0231	0.0103	618.8
	1000	0.4163	1.6675	5.9553	0.0093	0.1544	0.1420	928	0.0376	0.0167	934.2
Bore/Drill Rigs Composite		0.0786	0.5044	0.8125	0.0017	0.0302	0.0278	165	0.0071	0.0032	166.1
Cement and Mortar Mixers	15	0.0074	0.0386	0.0470	0.0001	0.0021	0.0020	6.3	0.0007	0.0003	6.4
	25	0.0270	0.0813	0.1510	0.0002	0.0083	0.0076	17.6	0.0024	0.0011	17.9
Cement and Mortar Mixers Composite		0.0091	0.0421	0.0556	0.0001	0.0026	0.0024	7.2	0.0008	0.0004	7.4
Concrete/Industrial Saws	25	0.0199	0.0678	0.1257	0.0002	0.0049	0.0045	16.5	0.0018	0.0008	16.8
	50	0.0955	0.2918	0.2858	0.0004	0.0247	0.0227	30.2	0.0086	0.0038	31.6
	120	0.1065	0.4836	0.7154	0.0009	0.0589	0.0542	74.1	0.0096	0.0043	75.7
	175	0.1569	0.8701	1.3612	0.0018	0.0706	0.0649	160	0.0142	0.0063	162.4

Concrete/Industrial Saws Composite		0.1002	0.4088	0.5572	0.0007	0.0452	0.0416	58.5	0.0090	0.0040	59.9
Cranes	50	0.1015	0.2892	0.2394	0.0003	0.0239	0.0220	23.2	0.0092	0.0041	24.6
	120	0.0919	0.3618	0.5508	0.0006	0.0493	0.0453	50.1	0.0083	0.0037	51.5
	164	0.1009	0.4580	0.7317	0.0008	0.0455	0.0418	74.3	0.0091	0.0040	75.8
	175	0.1031	0.4821	0.7769	0.0009	0.0445	0.0410	80.3	0.0093	0.0041	81.8
	250	0.1040	0.2948	0.9948	0.0013	0.0351	0.0323	112	0.0094	0.0042	113.6
	350	0.1245	0.3886	1.1661	0.0015	0.0418	0.0384	139.3	0.0112	0.0050	141.1
	500	0.1551	0.5292	1.4230	0.0018	0.0518	0.0477	180	0.0140	0.0062	182.3
	750	0.2625	0.8887	2.4614	0.0030	0.0885	0.0814	303	0.0237	0.0105	306.8
	1000	0.9491	3.3249	10.3665	0.0098	0.3189	0.2934	971	0.0856	0.0381	984.2
Cranes Composite		0.1348	0.4737	1.1934	0.0014	0.0508	0.0468	129	0.0122	0.0054	130.6
Crawler Tractors	50	0.1176	0.3246	0.2627	0.0003	0.0270	0.0248	24.9	0.0106	0.0047	26.6
	115	0.1285	0.4742	0.7325	0.0007	0.0648	0.0596	62.9	0.0116	0.0052	64.7
	120	0.1293	0.4858	0.7686	0.0008	0.0677	0.0623	65.8	0.0117	0.0052	67.7
	125	0.1328	0.5093	0.8127	0.0008	0.0681	0.0626	70.8	0.0120	0.0053	72.7
	175	0.1674	0.7448	1.2529	0.0014	0.0713	0.0656	121	0.0151	0.0067	123.6
	250	0.1764	0.5000	1.5945	0.0019	0.0613	0.0564	166	0.0159	0.0071	168.7
