

# **Appendix A**

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**Air Quality and Greenhouse Gas**

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# **Air Quality and Greenhouse Gas Modeling Inputs**

### Air Quality and GHG Modeling Equipment Usage Details and Assumptions

Construction Phase	Days	Equipment	Hours per day	Worker Commute Trips (per day)	Worker Commute Mileage	Vendor Trips (total)	Vendor Mileage	Haul Trips (per day)	Haul Mileage	Notes
Site Preparation (staging areas)	2	backhoe/tractor/loader (tractor mounted box scraper)	7			2		0		
		generator	2							
		generator	2							
Utility Location	10	air compressor	2			0		0		<i>Although the air compressor would be used for only 4-5 days, for ease of modeling and to be conservative, it is assumed that it would be used intermittently for all 10 days of the utility location phase</i>
		excavator	6							
Excavation, Pipe Placement, and Fill Activities	32	excavator	6							
		front-end loader	7							
		backhoe/tractor/loader	6	20	50	16	CalEEMod Default	34	50	
		10-wheel dump truck	6							
		10-wheel dump truck	6							
		vibratory compactor	6							
		water truck	2							
		concrete mixer truck	2							
		paving machines	8							
		roller	8							
Paving and Restoration	4	asphalt saw	6							
		jackhammer	4			4		0		<i>Although the spray rig would be used for only 1-2 days, for ease of modeling and to be conservative, it is assumed that it would be used intermittently for all 4 days of the repaving phase</i>
		emulsion spray rig	2							
Aerial Crossing (Putah South Canal)	4	crane	8			2		0		
		welder	8							
Testing Pipeline	8	dewatering pump	8			0		0		

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# **Cement Hill CalEEmod Annual Emissions**

Cement Hill Pipeline - Solano-San Francisco County, Annual

**Cement Hill Pipeline**  
**Solano-San Francisco County, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.00	Acre	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>	56
<b>Climate Zone</b>	4			<b>Operational Year</b>	2020
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	641.35	<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**

Cement Hill Pipeline - Solano-San Francisco County, Annual

Project Characteristics -

Land Use - No actual land use since project is construction impacts only, "city park" is just a proxy

Construction Phase - See spreadsheet "AQ modeling inputs" for detailed assumptions and project specific details

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs (emulsion spray rig and jackhammer uses air compressor as proxy for emissions)

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Trips and VMT - Project-specific input

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	8.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	4.00
tblGrading	AcresOfGrading	0.00	5.00
tblOffRoadEquipment	LoadFactor	0.48	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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		Testing Pipeline
tblOffRoadEquipment	PhaseName		Aerial Crossing
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,056.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00

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tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00

**2.0 Emissions Summary**

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**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<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>	<b>0.0000</b>	<b>0.0000</b>

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

**3.0 Construction Detail**

**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Aerial Crossing	Building Construction	6/6/2018	6/11/2018	5	4	
2	Testing Pipeline	Building Construction	6/12/2018	6/21/2018	5	8	
3	Site Preparation	Site Preparation	4/1/2019	4/2/2019	5	2	
4	Utility Location	Site Preparation	4/3/2019	4/16/2019	5	10	
5	Excavation, Pipe Placement, and Fill	Trenching	4/17/2019	5/30/2019	5	32	
6	Paving and Restoration	Paving	5/31/2019	6/5/2019	5	4	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Aerial Crossing	Cranes	1	8.00	231	0.29
Aerial Crossing	Forklifts	0	6.00	89	0.20
Aerial Crossing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Aerial Crossing	Welders	1	8.00	46	0.45
Testing Pipeline	Cranes	0	4.00	231	0.29
Testing Pipeline	Forklifts	0	6.00	89	0.20
Testing Pipeline	Pumps	1	8.00	84	0.74
Testing Pipeline	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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Utility Location	Air Compressors	1	2.00	78	0.37
Utility Location	Generator Sets	2	2.00	84	0.74
Utility Location	Graders	0	8.00	187	0.41
Utility Location	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Excavation, Pipe Placement, and Fill	Excavators	2	6.00	158	0.38
Excavation, Pipe Placement, and Fill	Off-Highway Trucks	1	2.00	402	0.38
Excavation, Pipe Placement, and Fill	Off-Highway Trucks	2	6.00	402	0.38
Excavation, Pipe Placement, and Fill	Plate Compactors	1	6.00	8	0.43
Excavation, Pipe Placement, and Fill	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Excavation, Pipe Placement, and Fill	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving and Restoration	Air Compressors	1	2.00	78	0.48
Paving and Restoration	Air Compressors	1	4.00	78	0.48
Paving and Restoration	Cement and Mortar Mixers	1	2.00	9	0.56
Paving and Restoration	Concrete/Industrial Saws	1	6.00	81	0.73
Paving and Restoration	Pavers	0	7.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Paving and Restoration	Tractors/Loaders/Backhoes	0	7.00	97	0.37

