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COGCC

Fifth Creek Energy Operating Company, LLC

Cause No. 421

Docket No. 170900556

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

IN THE MATTER OF THE APPLICATION OF)	CAUSE NO. 421
FIFTH CREEK ENERGY OPERATING)	
COMPANY, LLC FOR AN ORDER)	DOCKET NO. 170900556
AUTHORIZING ADDITIONAL WELLS IN SIX (6))	
APPROXIMATE 1,280-ACRE DRILLING AND)	TYPE: ADDITIONAL WELLS
SPACING UNITS ESTABLISHED FOR)	
SECTIONS 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)	
AND 18, TOWNSHIP 11 NORTH, RANGE 63)	
WEST, 6TH P.M., FOR PRODUCTION FROM)	
THE NIOBRARA FORMATION, HEREFORD)	
FIELD, WELD COUNTY, COLORADO.)	

REQUEST FOR RECOMMENDATION OF
APPROVAL OF APPLICATION WITHOUT A HEARING

Fifth Creek Energy Operating Company, LLC ("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 July 13, 2017, 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 17th day of August 2017.

Respectfully submitted,

FIFTH CREEK ENERGY OPERATING COMPANY, LLC

By: 

Jamie L. Jost
Kelsey Wasylenky
Jost Energy Law, P.C.
Attorney for Applicant
1401 17th St., Suite 370
Denver, Colorado 80202
(720) 446-5620

**Fifth Creek Energy Operating Company, LLC
Teale Stone - Land Testimony
Cause No. 421; Docket No. 170900556
Increased Density – Niobrara Formation
Wattenberg Field, Weld County, Colorado**

September 2017 Colorado Oil and Gas Conservation Commission Hearing

My name is Teale Stone, and I am currently employed as a Senior Landman at Fifth Creek Energy Operating Company, LLC ("Applicant"). I have over five years of professional 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 to authorize an additional seven (7) horizontal wells, for a total of fifteen (15) horizontal wells, in each of six (6) approximate 1,280-acre drilling and spacing units established by Order No. 421-86 for Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18, Township 11 North, Range 63 West, 6th P.M., for the efficient and economic development of oil, gas and associated hydrocarbons from the Niobrara Formation underlying the below-described lands.

Township 11 North, Range 63 West, 6th P.M.

Section 7: All

Section 18: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 8: All

Section 17: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 9: All

Section 16: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 10: All

Section 15: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 11: All

Section 14: All

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

Township 11 North, Range 63 West, 6th P.M.
Section 12: All
Section 13: All
1,280 acres, more or less, Weld County, Colorado

Exhibit 1: Leasehold Ownership Map:

Exhibit 1 is a map showing the location of the Application Lands and the leasehold ownership. Upon information and belief, the following parties own leasehold or unleased mineral interests in the Application Lands:

Clear Creek Fund I-A, LP
8 North, LLC
Jamestown Resources, LLC

Exhibit 2: Mineral Ownership Map:

Exhibit 2 is a map showing the mineral ownership of the Application Lands, which is owned in fee.

Exhibit 3: Property Location Plat:

Attached as Exhibit 3 is a Property Location Plat. The Applicant will conform to its statement that the treated perforation of the Wells within the Niobrara Formation will not be closer than 300 feet from the unit boundaries of the 1,280.00-acre drilling and spacing unit and not less than 150 feet from the treated interval of another well within the unit.

Exhibit 4: Surface Ownership Map:

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

Exhibit 5: Topographic Map:

Exhibit 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 6: Interested Parties:

Attached as Exhibit 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.

Teale Stone

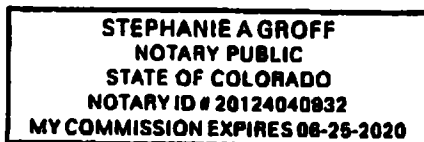
Teale Stone
Senior Landman
Fifth Creek Energy Operating Company, LLC

STATE OF COLORADO)
) ss.
COUNTY OF ARAPAHOE)

The foregoing instrument was subscribed and sworn to before me this 1st day of August 2017, by Teale Stone, Senior Landman for Fifth Creek Energy Operating Company, LLC.

Witness my hand and official seal.

[SEAL]



My commission expires: June 22, 2020

Stephanie A Groff

Notary Public

Teale Philip Stone

1850 Bassett Street #401
Denver, CO 80202
(918) 694-3231 teale.stone@gmail.com

EDUCATION

B.S. in Business Administration – 2011

UNIVERSITY OF DENVER

Major: Management through the Daniels College of Business

- Dean's List
- Academic All Conference (Soccer)

Petroleum Land Management Certificate – Expected 2017

UNIVERSITY OF DENVER

CASCIA HALL PREPARATORY SCHOOL - 2007

Tulsa, Oklahoma

EXPERIENCE

Fifth Creek Energy Operating Company, LLC

Denver, Colorado

Senior Landman

March 2017 – Present

- Oversee all Land Operation tasks, including but not limited to managing brokers, ordering and curing title, clearing surface locations for drill sites, assisting in acquisitions, and planning for all future development.

BILL BARRETT CORPORATION

Denver, Colorado

Landman I – Uinta Basin and DJ Basin

August 2014 to March 2017

- Nearly 5 years of professional in house land experience with a primary focus in the Rocky Mountain Region (Utah, Colorado, Wyoming and New Mexico).
- Prepare and present Uinta Basin and DJ Basin Asset Status Reports directly to Senior Management on a weekly basis.
- Perform aspects of title research, fee and federal leasing, purchasing fee working interests and aid in the maintenance of multiple drilling prospects throughout the Uinta and DJ Basin.
- Operations Land Lead on BBC's recent divestiture of over 120,000 net acres in the Uinta Basin which closed in July of 2016.
- Source and evaluate potential acquisitions and acreage swaps of all sizes within the DJ Basin.
- Negotiate and draft JOAs, acquire various surface and subsurface contracts from fee mineral owners, Bureau of Land Management, and Bureau of Indian Affairs.
- Extensive work dealing with Exploration Development Agreements, Joint Development Agreements and Farmout Agreements throughout BBC's assets in the Uinta and DJ Basin
- Calculate Net Revenue Interests, Gross Working Interests, and Acreage Totals for multiple drilling prospects throughout the Uinta and DJ Basin.
- Manage all Operated and Non-Operated Wells still owned by BBC within the Uinta Basin.
- Point of contact for multiple attorneys and coordinating the ordering of Drilling and Division Order Title Opinions.
- Manage two field brokerage firms to direct leasing efforts, help with Surface Use Agreements and Right of Ways across Public, Private, BIA, and Division of Wildlife lands.
- Testified before the Utah Division of Oil, Gas and Mining several times regarding Compulsory Force Pooling and various Spacing Orders.
- Maintain and manage company owned surface property throughout the Uinta Basin. Recently started assisting on the DJ Basin Surface Team.
- Certified Registered Landman with the AAPL. Seeking RPL Certificate in 2017.

BILL BARRETT CORPORATION

Denver, Colorado

Land Technician I & II – Uinta Basin

March 2012 to August 2014

- Help manage various assets within the Uinta Basin

Teale Philip Stone

1850 Bassett Street #401

Denver, CO 80202

(918) 694-3231 teale.stone@gmail.com

- Help draft Operating Agreements, AFE's, Fee Assignments, and Leases & Assignments for the Bureau of Indian Affairs
- Performance of regular data entry tasks (Oildex, Wellview, and Excalibur)
- Proficient in Microsoft Excel

KROENKE SPORTS & ENTERTAINMEN

October 2011 – March 2012

Denver, Colorado

Marketing Team

- In game marketing before, during and after all sporting events located at the Pepsi Center
- Promoted Altitude Sports Network

COMMUNITY SERVICE/LEADERSHIP

2014 ENGEN CLASS GRADUATE

- Colorado Oil and Gas Association sponsored group for Young Professionals in Energy
- Currently serving as board member for the program.

