

# **Wedgewire Screen and Diffuser Construction**

*Summary, Harborcraft Assumptions and  
Emissions, CalEEMod Summer/Annual  
Outputs*

**CONSTRUCTION EMISSION SUMMARY**

**Demolition (1st Day & Last Day)** 2 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	4.49	26.96	21.02	0.03	0.84	0.82	2.46	Large Day	
Onshore Emissions	0.55	4.16	3.46	0.01	0.68	0.29	0.42		
<b>Total</b>	<b>5.04</b>	<b>31.12</b>	<b>24.48</b>	<b>0.04</b>	<b>1.52</b>	<b>1.11</b>	<b>2.88</b>		

NOTES:

"Large Day" Includes:

Tug Boat (for Barge)  
Crew Boat

"Small Day" Includes:

Work Boat  
Crew Boat

**Demolition (3 Remaining Days)** 3 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	2.53	14.15	10.90	0.01	0.45	0.44	1.29	Small Day	
Onshore Emissions	0.46	4.12	2.65	0.01	0.46	0.23	0.32		
<b>Total</b>	<b>2.99</b>	<b>18.27</b>	<b>13.55</b>	<b>0.02</b>	<b>0.91</b>	<b>0.67</b>	<b>1.61</b>		

"Screen Transport" Includes:

Work Boat

**Dredging (First Day)** 1 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	4.49	26.96	21.02	0.03	0.84	0.82	2.46	Large Day	
Onshore Emissions	0.55	4.16	3.46	0.01	0.68	0.29	0.42		
<b>Total</b>	<b>5.04</b>	<b>31.12</b>	<b>24.48</b>	<b>0.04</b>	<b>1.52</b>	<b>1.11</b>	<b>2.88</b>		

**Dredging (3 Days)** 3 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	2.53	14.15	10.90	0.01	0.45	0.44	1.29	Small Day	
Onshore Emissions	0.46	4.12	2.65	0.01	0.46	0.23	0.32		
<b>Total</b>	<b>2.99</b>	<b>18.27</b>	<b>13.55</b>	<b>0.02</b>	<b>0.91</b>	<b>0.67</b>	<b>1.61</b>		

**Dredging (Last Day)** 1 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	4.49	26.96	21.02	0.03	0.84	0.82	2.46	Large Day	
Onshore Emissions	2.22	46.89	13.50	0.12	3.42	1.31	5.65		
<b>Total</b>	<b>6.71</b>	<b>73.85</b>	<b>34.52</b>	<b>0.15</b>	<b>4.26</b>	<b>2.13</b>	<b>8.11</b>		

**Screens and Diffuser Installation (First Day)** 1 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	5.46	32.38	25.20	0.03	1.01	0.99	2.97	Large Day + Screen Transport	
Onshore Emissions	1.21	11.41	7.77	0.03	1.58	0.67	1.23		
<b>Total</b>	<b>6.67</b>	<b>43.79</b>	<b>32.97</b>	<b>0.06</b>	<b>2.59</b>	<b>1.66</b>	<b>4.20</b>		

**Screens and Diffuser Installation (21 Days)** 21 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	2.53	14.15	10.90	0.01	0.45	0.44	1.29	Small Day	
Onshore Emissions	0.69	5.55	4.24	0.01	0.81	0.36	0.51		
<b>Total</b>	<b>3.22</b>	<b>19.70</b>	<b>15.14</b>	<b>0.02</b>	<b>1.26</b>	<b>0.80</b>	<b>1.80</b>		

**Screens and Diffuser Installation (Last Day)** 1 days total

	Daily Emissions From Construction							MT/day	
	pounds/day								
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2		
Vessel Emissions	4.49	26.96	21.02	0.03	0.84	0.82	2.46	Large Day	
Onshore Emissions	0.87	5.67	5.88	0.02	1.26	0.48	0.71		
<b>Total</b>	<b>5.36</b>	<b>32.63</b>	<b>26.90</b>	<b>0.05</b>	<b>2.10</b>	<b>1.30</b>	<b>3.17</b>		

SUMMARY:

Maximum Daily Emissions From Construction							
	pounds/day						MT/day
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	4.49	26.96	21.02	0.03	0.84	0.82	2.46
Onshore Emissions	2.22	46.89	13.50	0.12	3.42	1.31	5.65
<b>Total</b>	<b>6.71</b>	<b>73.85</b>	<b>34.52</b>	<b>0.15</b>	<b>4.26</b>	<b>2.13</b>	<b>8.11</b>

Total Annual Emissions From Construction							
	tons/year						MT/year
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	0.05	0.27	0.21	0.00	0.01	0.01	50.16
Onshore Emissions	0.01	0.11	0.07	0.00	0.01	0.01	21.48
<b>Total</b>	<b>0.06</b>	<b>0.38</b>	<b>0.28</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>71.64</b>

**ASSUMPTIONS**

<b>Vessel 1</b>	
Name	Tug Boat
Vessel Type	Tug Boats
Main Engine Power (hp)	750
Engine Power Range (Low)	501
Engine Power Range (High)	750
Main Engine Power (kW)	559.275
Number of Main Engines	1
Auxiliary Engine Power (hp)	100
Engine Power Range (Low)	51
Engine Power Range (High)	120
Auxiliary Engine Power (kW)	74.57
Number of Auxiliary Engines	1
Main Engine Load Factor	0.5
Auxiliary Engine Load Factor	0.31
Main Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Main Engine Age	11
Main Engine Useful Life	21
Auxiliary Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Auxiliary Engine Age	11
Auxiliary Engine Useful Life	23
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	3
Work Days (days)	1
Operational Year	2020

<b>Vessel 2</b>	
Name	Crew Boat
Vessel Type	Crew and Supply
Main Engine Power (hp)	250
Engine Power Range (Low)	176
Engine Power Range (High)	250
Main Engine Power (kW)	186.425
Number of Main Engines	1
Auxiliary Engine Power (hp)	100
Engine Power Range (Low)	51
Engine Power Range (High)	120
Auxiliary Engine Power (kW)	74.57
Number of Auxiliary Engines	1
Main Engine Load Factor	0.45
Auxiliary Engine Load Factor	0.43
Main Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Main Engine Age	11
Main Engine Useful Life	22
Auxiliary Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Auxiliary Engine Age	11
Auxiliary Engine Useful Life	22
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	2
Work Days (days)	1
Operational Year	2020

<b>Vessel 3</b>	
Name	Work Boat
Vessel Type	Work Boats
Main Engine Power (hp)	250
Engine Power Range (Low)	176
Engine Power Range (High)	250
Main Engine Power (kW)	186.425
Number of Main Engines	1
Auxiliary Engine Power (hp)	100
Engine Power Range (Low)	51
Engine Power Range (High)	120
Auxiliary Engine Power (kW)	74.57
Number of Auxiliary Engines	1
Main Engine Load Factor	0.45
Auxiliary Engine Load Factor	0.43
Main Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Main Engine Age	11
Main Engine Useful Life	17
Auxiliary Engine Model Year	2009
Model Year Range (Low)	2009
Model Year Range (High)	2009
Auxiliary Engine Age	11
Auxiliary Engine Useful Life	23
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	3
Work Days (days)	1
Operational Year	2020

**Emissions Factors**

Vessel	Engines	g/kW-h		g/hp-h		g/kW-h		g/hp-h		
		ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>		
Tug Boat	Main	0.68		5.1	3.73	0.00276		0.15	0.147	545.6
	Auxiliary	1.18		5.32	3.73	0.00276		0.22	0.2156	545.6
Crew Boat	Main	0.68		5.1	3.73	0.00276		0.15	0.147	545.6
	Auxiliary	1.18		5.32	3.73	0.00276		0.22	0.2156	545.6
Work Boat	Main	0.68		5.1	3.73	0.00276		0.15	0.147	545.6
	Auxiliary	1.18		5.32	3.73	0.00276		0.22	0.2156	545.6

**Engine Load Factor**

	Tug Boat	Work Boat	Crew Boat	
Main	0.50	0.45		0.45
Auxiliary	0.31	0.43		0.43

**Engine Useful Life**

	Tug Boat	Work Boat	Crew Boat	
Main	21	17		22
Auxiliary	23	23		22

### Engine Fuel Correction Factor

Vessel	Engines	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Tug Boat	Main		1	0.948	1	1	0.8	0.8
	Auxiliary		1	0.948	1	1	0.8	0.8
Crew Boat	Main		1	0.948	1	1	0.8	0.8
	Auxiliary		1	0.948	1	1	0.8	0.8
Work Boat	Main		1	0.948	1	1	0.8	0.8
	Auxiliary		1	0.948	1	1	0.8	0.8

### Engine Deterioration Factor

Vessel	Engines	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Tug Boat	Main	0.44		0.21	0.25	1	0.67	0.67
	Auxiliary	0.28		0.14	0.16	1	0.44	0.44
Crew Boat	Main	0.28		0.14	0.16	1	0.44	0.44
	Auxiliary	0.28		0.14	0.16	1	0.44	0.44
Work Boat	Main	0.28		0.14	0.16	1	0.44	0.44
	Auxiliary	0.28		0.14	0.16	1	0.44	0.44

Time to and from Port	Tug Boat	Crew Boat	Work Boat	Work Boat for Screen Transport
Distance (nautical miles) <sup>a</sup>	16.5	16.5		16.5
Speed (knots) <sup>b</sup>	12	12		12
Time (hours)	1.375	1.375		2
Max. Daily Number of Trips to or from Port of Long Beach	2	2		2

a. Distance for construction vessels based on route from Port of Long Beach to 0.5 miles offshore of desalination plant. Distance for screen transport work boat based on 24 miles from edge of California Regulated Waters to Port of Long Beach

b. Conservatively assumed that the Port of Long Beach voluntary speed reduction program would apply as slowest speed.

