Prepared for the
Mobile Source Air Pollution Review Committee (MSRC)
Under the AB 2766 Discretionary Fund Work Program
Final Report

Construction of a Compressed Natural Gas Fueling Station
Bear Valley Unified School District
Contract #11079
June 25th, 2014

Acknowledgements: There were contributions by several people and organizations toward this project that enabled its success. First, there was the MSRC with the offering and administration of this grant. This was our district's first experience with a grant like this and we needed much support and guidance through the process. Special mention goes to Mrs. Cynthia Ravenstein and Mr. Matt Mackenzie of Contracts Administration for guiding us through the process with excellent customer service, professionalism and patience. We greatly appreciate their efforts and assistance. We also acknowledge Mr. Greg Pettis, MSRC Chair, for being one of our featured speakers at our groundbreaking for the CNG Fueling Station on October 29, 2013.

Recognition also goes out to Mr. Terry Planz and Mrs. Gail Hastain of our district in their involvement in the vision, planning and organization of this project. And lastly, recognition to Mrs. Kim Crawford, Mr. Andrew Beggs and Mr. Stephen Cacace of Siemens Industry, Inc. for their involvement in the design, engineering and construction of this project.

This report was submitted in fulfillment of Contract #11079 and the construction of a compressed natural gas fueling station by Bear Valley Unified School District under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of October 29, 2013.

Project Description & Work Performed: The District contracted with Seimens Industry, Inc. to design, engineer, construct and install the CNG fueling station. We chose Siemens based upon their expertise in the industry as well as their ability to deliver a "turnkey" process. More specifically, they could design, engineer and construct all aspects of the fueling station. This avoided any disconnect of the design, engineering and construction that sometimes occurs when architects, engineers and/or contractors disagree. It was successfully completed on October 29, 2013 and within budget. The system is fully operational and functioning effectively.

The original vision was brought forth by Mr. Terry Planz and Mrs. Gail Hastain of Bear Valley Unified School District (BVUSD). Through these individuals, the district screened two contractors including Siemens Industry, Inc.; and ultimately it was determined that the best fit for our district was Siemens.

Throughout the planning, design, and engineering phases, we kept in mind the future potential of expanding the system. Considerations were made addressing this in terms of the location of the equipment. Potential expansion includes, but is not limited to, our own district use and a public station(s). The basic system and improvements includes one gas dryer, two (2) 28-SCFM compressors, eight (8) time-fill dispenser assemblies, an electric time-fill panel and other

necessary accessories. As previously stated, the system has been fully functional since October 29, 2013.

Problems Encountered: I am most pleased to report there we no problems encountered. I believe this was due to the quality of our contractor, Siemens Industry, Inc. and the on-going, straight forward and consistent communication of all parties.

Emissions Benefits: We do not have any specific data as to the reduced emissions of our new CNG buses as compared with our older and recently replaced non-compliant diesel buses. However, there are numerous studies that support the general statement that the emissions from new CNG buses are substantially less than those of older, non-compliant diesel buses. The quantification we are using is Diesel Fuel Gallons Displaced by CNG. The following tables reflect this measurement for the months of October 2013 – February 2014.

Table 1: Data for October 2013

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	6,426	6,674	48	9	5	8	5
16	2,503	2,591	91	9	5	8	5
17	2,541	2,850	309	9	3	10	3
18	2,457	2,955	498	9	7	6	7
26	2,486	2,550	64	9	0	Not CHP Approved	0
Diesel Fuel Gallons Displaced by CNG							202

Table 2: Data for November 2013

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	6,674	7,464	790	18	15	3	15
16	2,594	3,756	1,162	18	16	2	16
17	2,850	4,077	1,227	18	16	2	16
18	2,955	3,131	176	18	2	16	2
26	2,550	3,587	1,037	18	17	1	17
Diesel Fuel Gallons Displaced by CNG							878.4

Table 3: Data for December 2013

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	7,464	7,789	325	14	2.5	11.5	2.5
16	3,756	4,059	303	14	1	13	1
17	4,077	5,232	1,155	14	13	1	13
18	3,496	3,496	0	14	0	14	0
26	3,587	4,582	995	14	14	0	14
Diesel Fuel Gallons Displaced by CNG							555.6

Table 4: Data for January 2014

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	7,619	8,486	867	14	14	0	14
16	4,059	4,059	0	14	0	14	0
17	5,105	6,299	1,194	14	14	0	14
18	3,496	3,496	0	14	0	14	0
26	4,448	5,467	1,019	14	14	0	14
Diesel Fuel Gallons Displaced by CNG							616

Table 5: Data for February 2014

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	8,486	9,270	784	18	18	0	18
16	4,059	4,059	0	18	0	18	0
17	6,299	7,556	1,257	18	18	18	18
18	3,496	4,986	1,490	18	19	0	18
26	5,467	6,515	1,048	18	17	1	17
Diesel Fuel Gallons Displaced by CNG							915.8

Table 6: Data for March 2014

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	9,270	9,975	705	15	15	0	15
16	4,059	4,204	145	15	0	15	0
17	7,556	8,642	1,086	15	15	0	15
18	4,986	6,243	1,257	15	15	0	15
26	6,515	7,559	1,044	15	15	0	15
Diesel Fuel Gallons Displaced by CNG							847

Table 7: Data for April 2014

Bus #	Mileage Beginning	Mileage End	Mileage Total	Days Schools in Session	Days in Use	Buses not in Service	Days Fueled
15	9,975	10,763	788	17	17	0	17
16	4,204	5,067	863	17	13	4	13
17	8,642	9,427	785	17	8	9	8
18	6,243	7,750	1,507	17	15	2	15
26	7,559	8,652	1,093	17	17	0	17
Diesel Fuel Gallons Displaced by CNG							1,007

Photographs & Outreach: As part of commitment under the grants, we have MSRC decals on the fueling station and we have performed an outreach program. I have attached pictures verifying the decals and I have included the media materials supporting our outreach program. As part of our outreach program, we were most proud to have Mr. Greg Pettis, Mobile Source Air Pollution Reduction Review Committee Chair, speak at our ribbon cutting ceremony on October 29th, 2013. This event was covered by our local media.

Summary and Conclusions: This was the first of a grant of this type our district had engaged. We found the process to be smooth and the requirements of the grant were well defined. We have not identified any recommendations of how to improve the future execution of the project.

The work entailed the construction of a CNG fueling station to enable our district to fuel our five (5) new CNG buses that recently replaced five (5) older, non-compliant diesel buses. Our plan is to replace more of our existing older, non-compliant diesel buses with CNG buses as grants for buses become available.

As previously stated, we do not have any specific data as to the reduced emissions of our new CNG buses as compared with our older and recently replaced non-compliant diesel buses. However, there are numerous studies that support the general statement that the emissions from new CNG buses are substantially less than those of older, non-compliant diesel buses. Additionally, there is precise information within this report that quantifies the number of diesel fuel gallons displaced by the use of our CNG buses.