

Preserve at San Juan Construction Emissions-Phase 1 - South Coast Air Basin, Annual

Preserve at San Juan Construction Emissions-Phase 1
South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	72.00	Dwelling Unit	23.38	129,600.00	206

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - Project Description based on Table 1. 72 dwelling units

Construction Phase - Construction runs only-Phase 1

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Construction equipment for drainage construction assumed to be similar to building construction equipment

Off-road Equipment - No demolition

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Work trips are for Phase 1 (as shown in Table 2.7 of project description section)

On-road Fugitive Dust - No Demolition

Grading - Total acres developed under Phase 1- 108.6 acres

Architectural Coating -

Vehicle Trips - Construction Phase 1 only

Woodstoves - Construction only Phase 1

Consumer Products - Construction only runs

Area Coating - Construction Only Runs Phase 1

Landscape Equipment - Construction Phase 1 only

Water And Wastewater - Construction Runs Only-Phase 1

Construction Off-road Equipment Mitigation - Rule 403- Reduce dust during construction- watering 2 per day

Rule 1110.2 reduce NOx emissions from engines- Tier 2

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	100	0
tblAreaCoating	Area_EF_Residential_Exterior	50	0

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tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	370.00	90.00
tblConstructionPhase	NumDays	370.00	120.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	35.00	120.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	PhaseEndDate	9/2/2016	9/16/2016
tblConstructionPhase	PhaseEndDate	3/4/2016	4/1/2016
tblConstructionPhase	PhaseEndDate	7/8/2016	8/19/2016
tblConstructionPhase	PhaseEndDate	11/27/2015	1/8/2016
tblConstructionPhase	PhaseEndDate	8/5/2016	8/19/2016
tblConstructionPhase	PhaseEndDate	7/24/2015	8/14/2015
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	61.20	0.00
tblFireplaces	NumberNoFireplace	7.20	0.00
tblFireplaces	NumberWood	3.60	0.00
tblGrading	AcresOfGrading	225.00	108.60
tblGrading	MaterialExported	0.00	450,000.00
tblGrading	MaterialImported	0.00	450,000.00
tblOnRoadDust	HaulingPercentPave	100.00	0.00
tblOnRoadDust	VendorPercentPave	100.00	0.00

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tblOnRoadDust	WorkerPercentPave	100.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	WorkerTripNumber	18.00	5.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00
tblTripsAndVMT	WorkerTripNumber	26.00	10.00
tblTripsAndVMT	WorkerTripNumber	26.00	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	8.70	0.00
tblVehicleTrips	HO_TTP	40.60	0.00
tblVehicleTrips	HS_TL	5.90	0.00
tblVehicleTrips	HS_TTP	19.20	0.00
tblVehicleTrips	HW_TL	14.70	0.00
tblVehicleTrips	HW_TTP	40.20	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWater	IndoorWaterUseRate	4,691,089.84	0.00
tblWater	OutdoorWaterUseRate	2,957,426.21	0.00
tblWoodstoves	NumberCatalytic	3.60	0.00
tblWoodstoves	NumberNoncatalytic	3.60	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015											0.0000	462.8066	462.8066	0.1331	0.0000	466.1350
2016											0.0000	337.5322	337.5322	0.0747	0.0000	339.4008
Maximum											0.0000	462.8066	462.8066	0.1331	0.0000	466.1350

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					
2015											0.0000	462.8061	462.8061	0.1331	0.0000	466.1344
2016											0.0000	337.5319	337.5319	0.0747	0.0000	339.4004
Maximum											0.0000	462.8061	462.8061	0.1331	0.0000	466.1344

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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433
Energy											0.0000	316.6227	316.6227	0.0104	3.8800e-003	318.0390
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											17.1446	0.0000	17.1446	1.0132	0.0000	42.4751
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											17.1446	317.8356	334.9802	1.0249	3.8800e-003	361.7573

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433
Energy											0.0000	316.6227	316.6227	0.0104	3.8800e-003	318.0390
Mobile											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste											17.1446	0.0000	17.1446	1.0132	0.0000	42.4751
Water											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											17.1446	317.8356	334.9802	1.0249	3.8800e-003	361.7573

