Appendix 4.8-A – Greenhouse Gas Screening Letter

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February 13, 2021

Heritage Environmental Consultants, LLC
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RE: Gates 500 kV Dynamic Reactive Support Greenhouse Gas Screening Letter – Fresno County

The purpose of this letter is to provide Greenhouse Gas (GHG) analysis for the Gates 500 kilovolt (kV) Dynamic Reactive Support Project (Proposed Project or Project). This study quantifies GHG emissions associated with construction and operation of the Project and includes a general analysis of both a Business as Usual (BAU) scenario project and an operational project assessment for the Proposed Project for 2023 or the first year the Project would be operational. This analysis was prepared in accordance with San Joaquin Valley Air pollution Control District guidance (SJVAPCD, 2009) for GHGs.

GHGs analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O) and Sulfur Hexafluoride (SF_6). To simplify GHG calculations CH_4, N_2O and SF_6 are converted to equivalent amounts of CO_2 and are identified as carbon dioxide equivalent ($MTCO_2e$) using the 100 year periods of 25, 298, 22,800 respectively (IPCC, 2007).

Project Location

The approximately 24 acre Proposed Project site is located within a 72 acre parcel which is currently being used for agricultural uses and is located immediately west of S Trinity Avenue between Phelps Avenue to the north and W Jayne Avenue to the south and is located within the northeast quarter of Public Land Survey System (PLSS) Section 33 of Township 20 South and 17 East. The primary access to the Proposed Project for both construction and operations will be along Jayne Avenue. The site is located approximately 3.5 miles southwest of the City of Huron.

Project Description

The Proposed Project would be constructed and operated by LS Power Grid California (LSPGC). The Project seeks to construct two new static synchronous compensators (STATCOM) facilities and two new single circuit 500 kV transmission lines that will connect to the existing Pacific Gas & Electric (PG&E) Gates Substation. The STATCOM facility will support the regional transmission

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system by providing voltage support and grid stability at the Gates 500 kV bus. This will facilitate the reliable operation of the extra high voltage transmission system buses in the electrical proximity of the Gates 500 kV substation after the retirement of the Diablo Canyon nuclear generating units. The transmission system in the vicinity of the Proposed Project includes the existing PG&E Gates Substation which currently serves the electrical needs of PG&E customers and operates various 500 kV transmission lines, 230 kV transmission lines, and 70 kV transmission lines. The Gates Substation will need to be expanded to provide two new 500 kV bus positions, one for each STATCOM unit.

The Proposed Project will include the following main components:

- Construction of two new STATCOM facilities with a rated real power output of 0 MW, and a nominal terminal voltage of 500 kV;
- The project will install three (3) SPS2 550 kV circuit breaker or similar
- Improvement of existing public and private dirt roads to facilitate construction, operation, and maintenance of the STATCOM units;
- Installation of two new approximately 1,150 feet 500 kV single-circuit overhead electrical transmission lines between the STATCOM units and the Gates Substation;
- Expansion of the Gates Substation to provide two new bus positions, one for each STATCOM unit. This will require the addition of two new 500 kV breakers, 500 kV disconnect switches, PT's & CT's, protection and control, take-off structures, and associated equipment;
- A 4,000 square foot (SF) control building for each STATCOM facility; and
- 3,200 lineal feet (LF) of 20 foot wide gravel covered access roads.

The Proposed Project was approved by the California Independent System Operator Corporation (CAISO) to ensure the reliability of a major portion of the CAISO controlled grid and accommodate maintenance and contingencies of the reactive device. This would be accomplished through the construction of a dynamic reactive device between two equally sized blocks.

The Project will be operated, monitored and dispatched remotely on a day-to-day basis. Crews of two to four person's will periodically visit the site (approximately twice per month) for routine inspection and maintenance of the facilities and site. The Developer will own and maintain the facility up to the point where the system enters PG&E property.

Project construction includes site preparation and grading, installation of drainage and retention basins, foundations/supports, setting of equipment, wiring and electrical system installation, and assembly of the accessory components. The Project would require the grading of approximately 23.85 acres and will require an import of roughly 17,000 CY of suitable site materials and export of roughly 2,000 CY of excess material. The Proposed Project plans to start grading and construction in the second quarter of 2022 and be completed in the fourth quarter

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of 2023 and was assumed to have a six-day working week. Additionally, the Project will require 740,000 gallons of water which would be trucked to the site daily. Also, it should be noted that the peak construction activities will be during the earthwork phase of the Project between March and May of 2022. Material hauling/truck details along with worker trips were provided within the project description (See Table 3-6) and was manually updated within the CalEEMod software. The estimated Equipment List and construction task durations are shown in **Table 1.**

Table 1: Anticipated Construction Equipment and Durations

Equipment Identification	Estimated Start	Estimated Completion	Quantity	HP
Site Prep/roadway work	03/15/2022	5/28/2022		
Graders			1	250
Off-Highway Trucks (Dump Truck)			4	415
Off-Highway Trucks (Water Truck)			4	300
Rollers			1	405
Rubber Tired Loaders (4-5 yard)			1	275
Below Grade Construction	06/1/2022	8/30/2022		
Excavators			1	108
Off-Highway Trucks (Water Truck)			4	300
Forklifts			1	100
Tractors/Loaders/Backhoes			1	68
Excavators			1	70
Rubber Tired Loaders (4-5 yard)			1	275
Drill Rig			1	125
Off-Highway Trucks (Dump Truck)			1	415
Skid Steer Loaders			1	74
Trenchers			1	75
Above Grade Construction	09/1/2022	8/15/2023		
Aerial Lifts			1	49
Aerial Lifts			1	74
Cranes (17 Ton)			1	250
Cranes (30 ton)			1	130
Forklifts			2	130
Welders			1	395
[1]Commissioning and Testing	8/16/23	12/15/23		
Forklifts			2	130
Aerial Lifts			1	49

1. Commissioning and Testing estimated between 6/15/23 – 12/15/23. For purposes of modeling and to avoid double counting, Forklifts and Aerial Lifts are the same units as Above Grade Construction. For this purpose, commissioning and testing was modeled with a start date of 8/16/23.

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Once operational, the Project would generate very few GHG emissions from daily operations. Operational emissions sources would include the consumption of energy onsite from Project auxiliary equipment, such as control room HVAC units, communications equipment and lighting. It is assumed that the total demand onsite would be six kw continuous per building or roughly 105,120 kWH per year and was modeled as such within CalEEMod.

The Project would include three SPS2 550 kV gas circuit breakers or similar, which utilize roughly 595 pounds (lb) of SF_6 per breaker for insulation purposes. While the SF_6 is contained within the circuit breakers, a very small amount leaks over time. SF_6 has strong global warming potential of 23,900.

Mobile vehicle visits to the Project site associated with periodic operations and maintenance would also generate air emissions. Monthly staff operations and maintenance visits, with crews of two to four persons are expected to generate two to four trips twice per month. For purposes of preparing an overly conservative analysis, it was assumed that the Project would generate four trips per day using a rural setting. CalEEMod has been updated to reflect Project-related operational conditions.

Methods and Background

With the exception of the analysis of SF^6 from the new circuit breakers, the GHG impacts related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 air quality and GHG model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. CalEEMod utilizes EMFAC 2014 for vehicular emission rates for each operational year. SJVAPCD recognizes the CalEEMod Version 2016.3.2 as an acceptable model for projects of this nature.