SOURCE: CARB 2007a. Appendix B, Emissions Estimation Methodology for Commercial Harbor Craft Operating in California.

**"LARGE DAY" EMISSIONS - TUG BOAT FOR BARGE + CREW BOAT**

**Maximum Daily Emissions From Construction Activities**

Vessel	Engines	pounds/day						MT/day
		ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Tug Boat	Main	1.55	9.93	7.80	0.01	0.30	0.29	0.94
	Auxiliary	0.20	0.82	0.61	0.00	0.03	0.03	0.06
Sub Total		1.75	10.75	8.42	0.01	0.33	0.33	0.99
Crew Boat	Main	0.29	1.91	1.49	0.00	0.05	0.05	0.18
	Auxiliary	0.19	0.76	0.57	0.00	0.03	0.03	0.05
Sub Total		0.48	2.68	2.06	0.00	0.08	0.08	0.24
Total		2.23	13.42	10.48	0.01	0.42	0.41	1.23

**Maximum Daily Emissions From Daily Travel To/From Port**

Vessel	Engines	pounds/day						MT/day
		ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Tug Boat	Main	1.42	9.10	7.15	0.01	0.27	0.27	0.86
	Auxiliary	0.19	0.75	0.56	0.00	0.03	0.03	0.05
Sub Total		1.61	9.85	7.71	0.01	0.30	0.30	0.91
Crew Boat	Main	0.39	2.63	2.05	0.00	0.07	0.07	0.25
	Auxiliary	0.26	1.05	0.78	0.00	0.04	0.04	0.07
Sub Total		0.66	3.68	2.83	0.00	0.12	0.11	0.33
Total		2.26	13.53	10.55	0.01	0.42	0.41	1.23

**"SMALL DAY" EMISSIONS - WORK BOAT + CREW BOAT**

**Maximum Daily Emissions From Construction Activities**

Vessel	Engines	pounds/day						MT/day
		ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Work Boat	Main	0.45	2.93	2.28	0.00	0.09	0.08	0.30
	Auxiliary	0.28	1.14	0.85	0.00	0.05	0.04	0.08
	Sub Total	0.73	4.07	3.14	0.00	0.13	0.13	0.38
Crew Boat	Main	0.29	1.91	1.49	0.00	0.05	0.05	0.18
	Auxiliary	0.19	0.76	0.57	0.00	0.03	0.03	0.05
	Sub Total	0.48	2.68	2.06	0.00	0.08	0.08	0.24
	Total	1.21	6.74	5.20	0.01	0.22	0.21	0.62

**Maximum Daily Emissions From Daily Travel To/From Port**

Vessel	Engines	pounds/day						MT/day
		ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Work Boat	Main	0.41	2.68	2.09	0.00	0.08	0.08	0.28
	Auxiliary	0.26	1.05	0.78	0.00	0.04	0.04	0.07
	Sub Total	0.67	3.73	2.87	0.00	0.12	0.12	0.35
Crew Boat	Main	0.39	2.63	2.05	0.00	0.07	0.07	0.25
	Auxiliary	0.26	1.05	0.78	0.00	0.04	0.04	0.07
	Sub Total	0.66	3.68	2.83	0.00	0.12	0.11	0.33
	Total	1.32	7.41	5.71	0.01	0.24	0.23	0.67

**TRAVELING SCREEN EMISSIONS - WORK BOAT**

**Maximum Daily Emissions From Daily Travel To/From Port**

Vessel	Engines	pounds/day						MT/day
		ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Work Boat	Main	0.59	3.90	3.05	0.00	0.11	0.11	0.40
	Auxiliary	0.38	1.52	1.14	0.00	0.06	0.06	0.10
Sub Total		0.97	5.42	4.18	0.01	0.17	0.17	0.51



HB Desal - Demo (1st and Last Day) - South Coast AQMD Air District, Summer

**HB Desal - Demo (1st and Last Day)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>	2021		
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - First and Last Days of Demolition

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Underwater rivet busters and diamond saws assumed to be electrically powered. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	PhaseName		Demolition
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	10.00	46.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232
Maximum	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232
Maximum	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2020	7/1/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	6.00	231	0.29
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	6.00	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	46.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	0.3378	4.0172	1.5761	4.3000e-003		0.1656	0.1656		0.1524	0.1524		416.3465	416.3465	0.1347		419.7128
<b>Total</b>	<b>0.3378</b>	<b>4.0172</b>	<b>1.5761</b>	<b>4.3000e-003</b>		<b>0.1656</b>	<b>0.1656</b>		<b>0.1524</b>	<b>0.1524</b>		<b>416.3465</b>	<b>416.3465</b>	<b>0.1347</b>		<b>419.7128</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										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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400		526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>0.2081</b>	<b>0.1399</b>	<b>1.8806</b>	<b>5.2900e-003</b>	<b>0.5142</b>	<b>3.9000e-003</b>	<b>0.5181</b>	<b>0.1364</b>	<b>3.5900e-003</b>	<b>0.1400</b>		<b>526.4320</b>	<b>526.4320</b>	<b>0.0151</b>		<b>526.8104</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	lb/day										lb/day					
Off-Road	0.3378	4.0172	1.5761	4.3000e-003		0.1656	0.1656		0.1524	0.1524	0.0000	416.3465	416.3465	0.1347		419.7128
<b>Total</b>	<b>0.3378</b>	<b>4.0172</b>	<b>1.5761</b>	<b>4.3000e-003</b>		<b>0.1656</b>	<b>0.1656</b>		<b>0.1524</b>	<b>0.1524</b>	<b>0.0000</b>	<b>416.3465</b>	<b>416.3465</b>	<b>0.1347</b>		<b>419.7128</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										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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400		526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>0.2081</b>	<b>0.1399</b>	<b>1.8806</b>	<b>5.2900e-003</b>	<b>0.5142</b>	<b>3.9000e-003</b>	<b>0.5181</b>	<b>0.1364</b>	<b>3.5900e-003</b>	<b>0.1400</b>		<b>526.4320</b>	<b>526.4320</b>	<b>0.0151</b>		<b>526.8104</b>

HB Desal - Demo (1st and Last Day) - South Coast AQMD Air District, Annual

**HB Desal - Demo (1st and Last Day)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - First and Last Days of Demolition

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Underwater rivet busters and diamond saws assumed to be electrically powered. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	PhaseName		Demolition
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	10.00	46.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177
Maximum	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177
Maximum	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00





Category	tons/yr								MT/yr							
Off-Road	1.7000e-004	2.0100e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1889	0.1889	6.0000e-005	0.0000	0.1904
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0100e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1889</b>	<b>0.1889</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1904</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										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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2272</b>	<b>0.2272</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2273</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										MT/yr					
Off-Road	1.7000e-004	2.0100e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1889	0.1889	6.0000e-005	0.0000	0.1904
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0100e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1889</b>	<b>0.1889</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1904</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	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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2272</b>	<b>0.2272</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2273</b>

