



02234640

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

RECEIVED
JUL 15 2014
COGCC

IN THE MATTER OF THE APPLICATION OF
CONOCOPHILLIPS COMPANY FOR AN
ORDER TO ESTABLISH AN EXPLORATORY
1280-ACRE DRILLING AND SPACING UNIT
AND ESTABLISHING WELL LOCATION RULES
FOR THE NIOBRARA FORMATION IN
SECTIONS 22 AND 23, TOWNSHIP 3 SOUTH,
RANGE 65 WEST, 6TH P.M., AN UNNAMED
FIELD, ADAMS COUNTY, COLORADO

CAUSE NO. 535
DOCKET NO. 1407-SP-2086

**REQUEST FOR RECOMMENDATION OF
APPROVAL OF APPLICATION WITHOUT A HEARING**

ConocoPhillips Company ("Applicant"), by and through its undersigned attorneys, hereby requests pursuant to Rule 511.a. of the Rules of Regulations of the Colorado Oil and Gas Conservation Commission for the Director to recommend approval of its May 29, 2014, verified application ("Application") and the supporting exhibits without a hearing.

Applicant requests that the above-captioned matter be approved based upon: (i) the merits of the Application, and (ii) Applicant's sworn written testimony verifying sufficient facts along with exhibits that adequately support the relief requested in the Application. To Applicant's information and belief, no protests were timely filed in this matter.

WHEREFORE, Applicant requests that its request for a recommendation for approval of its Application without a hearing be granted.

DATED this 15th day of July, 2014.

Respectfully submitted,

ConocoPhillips Company

By: Jamie L. Jost

Jamie L. Jost
James P. Parrot
Jost & Shelton Energy Group, P.C.
Attorneys for Applicant
1675 Larimer Street, Suite 420
Denver, CO 80202
(720) 379-1812

ConocoPhillips Company

**Cause No. 535
Docket No. 1407-SP-2086**

ConocoPhillips Company
Kelsey L. Swinford - Land Testimony
Cause 535; Docket No. 1407-SP-2086
Drilling and Spacing Unit Application – Niobrara Formation
Unnamed Field, Adams County, Colorado

July 2014 Colorado Oil and Gas Conservation Commission Hearing

My name is Kelsey L. Swinford, and I am currently employed as a Staff Landman for ConocoPhillips Company (“Applicant”). I graduated from the University of Oklahoma in 2004 with a Business Administration degree in Energy Management. I have over 10 years of experience in oil and gas land work and I am familiar with the lands subject to, and matters set forth in, the verified application (“Application”).

In support of Applicant’s Application and my sworn testimony herein, I am submitting six (6) exhibits. This testimony and exhibits provide the supporting basis for approval of the Applicant’s request for an order a) to vacate Order No. 535-89 as to the Application Lands, as defined below, and b) to establish an approximate 1280-acre exploratory drilling and spacing unit and c) to authorize up to two (2) horizontal wells in order to efficiently and economically recover the oil, gas and associated hydrocarbons from the Niobrara Formation underlying the following lands (“Application Lands”):

Township 3 South, Range 65 West, 6th P.M.

Section 22: All

Section 23: All

1,280 acres, more or less, Adams County, Colorado

Exhibit A-1: Leasehold Ownership Map:

Exhibit A-1 is a map showing the location of the Application Lands and the leasehold ownership. The Application Lands consist of 100% FEE mineral interest. The following parties own leasehold or unleased mineral interests in the Application Lands:

| <u>INTEREST OWNER(S)</u> | <u>UNIT WI</u> |
|--|---------------------------|
| Burlington Resources Oil & Gas Company | 89.84375% |
| Other Working Interest Owners | 10.15625% |
| TOTAL: | <u>100.000000%</u> |

ConocoPhillips and Burlington Resources Oil & Gas Company are operating in partnership with regard to the Application Lands, and for purposes of the Application are considered a single entity.

Exhibit A-2: Mineral Ownership Map:

Exhibit A-2 is a map showing the location of the Application Lands and the mineral ownership.

Exhibit A-3: Property Location Plat:

Attached as Exhibit A-3 is a Property Location Plat. The Applicant will conform to its statement that the treated perforation of the well(s) within the Niobrara Formation will not be closer than 460 feet from the boundaries of the 1280 acre drilling and spacing unit and not less than 960 feet from the treated interval of another well within the unit.

Exhibit A-4: Surface Ownership Map:

Exhibit A-4 is a map showing the surface ownership of the Application Lands, which is owned in FEE.

Exhibit A-5: Topographic Map:

Exhibit A-5 is a map showing the topography of the Application Lands. Approval of the Application for a drilling and spacing unit would allow for a less impactful surface development plan.

Exhibit A-6: Interested Parties:

Attached as Exhibit A-6 are interested parties within the Application Lands. Based upon our examination of relevant documents all of the interested parties received proper notice. As of the date of this testimony, the Applicant is not aware of any unresolved protests or objections to the Application.

Affirmation

The matters described herein were all conducted under my direction and control. I hereby swear that to the best of my knowledge and belief, all of the matters set forth herein and in the exhibits are true, correct, and accurate.



Kelsey L. Swinford
Staff Landman
ConocoPhillips Company

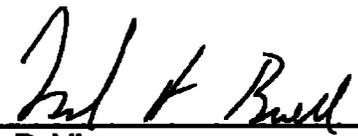
STATE OF TEXAS)
) ss.
COUNTY OF HARRIS)

The foregoing instrument was subscribed and sworn to before me this 10th day of July, 2014, by Kelsey L. Swinford, Rockies Business Unit, Niobrara Land, Staff Landman for ConocoPhillips Company.

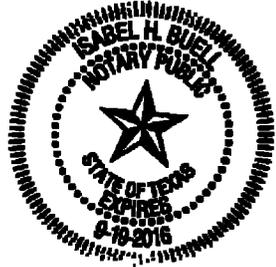
Witness my hand and official seal.

[SEAL]

