

## **APPENDIX**

### **10.3 Air Quality/Greenhouse Gas Modeling Data**

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## Clean Water Factory Modeling Assumptions

### Conveyance Scenario Summary

Scenario	Max Pipeline Length (ft)	Total Tank Capacity (MG)	Total Pump HP
1	42,900	8.2	2,300
2	44,800	8.2	2,450
3	<b>87,700</b>	8.5	3,400
4	61,400	<b>8.7</b>	2,350
5	85,800	8.2	3,500
6	<b>87,700</b>	8.2	<b>3,650</b>

Source: Clean Water Factory Project Recycled/Advanced Water Conveyance System Engineering Analysis Summary Report , July 2012 (pages 5-4 - 5-12 and Appendix D, Table D-4).

### Pipeline Excavation Estimates

Max Length (ft)	Max Excavation Width (ft)	Max Excavation Depth (ft)	Maximum Excavation Volume	
			Cubic Feet	Cubic Yards
87,700	4	10	3,508,000	129,926

Note: Estimates conservatively assume maximum trenching depth and width.

### Roadway Demolition

Pavement Length (ft)	Pavement Width (ft)	Pavement Thickness (ft)	Demo Volume	
			Cubic Feet	Cubic Yards
87,700	6	0.5	263,100	9,744
				19,075

Note: Assumes worst case scenario that all pipelines would be installed within roadways

### Pipeline Construction Duration (100 feet/day x2 crews)

439

### Reservoir Assumptions

Option	Location	Capacity (MG)	Buried?	Diameter (ID) (feet)	Height (feet)	Est. Excavated Volume (CY) <sup>1,2</sup>	Est. Grading Volume (CY) <sup>3</sup> (cutfill for foundation work and piping)
A	23rd St./N. Leroy St.	2.4	No	117	30	0	796
B	Highland/Valencia Ave.	2.4	Yes	117	30	11,940	796
C	Highland/E. Twin Creek	2.4	No	117	30	0	796
D	N. Waterman Ave.	4.0	Yes	151	30	19,888	1,326
E	E. 40th St. (W. of Valencia)	4.0	Yes	151	30	19,888	1,326
F	E. 40th St. (E. of Valencia)	4.0	No	151	30	0	1,326
G	NE of Waterman Basins	4.0	No	151	30	0	1,326
WRP Tank 1	WRP	4.3	No	157	30	0	1,433
WRP Tank 2	WRP	0.2	No	75	30	0	327
<b>Worst Case Excavated Volume &amp; Grading Volume</b>						<b>39,775</b>	<b>4,412</b>

Source: *Clean Water Factory Project Recycled/Advanced Water Conveyance System Engineering Analysis Summary Report*, July 2012 (Figures 9-1 through 9-7 [pdf pages 143-149]).

Notes:

1. Worst case volumes assume the construction of options D and E, which are buried and two tanks on the WRP.
2. Assumes excavated soil would be hauled off-site.
3. Earthwork is based on worst case condition where options D and E would be constructed plus two tanks on the WRP. Earthwork volume for each reservoir foundation is estimated at 2 feet deep. Assumes balanced cut/fill.

### Construction Assumptions

Project Components	Duration (days)	Earthwork (CY)	Construction Trips		Notes
			Worker Trips/Day <sup>1</sup>	Total Hauling Trips <sup>2</sup>	
1 SBWRP Improvements (within SBWRP complex)	396	N/A	23	N/A	
2 Pipeline/Conveyance	439	129,926	33	N/A	Most excavation would be backfilled
	132	39,775	15	4,972	Round trips, assumes 16 CY truck capacity
3 Recharge Site Improvements	132	4,412		N/A	Assumes balanced
		250,000	20	N/A	Assumes balanced

Notes:

Pipeline earthwork assumes soil would not need to be hauled away. Worker trips are based on California Emissions Estimator Model (CalEEMod) survey data. Hauling trips are round trips and assume 16 CY truck capacity.

**Operational Energy Consumption**

**SBWMD Improvements**

Total Annual Power: 21,551,012 kWh/yr  
21,551 MWh/yr

\* Refer to SBWMD Power Consumption page

**Conveyance System**

Total Max Pump HP: 3,650 (Scenario 6)  
1 HP = 0.75 kW  
23,980,500 kWh/yr<sup>1</sup>  
23,981 MWh/yr<sup>1</sup>

Assumes continuous pump operation 24 hours per day 365 days per year.

**Operations - Maintenance**

Basin Maintenance - Scarify twice per year

**SBWMD - Clean Water Factory  
Power Consumption Calcs**

ASSUMPTIONS	
RO Recovery	85%
MF Recovery	92%
Pump Efficiency	75%
Summer Elec. Cost	\$0.00
Winter Elec. Cost	\$0.00

FLOW RATE INFO		COMMENTS
<b>MF Production</b>	<b>5.0 MGD</b> 3,472 gpm	Tertiary Treatment (Title 22)
MF Recovery	92%	
MF Feed	5.43 MGD 3,774 gpm	
<b>RO Production</b>	<b>15.0 MGD</b> 10,417 gpm	Adv. Water Treatment (Recharge Basins)
RO recovery	85%	
RO feed	17.65 MGD 12,255 gpm	
MF Recovery	92%	
MF Feed	19.18 MGD 13,321 gpm	
<b>Total MF Feed</b>	<b>24.62 MGD</b> 17,095 gpm	Secondary Effluent Flow to MF (tertiary + RO treatment)
<b>Total RO Feed</b>	<b>17.65 MGD</b> 12,255 gpm	Total MF Filtrate flow to RO

POWER CONSUMPTION			
Description	Quantity	Unit Cost	Total Cost
<b>Micro-filtration (MF) Process</b>			
Summer Annual Flow (Feed)		17,095 gpm	
Winter Annual Flow (Feed)		17,095 gpm	
Summer Annual Flow (Production)		15,727 gpm	
Winter Annual Flow (Production)		15,727 gpm	
<b>Secondary Effluent Lift</b>		<b>20 ft</b>	
Summer Energy	376,139 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	376,139 kw-hrs	\$0.00 /kw-hrs	\$0
<b>MF Draw Pumps</b>		<b>20 ft</b>	
Summer Energy	376,139 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	376,139 kw-hrs	\$0.00 /kw-hrs	\$0
<b>Air Blower / Compressor</b>		<b>1,300 hp</b>	
Summer Energy	4,247,724 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	4,247,724 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL MF POWER</b>			<b>\$0</b>
<b>Reverse Osmosis Process</b>			
Summer Annual Flow (Feed)		12,255 gpm	
Winter Annual Flow (Feed)		12,255 gpm	
Summer Annual Permeate Production		10,417 gpm	
Winter Annual Permeate Production		10,417 gpm	
Summer Annual Brine Production		1,838 gpm	
Winter Annual Brine Production		1,838 gpm	
<b>Filtrate Forwarding Pump</b>		<b>20 ft</b>	
Summer Energy	269,647 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	269,647 kw-hrs	\$0.00 /kw-hrs	\$0
<b>High Pressure Pump</b>		<b>350 ft</b>	
Summer Energy	4,718,830 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	4,718,830 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL RO POWER</b>			<b>\$0</b>
<b>RO Post-Treatment Process</b>			
Summer Annual Flow (Feed)		10,417 gpm	
Winter Annual Flow (Feed)		10,417 gpm	
<b>Stripping Tower Lift</b>		<b>20 ft</b>	
Summer Energy	229,200 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	229,200 kw-hrs	\$0.00 /kw-hrs	\$0
<b>Clearwell Storage Lift</b>		<b>20 ft</b>	
Summer Energy	229,200 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	229,200 kw-hrs	\$0.00 /kw-hrs	\$0
<b>UV Disinfection</b>		<b>3.0 kw/mgd</b>	
Summer Energy	197,226 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	197,226 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL POST-TREATMENT POWER</b>			<b>\$0</b>
<b>Miscellaneous</b>			
Misc. Facility Power Usage (approx. 1% of total power usage)		<b>30 kw</b>	
Summer Energy	131,400 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	131,400 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL MISC. POWER</b>			<b>\$0</b>
<b>TOTAL ANNUAL POWER</b>	<b>21,551,012 kw-hrs</b>		<b>\$0</b>

**SBWMD - Clean Water Factory  
Power Consumption Calcs**

ASSUMPTIONS	
RO Recovery	85%
MF Recovery	92%
Pump Efficiency	75%
Summer Elec. Cost	\$0.00
Winter Elec. Cost	\$0.00

FLOW RATE INFO			COMMENTS
<b>MF Production</b>		<b>20.9 MGD</b> 14,514 gpm	Tertiary Treatment (Title 22)
MF Recovery	92%		
MF Feed		22.72 MGD 15,776 gpm	
<b>RO Production</b>		<b>0.0 MGD</b> 0 gpm	Adv. Water Treatment (Recharge Basins)
RO recovery	85%		
RO feed		0.00 MGD 0 gpm	
MF Recovery	92%		
MF Feed		0.00 MGD 0 gpm	
<b>Total MF Feed</b>		<b>22.72 MGD</b> 15,776 gpm	Secondary Effluent Flow to MF (tertiary + RO treatment)
<b>Total RO Feed</b>		<b>0.00 MGD</b> 0 gpm	Total MF Filtrate flow to RO

POWER CONSUMPTION			
Description	Quantity	Unit Cost	Total Cost
<b>Micro-filtration (MF) Process</b>			
Summer Annual Flow (Feed)		15,776 gpm	
Winter Annual Flow (Feed)		15,776 gpm	
Summer Annual Flow (Production)		14,514 gpm	
Winter Annual Flow (Production)		14,514 gpm	
<b>Secondary Effluent Lift</b>		<b>20 ft</b>	
Summer Energy	347,122 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	347,122 kw-hrs	\$0.00 /kw-hrs	\$0
<b>MF Draw Pumps</b>		<b>20 ft</b>	
Summer Energy	347,122 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	347,122 kw-hrs	\$0.00 /kw-hrs	\$0
<b>Air Blower / Compressor</b>		<b>1,300 hp</b>	
Summer Energy	4,247,724 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	4,247,724 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL MF POWER</b>			<b>\$0</b>
<b>Reverse Osmosis Process</b>			
Summer Annual Flow (Feed)		0 gpm	
Winter Annual Flow (Feed)		0 gpm	
Summer Annual Permeate Production		0 gpm	
Winter Annual Permeate Production		0 gpm	
Summer Annual Brine Production		0 gpm	
Winter Annual Brine Production		0 gpm	
<b>Filtrate Forwarding Pump</b>		<b>20 ft</b>	
Summer Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
<b>High Pressure Pump</b>		<b>350 ft</b>	
Summer Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL RO POWER</b>			<b>\$0</b>
<b>RO Post-Treatment Process</b>			
Summer Annual Flow (Feed)		0 gpm	
Winter Annual Flow (Feed)		0 gpm	
<b>Stripping Tower Lift</b>		<b>20 ft</b>	
Summer Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
<b>Clearwell Storage Lift</b>		<b>20 ft</b>	
Summer Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
<b>UV Disinfection</b>		<b>3.0 kw/mgd</b>	
Summer Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	0 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL POST-TREATMENT POWER</b>			<b>\$0</b>
<b>Miscellaneous</b>			
Misc. Facility Power Usage (approx. 1% of total power usage)		<b>30 kw</b>	
Summer Energy	131,400 kw-hrs	\$0.00 /kw-hrs	\$0
Winter Energy	131,400 kw-hrs	\$0.00 /kw-hrs	\$0
<b>SUBTOTAL MISC. POWER</b>			<b>\$0</b>
<b>TOTAL ANNUAL POWER</b>	<b>10,146,737 kw-hrs</b>		<b>\$0</b>

## Operational Energy Calculations

### Conveyance System

Total Max Pump HP:  
1 HP = 0.75 kW

3,650	(Scenario 6)
23,980,500	kwh/yr <sup>1</sup>
<b>23,981</b>	<b>MWh/yr<sup>1</sup></b>
<b>66</b>	<b>MWh/day<sup>1</sup></b>

### SBWRP

21,551,012	kwh/yr <sup>1</sup>
<b>21,551</b>	<b>MWh/yr<sup>1</sup></b>
<b>59</b>	<b>MWh/day<sup>1</sup></b>

GHG Emissions Factors	CO <sub>2</sub>	CH <sub>4</sub>	CH <sub>4</sub> (CO <sub>2</sub> eq)	N <sub>2</sub> O	N <sub>2</sub> O (CO <sub>2</sub> eq)	Total MTCO <sub>2</sub> eq
lb/MWh <sup>2</sup>	630.80	0.03	--	0.01	--	--
MT/MWh	0.29	1.32E-05	--	2.72E-06	--	--
Emissions - SBWRP	6,166.31	0.28	7.09	0.06	17.48	6,190.87
Emissions - Conveyance Pumps	6,861.45	0.32	7.89	0.07	19.45	6,888.78
<b>Total</b>	<b>13,027.75</b>	<b>0.60</b>	<b>14.97</b>	<b>0.12</b>	<b>36.93</b>	<b>13,079.65</b>

#### Notes:

1. Assumes continuous pump operation 24 hours per day 365 days per year.
2. Based on intensity factors for Southern California Edison (as provided in CalEEMod).

Emissions Factor (lbs/MWh)	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
lb/day	0.59	15.94	11.81	7.09	5.31	3.54
lb/day	0.66	17.74	13.14	7.88	5.91	3.94
<b>Total</b>	<b>1.25</b>	<b>33.68</b>	<b>24.95</b>	<b>14.97</b>	<b>11.23</b>	<b>7.48</b>

SBWRP	tons/year	0.11	2.91	2.16	1.29	0.97	0.65
Conveyance Pumps	tons/year	0.12	3.24	2.40	1.44	1.08	0.72
<b>Total</b>	<b>tons/year</b>	<b>0.23</b>	<b>6.15</b>	<b>4.55</b>	<b>2.73</b>	<b>2.05</b>	<b>1.37</b>

Criteria emissions based on emissions factors from the EPA eGrid Database and the California Energy Commission, Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, revised June 2009.



### Avoided Emissions - RIX Reduction

10,146,737	kwh/yr <sup>1</sup>
10,147	MWh/yr <sup>1</sup>
28	MWh/day <sup>1</sup>

GHG Emissions Factors	lb/MWh <sup>2</sup> MT/MWh	CO <sub>2</sub>	CH <sub>4</sub>	CH <sub>4</sub> (CO <sub>2</sub> eq)	N <sub>2</sub> O	N <sub>2</sub> O (CO <sub>2</sub> eq)	Total MTCO <sub>2</sub> eq
		630.80	0.03	--	0.01	--	--
		0.29	1.32E-05	--	2.72E-06	--	--
RIX Reduction	MT/yr	2,903.25	0.13	3.34	0.03	8.23	2,914.81
<b>Total</b>		<b>2,903.25</b>	<b>0.13</b>	<b>3.34</b>	<b>0.03</b>	<b>8.23</b>	<b>2,914.81</b>

Notes:

1. Assumes continuous pump operation 24 hours per day 365 days per year.
2. Based on intensity factors for Southern California Edison (as provided in CalEEMod).

Emissions Factor (lbs/MWh)	lb/day	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
		0.01	0.27	0.20	0.12	0.09	0.06
RIX Reduction		0.28	7.51	5.56	3.34	2.50	1.67
<b>Total</b>		<b>0.28</b>	<b>7.51</b>	<b>5.56</b>	<b>3.34</b>	<b>2.50</b>	<b>1.67</b>
<b>Total</b>	tons/year	<b>0.05</b>	<b>1.37</b>	<b>1.01</b>	<b>0.61</b>	<b>0.46</b>	<b>0.30</b>

## Clean Water Factory\_Pipeline South Coast Air Basin, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Population
User Defined Industrial	2,800.00	User Defined Unit	0
		Lot Acreage	0.00

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - approximate area of disturbance for pipeline

Construction Phase - anticipated duration of pipeline installation

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is excavation and backfill.