**Trips and VMT**

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Aerial Crossing	2	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Testing Pipeline	1	20.00	0.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Utility Location	3	20.00	0.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Excavation, Pipe Placement, and Fill	8	20.00	1.00	1,056.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	6	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Aerial Crossing - 2018

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	2.0200e-003	0.0170	8.7600e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.7000e-004	7.7000e-004	0.0000	1.4299	1.4299	4.0000e-004	0.0000	1.4399
<b>Total</b>	<b>2.0200e-003</b>	<b>0.0170</b>	<b>8.7600e-003</b>	<b>2.0000e-005</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>		<b>7.7000e-004</b>	<b>7.7000e-004</b>	<b>0.0000</b>	<b>1.4299</b>	<b>1.4299</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4399</b>

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**3.2 Aerial Crossing - 2018**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.7000e-004	8.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0552	0.0552	0.0000	0.0000	0.0553
Worker	6.4000e-004	5.5000e-004	4.9300e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3930	1.3930	4.0000e-005	0.0000	1.3939
<b>Total</b>	<b>6.5000e-004</b>	<b>8.2000e-004</b>	<b>5.0100e-003</b>	<b>2.0000e-005</b>	<b>1.4800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.4482</b>	<b>1.4482</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4492</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	2.0200e-003	0.0170	8.7600e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.7000e-004	7.7000e-004	0.0000	1.4299	1.4299	4.0000e-004	0.0000	1.4399
<b>Total</b>	<b>2.0200e-003</b>	<b>0.0170</b>	<b>8.7600e-003</b>	<b>2.0000e-005</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>		<b>7.7000e-004</b>	<b>7.7000e-004</b>	<b>0.0000</b>	<b>1.4299</b>	<b>1.4299</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4399</b>

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**3.2 Aerial Crossing - 2018**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.7000e-004	8.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0552	0.0552	0.0000	0.0000	0.0553
Worker	6.4000e-004	5.5000e-004	4.9300e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3930	1.3930	4.0000e-005	0.0000	1.3939
<b>Total</b>	<b>6.5000e-004</b>	<b>8.2000e-004</b>	<b>5.0100e-003</b>	<b>2.0000e-005</b>	<b>1.4800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.4482</b>	<b>1.4482</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4492</b>

**3.3 Testing Pipeline - 2018**

**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	2.1300e-003	0.0167	0.0152	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.2608	2.2608	1.7000e-004	0.0000	2.2651
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0167</b>	<b>0.0152</b>	<b>3.0000e-005</b>		<b>1.1100e-003</b>	<b>1.1100e-003</b>		<b>1.1100e-003</b>	<b>1.1100e-003</b>	<b>0.0000</b>	<b>2.2608</b>	<b>2.2608</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>2.2651</b>



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**3.3 Testing Pipeline - 2018**

**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	1.2700e-003	1.0900e-003	9.8700e-003	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.7859	2.7859	8.0000e-005	0.0000	2.7879
<b>Total</b>	<b>1.2700e-003</b>	<b>1.0900e-003</b>	<b>9.8700e-003</b>	<b>3.0000e-005</b>	<b>2.9400e-003</b>	<b>2.0000e-005</b>	<b>2.9600e-003</b>	<b>7.8000e-004</b>	<b>2.0000e-005</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.7859</b>	<b>2.7859</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.7879</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	2.1300e-003	0.0167	0.0152	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.2608	2.2608	1.7000e-004	0.0000	2.2651
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0167</b>	<b>0.0152</b>	<b>3.0000e-005</b>		<b>1.1100e-003</b>	<b>1.1100e-003</b>		<b>1.1100e-003</b>	<b>1.1100e-003</b>	<b>0.0000</b>	<b>2.2608</b>	<b>2.2608</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>2.2651</b>

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**3.3 Testing Pipeline - 2018**

**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	1.2700e-003	1.0900e-003	9.8700e-003	3.0000e-005	2.9400e-003	2.0000e-005	2.9600e-003	7.8000e-004	2.0000e-005	8.0000e-004	0.0000	2.7859	2.7859	8.0000e-005	0.0000	2.7879
<b>Total</b>	<b>1.2700e-003</b>	<b>1.0900e-003</b>	<b>9.8700e-003</b>	<b>3.0000e-005</b>	<b>2.9400e-003</b>	<b>2.0000e-005</b>	<b>2.9600e-003</b>	<b>7.8000e-004</b>	<b>2.0000e-005</b>	<b>8.0000e-004</b>	<b>0.0000</b>	<b>2.7859</b>	<b>2.7859</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.7879</b>

**3.4 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0000e-004	2.0500e-003	2.0100e-003	0.0000		1.4000e-004	1.4000e-004		1.3000e-004	1.3000e-004	0.0000	0.2441	0.2441	8.0000e-005	0.0000	0.2461
<b>Total</b>	<b>2.0000e-004</b>	<b>2.0500e-003</b>	<b>2.0100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.2441</b>	<b>0.2441</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2461</b>