	300	0.1920	0.5901	1.7234	0.0020	0.0664	0.0611	184.8	0.0173	0.0077	187.5
	500	0.2542	0.9504	2.2389	0.0025	0.0868	0.0799	259	0.0229	0.0102	262.9
	750	0.4574	1.6983	4.1042	0.0047	0.1573	0.1447	465	0.0413	0.0183	471.2
	1000	0.6901	2.6950	7.3731	0.0066	0.2361	0.2172	658	0.0623	0.0277	668.0
Crawler Tractors Composite		0.1584	0.5900	1.1593	0.0013	0.0697	0.0641	114	0.0143	0.0064	116.3
Crushing/Proc. Equipment	50	0.1741	0.5009	0.4359	0.0006	0.0422	0.0389	44.0	0.0157	0.0070	46.5
	100	0.1499	0.5548	0.7354	0.0009	0.0677	0.0623	72.0	0.0135	0.0060	74.1
	120	0.1402	0.5764	0.8552	0.0010	0.0779	0.0717	83.1	0.0127	0.0056	85.2
	175	0.1942	0.9615	1.5237	0.0019	0.0864	0.0795	167	0.0175	0.0078	170.0
	250	0.1848	0.5425	2.0202	0.0028	0.0620	0.0571	245	0.0167	0.0074	247.2
	500	0.2608	0.8480	2.7097	0.0037	0.0884	0.0813	374	0.0235	0.0105	377.4
	750	0.4147	1.3191	4.4498	0.0059	0.1418	0.1305	589	0.0374	0.0166	594.8
	1000	1.1270	3.6752	13.3218	0.0131	0.3880	0.3569	1,308	0.1017	0.0452	1323.9
Crushing/Proc. Equipment Composite		0.1733	0.6773	1.1752	0.0015	0.0748	0.0688	132	0.0156	0.0070	134.8
Dumpers/Tenders	25	0.0097	0.0320	0.0601	0.0001	0.0029	0.0027	7.6	0.0009	0.0004	7.8
Dumpers/Tenders Composite		0.0097	0.0320	0.0601	0.0001	0.0029	0.0027	7.6	0.0009	0.0004	7.8
Excavators	25	0.0198	0.0677	0.1253	0.0002	0.0047	0.0043	16.4	0.0018	0.0008	16.7
	50	0.0816	0.2841	0.2458	0.0003	0.0212	0.0195	25.0	0.0074	0.0033	26.2
	120	0.1086	0.5177	0.6791	0.0009	0.0586	0.0539	73.6	0.0098	0.0044	75.2
	121	0.1089	0.5204	0.6830	0.0009	0.0585	0.0538	74.3	0.0098	0.0044	75.9
	175	0.1208	0.6668	0.8932	0.0013	0.0512	0.0471	112	0.0109	0.0048	114.0
	200	0.1220	0.5626	0.9741	0.0014	0.0466	0.0428	127.7	0.0110	0.0049	129.5
	250	0.1242	0.3541	1.1360	0.0018	0.0372	0.0343	159	0.0112	0.0050	160.5
	300	0.1341	0.3887	1.2041	0.0019	0.0401	0.0369	173.7	0.0121	0.0054	175.6
	500	0.1735	0.5271	1.4763	0.0023	0.0516	0.0475	234	0.0157	0.0070	236.2
	750	0.2895	0.8731	2.5290	0.0039	0.0871	0.0802	387	0.0261	0.0116	391.6