Demolition - pavement removed

Grading - material exported= volume excavated and backfilled

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	50.00	439.00
tblConstructionPhase	NumDays	75.00	439.00
tblConstructionPhase	NumDays	55.00	391.00
tblConstructionPhase	PhaseEndDate	5/14/2019	9/6/2017
tblConstructionPhase	PhaseEndDate	3/7/2019	9/29/2017
tblConstructionPhase	PhaseStartDate	9/7/2017	1/1/2016
tblConstructionPhase	PhaseStartDate	9/7/2017	4/1/2016
tblGrading	AcresOfGrading	0.00	80.00
tblGrading	MaterialExported	0.00	129,926.00
tblLandUse	LotAcreage	0.00	50.00

tbOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbProjectCharacteristics	OperationalYear	2014	2018
tbTripsAndVMT	HaulingTripNumber	16,241.00	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

Year	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
	tons/yr															
	MIT/yr															
2016	0.8209	8.6377	6.5765	9.4400e-003	1.5566	0.4636	2.0202	0.7675	0.4301	1.1977	0.0000	871.3463	871.3463	0.2259	0.0000	876.0909
2017	0.5803	5.9826	4.8775	7.1900e-003	1.5067	0.3233	1.8300	0.7586	0.2997	1.0583	0.0000	653.0343	653.0343	0.1732	0.0000	656.6718
<b>Total</b>	<b>1.4012</b>	<b>14.5203</b>	<b>11.4540</b>	<b>0.0166</b>	<b>3.0633</b>	<b>0.7869</b>	<b>3.8502</b>	<b>1.5262</b>	<b>0.7298</b>	<b>2.2560</b>	<b>0.0000</b>	<b>1,524.380</b>	<b>1,524.3806</b>	<b>0.3991</b>	<b>0.0000</b>	<b>1,532.7627</b>

#### Mitigated Construction

Year	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
	tons/yr															
	MIT/yr															
2016	-0.0357	1.7571	4.8863	9.4400e-003	0.7019	0.0922	0.7940	0.3378	0.1064	0.4432	0.0000	871.3454	871.3454	0.2259	0.0000	876.0900
2017	9.9000e-004	1.6498	3.9526	7.1900e-003	0.6741	0.0869	0.7609	0.3322	0.0965	0.4277	0.0000	653.0336	653.0336	0.1732	0.0000	656.6711

Total	-0.0347	3.4069	8.8388	0.0166	1.3759	0.1791	1.5550	0.6700	0.2009	0.8709	0.0000	1,524.379	1,524.3790	0.3991	0.0000	1,532.7610
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	102.48	76.54	22.83	0.00	55.08	77.25	59.61	56.10	72.47	61.40	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	Demolition	Demolition	1/1/2016	9/6/2017	5	439	
2	Pipeline construction/earthwork	Grading	1/1/2016	9/6/2017	5	439	
3	Paving	Paving	4/1/2016	9/29/2017	5	391	

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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Pipeline construction/earthwork	Excavators	2	8.00	162	0.38
Pipeline construction/earthwork	Graders	0	8.00	174	0.41
Pipeline construction/earthwork	Rubber Tired Dozers	1	8.00	255	0.40
Pipeline construction/earthwork	Scrapers	0	8.00	361	0.48

Pipeline construction/earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

### 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
Demolition	4	10.00	0.00	1,886.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline construction/earthwork	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

### **3.2 Demolition - 2016**

#### Unmitigated Construction On-Site

Category	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
tons/yr																
Fugitive Dust					0.1213	0.0000	0.1213	0.0184	0.0000	0.0184	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2364	2.3378	1.8349	2.8900e-003	0.1307	0.1307	0.1307	0.1239	0.1239	0.1239	0.0000	265.4747	265.4747	0.0657	0.0000	266.8545
<b>Total</b>	<b>0.2364</b>	<b>2.3378</b>	<b>1.8349</b>	<b>2.8900e-003</b>	<b>0.1213</b>	<b>0.1307</b>	<b>0.2520</b>	<b>0.0184</b>	<b>0.1239</b>	<b>0.1422</b>	<b>0.0000</b>	<b>265.4747</b>	<b>265.4747</b>	<b>0.0657</b>	<b>0.0000</b>	<b>266.8545</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	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
Hauling	0.0101	0.1635	0.1228	4.1000e-004	0.0146	2.4000e-003	0.0170	3.8500e-003	2.2100e-003	6.0600e-003	0.0000	37.8051	37.8051	2.7000e-004	0.0000	37.8108
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	5.2300e-003	7.6800e-003	0.0799	1.8000e-004	0.0143	1.2000e-004	0.0144	3.8000e-003	1.1000e-004	3.9100e-003	0.0000	13.4141	13.4141	7.2000e-004	0.0000	13.4292
<b>Total</b>	<b>0.0153</b>	<b>0.1712</b>	<b>0.2027</b>	<b>5.9000e-004</b>	<b>0.0289</b>	<b>2.5200e-003</b>	<b>0.0314</b>	<b>7.6500e-003</b>	<b>2.3200e-003</b>	<b>9.9700e-003</b>	<b>0.0000</b>	<b>51.2191</b>	<b>51.2191</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>51.2400</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	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
Fugitive Dust	0.0673	1.3591	2.0763	2.8900e-003	0.0519	0.0000	0.0519	7.8500e-003	0.0000	7.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0673	1.3591	2.0763	2.8900e-003	0.0737	0.0737	0.0737	0.0737	0.0737	0.0737	0.0000	265.4744	265.4744	0.0657	0.0000	266.8542
<b>Total</b>	<b>0.0673</b>	<b>1.3591</b>	<b>2.0763</b>	<b>2.8900e-003</b>	<b>0.0519</b>	<b>0.0737</b>	<b>0.1256</b>	<b>7.8500e-003</b>	<b>0.0737</b>	<b>0.0816</b>	<b>0.0000</b>	<b>265.4744</b>	<b>265.4744</b>	<b>0.0657</b>	<b>0.0000</b>	<b>266.8542</b>

**Mitigated Construction Off-Site**

Category	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
tons/yr																
MT/yr																
Hauling	0.0101	0.1635	0.1228	4.1000e-004	0.0146	2.4000e-003	0.0170	3.8500e-003	2.2100e-003	6.0600e-003	0.0000	37.8051	37.8051	2.7000e-004	0.0000	37.8108
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	5.2300e-003	7.6800e-003	0.0799	1.8000e-004	0.0143	1.2000e-004	0.0144	3.8000e-003	1.1000e-004	3.9100e-003	0.0000	13.4141	13.4141	7.2000e-004	0.0000	13.4292
<b>Total</b>	<b>0.0153</b>	<b>0.1712</b>	<b>0.2027</b>	<b>5.9000e-004</b>	<b>0.0289</b>	<b>2.5200e-003</b>	<b>0.0314</b>	<b>7.6500e-003</b>	<b>2.3200e-003</b>	<b>9.9700e-003</b>	<b>0.0000</b>	<b>51.2191</b>	<b>51.2191</b>	<b>9.9000e-004</b>	<b>0.0000</b>	<b>51.2400</b>

### 3.2 Demolition - 2017

#### Unmitigated Construction On-Site

Category	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
tons/yr																
MT/yr																
Fugitive Dust					0.0828	0.0000	0.0828	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1484	1.4518	1.2471	1.9700e-003	0.0801	0.0801	0.0801	0.0758	0.0758	0.0758	0.0000	178.9549	178.9549	0.0444	0.0000	179.8869
<b>Total</b>	<b>0.1484</b>	<b>1.4518</b>	<b>1.2471</b>	<b>1.9700e-003</b>	<b>0.0828</b>	<b>0.0801</b>	<b>0.1628</b>	<b>0.0125</b>	<b>0.0758</b>	<b>0.0884</b>	<b>0.0000</b>	<b>178.9549</b>	<b>178.9549</b>	<b>0.0444</b>	<b>0.0000</b>	<b>179.8869</b>

#### Unmitigated Construction Off-Site

Category	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
tons/yr																
MT/yr																
Hauling	6.4600e-003	0.1023	0.0808	2.8000e-004	0.0138	1.5000e-003	0.0153	3.5800e-003	1.3800e-003	4.9600e-003	0.0000	25.3604	25.3604	1.8000e-004	0.0000	25.3642







Category	tons/yr										MIT/yr					
	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
Fugitive Dust					0.5864	0.0000	0.5864	0.3131	0.0000	0.3131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	-0.1848	-0.8762	0.7544	3.3500e-003	-0.0430	-0.0430	-0.0430	-0.0295	-0.0295	-0.0295	0.0000	316.1683	316.1683	0.0954	0.0000	318.1710
<b>Total</b>	<b>-0.1848</b>	<b>-0.8762</b>	<b>0.7544</b>	<b>3.3500e-003</b>	<b>0.5864</b>	<b>-0.0430</b>	<b>0.5434</b>	<b>0.3131</b>	<b>-0.0295</b>	<b>0.2835</b>	<b>0.0000</b>	<b>316.1683</b>	<b>316.1683</b>	<b>0.0954</b>	<b>0.0000</b>	<b>318.1710</b>

### Mitigated Construction Off-Site

Category	tons/yr										MIT/yr					
	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
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	6.8000e-003	9.9900e-003	0.1039	2.3000e-004	0.0186	1.6000e-004	0.0188	4.9400e-003	1.5000e-004	5.0900e-003	0.0000	17.4383	17.4383	9.4000e-004	0.0000	17.4580
<b>Total</b>	<b>6.8000e-003</b>	<b>9.9900e-003</b>	<b>0.1039</b>	<b>2.3000e-004</b>	<b>0.0186</b>	<b>1.6000e-004</b>	<b>0.0188</b>	<b>4.9400e-003</b>	<b>1.5000e-004</b>	<b>5.0900e-003</b>	<b>0.0000</b>	<b>17.4383</b>	<b>17.4383</b>	<b>9.4000e-004</b>	<b>0.0000</b>	<b>17.4580</b>

### 3.3 Pipeline construction/earthwork - 2017

#### Unmitigated Construction On-Site

Category	tons/yr										MIT/yr					
	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
Fugitive Dust					1.3716	0.0000	1.3716	0.7323	0.0000	0.7323	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2268	2.4310	1.9198	2.2900e-003	0.1305	0.1305	0.1305	0.1200	0.1200	0.1200	0.0000	212.2690	212.2690	0.0650	0.0000	213.6348

Total	0.2268	2.4310	1.9198	2.2900e-003	1.3716	0.1305	1.5021	0.7323	0.1200	0.8523	0.0000	212.2690	212.2690	0.0650	0.0000	213.6348
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**Unmitigated Construction Off-Site**

Category	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
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	4.1600e-003	6.1500e-003	0.0639	1.6000e-004	0.0127	1.0000e-004	0.0128	3.3700e-003	1.0000e-004	3.4700e-003	0.0000	11.4362	11.4362	5.9000e-004	0.0000	11.4486
<b>Total</b>	<b>4.1600e-003</b>	<b>6.1500e-003</b>	<b>0.0639</b>	<b>1.6000e-004</b>	<b>0.0127</b>	<b>1.0000e-004</b>	<b>0.0128</b>	<b>3.3700e-003</b>	<b>1.0000e-004</b>	<b>3.4700e-003</b>	<b>0.0000</b>	<b>11.4362</b>	<b>11.4362</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>11.4486</b>

**Mitigated Construction On-Site**

Category	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
tons/yr																
MT/yr																
Fugitive Dust					0.5864	0.0000	0.5864	0.3131	0.0000	0.3131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	-0.1175	-0.4769	0.6114	2.2900e-003		-0.0235	-0.0235	-0.0148	-0.0148	-0.0148	0.0000	212.2688	212.2688	0.0650	0.0000	213.6346
<b>Total</b>	<b>-0.1175</b>	<b>-0.4769</b>	<b>0.6114</b>	<b>2.2900e-003</b>	<b>0.5864</b>	<b>-0.0235</b>	<b>0.5628</b>	<b>0.3131</b>	<b>-0.0148</b>	<b>0.2982</b>	<b>0.0000</b>	<b>212.2688</b>	<b>212.2688</b>	<b>0.0650</b>	<b>0.0000</b>	<b>213.6346</b>

**Mitigated Construction Off-Site**





### 3.4 Paving - 2017

#### Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	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
Off-Road	0.1860	1.9789	1.4359	2.1700e-003		0.1110	0.1110		0.1021	0.1021	0.0000	201.7608	201.7608	0.0618	0.0000	203.0590
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.1860</b>	<b>1.9789</b>	<b>1.4359</b>	<b>2.1700e-003</b>		<b>0.1110</b>	<b>0.1110</b>		<b>0.1021</b>	<b>0.1021</b>	<b>0.0000</b>	<b>201.7608</b>	<b>201.7608</b>	<b>0.0618</b>	<b>0.0000</b>	<b>203.0590</b>

#### Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	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
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	5.2500e-003	7.7800e-003	0.0808	2.0000e-004	0.0161	1.3000e-004	0.0162	4.2600e-003	1.2000e-004	4.3800e-003	0.0000	14.4559	14.4559	7.5000e-004	0.0000	14.4716
<b>Total</b>	<b>5.2500e-003</b>	<b>7.7800e-003</b>	<b>0.0808</b>	<b>2.0000e-004</b>	<b>0.0161</b>	<b>1.3000e-004</b>	<b>0.0162</b>	<b>4.2600e-003</b>	<b>1.2000e-004</b>	<b>4.3800e-003</b>	<b>0.0000</b>	<b>14.4559</b>	<b>14.4559</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>14.4716</b>

#### Mitigated Construction On-Site

Category	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
	tons/yr															
	MT/yr															
Off-Road	0.0535	1.0788	1.6504	2.1700e-003	0.0583	0.0583	0.0583	0.0583	0.0583	0.0583	0.0000	201.7606	201.7606	0.0618	0.0000	203.0588
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0535</b>	<b>1.0788</b>	<b>1.6504</b>	<b>2.1700e-003</b>	<b>0.0583</b>	<b>0.0583</b>	<b>0.0583</b>	<b>0.0583</b>	<b>0.0583</b>	<b>0.0583</b>	<b>0.0000</b>	<b>201.7606</b>	<b>201.7606</b>	<b>0.0618</b>	<b>0.0000</b>	<b>203.0588</b>

**Mitigated Construction Off-Site**

Category	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
	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	5.2500e-003	7.7800e-003	0.0808	2.0000e-004	0.0161	1.3000e-004	0.0162	4.2600e-003	1.2000e-004	4.3800e-003	0.0000	14.4559	14.4559	7.5000e-004	0.0000	14.4716
<b>Total</b>	<b>5.2500e-003</b>	<b>7.7800e-003</b>	<b>0.0808</b>	<b>2.0000e-004</b>	<b>0.0161</b>	<b>1.3000e-004</b>	<b>0.0162</b>	<b>4.2600e-003</b>	<b>1.2000e-004</b>	<b>4.3800e-003</b>	<b>0.0000</b>	<b>14.4559</b>	<b>14.4559</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>14.4716</b>



## Clean Water Factory\_Pipeline South Coast Air Basin, Summer

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	2,800.00	User Defined Unit	50.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - approximate area of disturbance for pipeline

Construction Phase - anticipated duration of pipeline installation

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is excavation and backfill.

Demolition - pavement removed

Grading - material exported= volume excavated and backfilled

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	50.00	439.00
tblConstructionPhase	NumDays	75.00	439.00
tblConstructionPhase	NumDays	55.00	391.00
tblConstructionPhase	PhaseEndDate	5/14/2019	9/6/2017
tblConstructionPhase	PhaseEndDate	3/7/2019	9/29/2017
tblConstructionPhase	PhaseStartDate	9/7/2017	1/1/2016
tblConstructionPhase	PhaseStartDate	9/7/2017	4/1/2016
tblGrading	AcresOfGrading	0.00	80.00
tblGrading	MaterialExported	0.00	129,926.00
tblLandUse	LotAcreage	0.00	50.00

tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbIP rojectCharacteristics	OperationalYear	2014	2018
tbITripsAndVMT	HaulingTripNumber	16,241.00	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
2016	6.8289	70.9298	54.3459	0.0787	7.7170	3.8669	11.5839	3.6196	3.5853	7.2049	0.0000	8,001.112	8,001.1127	2.0847	0.0000	8,044.8914
2017	6.3355	65.1921	53.3422	0.0787	7.7615	3.5241	11.2856	3.6305	3.2667	6.8972	0.0000	7,875.727	7,875.7278	2.0778	0.0000	7,919.3606
Total	13.1644	136.1219	107.6881	0.1574	15.4785	7.3910	22.8695	7.2501	6.8521	14.1022	0.0000	15,876.84	15,876.840	4.1625	0.0000	15,964.252

#### Mitigated Construction

Year	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
2016	-0.1191	16.1516	41.9193	0.0787	3.6072	0.8556	4.4628	1.6290	0.9571	2.5861	0.0000	8,001.112	8,001.1127	2.0847	0.0000	8,044.8914
2017	0.6051	17.3906	42.7399	0.0787	3.6518	0.9190	4.5707	1.6400	1.0154	2.6554	0.0000	7,875.727	7,875.7278	2.0778	0.0000	7,919.3606

Total	0.4860	33.5421	84.6592	0.1574	7.2589	1.7746	9.0335	3.2690	1.9725	5.2415	0.0000	15,876.8405	15,876.8405	4.1625	0.0000	15,964.2521
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	96.31	75.36	21.38	0.00	53.10	75.99	54.91	71.21	62.83	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	Demolition	Demolition	1/1/2016	9/6/2017	5	439	
2	Pipeline construction/earthwork	Grading	1/1/2016	9/6/2017	5	439	
3	Paving	Paving	4/1/2016	9/29/2017	5	391	

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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Pipeline construction/earthwork	Excavators	2	8.00	162	0.38
Pipeline construction/earthwork	Graders	0	8.00	174	0.41
Pipeline construction/earthwork	Rubber Tired Dozers	1	8.00	255	0.40
Pipeline construction/earthwork	Scrapers	0	8.00	361	0.48

Pipeline construction/earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

### 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
Demolition	4	10.00	0.00	1,886.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline construction/earthwork	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

### **3.2 Demolition - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	CH4	N2O	CO2e
lb/day														
Fugitive Dust					0.9298	0.0000	0.9298	0.1408	0.0000	0.1408				0.0000
Off-Road	1.8111	17.9145	14.0605	0.0221	1.0013	1.0013	1.0013	0.9490	0.9490	0.9490	2,242.420	2,242.420	0.5550	2,254.0746
<b>Total</b>	<b>1.8111</b>	<b>17.9145</b>	<b>14.0605</b>	<b>0.0221</b>	<b>0.9298</b>	<b>1.0013</b>	<b>1.9311</b>	<b>0.1408</b>	<b>0.9490</b>	<b>1.0898</b>	<b>2,242.420</b>	<b>2,242.420</b>	<b>0.5550</b>	<b>2,254.0746</b>

**Unmitigated Construction Off-Site**

Category	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
lb/day																
Hauling	0.0740	1.1890	0.8359	3.1700e-003	0.1136	0.0184	0.1320	0.0300	0.0169	0.0469	319.6518	319.6518	2.2900e-003			319.6999
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
Worker	0.0416	0.0521	0.6486	1.4200e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305	118.9583	118.9583	6.1000e-003			119.0863
<b>Total</b>	<b>0.1157</b>	<b>1.2411</b>	<b>1.4846</b>	<b>4.5900e-003</b>	<b>0.2254</b>	<b>0.0193</b>	<b>0.2447</b>	<b>0.0596</b>	<b>0.0178</b>	<b>0.0774</b>	<b>438.6101</b>	<b>438.6101</b>	<b>8.3900e-003</b>			<b>438.7862</b>

**Mitigated Construction On-Site**

Category	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
lb/day																
Fugitive Dust					0.3975	0.0000	0.3975	0.0602	0.0000	0.0602			0.0000			0.0000
Off-Road	0.5160	10.4142	15.9103	0.0221	0.5650	0.5650	0.5650	0.5650	0.5650	0.5650	0.0000	2,242.420	2,242.4200	0.5550		2,254.0746
<b>Total</b>	<b>0.5160</b>	<b>10.4142</b>	<b>15.9103</b>	<b>0.0221</b>	<b>0.3975</b>	<b>0.5650</b>	<b>0.9625</b>	<b>0.0602</b>	<b>0.5650</b>	<b>0.6252</b>	<b>0.0000</b>	<b>2,242.420</b>	<b>2,242.4200</b>	<b>0.5550</b>		<b>2,254.0746</b>