HB Desal - Demo (Other Days) - South Coast AQMD Air District, Summer

**HB Desal - Demo (Other Days)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Remaining days of Demolition

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Underwater rivet busters and diamond saws assumed to be electrically powered. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 26 one-way worker trips (13 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Demolition
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	10.00	26.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432
Maximum	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432
Maximum	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/2/2020	7/2/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	6.00	231	0.29
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	6.00	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	26.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3401	4.0437	1.5865	4.3300e-003		0.1667	0.1667		0.1534	0.1534		419.0922	419.0922	0.1355		422.4808
<b>Total</b>	<b>0.3401</b>	<b>4.0437</b>	<b>1.5865</b>	<b>4.3300e-003</b>		<b>0.1667</b>	<b>0.1667</b>		<b>0.1534</b>	<b>0.1534</b>		<b>419.0922</b>	<b>419.0922</b>	<b>0.1355</b>		<b>422.4808</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										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	0.1176	0.0791	1.0629	2.9900e-003	0.2906	2.2000e-003	0.2928	0.0771	2.0300e-003	0.0791		297.5485	297.5485	8.5500e-003		297.7624
<b>Total</b>	<b>0.1176</b>	<b>0.0791</b>	<b>1.0629</b>	<b>2.9900e-003</b>	<b>0.2906</b>	<b>2.2000e-003</b>	<b>0.2928</b>	<b>0.0771</b>	<b>2.0300e-003</b>	<b>0.0791</b>		<b>297.5485</b>	<b>297.5485</b>	<b>8.5500e-003</b>		<b>297.7624</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	lb/day										lb/day					
Off-Road	0.3401	4.0437	1.5865	4.3300e-003		0.1667	0.1667		0.1534	0.1534	0.0000	419.0922	419.0922	0.1355		422.4808
<b>Total</b>	<b>0.3401</b>	<b>4.0437</b>	<b>1.5865</b>	<b>4.3300e-003</b>		<b>0.1667</b>	<b>0.1667</b>		<b>0.1534</b>	<b>0.1534</b>	<b>0.0000</b>	<b>419.0922</b>	<b>419.0922</b>	<b>0.1355</b>		<b>422.4808</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										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	0.1176	0.0791	1.0629	2.9900e-003	0.2906	2.2000e-003	0.2928	0.0771	2.0300e-003	0.0791		297.5485	297.5485	8.5500e-003		297.7624
<b>Total</b>	<b>0.1176</b>	<b>0.0791</b>	<b>1.0629</b>	<b>2.9900e-003</b>	<b>0.2906</b>	<b>2.2000e-003</b>	<b>0.2928</b>	<b>0.0771</b>	<b>2.0300e-003</b>	<b>0.0791</b>		<b>297.5485</b>	<b>297.5485</b>	<b>8.5500e-003</b>		<b>297.7624</b>

HB Desal - Demo (Other Days) - South Coast AQMD Air District, Annual

**HB Desal - Demo (Other Days)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Remaining days of Demolition

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Underwater rivet busters and diamond saws assumed to be electrically powered. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 26 one-way worker trips (13 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00



tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Demolition
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	10.00	26.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201
Maximum	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201
Maximum	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/2/2020	7/2/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	6.00	231	0.29
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Rubber Tired Dozers	0	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	6.00	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	26.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Demolition - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr								MT/yr							
Off-Road	1.7000e-004	2.0200e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1901	0.1901	6.0000e-005	0.0000	0.1916
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0200e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1901</b>	<b>0.1901</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1916</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										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	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1284	0.1284	0.0000	0.0000	0.1285
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1284</b>	<b>0.1284</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1285</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										MT/yr					
Off-Road	1.7000e-004	2.0200e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1901	0.1901	6.0000e-005	0.0000	0.1916
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0200e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1901</b>	<b>0.1901</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1916</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	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	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	0.0000
Worker	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1284	0.1284	0.0000	0.0000	0.1285	
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1284</b>	<b>0.1284</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1285</b>	

HB Desal - Dredge (1st Day) - South Coast AQMD Air District, Summer

**HB Desal - Dredge (1st Day)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - First day of dredging

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Harborcraft emissions modeled outside of CalEEMod

Grading - No soils export assumed until last day of dredging

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	3.00	46.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232
Maximum	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232
Maximum	0.5459	4.1571	3.4567	9.5900e-003	0.5142	0.1695	0.6837	0.1364	0.1560	0.2923	0.0000	942.7785	942.7785	0.1498	0.0000	946.5232

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/8/2020	7/8/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	6.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	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
Site Preparation	1	46.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Site Preparation - 2020

#### 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										lb/day					

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3378	4.0172	1.5761	4.3000e-003		0.1656	0.1656		0.1524	0.1524		416.3465	416.3465	0.1347		419.7128
<b>Total</b>	<b>0.3378</b>	<b>4.0172</b>	<b>1.5761</b>	<b>4.3000e-003</b>	<b>0.0000</b>	<b>0.1656</b>	<b>0.1656</b>	<b>0.0000</b>	<b>0.1524</b>	<b>0.1524</b>		<b>416.3465</b>	<b>416.3465</b>	<b>0.1347</b>		<b>419.7128</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										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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400		526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>0.2081</b>	<b>0.1399</b>	<b>1.8806</b>	<b>5.2900e-003</b>	<b>0.5142</b>	<b>3.9000e-003</b>	<b>0.5181</b>	<b>0.1364</b>	<b>3.5900e-003</b>	<b>0.1400</b>		<b>526.4320</b>	<b>526.4320</b>	<b>0.0151</b>		<b>526.8104</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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3378	4.0172	1.5761	4.3000e-003		0.1656	0.1656		0.1524	0.1524	0.0000	416.3465	416.3465	0.1347		419.7128
<b>Total</b>	<b>0.3378</b>	<b>4.0172</b>	<b>1.5761</b>	<b>4.3000e-003</b>	<b>0.0000</b>	<b>0.1656</b>	<b>0.1656</b>	<b>0.0000</b>	<b>0.1524</b>	<b>0.1524</b>	<b>0.0000</b>	<b>416.3465</b>	<b>416.3465</b>	<b>0.1347</b>		<b>419.7128</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										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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400		526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>0.2081</b>	<b>0.1399</b>	<b>1.8806</b>	<b>5.2900e-003</b>	<b>0.5142</b>	<b>3.9000e-003</b>	<b>0.5181</b>	<b>0.1364</b>	<b>3.5900e-003</b>	<b>0.1400</b>		<b>526.4320</b>	<b>526.4320</b>	<b>0.0151</b>		<b>526.8104</b>

HB Desal - Dredge (1st Day) - South Coast AQMD Air District, Annual

**HB Desal - Dredge (1st Day)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - First day of dredging

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Harborcraft emissions modeled outside of CalEEMod

Grading - No soils export assumed until last day of dredging

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblLandUse	LotAcreage	0.00	1.0000e-003
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	3.00	46.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177
Maximum	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177
Maximum	2.7000e-004	2.0900e-003	1.6600e-003	0.0000	2.5000e-004	8.0000e-005	3.4000e-004	7.0000e-005	8.0000e-005	1.4000e-004	0.0000	0.4160	0.4160	7.0000e-005	0.0000	0.4177

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/8/2020	7/8/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	6.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	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
Site Preparation	1	46.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Site Preparation - 2020

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	2.0100e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1889	0.1889	6.0000e-005	0.0000	0.1904
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0100e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1889</b>	<b>0.1889</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1904</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										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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2272</b>	<b>0.2272</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2273</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										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	2.0100e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1889	0.1889	6.0000e-005	0.0000	0.1904
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0100e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1889</b>	<b>0.1889</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1904</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	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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>1.0000e-004</b>	<b>8.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2272</b>	<b>0.2272</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2273</b>

HB Desal - Dredge (Other) - South Coast AQMD Air District, Summer

**HB Desal - Dredge (Other)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

- Land Use - Off shore construction of intake wedgewire screens and discharge diffuser
- Construction Phase - Remaining days of dredging
- Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Harborcraft emissions modeled outside of CalEEMod
- Grading - No soil export assumed until last day of dredging
- Trips and VMT - 26 one-way worker trips (13 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74

tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	3.00	26.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432
Maximum	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432
Maximum	0.4577	4.1227	2.6495	7.3200e-003	0.2906	0.1689	0.4595	0.0771	0.1554	0.2325	0.0000	716.6408	716.6408	0.1441	0.0000	720.2432

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/9/2020	7/9/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	6.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	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
Site Preparation	1	26.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Site Preparation - 2020

#### 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										lb/day					

Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3401	4.0437	1.5865	4.3300e-003		0.1667	0.1667		0.1534	0.1534		419.0922	419.0922	0.1355		422.4808
<b>Total</b>	<b>0.3401</b>	<b>4.0437</b>	<b>1.5865</b>	<b>4.3300e-003</b>	<b>0.0000</b>	<b>0.1667</b>	<b>0.1667</b>	<b>0.0000</b>	<b>0.1534</b>	<b>0.1534</b>		<b>419.0922</b>	<b>419.0922</b>	<b>0.1355</b>		<b>422.4808</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										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	0.1176	0.0791	1.0629	2.9900e-003	0.2906	2.2000e-003	0.2928	0.0771	2.0300e-003	0.0791		297.5485	297.5485	8.5500e-003		297.7624
<b>Total</b>	<b>0.1176</b>	<b>0.0791</b>	<b>1.0629</b>	<b>2.9900e-003</b>	<b>0.2906</b>	<b>2.2000e-003</b>	<b>0.2928</b>	<b>0.0771</b>	<b>2.0300e-003</b>	<b>0.0791</b>		<b>297.5485</b>	<b>297.5485</b>	<b>8.5500e-003</b>		<b>297.7624</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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3401	4.0437	1.5865	4.3300e-003		0.1667	0.1667		0.1534	0.1534	0.0000	419.0922	419.0922	0.1355		422.4808
<b>Total</b>	<b>0.3401</b>	<b>4.0437</b>	<b>1.5865</b>	<b>4.3300e-003</b>	<b>0.0000</b>	<b>0.1667</b>	<b>0.1667</b>	<b>0.0000</b>	<b>0.1534</b>	<b>0.1534</b>	<b>0.0000</b>	<b>419.0922</b>	<b>419.0922</b>	<b>0.1355</b>		<b>422.4808</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										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	0.1176	0.0791	1.0629	2.9900e-003	0.2906	2.2000e-003	0.2928	0.0771	2.0300e-003	0.0791		297.5485	297.5485	8.5500e-003		297.7624
<b>Total</b>	<b>0.1176</b>	<b>0.0791</b>	<b>1.0629</b>	<b>2.9900e-003</b>	<b>0.2906</b>	<b>2.2000e-003</b>	<b>0.2928</b>	<b>0.0771</b>	<b>2.0300e-003</b>	<b>0.0791</b>		<b>297.5485</b>	<b>297.5485</b>	<b>8.5500e-003</b>		<b>297.7624</b>