Excavators Composite		0.1220	0.5338	0.9071	0.0013	0.0481	0.0442	120	0.0110	0.0049	121.3
Forklifts	50	0.0445	0.1623	0.1431	0.0002	0.0121	0.0111	14.7	0.0040	0.0018	15.3
	80	0.0442	0.1860	0.2013	0.0003	0.0173	0.0159	21.8	0.0040	0.0018	22.4
	120	0.0438	0.2176	0.2788	0.0004	0.0241	0.0222	31.2	0.0040	0.0018	31.9
	175	0.0572	0.3307	0.4261	0.0006	0.0246	0.0226	56.1	0.0052	0.0023	56.9
	250	0.0570	0.1614	0.5281	0.0009	0.0168	0.0154	77.1	0.0051	0.0023	77.9
	500	0.0781	0.2208	0.6592	0.0011	0.0228	0.0210	111	0.0070	0.0031	112.1
Forklifts Composite		0.0541	0.2235	0.3950	0.0006	0.0204	0.0188	54.4	0.0049	0.0022	55.2
Generator Sets	15	0.0149	0.0684	0.1016	0.0002	0.0058	0.0053	10.2	0.0013	0.0006	10.4
	25	0.0266	0.0908	0.1594	0.0002	0.0091	0.0083	17.6	0.0024	0.0011	18.0
	40	0.0629	0.1946	0.2346	0.0003	0.0177	0.0163	25.4	0.0057	0.0025	26.3
	50	0.0872	0.2639	0.2847	0.0004	0.0234	0.0215	30.6	0.0079	0.0035	31.9
	120	0.1106	0.4905	0.7587	0.0009	0.0590	0.0543	77.9	0.0100	0.0044	79.5
	175	0.1347	0.7388	1.2314	0.0016	0.0592	0.0544	142	0.0122	0.0054	143.9
	250	0.1277	0.4365	1.6763	0.0024	0.0464	0.0427	213	0.0115	0.0051	214.3
	500	0.1818	0.7230	2.3955	0.0033	0.0690	0.0635	337	0.0164	0.0073	339.5
	750	0.3035	1.1671	3.9863	0.0055	0.1134	0.1044	544	0.0274	0.0122	548.1
	1000	0.7957	2.8065	10.2314	0.0105	0.2844	0.2616	1,049	0.0718	0.0319	1060.0
Generator Sets Composite		0.0767	0.3045	0.5430	0.0007	0.0324	0.0298	61.0	0.0069	0.0031	62.1
Graders	50	0.1080	0.3263	0.2772	0.0004	0.0262	0.0241	27.5	0.0097	0.0043	29.1
	120	0.1254	0.5310	0.7729	0.0009	0.0676	0.0622	75.0	0.0113	0.0050	76.8
	140	0.1331	0.6050	0.8989	0.0011	0.0660	0.0607	92.8	0.0120	0.0053	94.7
	175	0.1467	0.7345	1.1193	0.0014	0.0631	0.0581	124	0.0132	0.0059	126.0
	195	0.1474	0.6541	1.1991	0.0015	0.0595	0.0547	136.8	0.0133	0.0059	138.9
	250	0.1492	0.4331	1.4184	0.0019	0.0494	0.0454	172	0.0135	0.0060	174.3
	300	0.1565	0.4723	1.4716	0.0020	0.0517	0.0475	183.6	0.0141	0.0063	185.8
	500	0.1855	0.6289	1.6842	0.0023	0.0608	0.0559	229	0.0167	0.0074	232.1
	750	0.3952	1.3289	3.6674	0.0049	0.1306	0.1202	486	0.0357	0.0158	491.4
		0.1446	0.6053	1.1663	0.0015	0.0593	0.0546	133	0.0130	0.0058	134.8
Graders Composite		0.1446	0.6053	1.1663	0.0015	0.0593	0.0546	133	0.0130	0.0058	134.8
Off-Highway Tractors	120	0.2113	0.7191	1.2368	0.0011	0.1078	0.0992	93.7	0.0191	0.0085	96.8
	175	0.2045	0.8335	1.5337	0.0015	0.0871	0.0801	130	0.0185	0.0082	133.3
	250	0.1641	0.4691	1.4453	0.0015	0.0601	0.0553	130	0.0148	0.0066	132.8
	750	0.6538	2.8815	5.8130	0.0057	0.2353	0.2165	568	0.0590	0.0262	577.5
	1000	0.9818	4.4978	10.0554	0.0082	0.3436	0.3161	814	0.0886	0.0394	828.4
Off-Highway Tractors Composite		0.2077	0.7649	1.7062	0.0017	0.0818	0.0753	151	0.0187	0.0083	154.4
Off-Highway Trucks	175	0.1441	0.7580	1.0305	0.0014	0.0602	0.0554	125	0.0130	0.0058	127.2
	250	0.1400	0.3837	1.2373	0.0019	0.0412	0.0379	167	0.0126	0.0056	168.6
	300	0.1554	0.4342	1.3471	0.0020	0.0457	0.0420	187.7	0.0140	0.0062	189.9
	500	0.2170	0.6362	1.7865	0.0027	0.0634	0.0583	272	0.0196	0.0087	275.4
	750	0.3542	1.0311	2.9938	0.0044	0.1046	0.0962	442	0.0320	0.0142	446.8
	1000	0.5484	1.6691	5.9808	0.0063	0.1796	0.1652	625	0.0495	0.0220	632.6