My commission expires: 9/19/2016



Notary Public



Bear 3-65 22-23

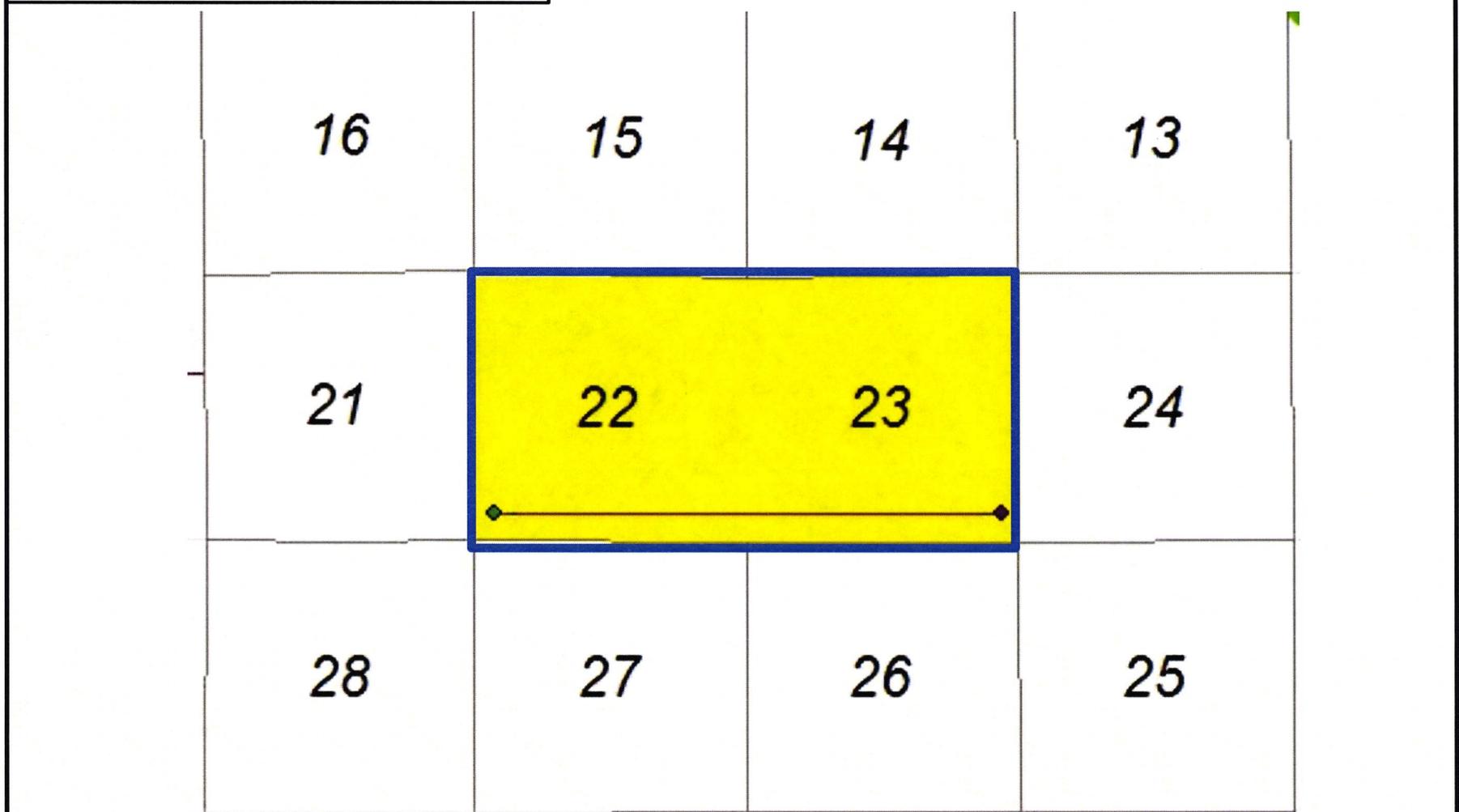
Exhibit : A-1

Docket:1407-SP-2086 Cause: 585

Leasehold Ownership Map

Bear 3-65 22-23

Location: Section: 22-23 Township: 3S Range: 65W



Leasehold Ownership

 **Fee Surface Ownership**

Prepared by Lance
Young

Bear 3-65 22-23

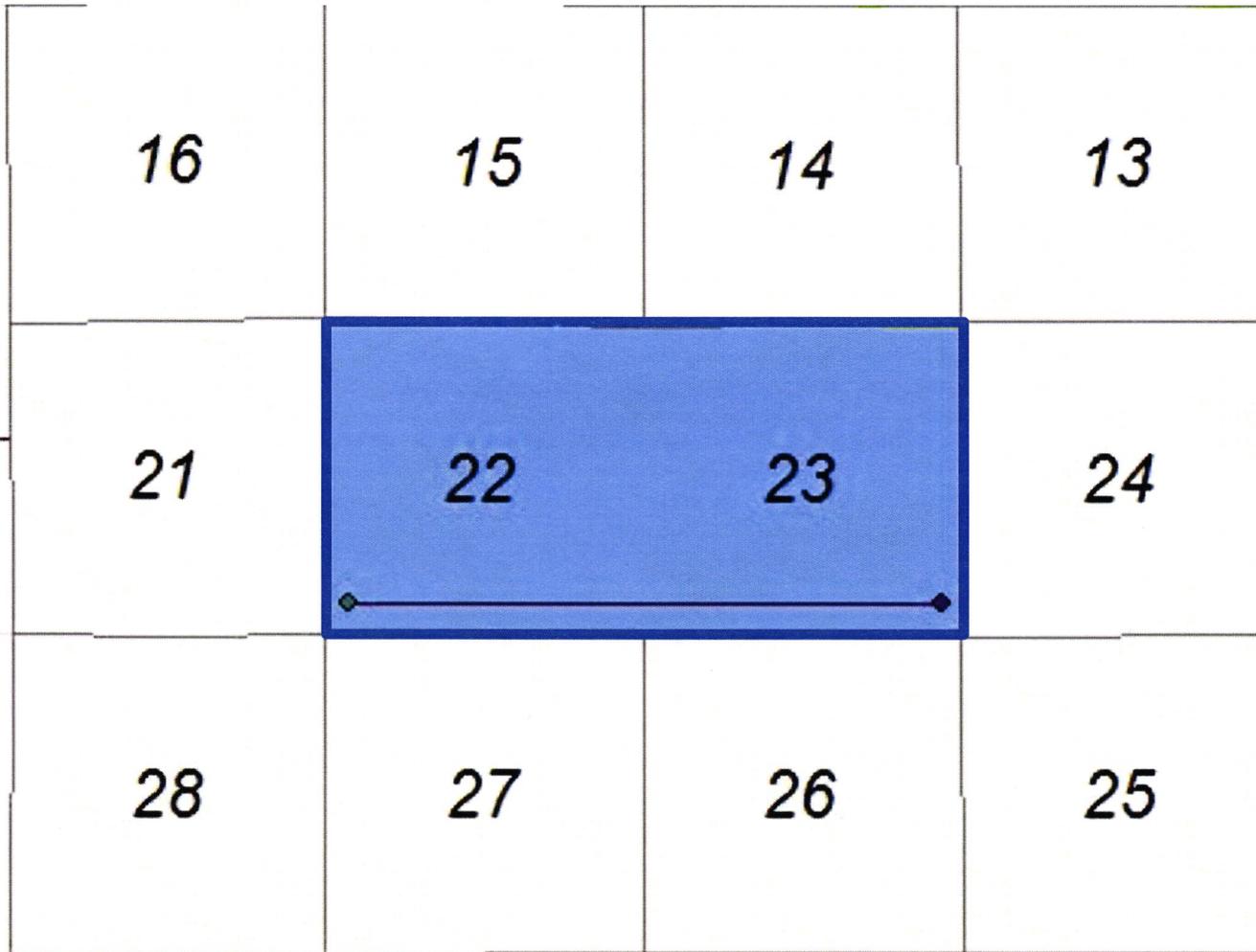
Exhibit : A-2

Docket:1407-SP-2086 Cause: 585

Mineral Ownership Map

Bear 3-65 22-23

Location: Section: 22-23 Township: 3S Range: 65W



Mineral Ownership

 Fee Mineral Ownership

Prepared by Lance
Young

Bear 3-65 22-23

Exhibit : A-3

Docket:1407-SP-2086 Cause: 585

Property Location Plat

Bear 3-65 22-23

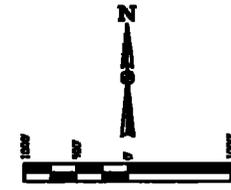
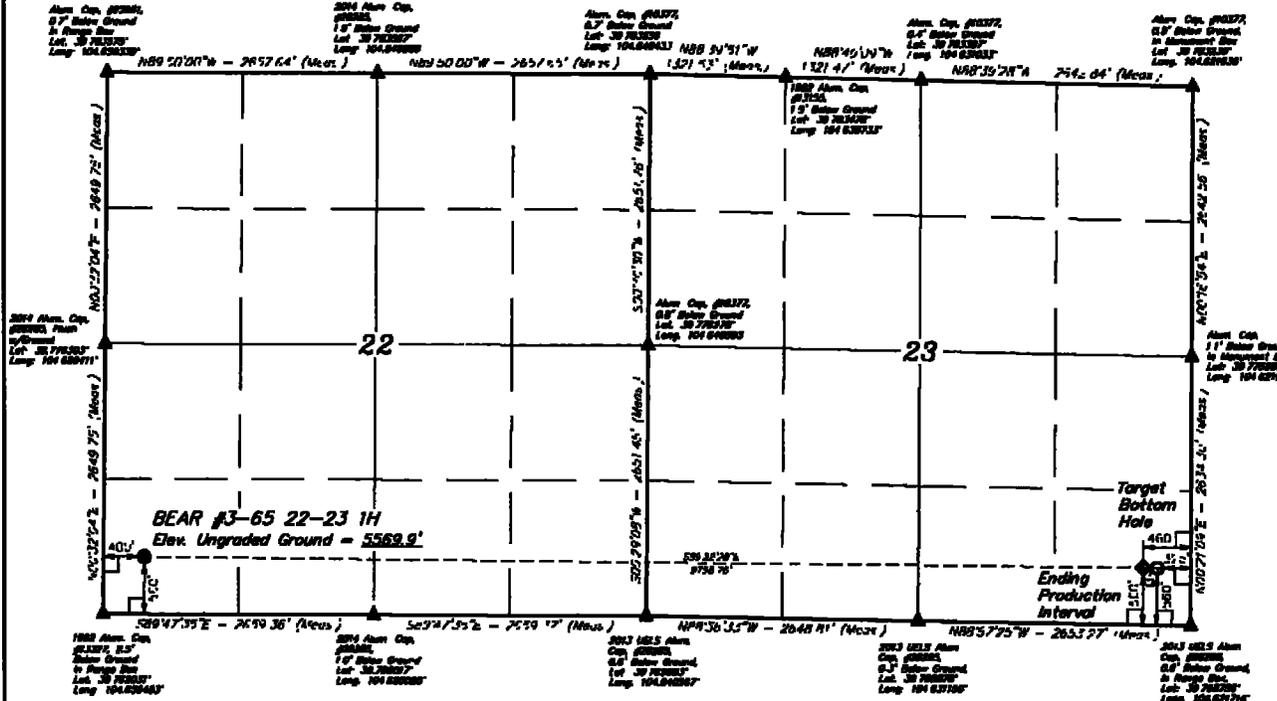
Location: Section: 22-23 Township: 3S Range: 65W

T3S, R65W, 6th P.M.

