

Steve Fugate

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**Summary Report from the Diesel Emissions
Quantifier**

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| Vehicle Type | Sector | Vehicle/Equipment Type |
|---------------------|---------------------|-------------------------------|
| On Highway | City/County Vehicle | Class 5 (16,001-19,500 lbs) |
| NonRoad | Construction | Skid Steer Loaders |
| NonRoad | Construction | Skid Steer Loaders |
| NonRoad | Construction | Cranes |
| NonRoad | Construction | Dumpers/Tenders |
| NonRoad | Agriculture | Agricultural Mowers |
| NonRoad | Construction | Skid Steer Loaders |
| NonRoad | Stationary | Power generation |
| NonRoad | Construction | Tractors/Loaders/Backhoes |
| NonRoad | Construction | Skid Steer Loaders |

| Number of Vehicles Retrofitted | Model Year | Retrofit Year | Technology Description |
|---------------------------------------|-------------------|----------------------|-------------------------------|
| 1 | 2007 | 2009 | Biodiesel (B100) |
| 1 | 2000 | 2009 | Biodiesel (B100) |
| 1 | 2000 | 2009 | Biodiesel (B100) |
| 1 | 1980 | 2009 | Biodiesel (B100) |
| 1 | 1980 | 2009 | Biodiesel (B100) |
| 6 | 2000 | 2009 | Biodiesel (B100) |
| 5 | 1980 | 2009 | Biodiesel (B100) |
| 1 | 2002 | 2009 | Biodiesel (B100) |
| 2 | 2002 | 2009 | Biodiesel (B100) |
| 4 | 2005 | 2009 | Biodiesel (B100) |

| Fuel Type | Vehicle Miles Traveled/Year (VMT) | Horsepower | Usage Rate/Year |
|-------------------------------|--|-------------------|------------------------|
| Regular Diesel (ULSD), 15 ppm | 12354 | | |
| Regular Diesel (LSD), 500 ppm | | 100 | 40 |
| Regular Diesel (LSD), 500 ppm | | 25 | 30 |
| Regular Diesel (LSD), 500 ppm | | 600 | 15 |
| Regular Diesel (LSD), 500 ppm | | 175 | 35 |
| Regular Diesel (LSD), 500 ppm | | 100 | 30 |
| Regular Diesel (LSD), 500 ppm | | 100 | 20 |
| Regular Diesel (LSD), 500 ppm | | 600 | 25 |
| Regular Diesel (LSD), 500 ppm | | 75 | 40 |
| Regular Diesel (LSD), 500 ppm | | 50 | 20 |

| Installation Cost | Unit Cost | Percent Reduced (NOx, %) | Baseline of Vehicles Retrofitted per year (NOx, tons/year) |
|--------------------------|------------------|---------------------------------|---|
| \$0 | \$0 | -10.00% | 0.0381 |
| \$0 | \$0 | -10.00% | 0.0049 |
| \$0 | \$0 | -10.00% | 0.0007 |
| \$0 | \$0 | -10.00% | 0.0309 |
| \$0 | \$0 | -10.00% | 0.0096 |
| \$0 | \$0 | -10.00% | 0.0477 |
| \$0 | \$0 | -10.00% | 0.0212 |
| \$0 | \$0 | -10.00% | 0.0216 |
| \$0 | \$0 | -10.00% | 0.0072 |
| \$0 | \$0 | -10.00% | 0.0044 |

| Amount Reduced per Year(NOx, tons) | Lifetime Baseline of Vehicles Retrofitted (NOx, tons) |
|---|--|
| 0 | 0.6194 |
| 0 | 0.0763 |
| 0 | 0.004 |
| 0 | 0.0309 |
| 0 | 0.0096 |
| 0 | 0.5651 |
| 0 | 0.0212 |
| 0 | 0.4571 |
| 0 | 0.0864 |
| 0 | 0.0443 |

| Lifetime Amount Reduced (NOx, tons) | Lifetime Amount Emitted After Retrofit, Retrofitted Vehicles (NOx, tons) |
|--|---|
| -0.0619 | 0.6813 |
| -0.0076 | 0.0839 |
| 0 | 0.0044 |
| 0 | 0.034 |
| 0 | 0.0105 |
| -0.0565 | 0.6216 |
| 0 | 0.0233 |
| -0.0457 | 0.5028 |
| -0.0086 | 0.0951 |
| 0 | 0.0487 |

| Baseline of Vehicles Retrofitted per year (PM, tons/year) | Amount Reduced per Year(PM, tons) |
|--|--|
| 0.0002 | 0.0001 |
| 0.0008 | 0.0003 |
| 0.0001 | 0 |
| 0.0038 | 0.0015 |
| 0.0021 | 0.0008 |
| 0.006 | 0.0024 |
| 0.0051 | 0.002 |
| 0.0007 | 0.0003 |
| 0.0012 | 0.0005 |
| 0.0007 | 0.0003 |

| Lifetime Baseline of Vehicles Retrofitted (PM, tons) | Lifetime Amount Reduced (PM, tons) |
|---|---|
| 0.0036 | 0.0014 |
| 0.0129 | 0.0052 |
| 0.0005 | 0.0002 |
| 0.0038 | 0.0015 |
| 0.0021 | 0.0008 |
| 0.0713 | 0.0285 |
| 0.0051 | 0.002 |
| 0.0155 | 0.0062 |
| 0.0149 | 0.006 |
| 0.0067 | 0.0027 |