Regarding the Project's energy intensity factors, CalEEMod's default rates do not include state regulated renewable energy mandates for energy providers such as PG&E. Based on the requirements of SB 100 (State of California, 2018) utility providers are required to have 60% of their portfolio supplied by renewable energy sources. To date, PG&E has achieved 39% and in 2023, PG&E should have 47.8% in place to meet requirements of SB 100 in 2030. Given this, PG&E energy-intensity factors for 2023 were calculated and were modeled as such within CalEEMod (California Public Utilities Commission, 2019).

In 2010 CARB published final regulations for SF_6 and outlines requirements for equipment operational from 2011 to beyond 2020. From that data, the allowable leakage rates in 2011 are 10% and in 2020 and each calendar year after that are 1% (CARB, 2010) from 2011. The project would install three SPS2 550 kV gas circuit breakers or similar. In 2023, the SPS2 550 kV circuit breakers can emit at most by regulation (17.85 lbs). Under the baseline scenario in 2004, SF_6

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regulations are not readily available. However, 2011, which is assumed to be the conservative BAU baseline, the project could release 178.5 lb of SF_6.

CEQA requires lead agencies to establish specific procedures for administering its responsibilities under CEQA, including orderly evaluation of projects and preparation of environmental documents. In response to this, In August 2008, SJVAPCDs Governing Board adopted the Climate Change Action Plan (CCAP). Based on that plan, the district came up with processes to evaluate GHG significance. The plan basically covered projects which include Best Performance Standards (BPS) which are more typical of residential or commercial type projects and projects that do not implement BPS.

Projects not implementing BPS would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

Since this Project is not a typical residential or commercial development project, including standard BPS is not applicable. Based on this, this analysis will do a comparison of BAU in 2004 and the operational year (2023) with the intent of showing a 29% reduction over BAU. CalEEMod inputs/outputs for both BAU and the Proposed Project are shown in ***Attachment A*** to this letter.

Estimated Project-Related Construction Emissions (BAU)

Based on modeling conducted, BAU construction (between 2003 and 2004) for the Project would generate 1,395 Metric Tons (MT) CO_2e over the estimated construction period. Given the fact that the total emissions would ultimately contribute to cumulative levels, it is acceptable to average the total construction emission over the life of the Project, which is assumed to be 30 years (SCAQMD, 2008). Given this, as shown in Table 2, the Project would add approximately 46.51 MT CO_2e per year from construction.

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Table 2: Expected Annual Construction CO_2e Emissions (2004 BAU)

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT)
2003	0.00	1,057.16	1,057.16	0.17	0.00	1,061.47
2004	0.00	332.39	332.39	0.06	0.00	333.92
					Total	**1,395.39**
					Yearly Average Construction Emissions (Metric Tons/year over 30 years)	**46.51**
Expected Construction emissions are based upon CalEEMod modeling assumptions (Table 1 above and modified to BAU year)						

Similarly, as shown in Table 3, Project construction (between 2022 and 2023) for the Proposed Project would generate 1,173.66 MT CO_2e over the estimated construction period or an annual average of 39.12 MT CO_2e per year from construction. The reductions achieved are primarily due to the fact that both construction equipment and vehicles used from workers to and from are more efficient in 2023.

Table 3: Expected Annual Construction CO_2e Emissions (2023)

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT)
2022	0.00	886.72	886.72	0.25	0.00	892.87
2023	0.00	279.53	279.53	0.05	0.00	280.78
					Total	**1,173.66**
					Yearly Average Construction Emissions (Metric Tons/year over 30 years)	**39.12**
Expected Construction emissions are based upon CalEEMod modeling assumptions (Table 1 above)						

Estimated Project-Related Operational Emissions

Operations of the Project would begin once construction is completed. Operational related emissions would result primarily from vehicle exhaust emissions associated with maintenance staff traveling to and from the Project site. As well as energy consumption onsite as discussed earlier in this analysis. CalEEMod was used to estimate annual operational-related emissions for both the 2004 BAU scenario and the Proposed Project scenario which would be operational in 2023. Also, it should be noted that the scenario analyzed would have both annualized construction and operational emissions combined to reflect the total annual GHG emission produced by the Project. In addition, the GHG emissions generated from SF_6 based on regulatory emission leakage allowed is included in the modeling.

Under the BAU scenario, the expected operational emissions including amortized construction emissions would be expected to generate 2,017.11 MTCO_2e per year as shown in Table 4.

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Table 4: Operational Emissions Summary MT/Year (BAU)

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT/Yr)
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	30.58	30.58	0.00	0.00	30.70
Mobile	0.00	4.87	4.87	0.00	0.00	4.90
Waste	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00	0.00	0.00
					Sub Total (MT/Year)	35.60
					SF_6 emissions (Allowed 10 Percent or 178.5 lb *23,900 CO_2 Equivalent Factor) = 4,266,150 lb	[1]1,935
					Amortized Construction Emissions (Table 2 above)	46.51
					Total Construction and Operations (MT/Year)	**[2]2,017.11**

1. Data is in Metric Tons (MT). Conversion rate is 1 lb = 0.000453592 MT
2. Data is presented in decimal format and may have rounding errors.

Under the 2023 scenario, the expected operational emissions including amortized construction emissions would be expected to generate 65.98 $MTCO_2e$ per year as shown in Table 5.

Table 5: Operational Emissions Summary MT/Year (2023)

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT/Yr)
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	15.98	15.98	0.00	0.00	16.04
Mobile	0.00	4.19	4.19	0.00	0.00	4.20
Waste	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00	0.00	0.00
					Sub Total (MT/Year)	20.23
					SF_6 emissions (Allowed 1 Percent or 17.85 lb *23,900 CO_2 Equivalent Factor) = 42,662 lb	[1]19.35
					Amortized Construction Emissions (Table 3 above)	39.12
					Total Construction and Operations (MT/Year)	**78.70**
					Combined BAU Scenario	**2,017.11**
					Reduction over BAU	**[2]1,938.41**
					Percentage Reduction over BAU	**96.1%**

1. Data is in Metric Tons (MT). Conversion rate is 1 lb = 0.000453592 MT
2. Data is presented in decimal format and may have rounding errors.

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Based on this, the Proposed Project would have a 96.1% reduction in GHG emissions over BAU and would therefore generate a less than significant GHG impact per SJVAPCD requirements. For questions, please contact me directly at (760) 473-1253.

Sincerely,

Ldn Consulting, Inc.

Jeremy Louden

Attachments:

Attachment A: CALEEMOD Inputs/Outputs

Sources:

California Public Utilities Commission. (2019). *California Renewables Portfolio Standard.* Retrieved from https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/2019%20RPS%20Annual%20Report.pdfv

CARB. (2010). *SF6 - FINAL REGULATION ORDER.* Retrieved from https://ww3.arb.ca.gov/regact/2010/sf6elec/completesf6.pdf?_ga=2.28957116.1293428388.1604412973-1879348183.1592843116

IPCC. (2007). *IPCC Fourth Assessment Report: Climate Change 2007 : Working Group I: The Physical Science Basis.* Retrieved from https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

SCAQMD. (2008). Retrieved 2018, from http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf

SJVAPCD. (2009). *Addressing Greenhouse Gas Emissions Impact under the California Environmental Quality Act (CEQA).* Retrieved from http://www.valleyair.org/Programs/CCAP/bps/Fact_Sheet_Development_Sources.pdf

State of California. (2018). *Senate Bill No. 100.* Retrieved from https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100

Gates 500 kV Dynamic Reactive Support Project (BAU 2004)

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	9.20	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gates 500 kV Dynamic Reactive Support Project (BAU 2004) - Fresno County, Annual

Project Characteristics - 2005 is first available operational year in CalEEMod

Land Use - Site area is 9.2 Acre; 2 small control buildings will be installed (Estimated to be 8,000 SF)

Construction Phase - LSPGC Gates Schedule and includes Construction List provided by applicant. BAU 2004

Off-road Equipment - construction sched per PD

Off-road Equipment - Above Grade... 16 week duration equipment set

Off-road Equipment - Per revised construction sched. Added three additional 300 HP Water Truck

Off-road Equipment - Dates were modified to reflect the fact that aerial lifts in this phase and forklifts are identical to above ground work.