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**3.4 Site Preparation - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.3000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0274	0.0274	0.0000	0.0000	0.0275
Worker	2.9000e-004	2.4000e-004	2.1800e-003	1.0000e-005	7.3000e-004	0.0000	7.4000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6754	0.6754	2.0000e-005	0.0000	0.6758
<b>Total</b>	<b>3.0000e-004</b>	<b>3.7000e-004</b>	<b>2.2200e-003</b>	<b>1.0000e-005</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.7028</b>	<b>0.7028</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.7033</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	2.0000e-004	2.0500e-003	2.0100e-003	0.0000		1.4000e-004	1.4000e-004		1.3000e-004	1.3000e-004	0.0000	0.2441	0.2441	8.0000e-005	0.0000	0.2461
<b>Total</b>	<b>2.0000e-004</b>	<b>2.0500e-003</b>	<b>2.0100e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.2441</b>	<b>0.2441</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2461</b>

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**3.4 Site Preparation - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.3000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0274	0.0274	0.0000	0.0000	0.0275
Worker	2.9000e-004	2.4000e-004	2.1800e-003	1.0000e-005	7.3000e-004	0.0000	7.4000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6754	0.6754	2.0000e-005	0.0000	0.6758
<b>Total</b>	<b>3.0000e-004</b>	<b>3.7000e-004</b>	<b>2.2200e-003</b>	<b>1.0000e-005</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.7028</b>	<b>0.7028</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.7033</b>

**3.5 Utility Location - 2019**

**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					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	0.0118	0.0117	2.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	1.7410	1.7410	1.2000e-004	0.0000	1.7440
<b>Total</b>	<b>1.4500e-003</b>	<b>0.0118</b>	<b>0.0117</b>	<b>2.0000e-005</b>	<b>2.6500e-003</b>	<b>7.3000e-004</b>	<b>3.3800e-003</b>	<b>2.9000e-004</b>	<b>7.3000e-004</b>	<b>1.0200e-003</b>	<b>0.0000</b>	<b>1.7410</b>	<b>1.7410</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.7440</b>

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**3.5 Utility Location - 2019**

**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	1.4400e-003	1.1900e-003	0.0109	4.0000e-005	3.6700e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.3768	3.3768	9.0000e-005	0.0000	3.3789
<b>Total</b>	<b>1.4400e-003</b>	<b>1.1900e-003</b>	<b>0.0109</b>	<b>4.0000e-005</b>	<b>3.6700e-003</b>	<b>2.0000e-005</b>	<b>3.7000e-003</b>	<b>9.8000e-004</b>	<b>2.0000e-005</b>	<b>1.0000e-003</b>	<b>0.0000</b>	<b>3.3768</b>	<b>3.3768</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.3789</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					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	0.0118	0.0117	2.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	1.7410	1.7410	1.2000e-004	0.0000	1.7440
<b>Total</b>	<b>1.4500e-003</b>	<b>0.0118</b>	<b>0.0117</b>	<b>2.0000e-005</b>	<b>2.6500e-003</b>	<b>7.3000e-004</b>	<b>3.3800e-003</b>	<b>2.9000e-004</b>	<b>7.3000e-004</b>	<b>1.0200e-003</b>	<b>0.0000</b>	<b>1.7410</b>	<b>1.7410</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.7440</b>

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**3.5 Utility Location - 2019**

**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	1.4400e-003	1.1900e-003	0.0109	4.0000e-005	3.6700e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.3768	3.3768	9.0000e-005	0.0000	3.3789
<b>Total</b>	<b>1.4400e-003</b>	<b>1.1900e-003</b>	<b>0.0109</b>	<b>4.0000e-005</b>	<b>3.6700e-003</b>	<b>2.0000e-005</b>	<b>3.7000e-003</b>	<b>9.8000e-004</b>	<b>2.0000e-005</b>	<b>1.0000e-003</b>	<b>0.0000</b>	<b>3.3768</b>	<b>3.3768</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>3.3789</b>

**3.6 Excavation, Pipe Placement, and Fill - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0327	0.3295	0.2526	5.8000e-004		0.0146	0.0146		0.0134	0.0134	0.0000	51.9756	51.9756	0.0164	0.0000	52.3848
<b>Total</b>	<b>0.0327</b>	<b>0.3295</b>	<b>0.2526</b>	<b>5.8000e-004</b>		<b>0.0146</b>	<b>0.0146</b>		<b>0.0134</b>	<b>0.0134</b>	<b>0.0000</b>	<b>51.9756</b>	<b>51.9756</b>	<b>0.0164</b>	<b>0.0000</b>	<b>52.3848</b>