Off-Highway Trucks Composite		0.2141	0.6361	1.8543	0.0027	0.0644	0.0593	260	0.0193	0.0086	263.1
Other Construction Equipment	4	0.0031	0.0165	0.0196	0.0000	0.0008	0.0007	2.7	0.0003	0.0001	2.7
	15	0.0118	0.0617	0.0737	0.0002	0.0029	0.0026	10.1	0.0011	0.0005	10.3
	25	0.0160	0.0544	0.1013	0.0002	0.0041	0.0037	13.2	0.0014	0.0006	13.4
	50	0.0753	0.2653	0.2585	0.0004	0.0205	0.0189	28.0	0.0068	0.0030	29.1
	120	0.1006	0.5277	0.7025	0.0009	0.0567	0.0522	80.9	0.0091	0.0040	82.3
	125	0.0999	0.5331	0.7115	0.0010	0.0554	0.0509	83.2	0.0090	0.0040	84.6
	175	0.0935	0.5873	0.8011	0.0012	0.0420	0.0386	107	0.0084	0.0038	107.9
	188	0.0956	0.5847	0.8298	0.0013	0.0423	0.0389	112.4	0.0086	0.0038	113.8
	500	0.1452	0.5234	1.5187	0.0025	0.0491	0.0452	254	0.0131	0.0058	256.3
Other Construction Equipment Composite		0.0872	0.3765	0.7938	0.0013	0.0330	0.0304	123	0.0079	0.0035	123.9
Other General Industrial Equipmen	15	0.0066	0.0391	0.0466	0.0001	0.0018	0.0017	6.4	0.0006	0.0003	6.5
	25	0.0185	0.0632	0.1170	0.0002	0.0044	0.0040	15.3	0.0017	0.0007	15.6
	50	0.0980	0.2738	0.2243	0.0003	0.0232	0.0214	21.7	0.0088	0.0039	23.1
	100	0.1121	0.3987	0.5490	0.0006	0.0526	0.0484	50.5	0.0101	0.0045	52.1
	120	0.1177	0.4487	0.6789	0.0007	0.0644	0.0593	62.0	0.0106	0.0047	63.7
	175	0.1261	0.5728	0.9333	0.0011	0.0549	0.0505	95.9	0.0114	0.0051	97.7
	250	0.1174	0.3177	1.2013	0.0015	0.0380	0.0350	136	0.0106	0.0047	137.3
	300	0.1366	0.3818	1.3739	0.0017	0.0443	0.0407	161.5	0.0123	0.0055	163.5
	500	0.2135	0.6384	2.0642	0.0026	0.0693	0.0638	265	0.0193	0.0086	268.5
	750	0.3546	1.0522	3.5146	0.0044	0.1165	0.1072	437	0.0320	0.0142	442.5
	1000	0.5246	1.6793	6.0067	0.0056	0.1805	0.1660	560	0.0473	0.0210	567.1
Other General Industrial Equipmen Composite		0.1542	0.5159	1.3484	0.0016	0.0580	0.0533	152	0.0139	0.0062	154.4
Other Material Handling Equipment	50	0.1361	0.3789	0.3119	0.0004	0.0323	0.0297	30.3	0.0123	0.0055	32.3
	120	0.1144	0.4370	0.6628	0.0007	0.0628	0.0578	60.7	0.0103	0.0046	62.3
	175	0.1591	0.7257	1.1860	0.0014	0.0696	0.0640	122	0.0144	0.0064	124.4
	200	0.1474	0.5966	1.2183	0.0015	0.0599	0.0551	129.7	0.0133	0.0059	131.8
	250	0.1241	0.3385	1.2829	0.0016	0.0405	0.0372	145	0.0112	0.0050	146.8
	300	0.1297	0.3627	1.3240	0.0017	0.0423	0.0390	154.3	0.0117	0.0052	156.2
	500	0.1521	0.4596	1.4883	0.0019	0.0498	0.0458	192	0.0137	0.0061	193.8
	1000	0.7021	2.2197	7.9424	0.0073	0.2379	0.2188	741	0.0634	0.0282	751.4
Other Material Handling Equipment Composite		0.1473	0.4951	1.3132	0.0015	0.0562	0.0517	141	0.0133	0.0059	143.3
Pavers	25	0.0247	0.0799	0.1500	0.0002	0.0075	0.0069	18.7	0.0022	0.0010	19.0
	50	0.1366	0.3592	0.2948	0.0004	0.0308	0.0283	28.0	0.0123	0.0055	29.9
	120	0.1387	0.5057	0.8357	0.0008	0.0729	0.0671	69.2	0.0125	0.0056	71.2
	142	0.1543	0.6148	1.0522	0.0011	0.0745	0.0685	92.8	0.0139	0.0062	95.0
	175	0.1777	0.7784	1.3769	0.0014	0.0769	0.0707	128	0.0160	0.0071	130.8
	250	0.2072	0.6081	1.9469	0.0022	0.0756	0.0695	194	0.0187	0.0083	197.3
	500	0.2275	0.9254	2.1080	0.0023	0.0818	0.0752	233	0.0205	0.0091	236.5
Pavers Composite		0.1511	0.5357	0.8542	0.0009	0.0603	0.0555	77.9	0.0136	0.0061	80.1
Paving Equipment	25	0.0153	0.0520	0.0968	0.0002	0.0039	0.0036	12.6	0.0014	0.0006	12.8
	50	0.1166	0.3049	0.2514	0.0003	0.0263	0.0242	23.9	0.0105	0.0047	25.6
	120	0.1087	0.3958	0.6561	0.0006	0.0574	0.0528	54.5	0.0098	0.0044	56.1
	175	0.1387	0.6079	1.0816	0.0011	0.0602	0.0554	101	0.0125	0.0056	103.0
	250	0.1277	0.3763	1.2206	0.0014	0.0467	0.0430	122	0.0115	0.0051	124.1

