

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



Report Generated On: 08/30/2010 01:11 pm PT

Report Revision #: 0

13060 Highway 9  
Boulder Creek, CA 95006 United States

www.slvwd.com  
831-430-4627  
bherbert@slvwd.com

Contact: Betsy Herbert  
Industry Type: Government – State  
NAIC Code: 2213-Water, Sewage and Other Systems  
SIC Code:

Description: The San Lorenzo Valley Water District (SLVWD) is an independent special district supplying water to approximately 22,500 people on the Central Coast. SLVWD utilizes both surface water and ground water sources. SLVWD also owns and operates a wastewater treatment facility, serving 56 houses.

Primary Calculation Methodologies: SLV Water District used equations in the GRP 3, Rev. 1 which accounts for special emission factors for P G & E, and default factors in CARROT to report and inventory our 2009 GHG emissions.

Organizational structure disclosure: The San Lorenzo Valley Water District is a government agency.

**Legend**

**Blue** = required

**Orange** = optional

#### VERIFIED EMISSIONS INFORMATION

Reporting Year: **2009**  
Reporting Scope: **CA**  
Reporting Protocol: General Reporting Protocol, Version 3.1, (January 2009)  
Reporting Boundaries: Management Control - Operational Criteria  
Direct Baseline Year: 2009  
Indirect Baseline Year: 2009

| Direct Emissions      | CO2e          | CO2    | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit       |
|-----------------------|---------------|--------|------|------|-------|-------|------|------------|
| Mobile Combustion     | <b>142.81</b> | 141.32 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Stationary Combustion | <b>18.72</b>  | 18.72  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Process Emissions     | <b>0.61</b>   | 0.30   | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Fugitive Emissions    | <b>0.00</b>   | 0.00   | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | -          |
| <b>TOTAL DIRECT</b>   | <b>162.14</b> | 160.34 | 0.00 | 0.01 | 0.00  | 0.00  | 0.00 | metric ton |

\* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

| Indirect Emissions            | CO2e          | CO2    | CH4  | N2O  | Unit       |
|-------------------------------|---------------|--------|------|------|------------|
| Purchased Electricity         | <b>633.62</b> | 630.79 | 0.03 | 0.01 | metric ton |
| Purchased Steam               | <b>0.00</b>   | 0.00   | 0.00 | 0.00 | -          |
| Purchased Heating and Cooling | <b>0.00</b>   | 0.00   | 0.00 | 0.00 | -          |
| <b>TOTAL INDIRECT</b>         | <b>633.62</b> | 630.79 | 0.03 | 0.01 | metric ton |

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| De Minimis Emissions                   | CO2e   | CO2  | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit       |
|--|--------|------|------|------|-------|-------|------|------------|
| District vehicle air conditioner-ADMIN | 0.00   | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| District vehicle air conditioners-OPS/ | 6.50   | 0.00 | 0.00 | 0.00 | 0.01  | 0.00  | 0.00 | metric ton |
| District vehicle air conditioners-OPS/ | 2.60   | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generator-ADMIN                        | 0.00   | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generators SUP/TRTMNT                  | 2.27   | 2.27 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generators, etc. OPS/Dist              | 0.00   | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generators, etc. OPS/Dist              | 1.60   | 1.60 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generators-SUP/TRTMNT                  | 0.00   | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Generators-WSTWTR                      | 0.50   | 0.50 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| TOTAL DEMINIMIS                        | 13.47  | 4.37 | 0.00 | 0.00 | 0.01  | 0.00  | 0.00 | metric ton |
| Percentage of Total Inventory:         | 1.66 % |      |      |      |       |       |      |            |

### Movement Report\*

| Factor | Details  | Amount (CO2e) | Unit       |
|--------|--|---------------|------------|
| Other  | 2009 was not a drought year, which accounts for the decrease in kwh consumed by groundwater pumping from 2008, which was a drought year. In 2008, the District estimated from three months of actual data, the entire year's emissions for the Felton water system, which was acquired in September 2008. Staff estimated the therms of natural gas used by the newly acquired water treatment plant at 839 for the year 2008. Actual therms consumed by the treatment plant in 2009 were 2230. The difference between 2230 and 839 is a difference of approximately 9 metric tons of CO2e | 9.10          | metric ton |

\*The Movement Report documents changes in the members inventory. This data is not verified but must be completed by the member to help track changes in emissions over time.