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/15/2015	8/14/2015	5	45	
2	Demolition	Demolition	6/15/2015	6/14/2015	5	0	
3	Grading	Grading	7/25/2015	1/8/2016	5	120	
4	Construction of Drainage	Building Construction	11/28/2015	4/1/2016	5	90	
5	Building Construction	Building Construction	3/5/2016	8/19/2016	5	120	
6	Paving	Paving	7/9/2016	8/19/2016	5	30	
7	Architectural Coating	Architectural Coating	8/6/2016	9/16/2016	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 108.6

Acres of Paving: 0

Residential Indoor: 262,440; Residential Outdoor: 87,480; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Construction of Drainage	Cranes	1	7.00	231	0.29
Construction of Drainage	Forklifts	3	8.00	89	0.20
Construction of Drainage	Generator Sets	1	8.00	84	0.74
Construction of Drainage	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Construction of Drainage	Welders	1	8.00	46	0.45
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Construction of Drainage	9	10.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	50.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2015

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	81.6626	81.6626	0.0244	0.0000	82.2721
Total											0.0000	81.6626	81.6626	0.0244	0.0000	82.2721

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3.2 Site Preparation - 2015

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2828	1.2828	6.0000e-005	0.0000	1.2843
Total											0.0000	1.2828	1.2828	6.0000e-005	0.0000	1.2843

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	81.6625	81.6625	0.0244	0.0000	82.2720
Total											0.0000	81.6625	81.6625	0.0244	0.0000	82.2720

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3.3 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.4 Grading - 2015

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	336.9412	336.9412	0.1006	0.0000	339.4560
Total											0.0000	336.9412	336.9412	0.1006	0.0000	339.4560

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3.4 Grading - 2015

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	9.7495	9.7495	4.6000e-004	0.0000	9.7609
Total											0.0000	9.7495	9.7495	4.6000e-004	0.0000	9.7609

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	336.9408	336.9408	0.1006	0.0000	339.4556
Total											0.0000	336.9408	336.9408	0.1006	0.0000	339.4556

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3.4 Grading - 2015

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	9.7495	9.7495	4.6000e-004	0.0000	9.7609
Total											0.0000	9.7495	9.7495	4.6000e-004	0.0000	9.7609

3.4 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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.5434	17.5434	5.2900e-003	0.0000	17.6757
Total											0.0000	17.5434	17.5434	5.2900e-003	0.0000	17.6757

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3.4 Grading - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5006	0.5006	2.0000e-005	0.0000	0.5011
Total											0.0000	0.5006	0.5006	2.0000e-005	0.0000	0.5011

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	17.5434	17.5434	5.2900e-003	0.0000	17.6757
Total											0.0000	17.5434	17.5434	5.2900e-003	0.0000	17.6757

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3.4 Grading - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.5006	0.5006	2.0000e-005	0.0000	0.5011
Total											0.0000	0.5006	0.5006	2.0000e-005	0.0000	0.5011

3.5 Construction of Drainage - 2015

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	29.4042	29.4042	7.3800e-003	0.0000	29.5887
Total											0.0000	29.4042	29.4042	7.3800e-003	0.0000	29.5887

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3.5 Construction of Drainage - 2015

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
Vendor											0.0000	2.3979	2.3979	2.0000e-004	0.0000	2.4029
Worker											0.0000	1.3684	1.3684	6.0000e-005	0.0000	1.3700
Total											0.0000	3.7663	3.7663	2.6000e-004	0.0000	3.7729

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	29.4041	29.4041	7.3800e-003	0.0000	29.5887
Total											0.0000	29.4041	29.4041	7.3800e-003	0.0000	29.5887

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3.5 Construction of Drainage - 2015

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
Vendor											0.0000	2.3979	2.3979	2.0000e-004	0.0000	2.4029
Worker											0.0000	1.3684	1.3684	6.0000e-005	0.0000	1.3700
Total											0.0000	3.7663	3.7663	2.6000e-004	0.0000	3.7729

3.5 Construction of Drainage - 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											0.0000	80.2504	80.2504	0.0199	0.0000	80.7485
Total											0.0000	80.2504	80.2504	0.0199	0.0000	80.7485

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3.5 Construction of Drainage - 2016

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
Vendor											0.0000	6.5923	6.5923	5.3000e-004	0.0000	6.6055
Worker											0.0000	3.6712	3.6712	1.5000e-004	0.0000	3.6750
Total											0.0000	10.2634	10.2634	6.8000e-004	0.0000	10.2805

