Appendix C

AIR QUALITY APPENDIX

C.1 NO_x Construction Emissions Summary Table

C.2 Equipment List and Modeling Assumptions

C.3 URBEMIS Output Sheets

C.4 Mitigation Fee Calculator

C.5 CO_2 Construction Emissions Summary Table

C.6 CO_2 Construction Emissions Calculations

C.7 Methane Emission Estimates

C.1 NO_x Construction Emissions Summary Table

NOx Summary Table
(Update 4/25/07 2008 Build)

2007 Construction Schedule for:	NOx Output in lbs/day	19-Jul	20-Jul	21-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	30-Jul	31-Jul	1-Aug	2-Aug	3-Aug	4-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	1-Oct	2-Oct	
Clear and Fence	36.75																																																																						588.0
Grade ROW	95.02																																																																								1520.3
Ditch	38.57																																																																								617.1
Pipe Delivery (7 trips day @ 70 mi RT) +String Pipe	142.7																																																																							2283.2
Bend	45.21																																																																								904.2
Lay and Weld 24" Pipe (assume 8 welding machines	91.16																																																																							1640.9
Coat Joints	45.21																																																																								813.8
Lower-in	106.62																																																																								1919.2
Backfill	84.4																																																																								1519.2
Tie-in	106.62																																																																								1919.2
Hydro Test	95.12																																																																								2758.5
Directional Drill (3 "pink" days drill 24 hrs + generator 8 hrs	120.93 372.97 (24 hour days)																																																																							4988.7
Road Boring	106.62																																																																								4264.8
Hydrotest and Kaliper Mainline	95.12																																																																								1046.3
Clean Up	134.77																																																																								2695.4
Support Crew	89.66																																																																								5827.9
Worker Commute (75 workers total)	1.77																																																																								115.1
	NOx total in lbs/day	344.23	344.23	439.25	439.25	620.52	620.52	727.14	727.14	772.35	772.35	772.35	1024.39	772.35	772.35	772.35	772.35	772.35	735.6	826.76	731.74	731.74	550.47	595.68	595.68	1038.74	786.7	786.7	786.7	893.32	848.11	752.99	752.99	752.99	752.99	752.99	752.99	1005.03	540.9	540.9	540.9	540.9	495.69	495.69	304.67	304.67	304.67	304.67	332.82	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	321.32	226.2	226.2	226.2	226.2	226.2	226.2	226.2	226.2	226.2	
	20% NOx Reduction	275.384	275.384	351.4	351.4	496.416	496.416	581.712	581.712	617.88	617.88	617.88	819.512	617.88	617.88	617.88	617.88	617.88	588.48	661.408	585.392	585.392	440.376	476.544	476.544	830.992	629.36	629.36	629.36	714.656	678.488	602.392	602.392	602.392	602.392	602.392	602.392	804.024	432.72	432.72	432.72	432.72	396.552	396.552	243.736	243.736	243.736	243.736	266.256	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	257.056	180.96	180.96	180.96	180.96	180.96	180.96	180.96	180.96	180.96	
	NOx lbs/day above the standard :	190.384	190.384	266.4	266.4	411.416	411.416	496.712	496.712	532.88	532.88	532.88	734.512	532.88	532.88	532.88	532.88	532.88	503.48	576.408	500.392	500.392	355.376	391.544	391.544	745.992	544.36	544.36	544.36	629.656	593.488	517.392	517.392	517.392	517.392	517.392	517.392	719.024	347.72	347.72	347.72	347.72	311.552	311.552	158.736	158.736	158.736	158.736	181.256	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	172.056	95.96	95.96	95.96	95.96	95.96	95.96	95.96	95.96	95.96	

NOx total (for construction) in Tons	17.71082
20% Nox reduction	14.168656

NOx above the threshhold **11.406156**

C.2 Equipment List and Modeling Assumptions

Equipment List for Line 108 Phases & Modeling Assumptions

Equipment List by Phase

Environmental, Fence & Pot Hole Crew (60 days)

1 Vacuum Suck Pump (Other Equipment)

1 Flatbed

Grade Crew (18 Days)

3 D-8 Dozers

1 Cat Backhoe

1 Motor Grader

Ditch Crew (18 Days)