### VERIFICATION INFORMATION

Verification Company:

Verifier Name:

Lead Verifier Name:

Basis of Verification Opinion:

Date Submitted:

Verifier Comments:

### OPTIONAL INFORMATION

Information in this section is voluntarily provided by the participant for public information, but is not required and thus, not verified under California Registry protocols.

| Optional Emissions                     | CO2e  | CO2   | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit       |
|--|-------|-------|------|------|-------|-------|------|------------|
| Employee Commuting and Business Travel | 33.43 | 33.13 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| TOTAL OPTIONAL                         | 33.43 | 33.13 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |

Emissions Efficiency metric:

Emissions Management Programs:

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**Emissions Reduction Projects:** The District participates in several water conservation projects to encourage its customers to conserve water; thereby conserving energy and reducing GHG emissions. The District is investigating water recharge projects to increase groundwater storage to better conserve energy from groundwater pumping. The District is also investigating solar power to use at various installations.

**Emissions Reduction Goals:** The District's Board adopted a resolution in 2008 to adopt a policy matching AB 32 GHG emission reduction goals.

#### REFERENCE DOCUMENTS

| Title  | Author                         | Document Status | Publish Date          |
|--|--------------------------------|-----------------|-----------------------|
| <a href="#">Indirect_emissions_calculation_worksheet</a>     | Betsy Herbert, Ph.D.           | Private         | 08/30/2010 12:00:00AM |
| <a href="#">2009-Direct_emissions_calculation_worksheet</a>  | Betsy Herbert, Ph.D.           | Private         | 08/30/2010 12:00:00AM |
| <a href="#">2009-optional-emissions_calculation_workshee</a> | Betsy Herbert, Ph.D.           | Private         | 08/30/2010 12:00:00AM |
| <a href="#">Gas_year-2009</a>                                | Carol Triant, Accounting clerk | Private         | 08/30/2010 12:00:00AM |

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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#### FACILITY INFORMATION

Facility Name: **ADMIN**

Facility ID:

ReportingYear: 2009

Facility Address: Boulder Creek, CA 95006, United States

Facility PO Box:

Facility Contact Person: Lynn Barker

Facility Contact Phone: 831-430-4637

Facility Contact Email: lbarker@slvwd.com

Facility Description: ADMIN is equivalent to department "01" in SLVWD's accounting system, and includes emissions from the office buildings at 12788 Highway 9, and 13060 Highway 9.

SIC Code:

NAIC Code:

Industry Type:

| Direct Emissions      | CO2e        | CO2         | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Mobile Combustion     | 1.76        | 1.66        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Stationary Combustion | 2.11        | 2.11        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Process Emissions     | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| Fugitive Emissions    | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| <b>TOTAL DIRECT</b>   | <b>3.87</b> | <b>3.77</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

\* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

| Indirect Emissions            | CO2e        | CO2         | CH4         | N2O         | Unit              |  |  |
|-------------------------------|-------------|-------------|-------------|-------------|-------------------|--|--|
| Purchased Electricity         | 9.93        | 9.88        | 0.00        | 0.00        | metric ton        |  |  |
| Purchased Steam               | 0.00        | 0.00        | 0.00        | 0.00        | -                 |  |  |
| Purchased Heating and Cooling | 0.00        | 0.00        | 0.00        | 0.00        | -                 |  |  |
| <b>TOTAL INDIRECT</b>         | <b>9.93</b> | <b>9.88</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |  |  |

| De Minimis Detail                   | CO2e        | CO2         | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| District vehicle air conditioner-AC | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Generator-ADMIN                     | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL DEMINIMIS</b>              | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

Percentage of Total Inventory: 0.00%

| Optional Emissions           | CO2e         | CO2          | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Employee Commuting and Busir | 10.53        | 10.45        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL OPTIONAL</b>        | <b>10.53</b> | <b>10.45</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