**Mitigated Construction Off-Site**

Category	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
lb/day																
Hauling	0.0740	1.1890	0.8359	3.1700e-003	0.1136	0.0184	0.1320	0.0300	0.0169	0.0469	319.6518	319.6518	2.2900e-003			319.6999
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
Worker	0.0416	0.0521	0.6486	1.4200e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305	118.9583	118.9583	6.1000e-003			119.0863
<b>Total</b>	<b>0.1157</b>	<b>1.2411</b>	<b>1.4846</b>	<b>4.5900e-003</b>	<b>0.2254</b>	<b>0.0193</b>	<b>0.2447</b>	<b>0.0596</b>	<b>0.0178</b>	<b>0.0774</b>	<b>438.6101</b>	<b>438.6101</b>	<b>8.3900e-003</b>			<b>438.7862</b>

### 3.2 Demolition - 2017

#### Unmitigated Construction On-Site

Category	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
lb/day																
Fugitive Dust					0.9298	0.0000	0.9298	0.1408	0.0000	0.1408			0.0000			0.0000
Off-Road	1.6675	16.3118	14.0123	0.0221	0.8995	0.8995	0.8995	0.8521	0.8521	0.8521	2,216.450	2,216.4500	0.5497			2,227.9930
<b>Total</b>	<b>1.6675</b>	<b>16.3118</b>	<b>14.0123</b>	<b>0.0221</b>	<b>0.9298</b>	<b>0.8995</b>	<b>1.8293</b>	<b>0.1408</b>	<b>0.8521</b>	<b>0.9929</b>	<b>2,216.450</b>	<b>2,216.4500</b>	<b>0.5497</b>			<b>2,227.9930</b>

#### Unmitigated Construction Off-Site

Category	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
lb/day																
Hauling	0.0700	1.0912	0.8018	3.1700e-003	0.1581	0.0168	0.1750	0.0409	0.0155	0.0564	314.4151	314.4151	2.2500e-003			314.4622

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	0.0000	0.0000	0.0000
Worker	0.0374	0.0470	0.5870	1.4200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305	114.4058	114.4058	5.6300e-003	114.5239					
<b>Total</b>	<b>0.1074</b>	<b>1.1382</b>	<b>1.3889</b>	<b>4.5900e-003</b>	<b>0.2699</b>	<b>0.0177</b>	<b>0.2877</b>	<b>0.0706</b>	<b>0.0163</b>	<b>0.0869</b>	<b>428.8208</b>	<b>428.8208</b>	<b>7.8800e-003</b>	<b>428.9862</b>					

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bi-o- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.3975	0.0000	0.3975	0.0602	0.0000	0.0602			0.0000			0.0000
Off-Road	0.5160	10.4142	15.9103	0.0221	0.5650	0.5650	0.5650	0.5650	0.5650	0.5650	0.0000	2,216.4499	2,216.4499	0.5497		2,227.9930
<b>Total</b>	<b>0.5160</b>	<b>10.4142</b>	<b>15.9103</b>	<b>0.0221</b>	<b>0.3975</b>	<b>0.5650</b>	<b>0.9625</b>	<b>0.0602</b>	<b>0.5650</b>	<b>0.6252</b>	<b>0.0000</b>	<b>2,216.4499</b>	<b>2,216.4499</b>	<b>0.5497</b>		<b>2,227.9930</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bi-o- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0700	1.0912	0.8018	3.1700e-003	0.1581	0.0168	0.1750	0.0409	0.0155	0.0564		314.4151	314.4151	2.2500e-003		314.4622
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
Worker	0.0374	0.0470	0.5870	1.4200e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		114.4058	114.4058	5.6300e-003		114.5239
<b>Total</b>	<b>0.1074</b>	<b>1.1382</b>	<b>1.3889</b>	<b>4.5900e-003</b>	<b>0.2699</b>	<b>0.0177</b>	<b>0.2877</b>	<b>0.0706</b>	<b>0.0163</b>	<b>0.0869</b>	<b>428.8208</b>	<b>428.8208</b>	<b>7.8800e-003</b>	<b>7.8800e-003</b>		<b>428.9862</b>



### 3.3 Pipeline construction/earthwork - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					6.2488	0.0000	6.2488	3.3362	0.0000	3.3362			0.0000			0.0000
Off-Road	2.6958	29.2425	22.1670	0.0257	1.5827	1.5827	1.5827	1.4561	1.4561	1.4561		2,670.6228	2,670.6228	0.8056		2,687.5394
<b>Total</b>	<b>2.6958</b>	<b>29.2425</b>	<b>22.1670</b>	<b>0.0257</b>	<b>6.2488</b>	<b>1.5827</b>	<b>7.8315</b>	<b>3.3362</b>	<b>1.4561</b>	<b>4.7922</b>		<b>2,670.6228</b>	<b>2,670.6228</b>	<b>0.8056</b>		<b>2,687.5394</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0541	0.0677	0.8432	1.8400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		154.6457	154.6457	7.9300e-003		154.8122
<b>Total</b>	<b>0.0541</b>	<b>0.0677</b>	<b>0.8432</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>154.6457</b>	<b>154.6457</b>	<b>7.9300e-003</b>		<b>154.8122</b>

#### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																

Category	lb/day											lb/day								
Fugitive Dust												2.6714	0.0000	2.6714	1.4262	0.0000	1.4262	0.0000	0.0000	0.0000
Off-Road	-1.4164	-6.7139	5.7807	0.0257								-0.3296	-0.2263	-0.3296	-0.2263	0.0000	2,670.6228	2,670.6228	0.8056	2,687.5394
<b>Total</b>	<b>-1.4164</b>	<b>-6.7139</b>	<b>5.7807</b>	<b>0.0257</b>								<b>2.6714</b>	<b>-0.3296</b>	<b>2.3418</b>	<b>1.4262</b>	<b>0.0000</b>	<b>2,670.6228</b>	<b>2,670.6228</b>	<b>0.8056</b>	<b>2,687.5394</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0541	0.0677	0.8432	1.8400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397			154.6457	7.9300e-003		154.8122
<b>Total</b>	<b>0.0541</b>	<b>0.0677</b>	<b>0.8432</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>			<b>154.6457</b>	<b>7.9300e-003</b>		<b>154.8122</b>

**3.3 Pipeline construction/earthwork - 2017**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust																
Off-Road	2.5484	27.3141	21.5703	0.0257	6.2488	0.0000	6.2488	3.3362	0.0000	3.3362			0.0000			0.0000
<b>Total</b>	<b>2.5484</b>	<b>27.3141</b>	<b>21.5703</b>	<b>0.0257</b>	<b>6.2488</b>	<b>0.0000</b>	<b>6.2488</b>	<b>3.3362</b>	<b>0.0000</b>	<b>3.3362</b>			<b>2,629.0621</b>	<b>0.8055</b>		<b>2,645.9785</b>

Total	2.5484	27.3141	21.5703	0.0257	6.2488	1.4660	7.7148	3.3362	1.3487	4.6848	2,629.062	2,629.0621	0.8055	2,645.9785
								1						

**Unmitigated Construction Off-Site**

Category	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
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	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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396	148.7275	148.7275	7.3200e-003	0.0000	0.0000	148.8811
<b>Total</b>	<b>0.0487</b>	<b>0.0611</b>	<b>0.7632</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.1700e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.0800e-003</b>	<b>0.0396</b>	<b>148.7275</b>	<b>148.7275</b>	<b>7.3200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>148.8811</b>

**Mitigated Construction On-Site**

Category	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
lb/day																
Fugitive Dust					2.6714	0.0000	2.6714	1.4262	0.0000	1.4262	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	-1.3206	-5.3579	6.8694	0.0257	-0.2645	-0.2645	-0.2645	-0.1664	-0.1664	-0.1664	0.0000	2,629.062	2,629.0621	0.8055	0.0000	2,645.9785
<b>Total</b>	<b>-1.3206</b>	<b>-5.3579</b>	<b>6.8694</b>	<b>0.0257</b>	<b>2.6714</b>	<b>-0.2645</b>	<b>2.4069</b>	<b>1.4262</b>	<b>-0.1664</b>	<b>1.2598</b>	<b>0.0000</b>	<b>2,629.062</b>	<b>2,629.0621</b>	<b>0.8055</b>	<b>0.0000</b>	<b>2,645.9785</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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	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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396	148.7275	148.7275	7.3200e-003	7.3200e-003	148.8811	148.8811
<b>Total</b>	<b>0.0487</b>	<b>0.0611</b>	<b>0.7632</b>	<b>1.8400e-003</b>	<b>0.1453</b>	<b>1.1700e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.0800e-003</b>	<b>0.0396</b>	<b>148.7275</b>	<b>148.7275</b>	<b>7.3200e-003</b>	<b>7.3200e-003</b>	<b>148.8811</b>	<b>148.8811</b>

### 3.4 Paving - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Off-Road	2.0898	22.3859	14.8176	0.0223	1.2610	1.2610	1.2610	1.1601	1.1601	1.1601	2,316.3767	2,316.3767	0.6987	0.6987	2,331.0495	2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7	7	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.0898</b>	<b>22.3859</b>	<b>14.8176</b>	<b>0.0223</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.1601</b>	<b>1.1601</b>	<b>1.1601</b>	<b>2,316.3767</b>	<b>2,316.3767</b>	<b>0.6987</b>	<b>0.6987</b>	<b>2,331.0495</b>	<b>2,331.0495</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																



### 3.4 Paving - 2017

#### Unmitigated Construction On-Site

Category	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
lb/day																
Off-Road	1.9074	20.2964	14.7270	0.0223	1.1384	1.1384	1.1384	1.0473	1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000			0.0000
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>	<b>1.1384</b>	<b>1.1384</b>	<b>1.1384</b>	<b>1.0473</b>	<b>1.0473</b>	<b>1.0473</b>		<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>		<b>2,295.7360</b>

#### Unmitigated Construction Off-Site

Category	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
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	0.0000	0.0000	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	0.0561	0.0705	0.8806	2.1200e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2400e-003	0.0457		171.6086	171.6086	8.4400e-003		171.7859
<b>Total</b>	<b>0.0561</b>	<b>0.0705</b>	<b>0.8806</b>	<b>2.1200e-003</b>	<b>0.1677</b>	<b>1.3500e-003</b>	<b>0.1690</b>	<b>0.0445</b>	<b>1.2400e-003</b>	<b>0.0457</b>		<b>171.6086</b>	<b>171.6086</b>	<b>8.4400e-003</b>		<b>171.7859</b>

#### Mitigated Construction On-Site

Category	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
	lb/day															
Off-Road	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.5982	0.5982	0.5982	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5490</b>	<b>11.0645</b>	<b>16.9276</b>	<b>0.0223</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.0000</b>	<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>		<b>2,295.7360</b>

**Mitigated Construction Off-Site**

Category	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
	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
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
Worker	0.0561	0.0705	0.8806	2.1200e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2400e-003	0.0457			171.6086	8.4400e-003		171.7859
<b>Total</b>	<b>0.0561</b>	<b>0.0705</b>	<b>0.8806</b>	<b>2.1200e-003</b>	<b>0.1677</b>	<b>1.3500e-003</b>	<b>0.1690</b>	<b>0.0445</b>	<b>1.2400e-003</b>	<b>0.0457</b>			<b>171.6086</b>	<b>8.4400e-003</b>		<b>171.7859</b>

## Clean Water Factory\_Pipeline South Coast Air Basin, Winter

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Population
User Defined Industrial	2,800.00	User Defined Unit	0
		Lot Acreage	Floor Surface Area
		50.00	0.00

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - approximate area of disturbance for pipeline

Construction Phase - anticipated duration of pipeline installation

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is excavation and backfill.

Demolition - pavement removed

Grading - material exported= volume excavated and backfilled

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices



Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentsMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	50.00	439.00
tblConstructionPhase	NumDays	75.00	439.00
tblConstructionPhase	NumDays	55.00	391.00
tblConstructionPhase	PhaseEndDate	5/14/2019	9/6/2017
tblConstructionPhase	PhaseEndDate	3/7/2019	9/29/2017
tblConstructionPhase	PhaseStartDate	9/7/2017	1/1/2016
tblConstructionPhase	PhaseStartDate	9/7/2017	4/1/2016
tblGrading	AcresOfGrading	0.00	80.00
tblGrading	MaterialExported	0.00	129,926.00
tblLandUse	LotAcreage	0.00	50.00

tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tbIP rojectCharacteristics	OperationalYear	2014	2018
tbITripsAndVMT	HaulingTripNumber	16,241.00	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
2016	6.8366	70.9923	54.2753	0.0783	7.7170	3.8670	11.5839	3.6196	3.5854	7.2050	0.0000	7,972.276	7,972.2763	2.0847	0.0000	8,016.0557
2017	6.3420	65.2491	53.2833	0.0783	7.7615	3.5241	11.2857	3.6305	3.2668	6.8973	0.0000	7,847.920	7,847.9201	2.0778	0.0000	7,891.5535
Total	13.1786	136.2414	107.5586	0.1567	15.4785	7.3911	22.8696	7.2501	6.8521	14.1023	0.0000	15,820.19	15,820.196	4.1625	0.0000	15,907.609

#### Mitigated Construction

Year	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
2016	-0.1114	16.2141	41.8488	0.0783	3.6072	0.8556	4.4628	1.6290	0.9571	2.5862	0.0000	7,972.276	7,972.2763	2.0847	0.0000	8,016.0557
2017	0.6063	17.4475	42.6810	0.0783	3.6518	0.9190	4.5708	1.6400	1.0155	2.6554	0.0000	7,847.920	7,847.9201	2.0778	0.0000	7,891.5535

Total	0.4948	33.6616	84.5297	0.1567	7.2589	1.7746	9.0336	3.2690	1.9726	5.2416	0.0000	15,820.19	15,820.196	4.1625	0.0000	15,907.609
												64	4			3

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
96.25	75.29	21.41	0.00	53.10	75.99	60.50	54.91	71.21	62.83	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	Demolition	Demolition	1/1/2016	9/6/2017	5	439	
2	Pipeline construction/earthwork	Grading	1/1/2016	9/6/2017	5	439	
3	Paving	Paving	4/1/2016	9/29/2017	5	391	

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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	0	8.00	255	0.40
Pipeline construction/earthwork	Excavators	2	8.00	162	0.38
Pipeline construction/earthwork	Graders	0	8.00	174	0.41
Pipeline construction/earthwork	Rubber Tired Dozers	1	8.00	255	0.40
Pipeline construction/earthwork	Scrapers	0	8.00	361	0.48
Pipeline construction/earthwork	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42

Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

### 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
Demolition	4	10.00	0.00	1,886.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline construction/earthwork	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

### **3.2 Demolition - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					0.9298	0.0000	0.9298	0.1408	0.0000	0.1408			0.0000			0.0000
Off-Road	1.8111	17.9145	14.0605	0.0221	1.0013	1.0013	1.0013	0.9490	0.9490	0.9490		2,242.420	2,242.4200	0.5550		2,254.0746
<b>Total</b>	<b>1.8111</b>	<b>17.9145</b>	<b>14.0605</b>	<b>0.0221</b>	<b>0.9298</b>	<b>1.0013</b>	<b>1.9311</b>	<b>0.1408</b>	<b>0.9490</b>	<b>1.0898</b>		<b>2,242.420</b>	<b>2,242.4200</b>	<b>0.5550</b>		<b>2,254.0746</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	0.0782	1.2321	0.9578	3.1700e-003	0.1136	0.0184	0.1320	0.0300	0.0170	0.0470		318.8927	318.8927	2.3200e-003		318.9414
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	0.0426	0.0572	0.5980	1.3300e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		111.5695	111.5695	6.1000e-003		111.6976
<b>Total</b>	<b>0.1208</b>	<b>1.2893</b>	<b>1.5558</b>	<b>4.5000e-003</b>	<b>0.2254</b>	<b>0.0194</b>	<b>0.2447</b>	<b>0.0596</b>	<b>0.0178</b>	<b>0.0775</b>		<b>430.4622</b>	<b>430.4622</b>	<b>8.4200e-003</b>		<b>430.6390</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					0.3975	0.0000	0.3975	0.0602	0.0000	0.0602			0.0000			0.0000
Off-Road	0.5160	10.4142	15.9103	0.0221	0.5650	0.5650	0.5650	0.5650	0.5650	0.5650		2,242.4200	2,242.4200	0.5550		2,254.0746
<b>Total</b>	<b>0.5160</b>	<b>10.4142</b>	<b>15.9103</b>	<b>0.0221</b>	<b>0.3975</b>	<b>0.5650</b>	<b>0.9625</b>	<b>0.0602</b>	<b>0.5650</b>	<b>0.6252</b>	<b>0.0000</b>	<b>2,242.4200</b>	<b>2,242.4200</b>	<b>0.5550</b>		<b>2,254.0746</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															

Category	lb/day											lb/day			
Hauling	0.0782	1.2321	0.9578	3.1700e-003	0.1136	0.0184	0.1320	0.0300	0.0170	0.0470	318.8927	318.8927	2.3200e-003	318.9414	
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	0.0426	0.0572	0.5980	1.3300e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305	111.5695	111.5695	6.1000e-003	111.6976	
<b>Total</b>	<b>0.1208</b>	<b>1.2893</b>	<b>1.5558</b>	<b>4.5000e-003</b>	<b>0.2254</b>	<b>0.0194</b>	<b>0.2447</b>	<b>0.0596</b>	<b>0.0178</b>	<b>0.0775</b>	<b>430.4622</b>	<b>430.4622</b>	<b>8.4200e-003</b>	<b>430.6390</b>	