HB Desal - Dredge (Other) - South Coast AQMD Air District, Annual

**HB Desal - Dredge (Other)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Remaining days of dredging

Off-road Equipment - Crane on barge - assumed to operate 6 hours per day. Harborcraft emissions modeled outside of CalEEMod

Grading - No soil export assumed until last day of dredging

Trips and VMT - 26 one-way worker trips (13 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	3.00	26.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201
Maximum	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201
Maximum	2.3000e-004	2.0700e-003	1.2900e-003	0.0000	1.4000e-004	8.0000e-005	2.3000e-004	4.0000e-005	8.0000e-005	1.2000e-004	0.0000	0.3185	0.3185	7.0000e-005	0.0000	0.3201

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/9/2020	7/9/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	6.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	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
Site Preparation	1	26.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Site Preparation - 2020

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	2.0200e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1901	0.1901	6.0000e-005	0.0000	0.1916
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0200e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1901</b>	<b>0.1901</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1916</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										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	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1284	0.1284	0.0000	0.0000	0.1285
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1284</b>	<b>0.1284</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1285</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										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7000e-004	2.0200e-003	7.9000e-004	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.1901	0.1901	6.0000e-005	0.0000	0.1916
<b>Total</b>	<b>1.7000e-004</b>	<b>2.0200e-003</b>	<b>7.9000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.1901</b>	<b>0.1901</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1916</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	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	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1284	0.1284	0.0000	0.0000	0.1285
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.1284</b>	<b>0.1284</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1285</b>



HB Desal - Dredge (Last Day) - South Coast AQMD Air District, Summer

**HB Desal - Dredge (Last Day)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>	2022		
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Last day of dredging

Off-road Equipment - Crane on barge (4 hrs), Port of Long Beach crane and loader each assumed to operate 8 hours. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle) and 126-one way (63 loads) trips for haul trucks

Grading - 1,000 CY of soil export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Site Preparation
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	125.00	126.00
tblTripsAndVMT	WorkerTripNumber	8.00	46.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.2163	46.8914	13.4980	0.1179	2.8290	0.5928	3.4218	0.7569	0.5494	1.3063	0.0000	12,529.06 34	12,529.06 34	1.1896	0.0000	12,558.80 29
Maximum	2.2163	46.8914	13.4980	0.1179	2.8290	0.5928	3.4218	0.7569	0.5494	1.3063	0.0000	12,529.06 34	12,529.06 34	1.1896	0.0000	12,558.80 29

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.2163	46.8914	13.4980	0.1179	2.8290	0.5928	3.4218	0.7569	0.5494	1.3063	0.0000	12,529.06 34	12,529.06 34	1.1896	0.0000	12,558.80 29
Maximum	2.2163	46.8914	13.4980	0.1179	2.8290	0.5928	3.4218	0.7569	0.5494	1.3063	0.0000	12,529.06 34	12,529.06 34	1.1896	0.0000	12,558.80 29

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 3.0 Construction Detail

### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/14/2020	7/14/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	4.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Cranes	1	8.00	231	0.29

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	46.00	0.00	126.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1131	0.0000	0.1131	0.0171	0.0000	0.0171			0.0000			0.0000
Off-Road	1.0512	12.4615	4.7946	0.0149		0.4783	0.4783		0.4401	0.4401		1,439.683	1,439.683	0.4656		1,451.323
												3	3			9

<b>Total</b>	<b>1.0512</b>	<b>12.4615</b>	<b>4.7946</b>	<b>0.0149</b>	<b>0.1131</b>	<b>0.4783</b>	<b>0.5914</b>	<b>0.0171</b>	<b>0.4401</b>	<b>0.4572</b>		<b>1,439.683</b>	<b>1,439.683</b>	<b>0.4656</b>		<b>1,451.323</b>
												<b>3</b>	<b>3</b>			<b>9</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										lb/day						
Hauling	0.9570	34.2899	6.8228	0.0977	2.2017	0.1105	2.3123	0.6034	0.1058	0.7091			10,562.9480	10,562.9480	0.7088		10,580.6686
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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400			526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>1.1651</b>	<b>34.4298</b>	<b>8.7034</b>	<b>0.1030</b>	<b>2.7159</b>	<b>0.1144</b>	<b>2.8304</b>	<b>0.7398</b>	<b>0.1093</b>	<b>0.8491</b>			<b>11,089.3801</b>	<b>11,089.3801</b>	<b>0.7240</b>		<b>11,107.4790</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	lb/day										lb/day					
Fugitive Dust					0.1131	0.0000	0.1131	0.0171	0.0000	0.0171			0.0000			0.0000
Off-Road	1.0512	12.4615	4.7946	0.0149		0.4783	0.4783		0.4401	0.4401	0.0000	1,439.6833	1,439.6833	0.4656		1,451.3239
<b>Total</b>	<b>1.0512</b>	<b>12.4615</b>	<b>4.7946</b>	<b>0.0149</b>	<b>0.1131</b>	<b>0.4783</b>	<b>0.5914</b>	<b>0.0171</b>	<b>0.4401</b>	<b>0.4572</b>	<b>0.0000</b>	<b>1,439.6833</b>	<b>1,439.6833</b>	<b>0.4656</b>		<b>1,451.3239</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										lb/day					
Hauling	0.9570	34.2899	6.8228	0.0977	2.2017	0.1105	2.3123	0.6034	0.1058	0.7091		10,562.9480	10,562.9480	0.7088		10,580.6686
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	0.2081	0.1399	1.8806	5.2900e-003	0.5142	3.9000e-003	0.5181	0.1364	3.5900e-003	0.1400		526.4320	526.4320	0.0151		526.8104
<b>Total</b>	<b>1.1651</b>	<b>34.4298</b>	<b>8.7034</b>	<b>0.1030</b>	<b>2.7159</b>	<b>0.1144</b>	<b>2.8304</b>	<b>0.7398</b>	<b>0.1093</b>	<b>0.8491</b>		<b>11,089.3801</b>	<b>11,089.3801</b>	<b>0.7240</b>		<b>11,107.4790</b>

HB Desal - Dredge (Last Day) - South Coast AQMD Air District, Annual

**HB Desal - Dredge (Last Day)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2022
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Last day of dredging

Off-road Equipment - Crane on barge (4 hrs), Port of Long Beach crane and loader each assumed to operate 8 hours. Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 46 one-way worker trips (23 round trips assuming each worker would drive own vehicle) and 126-one way (63 loads) trips for haul trucks

Grading - 1,000 CY of soil export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Site Preparation
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2022
tblTripsAndVMT	HaulingTripNumber	125.00	126.00
tblTripsAndVMT	WorkerTripNumber	8.00	46.00



## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.1100e-003	0.0240	6.7900e-003	6.0000e-005	1.3900e-003	3.0000e-004	1.6900e-003	3.7000e-004	2.8000e-004	6.5000e-004	0.0000	5.6344	5.6344	5.5000e-004	0.0000	5.6481
<b>Maximum</b>	<b>1.1100e-003</b>	<b>0.0240</b>	<b>6.7900e-003</b>	<b>6.0000e-005</b>	<b>1.3900e-003</b>	<b>3.0000e-004</b>	<b>1.6900e-003</b>	<b>3.7000e-004</b>	<b>2.8000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>5.6344</b>	<b>5.6344</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.6481</b>

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.1100e-003	0.0240	6.7900e-003	6.0000e-005	1.3900e-003	3.0000e-004	1.6900e-003	3.7000e-004	2.8000e-004	6.5000e-004	0.0000	5.6344	5.6344	5.5000e-004	0.0000	5.6481
<b>Maximum</b>	<b>1.1100e-003</b>	<b>0.0240</b>	<b>6.7900e-003</b>	<b>6.0000e-005</b>	<b>1.3900e-003</b>	<b>3.0000e-004</b>	<b>1.6900e-003</b>	<b>3.7000e-004</b>	<b>2.8000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>5.6344</b>	<b>5.6344</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.6481</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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 3.0 Construction Detail

### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/14/2020	7/14/2020	5	1	Dredging

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	1	4.00	231	0.29
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Cranes	1	8.00	231	0.29

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	46.00	0.00	126.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-004	6.2300e-003	2.4000e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.6530	0.6530	2.1000e-004	0.0000	0.6583
<b>Total</b>	<b>5.3000e-004</b>	<b>6.2300e-003</b>	<b>2.4000e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>2.4000e-004</b>	<b>3.0000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>0.6530</b>	<b>0.6530</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6583</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										MT/yr					
Hauling	4.8000e-004	0.0177	3.5300e-003	5.0000e-005	1.0800e-003	6.0000e-005	1.1400e-003	3.0000e-004	5.0000e-005	3.5000e-004	0.0000	4.7542	4.7542	3.3000e-004	0.0000	4.7624
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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>5.8000e-004</b>	<b>0.0178</b>	<b>4.4000e-003</b>	<b>5.0000e-005</b>	<b>1.3300e-003</b>	<b>6.0000e-005</b>	<b>1.3900e-003</b>	<b>3.7000e-004</b>	<b>5.0000e-005</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>4.9814</b>	<b>4.9814</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>4.9898</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										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3000e-004	6.2300e-003	2.4000e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.6530	0.6530	2.1000e-004	0.0000	0.6583
<b>Total</b>	<b>5.3000e-004</b>	<b>6.2300e-003</b>	<b>2.4000e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>2.4000e-004</b>	<b>3.0000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>0.6530</b>	<b>0.6530</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6583</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	tons/yr										MT/yr					
	Hauling	4.8000e-004	0.0177	3.5300e-003	5.0000e-005	1.0800e-003	6.0000e-005	1.1400e-003	3.0000e-004	5.0000e-005	3.5000e-004	0.0000	4.7542	4.7542	3.3000e-004	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	1.0000e-004	8.0000e-005	8.7000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2272	0.2272	1.0000e-005	0.0000	0.2273
<b>Total</b>	<b>5.8000e-004</b>	<b>0.0178</b>	<b>4.4000e-003</b>	<b>5.0000e-005</b>	<b>1.3300e-003</b>	<b>6.0000e-005</b>	<b>1.3900e-003</b>	<b>3.7000e-004</b>	<b>5.0000e-005</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>4.9814</b>	<b>4.9814</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>4.9898</b>

HB Desal - Wedgewire & Diffuser Install (1st Day) - South Coast AQMD Air District, Summer

**HB Desal - Wedgewire & Diffuser Install (1st Day)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>	2021		
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser  
 Construction Phase - 1st day of wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each), 2x cranes at port (2 hrs each), and 1x forklift at port (2 hrs). Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 92 one-way worker trips (46 round trips assuming each worker would drive own vehicle) and 10 one-way trips (5 truck loads) for diffuser piece transport

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	92.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.2083	11.4129	7.7707	0.0274	1.2031	0.3742	1.5772	0.3206	0.3445	0.6652	0.0000	2,766.3854	2,766.3854	0.3696	0.0000	2,775.6250
Maximum	1.2083	11.4129	7.7707	0.0274	1.2031	0.3742	1.5772	0.3206	0.3445	0.6652	0.0000	2,766.3854	2,766.3854	0.3696	0.0000	2,775.6250

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.2083	11.4129	7.7707	0.0274	1.2031	0.3742	1.5772	0.3206	0.3445	0.6652	0.0000	2,766.3854	2,766.3854	0.3696	0.0000	2,775.6250
Maximum	1.2083	11.4129	7.7707	0.0274	1.2031	0.3742	1.5772	0.3206	0.3445	0.6652	0.0000	2,766.3854	2,766.3854	0.3696	0.0000	2,775.6250

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Category	lb/day										lb/day					
Off-Road	0.7161	8.4117	3.4681	9.0300e-003		0.3576	0.3576		0.3290	0.3290		875.1922	875.1922	0.2831		882.2685
<b>Total</b>	<b>0.7161</b>	<b>8.4117</b>	<b>3.4681</b>	<b>9.0300e-003</b>		<b>0.3576</b>	<b>0.3576</b>		<b>0.3290</b>	<b>0.3290</b>		<b>875.1922</b>	<b>875.1922</b>	<b>0.2831</b>		<b>882.2685</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										lb/day					
Hauling	0.0760	2.7214	0.5415	7.7500e-003	0.1747	8.7700e-003	0.1835	0.0479	8.3900e-003	0.0563		838.3292	838.3292	0.0563		839.7356
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	0.4162	0.2798	3.7611	0.0106	1.0283	7.8000e-003	1.0361	0.2727	7.1900e-003	0.2799		1,052.8641	1,052.8641	0.0303		1,053.6208
<b>Total</b>	<b>0.4922</b>	<b>3.0012</b>	<b>4.3026</b>	<b>0.0183</b>	<b>1.2031</b>	<b>0.0166</b>	<b>1.2197</b>	<b>0.3206</b>	<b>0.0156</b>	<b>0.3362</b>		<b>1,891.1933</b>	<b>1,891.1933</b>	<b>0.0865</b>		<b>1,893.3564</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	lb/day										lb/day					
Off-Road	0.7161	8.4117	3.4681	9.0300e-003		0.3576	0.3576		0.3290	0.3290	0.0000	875.1922	875.1922	0.2831		882.2685
<b>Total</b>	<b>0.7161</b>	<b>8.4117</b>	<b>3.4681</b>	<b>9.0300e-003</b>		<b>0.3576</b>	<b>0.3576</b>		<b>0.3290</b>	<b>0.3290</b>	<b>0.0000</b>	<b>875.1922</b>	<b>875.1922</b>	<b>0.2831</b>		<b>882.2685</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										lb/day					
Hauling	0.0760	2.7214	0.5415	7.7500e-003	0.1747	8.7700e-003	0.1835	0.0479	8.3900e-003	0.0563		838.3292	838.3292	0.0563		839.7356
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	0.4162	0.2798	3.7611	0.0106	1.0283	7.8000e-003	1.0361	0.2727	7.1900e-003	0.2799		1,052.8641	1,052.8641	0.0303		1,053.6208
<b>Total</b>	<b>0.4922</b>	<b>3.0012</b>	<b>4.3026</b>	<b>0.0183</b>	<b>1.2031</b>	<b>0.0166</b>	<b>1.2197</b>	<b>0.3206</b>	<b>0.0156</b>	<b>0.3362</b>		<b>1,891.1933</b>	<b>1,891.1933</b>	<b>0.0865</b>		<b>1,893.3564</b>

HB Desal - Wedgewire & Diffuser Install (1st Day) - South Coast AQMD Air District, Annual

**HB Desal - Wedgewire & Diffuser Install (1st Day)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser  
 Construction Phase - 1st day of wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each), 2x cranes at port (2 hrs each), and 1x forklift at port (2 hrs).  
 Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 92 one-way worker trips (46 round trips assuming each worker would drive own vehicle) and 10 one-way trips (5 truck loads) for diffuser piece transport

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	92.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	6.0000e-004	5.7700e-003	3.7600e-003	1.0000e-005	5.9000e-004	1.9000e-004	7.8000e-004	1.6000e-004	1.7000e-004	3.3000e-004	0.0000	1.2286	1.2286	1.7000e-004	0.0000	1.2328
Maximum	6.0000e-004	5.7700e-003	3.7600e-003	1.0000e-005	5.9000e-004	1.9000e-004	7.8000e-004	1.6000e-004	1.7000e-004	3.3000e-004	0.0000	1.2286	1.2286	1.7000e-004	0.0000	1.2328

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	6.0000e-004	5.7700e-003	3.7600e-003	1.0000e-005	5.9000e-004	1.9000e-004	7.8000e-004	1.6000e-004	1.7000e-004	3.3000e-004	0.0000	1.2286	1.2286	1.7000e-004	0.0000	1.2328
Maximum	6.0000e-004	5.7700e-003	3.7600e-003	1.0000e-005	5.9000e-004	1.9000e-004	7.8000e-004	1.6000e-004	1.7000e-004	3.3000e-004	0.0000	1.2286	1.2286	1.7000e-004	0.0000	1.2328

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	7/15/2020	7/15/2020	5	1	Screen/Diffuser Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	1	2.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	2	2.00	231	0.29

#### 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
Building Construction	5	92.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2020

