

Appendix 3

Air Pollutant Emissions Calculation

CalEEMod Maximum Daily Emissions Calculations.....	Ap.3-1
CalEEMod Annual Emissions Calculations.....	Ap.3-44
Operation and Maintenance GHG Emissions Calculations.....	Ap.3-88

Vine Substation Project - Data Request #2
San Diego County, Winter

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	1.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The proposed Vine Substation site will be approximately 1.5 acres

Construction Phase - Construction schedule take from the original PEA and PEA Supplement.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

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Trips and VMT - Truck trip requirements taken from Attachment A: Construction Equipment and Vehicle Summary

On-road Fugitive Dust - All on-road travel will be 100-percent paved with the exception of vendor and hauling trips during construction of the proposed Vine Substation.

Grading - Import and export requirements taken from the original PEA. Entire site assumed to be disturbed during both processes.

Vehicle Trips - Assume a maximum of 10 vehicles could visit the site daily.

Construction Off-road Equipment Mitigation - Tier 3 or better will be a mitigation measure for the project

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2016	24.1458	227.8605	155.6874	0.3181	25.1631	12.5089	31.9849	7.0209	11.9355	13.4253	0.0000	31,096.13 59	31,096.13 59	5.6598	0.0000	31,214.99 27
2017	26.0984	250.0242	175.3435	0.3636	7.3235	13.2394	20.5629	1.5275	12.6013	14.1288	0.0000	35,208.68 66	35,208.68 66	6.6478	0.0000	35,348.29 13
Total	50.2441	477.8847	331.0308	0.6817	32.4866	25.7482	52.5478	8.5485	24.5368	27.5541	0.0000	66,304.82 26	66,304.82 26	12.3077	0.0000	66,563.28 40

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	lb/day										lb/day					
2016	7.5082	132.0635	171.5404	0.3181	10.4124	6.7768	13.3474	3.3127	6.7583	8.0618	0.0000	31,096.13 59	31,096.13 59	5.6598	0.0000	31,214.99 26
2017	8.6375	151.7633	196.8085	0.3636	5.4575	7.8251	13.2826	1.3413	7.8078	9.1491	0.0000	35,208.68 66	35,208.68 66	6.6478	0.0000	35,348.29 13
Total	16.1457	283.8268	368.3488	0.6817	15.8699	14.6019	26.6301	4.6540	14.5661	17.2109	0.0000	66,304.82 25	66,304.82 25	12.3077	0.0000	66,563.28 40

	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
Percent Reduction	67.87	40.61	-11.27	0.00	51.15	43.29	49.32	45.56	40.64	37.54	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	Vine - Site Development and Grading	Grading	1/1/2016	3/31/2016	6	78	
2	Vine - Retaining/Boundary Wall Construction	Building Construction	3/1/2016	4/30/2016	6	53	
3	Vine - Below-Grade Construction	Site Preparation	4/1/2016	9/30/2016	6	157	
4	Vine - Substation Equipment Installation	Building Construction	9/1/2016	6/30/2017	6	260	
5	12 kV - Daytime Duct Bank and Vault Installation	Trenching	10/1/2016	3/31/2017	6	156	
6	12 kV - Nighttime Duct Bank and Vault Installation	Trenching	10/1/2016	3/31/2017	6	156	
7	69 kV - Foundation Installation	Trenching	11/16/2016	11/30/2016	6	13	
8	69 kV - Pole Installation and Removal	Building Construction	11/16/2016	2/28/2017	6	90	
9	12 kV - Jack-and-Bore Installation	Trenching	1/1/2017	1/20/2017	6	17	
10	69 kV - Conductor Installation	Building Construction	1/1/2017	2/28/2017	6	50	
11	Energize - Testing and Commissioning	Building Construction	2/1/2017	6/30/2017	6	129	
12	Telecom - Duct Bank and Vault Installation	Trenching	4/1/2017	4/29/2017	6	25	
13	12 kV - Cable Installation and Cutover	Building Construction	4/1/2017	6/30/2017	6	78	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vine - Site Development and Grading	Excavators	1	6.00	162	0.38

Vine - Site Development and Grading	Off-Highway Trucks	1	7.00	400	0.38
Vine - Site Development and Grading	Pavers	1	6.00	125	0.42
Vine - Site Development and Grading	Rollers	2	7.00	80	0.38
Vine - Site Development and Grading	Rollers	2	6.00	80	0.38
Vine - Site Development and Grading	Rubber Tired Dozers	2	6.00	255	0.40
Vine - Site Development and Grading	Rubber Tired Loaders -	2	6.00	199	0.36
Site Development and Grading	Scrapers	2	7.00	361	0.48
Vine - Site Development and Grading	Skid Steer Loaders	2	3.00	64	0.37
Site Development and Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Vine - Site Development/Grading	Trenchers	1	6.00	80	0.50
Vine - Retaining/Boundary Wall Construction	Excavators	1	9.00	162	0.38
Vine - Retaining/Boundary Wall Construction	Graders	1	9.00	174	0.41
Vine - Retaining/Boundary Wall Construction	Plate Compactors	3	9.00	8	0.43
Vine - Retaining/Boundary Wall Construction	Rollers	1	9.00	80	0.38
Vine - Retaining/Boundary Wall Construction	Rubber Tired Loaders	3	9.00	199	0.36

Vine - Below-Grade Construction	Rubber Tired Loaders	2	6.00	199	0.36
Vine - Below-Grade Construction	Skid Steer Loaders	1	4.00	64	0.37
Vine - Below-Grade Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Vine - Below-Grade Construction	Trenchers	1	6.00	80	0.50
Substation Equipment Installation	Aerial Lifts	4	5.00	62	0.31
Substation Equipment Installation	Aerial Lifts	1	6.00	62	0.31
Vine - Substation Equipment Installation	Cranes	2	6.00	226	0.29
Vine - Substation Equipment Installation	Generator Sets	1	24.00	84	0.74
12 kV - Daytime Duct Bank and Vault Installation	Air Compressors	4	3.00	78	0.48
12 kV - Daytime Duct Bank and Vault Installation	Concrete/Industrial Saws	2	6.00	81	0.73
12 kV - Daytime Duct Bank and Vault Installation	Cranes	2	4.00	226	0.29
12 kV - Daytime Duct Bank and Vault Installation	Crushing/Proc. Equipment	2	5.00	85	0.78
12 kV - Daytime Duct Bank and Vault Installation	Generator Sets	2	5.00	84	0.74
12 kV - Daytime Duct Bank and Vault Installation	Off-Highway Trucks	2	6.00	400	0.38
12 kV - Daytime Duct Bank and Vault Installation	Paving Equipment	2	5.00	130	0.36
12 kV - Daytime Duct Bank and Vault Installation	Rollers	2	5.00	80	0.38
12 kV - Daytime Duct Bank and Vault Installation	Skid Steer Loaders	2	2.00	64	0.37

12 kV - Daytime Duct Bank and Vault Installation	Surfacing Equipment	2	6.00	253	0.30
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	2.00	97	0.37
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Air Compressors	4	3.00	78	0.48
12 kV - Nighttime Duct Bank and Vault Installation	Concrete/Industrial Saws	2	6.00	81	0.73
12 kV - Nighttime Duct Bank and Vault Installation	Cranes	2	4.00	226	0.29
12 kV - Nighttime Duct Bank and Vault Installation	Crushing/Proc. Equipment	2	5.00	85	0.78
12 kV - Nighttime Duct Bank and Vault Installation	Generator Sets	2	5.00	84	0.74
12 kV - Nighttime Duct Bank and Vault Installation	Off-Highway Trucks	2	6.00	400	0.38
12 kV - Nighttime Duct Bank and Vault Installation	Paving Equipment	2	5.00	130	0.36
12 kV - Nighttime Duct Bank and Vault Installation	Rollers	2	5.00	80	0.38
12 kV - Nighttime Duct Bank and Vault Installation	Signal Boards	8	8.00	6	0.82
12 kV - Nighttime Duct Bank and Vault Installation	Skid Steer Loaders	2	2.00	64	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Surfacing Equipment	2	6.00	253	0.30
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	2.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37

69 kV - Foundation Installation	Bore/Drill Rigs	1	8.00	205	0.50
69 kV - Foundation Installation	Cranes	1	3.00	226	0.29
69 kV - Foundation Installation	Forklifts	1	4.00	89	0.20
69 kV - Foundation Installation	Generator Sets	1	4.00	84	0.74
69 kV - Foundation Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
69 kV - Pole Installation and Removal	Aerial Lifts	1	8.00	62	0.31
69 kV - Pole Installation and Removal	Air Compressors	1	8.00	78	0.48
69 kV - Pole Installation and Removal	Cranes	1	8.00	226	0.29
12 kV - Jack-and-Bore Installation	Air Compressors	1	3.00	78	0.48
12 kV - Jack-and-Bore Installation	Bore/Drill Rigs	1	6.00	205	0.50
12 kV - Jack-and-Bore Installation	Concrete/Industrial Saws	1	4.00	81	0.73
12 kV - Jack-and-Bore Installation	Cranes	1	6.00	226	0.29
12 kV - Jack-and-Bore Installation	Cranes	2	3.00	226	0.29
12 kV - Jack-and-Bore Installation	Cranes	1	4.00	226	0.29
12 kV - Jack-and-Bore Installation	Excavators	1	6.00	162	0.38
12 kV - Jack-and-Bore Installation	Generator Sets	1	4.00	84	0.74
12 kV - Jack-and-Bore Installation	Off-Highway Trucks	1	4.00	400	0.38
12 kV - Jack-and-Bore Installation	Pumps	1	6.00	84	0.74
12 kV - Jack-and-Bore Installation	Skid Steer Loaders	1	3.00	64	0.37
12 kV - Jack-and-Bore Installation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
12 kV - Jack-and-Bore Installation	Welders	1	4.00	46	0.45
69 kV - Conductor Installation	Aerial Lifts	2	7.00	62	0.31

69 kV - Conductor Installation	Cranes	1	7.00	226	0.29
69 kV - Conductor Installation	Other Construction Equipment	1	7.00	171	0.42
Telecom - Duct Bank and Vault Installation	Skid Steer Loaders	1	3.00	64	0.37
Telecom - Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	1	3.00	97	0.37
12 kV - Cable Installation and Cutover	Other Construction Equipment	1	2.00	171	0.42

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
Vine - Site Development and Gra	18	48.00	7.00	1,106.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Retaining/Boundary W	9	20.00	7.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Below-Grade Construction	5	27.00	4.00	198.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Substation Equipment Installation	8	37.00	5.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Daytime Duct Bank and Vault Install	28	40.00	4.00	685.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Nighttime Duct Bank and Vault Install	36	40.00	4.00	1,037.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Foundation Installation	5	7.00	2.00	53.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Pole Installation and Remo	3	5.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Jack-and-Bore Installation	14	9.00	3.00	76.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Conductor Installation	4	0.00	1.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Energize - Testing and Commissioning	0	0.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Telecom - Duct Bank and Vault Installation	2	0.00	0.00	40.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Cable Installation and Cutover	1	15.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Vine - Site Development and Grading - 2016

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	lb/day										lb/day					
Fugitive Dust					9.0732	0.0000	9.0732	4.9705	0.0000	4.9705			0.0000			0.0000
Off-Road	8.5462	97.2545	60.2150	0.0847		4.6990	4.6990		4.3230	4.3230		8,807.4408	8,807.4408	2.6566		8,863.2301
Total	8.5462	97.2545	60.2150	0.0847	9.0732	4.6990	13.7721	4.9705	4.3230	9.2936		8,807.4408	8,807.4408	2.6566		8,863.2301

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	lb/day										lb/day					
Hauling	0.3871	5.9925	4.1323	0.0158	6.6284	0.0812	6.7096	0.7254	0.0747	0.8002		1,587.6032	1,587.6032	0.0112		1,587.8373
Vendor	0.1818	2.7079	1.6504	7.4700e-003	3.8264	0.0466	3.8730	0.4227	0.0429	0.4656		751.6472	751.6472	5.3200e-003		751.7588
Worker	0.2889	0.6552	5.8269	0.0149	1.2768	8.7400e-003	1.2855	0.3385	8.0400e-003	0.3466		1,243.9802	1,243.9802	0.0637		1,245.3179
Total	0.8578	9.3556	11.6096	0.0381	11.7316	0.1366	11.8681	1.4867	0.1256	1.6123		3,583.2305	3,583.2305	0.0802		3,584.9141