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**3.6 Excavation, Pipe Placement, and Fill - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8900e-003	0.3070	0.0551	9.7000e-004	0.0224	1.4900e-003	0.0239	6.1700e-003	1.4200e-003	7.5900e-003	0.0000	92.2768	92.2768	2.2900e-003	0.0000	92.3342
Vendor	9.0000e-005	2.0200e-003	5.8000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4389	0.4389	3.0000e-005	0.0000	0.4395
Worker	4.5900e-003	3.8200e-003	0.0348	1.2000e-004	0.0118	8.0000e-005	0.0118	3.1200e-003	7.0000e-005	3.1900e-003	0.0000	10.8057	10.8057	2.7000e-004	0.0000	10.8126
<b>Total</b>	<b>0.0146</b>	<b>0.3128</b>	<b>0.0905</b>	<b>1.0900e-003</b>	<b>0.0343</b>	<b>1.5800e-003</b>	<b>0.0359</b>	<b>9.3200e-003</b>	<b>1.5000e-003</b>	<b>0.0108</b>	<b>0.0000</b>	<b>103.5215</b>	<b>103.5215</b>	<b>2.5900e-003</b>	<b>0.0000</b>	<b>103.5863</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	0.0327	0.3295	0.2526	5.8000e-004		0.0146	0.0146		0.0134	0.0134	0.0000	51.9756	51.9756	0.0164	0.0000	52.3847
<b>Total</b>	<b>0.0327</b>	<b>0.3295</b>	<b>0.2526</b>	<b>5.8000e-004</b>		<b>0.0146</b>	<b>0.0146</b>		<b>0.0134</b>	<b>0.0134</b>	<b>0.0000</b>	<b>51.9756</b>	<b>51.9756</b>	<b>0.0164</b>	<b>0.0000</b>	<b>52.3847</b>

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**3.6 Excavation, Pipe Placement, and Fill - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.8900e-003	0.3070	0.0551	9.7000e-004	0.0224	1.4900e-003	0.0239	6.1700e-003	1.4200e-003	7.5900e-003	0.0000	92.2768	92.2768	2.2900e-003	0.0000	92.3342
Vendor	9.0000e-005	2.0200e-003	5.8000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4389	0.4389	3.0000e-005	0.0000	0.4395
Worker	4.5900e-003	3.8200e-003	0.0348	1.2000e-004	0.0118	8.0000e-005	0.0118	3.1200e-003	7.0000e-005	3.1900e-003	0.0000	10.8057	10.8057	2.7000e-004	0.0000	10.8126
<b>Total</b>	<b>0.0146</b>	<b>0.3128</b>	<b>0.0905</b>	<b>1.0900e-003</b>	<b>0.0343</b>	<b>1.5800e-003</b>	<b>0.0359</b>	<b>9.3200e-003</b>	<b>1.5000e-003</b>	<b>0.0108</b>	<b>0.0000</b>	<b>103.5215</b>	<b>103.5215</b>	<b>2.5900e-003</b>	<b>0.0000</b>	<b>103.5863</b>

**3.7 Paving and Restoration - 2019**

**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	2.1300e-003	0.0182	0.0183	3.0000e-005		1.1300e-003	1.1300e-003		1.0900e-003	1.0900e-003	0.0000	2.5430	2.5430	4.8000e-004	0.0000	2.5551
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0182</b>	<b>0.0183</b>	<b>3.0000e-005</b>		<b>1.1300e-003</b>	<b>1.1300e-003</b>		<b>1.0900e-003</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>2.5430</b>	<b>2.5430</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>2.5551</b>



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**3.7 Paving and Restoration - 2019**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.5000e-004	7.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0549
Worker	5.7000e-004	4.8000e-004	4.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3507	1.3507	3.0000e-005	0.0000	1.3516
<b>Total</b>	<b>5.8000e-004</b>	<b>7.3000e-004</b>	<b>4.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.4056</b>	<b>1.4056</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.4065</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	2.1300e-003	0.0182	0.0183	3.0000e-005		1.1300e-003	1.1300e-003		1.0900e-003	1.0900e-003	0.0000	2.5430	2.5430	4.8000e-004	0.0000	2.5551
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0182</b>	<b>0.0183</b>	<b>3.0000e-005</b>		<b>1.1300e-003</b>	<b>1.1300e-003</b>		<b>1.0900e-003</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>2.5430</b>	<b>2.5430</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>2.5551</b>

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**3.7 Paving and Restoration - 2019**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.5000e-004	7.0000e-005	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0549	0.0549	0.0000	0.0000	0.0549
Worker	5.7000e-004	4.8000e-004	4.3500e-003	1.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3507	1.3507	3.0000e-005	0.0000	1.3516
<b>Total</b>	<b>5.8000e-004</b>	<b>7.3000e-004</b>	<b>4.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>1.4056</b>	<b>1.4056</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.4065</b>

**4.0 Operational Detail - Mobile**

**4.1 Mitigation Measures Mobile**

Cement Hill Pipeline - Solano-San Francisco County, Annual

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.579245	0.037675	0.174898	0.116107	0.020475	0.005588	0.009509	0.042408	0.003213	0.002343	0.006812	0.000608	0.001119

5.0 Energy Detail

Historical Energy Use: N



Cement Hill Pipeline - Solano-San Francisco County, Annual

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<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>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	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>



Cement Hill Pipeline - Solano-San Francisco County, Annual

**6.2 Area by SubCategory**

**Unmitigated**

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

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

**7.0 Water Detail**

Cement Hill Pipeline - Solano-San Francisco County, Annual

**7.1 Mitigation Measures Water**

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

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	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>