ConocoPhillips Company

BEAR 3-65 22-23 1H
SW 1/4 SW 1/4 SECTION 22, T3S, R65W, 6th P.M.
ADAMS COUNTY, COLORADO

BASE OF BEARING
BASE OF ELEVATION
BENCHMARK 374 LOCATED ON THE SECTION LINE BETWEEN SECTIONS 22 & 23, T3S, R65W, 6th P.M. TAKEN FROM 1988 FOREBORN DATUM BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY AS BEING 6054.61 FEET.



| LINE TABLE | | |
|------------|-------------|---------|
| LINE | DIRECTION | LENGTH |
| L1 | S89°57'38"E | 129.01' |



- LEGEND:**
- = 50' SYMBOL
 - = PROPOSED WELLHEAD
 - = TARGET BOTTOM HOLE
 - △ = SECTION CORNERS LOCATED
 - = PRODUCTION INTERVAL

| WELL # (TARGET BOTTOM HOLE) | WELL # (ENDING PRODUCTION INTERVAL) | WELL # (SURFACE LOCATION) |
|--|--|--|
| WELL # 3-65 22-23 1H LATITUDE = 39°40'13.11" (84 62184) LONGITUDE = 106°27'22.18" (84 62184) | WELL # 3-65 22-23 1H LATITUDE = 39°40'13.11" (84 62184) LONGITUDE = 106°27'22.18" (84 62184) | WELL # 3-65 22-23 1H LATITUDE = 39°40'13.11" (84 62184) LONGITUDE = 106°27'22.18" (84 62184) |

UNTAH DE LA, LLC
Corporate Office • 100 South 200 East
Vernal, UT 84778 • (435) 789-3417

DESIGNED BY: DARREN FRANKS, M.S. DATE: 04-20-14
DRAWN BY: JS SCALE: 1" = 100'
DATE DRAWN: 02-07-14 REVISION: 02-08-20

WELL LOCATION PLAT

Prepared by Lance Young

Bear 3-65 22-23

Exhibit : A-4

Docket:1407-SP-2086 Cause: 585

Surface Ownership Map

Bear 3-65 22-23

Location: Section: 22-23 Township: 3S Range: 65W



Surface Ownership

 Majority Ownership

Prepared by Lance Young

Bear 3-65 22-23

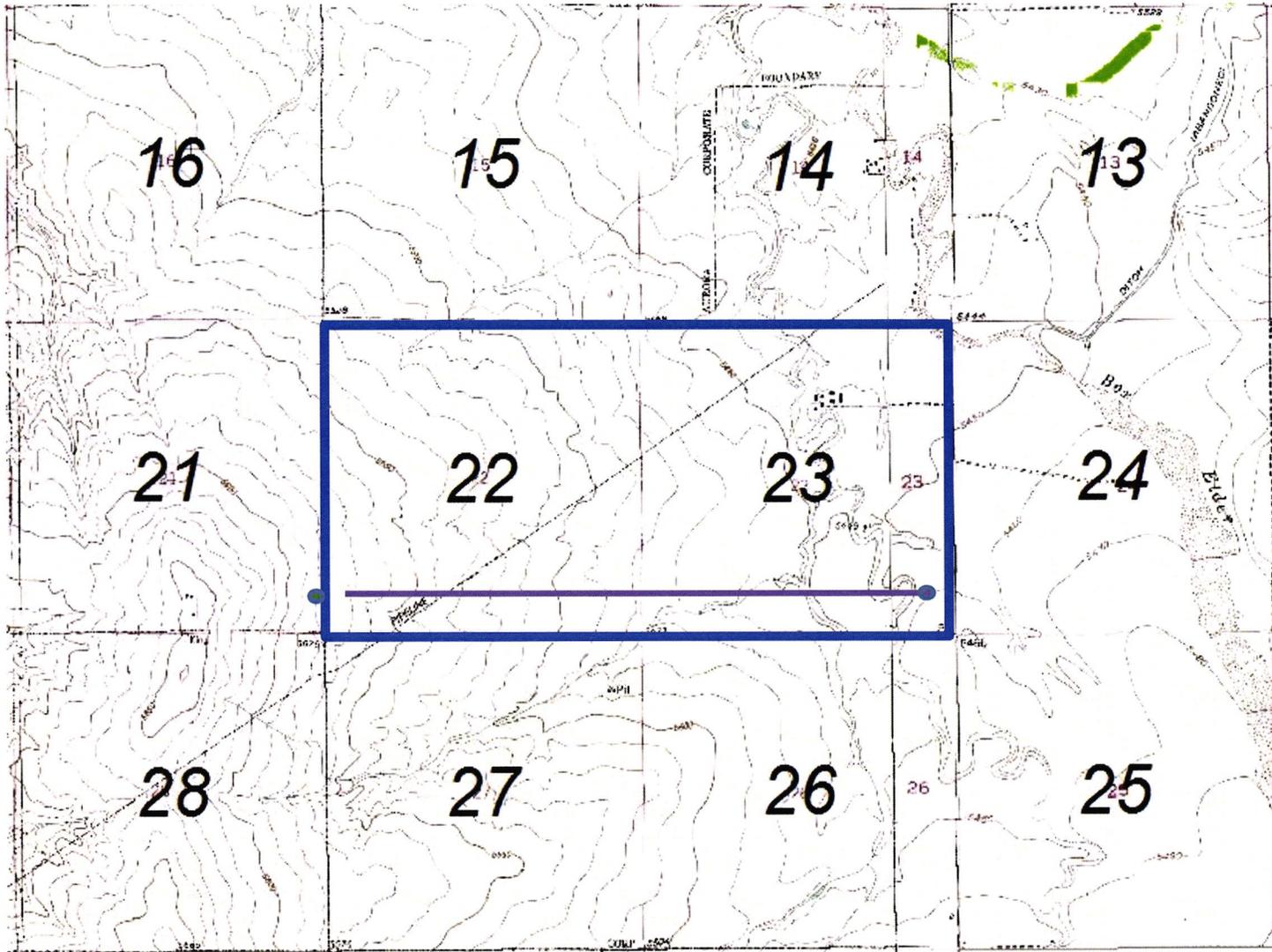
Exhibit : A-5

Docket:1407-SP-2086 Cause: 585

Topographic Map

Bear 3-65 22-23

Location: Section: 22-23 Township: 3S Range: 65W



Prepared by Lance Young

**Exhibit A-6
Interested Party List
SP-Bear 3-65 22-23 (1280)**

**Burlington Resources Oil & Gas
Company, LP
600 North Dairy Ashford Road
Houston, TX 77079**

**Property Reserve Inc.
c/o David H. Powers, Energy Group
Manager
50 E. North Temple Street, 12th Floor
Salt Lake City, UT 84150-0012**

**Herman A. Flader T/U/W FBO Laura
Britt, U.S.Bank, N.A., Trustee
c/o The Private Client Reserve at U.S.
Bank, Attn: Karla Goddard, Personal
Trust Associate
950 17th Street, 5th Floor
Denver, CO 80202**

**Herman A. Flader T/U/W FBO Casey
Reed, U.S.Bank, N.A., Trustee
c/o The Private Client Reserve at U.S.
Bank, Attn: Karla Goddard, Personal
Trust Associate
950 17th Street, 5th Floor
Denver, CO 80202**

**Heirs or Devisees of Lloyd E. Gardner
Address Unknown**

**Lottie B. Peak
Address Unknown**

**James C. Wallace
Address Unknown**

**Prosper Farms Investments, LLC
5603 Broadway
Denver, CO 80216**

**Hertal Properties, LLC
6731 East 50th Avenue
Commerce City, CO 80022**

**Tom Schreiner
Energy Liaison
Colorado Parks and Wildlife
Northeast Regional Office
6060 Broadway
Denver, CO 80216**

**Kent Kuster
Colorado Department of Public Health &
Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530**

**Gordon Stevens
Adams County Public Works,
Construction Manager
4430 South Adams County Pkwy.
Brighton, CO 80601-8218**

ConocoPhillips Company

Geoscience Testimony

Spacing Application

Niobrara Formation

Colorado Oil and Gas Conservation Commission Hearing

Cause No. 535

Docket No. 1407-SP-2086

Township 3 South, Range 65 West, Sections 22-23

Adams County

My name is Christian Marine Lahsberg, and I am currently employed as a Staff Geologist for ConocoPhillips Company. I received a Bachelor's degree in Geophysics from The Universidad Simon Bolivar (2000) and a Master's Degree In Geology from The University of Oklahoma (2006). I have 11 years of experience in the oil and gas industry.

I have worked directly with the properties and lands that are subject of this matter.

In support of Applicant's application and my sworn testimony herein, I am submitting six (6) exhibits. The exhibits are attached to my sworn testimony and form the basis for the Applicant's request to gain approval for establishing an approximate 1280 acre drilling and spacing unit for the production of oil, gas and associated hydrocarbons from the Niobrara formation underlying the following lands ("Application Lands")

Township 3 South, Range 65 West, 6th P.M.

Section 22: All

Section 23: All

Adams County, Colorado

The Niobrara Formation is a Cretaceous sequence of chinks, marls, limestones, and shales that were deposited in the Western Interior Seaway. This formation is regionally extensive and found throughout most of the Rocky Mountain Region and is in the subsurface throughout the Denver-Julesburg Basin. It is my conclusion that the Niobrara Formation underlies the Application Lands to be spaced.

The six geologic exhibits herein were prepared and presented as follows:

Exhibit No. G-1 Niobrara Type Log

Exhibit No. G-1 is the Type Log used for this area. The log is from Andrau Enterprises' #13 Owl Creek, located in Section 29, Township 29 North, Range 64 West. This log was originally published by Longman et al. (1998) and is widely used throughout literature and industry as an established type log for this part of the Denver-Julesburg Basin. Displayed on this log are typical Gamma Ray and Resistivity curves

associated with modern open-hole logging of the Niobrara in this area. Scales of each are posted at the bottom of the log. The targeted interval is the Smoky Hill Shale Member of the Niobrara formation, which is regionally defined as the upper member of the Niobrara formation, above the Ft Hayes Limestone. The Niobrara top is identified as the upper red line on the log. The base of the Niobrara is defined as the top of the Ft Hayes Limestone Sandstone (green line). The log exhibits a gamma ray and resistivity signature similar to logs derived from the Niobrara producers in nearby Adams County. An increased resistivity measurement is commonly used as a proxy for hydrocarbon presence in the reservoir.