3.2 Vine - Site Development and Grading - 2016

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	lb/day										lb/day					
Fugitive Dust					4.0829	0.0000	4.0829	2.2367	0.0000	2.2367			0.0000			0.0000
Off-Road	2.0797	41.6919	50.6075	0.0847		1.9289	1.9289		1.9289	1.9289	0.0000	8,807.4408	8,807.4408	2.6566		8,863.2301
Total	2.0797	41.6919	50.6075	0.0847	4.0829	1.9289	6.0118	2.2367	1.9289	4.1656	0.0000	8,807.4408	8,807.4408	2.6566		8,863.2301

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	lb/day										lb/day					
Hauling	0.3871	5.9925	4.1323	0.0158	2.0926	0.0812	2.1739	0.2726	0.0747	0.3473		1,587.6032	1,587.6032	0.0112		1,587.8373
Vendor	0.1818	2.7079	1.6504	7.4700e-003	1.2140	0.0466	1.2606	0.1619	0.0429	0.2048		751.6472	751.6472	5.3200e-003		751.7588
Worker	0.2889	0.6552	5.8269	0.0149	1.2768	8.7400e-003	1.2855	0.3385	8.0400e-003	0.3466		1,243.9802	1,243.9802	0.0637		1,245.3179
Total	0.8578	9.3556	11.6096	0.0381	4.5834	0.1366	4.7200	0.7730	0.1256	0.8987		3,583.2305	3,583.2305	0.0802		3,584.9141

3.3 Vine - Retaining/Boundary Wall Construction - 2016

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	lb/day										lb/day					
Off-Road	3.7740	42.8247	18.5683	0.0382		1.9361	1.9361		1.7838	1.7838		3,919.9079	3,919.9079	1.1594		3,944.2545
Total	3.7740	42.8247	18.5683	0.0382		1.9361	1.9361		1.7838	1.7838		3,919.9079	3,919.9079	1.1594		3,944.2545

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	lb/day										lb/day					
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
Vendor	0.1818	2.7079	1.6504	7.4700e-003	3.8264	0.0466	3.8730	0.4227	0.0429	0.4656		751.6472	751.6472	5.3200e-003		751.7588
Worker	0.1204	0.2730	2.4279	6.2100e-003	0.5320	3.6400e-003	0.5356	0.1411	3.3500e-003	0.1444		518.3251	518.3251	0.0265		518.8825
Total	0.3022	2.9809	4.0783	0.0137	4.3584	0.0502	4.4086	0.5638	0.0462	0.6100		1,269.9722	1,269.9722	0.0319		1,270.6413

3.3 Vine - Retaining/Boundary Wall Construction - 2016

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	lb/day										lb/day					
Off-Road	1.0359	18.5119	23.7862	0.0382		0.8194	0.8194		0.8194	0.8194	0.0000	3,919.9079	3,919.9079	1.1594		3,944.2545
Total	1.0359	18.5119	23.7862	0.0382		0.8194	0.8194		0.8194	0.8194	0.0000	3,919.9079	3,919.9079	1.1594		3,944.2545

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	lb/day										lb/day					
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
Vendor	0.1818	2.7079	1.6504	7.4700e-003	1.2140	0.0466	1.2606	0.1619	0.0429	0.2048		751.6472	751.6472	5.3200e-003		751.7588
Worker	0.1204	0.2730	2.4279	6.2100e-003	0.5320	3.6400e-003	0.5356	0.1411	3.3500e-003	0.1444		518.3251	518.3251	0.0265		518.8825
Total	0.3022	2.9809	4.0783	0.0137	1.7460	0.0502	1.7962	0.3030	0.0462	0.3492		1,269.9722	1,269.9722	0.0319		1,270.6413

3.4 Vine - Below-Grade Construction - 2016

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	lb/day										lb/day					
Fugitive Dust					0.0119	0.0000	0.0119	1.3600e-003	0.0000	1.3600e-003			0.0000			0.0000
Off-Road	1.4747	16.5259	7.3667	0.0151		0.8463	0.8463		0.7786	0.7786		1,572.8389	1,572.8389	0.4744		1,582.8018
Total	1.4747	16.5259	7.3667	0.0151	0.0119	0.8463	0.8582	1.3600e-003	0.7786	0.7799		1,572.8389	1,572.8389	0.4744		1,582.8018

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	lb/day										lb/day					
Hauling	0.0344	0.5330	0.3675	1.4000e-003	0.5895	7.2200e-003	0.5968	0.0645	6.6500e-003	0.0712		141.2040	141.2040	9.9000e-004		141.2248
Vendor	0.1039	1.5474	0.9431	4.2700e-003	2.1865	0.0266	2.2131	0.2415	0.0245	0.2660		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.1625	0.3685	3.2777	8.3800e-003	0.7182	4.9200e-003	0.7231	0.1904	4.5200e-003	0.1949		699.7388	699.7388	0.0358		700.4913
Total	0.3008	2.4489	4.5883	0.0141	3.4942	0.0388	3.5330	0.4965	0.0357	0.5321		1,270.4555	1,270.4555	0.0399		1,271.2926

3.4 Vine - Below-Grade Construction - 2016

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	lb/day										lb/day					
Fugitive Dust					5.3600e-003	0.0000	5.3600e-003	6.1000e-004	0.0000	6.1000e-004			0.0000			0.0000
Off-Road	0.3730	7.7198	9.4146	0.0151		0.3996	0.3996		0.3996	0.3996	0.0000	1,572.8389	1,572.8389	0.4744		1,582.8018
Total	0.3730	7.7198	9.4146	0.0151	5.3600e-003	0.3996	0.4050	6.1000e-004	0.3996	0.4002	0.0000	1,572.8389	1,572.8389	0.4744		1,582.8018

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	lb/day										lb/day					
Hauling	0.0344	0.5330	0.3675	1.4000e-003	0.1861	7.2200e-003	0.1934	0.0243	6.6500e-003	0.0309		141.2040	141.2040	9.9000e-004		141.2248
Vendor	0.1039	1.5474	0.9431	4.2700e-003	0.6937	0.0266	0.7203	0.0925	0.0245	0.1170		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.1625	0.3685	3.2777	8.3800e-003	0.7182	4.9200e-003	0.7231	0.1904	4.5200e-003	0.1949		699.7388	699.7388	0.0358		700.4913
Total	0.3008	2.4489	4.5883	0.0141	1.5980	0.0388	1.6368	0.3072	0.0357	0.3428		1,270.4555	1,270.4555	0.0399		1,271.2926

3.5 Vine - Substation Equipment Installation - 2016

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	lb/day										lb/day					
Off-Road	3.1798	30.3006	19.4132	0.0336		1.7203	1.7203		1.6640	1.6640		3,306.1458	3,306.1458	0.6045		3,318.8401
Total	3.1798	30.3006	19.4132	0.0336		1.7203	1.7203		1.6640	1.6640		3,306.1458	3,306.1458	0.6045		3,318.8401

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	lb/day										lb/day					
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
Vendor	0.1299	1.9342	1.1789	5.3300e-003	2.7331	0.0333	2.7664	0.3019	0.0306	0.3325		536.8908	536.8908	3.8000e-003		536.9706
Worker	0.2227	0.5050	4.4916	0.0115	0.9842	6.7400e-003	0.9909	0.2610	6.1900e-003	0.2671		958.9014	958.9014	0.0491		959.9326
Total	0.3526	2.4393	5.6705	0.0168	3.7173	0.0400	3.7573	0.5629	0.0368	0.5997		1,495.7922	1,495.7922	0.0529		1,496.9032

3.5 Vine - Substation Equipment Installation - 2016

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	lb/day										lb/day					
Off-Road	0.7349	16.0530	20.7535	0.0336		0.9956	0.9956		0.9956	0.9956	0.0000	3,306.1458	3,306.1458	0.6045		3,318.8401
Total	0.7349	16.0530	20.7535	0.0336		0.9956	0.9956		0.9956	0.9956	0.0000	3,306.1458	3,306.1458	0.6045		3,318.8401

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	lb/day										lb/day					
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
Vendor	0.1299	1.9342	1.1789	5.3300e-003	0.8671	0.0333	0.9004	0.1156	0.0306	0.1463		536.8908	536.8908	3.8000e-003		536.9706
Worker	0.2227	0.5050	4.4916	0.0115	0.9842	6.7400e-003	0.9909	0.2610	6.1900e-003	0.2671		958.9014	958.9014	0.0491		959.9326
Total	0.3526	2.4393	5.6705	0.0168	1.8513	0.0400	1.8914	0.3766	0.0368	0.4134		1,495.7922	1,495.7922	0.0529		1,496.9032

3.5 Vine - Substation Equipment Installation - 2017

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	lb/day										lb/day					
Off-Road	2.8394	27.5361	18.9632	0.0336		1.5075	1.5075		1.4590	1.4590		3,283.9820	3,283.9820	0.5848		3,296.2629
Total	2.8394	27.5361	18.9632	0.0336		1.5075	1.5075		1.4590	1.4590		3,283.9820	3,283.9820	0.5848		3,296.2629

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	lb/day										lb/day					
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
Vendor	0.1192	1.7090	1.1005	5.3200e-003	2.7331	0.0289	2.7621	0.3019	0.0266	0.3285		527.8030	527.8030	3.5500e-003		527.8776
Worker	0.1969	0.4594	4.0338	0.0115	0.9842	6.5100e-003	0.9907	0.2610	6.0000e-003	0.2670		921.8163	921.8163	0.0455		922.7722
Total	0.3161	2.1684	5.1343	0.0168	3.7173	0.0354	3.7528	0.5629	0.0326	0.5955		1,449.6193	1,449.6193	0.0491		1,450.6497

3.5 Vine - Substation Equipment Installation - 2017

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	lb/day										lb/day					
Off-Road	0.7349	16.0530	20.7535	0.0336		0.9956	0.9956		0.9956	0.9956	0.0000	3,283.9820	3,283.9820	0.5848		3,296.2629
Total	0.7349	16.0530	20.7535	0.0336		0.9956	0.9956		0.9956	0.9956	0.0000	3,283.9820	3,283.9820	0.5848		3,296.2629

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	lb/day										lb/day					
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
Vendor	0.1192	1.7090	1.1005	5.3200e-003	0.8672	0.0289	0.8961	0.1156	0.0266	0.1422		527.8030	527.8030	3.5500e-003		527.8776
Worker	0.1969	0.4594	4.0338	0.0115	0.9842	6.5100e-003	0.9907	0.2610	6.0000e-003	0.2670		921.8163	921.8163	0.0455		922.7722
Total	0.3161	2.1684	5.1343	0.0168	1.8513	0.0354	1.8868	0.3766	0.0326	0.4092		1,449.6193	1,449.6193	0.0491		1,450.6497

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2016

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	lb/day										lb/day					
Off-Road	8.1808	76.7440	48.0343	0.0876		4.5421	4.5421		4.3300	4.3300		8,806.8473	8,806.8473	2.0517		8,849.9333
Total	8.1808	76.7440	48.0343	0.0876		4.5421	4.5421		4.3300	4.3300		8,806.8473	8,806.8473	2.0517		8,849.9333

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	lb/day										lb/day					
Hauling	0.1199	1.8557	1.2797	4.8800e-003	0.1996	0.0252	0.2248	0.0522	0.0231	0.0754		491.6402	491.6402	3.4500e-003		491.7127
Vendor	0.1039	1.5474	0.9431	4.2700e-003	0.1269	0.0266	0.1536	0.0362	0.0245	0.0607		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.2408	0.5460	4.8558	0.0124	1.0640	7.2900e-003	1.0713	0.2821	6.7000e-003	0.2888		1,036.6501	1,036.6501	0.0531		1,037.7650
Total	0.4645	3.9491	7.0785	0.0216	1.3905	0.0591	1.4496	0.3705	0.0543	0.4249		1,957.8030	1,957.8030	0.0596		1,959.0541

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2016

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	lb/day										lb/day					
Off-Road	2.0038	42.3021	53.8799	0.0876		2.3763	2.3763		2.3763	2.3763	0.0000	8,806.8473	8,806.8473	2.0517		8,849.9333
Total	2.0038	42.3021	53.8799	0.0876		2.3763	2.3763		2.3763	2.3763	0.0000	8,806.8473	8,806.8473	2.0517		8,849.9333

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	lb/day										lb/day					
Hauling	0.1199	1.8557	1.2797	4.8800e-003	0.1996	0.0252	0.2248	0.0522	0.0231	0.0754		491.6402	491.6402	3.4500e-003		491.7127
Vendor	0.1039	1.5474	0.9431	4.2700e-003	0.1269	0.0266	0.1536	0.0362	0.0245	0.0607		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.2408	0.5460	4.8558	0.0124	1.0640	7.2900e-003	1.0713	0.2821	6.7000e-003	0.2888		1,036.6501	1,036.6501	0.0531		1,037.7650
Total	0.4645	3.9491	7.0785	0.0216	1.3905	0.0591	1.4496	0.3705	0.0543	0.4249		1,957.8030	1,957.8030	0.0596		1,959.0541