5 Backhoes

1 Ditching Machine

Stringing Crew (18 Days)

1 Cat Backhoe

1 Cat Sideboom

4 Stringing Trucks

1 Cat Dozer

Bending Crew (18 Days)

2 Sidebooms

1 Bending Machine

Pipe Gang (Bead Welders) (18 Days)

1 Sideboom

1 Tack Rig

1 Tow Cat

1 Skid Truck

8 Gas power welding units

Firing Line (Hot Pass & Fill Welders) (18 Days)

None

Joint Coating Crew (18 Days)

1 571 Sideboom

1 Sand Blast Pot

1 Air Compressor

Lower-in Crew (18 Days)

3 Sidebooms

1 Backhoe

1 Dozer

1 Backhoe w/ Clam attachment

Tie-In Crew (30 Days)

3 Sidebooms

1 Backhoe

1 Dozer

2 Water Pumps

Backfill Crew (18 Days)

1 Backhoe

3 Dozers

Hydro-Test Crew (39 Days)

2 Air Compressors

1 Cat Sideboom

2 Fill Pumps

1 Test Pump

Clean Up Crew (24 Days)

3 Dozers

2 Backhoes

1 Motor Grader

1 Tractor

1 Dump Truck

Road Boring Crew (36 Days)

1 Sideboom

1 Backhoe

1 Dozer

1 Air Compressor

1 Hammer Bore

2 Water Pumps

Support Crew

2 Lowboy Trucks/Trailers

2 Water Trucks

1 Boom Truck

Methodology/Modeling Assumptions

Equipment used in the air quality modeling was based on a list provided by the Rockford Corporation, which identified equipment to be used by phase. The list also identified the number of work-days expected in each phase. Other information provided by the applicant showed a timeline for each phase, which allowed overlapping phases to be identified.

For each phase, equipment from the provided list was entered into the URBEMIS model. When a piece of listed equipment matched a piece of equipment available in the URBEMIS model, the model's assumptions for that piece of equipment were used. When a piece of listed equipment did not match any equipment found in the URBEMIS model, the equipment was specified as "other". The "other" category for construction equipment provides an average off-road equipment horsepower and load factor. In every case, equipment listed for a phase was assumed to operate during the entire phase for eight hours each day.

Certain pieces of equipment contained in the provided list were not included in the modeling. This was the case with equipment such as buses or pick-ups for transporting workers or equipment, where it was assumed that the equipment merely drove to the site in the morning, and was then not in operation until it left the site at night. Also, equipment that was assumed to have minimal emissions, was not included in the modeling.

After daily emissions for each phase were calculated, a total daily NOx emission rate was calculated for each workday during project construction. When phases overlapped, daily emissions from each overlapping phase were added together. A 20% reduction in NO_x was applied to total emissions, since the proposed project will be required to comply with SMAQMD standard construction mitigation that provides a 20% overall NO_x reduction. Total daily NO_x emissions for each day of the project construction were added together to determine total tons of NO_x during the entire project. Tons of NO_x were multiplied by the SMAQMD's mitigation fee rate to arrive at the total mitigation fee.

C.3 URBEMIS Output Sheets

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Fence Pothole Mod.urb
Project Name: Pipeline 108 Fence and Pothole
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	6.61	38.52	76.63	0.02	1.58	1.46	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Fence Pothole Mod.urb
Project Name: Pipeline 108 Fence and Pothole
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	5.68	36.75	46.53	-	1.40	1.40	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.61	38.52	76.63	0.02	1.58	1.46	0.12
Max lbs/day all phases	6.61	38.52	76.63	0.02	1.58	1.46	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
1	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Grade Crew Mod.urb
Project Name: Pipeline 108 Grade Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	13.47	95.16	106.57	0.00	3.98	3.97	0.01

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Grade Crew Mod.urb
Project Name: Pipeline 108 Grade Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	13.39	95.02	104.16	-	3.97	3.97	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.08	0.14	2.41	0.00	0.01	0.00	0.01
Maximum lbs/day	13.47	95.16	106.57	0.00	3.98	3.97	0.01
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	13.47	95.16	106.57	0.00	3.98	3.97	0.01