Off-road Equipment - Per revised construction sched. Added one additional 415 HP Dump Truck

Trips and VMT - Daily vehicle trips identified in Table 3-6 of PD. Hauling trips incorporated in average ADT for Trucks and worker trips. Vehicle Class for Vender modified to HHDT only to be conservative

Grading -

Architectural Coating -

Vehicle Trips - 4 trips per weekday

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating -

Energy Use - 6kw per building average demand 6*24*365=52,560 kWH per building... 2 buildings (105,120kWH) or 13.14 kWH per SF (8000 SF * 13.14 kwh/sf) =105,120 kWH

Construction Off-road Equipment Mitigation - t4 30%

Fleet Mix -

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2003	2.0542	16.9273	9.5715	0.1007	0.0988	0.7820	0.8809	0.0235	0.7799	0.8034	0.0000	1,057.1573	1,057.1573	0.1724	0.0000	1,061.4680
2004	0.7212	4.7111	3.6735	0.0295	0.0763	0.2241	0.3004	0.0204	0.2227	0.2431	0.0000	332.3908	332.3908	0.0612	0.0000	333.9217
Maximum	**2.0542**	**16.9273**	**9.5715**	**0.1007**	**0.0988**	**0.7820**	**0.8809**	**0.0235**	**0.7799**	**0.8034**	**0.0000**	**1,057.1573**	**1,057.1573**	**0.1724**	**0.0000**	**1,061.4680**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2003	1.3690	10.5744	8.0539	0.1007	0.0988	0.4912	0.5900	0.0235	0.4891	0.5126	0.0000	1,057.1562	1,057.1562	0.1724	0.0000	1,061.4669
2004	0.7019	4.5613	3.6766	0.0295	0.0763	0.2156	0.2919	0.0204	0.2142	0.2346	0.0000	332.3906	332.3906	0.0612	0.0000	333.9215
Maximum	**1.3690**	**10.5744**	**8.0539**	**0.1007**	**0.0988**	**0.4912**	**0.5900**	**0.0235**	**0.4891**	**0.5126**	**0.0000**	**1,057.1562**	**1,057.1562**	**0.1724**	**0.0000**	**1,061.4669**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**25.39**	**30.05**	**11.43**	**0.00**	**0.00**	**29.75**	**25.34**	**0.00**	**29.86**	**28.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0405	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	30.5806	30.5806	1.3800e-003	2.9000e-004	30.7004
Mobile	5.4700e-003	0.0358	0.0495	2.6000e-004	2.6300e-003	8.6000e-004	3.4900e-003	7.1000e-004	8.2000e-004	1.5300e-003	0.0000	4.8679	4.8679	1.4100e-003	0.0000	4.9032
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0460**	**0.0358**	**0.0495**	**2.6000e-004**	**2.6300e-003**	**8.6000e-004**	**3.4900e-003**	**7.1000e-004**	**8.2000e-004**	**1.5300e-003**	**0.0000**	**35.4485**	**35.4485**	**2.7900e-003**	**2.9000e-004**	**35.6037**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0405	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	30.5806	30.5806	1.3800e-003	2.9000e-004	30.7004
Mobile	5.4700e-003	0.0358	0.0495	2.6000e-004	2.6300e-003	8.6000e-004	3.4900e-003	7.1000e-004	8.2000e-004	1.5300e-003	0.0000	4.8679	4.8679	1.4100e-003	0.0000	4.9032
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0460**	**0.0358**	**0.0495**	**2.6000e-004**	**2.6300e-003**	**8.6000e-004**	**3.4900e-003**	**7.1000e-004**	**8.2000e-004**	**1.5300e-003**	**0.0000**	**35.4485**	**35.4485**	**2.7900e-003**	**2.9000e-004**	**35.6037**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep/roadway work	Grading	3/15/2003	5/29/2003	6	65	
2	Below Grade Construction	Trenching	6/1/2003	8/30/2003	6	78	
3	Above Grade Construction	Building Construction	9/1/2003	8/13/2004	6	299	
4	Commisioning and Testing	Building Construction	8/16/2004	12/15/2004	6	105	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Gates 500 kV Dynamic Reactive Support Project (BAU 2004) - Fresno County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Prep/roadway work	Graders	1	10.00	250	0.41
Site Prep/roadway work	Off-Highway Trucks	4	10.00	300	0.38
Site Prep/roadway work	Off-Highway Trucks	4	5.00	415	0.38
Site Prep/roadway work	Rollers	1	10.00	405	0.38
Site Prep/roadway work	Rubber Tired Loaders	1	10.00	275	0.36
Below Grade Construction	Bore/Drill Rigs	1	10.00	125	0.50
Below Grade Construction	Excavators	1	10.00	108	0.38
Below Grade Construction	Excavators	1	5.00	70	0.38
Below Grade Construction	Forklifts	1	4.00	100	0.20
Below Grade Construction	Off-Highway Trucks	4	10.00	300	0.38
Below Grade Construction	Off-Highway Trucks	1	8.00	415	0.38
Below Grade Construction	Rubber Tired Loaders	1	10.00	275	0.36
Below Grade Construction	Skid Steer Loaders	1	10.00	74	0.37
Below Grade Construction	Tractors/Loaders/Backhoes	1	5.00	68	0.37
Below Grade Construction	Trenchers	1	5.00	75	0.50
Above Grade Construction	Aerial Lifts	1	4.00	74	0.31
Above Grade Construction	Aerial Lifts	1	4.00	49	0.31
Above Grade Construction	Cranes	1	10.00	250	0.29
Above Grade Construction	Cranes	1	5.00	130	0.29
Above Grade Construction	Forklifts	2	5.00	130	0.20
Above Grade Construction	Welders	1	2.00	395	0.45
Commisioning and Testing	Aerial Lifts	1	4.00	49	0.31
Commisioning and Testing	Forklifts	2	5.00	130	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Prep/roadway work	11	8.00	15.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Below Grade Construction	13	15.00	10.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Above Grade Construction	7	15.00	5.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Commisioning and Testing	3	5.00	5.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Prep/roadway work - 2003

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0190	0.0000	0.0190	2.1000e-003	0.0000	2.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7706	7.0696	3.4719	0.0409		0.3087	0.3087		0.3087	0.3087	0.0000	416.2336	416.2336	0.0626	0.0000	417.7982
Total	**0.7706**	**7.0696**	**3.4719**	**0.0409**	**0.0190**	**0.3087**	**0.3277**	**2.1000e-003**	**0.3087**	**0.3108**	**0.0000**	**416.2336**	**416.2336**	**0.0626**	**0.0000**	**417.7982**

