

## COGCC OIL AND GAS FIELD SCOUT CARD

Date 04/18/2016  
Document No. 2056117

FIELD NAME **DIVIDE CREEK**  
FIELD NUMBER **16900**

### LOCATION

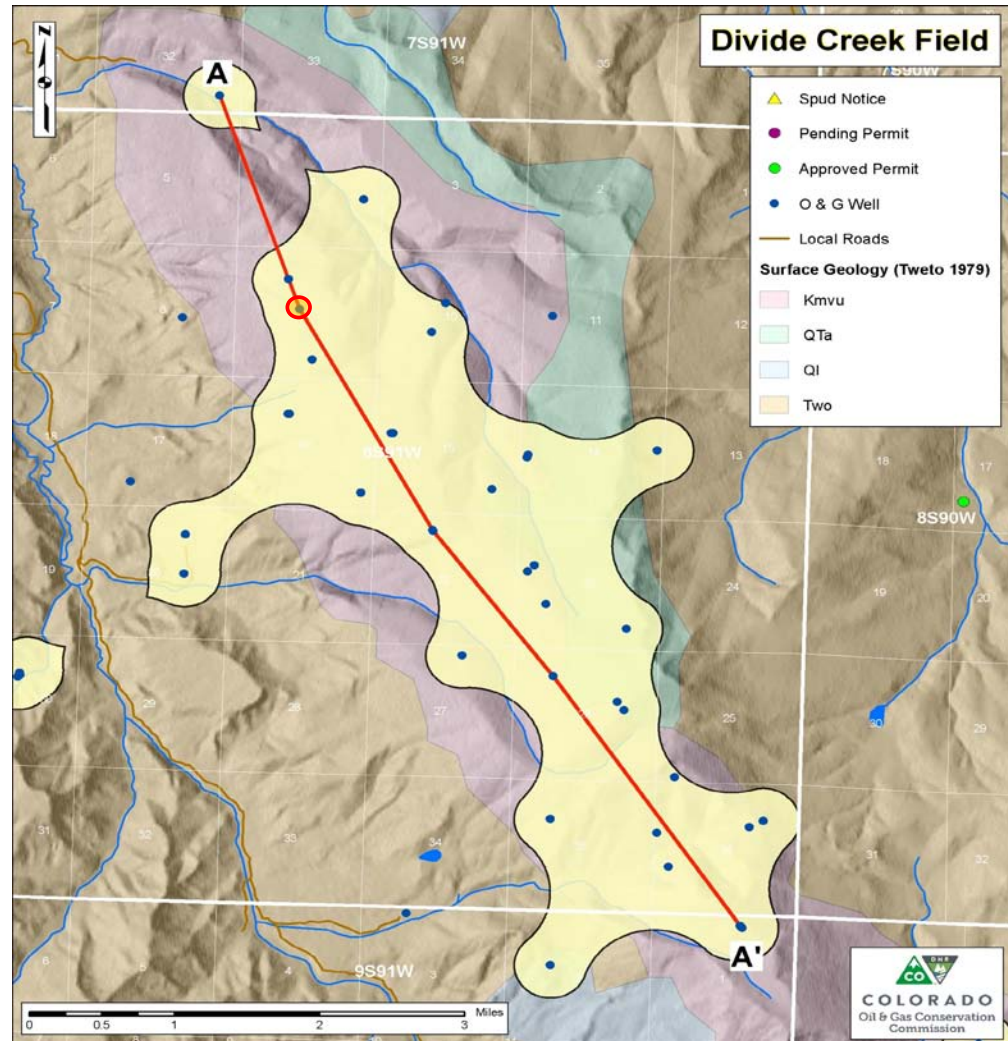
Basin Piceance  
Township(s) 7S to 9S  
Range(s) 90W to 91W

### SURFACE GEOLOGY

Surface Geology consists of alluvium along the eastern side of the field and landslide deposits near the northern and southern ends of the field, underlain by the Wasatch Formation. The Mesaverde Group outcrops in the center, along the long axis of the field.

### GEOLOGIC STRUCTURE

A northwest - southeast trending anticline is present on COGCC's 250K GIS Geology layer through the long axis of the field; a northwest-southeast trending, northeasterly-sloping monocline is present within two miles west of the field.