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	80.2503	80.2503	0.0199	0.0000	80.7484
Total											0.0000	80.2503	80.2503	0.0199	0.0000	80.7484

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3.5 Construction of Drainage - 2016

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
Vendor											0.0000	6.5923	6.5923	5.3000e-004	0.0000	6.6055
Worker											0.0000	3.6712	3.6712	1.5000e-004	0.0000	3.6750
Total											0.0000	10.2634	10.2634	6.8000e-004	0.0000	10.2805

3.6 Building 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											0.0000	145.9099	145.9099	0.0362	0.0000	146.8154
Total											0.0000	145.9099	145.9099	0.0362	0.0000	146.8154

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3.6 Building Construction - 2016

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
Vendor											0.0000	11.9859	11.9859	9.6000e-004	0.0000	12.0099
Worker											0.0000	33.3742	33.3742	1.4100e-003	0.0000	33.4093
Total											0.0000	45.3601	45.3601	2.3700e-003	0.0000	45.4193

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	145.9097	145.9097	0.0362	0.0000	146.8152
Total											0.0000	145.9097	145.9097	0.0362	0.0000	146.8152

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3.6 Building Construction - 2016

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
Vendor											0.0000	11.9859	11.9859	9.6000e-004	0.0000	12.0099
Worker											0.0000	33.3742	33.3742	1.4100e-003	0.0000	33.4093
Total											0.0000	45.3601	45.3601	2.3700e-003	0.0000	45.4193

3.7 Paving - 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											0.0000	32.2058	32.2058	9.7100e-003	0.0000	32.4486
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											0.0000	32.2058	32.2058	9.7100e-003	0.0000	32.4486

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3.7 Paving - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.0012	1.0012	4.0000e-005	0.0000	1.0023
Total											0.0000	1.0012	1.0012	4.0000e-005	0.0000	1.0023

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	32.2057	32.2057	9.7100e-003	0.0000	32.4486
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											0.0000	32.2057	32.2057	9.7100e-003	0.0000	32.4486

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3.7 Paving - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.0012	1.0012	4.0000e-005	0.0000	1.0023
Total											0.0000	1.0012	1.0012	4.0000e-005	0.0000	1.0023

3.8 Architectural Coating - 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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.8299	3.8299	4.5000e-004	0.0000	3.8412
Total											0.0000	3.8299	3.8299	4.5000e-004	0.0000	3.8412

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3.8 Architectural Coating - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6675	0.6675	3.0000e-005	0.0000	0.6682
Total											0.0000	0.6675	0.6675	3.0000e-005	0.0000	0.6682

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	3.8299	3.8299	4.5000e-004	0.0000	3.8412
Total											0.0000	3.8299	3.8299	4.5000e-004	0.0000	3.8412

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3.8 Architectural Coating - 2016

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6675	0.6675	3.0000e-005	0.0000	0.6682
Total											0.0000	0.6675	0.6675	3.0000e-005	0.0000	0.6682

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.544524	0.045551	0.198447	0.129336	0.019135	0.005878	0.019261	0.027434	0.001914	0.002222	0.004531	0.000699	0.001069

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	196.7533	196.7533	8.1200e-003	1.6800e-003	197.4572
Electricity Unmitigated											0.0000	196.7533	196.7533	8.1200e-003	1.6800e-003	197.4572
NaturalGas Mitigated											0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817
NaturalGas Unmitigated											0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.24627e+006											0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817
Total												0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817

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5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.24627e+006											0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817
Total												0.0000	119.8694	119.8694	2.3000e-003	2.2000e-003	120.5817

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	617514	196.7533	8.1200e-003	1.6800e-003	197.4572
Total		196.7533	8.1200e-003	1.6800e-003	197.4572

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	617514	196.7533	8.1200e-003	1.6800e-003	197.4572
Total		196.7533	8.1200e-003	1.6800e-003	197.4572

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433
Unmitigated											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433
Total											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433
Total											0.0000	1.2129	1.2129	1.2200e-003	0.0000	1.2433

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.1446	1.0132	0.0000	42.4751
Unmitigated	17.1446	1.0132	0.0000	42.4751

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	84.46	17.1446	1.0132	0.0000	42.4751
Total		17.1446	1.0132	0.0000	42.4751

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	84.46	17.1446	1.0132	0.0000	42.4751
Total		17.1446	1.0132	0.0000	42.4751

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