### 3.2 Demolition - 2017

#### Unmitigated Construction On-Site

Category	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
Fugitive Dust					0.9298	0.0000	0.9298	0.1408	0.0000	0.1408			0.0000			0.0000
Off-Road	1.6675	16.3118	14.0123	0.0221		0.8995	0.8995	0.8521	0.8521	0.8521		0	2,216.4500	0.5497		2,227.9930
<b>Total</b>	<b>1.6675</b>	<b>16.3118</b>	<b>14.0123</b>	<b>0.0221</b>	<b>0.9298</b>	<b>0.8995</b>	<b>1.8293</b>	<b>0.1408</b>	<b>0.8521</b>	<b>0.9929</b>	<b>0</b>	<b>2,216.4500</b>	<b>2,216.4500</b>	<b>0.5497</b>		<b>2,227.9930</b>

#### Unmitigated Construction Off-Site

Category	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
Hauling	0.0737	1.1306	0.9246	3.1600e-003	0.1581	0.0169	0.1750	0.0409	0.0155	0.0565			313.6678	2.2800e-003		313.7156
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
Worker	0.0382	0.0516	0.5392	1.3300e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305			107.2846	5.6300e-003		107.4028

Total	0.1118	1.1822	1.4638	4.4900e-003	0.2699	0.0178	0.2877	0.0706	0.0164	0.0869	420.9524	420.9524	7.9100e-003	421.1184
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					0.3975	0.0000	0.3975	0.0602	0.0000	0.0602			0.0000			0.0000
Off-Road	0.5160	10.4142	15.9103	0.0221		0.5650	0.5650		0.5650	0.5650	0.0000	2,216.4499	2,216.4499	0.5497		2,227.9930
<b>Total</b>	<b>0.5160</b>	<b>10.4142</b>	<b>15.9103</b>	<b>0.0221</b>	<b>0.3975</b>	<b>0.5650</b>	<b>0.9625</b>	<b>0.0602</b>	<b>0.5650</b>	<b>0.6252</b>	<b>0.0000</b>	<b>2,216.4499</b>	<b>2,216.4499</b>	<b>0.5497</b>		<b>2,227.9930</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Hauling	0.0737	1.1306	0.9246	3.1600e-003	0.1581	0.0169	0.1750	0.0409	0.0155	0.0565		313.6678	313.6678	2.2800e-003		313.7156
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	0.0382	0.0516	0.5392	1.3300e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2846	107.2846	5.6300e-003		107.4028
<b>Total</b>	<b>0.1118</b>	<b>1.1822</b>	<b>1.4638</b>	<b>4.4900e-003</b>	<b>0.2699</b>	<b>0.0178</b>	<b>0.2877</b>	<b>0.0706</b>	<b>0.0164</b>	<b>0.0869</b>		<b>420.9524</b>	<b>420.9524</b>	<b>7.9100e-003</b>		<b>421.1184</b>

**3.3 Pipeline construction/earthwork - 2016**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					6.2488	0.0000	6.2488	3.3362	0.0000	3.3362			0.0000			0.0000
Off-Road	2.6958	29.2425	22.1670	0.0257	1.5827	1.5827	1.5827	1.4561	1.4561	1.4561		2,670.6228	2,670.6228	0.8056		2,687.5394
<b>Total</b>	<b>2.6958</b>	<b>29.2425</b>	<b>22.1670</b>	<b>0.0257</b>	<b>6.2488</b>	<b>1.5827</b>	<b>7.8315</b>	<b>3.3362</b>	<b>1.4561</b>	<b>4.7922</b>		<b>2,670.6228</b>	<b>2,670.6228</b>	<b>0.8056</b>		<b>2,687.5394</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0553	0.0744	0.7774	1.7300e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397		145.0404	145.0404	7.9300e-003		145.2069
<b>Total</b>	<b>0.0553</b>	<b>0.0744</b>	<b>0.7774</b>	<b>1.7300e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>		<b>145.0404</b>	<b>145.0404</b>	<b>7.9300e-003</b>		<b>145.2069</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																



Fugitive Dust					2.6714	0.0000	2.6714	1.4262	0.0000	1.4262	0.0000	0.0000						0.0000
Off-Road	-1.4164	-6.7139	5.7807	0.0257	-0.3296	-0.3296	-0.3296	-0.2263	-0.2263	0.0000	2,670.6228	2,670.6228	0.8056	0.0000	0.0000	0.0000	0.0000	2,687.5394
<b>Total</b>	<b>-1.4164</b>	<b>-6.7139</b>	<b>5.7807</b>	<b>0.0257</b>	<b>2.3418</b>	<b>-0.3296</b>	<b>2.6714</b>	<b>1.4262</b>	<b>-0.2263</b>	<b>1.1999</b>	<b>2,670.6228</b>	<b>2,670.6228</b>	<b>0.8056</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2,687.5394</b>

**Mitigated Construction Off-Site**

Category	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	
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			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
Worker	0.0553	0.0744	0.7774	1.7300e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1200e-003	0.0397	145.0404	145.0404	145.0404	7.9300e-003			145.2069
<b>Total</b>	<b>0.0553</b>	<b>0.0744</b>	<b>0.7774</b>	<b>1.7300e-003</b>	<b>0.1453</b>	<b>1.2100e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.1200e-003</b>	<b>0.0397</b>	<b>145.0404</b>	<b>145.0404</b>	<b>145.0404</b>	<b>7.9300e-003</b>			<b>145.2069</b>

**3.3 Pipeline construction/earthwork - 2017**

**Unmitigated Construction On-Site**

Category	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	
lb/day																	
Fugitive Dust					6.2488	0.0000	6.2488	3.3362	0.0000	3.3362			0.0000				0.0000
Off-Road	2.5484	27.3141	21.5703	0.0257	1.4660	1.4660	1.4660	1.3487	1.3487	1.3487	2,629.0621	2,629.0621	2,629.0621	0.8055			2,645.9765
<b>Total</b>	<b>2.5484</b>	<b>27.3141</b>	<b>21.5703</b>	<b>0.0257</b>	<b>6.2488</b>	<b>1.4660</b>	<b>7.7148</b>	<b>3.3362</b>	<b>1.3487</b>	<b>4.6848</b>	<b>2,629.0621</b>	<b>2,629.0621</b>	<b>2,629.0621</b>	<b>0.8055</b>			<b>2,645.9765</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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	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	0.0496	0.0671	0.7010	1.7200e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396	139.4700	139.4700	7.3200e-003	7.3200e-003	139.6236	139.6236
<b>Total</b>	<b>0.0496</b>	<b>0.0671</b>	<b>0.7010</b>	<b>1.7200e-003</b>	<b>0.1453</b>	<b>1.1700e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.0800e-003</b>	<b>0.0396</b>	<b>139.4700</b>	<b>139.4700</b>	<b>7.3200e-003</b>	<b>7.3200e-003</b>	<b>139.6236</b>	<b>139.6236</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					2.6714	0.0000	2.6714	1.4262	0.0000	1.4262			0.0000			0.0000
Off-Road	-1.3206	-5.3579	6.8694	0.0257	-0.2645	-0.2645	-0.2645	-0.1664	-0.1664	-0.1664	0.0000	2,629.062	2,629.0621	0.8055		2,645.9785
<b>Total</b>	<b>-1.3206</b>	<b>-5.3579</b>	<b>6.8694</b>	<b>0.0257</b>	<b>2.6714</b>	<b>-0.2645</b>	<b>2.4069</b>	<b>1.4262</b>	<b>-0.1664</b>	<b>1.2598</b>	<b>0.0000</b>	<b>2,629.062</b>	<b>2,629.0621</b>	<b>0.8055</b>		<b>2,645.9785</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																

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	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	0.0496	0.0671	0.7010	1.7200e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396	139.4700	139.4700	7.3200e-003	139.6236	139.6236	0.0000
<b>Total</b>	<b>0.0496</b>	<b>0.0671</b>	<b>0.7010</b>	<b>1.7200e-003</b>	<b>0.1453</b>	<b>1.1700e-003</b>	<b>0.1465</b>	<b>0.0385</b>	<b>1.0800e-003</b>	<b>0.0396</b>	<b>139.4700</b>	<b>139.4700</b>	<b>7.3200e-003</b>	<b>139.6236</b>	<b>139.6236</b>	<b>0.0000</b>

### 3.4 Paving - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	MBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.0898	22.3859	14.8176	0.0223	1.2610	1.2610	1.2610	1.1601	1.1601	1.1601			2,316.376	2,316.376	0.6987	2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.0898</b>	<b>22.3859</b>	<b>14.8176</b>	<b>0.0223</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.1601</b>	<b>1.1601</b>	<b>1.1601</b>			<b>2,316.376</b>	<b>2,316.376</b>	<b>0.6987</b>	<b>2,331.0495</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	MBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0638	0.0858	0.8970	1.9900e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458	167.3543	167.3543	9.1500e-003	167.5464	167.5464	0.0000

Total	0.0638	0.0858	0.8970	1.9900e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458	167.3543	167.3543	9.1500e-003	167.5464
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.5982	0.5982	0.5982	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		7	0.0000			0.0000
Total	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.5982	0.5982	0.5982	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0000	0.0000	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	0.0638	0.0858	0.8970	1.9900e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		167.3543	167.3543	9.1500e-003		167.5464
Total	0.0638	0.0858	0.8970	1.9900e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		167.3543	167.3543	9.1500e-003		167.5464

**3.4 Paving - 2017**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.9074	20.2964	14.7270	0.0223	1.1384	1.1384	1.1384	1.0473	1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>	<b>1.1384</b>	<b>1.1384</b>	<b>1.1384</b>	<b>1.0473</b>	<b>1.0473</b>	<b>1.0473</b>		<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>		<b>2,295.7360</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	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
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
Worker	0.0573	0.0775	0.8088	1.9900e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2400e-003	0.0457		160.9269	160.9269	8.4400e-003		161.1042
<b>Total</b>	<b>0.0573</b>	<b>0.0775</b>	<b>0.8088</b>	<b>1.9900e-003</b>	<b>0.1677</b>	<b>1.3500e-003</b>	<b>0.1690</b>	<b>0.0445</b>	<b>1.2400e-003</b>	<b>0.0457</b>		<b>160.9269</b>	<b>160.9269</b>	<b>8.4400e-003</b>		<b>161.1042</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															

Off-Road	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.0000	2,281.0588	2,281.0588	0.6989	2,295.7360
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.5490</b>	<b>11.0645</b>	<b>16.9276</b>	<b>0.0223</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.0000</b>	<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>	<b>2,295.7360</b>

**Mitigated Construction Off-Site**

Category	lb/day																
	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	
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
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
Worker	0.0573	0.0775	0.8088	1.9900e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2400e-003	0.0457	160.9269	160.9269	160.9269	8.4400e-003			161.1042
<b>Total</b>	<b>0.0573</b>	<b>0.0775</b>	<b>0.8088</b>	<b>1.9900e-003</b>	<b>0.1677</b>	<b>1.3500e-003</b>	<b>0.1690</b>	<b>0.0445</b>	<b>1.2400e-003</b>	<b>0.0457</b>	<b>160.9269</b>	<b>160.9269</b>	<b>160.9269</b>	<b>8.4400e-003</b>			<b>161.1042</b>

## Clean Water Factory\_Pump Stations & Reservoirs

### South Coast Air Basin, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	300.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10	Operational Year	2018		

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for pump stations and reservoirs

Construction Phase - anticipated duration of pump stations and reservoirs

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - worker trips

Demolition -

Grading - imported= excavation for buried tanks

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	10.00
tblGrading	MaterialExported	0.00	4,412.00
tblGrading	MaterialImported	0.00	39,775.00
tblLandUse	LotAcreage	0.00	10.00





Percent Reduction	70.60	43.46	5.23	0.00	40.50	52.94	48.34	43.37	50.08	48.89	0.00	0.00	0.00	0.00
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### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/28/2016	5	20	
2	Building	Building Construction	1/29/2016	12/15/2016	5	230	
3	Paving	Paving	12/16/2016	12/29/2016	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 50

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
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building	Cranes	1	7.00	226	0.29
Building	Forklifts	3	8.00	89	0.20
Building	Generator Sets	1	8.00	84	0.74
Building	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42

Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

**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
Grading	8	20.00	0.00	5,523.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building	9	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

**3.2 Grading - 2016**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.0892	0.0000	0.0892	0.0363	0.0000	0.0363	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0648	0.7481	0.4914	6.2000e-004	0.0358	0.0358	0.0358	0.0330	0.0330	0.0330	0.0000	58.1957	58.1957	0.0176	0.0000	58.5644
<b>Total</b>	<b>0.0648</b>	<b>0.7481</b>	<b>0.4914</b>	<b>6.2000e-004</b>	<b>0.0892</b>	<b>0.0358</b>	<b>0.1251</b>	<b>0.0363</b>	<b>0.0330</b>	<b>0.0693</b>	<b>0.0000</b>	<b>58.1957</b>	<b>58.1957</b>	<b>0.0176</b>	<b>0.0000</b>	<b>58.5644</b>
MIT/yr																



Category	tons/yr										MT/yr					
	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
Hauling	0.0495	0.8055	0.6049	2.0400e-003	0.0380	0.0118	0.0499	0.0107	0.0109	0.0216	0.0000	186.2119	186.2119	1.3400e-003	0.0000	186.2401
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	8.0000e-004	1.1800e-003	0.0123	3.0000e-005	1.7000e-003	2.0000e-005	1.7200e-003	4.6000e-004	2.0000e-005	4.8000e-004	0.0000	2.0558	2.0558	1.1000e-004	0.0000	2.0581
<b>Total</b>	<b>0.0503</b>	<b>0.8067</b>	<b>0.6172</b>	<b>2.0700e-003</b>	<b>0.0397</b>	<b>0.0119</b>	<b>0.0516</b>	<b>0.0112</b>	<b>0.0109</b>	<b>0.0221</b>	<b>0.0000</b>	<b>188.2677</b>	<b>188.2677</b>	<b>1.4500e-003</b>	<b>0.0000</b>	<b>188.2982</b>

### 3.3 Building - 2016

#### Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	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
Off-Road	0.3917	3.2782	2.1283	3.0800e-003	0.2263	0.2263	0.2263	0.2126	0.2126	0.2126	0.0000	278.4766	278.4766	0.0691	0.0000	279.9270
<b>Total</b>	<b>0.3917</b>	<b>3.2782</b>	<b>2.1283</b>	<b>3.0800e-003</b>	<b>0.2263</b>	<b>0.2263</b>	<b>0.2263</b>	<b>0.2126</b>	<b>0.2126</b>	<b>0.2126</b>	<b>0.0000</b>	<b>278.4766</b>	<b>278.4766</b>	<b>0.0691</b>	<b>0.0000</b>	<b>279.9270</b>

#### Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	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
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	9.2200e-003	0.0135	0.1409	3.1000e-004	0.0252	2.1000e-004	0.0255	6.7000e-003	2.0000e-004	6.9000e-003	0.0000	23.6417	23.6417	1.2700e-003	0.0000	23.6684

Total	9.2200e-003	0.0135	0.1409	3.1000e-004	0.0252	2.1000e-004	0.0255	6.7000e-003	2.0000e-004	6.9000e-003	0.0000	23.6417	23.6417	1.2700e-003	0.0000	23.6684
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/yr															
Off-Road	0.0772	1.6300	2.0488	3.0800e-003	0.1037	0.1037	0.1037	0.1037	0.1037	0.1037	0.0000	278.4763	278.4763	0.0691	0.0000	279.9267
<b>Total</b>	<b>0.0772</b>	<b>1.6300</b>	<b>2.0488</b>	<b>3.0800e-003</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.1037</b>	<b>0.0000</b>	<b>278.4763</b>	<b>278.4763</b>	<b>0.0691</b>	<b>0.0000</b>	<b>279.9267</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr															
	MIT/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	9.2200e-003	0.0135	0.1409	3.1000e-004	0.0196	2.1000e-004	0.0198	5.3100e-003	2.0000e-004	5.5000e-003	0.0000	23.6417	23.6417	1.2700e-003	0.0000	23.6684
<b>Total</b>	<b>9.2200e-003</b>	<b>0.0135</b>	<b>0.1409</b>	<b>3.1000e-004</b>	<b>0.0196</b>	<b>2.1000e-004</b>	<b>0.0198</b>	<b>5.3100e-003</b>	<b>2.0000e-004</b>	<b>5.5000e-003</b>	<b>0.0000</b>	<b>23.6417</b>	<b>23.6417</b>	<b>1.2700e-003</b>	<b>0.0000</b>	<b>23.6684</b>

**3.4 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															
MIT/yr																
Off-Road	0.0105	0.1119	0.0741	1.1000e-004	6.3000e-003	6.3000e-003	6.3000e-003	5.8000e-003	5.8000e-003	5.8000e-003	0.0000	10.5069	10.5069	3.1700e-003	0.0000	10.5735
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0105</b>	<b>0.1119</b>	<b>0.0741</b>	<b>1.1000e-004</b>	<b>6.3000e-003</b>	<b>6.3000e-003</b>	<b>6.3000e-003</b>	<b>5.8000e-003</b>	<b>5.8000e-003</b>	<b>5.8000e-003</b>	<b>0.0000</b>	<b>10.5069</b>	<b>10.5069</b>	<b>3.1700e-003</b>	<b>0.0000</b>	<b>10.5735</b>

**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															
MIT/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	3.0000e-004	4.4000e-004	4.5900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7709	0.7709	4.0000e-005	0.0000	0.7718
<b>Total</b>	<b>3.0000e-004</b>	<b>4.4000e-004</b>	<b>4.5900e-003</b>	<b>1.0000e-005</b>	<b>8.2000e-004</b>	<b>1.0000e-005</b>	<b>8.3000e-004</b>	<b>2.2000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.7709</b>	<b>0.7709</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.7718</b>