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	7.4633	70.2140	46.9367	0.0876		4.0626	4.0626		3.8708	3.8708		8,718.8434	8,718.8434	2.0189		8,761.2404
Total	7.4633	70.2140	46.9367	0.0876		4.0626	4.0626		3.8708	3.8708		8,718.8434	8,718.8434	2.0189		8,761.2404

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	lb/day										lb/day					
Hauling	0.1122	1.6519	1.2266	4.8700e-003	0.2041	0.0221	0.2262	0.0533	0.0203	0.0737		483.2693	483.2693	3.3000e-003		483.3385
Vendor	0.0954	1.3672	0.8804	4.2600e-003	0.1269	0.0231	0.1501	0.0362	0.0213	0.0575		422.2424	422.2424	2.8400e-003		422.3021
Worker	0.2129	0.4967	4.3608	0.0124	1.0640	7.0400e-003	1.0710	0.2821	6.4900e-003	0.2886		996.5581	996.5581	0.0492		997.5915
Total	0.4204	3.5158	6.4679	0.0215	1.3950	0.0523	1.4473	0.3716	0.0481	0.4197		1,902.0698	1,902.0698	0.0554		1,903.2321

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	2.0038	42.3021	53.8799	0.0876		2.3763	2.3763		2.3763	2.3763	0.0000	8,718.8434	8,718.8434	2.0189		8,761.2404
Total	2.0038	42.3021	53.8799	0.0876		2.3763	2.3763		2.3763	2.3763	0.0000	8,718.8434	8,718.8434	2.0189		8,761.2404

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	lb/day										lb/day					
Hauling	0.1122	1.6519	1.2266	4.8700e-003	0.2041	0.0221	0.2262	0.0533	0.0203	0.0737		483.2693	483.2693	3.3000e-003		483.3385
Vendor	0.0954	1.3672	0.8804	4.2600e-003	0.1269	0.0231	0.1501	0.0362	0.0213	0.0575		422.2424	422.2424	2.8400e-003		422.3021
Worker	0.2129	0.4967	4.3608	0.0124	1.0640	7.0400e-003	1.0710	0.2821	6.4900e-003	0.2886		996.5581	996.5581	0.0492		997.5915
Total	0.4204	3.5158	6.4679	0.0215	1.3950	0.0523	1.4473	0.3716	0.0481	0.4197		1,902.0698	1,902.0698	0.0554		1,903.2321

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2016

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	lb/day										lb/day					
Off-Road	8.6397	79.6193	50.4424	0.0932		4.6539	4.6539		4.4418	4.4418		9,201.3556	9,201.3556	2.0927		9,245.3018
Total	8.6397	79.6193	50.4424	0.0932		4.6539	4.6539		4.4418	4.4418		9,201.3556	9,201.3556	2.0927		9,245.3018

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	lb/day										lb/day					
Hauling	0.1815	2.8093	1.9372	7.3800e-003	0.3022	0.0381	0.3402	0.0791	0.0350	0.1141		744.2787	744.2787	5.2300e-003		744.3885
Vendor	0.1039	1.5474	0.9431	4.2700e-003	0.1269	0.0266	0.1536	0.0362	0.0245	0.0607		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.2408	0.5460	4.8558	0.0124	1.0640	7.2900e-003	1.0713	0.2821	6.7000e-003	0.2888		1,036.6501	1,036.6501	0.0531		1,037.7650
Total	0.5261	4.9027	7.7361	0.0241	1.4931	0.0720	1.5651	0.3974	0.0662	0.4636		2,210.4415	2,210.4415	0.0614		2,211.7299

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2016

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	lb/day										lb/day					
Off-Road	2.4627	45.1775	56.2880	0.0932		2.4880	2.4880		2.4880	2.4880	0.0000	9,201.3556	9,201.3556	2.0927		9,245.3017
Total	2.4627	45.1775	56.2880	0.0932		2.4880	2.4880		2.4880	2.4880	0.0000	9,201.3556	9,201.3556	2.0927		9,245.3017

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	lb/day										lb/day					
Hauling	0.1815	2.8093	1.9372	7.3800e-003	0.3022	0.0381	0.3402	0.0791	0.0350	0.1141		744.2787	744.2787	5.2300e-003		744.3885
Vendor	0.1039	1.5474	0.9431	4.2700e-003	0.1269	0.0266	0.1536	0.0362	0.0245	0.0607		429.5127	429.5127	3.0400e-003		429.5765
Worker	0.2408	0.5460	4.8558	0.0124	1.0640	7.2900e-003	1.0713	0.2821	6.7000e-003	0.2888		1,036.6501	1,036.6501	0.0531		1,037.7650
Total	0.5261	4.9027	7.7361	0.0241	1.4931	0.0720	1.5651	0.3974	0.0662	0.4636		2,210.4415	2,210.4415	0.0614		2,211.7299

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	7.9222	73.0893	49.3448	0.0932		4.1744	4.1744		3.9825	3.9825		9,113.3517	9,113.3517	2.0599		9,156.6089
Total	7.9222	73.0893	49.3448	0.0932		4.1744	4.1744		3.9825	3.9825		9,113.3517	9,113.3517	2.0599		9,156.6089

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	lb/day										lb/day					
Hauling	0.1699	2.5008	1.8569	7.3700e-003	0.3089	0.0335	0.3424	0.0808	0.0308	0.1115		731.6063	731.6063	4.9900e-003		731.7110
Vendor	0.0954	1.3672	0.8804	4.2600e-003	0.1269	0.0231	0.1501	0.0362	0.0213	0.0575		422.2424	422.2424	2.8400e-003		422.3021
Worker	0.2129	0.4967	4.3608	0.0124	1.0640	7.0400e-003	1.0710	0.2821	6.4900e-003	0.2886		996.5581	996.5581	0.0492		997.5915
Total	0.4781	4.3647	7.0982	0.0240	1.4999	0.0636	1.5635	0.3990	0.0586	0.4576		2,150.4068	2,150.4068	0.0570		2,151.6046

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	2.4627	45.1775	56.2880	0.0932		2.4880	2.4880		2.4880	2.4880	0.0000	9,113.3517	9,113.3517	2.0599		9,156.6089
Total	2.4627	45.1775	56.2880	0.0932		2.4880	2.4880		2.4880	2.4880	0.0000	9,113.3517	9,113.3517	2.0599		9,156.6089

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	lb/day										lb/day					
Hauling	0.1699	2.5008	1.8569	7.3700e-003	0.3089	0.0335	0.3424	0.0808	0.0308	0.1115		731.6063	731.6063	4.9900e-003		731.7110
Vendor	0.0954	1.3672	0.8804	4.2600e-003	0.1269	0.0231	0.1501	0.0362	0.0213	0.0575		422.2424	422.2424	2.8400e-003		422.3021
Worker	0.2129	0.4967	4.3608	0.0124	1.0640	7.0400e-003	1.0710	0.2821	6.4900e-003	0.2886		996.5581	996.5581	0.0492		997.5915
Total	0.4781	4.3647	7.0982	0.0240	1.4999	0.0636	1.5635	0.3990	0.0586	0.4576		2,150.4068	2,150.4068	0.0570		2,151.6046

3.8 69 kV - Foundation Installation - 2016

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	lb/day										lb/day					
Off-Road	1.2214	13.4673	6.9069	0.0165		0.6755	0.6755		0.6350	0.6350		1,680.2971	1,680.2971	0.4414		1,689.5660
Total	1.2214	13.4673	6.9069	0.0165		0.6755	0.6755		0.6350	0.6350		1,680.2971	1,680.2971	0.4414		1,689.5660

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	lb/day										lb/day					
Hauling	0.1113	1.7230	1.1881	4.5300e-003	0.1065	0.0234	0.1299	0.0292	0.0215	0.0507		456.4718	456.4718	3.2100e-003		456.5391
Vendor	0.0520	0.7737	0.4715	2.1300e-003	0.0635	0.0133	0.0768	0.0181	0.0123	0.0303		214.7563	214.7563	1.5200e-003		214.7882
Worker	0.0421	0.0956	0.8498	2.1700e-003	0.1862	1.2800e-003	0.1875	0.0494	1.1700e-003	0.0505		181.4138	181.4138	9.2900e-003		181.6089
Total	0.2054	2.5922	2.5094	8.8300e-003	0.3562	0.0379	0.3941	0.0966	0.0349	0.1315		852.6419	852.6419	0.0140		852.9362

3.8 69 kV - Foundation Installation - 2016

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	lb/day										lb/day					
Off-Road	0.3916	7.9990	9.6073	0.0165		0.3934	0.3934		0.3934	0.3934	0.0000	1,680.297 1	1,680.297 1	0.4414		1,689.566 0
Total	0.3916	7.9990	9.6073	0.0165		0.3934	0.3934		0.3934	0.3934	0.0000	1,680.297 1	1,680.297 1	0.4414		1,689.566 0

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	lb/day										lb/day					
Hauling	0.1113	1.7230	1.1881	4.5300e-003	0.1065	0.0234	0.1299	0.0292	0.0215	0.0507		456.4718	456.4718	3.2100e-003		456.5391
Vendor	0.0520	0.7737	0.4715	2.1300e-003	0.0635	0.0133	0.0768	0.0181	0.0123	0.0303		214.7563	214.7563	1.5200e-003		214.7882
Worker	0.0421	0.0956	0.8498	2.1700e-003	0.1862	1.2800e-003	0.1875	0.0494	1.1700e-003	0.0505		181.4138	181.4138	9.2900e-003		181.6089
Total	0.2054	2.5922	2.5094	8.8300e-003	0.3562	0.0379	0.3941	0.0966	0.0349	0.1315		852.6419	852.6419	0.0140		852.9362

3.9 69 kV - Pole Installation and Removal - 2016

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	lb/day										lb/day					
Off-Road	1.2674	12.6173	6.5818	0.0113		0.6872	0.6872		0.6532	0.6532		1,133.0957	1,133.0957	0.2728		1,138.8252
Total	1.2674	12.6173	6.5818	0.0113		0.6872	0.6872		0.6532	0.6532		1,133.0957	1,133.0957	0.2728		1,138.8252

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	lb/day										lb/day					
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
Vendor	0.0779	1.1605	0.7073	3.2000e-003	0.0952	0.0200	0.1152	0.0271	0.0184	0.0455		322.1345	322.1345	2.2800e-003		322.1824
Worker	0.0301	0.0683	0.6070	1.5500e-003	0.1330	9.1000e-004	0.1339	0.0353	8.4000e-004	0.0361		129.5813	129.5813	6.6400e-003		129.7206
Total	0.1080	1.2288	1.3143	4.7500e-003	0.2282	0.0209	0.2491	0.0624	0.0192	0.0816		451.7158	451.7158	8.9200e-003		451.9030

3.9 69 kV - Pole Installation and Removal - 2016

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	lb/day										lb/day					
Off-Road	0.2586	5.4199	6.7029	0.0113		0.2936	0.2936		0.2936	0.2936	0.0000	1,133.0957	1,133.0957	0.2728		1,138.8252
Total	0.2586	5.4199	6.7029	0.0113		0.2936	0.2936		0.2936	0.2936	0.0000	1,133.0957	1,133.0957	0.2728		1,138.8252

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	lb/day										lb/day					
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
Vendor	0.0779	1.1605	0.7073	3.2000e-003	0.0952	0.0200	0.1152	0.0271	0.0184	0.0455		322.1345	322.1345	2.2800e-003		322.1824
Worker	0.0301	0.0683	0.6070	1.5500e-003	0.1330	9.1000e-004	0.1339	0.0353	8.4000e-004	0.0361		129.5813	129.5813	6.6400e-003		129.7206
Total	0.1080	1.2288	1.3143	4.7500e-003	0.2282	0.0209	0.2491	0.0624	0.0192	0.0816		451.7158	451.7158	8.9200e-003		451.9030

3.9 69 kV - Pole Installation and Removal - 2017

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	lb/day										lb/day					
Off-Road	1.1394	11.4076	6.3265	0.0113		0.6024	0.6024		0.5727	0.5727		1,121.4317	1,121.4317	0.2682		1,127.0648
Total	1.1394	11.4076	6.3265	0.0113		0.6024	0.6024		0.5727	0.5727		1,121.4317	1,121.4317	0.2682		1,127.0648

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0266	0.0621	0.5451	1.5500e-003	0.1330	8.8000e-004	0.1339	0.0353	8.1000e-004	0.0361		124.5698	124.5698	6.1500e-003		124.6989
Total	0.0981	1.0875	1.2054	4.7400e-003	0.2282	0.0182	0.2464	0.0624	0.0168	0.0792		441.2516	441.2516	8.2800e-003		441.4255