Phase 3 - Building Construction Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 1 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
3	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Ditching Crew Mod.urb
Project Name: Pipeline 108 Ditching Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	6.25	40.34	70.85	0.02	1.83	1.71	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Ditching Crew Mod.urb
Project Name: Pipeline 108 Ditching Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	5.31	38.57	40.75	-	1.65	1.65	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.25	40.34	70.85	0.02	1.83	1.71	0.12
Max lbs/day all phases	6.25	40.34	70.85	0.02	1.83	1.71	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Other Equipment	190	0.620	8.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Stringing Crew Mod.urb
Project Name: Pipeline 108 Stringing Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	21.72	134.81	201.48	0.02	5.18	5.06	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Stringing Crew Mod.urb
Project Name: Pipeline 108 Stringing Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.04	0.69	0.16	0.00	0.02	0.02	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.04	0.69	0.16	0.00	0.02	0.02	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	20.78	133.04	171.37	-	5.00	5.00	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	21.72	134.81	201.48	0.02	5.18	5.06	0.12
Max lbs/day all phases	21.72	134.81	201.48	0.02	5.18	5.06	0.12

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '08
Phase 2 Duration: 0.5 months
On-Road Truck Travel (VMT): 35
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 0.5 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 0.5 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
1	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Site Grading Miles/Round Trip changed from 20 to 35

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Bending Crew Mod.urb
Project Name: Pipeline 108 Bending Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	7.16	46.98	77.87	0.02	2.11	1.99	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Bending Crew Mod.urb
Project Name: Pipeline 108 Bending Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	45.21	47.76	-	1.93	1.93	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	7.16	46.98	77.87	0.02	2.11	1.99	0.12
Max lbs/day all phases	7.16	46.98	77.87	0.02	2.11	1.99	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Pipe Laying Firing Mod.urb
Project Name: Pipeline 108 Pipe Laying and Firing
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	9.24	62.05	93.79	0.02	2.75	2.63	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Pipe Laying Firing Mod.urb
Project Name: Pipeline 108 Pipe Laying and Firing
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	8.30	60.28	63.68	-	2.57	2.57	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	9.24	62.05	93.79	0.02	2.75	2.63	0.12
Max lbs/day all phases	9.24	62.05	93.79	0.02	2.75	2.63	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Joint Coating Mod.urb
Project Name: Pipeline 108 Joint Coating
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	7.16	46.98	77.87	0.02	2.11	1.99	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Joint Coating Mod.urb
Project Name: Pipeline 108 Joint Coating
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	45.21	47.76	-	1.93	1.93	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	7.16	46.98	77.87	0.02	2.11	1.99	0.12
Max lbs/day all phases	7.16	46.98	77.87	0.02	2.11	1.99	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Lower in Crew Mod.urb
Project Name: Pipeline 108 Lower-in Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	15.62	108.39	142.75	0.02	4.73	4.61	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Lower in Crew Mod.urb
Project Name: Pipeline 108 Lower-in Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	14.69	106.62	112.64	-	4.55	4.55	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	15.62	108.39	142.75	0.02	4.73	4.61	0.12
Max lbs/day all phases	15.62	108.39	142.75	0.02	4.73	4.61	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
5	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Backfill Crew Mod.urb
Project Name: Pipeline 108 Backfill Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	12.56	86.18	119.28	0.02	3.78	3.66	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Backfill Crew Mod.urb
Project Name: Pipeline 108 Backfill Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	11.63	84.40	89.17	-	3.60	3.60	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	12.56	86.18	119.28	0.02	3.78	3.66	0.12
Max lbs/day all phases	12.56	86.18	119.28	0.02	3.78	3.66	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Tie In crew Mod.urb
Project Name: Pipeline 108 Tie In Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	15.62	108.39	142.75	0.02	4.73	4.61	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Tie In crew Mod.urb
Project Name: Pipeline 108 Tie In Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	14.69	106.62	112.64	-	4.55	4.55	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	15.62	108.39	142.75	0.02	4.73	4.61	0.12
Max lbs/day all phases	15.62	108.39	142.75	0.02	4.73	4.61	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
5	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Hydro test Crew Mod.urb
Project Name: Pipeline 108 Hydro test Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	14.04	96.89	130.60	0.02	4.24	4.12	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Hydro test Crew Mod.urb
Project Name: Pipeline 108 Hydro test Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	13.10	95.12	100.49	-	4.06	4.06	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	14.04	96.89	130.60	0.02	4.24	4.12	0.12
Max lbs/day all phases	14.04	96.89	130.60	0.02	4.24	4.12	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
6	Other Equipment	190	0.620	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Drilling Mod.urb
Project Name: Pipeline 108 Drilling
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	54.25	363.88	446.17	0.01	14.33	14.26	0.07

