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BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

RECEIVED

NOV - 9 2012

IN THE MATTER OF THE PROMULGATION AND )  
ESTABLISHMENT OF FIELD RULES TO GOVERN )  
OPERATIONS IN THE HEREFORD FIELD, WELD )  
COUNTY, COLORADO )

CAUSE NO. 421

DOCKET NO. 1211-SP-125

COGCC

ORIGINAL

REQUEST FOR RECOMMENDATION OF  
APPROVAL OF APPLICATION WITHOUT A HEARING

EOG Resources, Inc. ("EOG" or "Applicant"), by and through its attorneys, Burleson LLP, hereby requests, pursuant to Rule 511.a. of the Rules and Regulations of the Colorado Oil and Gas Conservation Commission ("Commission" or "COGCC"), the Director to recommend approval of its September 17, 2012, verified application (the "Application") filed herein based on written testimony and the supporting exhibits, without a hearing.

EOG requests that the Application be approved based on the uncontested allegations contained therein for an order to establish an approximate 1,280-acre stand-up exploratory drilling unit consisting of certain lands located in Sections 17 and 20, Township 10 North, Range 62 West, 6<sup>th</sup> P.M., for horizontal and vertical well development, for the production of oil, gas and associated hydrocarbons from the Niobrara Formation.

As of the filing date of this submittal, no protests have been filed.

In the event that this request is denied, EOG requests that an administrative hearing be scheduled for this matter, to occur at a convenient time prior to the Commission hearing on November 15, 2012.

WHEREFORE, EOG requests that its request for the Director's recommendation for approval of the Application, without an administrative hearing, be granted.

DATED this 2<sup>nd</sup> day of November, 2012.

Respectfully submitted,

EOG RESOURCES, INC.

By: 

Robert A. Willis  
Burleson LLP  
Wells Fargo Center  
1700 Lincoln Street, Suite 1300  
Denver, CO 80203  
(303) 801-3200



**Cause No. 421, Docket No. 1211-SP-125**

## **EOG Resources, Inc.**

### **Jason McLaren – Land Testimony Cause 421, Docket No. 1211-SP-125**

My name is Jason McLaren, and I am currently employed as a Landman for EOG Resources, Inc., ("EOG"). I graduated from Emory University in 1995 with an undergraduate degree, and the University of Wyoming College of Law in 2000 with a law degree. I have over 10 years of experience in oil and gas land and contract work. I am familiar with the land subject to, and the matters set forth in, the September 17, 2012, verified application (the "Application") filed herein.

In support of the Application, I am submitting two exhibits.

1. Exhibit No. L-1

Exhibit No. L-1 is an overhead map which describes EOG's leasehold interests in the area of the Application Lands.

2. Exhibit No. L-2

Exhibit No. L-2 is a map marking those lands which are subject to the Application.

#### *Notice of Application/Notice of Hearing*

Based on the examination of relevant contracts and records, the interested parties (owners within the proposed drilling and spacing unit) have been duly served with the Application and associated Notice of Hearing. Further, as of the date of this testimony, EOG has not received any notice of objection or protest to the Application.

The matters described herein were devised under my direction and control. To the best of my knowledge and belief, all of the matters set forth herein, my testimony and the supporting exhibits, are true, correct and accurate.