Exhibit No. G-2 **Spacing Locator and Cross Section Line Indicator Map**

Exhibit No. G-2 displays the drilling and spacing units ConocoPhillips is requesting consideration for approval from the Oil and Gas Conservation Commission to establish a 1280 acre drilling and spacing unit for the Niobrara formation in order to drill horizontal wells in this section. The area is sections 22 and 23, township 3 south, range 65 west, in Adams County, Colorado. This area is represented on the map as a red filled rectangle. The location of the cross sections displayed in Exhibits G-3 and G-4 are identified as blue and green lines, respectively, on the map.

Exhibit No. G-3 **Cross Section A-A'**

Exhibit No. G-3 is a cross section of wells in the area which comprises the drilling and spacing unit, showing the Niobrara section. The cross section extends generally from west (A) to east (A') and is hung on the top of the Niobrara. The formation annotation on this cross section is consistent with that of the type log shown in Exhibit No. G-1. All the logs display gamma ray and resistivity curves. Resistivity measurements above 25 ohms are shaded red and are shown as an indication for the likely presence of hydrocarbons in the reservoir. Logs on the cross section exhibit resistivity measurements comparable to productive Niobrara wells located in Adams County.

Exhibit No. G-4 **Cross Section B-B'**

Exhibit No. G-4 is a cross section of wells in the area which comprises the drilling and spacing unit, showing the Niobrara section. The cross section extends generally from north (B) to south (B') and is hung on the top of the Niobrara. The formation annotation on this cross section is consistent with that of the type log shown in Exhibit No. G-1. All the logs display gamma ray and resistivity curves. Resistivity measurements above 25 ohms are shaded red and are shown as an indication for the likely presence of hydrocarbons in the reservoir. Logs on the cross section exhibit resistivity measurements comparable to productive Niobrara wells located in Adams County.

Exhibit No. G-5 **Niobrara Top SubSea Structure**

Exhibit No. G-5 shows the top subsea structure of the top Niobrara contoured in 50' intervals. This map reflects the regional monoclonal dip to the west existing in this area.

MARINE LAHSBERG, CHRISTIAN A.

CHRISTIAN.A.MARINE@CONOCOPHILLIPS.COM

EXPERIENCE

2007 TO PRESENT
GEOPHYSICIST

ConocoPhillips Company

Houston, TX

- **2014-Present: Staff Geophysicist, Niobrara Implementation Team, Rockies Business Unit**
- **2012-2013: Staff Geophysicist, Deep Water Gulf of Mexico Exploration, Exploration & Production Unit**
- **2009-2012: Senior Geophysicist, Deep Water Gulf of Mexico Exploration, Exploration & Production Unit**
- **2007-2009: Senior Geophysicist, Lower 48 Panhandle Development, Onshore Exploration and Production**

EDUCATION

2004-2008
M. S. GEOLOGY

University of Oklahoma

Norman, OK

1993-2000
B. S. GEOPHYSICS

Universidad Simon Bolivar

Caracas, VZLA.

Type Log
Andrau Enterprises
#13 Owl Creek
NW NW Sec. 29 T7N R64W
Weld County, CO
 (Modified from Longman et al., 1998)

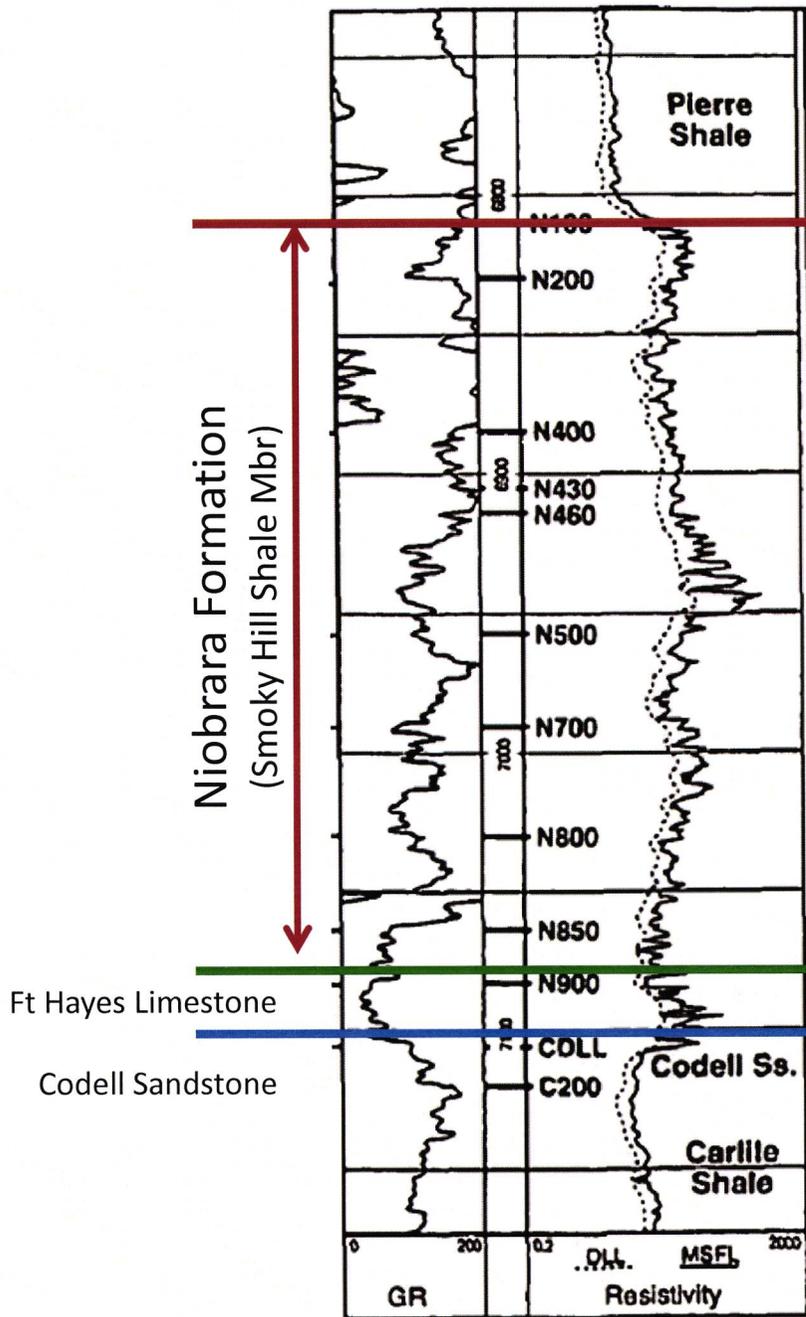
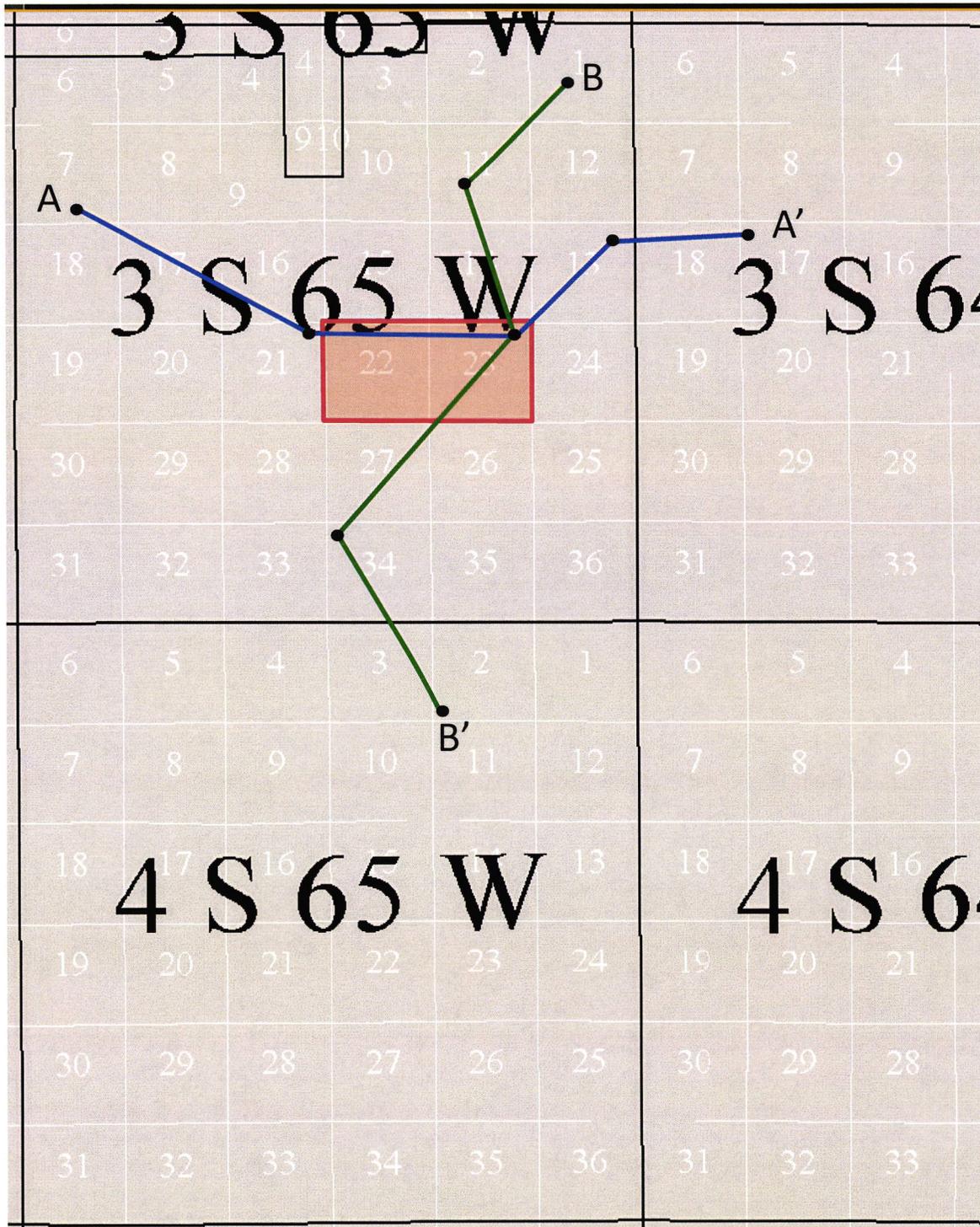


