NATIONWIDE ENVIRONMENTAL SERVICES Division OF Joe's Sweeping, Inc.



FINAL REPORT

October 1, 2014

Contract#: MS10006

NATIONWIDE ENVIRONMENTAL SERVICES COMPRESSED NATURAL GAS STREET SWEEPERS DEPLOYMENT PROJECT

Nationwide Environmental Services

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Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under the AB2766 Discretionary Fund Work Program

Acknowledgements

Nationwide Environmental Services thanks the Mobile Source Air Pollution Reduction Review Committee (MSRC) and Clean Energy for their individual and combined efforts that made this project possible.

This report was submitted in fulfillment of MSRC Contract# MS10006, Nationwide Environmental Services compressed natural gas (CNG) Street Sweepers Deployment Project (x3). Work was completed as of September 18, 2014.

Disclaimer

The statement and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction Review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses in connection with material reported is not to be constructed as either an actual or implied endorsement of such products.

Project Description

This contract provides \$94,887 in funding to offset the costs of purchasing and deploying four (3) CNG street sweeper trucks. Nationwide Environmental provided the remaining capital for this purchase, a total of \$972,042.

NES has become the preferred provider of street sweeping services equipped with the best and newest equipment available in the industry. Our extensive and expanding fleet of over 90 sweeping and cleaning vehicles is maintained regularly for a positive image and is continually upgraded with the latest technology.

Work Performed

Vehicle purchasing and deployment began in December 2012. All vehicles were purchased and deployed by December 2013.

Task 1: Order Vehicles

All vehicles were ordered from Marco Equipment Company.

Task 2: Vehicle Procurement

Nationwide Environmental Services developed a public outreach plan for their webpage that included information about compressed natural gas, the MSRC, and the air quality benefits created through the use of CNG by fleet vehicles. Each new refuse truck was clearly labeled with a decal noting the use of CNG and the support of the MSRC. The Public Outreach Plan was submitted and approved by the MSRC.

Task 3: Vehicle Deployment

The three (3) vehicles funded under the terms of this award have been received by Nationwide Environmental and placed into service.

Task 4: Progress Reports

Nationwide Environmental submitted all required quarterly progress reports.

Task 5: Final Report

This report will act as the final report for this project. Upon acceptance of this report, Task 6 will be complete.

Problems Encountered

Nationwide Environmental has not encountered any major problems with the CNG vehicles since their deployment. The new vehicles have provided reliable performance and have received positive feedback from Nationwide Environmental Drivers and customers.

Emissions Benefits

Natural gas is the cleanest choice of fuel available today for this market. Natural gas powered refuse trucks produce up to 23% fewer greenhouse gas emissions

than comparable diesel models¹² At the time of application, the 2010 Cummins ISL-G natural gas engine was the only 2010-compliant engine available. For comparison purposes and since FEL engines are not eligible for this funding program, emission reduction calculations utilized the 2009 emissions certifications for the Cummins ISL-G natural gas engine (a 2010 compliant engine) versus a comparable diesel engine.

This fleet of four (3) heavy-duty CNG refuse trucks will collectively consume 27,331 diesel equivalent gallons (DEG) of CNG annually, 9,110 DEG per truck (based on averaged fleet data). Based on this use, an estimated 7,751 pounds of criteria pollutants and greenhouse gas emissions³ and would be reduced annually by this fleet with 77,514 pounds reduced over the 10-year life of the project.

Project Emission Reductions*

Annual Emission Reductions (Pounds)						
Emissions Reduced:	Carbon	Volatile Organic	Nitrogen Oxide	Fine Particulate	Greenhouse	Total Emission Reductions
	Monoxide (CO)	Compound (VOC)	(NOx)	Matter (PM2.5)	Gas (GHG)	(Criteria Pollutants & GHG)
3 CNG Vehicles	393	44	2,039	26	5,250	7,751

² "Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (USLD) from average Crude Refined In California" California Air Resources Board, January 12, 2009
³ Emissions reduction calculated using the U.S. Department of Energy Clean Cities Area of Interest 4: Alternative Fuel and Advanced Technology Vehicles Pilot Program Emissions Benefit Tool. Assumptions: CA vehicle fleet of 3 CNG vehicles will travel 27,331 miles annually.

¹ "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from North American Natural Gas" California Air Resources Board, January 12, 2009.

Photographs & Outreach

Truck#250



Truck#235



Truck#236



Summary and Conclusions

Nationwide and Clean Energy appreciate the support that has been provided by the Mobile Source Air Pollution Review Committee and South Coast Air Quality Management District for alternative fuel projects in the South Coast Air Basin. We recommend the continued support for funding projects that provide buydowns for clean-fueled natural gas vehicles, fund technology advancement, and increase natural gas infrastructure.