3.2 Site Prep/roadway work - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0450	0.5595	0.1945	3.9600e-003	8.3400e-003	0.0192	0.0275	2.2900e-003	0.0184	0.0207	0.0000	40.5751	40.5751	7.1700e-003	0.0000	40.7544
Worker	0.0248	0.0339	0.2772	1.7000e-004	9.6100e-003	3.5000e-004	9.9600e-003	2.5500e-003	3.2000e-004	2.8800e-003	0.0000	9.9380	9.9380	1.5800e-003	0.0000	9.9774
Total	**0.0698**	**0.5934**	**0.4718**	**4.1300e-003**	**0.0180**	**0.0195**	**0.0375**	**4.8400e-003**	**0.0187**	**0.0235**	**0.0000**	**50.5131**	**50.5131**	**8.7500e-003**	**0.0000**	**50.7318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0190	0.0000	0.0190	2.1000e-003	0.0000	2.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4422	3.9308	2.7008	0.0409		0.1714	0.1714		0.1714	0.1714	0.0000	416.2331	416.2331	0.0626	0.0000	417.7977
Total	**0.4422**	**3.9308**	**2.7008**	**0.0409**	**0.0190**	**0.1714**	**0.1904**	**2.1000e-003**	**0.1714**	**0.1735**	**0.0000**	**416.2331**	**416.2331**	**0.0626**	**0.0000**	**417.7977**

3.2 Site Prep/roadway work - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0450	0.5595	0.1945	3.9600e-003	8.3400e-003	0.0192	0.0275	2.2900e-003	0.0184	0.0207	0.0000	40.5751	40.5751	7.1700e-003	0.0000	40.7544
Worker	0.0248	0.0339	0.2772	1.7000e-004	9.6100e-003	3.5000e-004	9.9600e-003	2.5500e-003	3.2000e-004	2.8800e-003	0.0000	9.9380	9.9380	1.5800e-003	0.0000	9.9774
Total	**0.0698**	**0.5934**	**0.4718**	**4.1300e-003**	**0.0180**	**0.0195**	**0.0375**	**4.8400e-003**	**0.0187**	**0.0235**	**0.0000**	**50.5131**	**50.5131**	**8.7500e-003**	**0.0000**	**50.7318**

3.3 Below Grade Construction - 2003

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.7895	6.5439	3.1509	0.0386		0.3330	0.3330		0.3330	0.3330	0.0000	383.3028	383.3028	0.0642	0.0000	384.9066
Total	**0.7895**	**6.5439**	**3.1509**	**0.0386**		**0.3330**	**0.3330**		**0.3330**	**0.3330**	**0.0000**	**383.3028**	**383.3028**	**0.0642**	**0.0000**	**384.9066**

3.3 Below Grade Construction - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0360	0.4476	0.1556	3.1700e-003	6.6700e-003	0.0154	0.0220	1.8300e-003	0.0147	0.0165	0.0000	32.4601	32.4601	5.7400e-003	0.0000	32.6035
Worker	0.0557	0.0762	0.6238	3.8000e-004	0.0216	7.8000e-004	0.0224	5.7500e-003	7.3000e-004	6.4700e-003	0.0000	22.3604	22.3604	3.5500e-003	0.0000	22.4492
Total	**0.0917**	**0.5238**	**0.7794**	**3.5500e-003**	**0.0283**	**0.0161**	**0.0445**	**7.5800e-003**	**0.0154**	**0.0230**	**0.0000**	**54.8205**	**54.8205**	**9.2900e-003**	**0.0000**	**55.0527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4395	3.3824	2.4034	0.0386		0.1824	0.1824		0.1824	0.1824	0.0000	383.3024	383.3024	0.0642	0.0000	384.9062
Total	**0.4395**	**3.3824**	**2.4034**	**0.0386**		**0.1824**	**0.1824**		**0.1824**	**0.1824**	**0.0000**	**383.3024**	**383.3024**	**0.0642**	**0.0000**	**384.9062**

3.3 Below Grade Construction - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0360	0.4476	0.1556	3.1700e-003	6.6700e-003	0.0154	0.0220	1.8300e-003	0.0147	0.0165	0.0000	32.4601	32.4601	5.7400e-003	0.0000	32.6035
Worker	0.0557	0.0762	0.6238	3.8000e-004	0.0216	7.8000e-004	0.0224	5.7500e-003	7.3000e-004	6.4700e-003	0.0000	22.3604	22.3604	3.5500e-003	0.0000	22.4492
Total	**0.0917**	**0.5238**	**0.7794**	**3.5500e-003**	**0.0283**	**0.0161**	**0.0445**	**7.5800e-003**	**0.0154**	**0.0230**	**0.0000**	**54.8205**	**54.8205**	**9.2900e-003**	**0.0000**	**55.0527**

3.4 Above Grade Construction - 2003

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2334	1.7927	0.7530	0.0109		0.0932	0.0932		0.0932	0.0932	0.0000	100.3387	100.3387	0.0190	0.0000	100.8138
Total	**0.2334**	**1.7927**	**0.7530**	**0.0109**		**0.0932**	**0.0932**		**0.0932**	**0.0932**	**0.0000**	**100.3387**	**100.3387**	**0.0190**	**0.0000**	**100.8138**

3.4 Above Grade Construction - 2003

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	0.3013	0.1047	2.1300e-003	4.4900e-003	0.0103	0.0148	1.2400e-003	9.8900e-003	0.0111	0.0000	21.8482	21.8482	3.8600e-003	0.0000	21.9447
Worker	0.0750	0.1026	0.8397	5.1000e-004	0.0291	1.0600e-003	0.0302	7.7400e-003	9.8000e-004	8.7200e-003	0.0000	30.1005	30.1005	4.7800e-003	0.0000	30.2201
Total	**0.0992**	**0.4039**	**0.9445**	**2.6400e-003**	**0.0336**	**0.0114**	**0.0450**	**8.9800e-003**	**0.0109**	**0.0198**	**0.0000**	**51.9487**	**51.9487**	**8.6400e-003**	**0.0000**	**52.1648**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2266	1.7401	0.7541	0.0109		0.0903	0.0903		0.0903	0.0903	0.0000	100.3385	100.3385	0.0190	0.0000	100.8137
Total	**0.2266**	**1.7401**	**0.7541**	**0.0109**		**0.0903**	**0.0903**		**0.0903**	**0.0903**	**0.0000**	**100.3385**	**100.3385**	**0.0190**	**0.0000**	**100.8137**

3.4 Above Grade Construction - 2003

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	0.3013	0.1047	2.1300e-003	4.4900e-003	0.0103	0.0148	1.2400e-003	9.8900e-003	0.0111	0.0000	21.8482	21.8482	3.8600e-003	0.0000	21.9447
Worker	0.0750	0.1026	0.8397	5.1000e-004	0.0291	1.0600e-003	0.0302	7.7400e-003	9.8000e-004	8.7200e-003	0.0000	30.1005	30.1005	4.7800e-003	0.0000	30.2201
Total	**0.0992**	**0.4039**	**0.9445**	**2.6400e-003**	**0.0336**	**0.0114**	**0.0450**	**8.9800e-003**	**0.0109**	**0.0198**	**0.0000**	**51.9487**	**51.9487**	**8.6400e-003**	**0.0000**	**52.1648**

3.4 Above Grade Construction - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4312	3.3123	1.3913	0.0201		0.1723	0.1723		0.1723	0.1723	0.0000	185.3876	185.3876	0.0351	0.0000	186.2655
Total	**0.4312**	**3.3123**	**1.3913**	**0.0201**		**0.1723**	**0.1723**		**0.1723**	**0.1723**	**0.0000**	**185.3876**	**185.3876**	**0.0351**	**0.0000**	**186.2655**