Paving Equipment Composite		0.1142	0.4316	0.7709	0.0008	0.0536	0.0493	68.9	0.0103	0.0046	70.6
Plate Compactors	15	0.0050	0.0263	0.0314	0.0001	0.0012	0.0011	4.3	0.0005	0.0002	4.4
Plate Compactors Composite		0.0050	0.0263	0.0314	0.0001	0.0012	0.0011	4.3	0.0005	0.0002	4.4
Pressure Washers	15	0.0071	0.0328	0.0487	0.0001	0.0028	0.0025	4.9	0.0006	0.0003	5.0
	25	0.0108	0.0368	0.0646	0.0001	0.0037	0.0034	7.1	0.0010	0.0004	7.3
	50	0.0315	0.1037	0.1284	0.0002	0.0094	0.0086	14.3	0.0028	0.0013	14.7
	120	0.0302	0.1443	0.2235	0.0003	0.0157	0.0145	24.1	0.0027	0.0012	24.5
Pressure Washers Composite		0.0159	0.0619	0.0878	0.0001	0.0058	0.0053	9.4	0.0014	0.0006	9.6
Pumps	15	0.0125	0.0497	0.0752	0.0001	0.0049	0.0046	7.4	0.0011	0.0005	7.6
	25	0.0359	0.1004	0.1761	0.0002	0.0109	0.0100	19.5	0.0032	0.0014	20.0
	50	0.1052	0.3116	0.3228	0.0004	0.0275	0.0253	34.3	0.0095	0.0042	35.8
	68	0.1077	0.3596	0.4380	0.0006	0.0363	0.0334	45.6	0.0097	0.0043	47.1
	120	0.1149	0.4984	0.7706	0.0009	0.0617	0.0568	77.9	0.0104	0.0046	79.6
	175	0.1385	0.7405	1.2344	0.0016	0.0611	0.0562	140	0.0125	0.0056	142.1
	250	0.1266	0.4210	1.6140	0.0023	0.0457	0.0421	201	0.0114	0.0051	203.2
	500	0.1952	0.7595	2.4849	0.0034	0.0734	0.0675	345	0.0176	0.0078	348.0
	750	0.3326	1.2556	4.2353	0.0057	0.1235	0.1136	571	0.0300	0.0133	575.5
	1000	1.0536	3.7127	13.3750	0.0136	0.3744	0.3444	1,355	0.0951	0.0423	1369.9
Pumps Composite		0.0748	0.2926	0.4705	0.0006	0.0323	0.0297	49.6	0.0067	0.0030	50.7
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	0.0016	6.3	0.0007	0.0003	6.4
	25	0.0161	0.0549	0.1023	0.0002	0.0041	0.0038	13.3	0.0015	0.0006	13.6
	50	0.1025	0.2911	0.2583	0.0003	0.0245	0.0225	26.0	0.0092	0.0041	27.5
	100	0.0997	0.3734	0.5204	0.0006	0.0451	0.0415	49.6	0.0090	0.0040	51.0
	120	0.0986	0.4063	0.6253	0.0007	0.0534	0.0491	59.0	0.0089	0.0040	60.4
	137	0.1067	0.4723	0.7447	0.0009	0.0539	0.0496	74.2	0.0096	0.0043	75.7
	175	0.1247	0.6199	1.0114	0.0012	0.0550	0.0506	108	0.0113	0.0050	109.9
	250	0.1262	0.3887	1.3124	0.0017	0.0451	0.0415	153	0.0114	0.0051	154.9
	500	0.1654	0.6313	1.6820	0.0022	0.0593	0.0545	219	0.0149	0.0066	221.5
		0.0973	0.4060	0.6546	0.0008	0.0453	0.0417	67.1	0.0088	0.0039	68.4
Rollers Composite		0.0973	0.4060	0.6546	0.0008	0.0453	0.0417	67.1	0.0088	0.0039	68.4
Rough Terrain Forklifts	50	0.1181	0.3778	0.3316	0.0004	0.0300	0.0276	33.9	0.0107	0.0047	35.6
	80	0.1084	0.4013	0.4464	0.0006	0.0399	0.0367	46.1	0.0098	0.0043	47.7
	120	0.0955	0.4327	0.5995	0.0007	0.0529	0.0487	62.4	0.0086	0.0038	63.8
	175	0.1352	0.7256	1.0448	0.0014	0.0592	0.0545	125	0.0122	0.0054	126.8
	250	0.1294	0.3798	1.2955	0.0019	0.0416	0.0382	171	0.0117	0.0052	172.7
	500	0.1824	0.5717	1.7096	0.0025	0.0584	0.0537	257	0.0165	0.0073	259.2
Rough Terrain Forklifts Composite		0.1009	0.4642	0.6526	0.0008	0.0532	0.0489	70.3	0.0091	0.0040	71.7
Rubber Tired Dozers	175	0.2119	0.8457	1.5561	0.0015	0.0893	0.0821	129	0.0191	0.0085	132.5
	250	0.2435	0.6833	2.0817	0.0021	0.0881	0.0810	183	0.0220	0.0098	187.0
	500	0.3211	1.4228	2.7305	0.0026	0.1133	0.1043	265	0.0290	0.0129	269.5
	750	0.4843	2.1329	4.1797	0.0040	0.1716	0.1579	399	0.0437	0.0194	405.7
	1000	0.7496	3.4322	7.4509	0.0060	0.2591	0.2384	592	0.0676	0.0301	602.6