3.9 69 kV - Pole Installation and Removal - 2017

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	lb/day										lb/day					
Off-Road	0.2586	5.4199	6.7029	0.0113		0.2936	0.2936		0.2936	0.2936	0.0000	1,121.4317	1,121.4317	0.2682		1,127.0648
Total	0.2586	5.4199	6.7029	0.0113		0.2936	0.2936		0.2936	0.2936	0.0000	1,121.4317	1,121.4317	0.2682		1,127.0648

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0266	0.0621	0.5451	1.5500e-003	0.1330	8.8000e-004	0.1339	0.0353	8.1000e-004	0.0361		124.5698	124.5698	6.1500e-003		124.6989
Total	0.0981	1.0875	1.2054	4.7400e-003	0.2282	0.0182	0.2464	0.0624	0.0168	0.0792		441.2516	441.2516	8.2800e-003		441.4255

3.10 12 kV - Jack-and-Bore Installation - 2017

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	lb/day										lb/day					
Off-Road	3.9575	39.2568	22.7560	0.0456		2.0044	2.0044		1.8992	1.8992		4,538.8603	4,538.8603	1.1153		4,562.2809
Total	3.9575	39.2568	22.7560	0.0456		2.0044	2.0044		1.8992	1.8992		4,538.8603	4,538.8603	1.1153		4,562.2809

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	lb/day										lb/day					
Hauling	0.1143	1.6818	1.2489	4.9600e-003	0.1168	0.0225	0.1393	0.0320	0.0207	0.0527		492.0259	492.0259	3.3600e-003		492.0963
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0479	0.1118	0.9812	2.7900e-003	0.2394	1.5800e-003	0.2410	0.0635	1.4600e-003	0.0649		224.2256	224.2256	0.0111		224.4581
Total	0.2337	2.8190	2.8904	0.0109	0.4514	0.0414	0.4928	0.1226	0.0381	0.1607		1,032.9332	1,032.9332	0.0166		1,033.2810

3.10 12 kV - Jack-and-Bore Installation - 2017

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	lb/day										lb/day					
Off-Road	1.2816	21.9704	27.2423	0.0456		1.1278	1.1278		1.1278	1.1278	0.0000	4,538.8603	4,538.8603	1.1153		4,562.2809
Total	1.2816	21.9704	27.2423	0.0456		1.1278	1.1278		1.1278	1.1278	0.0000	4,538.8603	4,538.8603	1.1153		4,562.2809

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	lb/day										lb/day					
Hauling	0.1143	1.6818	1.2489	4.9600e-003	0.1168	0.0225	0.1393	0.0320	0.0207	0.0527		492.0259	492.0259	3.3600e-003		492.0963
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0479	0.1118	0.9812	2.7900e-003	0.2394	1.5800e-003	0.2410	0.0635	1.4600e-003	0.0649		224.2256	224.2256	0.0111		224.4581
Total	0.2337	2.8190	2.8904	0.0109	0.4514	0.0414	0.4928	0.1226	0.0381	0.1607		1,032.9332	1,032.9332	0.0166		1,033.2810

3.11 69 kV - Conductor Installation - 2017

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	lb/day										lb/day					
Off-Road	1.2063	14.2231	8.0001	0.0132		0.6713	0.6713		0.6176	0.6176		1,350.3763	1,350.3763	0.4138		1,359.0651
Total	1.2063	14.2231	8.0001	0.0132		0.6713	0.6713		0.6176	0.6176		1,350.3763	1,350.3763	0.4138		1,359.0651

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	lb/day										lb/day					
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
Vendor	0.0238	0.3418	0.2201	1.0600e-003	0.0317	5.7800e-003	0.0375	9.0400e-003	5.3200e-003	0.0144		105.5606	105.5606	7.1000e-004		105.5755
Worker	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	0.0238	0.3418	0.2201	1.0600e-003	0.0317	5.7800e-003	0.0375	9.0400e-003	5.3200e-003	0.0144		105.5606	105.5606	7.1000e-004		105.5755

3.11 69 kV - Conductor Installation - 2017

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	lb/day										lb/day					
Off-Road	0.3256	6.5433	8.9256	0.0132		0.3270	0.3270		0.3270	0.3270	0.0000	1,350.3763	1,350.3763	0.4138		1,359.0651
Total	0.3256	6.5433	8.9256	0.0132		0.3270	0.3270		0.3270	0.3270	0.0000	1,350.3763	1,350.3763	0.4138		1,359.0651

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	lb/day										lb/day					
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
Vendor	0.0238	0.3418	0.2201	1.0600e-003	0.0317	5.7800e-003	0.0375	9.0400e-003	5.3200e-003	0.0144		105.5606	105.5606	7.1000e-004		105.5755
Worker	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	0.0238	0.3418	0.2201	1.0600e-003	0.0317	5.7800e-003	0.0375	9.0400e-003	5.3200e-003	0.0144		105.5606	105.5606	7.1000e-004		105.5755

3.12 Energize - Testing and Commissioning - 2017

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	lb/day										lb/day					
Off-Road	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

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	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	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265

3.12 Energize - Testing and Commissioning - 2017

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	lb/day										lb/day					
Off-Road	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

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	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	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265

3.13 Telecom - Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	0.1588	1.6561	1.4174	1.9300e-003		0.1135	0.1135		0.1044	0.1044		197.3953	197.3953	0.0605		198.6654
Total	0.1588	1.6561	1.4174	1.9300e-003		0.1135	0.1135		0.1044	0.1044		197.3953	197.3953	0.0605		198.6654

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	lb/day										lb/day					
Hauling	0.0409	0.6019	0.4470	1.7700e-003	0.0418	8.0600e-003	0.0499	0.0115	7.4100e-003	0.0189		176.0935	176.0935	1.2000e-003		176.1187
Vendor	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
Worker	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	0.0409	0.6019	0.4470	1.7700e-003	0.0418	8.0600e-003	0.0499	0.0115	7.4100e-003	0.0189		176.0935	176.0935	1.2000e-003		176.1187

3.13 Telecom - Duct Bank and Vault Installation - 2017

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	lb/day										lb/day					
Off-Road	0.0473	1.0795	1.4578	1.9300e-003		0.0757	0.0757		0.0757	0.0757	0.0000	197.3953	197.3953	0.0605		198.6654
Total	0.0473	1.0795	1.4578	1.9300e-003		0.0757	0.0757		0.0757	0.0757	0.0000	197.3953	197.3953	0.0605		198.6654

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	lb/day										lb/day					
Hauling	0.0409	0.6019	0.4470	1.7700e-003	0.0418	8.0600e-003	0.0499	0.0115	7.4100e-003	0.0189		176.0935	176.0935	1.2000e-003		176.1187
Vendor	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
Worker	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	0.0409	0.6019	0.4470	1.7700e-003	0.0418	8.0600e-003	0.0499	0.0115	7.4100e-003	0.0189		176.0935	176.0935	1.2000e-003		176.1187

3.14 12 kV - Cable Installation and Cutover - 2017

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	lb/day										lb/day					
Off-Road	0.1585	1.7399	1.0570	1.5300e-003		0.0919	0.0919		0.0846	0.0846		157.0475	157.0475	0.0481		158.0580
Total	0.1585	1.7399	1.0570	1.5300e-003		0.0919	0.0919		0.0846	0.0846		157.0475	157.0475	0.0481		158.0580

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0798	0.1863	1.6353	4.6500e-003	0.3990	2.6400e-003	0.4016	0.1058	2.4300e-003	0.1082		373.7093	373.7093	0.0185		374.0968
Total	0.1513	1.2117	2.2956	7.8400e-003	0.4942	0.0200	0.5142	0.1329	0.0184	0.1513		690.3911	690.3911	0.0206		690.8234

3.14 12 kV - Cable Installation and Cutover - 2017

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	lb/day										lb/day					
Off-Road	0.0380	0.7347	1.1717	1.5300e-003		0.0355	0.0355		0.0355	0.0355	0.0000	157.0475	157.0475	0.0481		158.0580
Total	0.0380	0.7347	1.1717	1.5300e-003		0.0355	0.0355		0.0355	0.0355	0.0000	157.0475	157.0475	0.0481		158.0580

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	lb/day										lb/day					
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
Vendor	0.0715	1.0254	0.6603	3.1900e-003	0.0952	0.0174	0.1125	0.0271	0.0160	0.0431		316.6818	316.6818	2.1300e-003		316.7265
Worker	0.0798	0.1863	1.6353	4.6500e-003	0.3990	2.6400e-003	0.4016	0.1058	2.4300e-003	0.1082		373.7093	373.7093	0.0185		374.0968
Total	0.1513	1.2117	2.2956	7.8400e-003	0.4942	0.0200	0.5142	0.1329	0.0184	0.1513		690.3911	690.3911	0.0206		690.8234

Vine Substation Project - Data Request #2
San Diego 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	1.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The proposed Vine Substation site will be approximately 1.5 acres

Construction Phase - Construction schedule take from the original PEA and PEA Supplement.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Off-road Equipment - Default equipment set to zero. Equipment list taken from Attachment A: Construction Equipment and Vehicle Summary.

Trips and VMT - Truck trip requirements taken from Attachment A: Construction Equipment and Vehicle Summary

On-road Fugitive Dust - All on-road travel will be 100-percent paved with the exception of vendor and hauling trips during construction of the proposed Vine Substation.

Grading - Import and export requirements taken from the original PEA. Entire site assumed to be disturbed during both processes.

Vehicle Trips - Assume a maximum of 10 vehicles could visit the site daily.

Construction Off-road Equipment Mitigation - Tier 3 or better will be a mitigation measure for the project

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					
2016	1.5354	15.4894	10.3183	0.0206	1.4202	0.7903	2.2105	0.3567	0.7442	1.1009	0.0000	1,835.2448	1,835.2448	0.3540	0.0000	1,842.6795
2017	0.9853	9.3674	6.8879	0.0145	0.4085	0.4980	0.9065	0.0797	0.4753	0.5549	0.0000	1,263.0200	1,263.0200	0.2186	0.0000	1,267.6106
Total	2.5207	24.8567	17.2062	0.0351	1.8286	1.2883	3.1169	0.4364	1.2195	1.6559	0.0000	3,098.2648	3,098.2648	0.5726	0.0000	3,110.2901

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					
2016	0.4822	8.3384	10.7948	0.0206	0.6954	0.3988	1.0942	0.1971	0.3974	0.5945	0.0000	1,835.2432	1,835.2432	0.3540	0.0000	1,842.6779
2017	0.3290	5.7932	7.6370	0.0145	0.2797	0.3020	0.5817	0.0668	0.3012	0.3680	0.0000	1,263.0189	1,263.0189	0.2186	0.0000	1,267.6095
Total	0.8112	14.1316	18.4317	0.0351	0.9751	0.7008	1.6759	0.2639	0.6986	0.9625	0.0000	3,098.2621	3,098.2621	0.5726	0.0000	3,110.2873

	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
Percent Reduction	67.82	43.15	-7.12	0.00	46.68	45.60	46.23	39.51	42.72	41.87	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	Vine - Site Development and Grading	Grading	1/1/2016	3/31/2016	6	78	
2	Vine - Retaining/Boundary Wall Construction	Building Construction	3/1/2016	4/30/2016	6	53	
3	Vine - Below-Grade Construction	Site Preparation	4/1/2016	9/30/2016	6	157	
4	Vine - Substation Equipment Installation	Building Construction	9/1/2016	6/30/2017	6	260	
5	12 kV - Daytime Duct Bank and Vault Installation	Trenching	10/1/2016	3/31/2017	6	156	
6	12 kV - Nighttime Duct Bank and Vault Installation	Trenching	10/1/2016	3/31/2017	6	156	
7	69 kV - Foundation Installation	Trenching	11/16/2016	11/30/2016	6	13	
8	69 kV - Pole Installation and Removal	Building Construction	11/16/2016	2/28/2017	6	90	
9	12 kV - Jack-and-Bore Installation	Trenching	1/1/2017	1/20/2017	6	17	
10	69 kV - Conductor Installation	Building Construction	1/1/2017	2/28/2017	6	50	
11	Energize - Testing and Commissioning	Building Construction	2/1/2017	6/30/2017	6	129	
12	Telecom - Duct Bank and Vault Installation	Trenching	4/1/2017	4/29/2017	6	25	
13	12 kV - Cable Installation and Cutover	Building Construction	4/1/2017	6/30/2017	6	78	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vine - Site Development and Grading	Excavators	1	6.00	162	0.38