3.4 Above Grade Construction - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0448	0.5567	0.1935	3.9400e-003	8.3000e-003	0.0191	0.0274	2.2800e-003	0.0183	0.0206	0.0000	40.3671	40.3671	7.1300e-003	0.0000	40.5454
Worker	0.1385	0.1895	1.5515	9.4000e-004	0.0538	1.9500e-003	0.0558	0.0143	1.8100e-003	0.0161	0.0000	55.6143	55.6143	8.8400e-003	0.0000	55.8352
Total	**0.1833**	**0.7461**	**1.7450**	**4.8800e-003**	**0.0621**	**0.0211**	**0.0831**	**0.0166**	**0.0201**	**0.0367**	**0.0000**	**95.9813**	**95.9813**	**0.0160**	**0.0000**	**96.3806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4187	3.2150	1.3933	0.0201		0.1668	0.1668		0.1668	0.1668	0.0000	185.3874	185.3874	0.0351	0.0000	186.2653
Total	**0.4187**	**3.2150**	**1.3933**	**0.0201**		**0.1668**	**0.1668**		**0.1668**	**0.1668**	**0.0000**	**185.3874**	**185.3874**	**0.0351**	**0.0000**	**186.2653**

3.4 Above Grade Construction - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0448	0.5567	0.1935	3.9400e-003	8.3000e-003	0.0191	0.0274	2.2800e-003	0.0183	0.0206	0.0000	40.3671	40.3671	7.1300e-003	0.0000	40.5454
Worker	0.1385	0.1895	1.5515	9.4000e-004	0.0538	1.9500e-003	0.0558	0.0143	1.8100e-003	0.0161	0.0000	55.6143	55.6143	8.8400e-003	0.0000	55.8352
Total	**0.1833**	**0.7461**	**1.7450**	**4.8800e-003**	**0.0621**	**0.0211**	**0.0831**	**0.0166**	**0.0201**	**0.0367**	**0.0000**	**95.9813**	**95.9813**	**0.0160**	**0.0000**	**96.3806**

3.5 Commisioning and Testing - 2004

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0574	0.3173	0.1526	2.1700e-003		0.0201	0.0201		0.0201	0.0201	0.0000	19.1402	19.1402	4.6900e-003	0.0000	19.2576
Total	**0.0574**	**0.3173**	**0.1526**	**2.1700e-003**		**0.0201**	**0.0201**		**0.0201**	**0.0201**	**0.0000**	**19.1402**	**19.1402**	**4.6900e-003**	**0.0000**	**19.2576**

3.5 Commisioning and Testing - 2004

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	0.3013	0.1047	2.1300e-003	4.4900e-003	0.0103	0.0148	1.2400e-003	9.8900e-003	0.0111	0.0000	21.8482	21.8482	3.8600e-003	0.0000	21.9447
Worker	0.0250	0.0342	0.2799	1.7000e-004	9.7100e-003	3.5000e-004	0.0101	2.5800e-003	3.3000e-004	2.9100e-003	0.0000	10.0335	10.0335	1.5900e-003	0.0000	10.0734
Total	**0.0492**	**0.3355**	**0.3846**	**2.3000e-003**	**0.0142**	**0.0107**	**0.0249**	**3.8200e-003**	**0.0102**	**0.0140**	**0.0000**	**31.8817**	**31.8817**	**5.4500e-003**	**0.0000**	**32.0181**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0507	0.2647	0.1537	2.1700e-003		0.0171	0.0171		0.0171	0.0171	0.0000	19.1402	19.1402	4.6900e-003	0.0000	19.2576
Total	**0.0507**	**0.2647**	**0.1537**	**2.1700e-003**		**0.0171**	**0.0171**		**0.0171**	**0.0171**	**0.0000**	**19.1402**	**19.1402**	**4.6900e-003**	**0.0000**	**19.2576**

3.5 Commisioning and Testing - 2004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	0.3013	0.1047	2.1300e-003	4.4900e-003	0.0103	0.0148	1.2400e-003	9.8900e-003	0.0111	0.0000	21.8482	21.8482	3.8600e-003	0.0000	21.9447
Worker	0.0250	0.0342	0.2799	1.7000e-004	9.7100e-003	3.5000e-004	0.0101	2.5800e-003	3.3000e-004	2.9100e-003	0.0000	10.0335	10.0335	1.5900e-003	0.0000	10.0734
Total	**0.0492**	**0.3355**	**0.3846**	**2.3000e-003**	**0.0142**	**0.0107**	**0.0249**	**3.8200e-003**	**0.0102**	**0.0140**	**0.0000**	**31.8817**	**31.8817**	**5.4500e-003**	**0.0000**	**32.0181**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.4700e-003	0.0358	0.0495	2.6000e-004	2.6300e-003	8.6000e-004	3.4900e-003	7.1000e-004	8.2000e-004	1.5300e-003	0.0000	4.8679	4.8679	1.4100e-003	0.0000	4.9032
Unmitigated	5.4700e-003	0.0358	0.0495	2.6000e-004	2.6300e-003	8.6000e-004	3.4900e-003	7.1000e-004	8.2000e-004	1.5300e-003	0.0000	4.8679	4.8679	1.4100e-003	0.0000	4.9032

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.00	0.00	0.00	6,864	6,864
Total	4.00	0.00	0.00	6,864	6,864

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.415876	0.061183	0.150996	0.176036	0.035163	0.006973	0.031964	0.109874	0.002099	0.001787	0.005269	0.001212	0.001569

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.5806	30.5806	1.3800e-003	2.9000e-004	30.7004
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.5806	30.5806	1.3800e-003	2.9000e-004	30.7004
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	105120	30.5806	1.3800e-003	2.9000e-004	30.7004
Total		**30.5806**	**1.3800e-003**	**2.9000e-004**	**30.7004**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	105120	30.5806	1.3800e-003	2.9000e-004	30.7004
Total		**30.5806**	**1.3800e-003**	**2.9000e-004**	**30.7004**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0405	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0405	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0405**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0405**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gates 500 kV Dynamic Reactive Support Project (Operational 2023)

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	9.20	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	335.11	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Gates 500 kV Dynamic Reactive Support Project (Operational 2023) - Fresno County, Annual

Project Characteristics - 2019 RPS Annual Report...PGE achieved 39% RPS in 2018. 2030 will achieve 60% or 1.75% per year. By 2023 47.8% achieved.

Land Use - Site area is 9.2 Acre; 2 small control buildings will be installed (Estimated to be 8,000 SF)

Construction Phase - LSPGC Gates Schedule and includes Construction List provided by applicant.

Off-road Equipment - construction sched per PD

Off-road Equipment - Above Grade... 16 week duration equipment set

Off-road Equipment - Per revised construction sched. Added three additional 300 HP Water Truck

Off-road Equipment - Dates were modified to reflect the fact that aerial lifts in this phase and forklifts are identical to above ground work.