Rubber Tired Dozers Composite		0.2986	1.1749	2.5452	0.0025	0.1064	0.0979	239	0.0269	0.0120	243.4
Rubber Tired Loaders	25	0.0204	0.0697	0.1292	0.0002	0.0050	0.0046	16.9	0.0018	0.0008	17.2
	50	0.1200	0.3641	0.3118	0.0004	0.0292	0.0269	31.1	0.0108	0.0048	32.9
	120	0.0971	0.4152	0.6015	0.0007	0.0525	0.0483	58.9	0.0088	0.0039	60.3
	175	0.1238	0.6274	0.9501	0.0012	0.0535	0.0492	106	0.0112	0.0050	108.1
	250	0.1259	0.3685	1.2125	0.0017	0.0417	0.0384	149	0.0114	0.0050	150.8
	500	0.1867	0.6397	1.7158	0.0023	0.0613	0.0564	237	0.0168	0.0075	239.7
	750	0.3850	1.3084	3.6184	0.0049	0.1276	0.1174	486	0.0347	0.0154	491.0
	1000	0.5190	1.8389	5.9660	0.0060	0.1795	0.1651	594	0.0468	0.0208	601.3
Rubber Tired Loaders Composite		0.1195	0.4763	0.9346	0.0012	0.0508	0.0467	109	0.0108	0.0048	110.3
Scrapers	120	0.1877	0.6943	1.1141	0.0011	0.0983	0.0904	93.9	0.0169	0.0075	96.6
	175	0.2070	0.9107	1.5564	0.0017	0.0884	0.0813	148	0.0187	0.0083	151.0
	250	0.2252	0.6408	2.0481	0.0024	0.0791	0.0727	209	0.0203	0.0090	212.7
	400	0.2813	0.9831	2.5165	0.0028	0.0976	0.0898	276.6	0.0254	0.0113	280.7
	500	0.3186	1.2113	2.8288	0.0032	0.1099	0.1011	321	0.0287	0.0128	326.0
	750	0.5525	2.0861	4.9949	0.0056	0.1918	0.1764	555	0.0499	0.0222	563.2
Scrapers Composite		0.2783	1.0395	2.4118	0.0027	0.1005	0.0925	262	0.0251	0.0112	266.5
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	0.0016	6.2	0.0006	0.0003	6.3
	50	0.1151	0.3456	0.3415	0.0005	0.0296	0.0272	36.2	0.0104	0.0046	37.8
	120	0.1176	0.5214	0.7807	0.0009	0.0644	0.0593	80.2	0.0106	0.0047	81.9
	175	0.1535	0.8341	1.3333	0.0017	0.0685	0.0630	155	0.0139	0.0062	156.7
	250	0.1632	0.5350	1.9963	0.0029	0.0580	0.0534	255	0.0147	0.0065	257.6
Signal Boards Composite		0.0192	0.0934	0.1399	0.0002	0.0077	0.0071	16.7	0.0017	0.0008	17.0
Skid Steer Loaders	25	0.0202	0.0620	0.1166	0.0002	0.0063	0.0058	13.8	0.0018	0.0008	14.1
	50	0.0517	0.2263	0.2279	0.0003	0.0157	0.0144	25.5	0.0047	0.0021	26.3
	120	0.0429	0.2748	0.3267	0.0005	0.0245	0.0225	42.8	0.0039	0.0017	43.4
Skid Steer Loaders Composite		0.0468	0.2309	0.2522	0.0004	0.0179	0.0165	30.3	0.0042	0.0019	30.9
Surfacing Equipment	50	0.0477	0.1403	0.1359	0.0002	0.0119	0.0109	14.1	0.0043	0.0019	14.8
	120	0.0970	0.4215	0.6523	0.0007	0.0517	0.0475	63.8	0.0088	0.0039	65.2
	175	0.0894	0.4730	0.7742	0.0010	0.0392	0.0360	85.8	0.0081	0.0036	87.1
	250	0.1025	0.3374	1.1177	0.0015	0.0376	0.0346	135	0.0092	0.0041	136.3
	500	0.1532	0.6418	1.6597	0.0022	0.0567	0.0522	221	0.0138	0.0061	223.4
	750	0.2443	1.0046	2.6697	0.0035	0.0900	0.0828	347	0.0220	0.0098	350.5
Surfacing Equipment Composite		0.1277	0.5182	1.2760	0.0017	0.0468	0.0431	166	0.0115	0.0051	167.8
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0034	0.0031	11.9	0.0011	0.0005	12.1
	25	0.0237	0.0808	0.1496	0.0002	0.0058	0.0054	19.6	0.0021	0.0009	20.0
	50	0.1048	0.3425	0.3055	0.0004	0.0271	0.0249	31.6	0.0095	0.0042	33.1
	120	0.1107	0.5147	0.6989	0.0009	0.0622	0.0573	75.0	0.0100	0.0044	76.6
	175	0.1439	0.7997	1.1204	0.0016	0.0637	0.0586	139	0.0130	0.0058	141.1
	250	0.1146	0.3382	1.1784	0.0018	0.0362	0.0333	162	0.0103	0.0046	163.7

