

# Appendix B

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Energy Data

Instructions: Input all construction equipment by each phase and phase length and use CalEEMod outputs for amount, usage hours, horsepower, and load factor.

**Construction Offroad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Grubbing/Land Clearing	off-highway trucks	2	8	402	0.3819	26	3,193
Grubbing/Land Clearing	sweepers/scrubbers	1	8	64	0.4556	26	303
Grading/Excavation	concrete/industrial saws	1	8	81	0.73	119	2,815
Grading/Excavation	excavators	2	8	158	0.3819	119	5,744
Grading/Excavation	tractors/loaders/backhoes	1	8	97	0.37	119	1,708
Pipeline Installation	off-highway trucks	1	8	402	0.3819	79	4,851
Pipeline Installation	other material handling equipment	2	8	168	0.40	79	4,197
Pipeline Installation	pumps	1	8	84	0.74	79	1,964
Pipeline Installation	welders	2	8	46	0.45	79	1,308
Paving	pavers	1	8	130	0.42	40	874
Paving	paving equipment	1	8	132	0.36	40	750
Paving	rollers	1	8	80	0.38	40	486
<b>TOTAL</b>							<b>28,195</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

**Trips and VMT**

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Grubbing/Land Clearing	16	0	0	26	416	0	0	20.00	6.50	50.00	8320	0.00	-	279	0
Grading/Excavation	16	0	3	119	1904	0	357	20.00	6.50	50.00	38080	0.00	17,850.00	1,275	2,936
Pipeline Installation	16	0	2	79	1264	0	158	20.00	6.50	50.00	25280	0.00	7,900.00	847	1,300
Paving	16	0	2	40	640	0	80	20.00	6.50	50.00	12800	0.00	4,000.00	429	658
<b>TOTAL</b>													<b>2,829</b>	<b>4,894</b>	

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

<b>Total gallons of diesel (construction equipment plus hauling trips)</b>	<b>33,089</b>
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Instructions: Input EMFAC run for LDA, LDT1, LTD2 for gas, and T7 tractor construction for diesel into template below.

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Alpine

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Miles per gallon
Alpine	2022	LDA	Aggregated	Aggregated	GAS	2,939	103,599	18,526	3.1	32.94
Alpine	2022	LDA	Aggregated	Aggregated	DSL	35	1,250	217	0.0	42.00
Alpine	2022	LDA	Aggregated	Aggregated	ELEC	110	5,244	714	-	-
Alpine	2022	LDT1	Aggregated	Aggregated	GAS	263	7,943	1,561	0.3	27.04
Alpine	2022	LDT1	Aggregated	Aggregated	DSL	0	7	2	0.0	30.70
Alpine	2022	LDT1	Aggregated	Aggregated	ELEC	0	4	1	-	-
Alpine	2022	LDT2	Aggregated	Aggregated	GAS	1,122	39,535	7,040	1.6	24.40
Alpine	2022	LDT2	Aggregated	Aggregated	DSL	2	75	12	0.0	32.93
Alpine	2022	T7 tractor construction	Aggregated	Aggregated	DSL	1	45	-	0.0	6.08

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

### Fuel Efficiency Calculation

	Value	Units
Gasoline consumption by LDA, LDT 1, and LDT 2	5058.97	gallons/day
VMT for LDA, LDT1, and LDT 2	151,077	miles/day
Gasoline fuel efficiency	29.86	miles/gallon
Diesel consumption by T7 tractor construction	7.4	gallons/day
VMT for T7 tractor construction	45	miles/day
Diesel fuel efficiency	6.08	miles/gallon