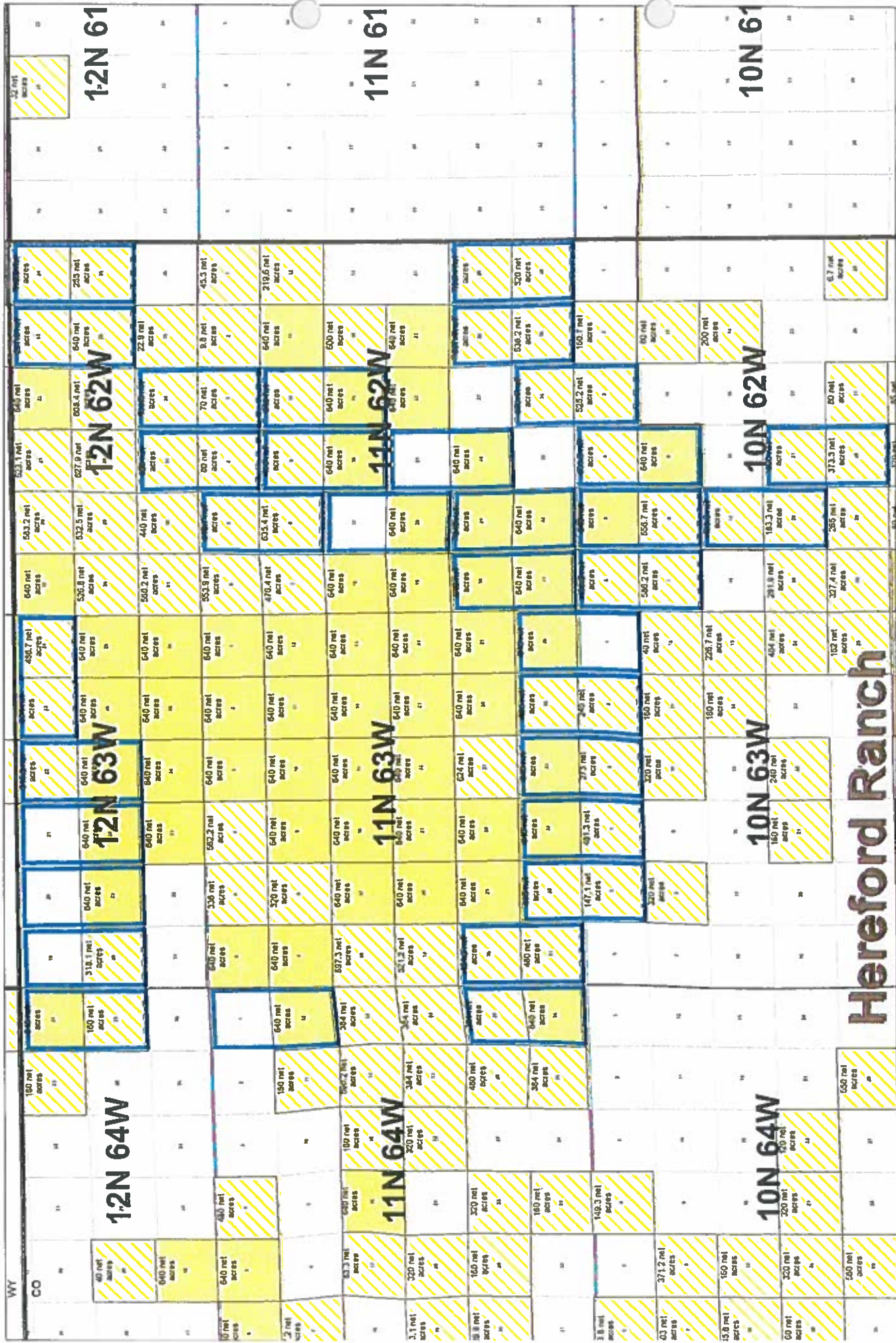
  
Jason McLaren, Landman  
EOG Resources, Inc.

STATE OF COLORADO )  
 )ss.  
CITY AND COUNTY OF DENVER )

**Witness my hand and official seal.**

ELIZABETH VAN ORSDALE  
NOTARY PUBLIC  
STATE OF COLORADO  
My Commission Expires 06/24/2013


  
Notary Public



Application Lands - 

Sec. 5 & 8, T10N, R62W  
Weld County

Exhibit L-2

13	18	17	16	15	14	13	18	17
24	19	20	21 T11N R62W	22	23	24	19	20
25	30	29	28	27	26	25	30	29
36	31	32	33	34	35	36	31	32
1	6	 5 Elk Creek #2-05H	4	3	2	1	6	5
12	7		9	10	11	12	7	8
13	18	17	T10N R62W 16	15	14	13	18	17



## **EOG Resources, Inc.**

### **John H. Melby – Geological Testimony Cause 421, Docket No. 1211-SP-125**

My name is John H. Melby, and I am currently employed as a Petroleum Geologist for EOG Resources, Inc. ("EOG"). I graduated from the University of Wisconsin with both a Bachelor's (1965) and Master's Degree (1967) in Geology.