AAPL

- Registered Landman

UNIVERSITY OF DENVER SOCCER

- Team Captain
- NCAA Tournament Appearances 2008 and 2010

CAMBUUR SOCCER CLUB

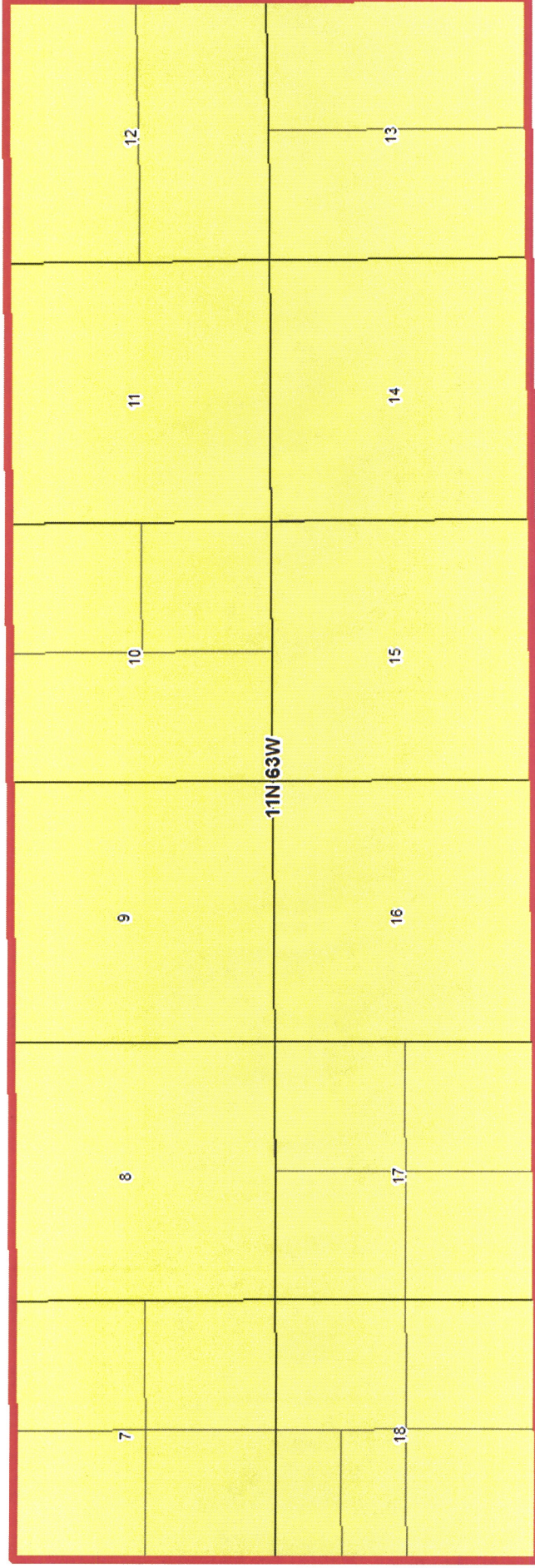
- Played for Professional Soccer Team located in Leeuwarden, Netherlands in 2008

YOU CAN PLAY PROJECT

- Manager of College Operations. Served as the liaison between the organization, various College and Universities, and the NCAA. "You Can Play" is a Community Service/Non-Profit Organization visit youcanplayproject.org for more information.

