

SUPPLEMENTAL SITE-SPECIFIC WATER QUALITY MONITORING PLAN
Rush 4-65 29-30 3AH
Location ID 449806

Crestone Peak Resources Operating, LLC
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ATTACHMENTS

1. DWR water sources - Rush 4-65 29-30 3AH area map with one-half mile radius
2. DWR water sources inventory
3. Westbay general well arrangement diagram

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 radius and frequency of sampling / monitoring prior to the commencement of drilling a New Well at the Rush 4-65 29-30 3AH (Rush South) 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 considered water sources for which the water well owner or a landowner, as applicable, has given consent for sampling and testing and has consented to having the sample data obtained made available to the public, including without limitation, being posted on the COGCC website.

2.1 - Water Well Identification

Crestone identified all AWS within a one-half mile radius of the Rush South location and evaluated the DWR water sources using the selection, exception, and timing criteria identified in the Aurora OA. The criteria includes proximity to the proposed location, radial pattern around the new well, aquifer availability, and orientation of sampling locations.

As shown on the attached map and DWR water sources inventory, no AWSs were identified within the one-half mile radius.

2.2 - Installation of Monitoring Well

Crestone will drill and construct a Westbay System or equivalent multilevel monitoring well per the Aurora OA Requested Well criteria on the pad site. A Westbay system general well arrangement is shown on the attached diagram.

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 needed, 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.