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Drilling Mod.urb
Project Name: Pipeline 108 Drilling
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	53.55	362.78	426.88	-	14.22	14.22	0.00
Bldg Const Worker Trips	0.70	1.10	19.28	0.01	0.11	0.04	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	54.25	363.88	446.17	0.01	14.33	14.26	0.07
Max lbs/day all phases	54.25	363.88	446.17	0.01	14.33	14.26	0.07

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Bore/Drill Rigs	218	0.750	24.0
1	Off Highway Trucks	417	0.490	24.0
1	Other Equipment	660	0.620	24.0
1	Rubber Tired Dozers	400	0.590	24.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Road Boring Crew Mod.urb
Project Name: Pipeline 108 Road Boring crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	15.62	108.39	142.75	0.02	4.73	4.61	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Road Boring Crew Mod.urb
Project Name: Pipeline 108 Road Boring crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	14.69	106.62	112.64	-	4.55	4.55	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	15.62	108.39	142.75	0.02	4.73	4.61	0.12
Max lbs/day all phases	15.62	108.39	142.75	0.02	4.73	4.61	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
5	Other Equipment	190	0.620	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Clean Up Crew Mod.urb
Project Name: Pipeline 108 Clean Up Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	20.42	136.54	183.97	0.02	5.68	5.56	0.12

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Clean Up Crew Mod.urb
Project Name: Pipeline 108 Clean Up Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	19.48	134.77	153.86	-	5.50	5.50	0.00
Bldg Const Worker Trips	0.94	1.77	30.11	0.02	0.18	0.06	0.12
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	20.42	136.54	183.97	0.02	5.68	5.56	0.12
Max lbs/day all phases	20.42	136.54	183.97	0.02	5.68	5.56	0.12

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Tractors	255	0.410	8.0
1	Off Highway Trucks	417	0.490	8.0
3	Rubber Tired Dozers	352	0.590	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Support Crew Mod.urb
Project Name: Pipeline 108 Support Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	14.13	89.66	128.25	0.01	3.55	3.48	0.07

URBEMIS 2002 For Windows 8.7.0

File Name: U:\URBEMIS 2002 Version 8.7\Projects2k2\Pipeline 108 Support Crew Mod.urb
Project Name: Pipeline 108 Support Crew
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2008
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 178570

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	13.43	88.56	108.97	-	3.44	3.44	0.00
Bldg Const Worker Trips	0.70	1.10	19.28	0.01	0.11	0.04	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	14.13	89.66	128.25	0.01	3.55	3.48	0.07
Max lbs/day all phases	14.13	89.66	128.25	0.01	3.55	3.48	0.07

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jun '08
Phase 3 Duration: 1 months
Start Month/Year for SubPhase Building: Jun '08
SubPhase Building Duration: 1 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

C.4 Mitigation Fee Calculator

Construction Emissons Mitigation Fee Calculation

PART 1: PROJECT INFORMATION

Project Name:	PG&E Line 108 Natural Gas Pipeline
Control/Application #:	

Single Family Dwelling Units:		*Note: Enter information only in blue bordered cells*	
Multi Family Dwelling Units:		Total Residential Acreage:	
Non-residential Square Feet:		Total Non-residential Acreage:	85 (11 mile, 50 ft ROW)

PART 2: EMISSIONS INFORMATION

Year	Activity Phase	NOx (lbs/day) unmitigated	NOx (lbs/day) mitigated*	NOx over threshold (lbs/day)	duration (days)	Total significant NOx (lbs)
	Demolition (on road)					
	Demolition (off road)		0.00			
	TOTAL Demolition		0.00	0	0	0.00
	Grading	544.95	435.96	350.96	65	22812.31
	Building Construction		0.00	0	0	0.00
	Building Construction		0.00	0	0	0.00
	Building Construction		0.00	0	0	0.00
	Asphalt		0.00	0	0	0.00
	Total project Nox over threshold (lbs)		*22812.31*			
	Total project Nox over threshold (tons)		*11.41*			