**Facility Emission Reduction Goals:**

**Environmental Programs/Policies:**

**Other Public Information:**

**Primary Calculation Methodologies:**

**Equity Share:** 100.00

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| Source                  | Emission Category                      | Calc Method | Fuel Name | Fuel/Mileage | Emission Factor | Fract. Oxid. | GHG | Amount | Unit       | Methodol./ Source   | General Info |
|-------------------------|--|-------------|-----------|--------------|-----------------|--------------|-----|--------|------------|---|--------------|
| ADMIN personal vehicles | Employee Commuting and Business Travel | Pre-Calc    |           |              |                 |              | CO2 | 10.45  | metric ton | Make, year & model of each vehicle was recorded and miles per gallon determined from www.fueleconomy.gov. Mileage calculated on-line based on distance to and from employee homes; gallons of gas calculated from mileage using Equation III.7b from CCAR GRP 3.1: Total fuel Use (gallons) = Total mileage / (fuel economy city mpg x 55% + Fuel Economy highway mpg x 45%) Emissions factors from Table C-4, GRP-3.1, CH4 and N2O emissions factors for highway vehicles by model & year Used calculation III.7E from GRP-3.1, p. 43 to determine emissions |              |
| ADMIN personal vehicles | Employee Commuting and Business Travel | Pre-Calc    |           |              |                 |              | CH4 | 0.00   | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. CH4 emissions were then calculated according to calculation III.7E from GRP-3.1, p. 43.   |              |
| ADMIN personal vehicles | Employee Commuting and Business Travel | Pre-Calc    |           |              |                 |              | N2O | 0.00   | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. NO2 emissions were then calculated according to calculation III.7E from GRP-3.1, p. 43.   |              |

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### (Emissions from California operations)



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|  |                       |          |          |      |            |   |                                     |
|--|-----------------------|----------|----------|------|------------|---|-------------------------------------|
| Buildings-ADMIN                        | Purchased Electricity | Pre-Calc | CO2      | 9.88 | metric ton | All of Kwh information was obtained from spreadsheets, routinely compiled by SLVWD's accounting department, from PG & E bills. Equation uses PG&E multiplier for CO2 in pounds per Kwh (0.63567), and converts pounds to metric tons; (PG & E multiplier was reported in 2008 from 2010 CCAR website)   |                                     |
| Buildings-ADMIN                        | Purchased Electricity | Pre-Calc | CH4      | 0.00 | metric ton | Emission factor from GRP-3.1, Table C-2   | All purchased electricity from PG&E |
| Buildings-ADMIN                        | Purchased Electricity | Pre-Calc | N2O      | 0.00 | metric ton | ***Emission factor from GRP-3.1, Table C-2  |                                     |
| District vehicle air conditioner-ADMIN | Fugitive Emissions    | Pre-Calc | HFC-134a | 0.00 | metric ton | The screening method in GRP-3.1 assumes a refrigerant charge of 1 kg of HFC-134a for large vehicles and 0.5 kg of the same compound for small vehicles. The refrigerant loss rate for both vehicle types is assumed to be 35%. In 2008, SLVWD operated 23 vehicles, of which 21 were equipped with air conditioning units. Of these 21 vehicles, 2 were small and 19 were large in size. Only one of these vehicles is charged to ADMIN. The screening determined that direct fugitive emissions from vehicle air conditioning units were not significant, and therefore, could be categorized as de minimis emissions. |                                     |
| Generator-ADMIN                        | Stationary Combustion | Pre-Calc | CO2      | 0.18 | metric ton | Used Table C.7, Carbon Dioxide Emission Factors for Stationary Combustion from GRP-3.1  |                                     |
| Generator-ADMIN                        | Stationary Combustion | Pre-Calc | CH4      | 0.00 | metric ton | Used Table C.8, from GRP-3.1  |                                     |
| Generator-ADMIN                        | Stationary Combustion | Pre-Calc | N2O      | 0.00 | metric ton |   | Used Table C.8, from GRP-3.1        |

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|                     |                       |          |     |      |            |  |   |
|---------------------|-----------------------|----------|-----|------|------------|--|---|
| Natural gas-ADMIN   | Stationary Combustion | Pre-Calc | CO2 | 1.93 | metric ton | ****Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons   | PG & E supplies the natural gas; therms obtained from monthly bills |
| Natural gas-ADMIN   | Stationary Combustion | Pre-Calc | CH4 | 0.00 | metric ton | ****Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons   |   |
| Natural gas-ADMIN   | Stationary Combustion | Pre-Calc | N2O | 0.00 | metric ton | ****Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons   |   |
| vehicle -ADMIN      | Mobile Combustion     | Pre-Calc | CO2 | 1.66 | metric ton | Calculated using Equation III.7c in GRP-3.1, with emission factors from Table C.3, GRP-3.1; Total emissions in metric tons= fuel consumed (gallons) x emission factor (kg CO2/gallon) x 0.001 metric tons/kg |   |
| Vehicle fleet-ADMIN | Mobile Combustion     | Pre-Calc | CH4 | 0.00 | metric ton | Calculated using Equation III.7c in GRP-3.1, with emission factor from Table C.3, GRP-3: Total emissions in metric tons= fuel consumed (gallons) x emission factor (kg CO2/gallon) x 0.001 metric tons/kg    |   |
| Vehicle fleet-ADMIN | Mobile Combustion     | Pre-Calc | N2O | 0.00 | metric ton | Used mileage data collected by the District; Conversion factor from Table C.4, GRP-3.1   |   |