Off-road Equipment - Per revised construction sched. Added one additional 415 HP Dump Truck

Trips and VMT - Daily vehicle trips identified in Table 3-6 of PD. Hauling trips incorporated in average ADT for Trucks and worker trips. Vehicle Class for Vender modified to HHDT only to be conservative

Grading -

Architectural Coating -

Vehicle Trips - 4 trips per weekday

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating -

Energy Use - 6kw per building average demand 6*24*365=52,560 kWH per building... 2 buildings (105,120kWH) or 13.14 kWH per SF (8000 SF * 13.14 kwh/sf) =105,120 kWH

Construction Off-road Equipment Mitigation - t4 30%

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Gates 500 kV Dynamic Reactive Support Project (Operational 2023) - Fresno County, Annual

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	299.00
tblConstructionPhase	NumDays	230.00	105.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	NT24E	0.00	13.14
tblGrading	AcresOfGrading	40.63	33.75
tblGrading	MaterialExported	0.00	2,000.00
tblGrading	MaterialImported	0.00	17,000.00
tblLandUse	LandUseSquareFeet	0.00	8,000.00
tblLandUse	LotAcreage	0.00	9.20
tblOffRoadEquipment	HorsePower	187.00	250.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	402.00	415.00
tblOffRoadEquipment	HorsePower	80.00	405.00
tblOffRoadEquipment	HorsePower	203.00	275.00
tblOffRoadEquipment	HorsePower	221.00	125.00
tblOffRoadEquipment	HorsePower	158.00	108.00
tblOffRoadEquipment	HorsePower	158.00	70.00
tblOffRoadEquipment	HorsePower	89.00	100.00
tblOffRoadEquipment	HorsePower	402.00	300.00
tblOffRoadEquipment	HorsePower	402.00	415.00
tblOffRoadEquipment	HorsePower	203.00	275.00

tblOffRoadEquipment	HorsePower	65.00	74.00
tblOffRoadEquipment	HorsePower	97.00	68.00
tblOffRoadEquipment	HorsePower	78.00	75.00
tblOffRoadEquipment	HorsePower	63.00	74.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	231.00	250.00
tblOffRoadEquipment	HorsePower	231.00	130.00
tblOffRoadEquipment	HorsePower	89.00	130.00
tblOffRoadEquipment	HorsePower	46.00	395.00
tblOffRoadEquipment	HorsePower	63.00	49.00
tblOffRoadEquipment	HorsePower	89.00	130.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	641.35	335.11
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	2,375.00	0.00
tblTripsAndVMT	VendorTripLength	6.60	20.00
tblTripsAndVMT	VendorTripLength	6.60	20.00
tblTripsAndVMT	VendorTripLength	6.60	20.00

tblTripsAndVMT	VendorTripLength	6.60	20.00
tblTripsAndVMT	VendorTripNumber	0.00	15.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	1.00	5.00
tblTripsAndVMT	VendorTripNumber	1.00	5.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripNumber	28.00	8.00
tblTripsAndVMT	WorkerTripNumber	33.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	5.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	4.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.4126	3.6929	2.9611	9.9700e-003	0.0988	0.1349	0.2338	0.0235	0.1243	0.1478	0.0000	886.7201	886.7201	0.2461	0.0000	892.8730
2023	0.1304	1.1714	1.0186	3.0500e-003	0.0763	0.0441	0.1204	0.0204	0.0409	0.0612	0.0000	279.5258	279.5258	0.0503	0.0000	280.7822
Maximum	**0.4126**	**3.6929**	**2.9611**	**9.9700e-003**	**0.0988**	**0.1349**	**0.2338**	**0.0235**	**0.1243**	**0.1478**	**0.0000**	**886.7201**	**886.7201**	**0.2461**	**0.0000**	**892.8730**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3271	2.8894	3.4906	9.9700e-003	0.0988	0.1028	0.2016	0.0235	0.0951	0.1186	0.0000	886.7192	886.7192	0.2461	0.0000	892.8721
2023	0.1273	1.1396	1.0275	3.0500e-003	0.0763	0.0424	0.1187	0.0204	0.0392	0.0596	0.0000	279.5256	279.5256	0.0503	0.0000	280.7820
Maximum	**0.3271**	**2.8894**	**3.4906**	**9.9700e-003**	**0.0988**	**0.1028**	**0.2016**	**0.0235**	**0.0951**	**0.1186**	**0.0000**	**886.7192**	**886.7192**	**0.2461**	**0.0000**	**892.8721**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.34**	**17.17**	**-13.53**	**0.00**	**0.00**	**18.93**	**9.57**	**0.00**	**18.66**	**14.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	1-1-2022	3-31-2022	0.4106	0.3161
6	4-1-2022	6-30-2022	1.9143	1.4426
7	7-1-2022	9-30-2022	1.2220	0.9148
8	10-1-2022	12-31-2022	0.5329	0.5219
9	1-1-2023	3-31-2023	0.4630	0.4540
10	4-1-2023	6-30-2023	0.4661	0.4570
11	7-1-2023	9-30-2023	0.2883	0.2791
		Highest	1.9143	1.4426

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0368	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	15.9786	15.9786	7.2000e-004	1.4000e-004	16.0391
Mobile	8.0000e-004	9.0600e-003	7.6900e-003	4.0000e-005	2.6300e-003	2.0000e-005	2.6600e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	4.1871	4.1871	3.4000e-004	0.0000	4.1956
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0376**	**9.0600e-003**	**7.7000e-003**	**4.0000e-005**	**2.6300e-003**	**2.0000e-005**	**2.6600e-003**	**7.1000e-004**	**2.0000e-005**	**7.3000e-004**	**0.0000**	**20.1657**	**20.1657**	**1.0600e-003**	**1.4000e-004**	**20.2347**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0368	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	15.9786	15.9786	7.2000e-004	1.4000e-004	16.0391
Mobile	8.0000e-004	9.0600e-003	7.6900e-003	4.0000e-005	2.6300e-003	2.0000e-005	2.6600e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	4.1871	4.1871	3.4000e-004	0.0000	4.1956
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0376**	**9.0600e-003**	**7.7000e-003**	**4.0000e-005**	**2.6300e-003**	**2.0000e-005**	**2.6600e-003**	**7.1000e-004**	**2.0000e-005**	**7.3000e-004**	**0.0000**	**20.1657**	**20.1657**	**1.0600e-003**	**1.4000e-004**	**20.2347**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Gates 500 kV Dynamic Reactive Support Project (Operational 2023) - Fresno County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep/roadway work	Grading	3/15/2022	5/28/2022	6	65	
2	Below Grade Construction	Trenching	6/1/2022	8/30/2022	6	78	
3	Above Grade Construction	Building Construction	9/1/2022	8/15/2023	6	299	
4	Commisioning and Testing	Building Construction	8/16/2023	12/15/2023	6	105	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Prep/roadway work	Graders	1	10.00	250	0.41
Site Prep/roadway work	Off-Highway Trucks	4	10.00	300	0.38
Site Prep/roadway work	Off-Highway Trucks	4	5.00	415	0.38
Site Prep/roadway work	Rollers	1	10.00	405	0.38
Site Prep/roadway work	Rubber Tired Loaders	1	10.00	275	0.36
Below Grade Construction	Bore/Drill Rigs	1	10.00	125	0.50
Below Grade Construction	Excavators	1	10.00	108	0.38
Below Grade Construction	Excavators	1	5.00	70	0.38
Below Grade Construction	Forklifts	1	4.00	100	0.20
Below Grade Construction	Off-Highway Trucks	4	10.00	300	0.38
Below Grade Construction	Off-Highway Trucks	1	8.00	415	0.38
Below Grade Construction	Rubber Tired Loaders	1	10.00	275	0.36
Below Grade Construction	Skid Steer Loaders	1	10.00	74	0.37
Below Grade Construction	Tractors/Loaders/Backhoes	1	5.00	68	0.37
Below Grade Construction	Trenchers	1	5.00	75	0.50
Above Grade Construction	Aerial Lifts	1	4.00	74	0.31
Above Grade Construction	Aerial Lifts	1	4.00	49	0.31
Above Grade Construction	Cranes	1	10.00	250	0.29
Above Grade Construction	Cranes	1	5.00	130	0.29
Above Grade Construction	Forklifts	2	5.00	130	0.20
Above Grade Construction	Welders	1	2.00	395	0.45
Commisioning and Testing	Aerial Lifts	1	4.00	49	0.31
Commisioning and Testing	Forklifts	2	5.00	130	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Prep/roadway work	11	8.00	15.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Below Grade Construction	13	15.00	10.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Above Grade Construction	7	15.00	5.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT
Commisioning and Testing	3	5.00	5.00	0.00	50.00	20.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Prep/roadway work - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0190	0.0000	0.0190	2.1000e-003	0.0000	2.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1718	1.5349	1.1003	3.9600e-003		0.0555	0.0555		0.0511	0.0511	0.0000	347.6613	347.6613	0.1124	0.0000	350.4724
Total	**0.1718**	**1.5349**	**1.1003**	**3.9600e-003**	**0.0190**	**0.0555**	**0.0745**	**2.1000e-003**	**0.0511**	**0.0532**	**0.0000**	**347.6613**	**347.6613**	**0.1124**	**0.0000**	**350.4724**