**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															
MIT/yr																

Off-Road	2.7500e-003	0.0553	0.0846	1.1000e-004	2.9900e-003	2.9900e-003	2.9900e-003	2.9900e-003	2.9900e-003	2.9900e-003	10.5069	10.5069	3.1700e-003	0.0000	10.5735
Paving	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.7500e-003</b>	<b>0.0553</b>	<b>0.0846</b>	<b>1.1000e-004</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>2.9900e-003</b>	<b>10.5069</b>	<b>10.5069</b>	<b>3.1700e-003</b>	<b>0.0000</b>	<b>10.5735</b>

**Mitigated Construction Off-Site**

Category	tons/yr														MT/yr			
	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		
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	3.0000e-004	4.4000e-004	4.5900e-003	1.0000e-005	6.4000e-004	1.0000e-005	6.4000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.7709	0.7709	4.0000e-005	0.0000	0.7718		
<b>Total</b>	<b>3.0000e-004</b>	<b>4.4000e-004</b>	<b>4.5900e-003</b>	<b>1.0000e-005</b>	<b>6.4000e-004</b>	<b>1.0000e-005</b>	<b>6.4000e-004</b>	<b>1.7000e-004</b>	<b>1.0000e-005</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.7709</b>	<b>0.7709</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.7718</b>		



## Clean Water Factory\_Pump Stations & Reservoirs

### South Coast Air Basin, Summer

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	300.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for pump stations and reservoirs

Construction Phase - anticipated duration of pump stations and reservoirs

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - worker trips

Demolition -

Grading - imported= excavation for buried tanks

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	10.00
tblGrading	MaterialExported	0.00	4,412.00
tblGrading	MaterialImported	0.00	39,775.00
tblLandUse	LotAcreage	0.00	10.00

tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
	lb/day															
2016	11.3222	151.3473	104.1676	0.2684	13.9573	4.7684	18.7257	5.0109	4.3867	9.3976	0.0000	27,199.73	27,199.737	2.0945	0.0000	27,243.720
Total	11.3222	151.3473	104.1676	0.2684	13.9573	4.7684	18.7257	5.0109	4.3867	9.3976	0.0000	27,199.73	27,199.737	2.0945	0.0000	27,243.720

#### Mitigated Construction

Year	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
	lb/day															
2016	6.3555	106.3133	92.9734	0.2684	7.8490	2.5075	10.3565	2.6848	2.4126	5.0974	0.0000	27,199.73	27,199.737	2.0945	0.0000	27,243.720
Total	6.3555	106.3133	92.9734	0.2684	7.8490	2.5075	10.3565	2.6848	2.4126	5.0974	0.0000	27,199.73	27,199.737	2.0945	0.0000	27,243.720

Year	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
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Percent Reduction	43.87	29.76	10.75	0.00	43.76	47.41	44.69	46.42	45.00	45.76	0.00	0.00	0.00	0.00
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### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/28/2016	5	20	
2	Building	Building Construction	1/29/2016	12/15/2016	5	230	
3	Paving	Paving	12/16/2016	12/29/2016	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 50

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
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building	Cranes	1	7.00	226	0.29
Building	Forklifts	3	8.00	89	0.20
Building	Generator Sets	1	8.00	84	0.74
Building	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42

Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

### 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
Grading	8	20.00	0.00	5,523.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building	9	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Grading - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					8.9232	0.0000	8.9232	3.6343	0.0000	3.6343			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842	3.2975	3.2975	6.414.9807	6,414.9807	7	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>8.9232</b>	<b>3.5842</b>	<b>12.5074</b>	<b>3.6343</b>	<b>3.2975</b>	<b>6.9318</b>	<b>6,414.9807</b>	<b>7</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	4.7594	76.4294	53.7329	0.2039	4.8106	1.1823	5.9929	1.3172	1.0875	2.4047		20,546.83	20,546.839	0.1473		20,549.932
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	0.0853	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0693	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
<b>Total</b>	<b>4.8427</b>	<b>76.5335</b>	<b>55.0302</b>	<b>0.2067</b>	<b>5.0341</b>	<b>1.1842</b>	<b>6.2183</b>	<b>1.3765</b>	<b>1.0892</b>	<b>2.4658</b>		<b>63</b>	<b>20,784.75</b>	<b>20,784.756</b>	<b>0.1595</b>	<b>20,788.105</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Fugitive Dust					3.8147	0.0000	3.8147	1.5537	0.0000	1.5537			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617		1.3234	1.3234		1.3234	1.3234	0.0000	6,414.980	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>1.5128</b>	<b>29.7798</b>	<b>37.9432</b>	<b>0.0617</b>	<b>3.8147</b>	<b>1.3234</b>	<b>5.1380</b>	<b>1.5537</b>	<b>1.3234</b>	<b>2.8771</b>	<b>0.0000</b>	<b>7</b>	<b>6,414.980</b>	<b>6,414.9807</b>	<b>1.9350</b>	<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															

Category	lb/day										lb/day			
Hauling	4.7594	76.4294	53.7329	0.2039	3.8613	1.1823	5.0436	1.0842	1.0875	2.1717	20,546.83	20,546.839	0.1473	20,549.9327
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	0.0833	0.1041	1.2973	2.8300e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	237.9165	237.9165	0.0122	238.1726
<b>Total</b>	<b>4.8427</b>	<b>76.5335</b>	<b>55.0302</b>	<b>0.2067</b>	<b>4.0343</b>	<b>1.1842</b>	<b>5.2185</b>	<b>1.1311</b>	<b>1.0892</b>	<b>2.2203</b>	<b>20,784.75</b>	<b>20,784.756</b>	<b>0.1595</b>	<b>20,788.1054</b>

### 3.3 Building - 2016

#### Unmitigated Construction On-Site

Category	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
Off-Road	3.4062	28.5063	18.5066	0.0268	1.9674	1.9674	1.9674	1.8485	1.8485	1.8485		2,669.286	2,669.2864	0.6620		2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>	<b>1.9674</b>	<b>1.9674</b>	<b>1.9674</b>	<b>1.8485</b>	<b>1.8485</b>	<b>1.8485</b>		<b>2,669.286</b>	<b>2,669.2864</b>	<b>0.6620</b>		<b>2,683.1890</b>

#### Unmitigated Construction Off-Site

Category	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
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	0.0000	0.0000	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	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726

Total	0.0833	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610	237.9165	237.9165	0.0122	238.1726
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.6712	14.1741	17.8156	0.0268	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
<b>Total</b>	<b>0.6712</b>	<b>14.1741</b>	<b>17.8156</b>	<b>0.0268</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.0000</b>	<b>2,669.2864</b>	<b>2,669.2864</b>	<b>0.6620</b>		<b>2,683.1890</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0833	0.1041	1.2973	2.8300e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	237.9165	237.9165	237.9165	0.0122		238.1726
<b>Total</b>	<b>0.0833</b>	<b>0.1041</b>	<b>1.2973</b>	<b>2.8300e-003</b>	<b>0.1730</b>	<b>1.8700e-003</b>	<b>0.1749</b>	<b>0.0469</b>	<b>1.7200e-003</b>	<b>0.0486</b>	<b>237.9165</b>	<b>237.9165</b>	<b>237.9165</b>	<b>0.0122</b>		<b>238.1726</b>

**3.4 Paving - 2016**

**Unmitigated Construction On-Site**



Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	2.0898	22.3859	14.8176	0.0223	1.2610	1.2610	1.2610	1.1601	1.1601	1.1601	2,316.3767	7	2,316.3767	0.6987		2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>2.0898</b>	<b>22.3859</b>	<b>14.8176</b>	<b>0.0223</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.1601</b>	<b>1.1601</b>	<b>1.1601</b>	<b>2,316.3767</b>	<b>7</b>	<b>2,316.3767</b>	<b>0.6987</b>		<b>2,331.0495</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	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
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
Worker	0.0624	0.0781	0.9730	2.1200e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458	178.4374	178.4374	178.4374	9.1500e-003		178.6295
<b>Total</b>	<b>0.0624</b>	<b>0.0781</b>	<b>0.9730</b>	<b>2.1200e-003</b>	<b>0.1677</b>	<b>1.4000e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.2900e-003</b>	<b>0.0458</b>	<b>178.4374</b>	<b>178.4374</b>	<b>178.4374</b>	<b>9.1500e-003</b>		<b>178.6295</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															

Off-Road	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.0000	0.0000	2,316.3767	2,316.3767	0.6987	0.6987	2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000					0.0000
<b>Total</b>	<b>0.5490</b>	<b>11.0645</b>	<b>16.9276</b>	<b>0.0223</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2,316.3767</b>	<b>2,316.3767</b>	<b>0.6987</b>	<b>0.6987</b>	<b>2,331.0495</b>

**Mitigated Construction Off-Site**

Category	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
	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
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
Worker	0.0624	0.0781	0.9730	2.1200e-003	0.1298	1.4000e-003	0.1312	0.0352	1.2900e-003	0.0365		178.4374	178.4374	9.1500e-003		178.6295
<b>Total</b>	<b>0.0624</b>	<b>0.0781</b>	<b>0.9730</b>	<b>2.1200e-003</b>	<b>0.1298</b>	<b>1.4000e-003</b>	<b>0.1312</b>	<b>0.0352</b>	<b>1.2900e-003</b>	<b>0.0365</b>		<b>178.4374</b>	<b>178.4374</b>	<b>9.1500e-003</b>		<b>178.6295</b>

## Clean Water Factory\_Pump Stations & Reservoirs

### South Coast Air Basin, Winter

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	300.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for pump stations and reservoirs

Construction Phase - anticipated duration of pump stations and reservoirs

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - worker trips

Demolition -

Grading - imported= excavation for buried tanks

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	10.00
tblGrading	MaterialExported	0.00	4,412.00
tblGrading	MaterialImported	0.00	39,775.00
tblLandUse	LotAcreage	0.00	10.00

tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
	lb/day															
2016	11.5910	154.1251	111.8977	0.2679	13.9573	4.7712	18.7285	5.0109	4.3893	9.4002	0.0000	27,136.16	27,136.163	2.0964	0.0000	27,180.188
Total	11.5910	154.1251	111.8977	0.2679	13.9573	4.7712	18.7285	5.0109	4.3893	9.4002	0.0000	27,136.16	27,136.163	2.0964	0.0000	27,180.188

#### Mitigated Construction

Year	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
	lb/day															
2016	6.6244	109.0912	100.7035	0.2679	7.8490	2.5103	10.3593	2.6848	2.4152	5.1000	0.0000	27,136.16	27,136.163	2.0964	0.0000	27,180.188
Total	6.6244	109.0912	100.7035	0.2679	7.8490	2.5103	10.3593	2.6848	2.4152	5.1000	0.0000	27,136.16	27,136.163	2.0964	0.0000	27,180.188

Year	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
	lb/day															

Percent Reduction	42.85	29.22	10.00	0.00	43.76	47.39	44.69	46.42	44.98	45.75	0.00	0.00	0.00	0.00
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### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	1/28/2016	5	20	
2	Building	Building Construction	1/29/2016	12/15/2016	5	230	
3	Paving	Paving	12/16/2016	12/29/2016	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 50

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
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building	Cranes	1	7.00	226	0.29
Building	Forklifts	3	8.00	89	0.20
Building	Generator Sets	1	8.00	84	0.74
Building	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36

Paving	Rollers	2	8.00	80	0.38
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**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
Grading	8	20.00	0.00	5,523.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building	9	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	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
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

**3.2 Grading - 2016**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					8.9232	0.0000	8.9232	3.6343	0.0000	3.6343			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842	3.2975	3.2975	6.414.9807	7	6,414.9807	1.9350			6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>8.9232</b>	<b>3.5842</b>	<b>12.5074</b>	<b>3.6343</b>	<b>3.2975</b>	<b>6.9318</b>	<b>7</b>	<b>6,414.9807</b>	<b>1.9350</b>			<b>6,455.6154</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Hauling	5.0284	79.1970	61.5643	0.2035	4.8106	1.1851	5.9956	1.3172	1.0901	2.4073	20,498.04	37	20,498.043	0.1492		20,501.177
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
Worker	0.0851	0.1144	1.1960	2.6500e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610	223.1390	223.1390	223.1390	0.0122		223.3952
<b>Total</b>	<b>5.1115</b>	<b>79.3114</b>	<b>62.7603</b>	<b>0.2061</b>	<b>5.0341</b>	<b>1.1869</b>	<b>6.2211</b>	<b>1.3765</b>	<b>1.0918</b>	<b>2.4683</b>	<b>20,721.18</b>	<b>27</b>	<b>20,721.182</b>	<b>0.1614</b>		<b>20,724.572</b>
	6															

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Fugitive Dust					3.8147	0.0000	3.8147	1.5537	0.0000	1.5537	0.0000		0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617		1.3234	1.3234	1.3234	1.3234	1.3234	0.0000	6,414.980	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>1.5128</b>	<b>29.7798</b>	<b>37.9432</b>	<b>0.0617</b>	<b>3.8147</b>	<b>1.3234</b>	<b>5.1380</b>	<b>1.5537</b>	<b>1.3234</b>	<b>2.8771</b>	<b>0.0000</b>	<b>6,414.980</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															



Category	lb/day											lb/day			
Hauling	5.0264	79.1970	61.5643	0.2035	3.8613	1.1851	5.0464	1.0842	1.0901	2.1743	20,498.04	20,498.043	0.1492	20,501.177	
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	0.0851	0.1144	1.1960	2.6500e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	223.1390	223.1390	0.0122	223.3952	
<b>Total</b>	<b>5.1115</b>	<b>79.3114</b>	<b>62.7603</b>	<b>0.2061</b>	<b>4.0343</b>	<b>1.1869</b>	<b>5.2213</b>	<b>1.1311</b>	<b>1.0918</b>	<b>2.2229</b>	<b>20,721.18</b>	<b>20,721.182</b>	<b>0.1614</b>	<b>20,724.572</b>	

### 3.3 Building - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	3.4062	28.5063	18.5066	0.0268	1.9674	1.9674	1.9674	1.8485	1.8485	1.8485	2,669.286	2,669.2864	0.6620	2,683.1890		
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>	<b>1.9674</b>	<b>1.9674</b>	<b>1.9674</b>	<b>1.8485</b>	<b>1.8485</b>	<b>1.8485</b>	<b>2,669.286</b>	<b>2,669.2864</b>	<b>0.6620</b>	<b>2,683.1890</b>		

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0851	0.1144	1.1960	2.6500e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610	223.1390	223.1390	0.0122	223.3952		223.3952

Total	0.0851	0.1144	1.1960	2.6500e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610	223.1390	223.1390	0.0122	223.3952
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**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.6712	14.1741	17.8156	0.0268	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
<b>Total</b>	<b>0.6712</b>	<b>14.1741</b>	<b>17.8156</b>	<b>0.0268</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.9016</b>	<b>0.0000</b>	<b>2,669.2864</b>	<b>2,669.2864</b>	<b>0.6620</b>		<b>2,683.1890</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0851	0.1144	1.1960	2.6500e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	223.1390	223.1390	223.1390	0.0122		223.3952
<b>Total</b>	<b>0.0851</b>	<b>0.1144</b>	<b>1.1960</b>	<b>2.6500e-003</b>	<b>0.1730</b>	<b>1.8700e-003</b>	<b>0.1749</b>	<b>0.0469</b>	<b>1.7200e-003</b>	<b>0.0486</b>	<b>223.1390</b>	<b>223.1390</b>	<b>223.1390</b>	<b>0.0122</b>		<b>223.3952</b>

**3.4 Paving - 2016**

**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	2.0898	22.3859	14.8176	0.0223	1.2610	1.2610	1.2610	1.1601	1.1601	1.1601	2,316.3767	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		7	0.0000			0.0000
<b>Total</b>	<b>2.0898</b>	<b>22.3859</b>	<b>14.8176</b>	<b>0.0223</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.2610</b>	<b>1.1601</b>	<b>1.1601</b>	<b>1.1601</b>	<b>2,316.3767</b>	<b>2,316.3767</b>	<b>2,316.3767</b>	<b>0.6987</b>		<b>2,331.0495</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	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	0.0000	0.0000	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	0.0638	0.0858	0.8970	1.9900e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458	167.3543	167.3543	167.3543	9.1500e-003		167.5464
<b>Total</b>	<b>0.0638</b>	<b>0.0858</b>	<b>0.8970</b>	<b>1.9900e-003</b>	<b>0.1677</b>	<b>1.4000e-003</b>	<b>0.1691</b>	<b>0.0445</b>	<b>1.2900e-003</b>	<b>0.0458</b>	<b>167.3543</b>	<b>167.3543</b>	<b>167.3543</b>	<b>9.1500e-003</b>		<b>167.5464</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															

Off-Road	0.5490	11.0645	16.9276	0.0223	0.5982	0.5982	0.5982	0.0000	0.0000	2,316.3767	2,316.3767	0.6987	2,331.0495
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000				0.0000
<b>Total</b>	<b>0.5490</b>	<b>11.0645</b>	<b>16.9276</b>	<b>0.0223</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.5982</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2,316.3767</b>	<b>2,316.3767</b>	<b>0.6987</b>	<b>2,331.0495</b>

**Mitigated Construction Off-Site**

Category	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
	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		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
Worker	0.0638	0.0858	0.8970	1.9900e-003	0.1298	1.4000e-003	0.1312	0.0352	1.2900e-003	0.0365	167.3543	167.3543	167.3543	9.1500e-003		167.5464
<b>Total</b>	<b>0.0638</b>	<b>0.0858</b>	<b>0.8970</b>	<b>1.9900e-003</b>	<b>0.1298</b>	<b>1.4000e-003</b>	<b>0.1312</b>	<b>0.0352</b>	<b>1.2900e-003</b>	<b>0.0365</b>	<b>167.3543</b>	<b>167.3543</b>	<b>167.3543</b>	<b>9.1500e-003</b>		<b>167.5464</b>

## Clean Water Factory\_Recharge Site Improvements South Coast Air Basin, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	400.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

**Urbanization**      Urban      **Wind Speed (m/s)**      2.2      **Precipitation Freq (Days)**      31  
**Climate Zone**      10      **Operational Year**      2018

**Utility Company**      Southern California Edison

**CO2 Intensity (lb/MW/hr)**      630.89      **CH4 Intensity (lb/MW/hr)**      0.029      **N2O Intensity (lb/MW/hr)**      0.006

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for recharge site improvements

Construction Phase - anticipated duration of berm repair

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is balanced.