# Total Emissions Summary Report

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### (Emissions from California operations)



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#### FACILITY INFORMATION

Facility Name: **OPS/DISTRIBUTION**

Facility ID:

ReportingYear: 2009

Facility Address: Boulder Creek, CA 95006, United States

Facility PO Box:

Facility Contact Person: Betsy Herbert

Facility Contact Phone: 831-430-4627

Facility Contact Email: bherbert@slvwd.com

Facility Description: OPS/DISTRIBUTION is equivalent to department "04" in SLVWD's accounting system, and includes emissions from pump stations, tanks, reservoirs, and storage facilities.

SIC Code:

NAIC Code:

Industry Type:

| Direct Emissions      | CO2e          | CO2           | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-----------------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Mobile Combustion     | 110.05        | 109.04        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Stationary Combustion | 4.78          | 4.78          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Process Emissions     | 0.00          | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| Fugitive Emissions    | 0.00          | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| <b>TOTAL DIRECT</b>   | <b>114.83</b> | <b>113.82</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

\* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

| Indirect Emissions            | CO2e          | CO2           | CH4         | N2O         | Unit              |  |  |
|-------------------------------|---------------|---------------|-------------|-------------|-------------------|--|--|
| Purchased Electricity         | 125.33        | 124.98        | 0.01        | 0.00        | metric ton        |  |  |
| Purchased Steam               | 0.00          | 0.00          | 0.00        | 0.00        | -                 |  |  |
| Purchased Heating and Cooling | 0.00          | 0.00          | 0.00        | 0.00        | -                 |  |  |
| <b>TOTAL INDIRECT</b>         | <b>125.33</b> | <b>124.98</b> | <b>0.01</b> | <b>0.00</b> | <b>metric ton</b> |  |  |

| De Minimis Detail                   | CO2e        | CO2         | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| District vehicle air conditioners-D | 6.50        | 0.00        | 0.00        | 0.00        | 0.01        | 0.00        | 0.00        | metric ton        |
| Generators, etc. OPS/Dist           | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Generators, etc. OPS/Dist           | 1.60        | 1.60        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL DEMINIMIS</b>              | <b>8.10</b> | <b>1.60</b> | <b>0.00</b> | <b>0.00</b> | <b>0.01</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

Percentage of Total Inventory: 3.26%

| Optional Emissions           | CO2e         | CO2          | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Employee Commuting and Busir | 19.27        | 19.05        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL OPTIONAL</b>        | <b>19.27</b> | <b>19.05</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

**Facility Emission Reduction Goals:**

**Environmental Programs/Policies:**

**Other Public Information:**

**Primary Calculation Methodologies:**

**Equity Share:** 100.00



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| Source                                     | Emission Category     | Calc Method | Fuel Name | Fuel/Mileage | Emission Factor | Fract. Oxid. | GHG      | Amount | Unit       | Methodol./Source   | General Info                   |
|--|-----------------------|-------------|-----------|--------------|-----------------|--------------|----------|--------|------------|--|--------------------------------|
| Booster pumps, buildings OPS/Dist          | Purchased Electricity | Pre-Calc    |           |              |                 |              | CO2      | 124.98 | metric ton | All of Kwh information was obtained from spreadsheets, routinely compiled by SLVWD's accounting department, from PG & E bills. Equation uses PG&E multiplier for CO2 in pounds per Kwh (0.63567), and converts pounds to metric tons; (PG & E multiplier for 2008 as reported on 2010 CCAR website)  |                                |
| Booster pumps, buildings OPS/Dist          | Purchased Electricity | Pre-Calc    |           |              |                 |              | CH4      | 0.01   | metric ton | All of SLVWD's indirect emissions of CH4 come from electricity purchased from PG & E. Kwh provided in PG&E bills. Excel Worksheet is available. Emission factor from GRP-3.1, Table C-2.   |                                |
| Booster pumps, buildings OPS/Dist          | Purchased Electricity | Pre-Calc    |           |              |                 |              | N2O      | 0.00   | metric ton | Emission factor from GRP-3.1, Table C-2  |                                |
| District vehicle air conditioners-OPS/Dist | Fugitive Emissions    | Pre-Calc    |           |              |                 |              | HFC-134a | 0.01   | metric ton | The screening method in GRP-3.1 assumes a refrigerant charge of 1 kg of HFC-134a for large vehicles and 0.5 kg of the same compound for small vehicles. The refrigerant loss rate for both vehicle types is assumed to be 35%. In 2009, SLVWD operated 23 vehicles, of which 21 were equipped with air conditioning units. Of these 21 vehicles, 17 were operated under OPS/Distribution. The screening determined that direct fugitive emissions from vehicle air conditioning units were not significant, and therefore, could be categorized as de minimis emissions. | 5kg * .0001 = .005 metric tons |