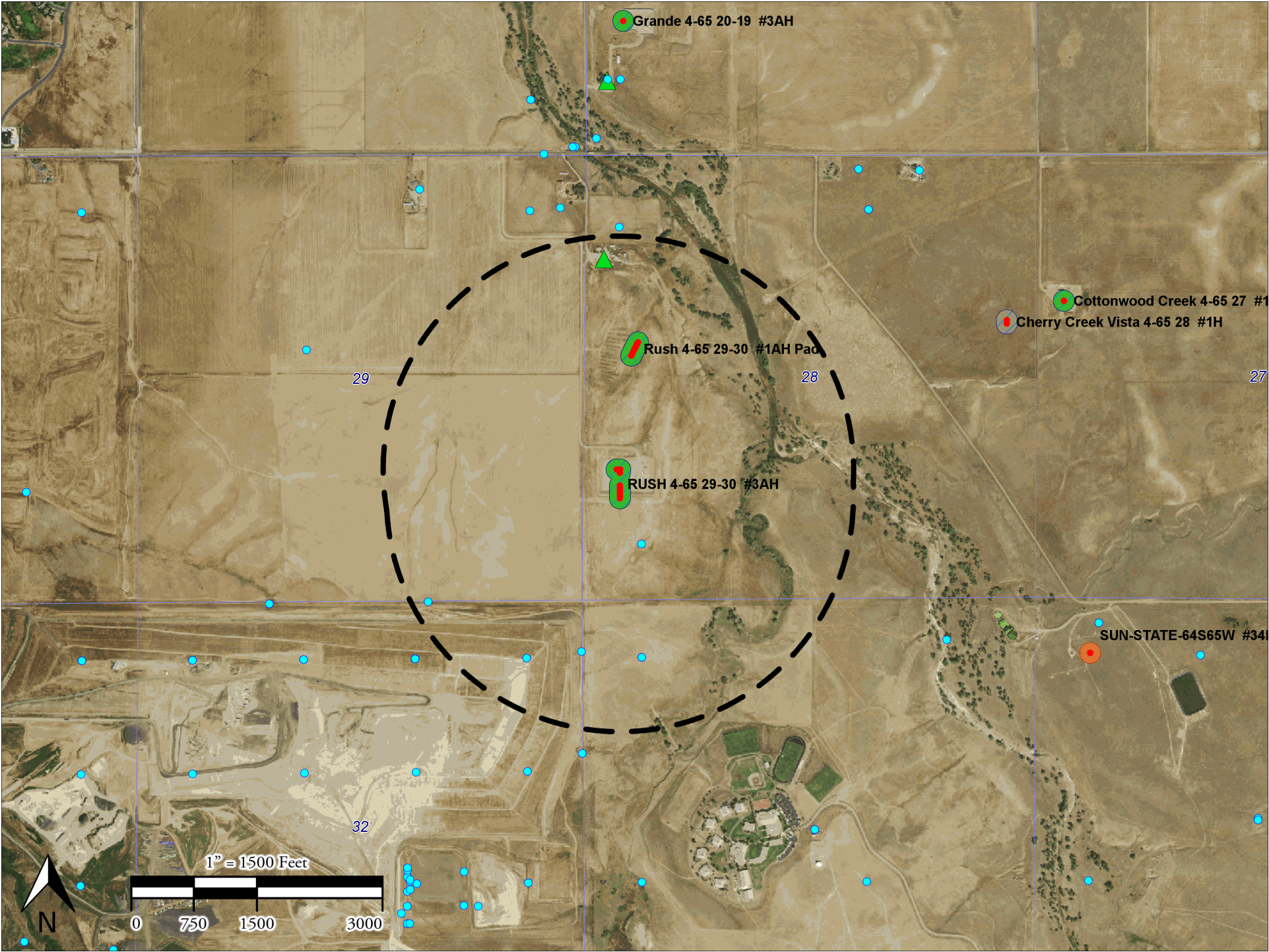
6.0 - REFERENCES

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

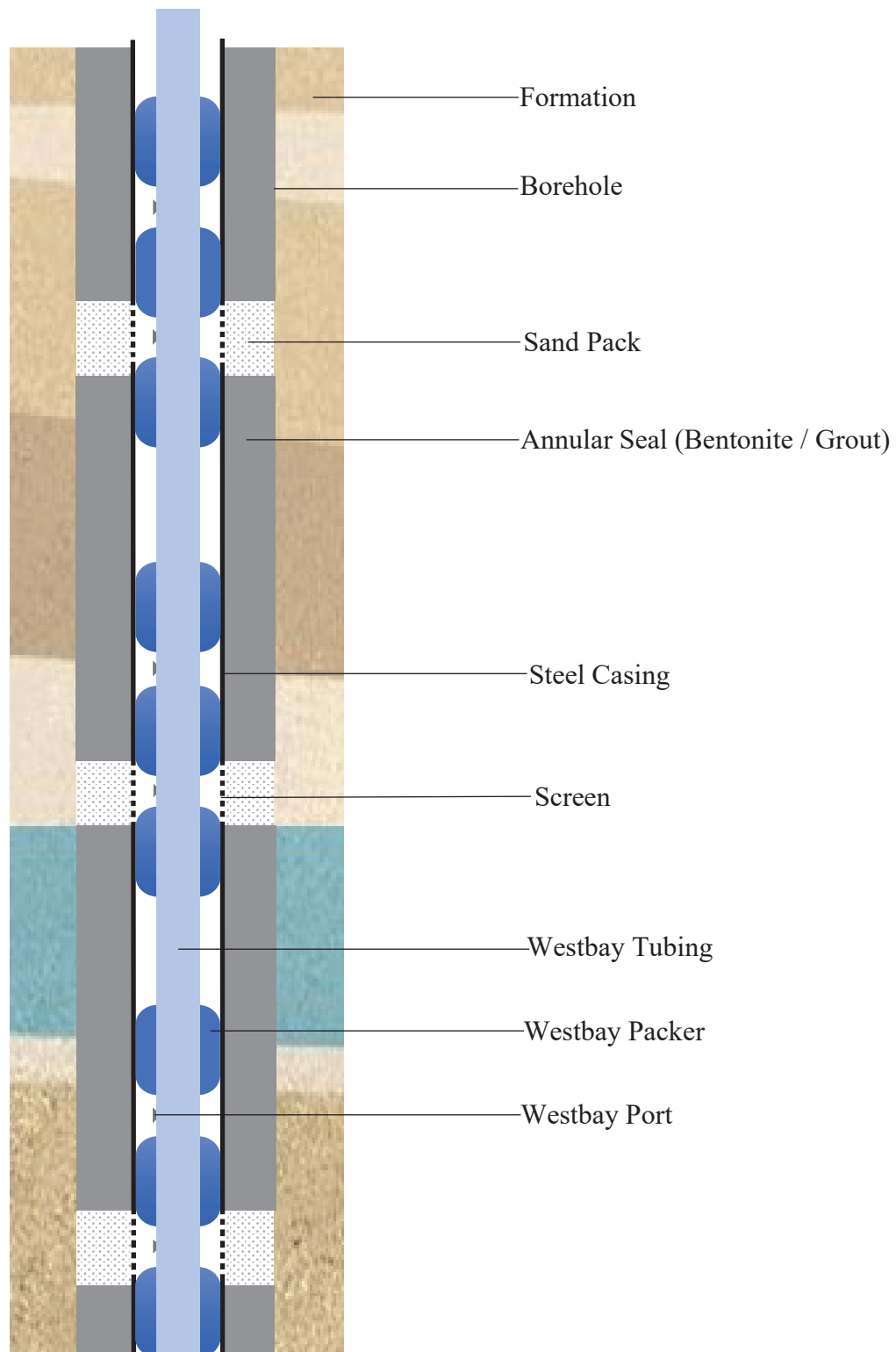
DWR Water Sources - Rush 4-65 29-30 3AH



DWR Water Source Inventory**Rush 4-65 29-30 3AH**

Status	Receipt	Permit	Permit Status	Contact Name	County	Tw	Rng	Sec	Q40	Q160	Latitude	Longitude	Aquifer(s)	Use(s)	TD
1 - Monitoring well notice of intent submitted to the DWR for the associated Westbay System multilevel monitoring well	10002696	316991-	Permit Issued	CRESTONE PEAK RESOURCES	ARAPAHOE	4S	65W	28	SW	SW	39.669309	-104.6762		Monitoring / Sampling	
Eliminated -- Permit Status	33994	33994-MH	Well Abandoned	WASTE MANAGEMENT OF COLORADO	ARAPAHOE	4S	65W	32	NE	NE	39.665611	-104.6811	ALL UNNAMED	Monitoring / Sampling	
