1.0 Introduction

This Document contains a description of greenhouse gas (GHG) emissions calculated for construction of the Beacon Energy Solar Project (BSEP or Project). Section 2 describes the methodology used to calculate emissions, and references are provided in Section 3. Tables which contain the GHG emissions during construction of the BSEP follow in tables at the end of the document.

2.0 Construction Greenhouse Gas Emissions

GHG emissions will arise from the operation of construction equipment and motor vehicles. The Project will include construction of the solar facility, the natural gas supply pipeline, and the electricity transmission line. GHG emissions during each month of construction were calculated separately for the solar facility, the natural gas pipeline and the transmission line. The monthly emissions were summed over the construction duration for each Project component to calculate total GHG emissions.

2.1 Emission Calculation Methodology

2.1.1 Construction Equipment Exhaust Emissions

The combustion of fuel to provide power for the operation of various construction activities and equipment results in the generation of GHG, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The following predictive emission equation was used to calculate exhaust emissions from construction equipment:

$$\text{Exhaust Emissions}_{C,i,j}\,(MT) = EF_{C,i,j} \times F_{C,jk} \times T_{H,k} / 1000 \qquad \text{(Eq. 2-1)}$$

Where:

$EF_{C,i,j}$ = Emission factor for specific GHG i from construction equipment using fuel j (kg/gal)

$F_{C,jk}$ = Fuel consumption rate for fuel j in construction equipment of type k (gal/hr)

$T_{H,k}$ = Operating time for equipment of type k (hr)

1000 = kilograms per metric tonne (kg/MT)

The fuel consumption rates used for the calculations are composite horsepower-based off-road consumption rates for 2009 derived from the California Air Resources Board's (ARB) OFFROAD2007 Model (version 2.0.1.2, December 15, 2007) (ARB, 2007a). The OFFROAD2007 Model calculates total daily fuel consumption by equipment category (crane, dozer, grader, etc.) and type of fuel (diesel, gasoline, etc.) within engine horsepower ranges in a geographic area, such as the Kern County Air Pollution Control District (KCAPCD) jurisdiction. The model also calculates total daily operating hours within the geographic area by equipment category, fuel and horsepower range. The total daily fuel consumptions were divided by the total daily operating hours to calculate fuel consumption rates, in gallons per hour, by equipment category, fuel and horsepower range. The diesel off-road equipment consumption rates for 2009 are in Table 1 at the end of this document, and the gasoline off-road equipment consumption rates are in Table 2. Consumption rates for the specific types of equipment anticipated to be used during construction of the BSEP are in Table 3.

CO_2 emission factors, in units of kilograms per gallon (kg/gal), were taken directly from Table 4 in Appendix A of ARB (2008). CH_4 and N_2O emission factors, in units of grams per million British thermal units (g/MMBtu),

were taken from Table 6 in Appendix A of ARB (2008). These emission factors were converted to units of kg/gal by the following equation:

$$EF_{C,ij}\ (kg/gal) = EFH_{C,ij} \times HHV_j / 42 / 1000 \quad \text{(Eq. 2-2)}$$

Where:

$EFH_{C,ij}$ = Emission factor for GHG i from fuel j (g/MMBtu)

HHV_j = Higher heating value for fuel j (MMBtu/barrel)

42 = gallons per barrel

1000 = grams per kilogram (g/kg)

Higher heating values for diesel fuel and gasoline, in units of MMBtu/barrel, were taken from Table 4 in Appendix A of ARB (2008).

Construction equipment GHG emission factors are in Tables 6-A and 6-B at the end of this document.

2.1.2 Motor Vehicle Exhaust Emissions

The combustion of fuel in motor vehicle engines results in the generation of GHGs, including CO_2, CH_4 and N_2O. The following predictive emission equation was used to calculate CO_2 exhaust emissions from motor vehicles:

$$CO_2\ \text{Exhaust Emissions}_{V,j}\ (MT) = EF_{CO2V,j} \times F_{V,k} \times VMT_k / 1000 \quad \text{(Eq. 2-3)}$$

Where:

$EF_{CO2V,j}$ = Emission factor for CO_2 from vehicles using fuel j (kg/gal)

$F_{V,k}$ = Fuel consumption rate for vehicle of type k (gal/mi)

VMT_k = Vehicle miles traveled by vehicles of type k (mi)

1000 = kilograms per metric tonne (kg/MT)

Fuel consumption rates were compiled by running the ARB's EMFAC2007 (version 2.3) Burden Model (ARB, 2007b) for the KCAPCD jurisdiction during calendar year 2009. Daily fuel use by vehicle class (light-duty truck, heavy, heavy-heavy duty diesel vehicle, etc.) from the Burden model were divided by the daily mileage traveled by vehicles within the class from the Burden Model to calculate the consumption rates. The motor vehicle fuel consumption rates from the Burden Model are listed in Table 4 at the end of this document, and the consumption rates for the vehicles to be used for construction of BSEP are listed in Table 5. CO_2 emission factors, in units of kilograms per gallon (kg/gal), were taken directly from Table 7 in Appendix A of ARB (2008).

CH_4 and N_2O emissions from motor vehicles were calculated from the following equation:

$$\text{Exhaust Emissions}_{V,ij}\ (MT) = EF_{ij} \times VMT_k / 1000000 \quad \text{(Eq. 2-4)}$$

Where:

$EF_{V,ij}$ = Emission factor for GHG i from vehicles using fuel j (g/mi)

VMT_k = Vehicle miles traveled by vehicles of type k (mi)

1000000 = grams per metric tonne (g/MT)

CH_4 and N_2O emission factors, in units of grams per mile, were taken from Table 8 in Appendix A of ARB (2008).

Motor vehicle GHG emission factors are in Table 6-C at the end of this document.

2.2 Emission Calculations

Emissions were calculated from estimates of (1) the types, number, horsepower rating and daily operating hours for construction equipment; and (2) the types, number and daily miles traveled by on site and offsite motor vehicles. These estimates were made by construction month for construction of the solar facility, the natural gas pipeline and the transmission line.

Monthly and total emissions were calculated for construction of each component.

Calculations of solar facility GHG construction emissions are in Tables 7-A through 7-F at the end of this document, calculations of gas line construction GHG emissions are in Tables 8-A through 8-F, and calculations of transmission line construction GHG emissions are in Tables 9-A through 9-F. Table A in each set of tables lists construction equipment emissions, Table B lists motor vehicle emissions, and Table C lists total emissions. Table D lists the daily operating hours for construction equipment, daily vehicle miles traveled for motor vehicles, and number of pieces of construction equipment and motor vehicles by month for each type of equipment or motor vehicle; Table E lists the monthly operating hours and vehicle miles traveled for each type of construction equipment or motor vehicle, based on 22 working days per month, and Table F lists the monthly fuel consumption for each type of construction equipment or motor vehicle.

Total emissions of each GHG are listed in Table C in each set of tables as well as the CO_2-equivalent (CO_2e) emissions of CH_4 and N_2O. CO_2e is a measure for comparing CO_2 with other GHGs, based on the quantity of those gases multiplied by the appropriate global warming potential (GWP). The GWP for CH_4 and N_2O were taken from Table 2 in Appendix A of ARB (2008) and are listed in Table C.

Total calculated emissions during construction of the BSEP are summarized in Table 10.

3.0 References

ARB, 2007a. California Air Resources Board OFFROAD2007 Model, version 2.0.1.2, http://www.arb.ca.gov/msei/offroad/offroad.htm, December 15.

ARB, 2007b. California Air Resources Board EMFAC2007 (version 2.3) Burden Model available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm.

ARB, 2008. Second 15-Day Modified Regulatory Language for Public Comment, Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, available online at: http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf.

TABLES

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
A/C Tug Narrow Body	0	250	8.14
A/C Tug Wide Body	0	500	15.22
Aerial Lifts	0	15	0.40
Aerial Lifts	16	25	0.50
Aerial Lifts	26	50	0.91
Aerial Lifts	51	120	1.75
Aerial Lifts	121	500	9.65
Aerial Lifts	501	750	17.45
Agricultural Mowers	0	120	1.61
Agricultural Tractors	0	15	0.48
Agricultural Tractors	16	25	0.92
Agricultural Tractors	26	50	1.60
Agricultural Tractors	51	120	3.34
Agricultural Tractors	121	175	5.69
Agricultural Tractors	176	250	8.08
Agricultural Tractors	251	500	13.22
Air Compressors	0	15	0.33
Air Compressors	16	25	0.66
Air Compressors	26	50	1.05
Air Compressors	51	120	2.16
Air Compressors	121	175	4.04
Air Compressors	176	250	5.95
Air Compressors	251	500	10.52
Air Compressors	501	750	16.26
Air Compressors	751	1000	22.13
Air Conditioner	0	175	6.62
Air Conditioner	176	250	9.39
Air Conditioner	251	500	18.77
Air Start Unit	0	175	6.91
Air Start Unit	176	250	9.81
Air Start Unit	251	500	19.62
Air Start Unit	501	750	29.44
Baggage Tug	0	120	2.25
Balers	0	50	1.68
Balers	51	120	2.49
Belt Loader	0	120	1.57
Bobtail	0	120	3.57
Bore/Drill Rigs	0	15	0.47
Bore/Drill Rigs	16	25	0.73
Bore/Drill Rigs	26	50	1.43
Bore/Drill Rigs	51	120	3.52
Bore/Drill Rigs	121	175	6.42
Bore/Drill Rigs	176	250	8.50
Bore/Drill Rigs	251	500	14.07

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Bore/Drill Rigs	501	750	27.81
Bore/Drill Rigs	751	1000	41.99
Cargo Loader	0	120	2.90
Cargo Tractor	0	120	2.74
Catering Truck	0	250	7.08
Cement and Mortar Mixers	0	15	0.29
Cement and Mortar Mixers	16	25	0.80
Chippers/Stump Grinders	0	25	0.92
Chippers/Stump Grinders	26	120	3.48
Chippers/Stump Grinders	121	175	6.01
Chippers/Stump Grinders	176	250	10.08
Chippers/Stump Grinders	251	500	11.21
Chippers/Stump Grinders	501	750	26.98
Chippers/Stump Grinders	751	1000	38.47
Combines	0	120	4.34
Combines	121	175	5.68
Combines	176	250	7.95
Combines	251	500	10.93
Commercial Turf Equipment	0	15	0.44
Commercial Turf Equipment	16	25	0.66
Compressor (Entertainment)	0	120	1.60
Compressor (GSE)	0	120	2.62
Compressor (GSE)	121	250	5.30
Compressor (GSE)	251	500	10.92
Compressor (GSE)	501	750	16.13
Compressor (Railyard)	0	120	1.49
Concrete/Industrial Saws	0	25	0.75
Concrete/Industrial Saws	26	50	1.41
Concrete/Industrial Saws	51	120	3.40
Concrete/Industrial Saws	121	175	7.31
Crane (Rail-CHE)	0	120	2.48
Crane (Rail-CHE)	121	175	3.12
Cranes	0	50	1.09
Cranes	51	120	2.30
Cranes	121	175	3.67
Cranes	176	250	5.10
Cranes	251	500	8.19
Cranes	501	750	13.78
Cranes	751	9999	44.19
Crawler Tractors	0	50	1.17
Crawler Tractors	51	120	3.03
Crawler Tractors	121	175	5.54
Crawler Tractors	176	250	7.56
Crawler Tractors	251	500	11.81