| Lifetime Amount Emitted After Retrofit, Retrofitted Vehicles (PM, tons) | Capital Cost Effectiveness (\$/ton), Retrofitted Vehicles (PM) |
|--|---|
| 0.0022 | 0 |
| 0.0078 | 0 |
| 0.0003 | 0 |
| 0.0023 | 0 |
| 0.0013 | 0 |
| 0.0428 | 0 |
| 0.003 | 0 |
| 0.0093 | 0 |
| 0.0089 | 0 |
| 0.004 | 0 |

| Percent Reduced (HC, %) | Baseline of Vehicles Retrofitted per year(HC, tons/year) |
|--------------------------------|---|
| 60.00% | 0.0014 |
| 60.00% | 0.0009 |
| 60.00% | 0.0001 |
| 60.00% | 0.0028 |
| 60.00% | 0.0012 |
| 60.00% | 0.0049 |
| 60.00% | 0.007 |
| 60.00% | 0.0008 |
| 60.00% | 0.0014 |
| 60.00% | 0.0005 |

| Amount Reduced per Year(HC, tons) | Lifetime Baseline of Vehicles Retrofitted (HC, tons) |
|--|---|
| 0.0008 | 0.0223 |
| 0.0006 | 0.0149 |
| 0.0001 | 0.0008 |
| 0.0017 | 0.0028 |
| 0.0007 | 0.0012 |
| 0.0029 | 0.0579 |
| 0.0042 | 0.007 |
| 0.0005 | 0.018 |
| 0.0008 | 0.0169 |
| 0.0003 | 0.0055 |

| Lifetime Amount Reduced (HC, tons) | Lifetime Amount Emitted After Retrofit, Retrofitted Vehicles (HC, tons) |
|---|--|
| 0.0134 | 0.0089 |
| 0.0089 | 0.006 |
| 0.0005 | 0.0003 |
| 0.0017 | 0.0011 |
| 0.0007 | 0.0005 |
| 0.0347 | 0.0232 |
| 0.0042 | 0.0028 |
| 0.0108 | 0.0072 |
| 0.0101 | 0.0067 |
| 0.0033 | 0.0022 |

| Baseline of Vehicles Retrofitted per year (CO, tons/year) | Amount Reduced per Year(CO, tons) |
|--|--|
| 0.0015 | 0.0007 |
| 0.0049 | 0.0022 |
| 0.0008 | 0.0004 |
| 0.0073 | 0.0033 |
| 0.0036 | 0.0016 |
| 0.0337 | 0.0152 |
| 0.0268 | 0.012 |
| 0.0042 | 0.0019 |
| 0.0073 | 0.0033 |
| 0.0034 | 0.0015 |

| Lifetime Baseline of Vehicles Retrofitted (CO, tons) | Lifetime Amount Reduced (CO, tons) |
|---|---|
| 0.0244 | 0.011 |
| 0.0772 | 0.0347 |
| 0.0047 | 0.0021 |
| 0.0073 | 0.0033 |
| 0.0036 | 0.0016 |
| 0.3995 | 0.1798 |
| 0.0268 | 0.012 |
| 0.0898 | 0.0404 |
| 0.0877 | 0.0395 |
| 0.0345 | 0.0155 |

| Lifetime Amount Emitted After Retrofit, Retrofitted Vehicles (CO, tons) | Capital Cost Effectiveness (\$/ton), Retrofitted Vehicles (CO) |
|--|---|
| 0.0134 | 0 |
| 0.0424 | 0 |
| 0.0026 | 0 |
| 0.004 | 0 |
| 0.002 | 0 |
| 0.2197 | 0 |
| 0.0147 | 0 |
| 0.0494 | 0 |
| 0.0482 | 0 |
| 0.019 | 0 |

| Percent Reduced (CO2, %) | Baseline of Vehicles Retrofitted per year(CO2, tons/year) |
|---------------------------------|--|
| 5.20% | 11.4663 |
| 5.20% | 3.1524 |
| 5.20% | 2.3532 |
| 5.20% | 3.8406 |
| 5.20% | 4.6176 |
| 5.20% | 2.1423 |
| 5.20% | 7.4814 |
| 5.20% | 5.6166 |
| 5.20% | 5.4501 |
| 5.20% | 3.9183 |

| Amount Reduced per Year(CO2, tons) | Lifetime Baseline of Vehicles Retrofitted (CO2, tons) |
|---|--|
| 0.5962 | 186.442 |
| 0.1639 | 49.3819 |
| 0.1224 | 13.3309 |
| 0.1997 | 3.8406 |
| 0.2401 | 4.6176 |
| 0.1114 | 25.3974 |
| 0.389 | 7.4814 |
| 0.2921 | 118.8874 |
| 0.2834 | 65.2468 |
| 0.2038 | 39.8288 |

| Lifetime Amount Reduced (CO2, tons) | Lifetime Amount Emitted After Retrofit, Retrofitted Vehicles (CO2, tons) |
|--|---|
| 9.695 | 176.7471 |
| 2.5679 | 46.8141 |
| 0.6932 | 12.6377 |
| 0.1997 | 3.6409 |
| 0.2401 | 4.3775 |
| 1.3207 | 24.0767 |
| 0.389 | 7.0924 |
| 6.1821 | 112.7052 |
| 3.3928 | 61.8539 |
| 2.0711 | 37.7577 |