Cement Hill Pipeline - Solano-San Francisco County, Annual

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	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>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

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

Cement Hill Pipeline - Solano-San Francisco County, Annual

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	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>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	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>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Cement Hill Pipeline - Solano-San Francisco County, Annual

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**

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# **Cement Hill CalEEMod Summer Emissions**

Cement Hill Pipeline - Solano-San Francisco County, Summer

**Cement Hill Pipeline**  
**Solano-San Francisco County, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.00	Acre	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>	56
<b>Climate Zone</b>	4			<b>Operational Year</b>	2020
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	641.35	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

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

Cement Hill Pipeline - Solano-San Francisco County, Summer

Project Characteristics -

Land Use - No actual land use since project is construction impacts only, "city park" is just a proxy

Construction Phase - See spreadsheet "AQ modeling inputs" for detailed assumptions and project specific details

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs (emulsion spray rig and jackhammer uses air compressor as proxy for emissions)

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Off-road Equipment - Project-specific inputs

Trips and VMT - Project-specific input

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	4.00
tblConstructionPhase	NumDays	0.00	8.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	10.00
tblConstructionPhase	NumDays	0.00	4.00
tblGrading	AcresOfGrading	0.00	5.00
tblOffRoadEquipment	LoadFactor	0.48	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

Cement Hill Pipeline - Solano-San Francisco County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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		Testing Pipeline
tblOffRoadEquipment	PhaseName		Aerial Crossing
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,056.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00

## Cement Hill Pipeline - Solano-San Francisco County, Summer

tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00

**2.0 Emissions Summary**

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Cement Hill Pipeline - Solano-San Francisco County, Summer

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	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>	<b>0.0000</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	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>	<b>0.0000</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

	ROG	NOx	CO	SO2	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	Aerial Crossing	Building Construction	6/6/2018	6/11/2018	5	4	
2	Testing Pipeline	Building Construction	6/12/2018	6/21/2018	5	8	
3	Site Preparation	Site Preparation	4/1/2019	4/2/2019	5	2	
4	Utility Location	Site Preparation	4/3/2019	4/16/2019	5	10	
5	Excavation, Pipe Placement, and Fill	Trenching	4/17/2019	5/30/2019	5	32	
6	Paving and Restoration	Paving	5/31/2019	6/5/2019	5	4	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

#### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Aerial Crossing	Cranes	1	8.00	231	0.29
Aerial Crossing	Forklifts	0	6.00	89	0.20
Aerial Crossing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Aerial Crossing	Welders	1	8.00	46	0.45

Cement Hill Pipeline - Solano-San Francisco County, Summer

Testing Pipeline	Cranes	0	4.00	231	0.29
Testing Pipeline	Forklifts	0	6.00	89	0.20
Testing Pipeline	Pumps	1	8.00	84	0.74
Testing Pipeline	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Utility Location	Air Compressors	1	2.00	78	0.37
Utility Location	Generator Sets	2	2.00	84	0.74
Utility Location	Graders	0	8.00	187	0.41
Utility Location	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Excavation, Pipe Placement, and Fill	Excavators	2	6.00	158	0.38
Excavation, Pipe Placement, and Fill	Off-Highway Trucks	1	2.00	402	0.38
Excavation, Pipe Placement, and Fill	Off-Highway Trucks	2	6.00	402	0.38
Excavation, Pipe Placement, and Fill	Plate Compactors	1	6.00	8	0.43
Excavation, Pipe Placement, and Fill	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Excavation, Pipe Placement, and Fill	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving and Restoration	Air Compressors	1	2.00	78	0.48
Paving and Restoration	Air Compressors	1	4.00	78	0.48
Paving and Restoration	Cement and Mortar Mixers	1	2.00	9	0.56
Paving and Restoration	Concrete/Industrial Saws	1	6.00	81	0.73
Paving and Restoration	Pavers	0	7.00	130	0.42
Paving and Restoration	Paving Equipment	1	8.00	132	0.36
Paving and Restoration	Rollers	1	8.00	80	0.38
Paving and Restoration	Tractors/Loaders/Backhoes	0	7.00	97	0.37

**Trips and VMT**

Cement Hill Pipeline - Solano-San Francisco County, Summer

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
Aerial Crossing	2	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Testing Pipeline	1	20.00	0.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Utility Location	3	20.00	0.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Excavation, Pipe Placement, and Fill	8	20.00	1.00	1,056.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT
Paving and Restoration	6	20.00	1.00	0.00	50.00	7.30	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Aerial Crossing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0125	8.5027	4.3809	8.3200e-003		0.4088	0.4088		0.3851	0.3851		788.0757	788.0757	0.2205		793.5892
<b>Total</b>	<b>1.0125</b>	<b>8.5027</b>	<b>4.3809</b>	<b>8.3200e-003</b>		<b>0.4088</b>	<b>0.4088</b>		<b>0.3851</b>	<b>0.3851</b>		<b>788.0757</b>	<b>788.0757</b>	<b>0.2205</b>		<b>793.5892</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.2 Aerial Crossing - 2018**