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Crawler Tractors	501	750	21.17
Crawler Tractors	751	1000	30.02
Crushing/Proc. Equipment	0	50	2.07
Crushing/Proc. Equipment	51	120	3.82
Crushing/Proc. Equipment	121	175	7.64
Crushing/Proc. Equipment	176	250	11.09
Crushing/Proc. Equipment	251	500	16.95
Crushing/Proc. Equipment	501	750	26.71
Crushing/Proc. Equipment	751	9999	59.47
Dumpers/Tenders	0	25	0.35
Excavators	0	25	0.75
Excavators	26	50	1.17
Excavators	51	120	3.38
Excavators	121	175	5.13
Excavators	176	250	7.20
Excavators	251	500	10.60
Excavators	501	750	17.57
Forklift	0	175	2.67
Forklifts	0	50	0.69
Forklifts	51	120	1.43
Forklifts	121	175	2.56
Forklifts	176	250	3.49
Forklifts	251	500	5.03
Fuel Truck	0	250	2.68
Generator	0	120	3.77
Generator	121	175	7.08
Generator	176	250	10.16
Generator	251	500	16.11
Generator	501	750	26.01
Generator (Entertainment)	0	50	2.02
Generator (Entertainment)	51	120	4.08
Generator (Entertainment)	121	175	6.81
Generator (Entertainment)	176	250	8.96
Generator (Entertainment)	251	500	12.54
Generator (Entertainment)	501	750	24.62
Generator (Entertainment)	751	9999	43.85
Generator (Railyard)	0	175	6.35
Generator (Railyard)	176	9999	39.93
Generator Sets	0	15	0.47
Generator Sets	16	25	0.81
Generator Sets	26	50	1.42
Generator Sets	51	120	3.57
Generator Sets	121	175	6.47
Generator Sets	176	250	9.63

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Generator Sets	251	500	15.27
Generator Sets	501	750	24.65
Generator Sets	751	9999	47.66
Graders	0	50	1.29
Graders	51	120	3.44
Graders	121	175	5.66
Graders	176	250	7.81
Graders	251	500	10.42
Graders	501	750	22.06
Ground Power Unit	0	175	7.00
Hydrant Truck	0	175	7.01
Hydro Power Units	0	15	0.27
Hydro Power Units	16	25	0.52
Hydro Power Units	26	50	0.99
Hydro Power Units	51	120	1.93
Lav Truck	0	175	2.40
Lawn & Garden Tractors	0	15	0.42
Lawn & Garden Tractors	16	25	0.65
Leaf Blowers/Vacuums	0	15	0.14
Leaf Blowers/Vacuums	16	120	2.22
Leaf Blowers/Vacuums	121	250	4.54
Lift	0	120	3.31
Materials Handling (Rail-CHE)	0	120	2.72
Off-Highway Tractors	0	120	4.32
Off-Highway Tractors	121	175	5.97
Off-Highway Tractors	176	250	5.94
Off-Highway Tractors	251	750	25.97
Off-Highway Tractors	751	1000	37.27
Off-Highway Trucks	0	175	5.72
Off-Highway Trucks	176	250	7.56
Off-Highway Trucks	251	500	12.36
Off-Highway Trucks	501	750	20.04
Off-Highway Trucks	751	1000	28.39
Other Agricultural Equipment	0	15	0.35
Other Agricultural Equipment	16	25	0.64
Other Agricultural Equipment	26	50	1.19
Other Agricultural Equipment	51	120	2.34
Other Agricultural Equipment	121	175	4.23
Other Agricultural Equipment	176	250	6.09
Other Agricultural Equipment	251	500	8.76
Other Construction Equipment	0	15	0.46
Other Construction Equipment	16	25	0.60
Other Construction Equipment	26	50	1.30
Other Construction Equipment	51	120	3.70

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Other Construction Equipment	121	175	4.86
Other Construction Equipment	176	500	11.52
Other General Industrial Equipmen	0	15	0.29
Other General Industrial Equipmen	16	25	0.70
Other General Industrial Equipmen	26	50	1.03
Other General Industrial Equipmen	51	120	2.85
Other General Industrial Equipmen	121	175	4.39
Other General Industrial Equipmen	176	250	6.16
Other General Industrial Equipmen	251	500	12.05
Other General Industrial Equipmen	501	750	19.87
Other General Industrial Equipmen	751	1000	25.48
Other GSE	0	175	4.02
Other Lawn & Garden Equipment	0	15	0.56
Other Lawn & Garden Equipment	16	25	0.74
Other Material Handling Equipment	0	50	1.43
Other Material Handling Equipment	51	120	2.79
Other Material Handling Equipment	121	175	5.58
Other Material Handling Equipment	176	250	6.58
Other Material Handling Equipment	251	500	8.70
Other Material Handling Equipment	501	9999	33.75
Passenger Stand	0	120	3.39
Pavers	0	25	0.85
Pavers	26	50	1.32
Pavers	51	120	3.18
Pavers	121	175	5.87
Pavers	176	250	8.84
Pavers	251	500	10.63
Paving Equipment	0	25	0.57
Paving Equipment	26	50	1.13
Paving Equipment	51	120	2.51
Paving Equipment	121	175	4.62
Paving Equipment	176	250	5.56
Plate Compactors	0	15	0.20
Pressure Washers	0	15	0.22
Pressure Washers	16	25	0.33
Pressure Washers	26	50	0.66
Pressure Washers	51	120	1.10
Pumps	0	15	0.34
Pumps	16	25	0.89
Pumps	26	50	1.60
Pumps	51	120	3.57
Pumps	121	175	6.39
Pumps	176	250	9.13
Pumps	251	500	15.65

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Pumps	501	750	25.88
Pumps	751	9999	61.60
Rollers	0	15	0.29
Rollers	16	25	0.61
Rollers	26	50	1.22
Rollers	51	120	2.71
Rollers	121	175	4.94
Rollers	176	250	6.95
Rollers	251	500	9.96
Rough Terrain Forklifts	0	50	1.59
Rough Terrain Forklifts	51	120	2.87
Rough Terrain Forklifts	121	175	5.70
Rough Terrain Forklifts	176	250	7.75
Rough Terrain Forklifts	251	500	11.64
Rubber Tired Dozers	0	175	5.93
Rubber Tired Dozers	176	250	8.37
Rubber Tired Dozers	251	500	12.12
Rubber Tired Dozers	501	750	18.24
Rubber Tired Dozers	751	1000	27.11
Rubber Tired Loaders	0	25	0.77
Rubber Tired Loaders	26	50	1.46
Rubber Tired Loaders	51	120	2.70
Rubber Tired Loaders	121	175	4.86
Rubber Tired Loaders	176	250	6.76
Rubber Tired Loaders	251	500	10.76
Rubber Tired Loaders	501	750	22.05
Rubber Tired Loaders	751	1000	27.01
Sailboat Auxiliary Inboard Engine	0	50	0.55
Scrapers	0	120	4.32
Scrapers	121	175	6.77
Scrapers	176	250	9.53
Scrapers	251	500	14.65
Scrapers	501	750	25.30
Service Truck	0	175	1.99
Signal Boards	0	15	0.28
Signal Boards	16	50	1.69
Signal Boards	51	120	3.68
Signal Boards	121	175	7.05
Signal Boards	176	250	11.57
Skid Steer Loaders	0	25	0.63
Skid Steer Loaders	26	50	1.18
Skid Steer Loaders	51	120	1.96
Snowblowers	0	175	6.06
Snowblowers	176	250	9.16

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Snowblowers	251	500	13.56
Sprayers	0	25	0.55
Sprayers	26	50	1.04
Sprayers	51	120	2.61
Sprayers	121	175	4.31
Sprayers	176	250	7.04
Sprayers	251	500	7.69
Surfacing Equipment	0	50	0.66
Surfacing Equipment	51	120	2.92
Surfacing Equipment	121	175	3.91
Surfacing Equipment	176	250	6.12
Surfacing Equipment	251	500	10.05
Surfacing Equipment	501	750	15.76
Swathers	0	120	2.46
Swathers	121	175	4.71
Sweeper	0	120	1.50
Sweepers/Scrubbers	0	15	0.54
Sweepers/Scrubbers	16	25	0.89
Sweepers/Scrubbers	26	50	1.48
Sweepers/Scrubbers	51	120	3.45
Sweepers/Scrubbers	121	175	6.35
Sweepers/Scrubbers	176	250	7.34
Tillers	0	15	0.31
Tillers	16	250	10.86
Tillers	251	500	19.36
Tractors/Loaders/Backhoes	0	25	0.72
Tractors/Loaders/Backhoes	26	50	1.42
Tractors/Loaders/Backhoes	51	120	2.37
Tractors/Loaders/Backhoes	121	175	4.63
Tractors/Loaders/Backhoes	176	250	7.78
Tractors/Loaders/Backhoes	251	500	15.63
Tractors/Loaders/Backhoes	501	750	23.44
Transport Refrigeration Units	0	15	0.37
Transport Refrigeration Units	16	25	0.62
Transport Refrigeration Units	26	50	1.20
Trenchers	0	15	0.39
Trenchers	16	25	1.50
Trenchers	26	50	1.55
Trenchers	51	120	2.98
Trenchers	121	175	6.58
Trenchers	176	250	10.14
Trenchers	251	500	14.20
Trenchers	501	750	26.77
Vessels w/Inboard Engines	0	250	4.99

Table 1

Diesel Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Welders	0	15	0.28
Welders	16	25	0.52
Welders	26	50	1.22
Welders	51	120	1.81
Welders	121	175	4.48
Welders	176	250	5.40
Welders	251	500	7.61

[a] These are composite horsepower-based fuel consumption rates for 2009 developed by running CARB's OFFROAD2007 Model (December 15, 2006 version). Total daily fuel consumption from the model for each type of equipment within each horsepower range was divided by the total daily operating hours for the equipment within each horsepower range to calculate hourly fuel consumption from individual pieces of equipment.

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
2-Wheel Tractors	0	5	0.21
2-Wheel Tractors	6	15	0.48
2-Wheel Tractors	16	25	0.99
A/C Tug Narrow Body	0	175	9.51
A/C Tug Wide Body	0	500	35.35
Aerial Lifts	0	15	0.58
Aerial Lifts	16	25	0.87
Aerial Lifts	26	50	1.61
Aerial Lifts	51	120	2.92
Agricultural Mowers	0	15	0.39
Agricultural Mowers	16	25	0.89
Agricultural Tractors	0	120	5.03
Agricultural Tractors	121	175	7.09
Air Compressors	0	5	0.22
Air Compressors	6	5	0.22
Air Compressors	6	15	0.38
Air Compressors	16	15	0.38
Air Compressors	16	25	0.95
Air Compressors	26	25	0.96
Air Compressors	26	50	2.19
Air Compressors	51	120	3.87
Air Compressors	121	175	6.85
Air Conditioner	0	175	8.82
Air Start Unit	0	175	10.59
All Terrain Vehicles (ATVs) Active	0	15	0.02
All Terrain Vehicles (ATVs) Active	16	25	0.02
All Terrain Vehicles (ATVs) Active	26	50	0.02
All Terrain Vehicles (ATVs) Inactive	0	15	0.00
All Terrain Vehicles (ATVs) Inactive	16	25	0.00
All Terrain Vehicles (ATVs) Inactive	26	50	0.00
Asphalt Pavers	0	15	0.58
Asphalt Pavers	16	25	1.45
Asphalt Pavers	26	50	2.33
Asphalt Pavers	51	120	3.95
Baggage Tug	0	120	5.22
Balers	0	50	2.03
Balers	51	120	3.37
Belt Loader	0	120	2.87
Bobtail	0	120	5.22
Bore/Drill Rigs	0	15	0.79
Bore/Drill Rigs	16	25	1.45
Bore/Drill Rigs	26	50	2.68
Bore/Drill Rigs	51	120	6.67
Bore/Drill Rigs	121	175	9.03

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Cargo Loader	0	120	3.36
Cargo Tractor	0	120	5.21
Cart	0	15	0.58
Catering Truck	0	250	9.49
Cement and Mortar Mixers	0	5	0.25
Cement and Mortar Mixers	6	15	0.52
Cement and Mortar Mixers	16	25	1.61
Chippers/Stump Grinders	0	15	0.84
Chippers/Stump Grinders	16	15	0.91
Chippers/Stump Grinders	16	25	1.42
Chippers/Stump Grinders	26	25	1.50
Combines	0	120	7.16
Combines	121	175	11.00
Combines	176	250	12.65
Commercial Turf Equipment	0	15	0.53
Commercial Turf Equipment	16	25	0.95
Commercial Turf Equipment	26	50	1.62
Commercial Turf Equipment	51	120	2.44
Concrete/Industrial Saws	0	5	0.26
Concrete/Industrial Saws	6	15	0.68
Concrete/Industrial Saws	16	25	1.32
Concrete/Industrial Saws	26	50	2.77
Concrete/Industrial Saws	51	120	4.71
Cranes	0	50	1.92
Cranes	51	120	3.41
Cranes	121	175	5.36
Crushing/Proc. Equipment	0	15	0.74
Crushing/Proc. Equipment	16	25	1.36
Crushing/Proc. Equipment	26	120	7.90
Deicer	0	120	8.34
Dumpers/Tenders	0	5	0.13
Dumpers/Tenders	6	15	0.40
Dumpers/Tenders	16	25	0.85
Dumpers/Tenders	26	120	2.60
Forklift	0	50	1.64
Forklifts	0	25	0.69
Forklifts	26	50	1.60
Forklifts	51	120	2.12
Forklifts	121	175	4.04
Front Mowers	0	15	0.52
Front Mowers	16	15	0.54
Front Mowers	16	25	0.70
Front Mowers	26	25	0.72
Fuel Truck	0	175	2.94

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Generator	0	120	8.38
Generator Sets	0	5	0.28
Generator Sets	6	5	0.30
Generator Sets	6	15	0.63
Generator Sets	16	15	0.66
Generator Sets	16	25	1.34
Generator Sets	26	25	1.39
Generator Sets	26	50	2.31
Generator Sets	51	120	5.42
Generator Sets	121	175	8.99
Golf Carts	0	15	0.50
Ground Power Unit	0	175	10.22
Hydrant truck	0	175	7.89
Hydro Power Units	0	5	0.23
Hydro Power Units	6	15	0.43
Hydro Power Units	16	25	0.95
Hydro Power Units	26	50	2.20
Hydro Power Units	51	120	3.38
Lav Cart	0	15	0.58
Lav Truck	0	175	2.98
Lawn & Garden Tractors	0	15	0.63
Lawn & Garden Tractors	16	15	0.65
Lawn & Garden Tractors	16	25	1.00
Lawn & Garden Tractors	26	25	1.03
Lawn & Garden Tractors	26	50	1.57
Lawn Mowers	0	5	0.12
Lawn Mowers	6	5	0.15
Leaf Blowers/Vacuums	0	5	0.07
Leaf Blowers/Vacuums	6	5	0.08
Lift	0	120	4.84
Maint. Truck	0	175	5.92
Minibikes	0	5	0.22
Off-Road Motorcycles Active	0	15	0.02
Off-Road Motorcycles Active	16	25	0.02
Off-Road Motorcycles Active	26	50	0.02
Off-Road Motorcycles Inactive	0	15	0.00
Off-Road Motorcycles Inactive	16	25	0.00
Off-Road Motorcycles Inactive	26	50	0.00
Other Agricultural Equipment	0	5	0.18
Other Agricultural Equipment	6	15	0.57
Other Agricultural Equipment	16	25	1.43
Other Agricultural Equipment	26	50	1.70
Other Agricultural Equipment	51	120	3.55
Other Agricultural Equipment	121	175	6.79

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Other Agricultural Equipment	176	250	11.95
Other Construction Equipment	0	175	5.48
Other General Industrial Equipmen	0	15	0.42
Other General Industrial Equipmen	16	25	0.96
Other General Industrial Equipmen	26	50	1.80
Other General Industrial Equipmen	51	120	4.07
Other General Industrial Equipmen	121	175	8.55
Other GSE	0	50	2.65
Other Lawn & Garden Equipment	0	5	0.20
Other Lawn & Garden Equipment	6	5	0.26
Other Lawn & Garden Equipment	6	15	0.44
Other Lawn & Garden Equipment	16	15	0.47
Other Lawn & Garden Equipment	16	25	0.97
Other Lawn & Garden Equipment	26	25	1.02
Other Lawn & Garden Equipment	26	50	2.17
Other Lawn & Garden Equipment	51	120	5.62
Other Material Handling Equipment	0	50	2.41
Other Material Handling Equipment	51	120	2.80
Passenger Stand	0	175	6.69
Paving Equipment	0	5	0.19
Paving Equipment	6	15	0.58
Paving Equipment	16	25	1.31
Paving Equipment	26	50	2.31
Paving Equipment	51	120	3.72
Plate Compactors	0	5	0.18
Plate Compactors	6	15	0.43
Pressure Washers	0	5	0.39
Pressure Washers	6	5	0.45
Pressure Washers	6	15	0.61
Pressure Washers	16	15	0.65
Pressure Washers	16	25	1.57
Pressure Washers	26	25	1.64
Pressure Washers	26	50	2.60
Pumps	0	5	0.18
Pumps	6	5	0.22
Pumps	6	15	0.55
Pumps	16	15	0.58
Pumps	16	25	1.18
Pumps	26	25	1.21
Pumps	26	50	2.29
Pumps	51	120	6.18
Pumps	121	175	9.03
Rear Engine Riding Mowers	0	15	0.33
Rear Engine Riding Mowers	16	15	0.34

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Rear Engine Riding Mowers	16	25	0.64
Rear Engine Riding Mowers	26	25	0.65
Rollers	0	5	0.27
Rollers	6	15	0.54
Rollers	16	25	1.18
Rollers	26	50	2.61
Rollers	51	120	4.63
Rough Terrain Forklifts	0	50	3.27
Rough Terrain Forklifts	51	120	5.25
Rough Terrain Forklifts	121	175	8.16
Rubber Tired Loaders	0	50	2.42
Rubber Tired Loaders	51	120	3.84
Sailboat Auxiliary Inboard Engine	0	15	0.41
Service Truck	0	250	3.21
Shredders	0	5	0.27
Shredders	6	5	0.36
Signal Boards	0	5	0.32
Signal Boards	6	15	0.59
Skid Steer Loaders	0	15	0.79
Skid Steer Loaders	16	25	1.10
Skid Steer Loaders	26	50	1.93
Skid Steer Loaders	51	120	4.34
Snowblowers	0	5	0.13
Snowblowers	6	5	0.15
Snowblowers	6	15	0.30
Snowblowers	16	15	0.32
Snowblowers	16	25	0.55
Snowblowers	26	25	0.58
Specialty Vehicles Carts	0	5	0.26
Specialty Vehicles Carts	6	15	0.39
Specialty Vehicles Carts	16	25	1.08
Sprayers	0	5	0.17
Sprayers	6	15	0.38
Sprayers	16	25	0.92
Sprayers	26	50	1.74
Sprayers	51	120	3.25
Sprayers	121	175	6.35
Surfacing Equipment	0	5	0.20
Surfacing Equipment	6	15	0.38
Surfacing Equipment	16	25	0.93
Swathers	0	120	4.38
Swathers	121	175	6.09
Sweeper	0	120	2.63
Sweepers/Scrubbers	0	15	0.55

Table 2

Four-Stroke Gasoline Off-road Equipment Fuel Consumption for 2009 in Kern County APCD Jurisdiction by Equipment Catgeory and Horsepower Range[a]

Equipment Type	HP Range		Fuel Consumption (gal/hr)
	From	To	
Sweepers/Scrubbers	16	25	1.27
Sweepers/Scrubbers	26	50	2.64
Sweepers/Scrubbers	51	120	4.52
Sweepers/Scrubbers	121	175	9.02
Tampers/Rammers	0	15	0.49
Tillers	0	5	0.14
Tillers	6	5	0.17
Tillers	6	15	0.53
Tractors/Loaders/Backhoes	0	120	2.98
Transport Refrigeration Units	0	15	0.58
Trenchers	0	15	0.64
Trenchers	16	25	1.38
Trenchers	26	50	2.18
Trenchers	51	120	4.27
Trimmers/Edgers/Brush Cutters	0	5	0.03
Trimmers/Edgers/Brush Cutters	6	5	0.04
Vessels w/Inboard Engines	0	250	5.60
Vessels w/Inboard Jet Engines	0	500	6.68
Vessels w/Outboard Engines	0	50	1.32
Vessels w/Sterndrive Engines	0	250	4.15
Water Truck	0	175	2.73
Welders	0	15	0.60
Welders	16	25	0.91
Welders	26	50	2.47
Welders	51	120	3.46
Welders	121	175	6.02
Wood Splitters	0	5	0.29
Wood Splitters	6	5	0.38

[a] These are composite horsepower-based fuel consumption rates for 2009 developed by running CARB's OFFROAD2007 Model (December 15, 2006 version). Total daily fuel consumption from the model for each type of equipment within each horsepower range was divided by the total daily operating hours for the equipment within each horsepower range to calculate hourly fuel consumption from individual pieces of equipment.

Table 3
Construction Equipment Fuel Consumption

Equipment Type	Model	Horsepower	Fuel	ARB Off-Road Model Category	Fuel Use (gal/hr)[a]
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	Air Compressors	0.663
Asphalt Paver, Cat	AP1055B	174	Diesel	Pavers	5.868
Scraper, Cat	651	500	Diesel	Scrapers	14.648
Scraper, Cat	623	330	Diesel	Scrapers	14.648
Dozer, Cat	824	354	Diesel	Rubber Tired Dozers	12.118
Dozer, Cat	834	498	Diesel	Rubber Tired Dozers	12.118
Dozer, Cat	D-6	150	Diesel	Crawler Tractors	5.544
Dozer, Cat	D-9	410	Diesel	Crawler Tractors	11.810
Dozer, Cat	D-10	580	Diesel	Crawler Tractors	21.171
Blade, Cat	140H	165	Diesel	Graders	5.662
Blade, Cat	14H	210	Diesel	Graders	7.814
Blade, Cat	16H	265	Diesel	Graders	10.423
Backhoe, Cat,	430E	97	Diesel	Tractors/Loaders/Backhoes	2.371
Backhoe, CAT	416E	74	Diesel	Tractors/Loaders/Backhoes	2.371
Cable Puller	N/A	385	Diesel	Other Construction Equipment	11.517
Compactor, Cat	826H	410	Diesel	Rollers	9.955
Crane, 150-Ton, Manitowoc	555	347	Diesel	Cranes	8.188
Crane, 20-Ton, Grove	YB777	130	Diesel	Cranes	3.673
Crane 90 Ton	N/A	275	Diesel	Cranes	8.188
Crane, 225-Ton, Manitowoc,	14000	340	Diesel	Cranes	8.188
Crane, 40-Ton, Grove	RT600	173	Diesel	Cranes	3.673
Crane 50 Ton, Grove	TR600E	173	Diesel	Cranes	3.673
Dozer, CAT	D8	305	Diesel	Crawler Tractors	11.810
Forklift, Cat	3054E	120	Diesel	Forklifts	1.434
Loader, Cat,	972G	275	Diesel	Rubber Tired Loaders	10.763
Loader, CAT	966R	150	Diesel	Rubber Tired Loaders	4.857
Manlift JLG 1350SJP	1350SJP	87	Diesel	Aerial Lifts	1.745
Motor Grader, Cat	140H	150	Diesel	Graders	5.662
Pole Digger, International	4700	210	Diesel	Bore/Drill Rigs	8.505
Sideboom, CAT	572R Series2	240	Diesel	Cranes	5.096
Truck, Concrete Pump, REED	XT36R-160	350	Diesel	Pumps	15.654
Welder, Multiquip	BLW-300SS	19.5	Diesel	Welders	0.518

Table 3
Construction Equipment Fuel Consumption

Equipment Type	Model	Horsepower	Fuel	ARB Off-Road Model Category	Fuel Use (gal/hr)[a]
Welder, Multiquip	BLW-300SS	19.5	Gasoline	Welders	0.905
Welder, Multiquip	BLW-400SS	31	Diesel	Welders	1.216

[a] From Table 1 for diesel and Table 2 for gasoline.

Table 4

Kern County APCD Jurisdiction 2009 On-Road Motor Vehicle Fuel Consumption

Category	Fuel Consumption (gal/mi)
LDA-NCAT	0.0789
LDA-CAT	0.0418
LDA-DSL	0.0380
LDT1-NCAT	0.0773
LDT1-CAT	0.0523
LDT1-DSL	0.0343
LDT2-NCAT	0.0800
LDT2-CAT	0.0520
LDT2-DSL	0.0350
MDV-NCAT	0.0900
MDV-CAT	0.0707
MDV-DSL	0.0333
LHDT1-NCAT	0.1100
LHDT1-CAT	0.1153
LHDT1-DSL	0.0518
LHDT2-CAT	0.1185
LHDT2-DSL	0.0529
MHDT-NCAT	0.1900
MHDT-CAT	0.0930
MHDT-DSL	0.1507
HHDT-CAT	0.0842
HHDT-DSL	0.1864
OBUS-CAT	0.0800
OBUS-DSL	0.1733
SBUS-CAT	0.0800
SBUS-DSL	0.1240
UB-CAT	0.0950
UB-DSL	0.2000
MH-NCAT	0.0950
MH-CAT	0.0816
MH-DSL	0.1400
MCY-NCAT	0.0279
MCY-CAT	0.0258

[a] Fuel consumption calculated by dividing total fuel use [gal/day] from BURDEN output of EMFAC2007, version 2.3, by total VMT [mi/day] from BURDEN output.

Table 5
2009 Motor Vehicle Fuel Consumption

Vehicle	Category	Fuel Consumption (gal/mi)[a]
Water Trucks, Freightliner 4000 gallon	HHDT-DSL	0.1864
Water Pull (8000 gallon) CAT	HHDT-DSL	0.1864
On-Site Welding Truck	MHDT-CAT	0.0930
On-Site Fuel/ILube Truck International	HHDT-DSL	0.1864
On-Site Flatbed Truck, Chevrolet	MHDT-CAT	0.0930
On-Site Dump Truck, Volvo	HHDT-DSL	0.1864
On-Site 3/4 Ton Pick-Up, Ford	LDT2-CAT	0.0520
On-Site Water Truck	HHDT-DSL	0.1864
On-Site Bus, MC	HHDT-DSL	0.1864
On-Site Cement Trucks, MACK	HHDT-DSL	0.1864
On-Site Low Boy Trucks	HHDT-DSL	0.1864
Off-Site Flat Bed Trucks	MHDT-CAT	0.0930
Off-Site Asphalt Trucks	HHDT-DSL	0.1864
Off-Site Cement Trucks, MACK	HHDT-DSL	0.1864
Off-Site Construction Worker Commute	LDT1-CAT	0.0523
Off-Site Dump Truck, Volvo	HHDT-DSL	0.1864
Off-Site Low Boy Trucks	HHDT-DSL	0.1864
Off-Site Pickup Trucks	LDT1-CAT	0.0523
Off-Site Pipe Hauling Trucks	HHDT-DSL	0.1864
Off-Site Water Trucks	HHDT-DSL	0.1864
Off-Site Bus, MC	HHDT-DSL	0.1864
Off-Site Welding Truck	MHDT-CAT	0.0930
Off-Site Fuel/ILube Truck International	HHDT-DSL	0.1864

[a] From Table 5

Table 6-A
Construction Equipment Greenhouse Gas Emission Factors

Fuel	Emission Factors (kg/gallon)		
	CO_2[a]	CH_4[b]	N_2O[b]
Diesel	1.01E+01	4.16E-04	8.32E-05
Gasoline	8.80E+00	3.73E-04	7.45E-05

[a] From Table 4 , Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

[b] See Table 6-B for calculations

Table 6-B
Construction Equipment CH_4 and N_2O Emission Factors

Fuel	Heat Content (MMBtu/ barrel)[a]	CH_4		N_2O	
		Emission Factor (g/MMBtu)[b]	Emission Factor (kg/gallon)[c]	Emission Factor (g/MMBtu)[b]	Emission Factor (kg/gallon)[c]
Diesel	5.825	3	4.16E-04	0.6	8.32E-05
Gasoline	5.218	3	3.73E-04	0.6	7.45E-05

[a] From Table 4, Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

[b] From Table 6, Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

[c] Emission factor [Kg/gal] = Emission factor [g/MMBtu] x Heat content [MMBtu/barrel] / 42 [gal/barrel] x 0.001 [Kg/g]

Table 6-C
Motor Vehicle Greenhouse Gas Emission Factors

Fuel	Emission Factors[a]		
	CO_2 (kg/gal)	CH_4 (g/mi)	N_2O (g/mi)
Diesel	9.96E+00	5.10E-03	4.80E-03
Gasoline	8.55E+00	1.50E-02	1.00E-02

[a] From Table 7 (CO_2) and Table 8 (CH_4 and N_2O), Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

Table 7-A
Solar Facility Construction Construction Equipment Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	CO_2 Emission Factor (kg/gallon)	CO_2 Emissions (MT)[a]	CH_4 Emission Factor (kg/gallon)	CH_4 Emissions (MT)[a]	N_2O Emission Factor (kg/gallon)	N_2O Emissions (MT)[a]
Construction Equipment Diesel	751,455	1.01E+01	7,620	4.16E-04	0.31	8.32E-05	0.06
Construction Equipment Gasoline	21,229	8.80E+00	187	3.73E-04	0.01	7.45E-05	0.00
Total			**7,807**		**0**		**0**

[a] MT = metric tonne = 1,000 kg = 2,205 lb

Table 7-B
Solar Facility Construction Motor Vehicle Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	Total VMT (miles)	CO_2 Emission Factor (kg/gallon)	CO_2 Emissions (MT)	CH_4 Emission Factor (g/mi)	CH_4 Emissions (MT)	N_2O Emission Factor (g/mi)	N_2O Emissions (MT)
Motor Vehicle Diesel	53,692	288,090	9.96E+00	535	5.10E-03	0.00	4.80E-03	0.00
Motor Vehicle Gasoline	775,250	14,750,230	8.55E+00	6,628	1.50E-02	0.22	1.00E-02	0.15
Total				**7,163**		**0.22**		**0.15**

Table 7-C
Solar Facility Construction Greenhouse Gas Emissions Summary

Item	CO_2	CH_4	N_2O
Emissions (MT)	14,970	0.54	0.21
Global Warming Potential[a]	1	21	310
Emissions (MT CO_2e)	14,970	11	66
Total Emissions (MT CO_2e)	**15,047**		

[a] From Table 2, Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

Table 7-D
Solar Facility Construction Equipment and Motor Vehicle Numbers

Equipment/Vehicle Type	Model	Horsepower	Fuel	Hours or Miles/Day	Monthly Number												
					Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13
Construction Equipment																	
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	4.5	0	0	0	0	4	4	4	5	6	8	6	6	6
Asphalt Paver, Cat	AP1055B	174	Diesel	6	0	0	0	0	0	0	0	0	0	0	0	0	0
Scraper, Cat	651	500	Diesel	10	0	12	12	11	11	11	11	8	8	0	0	0	0
Scraper, Cat	623	330	Diesel	10	0	0	3	3	3	3	3	3	3	3	0	0	0
Dozer, Cat	824	354	Diesel	10	0	0	2	1	1	1	1	1	0	0	0	0	0
Dozer, Cat	834	498	Diesel	10	0	0	0	2	2	2	2	2	1	0	0	0	0
Dozer, Cat	D-6	150	Diesel	10	0	0	0		2	3	3	3	3	2	0	0	0
Dozer, Cat	D-9	410	Diesel	10	0	3	3	3	3	3	3	3	0	0	0	0	0
Dozer, Cat	D-10	580	Diesel	10	0	1	2	2	2	2	1	1	0	0	0	0	0
Blade, Cat	140H	165	Diesel	10	0	0	0	0	0	0	1	1	1	1	0	0	0
Blade, Cat	14H	210	Diesel	10	0	0	0	2	3	3	3	3	3	3	0	0	0
Blade, Cat	16H	265	Diesel	10	0	0			1	1	2	2	1	1	0	0	0
Backhoe, Cat,	430E	97	Diesel	5	0	0	2	2	2	4	4	4	4	2	2	2	1
Compactor, Cat	826H	410	Diesel	5	0	0	1	1	1	2	2	2	2	1	1	1	0
Crane, 150-Ton, Manitowoc	555	347	Diesel	4	0	0	0	0	0	1	2	2	2	2	2	1	1
Crane, 20-Ton, Grove	YB777	130	Diesel	5	0	0	0	1	1	1	1	1	2	6	4	4	4
Crane, 225-Ton, Manitowoc,	14000	340	Diesel	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Crane, 40-Ton, Grove	RT600	173	Diesel	5	0	0	0	0	1	1	2	2	2	4	4	4	4
Loader, Cat,	972G	275	Diesel	5	0	0	0	1	1	1	2	3	3	3	3	3	3
Motor Grader, Cat	140H	150	Diesel														
Truck, Concrete Pump, REED	XT36R-160	350	Diesel	4	0	0	2	3	3	2	2	2	2	2	1	1	0
Welder, Multiquip	BLW-300SS	19.5	Diesel	6	1	1	1	2	3	6	7	9	9	13	9	9	8
Welder, Multiquip	BLW-300SS	19.5	Gasoline	6.5	0	5	5	5	5	7	7	7	7	8	8	9	9
Motor Vehicles																	
On-site Vehicles																	
Water Trucks, Freightliner 4000 gallon	FL80	N/A	Diesel	10	0	1	2	2	2	2	0	0	0	0	0	0	0
Water Pull (8000 gallon) CAT	651	N/A	Diesel	10	0	4	8	8	6	4	0	0	0	0	0	0	0
On-Site Welding Truck	N/A	N/A	Gasoline	5	0	0	0	2	2	2	2	2	4	6	6	6	6
On-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	5	1	3	3	3	3	3	3	1	1	2	2	2	2
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Gasoline	5	1	1	1	2	2	2	2	3	3	7	5	5	5
On-Site Dump Truck, Volvo	N/A	N/A	Diesel	5	0	1	1	1	1	2	2	2	2	4	4	4	4
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	4	2	2	2	2	2	2	2	2	2	7	7	7	7
Off-Site Vehicles																	
Off-Site Flat Bed Trucks	T7500	N/A	Gasoline	20	4	4	4	4	4	9	9	15	15	20	20	20	15
Off-Site Asphalt Trucks	N/A	N/A	Diesel	20	0	0	0	0	0	0	0	0	0	0	0	0	0
Off-Site Cement Trucks, MACK	RD690S	N/A	Diesel	20	0	0	5	5	5	5	6	6	6	4	1	1	1
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	60	111	121	156	199	240	213	173	185	461	771	744	782	739
Off-Site Dump Truck, Volvo	N/A	N/A	Diesel	40	0	2	2	2	2	2	2	2	2	2	2	2	2
Off-Site Low Boy Trucks	N/A	N/A	Diesel	15	0	5	0	0	5	5	5	5	5	3	3	3	3
Off-Site Pickup Trucks	F-250	N/A	Gasoline	20	5	5	5	5	5	5	5	5	7	12	14	14	14
Off-Site Pipe Hauling Trucks	T7500	N/A	Diesel	120	0	0	0	4	4	4	4	4	4	8	8	8	8
Off-Site Water Trucks	FL80	N/A	Diesel	5	1	1	1	2	2	2	2	2	2	2	1	1	1
Off-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	20	1	1	1	2	2	2	2	2	2	3	3	3	3

