APPENDIX E

AIR EMISSIONS WORKSHEETS

Plant No. 1 Operations

worker commute

| Employee Commute Vehicle Inputs | | | | |
|---|----------------------|----------------|-------|---------|
| Number of Wor | kers | | | 208 |
| Average Trip | Distance (One Way | / Miles) | | 30 |
| Number of Bios | solid Truck Trips Pe | er Day | | |
| Average Trip | Distance (One Way | // Miles) | | |
| Number of Grit | Screening Truck Tr | rips Per Day | | |
| Average Trip | Distance (One Way | // Miles) | | |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Total Trips, PO | V (One Way) | | 208 | |
| Total Trips Truck (One Way) 0 | | | | |
| | | | - | |
| Assumptions Used in EMFAC2002 For Automobiles | | | | nobiles |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 6240 |
| %LDT | 30.00% | Daily VMT Haul | Truck | 0 |

| EMFAC2002 Inputs | | | | |
|-----------------------|------------|------------|------------|--|
| | LDA | LDT | HDD | |
| | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | |
| (ROC) | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 | |
| Sulfur Oxides (SOx) | NA | NA | NA | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | |

Source: EMFAC2002

| Truck Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 2.9 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 |
| Sulfur Oxides (SOx) | 0 | 0.00 |
| Particulates (PM10) | 0.26 | 0.00 |

Plant No. 1 Operations, continued

worker commute

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 43.90 |
| Reactive Organic Compounds (ROC) | 0.19 | 2.65 |
| Nitrogen Oxides (NOx) | 0.27 | 3.64 |
| Sulfur Oxides (SOx) | 0.05 | 0.69 |
| Particulates (PM10) | 0.01 | 0.14 |

Source: Emission Factors From EMFAC2002

| Fugitive Dust Emissions from project-related trips on local | | | |
|---|-----------|--|---------|
| | PM10 | | |
| | grams/VMT | | lbs/day |
| Local Streets | 0.42 | | 5.8 |

| Total Operational Emissions | | | | |
|------------------------------------|-----------|--|-----------|--|
| Air Pollutant | Mobile | | Total | |
| | (lbs/day) | | (lbs/day) | |
| Carbon Monoxide (CO) | 43.90 | | 43.90 | |
| Reactive Organic Compounds (RO | 2.65 | | 2.65 | |
| Nitrogen Oxides (NOx) | 3.64 | | 3.64 | |
| Sulfur Oxides (SOx) | 0.69 | | 0.69 | |
| Particulates (PM10) | 5.94 | | 5.94 | |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

chemical delivery

| enemiear aci | | | | |
|--|--------------------------------|----------------|---------|------|
| Chemical Delivery Vehicle Inputs | | | | |
| Number of Wor | rkers | | | |
| Average Trip | Distance (One Way | y/ Miles) | | |
| Number of Bios | solid Truck Trips P | er Day | | |
| Average Trip | Distance (One Way | y/ Miles) | | |
| Number of Grit | /Screening Truck T | rips Per Day | | |
| Average Trip | Distance (One Way | y/ Miles) | | |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | 20 | | |
| Average Trip | Distance (One Way | y/ Miles) | | 30 |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips True | Total Trips Truck (One Way) 20 | | | |
| | | | _ | |
| Assumptions Used in EMFAC2002 For Auton | | | nobiles | |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 0 |
| %LDT | 30.00% | Daily VMT Haul | Truck | 1200 |

| EMFAC2002 Inputs | | | | |
|-----------------------|------------|------------|------------|--|
| | LDA | LDT | HDD | |
| | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | |
| (ROC) | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 | |
| Sulfur Oxides (SOx) | NA | NA | NA | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | |

Source: EMFAC2002

| Truck Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 2.9 | 7.67 |
| Reactive Organic Compounds (ROC) | 0.65 | 1.72 |
| Nitrogen Oxides (NOx) | 15.97 | 42.21 |
| Sulfur Oxides (SOx) | 0 | 0.00 |
| Particulates (PM10) | 0.26 | 0.69 |

Plant No. 1 Operations, continued

chemical delivery

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 |
| Sulfur Oxides (SOx) * | 0.05 | 0.00 |
| Particulates (PM10) | 0.01 | 0.00 |

Source: Emission Factors From EMFAC2002

| Fugitive Dust Emissions from project-related trips on local | | | | |
|---|------|--|-----|--|
| PM10 | | | | |
| grams/VMT lbs/day | | | | |
| Local Streets | 0.42 | | 1.1 | |

| Total Operational Emissions | | | |
|------------------------------------|-----------|--|-----------|
| Air Pollutant | Mobile | | Total |
| | (lbs/day) | | (lbs/day) |
| Carbon Monoxide (CO) | 7.67 | | 7.67 |
| Reactive Organic Compounds (RO | 1.72 | | 1.72 |
| Nitrogen Oxides (NOx) | 42.21 | | 42.21 |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 |
| Particulates (PM10) | 1.80 | | 1.80 |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

biosolids transport

| orosonas transport | | | | |
|--|---------------------|-------------------------|---------|-------|
| Biosolids Haul Trip Vehicle Inputs | | | | |
| Number of Wor | kers | | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of Bios | solid Truck Trips P | er Day | | 42 |
| Average Trip | Distance (One Wa | y/ Miles) | | 200 |
| Number of Grit | Screening Truck T | rips Per Day | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips Truck (One Way) 42 | | | | |
| | | | • | |
| Assumptions Used in EMFAC2002 For Autom | | | nobiles | |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 0 |
| %LDT | 30.00% | 0% Daily VMT Haul Truck | | 16800 |

| EMFAC2002 Inputs | | | |
|-----------------------|------------|------------|------------|
| | LDA | LDT | HDD |
| | Grams/Mile | Grams/Mile | Grams/Mile |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 |
| (ROC) | 0.19 | 0.2 | 0.65 |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 |
| Sulfur Oxides (SOx) | NA | NA | NA |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 |

Source: EMFAC2002

| Truck Emissions | | • |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 2.9 | 107.31 |
| Reactive Organic Compounds (ROC) | 0.65 | 24.05 |
| Nitrogen Oxides (NOx) | 15.97 | 590.96 |
| Sulfur Oxides (SOx) | 0 | 0.00 |
| Particulates (PM10) | 0.26 | 9.62 |

Plant No. 1 Operations, continued

biosolids transport

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 |
| Sulfur Oxides (SOx) | 0.05 | 0.00 |
| Particulates (PM10) | 0.01 | 0.00 |

Source: Emission Factors From EMFAC2002

| Fugitive Dust Emissions from project-related trips on local | | | | |
|---|-----------|---------|--|--|
| PM10 | | | | |
| | grams/VMT | lbs/day | | |
| Local Streets | 0.42 | 15.6 | | |

| Total Operational Emissions | | | |
|------------------------------------|-----------|--|-----------|
| Air Pollutant | Mobile | | Total |
| | (lbs/day) | | (lbs/day) |
| Carbon Monoxide (CO) | 107.31 | | 107.31 |
| Reactive Organic Compounds (RO | 24.05 | | 24.05 |
| Nitrogen Oxides (NOx) | 590.96 | | 590.96 |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 |
| Particulates (PM10) | 25.24 | | 25.24 |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | YES |
| 150 | NO |
| 150 | NO |

grit and screening transport

| <u> </u> | <u> </u> | | | |
|--|---------------------|----------------|---------|-----|
| Grit and Screening Vehicle Inputs | | | | |
| Number of Wor | rkers | | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of Bios | solid Truck Trips F | Per Day | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of Grit | /Screening Truck | Гrips Per Day | | 2 |
| Average Trip | Distance (One Wa | y/ Miles) | | 60 |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips Truck (One Way) 0 | | | | |
| | | | | - |
| Assumptions Used in EMFAC2002 For Auton | | | nobiles | |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 0 |
| %LDT | 30.00% | Daily VMT Haul | Truck | 240 |

| EMFAC2002 Inputs | | | |
|-----------------------|------------|------------|------------|
| | LDA | LDT | HDD |
| | Grams/Mile | Grams/Mile | Grams/Mile |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 |
| (ROC) | 0.19 | 0.2 | 0.65 |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 |
| Sulfur Oxides (SOx) | NA | NA | NA |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 |

Source: EMFAC2002

| Truck Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 2.9 | 1.53 |
| Reactive Organic Compounds (ROC) | 0.65 | 0.34 |
| Nitrogen Oxides (NOx) | 15.97 | 8.44 |
| Sulfur Oxides (SOx) | 0 | 0.00 |
| Particulates (PM10) | 0.26 | 0.14 |

grit and screening transport

| <u> </u> | | |
|----------------------------------|------------|-----------|
| POV Emissions | | |
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 |
| Sulfur Oxides (SOx) * | 0.05 | 0.00 |
| Particulates (PM10) | 0.01 | 0.00 |

Source: Emission Factors From EMFAC2002 *Source: Table A9-5-L SCAQMD CEQA Handbook

| Fugitive Dust Emissions from project-related trips on local | | | on local |
|---|-----------|--|----------|
| | PM10 | | |
| | grams/VMT | | lbs/day |
| Local Streets | 0.42 | | 0.2 |

| Total Operational Emissions | | | |
|------------------------------------|-----------|--|-----------|
| Air Pollutant | Mobile | | Total |
| | (lbs/day) | | (lbs/day) |
| Carbon Monoxide (CO) | 1.53 | | 1.53 |
| Reactive Organic Compounds (RO | 0.34 | | 0.34 |
| Nitrogen Oxides (NOx) | 8.44 | | 8.44 |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 |
| Particulates (PM10) | 0.36 | | 0.36 |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

Plant No. 2 Operations

worker commute

| Em | Employee Commute Vehicle Inputs | | | |
|---|--|----------------|-------|------|
| Number of Workers | | | | 208 |
| Average Trip Distance | ce (One Way | / Miles) | | 30 |
| Number of Biosolid Tr | ruck Trips Pe | r Day | | |
| Average Trip Distance | ce (One Way | / Miles) | | |
| Number of Grit/Screen | ing Truck Tr | rips Per Day | | |
| Average Trip Distance | ce (One Way | / Miles) | | |
| Number of septage disp | posal trips Pe | er Day | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Total Trips, POV (One | Total Trips, POV (One Way) 208 | | 208 | |
| Total Trips Truck (One Way) 0 | | | | |
| | | | | |
| Assumptions Used in EMFAC2002 For Automobiles | | | | |
| % LDA 70 | 0.00% | Daily VMT LDA | & LDT | 6240 |
| %LDT 30 | 0.00% | Daily VMT Haul | Truck | 0 |

| EMFAC2002 Inputs | | | |
|-----------------------|------------|------------|------------|
| | LDA | LDT | HDD |
| | Grams/Mile | Grams/Mile | Grams/Mile |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 |
| (ROC) | 0.19 | 0.2 | 0.65 |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 |
| Sulfur Oxides (SOx) | NA | NA | NA |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 |

Source: EMFAC2002

| Truck Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 2.9 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 |
| Sulfur Oxides (SOx) | 0 | 0.00 |
| Particulates (PM10) | 0.26 | 0.00 |

worker commute

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 43.90 |
| Reactive Organic Compounds (ROC) | 0.19 | 2.65 |
| Nitrogen Oxides (NOx) | 0.27 | 3.64 |
| Sulfur Oxides (SOx) | 0.05 | 0.69 |
| Particulates (PM10) | 0.01 | 0.14 |

Source: Emission Factors From EMFAC2002

| Fugitive Dust Emissions from project-related trips on local | | | |
|---|-----------|--|---------|
| | PM10 | | |
| | grams/VMT | | lbs/day |
| Local Streets | 0.42 | | 5.8 |

| Total Operational Emissions | | | |
|--------------------------------|-----------|--|-----------|
| Air Pollutant | Mobile | | Total |
| | (lbs/day) | | (lbs/day) |
| Carbon Monoxide (CO) | 43.90 | | 43.90 |
| Reactive Organic Compounds (RO | 2.65 | | 2.65 |
| Nitrogen Oxides (NOx) | 3.64 | | 3.64 |
| Sulfur Oxides (SOx) | 0.69 | | 0.69 |
| Particulates (PM10) | 5.94 | | 5.94 |

| SCAQMD Thresholds lb/day | Significant? |
|--------------------------------|--------------|
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

chemical delivery

| | Chemical I | Delivery Vehicle | Inputs | |
|--|---------------------|------------------|-----------|---------|
| Number of Wor | rkers | | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of Bios | solid Truck Trips F | Per Day | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of Grit | /Screening Truck | Гrips Per Day | | |
| Average Trip | Distance (One Wa | y/ Miles) | | |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Deli | ivery Trucks | | | 26 |
| Average Trip | Distance (One Wa | y/ Miles) | | 30 |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips Truck (One Way) 26 | | | | |
| | | | _ | |
| Assum | ptions Used in | EMFAC2002 | For Auton | nobiles |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 0 |
| %LDT | 30.00% | Daily VMT Haul | Γruck | 1560 |

| EMFAC2002 Inputs | | | | |
|-----------------------|------------|------------|------------|--|
| | LDA | LDT | HDD | |
| | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | |
| (ROC) | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 | |
| Sulfur Oxides (SOx) | NA | NA | NA | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | |

Source: EMFAC2002

| Truck Emissions | | | |
|----------------------------------|------------|-----------|--|
| | EMFAC | | |
| | Emissions | Est. | |
| | Factor. | Emissions | |
| | Grams/Mile | lbs/day | |
| Carbon Monoxide (CO) | 2.9 | 9.96 | |
| Reactive Organic Compounds (ROC) | 0.65 | 2.23 | |
| Nitrogen Oxides (NOx) | 15.97 | 54.87 | |
| Sulfur Oxides (SOx) | 0 | 0.00 | |
| Particulates (PM10) | 0.26 | 0.89 | |

chemical delivery

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 |
| Sulfur Oxides (SOx) * | 0.05 | 0.00 |
| Particulates (PM10) | 0.01 | 0.00 |

