

SUPPLEMENTAL SITE-SPECIFIC WATER QUALITY MONITORING PLAN
Lone Tree 4-65 15-16 3BH
Location ID 449486

Crestone Peak Resources Operating, LLC
1801 California Street #2500
Denver, CO 80202

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ATTACHMENTS

1. DWR water sources - Lone Tree 4-65 15-16 3BH area map with one-half mile radius
2. DWR water sources inventory

1.0 - INTRODUCTION

This supplemental, site specific water quality monitoring plan was developed as an attachment to the Crestone Peak Resources Operating, LLC (Crestone) Fieldwide Water Quality Monitoring Plan for the City of Aurora, Colorado, dated September 29, 2020 (Plan), to address City of Aurora requirements for a Water Quality Monitoring plan as specified in the City of Aurora Oil and Gas Operator Agreement (OA) to monitor groundwater quality conditions around proposed oil and gas well locations within the City of Aurora.

The Plan complies with the procedures, guidelines, and reporting requirements in accordance with the Colorado Oil and Gas Conservation Commission (COGCC) Model Sampling and Analysis Plan (SAP). See **Attachment A** for Plan Professional Geologist (PG) certification and **Attachment B** for Plan contacts. The contacts list will be reviewed on an annual basis unless more frequent updates are warranted.

2.0 - ENVIRONMENTAL DUE DILIGENCE

The following describes the process Crestone used for identifying up to four sampling / monitoring locations within a one-half mile and frequency of sampling / monitoring prior to commencement of drilling a New Well at the Lone Tree 4-65 15-16 3BH (Lone Tree North) location.

Water sources and associated reference data for this effort were acquired from publicly available datasets, including the Colorado Division of Water Resources (DWR). Spatial analysis will be completed using queries in a geographic information system (GIS) desktop environment.

For purposes of the assessment, a water source is a properly and well-maintained domestic water source registered with the DWR. When evaluating locations as potential available water sources (AWSs) for sampling / monitoring, Crestone considers water sources for which the water well owner, or a landowner, as applicable, had given consent for sampling and testing and had consented to having the sample data obtained made available to the public, including without limitation, being posted on the COGCC website.

2.1 - Water Source Identification

Crestone identified all AWSs within a one-half mile radius of the Lone Tree North location and evaluated the DWR water sources using the selection, exception, and timing criteria identified in the Aurora OA.

As shown on the attached map and DWR water sources inventory, one available water source was identified within the one-half mile radius. A good faith effort will be made to contact the respective water source owner(s) to request and obtain permission for site access and collect water samples, including the acknowledgement that the sample data will be accessible to the public through the COGCC website and submitted to the City of Aurora.

2.2 - Installation of Monitoring Well

If no samples are collected from the previously identified domestic water wells, Crestone will drill and construct a Westbay System or equivalent for multilevel monitoring well per the Aurora OA Requested Well criteria. A well diagram will be provided to the City of Aurora if the Requested Well is required.

3.0 - FIELD ASSESSMENT / DATA EVALUATION

Baseline and subsequent water quality scheduling, field assessments, sampling processes, and data evaluations will be completed using standard industry procedures consistent with the COGCC Model SAP and as defined in the Plan.

4.0 - PROTECTION AND MITIGATION MEASURES

If Crestone identifies degradation to water quality as a result of its oil and gas development, Crestone shall be responsible to mitigate the degradation of water quality to the applicable regulatory standards as defined in the City of Aurora OA. A mitigation plan will be developed on a case-by-case basis depending on the degradation observed and the degree of impairment. The plan will identify locations and frequency for sampling to document baseline groundwater conditions prior and subsequent to drilling activities.

5.0 - REPORTING RESULTS

Crestone will provide copies of all test results to the City of Aurora and the water source owners within 30-days after receiving the analytical results. All results will be submitted electronically to the City of Aurora contacts identified in Plan **Attachment B** unless otherwise directed by the City of Aurora.

6.0 - REFERENCES

Apex Companies, LLC (2020). *Fieldwide Water Quality Monitoring Plan – City of Aurora*.

City of Aurora (2019). *Oil and Gas Operator Agreement* (Document No. 0.337206). City of Aurora, CO

Colorado Oil and Gas Conservation Commission (2020). *Model Sampling and Analysis Plan Rules 609 and 318A.e(4) Colorado Oil and Gas Conservation Commission Version 2* Retrieved May 28, 2020, from https://cogcc.state.co.us/documents/about/COGIS_Help/COGCC_Model_SAP_20200414.pdf



CRESTONE PEAK
RESOURCES

Lone Tree 4-65 15-16 3BH
Location ID: 449486
DWR Water Sources



3535j--A

214561-
41817-MH

314851-

LONE TREE 4-65 15-16 1BH LONE TREE 4-65 15-16 1AH
LONE TREE 4-65 15-16 2BH LONE TREE 4-65 15-16 2CH
LONE TREE 4-65 15-16 2DH

D 24535-F

Google Earth

2000 ft

DWR Water Sources Inventory**Lone Tree 4-65 15-16 3BH**

Status	Receipt	Permit	Permit Status	Contact Name	County	Twn	Rng	Sec	Q40	Q160	Latitude	Longitude	Aquifer(s)	Use(s)
1 - Water source was sampled on July 29, 2020	9007101	51506-	Well Constructed	Hurd, Mark & Marjorie 308 S Hayesmount Rd Watkins, CO 80137-8505	ARAPAHOE	4S	65W	14	NW	NW	39.709387	-104.6386	DENVER	Domestic
Eliminated -- Permit Status	41817	41817-MH	Well Abandoned	US GEOLOGICAL SERVEY	ARAPAHOE	4S	65W	14	NW	NW	39.709387	-104.6386	ALL UNNAMED	Monitoring / Sampling
Eliminated -- Permit Status	437182	214561-	Permit Issued	HURD, MARK L	ARAPAHOE	4S	65W	14	NW	NW	39.709609	-104.6403	ARAPAHOE	Domestic, Stock
Eliminated -- Permit Use	0270512B	35351--A	Well Constructed	Melcor/TC Aurora LLC Physical: NENW Sec 15 T4S R65W Mailing: 9750 W Cambridge Place Littleton, CO 80127-5906	ARAPAHOE	4S	65W	15	NE	NW	39.70757	-104.6506	ALL UNNAMED	Stock