**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	5.9500e-003	0.1322	0.0378	2.9000e-004	6.7800e-003	1.1000e-003	7.8800e-003	1.9500e-003	1.0600e-003	3.0100e-003		30.8389	30.8389	1.7300e-003		30.8821
Worker	0.3185	0.2421	2.8539	8.3500e-003	0.7599	4.8600e-003	0.7648	0.2015	4.4800e-003	0.2060		832.3007	832.3007	0.0236		832.8897
<b>Total</b>	<b>0.3245</b>	<b>0.3743</b>	<b>2.8917</b>	<b>8.6400e-003</b>	<b>0.7667</b>	<b>5.9600e-003</b>	<b>0.7727</b>	<b>0.2034</b>	<b>5.5400e-003</b>	<b>0.2090</b>		<b>863.1396</b>	<b>863.1396</b>	<b>0.0253</b>		<b>863.7718</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0125	8.5027	4.3809	8.3200e-003		0.4088	0.4088		0.3851	0.3851	0.0000	788.0757	788.0757	0.2205		793.5892
<b>Total</b>	<b>1.0125</b>	<b>8.5027</b>	<b>4.3809</b>	<b>8.3200e-003</b>		<b>0.4088</b>	<b>0.4088</b>		<b>0.3851</b>	<b>0.3851</b>	<b>0.0000</b>	<b>788.0757</b>	<b>788.0757</b>	<b>0.2205</b>		<b>793.5892</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.2 Aerial Crossing - 2018**

**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	5.9500e-003	0.1322	0.0378	2.9000e-004	6.7800e-003	1.1000e-003	7.8800e-003	1.9500e-003	1.0600e-003	3.0100e-003		30.8389	30.8389	1.7300e-003		30.8821
Worker	0.3185	0.2421	2.8539	8.3500e-003	0.7599	4.8600e-003	0.7648	0.2015	4.4800e-003	0.2060		832.3007	832.3007	0.0236		832.8897
<b>Total</b>	<b>0.3245</b>	<b>0.3743</b>	<b>2.8917</b>	<b>8.6400e-003</b>	<b>0.7667</b>	<b>5.9600e-003</b>	<b>0.7727</b>	<b>0.2034</b>	<b>5.5400e-003</b>	<b>0.2090</b>		<b>863.1396</b>	<b>863.1396</b>	<b>0.0253</b>		<b>863.7718</b>

**3.3 Testing Pipeline - 2018**

**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	0.5317	4.1748	3.8053	6.5800e-003		0.2763	0.2763		0.2763	0.2763		623.0346	623.0346	0.0471		624.2131
<b>Total</b>	<b>0.5317</b>	<b>4.1748</b>	<b>3.8053</b>	<b>6.5800e-003</b>		<b>0.2763</b>	<b>0.2763</b>		<b>0.2763</b>	<b>0.2763</b>		<b>623.0346</b>	<b>623.0346</b>	<b>0.0471</b>		<b>624.2131</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.3 Testing Pipeline - 2018**

**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	0.3185	0.2421	2.8539	8.3500e-003	0.7599	4.8600e-003	0.7648	0.2015	4.4800e-003	0.2060		832.3007	832.3007	0.0236		832.8897
<b>Total</b>	<b>0.3185</b>	<b>0.2421</b>	<b>2.8539</b>	<b>8.3500e-003</b>	<b>0.7599</b>	<b>4.8600e-003</b>	<b>0.7648</b>	<b>0.2015</b>	<b>4.4800e-003</b>	<b>0.2060</b>		<b>832.3007</b>	<b>832.3007</b>	<b>0.0236</b>		<b>832.8897</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	0.5317	4.1748	3.8053	6.5800e-003		0.2763	0.2763		0.2763	0.2763	0.0000	623.0346	623.0346	0.0471		624.2131
<b>Total</b>	<b>0.5317</b>	<b>4.1748</b>	<b>3.8053</b>	<b>6.5800e-003</b>		<b>0.2763</b>	<b>0.2763</b>		<b>0.2763</b>	<b>0.2763</b>	<b>0.0000</b>	<b>623.0346</b>	<b>623.0346</b>	<b>0.0471</b>		<b>624.2131</b>



Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.3 Testing Pipeline - 2018**

**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	0.3185	0.2421	2.8539	8.3500e-003	0.7599	4.8600e-003	0.7648	0.2015	4.4800e-003	0.2060		832.3007	832.3007	0.0236		832.8897
<b>Total</b>	<b>0.3185</b>	<b>0.2421</b>	<b>2.8539</b>	<b>8.3500e-003</b>	<b>0.7599</b>	<b>4.8600e-003</b>	<b>0.7648</b>	<b>0.2015</b>	<b>4.4800e-003</b>	<b>0.2060</b>		<b>832.3007</b>	<b>832.3007</b>	<b>0.0236</b>		<b>832.8897</b>