Vine - Site Development and Grading	Off-Highway Trucks	1	7.00	400	0.38
Vine - Site Development and Grading	Pavers	1	6.00	125	0.42
Vine - Site Development and Grading	Rollers	2	7.00	80	0.38
Vine - Site Development and Grading	Rollers	2	6.00	80	0.38
Vine - Site Development and Grading	Rubber Tired Dozers	2	6.00	255	0.40
Vine - Site Development and Grading	Rubber Tired Loaders	2	6.00	199	0.36
Vine - Site Development and Grading	Scrapers	2	7.00	361	0.48
Vine - Site Development and Grading	Skid Steer Loaders	2	3.00	64	0.37
Vine - Site Development and Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Vine - Site Development and Grading	Trenchers	1	6.00	80	0.50
Vine - Retaining/Boundary Wall Construction	Excavators	1	9.00	162	0.38
Vine - Retaining/Boundary Wall Construction	Graders	1	9.00	174	0.41
Vine - Retaining/Boundary Wall Construction	Plate Compactors	3	9.00	8	0.43
Vine - Retaining/Boundary Wall Construction	Rollers	1	9.00	80	0.38
Vine - Retaining/Boundary Wall Construction	Rubber Tired Loaders	3	9.00	199	0.36

Vine - Below-Grade Construction	Rubber Tired Loaders	2	6.00	199	0.36
Vine - Below-Grade Construction	Skid Steer Loaders	1	4.00	64	0.37
Vine - Below-Grade Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Vine - Below-Grade Construction	Trenchers	1	6.00	80	0.50
Vine Substation Equipment Installation	Aerial Lifts	4	5.00	62	0.31
Vine - Substation Equipment Installation	Aerial Lifts	1	6.00	62	0.31
Vine - Substation Equipment Installation	Cranes	2	6.00	226	0.29
Vine - Substation Equipment Installation	Generator Sets	1	24.00	84	0.74
12 kV - Daytime Duct Bank and Vault Installation	Air Compressors	4	3.00	78	0.48
12 kV - Daytime Duct Bank and Vault Installation	Concrete/Industrial Saws	2	6.00	81	0.73
12 kV - Daytime Duct Bank and Vault Installation	Cranes	2	4.00	226	0.29
12 kV - Daytime Duct Bank and Vault Installation	Crushing/Proc. Equipment	2	5.00	85	0.78
12 kV - Daytime Duct Bank and Vault Installation	Generator Sets	2	5.00	84	0.74
12 kV - Daytime Duct Bank and Vault Installation	Off-Highway Trucks	2	6.00	400	0.38
12 kV - Daytime Duct Bank and Vault Installation	Paving Equipment	2	5.00	130	0.36
12 kV - Daytime Duct Bank and Vault Installation	Rollers	2	5.00	80	0.38
12 kV - Daytime Duct Bank and Vault Installation	Skid Steer Loaders	2	2.00	64	0.37

12 kV - Daytime Duct Bank and Vault Installation	Surfacing Equipment	2	6.00	253	0.30
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	2.00	97	0.37
12 kV - Daytime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Air Compressors	4	3.00	78	0.48
12 kV - Nighttime Duct Bank and Vault Installation	Concrete/Industrial Saws	2	6.00	81	0.73
12 kV - Nighttime Duct Bank and Vault Installation	Cranes	2	4.00	226	0.29
12 kV - Nighttime Duct Bank and Vault Installation	Crushing/Proc. Equipment	2	5.00	85	0.78
12 kV - Nighttime Duct Bank and Vault Installation	Generator Sets	2	5.00	84	0.74
12 kV - Nighttime Duct Bank and Vault Installation	Off-Highway Trucks	2	6.00	400	0.38
12 kV - Nighttime Duct Bank and Vault Installation	Paving Equipment	2	5.00	130	0.36
12 kV - Nighttime Duct Bank and Vault Installation	Rollers	2	5.00	80	0.38
12 kV - Nighttime Duct Bank and Vault Installation	Signal Boards	8	8.00	6	0.82
12 kV - Nighttime Duct Bank and Vault Installation	Skid Steer Loaders	2	2.00	64	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Surfacing Equipment	2	6.00	253	0.30
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	2.00	97	0.37
12 kV - Nighttime Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	2	6.00	97	0.37

69 kV - Foundation Installation	Bore/Drill Rigs	1	8.00	205	0.50
69 kV - Foundation Installation	Cranes	1	3.00	226	0.29
69 kV - Foundation Installation	Forklifts	1	4.00	89	0.20
69 kV - Foundation Installation	Generator Sets	1	4.00	84	0.74
69 kV - Foundation Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
69 kV - Pole Installation and Removal	Aerial Lifts	1	8.00	62	0.31
69 kV - Pole Installation and Removal	Air Compressors	1	8.00	78	0.48
69 kV - Pole Installation and Removal	Cranes	1	8.00	226	0.29
12 kV - Jack-and-Bore Installation	Air Compressors	1	3.00	78	0.48
12 kV - Jack-and-Bore Installation	Bore/Drill Rigs	1	6.00	205	0.50
12 kV - Jack-and-Bore Installation	Concrete/Industrial Saws	1	4.00	81	0.73
12 kV - Jack-and-Bore Installation	Cranes	1	6.00	226	0.29
12 kV - Jack-and-Bore Installation	Cranes	2	3.00	226	0.29
12 kV - Jack-and-Bore Installation	Cranes	1	4.00	226	0.29
12 kV - Jack-and-Bore Installation	Excavators	1	6.00	162	0.38
12 kV - Jack-and-Bore Installation	Generator Sets	1	4.00	84	0.74
12 kV - Jack-and-Bore Installation	Off-Highway Trucks	1	4.00	400	0.38
12 kV - Jack-and-Bore Installation	Pumps	1	6.00	84	0.74
12 kV - Jack-and-Bore Installation	Skid Steer Loaders	1	3.00	64	0.37
12 kV - Jack-and-Bore Installation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
12 kV - Jack-and-Bore Installation	Welders	1	4.00	46	0.45
69 kV - Conductor Installation	Aerial Lifts	2	7.00	62	0.31

69 kV - Conductor Installation	Cranes	1	7.00	226	0.29
69 kV - Conductor Installation	Other Construction Equipment	1	7.00	171	0.42
Telecom - Duct Bank and Vault Installation	Skid Steer Loaders	1	3.00	64	0.37
Telecom - Duct Bank and Vault Installation	Tractors/Loaders/Backhoes	1	3.00	97	0.37
12 kV - Cable Installation and Cutover	Other Construction Equipment	1	2.00	171	0.42

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
Vine - Site Development and Gra	18	48.00	7.00	1,106.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Retaining/Boundary W	9	20.00	7.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Below-Grade Construction	5	27.00	4.00	198.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Vine - Substation Equipment Installation	8	37.00	5.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Daytime Duct Bank and Vault Install	28	40.00	4.00	685.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Nighttime Duct Bank and Vault Install	36	40.00	4.00	1,037.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Foundation Installation	5	7.00	2.00	53.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Pole Installation and Remo	3	5.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Jack-and-Bore Installation	14	9.00	3.00	76.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
69 kV - Conductor Installation	4	0.00	1.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Energize - Testing and Commissioning	0	0.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
Telecom - Duct Bank and Vault Installation	2	0.00	0.00	40.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT
12 kV - Cable Installation and Cutov	1	15.00	3.00	0.00	35.00	35.00	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Vine - Site Development and Grading - 2016

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					0.3539	0.0000	0.3539	0.1939	0.0000	0.1939	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3333	3.7929	2.3484	3.3000e-003		0.1833	0.1833		0.1686	0.1686	0.0000	311.6091	311.6091	0.0940	0.0000	313.5829
Total	0.3333	3.7929	2.3484	3.3000e-003	0.3539	0.1833	0.5371	0.1939	0.1686	0.3625	0.0000	311.6091	311.6091	0.0940	0.0000	313.5829

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	0.0146	0.2345	0.1506	6.1000e-004	0.2315	3.1600e-003	0.2346	0.0256	2.9100e-003	0.0285	0.0000	56.2212	56.2212	3.9000e-004	0.0000	56.2294
Vendor	6.9100e-003	0.1060	0.0609	2.9000e-004	0.1337	1.8100e-003	0.1355	0.0149	1.6700e-003	0.0166	0.0000	26.6197	26.6197	1.9000e-004	0.0000	26.6236
Worker	0.0108	0.0252	0.2286	5.9000e-004	0.0486	3.4000e-004	0.0490	0.0129	3.1000e-004	0.0132	0.0000	44.4551	44.4551	2.2500e-003	0.0000	44.5024
Total	0.0323	0.3658	0.4401	1.4900e-003	0.4137	5.3100e-003	0.4190	0.0534	4.8900e-003	0.0583	0.0000	127.2960	127.2960	2.8300e-003	0.0000	127.3555

3.2 Vine - Site Development and Grading - 2016

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					0.1592	0.0000	0.1592	0.0872	0.0000	0.0872	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0811	1.6260	1.9737	3.3000e-003		0.0752	0.0752		0.0752	0.0752	0.0000	311.6087	311.6087	0.0940	0.0000	313.5825
Total	0.0811	1.6260	1.9737	3.3000e-003	0.1592	0.0752	0.2345	0.0872	0.0752	0.1625	0.0000	311.6087	311.6087	0.0940	0.0000	313.5825

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	0.0146	0.2345	0.1506	6.1000e-004	0.0739	3.1600e-003	0.0771	9.8200e-003	2.9100e-003	0.0127	0.0000	56.2212	56.2212	3.9000e-004	0.0000	56.2294
Vendor	6.9100e-003	0.1060	0.0609	2.9000e-004	0.0429	1.8100e-003	0.0447	5.8500e-003	1.6700e-003	7.5200e-003	0.0000	26.6197	26.6197	1.9000e-004	0.0000	26.6236
Worker	0.0108	0.0252	0.2286	5.9000e-004	0.0486	3.4000e-004	0.0490	0.0129	3.1000e-004	0.0132	0.0000	44.4551	44.4551	2.2500e-003	0.0000	44.5024
Total	0.0323	0.3658	0.4401	1.4900e-003	0.1655	5.3100e-003	0.1708	0.0286	4.8900e-003	0.0335	0.0000	127.2960	127.2960	2.8300e-003	0.0000	127.3555

3.3 Vine - Retaining/Boundary Wall Construction - 2016

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	0.1000	1.1349	0.4921	1.0100e-003		0.0513	0.0513		0.0473	0.0473	0.0000	94.2361	94.2361	0.0279	0.0000	94.8214
Total	0.1000	1.1349	0.4921	1.0100e-003		0.0513	0.0513		0.0473	0.0473	0.0000	94.2361	94.2361	0.0279	0.0000	94.8214

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	4.6900e-003	0.0721	0.0414	2.0000e-004	0.0908	1.2300e-003	0.0920	0.0101	1.1300e-003	0.0113	0.0000	18.0878	18.0878	1.3000e-004	0.0000	18.0904
Worker	3.0500e-003	7.1300e-003	0.0647	1.7000e-004	0.0138	1.0000e-004	0.0139	3.6600e-003	9.0000e-005	3.7400e-003	0.0000	12.5861	12.5861	6.4000e-004	0.0000	12.5995
Total	7.7400e-003	0.0792	0.1061	3.7000e-004	0.1046	1.3300e-003	0.1059	0.0138	1.2200e-003	0.0150	0.0000	30.6739	30.6739	7.7000e-004	0.0000	30.6899

3.3 Vine - Retaining/Boundary Wall Construction - 2016

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	0.0275	0.4906	0.6303	1.0100e-003		0.0217	0.0217		0.0217	0.0217	0.0000	94.2360	94.2360	0.0279	0.0000	94.8213
Total	0.0275	0.4906	0.6303	1.0100e-003		0.0217	0.0217		0.0217	0.0217	0.0000	94.2360	94.2360	0.0279	0.0000	94.8213

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	4.6900e-003	0.0721	0.0414	2.0000e-004	0.0292	1.2300e-003	0.0304	3.9700e-003	1.1300e-003	5.1100e-003	0.0000	18.0878	18.0878	1.3000e-004	0.0000	18.0904
Worker	3.0500e-003	7.1300e-003	0.0647	1.7000e-004	0.0138	1.0000e-004	0.0139	3.6600e-003	9.0000e-005	3.7400e-003	0.0000	12.5861	12.5861	6.4000e-004	0.0000	12.5995
Total	7.7400e-003	0.0792	0.1061	3.7000e-004	0.0429	1.3300e-003	0.0443	7.6300e-003	1.2200e-003	8.8500e-003	0.0000	30.6739	30.6739	7.7000e-004	0.0000	30.6899