Exhibit: G-1
 Cause No. 535
 Docket No. 1407-SP-2086



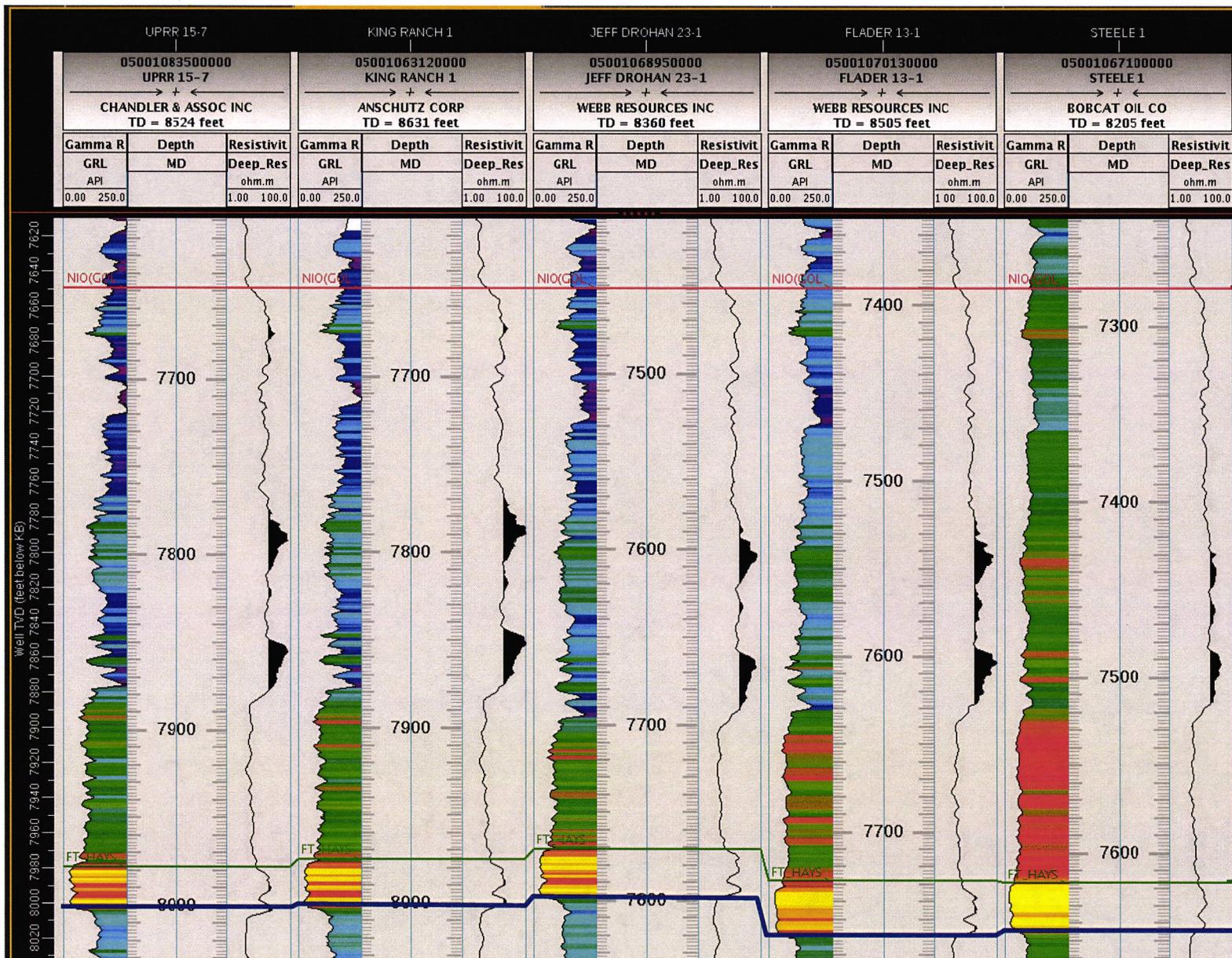
 1280 Application Lands

Exhibit: G-2
Cause No. 535
Docket No. 1407-SP-2086

5,000 feet
2,000 meters

A

A'



Niobrara Formation

Ft Hayes

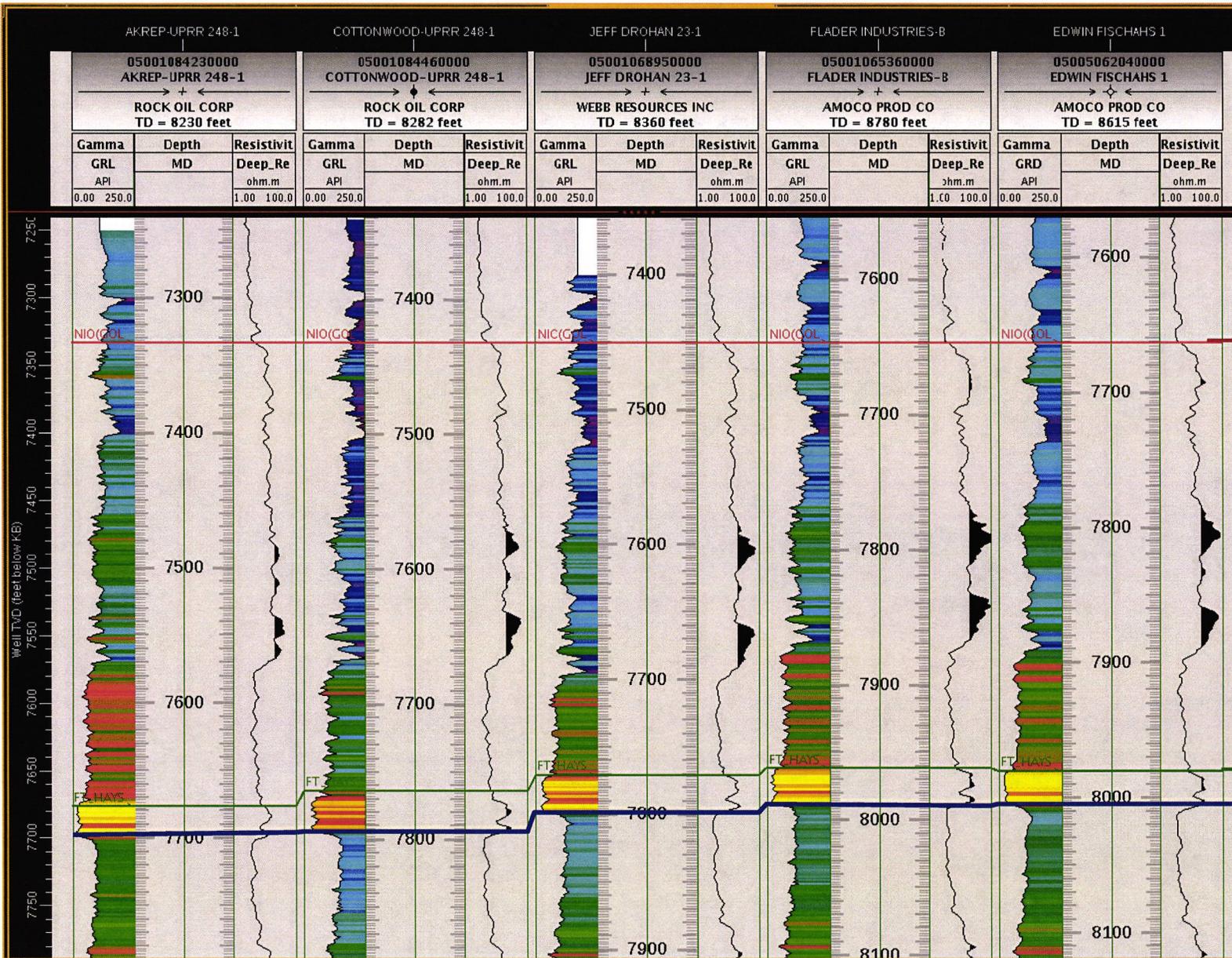
Codell Sandstone

Exhibit: G-3
Cause No. 535
Docket No. 1407-SP-2086

ConocoPhillips Company
West-East Cross Section
Bear 3-65 22-23 4H

B

B'