Exhibit 1

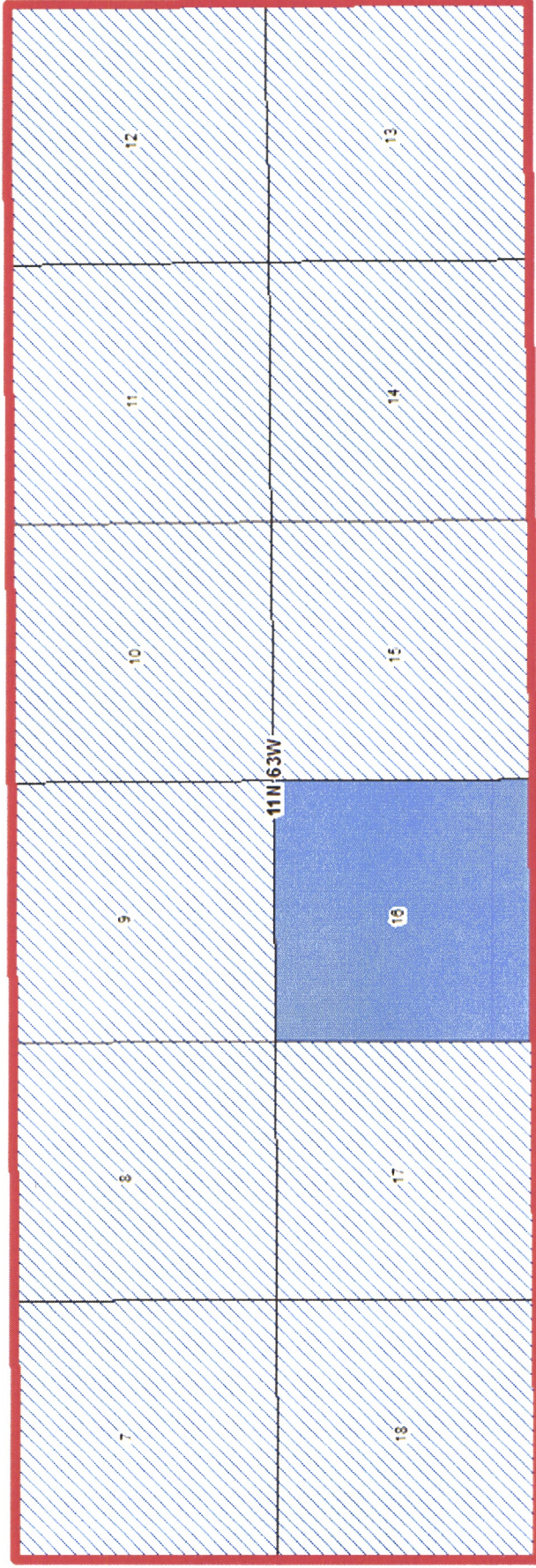
Leasehold Ownership



- Fee Leasehold
- Application Lands

Exhibit 2

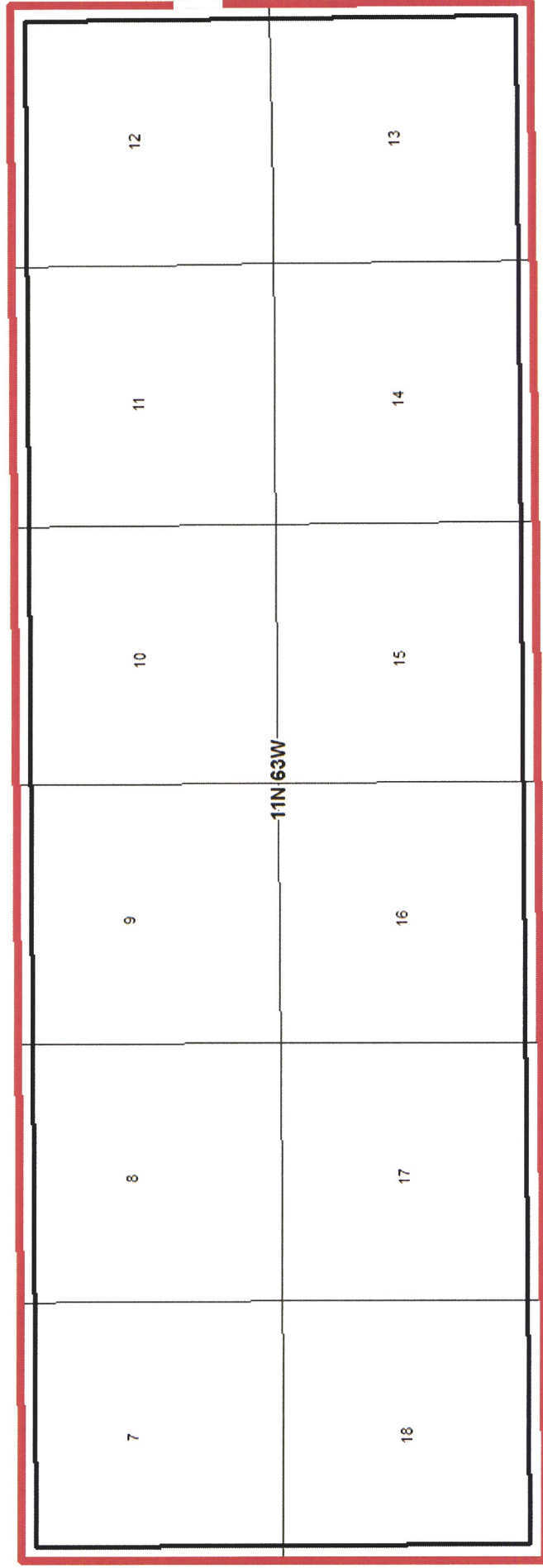
Mineral Ownership



- State Minerals
- Fee Minerals
- Application Lands

Exhibit 3

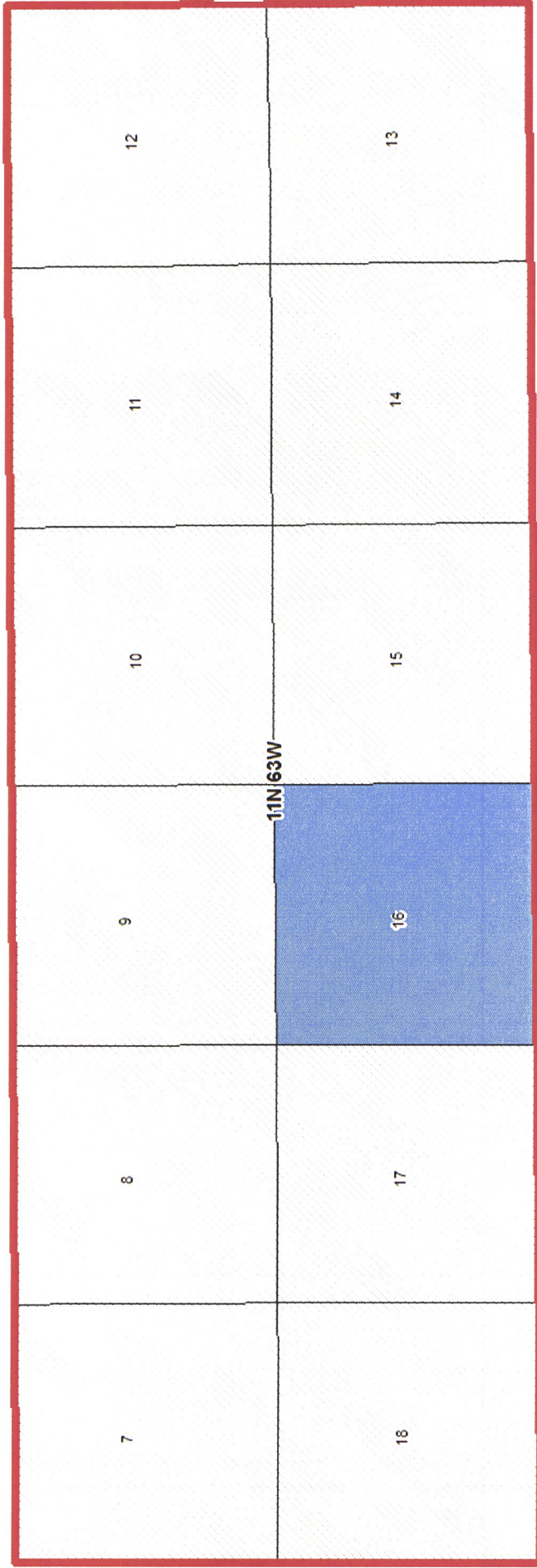
Property Location Plat



- 300' Setback
- Application Lands

Exhibit 4

Surface Ownership



- State Surface
- Fee Surface
- Application Lands

Exhibit 5

Topography



 Application Lands

Exhibit 6
ID - T11N-R63W - 6 Northern Units

FIFTH CREEK ENERGY OPERATING
COMPANY LLC
5251 DTC PARKWAY SUITE 420
GREENWOOD VILLAGE, CO 80110

LOUANNE TIMM & PAUL W TIMM
29451 W CR 130
GROVER, CO 80729-0000

8 NORTH LLC
370 17TH ST SUITE 5300
DENVER, CO 8020-20000

BRENT A OSWALD
1304 YORKSHIRE DR
AUSTIN, TX 78723-0000

CENTENNIAL MINERAL HOLDINGS LLC
SUITE 200 5950 CEDAR SPRINGS ROAD
DALLAS, TX 75235-0000

DOUBLE EAGLE ENERG ROCKIES LLC
1401 BALLINGER ST NO 203
FORT WORTH, TX 76102-0000

JAMESTOWN RESOURCES LLC C/O BLACK
FALCON ENERGY LLC
600 TRAVIS STREET SUITE 4750
HOUSTON, TX 77002-0000

JESSE L WHITE JLW INVESTMENT LLC
351 GLENCOE ST
DENVER, CO 80220-0000

JH PETROLEUM LLC
P O BOX 621128
LITTLETON, CO 80162-1128

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LAKEWOOD, CO 80228-0969

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COX, SOLE SURVIVING PARTNER P O
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MEADER RANCH INC CHARLES P MEADER,
PRESIDENT
65009 WCR 67
GROVER, CO 80729-0000

OLD WEST TOURS
PMB 1989 110 E CENTER STREET
MADISON, SD 57042-2908

SSALJD INVESTMENT GROUP LLC
P O BOX 621128
LITTLETON, CO 80162-1128

OIL AND GAS INVESTORS LLC
P O BOX 608
SANDPOINT, ID 83864-0000

CHOCTAW ENERGY LTD
P O BOX 6387
SAN ANTONIO, TX 78209-6387

DENKAI ANIMAL SANCTUARY A COLORADO
NON-PROFIT CORPORATION FLOSS
BLACKBURN PRESIDENT
36710 WCR 126
GROVER, CO 80729-0000

E RAY REICHLEY
1005 32ND AVE
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MESQUITE DEVELOPMENT INC
208 PRINZ
SAN ANTONIO, TX 78213-0000

RAYMOND W THOMAS
3771 COUNTY ROAD P
WIGGINS, CO 8065-40000

RONALD W THOMAS
11923 GRANITE WOODS LOOP
VENICE, FL 3429-20000

ANADARKO E&P ONSHORE LLC
P O BOX 730875
DALLAS, TX 75373-0875

ELDER LAMBERT AND MARTIN LLC
3136 LONGHORN CT
FORT COLLINS, CO 80526-0000

EOG RESOURCES INC
P O BOX 840321
DALLAS, TX 75284-0321

G WARREN SMITH II
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SLIPPERY ROCK, PA 16057-0000