#### Unmitigated Construction On-Site

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	3.6000e-004	4.2100e-003	1.7300e-003	0.0000		1.8000e-004	1.8000e-004		1.6000e-004	1.6000e-004	0.0000	0.3970	0.3970	1.3000e-004	0.0000	0.4002
<b>Total</b>	<b>3.6000e-004</b>	<b>4.2100e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>		<b>1.8000e-004</b>	<b>1.8000e-004</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.3970</b>	<b>0.3970</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.4002</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										MT/yr					
Hauling	4.0000e-005	1.4000e-003	2.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3773	0.3773	3.0000e-005	0.0000	0.3780
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	2.1000e-004	1.6000e-004	1.7400e-003	1.0000e-005	5.0000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4543	0.4543	1.0000e-005	0.0000	0.4547
<b>Total</b>	<b>2.5000e-004</b>	<b>1.5600e-003</b>	<b>2.0200e-003</b>	<b>1.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>6.0000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.8317</b>	<b>0.8317</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8326</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										MT/yr					
Off-Road	3.6000e-004	4.2100e-003	1.7300e-003	0.0000		1.8000e-004	1.8000e-004		1.6000e-004	1.6000e-004	0.0000	0.3970	0.3970	1.3000e-004	0.0000	0.4002
<b>Total</b>	<b>3.6000e-004</b>	<b>4.2100e-003</b>	<b>1.7300e-003</b>	<b>0.0000</b>		<b>1.8000e-004</b>	<b>1.8000e-004</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.3970</b>	<b>0.3970</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.4002</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	tons/yr										MT/yr					
Hauling	4.0000e-005	1.4000e-003	2.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3773	0.3773	3.0000e-005	0.0000	0.3780
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	2.1000e-004	1.6000e-004	1.7400e-003	1.0000e-005	5.0000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4543	0.4543	1.0000e-005	0.0000	0.4547
<b>Total</b>	<b>2.5000e-004</b>	<b>1.5600e-003</b>	<b>2.0200e-003</b>	<b>1.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>6.0000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.8317</b>	<b>0.8317</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8326</b>

HB Desal - Wedgewire & Diffuser Install (Other Days) - South Coast AQMD Air District, Summer

**HB Desal - Wedgewire & Diffuser Install (Other Days)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Remaining days wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each). Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 52 one-way worker trips (26 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	52.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.6887	5.5497	4.2412	0.0117	0.5812	0.2267	0.8079	0.1542	0.2086	0.3627	0.0000	1,153.8867	1,153.8867	0.1978	0.0000	1,158.8325
Maximum	0.6887	5.5497	4.2412	0.0117	0.5812	0.2267	0.8079	0.1542	0.2086	0.3627	0.0000	1,153.8867	1,153.8867	0.1978	0.0000	1,158.8325

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.6887	5.5497	4.2412	0.0117	0.5812	0.2267	0.8079	0.1542	0.2086	0.3627	0.0000	1,153.8867	1,153.8867	0.1978	0.0000	1,158.8325
Maximum	0.6887	5.5497	4.2412	0.0117	0.5812	0.2267	0.8079	0.1542	0.2086	0.3627	0.0000	1,153.8867	1,153.8867	0.1978	0.0000	1,158.8325

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	7/16/2020	7/16/2020	5	1	Screen/Diffuser Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	52.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2020

#### 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										lb/day					

Off-Road	0.4534	5.3915	2.1154	5.7700e-003		0.2223	0.2223		0.2045	0.2045		558.7896	558.7896	0.1807		563.3077
<b>Total</b>	<b>0.4534</b>	<b>5.3915</b>	<b>2.1154</b>	<b>5.7700e-003</b>		<b>0.2223</b>	<b>0.2223</b>		<b>0.2045</b>	<b>0.2045</b>		<b>558.7896</b>	<b>558.7896</b>	<b>0.1807</b>		<b>563.3077</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										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	0.2353	0.1582	2.1259	5.9700e-003	0.5812	4.4100e-003	0.5857	0.1542	4.0600e-003	0.1582		595.0971	595.0971	0.0171		595.5248
<b>Total</b>	<b>0.2353</b>	<b>0.1582</b>	<b>2.1259</b>	<b>5.9700e-003</b>	<b>0.5812</b>	<b>4.4100e-003</b>	<b>0.5857</b>	<b>0.1542</b>	<b>4.0600e-003</b>	<b>0.1582</b>		<b>595.0971</b>	<b>595.0971</b>	<b>0.0171</b>		<b>595.5248</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	lb/day										lb/day					
Off-Road	0.4534	5.3915	2.1154	5.7700e-003		0.2223	0.2223		0.2045	0.2045	0.0000	558.7896	558.7896	0.1807		563.3077
<b>Total</b>	<b>0.4534</b>	<b>5.3915</b>	<b>2.1154</b>	<b>5.7700e-003</b>		<b>0.2223</b>	<b>0.2223</b>		<b>0.2045</b>	<b>0.2045</b>	<b>0.0000</b>	<b>558.7896</b>	<b>558.7896</b>	<b>0.1807</b>		<b>563.3077</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										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	0.2353	0.1582	2.1259	5.9700e-003	0.5812	4.4100e-003	0.5857	0.1542	4.0600e-003	0.1582		595.0971	595.0971	0.0171		595.5248
<b>Total</b>	<b>0.2353</b>	<b>0.1582</b>	<b>2.1259</b>	<b>5.9700e-003</b>	<b>0.5812</b>	<b>4.4100e-003</b>	<b>0.5857</b>	<b>0.1542</b>	<b>4.0600e-003</b>	<b>0.1582</b>		<b>595.0971</b>	<b>595.0971</b>	<b>0.0171</b>		<b>595.5248</b>

HB Desal - Wedgewire & Diffuser Install (Other Days) - South Coast AQMD Air District, Annual

**HB Desal - Wedgewire & Diffuser Install (Other Days)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Remaining days wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each). Harborcraft emissions modeled outside of CalEEMod

Trips and VMT - 52 one-way worker trips (26 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00

tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	52.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	3.4000e-004	2.7800e-003	2.0400e-003	1.0000e-005	2.9000e-004	1.1000e-004	4.0000e-004	8.0000e-005	1.0000e-004	1.8000e-004	0.0000	0.5103	0.5103	9.0000e-005	0.0000	0.5125
<b>Maximum</b>	<b>3.4000e-004</b>	<b>2.7800e-003</b>	<b>2.0400e-003</b>	<b>1.0000e-005</b>	<b>2.9000e-004</b>	<b>1.1000e-004</b>	<b>4.0000e-004</b>	<b>8.0000e-005</b>	<b>1.0000e-004</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.5103</b>	<b>0.5103</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.5125</b>

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	3.4000e-004	2.7800e-003	2.0400e-003	1.0000e-005	2.9000e-004	1.1000e-004	4.0000e-004	8.0000e-005	1.0000e-004	1.8000e-004	0.0000	0.5103	0.5103	9.0000e-005	0.0000	0.5125
<b>Maximum</b>	<b>3.4000e-004</b>	<b>2.7800e-003</b>	<b>2.0400e-003</b>	<b>1.0000e-005</b>	<b>2.9000e-004</b>	<b>1.1000e-004</b>	<b>4.0000e-004</b>	<b>8.0000e-005</b>	<b>1.0000e-004</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.5103</b>	<b>0.5103</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.5125</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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	7/16/2020	7/16/2020	5	1	Screen/Diffuser Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	52.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2020

#### 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					

Off-Road	2.3000e-004	2.7000e-003	1.0600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.2535	0.2535	8.0000e-005	0.0000	0.2555
<b>Total</b>	<b>2.3000e-004</b>	<b>2.7000e-003</b>	<b>1.0600e-003</b>	<b>0.0000</b>		<b>1.1000e-004</b>	<b>1.1000e-004</b>		<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2535</b>	<b>0.2535</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2555</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										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	1.2000e-004	9.0000e-005	9.8000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2568	0.2568	1.0000e-005	0.0000	0.2570
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>2.9000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2568</b>	<b>0.2568</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2570</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										MT/yr					
Off-Road	2.3000e-004	2.7000e-003	1.0600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.2535	0.2535	8.0000e-005	0.0000	0.2555
<b>Total</b>	<b>2.3000e-004</b>	<b>2.7000e-003</b>	<b>1.0600e-003</b>	<b>0.0000</b>		<b>1.1000e-004</b>	<b>1.1000e-004</b>		<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2535</b>	<b>0.2535</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2555</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	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	1.2000e-004	9.0000e-005	9.8000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2568	0.2568	1.0000e-005	0.0000	0.2570
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>2.9000e-004</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2568</b>	<b>0.2568</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2570</b>



HB Desal - Wedgewire & Diffuser Install (Last Day) - South Coast AQMD Air District, Summer

**HB Desal - Wedgewire & Diffuser Install (Last Day)**  
**South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Last day of wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each)

Trips and VMT - 92 one-way worker trips (46 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	92.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.8696	5.6713	5.8765	0.0163	1.0283	0.2301	1.2584	0.2727	0.2117	0.4844	0.0000	1,611.6537	1,611.6537	0.2110	0.0000	1,616.9286
Maximum	0.8696	5.6713	5.8765	0.0163	1.0283	0.2301	1.2584	0.2727	0.2117	0.4844	0.0000	1,611.6537	1,611.6537	0.2110	0.0000	1,616.9286