Source: Emission Factors From EMFAC2002 *Source: Table A9-5-L SCAQMD CEQA Handbook

| Fugitive Dust Emissions from project-related trips on local | | | | |
|---|------|--|-----|--|
| PM10 | | | | |
| grams/VMT lbs/day | | | | |
| Local Streets | 0.42 | | 1.5 | |

| Total Operational Emissions | | | | |
|--------------------------------|-----------|--------|-----------|--|
| Air Pollutant | Mobile | Mobile | | |
| | (lbs/day) | | (lbs/day) | |
| Carbon Monoxide (CO) | 9.96 | | 9.96 | |
| Reactive Organic Compounds (RO | 2.23 | | 2.23 | |
| Nitrogen Oxides (NOx) | 54.87 | | 54.87 | |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 | |
| Particulates (PM10) | 2.34 | | 2.34 | |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

biosolids transport

| | Biosolids H | aul Trip Vehicl | e Inputs | |
|--|--------------------|-----------------|-----------|---------|
| Number of Wor | kers | | | |
| Average Trip | Distance (One Wa | ay/ Miles) | | |
| Number of Bios | olid Truck Trips I | Per Day | | 33 |
| Average Trip | Distance (One Wa | ay/ Miles) | | 200 |
| Number of Grit | Screening Truck | Trips Per Day | | |
| Average Trip | Distance (One Wa | ay/ Miles) | | |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Deli | very Trucks | | | |
| Average Trip | Distance (One Wa | ay/ Miles) | | |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips Truck (One Way) 33 | | | | |
| | | | | - |
| Assump | otions Used in | n EMFAC2002 | For Auton | nobiles |
| % LDA | 70.00% | Daily VMT LDA | & LDT | 0 |
| %LDT | 30.00% | Daily VMT Haul | Truck | 13200 |

| EMFAC2002 Inputs | | | | |
|-----------------------|------------|------------|------------|--|
| | LDA | LDT | HDD | |
| | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | |
| (ROC) | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 | |
| Sulfur Oxides (SOx) | NA | NA | NA | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | |

Source: EMFAC2002

| Truck Emissions | | | |
|----------------------------------|------------|-----------|--|
| | EMFAC | | |
| | Emissions | Est. | |
| | Factor. | Emissions | |
| | Grams/Mile | lbs/day | |
| Carbon Monoxide (CO) | 2.9 | 84.32 | |
| Reactive Organic Compounds (ROC) | 0.65 | 18.90 | |
| Nitrogen Oxides (NOx) | 15.97 | 464.33 | |
| Sulfur Oxides (SOx) | 0 | 0.00 | |
| Particulates (PM10) | 0.26 | 7.56 | |

biosolids transport

| POV Emissions | | |
|----------------------------------|------------|-----------|
| | EMFAC | |
| | Emissions | Est. |
| | Factor. | Emissions |
| | Grams/Mile | lbs/day |
| Carbon Monoxide (CO) | 3.19 | 0.00 |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 |
| Sulfur Oxides (SOx) * | 0.05 | 0.00 |
| Particulates (PM10) | 0.01 | 0.00 |

Source: Emission Factors From EMFAC2002 *Source: Table A9-5-L SCAQMD CEQA Handbook

| Fugitive Dust Emissions from project-related trips on local | | | | |
|---|-----------|--|---------|--|
| PM10 | | | | |
| | grams/VMT | | lbs/day | |
| Local Streets | 0.42 | | 12.3 | |

| Total Operational Emissions | | | | | |
|--------------------------------|-----------|--------|-----------|--|--|
| Air Pollutant | Mobile | Mobile | | | |
| | (lbs/day) | | (lbs/day) | | |
| Carbon Monoxide (CO) | 84.32 | | 84.32 | | |
| Reactive Organic Compounds (RO | 18.90 | | 18.90 | | |
| Nitrogen Oxides (NOx) | 464.33 | | 464.33 | | |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 | | |
| Particulates (PM10) | 19.83 | | 19.83 | | |

| SCAQMD | |
|------------|--------------|
| Thresholds | |
| lb/day | Significant? |
| 550 | NO |
| 55 | NO |
| 55 | YES |
| 150 | NO |
| 150 | NO |

grit and screening transport

| 8 | | | | |
|--|---------------------|----------------------|---|---------|
| Grit and Screening Vehicle Inputs | | | | |
| Number of Wor | rkers | | | |
| Average Trip | Distance (One Wa | ny/ Miles) | | |
| Number of Bios | solid Truck Trips I | Per Day | | |
| Average Trip | Distance (One Wa | ny/ Miles) | | |
| Number of Grit | Screening Truck | Trips Per Day | | 3 |
| Average Trip | Distance (One Wa | ny/ Miles) | | 60 |
| Number of septage disposal trips Per Day | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Number of Delivery Trucks | | | | |
| Average Trip Distance (One Way/ Miles) | | | | |
| Total Trips, PO | V (One Way) | | 0 | |
| Total Trips Truck (One Way) 0 | | | | |
| | | | • | |
| Assumptions Used in EMFAC2002 For Auton | | | | nobiles |
| % LDA | 70.00% | Daily VMT LDA & LD | Т | 0 |
| %LDT | 30.00% | Daily VMT Haul Truck | | 360 |

| EMFAC2002 Inputs | | | | | | |
|-----------------------|------------|------------|------------|--|--|--|
| LDA LDT HDD | | | | | | |
| | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | |
| (ROC) | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxides (NOx) | 0.25 | 0.3 | 15.97 | | | |
| Sulfur Oxides (SOx) | NA | NA | NA | | | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | | | |

Source: EMFAC2002

| Truck Emissions | | | | | |
|----------------------------------|------------|-----------|--|--|--|
| | EMFAC | | | | |
| | Emissions | Est. | | | |
| | Factor. | Emissions | | | |
| | Grams/Mile | lbs/day | | | |
| Carbon Monoxide (CO) | 2.9 | 2.30 | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.52 | | | |
| Nitrogen Oxides (NOx) | 15.97 | 12.66 | | | |
| Sulfur Oxides (SOx) | 0 | 0.00 | | | |
| Particulates (PM10) | 0.26 | 0.21 | | | |

grit and screening transport

| POV Emissions | | | | | |
|----------------------------------|------------|-----------|--|--|--|
| | EMFAC | | | | |
| | Emissions | Est. | | | |
| | Factor. | Emissions | | | |
| | Grams/Mile | lbs/day | | | |
| Carbon Monoxide (CO) | 3.19 | 0.00 | | | |
| Reactive Organic Compounds (ROC) | 0.19 | 0.00 | | | |
| Nitrogen Oxides (NOx) | 0.27 | 0.00 | | | |
| Sulfur Oxides (SOx) * | 0.05 | 0.00 | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | |

Source: Emission Factors From EMFAC2002 *Source: Table A9-5-L SCAQMD CEQA Handbook

| Fugitive Dust Emissions from project-related trips on local | | | | |
|---|-----------|--|---------|--|
| PM10 | | | | |
| | grams/VMT | | lbs/day | |
| Local Streets | 0.42 | | 0.3 | |

| Total Operational Emissions | | | | | |
|--------------------------------|-----------|-------|-----------|--|--|
| Air Pollutant | Mobile | Total | | | |
| | (lbs/day) | | (lbs/day) | | |
| Carbon Monoxide (CO) | 2.30 | | 2.30 | | |
| Reactive Organic Compounds (RO | 0.52 | | 0.52 | | |
| Nitrogen Oxides (NOx) | 12.66 | | 12.66 | | |
| Sulfur Oxides (SOx) | 0.00 | | 0.00 | | |
| Particulates (PM10) | 0.54 | | 0.54 | | |

| SCAQMD Thresholds lb/day | Significant? |
|--------------------------------|--------------|
| 550 | NO |
| 55 | NO |
| 55 | NO |
| 150 | NO |
| 150 | NO |

P1-82 Site Clearing Activities (2005)

| P1-82 Site Clearing Imports Inputs | | | | | | |
|------------------------------------|--|---------------|-----------------|---------------|----------|---------|
| Total days Allowed for Project 40 | | | | | | |
| • | Total Days Allowed for Construction (Days) | | | | | |
| Number of Employees | | | | 55 | | |
| Average Trip Length One W | ay POV (Miles) |) | | 30 | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | |
| Daily Number of Haul Truck | S | | | 5 | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 2 | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 20 | | |
| То | tal Number o | of Each Equi | nmont used f | for Construct | ion | |
| # of equipment | tai ivuilibei e | n Each Equi | official used i | or Construct | 1011 | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 |
| Miles Per Hour | .0 | .0 | | | | |
| | scraper | forklift | compactor | crane | welder | backhoe |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | | | | | | |
| # of equipment | 2 | 1 | | | | |
| Hours per Day | 6 | 6 | 8 | 8 | 8 | 6 |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 |
| Miles Per Hour | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | Assumption | a Haad in E | MEAC200 | 2 | | |
| % LDA 66.00% | Assumption | s Used III E | | | 2222 000 | |
| | | ı | Daily VMT LD | | 3322.000 | |
| %LDT 34.00% Season summer | | | Daily VMT Ha | ul Truck | 300 | |
| Season summer | | | | | | |
| EMFAC2002 Inputs | | | | | | |
| | LDA LDT HDD | | | | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | |
| Carbon Monoxide (CO) 3.02 3.6 2.9 | | | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | | | | | 15.97 | |
| Particulates (PM10) | 0.01 | 0.01 | 0.26 | | | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | |
|------------------------------------|------------|----------------|--|--|--|
| EMFAC | | | | | |
| | Emissions | | | | |
| | Factor. | Est. Emissions | | | |
| | Grams/Mile | lbs/day | | | |
| Carbon Monoxide (CO) | 3.2172 | 23.54 | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.42 | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.95 | | | |
| Particulates (PM10) | 0.01 | 0.07 | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | |
|----------------------------------|-----------|----------------|--|--|
| | EMFAC | | | |
| | Emissions | | | |
| | Factor. | Est. Emissions | | |
| Grams/Mile lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | |
| Sulfur Oxides (SOx) | NA | 0 | | |
| Particulates (PM10) | 0.26 | 0.17 | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 4.6 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 2.4 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 41.6 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 1.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| To | tal PM10 Fu | gitive Dus | t Emissions fr | om const | ruction | | |
|--------------------------------------|-----------------|------------|----------------|----------|------------|------------|-------|
| | | <u> </u> | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | Est. Emiss | sions |
| | | | | | | (lbs/day | ıy) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 14.4 | lb/day | 50% | 7 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | 3.35 | |
| Total Particulates | | | | | | 11 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavation | n Including P | OV, Fu | ugitive Du | st, and |
|-------------------------------------|----------------|--------|------------|--------------|
| | | | SCAQMD | |
| | Est. Emissions | | Thresholds | |
| Air Pollutant | (lbs/day) | | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 30.08 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 4.24 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 54.09 | | 100.00 | NO |
| Particulates (PM10) | 11.89 | | 150.00 | NO |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-100 Construction Activities (2008-2010)

| | P1-100 (| Constructi | on Import | ts Inputs | | |
|-----------------------------------|---------------|---------------|--------------|--------------|------------|---------|
| Total days Allowed for | | | - | 480 | | |
| Total Days Allowed for Cons | • |) | | 480 | | |
| Number of Employees | | | | 15 | | |
| Average Trip Length One W | ay POV (Miles | ;) | | 30 | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | |
| Daily Number of Haul Truck | s | | | 5 | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 6 | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | |
| То | tal Number o | of Each Equi | pment used f | or Construct | ion | |
| # of equipment | | | | 1 | | |
| Hours per Day | 8 | 8 | 8 | 6 | 8 | 8 |
| Days in Operation | 480 | 480 | 480 | 480 | 480 | 480 |
| Miles Per Hour | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | | | | | | |
| # of equipment | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 |
| Days in Operation | 480 | 480 | 480 | 480 | 480 | 480 |
| Miles Per Hour | | | | | | |
| | loaders | crawler dozer | pile driver | grader | pump | truck |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | A coumntion | a Haad in E | MEAC200 | 2 | | İ |
| % LDA 66.00% | Assumption | s Used in E | | | 1056.000 | |
| % LDA 00.00% 34.00% | | ı | Daily VMT LD | | | |
| Season Summer | | | Daily VMT Ha | ul Truck | 300 | |
| Scason summer | | | | | | |
| | EM | FAC2002 In | puts | | | |
| | | | LDA | LDT | HDD | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) 3.02 3.6 2.9 | | | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.48 | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|--------------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 1.3 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.7 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 12.1 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.3 | |
| | | | | | | | | |
| | loaders | crawler dozer | pile driver | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|---------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | E | st. Emissions |
| | | | | | | _ | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 |
| Total Particulates | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavation | on Includin | g POV, Fu | ıgitive Du | st, and |
|-------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 10.72 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 1.54 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 23.23 | | 100.00 | NO |
| Particulates (PM10) | 1.75 | | 150.00 | NO |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-82 Excavation Activities (2006)

| P1-82 Excavation Imports Inputs | | | | | | | |
|---------------------------------|--|---------------|-----------------------------|--------------|------------|---------|--|
| Total days Allowed for | Project | | _ | 80 | | | |
| • | Total Days Allowed for Construction (Days) | | | | | | |
| Number of Employees | ` • | | | 55 | | | |
| Average Trip Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Total Soil excavated (cubic y | ards) | | | 7500 | | | |
| Daily Number of Haul Truck | KS | | | 4.6875 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 4 | | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | 20 | | | |
| | | | | | • | | |
| To | tal Number | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | 1 | | | | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 6 | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | | 5 | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | • | | | | | |
| # of equipment | 2 | | | | | | |
| Hours per Day | 6 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | 5 | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| , | Assumption | ns Used in E | MFAC2002 | 2 | | | |
| % LDA 66.00% | | | Daily VMT LE | OA & LDT | 3324.000 | | |
| %LDT 34.00% | | | Daily VMT Haul Truck 281.25 | | | | |
| Season summer | | | | | | | |
| | | | | | | | |
| | EM | IFAC2002 In | | | | | |
| | | | LDA | LDT | HDD | | |
| | | ı | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | 3.02 | 3.6 | 2.9 | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 3.2172 | 23.56 | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.42 | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.95 | | | | |
| Particulates (PM10) | 0.01 | 0.07 | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|--------------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.80 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.40 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 9.89 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.16 | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 3.4 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 1.3 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 26.6 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.5 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 2.8 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.4 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 24.8 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.6 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|----|---------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | Es | st. Emissions |
| | | | | | | | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 3.34 |
| Total Particulates | | | | | | | 3 |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavat | ion Includin | g POV, Fı | ıgitive Du | st, and |
|----------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 31.47 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 4.58 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 63.27 | | 100.00 | NO |
| Particulates (PM10) | 4.78 | | 150.00 | NO |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P-1 82 Construction Activities (2006)