**3.4 Site Preparation - 2019**

**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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2037	2.0452	2.0148	2.7200e-003		0.1365	0.1365		0.1256	0.1256		269.0991	269.0991	0.0851		271.2276
<b>Total</b>	<b>0.2037</b>	<b>2.0452</b>	<b>2.0148</b>	<b>2.7200e-003</b>	<b>0.0000</b>	<b>0.1365</b>	<b>0.1365</b>	<b>0.0000</b>	<b>0.1256</b>	<b>0.1256</b>		<b>269.0991</b>	<b>269.0991</b>	<b>0.0851</b>		<b>271.2276</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.4 Site Preparation - 2019**

**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	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2932</b>	<b>0.3365</b>	<b>2.5632</b>	<b>8.3900e-003</b>	<b>0.7667</b>	<b>5.7000e-003</b>	<b>0.7724</b>	<b>0.2034</b>	<b>5.2900e-003</b>	<b>0.2087</b>		<b>837.7932</b>	<b>837.7932</b>	<b>0.0225</b>		<b>838.3567</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	0.2037	2.0452	2.0148	2.7200e-003		0.1365	0.1365		0.1256	0.1256	0.0000	269.0991	269.0991	0.0851		271.2276
<b>Total</b>	<b>0.2037</b>	<b>2.0452</b>	<b>2.0148</b>	<b>2.7200e-003</b>	<b>0.0000</b>	<b>0.1365</b>	<b>0.1365</b>	<b>0.0000</b>	<b>0.1256</b>	<b>0.1256</b>	<b>0.0000</b>	<b>269.0991</b>	<b>269.0991</b>	<b>0.0851</b>		<b>271.2276</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.4 Site Preparation - 2019**

**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	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2932</b>	<b>0.3365</b>	<b>2.5632</b>	<b>8.3900e-003</b>	<b>0.7667</b>	<b>5.7000e-003</b>	<b>0.7724</b>	<b>0.2034</b>	<b>5.2900e-003</b>	<b>0.2087</b>		<b>837.7932</b>	<b>837.7932</b>	<b>0.0225</b>		<b>838.3567</b>

**3.5 Utility Location - 2019**

**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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.2905	2.3605	2.3347	4.0500e-003		0.1460	0.1460		0.1460	0.1460		383.8338	383.8338	0.0258		384.4798
<b>Total</b>	<b>0.2905</b>	<b>2.3605</b>	<b>2.3347</b>	<b>4.0500e-003</b>	<b>0.5303</b>	<b>0.1460</b>	<b>0.6763</b>	<b>0.0573</b>	<b>0.1460</b>	<b>0.2033</b>		<b>383.8338</b>	<b>383.8338</b>	<b>0.0258</b>		<b>384.4798</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.5 Utility Location - 2019**

**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	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2879</b>	<b>0.2123</b>	<b>2.5295</b>	<b>8.1000e-003</b>	<b>0.7599</b>	<b>4.7700e-003</b>	<b>0.7647</b>	<b>0.2015</b>	<b>4.4000e-003</b>	<b>0.2059</b>		<b>807.1482</b>	<b>807.1482</b>	<b>0.0209</b>		<b>807.6700</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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.2905	2.3605	2.3347	4.0500e-003		0.1460	0.1460		0.1460	0.1460	0.0000	383.8338	383.8338	0.0258		384.4798
<b>Total</b>	<b>0.2905</b>	<b>2.3605</b>	<b>2.3347</b>	<b>4.0500e-003</b>	<b>0.5303</b>	<b>0.1460</b>	<b>0.6763</b>	<b>0.0573</b>	<b>0.1460</b>	<b>0.2033</b>	<b>0.0000</b>	<b>383.8338</b>	<b>383.8338</b>	<b>0.0258</b>		<b>384.4798</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.5 Utility Location - 2019**

**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	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2879</b>	<b>0.2123</b>	<b>2.5295</b>	<b>8.1000e-003</b>	<b>0.7599</b>	<b>4.7700e-003</b>	<b>0.7647</b>	<b>0.2015</b>	<b>4.4000e-003</b>	<b>0.2059</b>		<b>807.1482</b>	<b>807.1482</b>	<b>0.0209</b>		<b>807.6700</b>

**3.6 Excavation, Pipe Placement, and Fill - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0418	20.5913	15.7889	0.0363		0.9124	0.9124		0.8400	0.8400		3,580.8336	3,580.8336	1.1274		3,609.0196
<b>Total</b>	<b>2.0418</b>	<b>20.5913</b>	<b>15.7889</b>	<b>0.0363</b>		<b>0.9124</b>	<b>0.9124</b>		<b>0.8400</b>	<b>0.8400</b>		<b>3,580.8336</b>	<b>3,580.8336</b>	<b>1.1274</b>		<b>3,609.0196</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.6 Excavation, Pipe Placement, and Fill - 2019**

