



CRESTONE PEAK

RESOURCES

Site Specific Air Quality Plan Addendum

**For LONE TREE NORTH 4-65 15-16, 1AH, 1BH, 2AH, 2BH, 3CH,
4AH, 4BH, 3BH (existing), and
PROSPER FARMS 4-65 14-13 1AH (FORMERLY LONE TREE NORTH
1BH), 1BH (FORMERLY LONE TREE NORTH 1DH), 2BH (FORMERLY
LONE TREE NORTH 2BH), 3AH (FORMERLY LONE TREE NORTH 2DH),
3BH, 4AH, 4BH**

(Lone Tree North Phase 2 Facility)

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1. Purpose

- The purpose of this plan is to provide the necessary information for meeting Air Quality requirements as required by the Oil and Gas Operator Agreement between Crestone Peak Resources, LLC (CPRO) and the City of Aurora, a municipal corporation.
- This plan addendum is intended to address site specific items. Each location presents unique challenges related to topography, surrounding land uses, proximity to other sources of emissions, and conditions driven by the Operator Agreement.

2. Scope

- The Field-wide Air Quality Plan (FW AQP) addresses all air quality requirements subject to the Aurora Operator that are common to all locations. This site-specific plan addendum is intended to address only the aspects that are unique to the Eastern Hill South location and will not repeat general terms outlined in the FW AQP.

3. Objectives

The following objectives are applied to the site-specific addendum.

- Identification of background sources of emissions and potential causes of interference.
- Location specific considerations such as topography, unique site designs and multi-well pads in different stages of production.
- Monitoring strategies that will be employed and monitor locations

4. Monitoring Strategy

4.1. Monitoring Timetable

CPRO will utilize the Canary S monitoring system as provided by Project Canary. The FW AQP outlines the monitoring strategy employed fieldwide.

- Signed contract with Canary – December 21, 2019
- Establish alert levels/thresholds and data feed to the City – June 25, 2020
- Identify monitor locations in field with Canary – July 7, 2020
- Begin pre-construction baseline air monitoring – July 26, 2021

** Any timelines listed above may be subject to change based on City requirements and O&G location specific issues which may be outside of CPRO's control.*

4.2. Pre-activity information

- List of possible sources of outside interference:
 - Private Residence: 1160 ft Northeast
- There are no buildings or structures near the location that will create any monitoring obstructions.

4.3. Location Specific Considerations

- Topography: Flat with minimal slopes
- Identification of site design / structures of concern:
 - Sound walls will be used during pre-production operations. The sound walls will be installed prior to moving in the drilling rig and remain on location through completions operations. The sound walls will be removed after first date of production through the permanent equipment.
 - The site is close to the road and high traffic or idling vehicles could impact the monitors.

During all activity's sensor placement will be evaluated and monitored. Sensor placement will be adjusted to ensure the best location for monitoring. (see section 4.4)

- All monitoring locations will include the ability to pull summa canisters.
- The City of Aurora indicated that they would like a monitor located near the area of high vehicular traffic/idling vehicles. One monitor is located nearest to the haul road and one will be located near the tanks unloading area which has the highest potential for vehicular emissions impacts.
- Section 6.3.5 Continuous Monitoring Plan of the FWAQP provides a description for evaluation criteria. But essentially, the three monitors and canister samplers will be placed a triangular pattern around the location with a focus on placing monitors downwind of activities that may be the source of an emissions event.
- Describe site activity, stages, and timeline
 - Initial Pad Construction: Estimated start February 28, 2022
 - Drilling Phase: Estimated Start April 11, 2022
 - Completions: Estimated start June 20, 2022
 - Facility Construction: Estimated start June 20, 2022
 - Projected First date of production: October 4, 2022.