Niobrara Formation

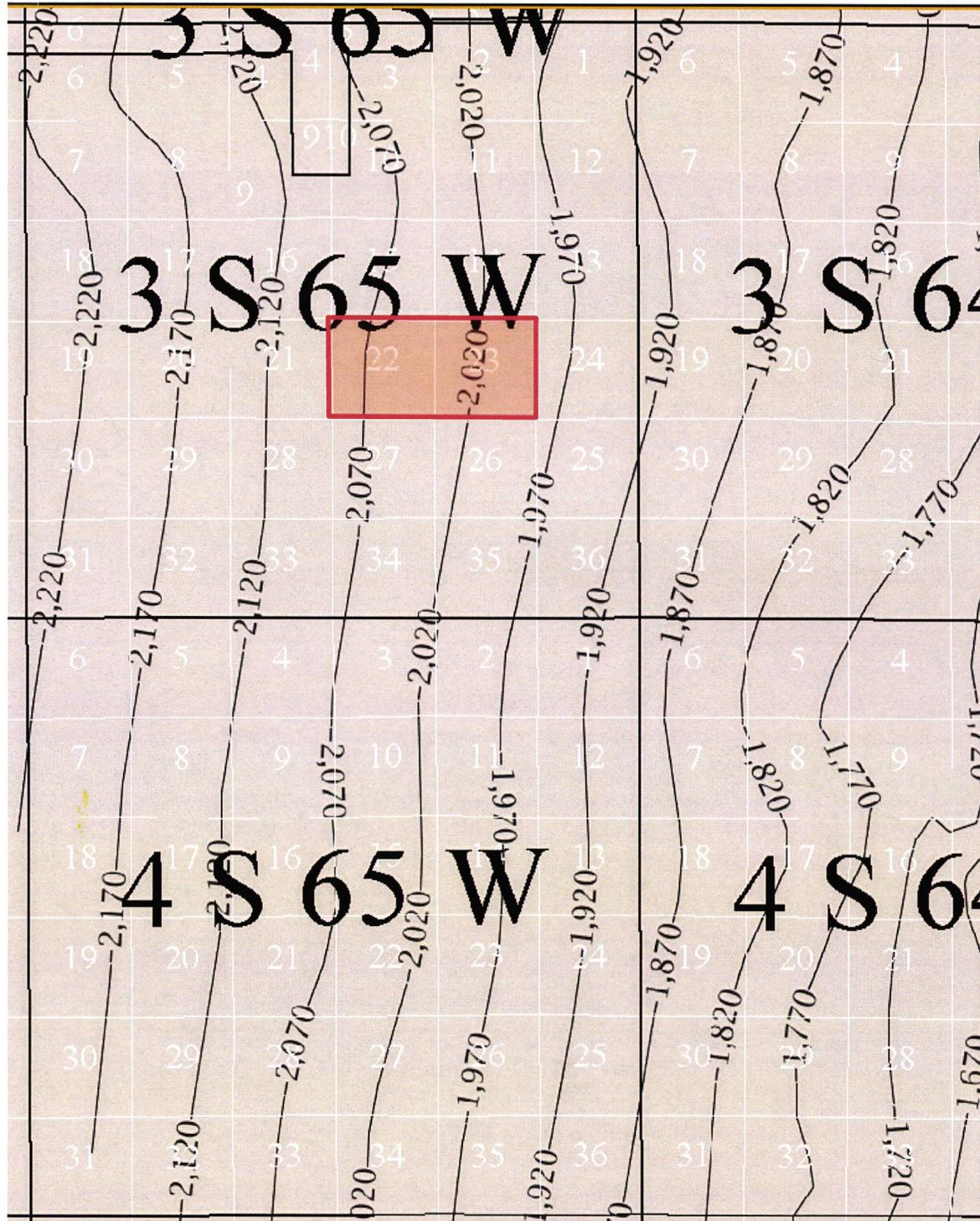
Ft Hayes

Codell Sandstone

Exhibit: G-4
 Cause No. 535
 Docket No. 1407-SP-2086

ConocoPhillips Company

North-South Cross Section
 Bear 3-65 22-23 4H

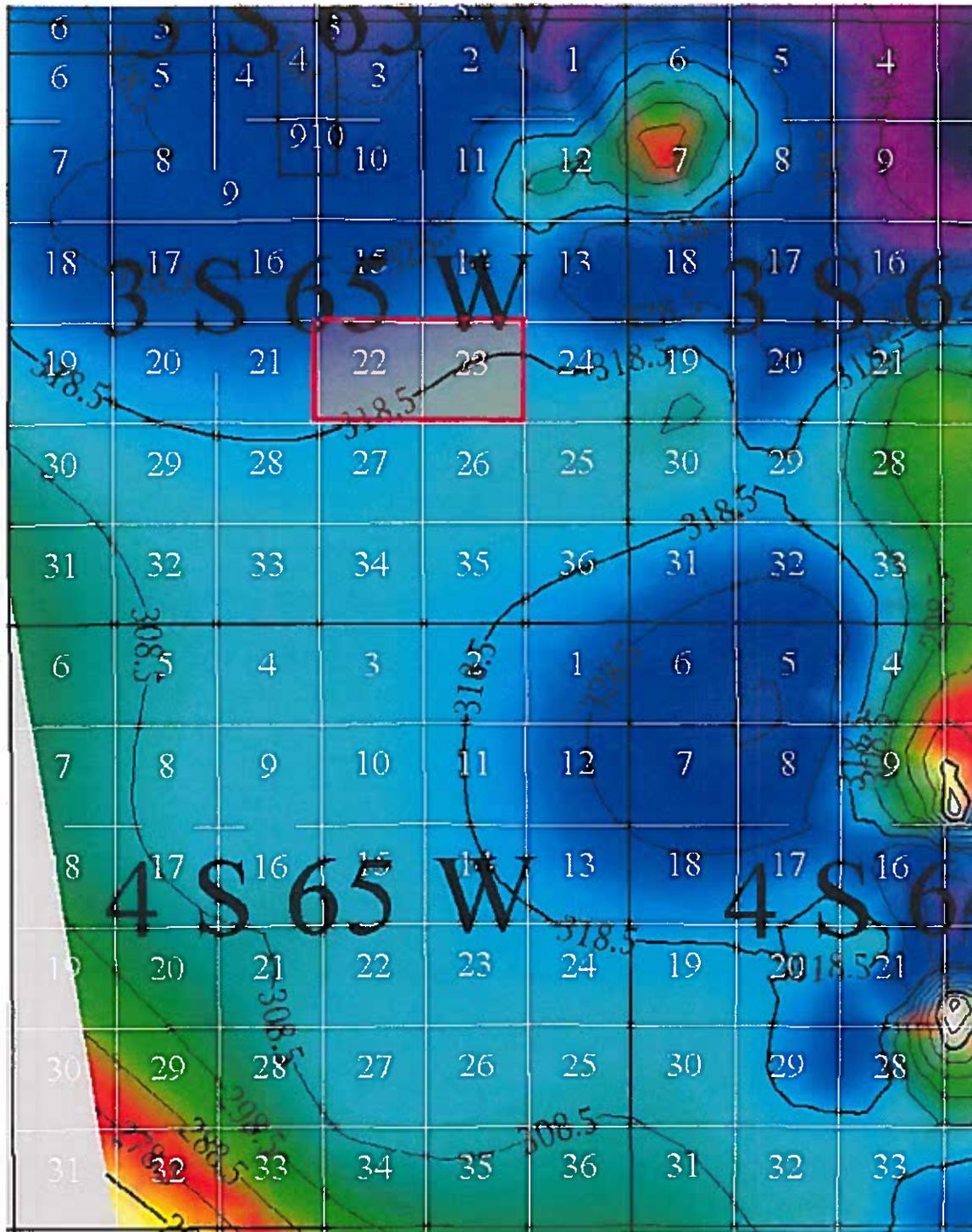


ConocoPhillips Company
Top Niobrara Structure Map
SubSea TVD (Feet)
C.I.: 50'

 1280 Application Lands

5,000 feet
2,000 meters

Exhibit: G-5
Cause No. 535
Docket No. 1407-SP-2086



ConocoPhillips Company
 Niobrara Isopach Map
 Thickness (Feet)
 C.I.: 10'

 1280 Application Lands

5,000 feet
 2,000 meters

Exhibit: G-6
 Cause No. 535
 Docket No. 1407-SP-2086

Engineering Testimony – Clint Hutchinson

Cause No. 535; Docket No. 1407-SP-2086

1280 Acres Spacing Application – Niobrara Formation

Adams County

July 2014 Colorado Oil and Gas Conservation Commission Hearing

In support of the Verified Application of ConocoPhillips in Cause No. 535, Docket 1407-SP-2086 (the Application), Clint Hutchinson, Lead Reservoir Engineer, upon oath, disposes and states as follows:

- a. I am currently employed as a Reservoir Engineer at ConocoPhillips. I have knowledge of the Reservoir Engineering characteristics of the Niobrara formation underlying the Application Lands. I have over 15 years of experience in the oil and gas industry. A true and correct copy of my resume is included as Exhibit E-1. To the best of my knowledge and belief, each of these Exhibits is correct and accurate as of the date of this Verified Statement.
- b. Exhibit E-2 is a base map of the application lands.
- c. Exhibit E-3 demonstrates the additional drainage area available with a long lateral. Allowing for setbacks, the total length of two short laterals is 8,720 feet as compared to the long lateral length of 9,640 feet. The long lateral exposes an additional 920 feet of reservoir. The drilling of a long lateral would permit the recovery with horizontal wells of the resource within the 920-foot area between the two sections which would otherwise not be recovered with 640-acre spacing and 460-foot setbacks on each side of the section line. Drilling a long lateral prevents waste by recovering additional oil and gas resources.
- d. Exhibit E-4 is the type curve developed from my study of offset wells in the Wattenberg Field. This type curve represents the oil profile developed from 27 horizontal wells completed in the Niobrara formation with laterals greater than 6,000 feet in length. Estimated Ultimate Recovery (EUR) for the oil type curve is 208,163 barrels of oil.
- e. Exhibit E-5 shows the estimated drainage area for a horizontal Niobrara well on the Application Lands assuming my estimated Wattenberg oil type curve EUR of 208,163 barrels. ConocoPhillips rock and fluid parameters used in this estimate include a net pay of 40 feet, a porosity of 7.0%, a water saturation of 20%, a formation volume factor of 1.7 reservoir barrels per stock tank barrel, and a recovery factor of 5%.

The effective porosity was derived from a combination of conventional core analysis and interpretation of the bulk density from wireline logging. Bulk density was utilized as an input to a regression tied to the conventional core porosity analysis. The statistical average porosity across our targeted zone in the Niobrara is approximately 7%. The net thickness was derived by utilizing porosity and water saturation cut-offs. The porosity was derived as stated above and the water saturation was an interpretation of our target formation in the Niobrara based on Archie's equation. The statistical average water saturation and net thickness across our targeted zone is approximately 20% and 40 feet, respectively. The petrophysical parameters were statistical averages derived from our type log, the Tebo 29 1H. However, these values are somewhat consistent across acreage we have assessed. The formation volume factor was calculated from company PVT analysis.

The estimated drainage area is not greater than 407.3 acres per individual well. If a second optional well is drilled, total drainage area from both wells is estimated to be not greater than 814.5 acres. Thus, the proposed 1280 acre drilling and spacing units are not smaller than the maximum area that can be economically and efficiently drained by a horizontal well in the Niobrara formation within each such unit, and a second optional horizontal well in each such unit would promote efficient drainage and not result in waste.

- f. Economics were run using completed well costs of \$18,029,073 for the Bear 3-65 22-23 4H, the type curve presented in this exhibit, and ConocoPhillips operating cost assumptions. The single well economics meet the Company's requirements for exploration wells.
- g. Exhibit E-6 is a summary of my conclusions relevant to this Application.
 - 1. The drainage area of a horizontal well in the Niobrara formation of the Application Lands having a wellbore lateral of greater than 6,000 feet in length is estimated to be no greater than 407.3 acres.
 - 2. A horizontal well with a greater than 6,000 foot lateral producing from the Niobrara formation meets ConocoPhillips' economic requirements for explorations wells.
 - 3. The proposed 1280 acre drilling and spacing unit, with the requested setbacks, for a horizontal well in the Niobrara formation in the Application Lands, and authorization for an optional second such well in each unit, will promote efficient drainage, protect correlative rights, and prevent waste. The drilling of a long lateral will recover resource within the 920 foot area between the two sections which would otherwise not be recovered with 640-acre spacing and 460-foot setbacks.

I reserve the right to modify or supplement this testimony and the attached exhibits prior to the July 2014 COGCC hearing.

Clint Hutchinson
Clint Hutchinson

Subscribed to and sworn to before me this 2nd day of July, 2014, by Clint Hutchinson, Lead Reservoir Engineer.

Notary Public Sharon K Horton

My Commission Expires: March 28, 2017

Address: 600 N Dairy Ashford, Houston, TX 77079



*****Exhibits E-1 through E-6 Follow on the Next Pages*****

Resume

CLINT HUTCHINSON
ConocoPhillips Company
P.O. Box 2197 Houston, TX 77252
Clint.L.Hutchinson@ConocoPhillips.com
281-647-1813

2013: Lead Reservoir Engineer – Niobrara Implementation - ConocoPhillips Houston, TX

Responsible for providing guidance and mentorship to reservoir engineering staff. Coordinate production performance analysis and reservoir studies.

2009-2013: Staff Reservoir Engineer – Eagle Ford Development - ConocoPhillips Houston, TX

Responsible for ensuring the implementation of a multi-rig drilling program. Identified and prepared prospects for drilling. Prepared field development plans. Developed type curves. Performed production performance analysis. Coordinated completion studies. Performed reservoir studies. Evaluated acreage for acquisition.

2003-2009: Staff Reservoir Engineer – South Texas Development- ConocoPhillips Houston, TX

Responsible for ensuring the implementation of a multi-rig drilling program. Identified and prepared prospects for drilling. Performed production performance analysis. Evaluated acreage for acquisition.

2001-2003: Reservoir Engineer – Gulf Coast Development - ConocoPhillips Houston, TX

Evaluated drilling prospects. Prepared acreage for disposition.

1999-1997: Reservoir Engineer – San Juan Development – Phillips Petroleum Farmington, NM

Identified and prepared prospects for drilling. Performed performance analysis. Maintained reserve forecasts.

1996-1999: Reservoir Engineer – Gulf Coast Development – Phillips Petroleum Houston, TX

Evaluated drilling and recompletion prospects. Maintained reserve forecasts. Prepared acreage for disposition.