**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	0.6142	18.4880	3.3749	0.0607	1.4441	0.0924	1.5366	0.3960	0.0884	0.4844		6,383.6617	6,383.6617	0.1532		6,387.4924
Vendor	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.9074</b>	<b>18.8244</b>	<b>5.9381</b>	<b>0.0691</b>	<b>2.2108</b>	<b>0.0981</b>	<b>2.3090</b>	<b>0.5994</b>	<b>0.0937</b>	<b>0.6931</b>		<b>7,221.4549</b>	<b>7,221.4549</b>	<b>0.1758</b>		<b>7,225.8491</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	2.0418	20.5913	15.7889	0.0363		0.9124	0.9124		0.8400	0.8400	0.0000	3,580.8336	3,580.8336	1.1274		3,609.0196
<b>Total</b>	<b>2.0418</b>	<b>20.5913</b>	<b>15.7889</b>	<b>0.0363</b>		<b>0.9124</b>	<b>0.9124</b>		<b>0.8400</b>	<b>0.8400</b>	<b>0.0000</b>	<b>3,580.8336</b>	<b>3,580.8336</b>	<b>1.1274</b>		<b>3,609.0196</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.6 Excavation, Pipe Placement, and Fill - 2019**

**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	0.6142	18.4880	3.3749	0.0607	1.4441	0.0924	1.5366	0.3960	0.0884	0.4844		6,383.6617	6,383.6617	0.1532		6,387.4924
Vendor	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.9074</b>	<b>18.8244</b>	<b>5.9381</b>	<b>0.0691</b>	<b>2.2108</b>	<b>0.0981</b>	<b>2.3090</b>	<b>0.5994</b>	<b>0.0937</b>	<b>0.6931</b>		<b>7,221.4549</b>	<b>7,221.4549</b>	<b>0.1758</b>		<b>7,225.8491</b>

**3.7 Paving and Restoration - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0671	9.1163	9.1258	0.0145		0.5637	0.5637		0.5430	0.5430		1,401.5794	1,401.5794	0.2661		1,408.2328
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.0671</b>	<b>9.1163</b>	<b>9.1258</b>	<b>0.0145</b>		<b>0.5637</b>	<b>0.5637</b>		<b>0.5430</b>	<b>0.5430</b>		<b>1,401.5794</b>	<b>1,401.5794</b>	<b>0.2661</b>		<b>1,408.2328</b>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.7 Paving and Restoration - 2019**

**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	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2932</b>	<b>0.3365</b>	<b>2.5632</b>	<b>8.3900e-003</b>	<b>0.7667</b>	<b>5.7000e-003</b>	<b>0.7724</b>	<b>0.2034</b>	<b>5.2900e-003</b>	<b>0.2087</b>		<b>837.7932</b>	<b>837.7932</b>	<b>0.0225</b>		<b>838.3567</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	1.0671	9.1163	9.1258	0.0145		0.5637	0.5637		0.5430	0.5430	0.0000	1,401.5794	1,401.5794	0.2661		1,408.2328
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.0671</b>	<b>9.1163</b>	<b>9.1258</b>	<b>0.0145</b>		<b>0.5637</b>	<b>0.5637</b>		<b>0.5430</b>	<b>0.5430</b>	<b>0.0000</b>	<b>1,401.5794</b>	<b>1,401.5794</b>	<b>0.2661</b>		<b>1,408.2328</b>



Cement Hill Pipeline - Solano-San Francisco County, Summer

**3.7 Paving and Restoration - 2019**

**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	5.3200e-003	0.1242	0.0337	2.9000e-004	6.7800e-003	9.3000e-004	7.7100e-003	1.9500e-003	8.9000e-004	2.8400e-003		30.6450	30.6450	1.6700e-003		30.6867
Worker	0.2879	0.2123	2.5295	8.1000e-003	0.7599	4.7700e-003	0.7647	0.2015	4.4000e-003	0.2059		807.1482	807.1482	0.0209		807.6700
<b>Total</b>	<b>0.2932</b>	<b>0.3365</b>	<b>2.5632</b>	<b>8.3900e-003</b>	<b>0.7667</b>	<b>5.7000e-003</b>	<b>0.7724</b>	<b>0.2034</b>	<b>5.2900e-003</b>	<b>0.2087</b>		<b>837.7932</b>	<b>837.7932</b>	<b>0.0225</b>		<b>838.3567</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

Cement Hill Pipeline - Solano-San Francisco County, Summer

	ROG	NOx	CO	SO2	Fugitive 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					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.579245	0.037675	0.174898	0.116107	0.020475	0.005588	0.009509	0.042408	0.003213	0.002343	0.006812	0.000608	0.001119

5.0 Energy Detail

Historical Energy Use: N

Cement Hill Pipeline - Solano-San Francisco County, Summer

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<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>

Cement Hill Pipeline - Solano-San Francisco County, Summer

**5.2 Energy by Land Use - Natural Gas**

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<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>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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

Cement Hill Pipeline - Solano-San Francisco County, Summer

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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>

**7.0 Water Detail**

## Cement Hill Pipeline - Solano-San Francisco County, Summer

**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**