3.2 Site Prep/roadway work - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4400e-003	0.1150	0.0171	3.8000e-004	8.3400e-003	3.5000e-004	8.6800e-003	2.2900e-003	3.3000e-004	2.6200e-003	0.0000	36.2010	36.2010	3.0800e-003	0.0000	36.2781
Worker	3.4300e-003	2.3400e-003	0.0234	8.0000e-005	9.6100e-003	5.0000e-005	9.6700e-003	2.5500e-003	5.0000e-005	2.6000e-003	0.0000	7.5731	7.5731	1.6000e-004	0.0000	7.5770
Total	**6.8700e-003**	**0.1173**	**0.0405**	**4.6000e-004**	**0.0180**	**4.0000e-004**	**0.0184**	**4.8400e-003**	**3.8000e-004**	**5.2200e-003**	**0.0000**	**43.7740**	**43.7740**	**3.2400e-003**	**0.0000**	**43.8551**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0190	0.0000	0.0190	2.1000e-003	0.0000	2.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1309	1.1543	1.3696	3.9600e-003		0.0412	0.0412		0.0381	0.0381	0.0000	347.6609	347.6609	0.1124	0.0000	350.4719
Total	**0.1309**	**1.1543**	**1.3696**	**3.9600e-003**	**0.0190**	**0.0412**	**0.0601**	**2.1000e-003**	**0.0381**	**0.0402**	**0.0000**	**347.6609**	**347.6609**	**0.1124**	**0.0000**	**350.4719**

3.2 Site Prep/roadway work - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4400e-003	0.1150	0.0171	3.8000e-004	8.3400e-003	3.5000e-004	8.6800e-003	2.2900e-003	3.3000e-004	2.6200e-003	0.0000	36.2010	36.2010	3.0800e-003	0.0000	36.2781
Worker	3.4300e-003	2.3400e-003	0.0234	8.0000e-005	9.6100e-003	5.0000e-005	9.6700e-003	2.5500e-003	5.0000e-005	2.6000e-003	0.0000	7.5731	7.5731	1.6000e-004	0.0000	7.5770
Total	**6.8700e-003**	**0.1173**	**0.0405**	**4.6000e-004**	**0.0180**	**4.0000e-004**	**0.0184**	**4.8400e-003**	**3.8000e-004**	**5.2200e-003**	**0.0000**	**43.7740**	**43.7740**	**3.2400e-003**	**0.0000**	**43.8551**

3.3 Below Grade Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1551	1.3043	1.2691	3.6400e-003		0.0541	0.0541		0.0498	0.0498	0.0000	319.4545	319.4545	0.1033	0.0000	322.0375
Total	**0.1551**	**1.3043**	**1.2691**	**3.6400e-003**		**0.0541**	**0.0541**		**0.0498**	**0.0498**	**0.0000**	**319.4545**	**319.4545**	**0.1033**	**0.0000**	**322.0375**

3.3 Below Grade Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7500e-003	0.0920	0.0137	3.0000e-004	6.6700e-003	2.8000e-004	6.9500e-003	1.8300e-003	2.7000e-004	2.1000e-003	0.0000	28.9608	28.9608	2.4700e-003	0.0000	29.0225
Worker	7.7300e-003	5.2700e-003	0.0527	1.9000e-004	0.0216	1.2000e-004	0.0218	5.7500e-003	1.1000e-004	5.8500e-003	0.0000	17.0394	17.0394	3.5000e-004	0.0000	17.0483
Total	**0.0105**	**0.0973**	**0.0663**	**4.9000e-004**	**0.0283**	**4.0000e-004**	**0.0287**	**7.5800e-003**	**3.8000e-004**	**7.9500e-003**	**0.0000**	**46.0002**	**46.0002**	**2.8200e-003**	**0.0000**	**46.0708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1117	0.8948	1.5263	3.6400e-003		0.0370	0.0370		0.0343	0.0343	0.0000	319.4542	319.4542	0.1033	0.0000	322.0371
Total	**0.1117**	**0.8948**	**1.5263**	**3.6400e-003**		**0.0370**	**0.0370**		**0.0343**	**0.0343**	**0.0000**	**319.4542**	**319.4542**	**0.1033**	**0.0000**	**322.0371**

3.3 Below Grade Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7500e-003	0.0920	0.0137	3.0000e-004	6.6700e-003	2.8000e-004	6.9500e-003	1.8300e-003	2.7000e-004	2.1000e-003	0.0000	28.9608	28.9608	2.4700e-003	0.0000	29.0225
Worker	7.7300e-003	5.2700e-003	0.0527	1.9000e-004	0.0216	1.2000e-004	0.0218	5.7500e-003	1.1000e-004	5.8500e-003	0.0000	17.0394	17.0394	3.5000e-004	0.0000	17.0483
Total	**0.0105**	**0.0973**	**0.0663**	**4.9000e-004**	**0.0283**	**4.0000e-004**	**0.0287**	**7.5800e-003**	**3.8000e-004**	**7.9500e-003**	**0.0000**	**46.0002**	**46.0002**	**2.8200e-003**	**0.0000**	**46.0708**

3.4 Above Grade Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0562	0.5701	0.4048	9.6000e-004		0.0242	0.0242		0.0224	0.0224	0.0000	87.3995	87.3995	0.0222	0.0000	87.9533
Total	**0.0562**	**0.5701**	**0.4048**	**9.6000e-004**		**0.0242**	**0.0242**		**0.0224**	**0.0224**	**0.0000**	**87.3995**	**87.3995**	**0.0222**	**0.0000**	**87.9533**

3.4 Above Grade Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8500e-003	0.0619	9.2000e-003	2.0000e-004	4.4900e-003	1.9000e-004	4.6800e-003	1.2300e-003	1.8000e-004	1.4100e-003	0.0000	19.4928	19.4928	1.6600e-003	0.0000	19.5344
Worker	0.0104	7.0900e-003	0.0709	2.5000e-004	0.0291	1.6000e-004	0.0293	7.7400e-003	1.5000e-004	7.8800e-003	0.0000	22.9377	22.9377	4.8000e-004	0.0000	22.9496
Total	**0.0123**	**0.0690**	**0.0801**	**4.5000e-004**	**0.0336**	**3.5000e-004**	**0.0340**	**8.9700e-003**	**3.3000e-004**	**9.2900e-003**	**0.0000**	**42.4305**	**42.4305**	**2.1400e-003**	**0.0000**	**42.4840**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0549	0.5567	0.4078	9.6000e-004		0.0235	0.0235		0.0217	0.0217	0.0000	87.3994	87.3994	0.0222	0.0000	87.9532
Total	**0.0549**	**0.5567**	**0.4078**	**9.6000e-004**		**0.0235**	**0.0235**		**0.0217**	**0.0217**	**0.0000**	**87.3994**	**87.3994**	**0.0222**	**0.0000**	**87.9532**