Table 7-D (continued)
Solar Facility Construction Equipment and Motor Vehicle Numbers

Equipment/Vehicle Type	Model	Horsepower	Fuel	Hours or Miles/Day	Monthly Number											
					Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25
Construction Equipment																
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	4.5	6	6	6	5	5	4	4	6	4	4	4	2
Asphalt Paver, Cat	AP1055B	174	Diesel	6	0	0	0	0	0	0	0	0	0	0	1	1
Scraper, Cat	651	500	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Scraper, Cat	623	330	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	824	354	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	834	498	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-6	150	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-9	410	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-10	580	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	140H	165	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	14H	210	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	16H	265	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Backhoe, Cat,	430E	97	Diesel	5	1	1	1	1	1	1	1	1	1	0	0	0
Compactor, Cat	826H	410	Diesel	5	0	0	0	0	0	0	0	1	1	1	1	1
Crane, 150-Ton, Manitowoc	555	347	Diesel	4	1	1	0	0	0	0	0	0	0	0	0	0
Crane, 20-Ton, Grove	YB777	130	Diesel	5	4	4	4	4	4	3	3	3	2	2	2	1
Crane, 225-Ton, Manitowoc,	14000	340	Diesel	4	1	1	1	1	1	0	0	0	0	0	0	0
Crane, 40-Ton, Grove	RT600	173	Diesel	5	4	4	4	4	4	3	3	3	2	2	2	2
Loader, Cat,	972G	275	Diesel	5	2	1	1	0	0	0	0	0	0	0	0	0
Motor Grader, Cat	140H	150	Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck, Concrete Pump, REED	XT36R-160	350	Diesel	4	0	0	0	0	0	0	0	0	0	0	0	0
Welder, Multiquip	BLW-300SS	19.5	Diesel	6	8	7	7	6	6	5	5	5	5	5	5	5
Welder, Multiquip	BLW-300SS	19.5	Gasoline	6.5	9	9	9	9	7	7	7	6	6	6	4	3
Motor Vehicles																
On-site Vehicles																
Water Trucks, Freightliner 4000 gallon	FL80	N/A	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
Water Pull (8000 gallon) CAT	651	N/A	Diesel	10	0	0	0	0	0	0	0	0	0	0	0	0
On-Site Welding Truck	N/A	N/A	Gasoline	5	6	6	6	6	3	6	6	4	2	2	2	1
On-Site Fuel/ILube Truck International	4400 SA	N/A	Diesel	5	2	2	2	2	2	2	2	1	1	1	1	1
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Gasoline	5	5	5	5	3	3	3	3	3	3	3	3	3
On-Site Dump Truck, Volvo	N/A	N/A	Diesel	5	4	4	4	4	3	2	2	1	1	1	1	1
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	4	7	7	7	7	7	7	7	7	2	2	2	2
Off-Site Vehicles																
Off-Site Flat Bed Trucks	T7500	N/A	Gasoline	20	15	10	10	10	5	5	1	1	1	1	1	1
Off-Site Asphalt Trucks	N/A	N/A	Diesel	20	0	0	0	0	0	0	0	0	0	0	2	2
Off-Site Cement Trucks, MACK	RD690S	N/A	Diesel	20	1	1	0	0	0	0	0	0	0	0	0	0
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	60	730	836	731	713	667	532	559	503	338	235	226	68
Off-Site Dump Truck, Volvo	N/A	N/A	Diesel	40	2	2	2	2	2	2	2	0	0	0	0	0
Off-Site Low Boy Trucks	N/A	N/A	Diesel	15	3	1	1	0	0	0	0	0	0	0	0	0
Off-Site Pickup Trucks	F-250	N/A	Gasoline	20	14	14	10	7	5	3	2	0	0	0	0	0
Off-Site Pipe Hauling Trucks	T7500	N/A	Diesel	120	4	4	2	2	0	0	0	0	0	0	0	0
Off-Site Water Trucks	FL80	N/A	Diesel	5	1	1	1	1	0	0	0	0	0	0	0	0
Off-Site Fuel/ILube Truck International	4400 SA	N/A	Diesel	20	2	2	1	1	0	0	0	0	0	0	0	0

Table 7-E
Solar Facility Construction Monthly Construction Equipment and Motor Vehicle Use

Equipment/Vehicle Type	Model	Horsepower	Fuel	Monthly Operating Hours or Miles[a]												
				Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13
Construction Equipment																
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	0	0	0	0	396	396	396	495	594	792	594	594	594
Asphalt Paver, Cat	AP1055B	174	Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0
Scraper, Cat	651	500	Diesel	0	2,640	2,640	2,420	2,420	2,420	2,420	1,760	1,760	0	0	0	0
Scraper, Cat	623	330	Diesel	0	0	660	660	660	660	660	660	660	660	0	0	0
Dozer, Cat	824	354	Diesel	0	0	440	220	220	220	220	220	0	0	0	0	0
Dozer, Cat	834	498	Diesel	0	0	0	440	440	440	440	440	220	0	0	0	0
Dozer, Cat	D-6	150	Diesel	0	0	0	0	440	660	660	660	660	440	0	0	0
Dozer, Cat	D-9	410	Diesel	0	660	660	660	660	660	660	660	0	0	0	0	0
Dozer, Cat	D-10	580	Diesel	0	220	440	440	440	440	220	220	0	0	0	0	0
Blade, Cat	140H	165	Diesel	0	0	0	0	0	0	220	220	220	220	0	0	0
Blade, Cat	14H	210	Diesel	0	0	0	440	660	660	660	660	660	660	0	0	0
Blade, Cat	16H	265	Diesel	0	0	0	0	220	220	440	440	220	220	0	0	0
Backhoe, Cat,	430E	97	Diesel	0	0	220	220	220	440	440	440	440	220	220	220	110
Compactor, Cat	826H	410	Diesel	0	0	110	110	110	220	220	220	220	110	110	110	0
Crane, 150-Ton, Manitowoc	555	347	Diesel	0	0	0	0	0	88	176	176	176	176	176	88	88
Crane, 20-Ton, Grove	YB777	130	Diesel	0	0	0	110	110	110	110	110	220	660	440	440	440
Crane, 225-Ton, Manitowoc,	14000	340	Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0
Crane, 40-Ton, Grove	RT600	173	Diesel	0	0	0	0	110	110	220	220	220	440	440	440	440
Loader, Cat,	972G	275	Diesel	0	0	0	110	110	110	220	330	330	330	330	330	330
Motor Grader, Cat	140H	150	Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck, Concrete Pump, REED	XT36R-160	350	Diesel	0	0	176	264	264	176	176	176	176	176	88	88	0
Welder, Multiquip	BLW-300SS	19.5	Diesel	132	132	132	264	396	792	924	1,188	1,188	1,716	1,188	1,188	1,056
Welder, Multiquip	BLW-300SS	19.5	Gasoline	0	715	715	715	715	1,001	1,001	1,001	1,001	1,144	1,144	1,287	1,287
Motor Vehicles																
On-site Vehicles																
Water Trucks, Freightliner 4000 gallon	FL80	N/A	Diesel	0	220	440	440	440	440	0	0	0	0	0	0	0
Water Pull (8000 gallon) CAT	651	N/A	Diesel	0	880	1,760	1,760	1,320	880	0	0	0	0	0	0	0
On-Site Welding Truck	N/A	N/A	Gasoline	0	0	0	220	220	220	220	220	440	660	660	660	660
On-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	110	330	330	330	330	330	330	110	110	220	220	220	220
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Gasoline	110	110	110	220	220	220	220	330	330	770	550	550	550
On-Site Dump Truck, Volvo	N/A	N/A	Diesel	0	110	110	110	110	220	220	220	220	440	440	440	440
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	176	176	176	176	176	176	176	176	176	616	616	616	616
Off-Site Vehicles																
Off-Site Flat Bed Trucks	T7500	N/A	Gasoline	1,760	1,760	1,760	1,760	1,760	3,960	3,960	6,600	6,600	8,800	8,800	8,800	6,600
Off-Site Asphalt Trucks	N/A	N/A	Diesel	0	0	0	0	0	0	0	0	0	0	0	0	0
Off-Site Cement Trucks, MACK	RD690S	N/A	Diesel	0	0	2,200	2,200	2,200	2,200	2,640	2,640	2,640	1,760	440	440	440
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	146,520	159,720	205,920	262,680	316,800	281,160	228,360	244,200	608,520	1,017,720	982,080	1,032,240	975,480
Off-Site Dump Truck, Volvo	N/A	N/A	Diesel	0	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760
Off-Site Low Boy Trucks	N/A	N/A	Diesel	0	1,650	0	0	1,650	1,650	1,650	1,650	1,650	990	990	990	990
Off-Site Pickup Trucks	F-250	N/A	Gasoline	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	3,080	5,280	6,160	6,160	6,160
Off-Site Pipe Hauling Trucks	T7500	N/A	Diesel	0	0	0	10,560	10,560	10,560	10,560	10,560	10,560	21,120	21,120	21,120	21,120
Off-Site Water Trucks	FL80	N/A	Diesel	110	110	110	220	220	220	220	220	220	220	110	110	110
Off-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	440	440	440	880	880	880	880	880	880	1,320	1,320	1,320	1,320
Motor Vehicle Diesel				**660**	**5,500**	**7,150**	**18,260**	**19,470**	**19,140**	**18,260**	**18,040**	**18,040**	**27,830**	**26,400**	**26,400**	**26,400**
Motor Vehicle Gasoline				**150,766**	**163,966**	**210,166**	**267,256**	**321,376**	**287,936**	**235,136**	**253,726**	**619,146**	**1,033,846**	**998,866**	**1,049,026**	**990,066**

Table 7-E (continued)
Solar Facility Construction Monthly Construction Equipment and Motor Vehicle Use