3.4 Vine - Below-Grade Construction - 2016

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					9.3000e-004	0.0000	9.3000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1158	1.2973	0.5783	1.1900e-003		0.0664	0.0664		0.0611	0.0611	0.0000	112.0082	112.0082	0.0338	0.0000	112.7177
Total	0.1158	1.2973	0.5783	1.1900e-003	9.3000e-004	0.0664	0.0674	1.1000e-004	0.0611	0.0612	0.0000	112.0082	112.0082	0.0338	0.0000	112.7177

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	2.6200e-003	0.0420	0.0270	1.1000e-004	0.0414	5.7000e-004	0.0420	4.5700e-003	5.2000e-004	5.0900e-003	0.0000	10.0649	10.0649	7.0000e-005	0.0000	10.0664
Vendor	7.9400e-003	0.1220	0.0701	3.4000e-004	0.1537	2.0900e-003	0.1558	0.0171	1.9200e-003	0.0191	0.0000	30.6175	30.6175	2.2000e-004	0.0000	30.6221
Worker	0.0122	0.0285	0.2588	6.6000e-004	0.0550	3.9000e-004	0.0554	0.0146	3.5000e-004	0.0150	0.0000	50.3326	50.3326	2.5500e-003	0.0000	50.3862
Total	0.0227	0.1925	0.3558	1.1100e-003	0.2502	3.0500e-003	0.2532	0.0363	2.7900e-003	0.0391	0.0000	91.0150	91.0150	2.8400e-003	0.0000	91.0746

3.4 Vine - Below-Grade Construction - 2016

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					4.2000e-004	0.0000	4.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.6060	0.7391	1.1900e-003		0.0314	0.0314		0.0314	0.0314	0.0000	112.0080	112.0080	0.0338	0.0000	112.7175
Total	0.0293	0.6060	0.7391	1.1900e-003	4.2000e-004	0.0314	0.0318	5.0000e-005	0.0314	0.0314	0.0000	112.0080	112.0080	0.0338	0.0000	112.7175

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	2.6200e-003	0.0420	0.0270	1.1000e-004	0.0132	5.7000e-004	0.0138	1.7600e-003	5.2000e-004	2.2800e-003	0.0000	10.0649	10.0649	7.0000e-005	0.0000	10.0664
Vendor	7.9400e-003	0.1220	0.0701	3.4000e-004	0.0494	2.0900e-003	0.0515	6.7300e-003	1.9200e-003	8.6500e-003	0.0000	30.6175	30.6175	2.2000e-004	0.0000	30.6221
Worker	0.0122	0.0285	0.2588	6.6000e-004	0.0550	3.9000e-004	0.0554	0.0146	3.5000e-004	0.0150	0.0000	50.3326	50.3326	2.5500e-003	0.0000	50.3862
Total	0.0227	0.1925	0.3558	1.1100e-003	0.1177	3.0500e-003	0.1207	0.0231	2.7900e-003	0.0259	0.0000	91.0150	91.0150	2.8400e-003	0.0000	91.0746

3.5 Vine - Substation Equipment Installation - 2016

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	0.1669	1.5908	1.0192	1.7600e-003		0.0903	0.0903		0.0874	0.0874	0.0000	157.4625	157.4625	0.0288	0.0000	158.0671
Total	0.1669	1.5908	1.0192	1.7600e-003		0.0903	0.0903		0.0874	0.0874	0.0000	157.4625	157.4625	0.0288	0.0000	158.0671

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	6.6400e-003	0.1020	0.0586	2.8000e-004	0.1285	1.7500e-003	0.1303	0.0143	1.6100e-003	0.0159	0.0000	25.5959	25.5959	1.8000e-004	0.0000	25.5997
Worker	0.0112	0.0261	0.2372	6.1000e-004	0.0504	3.5000e-004	0.0508	0.0134	3.3000e-004	0.0137	0.0000	46.1293	46.1293	2.3400e-003	0.0000	46.1784
Total	0.0178	0.1281	0.2957	8.9000e-004	0.1790	2.1000e-003	0.1810	0.0277	1.9400e-003	0.0297	0.0000	71.7252	71.7252	2.5200e-003	0.0000	71.7781

3.5 Vine - Substation Equipment Installation - 2016

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	0.0386	0.8428	1.0896	1.7600e-003		0.0523	0.0523		0.0523	0.0523	0.0000	157.4623	157.4623	0.0288	0.0000	158.0669
Total	0.0386	0.8428	1.0896	1.7600e-003		0.0523	0.0523		0.0523	0.0523	0.0000	157.4623	157.4623	0.0288	0.0000	158.0669

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	6.6400e-003	0.1020	0.0586	2.8000e-004	0.0413	1.7500e-003	0.0430	5.6200e-003	1.6100e-003	7.2300e-003	0.0000	25.5959	25.5959	1.8000e-004	0.0000	25.5997
Worker	0.0112	0.0261	0.2372	6.1000e-004	0.0504	3.5000e-004	0.0508	0.0134	3.3000e-004	0.0137	0.0000	46.1293	46.1293	2.3400e-003	0.0000	46.1784
Total	0.0178	0.1281	0.2957	8.9000e-004	0.0917	2.1000e-003	0.0938	0.0190	1.9400e-003	0.0210	0.0000	71.7252	71.7252	2.5200e-003	0.0000	71.7781

3.5 Vine - Substation Equipment Installation - 2017

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	0.2201	2.1341	1.4697	2.6000e-003		0.1168	0.1168		0.1131	0.1131	0.0000	230.8863	230.8863	0.0411	0.0000	231.7498
Total	0.2201	2.1341	1.4697	2.6000e-003		0.1168	0.1168		0.1131	0.1131	0.0000	230.8863	230.8863	0.0411	0.0000	231.7498

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	9.0000e-003	0.1330	0.0805	4.1000e-004	0.1897	2.2400e-003	0.1919	0.0212	2.0600e-003	0.0232	0.0000	37.1449	37.1449	2.5000e-004	0.0000	37.1502
Worker	0.0146	0.0351	0.3151	9.0000e-004	0.0745	5.0000e-004	0.0750	0.0198	4.7000e-004	0.0202	0.0000	65.4627	65.4627	3.2000e-003	0.0000	65.5299
Total	0.0236	0.1681	0.3956	1.3100e-003	0.2642	2.7400e-003	0.2669	0.0409	2.5300e-003	0.0435	0.0000	102.6076	102.6076	3.4500e-003	0.0000	102.6801

3.5 Vine - Substation Equipment Installation - 2017

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	0.0570	1.2441	1.6084	2.6000e-003		0.0772	0.0772		0.0772	0.0772	0.0000	230.8860	230.8860	0.0411	0.0000	231.7495
Total	0.0570	1.2441	1.6084	2.6000e-003		0.0772	0.0772		0.0772	0.0772	0.0000	230.8860	230.8860	0.0411	0.0000	231.7495

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	9.0000e-003	0.1330	0.0805	4.1000e-004	0.0609	2.2400e-003	0.0632	8.3000e-003	2.0600e-003	0.0104	0.0000	37.1449	37.1449	2.5000e-004	0.0000	37.1502
Worker	0.0146	0.0351	0.3151	9.0000e-004	0.0745	5.0000e-004	0.0750	0.0198	4.7000e-004	0.0202	0.0000	65.4627	65.4627	3.2000e-003	0.0000	65.5299
Total	0.0236	0.1681	0.3956	1.3100e-003	0.1354	2.7400e-003	0.1381	0.0281	2.5300e-003	0.0306	0.0000	102.6076	102.6076	3.4500e-003	0.0000	102.6801

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2016

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	0.3231	3.0314	1.8974	3.4600e-003		0.1794	0.1794		0.1710	0.1710	0.0000	315.5828	315.5828	0.0735	0.0000	317.1267
Total	0.3231	3.0314	1.8974	3.4600e-003		0.1794	0.1794		0.1710	0.1710	0.0000	315.5828	315.5828	0.0735	0.0000	317.1267

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	4.5800e-003	0.0736	0.0472	1.9000e-004	7.7000e-003	9.9000e-004	8.6900e-003	2.0200e-003	9.1000e-004	2.9300e-003	0.0000	17.6335	17.6335	1.2000e-004	0.0000	17.6361
Vendor	4.0000e-003	0.0614	0.0353	1.7000e-004	4.9100e-003	1.0500e-003	5.9600e-003	1.4000e-003	9.7000e-004	2.3700e-003	0.0000	15.4063	15.4063	1.1000e-004	0.0000	15.4086
Worker	9.0800e-003	0.0213	0.1929	5.0000e-004	0.0410	2.9000e-004	0.0413	0.0109	2.6000e-004	0.0112	0.0000	37.5209	37.5209	1.9000e-003	0.0000	37.5608
Total	0.0177	0.1562	0.2754	8.6000e-004	0.0536	2.3300e-003	0.0560	0.0143	2.1400e-003	0.0165	0.0000	70.5606	70.5606	2.1300e-003	0.0000	70.6054

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2016

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	0.0792	1.6709	2.1283	3.4600e-003		0.0939	0.0939		0.0939	0.0939	0.0000	315.5824	315.5824	0.0735	0.0000	317.1263
Total	0.0792	1.6709	2.1283	3.4600e-003		0.0939	0.0939		0.0939	0.0939	0.0000	315.5824	315.5824	0.0735	0.0000	317.1263

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	4.5800e-003	0.0736	0.0472	1.9000e-004	7.7000e-003	9.9000e-004	8.6900e-003	2.0200e-003	9.1000e-004	2.9300e-003	0.0000	17.6335	17.6335	1.2000e-004	0.0000	17.6361
Vendor	4.0000e-003	0.0614	0.0353	1.7000e-004	4.9100e-003	1.0500e-003	5.9600e-003	1.4000e-003	9.7000e-004	2.3700e-003	0.0000	15.4063	15.4063	1.1000e-004	0.0000	15.4086
Worker	9.0800e-003	0.0213	0.1929	5.0000e-004	0.0410	2.9000e-004	0.0413	0.0109	2.6000e-004	0.0112	0.0000	37.5209	37.5209	1.9000e-003	0.0000	37.5608
Total	0.0177	0.1562	0.2754	8.6000e-004	0.0536	2.3300e-003	0.0560	0.0143	2.1400e-003	0.0165	0.0000	70.5606	70.5606	2.1300e-003	0.0000	70.6054

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2017

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	0.2873	2.7032	1.8071	3.3700e-003		0.1564	0.1564		0.1490	0.1490	0.0000	304.5197	304.5197	0.0705	0.0000	306.0005
Total	0.2873	2.7032	1.8071	3.3700e-003		0.1564	0.1564		0.1490	0.1490	0.0000	304.5197	304.5197	0.0705	0.0000	306.0005

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	4.1900e-003	0.0638	0.0441	1.9000e-004	7.6700e-003	8.5000e-004	8.5200e-003	2.0100e-003	7.8000e-004	2.7900e-003	0.0000	16.8944	16.8944	1.1000e-004	0.0000	16.8968
Vendor	3.5800e-003	0.0529	0.0320	1.6000e-004	4.7900e-003	8.9000e-004	5.6800e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.7621	14.7621	1.0000e-004	0.0000	14.7642
Worker	7.8300e-003	0.0189	0.1692	4.8000e-004	0.0400	2.7000e-004	0.0403	0.0106	2.5000e-004	0.0109	0.0000	35.1570	35.1570	1.7200e-003	0.0000	35.1931
Total	0.0156	0.1355	0.2453	8.3000e-004	0.0525	2.0100e-003	0.0545	0.0140	1.8500e-003	0.0159	0.0000	66.8135	66.8135	1.9300e-003	0.0000	66.8541

3.6 12 kV - Daytime Duct Bank and Vault Installation - 2017

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	0.0772	1.6286	2.0744	3.3700e-003		0.0915	0.0915		0.0915	0.0915	0.0000	304.5193	304.5193	0.0705	0.0000	306.0001
Total	0.0772	1.6286	2.0744	3.3700e-003		0.0915	0.0915		0.0915	0.0915	0.0000	304.5193	304.5193	0.0705	0.0000	306.0001

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	4.1900e-003	0.0638	0.0441	1.9000e-004	7.6700e-003	8.5000e-004	8.5200e-003	2.0100e-003	7.8000e-004	2.7900e-003	0.0000	16.8944	16.8944	1.1000e-004	0.0000	16.8968
Vendor	3.5800e-003	0.0529	0.0320	1.6000e-004	4.7900e-003	8.9000e-004	5.6800e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.7621	14.7621	1.0000e-004	0.0000	14.7642
Worker	7.8300e-003	0.0189	0.1692	4.8000e-004	0.0400	2.7000e-004	0.0403	0.0106	2.5000e-004	0.0109	0.0000	35.1570	35.1570	1.7200e-003	0.0000	35.1931
Total	0.0156	0.1355	0.2453	8.3000e-004	0.0525	2.0100e-003	0.0545	0.0140	1.8500e-003	0.0159	0.0000	66.8135	66.8135	1.9300e-003	0.0000	66.8541