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66732 WCR 87
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SANTA MARIA, CA 93458-0000

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BICKING & SHARRON A BICKING REV
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THE VILLAGES, FL 32162-0000

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GREELEY, CO 80631-0000

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VERO BEACH, FL 32962-7061

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ASPEN LEAF LLC
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MUSTANG, OK 73064-0000

BERNICE G ALDRICH
626 ELWOOD STREET
STERLING, CO 80751-00000

BONNIE G KIRSCHBAUM
PO BOX 54
MERINO, CO 80741-0000

CHARLES W & PATTY N BROWN LLC
P O BOX 587
MARLOW, OK 73055-0000

DAPCO LLC
1776 S JACKSON ST STE 1000
DENVER, CO 80210-0000

GERALD E FISCUS
2520 CHANNEL VISTA DR
JUNEAU, AK 99801-0000

HELEN BURBACH
35744 WCR 130
GROVER, CO 80709-0000

HOLLY MERCER
505 SPLIT RAIL CT
SPARKS, NV 89441-0000

JAMES M MORRIS
2121 REDHEAD DR
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JOELYN F WEST AKA JOELYN F EASTMAN
PO BOX 1363
COLLEYVILLE, TX 76034-0000

KIMBERLY REDDIG
P O BOX 2591
SPARKS, NV 89432-0000

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1102 S 11TH AVENUE
STERLING, CO 80751-0000

RALPH L FISCUS
PO BOX 165
LAPORTE, CO 80535-0000

SHERRIL B SCHARF
PO BOX 42
MERINO, CO 80741-0000

SHIRLEY FAMILY 1993 TRUST THAD
SHIRLEY THOR SHIRLEY AND ERIC SHIRLEY
TSTES
P O BOX 189
CLAYTON, CA 94517-0000

EOG RESOURCES INC
DOMINION PLAZA 600 17TH ST #1000N
DENVER, CO 80202

AARON M MARTIN AND SABRINA M MARTIN
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CHERYL J HAUER AND KEVIN D HAUER
166 COUNTY RD 148
CARPENTER, WY 82054-0000

DALE R MARTIN AND SHARON A MARTIN
PO BOX 391
CARPENTER, WY 82054-0000

DANIEL J MARTIN AND LANELLE R MARTIN
4025 CR 49E
KIMBALL, NE 69145-0000

GARY W SMITH AND NORMA J SMITH
BOX 365
CARPENTER, WY 82054-0000

JERRY L MARTIN AND ANDREA R MARTIN
170 COUNTY RD 148
CARPENTER, WY 82054-0000

LEMON CREEK OIL & GAS LTD
P O BOX 192199
DALLAS, TX 75219-8514

TERRE VERTE COMPANY INC
PO BOX 90265
SAN DIEGO, CA 92165-0000

TODD A MARTIN AND APRIL K MARTIN
169 COUNTY RD 148
CARPENTER, WY 82054-0000

BONNIE J ARNOLD
4800 TABOR ST APT 147
WHEAT RIDGE, CO 80033-2112

CLARA MARKUS
P O BOX 144
SUGAR CITY, CO 81076-0000

DELORES J WORNER 2009 TR
4085 DELAVAN ROAD
DELAVAN, IL 61734-0000

JOHN C GLENN
602 CHURCH DRIVE
INMAN, KS 67546-0000

JOYCE SEAL
2607 ZEPHYR DRIVE
COLORADO SPGS, CO 80920-3826

JUDY L HODGES
609 ASPEN DR
COLORADO SPGS, CO 80911-0000

LARRY J KING
9637 WEST OHIO
LAKEWOOD, CO 8022-80000

LOIS GARDNER INDIVIDUALLY
935 LAKESIDE COURT
GRAND JUNCTION, CO 81506-0000

LORENZ FAMILY TRUST FREDRICK L
LORENZ TSTEE
8331 BARKLEY DRIVE
LINCOLN, NE 68516-0000

PHYLLIS SWETNAM
64151 N RAMONA RD
MONTROSE, CO 8140-30000

SUE KING & LARRY KING
9637 W OHIO AVE
LAKEWOOD, CO 80226-0000

TOM DEAKINS & DONNA DEAKINS
531 CR 174
CRAIG, CO 81625-0000

BEULAH L CREEK LORRAINE A HOWARD
POA
12802 E 31ST AVE
AURORA, CO 80011-1807

LARRY W PEVLER & S IRENE PEVLER
61497 WCR 63
GROVER, CO 8072-90000

PAUL W TIMM & LOUANNE TIMM & SCOTT
TIMM AND STEPHANIE TIMM
29541 WCR 130
GROVER, CO 80729-0000

ARDATH A PEARSON AND NICHOLAS
PEARSON
P O BOX 1977
OVERGAARD, AZ 85933-1977

BARBARA L RICHARDSON AND
CLEMENT G RICHARDSON, JR, TTES OF
THE 1999 CLEMENT G RICHARDSON &
BARBARA L RICHARDSON FMLY TR DTD
4/29/99;
16629 TORO HLS CT
SALINAS, CA 93908-0000

DALE A AYARS AND MARY FRANCES AYARS
3023 W 109TH PL
WESTMINSTER, CO 80031-6825

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ACO VENTURES LLC
P O BOX 753
ARNAUDVILLE, LA 70512-0000

ALBERT GOODIS TSTE ALBERT GOODIS
REVOCABLE LIVING TRUST 4-4-00
111 WATER ROCK CIRCLE
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P O BOX 260498
LAKEWOOD, CO 80226-0000

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P O BOX 189
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RDMB HOLDINGS INC
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FREDERICK, CO 80530-7096

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BURBACH TRUSTEE
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CARPENTER, WY 82054-0000

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BICKING & SHARRON A BICKING REV
LIVING TRUST
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JEFF TRACY
1416 8TH AVE
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NORTHGLENN, CO 80234

GARY D. ROHRBOUCK
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GERING, NE 69341

FOOD FOR THE POOR
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COCONUT CREEK, FL 33073

CATHOLIC RELIEF SERVICES
228 W. LEXINGTON ST.
BALTIMORE, MD 21201

CENTER OF ACTION AND CONTEMPLATION
P O BOX 12464
ALBUQUERQUE, NM 87195

MARYCREST FOR RETIRED SISTERS
FOUNDATIONSISTERS OF ST. FRANCIS
(NKA MARYCREST CONVENT - SISTERS OF
ST. FRANCIS)
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DENVER, CO 80221

ANADARKO LAND CORP
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DENVER, CO 80202

LORENZ FAMILY TRUST
FREDRICK L LORENZ TSTEE
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EOG RESOURCES, INC.
600 17TH ST SUITE 1000N
DENVER, CO 80202

OKREEK OIL & GAS II, LLC
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DENVER, CO 80202

PAWNEE BUTTE ROYALTIES, LLC
P.O. BOX 4631
ENGLEWOOD, CO 80155

Fifth Creek Energy Operating Company, LLC
Benjamin C Burke - Geology Testimony
Cause No. 421; Docket No. 170900556
Increased Density – Niobrara Formation
Wattenberg Field, Weld County, Colorado

September 2017 Colorado Oil and Gas Conservation Commission Hearing

My name is Benjamin C. Burke, and I am currently employed as the Geoscience Manager for Fifth Creek Energy Operating Company, LLC ("Applicant"). I earned a Bachelors of Arts in Geology from Bowdoin College, a Masters of Business Administration from Texas A&M University, and a PhD in Earth Sciences from Dartmouth College. I have 14 years of private sector geology experience, 12 of which is in the oil and gas industry. I am familiar with the lands described, and the matters set forth in, the verified application ("Application") subject to the above-referenced docket.