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|                           |                       |          |     |      |            |   |  |
|---------------------------|-----------------------|----------|-----|------|------------|---|--|
| Generators, etc. OPS/Dist | Stationary Combustion | Pre-Calc | CH4 | 0.00 | metric ton | Stationary diesel, lpg, and unleaded fuel data from spreadsheets kept by inhouse operations staff, with data estimated for each generator: beginning of year fuel inventory, fuel added during the year, and end of year fuel inventory. See 09 -stat-fuel-work worksheet for details and accounting. | Includes generators and other transportable equipment including chainsaws.<br><br> |
| Generators, etc. OPS/Dist | Stationary Combustion | Pre-Calc | CO2 | 1.60 | metric ton | Stationary diesel fuel data from spreadsheets kept by inhouse operations staff, with data estimated for each generator: beginning of year fuel inventory, fuel added during the year, and end of year fuel inventory. Used Table C.7 for emissions factors.<br><br>                                   |  |
| Generators, etc. OPS/Dist | Stationary Combustion | Pre-Calc | N2O | 0.00 | metric ton | Stationary fuel data from spreadsheets kept by inhouse operations staff, with data estimated for each generator: beginning of year fuel inventory, fuel added during the year, and end of year fuel inventory. Used Table C8, GRP 3.1 for emissions factors.<br><br>                                  | Includes generators and other equipment including chainsaws <br><br>               |
| Natural gas-OPS/Dist      | Stationary Combustion | Pre-Calc | CO2 | 4.78 | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for N2O in Table C.8 for natural gas and converted from kg to metric tons<br><br>  |  |
| Natural gas-OPS/Dist      | Stationary Combustion | Pre-Calc | CH4 | 0.00 | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons<br><br>  |  |

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### (Emissions from California operations)



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|                                     |  |          |     |        |            |  |                   |
|-------------------------------------|--|----------|-----|--------|------------|--|-------------------|
| Natural gas-OPS/Dist                | Stationary Combustion                  | Pre-Calc | N2O | 0.00   | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons   |                   |
| OPS/DIST personal vehicles          | Employee Commuting and Business Travel | Pre-Calc | CH4 | 0.00   | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. CH4 emissions were then calculated according to calculation III.7E from GRP-3.1, p. 43.  |                   |
| OPS/DIST personal vehicles          | Employee Commuting and Business Travel | Pre-Calc | N2O | 0.00   | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. NO2 emissions were then calculated according to calculation III.7E from GRP-3.1, p. 43.  |                   |
| OPS/DIST personal vehicles Gasoline | Employee Commuting and Business Travel | Pre-Calc | CO2 | 19.05  | metric ton | Calculated from mileage using Equation III.7b from CCAR GRP 3.1: Total fuel Use (gallons) = Total mileage / (fuel economy city mpg x 55% + Fuel Economy highway mpg x 45%); Used emissions factors from Table C.1 for gasoline and diesel fuels. |                   |
| Vehicle fleet OPS/Dist              | Mobile Combustion                      | Pre-Calc | CO2 | 109.04 | metric ton | Calculated using Equation III.7c in GRP-3.1, with emission factors from Table C.3, GRP-3.1; Total emissions in metric tons= fuel consumed (gallons) x emission factor (kg CO2/gallon) x 0.001 metric tons/kg                                     | Includes forklift |
| Vehicle fleet OPS/Dist              | Mobile Combustion                      | Pre-Calc | CH4 | 0.00   | metric ton | Conversion factor from Table C.4, (GRP-3.1, p. 97) Used calculation III.7E from GRP-3.1, p. 43.  |                   |
| Vehicle fleet OPS/Dist              | Mobile Combustion                      | Pre-Calc | N2O | 0.00   | metric ton | Used mileage data collected by the District; Used Equation III.7E from GRP-3.1. Conversion factor from Table C.4, GRP-3.1  |                   |

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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#### FACILITY INFORMATION

