



Finding a better way

ATTN:

South Coast Air Quality Management District / MSRC

21865 Copley Drive

Diamond Bar, CA 91765

June 9, 2021

Final Project Report

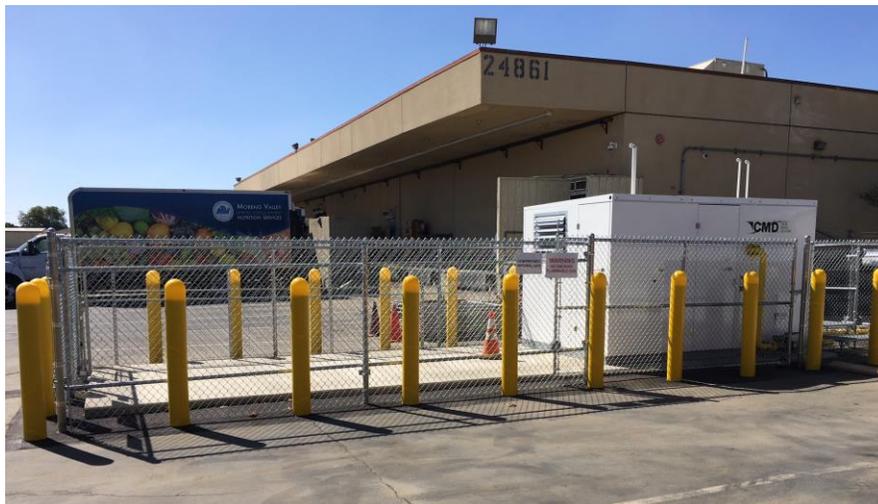
Moreno Valley Unified School District CNG Station Expansion

Contract No. AB 7266 / MS18125

Contract Period: May 29, 2019 through August 29, 2029

Contractor: U.S. GAIN, A DIVISION OF U.S. VENTURE, INC.

*Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under
the AB 2766 Discretionary Fund Work Program.*





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Acknowledgements:

A special thank you to the following individuals and organizations for making this project a success:

- Jim Burleson – Director of Transportation – Moreno Valley Unified School District
- John Nichols – Facilities Planner – Moreno Valley Unified School District
- Steve Rutherford – Lead Planning Associate – SoCal Gas
- Manny Alarcón - Clean Transportation Program Manager -SoCal Gas
- Tim Nelligan – CEO and Professional Engineer– Katahdin Environmental Corporation
- David Hill - Owner – General Manager – Tomco, Inc.
- Will Brinson – President - Compressor Design and Services, Inc.
- CMD Corporation – Primary Equipment Manufacturer
- Brian Saarnio – Project Manager – U.S. GAIN
- Michael Bolin – Business Development Manager – U.S. GAIN

This report was submitted in fulfillment of Contract No. AB 7266 / MS18125 and the Moreno Valley Unified School District CNG Station Expansion by U.S. GAIN under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of September 26, 2019.

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 (South Coast AQMD). The mention of commercial products, their sources or their uses in connection with material reported is not to be construed as either an actual or implied endorsement of such products.*



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Project Description & Work Performed

The Moreno Valley Unified School District (MVUSD) – contracted with U.S. GAIN to design, permit, construct and operate a replacement CNG Station at their Perris BLVD. facility, Moreno Valley CA. U.S. GAIN, with funding assistance from the MSRC, was successful designing and constructing a higher capacity, replacement CNG station and will operate the station on MVUSD’s behalf, ensuring outstanding station reliability, efficiency and performance.

Site Planning:

Through collaboration between the Moreno Valley Unified School District and U.S. GAIN, the project planning team was able to thoroughly assess the school district’s bussing / fleet operational fueling needs and develop a preliminary layout that satisfied the efficiency, safety and economic requirements for the project. The City of Moreno Valley was supportive of the project and issued permits without issue.

Site Design:

The Moreno Valley Unified School District property contained a small scale, non-functioning CNG fueling compressor and a limited number of time-fill hoses. U.S. Gain was able to incorporate a new compression unit, additional time fill fueling posts and hoses, and upgrade the underground gas line to serve the higher capacity natural gas demand, without impacting the District’s day-to day operational flow of the site.

U.S. GAIN procured the following equipment for the project:

- (1) 75hp CMD CGS071 Compressor unit rated at 95 SCFM
- (1) Xebec Gas Dryer
- (24) Dual Hose Time Fill Posts - K-Rail Mounted
- (2) Single Hose Time Fill Posts – K-Rail Mounted
- Control, Electrical, and Communication - NEMA Rated Cabinets

In addition to the equipment that was procured, the natural gas service for the site had to be upgraded with larger distribution lines and a new meter set assembly installed by SoCal Gas.