** Any timelines listed above may be subject to change based on City requirements and O&G location specific issues which may be outside of CPRO's control.*

4.4. Equipment Siting and Site-Specific Monitoring

- Pre-construction monitoring will consist of a single monitor and canister sampler placed on position 1 in Figure 1.
 - A single monitor is sufficient since the purpose is to develop baseline air pollutant levels and there will be no activity occurring on the location.
- During all remaining phases below **three** monitors and canister samplers will be placed a triangular pattern around the location with a focus on placing monitors downwind of activities that may be the source of an emissions event.
- During all pre-production activities, the Canary sensors will remain inside the sound walls.
- Anticipated timing for re-locations
 - Drilling → locations will be re-evaluated after sound walls constructed and drilling equipment is set on location
 - Completions → locations will be re-evaluated after completions equipment set on location.
 - Production → monitors will be re-evaluated after permanent equipment constructed (see section 4.5 for more information)
- The City of Aurora will be consulted with any pending changes to monitoring locations as warranted by site specific meteorological data. The City of Aurora during this consultation can approve the monitor placement changes or provide alternatives to be evaluated. Consultation will be limited to 5 business days and if no comments is received from the City of Aurora the placement changes will be considered approved
- Canary and Summa Can Height – 5 ft
- Rationale for Placement of Canaries. The initial rationale for monitoring placement is to use prevailing wind patterns and site equipment layouts to capture potential emissions sources using downwind monitors and a single upwind monitor to determine if off location sources are impacting the site.
 - Baseline monitoring: Prior to commencing construction, three Canary sensors equipped with canister samplers will be placed on temporary stands at the perimeter of the site in accordance with Figure 1.
 - Estimated Initial Location of receptors:
 - Receptor 1, GPS 39.70743 / -104.6438 - #1 on Figure 1 below
 - Receptor 2, GPS 39.70742 / -104.6417 - #2 on Figure 1 below
 - Receptor 3, GPS 39.70539 / -104.6431 - #3 on Figure 1 below
 - After the permanent facility has been constructed, permanent posts are installed around the perimeter of the site in accordance with Figure 1. These posts will be utilized if it is determined that any of three Canary monitors will need to be moved based upon meteorological data and consultation with the City of Aurora.

- At the completion of 30 days of monitoring at the permanent facility, wind rose information will be analyzed to determine if units need to be moved to the most effective posts according to the prevailing wind direction.
- CPRO will maintain a log of the date, reasoning and record of consultation with Aurora for changes to sensor movement decisions.

Figure 1

**Lone Tree 4-65 15-16 3BH (existing), 1AH, 1BH, 2AH, 2BH, 3CH, 4AH, 4BH
 Prosper Farms 4-65 14-13 1AH (Formerly Lone Tree 4-65 15-16 1BH), 1BH (Formerly Lone Tree 4-65 15-16 1DH), 2BH (Formerly Lone Tree 4-65 15-16 2BH), 3AH (Formerly Lone Tree 4-65 15-16 2DH), 3BH, 4AH, 4BH**
Location Drawing



Lone Tree Air Monitoring

0 250 500 Feet

Coordinate System: NAD 1983 BLM Zone 13N

3/7/2021
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5. Location Data plan

- Frequency of collection
 - Canary sensors will operate continuously upon installation.
 - Continuous monitoring will follow the procedures outlined in the FW AQP.
 - CPRO personnel will follow the CEM Data Evaluation and Response Procedure provided in the FW AQP
- Report out matrix
 - The regular report will follow the submittal frequency defined in the FW AQP. It will also include a log of sensor locations in the event that a sensor needs relocated as defined in section 4.4

6. Minimization of Emissions

- Equipment:
 - Electric drilling rig will be utilized, however in the event power is not available then diesel rig will be used.
 - Tier 4 engines will be utilized during completions, however if they are unavailable then Tier 2 engines will be used.
 - The permanent facility will utilize instrument air for all pneumatic devices.
 - Emissions from storage tanks and truck loadout operations will be controlled by an enclosed combustor.
 - All equipment and emissions will be in compliance with CDPHE regulations and air permit compliance.

7. References

- Fieldwide Air Quality Plan