In support of Applicant's Application and my sworn testimony herein, I am submitting five (5) exhibits. This testimony and exhibits provide the supporting basis for approval of the Applicant's request for an order to authorize an additional seven (7) horizontal wells, for a total of fifteen (15) horizontal wells, in each of six (6) approximate 1,280-acre drilling and spacing units established by Order No. 421-86 for Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18, Township 11 North, Range 63 West, 6th P.M., for the efficient and economic development of oil, gas and associated hydrocarbons from the Niobrara Formation underlying the below-described lands.

Township 11 North, Range 63 West, 6th P.M.

Section 7: All

Section 18: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 8: All

Section 17: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 9: All

Section 16: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 10: All

Section 15: All

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

Township 11 North, Range 63 West, 6th P.M.

Section 11: All
Section 14: All
1,280 acres, more or less, Weld County, Colorado

Township 11 North, Range 63 West, 6th P.M.
Section 12: All
Section 13: All
1,280 acres, more or less, Weld County, Colorado

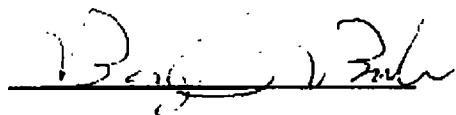
1. Exhibit G-1 – Structure Contour Map – Top Niobrara with offset well locations
Exhibit G-1 is a structure map constructed on the top of the Niobrara Formation. The contour interval of the map is 25 feet. The Niobrara is gently dipping to the west in the mapped area.
2. Exhibit G-2 – Isopach Map – Niobrara with offset well locations
Exhibit G-2 is an isopach map of the Niobrara Formation measured in feet. The contour interval of Niobrara thickness is 10 feet. Total thickness across the Application Lands ranges from approximately 230-260 feet.
3. Exhibit G-3 – Cross Section showing Niobrara section.
Exhibit G-3 is a cross section that includes the entire Niobrara Formation. This cross section and the isopach maps show the Niobrara intervals to be present and continuous throughout the Application Lands.
4. Exhibit G-4 – Hereford Field Type Log.
Exhibit G-4 is a type log showing the Formations and Members of the Cretaceous-aged lithology present in the Lamotta 5-01M (05-123-30556). The Lamotta well is located in Section 1, 11N 63W and has wireline logs that are typical of the geology of the Hereford Field. The wireline logs shown in the type section are the gamma ray, deep resistivity, and density porosity.
5. Exhibit G-5 – Offset Well Locations
Exhibit G-5 shows well locations on and in the vicinity of the Application Lands, according to the COGCC reference base map as of August 3, 2017.

The stratigraphy, geochemistry, and pressure data reviewed show that the additional wells in the Niobrara are necessary to adequately and economically recover the oil, gas and associated hydrocarbons from the Niobrara Formation.

Dated this 14th day of August 2017

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.



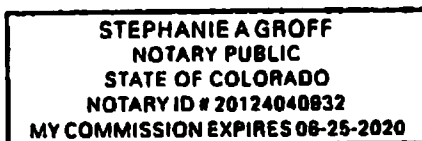
Benjamin C. Burke
Geoscience Manager
Fifth Creek Energy Operating Company, LLC

STATE OF COLORADO)
) ss.
COUNTY OF Arapahoe)

The foregoing instrument was subscribed and sworn to before me this 14th day of August, 2017, by Benjamin C. Burke, Geoscience Manager for Fifth Creek Energy Operating Company, LLC.

Witness my hand and official seal.

[SEAL]



My commission expires: June 25 2020

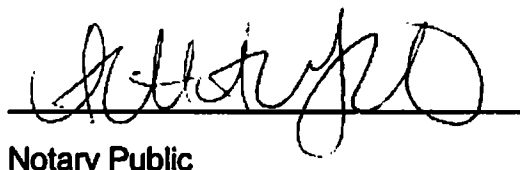
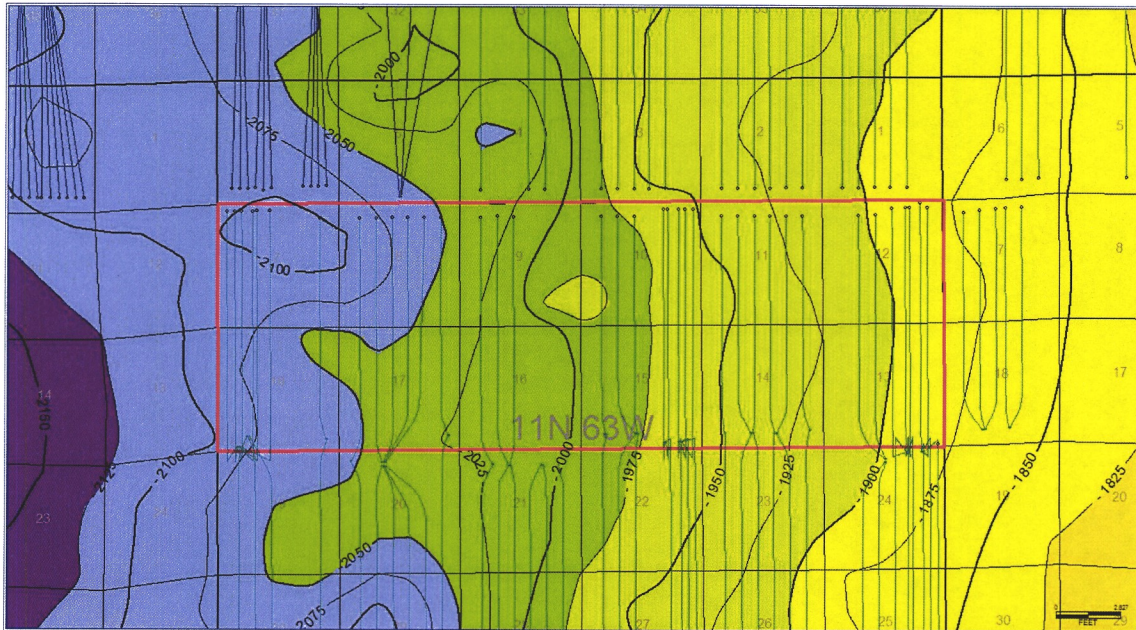