| | | P1-82 C | Construction | on Import | s Inputs | | |
|----------------------|----------------|----------------|---------------|--------------|--------------|------------|---------|
| Total days | Allowed for | Project | | - | 180 | | |
| | lowed for Cons | • |) | | 180 | | |
| Number of En | | | , | | 55 | | |
| | Length One W | av POV (Miles | :) | | 30 | | |
| | ours Per Day (| • | | | 8 | | |
| Daily Number | of Haul Truck | s | | | 1.583333333 | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | |
| Daily Delivery | trucks | | | | 5 | | |
| Total VMT W | ater Trucks pe | er day (Miles) | | | 4 | | |
| Total VMT Du | ump Trucks pe | r day (Miles) | | | 20 | | |
| | | - | | | | | |
| | To | tal Number o | of Each Equi | pment used f | or Construct | ion | |
| # of equipment | | | | | 1 | | |
| Hours per Day | | 8 | 8 | 8 | 4 | 8 | 6 |
| Days in Operat | ion | 180 | 180 | 180 | 180 | 180 | 180 |
| Miles Per Hour | • | | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe |
| | | diesel | diesel | diesel | diesel | diesel | diesel |
| | | | | | | | |
| # of equipment | | | | | | | |
| Hours per Day | | 8 | 8 | 6 | 8 | 8 | 4 |
| Days in Operat | | 180 | 180 | 180 | 180 | 180 | 180 |
| Miles Per Hour | • | | | | | | |
| | | loaders | crawler dozer | pile driver | grader | pump | truck |
| | | diesel | diesel | diesel | diesel | diesel | diesel |
| | | A saymetice | a Haad in E | MEAC200 | <u> </u> | | |
| % LDA | 66.00% | Assumption | s Used in E | Daily VMT LE | | 3324.000 | |
| % LDA %LDT | 34.00% | | ı | • | | | |
| %LD1 Season | summer | | | Daily VMT Ha | ul Truck | 245 | |
| Season | Summer | | | | | | |
| | | FM | FAC2002 In | nute | | | |
| | | Livi | 1 11C2002 III | LDA | LDT | HDD | |
| | | | | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | | | | | 3.6 | 2.9 | |
| | | | | | 0.2 | 0.65 | |
| Nitrogen Oxide | • | (1100) | | 0.19 | 0.3 | 15.97 | |
| Particulates (PM | | | | 0.23 | 0.01 | 0.26 | |
| Carrer EMEA | | | | 0.01 | 0.01 | 0.20 | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 23.56 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.42 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.95 | | | | | |
| Particulates (PM10) | 0.01 | 0.07 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.56 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.35 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 8.62 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.14 | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.9 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.4 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 8.0 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.2 | |
| | | | | | | | | |
| | loaders | crawler dozer | pile driver | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|----------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions |
| | | | | | | _ | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 3.30 |
| Total Particulates | | | | | | | 3 |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavation | on Includin | g POV, Fu | ugitive Du | st, and |
|-------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 26.00 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 2.21 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 18.61 | | 100.00 | NO |
| Particulates (PM10) | 3.72 | | 150.00 | NO |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-97 Site Clearing Activities (2005)

| | P1-97 S | Site Cleari | ng Import | s Inputs | | |
|-----------------------------|----------------|---------------|---------------------------|--------------|------------|---------|
| Total days Allowed for | Project | | | 40 | | |
| Total Days Allowed for Cons | - |) | | 40 | | |
| Number of Employees | | | | 15 | | |
| Average Trip Length One W | ay POV (Miles | ;) | | 30 | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | |
| Daily Number of Haul Truck | XS. | | | 1 | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 1 | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | 20 | | |
| To | otal Number o | of Each Equi | pment used f | or Construct | ion | |
| # of equipment | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 |
| Miles Per Hour | | | | | | |
| | scraper | forklift | compactor | crane | welder | backhoe |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | | | | | | |
| # of equipment | | 1 | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 1 |
| Miles Per Hour | | 5 | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck |
| | diesel | diesel | diesel | diesel | diesel | diesel |
| | A ssumption | s Used in E | MEAC200 |) | | |
| % LDA 66.00% | Assumption | is Oscu III L | Daily VMT LE | | 921.000 | |
| % LDA 60.00% % LDT 34.00% | ł | | Daily VMT LL Daily VMT Ha | | | |
| Season Summer | | | Daily VIVIT Ha | ui iiuck | 60 | |
| Scason summer | | | | | | |
| EMFAC2002 Inputs | | | | | | |
| | | | LDA | LDT | HDD | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 6.53 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.39 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.54 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.38 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.09 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 2.11 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.03 | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 1.9 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 16.7 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.4 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 14.4 | lb/day | 50% | | 7 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.91 | |
| | Total Particulates | | | | | 8 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 8.77 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 1.44 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 19.39 | | 100.00 | NO | | | | |
| Particulates (PM10) | 8.58 | | 150.00 | NO | | | | |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-97 Excavation Activities (2005-2006)

| P1-97 Excavation Imports Inputs | | | | | | | | |
|---------------------------------|-------------------|---------------|---------------|--------------|---------|---------|--|--|
| Total days Allowed | for Project | | | 40 | | | | |
| Total Days Allowed for C | • | 3) | | 40 | | | | |
| Number of Employees | , , | | | 15 | | | | |
| Average Trip Length On | e Way POV (Miles | | 30 | | | | | |
| Total Work Hours Per D | ay (Hours/Day) | | | 6 | | | | |
| Total Soil Excavated (cul | oic yards) | | | 20 | | | | |
| Daily Number of Haul Ti | rucks | | | 0.5 | | | | |
| Average Trip Length On | e Way Haul Truck | ks (Miles) | | 30 | | | | |
| Total VMT Water Truck | s per day (Miles) | | | 0 | | | | |
| Total VMT Dump Truck | s per day (Miles) | | | 20 | | | | |
| | | | | | | | | |
| | Total Number | of Each Equi | pment used f | or Construct | ion | | | |
| # of equipment | | | | | | 1 | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 8 | | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | | | | | | 5 | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | 6 | 8 | 8 | 8 | 8 | 6 | | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | XX 11 X | N (E) (2000) | | | | | |
| | | ns Used in E | | | | | | |
| % LDA 66.00% | | | Daily VMT LE | DA & LDT | 920.000 | | | |
| %LDT 34.00% | ó | | Daily VMT Ha | ul Truck | 30 | | | |
| Season summe | er | | | | | | | |
| | | | | | - | | | |
| | EMFAC2002 Inputs | | | | | | | |
| | | | LDA | LDT | HDD | | | |
| | Grams/Mile | Grams/Mile | Grams/Mile | | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | | |
| Reactive Organic Compou | 0.19 | 0.2 | 0.65 | | | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

Vehicle Exhaust Emissions from POV, Excavation

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 6.52 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.39 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.54 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.19 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.04 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 1.06 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.02 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|
| | scraper | excavator | compactor | crane | welder | backhoe | Total |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.9 |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.5 |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 8.1 |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.2 |
| | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

Source: ARB Inventory Publication MO99_32.5 App. B released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency |] | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0.04816 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | Ī | 0.88 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

Source: Table 11.9-1 EPA AP-42

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 7.59 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 0.91 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 9.68 | | 100.00 | NO | | | | |
| Particulates (PM10) | 1.10 | | 150.00 | NO | | | | |

Source: EMFAC2002 and SCAQMD CEQA Air Quality Handbook

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-97 Construction Activities (2006-2007)

| | P1-97 Construction Imports Inputs | | | | | | | |
|------------------------------------|--|----------------|---------------|--------------|--------------|-----------|---------|--|
| Total days Allowed for Project 400 | | | | | | | | |
| - | Total Days Allowed for Construction (Days) | | | | | | | |
| Number of Em | | | ŕ | | 170 | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work H | ours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number | of Haul Truck | KS . | | | 1 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Daily Delivery | Trucks | | | | 5 | | | |
| Total VMT W | ater Trucks pe | er day (Miles) | | | 3 | | | |
| Total VMT Du | ımp Trucks pe | er day (Miles) | | | 20 | | | |
| | | | | | | | | |
| | | tal Number | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | 1 | |
| Hours per Day | | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | | 400 | 400 | 400 | 400 | 400 | 400 | |
| Miles Per Hour | | | | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| # of agginment | | | | | | | | |
| # of equipment Hours per Day | | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operati | ion | 400 | 400 | 400 | 400 | 400 | 400 | |
| Miles Per Hour | | 400 | 400 | 400 | 400 | 400 | 400 | |
| wines i ei iioui | ļ | loaders | crawler dozer | pile driver | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | dieser | dieser | dieser | dieser | dieser | ulesei | |
| | 1 | Assumption | ns Used in E | MFAC2002 | 2 | | | |
| % LDA | 66.00% | | | Daily VMT LE | OA & LDT | 10223.000 | | |
| %LDT | 34.00% | | · · | Daily VMT Ha | ul Truck | 210 | | |
| Season | summer | | ' | | | | | |
| | | | - | | | | | |
| EMFAC2002 Inputs | | | | | | | | |
| LDA LDT HDD | | | | | | | | |
| Grams/Mile Grams/Mile Gra | | | | | | | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organ | ic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | es (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PN | M10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 72.44 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 4.35 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 6.01 | | | | | |
| Particulates (PM10) | 0.01 | 0.23 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.34 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.30 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 7.39 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.12 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.9 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.5 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 8.1 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.2 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0.04816 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 9.65 | |
| Total Particulates | | | | | | | 10 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 74.67 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 5.14 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 21.48 | | 100.00 | NO | | | | |
| Particulates (PM10) | 10.18 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-100 Site Clearing Activities (2007-2008)

| P1-100 Site Clearing Imports Inputs | | | | | | | |
|-------------------------------------|--|---------------|----------------------------|--------------|---------|---------|--|
| Total days Allowed for | Project | | | 40 | | | |
| * | Total Days Allowed for Construction (Days) | | | | | | |
| Number of Employees | | | | 15 | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number of Haul Truck | ΚS | | | 0 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 0 | | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | 20 | | | |
| To | otal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | 1 | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | |
| Miles Per Hour | | | | | | | |
| | scraper | forklift | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | - | | | | | | |
| # of equipment | | | | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 0 | |
| Miles Per Hour | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | Assumption | e Head in E | MEAC200 |) | | | |
| % LDA 66.00% | Assumption | is Used III L | Daily VMT LE | | 920.000 | | |
| % LDA 60.00% % LDT 34.00% | | į | Daily VMT LL Daily VMT Ha | | 0 | | |
| Season summer | | | Daily VIVIT Ha | ui iiuck | 0 | | |
| Season summer | | | | | | | |
| EMFAC2002 Inputs | | | | | | | |
| LDA LDT HDD | | | | | | | |
| | Grams/Mile | Grams/Mile | Grams/Mile | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 6.52 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.39 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.54 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | I | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.85 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|------------|--------------|--|--|--|--|
| | D. D. | | SCAQMD | | | | | |
| | Est. Emissions | | Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 6.52 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 0.39 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 0.54 | | 100.00 | NO | | | | |
| Particulates (PM10) | 0.87 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-100 Excavation Activities (2008-2009)

| | P1-100 Excavation Imports Inputs | | | | | | | |
|---|----------------------------------|---------------|---------------|-----------------|----------------|----------------|---------|--|
| Total days Allowed for Project 80 | | | | | | | | |
| | owed for Cons | • | | 80 | | | | |
| Number of Em | | , , | | | 15 | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work Ho | ours Per Day (| Hours/Day) | | | 6 | | | |
| Total soil exca | vated (cubic ya | ards) | | | 400 | | | |
| Daily Number | of Haul Truck | is | | | 0.25 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | | | | ' | | - | | |
| | To | tal Number o | of Each Equi | oment used f | or Construct | ion | | |
| # of equipment | | | 1 | | | | | |
| Hours per Day | | 6 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | ion | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | • | | 5 | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | | |
| # of equipment | | 2 | | | | | | |
| Hours per Day | | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operati | | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | • | 5 | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | A | . H 1 F | MEA COO | ` | | | |
| 0/ I D A | | Assumption | s Used in E | | | 1050 000 | | |
| % LDA | 66.00% | | | Daily VMT LD | | 1050.000 | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 15 | | |
| Season | summer | | | | | | | |
| | | EM | EAC2002 In. | muta | | | | |
| EMFAC2002 Inputs LDA LDT HDD | | | | | | | | |
| | | | | | | | | |
| Conhon Mar | : do (CO) | | j | Grams/Mile 3.02 | Grams/Mile 3.6 | Grams/Mile 2.9 | | |
| Carbon Monoxide (CO) Reactive Organic Compounds (ROC) | | | | 0.19 | 0.2 | 0.65 | | |
| • | - | (KUC) | | 0.19 | 0.2 | 15.97 | | |
| Nitrogen Oxide | | | | 0.23 | 0.01 | 0.26 | | |
| Particulates (PN | vI10) | | | 0.01 | 0.01 | 0.20 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.44 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.10 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.02 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.53 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.01 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 4.5 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 1.8 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 35.4 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.7 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 2.8 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.4 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 24.8 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.6 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency |] | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0.09996 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.99 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 14.78 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 3.67 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 61.43 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 2.46 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-101 Site Clearing Activities (2008)