Education

1992-1996: Colorado School of Mines Golden, CO
B.S. Petroleum Engineering

Exhibit E – 1
Cause #535
Docket #1407-SP-2086

Application Lands – Base Map

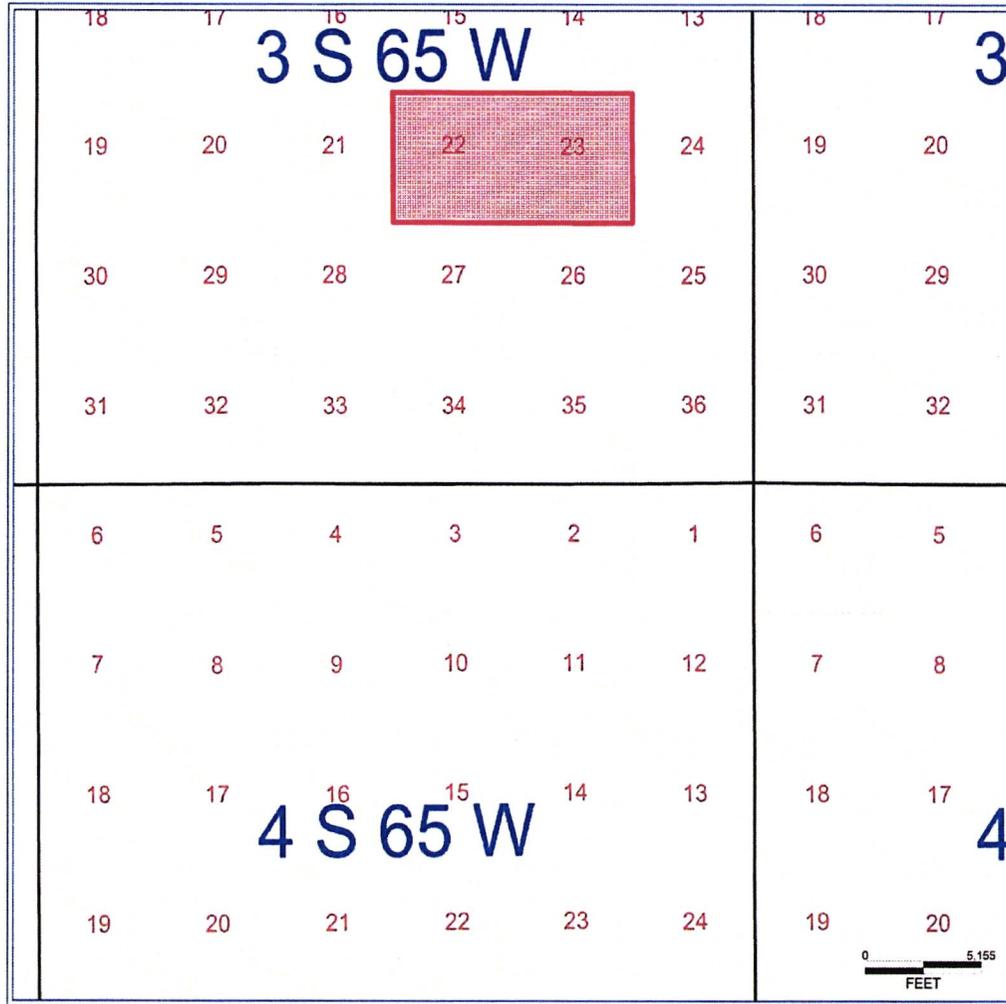
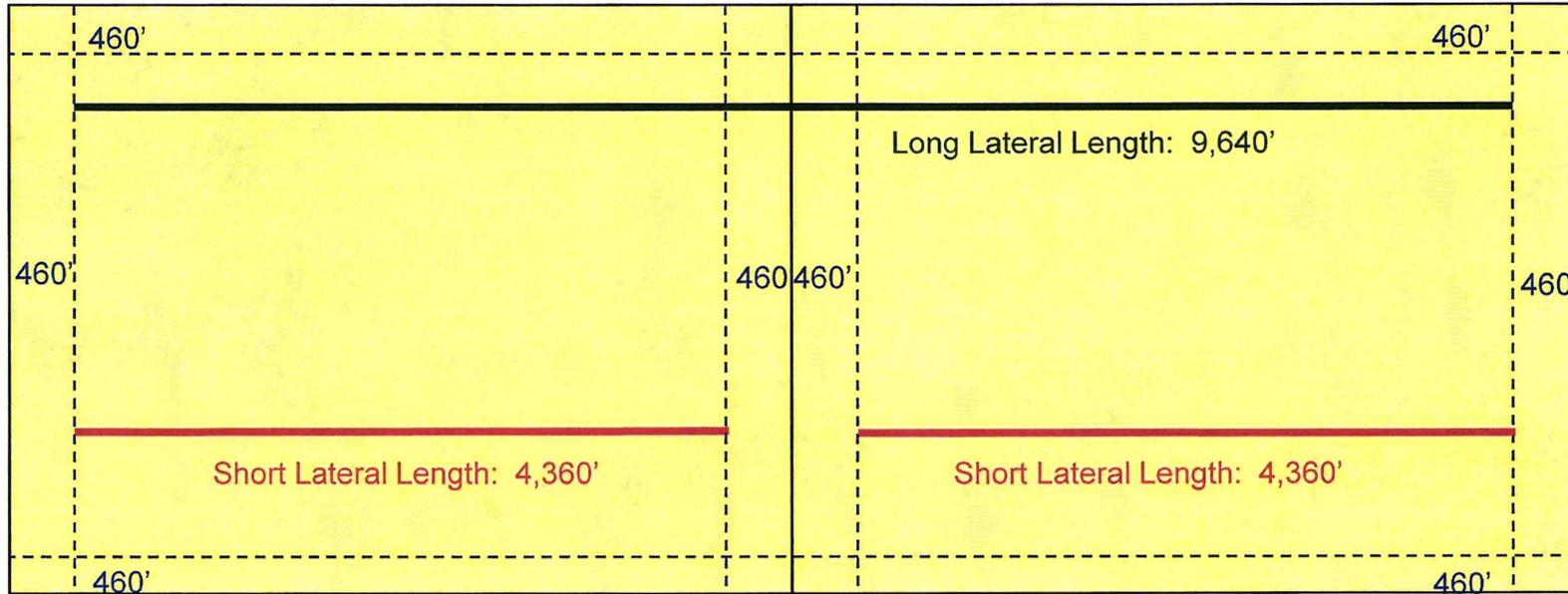


Exhibit E – 2
Cause #535
Docket #1407-SP-2086

 **1280 Acre Application Lands**

Long Laterals Contact More Reservoir Than Short Laterals



Ref: Wickstrom 18-2H Hearing
Cause # 535
Docket # 1305-SP-62 & 1305-UP-75

| Lateral Type | Two-Section Lateral Length, ft |
|--------------------------|-----------------------------------|
| 1 Long | 9,640 |
| 2 Short | 8,720 |
| Additional length | 920 |

Exhibit E – 3
Cause #535
Docket #1407-SP-2086

Niobrara Long Lateral Type Curve

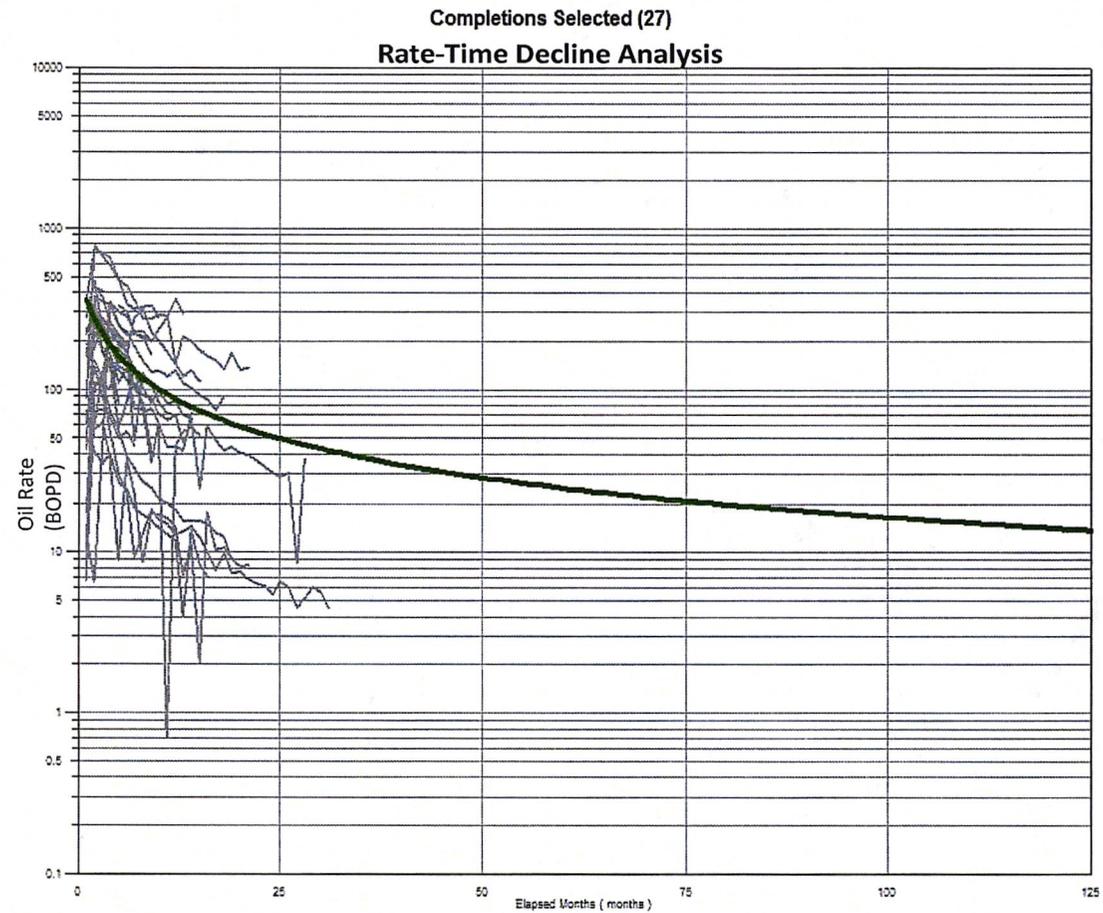


Exhibit E - 4
Cause #535
Docket #1407-SP-2086

Niobrara Long Lateral Drainage Area Calculation

COP PARAMETERS - LONG LATERAL

| | | |
|---------------|-------------------|---------------------------------|
| EUR Oil, bbls | 208,163.00 | estimated ultimate oil recovery |
| h, ft | 40 | net thickness |
| Por, fraction | 0.07 | porosity |
| Sw, fraction | 0.2 | water saturation |
| Boi, rb/stb | 1.7 | formation volume factor |
| RF, fraction | 0.05 | recovery factor |
| OOIP, stb | 4,163,260 | EUR/RF |

$$\text{Drainage area, acres} = \text{OOIP} * \text{Boi} / [7758 * \text{h} * \text{Por} * (1 - \text{Sw})]$$

| | | |
|---------------|--------------|---------------------|
| Drainage area | 407.3 | acres per well |
| | 814.5 | acres per two wells |

Exhibit E – 5
Cause #535
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Engineering Summary

- ▶ The drainage area of a horizontal well in the Niobrara formation of the Application Lands having a wellbore lateral of greater than 6,000 feet in length is estimated to be no greater than 407.3 acres.
- ▶ A horizontal well with a greater than 6,000 foot lateral producing from the Niobrara formation meets ConocoPhillips' economic requirements for exploration wells.
- ▶ The proposed 1280 acre drilling and spacing unit, with the requested setbacks, for a horizontal well in the Niobrara formation in the Application Lands, and authorization for an optional second such well in each unit, will promote efficient drainage, protect correlative rights, and prevent waste. The drilling of a long lateral will recover resource within the 920 foot area between the two sections which would otherwise not be recovered with 640-acre spacing and 460-foot setbacks.

**Exhibit E – 6
Cause #535
Docket #1407-SP-2086**