PART 3: MITIGATION FEE RESULTS

*MITIGATION FEE ($14,300/TON)***	*$163,108*
ADMINISTRATIVE FEE (5.0%)	*$8,155*
TOTAL FEE	***$171,263***

>>> *Fee is to be paid to the SMAQMD, either in total or on a by acre basis, prior to any ground disturbance.*

Mitigation Fee ($/acre) **#VALUE!**

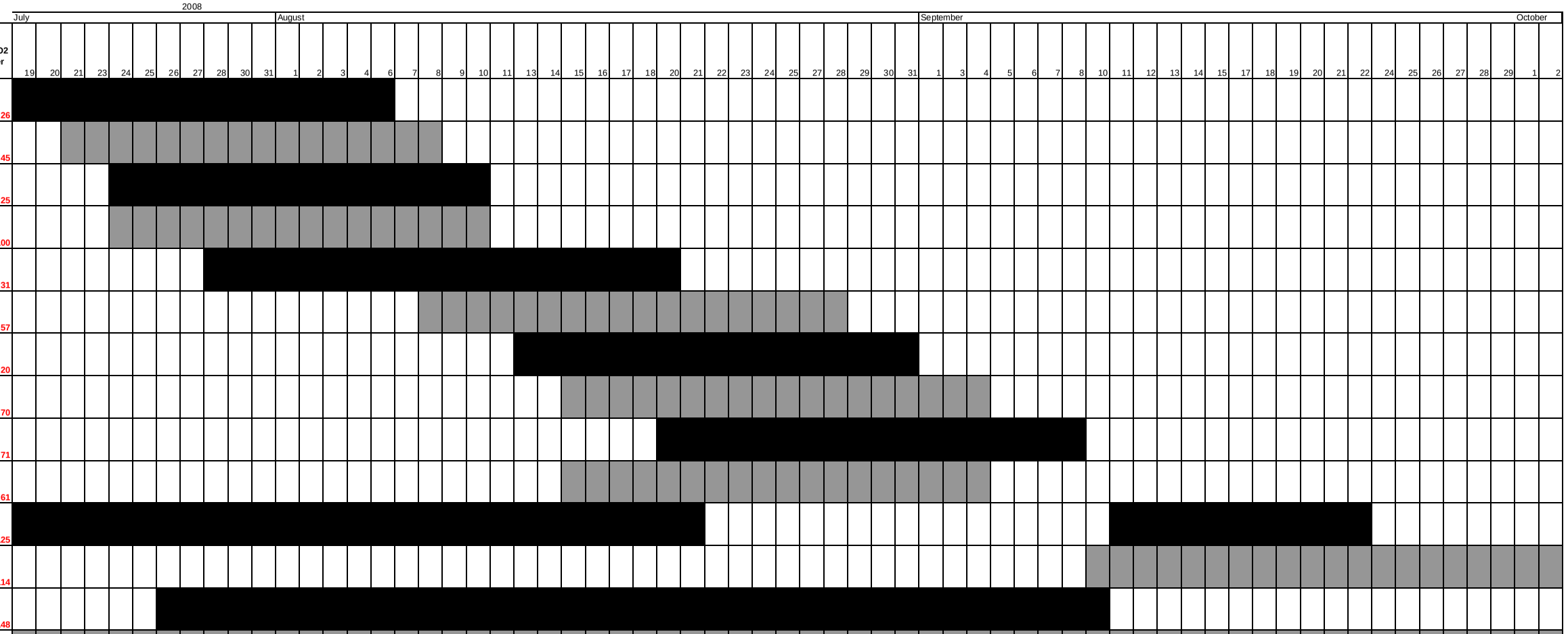
* Assumes a construction mitigation plan which achieves a 20% reduction in NOx from on-site, off-road equipment.