| | P1-101 S | Site Cleari | ng Impor | ts Inputs | | | | | |
|---|------------------|---------------|--------------|--------------|-------------|---------|--|--|--|
| Total days Allowed for Project 80 | | | | | | | | | |
| Total Days Allowed for Cons | | 80 | | | | | | | |
| Number of Employees | | | | 25 | | | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | | | |
| Daily Number of Haul Truck | s | | | 5 | | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 2 | | | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 20 | | | | | |
| | | | | - | - | | | | |
| То | tal Number o | of Each Equi | pment used f | or Construct | ion | | | | |
| # of equipment | | | | | | 1 | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | | | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 80 | | | |
| Miles Per Hour | | | | | | 5 | | | |
| | scraper | forklift | compactor | crane | welder | backhoe | | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | | |
| | | | | | | | | | |
| # of equipment | | 1 | | | | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 | | | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 2 | | | |
| Miles Per Hour | | 5 | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | | |
| | 1 coumption | s Used in E | MEAC200 | າ | | | | | |
| % LDA 66.00% | Assumption | s Osed III E | | | 1522 000 | | | | |
| | | , | Daily VMT LE | | 1522.000 | | | | |
| %LDT 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | | |
| Season summer | | | | | | | | | |
| | EM. | EA C2002 I | muta | | | | | | |
| | EMFAC2002 Inputs | | | | | | | | |
| LDA LDT HDD | | | | | | | | | |
| Corbon Monovide (CO) | | | Grams/Mile | Grams/Mile | Grams/Mile | | | | |
| Carbon Monoxide (CO) | (BOC) | | 3.02 0.19 | 3.6 0.2 | 2.9 0.65 | | | | |
| Reactive Organic Compounds | (KUC) | | 0.19 | 0.2 | 15.97 | | | | |
| Nitrogen Oxides (NOx) Particulates (PM10) | | | 0.25 | 0.3 | 0.26 | | | | |
| randoulates (FIVITO) | | | 0.01 | 0.01 | 0.20 | | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 10.79 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.65 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.90 | | | | | |
| Particulates (PM10) | 0.01 | 0.03 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|
| | scraper | forklift | compactor | crane | welder | backhoe | Total |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.7 |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.4 |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 6.1 |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.1 |
| | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 1.9 |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.0 |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 16.7 |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.4 |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 14.4 | lb/day | 50% | | 7 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0.03612 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.69 | |
| Total Particulates | | | | | | | 9 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 15.22 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 2.40 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 34.25 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 9.65 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-101 Excavation Activities (2008-2009)

| P1-101 Excavation Imports Inputs | | | | | | | |
|--|---------------|---------------|--------------|--------------|----------|---------|--|
| Total days Allowed for | Project | | _ | 80 | | | |
| Total Days Allowed for Construction (Days) | | | | 80 | | | |
| Number of Employees | • | | | 25 | | | |
| Average Trip Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Total soil excavated (cubic ya | ards) | | | 10000 | | | |
| Daily Number of Haul Truck | is . | | | 6.25 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 20 | | | |
| | | | | | | | |
| | | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | 1 | 1 | | | | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | 5 | 5 | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| # of equipment | 2 | | | | 2 | | |
| Hours per Day | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 80 | 80 | 80 | 80 | 80 | 80 | |
| Miles Per Hour | 5 | 80 | 00 | 00 | 5 | 80 | |
| whics i of flour | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | dieser | dieser | dieser | dieser | dieser | dieser | |
| | Assumption | s Used in E | MFAC2002 | 2 | | | |
| % LDA 66.00% | • | | Daily VMT LE | OA & LDT | 1520.000 | | |
| %LDT 34.00% | | 1 | Daily VMT Ha | ul Truck | 375 | | |
| Season summer | | | | | | | |
| | | | | | | | |
| EMFAC2002 Inputs | | | | | | | |
| LDA LDT HDD | | | | | | | |
| | Grams/Mile | Grams/Mile | Grams/Mile | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 10.77 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.65 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.89 | | | | | |
| Particulates (PM10) | 0.01 | 0.03 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 2.40 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.54 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 13.19 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.21 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 5.4 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 2.4 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 45.4 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 1.0 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.6 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 32.7 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency |] | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 129 | lb/day | 50% | | 64.5 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.75 | |
| | Total Particulates | | | | | | 66 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|-----|------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | AQMD resholds | | | | | | |
| Air Pollutant | (lbs/day) | (11 | os/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 22.13 | 5 | 50.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 5.50 | , | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 92.13 | 1 | 00.00 | NO | | | | | |
| Particulates (PM10) | 68.36 | 1 | 50.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-101 Construction Activities (2009-2010)

| | P1-101 Construction Imports Inputs | | | | | | | |
|--|------------------------------------|---------------|--------------|----------|----------|---------|--|--|
| Total days Allowed for | Project | | | 320 | | | | |
| Total Days Allowed for Construction (Days) | | | | | | | | |
| Number of Employees | | | | 25 | | | | |
| Average Trip Length One W | ay POV (Miles | s) | | 30 | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | | |
| Daily Number of Concrete Ti | rucks | | | 5 | | | | |
| Average Trip Length One W | ay Haul Trucl | ks (Miles) | | 30 | | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 6 | | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 20 | | | | |
| | . 137 1 | CD 1 D : | . 16 | | , | | | |
| | tai Number | of Each Equi | | | ion | | | |
| # of equipment | 0 | ^ | 2 | 1 | 0 | 0 | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | | |
| Days in Operation | 320 | 320 | 320 | 320 | 320 | 320 | | |
| Miles Per Hour | | | 5 | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| # of equipment | | | 1 | | 1 | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | | |
| Days in Operation | 320 | 320 | 320 | 320 | 320 | 320 | | |
| Miles Per Hour | 320 | 320 | 320 | 320 | 320 | 320 | | |
| Miles I et Hour | loaders | crawler dozer | pile driver | grader | pump | truck | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | diesei | dieser | dieser | dieser | dieser | dieser | | |
| 1 | Assumption | ns Used in E | MFAC2002 | 2 | | | | |
| % LDA 66.00% | • | | Daily VMT LE | | 1526.000 | | | |
| %LDT 34.00% | | ' | Daily VMT Ha | ul Truck | 300 | | | |
| Season summer | | | | | | | | |
| | | • | | | | | | |
| EMFAC2002 Inputs | | | | | | | | |
| | | | LDA | LDT | HDD | | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 10.81 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.65 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.90 | | | | | |
| Particulates (PM10) | 0.01 | 0.03 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|-----------------------------------|-------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. Est. Er Grams/Mile lbs | | | | | | |
| | | | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 1.7 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.9 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 15.9 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.4 | |
| | | | | | | | | |
| | loaders | crawler dozer | pile driver | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.2 | 0.24 | 0.05 | 0.25 | 2.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.15 | 0.12 | 0.03 | 0.13 | 1.4 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.7 | 2.18 | 0.49 | 2.35 | 25.5 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.6 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | I | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.69 | |
| Total Particulates | | | | | | | 2 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 16.41 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 3.44 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 52.85 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 2.89 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-102 Site Clearing Activities (2007-2008)

| | P1-102 Site Clearing Imports Inputs | | | | | | | | |
|---|-------------------------------------|---------------|---------------|---------------|--------------|---------------|---------|--|--|
| Total days / | Allowed for | Project | | | 120 | | | | |
| • | owed for Cons | - |) | | 120 | | | | |
| Number of Em | | | | | 65 | | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | | |
| Total Work H | ours Per Day (| Hours/Day) | | | 6 | | | | |
| Daily Number | of Haul Truck | is . | | | 5 | | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 5 | | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | | |
| | Т. | (-1 NT1 | . C.E 1. E | | C | | | | |
| ш - С • | | | of Each Equi | pinent used f | or Construct | IOII | | | |
| # of equipment | | 8 | 8 | 0 | 0 | 0 | (| | |
| Hours per Day | | | | 8 | 8 | 8 | 6 | | |
| Days in Operati Miles Per Hour | | 120 | 120 | 120 | 120 | 120 | 120 | | |
| willes Per Hour | | scraper | forklift | compactor | crane | welder | backhoe | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | ulesei | diesei | diesei | uiesei | ulesei | ulesei | | |
| # of equipment | | 2 | | | | | | | |
| Hours per Day | | 8 | 6 | 8 | 8 | 8 | 6 | | |
| Days in Operati | ion | 120 | 120 | 120 | 120 | 120 | 120 | | |
| Miles Per Hour | | 5 | | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | ** 11 - | N FT 1 G200 | | | i | | |
| | | Assumption | s Used in E | MFAC2002 | 2 | | | | |
| % LDA | 66.00% | | | Daily VMT LD | | 4055.000 | | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | |
| Season | summer | | | | | | | | |
| | | T1. | E A CO000 T | | | 1 | | | |
| | | EM | FAC2002 In | | I D.T. | IIDD | | | |
| | | | | LDA | LDT | HDD | | | |
| G 1 M | :1 (00) | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) Reactive Organic Compounds (ROC) | | | | 3.02 | 3.6 | 2.9 | | | |
| _ | _ | (KOC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 0.26 | | | |
| Particulates (PN | VIIU) | | | 0.01 | 0.01 | 0.20 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 28.74 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.73 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 2.38 | | | | | |
| Particulates (PM10) | 0.01 | 0.09 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 2.7 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 1.4 | | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 25.0 | | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.6 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.7 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 33.1 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.19992 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 103.2 | lb/day | 50% | | 51.6 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 4.03 | |
| | Total Particulates | | | | | | 56 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavatio | n Includin | g POV, Fu | igitive Du | st, and |
|------------------------------------|----------------|-----------|------------|--------------|
| | D. D. I | | SCAQMD | |
| | Est. Emissions | | Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 37.05 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 5.52 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 71.10 | | 100.00 | NO |
| Particulates (PM10) | 57.43 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-102 Excavation Activities (2007-2008)

| | P1-102 Excavation Imports Inputs | | | | | | | | |
|----------------------|----------------------------------|---------------|---------------|--------------|------------|------------|---------|--|--|
| Total days | Allowed for | Project | | | 160 | | | | |
| | lowed for Cons | - | | 160 | | | | | |
| Number of En | | | | | 65 | | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | | |
| Total Work H | lours Per Day (| Hours/Day) | | | 6 | | | | |
| Total soil exca | vated (cubic ya | ards) | | | 435000 | | | | |
| Daily Number | of Haul Truck | is | | | 135.9375 | | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 5 | | | | |
| Total VMT D | ump Trucks pe | r day (Miles) | | | 150 | | | | |
| | | | | | | • | | | |
| | | tal Number | of Each Equi | pment used f | | ion | | | |
| # of equipment | | | 3 | | 1 | | 2 | | |
| Hours per Day | | 6 | 6 | 8 | 4 | 8 | 8 | | |
| Days in Operat | | 160 | 160 | 160 | 160 | 160 | 160 | | |
| Miles Per Hou | r | | 3 | | | 1.1 | 1 11 | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| # of equipment | t | 2 | | | | | | | |
| Hours per Day | | 6 | 8 | 8 | 8 | 8 | 6 | | |
| Days in Operat | tion | 160 | 160 | 160 | 160 | 160 | 160 | | |
| Miles Per Hou | r | 3 | | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | · | ı | | |
| | | Assumption | s Used in E | MFAC2002 | 2 | | | | |
| % LDA | 66.00% | | | Daily VMT LD | A & LDT | 4055.000 | | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 8156.25 | | | |
| Season | summer | | | | | | | | |
| | | *** | TE A COOCO 2 | | | - | Ī | | |
| | | EM | FAC2002 In | | I D.T. | IIDD | | | |
| LDA LDT HDD | | | | | | | | | |
| | | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | | |
| _ | nic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (Pl | M10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 28.74 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.73 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 2.38 | | | | | |
| Particulates (PM10) | 0.01 | 0.09 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 52.10 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 11.68 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 286.91 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 4.67 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 11.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 4.4 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 87.8 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 1.8 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 2.8 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.4 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 24.8 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.6 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|----|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 11.30 | |
| | Total Particulates | | | | | 11 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation | on Includin | g POV, Fu | ugitive Du | st, and |
|-------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 94.55 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 19.24 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 401.91 | | 100.00 | YES |
| Particulates (PM10) | 18.55 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-102 Construction Activities (2008-2010)

| | P1-101 Construction Imports Inputs | | | | | | | |
|--|------------------------------------|--------------|---|--------------|----------|---------|--|--|
| Total days Allowed for | Project | | | 800 | | | | |
| Total Days Allowed for Construction (Days) | | | | | | | | |
| Number of Employees | | | | 65 | | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | | |
| Daily Number of Concrete Ta | rucks | | | 10.25 | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 5 | | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | | | |
| To | tal Number o | of Each Equi | pment used f | or Construct | ion | | | |
| # of equipment | tur i turricor (| Duen Dqui | Jilloin about | 3 | | | | |
| Hours per Day | 8 | 8 | 8 | 6 | 8 | 8 | | |
| Days in Operation | 800 | 800 | 800 | 800 | 800 | 800 | | |
| Miles Per Hour | | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | |
| # of equipment | | 4 | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | | |
| Days in Operation | 800 | 800 | 800 | 800 | 800 | 800 | | |
| Miles Per Hour | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | ** 1. = | T . C . C . C . C . C . C . C . C . C . | | 1 | I | | |
| | Assumption | s Used in E | EMFAC2002 | | | | | |
| % LDA 66.00% | | | Daily VMT LE | | 4055.000 | | | |
| %LDT 34.00% | | | Daily VMT Ha | ul Truck | 615 | | | |
| Season summer | | | | | | | | |
| | | | | | | | | |
| EMFAC2002 Inputs | | | | | | | | |
| | | | LDA | LDT | HDD | | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 28.74 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 1.73 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 2.38 | | | | | |
| Particulates (PM10) | 0.01 | 0.09 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 3.93 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.88 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 21.63 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.35 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 4.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 2.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 36.2 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.9 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 4.8 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 9.6 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 86.4 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 2.2 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|------------|-----------|--|--|
| | | | Unmitigated | | Mitigation | | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | Est. E | Emissions | | |
| | | | | | | <u>(lb</u> | s/day) | | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 76.8 | lb/day | 50% | | 38 | | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | 4 | 4.32 | | |
| | Total Particulates | | | | | | 43 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation | n Includin | g POV, Fu | ıgitive Du | st, and |
|-------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 41.42 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 14.19 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 146.60 | | 100.00 | YES |
| Particulates (PM10) | 46.30 | Ī | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-106 Site Clearing Activities (2007-2008)