Notary Public

Exhibit G-1

Structure Contour Map on the top of the Niobrara Formation



25 ft contour intervals

Exhibit G-2

Isopach Map on the top of the Niobrara Formation



10 ft isopach intervals

Exhibit G-3

Cross section showing Niobrara section

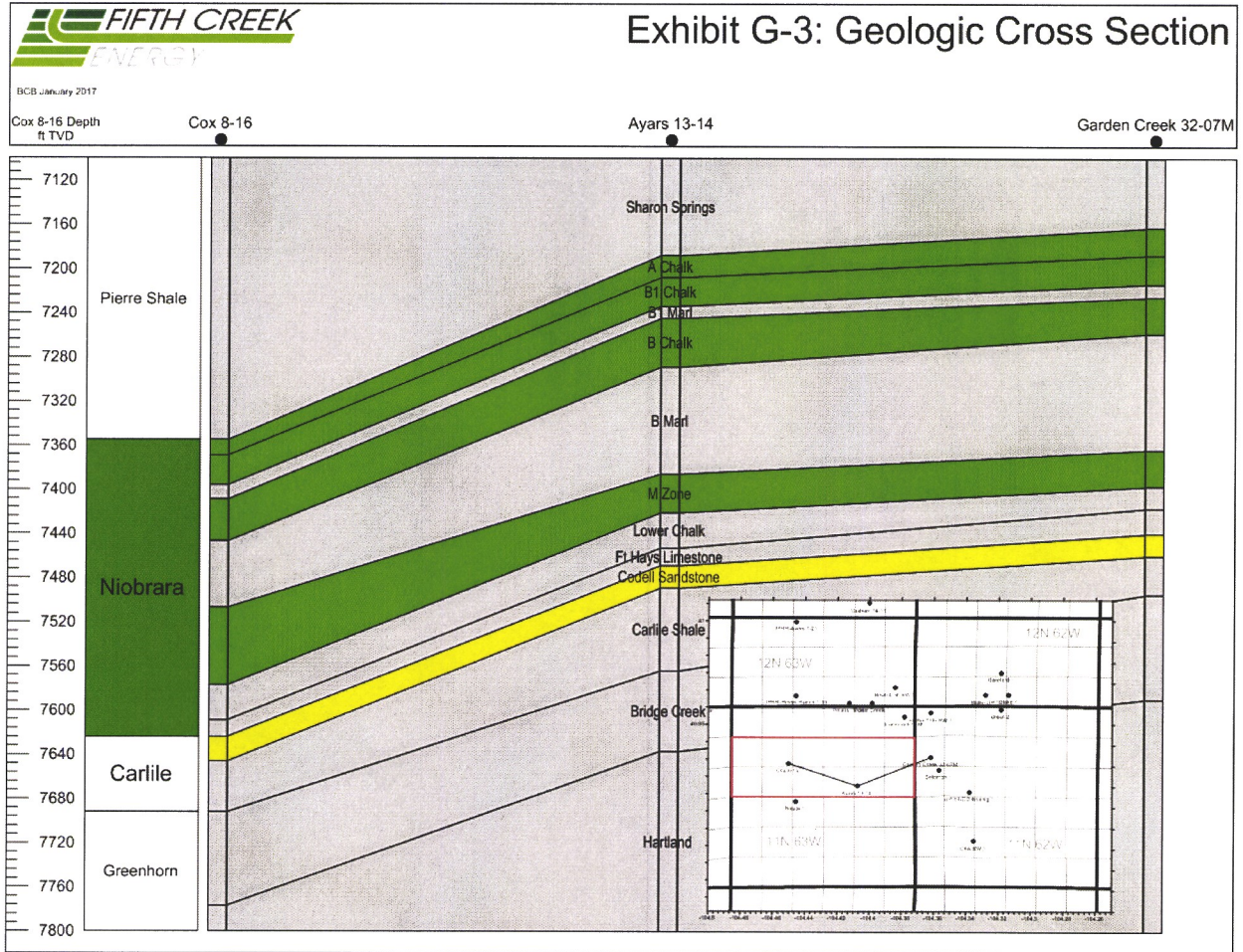


Exhibit G-4

Type log showing formations and lithology present

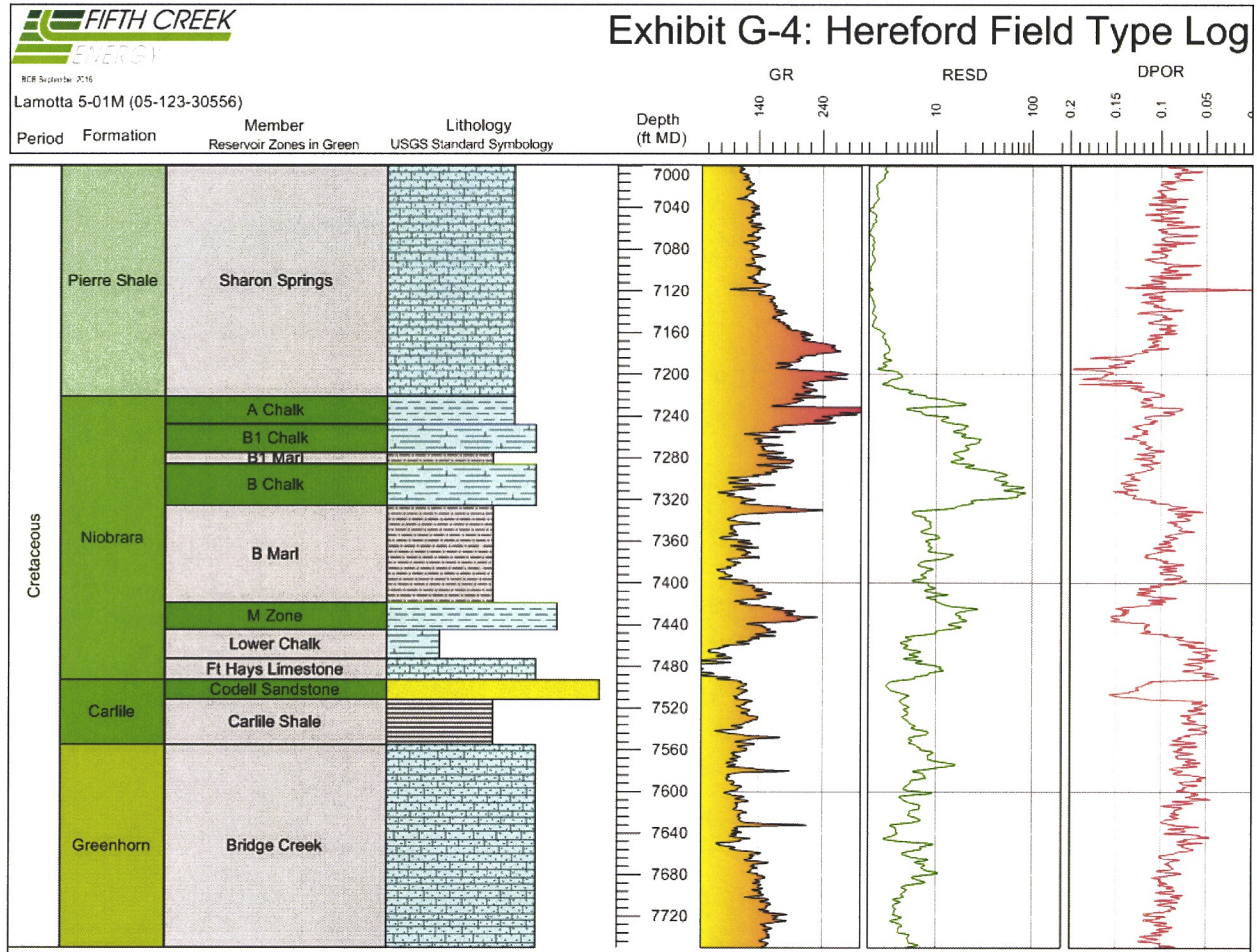
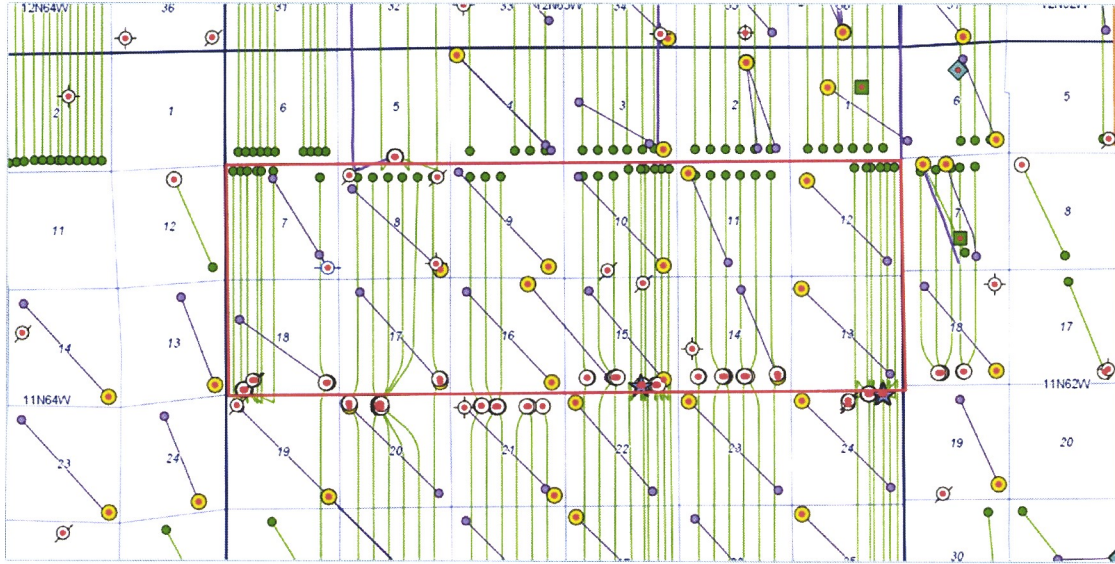