Eliminated -- Permit Status	42193	42193-MH	Well Abandoned	DENVER CITY & COUNTY OF	ARAPAHOE	4S	65W	32	NE	NE	39.665611	-104.6811	ALL UNNAMED	Monitoring / Sampling	
Eliminated -- Permit Use	493271	242713-	Well Constructed	WASTE MANAGEMENT OF COLORADO	ARAPAHOE	4S	65W	32	NW	NE	39.667458	-104.6852	ALL UNNAMED	Monitoring / Sampling	58
Eliminated -- Permit Use	512484	251833-	Well Constructed	WASTE MANAGEMENT OF COLORADO	ARAPAHOE	4S	65W	32	NE	NE	39.665818	-104.6788	ALL UNNAMED	Monitoring / Sampling	43
Eliminated -- Permit Status	0043585A	2004055-AB	Well Abandoned	LAYNE, -WESTERN	ARAPAHOE	4S	65W	33	NW	NW	39.665623	-104.6762	ALL UNNAMED	Other	
Eliminated -- Permit Status	0043586A	2004056-AB	Well Abandoned	LAYNE-WESTERN	ARAPAHOE	4S	65W	33	NW	NW	39.665623	-104.6762	ALL UNNAMED	Other	
Eliminated -- Permit Status	0043610A	2004071-AB	Well Abandoned	LAYNE-WESTERN	ARAPAHOE	4S	65W	33	NW	NW	39.665623	-104.6762	ALL UNNAMED	Other	