Facility Name **OPS/SUPPLY & TREATMENT**  
 Facility ID  
 ReportingYear 2009  
 Facility Address Boulder Creek, CA 95006, United States  
 Facility PO Box  
 Facility Contact Person Betsy Herbert  
 Facility Contact Phone 831-430-4627  
 Facility Contact Email bherbert@slvwd.com  
 Facility Description OPS/SUPPLY & TREATMENT is equivalent to department "08" in SLVWD's accounting system, and includes emissions from groundwater well pumps and treatment plants.  
 SIC Code  
 NAIC Code  
 Industry Type

| Direct Emissions      | CO2e         | CO2          | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-----------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Mobile Combustion     | 31.00        | 30.62        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Stationary Combustion | 11.83        | 11.83        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Process Emissions     | 0.00         | 0.00         | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| Fugitive Emissions    | 0.00         | 0.00         | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | -                 |
| <b>TOTAL DIRECT</b>   | <b>42.83</b> | <b>42.45</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

\* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

| Indirect Emissions            | CO2e          | CO2           | CH4         | N2O         | Unit              |
|-------------------------------|---------------|---------------|-------------|-------------|-------------------|
| Purchased Electricity         | 491.44        | 489.04        | 0.02        | 0.01        | metric ton        |
| Purchased Steam               | 0.00          | 0.00          | 0.00        | 0.00        | -                 |
| Purchased Heating and Cooling | 0.00          | 0.00          | 0.00        | 0.00        | -                 |
| <b>TOTAL INDIRECT</b>         | <b>491.44</b> | <b>489.04</b> | <b>0.02</b> | <b>0.01</b> | <b>metric ton</b> |

| De Minimis Detail                   | CO2e        | CO2         | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| District vehicle air conditioners-D | 2.60        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Generators SUP/TRTMNT               | 2.27        | 2.27        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| Generators-SUP/TRTMNT               | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL DEMINIMIS</b>              | <b>4.87</b> | <b>2.27</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

Percentage of Total Inventory: 0.90%

| Optional Emissions           | CO2e        | CO2         | CH4         | N2O         | HFCs*       | PFCs*       | SF6         | Unit              |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Employee Commuting and Busir | 3.63        | 3.63        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | metric ton        |
| <b>TOTAL OPTIONAL</b>        | <b>3.63</b> | <b>3.63</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>metric ton</b> |

**Facility Emission Reduction Goals:**  
**Environmental Programs/Policies:**  
**Other Public Information:**  
**Primary Calculation Methodologies:**  
 Equity Share: 100.00

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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| Source   | Emission Category     | Calc Method | Fuel Name | Fuel/Mileage | Emission Factor | Fract. Oxid. | GHG      | Amount | Unit       | Methodol./Source  | General Info                           |
|--|-----------------------|-------------|-----------|--------------|-----------------|--------------|----------|--------|------------|---|--|
| District vehicle air conditioners-OPS/Sup & Trtmnt | Fugitive Emissions    | Pre-Calc    |           |              |                 |              | HFC-134a | 0.00   | metric ton | The screening method in GRP-3.1 assumes a refrigerant charge of 1 kg of HFC-134a for large vehicles and 0.5 kg of the same compound for small vehicles. The refrigerant loss rate for both vehicle types is assumed to be 35%. In 2009, SLVWD operated 23 vehicles, of which 21 were equipped with air conditioning units. Of these 21 vehicles, 5 were operated under OPS/Supply & Treatment. The screening determined that direct fugitive emissions from vehicle air conditioning units were not significant, and therefore, could be categorized as de minimis emissions. | 2 kg * .001 = .002 metric tons<br><br> |
| Generators SUP/TRTMNT                              | Stationary Combustion | Pre-Calc    |           |              |                 |              | CO2      | 2.27   | metric ton | Stationary fuel data from spreadsheets kept by inhouse operations staff, with data estimated for each generator: beginning of year fuel inventory, fuel added during the year, and end of year fuel inventory. Used Table C.7, Carbon Dioxide Emission Factors for Stationary Combustion from GRP-3.1   |  |
| Generators-SUP/TRTMNT                              | Stationary Combustion | Pre-Calc    |           |              |                 |              | CH4      | 0.00   | metric ton | Used Table C.8, Carbon Dioxide Emission Factors for Stationary Combustion from GRP-3.1  |  |
| Generators-SUP/TRTMNT                              | Stationary Combustion | Pre-Calc    |           |              |                 |              | N2O      | 0.00   | metric ton | Used Table C.8, GRP-3.1 for emissions factors   |  |