Equipment/Vehicle Type	Model	Horsepower	Fuel	Monthly Operating Hours or Miles[a]											
				Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25
Construction Equipment															
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	594	594	594	495	495	396	396	594	396	396	396	198
Asphalt Paver, Cat	AP1055B	174	Diesel	0	0	0	0	0	0	0	0	0	0	132	132
Scraper, Cat	651	500	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Scraper, Cat	623	330	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	824	354	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	834	498	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-6	150	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-9	410	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Dozer, Cat	D-10	580	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	140H	165	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	14H	210	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Blade, Cat	16H	265	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Backhoe, Cat,	430E	97	Diesel	110	110	110	110	110	110	110	110	110	0	0	0
Compactor, Cat	826H	410	Diesel	0	0	0	0	0	0	0	110	110	110	110	110
Crane, 150-Ton, Manitowoc	555	347	Diesel	88	88	0	0	0	0	0	0	0	0	0	0
Crane, 20-Ton, Grove	YB777	130	Diesel	440	440	440	440	440	330	330	330	220	220	220	110
Crane, 225-Ton, Manitowoc,	14000	340	Diesel	88	88	88	88	88	0	0	0	0	0	0	0
Crane, 40-Ton, Grove	RT600	173	Diesel	440	440	440	440	440	330	330	330	220	220	220	220
Loader, Cat,	972G	275	Diesel	220	110	110	0	0	0	0	0	0	0	0	0
Motor Grader, Cat	140H	150	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Truck, Concrete Pump, REED	XT36R-160	350	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Welder, Multiquip	BLW-300SS	19.5	Diesel	1,056	924	924	792	792	660	660	660	660	660	660	660
Welder, Multiquip	BLW-300SS	19.5	Gasoline	1,287	1,287	1,287	1,287	1,001	1,001	1,001	858	858	858	572	429
Motor Vehicles															
On-site Vehicles															
Water Trucks, Freightliner 4000 gallon	FL80	N/A	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Water Pull (8000 gallon) CAT	651	N/A	Diesel	0	0	0	0	0	0	0	0	0	0	0	0
On-Site Welding Truck	N/A	N/A	Gasoline	660	660	660	660	330	660	660	440	220	220	220	110
On-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	220	220	220	220	220	220	220	110	110	110	110	110
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Gasoline	550	550	550	330	330	330	330	330	330	330	330	330
On-Site Dump Truck, Volvo	N/A	N/A	Diesel	440	440	440	440	330	220	220	110	110	110	110	110
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	616	616	616	616	616	616	616	616	176	176	176	176
Off-Site Vehicles															
Off-Site Flat Bed Trucks	T7500	N/A	Gasoline	6,600	4,400	4,400	4,400	2,200	2,200	440	440	440	440	440	440
Off-Site Asphalt Trucks	N/A	N/A	Diesel	0	0	0	0	0	0	0	0	0	0	880	880
Off-Site Cement Trucks, MACK	RD690S	N/A	Diesel	440	440	0	0	0	0	0	0	0	0	0	0
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	963,600	1,103,520	964,920	941,160	880,440	702,240	737,880	663,960	446,160	310,200	298,320	89,760
Off-Site Dump Truck, Volvo	N/A	N/A	Diesel	1,760	1,760	1,760	1,760	1,760	1,760	1,760	0	0	0	0	0
Off-Site Low Boy Trucks	N/A	N/A	Diesel	990	330	330	0	0	0	0	0	0	0	0	0
Off-Site Pickup Trucks	F-250	N/A	Gasoline	6,160	6,160	4,400	3,080	2,200	1,320	880	0	0	0	0	0
Off-Site Pipe Hauling Trucks	T7500	N/A	Diesel	10,560	10,560	5,280	5,280	0	0	0	0	0	0	0	0
Off-Site Water Trucks	FL80	N/A	Diesel	110	110	110	110	0	0	0	0	0	0	0	0
Off-Site Fuel/Lube Truck International	4400 SA	N/A	Diesel	880	880	440	440	0	0	0	0	0	0	0	0
Motor Vehicle Diesel				**15,400**	**14,740**	**8,580**	**8,250**	**2,310**	**2,200**	**2,200**	**220**	**220**	**220**	**1,100**	**1,100**
Motor Vehicle Gasoline				**978,186**	**1,115,906**	**975,546**	**950,246**	**886,116**	**707,366**	**740,806**	**665,786**	**447,326**	**311,366**	**299,486**	**90,816**

a Based on 22 working days per month

Table 7-F
Solar Facility Construction Monthly Construction Equipment and Motor Vehicle Fuel Use

Equipment/Vehicle Type	Fuel	Fuel Consumption (gal/hr or gal/mile)	Monthly Fuel Use (gal/month)												
			Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13
Construction Equipment															
Air Compressor, Ingersoll-Rand	Diesel	0.663	0.0	0.0	0.0	0.0	262.5	262.5	262.5	328.1	393.7	524.9	393.7	393.7	393.7
Asphalt Paver, Cat	Diesel	5.868	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scraper, Cat	Diesel	14.648	0.0	38,669.6	38,669.6	35,447.2	35,447.2	35,447.2	35,447.2	25,779.8	25,779.8	0.0	0.0	0.0	0.0
Scraper, Cat	Diesel	14.648	0.0	0.0	9,667.4	9,667.4	9,667.4	9,667.4	9,667.4	9,667.4	9,667.4	9,667.4	0.0	0.0	0.0
Dozer, Cat	Diesel	12.118	0.0	0.0	5,331.8	2,665.9	2,665.9	2,665.9	2,665.9	2,665.9	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	12.118	0.0	0.0	0.0	5,331.8	5,331.8	5,331.8	5,331.8	5,331.8	2,665.9	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	5.544	0.0	0.0	0.0	0.0	2,439.4	3,659.0	3,659.0	3,659.0	3,659.0	2,439.4	0.0	0.0	0.0
Dozer, Cat	Diesel	11.810	0.0	7,794.6	7,794.6	7,794.6	7,794.6	7,794.6	7,794.6	7,794.6	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	21.171	0.0	4,657.6	9,315.2	9,315.2	9,315.2	9,315.2	4,657.6	4,657.6	0.0	0.0	0.0	0.0	0.0
Blade, Cat	Diesel	5.662	0.0	0.0	0.0	0.0	0.0	0.0	1,245.6	1,245.6	1,245.6	1,245.6	0.0	0.0	0.0
Blade, Cat	Diesel	7.814	0.0	0.0	0.0	3,438.2	5,157.2	5,157.2	5,157.2	5,157.2	5,157.2	5,157.2	0.0	0.0	0.0
Blade, Cat	Diesel	10.423	0.0	0.0	0.0	0.0	2,293.0	2,293.0	4,586.1	4,586.1	2,293.0	2,293.0	0.0	0.0	0.0
Backhoe, Cat,	Diesel	2.371	0.0	0.0	521.7	521.7	521.7	1,043.4	1,043.4	1,043.4	1,043.4	521.7	521.7	521.7	260.9
Compactor, Cat	Diesel	9.955	0.0	0.0	1,095.1	1,095.1	1,095.1	2,190.1	2,190.1	2,190.1	2,190.1	1,095.1	1,095.1	1,095.1	0.0
Crane, 150-Ton, Manitowoc	Diesel	8.188	0.0	0.0	0.0	0.0	0.0	720.6	1,441.1	1,441.1	1,441.1	1,441.1	1,441.1	720.6	720.6
Crane, 20-Ton, Grove	Diesel	3.673	0.0	0.0	0.0	404.0	404.0	404.0	404.0	404.0	808.0	2,424.1	1,616.1	1,616.1	1,616.1
Crane, 225-Ton, Manitowoc,	Diesel	8.188	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane, 40-Ton, Grove	Diesel	3.673	0.0	0.0	0.0	0.0	404.0	404.0	808.0	808.0	808.0	1,616.1	1,616.1	1,616.1	1,616.1
Loader, Cat,	Diesel	10.763	0.0	0.0	0.0	1,183.9	1,183.9	1,183.9	2,367.8	3,551.7	3,551.7	3,551.7	3,551.7	3,551.7	3,551.7
Motor Grader, Cat	Diesel	5.662	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Concrete Pump, REED	Diesel	15.654	0.0	0.0	2,755.1	4,132.7	4,132.7	2,755.1	2,755.1	2,755.1	2,755.1	2,755.1	1,377.6	1,377.6	0.0
Welder, Multiquip	Diesel	0.518	68.4	68.4	68.4	136.7	205.1	410.1	478.5	615.2	615.2	888.6	615.2	615.2	546.8
Welder, Multiquip	Gasoline	0.905	0.0	647.2	647.2	647.2	647.2	906.1	906.1	906.1	906.1	1,035.5	1,035.5	1,165.0	1,165.0
Motor Vehicles															
On-site Vehicles															
Water Trucks, Freightliner 4000 gallon	Diesel	0.1864	0.0	41.0	82.0	82.0	82.0	82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Pull (8000 gallon) CAT	Diesel	0.1864	0.0	164.0	328.0	328.0	246.0	164.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-Site Welding Truck	Gasoline	0.0930	0.0	0.0	0.0	20.5	20.5	20.5	20.5	20.5	40.9	61.4	61.4	61.4	61.4
On-Site Fuel/Lube Truck International	Diesel	0.1864	20.5	61.5	61.5	61.5	61.5	61.5	61.5	20.5	20.5	41.0	41.0	41.0	41.0
On-Site Flatbed Truck, Chevrolet	Gasoline	0.0930	10.2	10.2	10.2	20.5	20.5	20.5	20.5	30.7	30.7	71.6	51.2	51.2	51.2
On-Site Dump Truck, Volvo	Diesel	0.1864	0.0	20.5	20.5	20.5	20.5	41.0	41.0	41.0	41.0	82.0	82.0	82.0	82.0
On-Site 3/4 Ton Pick-Up, Ford	Gasoline	0.0520	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	32.0	32.0	32.0	32.0
Off-Site Vehicles															
Off-Site Flat Bed Trucks	Gasoline	0.0930	163.7	163.7	163.7	163.7	163.7	368.3	368.3	613.8	613.8	818.4	818.4	818.4	613.8
Off-Site Asphalt Trucks	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Cement Trucks, MACK	Diesel	0.1864	0.0	0.0	410.0	410.0	410.0	410.0	492.0	492.0	492.0	328.0	82.0	82.0	82.0
Off-Site Construction Worker Commute	Gasoline	0.0523	7,657.0	8,346.9	10,761.3	13,727.5	16,555.8	14,693.3	11,934.0	12,761.7	31,800.9	53,185.5	51,322.9	53,944.3	50,978.0
Off-Site Dump Truck, Volvo	Diesel	0.1864	0.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0
Off-Site Low Boy Trucks	Diesel	0.1864	0.0	307.5	0.0	0.0	307.5	307.5	307.5	307.5	307.5	184.5	184.5	184.5	184.5
Off-Site Pickup Trucks	Gasoline	0.0523	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	161.0	275.9	321.9	321.9	321.9
Off-Site Pipe Hauling Trucks	Diesel	0.1864	0.0	0.0	0.0	1,968.1	1,968.1	1,968.1	1,968.1	1,968.1	1,968.1	3,936.2	3,936.2	3,936.2	3,936.2
Off-Site Water Trucks	Diesel	0.1864	20.5	20.5	20.5	41.0	41.0	41.0	41.0	41.0	41.0	41.0	20.5	20.5	20.5
Off-Site Fuel/Lube Truck International	Diesel	0.1864	82.0	82.0	82.0	164.0	164.0	164.0	164.0	164.0	164.0	246.0	246.0	246.0	246.0
Construction Equipment Diesel			**68.4**	**51,190.2**	**75,219.0**	**81,134.3**	**88,320.6**	**90,705.2**	**91,963.0**	**83,681.8**	**64,074.4**	**35,621.0**	**12,228.1**	**11,507.6**	**8,705.7**
Construction Equipment Gasoline			**0.0**	**647.2**	**647.2**	**647.2**	**647.2**	**906.1**	**906.1**	**906.1**	**906.1**	**1,035.5**	**1,035.5**	**1,165.0**	**1,165.0**
Motor Vehicle Diesel			**123.0**	**1,025.0**	**1,332.6**	**3,403.2**	**3,628.7**	**3,567.2**	**3,403.2**	**3,362.2**	**3,362.2**	**5,186.7**	**4,920.2**	**4,920.2**	**4,920.2**
Motor Vehicle Gasoline			**7,955.1**	**8,644.9**	**11,059.3**	**14,056.2**	**16,884.5**	**15,226.6**	**12,467.3**	**13,550.8**	**32,656.4**	**54,444.8**	**52,607.8**	**55,229.1**	**52,058.3**