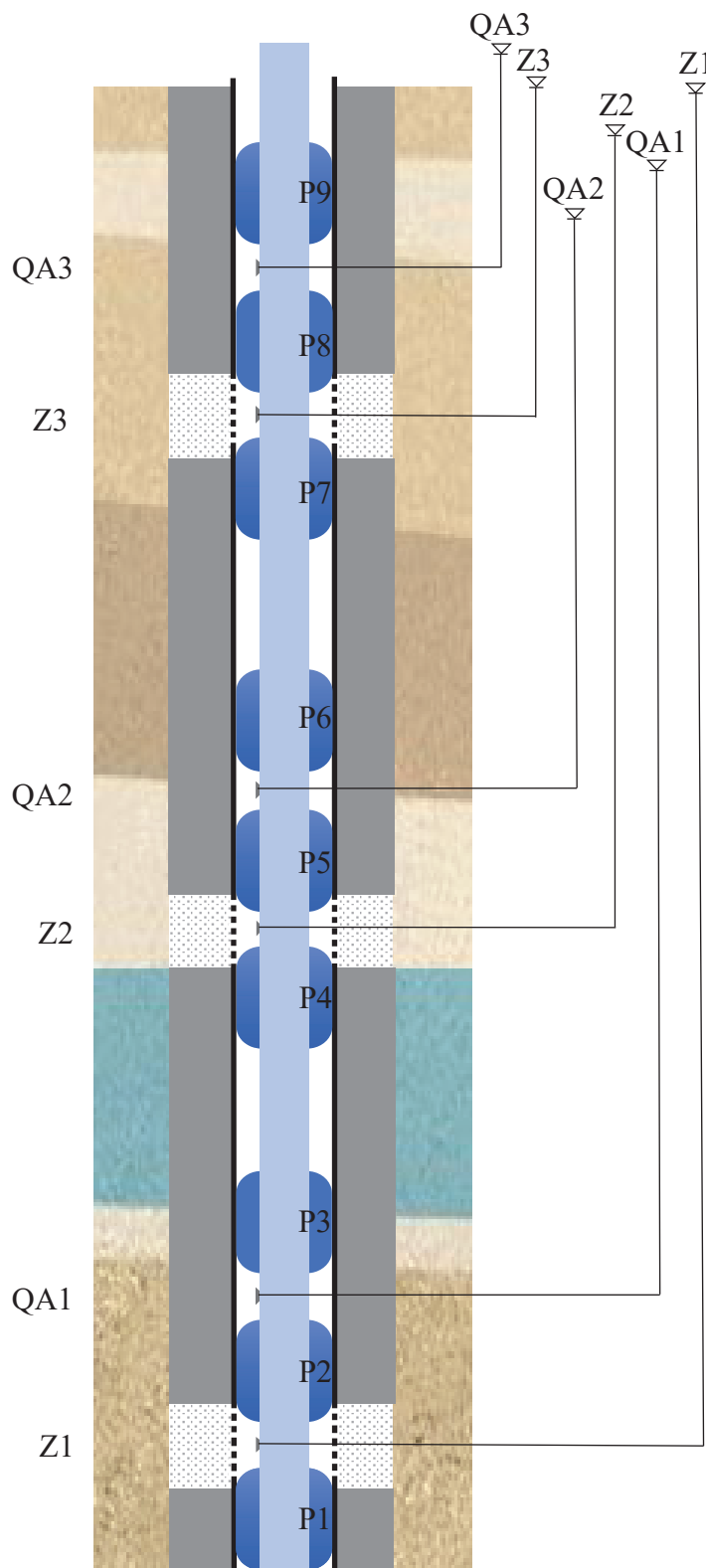
General Well Arrangement



Monitoring Zones

Well Schematic

Schematic Equivalent Depth to Water



Interpretation of Fluid Levels

1. For Packers No. P2 and P3
 - Depth to water for QA1 does not equal Z1 or Z2
 - Therefore, P2 and P3 are OK
 - And Z1 and Z2 are isolated
2. For Packers No. P5 and P6
 - Depth to water for QA2 does not equal Z2 or Z3
 - Therefore, P5 and P6 are OK
 - And Z2 and Z3 are isolated