I have over 45 years experience in the oil and gas industry. I am familiar with the lands subject to, and the matters set forth in, the September 17, 2011, verified application ("Application").

In support of EOG's Application in the above-referenced docket, I am submitting four (4) exhibits. The exhibits are attached to my sworn testimony and form the basis for EOG's Application to gain approval to drill and complete one (1) horizontal well in each of the requested 1280-acre drilling and spacing units for the Niobrara Formation covering the following lands (the "Application Lands"):

TOWNSHIP 10 NORTH, RANGE 62 WEST, 6TH P.M.

Section 5: All

Section 8: All

The Niobrara Formation is sequence of Chalks, Marls and Limestones that were deposited in the Western Interior Seaway during Cretaceous time. This seaway was vast in extent and covered much of North America from the Gulf of Mexico to the Arctic. These rocks were deposited as deep water sediments and underlie most of the DJ Basin in parts of northeastern Colorado, southeastern Wyoming and southwestern Nebraska.

Four geology exhibits were prepared and presented as follows:

***I. Exhibit G-1 – (Structure Map-C.I.=50')***

Exhibit G-1 is a subsea structure map constructed on the top of the Niobrara Formation. The regional dip is approximately 40'/mile to the northwest across the proposed spaced area.

***II. Exhibit G-2 – (Isopach Map-C.I.=5')***

Exhibit G-2 is an isopach map of the total Niobrara Formation. Total thickness ranges from approximately 295' to 315', with the thickest area in the southern portion of the proposed spaced area.

***III. Exhibit G-3 – (Niobrara-Type Log)***

Exhibit G-3 is an AIT type log for the Niobrara Formation. The Niobrara consists of two members, the Smoky Hill Chalk and the Ft. Hayes Limestone.

***IV. Exhibit G-4 (Cross Section A-A')***


Exhibit G-4 is a stratigraphic cross section constructed through nearby wells showing the mapped interval of the Niobrara Formation. This exhibit shows that the Niobrara Formation exists under the proposed spacing area. The location of cross section A-A' is shown on Exhibit G-1 & G-2.

My conclusion is that the Niobrara Formation exists under all of the Application Lands.

The matters described herein were all conducted under my direction and control. To the best of my knowledge and belief, all of the matters set forth herein, my testimony and in the exhibits are true, correct and accurate.

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John H. Melby, Petroleum Geologist  
EOG Resources, Inc.

STATE OF COLORADO )  
 )ss.  
CITY AND COUNTY OF DENVER )

**Witness my hand and official seal.**

ELIZABETH VAN ORSDALE  
NOTARY PUBLIC  
STATE OF COLORADO  
My Commission Expires 06/24/2013