Table 7-F (continued)
Solar Facility Construction Monthly Construction Equipment and Motor Vehicle Fuel Use

Equipment/Vehicle Type	Fuel	Fuel Consumption (gal/hr or gal/mile)	Monthly Emissions (lb/month)											
			Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25
Construction Equipment														
Air Compressor, Ingersoll-Rand	Diesel	0.6628	393.7	393.7	393.7	328.1	328.1	262.5	262.5	393.7	262.5	262.5	262.5	131.2
Asphalt Paver, Cat	Diesel	5.8680	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	774.6	774.6
Scraper, Cat	Diesel	14.6476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scraper, Cat	Diesel	14.6476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	12.1177	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	12.1177	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	5.5440	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	11.8101	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dozer, Cat	Diesel	21.1709	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blade, Cat	Diesel	5.6617	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blade, Cat	Diesel	7.8140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blade, Cat	Diesel	10.4229	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe, Cat,	Diesel	2.3714	260.9	260.9	260.9	260.9	260.9	260.9	260.9	260.9	260.9	0.0	0.0	0.0
Compactor, Cat	Diesel	9.9552	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,095.1	1,095.1	1,095.1	1,095.1	1,095.1
Crane, 150-Ton, Manitowoc	Diesel	8.1883	720.6	720.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane, 20-Ton, Grove	Diesel	3.6729	1,616.1	1,616.1	1,616.1	1,616.1	1,616.1	1,212.0	1,212.0	1,212.0	808.0	808.0	808.0	404.0
Crane, 225-Ton, Manitowoc,	Diesel	8.1883	720.6	720.6	720.6	720.6	720.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane, 40-Ton, Grove	Diesel	3.6729	1,616.1	1,616.1	1,616.1	1,616.1	1,616.1	1,212.0	1,212.0	1,212.0	808.0	808.0	808.0	808.0
Loader, Cat,	Diesel	10.7626	2,367.8	1,183.9	1,183.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motor Grader, Cat	Diesel	5.6617	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Concrete Pump, REED	Diesel	15.6542	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welder, Multiquip	Diesel	0.5178	546.8	478.5	478.5	410.1	410.1	341.8	341.8	341.8	341.8	341.8	341.8	341.8
Welder, Multiquip	Gasoline	0.9052	1,165.0	1,165.0	1,165.0	1,165.0	906.1	906.1	906.1	776.7	776.7	776.7	517.8	388.3
Motor Vehicles														
On-site Vehicles														
Water Trucks, Freightliner 4000 gallon	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Pull (8000 gallon) CAT	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-Site Welding Truck	Gasoline	0.0930	61.4	61.4	61.4	61.4	30.7	61.4	61.4	40.9	20.5	20.5	20.5	10.2
On-Site Fuel/lLube Truck International	Diesel	0.1864	41.0	41.0	41.0	41.0	41.0	41.0	41.0	20.5	20.5	20.5	20.5	20.5
On-Site Flatbed Truck, Chevrolet	Gasoline	0.0930	51.2	51.2	51.2	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7
On-Site Dump Truck, Volvo	Diesel	0.1864	82.0	82.0	82.0	82.0	61.5	41.0	41.0	20.5	20.5	20.5	20.5	20.5
On-Site 3/4 Ton Pick-Up, Ford	Gasoline	0.0520	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	9.1	9.1	9.1	9.1
Off-Site Vehicles														
Off-Site Flat Bed Trucks	Gasoline	0.0930	613.8	409.2	409.2	409.2	204.6	204.6	40.9	40.9	40.9	40.9	40.9	40.9
Off-Site Asphalt Trucks	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	164.0	164.0
Off-Site Cement Trucks, MACK	Diesel	0.1864	82.0	82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Construction Worker Commute	Gasoline	0.0523	50,357.2	57,669.3	50,426.2	49,184.5	46,011.3	36,698.7	38,561.2	34,698.2	23,316.1	16,210.9	15,590.0	4,690.8
Off-Site Dump Truck, Volvo	Diesel	0.1864	328.0	328.0	328.0	328.0	328.0	328.0	328.0	0.0	0.0	0.0	0.0	0.0
Off-Site Low Boy Trucks	Diesel	0.1864	184.5	61.5	61.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Pickup Trucks	Gasoline	0.0523	321.9	321.9	229.9	161.0	115.0	69.0	46.0	0.0	0.0	0.0	0.0	0.0
Off-Site Pipe Hauling Trucks	Diesel	0.1864	1,968.1	1,968.1	984.0	984.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Water Trucks	Diesel	0.1864	20.5	20.5	20.5	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Fuel/lLube Truck International	Diesel	0.1864	164.0	164.0	82.0	82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction Equipment Diesel			**8,242.4**	**6,990.2**	**6,269.6**	**4,951.7**	**4,951.7**	**3,289.2**	**3,289.2**	**4,515.5**	**3,576.2**	**3,315.4**	**4,089.9**	**3,554.7**
Construction Equipment Gasoline			**1,165.0**	**1,165.0**	**1,165.0**	**1,165.0**	**906.1**	**906.1**	**906.1**	**776.7**	**776.7**	**776.7**	**517.8**	**388.3**
Motor Vehicle Diesel			**2,870.1**	**2,747.1**	**1,599.1**	**1,537.6**	**430.5**	**410.0**	**410.0**	**41.0**	**41.0**	**41.0**	**205.0**	**205.0**
Motor Vehicle Gasoline			**51,437.4**	**58,545.0**	**51,209.8**	**49,878.7**	**46,424.2**	**37,096.3**	**38,772.2**	**34,842.7**	**23,417.3**	**16,312.1**	**15,691.2**	**4,781.8**

Note: Totals may not match sum of individual values because of rounding.

Table 8-A
Gas Line Construction Construction Equipment Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	CO_2		CH_4		N_2O	
		Emission Factor (kg/gallon)	Emissions (MT)[a]	Emission Factor (kg/gallon)	Emissions (MT)[a]	Emission Factor (kg/gallon)	Emissions (MT)[a]
Construction Equipment Diesel	134,318	1.01E+01	1,362	4.16E-04	0.06	8.32E-05	0.01
Construction Equipment Gasoline	0	8.80E+00	0	3.73E-04	0.00	7.45E-05	0.00
Total			**1,362**		**0**		**0**

[a] MT = metric tonne = 1,000 kg = 2,205 lb

Table 8-B
Gas Line Construction Motor Vehicle Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	Total VMT (miles)	CO_2		CH_4		N_2O	
			Emission Factor (kg/gallon)	Emissions (MT)	Emission Factor (g/mi)	Emissions (MT)	Emission Factor (g/mi)	Emissions (MT)
Motor Vehicle Diesel	12,318	86,328	9.96E+00	123	5.10E-03	0.00	4.80E-03	0.00
Motor Vehicle Gasoline	64,043	1,225,488	8.55E+00	548	1.50E-02	0.02	1.00E-02	0.01
Total				**670**		**0.02**		**0.01**

Table 8-C
Gas Line Construction Greenhouse Gas Emissions Summary

Item	CO_2	CH_4	N_2O
Emissions (MT)	2,032	0.07	0.02
Global Warming Potential[a]	1	21	310
Emissions (MT CO_2e)	2,032	2	7
Total Emissions (MT CO_2e)	**2,041**		

[a] From Table 2, Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

Table 8-D
Gas Line Construction Equipment and Motor Vehicle Numbers

Equipment/Vehicle Type	Model	Horsepower	Fuel	Hours or Miles/Day	Monthly Number				
					Month 1	Month 2	Month 3	Month 4	Month 5
Construction Equipment									
Backhoe, CAT	416E	74	Diesel	5	10	15	8	12	4
Loader, CAT	966R	150	Diesel	5	0	4	4	7	2
Dozer, CAT	D8	305	Diesel	5	4	15	12	12	3
Crane 50 Ton, Grove	TR600E	173	Diesel	5	2	0	0	0	0
Sideboom, CAT	572R Series2	240	Diesel	5	5	24	24	24	6
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	5	1	1	0	0	0
Welder, Multiquip	BLW-400SS	31	Diesel	5	0	12	12	12	3
Motor Vehicles									
On-Site Vehicles									
On-Site Dump Truck, Volvo	WG64T	N/A	Diesel	0	9	12	0	0	0
On-Site Welding Truck	N/A	N/A	Diesel	0	0	12	12	12	3
On-Site Water Truck	N/A	N/A	Diesel	0	3	4	4	4	3
On-Site Bus, MC	102D3	N/A	Diesel	0	3	7	4	4	1
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Diesel	0	7	5	0	0	0
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	0	18	37	24	39	11
Off-Site Vehicles									
Off-Site Dump Truck, Volvo	WG64T	N/A	Diesel	36	9	12	0	0	0
Off-Site Welding Truck	N/A	N/A	Diesel	36	0	12	12	12	3
Off-Site Water Trucks	N/A	N/A	Diesel	36	3	4	4	4	3
Off-Site Bus, MC	102D3	N/A	Diesel	36	3	7	4	4	1
Off-Site Flat Bed Trucks	T7500	N/A	Diesel	36	7	5	0	0	0
Off-Site Pickup Trucks	F-250	N/A	Gasoline	36	18	37	24	39	11
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	60	147	242	174	225	63

All vehicle travel is considered off-site because it is on paved roads.