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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|  |  |          |     |        |            |   |   |
|--|--|----------|-----|--------|------------|---|---|
| Groundwater wells, buildings-SUP/TRTMNT  | Purchased Electricity                  | Pre-Calc | CO2 | 489.04 | metric ton | All of Kwh information was obtained from spreadsheets, routinely compiled by SLVWD's accounting department, from PG & E bills. Equation uses PG&E multiplier for CO2 in pounds per Kwh (0.63567), and converts pounds to metric tons; (PG & E multiplier for 2008 from 2010 CCAR website) |   |
| Groundwater wells, buildings-SUP/TRTMNT  | Purchased Electricity                  | Pre-Calc | CH4 | 0.02   | metric ton | Emission factor from GRP-3.1, Table C-2   | All of SLVWD's indirect emissions of CH4 come from electricity purchased from PG & E. Kwh provided in PG&E bills. Excel Worksheet is available. |
| Groundwater wells, buildings-SUP/TRTMNT  | Purchased Electricity                  | Pre-Calc | N2O | 0.01   | metric ton | Emission factor from GRP-3.1, Table C-2   | All of SLVWD's indirect emissions of N2O come from electricity purchased from PG & E. Kwh provided in PG&E bills. Excel Worksheet is available. |
| Natural gas-SUP/TRTMNT                   | Stationary Combustion                  | Pre-Calc | CO2 | 11.83  | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons  |   |
| Natural gas-SUP/TRTMNT                   | Stationary Combustion                  | Pre-Calc | CH4 | 0.00   | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons  |   |
| Natural gas-SUP/TRTMNT                   | Stationary Combustion                  | Pre-Calc | N2O | 0.00   | metric ton | Therms X 0.1= MMBtu from Table III.8.1, GRP-3.1; multiplied by emission factor for NO2 in Table C.8 for natural gas and converted from kg to metric tons  |   |
| OPS SUP & TRTMNT personal vehicle Diesel | Employee Commuting and Business Travel | Pre-Calc | CO2 | 0.22   | metric ton |   |   |
| OPS SUP & TRTMNT personal vehicles       | Employee Commuting and Business Travel | Pre-Calc | N2O | 0.00   | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. NO2 emissions calculations from III.7E from GRP-3.1, p. 43.   |   |

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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|  |  |          |     |       |            |   |
|--|--|----------|-----|-------|------------|---|
| DPS SUP & TRTMNT-personal vehicles         | Employee Commuting and Business Travel | Pre-Calc | CH4 | 0.00  | metric ton | Vehicle make, model, year & fuel type were recorded from employee survey. CH4 emissions from calculation III.7E from GRP-3.1, p. 43.  |
| DPS/SUP & TRTMNT personal vehicle Gasoline | Employee Commuting and Business Travel | Pre-Calc | CO2 | 3.41  | metric ton | Fuel use calculated from mileage using Equation III.7b from CCAR GRP 3.1: Total fuel Use (gallons) = Total mileage / (fuel economy city mpg x 55% + Fuel Economy highway mpg x 45%)                       |
| Vehicle fleet-SUP/TRTMNT                   | Mobile Combustion                      | Pre-Calc | CO2 | 30.62 | metric ton | Calculated using Equation III.7c in GRP-3.1, with emission factor from Table C.3, GRP-3: Total emissions in metric tons= fuel consumed (gallons) x emission factor (kg CO2/gallon) x 0.001 metric tons/kg |
| Vehicle fleet-SUP/TRTMNT                   | Mobile Combustion                      | Pre-Calc | CH4 | 0.00  | metric ton | Used mileage data collected by District staff; Conversion factor from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (GRP-3, p. 97)                    |
| Vehicle fleet-SUP/TRTMNT                   | Mobile Combustion                      | Pre-Calc | N2O | 0.00  | metric ton | Used mileage data collected by District; Conversion factor from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (GRP-3, p. 97)                          |

# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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#### FACILITY INFORMATION

Facility Name: **WASTEWATER**

Facility ID:

ReportingYear: 2009

Facility Address: Boulder Creek, CA 95006, United States

Facility PO Box:

Facility Contact Person: Betsy Herbert

Facility Contact Phone: 831-430-4627

Facility Contact Email: bherbert@slvwd.com

Facility Description: WASTEWATER is equivalent to department "06" in SLVWD's accounting system, and includes emissions from the Bear Creek Wastewater Treatment Plant.