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2016

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	0.3413	3.1450	1.9925	3.6800e-003		0.1838	0.1838		0.1755	0.1755	0.0000	329.7195	329.7195	0.0750	0.0000	331.2943
Total	0.3413	3.1450	1.9925	3.6800e-003		0.1838	0.1838		0.1755	0.1755	0.0000	329.7195	329.7195	0.0750	0.0000	331.2943

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	6.9400e-003	0.1114	0.0715	2.9000e-004	0.0117	1.5000e-003	0.0132	3.0500e-003	1.3800e-003	4.4400e-003	0.0000	26.6948	26.6948	1.9000e-004	0.0000	26.6987
Vendor	4.0000e-003	0.0614	0.0353	1.7000e-004	4.9100e-003	1.0500e-003	5.9600e-003	1.4000e-003	9.7000e-004	2.3700e-003	0.0000	15.4063	15.4063	1.1000e-004	0.0000	15.4086
Worker	9.0800e-003	0.0213	0.1929	5.0000e-004	0.0410	2.9000e-004	0.0413	0.0109	2.6000e-004	0.0112	0.0000	37.5209	37.5209	1.9000e-003	0.0000	37.5608
Total	0.0200	0.1940	0.2997	9.6000e-004	0.0576	2.8400e-003	0.0604	0.0154	2.6100e-003	0.0180	0.0000	79.6219	79.6219	2.2000e-003	0.0000	79.6680

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2016

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	0.0973	1.7845	2.2234	3.6800e-003		0.0983	0.0983		0.0983	0.0983	0.0000	329.7191	329.7191	0.0750	0.0000	331.2939
Total	0.0973	1.7845	2.2234	3.6800e-003		0.0983	0.0983		0.0983	0.0983	0.0000	329.7191	329.7191	0.0750	0.0000	331.2939

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	6.9400e-003	0.1114	0.0715	2.9000e-004	0.0117	1.5000e-003	0.0132	3.0500e-003	1.3800e-003	4.4400e-003	0.0000	26.6948	26.6948	1.9000e-004	0.0000	26.6987
Vendor	4.0000e-003	0.0614	0.0353	1.7000e-004	4.9100e-003	1.0500e-003	5.9600e-003	1.4000e-003	9.7000e-004	2.3700e-003	0.0000	15.4063	15.4063	1.1000e-004	0.0000	15.4086
Worker	9.0800e-003	0.0213	0.1929	5.0000e-004	0.0410	2.9000e-004	0.0413	0.0109	2.6000e-004	0.0112	0.0000	37.5209	37.5209	1.9000e-003	0.0000	37.5608
Total	0.0200	0.1940	0.2997	9.6000e-004	0.0576	2.8400e-003	0.0604	0.0154	2.6100e-003	0.0180	0.0000	79.6219	79.6219	2.2000e-003	0.0000	79.6680

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2017

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	0.3050	2.8139	1.8998	3.5900e-003		0.1607	0.1607		0.1533	0.1533	0.0000	318.2985	318.2985	0.0719	0.0000	319.8093
Total	0.3050	2.8139	1.8998	3.5900e-003		0.1607	0.1607		0.1533	0.1533	0.0000	318.2985	318.2985	0.0719	0.0000	319.8093

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	6.3400e-003	0.0966	0.0667	2.8000e-004	0.0116	1.2900e-003	0.0129	3.0400e-003	1.1800e-003	4.2200e-003	0.0000	25.5760	25.5760	1.7000e-004	0.0000	25.5796
Vendor	3.5800e-003	0.0529	0.0320	1.6000e-004	4.7900e-003	8.9000e-004	5.6800e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.7621	14.7621	1.0000e-004	0.0000	14.7642
Worker	7.8300e-003	0.0189	0.1692	4.8000e-004	0.0400	2.7000e-004	0.0403	0.0106	2.5000e-004	0.0109	0.0000	35.1570	35.1570	1.7200e-003	0.0000	35.1931
Total	0.0178	0.1683	0.2679	9.2000e-004	0.0564	2.4500e-003	0.0588	0.0150	2.2500e-003	0.0173	0.0000	75.4950	75.4950	1.9900e-003	0.0000	75.5368

3.7 12 kV - Nighttime Duct Bank and Vault Installation - 2017

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	0.0948	1.7393	2.1671	3.5900e-003		0.0958	0.0958		0.0958	0.0958	0.0000	318.2981	318.2981	0.0719	0.0000	319.8090
Total	0.0948	1.7393	2.1671	3.5900e-003		0.0958	0.0958		0.0958	0.0958	0.0000	318.2981	318.2981	0.0719	0.0000	319.8090

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	6.3400e-003	0.0966	0.0667	2.8000e-004	0.0116	1.2900e-003	0.0129	3.0400e-003	1.1800e-003	4.2200e-003	0.0000	25.5760	25.5760	1.7000e-004	0.0000	25.5796
Vendor	3.5800e-003	0.0529	0.0320	1.6000e-004	4.7900e-003	8.9000e-004	5.6800e-003	1.3700e-003	8.2000e-004	2.1900e-003	0.0000	14.7621	14.7621	1.0000e-004	0.0000	14.7642
Worker	7.8300e-003	0.0189	0.1692	4.8000e-004	0.0400	2.7000e-004	0.0403	0.0106	2.5000e-004	0.0109	0.0000	35.1570	35.1570	1.7200e-003	0.0000	35.1931
Total	0.0178	0.1683	0.2679	9.2000e-004	0.0564	2.4500e-003	0.0588	0.0150	2.2500e-003	0.0173	0.0000	75.4950	75.4950	1.9900e-003	0.0000	75.5368

3.8 69 kV - Foundation Installation - 2016

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	7.9400e-003	0.0875	0.0449	1.1000e-004		4.3900e-003	4.3900e-003		4.1300e-003	4.1300e-003	0.0000	9.9082	9.9082	2.6000e-003	0.0000	9.9629
Total	7.9400e-003	0.0875	0.0449	1.1000e-004		4.3900e-003	4.3900e-003		4.1300e-003	4.1300e-003	0.0000	9.9082	9.9082	2.6000e-003	0.0000	9.9629

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	7.0000e-004	0.0112	7.2200e-003	3.0000e-005	6.8000e-004	1.5000e-004	8.3000e-004	1.9000e-004	1.4000e-004	3.3000e-004	0.0000	2.6941	2.6941	2.0000e-005	0.0000	2.6945
Vendor	3.3000e-004	5.0500e-003	2.9000e-003	1.0000e-005	4.0000e-004	9.0000e-005	4.9000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	1.2676	1.2676	1.0000e-005	0.0000	1.2678
Worker	2.6000e-004	6.1000e-004	5.5600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0805	1.0805	5.0000e-005	0.0000	1.0817
Total	1.2900e-003	0.0169	0.0157	5.0000e-005	2.2600e-003	2.5000e-004	2.5100e-003	6.2000e-004	2.3000e-004	8.5000e-004	0.0000	5.0423	5.0423	8.0000e-005	0.0000	5.0440

3.8 69 kV - Foundation Installation - 2016

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	2.5500e-003	0.0520	0.0625	1.1000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	9.9082	9.9082	2.6000e-003	0.0000	9.9629
Total	2.5500e-003	0.0520	0.0625	1.1000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	9.9082	9.9082	2.6000e-003	0.0000	9.9629

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	7.0000e-004	0.0112	7.2200e-003	3.0000e-005	6.8000e-004	1.5000e-004	8.3000e-004	1.9000e-004	1.4000e-004	3.3000e-004	0.0000	2.6941	2.6941	2.0000e-005	0.0000	2.6945
Vendor	3.3000e-004	5.0500e-003	2.9000e-003	1.0000e-005	4.0000e-004	9.0000e-005	4.9000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	1.2676	1.2676	1.0000e-005	0.0000	1.2678
Worker	2.6000e-004	6.1000e-004	5.5600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0805	1.0805	5.0000e-005	0.0000	1.0817
Total	1.2900e-003	0.0169	0.0157	5.0000e-005	2.2600e-003	2.5000e-004	2.5100e-003	6.2000e-004	2.3000e-004	8.5000e-004	0.0000	5.0423	5.0423	8.0000e-005	0.0000	5.0440

3.9 69 kV - Pole Installation and Removal - 2016

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	0.0254	0.2524	0.1316	2.3000e-004		0.0137	0.0137		0.0131	0.0131	0.0000	20.5585	20.5585	4.9500e-003	0.0000	20.6625
Total	0.0254	0.2524	0.1316	2.3000e-004		0.0137	0.0137		0.0131	0.0131	0.0000	20.5585	20.5585	4.9500e-003	0.0000	20.6625

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	1.5200e-003	0.0233	0.0134	6.0000e-005	1.8700e-003	4.0000e-004	2.2600e-003	5.3000e-004	3.7000e-004	9.0000e-004	0.0000	5.8505	5.8505	4.0000e-005	0.0000	5.8514
Worker	5.7000e-004	1.3500e-003	0.0122	3.0000e-005	2.6000e-003	2.0000e-005	2.6100e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.3747	2.3747	1.2000e-004	0.0000	2.3773
Total	2.0900e-003	0.0247	0.0256	9.0000e-005	4.4700e-003	4.2000e-004	4.8700e-003	1.2200e-003	3.9000e-004	1.6100e-003	0.0000	8.2252	8.2252	1.6000e-004	0.0000	8.2286

3.9 69 kV - Pole Installation and Removal - 2016

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	5.1700e-003	0.1084	0.1341	2.3000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	20.5585	20.5585	4.9500e-003	0.0000	20.6625
Total	5.1700e-003	0.1084	0.1341	2.3000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	20.5585	20.5585	4.9500e-003	0.0000	20.6625

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	1.5200e-003	0.0233	0.0134	6.0000e-005	1.8700e-003	4.0000e-004	2.2600e-003	5.3000e-004	3.7000e-004	9.0000e-004	0.0000	5.8505	5.8505	4.0000e-005	0.0000	5.8514
Worker	5.7000e-004	1.3500e-003	0.0122	3.0000e-005	2.6000e-003	2.0000e-005	2.6100e-003	6.9000e-004	2.0000e-005	7.1000e-004	0.0000	2.3747	2.3747	1.2000e-004	0.0000	2.3773
Total	2.0900e-003	0.0247	0.0256	9.0000e-005	4.4700e-003	4.2000e-004	4.8700e-003	1.2200e-003	3.9000e-004	1.6100e-003	0.0000	8.2252	8.2252	1.6000e-004	0.0000	8.2286

3.9 69 kV - Pole Installation and Removal - 2017

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	0.0285	0.2852	0.1582	2.8000e-004		0.0151	0.0151		0.0143	0.0143	0.0000	25.4336	25.4336	6.0800e-003	0.0000	25.5614
Total	0.0285	0.2852	0.1582	2.8000e-004		0.0151	0.0151		0.0143	0.0143	0.0000	25.4336	25.4336	6.0800e-003	0.0000	25.5614

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	1.7400e-003	0.0257	0.0156	8.0000e-005	2.3300e-003	4.3000e-004	2.7700e-003	6.7000e-004	4.0000e-004	1.0700e-003	0.0000	7.1893	7.1893	5.0000e-005	0.0000	7.1904
Worker	6.4000e-004	1.5300e-003	0.0137	4.0000e-005	3.2500e-003	2.0000e-005	3.2700e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.8537	2.8537	1.4000e-004	0.0000	2.8566
Total	2.3800e-003	0.0273	0.0293	1.2000e-004	5.5800e-003	4.5000e-004	6.0400e-003	1.5300e-003	4.2000e-004	1.9500e-003	0.0000	10.0430	10.0430	1.9000e-004	0.0000	10.0469

3.9 69 kV - Pole Installation and Removal - 2017

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	6.4700e-003	0.1355	0.1676	2.8000e-004		7.3400e-003	7.3400e-003		7.3400e-003	7.3400e-003	0.0000	25.4336	25.4336	6.0800e-003	0.0000	25.5614
Total	6.4700e-003	0.1355	0.1676	2.8000e-004		7.3400e-003	7.3400e-003		7.3400e-003	7.3400e-003	0.0000	25.4336	25.4336	6.0800e-003	0.0000	25.5614