3.4 Above Grade Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8500e-003	0.0619	9.2000e-003	2.0000e-004	4.4900e-003	1.9000e-004	4.6800e-003	1.2300e-003	1.8000e-004	1.4100e-003	0.0000	19.4928	19.4928	1.6600e-003	0.0000	19.5344
Worker	0.0104	7.0900e-003	0.0709	2.5000e-004	0.0291	1.6000e-004	0.0293	7.7400e-003	1.5000e-004	7.8800e-003	0.0000	22.9377	22.9377	4.8000e-004	0.0000	22.9496
Total	**0.0123**	**0.0690**	**0.0801**	**4.5000e-004**	**0.0336**	**3.5000e-004**	**0.0340**	**8.9700e-003**	**3.3000e-004**	**9.2900e-003**	**0.0000**	**42.4305**	**42.4305**	**2.1400e-003**	**0.0000**	**42.4840**

3.4 Above Grade Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0972	0.9543	0.7377	1.7700e-003		0.0401	0.0401		0.0371	0.0371	0.0000	161.4798	161.4798	0.0409	0.0000	162.5013
Total	**0.0972**	**0.9543**	**0.7377**	**1.7700e-003**		**0.0401**	**0.0401**		**0.0371**	**0.0371**	**0.0000**	**161.4798**	**161.4798**	**0.0409**	**0.0000**	**162.5013**

3.4 Above Grade Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3200e-003	0.0774	0.0141	3.7000e-004	8.2900e-003	1.3000e-004	8.4300e-003	2.2800e-003	1.3000e-004	2.4100e-003	0.0000	34.8171	34.8171	2.0800e-003	0.0000	34.8692
Worker	0.0180	0.0117	0.1200	4.5000e-004	0.0538	2.8000e-004	0.0541	0.0143	2.6000e-004	0.0146	0.0000	40.7877	40.7877	7.9000e-004	0.0000	40.8074
Total	**0.0203**	**0.0891**	**0.1340**	**8.2000e-004**	**0.0621**	**4.1000e-004**	**0.0625**	**0.0166**	**3.9000e-004**	**0.0170**	**0.0000**	**75.6048**	**75.6048**	**2.8700e-003**	**0.0000**	**75.6766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0951	0.9337	0.7435	1.7700e-003		0.0390	0.0390		0.0361	0.0361	0.0000	161.4796	161.4796	0.0409	0.0000	162.5011
Total	**0.0951**	**0.9337**	**0.7435**	**1.7700e-003**		**0.0390**	**0.0390**		**0.0361**	**0.0361**	**0.0000**	**161.4796**	**161.4796**	**0.0409**	**0.0000**	**162.5011**

3.4 Above Grade Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3200e-003	0.0774	0.0141	3.7000e-004	8.2900e-003	1.3000e-004	8.4300e-003	2.2800e-003	1.3000e-004	2.4100e-003	0.0000	34.8171	34.8171	2.0800e-003	0.0000	34.8692
Worker	0.0180	0.0117	0.1200	4.5000e-004	0.0538	2.8000e-004	0.0541	0.0143	2.6000e-004	0.0146	0.0000	40.7877	40.7877	7.9000e-004	0.0000	40.8074
Total	**0.0203**	**0.0891**	**0.1340**	**8.2000e-004**	**0.0621**	**4.1000e-004**	**0.0625**	**0.0166**	**3.9000e-004**	**0.0170**	**0.0000**	**75.6048**	**75.6048**	**2.8700e-003**	**0.0000**	**75.6766**

3.5 Commisioning and Testing - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.4700e-003	0.0839	0.1177	1.8000e-004		3.4900e-003	3.4900e-003		3.2100e-003	3.2100e-003	0.0000	16.2384	16.2384	5.2500e-003	0.0000	16.3697
Total	**8.4700e-003**	**0.0839**	**0.1177**	**1.8000e-004**		**3.4900e-003**	**3.4900e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**16.2384**	**16.2384**	**5.2500e-003**	**0.0000**	**16.3697**

3.5 Commisioning and Testing - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	0.0419	7.6200e-003	2.0000e-004	4.4900e-003	7.0000e-005	4.5600e-003	1.2300e-003	7.0000e-005	1.3000e-003	0.0000	18.8443	18.8443	1.1300e-003	0.0000	18.8725
Worker	3.2500e-003	2.1200e-003	0.0216	8.0000e-005	9.7100e-003	5.0000e-005	9.7600e-003	2.5800e-003	5.0000e-005	2.6300e-003	0.0000	7.3586	7.3586	1.4000e-004	0.0000	7.3622
Total	**4.5100e-003**	**0.0440**	**0.0293**	**2.8000e-004**	**0.0142**	**1.2000e-004**	**0.0143**	**3.8100e-003**	**1.2000e-004**	**3.9300e-003**	**0.0000**	**26.2029**	**26.2029**	**1.2700e-003**	**0.0000**	**26.2347**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3700e-003	0.0728	0.1208	1.8000e-004		2.8700e-003	2.8700e-003		2.6500e-003	2.6500e-003	0.0000	16.2384	16.2384	5.2500e-003	0.0000	16.3697
Total	**7.3700e-003**	**0.0728**	**0.1208**	**1.8000e-004**		**2.8700e-003**	**2.8700e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**16.2384**	**16.2384**	**5.2500e-003**	**0.0000**	**16.3697**

3.5 Commisioning and Testing - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	0.0419	7.6200e-003	2.0000e-004	4.4900e-003	7.0000e-005	4.5600e-003	1.2300e-003	7.0000e-005	1.3000e-003	0.0000	18.8443	18.8443	1.1300e-003	0.0000	18.8725
Worker	3.2500e-003	2.1200e-003	0.0216	8.0000e-005	9.7100e-003	5.0000e-005	9.7600e-003	2.5800e-003	5.0000e-005	2.6300e-003	0.0000	7.3586	7.3586	1.4000e-004	0.0000	7.3622
Total	**4.5100e-003**	**0.0440**	**0.0293**	**2.8000e-004**	**0.0142**	**1.2000e-004**	**0.0143**	**3.8100e-003**	**1.2000e-004**	**3.9300e-003**	**0.0000**	**26.2029**	**26.2029**	**1.2700e-003**	**0.0000**	**26.2347**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0000e-004	9.0600e-003	7.6900e-003	4.0000e-005	2.6300e-003	2.0000e-005	2.6600e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	4.1871	4.1871	3.4000e-004	0.0000	4.1956
Unmitigated	8.0000e-004	9.0600e-003	7.6900e-003	4.0000e-005	2.6300e-003	2.0000e-005	2.6600e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	4.1871	4.1871	3.4000e-004	0.0000	4.1956

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.00	0.00	0.00	6,864	6,864
Total	4.00	0.00	0.00	6,864	6,864

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.496766	0.030510	0.170483	0.111467	0.014688	0.004287	0.033704	0.127678	0.002360	0.001460	0.004966	0.001070	0.000562

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.9786	15.9786	7.2000e-004	1.4000e-004	16.0391
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.9786	15.9786	7.2000e-004	1.4000e-004	16.0391
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	105120	15.9786	7.2000e-004	1.4000e-004	16.0391
Total		**15.9786**	**7.2000e-004**	**1.4000e-004**	**16.0391**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	105120	15.9786	7.2000e-004	1.4000e-004	16.0391
Total		**15.9786**	**7.2000e-004**	**1.4000e-004**	**16.0391**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0368	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0368	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0368**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0312					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0368**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation