

West Texas Methane Showdown (WTMS)

Frequently Asked Questions (FAQ)

Date: 6-6-2020

Q: Will there be a single “winner” of the WTMS?

A: No, there will not be a single winner, and no winners will be declared. Results will be published and will compare technical capabilities of the tested sensors in unattended field operation. We anticipate that project Astra will be one of multiple large scale field deployments that will find the information generated in the WTMS useful and we anticipate that multiple sensor designs that fulfill the needs of Project Astra will be deployed in late 2021 in the Astra pilot array in the Permian Basin.

Q: When does the WTMS test start?

A: Installation will likely be over a single week to be scheduled in early August. More precise scheduling information will be available as pandemic restrictions evolve. Sensors would remain on site for a 6 month test (through Feb 2021).

Q: How many sensors are requested for the WTMS from my organization?

A: One (1)

Q: Is there an option to subsidize our costs for the WTMS?

A: This request is for your gratis (free) participation. We make that request of all participants in order to be fair to all. If that is impossible, please still submit your application, but state specifically what you are requesting.

Please note that sensors that are selected to be part of the 2022 pilot array deployment in the Permian Basin would be purchased for that deployment.

Q: Where will the WTMS site be?

A: In the Midland basin, on a single wellpad site belonging to one of the Project Astra member companies.

Q: We have a methane detector that produces an image to show detection, should we apply?

A: No. For the ultimate Permian array deployment, the array will need relatively low sensor costs, and each sensor will need to report a concentration enhancement above background. It is unlikely that an imaging sensor will meet these two criteria. If this assumption is wrong, we will be glad to receive your applicaton.

Q: We have a sensor that produces an open-path ppm-meter reading, should we apply?

A: Yes, if you believe your sensor meets the other needs. The deployment would likely be for a short-path (a meter or so), thus simulating a point source detector.

Q: Is there a specification for communication from the sensor?

A: Not yet. We do expect each sensor to be able to uplink its data by whatever means you have designed (cell tower, etc.), and that the data can be accessed electronically or sent to UT. But there is no preset data message packet protocols nor wireless protocols at the moment. Simply tell us how your system works and whether you have any specific needs.

Q: Does the sensor need to locate the leak source?

A: No

Q: Does the sensor need to estimate a release rate?

A: No. We only want absolute concentration or change in concentration from background.

Q: What sensor spacing will be used in the WTMS?

A: We plan to have the sensors in relatively close proximity to each other, but for the challenge tests, we will deliver a release to each sensor inlet, and for the continuous inter-comparison with a QC-TILDAS sensor, we will draw the QC-TILDAS sample from with ~1 meter of each sensor participating in the WTMS, cycling through sequential comparisons with each sensor.

Q: Do we have to supply our own power?

A: Yes, but if that is not possible, please let us know your needs.

Q: Our sensor also provides C₂H₆ in addition to CH₄. Is this useful?

A: Not required, but useful.

Q: Are there any intrinsic safety certifications needed?

A: No, but there will be spacing and safety requirements for the site. The sensors will be on the same pad, but located away from operating equipment on the pad. Additional guidance will be provided prior to deployment.

Q: What concentrations will be used to challenge and test the sensors?

A: TBD. There will be some very small (~5-50 ppb above background) and some very large signals (100 ppb-1 ppm above background).

Q: What holes can be dug for posts on the site, if any?

A: Our host site will answer this later for the selected participants. It may be that only temporary installations are allowed.

Q: After the WTMS, for later Phases of Project Astra, how many sensors will be deployed for the 1000-well pilot test?

A: Likely hundreds. This could be a small number of high precision sensors, combined with a large number of less precise, lower cost sensors.

Q: Will you be testing for methane interferences using other VOC's?

A: Yes

Q: Is accuracy or precision more important?

A: Both are important. We may be able to tolerate some baseline drift if the instrument still measures a change in concentration well.

Q: What price point are we aiming for?

A: Low cost is an advantage. We are trying to demonstrate a sensor network design for the same cost (~\$1,000 per well pad integrated over >1000 well pads) as the quarterly LDAR surveys that operators now perform.

Q: What size of emissions do you want to detect?

A: For the WTMS, we are testing only sensor performance in measuring atmospheric concentrations. We will not be estimating emission rates. For Project Astra we envision a network that targets emissions as low as 2 kg/hr (100 scfh). These detection targets, and how they vary within the test region, will be quantitatively assessed in the digital twin modeling of the test region, to be conducted at the University of Texas later this year.

Q: when will installations happen?

A: Likely in August

Q: Any contracting that will need to happen for the host sites?

A: Yes. There will be a small contract and a site access agreement.

Q: In later Phases of Project Astra, who will operate the array network?

A: TBD
