



ENERGY INSTITUTE

Colorado State University

METEC News

January 14, 2017 Update

Happy New Year! The METEC team at Colorado State University hopes that everyone had a lovely holiday and would like to welcome you to our first METEC Newsletter. Even with the arrival of cold weather, work on the METEC site has been very busy as we prepare for commissioning in February. We reviewed progress with ARPA-E in December and thought this would be the perfect time to share updates. After working out some concerns on site layout, we've begun construction and are focusing on the acquisition of equipment. We look forward to working closely with our contributors as well as other invested parties in the coming months before the test launch in February.

METEC Field Site Takes Shape. The CSU facilities team is leading the civil construction. We've finalized the site layout including roadways, pads, fencing, and utilities infrastructure. The design has passed the external code review and civil work has commenced. Roads and pads for



Round 1 will be ready for equipment placement by the third week of January. After that, trenching for utilities

and placing all necessary conduit and piping will begin. Concurrently, the METEC team will be working to install donated equipment and working to integrate their gas distribution designs. Site construction is on track for three pads to be commissioned as planned by 15 February for round 1 testing.

Equipment Donations Arriving.



METEC is extremely grateful for the generosity of its industry partners. A big thank you to Noble Energy, Anadarko, Pioneer, and Kinder Morgan for their donations of several key pieces of equipment, which will ensure that METEC has the look and feel of an actual well pad. Donations include well heads, separators, meter houses, emission control units and tanks. Deliveries have begun, and we are coordinating transportation of more items to the field site. We look forward to placing them soon. We also received a CNG-powered truck from Noble that will be instrumental in transporting gas to the site. We are still looking for a couple vertical separators to add variety to the site if you happen to know of any available!



Functional Components Are in Place. The compressor system for the field site has been established. A Norwalk compressor installed at the Powerhouse Energy Institute and capable of 60 SCFM at 3600 psi will provide CNG for the test site. The compressor system will incorporate 60 GGE of storage to allow rapid fill or time fill of the CNG transport vehicle.



A CNG powered truck will serve as the field site's mobile CNG filling station. The truck was generously donated by Noble Energy and is being retrofit to include two additional CNG storage tanks and NGV1



dispensing hardware. Together, the truck and compressor will ensure that a reliable and regular supply of CNG is available. METEC has planned for onsite storage of CNG and metering houses. These components have been designed, and components are ready for build.

The pad release subsystem has been designed, and 9 control units are assembled and ready for deployment at the site to support the Round 1 wellpads. These pad release



subsystems are each capable of controlling multiple source locations, independently or simultaneously, to produce steady or intermittent emission sources ranging from 2 SCFH to 300 SCFH. The control units will monitor gas pressures, temperatures and flowrates, and regulate gas releases remotely using

software developed by METEC IT staff. The software will allow the site operations staff to perform site calibrations, run standardized test scenarios, and monitor emissions throughout the test site from a single location.

Site and Surrounding Safety.

To ensure safety of the site and its surrounding areas, perimeter sensors are being developed through a CSU Senior Honors Thesis project, and will be installed to ensure that no significant methane is escaping from the METEC field site. Sensors will audibly alarm and send a wireless alert upon detection of greater than 300 ppm methane. Sensors will be distributed around the perimeter as well as internal to the site. The system will run on solar and battery power.



METEC Key Staffing and Responsibilities.

- Dan Zimmerle – Director and PI for METEC
- Kristine Bennett – Project coordination & communication
- Clay Bell – Overall design and construction oversight
- Tim Vaughn – Measurement systems oversight

The METEC team is also supported by several undergraduate students from CSU who are helping assemble equipment and outfit the test site.

A technician to maintain the test site, oversee daily operations, and standardize the testing process will be hired soon.

Timeline and Site Scheduling. METEC is working on a system to schedule testing at the site, as well as determining costs and procedures for the site. Round 1 construction will be complete and commissioned by 15 February. After two weeks of in-house testing, the site should be ready for scheduling MONITOR teams by 1 March and non-MONITOR clients by April or May. Before teams can use the site, we must have a CDA and Site Access Agreement in place. Please contact us for further information on this.

Contact Us. The METEC team would love to hear from you, and we are happy to answer questions. We can best be reached via email until we can set up an interactive website to schedule your testing at the METEC field site.

Email:

METEC@colostate.edu

Website:

<http://www.energy.colostate.edu/p/metec-program>