| P1-106 Site Clearing Imports Inputs | | | | | | | | |
|-------------------------------------|----------------|---------------|--------------|--------------|------------|---------|--|--|
| Total days Allowed for | Project | | | 40 | | | | |
| Total Days Allowed for Cons | | 40 | | | | | | |
| Number of Employees | | | | 15 | | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | | |
| Daily Number of Haul Truck | KS | | | 5 | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 4 | | | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | 150 | | | | |
| To | otal Number o | of Each Equi | pment used f | or Construct | ion | | | |
| # of equipment | | 1 | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | | | | | | | | |
| | scraper | forklift | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | |
| # of equipment | 2 | | | | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 | | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | 5 | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | Assumption | a Haadia D | MEAC200 | <u> </u> | | | | |
| % LDA 66.00% | Assumption | is Used III E | | | 1054 000 | | | |
| | 1 | 1 | Daily VMT LE | | 1054.000 | | | |
| | 1 | | Daily VMT Ha | ul Truck | 300 | | | |
| Season summer | | | | | | | | |
| | EM | FAC2002 In | puts | | | | | |
| | | 11102002 111 | LDA | LDT | HDD | | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | | |
| Reactive Organic Compounds | | 0.19 | 0.2 | 0.65 | | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.47 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.7 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 33.1 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|--|
| | | | Unmitigated | | Mitigation | | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency |] | Est. Emissions | | |
| | | | | | | _ | (lbs/day) | | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.19992 | lb/day | 50% | | 0.1 | | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | | |
| Total Particulates | | | | | | | 1 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 13.07 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 2.80 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 44.29 | | 100.00 | NO | | | | |
| Particulates (PM10) | 2.35 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-106 Excavation Activities (2007)

| | P1-106 Excavation Imports Inputs | | | | | | | |
|----------------------|--|----------------|---------------|--------------|--------------|------------|---------|--|
| Total days | Allowed for | Project | | - | 20 | | | |
| | Total Days Allowed for Construction (Days) | | | | | | | |
| Number of Em | | | , | | 20 15 | | | |
| | Length One W | av POV (Miles | ;) | | 30 | | | |
| | ours Per Day (| | | | 8 | | | |
| Total Soil exca | avated (cubic Y | ards) | | | 1000 | | | |
| Daily Number | of Haul Truck | XS. | | | 2.5 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | er day (Miles) | | | 2 | | | |
| Total VMT Du | ump Trucks pe | r day (Miles) | | | 20 | | | |
| | | | | ! | | • | | |
| | | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | 1 | | | 0 | | |
| Hours per Day | | 6 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | | 20 | 20 | 20 | 20 | 20 | 20 | |
| Miles Per Hour | : | | 3 | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| # of equipment | | 2 | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operati | ion | 20 | 20 | 20 | 20 | 20 | 20 | |
| Miles Per Hour | Ē | 5 | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | | |
| | 1 | Assumption | s Used in E | MFAC2002 | 2 | | | |
| % LDA | 66.00% | | | Daily VMT LD | OA & LDT | 922.000 | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 150 | | |
| Season | summer | | | | | | | |
| | | | | | | - | | |
| EMFAC2002 Inputs | | | | | | | | |
| LDA LDT HDD | | | | | | | | |
| | | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | |
| _ | nic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PN | | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 6.53 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.39 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.54 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.96 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.21 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 5.28 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.09 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 4.5 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 1.8 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 35.4 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.7 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.7 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 33.1 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.19992 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.99 | |
| Total Particulates | | | | | | 1 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|----------------------|--------------|--|--|--|--|--|--|
| | Est. Emissions | SCAQMD Thresholds | | | | | | | |
| Air Pollutant | (lbs/day) | (lbs/day) | Significant? | | | | | | |
| Carbon Monoxide (CO) | 15.65 | 550.00 | NO | | | | | | |
| Reactive Organic Compounds (ROC) | 4.29 | 75.00 | NO | | | | | | |
| Nitrogen Oxides (NOx) | 74.38 | 100.00 | NO | | | | | | |
| Particulates (PM10) | 2.72 | 150.00 | NO | | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P1-106 Construction Activities (2007)

| | P1-106 Construction Imports Inputs | | | | | | | |
|---|------------------------------------|------------------|--------------|--------------|--------------|----------|---------|--|
| Total days | Allowed for | | | | 180 | | | |
| • | owed for Cons | • | 1 | | 180 | | | |
| Number of Em | | ir detion (Days, | , | | 15 | | | |
| | Length One W | av POV (Miles |) | | 30 | | | |
| | ours Per Day (| • | , | | 8 | | | |
| | of Haul Truck | | | | 5 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 4 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | | | | | | l. | | |
| | То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | ion | 180 | 180 | 180 | 180 | 180 | 180 | |
| Miles Per Hour | • | | | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | i | | | | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operati | | 180 | 180 | 180 | 180 | 180 | 180 | |
| Miles Per Hour | • | | | | | | | |
| | | loaders | rigs | pile driver | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | A coumption | e Head in E | MFAC2002 |) | | | |
| % LDA | | assumpuon | s Useu III E | 1 | | 1054.000 | | |
| % LDA %LDT | 66.00% | | | Daily VMT LE | | 1054.000 | | |
| %LD1 Season | 34.00% summer | | | Daily VMT Ha | ul Truck | 300 | | |
| Season | Summer | | | | | | | |
| | | EM | EAC2002 I | nute | | | | |
| | EMFAC2002 Inputs LDA LDT HDD | | | | | | | |
| LDA LD1 HDD Grams/Mile Grams/Mile Grams/Mile | | | | | | | | |
| Carbon Monov | ide (CO) | 3.6 | 2.9 | | | | | |
| Carbon Monoxide (CO) Reactive Organic Compounds (ROC) | | | | 3.02 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | _ | (NOC) | | 0.19 | 0.2 | 15.97 | | |
| Particulates (PM | | | | 0.01 | 0.01 | 0.26 | | |
| i articulates (I I | ·110 <i>)</i> | | | 0.01 | 0.01 | 0.20 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.47 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|--|-------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. Est. Emiss Grams/Mile lbs/day | | | | | | |
| | | | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|----------------|-----------|------------------|--------|-------------------|-----|-------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | Est | . Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|------------|--------------|--|--|--|--|--|
| | . | | SCAQMD | | | | | | |
| | Est. Emissions | | Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 9.39 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 0.88 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 11.17 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 1.45 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-74 Site Clearing Activities (2006-2007)

| P1-102 Site Clearing Imports Inputs | | | | | | | | |
|-------------------------------------|----------------|---------------|---------------|--------------|--------------|------------|---------|--|
| Total days A | llowed for | Project | | | 1 | | | |
| Total Days Allo | | - |) | | 1 | | | |
| Number of Emp | ployees | | | | 0 | | | |
| Average Trip L | ength One W | ay POV (Miles |) | | 0 | | | |
| Total Work Ho | urs Per Day (| Hours/Day) | | | 0 | | | |
| Daily Number o | of Haul Truck | s | | | 0 | | | |
| Average Trip L | ength One W | ay Haul Truck | s (Miles) | | 0 | | | |
| Total VMT Wa | iter Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Du | mp Trucks pe | r day (Miles) | | | 0 | | | |
| | То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | on | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | | |
| | | scraper | forklift | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | i | | | | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 6 | 8 | 8 | 8 | 6 | |
| Days in Operation | on | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | 1 111 1 | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | Assumption | s Used in E | MFAC200 | 2. | | | |
| % LDA | 66.00% | r | | Daily VMT LE | | 0.000 | | |
| %LDT | 34.00% | | ı | Daily VMT Ha | | 0 | | |
| Season | summer | | | | | | | |
| | | | | | | | 1 | |
| | | EM | FAC2002 In | puts | | | | |
| _ | LDA LDT HDD | | | | | | | |
| | | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organi | c Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides | s (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM | I10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.00 | | | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|-------------------------------------|------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. Est. Emis Grams/Mile lbs/da | | | | | | |
| | | | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper forklift compactor crane welder backhoe | | | | | | Total | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|---------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | E | st. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.00 | |
| Total Particulates | | | | | | | 0 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation | n Includin | g POV, Fu | ıgitive Du | st, and |
|-------------------------------------|----------------|-----------|------------|--------------|
| | | | SCAQMD | |
| | Est. Emissions | | Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 0.00 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 0.00 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 0.00 | | 100.00 | NO |
| Particulates (PM10) | 0.00 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-74 Excavation Activities (2007-2008)

| P1-106 Excavation Imports Inputs | | | | | | | |
|----------------------------------|--|---------------|----------------|--------------|--------|---------|--|
| Total days Allowed for | Project | | | 1 | | | |
| • | Total Days Allowed for Construction (Days) | | | | | | |
| Number of Employees | | | | 0 | | | |
| Average Trip Length One W | ay POV (Miles) |) | | 0 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 0 | | | |
| Daily Number of Haul Truck | s | | | 0 | | | |
| Average Trip Length One W | ay Haul Trucks | s (Miles) | | 0 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 0 | | | |
| То | tal Number o | f Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | • | | | | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operation | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | | | | | | | |
| Hours per Day | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | Assumptions | s Used in F | MFAC200 | 2 | | | |
| % LDA 66.00% | Issumption | o oscu III L | Daily VMT LE | | 0.000 | | |
| %LDT 34.00% | | ļ | Daily VMT Ha | | 0 | | |
| Season summer | | ļ | Duny VIVII III | ur Truck | V | | |
| Summer | | | | | | - | |
| | EMI | FAC2002 In | puts | | | | |
| | | | LDA | LDT | HDD | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | | |
| Carbon Monoxide (CO) | | 3.02 | 3.6 | 2.9 | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.00 | | | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.00 | |
| Total Particulates | | | | | | | 0 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation | n Includin | g POV, Fu | ıgitive Du | st, and |
|-------------------------------------|----------------|-----------|------------|--------------|
| | | | SCAQMD | |
| | Est. Emissions | | Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 0.00 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 0.00 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 0.00 | | 100.00 | NO |
| Particulates (PM10) | 0.00 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-74 Construction Activities (2007-2008)

| P2-74 Construction Imports Inputs | | | | | | | |
|--|---------------|---------------|--------------|--------------|----------|---------|--|
| Total days Allowed for | | | • | 560 | | | |
| Total Days Allowed for Construction (Days) | | | | | | | |
| Number of Employees | ` , | • | | 15 | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number of Haul Truck | s | | | 0 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | | |
| То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operation | 560 | 560 | 560 | 560 | 560 | 560 | |
| Miles Per Hour | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | _ | |
| # of equipment | | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operation | 560 | 560 | 560 | 560 | 560 | 560 | |
| Miles Per Hour | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | 1 coumption | g Head in E | EMEAC200 | <u> </u> | | 1 | |
| % LDA 66.00% | Assumption | is Oscu III L | EMFAC2002 | | 1050.000 | | |
| % LDA 00.00% % LDT 34.00% | | | Daily VMT LD | | 0 | | |
| Season summer | | | Daily VMT Ha | ui iiuck | U | | |
| Scason summer | | | | | | | |
| | EM | FAC2002 In | puts | | | | |
| | | | LDA | LDT | HDD | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds (ROC) | | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.44 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.97 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|--|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 7.44 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 0.45 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 0.62 | | 100.00 | NO | | | | |
| Particulates (PM10) | 0.99 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-80 Site Clearing Activities (2006-2007)

| P2-80 Site Clearing Imports Inputs | | | | | | | |
|--|----------------|---------------|-----------------|----------------|----------------|---------|--|
| Total days Allowed for | Proiect | | | 1 | | | |
| Total Days Allowed for Construction (Days) | | | | | | | |
| Number of Employees | | | | 0 | | | |
| Average Trip Length One Wa | ay POV (Miles) | ı | | 0 | | | |
| Total Work Hours Per Day (l | Hours/Day) | | | 0 | | | |
| Daily Number of Haul Truck | s | | | 0 | | | |
| Average Trip Length One Wa | ay Haul Trucks | (Miles) | | 0 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Dump Trucks per | r day (Miles) | | | 0 | | | |
| То | tal Number o | f Each Equip | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 1 | 585 | 585 | 585 | 585 | 585 | |
| Miles Per Hour | | | | | | | |
| | scraper | forklift | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | | | | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 | |
| Days in Operation | 585 | 585 | 585 | 585 | 585 | 585 | |
| Miles Per Hour | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | \ aaumntian | . Haad in E | MEAC200 | <u> </u> | | | |
| % LDA 66.00% | Assumptions | s Useu III E | | | 0.000 | | |
| | | ı | Daily VMT LD | | 0.000 | | |
| %LDT 34.00% Season summer | | | Daily VMT Ha | ul Truck | 0 | | |
| Season summer | | | | | | | |
| | EMI | FAC2002 In | nuta | | | | |
| | EIVII | FAC2002 III | LDA | LDT | HDD | | |
| | | | | | | | |
| Carbon Monoxide (CO) | | ļ | Grams/Mile 3.02 | Grams/Mile 3.6 | Grams/Mile 2.9 | | |
| Reactive Organic Compounds (ROC) | | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | (NOC) | | 0.19 | 0.2 | 15.97 | | |
| Particulates (PM10) | | | 0.23 | 0.01 | 0.26 | | |
| FAITICUIAICS (FMT0) | | | 0.01 | 0.01 | 0.20 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.00 | | | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|
| | scraper | forklift | compactor | crane | welder | backhoe | Total |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 |
| | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.00 | |
| Total Particulates | | | | | | | 0 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 0.00 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 0.00 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 0.00 | | 100.00 | NO | | | | |
| Particulates (PM10) | 0.00 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-80 Excavation Activities (2007-2008)