Table 8-E
Gas Line Construction Monthly Construction Equipment and Motor Vehicle Use

Equipment/Vehicle Type	Model	Horsepower	Fuel	Monthly Operating Hours or Miles[a]				
				Month 1	Month 2	Month 3	Month 4	Month 5
Construction Equipment								
Backhoe, CAT	416E	74	Diesel	1,100	1,650	880	1,320	440
Loader, CAT	966R	150	Diesel	0	440	440	770	220
Dozer, CAT	D8	305	Diesel	440	1,650	1,320	1,320	330
Crane 50 Ton, Grove	TR600E	173	Diesel	220	0	0	0	0
Sideboom, CAT	572R Series2	240	Diesel	550	2,640	2,640	2,640	660
Air Compressor, Ingersoll-Rand	P65WK	23.5	Diesel	110	110	0	0	0
Welder, Multiquip	BLW-400SS	31	Diesel	0	1,320	1,320	1,320	330
Motor Vehicles								
On-Site Vehicles								
On-Site Dump Truck, Volvo	WG64T	N/A	Diesel	0	0	0	0	0
On-Site Welding Truck	N/A	N/A	Diesel	0	0	0	0	0
On-Site Water Truck	N/A	N/A	Diesel	0	0	0	0	0
On-Site Bus, MC	102D3	N/A	Diesel	0	0	0	0	0
On-Site Flatbed Truck, Chevrolet	T7500	N/A	Diesel	0	0	0	0	0
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	0	0	0	0	0
Off-Site Vehicles								
Off-Site Dump Truck, Volvo	WG64T	N/A	Diesel	7,128	9,504	0	0	0
Off-Site Welding Truck	N/A	N/A	Diesel	0	9,504	9,504	9,504	2,376
Off-Site Water Trucks	N/A	N/A	Diesel	2,376	3,168	3,168	3,168	2,376
Off-Site Bus, MC	102D3	N/A	Diesel	2,376	5,544	3,168	3,168	792
Off-Site Flat Bed Trucks	T7500	N/A	Diesel	5,544	3,960	0	0	0
Off-Site Pickup Trucks	F-250	N/A	Gasoline	14,256	29,304	19,008	30,888	8,712
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	194,040	319,440	229,680	297,000	83,160
Motor Vehicle Diesel				**17,424**	**31,680**	**15,840**	**15,840**	**5,544**
Motor Vehicle Gasoline				**208,296**	**348,744**	**248,688**	**327,888**	**91,872**

a Based on 22 working days per month

Table 8-F
Gas Line Construction Monthly Construction Equipment and Motor Vehicle Fuel Use

Equipment/Vehicle Type	Fuel	Fuel Consumption (gal/hr or gal/mile)	Monthly Fuel Use (gal/month)				
			Month 1	Month 2	Month 3	Month 4	Month 5
Construction Equipment							
Backhoe, CAT	Diesel	2.371	2,608.6	3,912.9	2,086.9	3,130.3	1,043.4
Loader, CAT	Diesel	4.857	0.0	2,137.0	2,137.0	3,739.7	1,068.5
Dozer, CAT	Diesel	11.810	5,196.4	19,486.6	15,589.3	15,589.3	3,897.3
Crane 50 Ton, Grove	Diesel	3.673	808.0	0.0	0.0	0.0	0.0
Sideboom, CAT	Diesel	5.096	2,802.8	13,453.4	13,453.4	13,453.4	3,363.4
Air Compressor, Ingersoll-Rand	Diesel	0.663	72.9	72.9	0.0	0.0	0.0
Welder, Multiquip	Diesel	1.216	0.0	1,604.6	1,604.6	1,604.6	401.1
Motor Vehicles							
On-Site Vehicles							
On-Site Dump Truck, Volvo	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0
On-Site Welding Truck	Diesel	0.0930	0.0	0.0	0.0	0.0	0.0
On-Site Water Truck	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0
On-Site Bus, MC	Diesel	0.1864	0.0	0.0	0.0	0.0	0.0
On-Site Flatbed Truck, Chevrolet	Diesel	0.0930	0.0	0.0	0.0	0.0	0.0
On-Site 3/4 Ton Pick-Up, Ford	Gasoline	0.0520	0.0	0.0	0.0	0.0	0.0
Off-Site Vehicles							
Off-Site Dump Truck, Volvo	Diesel	0.1864	1,328.5	1,771.3	0.0	0.0	0.0
Off-Site Welding Truck	Diesel	0.0930	0.0	883.9	883.9	883.9	221.0
Off-Site Water Trucks	Diesel	0.1864	442.8	590.4	590.4	590.4	442.8
Off-Site Bus, MC	Diesel	0.1864	442.8	1,033.2	590.4	590.4	147.6
Off-Site Flat Bed Trucks	Diesel	0.0930	515.6	368.3	0.0	0.0	0.0
Off-Site Pickup Trucks	Gasoline	0.0523	745.0	1,531.4	993.3	1,614.2	455.3
Off-Site Construction Worker Commute	Gasoline	0.0523	10,140.4	16,693.7	12,002.9	15,521.0	4,345.9
Construction Equipment Diesel			**11,488.7**	**40,667.3**	**34,871.1**	**37,517.3**	**9,773.7**
Construction Equipment Gasoline			**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Motor Vehicle Diesel			**2,729.7**	**4,647.1**	**2,064.7**	**2,064.7**	**811.4**
Motor Vehicle Gasoline			**10,885.4**	**18,225.2**	**12,996.3**	**17,135.2**	**4,801.2**

Note: Totals may not match sum of individual values because of rounding.

Table 9-A
Transmission Line Construction Construction Equipment Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	CO_2		CH_4		N_2O	
		Emission Factor (kg/gallon)	Emissions (MT)[a]	Emission Factor (kg/gallon)	Emissions (MT)[a]	Emission Factor (kg/gallon)	Emissions (MT)[a]
Construction Equipment Diesel	8,017	1.01E+01	81	4.16E-04	0.00	8.32E-05	0.00
Construction Equipment Gasoline	0	8.80E+00	0	3.73E-04	0.00	7.45E-05	0.00
Total			**81**		**0**		**0**

[a] MT = metric tonne = 1,000 kg = 2,205 lb

Table 9-B
Transmission Line Construction Motor Vehicle Greenhouse Gas Emissions

Fuel	Total Fuel Use (gallons)	Total VMT (miles)	CO_2		CH_4		N_2O	
			Emission Factor (kg/gallon)	Emissions (MT)	Emission Factor (g/mi)	Emissions (MT)	Emission Factor (g/mi)	Emissions (MT)
Motor Vehicle Diesel	6,359	34,122	9.96E+00	63	5.10E-03	0.00	4.80E-03	0.00
Motor Vehicle Gasoline	3,635	69,564	8.55E+00	31	1.50E-02	0.00	1.00E-02	0.00
Total				**94**		**0.00**		**0.00**

Table 9-C
Transmission Line Construction Greenhouse Gas Emissions Summary

Item	CO_2	CH_4	N_2O
Emissions (MT)	176	0.00	0.00
Global Warming Potential[a]	1	21	310
Emissions (MT CO_2e)	176	0	0
Total Emissions (MT CO_2e)	**176**		

[a] From Table 2, Appendix A, "SECOND 15-DAY MODIFIED REGULATORY LANGUAGE FOR PUBLIC COMMENT, REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS, California Air Resources Board, http://www.arb.ca.gov/regact/2007/ghg2007/ghgattachment1.pdf

Table 9-D
Transmission Line Construction Equipment and Motor Vehicle Numbers

Equipment/Vehicle Type	Model	Horsepower	Fuel	Hours or Miles/Day	Monthly Number		
					Month 1	Month 2	Month 3
Construction Equipment							
Cable Puller	N/A	385	Diesel	5	0	0	1
Forklift, Cat	3054E	120	Diesel	5	1	1	1
Pole Digger, International	4700	210	Diesel	5	1	2	0
Crane 90 Ton	N/A	275	Diesel	5	1	1	1
Manlift JLG 1350SJP	1350SJP	87	Diesel	5	1	1	2
Motor Vehicles							
On-site Vehicles							
On-Site Water Truck	N/A	N/A	Diesel	8	1	1	1
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	8	3	3	3
On-Site Low Boy Trucks	N/A	N/A	Diesel	8	5	9	0
Off-Site Vehicles							
Off-Site Water Trucks	N/A	N/A	Diesel	5	1	1	1
Off-Site Pickup Trucks	F-250	N/A	Gasoline	10	3	3	3
Off-Site Low Boy Trucks	N/A	N/A	Diesel	100	5	9	0
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	60	15	20	15

Table 9-E
Transmission Line Construction Monthly Construction Equipment and Motor Vehicle Use

Equipment/Vehicle Type	Model	Horsepower	Fuel	Monthly Operating Hours or Miles[a]		
				Month 1	Month 2	Month 3
Construction Equipment						
Cable Puller	N/A	385	Diesel	0	0	110
Forklift, Cat	3054E	120	Diesel	110	110	110
Pole Digger, International	4700	210	Diesel	110	220	0
Crane 90 Ton	N/A	275	Diesel	110	110	110
Manlift JLG 1350SJP	1350SJP	87	Diesel	110	110	220
Motor Vehicles						
On-site Vehicles						
On-Site Water Truck	N/A	N/A	Diesel	176	176	176
On-Site 3/4 Ton Pick-Up, Ford	F-250	N/A	Gasoline	528	528	528
On-Site Low Boy Trucks	N/A	N/A	Diesel	880	1,584	0
Off-Site Vehicles						
Off-Site Water Trucks	N/A	N/A	Diesel	110	110	110
Off-Site Pickup Trucks	F-250	N/A	Gasoline	660	660	660
Off-Site Low Boy Trucks	N/A	N/A	Diesel	11,000	19,800	0
Off-Site Construction Worker Commute	N/A	N/A	Gasoline	19,800	26,400	19,800
Motor Vehicle Diesel				**12,166**	**21,670**	**286**
Motor Vehicle Gasoline				**20,988**	**27,588**	**20,988**

a Based on 22 working days per month

Table 9-F
Transmission Line Construction Monthly Construction Equipment and Motor Vehicle Fuel Use

Equipment/Vehicle Type	Fuel	Fuel Consumption (gal/hr or gal/mile)	Monthly Fuel Use (gal/month)		
			Month 1	Month 2	Month 3
Construction Equipment					
Cable Puller	Diesel	11.517	0.0	0.0	1,266.9
Forklift, Cat	Diesel	1.434	157.7	157.7	157.7
Pole Digger, International	Diesel	8.505	935.5	1,871.1	0.0
Crane 90 Ton	Diesel	8.188	900.7	900.7	900.7
Manlift JLG 1350SJP	Diesel	1.745	192.0	192.0	383.9
Motor Vehicles					
On-site Vehicles					
On-Site Water Truck	Diesel	0.1864	32.8	32.8	32.8
On-Site 3/4 Ton Pick-Up, Ford	Gasoline	0.0520	27.4	27.4	27.4
On-Site Low Boy Trucks	Diesel	0.1864	164.0	295.2	0.0
Off-Site Vehicles					
Off-Site Water Trucks	Diesel	0.1864	20.5	20.5	20.5
Off-Site Pickup Trucks	Gasoline	0.0523	34.5	34.5	34.5
Off-Site Low Boy Trucks	Diesel	0.1864	2,050.1	3,690.2	0.0
Off-Site Construction Worker Commute	Gasoline	0.0523	1,034.7	1,379.6	1,034.7
Construction Equipment Diesel			**2,185.9**	**3,121.5**	**2,709.2**
Construction Equipment Gasoline			**0.0**	**0.0**	**0.0**
Motor Vehicle Diesel			**2,267.4**	**4,038.7**	**53.3**
Motor Vehicle Gasoline			**1,096.7**	**1,441.6**	**1,096.7**

Note: Totals may not match sum of individual values because of rounding.

Table 10
Greenhouse Gas Emissions Summary

Construction Element	CO_2 Equivalent Emissions (MT)[a]
Solar Facility Construction	15,047
Gas Line Construction	2,041
Transmission Line Construction	176
Total Emissions	**17,265**

[a] MT = metric tonne = 1,000 kg = 2,205 lb

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE BEACON SOLAR ENERGY PROJECT	DOCKET NO. 08-AFC-2

PROOF OF SERVICE
(Revised 11/10/08)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-2
1516 Ninth Street, MS-14
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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Eric K. Solorio, Project Manager esolorio@energy.state.ca.us	Public Adviser pao@energy.state.ca.us

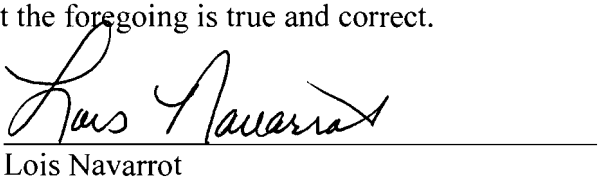
DECLARATION OF SERVICE

I, Lois Navarrot, declare that on January 6, 2009, I deposited copies of the attached **Beacon Solar Energy Project Construction Greenhouse Gas Emissions Calculations** in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of the California Code of Regulations, title 20, sections 1209, 1209.5 and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



Lois Navarrot