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.8696	5.6713	5.8765	0.0163	1.0283	0.2301	1.2584	0.2727	0.2117	0.4844	0.0000	1,611.6537	1,611.6537	0.2110	0.0000	1,616.9286
Maximum	0.8696	5.6713	5.8765	0.0163	1.0283	0.2301	1.2584	0.2727	0.2117	0.4844	0.0000	1,611.6537	1,611.6537	0.2110	0.0000	1,616.9286

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	8/14/2020	8/14/2020	5	1	Screen/Diffuser Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	92.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2020

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	0.4534	5.3915	2.1154	5.7700e-003		0.2223	0.2223		0.2045	0.2045		558.7896	558.7896	0.1807		563.3077
<b>Total</b>	<b>0.4534</b>	<b>5.3915</b>	<b>2.1154</b>	<b>5.7700e-003</b>		<b>0.2223</b>	<b>0.2223</b>		<b>0.2045</b>	<b>0.2045</b>		<b>558.7896</b>	<b>558.7896</b>	<b>0.1807</b>		<b>563.3077</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										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	0.4162	0.2798	3.7611	0.0106	1.0283	7.8000e-003	1.0361	0.2727	7.1900e-003	0.2799		1,052.8641	1,052.8641	0.0303		1,053.6208
<b>Total</b>	<b>0.4162</b>	<b>0.2798</b>	<b>3.7611</b>	<b>0.0106</b>	<b>1.0283</b>	<b>7.8000e-003</b>	<b>1.0361</b>	<b>0.2727</b>	<b>7.1900e-003</b>	<b>0.2799</b>		<b>1,052.8641</b>	<b>1,052.8641</b>	<b>0.0303</b>		<b>1,053.6208</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	lb/day										lb/day					
Off-Road	0.4534	5.3915	2.1154	5.7700e-003		0.2223	0.2223		0.2045	0.2045	0.0000	558.7896	558.7896	0.1807		563.3077
<b>Total</b>	<b>0.4534</b>	<b>5.3915</b>	<b>2.1154</b>	<b>5.7700e-003</b>		<b>0.2223</b>	<b>0.2223</b>		<b>0.2045</b>	<b>0.2045</b>	<b>0.0000</b>	<b>558.7896</b>	<b>558.7896</b>	<b>0.1807</b>		<b>563.3077</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										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	0.4162	0.2798	3.7611	0.0106	1.0283	7.8000e-003	1.0361	0.2727	7.1900e-003	0.2799		1,052.8641	1,052.8641	0.0303		1,053.6208
<b>Total</b>	<b>0.4162</b>	<b>0.2798</b>	<b>3.7611</b>	<b>0.0106</b>	<b>1.0283</b>	<b>7.8000e-003</b>	<b>1.0361</b>	<b>0.2727</b>	<b>7.1900e-003</b>	<b>0.2799</b>		<b>1,052.8641</b>	<b>1,052.8641</b>	<b>0.0303</b>		<b>1,053.6208</b>

HB Desal - Wedgewire & Diffuser Install (Last Day) - South Coast AQMD Air District, Annual

**HB Desal - Wedgewire & Diffuser Install (Last Day)**  
**South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore construction of intake wedgewire screens and discharge diffuser

Construction Phase - Last day of wedgewire screen and diffuser installation construction

Off-road Equipment - Equipment assumptions: 2x cranes on barges (4 hrs each)

Trips and VMT - 92 one-way worker trips (46 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	92.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	4.3000e-004	2.8500e-003	2.8000e-003	1.0000e-005	5.0000e-004	1.2000e-004	6.2000e-004	1.3000e-004	1.1000e-004	2.4000e-004	0.0000	0.7078	0.7078	1.0000e-004	0.0000	0.7102
Maximum	4.3000e-004	2.8500e-003	2.8000e-003	1.0000e-005	5.0000e-004	1.2000e-004	6.2000e-004	1.3000e-004	1.1000e-004	2.4000e-004	0.0000	0.7078	0.7078	1.0000e-004	0.0000	0.7102

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	4.3000e-004	2.8500e-003	2.8000e-003	1.0000e-005	5.0000e-004	1.2000e-004	6.2000e-004	1.3000e-004	1.1000e-004	2.4000e-004	0.0000	0.7078	0.7078	1.0000e-004	0.0000	0.7102
Maximum	4.3000e-004	2.8500e-003	2.8000e-003	1.0000e-005	5.0000e-004	1.2000e-004	6.2000e-004	1.3000e-004	1.1000e-004	2.4000e-004	0.0000	0.7078	0.7078	1.0000e-004	0.0000	0.7102

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 3.0 Construction Detail

### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	8/14/2020	8/14/2020	5	1	Screen/Diffuser Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	92.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Building Construction - 2020**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3000e-004	2.7000e-003	1.0600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.2535	0.2535	8.0000e-005	0.0000	0.2555



Total	2.3000e-004	2.7000e-003	1.0600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.2535	0.2535	8.0000e-005	0.0000	0.2555
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**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	2.1000e-004	1.6000e-004	1.7400e-003	1.0000e-005	5.0000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4543	0.4543	1.0000e-005	0.0000	0.4547
<b>Total</b>	<b>2.1000e-004</b>	<b>1.6000e-004</b>	<b>1.7400e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.4543</b>	<b>0.4543</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.4547</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										MT/yr					
Off-Road	2.3000e-004	2.7000e-003	1.0600e-003	0.0000		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	0.2535	0.2535	8.0000e-005	0.0000	0.2555
<b>Total</b>	<b>2.3000e-004</b>	<b>2.7000e-003</b>	<b>1.0600e-003</b>	<b>0.0000</b>		<b>1.1000e-004</b>	<b>1.1000e-004</b>		<b>1.0000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2535</b>	<b>0.2535</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2555</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	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	2.1000e-004	1.6000e-004	1.7400e-003	1.0000e-005	5.0000e-004	0.0000	5.1000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4543	0.4543	1.0000e-005	0.0000	0.4547
<b>Total</b>	<b>2.1000e-004</b>	<b>1.6000e-004</b>	<b>1.7400e-003</b>	<b>1.0000e-005</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.4543</b>	<b>0.4543</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.4547</b>

# **Wedgewire Screen and Diffuser Operations**

***Summary, Harborcraft Assumptions and  
Emissions, Rotating Screen Indirect  
GHGs, CalEEMod Summer/Winter/  
Annual Outputs***

**OPERATIONAL EMISSION SUMMARY**

OPTION 1: NON-ROTATING WEDGEWIRE SCREENS

11 dives

Maximum Daily Emissions From Wedgewire Screen Cleaning							
	pounds/day						MT/day
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	1.13	6.36	4.89	0.01	0.20	0.20	0.56
Onshore Emissions	0.03	0.02	0.30	0.00	0.09	0.02	0.04
<b>Total</b>	<b>1.16</b>	<b>6.38</b>	<b>5.19</b>	<b>0.01</b>	<b>0.29</b>	<b>0.22</b>	<b>0.60</b>

  

Total Annual Emissions From Wedgewire Screen Cleaning							
	tons/year						MT/year
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	0.01	0.03	0.03	0.00	0.00	0.00	6.18
Onshore Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.44
<b>Total</b>	<b>0.01</b>	<b>0.04</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.62</b>

\* Annual emissions assumes 11 dives

OPTION 2: ROTATING WEDGEWIRE SCREENS

4 dives

Maximum Daily Emissions From Wedgewire Screen Inspection							
	pounds/day						MT/day
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	1.13	6.36	4.89	0.01	0.20	0.20	0.56
Onshore Emissions	0.03	0.02	0.30	0.00	0.09	0.02	0.04
Pump Electricity	--	--	--	--	--	--	0.04
<b>Total</b>	<b>1.16</b>	<b>6.38</b>	<b>5.19</b>	<b>0.01</b>	<b>0.29</b>	<b>0.22</b>	<b>0.64</b>

  

Total Annual Emissions From Wedgewire Screen Cleaning							
	tons/year						MT/year
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2
Vessel Emissions	0.00	0.01	0.01	0.00	0.00	0.00	2.25
Onshore Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Pump Electricity	--	--	--	--	--	--	14.12
<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.53</b>

\* Annual emissions assumes 4 dives. Onshore emissions based on on-road vehicles and GHGs from pump electricity