| P2-80 Excavation Imports Inputs | | | | | | | |
|-------------------------------------|---------------|---------------|--------------|--------------|------------|---------|--|
| Total days Allowed for | | | • | 1 | | | |
| Total Days Allowed for Cons | - | 1 | | | | | |
| Number of Employees | | , | | | | | |
| Average Trip Length One W | ay POV (Miles |) | | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | | | | |
| Daily Number of Haul Truck | is | | | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | | | | |
| | | | | | | | |
| To | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operation | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| # C | | | | | | | |
| # of equipment | | 0 | 0 | 0 | 0 | | |
| Hours per Day Days in Operation | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation Miles Per Hour | 1 | 1 | 1 | 1 | 1 | 1 | |
| Willes Fel Houl | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | diesei | dieser | dieser | dieser | uleser | dieser | |
| | Assumption | s Used in E | MFAC2002 | 2 | | | |
| % LDA 66.00% | • | | Daily VMT LE | | 0.000 | | |
| %LDT 34.00% | | 1 | Daily VMT Ha | | 0 | | |
| Season summer | | | | | | | |
| | | | | | | | |
| | EM | FAC2002 In | puts | | | | |
| | | · | LDA | LDT | HDD | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.00 | | | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.00 | |
| Total Particulates | | | | | | | 0 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 0.00 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 0.00 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 0.00 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 0.00 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-80 Construction Activities (2007-2008)

| | P2-80 Construction Imports Inputs | | | | | | | |
|---|-----------------------------------|-----------------|--------------|--------------|--------------|-----------|---------|--|
| Total days | Allowed for | | 0 0 0 | F | 740 | | | |
| Total days Allowed for Project Total Days Allowed for Construction (Days) | | | | | 740 | | | |
| Number of Em | | truction (Days, | , | | 25 | | | |
| | Length One W | av POV (Miles |) | | 30 | | | |
| | ours Per Day (| • | , | | 6 | | | |
| | of Haul Truck | | | | 5 | | | |
| • | Length One W | | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | | | | | | | | |
| | То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | 2 | | | |
| Hours per Day | | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | ion | 740 | 740 | 740 | 740 | 740 | 740 | |
| Miles Per Hour | • | | | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | i | | | | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operati | | 740 | 740 | 740 | 740 | 740 | 740 | |
| Miles Per Hour | • | | | | | | | |
| | | loaders | rigs | pile driver | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | A agrumetian | a Haad in E | MEAC200 | <u> </u> | | | |
| 0/ I D A | | Assumption | is Used in E | MFAC2002 | | 4.570.000 | | |
| % LDA | 66.00% | | | Daily VMT LE | | 1650.000 | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 300 | | |
| Season | summer | | | | | | | |
| | | T73.4 | EACOOO I | | | | | |
| EMFAC2002 Inputs | | | | | | | | |
| LDA LDT HDD | | | | | | | | |
| Grams/Mile Grams/Mile Grams/Mile Grams/Mile Carbon Monoxide (CO) 3.02 3.6 2.9 | | | | | | | | |
| Carbon Monox | ` ' | (DOC) | | 0.19 | 0.2 | 0.65 | | |
| _ | ic Compounds | (KUC) | | 0.19 | 0.2 | 15.97 | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 0.26 | | |
| Particulates (PN | VI 1U) | | | 0.01 | 0.01 | 0.20 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 11.69 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.70 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.97 | | | | | |
| Particulates (PM10) | 0.01 | 0.04 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|----------------|---------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Est. Emissions | | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 1.8 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.9 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 16.1 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.4 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|----|--------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | Es | t. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.80 | |
| | Total Particulates | | | | | | 2 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 15.37 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 2.01 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 27.60 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 2.41 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-89 Construction Activities (2008-2010)

| | P2-89 Construction Imports Inputs | | | | | | | |
|-----------------------------|-----------------------------------|--------------|---|--------------|------------|---------|--|--|
| Total days Allowed for | Project | | | 940 | | | | |
| Total Days Allowed for Cons | 940 | | | | | | | |
| Number of Employees | | | | 15 | | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | | |
| Daily Number of Haul Truck | S | | | 5 | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 0 | | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | | | |
| То | tal Number o | of Each Equi | pment used f | or Construct | ion | | | |
| # of equipment | ini i tullioti (| Duen Dqui | Jilloin about | or comparact | | | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | | |
| Days in Operation | 940 | 940 | 940 | 940 | 940 | 940 | | |
| Miles Per Hour | | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | | |
| Days in Operation | 940 | 940 | 940 | 940 | 940 | 940 | | |
| Miles Per Hour | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | ** 1. = | T . C . C . C . C . C . C . C . C . C . | • | | İ | | |
| _ | Assumption | s Used in E | EMFAC2002 | | | | | |
| % LDA 66.00% | | | Daily VMT LD | | 1050.000 | | | |
| %LDT 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | |
| Season summer | | | | | | | | |
| | | | | | | İ | | |
| | EMFAC2002 Inputs | | | | | | | |
| LDA LDT HDD | | | | | | | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | 2.9 | | | | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.44 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|--|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 9.36 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 0.88 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 11.17 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 1.44 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-90 Site Clearing Activities (2007-2008)

| | P2-90 Site Clearing Imports Inputs | | | | | | | | |
|---|------------------------------------|-------------------|---------------|---------------------|--------------|---------------|---------|--|--|
| Total days / | Allowed for | | | | 120 | | | | |
| Total Days Allowed for Construction (Days) | | | | | 120 | | | | |
| Number of Em | | , , | | | 35 | | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | | |
| Total Work H | ours Per Day (| Hours/Day) | | | 8 | | | | |
| Daily Number | of Haul Truck | s | | | 5 | | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 15 | | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | | |
| | Т. | 4.1 NT1 | . C.E 1. E | | C | | | | |
| ш - С • | | | of Each Equi | pinent used f | or Construct | IOII | | | |
| # of equipment | | 8 | 8 | 0 | 0 | 0 | (| | |
| Hours per Day | | | | 8 | 8 | 8 | 6 | | |
| Days in Operati Miles Per Hour | | 120 3 | 120 | 120 | 120 | 120 | 120 | | |
| Miles Per Hour | | | forklift | aammaatan | crane | welder | backhoe | | |
| | | scraper diesel | diesel | compactor diesel | diesel | diesel | diesel | | |
| | | uiesei | ulesei | uiesei | uiesei | uiesei | ulesei | | |
| # of equipment | | | 1 | | | | | | |
| Hours per Day | | 8 | 6 | 8 | 8 | 8 | 6 | | |
| Days in Operati | ion | 120 | 120 | 120 | 120 | 120 | 120 | | |
| Miles Per Hour | | | 5 | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | ** 11 - | N FT 1 G200 | | | i | | |
| | | Assumption | s Used in E | MFAC2002 | 2 | | | | |
| % LDA | 66.00% | | | Daily VMT LE | OA & LDT | 2265.000 | | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | |
| Season | summer | | | | | | | | |
| | | F1. | E A CO000 T | | | 1 | | | |
| EMFAC2002 Inputs | | | | | | | | | |
| LDA LDT HDD | | | | | | | | | |
| G 1 M | :1 (00) | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) Reactive Organic Compounds (ROC) | | | | 3.02 | 3.6 | 2.9 | | | |
| _ | _ | (KOC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 0.26 | | | |
| Particulates (PN | V11U) | | | 0.01 | 0.01 | 0.20 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 16.05 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.96 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.33 | | | | | |
| Particulates (PM10) | 0.01 | 0.05 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 2.7 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 1.4 | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 25.0 | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.6 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 1.9 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 16.7 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.4 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|--|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 14.4 | lb/day | 50% | | 7 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 103.2 | lb/day | 50% | | 51.6 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 2.37 | |
| Total Particulates | | | | | | | 61 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavatio | n Includin | g POV, Fu | ıgitive Du | st, and |
|------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 22.55 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 3.79 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 53.66 | | 100.00 | NO |
| Particulates (PM10) | 62.45 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-90 Excavation Activities (2008-2010)

| | | P2-90 | Excavation | n Imports | Inputs | | | |
|------------------|--|---------------|---------------|--------------|-------------|------------|---------|--|
| Total days A | Total days Allowed for Project 240 | | | | | | | |
| | Total Days Allowed for Construction (Days) | | | | | | | |
| Number of Em | ıployees | | | | 35 | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work Ho | ours Per Day (| Hours/Day) | | | 8 | | | |
| Total soil exca | vated (cubic ya | ards) | | | 70000 | | | |
| Daily Number | of Haul Truck | s | | | 14.58333333 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 15 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | | . 137 1 | <u> </u> | 1.0 | | | | |
| | | | of Each Equi | oment used f | | ion | | |
| # of equipment | | 1 | 1 | | 1 | | | |
| Hours per Day | _ | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operati | | 240 | 240 | 240 | 240 | 240 | 240 | |
| Miles Per Hour | • | 3 | 5 | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| # of equipment | | 2 | | | | | | |
| Hours per Day | | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operati | ion | 240 | 240 | 240 | 240 | 240 | 240 | |
| Miles Per Hour | | 5 | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | | |
| | 1 | Assumption | s Used in E | MFAC2002 | 2 | | | |
| % LDA | 66.00% | | | Daily VMT LE | A & LDT | 2265.000 | | |
| %LDT | 34.00% | | , | Daily VMT Ha | ul Truck | 875 | | |
| Season | summer | | | | | | | |
| = | | | | | | · | | |
| | EMFAC2002 Inputs | | | | | | | |
| | | | | LDA | LDT | HDD | | |
| | | | İ | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monox | ` ′ | | | 3.02 | 3.6 | 2.9 | | |
| • | ic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PN | M10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 3.2172 | 16.05 | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.96 | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.33 | | | | |
| Particulates (PM10) | 0.01 | 0.05 | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|----------------|---------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | 5.59 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 1.25 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 30.78 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.50 | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 6.3 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 2.8 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 53.4 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 1.2 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 2.8 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.4 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 24.8 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.6 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|---|----------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | E | Est. Emissions |
| | | | | | | | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 77.4 | lb/day | 50% | | 38.7 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 2.90 |
| | Total Particulates | | | | | | 42 |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excava | ation Including PO | V, Fugitive Du | st, and |
|----------------------------------|--------------------|----------------------|--------------|
| | Est. Emissions | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 30.68 | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 6.50 | 75.00 | NO |
| Nitrogen Oxides (NOx) | 110.35 | 100.00 | YES |
| Particulates (PM10) | 44.05 | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-90 Construction Activities (2008-2011)

| | P2-90 C | Construction | on Import | s Inputs | | | |
|------------------------------------|---------------|----------------|--------------|--------------|------------|---------|--|
| Total days Allowed for Project 620 | | | | | | | |
| Total Days Allowed for Cons | • | 620 | | | | | |
| Number of Employees | | | | 35 | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number of Concrete To | rucks | | | 5 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 15 | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | | |
| То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | 3 | | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operation | 620 | 620 | 620 | 620 | 620 | 620 | |
| Miles Per Hour | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | | 4 | | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operation | 620 | 620 | 620 | 620 | 620 | 620 | |
| Miles Per Hour | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | A aaymatian | a Haad in E | EMFAC2002 | 2 | | | |
| % LDA 66.00% | Assumption | S USEU III L | | | 2265 000 | | |
| | | | Daily VMT LE | | 2265.000 | | |
| %LDT 34.00% Season summer | | | Daily VMT Ha | ul Truck | 300 | | |
| Season summer | | | | | | | |
| | FM | FAC2002 In | nuts | | | | |
| | EIVI | 1 / 1C2002 III | LDA | LDT | HDD | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | (00) | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |
| () | | | 0.01 | | J.20 | | |

| Construction Workers POV Emissions | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 3.2172 | 16.05 | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.96 | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 1.33 | | | | |
| Particulates (PM10) | 0.01 | 0.05 | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|
| | EMFAC | | | | | |
| | Emissions | | | | | |
| | Factor. | Est. Emissions | | | | |
| | Grams/Mile | lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|
| | scraper | excavator | compactor | crane | welder | backhoe | Total |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 2.6 |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 1.3 |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 24.1 |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.6 |
| | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 4.8 |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 9.6 |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 86.4 |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 2.2 |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions |
| | | | | | | _ | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 76.8 | lb/day | 50% | | 38 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 2.37 |
| Total Particulates | | | | | 41 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Exca | vation Including POV | , Fugitive Du | st, and |
|----------------------------------|----------------------|----------------------|--------------|
| | Est. Emissions | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 25.41 | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 12.31 | 75.00 | NO |
| Nitrogen Oxides (NOx) | 122.40 | 100.00 | YES |
| Particulates (PM10) | 43.83 | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-91 Excavation Activities (2008-2009)

| P2-91 Excavation Imports Inputs | | | | | | | |
|---------------------------------|----------------|---------------|----------------------------|--------------|------------|---------|--|
| Total days Allowed for | Project | | - | 1 | | | |
| Total Days Allowed for Cons | | 1 | | | | | |
| Number of Employees | | | | | | | |
| Average Trip Length One W | ay POV (Miles | s) | | | | | |
| Total Work Hours Per Day (| Hours/Day) | | | | | | |
| Daily Number of Haul Trucl | KS | | | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | | | | |
| Total VMT Water Trucks po | er day (Miles) | | | | | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | | | | |
| To | otal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | 1 | | | | | |
| Hours per Day | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operation | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | | | | | | | |
| Hours per Day | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 1 | 1 | 1 | 1 | 1 | 1 | |
| Miles Per Hour | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | Accumption | s Used in E | MEAC200 | 2 | | | |
| % LDA 66.00% | Assumption | is Oscu III L | Daily VMT LE | | 0.000 | | |
| % LDA 60.00% % LDT 34.00% | • | | Daily VMT LL Daily VMT Ha | | 0.000 | | |
| Season Summer | | | Daily VIVIT Ha | ui iiuck | Ü | | |
| Scason summer | | | | | | | |
| | EM | FAC2002 In | puts | | | | |
| | | , | LDA | LDT | HDD | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.00 | | | | | |
| Particulates (PM10) | 0.01 | 0.00 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 0.00 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.00 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 0.00 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.00 | | | | | |