Sweepers/Scrubbers Composite		0.1148	0.5145	0.6862	0.0009	0.0510	0.0469	78.5	0.0104	0.0046	80.2
Tractors/Loaders/Backhoes	25	0.0195	0.0657	0.1237	0.0002	0.0056	0.0052	15.9	0.0018	0.0008	16.1
	50	0.0893	0.3199	0.2893	0.0004	0.0238	0.0219	30.3	0.0081	0.0036	31.6
	98	0.0757	0.3425	0.4039	0.0005	0.0337	0.0310	45.0	0.0068	0.0030	46.1
	120	0.0694	0.3529	0.4565	0.0006	0.0383	0.0352	51.7	0.0063	0.0028	52.7
	175	0.0988	0.5861	0.7696	0.0011	0.0428	0.0394	101	0.0089	0.0040	102.8
	250	0.1204	0.3666	1.1658	0.0019	0.0370	0.0340	172	0.0109	0.0048	173.5
	300	0.1421	0.4421	1.3459	0.0023	0.0436	0.0401	206.4	0.0128	0.0057	208.4
	500	0.2290	0.7443	2.0659	0.0039	0.0701	0.0645	345	0.0207	0.0092	348.1
	750	0.3462	1.1159	3.2041	0.0058	0.1072	0.0986	517	0.0312	0.0139	522.2
Tractors/Loaders/Backhoes Composite		0.0792	0.3782	0.5392	0.0008	0.0387	0.0356	66.8	0.0071	0.0032	67.9
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0024	0.0022	8.5	0.0009	0.0004	8.6
	25	0.0397	0.1355	0.2511	0.0004	0.0097	0.0090	32.9	0.0036	0.0016	33.5
	50	0.1566	0.4082	0.3432	0.0004	0.0353	0.0325	32.9	0.0141	0.0063	35.2
	120	0.1281	0.4684	0.7862	0.0008	0.0669	0.0615	64.9	0.0116	0.0051	66.7
	175	0.1955	0.8632	1.5520	0.0016	0.0849	0.0781	144	0.0176	0.0078	146.7
	250	0.2354	0.7089	2.2485	0.0025	0.0880	0.0810	223	0.0212	0.0094	226.3
	500	0.2985	1.3011	2.8470	0.0031	0.1105	0.1016	311	0.0269	0.0120	315.6
	750	0.5663	2.4440	5.4715	0.0059	0.2099	0.1931	587	0.0511	0.0227	595.0
Trenchers Composite		0.1427	0.4675	0.6684	0.0007	0.0549	0.0505	58.7	0.0129	0.0057	60.8
Welders	15	0.0104	0.0416	0.0629	0.0001	0.0041	0.0038	6.2	0.0009	0.0004	6.4
	23	0.0187	0.0548	0.0942	0.0001	0.0059	0.0054	10.3	0.0017	0.0008	10.5
	25	0.0208	0.0581	0.1020	0.0001	0.0063	0.0058	11.3	0.0019	0.0008	11.6
	50	0.0979	0.2753	0.2535	0.0003	0.0240	0.0221	26.0	0.0088	0.0039	27.4
	120	0.0654	0.2659	0.4099	0.0005	0.0358	0.0330	39.5	0.0059	0.0026	40.4
	175	0.1101	0.5455	0.9083	0.0011	0.0490	0.0451	98.2	0.0099	0.0044	99.8
	250	0.0855	0.2618	1.0026	0.0013	0.0301	0.0277	119	0.0077	0.0034	120.3
	500	0.1092	0.3838	1.2526	0.0016	0.0394	0.0363	168	0.0098	0.0044	169.2
Welders Composite		0.0646	0.2096	0.2564	0.0003	0.0225	0.0207	25.6	0.0058	0.0026	26.5