○ Type Log Well

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DIVIDE CREEK #16900**

STRATIGRAPHY				A - Northwest			A' - Southeast		
				API Number =>	045-65361	045-05208	077-08586	077-08590	077-08812
All depths are measured depths				Surface Elevation =>	7,581	8,943	9,432	9,762	10,226
				Well Type =>	Vertical	Vertical	Vertical	Vertical	Directional
Group	Formation	Interval/Member	Isolation Concern	Log Top	Log Top	Log Top	Log Top	Log Top	
	Alluvium		Water						
	Landslide Deposit		Water						
	Wasatch	Upper*	Shallow Water						
	Wasatch	Middle*	None						
Mesaverde	Wasatch	Lower*	Water						
Mesaverde	Williams Fork	U. Mesaverde	Water	0	0	0	0	0	
Mesaverde	Williams Fork	Top of Gas	Gas						
Mesaverde	Williams Fork	Cameo	Gas	2,580		2,952	2,777		
Mesaverde	Iles	Rollins	Gas	3,260*	3,925	3,745	3,695	4,131	
Mesaverde	Iles	Cozzette	Gas / UIC	3,917	4,583			4,529	
Mesaverde	Iles	Corcoran	Gas / UIC	4,160	4,845			4,793	
	Mancos		Possible Gas					5,010*	
	Niobrara		Possible Gas					10,191	
	Frontier		Possible Gas						
Dakota	Dakota		Possible Gas					11,752	
	Morrison		Possible Gas						

*Annotated Type Log for 045-05208: COGCC Document Number 2056079*

\* COGCC log picks ("Upper Wasatch" and "Middle Wasatch" are intervals that may include multiple formation members and may be present along the eastern and western fringes of the field; "Lower" Wasatch, as shown herein for water isolation, is not recognized in geologic literature)

**WATER RESOURCE ISOLATION**

Alluvium, Landslide Deposits, Wasatch, Ohio Creek, and Upper Mesaverde.  
The deepest water well within the vicinity of the field is 290' (likely Wasatch)

**PRODUCING ZONE ISOLATION**

Primary Objectives: Mesaverde Group (Cameo, Rollins, Cozzette, and Corcoran)  
Secondary Objective: Williams Fork (interval above Cameo) and Mancos (completed in one well)

**UNDERGROUND INJECTION CONTROL**

API Number	Well Name and Number	Type	Zone	Sample Top	Sample Bottom	TDS	Source
045-05208	Divide Creek Unit #12-WD	Disposal	Corcoran	4,853	4,951	19,548	SWAB - 10/6/1983
045-05208	Divide Creek Unit #12-WD	Disposal	Cozzette	4,605	4,655	18,415	TBG - 5/28/1985
045-05022	Divide Creek Unit #6	Source	Mesaverde	0	570	4,076	SURF OH - 10/10/1975
045-06467	Divide Creek Unit #21	Source	Cameo Coal	3,659	3,739	9,910	SWAB OH - 9/27/1984
045-06467	Divide Creek Unit #21	Source	Cameo Coal	3,659	3,739	10,402	SWAB OH - 9/27/1984

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**COMMISSION ORDER SUMMARY (Significant Engineering and Spacing Issues)**

143-1 (6/23/1959)	Mesaverde Group: Recognizes all Mesaverde Group formations as a <b>Common Source</b> of gas. Establishes 640-acre drilling and spacing units, 900' from unit line. Minimum 250' surface casing requirement and leakoff testing required.
Various	Various orders delete certain lands from the requirements of 143-1, in favor of tighter spacing (reverts to statewide requirements).
1-107 (9/20/2004)	Establishes a Bradenhead Monitoring Area, including the Divide Creek Field.

**HISTORIC WELL CONSTRUCTION**

Surface casing setting depths generally range from 300' to 700' in older wells. Newer wells have surface casing setting depths of 900' or deeper (up to 2,500'). Production casing generally terminates in the Iles Formation. Some wells have intermediate casing. Production casing cement may be limited to coverage of the producing intervals, and coverage may be lacking across parts of the Mesaverde Group and any overlying formations (where present).

**NEW WELL CONSTRUCTION (effective 04/18/2016)**

Minimum surface casing of 250' (per Commission order) or 10% TVD required for well control (Cementing NTO), whichever is more stringent to cover water resources in the Wasatch Formation. Full cement coverage of the Mesaverde Group and Ohio Creek is required in the Piceance Basin through 2015. Recommend cementing intermediate or production casing at least 200' into the surface casing for full coverage of these zones, including the Wasatch Formation, if not otherwise covered by surface casing. Full cement coverage area is defined for sections and partial sections within an approximate one-mile buffer around the Mesaverde outcrop.

**PLUGGING OBJECTIVES**

Plug(s) above Mancos and other deeper formations (if penetrated) to address potential future horizontal wells; plug above Mesaverde Group completions; plug above Ohio Creek (if present) and across Lower Wasatch (squeeze to 500' above Lower Wasatch, if present with no annular cement coverage); stray gas isolation squeezes (if no annular cement) or in-casing stabilization plugs (if annular cement present) at 3,000-foot intervals if plugs are not already planned in those intervals as described above; surface casing shoe plug and surface plug. Larger surface casing shoe plugs should be considered for wells with less than 1,000' of surface casing.

**NOTES**

This field is located within the Mamm Creek Field Cementing Notice to Operators Area (Cementing NTO). Special requirements and Form 2 Conditions of Approval apply.

This field is located within the Bradenhead Monitoring Area. Special requirements and Form 2 Conditions of Approval apply.

Well Control: Controlled gas kick reported for 077-10210 on 9/22/2013 while drilling in the Niobrara Formation.