SIC Code:

NAIC Code:

Industry Type:

| Direct Emissions      | CO2e        | CO2  | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit       |
|-----------------------|-------------|------|------|------|-------|-------|------|------------|
| Mobile Combustion     | 0.00        | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | -          |
| Stationary Combustion | 0.00        | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | -          |
| Process Emissions     | 0.61        | 0.30 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| Fugitive Emissions    | 0.00        | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | -          |
| <b>TOTAL DIRECT</b>   | <b>0.61</b> | 0.30 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |

\* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

| Indirect Emissions            | CO2e        | CO2  | CH4  | N2O  | Unit       |
|-------------------------------|-------------|------|------|------|------------|
| Purchased Electricity         | 6.92        | 6.89 | 0.00 | 0.00 | metric ton |
| Purchased Steam               | 0.00        | 0.00 | 0.00 | 0.00 | -          |
| Purchased Heating and Cooling | 0.00        | 0.00 | 0.00 | 0.00 | -          |
| <b>TOTAL INDIRECT</b>         | <b>6.92</b> | 6.89 | 0.00 | 0.00 | metric ton |

| De Minimis Detail      | CO2e        | CO2  | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit       |
|------------------------|-------------|------|------|------|-------|-------|------|------------|
| Generators-WSTWTR      | 0.50        | 0.50 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |
| <b>TOTAL DEMINIMIS</b> | <b>0.50</b> | 0.50 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | metric ton |

Percentage of Total Inventory: 6.22%

| Optional Emissions    | CO2e        | CO2  | CH4  | N2O  | HFCs* | PFCs* | SF6  | Unit |
|-----------------------|-------------|------|------|------|-------|-------|------|------|
| <b>TOTAL OPTIONAL</b> | <b>0.00</b> | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | -    |

**Facility Emission Reduction Goals:**

**Environmental Programs/Policies:**

**Other Public Information:**

**Primary Calculation Methodologies:**

**Equity Share:** 100.00



# Total Emissions Summary Report

## San Lorenzo Valley Water District

### (Emissions from California operations)



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| Source                              | Emission Category     | Calc Method | Fuel Name | Fuel/ Mileage | Emission Factor | Fract. GHG Oxid. | GHG | Amount | Unit       | Methodol./ Source   | General Info  |
|-------------------------------------|-----------------------|-------------|-----------|---------------|-----------------|------------------|-----|--------|------------|---|---|
| Bear Creek Wastewater septic system | Process Emissions     | Pre-Calc    |           |               |                 |                  | CO2 | 0.30   | metric ton | Equation 10.7: Process N2O emissions from WWTP with nitrification/denitrification   |   |
| Bear Creek WWTP septic system       | Process Emissions     | Pre-Calc    |           |               |                 |                  | N2O | 0.00   | metric ton | Used equation 10.7 from Local Government Operations Protocol, V. 1, 2008 to calculate the annual N2O emissions in metric tons produced by this nitrification/denitrification system                                   | .00098 metric tons of N2O is equivalent to .304 metric tons CO2 equivalent  |
| Generators-WS TWTR                  | Stationary Combustion | Pre-Calc    |           |               |                 |                  | CO2 | 0.50   | metric ton | Used equation III.8c from GRP-3.1 Used Table C7, GRP-3.1 for emissions factors  | Generators used two different types of fuel   |
| Generators-WS TWTR                  | Stationary Combustion | Pre-Calc    |           |               |                 |                  | CH4 | 0.00   | metric ton | Used equation III.8e from GRP-3.1; Used Table C8, for emission factors for stationary sources   |   |
| Generators-WS TWTR                  | Stationary Combustion | Pre-Calc    |           |               |                 |                  | N2O | 0.00   | metric ton | Used equation III.8e from GRP-3.1; Used Table C8, for fuels emission factors for stationary sources   |   |
| Wastewater treatment plant          | Purchased Electricity | Pre-Calc    |           |               |                 |                  | CO2 | 6.89   | metric ton | Kwh provided in PG&E bills. Excel Worksheet is available. Equation uses PG& E multiplier for CO2 in pounds per Kwh (0.63567), and converts pounds to metric tons; (PG & E multiplier for 2008 from 2010 CCAR website) | Total Kwh used includes only that purchased from P G & E; it does not reflect the unknown amount of Kwh saved by our solar panel contribution (Meter # P99739). |
| Wastewater treatment plant          | Purchased Electricity | Pre-Calc    |           |               |                 |                  | CH4 | 0.00   | metric ton | Emission factor from GRP-3.1, Table C-2   |   |
| Wastewater treatment plant          | Purchased Electricity | Pre-Calc    |           |               |                 |                  | N2O | 0.00   | metric ton | Emission factor from GRP-3.1, Table C-2   |   |