**ASSUMPTIONS**

<b>Vessel</b>	
Name	Crew Boat
Vessel Type	Crew and Supply
Main Engine Power (hp)	250
Engine Power Range (Low)	176
Engine Power Range (High)	250
Main Engine Power (kW)	186.425
Number of Main Engines	1
Auxiliary Engine Power (hp)	100
Engine Power Range (Low)	51
Engine Power Range (High)	120
Auxiliary Engine Power (kW)	74.57
Number of Auxiliary Engines	1
Main Engine Load Factor	0.45
Auxiliary Engine Load Factor	0.43
Main Engine Model Year	2010
Model Year Range (Low)	2010
Model Year Range (High)	2011
Main Engine Age	11
Main Engine Useful Life	22
Auxiliary Engine Model Year	2010
Model Year Range (Low)	2010
Model Year Range (High)	2011
Auxiliary Engine Age	11
Auxiliary Engine Useful Life	22
Brake Specific Fuel Consumption (g/hp-h)	184
Operational Time (hours/day)	2
Work Days (days)	1
Operational Year	2021

<b>Emissions Factors</b>		g/kW-h	g/kW-h	g/kW-h	g/hp-h	g/kW-h	g/kW-h	g/hp-h	
Vessel	Engines	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	
Crew Boat	Main	0.68	5.1	3.73	0.00276	0.15		0.147	545.6
	Auxiliary	1.18	5.32	3.73	0.00276	0.22		0.2156	545.6

**Engine Load Factor**

<b>Crew Boat</b>	
Main	0.45
Auxiliary	0.43

**Engine Useful Life**

<b>Crew Boat</b>	
Main	22
Auxiliary	22

**Engine Fuel Correction Factor**

Vessel	Engines	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	
Crew Boat	Main	1	0.948	1	1	0.8		0.8	1
	Auxiliary	1	0.948	1	1	0.8		0.8	1

**Engine Deterioration Factor**

Vessel	Engines	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	
Crew Boat	Main	0.28	0.14	0.16	1	0.44		0.44	1
	Auxiliary	0.28	0.14	0.16	1	0.44		0.44	1

**Time to and from Port**

<b>Crew Boat</b>	
Distance (nautical miles) <sup>a</sup>	16.5
Speed (knots) <sup>b</sup>	12
Time (hours)	1.375
Max. Daily Number of Trips to or from Port of Long Beach	2

a. Distance for construction vessels based on route from Port of Long Beach to 0.5 miles offshore of desalination plant.

b. Conservatively assumed that the Port of Long Beach voluntary speed reduction program would apply as slowest speed.

SOURCE: CARB 2007a. Appendix B, Emissions Estimation Methodology for Commercial Harbor Craft Operating in California.

**HARBORCRAFT EMISSIONS**

**Maximum Daily Emissions From Operational Activities**

Vessel	Engines	pounds/day							MT/day
		ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	
Crew Boat	Main	0.29	1.91	1.49	0.00	0.05	0.05	0.18	
	Auxiliary	0.19	0.76	0.57	0.00	0.03	0.03	0.05	
Total		0.48	2.68	2.06	0.00	0.08	0.08	0.24	

**Maximum Daily Emissions From Daily Travel To/From Port**

Vessel	Engines	pounds/day							MT/day
		ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	
Crew Boat	Main	0.39	2.63	2.05	0.00	0.07	0.07	0.25	
	Auxiliary	0.26	1.05	0.78	0.00	0.04	0.04	0.07	
Total		0.66	3.68	2.83	0.00	0.12	0.11	0.33	

**Huntington Beach Desal Intake/Diffuser Emissions Estimates - Assumptions**

**Option 2 - Indirect GHG Emissions from Rotating Screen Electricity Use (Power Plant Emissions)**

Operations Annual Electrical Use: 70,080 hp-hr/year  
 0.746 kWh/hp-hr  
 52,280 kWh (kilowatt hours)/year  
 52 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor* lb/mWh	Annual		CO2 Equivalent Factor	Annual Equivalent Emissions (metric tons)
		Project Electricity mWh	GHGs metric tons		
Carbon Dioxide (CO2)	592.74	52	14.06	1	14.06
Nitrous Oxide (N2O)	0.006	52	0.0001	298	0.04
Methane (CH4)	0.029	52	0.0007	25	0.02
<b>Total Indirect GHG Emissions from Rotating Screen Operations Electricity Use=</b>					<b>14.12</b>

\* Emission factors for CO2, CH4, and N2O are from the CalEEMod software version 2016.3.1 for SCE.  
 CO2 adjusted based on 33% RPS by 2020

HB Desal - On-road trips for Operations - South Coast AQMD Air District, Summer

**HB Desal - On-road trips for Operations  
South Coast AQMD Air District, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore cleaning/inspection of intake wedgewire screens

Construction Phase - Wedgewire screen cleaning and inspection. Operations modeled with the "Construction" module in CalEEMod. Harborcraft emissions modeled outside of CalEEMod

Off-road Equipment - No heavy equipment needed

Trips and VMT - 8 one-way worker trips (4 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	PhaseEndDate	7/16/2020	1/4/2021
tblConstructionPhase	PhaseStartDate	7/16/2020	1/4/2021
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00



tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	88.5923	88.5923	2.3800e-003	0.0000	88.6518
Maximum	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	88.5923	88.5923	2.3800e-003	0.0000	88.6518

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	88.5923	88.5923	2.3800e-003	0.0000	88.6518
Maximum	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	88.5923	88.5923	2.3800e-003	0.0000	88.6518

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/4/2021	1/4/2021	5	1	Screen Cleaning/Inspection

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2021

#### 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										lb/day					

Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</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										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	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0338</b>	<b>0.0219</b>	<b>0.3014</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>		<b>88.5923</b>	<b>88.5923</b>	<b>2.3800e-003</b>		<b>88.6518</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	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</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										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	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0338</b>	<b>0.0219</b>	<b>0.3014</b>	<b>8.9000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>		<b>88.5923</b>	<b>88.5923</b>	<b>2.3800e-003</b>		<b>88.6518</b>

HB Desal - On-road trips for Operations - South Coast AQMD Air District, Winter

**HB Desal - On-road trips for Operations**  
**South Coast AQMD Air District, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8	<b>Operational Year</b>		2021	
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore cleaning/inspection of intake wedgewire screens

Construction Phase - Wedgewire screen cleaning and inspection. Operations modeled with the "Construction" module in CalEEMod. Harborcraft emissions modeled outside of CalEEMod

Off-road Equipment - No heavy equipment needed

Trips and VMT - 8 one-way worker trips (4 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	PhaseEndDate	7/16/2020	1/4/2021
tblConstructionPhase	PhaseStartDate	7/16/2020	1/4/2021
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	82.8534	82.8534	2.2200e-003	0.0000	82.9089
<b>Maximum</b>	<b>0.0369</b>	<b>0.0240</b>	<b>0.2708</b>	<b>8.3000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>	<b>0.0000</b>	<b>82.8534</b>	<b>82.8534</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>82.9089</b>

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243	0.0000	82.8534	82.8534	2.2200e-003	0.0000	82.9089
<b>Maximum</b>	<b>0.0369</b>	<b>0.0240</b>	<b>0.2708</b>	<b>8.3000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>	<b>0.0000</b>	<b>82.8534</b>	<b>82.8534</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>82.9089</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
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/4/2021	1/4/2021	5	1	Screen Cleaning/Inspection

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2021

#### 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										lb/day					

Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</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										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	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0369</b>	<b>0.0240</b>	<b>0.2708</b>	<b>8.3000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>		<b>82.8534</b>	<b>82.8534</b>	<b>2.2200e-003</b>		<b>82.9089</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	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</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										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	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0369</b>	<b>0.0240</b>	<b>0.2708</b>	<b>8.3000e-004</b>	<b>0.0894</b>	<b>6.6000e-004</b>	<b>0.0901</b>	<b>0.0237</b>	<b>6.1000e-004</b>	<b>0.0243</b>		<b>82.8534</b>	<b>82.8534</b>	<b>2.2200e-003</b>		<b>82.9089</b>

HB Desal - On-road trips for Operations - South Coast AQMD Air District, Annual

**HB Desal - On-road trips for Operations  
South Coast AQMD Air District, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2021
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	592.74	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

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

Land Use - Off shore cleaning/inspection of intake wedgewire screens

Construction Phase - Wedgewire screen cleaning and inspection. Operations modeled with the "Construction" module in CalEEMod. Harborcraft emissions modeled outside of CalEEMod

Off-road Equipment - No heavy equipment needed

Trips and VMT - 8 one-way worker trips (4 round trips assuming each worker would drive own vehicle)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	PhaseEndDate	7/16/2020	1/4/2021
tblConstructionPhase	PhaseStartDate	7/16/2020	1/4/2021
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	0.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383
Maximum	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383
Maximum	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/4/2021	1/4/2021	5	1	Screen Cleaning/Inspection

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	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
Building Construction	2	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Building Construction - 2021

#### 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					

Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</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										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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383
<b>Total</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0382</b>	<b>0.0382</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0383</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										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</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	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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0382	0.0382	0.0000	0.0000	0.0383
<b>Total</b>	<b>2.0000e-005</b>	<b>1.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0382</b>	<b>0.0382</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0383</b>