Source: EMFAC2002

| | Construction Equipment Emissions | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|--------------------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.00 | |
| | | Total Particulates | | | | | 0 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 0.00 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 0.00 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 0.00 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 0.00 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-91 Construction Activities (2008-2009)

| | P2-91 Construction Imports Inputs | | | | | | | |
|--|-----------------------------------|---------------|--------------|--------------|--------------|------------|---------|--|
| Total days A | Allowed for | | | - | 840 | | | |
| Total Days Allowed for Construction (Days) | | | | | 840 | | | |
| Number of Em | ployees | | | | 15 | | | |
| Average Trip I | Length One W | ay POV (Miles |) | | 30 | | | |
| Total Work Ho | ours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number | of Haul Truck | s | | | 5 | | | |
| Average Trip I | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Wa | ater Trucks pe | r day (Miles) | | | 0 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | То | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operati | ion | 840 | 840 | 840 | 840 | 840 | 840 | |
| Miles Per Hour | | | | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | i | | | 1 | | | | |
| # of equipment | | | | | | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 4 | |
| Days in Operati | | 840 | 840 | 840 | 840 | 840 | 840 | |
| Miles Per Hour | | | | | | | | |
| | | loaders | rigs | pile driver | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | Assumption | s Used in F | MFAC2002 | 2. | | | |
| % LDA | 66.00% | | | Daily VMT LD | | 1050.000 | | |
| %LDT | 34.00% | | | Daily VMT Ha | | 300 | | |
| Season | summer | | | | | | | |
| | | | | | | | | |
| | | EM | FAC2002 In | puts | | | | |
| | | | | LDA | LDT | HDD | | |
| | | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organ | ic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | s (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM | M10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.44 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------------|-----------|------------------|--------|-------------------|---|---------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | E | st. Emissions | |
| | | | | | | _ | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | |
| Total Particulates | | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | | |
| Carbon Monoxide (CO) | 9.36 | | 550.00 | NO | | | | | |
| Reactive Organic Compounds (ROC) | 0.88 | | 75.00 | NO | | | | | |
| Nitrogen Oxides (NOx) | 11.17 | | 100.00 | NO | | | | | |
| Particulates (PM10) | 1.44 | | 150.00 | NO | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-92 Site Clearing Activities (2008-2009)

| P2-92 Site Clearing Imports Inputs | | | | | | | |
|------------------------------------|---------------|---------------|-----------------|--------------|----------|---------|--|
| Total days Allowed for | | | | 40 | | | |
| Total Days Allowed for Cons | 40 | | | | | | |
| Number of Employees | | | | 25 | | | |
| Average Trip Length One W | ay POV (Miles |) | | 30 | | | |
| Total Work Hours Per Day (| Hours/Day) | | | 6 | | | |
| Daily Number of Haul Truck | s | | | 5 | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks pe | r day (Miles) | | | 2 | | | |
| Total VMT Dump Trucks pe | r day (Miles) | | | 150 | | | |
| To | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | | | | 1 | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | |
| Miles Per Hour | | | | | | 5 | |
| | scraper | forklift | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | | 1 | | | | | |
| Hours per Day | 8 | 6 | 8 | 8 | 8 | 6 | |
| Days in Operation | 40 | 40 | 40 | 40 | 40 | 40 | |
| Miles Per Hour | | 5 | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | Assumption | s Usad in E | MEAC200 |) | | | |
| % LDA 66.00% | Assumption | s Oseu III E | Daily VMT LE | | 1652.000 | | |
| % LDT 34.00% | | ı | Daily VMT Ha | | 300 | | |
| Season summer | | | Daily VIVII IIa | ui iiuck | 300 | | |
| Scason Summer | | | | | | | |
| EMFAC2002 Inputs | | | | | | | |
| LDA LDT HDD | | | | | | | |
| Grams/Mile Grams/Mile Grams/Mile | | | | | | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 11.71 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.70 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.97 | | | | | |
| Particulates (PM10) | 0.01 | 0.04 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|---------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.7 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.4 | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 6.1 | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.1 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 1.9 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.0 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 16.7 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.4 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions |
| | | | | | | | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 14.4 | lb/day | 50% | | 7 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0.03612 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.81 |
| Total Particulates | | | | | | 9 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavatio | n Includin | g POV, F | ugitive Du | st, and |
|------------------------------------|----------------|----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 16.14 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 2.45 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 34.32 | | 100.00 | NO |
| Particulates (PM10) | 9.77 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-92 Excavation Activities (2009-2011)

| | P2-92 Excavation Imports Inputs | | | | | | | |
|----------------------|---------------------------------|---------------|------------------|--------------|--------------|------------|---------|--|
| Total days A | Allowed for | Project | | | 60 | | | |
| | owed for Cons | • | | 60 | | | | |
| Number of Em | | , , | | | 25 | | | |
| Average Trip | Length One W | ay POV (Miles | s) | | 30 | | | |
| Total Work H | ours Per Day (| Hours/Day) | | | 6 | | | |
| Total soil exca | vated (cubic ya | ards) | | | 6000 | | | |
| Daily Number | of Haul Truck | s | | | 5 | | | |
| Average Trip | Length One W | ay Haul Truck | s (Miles) | | 30 | | | |
| Total VMT W | ater Trucks pe | r day (Miles) | | | 3 | | | |
| Total VMT Du | ımp Trucks pe | r day (Miles) | | | 150 | | | |
| | | | | ' | | • | | |
| | To | tal Number o | of Each Equi | pment used f | or Construct | ion | | |
| # of equipment | | | 2 | | | | | |
| Hours per Day | | 6 | 6 | 8 | 4 | 8 | 8 | |
| Days in Operat | ion | 60 | 60 | 60 | 60 | 60 | 60 | |
| Miles Per Hour | • | | 3 | | | | | |
| | | scraper | excavator | compactor | crane | welder | backhoe | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | | |
| # of equipment | | 2 | | | | | | |
| Hours per Day | | 6 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operati | | 60 | 60 | 60 | 60 | 60 | 60 | |
| Miles Per Hour | • | 5 | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | A | TT 1: F | MEA COOK | | | | |
| 0/ 1 5 4 | | Assumption | s Used in E | | | | | |
| % LDA | 66.00% | | | Daily VMT LD | | 1653.000 | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 300 | | |
| Season | summer | | | | | | | |
| | | F3.4 | T. A. C. 200.2 X | | | 1 | | |
| EMFAC2002 Inputs | | | | | | | | |
| | | | | LDA | LDT | HDD | | |
| | | | ĺ | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | | 3.02 | 3.6 | 2.9 | | |
| • | ic Compounds | (ROC) | | 0.19 | 0.2 | 0.65 | | |
| Nitrogen Oxide | | | | 0.25 | 0.3 | 15.97 | | |
| Particulates (PN | M10) | | | 0.01 | 0.01 | 0.26 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 11.71 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.70 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.97 | | | | | |
| Particulates (PM10) | 0.01 | 0.04 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 6.7 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 2.6 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 53.2 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 1.1 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 2.8 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.4 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 24.8 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.6 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---|----------------|
| | | | Unmitigated | | Mitigation | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | | Est. Emissions |
| | | | | | | _ | (lbs/day) |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.14994 | lb/day | 50% | | 0.1 |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.81 |
| Total Particulates | | | | | | | 2 |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavatio | n Includin | ıg POV, Fu | ıgitive Du | st, and |
|------------------------------------|----------------|------------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 23.11 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 5.21 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 89.53 | | 100.00 | NO |
| Particulates (PM10) | 3.77 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-92 Construction Activities (2009-2011)

| | P2-92 Construction Imports Inputs | | | | | | | | |
|---|------------------------------------|---------------|--------------|--------------|---------------|---------|--|--|--|
| Total days Allowed for | Total days Allowed for Project 600 | | | | | | | | |
| Total Days Allowed for Cons | | 600 | | | | | | | |
| Number of Employees | iruction (Duys) | , | | 25 | | | | | |
| Average Trip Length One W | av POV (Miles |) | | 30 | | | | | |
| Total Work Hours Per Day (| • | , | | 8 | | | | | |
| Daily Number of Haul Truck | | | | 5 | | | | | |
| Average Trip Length One W | ay Haul Truck | s (Miles) | | 30 | | | | | |
| Total VMT Water Trucks pe | er day (Miles) | | | 3 | | | | | |
| Total VMT Dump Trucks pe | er day (Miles) | | | 150 | | | | | |
| | | | | | | | | | |
| To | tal Number o | of Each Equi | pment used f | or Construct | ion | | | | |
| # of equipment | | | | 1 | | | | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | | | |
| Days in Operation | 600 | 600 | 600 | 600 | 600 | 600 | | | |
| Miles Per Hour | | | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | | |
| | | | | | | | | | |
| # of equipment | | 1 | | | 1 | | | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | | | |
| Days in Operation | 600 | 600 | 600 | 600 | 600 | 600 | | | |
| Miles Per Hour | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | | |
| | A saumetion | a Haad in E | MEAC200 | <u> </u> | | 1 | | | |
| | Assumption | is Used III E | | | 1.550 000 | | | | |
| % LDA 66.00% | | | Daily VMT LE | | 1653.000 | | | | |
| %LDT 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | | |
| Season summer | | | | | | | | | |
| | T-1 4 | EAGOOO I | 4. | | | | | | |
| | EMFAC2002 Inputs | | | | | | | | |
| LDA LDT HDD | | | | | | | | | |
| Grams/Mile Grams/Mile Grams/Mile Grams/Mile Carbon Monoxide (CO) 3.02 3.6 2.9 | | | | | | | | | |
| Carbon Monoxide (CO) | 3.02 | 3.6 | | | | | | | |
| Reactive Organic Compounds | (KOC) | | 0.19 | 0.2 | 0.65 | | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 0.26 | | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.20 | | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 11.71 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.70 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.97 | | | | | |
| Particulates (PM10) | 0.01 | 0.04 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.9 | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.4 | | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 8.0 | | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.2 | | |
| | | | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 1.6 | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 2.6 | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 25.5 | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.6 | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|-----------------|-----------|------------------|--------|-------------------|---------|----------|--|
| | - | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Factor | <u>or</u> | Emissions | | Efficiency | Est. Er | missions | |
| | | | | | | (lbs | s/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | C | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 19.2 | lb/day | 50% | 1 | 10 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | C | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | C | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | 1. | .81 | |
| Total Particulates | | | | | | | 11 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | | |
|---|----------------|----------------------|--------------|--|--|--|--|--|--|
| | Est. Emissions | SCAQMD Thresholds | | | | | | | |
| Air Pollutant | (lbs/day) | (lbs/day) | Significant? | | | | | | |
| Carbon Monoxide (CO) | 16.11 | 550.00 | NO | | | | | | |
| Reactive Organic Compounds (ROC) | 4.21 | 75.00 | NO | | | | | | |
| Nitrogen Oxides (NOx) | 45.09 | 100.00 | NO | | | | | | |
| Particulates (PM10) | 12.45 | 150.00 | NO | | | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-93 Site Clearing Activities (2007-2008)

| | P2-93 Site Clearing Imports Inputs | | | | | | | | |
|------------------|------------------------------------|-----------------|---------------|-----------------|--------------|-------------|---------|--|--|
| Total days . | Allowed for | Project | | | 40 | | | | |
| Total Days All | lowed for Const | truction (Days) | 40 | | | | | | |
| Number of En | ıployees | | | | 15 | | | | |
| Average Trip | Length One Wa | ay POV (Miles) | | | 30 | | | | |
| Total Work H | ours Per Day (I | Hours/Day) | | | 6 | | | | |
| Daily Number | of Haul Trucks | s | | | 5 | | | | |
| Average Trip | Length One Wa | ay Haul Trucks | s (Miles) | | 30 | | | | |
| Total VMT W | ater Trucks per | r day (Miles) | | | 4 | | | | |
| Total VMT Du | ımp Trucks pei | r day (Miles) | | | 150 | | | | |
| | То | atal Number (| of Each Equi | nmant usad f | or Construct | ion | | | |
| # of equipment | | nai Nuilloci (| Ji Each Equi | official asca i | or Construct | 1011 | | | |
| Hours per Day | | 8 | 8 | 8 | 8 | 8 | 6 | | |
| Days in Operat | ion | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | | 40 | 40 | 40 | 40 | 40 | 40 | | |
| wines i ei iioui | • | scraper | forklift | compactor | crane | welder | backhoe | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | Gleser | dieser | uicsei | Gleser | <u> </u> | dieser | | |
| # of equipment | | 2 | | | | | | | |
| Hours per Day | | 8 | 6 | 8 | 8 | 8 | 6 | | |
| Days in Operat | ion | 40 | 40 | 40 | 40 | 40 | 40 | | |
| Miles Per Hour | • | 5 | | | | | | | |
| | | loaders | crawler dozer | drill rig | grader | pump | truck | | |
| | | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | | |
| | | Assumption | s Used in E | | | | | | |
| % LDA | 66.00% | | | Daily VMT LD | A & LDT | 1054.000 | | | |
| %LDT | 34.00% | | | Daily VMT Ha | ul Truck | 300 | | | |
| Season | summer | | | | | | | | |
| | | F3.6 | E A C2002 I | | | | ı | | |
| | | EM | FAC2002 In | | LDT | HDD | | | |
| | | | | LDA | LDT | HDD | | | |
| Carlan Ma | :1- (CO) | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monox | * * | TOC) | | 3.02 0.19 | 3.6 0.2 | 2.9 0.65 | | | |
| _ | nic Compounds (| KUC) | | 0.19 | 0.2 | 15.97 | | | |
| Nitrogen Oxide | | | | 0.25 | 0.01 | 0.26 | | | |
| Particulates (PM | v11U) | | | 0.01 | 0.01 | 0.20 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.47 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|---------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|--|--|
| | scraper | forklift | compactor | crane | welder | backhoe | Total | | | |
| | 250 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | | |
| Carbon Monoxide (CO) | 0.34 | 0.24 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 | | | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.13 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 | | | |
| Nitrogen Oxides (NOx) | 3.13 | 2.24 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 | | | |
| Particulates (PM10) | 0.08 | 0.05 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 | | | |
| | | | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | | | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | | | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | | | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.7 | | | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | | | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 33.1 | | | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | | | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|---|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.19992 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | |
| | Total Particulates | | | | | 1 | | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation Including POV, Fugitive Dust, and | | | | | | | | |
|---|----------------|---|----------------------|--------------|--|--|--|--|
| | Est. Emissions | | SCAQMD Thresholds | | | | | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? | | | | |
| Carbon Monoxide (CO) | 13.07 | | 550.00 | NO | | | | |
| Reactive Organic Compounds (ROC) | 2.80 | | 75.00 | NO | | | | |
| Nitrogen Oxides (NOx) | 44.29 | | 100.00 | NO | | | | |
| Particulates (PM10) | 2.35 | | 150.00 | NO | | | | |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-93 Excavation Activities (2007)