  
Notary Public

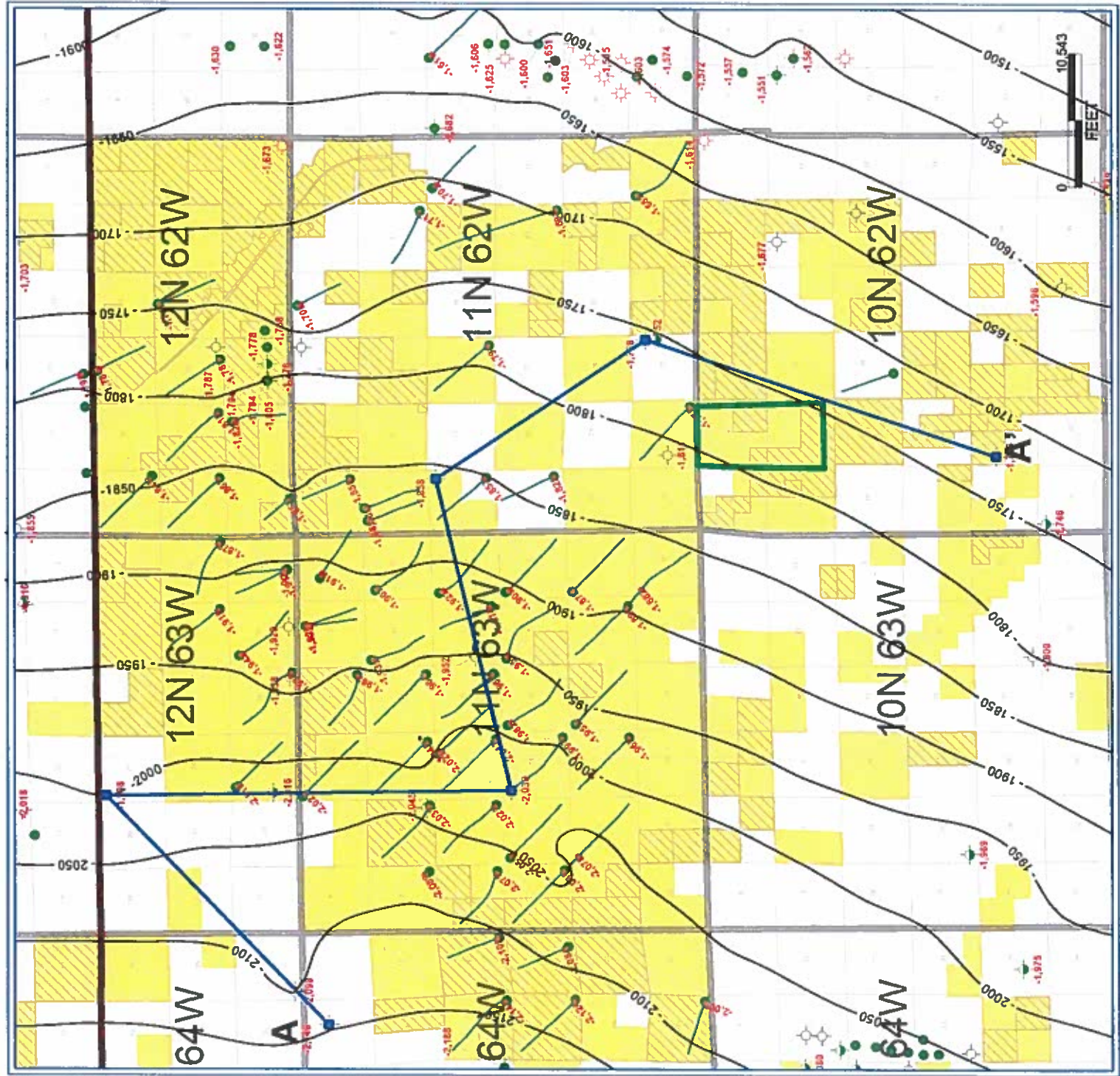
Application Lands



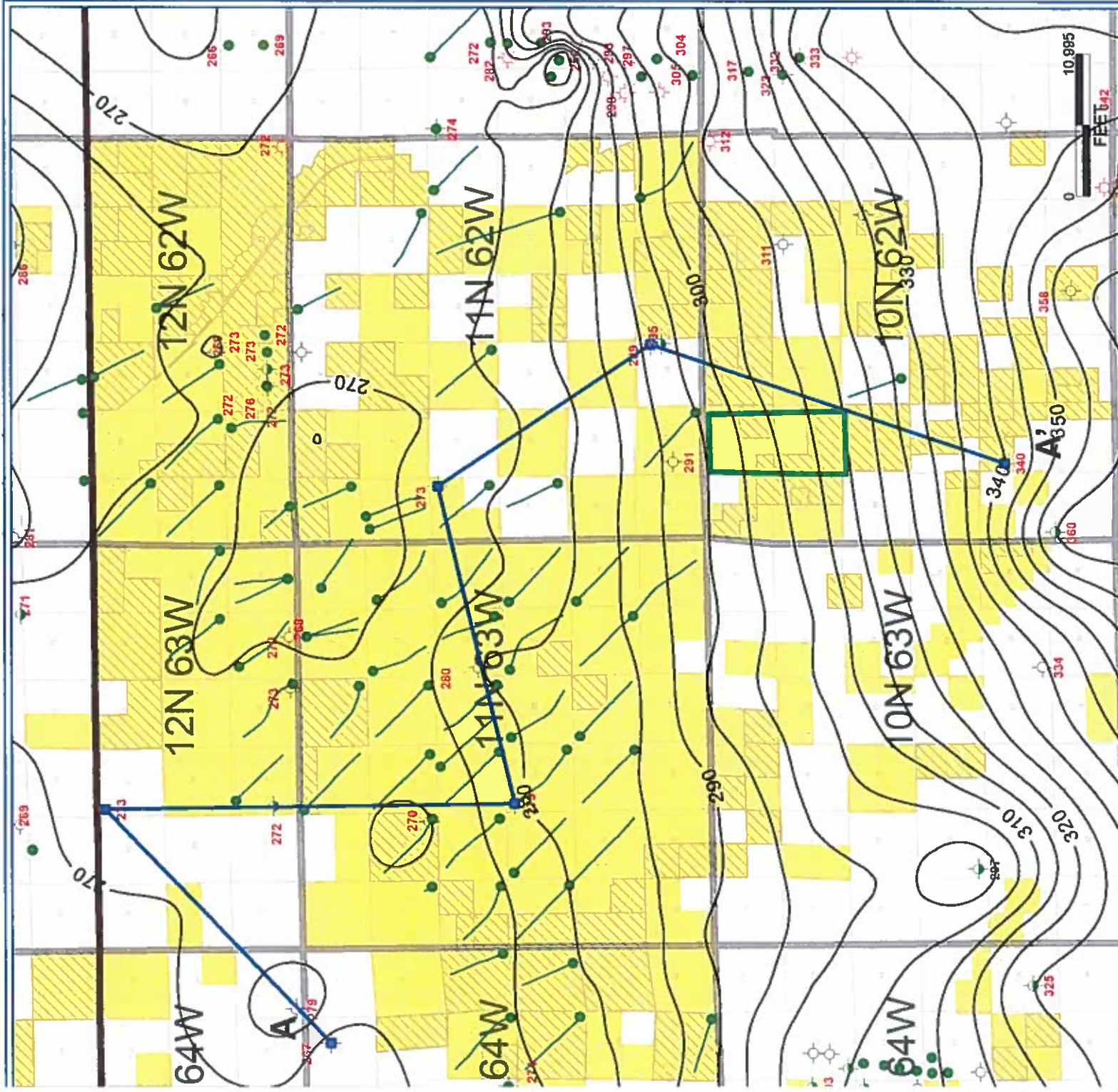
NIOBRARA  
STRUCTURE  
C.I. = 50'



CAUSE 421  
DOCKET 1211-SP-125  
EXHIBIT G-1







Application Lands

NIOBRARA  
ISOPACH  
C.I. = 5'