Grading - material imported= cut and fill

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	132.00
tblGrading	AcresOfGrading	330.00	10.00
tblGrading	MaterialExported	0.00	250,000.00
tblLandUse	LotAcreage	0.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripNumber	31,250.00	15,625.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

Year	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
2016	0.4880	5.1158	4.4213	4.4300e-003	0.4322	0.2373	0.6695	0.2253	0.2183	0.4436	0.0000	412.5758	412.5758	0.1170	0.0000	415.0325
<b>Total</b>	<b>0.4880</b>	<b>5.1158</b>	<b>4.4213</b>	<b>4.4300e-003</b>	<b>0.4322</b>	<b>0.2373</b>	<b>0.6695</b>	<b>0.2253</b>	<b>0.2183</b>	<b>0.4436</b>	<b>0.0000</b>	<b>412.5758</b>	<b>412.5758</b>	<b>0.1170</b>	<b>0.0000</b>	<b>415.0325</b>

**Mitigated Construction**

Year	tons/yr											MT/yr				
	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
2016	0.1602	2.1435	3.6825	4.4300e-003	0.1901	0.0881	0.2782	0.0978	0.0880	0.1858	0.0000	412.5754	412.5754	0.1170	0.0000	415.0320
<b>Total</b>	<b>0.1602</b>	<b>2.1435</b>	<b>3.6825</b>	<b>4.4300e-003</b>	<b>0.1901</b>	<b>0.0881</b>	<b>0.2782</b>	<b>0.0978</b>	<b>0.0880</b>	<b>0.1858</b>	<b>0.0000</b>	<b>412.5754</b>	<b>412.5754</b>	<b>0.1170</b>	<b>0.0000</b>	<b>415.0320</b>

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	67.18	58.10	16.71	0.00	62.89	58.45	56.58	59.69	58.11	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	Berm Repair Grading	Grading	6/1/2016	12/1/2016	5	132	

**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
Berm Repair Grading	Excavators	2	8.00	162	0.38

Berm Repair Grading	Graders	1	8.00	174	0.41
Berm Repair Grading	Rubber Tired Dozers	1	8.00	255	0.40
Berm Repair Grading	Scrapers	2	8.00	361	0.48
Berm Repair Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

### 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
Berm Repair Grading	8	20.00	0.00	15,625.00	14.70	6.90	0.10	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Berm Repair Grading - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					0.4169	0.0000	0.4169	0.2212	0.0000	0.2212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4276	4.9377	3.2431	4.0700e-003	0.2366	0.2366	0.2366	0.2176	0.2176	0.2176	0.0000	384.0918	384.0918	0.1159	0.0000	386.5248
<b>Total</b>	<b>0.4276</b>	<b>4.9377</b>	<b>3.2431</b>	<b>4.0700e-003</b>	<b>0.4169</b>	<b>0.2366</b>	<b>0.6535</b>	<b>0.2212</b>	<b>0.2176</b>	<b>0.4388</b>	<b>0.0000</b>	<b>384.0918</b>	<b>384.0918</b>	<b>0.1159</b>	<b>0.0000</b>	<b>386.5248</b>







## Clean Water Factory\_Recharge Site Improvements

### South Coast Air Basin, Summer

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	400.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for recharge site improvements

Construction Phase - anticipated duration of berm repair

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is balanced.

Grading - material imported= cut and fill

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	CleanPavedRoadPercentReduction	0	26
	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	132.00
tblGrading	AcresOfGrading	330.00	10.00
tblGrading	MaterialExported	0.00	250,000.00
tblLandUse	LotAcreage	0.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripNumber	31,250.00	15,625.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
2016	7.3128	77.4814	64.1071	0.0673	6.5529	3.5946	10.1475	3.4143	3.3069	6.7213	0.0000	6,910.800	6,910.8005	1.9535	0.0000	6,951.8237
<b>Total</b>	<b>7.3128</b>	<b>77.4814</b>	<b>64.1071</b>	<b>0.0673</b>	<b>6.5529</b>	<b>3.5946</b>	<b>10.1475</b>	<b>3.4143</b>	<b>3.3069</b>	<b>6.7213</b>	<b>0.0000</b>	<b>6,910.800</b>	<b>6,910.8005</b>	<b>1.9535</b>	<b>0.0000</b>	<b>6,951.8237</b>

**Mitigated Construction**

Year	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
2016	2.3461	32.4474	52.9129	0.0673	2.8841	1.3337	4.2178	1.4828	1.3328	2.8156	0.0000	6,910.8004	6,910.8004	1.9535	0.0000	6,951.8237
<b>Total</b>	<b>2.3461</b>	<b>32.4474</b>	<b>52.9129</b>	<b>0.0673</b>	<b>2.8841</b>	<b>1.3337</b>	<b>4.2178</b>	<b>1.4828</b>	<b>1.3328</b>	<b>2.8156</b>	<b>0.0000</b>	<b>6,910.8004</b>	<b>6,910.8004</b>	<b>1.9535</b>	<b>0.0000</b>	<b>6,951.8237</b>

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	67.92	58.12	17.46	0.00	55.99	62.90	58.43	59.70	58.11	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	Berm Repair Grading	Grading	6/1/2016	12/1/2016	5	132	

**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
Berm Repair Grading	Excavators	2	8.00	162	0.38

Berm Repair Grading	Graders	1	8.00	174	0.41
Berm Repair Grading	Rubber Tired Dozers	1	8.00	255	0.40
Berm Repair Grading	Scrapers	2	8.00	361	0.48
Berm Repair Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

### 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
Berm Repair Grading	8	20.00	0.00	15,625.00	14.70	6.90	0.10	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Berm Repair Grading - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					6.3166	0.0000	6.3166	3.3513	0.0000	3.3513			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617	3.5842	3.5842	3.5842	3.2975	3.2975	3.2975	6,414.9807	6,414.9807	1.9350			6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>6.3166</b>	<b>3.5842</b>	<b>9.9009</b>	<b>3.3513</b>	<b>3.2975</b>	<b>6.6488</b>	<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>			<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	0.7501	2.5635	13.6724	2.7800e-003	0.0128	8.4600e-003	0.0212	3.7200e-003	7.7100e-003	0.0114		257.9032	257.9032	6.3000e-003		258.0356
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	0.0853	0.1041	1.2973	2.8300e-003	0.2236	1.8700e-003	0.2254	0.0693	1.7200e-003	0.0610		237.9165	237.9165	0.0122		238.1726
<b>Total</b>	<b>0.8333</b>	<b>2.6676</b>	<b>14.9697</b>	<b>5.6100e-003</b>	<b>0.2363</b>	<b>0.0103</b>	<b>0.2467</b>	<b>0.0630</b>	<b>9.4300e-003</b>	<b>0.0724</b>		<b>495.8197</b>	<b>495.8197</b>	<b>0.0185</b>		<b>496.2083</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Fugitive Dust					2.7004	0.0000	2.7004	1.4327	0.0000	1.4327			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617	1.3234	1.3234	1.3234	1.3234	1.3234	1.3234	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>1.5128</b>	<b>29.7798</b>	<b>37.9432</b>	<b>0.0617</b>	<b>2.7004</b>	<b>1.3234</b>	<b>4.0237</b>	<b>1.4327</b>	<b>1.3234</b>	<b>2.7561</b>	<b>0.0000</b>	<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															

Category	lb/day										lb/day			
Hauling	0.7501	2.5635	13.6724	2.7800e-003	0.0107	8.4600e-003	0.0192	3.2200e-003	7.7100e-003	0.0109	257.9032	257.9032	6.3000e-003	258.0356
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	0.0833	0.1041	1.2973	2.8300e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	237.9165	237.9165	0.0122	238.1726
<b>Total</b>	<b>0.8333</b>	<b>2.6676</b>	<b>14.9697</b>	<b>5.6100e-003</b>	<b>0.1838</b>	<b>0.0103</b>	<b>0.1941</b>	<b>0.0501</b>	<b>9.4300e-003</b>	<b>0.0595</b>	<b>495.8197</b>	<b>495.8197</b>	<b>0.0185</b>	<b>496.2083</b>



## Clean Water Factory\_Recharge Site Improvements South Coast Air Basin, Winter

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	400.00	User Defined Unit	10.00	0.00	0

#### 1.2 Other Project Characteristics

Urbanization Urban Wind Speed (m/s) 2.2 Precipitation Freq (Days) 31  
 Climate Zone 10 Operational Year 2018

Utility Company Southern California Edison

CO2 Intensity (lb/MW/hr) 630.89 CH4 Intensity (lb/MW/hr) 0.029 N2O Intensity (lb/MW/hr) 0.006

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - area of disturbance for recharge site improvements

Construction Phase - anticipated duration of berm repair

Off-road Equipment - equipment

Off-road Equipment - equipment

Trips and VMT - No hauling would occur. Earthwork is balanced.

Grading - material imported= cut and fill

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	132.00
tblGrading	AcresOfGrading	330.00	10.00
tblGrading	MaterialExported	0.00	250,000.00
tblLandUse	LotAcreage	0.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.10
tblTripsAndVMT	HaulingTripNumber	31,250.00	15,625.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

Year	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
2016	7.4306	77.4515	67.4322	0.0670	6.5529	3.5958	10.1487	3.4143	3.3080	6.7224	0.0000	6,875.106	6,875.1066	1.9543	0.0000	6,916.1473
<b>Total</b>	<b>7.4306</b>	<b>77.4515</b>	<b>67.4322</b>	<b>0.0670</b>	<b>6.5529</b>	<b>3.5958</b>	<b>10.1487</b>	<b>3.4143</b>	<b>3.3080</b>	<b>6.7224</b>	<b>0.0000</b>	<b>6,875.106</b>	<b>6,875.1066</b>	<b>1.9543</b>	<b>0.0000</b>	<b>6,916.1473</b>

**Mitigated Construction**

Year	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
2016	2.4640	32.4175	56.2381	0.0670	2.8841	1.3349	4.2190	1.4828	1.3339	2.8167	0.0000	6,875.1066	6,875.1066	1.9543	0.0000	6,916.1473
<b>Total</b>	<b>2.4640</b>	<b>32.4175</b>	<b>56.2381</b>	<b>0.0670</b>	<b>2.8841</b>	<b>1.3349</b>	<b>4.2190</b>	<b>1.4828</b>	<b>1.3339</b>	<b>2.8167</b>	<b>0.0000</b>	<b>6,875.1066</b>	<b>6,875.1066</b>	<b>1.9543</b>	<b>0.0000</b>	<b>6,916.1473</b>

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	66.84	58.14	16.60	0.00	62.88	58.43	56.57	59.68	58.10	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	Berm Repair Grading	Grading	6/1/2016	12/1/2016	5	132	

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
Berm Repair Grading	Excavators	2	8.00	162	0.38

Berm Repair Grading	Graders	1	8.00	174	0.41
Berm Repair Grading	Rubber Tired Dozers	1	8.00	255	0.40
Berm Repair Grading	Scrapers	2	8.00	361	0.48
Berm Repair Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

### 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
Berm Repair Grading	8	20.00	0.00	15,625.00	14.70	6.90	0.10	LD_Mix	HDT_Mix	HHDT

### **3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

### **3.2 Berm Repair Grading - 2016**

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					6.3166	0.0000	6.3166	3.3513	0.0000	3.3513			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617	3.5842	3.5842	3.5842	3.2975	3.2975	3.2975	6,414.9807	6,414.9807	1.9350			6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>6.3166</b>	<b>3.5842</b>	<b>9.9009</b>	<b>3.3513</b>	<b>3.2975</b>	<b>6.6488</b>		<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	0.8661	2.5234	17.0988	2.6200e-003	0.0128	9.6600e-003	0.0224	3.7200e-003	8.8100e-003	0.0125		236.9869	236.9869	7.1400e-003		237.1368
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	0.0851	0.1144	1.1960	2.6500e-003	0.2236	1.8700e-003	0.2254	0.0693	1.7200e-003	0.0610		223.1390	223.1390	0.0122		223.3952
<b>Total</b>	<b>0.9512</b>	<b>2.6378</b>	<b>18.2948</b>	<b>5.2700e-003</b>	<b>0.2363</b>	<b>0.0115</b>	<b>0.2479</b>	<b>0.0630</b>	<b>0.0105</b>	<b>0.0735</b>		<b>460.1259</b>	<b>460.1259</b>	<b>0.0193</b>		<b>460.5319</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Fugitive Dust					2.7004	0.0000	2.7004	1.4327	0.0000	1.4327			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0617	1.3234	1.3234	1.3234	1.3234	1.3234	1.3234	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>1.5128</b>	<b>29.7798</b>	<b>37.9432</b>	<b>0.0617</b>	<b>2.7004</b>	<b>1.3234</b>	<b>4.0237</b>	<b>1.4327</b>	<b>1.3234</b>	<b>2.7561</b>	<b>0.0000</b>	<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

**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	INBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															

Category	lb/day												lb/day				
Hauling	0.8661	2.5234	17.0988	2.6200e-003	0.0107	9.6600e-003	0.0204	3.2200e-003	8.8100e-003	0.0120	236.9869	236.9869	7.1400e-003	237.1368			
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
Worker	0.0851	0.1144	1.1960	2.6500e-003	0.1730	1.8700e-003	0.1749	0.0469	1.7200e-003	0.0486	223.1390	223.1390	0.0122	223.3952			
<b>Total</b>	<b>0.9512</b>	<b>2.6378</b>	<b>18.2948</b>	<b>5.2700e-003</b>	<b>0.1838</b>	<b>0.0115</b>	<b>0.1953</b>	<b>0.0501</b>	<b>0.0105</b>	<b>0.0606</b>	<b>460.1259</b>	<b>460.1259</b>	<b>0.0193</b>	<b>460.5319</b>			

## Clean Water Factory \_SBWRP Improvements South Coast Air Basin, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	40.00	1000sqft	0.92	40,000.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - anticipated duration of SBWRP improvements

Off-road Equipment - equipment

Off-road Equipment - equipment

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00





2016	0.2807	2.5911	1.7795	2.5400e-003	0.0294	0.1838	0.2132	7.9200e-003	0.1692	0.1772	0.0000	232.8656	232.8656	0.0590	0.0000	234.1050
2017	0.1519	1.4116	1.0125	1.4800e-003	0.0172	0.0988	0.1161	4.6400e-003	0.0909	0.0956	0.0000	133.5778	133.5778	0.0347	0.0000	134.3059
<b>Total</b>	<b>0.4326</b>	<b>4.0028</b>	<b>2.7920</b>	<b>4.0200e-003</b>	<b>0.0466</b>	<b>0.2826</b>	<b>0.3293</b>	<b>0.0126</b>	<b>0.2602</b>	<b>0.2727</b>	<b>0.0000</b>	<b>366.4434</b>	<b>366.4434</b>	<b>0.0937</b>	<b>0.0000</b>	<b>368.4109</b>

**Mitigated Construction**

Year	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
2016	0.0666	1.2050	1.7019	2.5400e-003	0.0230	0.0740	0.0970	6.3400e-003	0.0739	0.0802	0.0000	232.8653	232.8653	0.0590	0.0000	234.1048
2017	0.0382	0.7012	0.9845	1.4800e-003	0.0135	0.0432	0.0566	3.7100e-003	0.0431	0.0468	0.0000	133.5777	133.5777	0.0347	0.0000	134.3058
<b>Total</b>	<b>0.1048</b>	<b>1.9062</b>	<b>2.6864</b>	<b>4.0200e-003</b>	<b>0.0364</b>	<b>0.1172</b>	<b>0.1536</b>	<b>0.0101</b>	<b>0.1170</b>	<b>0.1270</b>	<b>0.0000</b>	<b>366.4430</b>	<b>366.4430</b>	<b>0.0937</b>	<b>0.0000</b>	<b>368.4106</b>

Percent Reduction	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
	75.77	52.38	3.78	0.00	21.87	58.55	53.35	19.98	55.04	53.42	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	Demolition	Demolition	1/1/2016	1/14/2016	5	10	
2	Paving	Paving	1/15/2016	1/21/2016	5	5	
3	Building Construction	Building Construction	1/22/2016	7/28/2017	5	396	

**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
Paving	Other Construction Equipment	2	8.00	62	0.31
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	6	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

**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
Demolition	4	10.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	17.00	7.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	23.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

**3.2 Demolition - 2016**

**Unmitigated Construction On-Site**

Category	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
tons/yr																
MIT/yr																
Off-Road	6.5600e-003	0.0562	0.0435	6.0000e-005	4.0200e-003	4.0200e-003	4.0200e-003	3.8400e-003	3.8400e-003	3.8400e-003	0.0000	5.4141	5.4141	1.0800e-003	0.0000	5.4369
<b>Total</b>	<b>6.5600e-003</b>	<b>0.0562</b>	<b>0.0435</b>	<b>6.0000e-005</b>	<b>4.0200e-003</b>	<b>4.0200e-003</b>	<b>4.0200e-003</b>	<b>3.8400e-003</b>	<b>3.8400e-003</b>	<b>3.8400e-003</b>	<b>0.0000</b>	<b>5.4141</b>	<b>5.4141</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>5.4369</b>

**Unmitigated Construction Off-Site**

Category	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
tons/yr																
MIT/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	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
<b>Total</b>	<b>2.0000e-004</b>	<b>2.9000e-004</b>	<b>3.0600e-003</b>	<b>1.0000e-005</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.5140</b>	<b>0.5140</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5145</b>

**Mitigated Construction On-Site**

Category	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
	tons/yr															
	MIT/yr															
Off-Road	1.3300e-003	0.0299	0.0398	6.0000e-005	2.0100e-003	2.0100e-003	2.0100e-003	2.0100e-003	2.0100e-003	2.0100e-003	0.0000	5.4141	5.4141	1.0800e-003	0.0000	5.4369
<b>Total</b>	<b>1.3300e-003</b>	<b>0.0299</b>	<b>0.0398</b>	<b>6.0000e-005</b>	<b>2.0100e-003</b>	<b>2.0100e-003</b>	<b>2.0100e-003</b>	<b>2.0100e-003</b>	<b>2.0100e-003</b>	<b>2.0100e-003</b>	<b>0.0000</b>	<b>5.4141</b>	<b>5.4141</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>5.4369</b>