Notes:

SCAQMD emission factors for 2013 (SCAQMD 2008)

Offroad diesel exhaust PM_{2.5} = 92% of PM₁₀ per EMFAC 2007 version 2.3 (SCAQMD 2008)Offroad N₂O per Annex 3, Table A-103 (EPA 2011)

Non-matching application-specific values interpolated or extrapolated

EPA GWPs for CO₂ eqv (1, 21, 310)

SCAB Fleet Average Emission Factors

Onroad 2013

Air Basin

SC

	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)	(lb/mi)
Vehicle Type	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	CO2 eqv
Light Duty (pickup trucks)	0.00075	0.00709	0.00071	0.00001	0.00009	0.00006	1.10087	0.00007	0.00003	1.11070
Medium Duty (work trucks)	0.00206	0.01408	0.01577	0.00003	0.00060	0.00050	2.78163	0.00010	0.00015	2.83046
Heavy Heavy Duty (tractor/trailers)	0.00226	0.00932	0.02743	0.00004	0.00134	0.00115	4.21519	0.00010	0.00010	4.24784

Notes:

SCAQMD emission factors for 2013 (SCAQMD 2008)

HHD includes tire & brake wear

Onroad N₂O per Annex 3, Table A-101 (EPA 2011)EPA GWPs for CO₂ eqv (1, 21, 310)