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	1.7400e-003	0.0257	0.0156	8.0000e-005	2.3300e-003	4.3000e-004	2.7700e-003	6.7000e-004	4.0000e-004	1.0700e-003	0.0000	7.1893	7.1893	5.0000e-005	0.0000	7.1904
Worker	6.4000e-004	1.5300e-003	0.0137	4.0000e-005	3.2500e-003	2.0000e-005	3.2700e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.8537	2.8537	1.4000e-004	0.0000	2.8566
Total	2.3800e-003	0.0273	0.0293	1.2000e-004	5.5800e-003	4.5000e-004	6.0400e-003	1.5300e-003	4.2000e-004	1.9500e-003	0.0000	10.0430	10.0430	1.9000e-004	0.0000	10.0469

3.10 12 kV - Jack-and-Bore Installation - 2017

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	0.0336	0.3337	0.1934	3.9000e-004		0.0170	0.0170		0.0161	0.0161	0.0000	34.9995	34.9995	8.6000e-003	0.0000	35.1801
Total	0.0336	0.3337	0.1934	3.9000e-004		0.0170	0.0170		0.0161	0.0161	0.0000	34.9995	34.9995	8.6000e-003	0.0000	35.1801

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	9.4000e-004	0.0144	9.9000e-003	4.0000e-005	9.7000e-004	1.9000e-004	1.1600e-003	2.7000e-004	1.8000e-004	4.4000e-004	0.0000	3.7975	3.7975	3.0000e-005	0.0000	3.7981
Vendor	5.9000e-004	8.7500e-003	5.3000e-003	3.0000e-005	7.9000e-004	1.5000e-004	9.4000e-004	2.3000e-004	1.4000e-004	3.6000e-004	0.0000	2.4444	2.4444	2.0000e-005	0.0000	2.4447
Worker	3.9000e-004	9.4000e-004	8.4100e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7464	1.7464	9.0000e-005	0.0000	1.7482
Total	1.9200e-003	0.0240	0.0236	9.0000e-005	3.7500e-003	3.5000e-004	4.1000e-003	1.0300e-003	3.3000e-004	1.3400e-003	0.0000	7.9883	7.9883	1.4000e-004	0.0000	7.9910

3.10 12 kV - Jack-and-Bore Installation - 2017

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	0.0109	0.1868	0.2316	3.9000e-004		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	34.9994	34.9994	8.6000e-003	0.0000	35.1800
Total	0.0109	0.1868	0.2316	3.9000e-004		9.5900e-003	9.5900e-003		9.5900e-003	9.5900e-003	0.0000	34.9994	34.9994	8.6000e-003	0.0000	35.1800

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	9.4000e-004	0.0144	9.9000e-003	4.0000e-005	9.7000e-004	1.9000e-004	1.1600e-003	2.7000e-004	1.8000e-004	4.4000e-004	0.0000	3.7975	3.7975	3.0000e-005	0.0000	3.7981
Vendor	5.9000e-004	8.7500e-003	5.3000e-003	3.0000e-005	7.9000e-004	1.5000e-004	9.4000e-004	2.3000e-004	1.4000e-004	3.6000e-004	0.0000	2.4444	2.4444	2.0000e-005	0.0000	2.4447
Worker	3.9000e-004	9.4000e-004	8.4100e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7464	1.7464	9.0000e-005	0.0000	1.7482
Total	1.9200e-003	0.0240	0.0236	9.0000e-005	3.7500e-003	3.5000e-004	4.1000e-003	1.0300e-003	3.3000e-004	1.3400e-003	0.0000	7.9883	7.9883	1.4000e-004	0.0000	7.9910

3.11 69 kV - Conductor Installation - 2017

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	0.0302	0.3556	0.2000	3.3000e-004		0.0168	0.0168		0.0154	0.0154	0.0000	30.6260	30.6260	9.3800e-003	0.0000	30.8231
Total	0.0302	0.3556	0.2000	3.3000e-004		0.0168	0.0168		0.0154	0.0154	0.0000	30.6260	30.6260	9.3800e-003	0.0000	30.8231

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	5.8000e-004	8.5800e-003	5.2000e-003	3.0000e-005	7.8000e-004	1.4000e-004	9.2000e-004	2.2000e-004	1.3000e-004	3.6000e-004	0.0000	2.3965	2.3965	2.0000e-005	0.0000	2.3968
Worker	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
Total	5.8000e-004	8.5800e-003	5.2000e-003	3.0000e-005	7.8000e-004	1.4000e-004	9.2000e-004	2.2000e-004	1.3000e-004	3.6000e-004	0.0000	2.3965	2.3965	2.0000e-005	0.0000	2.3968

3.11 69 kV - Conductor Installation - 2017

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	8.1400e-003	0.1636	0.2231	3.3000e-004		8.1800e-003	8.1800e-003		8.1800e-003	8.1800e-003	0.0000	30.6260	30.6260	9.3800e-003	0.0000	30.8230
Total	8.1400e-003	0.1636	0.2231	3.3000e-004		8.1800e-003	8.1800e-003		8.1800e-003	8.1800e-003	0.0000	30.6260	30.6260	9.3800e-003	0.0000	30.8230

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	5.8000e-004	8.5800e-003	5.2000e-003	3.0000e-005	7.8000e-004	1.4000e-004	9.2000e-004	2.2000e-004	1.3000e-004	3.6000e-004	0.0000	2.3965	2.3965	2.0000e-005	0.0000	2.3968
Worker	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
Total	5.8000e-004	8.5800e-003	5.2000e-003	3.0000e-005	7.8000e-004	1.4000e-004	9.2000e-004	2.2000e-004	1.3000e-004	3.6000e-004	0.0000	2.3965	2.3965	2.0000e-005	0.0000	2.3968

3.12 Energize - Testing and Commissioning - 2017

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	0.0000	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

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	4.5000e-003	0.0664	0.0402	2.1000e-004	6.0200e-003	1.1200e-003	7.1400e-003	1.7200e-003	1.0300e-003	2.7500e-003	0.0000	18.5485	18.5485	1.2000e-004	0.0000	18.5511
Worker	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
Total	4.5000e-003	0.0664	0.0402	2.1000e-004	6.0200e-003	1.1200e-003	7.1400e-003	1.7200e-003	1.0300e-003	2.7500e-003	0.0000	18.5485	18.5485	1.2000e-004	0.0000	18.5511

3.12 Energize - Testing and Commissioning - 2017

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	0.0000	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

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	4.5000e-003	0.0664	0.0402	2.1000e-004	6.0200e-003	1.1200e-003	7.1400e-003	1.7200e-003	1.0300e-003	2.7500e-003	0.0000	18.5485	18.5485	1.2000e-004	0.0000	18.5511
Worker	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
Total	4.5000e-003	0.0664	0.0402	2.1000e-004	6.0200e-003	1.1200e-003	7.1400e-003	1.7200e-003	1.0300e-003	2.7500e-003	0.0000	18.5485	18.5485	1.2000e-004	0.0000	18.5511

3.13 Telecom - Duct Bank and Vault Installation - 2017

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	1.9800e-003	0.0207	0.0177	2.0000e-005		1.4200e-003	1.4200e-003		1.3100e-003	1.3100e-003	0.0000	2.2384	2.2384	6.9000e-004	0.0000	2.2528
Total	1.9800e-003	0.0207	0.0177	2.0000e-005		1.4200e-003	1.4200e-003		1.3100e-003	1.3100e-003	0.0000	2.2384	2.2384	6.9000e-004	0.0000	2.2528

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	5.0000e-004	7.5500e-003	5.2100e-003	2.0000e-005	5.1000e-004	1.0000e-004	6.1000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9987	1.9987	1.0000e-005	0.0000	1.9990
Vendor	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
Worker	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
Total	5.0000e-004	7.5500e-003	5.2100e-003	2.0000e-005	5.1000e-004	1.0000e-004	6.1000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9987	1.9987	1.0000e-005	0.0000	1.9990

3.13 Telecom - Duct Bank and Vault Installation - 2017

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	5.9000e-004	0.0135	0.0182	2.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	2.2384	2.2384	6.9000e-004	0.0000	2.2528
Total	5.9000e-004	0.0135	0.0182	2.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	2.2384	2.2384	6.9000e-004	0.0000	2.2528

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	5.0000e-004	7.5500e-003	5.2100e-003	2.0000e-005	5.1000e-004	1.0000e-004	6.1000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9987	1.9987	1.0000e-005	0.0000	1.9990
Vendor	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
Worker	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
Total	5.0000e-004	7.5500e-003	5.2100e-003	2.0000e-005	5.1000e-004	1.0000e-004	6.1000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.9987	1.9987	1.0000e-005	0.0000	1.9990

3.14 12 kV - Cable Installation and Cutover - 2017

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	6.1800e-003	0.0679	0.0412	6.0000e-005		3.5900e-003	3.5900e-003		3.3000e-003	3.3000e-003	0.0000	5.5564	5.5564	1.7000e-003	0.0000	5.5921
Total	6.1800e-003	0.0679	0.0412	6.0000e-005		3.5900e-003	3.5900e-003		3.3000e-003	3.3000e-003	0.0000	5.5564	5.5564	1.7000e-003	0.0000	5.5921

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	2.7200e-003	0.0402	0.0243	1.2000e-004	3.6400e-003	6.8000e-004	4.3100e-003	1.0400e-003	6.2000e-004	1.6600e-003	0.0000	11.2154	11.2154	8.0000e-005	0.0000	11.2170
Worker	2.9700e-003	7.1600e-003	0.0643	1.8000e-004	0.0152	1.0000e-004	0.0153	4.0300e-003	9.0000e-005	4.1300e-003	0.0000	13.3551	13.3551	6.5000e-004	0.0000	13.3688
Total	5.6900e-003	0.0473	0.0886	3.0000e-004	0.0188	7.8000e-004	0.0196	5.0700e-003	7.1000e-004	5.7900e-003	0.0000	24.5705	24.5705	7.3000e-004	0.0000	24.5857

3.14 12 kV - Cable Installation and Cutover - 2017

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	1.4800e-003	0.0287	0.0457	6.0000e-005		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	5.5564	5.5564	1.7000e-003	0.0000	5.5921
Total	1.4800e-003	0.0287	0.0457	6.0000e-005		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	5.5564	5.5564	1.7000e-003	0.0000	5.5921

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	2.7200e-003	0.0402	0.0243	1.2000e-004	3.6400e-003	6.8000e-004	4.3100e-003	1.0400e-003	6.2000e-004	1.6600e-003	0.0000	11.2154	11.2154	8.0000e-005	0.0000	11.2170
Worker	2.9700e-003	7.1600e-003	0.0643	1.8000e-004	0.0152	1.0000e-004	0.0153	4.0300e-003	9.0000e-005	4.1300e-003	0.0000	13.3551	13.3551	6.5000e-004	0.0000	13.3688
Total	5.6900e-003	0.0473	0.0886	3.0000e-004	0.0188	7.8000e-004	0.0196	5.0700e-003	7.1000e-004	5.7900e-003	0.0000	24.5705	24.5705	7.3000e-004	0.0000	24.5857

Vine Substation Project

Operation and Maintenance Annual GHG Emissions Estimate

Assumptions

- 1) Emissions are calculated for incremental O&M and SF6 leakage. Incremental water use will be minimal and is not available for indirect GHG estimate.
- 2) Vehicle trips are based on summation of the increase in O&M activities described in Section B.1.12.
- 3) Incremental SF6 quantity and leak rate from SDG&E
- 4) Emissions factors from The Climate Registry (TCR 2015), and GWP based on IPCC AR4 values.

EMFAC model fuel efficiency mpg

Diesel Pickup MPG	19
Diesel Truck MPG	9

(values rounded)

Annual Vehicle Trip Assumption

	Trips	EMFAC Vehicle Type
Diesel Pickup	30	LHDT1
Diesel Line Truck	20	T6
Diesel Utility Truck	260	T6

All trips @ 15 miles/round trip

Vehicle Emissions Factors

	Pickup	Truck	
CO2	10.21	10.21	kg/gallon
CH4	0.001	0.0015	g/mile
N2O	0.0051	0.0048	g/mile

Vehicle Emissions Results

	Pickup	Truck	
CO2	533.20	10,506.09	11,039.29 lbs
CH4	0.00	0.01	0.01 lbs
N2O	0.01	0.04	0.05 lbs
CO2e	534.74	10,519.68	11,054.42 Total lbs
			5.0 Total Metric Tons

SF6 Leakage Emissions Calculations

Assumptions

- 1) 33 lbs SF6 each in 9 Circuit Breakers
- 2) 0.1 annual leakage Rate
- 3) GWP = 22,800 based on IPCC AR4

SF6 Leakage Emissions Results

CO2e	3.1 Metric Tons
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