** Or the $/ton of NOx cost-effectiveness value in effect at the time the fee is collected.

C.5 CO_2 Construction Emissions Summary Table

Line 108 Construction - C02 Emissions Summary

Equipment Type	Dates of Use	Pounds of CO2 Emitted per Phase	Tons of CO2 Emitted per Phase
Clear and Fence	19JUL08 * 06AUG08	52747	26
Grade ROW	21JUL08 * 08AUG08	90209	45
Ditch	24JUL08 * 10AUG08	49755	25
Pipe Delivery (7 trips day @ 70 mi RT) +String Pipe	24JUL08 * 10AUG08	199907	100
Bend	28JUL08 * 20AUG08	62544	31
Lay and Weld 24" Pipe (assume 8 welding machines	08AUG08 * 28AUG08	113012	57
Coat Joints	13AUG08 * 31AUG08	40969	20
Lower-in	15AUG08 * 04SEP08	139366	70
Tie-in	20AUG08 * 08SEP08	142159	71
Backfill	15AUG08 * 04SEP08	121764	61
Hydro Test	19JUL08 * 21AUG08 / 11SEP08 * 22	249210	125
Clean Up	10SEP08 * 02OCT08	227755	114
Road Boring	26JUL08 * 10SEP08	296295	148
Support Crew	19JUL08 * 02OCT08	486241	243
Directional Drill (3 days drill 24 hrs + generator 8 hrs, then drill 8 hr	19JUL08 * 28AUG08	321248	161
Worker Commute (75 workers total)	19JUL08 * 02OCT08	16315	8
	Total Pounds Emited per Day		
	Tons Emitted per Day		
	Total Pounds Emitted by Project's Co	2609496	
	Total Tons Emitted by Project's Cons	1305	



	19	20	21	23	24	25	26	27	28	30	31	1	2	3	4	6	7	8	9	10	11	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30	31	1	3	4	5	6	7	8	10	11	12	13	14	15	17	18	19	20	21	22	24	25	26	27	28	29	1	2
Tons Emitted per Day	20.4	20.4	23.2	15.4	23.3	23.3	27	27	28.6	28.6	28.6	28.3	28.3	28.3	28.3	28.3	26.7	29.8	27	27	19.3	20.5	20.5	27.8	27.8	27.8	27.8	31.7	30.1	27	27	27	27	27	27	20	20	20	18.8	18.8	18.8	11.5	11.5	11.5	11.5	13.3	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	9.56	9.56	9.56	9.56	9.56	9.56	9.56	9.56
Pounds Emited per Day	40828	40828	46466	30726	46605	46605	54013	54013	57140	57140	57140	56650	56650	56650	56650	56650	53353	59632	53994	53994	38604	41014	41014	55521	55521	55521	55521	63419	60292	54062	54062	54062	54062	54062	54062	39954	39954	39954	37544	37544	37544	23037	23037	23037	23037	26527	25350	25350	25350	25350	25350	25350	25350	25350	25350	25350	25350	19119	19119	19119	19119	19119	19119	19119

C.6 CO_2 Construction Emissions Calculations

Line 100 - CGE Emissions Calculation

Scenario	CO2E Emission - Transportation Sector (Tons)	Results 2 CO2 per Place
Cars	2010BRAU	5214
4 Wheel Trucks	2010BRAU	47
6 Wheel Trucks		0
Heavy Duty Trucks Diesel	2010BRAU	9028
Heavy Duty Trucks Gasoline		0
Buses		0
Motorcycles		0
Recreational Vehicles		0
Diesel Locomotive		0
Electric Locomotive

C.7 Methane Emission Estimates

METHANE EMISSION ESTIMATES

Pounds of NH4 per cubic foot	0.04246
Pounds per metric ton	2,204.6
Volume released during blow down (SCF)	80,000
Pipeline emission factor (CF/mi/yr)	3,130
Miles of transmission line	11
Methane CO2 equivalence	21

Blow Down Emissions (metric tons)

[Volume released * pounds per cubic foot] / (pounds per metric ton) =	1.540778
Methane CO2 greenhouse equivalence (metric tons)	32.35635

Fugitive Pipeline Emissions (metric tons / year)

[Pipeline emission factor * pipeline miles * pounds per cubic foot] / (pounds per metric ton) =	0.663112
Methane CO2 greenhouse equivalence (metric tons)	13.92536

Sources:
USEPA Natural Gas Methane Unit Convertor Webpage (http://www.epa.gov/gasstar/pdf/unitconverter_final.pdf)
Blow-down volume and pipeline emission factor obtained from PG&E responses to CSLC data requests 1 and 4.
USEPA Natural Gas Star website