Exhibit G-5

Offset Well Locations



COGCC GIS Well Database, retrieved August 3, 2017

Fifth Creek Energy Operating Company, LLC
Engineering Testimony – William Irwin
Cause No. 421
Docket No. 170900556

September 2017 Colorado Oil and Gas Conservation Commission Hearing

My name is William Irwin and I am currently employed as the Engineering Advisor for Fifth Creek Energy Operating Company, LLC (“Fifth Creek”). I hold a Bachelor’s of Science in Petroleum Engineering from Montana Tech. I have 32 years of experience in oil and gas engineering. I am familiar with the lands subject to, and matters set forth in, the verified application (“Application”) subject to the above-referenced docket.

In support of Fifth Creek’s Application in the above referenced docket, I am submitting three (3) exhibits along with this sworn testimony. This Application requests an order to approve an additional seven (7) horizontal wells, for a total of fifteen (15) horizontal wells, in DSU #1, DSU #2, DSU #3, DSU #4, DSU #5 and DSU #6, to require that the productive interval of each additional proposed horizontal well in each approximate 1,280-acre drilling and spacing unit shall be no closer than 300 feet from the boundaries of the unit (regardless of the lease lines within the unit) and all horizontal wells shall be no closer than 150 feet from the productive interval of another well producing from the same source of supply within the unit, unless an exception is granted by the Director, and providing that the wells will be drilled from no more than five well pads, including the existing wellpads, in each of the six drilling and spacing units to be located within such unit or adjacent thereto, unless an exception is granted by the Director, consistent with Order No. 421-85 underlying the following lands (“Application Lands”):

Township 11 North, Range 63 West, 6th P.M.

Section 7: All

Section 18: All

(“DSU #1”)

Township 11 North, Range 63 West, 6th P.M.

Section 8: All

Section 17: All

(“DSU #2”)

Township 11 North, Range 63 West, 6th P.M.

Section 9: All

Section 16: All

(“DSU #3”)

Township 11 North, Range 63 West, 6th P.M.

Section 10: All

Section 15: All

(“DSU #4”)

Township 11 North, Range 63 West, 6th P.M.

Section 11: All

Section 14: All

("DSU #5")

Township 11 North, Range 63 West, 6th P.M.

Section 12: All

Section 13: All

("DSU #6")

1. Exhibit E-1 – OOIP and EUR Calculations

Exhibit E-1 shows OOIP calculations, estimated ultimate recovery, and drainage area for fifteen Niobrara Formation wells drilled in a 1280-acre drilling and spacing unit within the underlying the Application Lands as compared to eight wells drilled in the same drilling and spacing unit. The improved recovery factor by 47% shows the drilling of up to fifteen wells will promote efficient drainage, protect correlative rights and prevent waste in a 1280-acre unit versus only drilling eight wells. These reserves would not be fully recovered without the application of horizontal well technology in a 1280-acre drilling and spacing unit.

2. Exhibit E-2 – Analog Well Evaluation

Exhibit E-2 reflects an evaluation of analog 2-section lateral well results in Table A and 1-section lateral well results in Table B. Estimated ultimate recovery and associated drainage area are calculated through decline curve analysis utilizing available public data and the inclusion of one new well drill by the Fifth Creek underlying the Application Lands. The 2-section lateral analog wells have an average lateral length of 9,261' and average estimated ultimate recovery of 431,333 bbl for the Niobrara Formation, for a drainage per well of 85 acres. The 1-section lateral analog wells have an average lateral length of 4,143' and average estimated ultimate recovery of 191,000 bbl for the Niobrara Formation, for a drainage area per well of 38 acres. These estimates are within a reasonable expected range and support the Application.

3. Exhibit E-3 – Economic Analysis


Economic calculations show in improved value of 50% by drilling on 1280-acre units with total of 15 wells versus not developing the resource in an efficient, scientific manner. This result leads to the conclusion that reserves will not be appropriately accessed or drained in a tight unconventional resource with only eight wells per 1280 acre spacing unit, therefore leaving reserves under-developed and creating waste.

Conclusions

Based on each drilling and spacing unit area of 1,280 acres, the drainage calculations are consistent with the development of up to fifteen Niobrara horizontal wells. This testimony and attached exhibits support my conclusion that the drilling, completion, and production of up to fifteen horizontal wells within each proposed drilling and spacing unit will increase total recovery and reduce resource waste relative to an eight-well 1280-acre drilling and spacing unit. In addition, the proposed development plan can be accomplished in an economic and efficient manner while protecting correlative rights.

Affirmation

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 and in the exhibits are true, correct, and accurate.



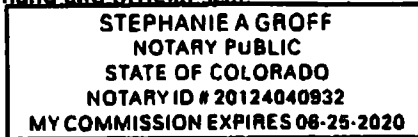
William Irwin
Engineering Advisor
Fifth Creek Energy Operating Company, LLC

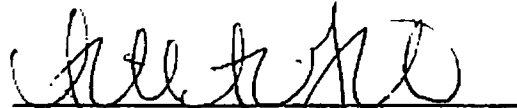
State of Colorado)
) ss.
County of)

The foregoing instrument was subscribed and sworn to before me this 16th day of August, 2017, by William Irwin as Engineering Advisor for Fifth Creek Energy Operating Company, LLC.

Witness my hand and official seal

[SEAL]





Notary Public

My commission expires: June 25 2020

William (Bill) L. Irwin, P.E., Senior Engineering Advisor

Mr. Irwin has a Bachelor of Science Degree in Petroleum Engineering from Montana Tech, and over 30 years of oil industry experience. In his most recent role as Vice President of Operations with Bakken Hunter, LLC, a division of Magnum Hunter Resources Corporation (MHR), he was instrumental in developing significant Bakken and Three Forks shale oil assets; using modern unconventional resource drilling and completion techniques. These techniques include horizontal drilling and multistage hydraulic fracturing. In addition, his facilities team planned, permitted, constructed and commissioned numerous field gathering and processing facilities. These cutting edge facilities produced, in record time, a cross-border, FERC regulated gas pipeline.

Prior to joining the MHR, Mr. Irwin was the Founder, President, and CEO of Pinon Oil & Gas Ltd. (1997) and Red Mike Energy Inc. (2000). Both private exploration and production companies primarily operated in southern Alberta. From 2007 to 2010, he was the Vice President, Business Development and Board Advisor for Fractal Systems Inc.; an oil services company with proprietary heavy oil viscosity reduction, and partial upgrading technology.