### Mitigated Construction Off-Site

Category	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
	tons/yr															
	MIT/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	2.0000e-004	2.9000e-004	3.0600e-003	1.0000e-005	4.2000e-004	0.0000	4.3000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.5140	0.5140	3.0000e-005	0.0000	0.5145
<b>Total</b>	<b>2.0000e-004</b>	<b>2.9000e-004</b>	<b>3.0600e-003</b>	<b>1.0000e-005</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>4.3000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.5140</b>	<b>0.5140</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5145</b>

### 3.3 Paving - 2016 Unmitigated Construction On-Site

Category	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
	tons/yr															
	MIT/yr															

Off-Road	3.9900e-003	0.0372	0.0248	4.000e-005	2.4900e-003	2.4900e-003	2.3000e-003	2.3000e-003	0.0000	3.2300	3.2300	9.1000e-004	0.0000	3.2491
Paving	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.9900e-003</b>	<b>0.0372</b>	<b>0.0248</b>	<b>4.0000e-005</b>	<b>2.4900e-003</b>	<b>2.4900e-003</b>	<b>2.3000e-003</b>	<b>2.3000e-003</b>	<b>0.0000</b>	<b>3.2300</b>	<b>3.2300</b>	<b>9.1000e-004</b>	<b>0.0000</b>	<b>3.2491</b>

**Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	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
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	2.3000e-004	3.4000e-004	3.5200e-003	1.0000e-005	6.3000e-004	1.0000e-005	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5910	3.0000e-005	0.0000	0.0000	0.5917
<b>Total</b>	<b>2.3000e-004</b>	<b>3.4000e-004</b>	<b>3.5200e-003</b>	<b>1.0000e-005</b>	<b>6.3000e-004</b>	<b>1.0000e-005</b>	<b>6.4000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.5910</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.5917</b>

**Mitigated Construction On-Site**

Off-Road	7.5000e-004	0.0163	0.0232	4.0000e-005	1.0400e-003	1.0400e-003	1.0400e-003	1.0400e-003	1.0400e-003	1.0400e-003	0.0000	3.2300	3.2300	9.1000e-004	0.0000	3.2491
Paving	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>7.5000e-004</b>	<b>0.0163</b>	<b>0.0232</b>	<b>4.0000e-005</b>	<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>3.2300</b>	<b>3.2300</b>	<b>9.1000e-004</b>	<b>0.0000</b>	<b>3.2491</b>



Category	tons/yr										MT/yr					
	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
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	7.6600e-003	0.0782	0.1003	1.9000e-004	5.3000e-003	1.2200e-003	6.5200e-003	1.5100e-003	1.1200e-003	2.6300e-003	0.0000	16.9832	16.9832	1.2000e-004	0.0000	16.9858
Worker	8.3800e-003	0.0123	0.1281	2.8000e-004	0.0229	2.0000e-004	0.0231	6.0900e-003	1.8000e-004	6.2700e-003	0.0000	21.4933	21.4933	1.1600e-003	0.0000	21.5176
<b>Total</b>	<b>0.0160</b>	<b>0.0905</b>	<b>0.2284</b>	<b>4.7000e-004</b>	<b>0.0282</b>	<b>1.4200e-003</b>	<b>0.0297</b>	<b>7.6000e-003</b>	<b>1.3000e-003</b>	<b>8.9000e-003</b>	<b>0.0000</b>	<b>38.4765</b>	<b>38.4765</b>	<b>1.2800e-003</b>	<b>0.0000</b>	<b>38.5034</b>

**Mitigated Construction On-Site**

Category	tons/yr										MT/yr					
	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
Off-Road	0.0481	1.0677	1.4039	1.9600e-003	0.0695	0.0695	0.0695	0.0695	0.0695	0.0695	0.0000	184.6397	184.6397	0.0557	0.0000	185.8093
<b>Total</b>	<b>0.0481</b>	<b>1.0677</b>	<b>1.4039</b>	<b>1.9600e-003</b>	<b>0.0695</b>	<b>0.0695</b>	<b>0.0695</b>	<b>0.0695</b>	<b>0.0695</b>	<b>0.0695</b>	<b>0.0000</b>	<b>184.6397</b>	<b>184.6397</b>	<b>0.0557</b>	<b>0.0000</b>	<b>185.8093</b>

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	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
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	7.6600e-003	0.0782	0.1003	1.9000e-004	4.3000e-003	1.2200e-003	5.5200e-003	1.2700e-003	1.1200e-003	2.3900e-003	0.0000	16.9832	16.9832	1.2000e-004	0.0000	16.9858
Worker	8.3800e-003	0.0123	0.1281	2.8000e-004	0.0178	2.0000e-004	0.0180	4.8200e-003	1.8000e-004	5.0000e-003	0.0000	21.4933	21.4933	1.1600e-003	0.0000	21.5176

Total	0.0160	0.0905	0.2284	4.7000e-004	0.0221	1.4200e-003	0.0235	6.0900e-003	1.3000e-003	7.3900e-003	0.0000	38.4765	38.4765	1.2800e-003	0.0000	38.5034
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### 3.4 Building Construction - 2017

#### Unmitigated Construction On-Site

Category	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
	tons/yr															
	MIT/yr															
Off-Road	0.1430	1.3615	0.8840	1.1900e-003	0.0981	0.0981	0.0981	0.0902	0.0902	0.0902	0.0000	110.7874	110.7874	0.0340	0.0000	111.5002
<b>Total</b>	<b>0.1430</b>	<b>1.3615</b>	<b>0.8840</b>	<b>1.1900e-003</b>	<b>0.0981</b>	<b>0.0981</b>	<b>0.0981</b>	<b>0.0902</b>	<b>0.0902</b>	<b>0.0902</b>	<b>0.0000</b>	<b>110.7874</b>	<b>110.7874</b>	<b>0.0340</b>	<b>0.0000</b>	<b>111.5002</b>

#### Unmitigated Construction Off-Site

Category	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
	tons/yr															
	MIT/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	4.2700e-003	0.0434	0.0580	1.1000e-004	3.2300e-003	6.6000e-004	3.8900e-003	9.2000e-004	6.1000e-004	1.5300e-003	0.0000	10.1879	10.1879	7.0000e-005	0.0000	10.1895
Worker	4.5800e-003	6.7800e-003	0.0705	1.7000e-004	0.0140	1.1000e-004	0.0141	3.7100e-003	1.1000e-004	3.8200e-003	0.0000	12.6026	12.6026	6.5000e-004	0.0000	12.6162
<b>Total</b>	<b>8.8500e-003</b>	<b>0.0502</b>	<b>0.1284</b>	<b>2.8000e-004</b>	<b>0.0172</b>	<b>7.7000e-004</b>	<b>0.0180</b>	<b>4.6300e-003</b>	<b>7.2000e-004</b>	<b>5.3500e-003</b>	<b>0.0000</b>	<b>22.7905</b>	<b>22.7905</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>22.8057</b>

#### Mitigated Construction On-Site



Category	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
tons/yr																
MIT/yr																
Off-Road	0.0293	0.6510	0.8560	1.1900e-003	0.0424	0.0424	0.0424	0.0424	0.0424	0.0424	0.0000	110.7872	110.7872	0.0339	0.0000	111.5001
<b>Total</b>	<b>0.0293</b>	<b>0.6510</b>	<b>0.8560</b>	<b>1.1900e-003</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0424</b>	<b>0.0000</b>	<b>110.7872</b>	<b>110.7872</b>	<b>0.0339</b>	<b>0.0000</b>	<b>111.5001</b>

**Mitigated Construction Off-Site**

Category	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
tons/yr																
MIT/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	4.2700e-003	0.0434	0.0580	1.1000e-004	2.6200e-003	6.6000e-004	3.2900e-003	7.7000e-004	6.1000e-004	1.3800e-003	0.0000	10.1879	10.1879	7.0000e-005	0.0000	10.1895
Worker	4.5800e-003	6.7800e-003	0.0705	1.7000e-004	0.0108	1.1000e-004	0.0110	2.9400e-003	1.1000e-004	3.0500e-003	0.0000	12.6026	12.6026	6.5000e-004	0.0000	12.6162
<b>Total</b>	<b>8.8500e-003</b>	<b>0.0502</b>	<b>0.1284</b>	<b>2.8000e-004</b>	<b>0.0135</b>	<b>7.7000e-004</b>	<b>0.0142</b>	<b>3.7100e-003</b>	<b>7.2000e-004</b>	<b>4.4300e-003</b>	<b>0.0000</b>	<b>22.7905</b>	<b>22.7905</b>	<b>7.2000e-004</b>	<b>0.0000</b>	<b>22.8057</b>

## Clean Water Factory \_SBWRP Improvements

### South Coast Air Basin, Summer

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	40.00	1000sqft	0.92	40,000.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006
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### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - anticipated duration of SBWRP improvements

Off-road Equipment - equipment

Off-road Equipment - equipment

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	1.00



2016	2.1916	20.2622	13.8021	0.0198	0.2571	1.4413	1.6750	0.0682	1.3260	1.3888	0.0000	2,009.688	2,009.6883	0.5106	0.0000	2,020.4106
2017	2.0240	18.7865	13.4414	0.0198	0.2338	1.3177	1.5515	0.0629	1.2123	1.2752	0.0000	1,973.052	1,973.0521	0.5095	0.0000	1,983.7523
<b>Total</b>	<b>4.2157</b>	<b>39.0487</b>	<b>27.2435</b>	<b>0.0397</b>	<b>0.4909</b>	<b>2.7590</b>	<b>3.2265</b>	<b>0.1310</b>	<b>2.5383</b>	<b>2.6640</b>	<b>0.0000</b>	<b>3,982.740</b>	<b>3,982.7404</b>	<b>1.0201</b>	<b>0.0000</b>	<b>4,004.1629</b>

**Mitigated Construction**

Year	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
2016	0.5200	9.3770	13.2148	0.0198	0.1990	0.5766	0.7592	0.0539	0.5757	0.6260	0.0000	2,009.688	2,009.6883	0.5106	0.0000	2,020.4106
2017	0.5080	9.3140	13.0685	0.0198	0.1825	0.5755	0.7580	0.0503	0.5747	0.6250	0.0000	1,973.052	1,973.0521	0.5095	0.0000	1,983.7523
<b>Total</b>	<b>1.0281</b>	<b>18.6910</b>	<b>26.2834</b>	<b>0.0397</b>	<b>0.3815</b>	<b>1.1521</b>	<b>1.5172</b>	<b>0.1042</b>	<b>1.1504</b>	<b>1.2509</b>	<b>0.0000</b>	<b>3,982.740</b>	<b>3,982.7404</b>	<b>1.0201</b>	<b>0.0000</b>	<b>4,004.1629</b>

Percent Reduction	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
	75.61	52.13	3.52	0.00	22.28	58.24	52.98	20.48	54.68	53.04	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	Demolition	Demolition	1/1/2016	1/14/2016	5	10	
2	Paving	Paving	1/15/2016	1/21/2016	5	5	
3	Building Construction	Building Construction	1/22/2016	7/28/2017	5	396	

**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
Paving	Other Construction Equipment	2	8.00	62	0.31
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	6	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

**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
Demolition	4	10.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	17.00	7.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	23.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads

**3.2 Demolition - 2016**

**Unmitigated Construction On-Site**

Category	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
Off-Road	1.3122	11.2385	8.7048	0.0120	0.8039	0.8039	0.8039	0.7674	0.7674	0.7674	1,193.6106	6	1,193.6106	0.2386		1,198.6217
<b>Total</b>	<b>1.3122</b>	<b>11.2385</b>	<b>8.7048</b>	<b>0.0120</b>	<b>0.8039</b>	<b>0.8039</b>	<b>0.8039</b>	<b>0.7674</b>	<b>0.7674</b>	<b>0.7674</b>	<b>1,193.6106</b>	<b>6</b>	<b>1,193.6106</b>	<b>0.2386</b>		<b>1,198.6217</b>

**Unmitigated Construction Off-Site**

Category	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
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
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
Worker	0.0416	0.0521	0.6486	1.4200e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305	118.9583	6	118.9583	6.1000e-003		119.0863
<b>Total</b>	<b>0.0416</b>	<b>0.0521</b>	<b>0.6486</b>	<b>1.4200e-003</b>	<b>0.1118</b>	<b>9.3000e-004</b>	<b>0.1127</b>	<b>0.0296</b>	<b>8.6000e-004</b>	<b>0.0305</b>	<b>118.9583</b>	<b>6</b>	<b>118.9583</b>	<b>6.1000e-003</b>		<b>119.0863</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.2661	5.9808	7.9564	0.0120	0.4023	0.4023	0.4023	0.4023	0.4023	0.4023	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
<b>Total</b>	<b>0.2661</b>	<b>5.9808</b>	<b>7.9564</b>	<b>0.0120</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.0000</b>	<b>1,193.6106</b>	<b>1,193.6106</b>	<b>0.2386</b>		<b>1,198.6217</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0416	0.0521	0.6486	1.4200e-003	0.0865	9.3000e-004	0.0875	0.0234	8.6000e-004	0.0243	118.9583	118.9583	118.9583	6.1000e-003		119.0863
<b>Total</b>	<b>0.0416</b>	<b>0.0521</b>	<b>0.6486</b>	<b>1.4200e-003</b>	<b>0.0865</b>	<b>9.3000e-004</b>	<b>0.0875</b>	<b>0.0234</b>	<b>8.6000e-004</b>	<b>0.0243</b>	<b>118.9583</b>	<b>118.9583</b>	<b>118.9583</b>	<b>6.1000e-003</b>		<b>119.0863</b>

**3.3 Paving - 2016**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																

Off-Road	1.5944	14.8917	9.9283	0.0144	0.9947	0.9947	0.9187	0.9187	1,424.203	1,424.203	0.3996	1,432.5949
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	1	0.0000		0.0000
<b>Total</b>	<b>1.5944</b>	<b>14.8917</b>	<b>9.9283</b>	<b>0.0144</b>	<b>0.9947</b>	<b>0.9947</b>	<b>0.9187</b>	<b>0.9187</b>	<b>1,424.203</b>	<b>1,424.203</b>	<b>0.3996</b>	<b>1,432.5949</b>

**Unmitigated Construction Off-Site**

Category	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
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
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
Worker	0.0958	0.1198	1.4919	3.2600e-003	0.2571	2.1500e-003	0.2592	0.0682	1.9800e-003	0.0702	273.6040	273.6040	273.6040	0.0140		273.8985
<b>Total</b>	<b>0.0958</b>	<b>0.1198</b>	<b>1.4919</b>	<b>3.2600e-003</b>	<b>0.2571</b>	<b>2.1500e-003</b>	<b>0.2592</b>	<b>0.0682</b>	<b>1.9800e-003</b>	<b>0.0702</b>	<b>273.6040</b>	<b>273.6040</b>	<b>273.6040</b>	<b>0.0140</b>		<b>273.8985</b>

**Mitigated Construction On-Site**

Off-Road	0.3009	6.5296	9.2768	0.0144	0.4166	0.4166	0.4166	0.4166	0.4166	0.4166	0.0000	1,424.203	1,424.203	0.3996	1,432.5949
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1	0.0000		0.0000
<b>Total</b>	<b>0.3009</b>	<b>6.5296</b>	<b>9.2768</b>	<b>0.0144</b>	<b>0.4166</b>	<b>0.4166</b>	<b>0.4166</b>	<b>0.4166</b>	<b>0.4166</b>	<b>0.4166</b>	<b>0.0000</b>	<b>1,424.203</b>	<b>1,424.203</b>	<b>0.3996</b>	<b>1,432.5949</b>



**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															
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	0.0958	0.1198	1.4919	3.2600e-003	0.1990	2.1500e-003	0.2011	0.0639	1.9800e-003	0.0559	273.6040	273.6040	273.6040	0.0140		273.8985
<b>Total</b>	<b>0.0958</b>	<b>0.1198</b>	<b>1.4919</b>	<b>3.2600e-003</b>	<b>0.1990</b>	<b>2.1500e-003</b>	<b>0.2011</b>	<b>0.0539</b>	<b>1.9800e-003</b>	<b>0.0559</b>	<b>273.6040</b>	<b>273.6040</b>	<b>273.6040</b>	<b>0.0140</b>		<b>273.8985</b>

**3.4 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	lb/day															
Off-Road	2.0624	19.5657	12.0012	0.0159	1.4298	1.4298	1.4298	1.3154	1.3154	1.3154	1,654.7207	7	1,654.7207	0.4991		1,665.2023
<b>Total</b>	<b>2.0624</b>	<b>19.5657</b>	<b>12.0012</b>	<b>0.0159</b>	<b>1.4298</b>	<b>1.4298</b>	<b>1.4298</b>	<b>1.3154</b>	<b>1.3154</b>	<b>1.3154</b>	<b>1,654.7207</b>	<b>7</b>	<b>1,654.7207</b>	<b>0.4991</b>		<b>1,665.2023</b>

**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															

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	0.0000	0.0000
Vendor	0.0585	0.6079	0.6982	1.5200e-003	0.0438	9.8700e-003	0.0536	0.0125	9.0800e-003	0.0215	152.7386	152.7386	1.1000e-003	1.1000e-003	152.7616	152.7616
Worker	0.0708	0.0885	1.1027	2.4100e-003	0.1900	1.5900e-003	0.1916	0.0504	1.4600e-003	0.0519	202.2290	202.2290	0.0104	0.0104	202.4467	202.4467
<b>Total</b>	<b>0.1292</b>	<b>0.6964</b>	<b>1.8009</b>	<b>3.9300e-003</b>	<b>0.2538</b>	<b>0.0115</b>	<b>0.2452</b>	<b>0.0629</b>	<b>0.0105</b>	<b>0.0734</b>	<b>354.9676</b>	<b>354.9676</b>	<b>0.0115</b>	<b>0.0115</b>	<b>355.2083</b>	<b>355.2083</b>