CAUSE 421  
DOCKET 1211-SP-125  
EXHIBIT G-2

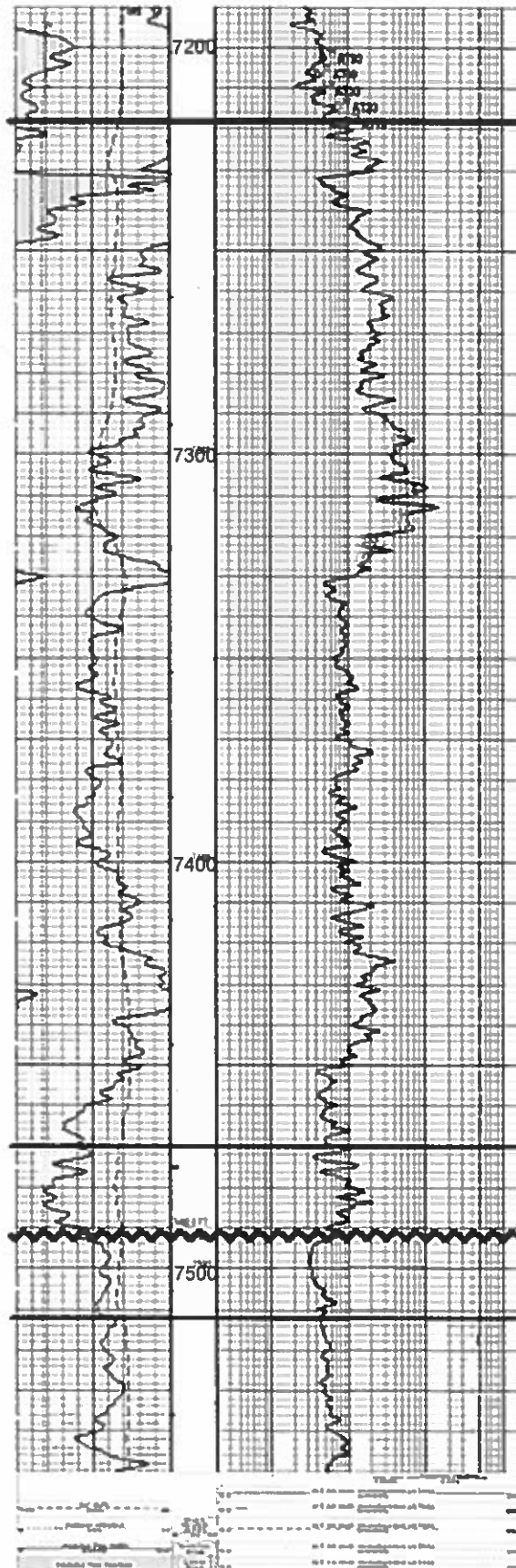
## UPPER CRETACEOUS

**NIOBRARA**

## SMOKY HILL CHALK

Ft. Hayes  
L.S.

**CarlisleSh.**



# NIOBRARA TYPE LOG



**CAUSE 421  
DOCKET 1211-SP-125  
EXHIBIT G-3**



2



**CAUSE 421  
DOCKET 1211-SP-125  
EXHIBIT G-4**

## **EOG Resources, Inc.**

### **Osman G. Apaydin – Engineering Testimony Cause 421, Docket No. 1211-SP-125**

My name is Osman G. Apaydin, and I am currently employed as a Reservoir Engineer for EOG Resources, Inc., (“EOG”). I graduated from Istanbul Technical University in 1995 with a Bachelor of Science in Petroleum and Natural Gas Engineering, and from Stanford University in 1998 with a Master of Science in Petroleum Engineering. I have over 14 years of experience in reservoir engineering, production operations, facility engineering, and related matters. I am familiar with the lands subject to, and the matters set forth in, the September 17, 2012, verified application (the “Application”) filed herein.

In support of the Application, I am submitting one exhibit. The exhibit is attached to my sworn testimony and forms the basis for my opinion.

#### *Drainage and economic calculations*

EOG believes that horizontal drilling and completing of the Niobrara Formation is the most efficient way to develop the resource potential. The Niobrara Formation may be a high-rate fracture play only, or may have additional matrix contribution to the complex fracture network. As a result, EOG Resources has been extensively testing multiple completion techniques at the Hereford Field, in order to maximize the recoverable reserves. Exhibit 1 reflects the original oil in place, estimated ultimate recovery, porosity and calculated drainage area for a number of EOG’s shorter wells drilled in 640 drilling spacing units (DSUs) within the Hereford Field Area. EUR estimates for the EOG Resources drilled horizontal wells, with limited production history, vary between 12,000 to 350,000 barrels. Estimated original oil in place is between 240,000 and 7,000,000 BBL. This range yields estimated drainage areas between 11 acres to 248 acres.

The last well presented in Exhibit 1, Garden Creek 16-2314H, is a long lateral that spans over two sections (a 1280 DSU) in a neighborhood where productions results has been relatively poor. Garden Creek 16-2314H has an EUR estimate of 63,000 BBL with a drainage area of 44 acres. The drainage area calculations presented in all the exhibits assume that there is matrix contribution and if this play turns out to be a fracture-only play then estimated drainage areas could be more than what is presented here. In a fracture only scenario, maximizing horizontal well length would increase the possibility of crossing more fault/fracture like features and could improve the reserve recovery substantially. The average drainage area for a 640 DSU well is calculated as 99 acres (Exhibit 1). EOG believes that average EUR could be improved by 70% with a 1280 DSU (long lateral) well. With this assumption, the estimated area that can be efficiently drained by a long lateral is 168 acres. Six long lateral wells are estimated to drain 1008 acres, which is smaller than the 1280 acres in the proposed spacing unit. These calculations demonstrate that up to 6 wells could be drilled in a 1280 acre spacing unit to prevent waste and will not adversely impact correlative rights.

The matters described herein were devised under my direction and control. To the best of my knowledge and belief, all of the matters set forth herein, my testimony and the supporting exhibits, are true, correct and accurate.