| Total days Allowed for | | | | | | | |
|--------------------------------|-------------------|---------------|----------------|---------------|------------|---------|--|
| rrotat days Allowed for | Project | | - | Inputs 20 | | | |
| Total Days Allowed for Const | | 20 | | | | | |
| Number of Employees | | | | 15 | | | |
| Average Trip Length One Wa | y POV (Miles |) | | 30 | | | |
| Total Work Hours Per Day (F | - | | | 8 | | | |
| Total Soil excavated (cubic Ya | ards) | | | 1000 | | | |
| Daily Number of Haul Trucks | ; | | | 2.5 | | | |
| Average Trip Length One Wa | y Haul Truck | s (Miles) | | 30 | | | |
| Total VMT Water Trucks per | day (Miles) | | | 2 | | | |
| Total VMT Dump Trucks per | day (Miles) | | | 20 | | | |
| | | | | | | | |
| То | tal Number | of Each Equi | pment used f | or Constructi | on | | |
| # of equipment | | 1 | | | | | |
| Hours per Day | 6 | 8 | 8 | 4 | 8 | 8 | |
| Days in Operation | 20 | 20 | 20 | 20 | 20 | 20 | |
| Miles Per Hour | | 3 | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | |
| | diesel | diesel | diesel | diesel | diesel | diesel | |
| | | | | | | | |
| # of equipment | 2 | 0 | | 0 | 0 | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 6 | |
| Days in Operation | <u>20</u> 5 | 20 | 20 | 20 | 20 | 20 | |
| Miles Per Hour | | | 4.000 .00 | | | 41- | |
| | loaders diesel | crawler dozer | drill rig | grader | pump | truck | |
| | diesei | diesel | diesel | diesel | diesel | diesel | |
| | Assumption | ns Used in E | MFAC2002 |) | | | |
| % LDA 66.00% | Issumption | is osed in E | Daily VMT LD | | 922,000 | | |
| %LDT 34.00% | | | Daily VMT Ha | | 150 | | |
| Season summer | | | Duny VIVII III | ar Truck | 130 | | |
| | | | | | | | |
| EMFAC2002 Inputs | | | | | | | |
| LDA LDT HDD | | | | | | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | |
| Reactive Organic Compounds (| ROC) | | 0.19 | 0.2 | 0.65 | | |
| | | | | 0.3 | 15.97 | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.5 | 10.77 | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 6.53 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.39 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.54 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|--|---------|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | | | | | | |
| | Grams/Mile | | lbs/day | | | | |
| Carbon Monoxide (CO) | 2.9 | | 0.96 | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | | 0.21 | | | | |
| Nitrogen Oxides (NOx) | 15.97 | | 5.28 | | | | |
| Sulfur Oxides (SOx) | NA | | 0 | | | | |
| Particulates (PM10) | 0.26 | | 0.09 | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|--|
| | scraper | excavator | compactor | crane | welder | backhoe | Total | |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 4.5 | |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 1.8 | |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 35.4 | |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.7 | |
| | | | | | | | | |
| | loaders | crawler dozer | drill rig | grader | pump | truck | Total | |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions | |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day | |
| Carbon Monoxide (CO) | 0.23 | 0.31 | 0.22 | 0.24 | 0.05 | 0.25 | 3.7 | |
| Reactive Organic Compounds (ROC) | 0.12 | 0.16 | 0.12 | 0.12 | 0.03 | 0.13 | 1.9 | |
| Nitrogen Oxides (NOx) | 2.07 | 2.79 | 2.02 | 2.18 | 0.49 | 2.35 | 33.1 | |
| Particulates (PM10) | 0.05 | 0.07 | 0.05 | 0.05 | 0.01 | 0.06 | 0.8 | |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|--|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0.19992 | lb/day | 50% | | 0.1 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 0.99 | |
| | Total Particulates | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excavation | n Includin | g POV, Fu | ıgitive Du | st, and |
|-------------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 15.65 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 4.29 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 74.38 | | 100.00 | NO |
| Particulates (PM10) | 2.72 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

P2-93 Construction Activities (2007)

| | P2-93 Construction Imports Inputs | | | | | | | |
|--|-----------------------------------|----------------|--------------|------------------|----------------|---------|--|--|
| Total days Allowed for | Project | | | 200 | | | | |
| Total Days Allowed for Construction (Days) | | | | 200 | | | | |
| Number of Employees | | | | 15 | | | | |
| Average Trip Length One Wa | ay POV (Miles) | | | 30 | | | | |
| Total Work Hours Per Day (1 | Hours/Day) | | | 8 | | | | |
| Daily Number of Haul Truck | s | | | 5 | | | | |
| Average Trip Length One Wa | ay Haul Trucks | (Miles) | | 30 | | | | |
| Total VMT Water Trucks per | r day (Miles) | | | 4 | | | | |
| Total VMT Dump Trucks per | day (Miles) | | | 150 | | | | |
| | | | | | | | | |
| To | tal Number o | of Each Equi | pment used f | or Construct | ion | | | |
| # of equipment | | | | | | | | |
| Hours per Day | 8 | 8 | 8 | 4 | 8 | 8 | | |
| Days in Operation | 200 | 200 | 200 | 200 | 200 | 200 | | |
| Miles Per Hour | | | | | | | | |
| | scraper | excavator | compactor | crane | welder | backhoe | | |
| | diesel | diesel | diesel | diesel | diesel | diesel | | |
| | | | | | | | | |
| # of equipment | 0 | 0 | 0 | | 0 | 4 | | |
| Hours per Day | 8 | 8 | 8 | 8 | 8 | 4 | | |
| Days in Operation Miles Per Hour | 200 | 200 | 200 | 200 | 200 | 200 | | |
| Miles Per Hour | loaders | ai.co | pile driver | ana dan | | truck | | |
| | diesel | rigs diesel | diesel | grader diesel | pump diesel | diesel | | |
| | ulesei | diesei | diesei | diesei | ulesei | diesei | | |
| | Assumption | s Used in E | MFAC2002 | 2 | | | | |
| % LDA 66.00% | I | | Daily VMT LD | | 1054.000 | | | |
| %LDT 34.00% | | | Daily VMT Ha | | 300 | | | |
| Season summer | | | | | | | | |
| • | | | | | | | | |
| | EM | FAC2002 In | puts | | | | | |
| | | | LDA | LDT | HDD | | | |
| | | | Grams/Mile | Grams/Mile | Grams/Mile | | | |
| Carbon Monoxide (CO) | | | 3.02 | 3.6 | 2.9 | | | |
| Reactive Organic Compounds (| ROC) | | 0.19 | 0.2 | 0.65 | | | |
| Nitrogen Oxides (NOx) | | | 0.25 | 0.3 | 15.97 | | | |
| Particulates (PM10) | | | 0.01 | 0.01 | 0.26 | | | |

| Construction Workers POV Emissions | | | | | | | |
|------------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | | | | | | |
| | Factor. | Est. Emissions | | | | | |
| | Grams/Mile | lbs/day | | | | | |
| Carbon Monoxide (CO) | 3.2172 | 7.47 | | | | | |
| Reactive Organic Compounds (ROC) | 0.1934 | 0.45 | | | | | |
| Nitrogen Oxides (NOx) | 0.267 | 0.62 | | | | | |
| Particulates (PM10) | 0.01 | 0.02 | | | | | |

Source: Emission Factors From EMFAC2002

| Haul Truck Emissions | | | | | | | |
|----------------------------------|------------|----------------|--|--|--|--|--|
| | EMFAC | | | | | | |
| | Emissions | Est. Emissions | | | | | |
| | Factor. | | | | | | |
| | Grams/Mile | | | | | | |
| Carbon Monoxide (CO) | 2.9 | 1.92 | | | | | |
| Reactive Organic Compounds (ROC) | 0.65 | 0.43 | | | | | |
| Nitrogen Oxides (NOx) | 15.97 | 10.55 | | | | | |
| Sulfur Oxides (SOx) | NA | 0 | | | | | |
| Particulates (PM10) | 0.26 | 0.17 | | | | | |

Source: EMFAC2002

| Construction Equipment Emissions | | | | | | | |
|----------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|-----------|
| | scraper | excavator | compactor | crane | welder | backhoe | Total |
| | 250 hp diesel | 500 hp diesel | 50 hp diesel | 175 hp diesel | 50 hp diesel | 120 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.34 | 0.56 | 0.05 | 0.22 | 0.55 | 0.11 | 0.0 |
| Reactive Organic Compounds (ROC) | 0.18 | 0.22 | 0.03 | 0.11 | 0.1 | 0.06 | 0.0 |
| Nitrogen Oxides (NOx) | 3.13 | 4.43 | 0.49 | 2.01 | 0.9 | 1.01 | 0.0 |
| Particulates (PM10) | 0.08 | 0.09 | 0.01 | 0.05 | 0.05 | 0.02 | 0.0 |
| | | | | | | | |
| | loaders | rigs | pile driver | grader | pump | truck | Total |
| | 175 hp diesel | 250 hp diesel | 175 hp diesel | 175 hp diesel | 50 hp diesel | 175 hp diesel | Emissions |
| | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/hour | lbs/day |
| Carbon Monoxide (CO) | 0.23 | 0.15 | 0.2 | 0.24 | 0.05 | 0.25 | 0.0 |
| Reactive Organic Compounds (ROC) | 0.12 | 0.30 | 0.15 | 0.12 | 0.03 | 0.13 | 0.0 |
| Nitrogen Oxides (NOx) | 2.07 | 2.70 | 2.7 | 2.18 | 0.49 | 2.35 | 0.0 |
| Particulates (PM10) | 0.05 | 0.07 | 0.07 | 0.05 | 0.01 | 0.06 | 0.0 |

Source: ARB Emission Inventory Publication Number MO99_32.3 Table 13 released: 2000

| Total PM10 Fugitive Dust Emissions from construction | | | | | | | | |
|--|--------------------|-----------|------------------|--------|-------------------|--|----------------|--|
| | | | Unmitigated | | Mitigation | | | |
| Air Pollutant | Emission Facto | <u>or</u> | Emissions | | Efficiency | | Est. Emissions | |
| | | | | | | | (lbs/day) | |
| Particulates (PM10) Loaders* | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Bulldozer** | 2.4 | lb/hr | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Scraper*** | 4.3 | lb/vmt | 0 | lb/day | 50% | | 0 | |
| Particulates (PM10) Backhoe**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) Trencher**** | 0.000035 | lb/ton | 0 | lb/day | 50% | | 0.0 | |
| Particulates (PM10) POV & Haul Truck | 0.42 | gm/mile | | | | | 1.25 | |
| | Total Particulates | | | | | | 1 | |

^{*} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 280 cubic yards per hour per loader, 1 cubic yard = 2550 pounds.

| Total Air Emissions from Excava | tion Including | g POV, Fu | igitive Du | st, and |
|----------------------------------|----------------|-----------|----------------------|--------------|
| | Est. Emissions | | SCAQMD Thresholds | |
| Air Pollutant | (lbs/day) | _ | (lbs/day) | Significant? |
| Carbon Monoxide (CO) | 9.39 | | 550.00 | NO |
| Reactive Organic Compounds (ROC) | 0.88 | | 75.00 | NO |
| Nitrogen Oxides (NOx) | 11.17 | | 100.00 | NO |
| Particulates (PM10) | 1.45 | | 150.00 | NO |

^{**} Bulldozing Overburden Equation Table 11.9-1 AP-42 Assume 15% silt content, 7.9 % soil moisture content

^{***} Cut and Fill Operations with 15 Cubic Meter Pan Scraper Equation SCAQMD CEQA Air Quality Handbook, Table A9-9

^{****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per backhoe, 1 cubic yard = 2550 pounds.

^{*****} Aggragate Batch Drop Equation AP-42, 13.2.4-3 (1) Assume mean wind speed = 1.6475 mph, 7.9% soil moisture content & 135 cubic yards per hour per Trencher, 1 cubic yard = 2550 pounds.

Cumulative Daily Construction Air Emissions Estimates for 2008

| | Est. Emissions | | AQMD esholds | |
|----------------------------------|----------------|------|-----------------|--------------|
| Air Pollutant | (lbs/day) | (lbs | s/day) | Significant? |
| Carbon Monoxide (CO) | 197.64 | 55 | 0.00 | NO |
| Reactive Organic Compounds (ROC) | 37.84 | 75 | 5.00 | NO |
| Nitrogen Oxides (NOx) | 669.33 | 10 | 0.00 | YES |
| Particulates (PM10) | 83.81 | 15 | 0.00 | NO |