**Mitigated Construction On-Site**

Category	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
Off-Road	0.3908	8.6805	11.4139	0.0159	0.5652	0.5652	0.5652	0.5652	0.5652	0.5652	0.0000	1,654.7207	1,654.7207	0.4991		1,665.2023
<b>Total</b>	<b>0.3908</b>	<b>8.6805</b>	<b>11.4139</b>	<b>0.0159</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.0000</b>	<b>1,654.7207</b>	<b>1,654.7207</b>	<b>0.4991</b>		<b>1,665.2023</b>

**Mitigated Construction Off-Site**

Category	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
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
Vendor	0.0585	0.6079	0.6982	1.5200e-003	0.0355	9.8700e-003	0.0453	0.0104	9.0800e-003	0.0195	152.7386	152.7386	1.1000e-003	1.1000e-003		152.7616
Worker	0.0708	0.0885	1.1027	2.4100e-003	0.1471	1.5900e-003	0.1487	0.0399	1.4600e-003	0.0413	202.2290	202.2290	0.0104	0.0104		202.4467

Total	0.1292	0.6964	1.8009	3.9300e-003	0.1825	0.0115	0.1940	0.0503	0.0105	0.0608	354.9676	354.9676	0.0115	355.2083
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### 3.4 Building Construction - 2017

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day															
Off-Road	1.9068	18.1531	11.7868	0.0159		1.3074	1.3074		1.2028	1.2028		3	1,628.2953	0.4989		1,638.7724
Total	1.9068	18.1531	11.7868	0.0159		1.3074	1.3074		1.2028	1.2028		3	1,628.2953	0.4989		1,638.7724

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
	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
Vendor	0.0536	0.5535	0.6567	1.5200e-003	0.0438	8.8100e-003	0.0526	0.0125	8.1000e-003	0.0206			150.2670	1.0600e-003		150.2893
Worker	0.0636	0.0799	0.9980	2.4100e-003	0.1900	1.5300e-003	0.1916	0.0504	1.4100e-003	0.0518			194.4898	9.5700e-003		194.6907
Total	0.1172	0.6335	1.6546	3.9300e-003	0.2338	0.0103	0.2441	0.0629	9.5100e-003	0.0724			344.7568	0.0106		344.9800

#### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.3908	8.6805	11.4139	0.0159	0.5652	0.5652	0.5652	0.5652	0.5652	0.5652	0.0000	1,628.2953	1,628.2953	0.4989		1,638.7724
<b>Total</b>	<b>0.3908</b>	<b>8.6805</b>	<b>11.4139</b>	<b>0.0159</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.0000</b>	<b>1,628.2953</b>	<b>1,628.2953</b>	<b>0.4989</b>		<b>1,638.7724</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0536	0.5535	0.6567	1.5200e-003	0.0355	8.8100e-003	0.0443	0.0104	8.1000e-003	0.0185	150.2670	150.2670	150.2670	1.0600e-003		150.2893
Worker	0.0636	0.0799	0.9980	2.4100e-003	0.1471	1.5300e-003	0.1486	0.0399	1.4100e-003	0.0413	194.4898	194.4898	194.4898	9.5700e-003		194.6907
<b>Total</b>	<b>0.1172</b>	<b>0.6335</b>	<b>1.6546</b>	<b>3.9300e-003</b>	<b>0.1825</b>	<b>0.0103</b>	<b>0.1929</b>	<b>0.0503</b>	<b>9.5100e-003</b>	<b>0.0598</b>	<b>344.7568</b>	<b>344.7568</b>	<b>344.7568</b>	<b>0.0106</b>		<b>344.9800</b>

## Clean Water Factory \_SBWRP Improvements

### South Coast Air Basin, Winter

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	40.00	1000sqft	0.92	40,000.00	0

#### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2018

Utility Company      Southern California Edison

CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006
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### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - anticipated duration of SBWRP improvements

Off-road Equipment - equipment

Off-road Equipment - equipment

Construction Off-road Equipment Mitigation - clean paved roads and use of trackout devices

Table Name	Column Name	Default Value	New Value
tbiConstDustMitigation	CleanPavedRoadPercentReduction	0	26
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	2.00
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	4.00
tbiConstEquipMitigation	NumberOfEquipMitigated	0.00	1.00



2016	2.1988	20.2862	13.8559	0.0197	0.2571	1.4414	1.6751	0.0682	1.3261	1.3889	0.0000	1,995.847	1,995.8475	0.5106	0.0000	2,006.5705
2017	2.0302	18.8080	13.4991	0.0197	0.2338	1.3178	1.5516	0.0629	1.2124	1.2752	0.0000	1,959.683	1,959.6838	0.5096	0.0000	1,970.3848
<b>Total</b>	<b>4.2291</b>	<b>39.0943</b>	<b>27.3550</b>	<b>0.0394</b>	<b>0.4909</b>	<b>2.7592</b>	<b>3.2267</b>	<b>0.1310</b>	<b>2.5384</b>	<b>2.6641</b>	<b>0.0000</b>	<b>3,955.531</b>	<b>3,955.5313</b>	<b>1.0202</b>	<b>0.0000</b>	<b>3,976.9552</b>

**Mitigated Construction**

Year	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
2016	0.5272	9.4010	13.2686	0.0197	0.1990	0.5767	0.7593	0.0539	0.5758	0.6261	0.0000	1,995.847	1,995.8475	0.5106	0.0000	2,006.5705
2017	0.5142	9.3355	13.1262	0.0197	0.1825	0.5756	0.7581	0.0503	0.5748	0.6250	0.0000	1,959.683	1,959.6838	0.5096	0.0000	1,970.3847
<b>Total</b>	<b>1.0415</b>	<b>18.7365</b>	<b>26.3948</b>	<b>0.0394</b>	<b>0.3815</b>	<b>1.1523</b>	<b>1.5174</b>	<b>0.1042</b>	<b>1.1506</b>	<b>1.2511</b>	<b>0.0000</b>	<b>3,955.531</b>	<b>3,955.5313</b>	<b>1.0202</b>	<b>0.0000</b>	<b>3,976.9552</b>

Percent Reduction	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
	75.37	52.07	3.51	0.00	22.28	58.24	52.97	20.48	54.67	53.04	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	Demolition	Demolition	1/1/2016	1/14/2016	5	10	
2	Paving	Paving	1/15/2016	1/21/2016	5	5	
3	Building Construction	Building Construction	1/22/2016	7/28/2017	5	396	

**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
Paving	Other Construction Equipment	2	8.00	62	0.31
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	6	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

**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
Demolition	4	10.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	17.00	7.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	23.00	0.00	0.00	14.70	14.70	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads



**3.2 Demolition - 2016**

**Unmitigated Construction On-Site**

Category	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
Off-Road	1.3122	11.2385	8.7048	0.0120	0.8039	0.8039	0.8039	0.7674	0.7674	0.7674	1,193.6106	6	1,193.6106	0.2386		1,198.6217
<b>Total</b>	<b>1.3122</b>	<b>11.2385</b>	<b>8.7048</b>	<b>0.0120</b>	<b>0.8039</b>	<b>0.8039</b>	<b>0.8039</b>	<b>0.7674</b>	<b>0.7674</b>	<b>0.7674</b>	<b>1,193.6106</b>	<b>6</b>	<b>1,193.6106</b>	<b>0.2386</b>		<b>1,198.6217</b>

**Unmitigated Construction Off-Site**

Category	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
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
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
Worker	0.0426	0.0572	0.5980	1.3300e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305	111.5695	6	111.5695	6.1000e-003		111.6976
<b>Total</b>	<b>0.0426</b>	<b>0.0572</b>	<b>0.5980</b>	<b>1.3300e-003</b>	<b>0.1118</b>	<b>9.3000e-004</b>	<b>0.1127</b>	<b>0.0296</b>	<b>8.6000e-004</b>	<b>0.0305</b>	<b>111.5695</b>	<b>6</b>	<b>111.5695</b>	<b>6.1000e-003</b>		<b>111.6976</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.2661	5.9808	7.9564	0.0120	0.4023	0.4023	0.4023	0.4023	0.4023	0.4023	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
<b>Total</b>	<b>0.2661</b>	<b>5.9808</b>	<b>7.9564</b>	<b>0.0120</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.4023</b>	<b>0.0000</b>	<b>1,193.6106</b>	<b>1,193.6106</b>	<b>0.2386</b>		<b>1,198.6217</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
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
Worker	0.0426	0.0572	0.5980	1.3300e-003	0.0865	9.3000e-004	0.0875	0.0234	8.6000e-004	0.0243	111.5695	111.5695	111.5695	6.1000e-003		111.6976
<b>Total</b>	<b>0.0426</b>	<b>0.0572</b>	<b>0.5980</b>	<b>1.3300e-003</b>	<b>0.0865</b>	<b>9.3000e-004</b>	<b>0.0875</b>	<b>0.0234</b>	<b>8.6000e-004</b>	<b>0.0243</b>	<b>111.5695</b>	<b>111.5695</b>	<b>111.5695</b>	<b>6.1000e-003</b>		<b>111.6976</b>

**3.3 Paving - 2016**  
**Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																

Off-Road	1.5944	14.8917	9.9283	0.0144	0.9947	0.9947	0.9187	0.9187	1,424.203	1,424.203	0.3996	1,432.5949
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	1	0.0000		0.0000
<b>Total</b>	<b>1.5944</b>	<b>14.8917</b>	<b>9.9283</b>	<b>0.0144</b>	<b>0.9947</b>	<b>0.9947</b>	<b>0.9187</b>	<b>0.9187</b>	<b>1,424.203</b>	<b>1,424.203</b>	<b>0.3996</b>	<b>1,432.5949</b>

**Unmitigated Construction Off-Site**

Category	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
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	0.0000	0.0000	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	0.0979	0.1315	1.3754	3.0500e-003	0.2571	2.1500e-003	0.2592	0.0682	1.9800e-003	0.0702		256.6099	256.6099	0.0140		256.9044
<b>Total</b>	<b>0.0979</b>	<b>0.1315</b>	<b>1.3754</b>	<b>3.0500e-003</b>	<b>0.2571</b>	<b>2.1500e-003</b>	<b>0.2592</b>	<b>0.0682</b>	<b>1.9800e-003</b>	<b>0.0702</b>		<b>256.6099</b>	<b>256.6099</b>	<b>0.0140</b>		<b>256.9044</b>

**Mitigated Construction On-Site**

Category	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
Off-Road	0.3009	6.5296	9.2768	0.0144		0.4166	0.4166		0.4166	0.4166	0.0000	1,424.203	1,424.203	0.3996		1,432.5949
Paving	0.0000					0.0000	0.0000		0.0000	0.0000		1	0.0000			0.0000
<b>Total</b>	<b>0.3009</b>	<b>6.5296</b>	<b>9.2768</b>	<b>0.0144</b>		<b>0.4166</b>	<b>0.4166</b>		<b>0.4166</b>	<b>0.4166</b>	<b>0.0000</b>	<b>1,424.203</b>	<b>1,424.203</b>	<b>0.3996</b>		<b>1,432.5949</b>

**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															
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	0.0979	0.1315	1.3754	3.0500e-003	0.1990	2.1500e-003	0.2011	0.0639	1.9800e-003	0.0559	256.6099	256.6099	0.0140	0.0140		256.9044
<b>Total</b>	<b>0.0979</b>	<b>0.1315</b>	<b>1.3754</b>	<b>3.0500e-003</b>	<b>0.1990</b>	<b>2.1500e-003</b>	<b>0.2011</b>	<b>0.0539</b>	<b>1.9800e-003</b>	<b>0.0559</b>	<b>256.6099</b>	<b>256.6099</b>	<b>0.0140</b>	<b>0.0140</b>		<b>256.9044</b>

**3.4 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	lb/day															
Off-Road	2.0624	19.5657	12.0012	0.0159	1.4298	1.4298	1.4298	1.3154	1.3154	1.3154	1,654.7207	1,654.7207	0.4991	0.4991		1,665.2023
<b>Total</b>	<b>2.0624</b>	<b>19.5657</b>	<b>12.0012</b>	<b>0.0159</b>	<b>1.4298</b>	<b>1.4298</b>	<b>1.4298</b>	<b>1.3154</b>	<b>1.3154</b>	<b>1.3154</b>	<b>1,654.7207</b>	<b>1,654.7207</b>	<b>0.4991</b>	<b>0.4991</b>		<b>1,665.2023</b>

**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															

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0641	0.6233	0.8381	1.5100e-003	0.0438	9.9700e-003	0.0537	0.0125	9.1700e-003	0.0216	151.4586	151.4586	1.1300e-003	151.4823	151.4586	1.1300e-003	151.4823	151.4586	1.1300e-003	151.4823	151.4586	1.1300e-003
Worker	0.0724	0.0972	1.0166	2.2600e-003	0.1900	1.5900e-003	0.1916	0.0504	1.4600e-003	0.0519	189.6682	189.6682	0.0104	189.8859	189.6682	0.0104	189.8859	189.6682	0.0104	189.8859	189.6682	0.0104
<b>Total</b>	<b>0.1364</b>	<b>0.7205</b>	<b>1.8547</b>	<b>3.7700e-003</b>	<b>0.2538</b>	<b>0.0116</b>	<b>0.2453</b>	<b>0.0629</b>	<b>0.0106</b>	<b>0.0735</b>	<b>341.1268</b>	<b>341.1268</b>	<b>0.0115</b>	<b>341.3682</b>	<b>341.1268</b>	<b>0.0115</b>	<b>341.3682</b>	<b>341.1268</b>	<b>0.0115</b>	<b>341.3682</b>	<b>341.1268</b>	<b>0.0115</b>

**Mitigated Construction On-Site**

Category	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
Off-Road	0.3908	8.6805	11.4139	0.0159	0.5652	0.5652	0.5652	0.5652	0.5652	0.5652	0.0000	1,654.7207	1,654.7207	0.4991		1,665.2023
<b>Total</b>	<b>0.3908</b>	<b>8.6805</b>	<b>11.4139</b>	<b>0.0159</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.0000</b>	<b>1,654.7207</b>	<b>1,654.7207</b>	<b>0.4991</b>		<b>1,665.2023</b>

**Mitigated Construction Off-Site**

Category	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	
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	
Vendor	0.0641	0.6233	0.8381	1.5100e-003	0.0355	9.9700e-003	0.0454	0.0104	9.1700e-003	0.0196	151.4586	151.4586	1.1300e-003	151.4823	151.4586	1.1300e-003	151.4823
Worker	0.0724	0.0972	1.0166	2.2600e-003	0.1471	1.5900e-003	0.1487	0.0399	1.4600e-003	0.0413	189.6682	189.6682	0.0104	189.8859	189.6682	0.0104	189.8859

Total	0.1364	0.7205	1.8547	3.7700e-003	0.1825	0.0116	0.1941	0.0503	0.0106	0.0609	341.1268	341.1268	0.0115	341.3682
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### 3.4 Building Construction - 2017

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	1.9068	18.1531	11.7868	0.0159	1.3074	1.3074	1.3074	1.2028	1.2028	1.2028	1,628.2953	3	1,628.2953	0.4989		1,638.7724
<b>Total</b>	<b>1.9068</b>	<b>18.1531</b>	<b>11.7868</b>	<b>0.0159</b>	<b>1.3074</b>	<b>1.3074</b>	<b>1.3074</b>	<b>1.2028</b>	<b>1.2028</b>	<b>1.2028</b>	<b>1,628.2953</b>	<b>3</b>	<b>1,628.2953</b>	<b>0.4989</b>		<b>1,638.7724</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0585	0.5672	0.7956	1.5100e-003	0.0438	8.9000e-003	0.0527	0.0125	8.1800e-003	0.0207	149.0047	149.0047	1.0900e-003	1.0900e-003		149.0277
Worker	0.0649	0.0878	0.9167	2.2600e-003	0.1900	1.5300e-003	0.1916	0.0504	1.4100e-003	0.0518	182.3838	182.3838	9.5700e-003	9.5700e-003		182.5847
<b>Total</b>	<b>0.1234</b>	<b>0.6550</b>	<b>1.7123</b>	<b>3.7700e-003</b>	<b>0.2338</b>	<b>0.0104</b>	<b>0.2442</b>	<b>0.0629</b>	<b>9.5900e-003</b>	<b>0.0725</b>	<b>331.3885</b>	<b>331.3885</b>	<b>0.0107</b>	<b>0.0107</b>		<b>331.6124</b>

#### Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Off-Road	0.3908	8.6805	11.4139	0.0159	0.5652	0.5652	0.5652	0.5652	0.5652	0.5652	0.0000	1,628.2953	1,628.2953	0.4989		1,638.7724
<b>Total</b>	<b>0.3908</b>	<b>8.6805</b>	<b>11.4139</b>	<b>0.0159</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.5652</b>	<b>0.0000</b>	<b>1,628.2953</b>	<b>1,628.2953</b>	<b>0.4989</b>		<b>1,638.7724</b>

**Mitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	INBio- CO2	Total CO2	CH4	N2O	CO2e
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		0.0000
Vendor	0.0585	0.5672	0.7956	1.5100e-003	0.0355	8.9000e-003	0.0444	0.0104	8.1800e-003	0.0186	149.0047	149.0047	149.0047	1.0900e-003		149.0277
Worker	0.0649	0.0878	0.9167	2.2600e-003	0.1471	1.5300e-003	0.1486	0.0399	1.4100e-003	0.0413	182.3838	182.3838	182.3838	9.5700e-003		182.5847
<b>Total</b>	<b>0.1234</b>	<b>0.6550</b>	<b>1.7123</b>	<b>3.7700e-003</b>	<b>0.1825</b>	<b>0.0104</b>	<b>0.1930</b>	<b>0.0503</b>	<b>9.5900e-003</b>	<b>0.0599</b>	<b>331.3885</b>	<b>331.3885</b>	<b>331.3885</b>	<b>0.0107</b>		<b>331.6124</b>

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