Electrical service was provided by MVUSD’s facility, as they had sufficient capacity within the onsite grid to support the project.



Site Construction:

Formal site construction was initiated on 7/23/2019 and the project was completed on 9/26/2019. The site construction process followed a standard U.S. GAIN project pathway and no significant issues developed during the process.

Moreno Valley Unified School District CNG Station Project Pathway:

- Phase 1** – Site demolition, prep work and removal of existing compressor equipment
- Phase 2** – Installation of the new underground gas line, underground CNG distribution lines and equipment foundations
- Phase 3** – Installation of the compressor, dryer and new time fill posts
- Phase 4** – Electrical cabinet installation and tie-ins – this included installation of the E-Stop and safety systems
- Phase 5** – Installation of safety signage, hoses, fencing, wheel stops
- Phase 6** – Testing and Final Inspection
- Phase 7** – Formal Commissioning and release of the station for use

Required City inspections were performed, as needed, during the appropriate construction phase. No findings were identified during final inspection that delayed the opening of the station.

Site Operation:

Upon completion of the project and commissioning on 9/26/2019, the station was opened for use to the MVUSD bus fleet. The district was responsible for re-training their drivers on the new CNG fueling process, safety systems and safety protocols to use the site. U.S. GAIN provided training support during the driver training period and is available 24/7 to assist in any future re-training needs.

The CND station is currently operational and is supported 24/7 by U.S. GAIN and our team of local maintenance providers. Bi-Weekly preventative maintenance is performed, and our remote call center is available 24/7/365 to offer on call support if immediate needs are identified.

Problems Encountered

No significant problems were encountered during the design, engineering, permitting or construction of the CNG project. After commissioning of the upgraded station in late September 2019, the Moreno Valley Unified School District slowly ramped up fueling at the site, as drivers needed to be trained on the new fueling hoses. Full site utilization started after winter break in January 2020.

School closures, due to COVID-19, significantly reduced station usage starting in March 2020 and remained in place throughout the remainder of 2020 and into March of 2021.



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Emissions Benefits

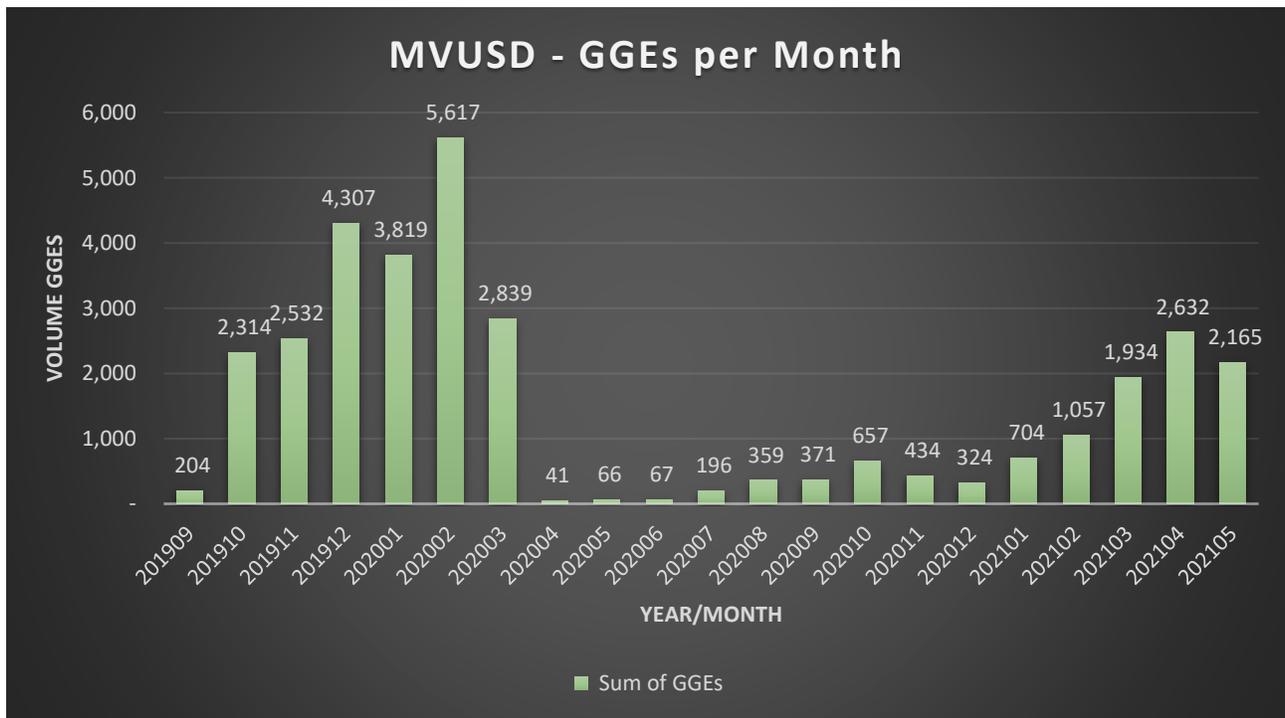
To date the station has provided benefits to both the environment and community of Moreno Valley by reducing both emissions and fuel costs within the Moreno Valley Unified School District. COVID-19 did have a negative impact on the realized benefits published in this report, as the MVUSD had to suspend district operations five months after the station opened. It is our expectation that resumption of full school district activities in August 2021 will demonstrate the true benefits of the site.