  
Osman Apaydin, Reservoir Engineer  
EOG Resources, Inc.

STATE OF COLORADO )  
 )ss.  
CITY AND COUNTY OF DENVER )

**My commission expires: June 24, 2013.**





# Niobrara Formation Drilling & Spacing Unit Application Hereford Field Drainage Calculations

WELL NAME	API NO	Well Orientation	FIELD	SEC.	TSHP.	RGE.	EUR OIL (BBL)	OOIP (BBL)	h(ft)	Porosity	Calculated Drainage Area (Acres)
JAKE 2-01H	5123305740000	Horizontal	HEREFORD	1.0	11N	63W	300,000	6,000,000	80	0.10	212
ELMER 8-31H	5123305840000	Horizontal	HEREFORD	31.0	12N	62W	245,000	4,800,000	80	0.10	174
RED POLL 10-16H	5123307490000	Horizontal	HEREFORD	18.0	11N	63W	280,000	5,600,000	80	0.10	190
GARDEN CREEK 6-11H	5123312210000	Horizontal	HEREFORD	11.0	11N	62W	24,000	480,000	80	0.10	17
GARDEN CREEK 9-16H	5123311910000	Horizontal	HEREFORD	18.0	11N	62W	25,000	500,000	80	0.10	18
GARDEN CREEK 11-18H	5123313310000	Horizontal	HEREFORD	18.0	11N	62W	31,000	620,000	80	0.10	22
GARDEN CREEK 27-36H	5123313310000	Horizontal	HEREFORD	36.0	11N	62W	38,000	760,000	80	0.10	27
CRITTER CREEK 2-03H	5123310470000	Horizontal	HEREFORD	3.0	11N	63W	350,000	7,000,000	80	0.10	248
CRITTER CREEK 4-00H	5123310530000	Horizontal	HEREFORD	9.0	11N	63W	350,000	7,000,000	80	0.10	248
CRITTER CREEK 5-10H	5123312750000	Horizontal	HEREFORD	10.0	11N	63W	225,000	4,500,000	80	0.10	158
CRITTER CREEK 8-14H	5123312220000	Horizontal	HEREFORD	14.0	11N	63W	30,000	600,000	80	0.10	21
CRITTER CREEK 9-16H	5123311810000	Horizontal	HEREFORD	15.0	11N	63W	290,000	5,800,000	80	0.10	199
LONGHORN B 3-36H	5123305860000	Horizontal	HEREFORD	36.0	12N	63W	45,000	900,000	80	0.10	32
LONGHORN B 5-36H	5123315320000	Horizontal	HEREFORD	36.0	12N	63W	50,000	1,000,000	80	0.10	35
LION CREEK 4-16H	5123320260000	Horizontal	HEREFORD	18.0	11N	64W	12,000	240,000	80	0.10	8
LION CREEK 6-23H	5123326980000	Horizontal	HEREFORD	23.0	11N	64W	74,000	1,480,000	80	0.10	51
RANDALL CREEK 4-32H	5123312330000	Horizontal	HEREFORD	32.0	12N	62W	15,000	300,000	80	0.10	11
<b>Average 640 well Drainage Area</b>											<b>99</b>
<b>Estimated 1200 Well</b>											<b>160</b>
<b>GARDEN CREEK 182314H</b>	<b>5123328010000</b>	<b>Horizontal 1280</b>	<b>HEREFORD</b>	<b>23.0</b>	<b>11N</b>	<b>61W</b>	<b>65,000</b>	<b>1,300,000</b>	<b>80</b>	<b>0.10</b>	<b>44</b>

$B_o = 1.4$   
 $S_w = 0.35$   
 $RF = 0.05$

Equations used:

$$OOIP = EUR / RF$$

$$Area = OOIP * B_o / 7758 / h / por / (1 - S_w)$$

where:

- OOIP = original oil in place (BBL)
- EUR = estimated ultimate recovery (BBL)
- RF = recovery factor (fraction)
- Area = drainage area (acres)
- $B_o$  = formation volume factor (rbt/STB)
- h = thickness, (ft)
- por = porosity (fraction)
- $S_w$  = water saturation (fraction)