To date, a total of 32,639 GGEs have been distributed through the site.

MSRC Grant Contract terms:

- (1) RNG Commitment of 50% of dispensed CNG must be RNG
- (2) Volume Commitment: Starting Year 3 dispense a minimum of 85k GGEs/ annually

Please note the site performance to date:



- As noted above, the COVID-19 pandemic forced school closures starting in 4/2020. We expect the station utilization to recover starting in 8/21, for the 2021-2022 school year.



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Evidence of the use of Renewable Natural Gas (RNG) is depicted through the Carbon Credit and LCFS Credit generation noted below. Starting in Q3 2021, U.S. GAIN will further ramp up RNG introduction to the site to achieve a minimum of 50% utilization by 9/2022. Results will be documented in the annual fiscal report issued to the MSRC, as required by the grant.

1 - Moreno Valley School District Station - Carbon Offset Credit Generation

| Seller: U.S. Gain, a Division of U.S. Venture, Inc. | | | | | | | Commencement Date: | | Sep-19 | Estimated |
|---|--------------------------|------------------------|-----------------|-----------------|-----------------------|-------------------------|--------------------|-----------------------|-----------------------|-----------|
| Buyer: Moreno Valley | | | | | | | Term Start Date: | | Sep-19 | Actual |
| Credit Value Calculator | | | | | | | Term Length: | | 5 years | |
| HDV Reference Fuel: | | | | | | | Diesel | | | |
| Date | HDV MMBTU / Therms (HHV) | HDV SCF / Therms (LHV) | HDV CI Standard | HDV Vehicle EER | HDV Brown Gas Credits | HDV Lanfill Gas Credits | Total LCFS Credits | Carbon Credit (\$/MT) | Value of LCFS Credits | |
| Sep-19 | | - | 94.17 | 0.9 | 0 | 0 | 0 | \$ 200.00 | \$ - | |
| Oct-19 | 3,713 | 3,353 | 94.17 | 0.9 | 2 | 0 | 2 | \$ 205.85 | \$ 411.70 | |
| Nov-19 | 3,340 | 3,016 | 94.17 | 0.9 | 2 | 0 | 2 | \$ 205.85 | \$ 411.70 | |
| Dec-19 | 6,185 | 5,585 | 94.17 | 0.9 | 3 | 0 | 3 | \$ 205.85 | \$ 617.55 | |
| Jan-20 | 5,759 | 5,200 | 92.92 | 0.9 | 2 | 0 | 2 | \$ 209.45 | \$ 418.90 | |
| Feb-20 | 7,817 | 7,059 | 92.92 | 0.9 | 3 | 0 | 3 | \$ 209.45 | \$ 628.35 | |
| Mar-20 | 4,174 | 3,769 | 92.92 | 0.9 | 2 | 0 | 2 | \$ 209.45 | \$ 418.90 | |
| Apr-20 | 74 | 67 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 190.10 | \$ - | |
| May-20 | 106 | 96 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 190.10 | \$ - | |
| Jun-20 | 109 | 98 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 190.10 | \$ - | |
| Jul-20 | 294 | 265 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 200.60 | \$ - | |
| Aug-20 | 530 | 479 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 200.60 | \$ - | |
| Sep-20 | 575 | 519 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 200.60 | \$ - | |
| Oct-20 | 988 | 892 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 194.10 | \$ - | |
| Nov-20 | 723 | 653 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 194.10 | \$ - | |
| Dec-20 | 559 | 505 | 92.92 | 0.9 | 0 | 0 | 0 | \$ 194.10 | \$ - | |
| Jan-21 | 1,108 | 1,001 | 91.66 | 0.9 | 0 | 0 | 0 | \$ 192.00 | \$ - | |
| Feb-21 | 1,531 | 1,382 | 91.66 | 0.9 | 0 | 0 | 0 | \$ 192.00 | \$ - | |
| Mar-21 | 2,831 | 2,556 | 91.66 | 0.9 | 1 | 0 | 1 | \$ 192.00 | \$ 192.00 | |
| Apr-21 | 3,819 | 3,449 | 91.66 | 0.9 | 1 | 0 | 1 | \$ 192.00 | \$ 192.00 | |
| May-21 | 3,819 | 3,449 | 91.66 | 0.9 | 1 | 0 | 1 | \$ 192.00 | \$ 192.00 | |

Photographs & Outreach

Grand Opening

Natural gas fueling station for Moreno Valley USD



Program & Lunch:
Wednesday, November 13th
from 10 - 11:30 a.m.

Location:
Moreno Valley USD
13911 Perris Boulevard
Moreno Valley, CA 92553

*Please use available parking lots
off Bay Ave. or Perris Blvd.



a division of U.S. Venture, Inc.

- Please join us to celebrate Moreno Valley Unified School District's NEW natural gas fueling station.
- A short program will be held inside the bus yard, followed by lunch.
- RSVP by November 4th: slowney@usgain.com or 920.3812190



2. CNG Station Compound



Project supported by



Clean Transportation
Funding from the MSRC

Mobile Source Air Pollution Reduction Review Committee

www.cleantransportationfunding.org

3. Grand Opening Event - Nov. 13, 2019



5. CNG Fueling Post & Hose Assembly

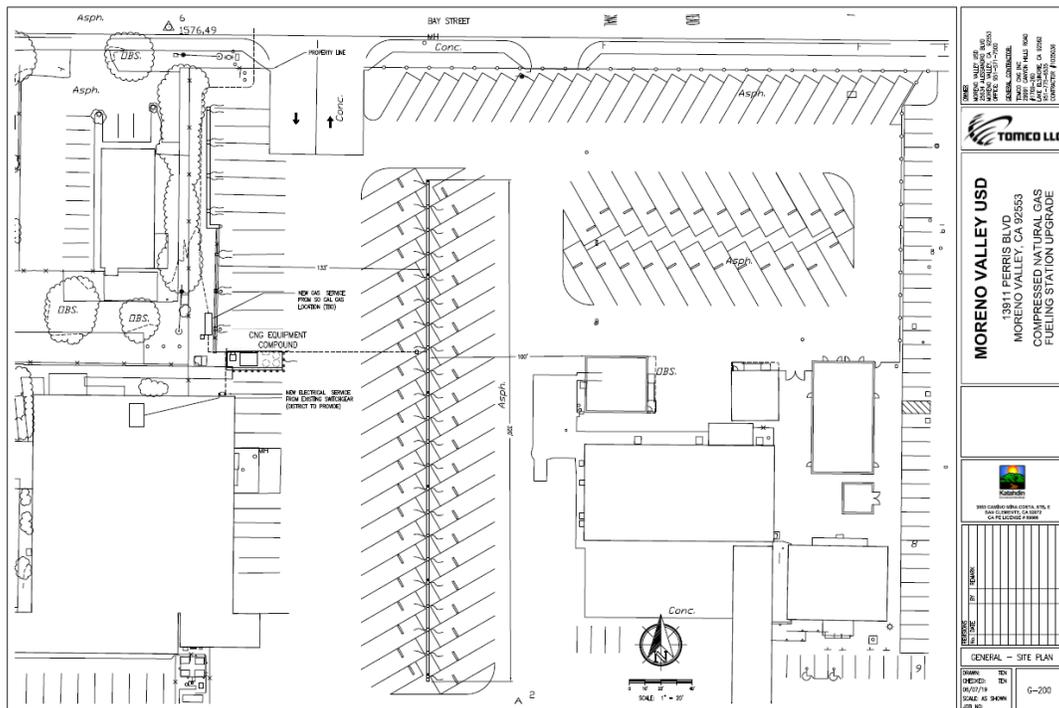


4. New CNG Fueling Posts



6. Wide Angle View - CNG Compressor Compound

7 CNG station layout





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Summary and Conclusions

The Moreno Valley Unified School District (MVUSD) CNG station project is a success. The short eight-week construction period was executed without issue, in part due to the comprehensive project management by the U.S. GAIN team. The supplemental grant funding provided by the Mobile Source Air Pollution Review Committee (**MSRC**) was key to make this project financially feasible and ultimately a success. During the past 21 months of operation, the site has maintained an 99% available uptime, with only standard maintenance and performance adjustment being required.

After successful commissioning of the station, use of the station ramped up during a training period, to ensure the safe operation of the site. Utilization of the site improved through the early months of 2020, until COVID -19 school closures reduced usage of the site.

Despite the reduced station usage in the first year of operation, the MVUSD team was satisfied with the results of the project, and they look forward to using the full potential of the station for years to come.