From 1994 through 1997 he was the Operations Manager for Tidal Resources Inc. (Tidal) in Canada and North Dakota. Tidal was a leader in the implementation of horizontal drilling technology to legacy assets in North Dakota. Prior to 1994, Mr. Irwin held varying technical and management roles with Unocal Corp and Quintana Petroleum Corporation in Canada, Colorado, New Mexico, Texas, and Utah. Mr. Irwin is a registered Professional Engineer in Alberta and is an accepted professional engineering witness in North Dakota and New Mexico.

Exhibit E-1 OOIP
OOIP and EUR Calculations

Date: 8/1/17

Reference Sections:

Engineer: William L. Irwin

Key Variables & Assumptions

	8 Niobrara wells	15 Niobrara wells	
Porosity (ϕ)	10%	10%	Median porosity for Niobrara
Water Saturation (S_w)	75%	75%	Core-based corrected saturation
Area (A)	1280	1280	acres
Height (h)	272	272	feet
Oil Formation Volume Factor (B_o)	1.5	1.5	bb/STB

Calculation Original Oil in Place

Estimated Oil Equivalent in Place:	45,017,088	45,017,088	Bbl oil
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Niobrara Well Performance

Horizontal Well Count	8	15	Density of wells
Drainage area for 1 well	85	85	acres
Average EUR per well	431,333	431,333	Bbl oil
Estimated Total Oil	3,450,667	6,470,000	Bbl of oil (total 8 wells, total 15 wells)
Estimated Rf of OOIP	7.7%	14.4%	

Comparison of Recovery Factors

Total increased Rf		47%	Increase in Recovery factor due to increase in well density
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Symbols, Terminology, and Equations

ϕ	Porosity as %	Rf	Recovery Factor, %
h	height, feet	bbl	barrel of oil, 42 gallons
A	Area, acres (1 acre is 42,560 ft ²)	STB	Stock Tank Barrel
B_o	Oil Formation Volume Factor, bbl/STB		
S_w	Water Saturation as %		

OOIP Original Oil in Place, bbls

$$OOIP = 7758 A h \phi (1 - S_w) / B_o$$

EUR

Estimated Ultimate Recovery, BBL of oil
EUR = 7758 (A) (Rf) (h) (ϕ) (1- S_w) / (B_o)

Exhibit E-2

Analog Well Evaluation

Date: 8/1/17

Reference Sections:

Engineer: William L. Irwin

Table A: 2-Section Laterals

Type	Zone	API	Township	Range	Section	Lateral Length (ft)	EUR (MBO)	Net Thickness (h, ft)	Average Porosity (φ, %)	Average Water Saturation (Sw, %)	Recovery Factor (Rf, %)	Bo (RB/STB)	Drainage Area (A, acres)
JUBILEE 113-1609H	Niobrara	49-021-21078	13N	65W	16, 9	8,875	237,000	272	10%	75%	14.5%	1.50	46
JUBILEE 151-1034H	Niobrara	49-021-21087	13N	65W	10, 34	9,484	557,000	272	10%	75%	14.5%	1.50	109
JUBILEE 153-1034H	Niobrara	49-021-21082	13N	65W	10, 34	9,371	353,000	272	10%	75%	14.5%	1.50	69
JUBILEE 154-1034H	Niobrara	49-021-21086	13N	65W	10, 34	9,365	685,000	272	10%	75%	14.5%	1.50	134
JUBILEE 194-2311H	Niobrara	49-021-21094	13N	65W	23, 11	9,515	338,000	272	10%	75%	14.5%	1.50	66
Fox Creek 222-3422H	Niobrara	05-123-42582	12N	63W	34, 22	8,955	418,000	272	10%	75%	14.5%	1.50	82
Averages							9,261	431,333	10%	75%	14.5%	1.50	85

Table B: 1-Section Laterals

Type	Zone	API	Township	Range	Section	Lateral Length (ft)	EUR (MBO)	Net Thickness (h, ft)	Average Porosity (φ, %)	Average Water Saturation (Sw, %)	Recovery Factor (Rf, %)	Bo (RB/STB)	Drainage Area (A, acres)
CASPER 1-26H	Niobrara	49-021-21111	16N	65W	25	4,468	241	272	10%	75%	14.5%	1.50	47
CRITTER CREEK 21-26H	Niobrara	05-123-31796	11N	63W	26	4,655	148	272	10%	75%	14.5%	1.50	29
CRITTER CREEK 22-27H	Niobrara	05-123-31507	11N	63W	27	4,955	52	272	10%	75%	14.5%	1.50	10
CRITTER CREEK 29-02H	Niobrara	05-123-33687	11N	63W	2	3,117	60	272	10%	75%	14.5%	1.50	12
CRITTER CREEK 30-26H	Niobrara	05-123-32328	11N	63W	26	4,266	94	272	10%	75%	14.5%	1.50	18
CRITTER CREEK 34-16H	Niobrara	05-123-33103	11N	63W	16	4,736	169	272	10%	75%	14.5%	1.50	33
ELMER 8-31H	Niobrara	05-123-30584	12N	62W	31	1,827	318	272	10%	75%	14.5%	1.50	62
ELSIE 7-34H	Niobrara	05-123-30631	12N	63W	34	4,930	473	272	10%	75%	14.5%	1.50	93
FOX CREEK 1-35H	Niobrara	05-123-31385	12N	63W	35	4,669	256	272	10%	75%	14.5%	1.50	50
FOX CREEK 2-25H	Niobrara	05-123-31400	12N	63W	25	3,776	168	272	10%	75%	14.5%	1.50	33
FOX CREEK 3-26H	Niobrara	05-123-31417	12N	63W	26	3,987	247	272	10%	75%	14.5%	1.50	48
FOX CREEK 6-33H	Niobrara	05-123-31558	12N	63W	33	4,140	37	272	10%	75%	14.5%	1.50	7
ROSIE 1-35H	Niobrara	49-021-21009	16N	65W	35	4,327	225	272	10%	75%	14.5%	1.50	44
Averages							4,143	191	10%	75%	14.5%	1.50	38
$\text{Drainage Area (acres)} = \frac{(EUR_{1st} \cdot B_o)(5.615 \frac{ft^3}{bbl})}{(Rf)(\phi)(1 - S_w)(h)(43,560 \frac{ft^2}{acre})}$													

Where:

RF = Recovery Factor, %

φ = Porosity, %

Sw = Water Saturation, %

h = Net Thickness, ft

Bo = Oil Formation Volume Factor, RB/STB

EUR1st = Estimated Ultimate Oil Recovery, bbls

Note: 1-section lateral average drainage area calculates to roughly half of 2-section lateral - check

Exhibit E-3

Economic Analysis

Date: 8/1/17

Reference Sections:

Engineer: William L. Irwin

Key Variables & Assumptions

	Type Well 8		Type Well 15		8 wells		15 wells	
Capex	\$	5,800	\$	5,600	\$	46,400	\$	84,000
LOE	\$	13,000	\$	13,000	\$	13,000	\$	13,000
Total Equivalent EUR		503		503		4,026		7,548
EUR, Oil		431		431		3,451		6,470
EUR, Gas		431		431		3,451		6,470
WI		100		100		100		100
NRI		86		86		86		86
Oil Price	\$	50.00	\$	50.00	\$	50.00	\$	50.00
Gas Price	\$	3.00	\$	3.00	\$	3.00	\$	3.00
M\$ Pad development and shared facilities lowers cost by \$200 M\$								
Monthly operating expenses per well, \$								
Estimated ultimate recovery, MBOE								
Estimated oil recovery, Mbbls								
Estimated gas recovery, Mscf (assuming 1,000 scf/bbl)								
Estimated Working Interest								
Estimated Net Revenue Interest								
\$/bbl, Estimated realized price, includes differential from Nymex								
\$/Mcf, Estimated realized price, includes differential from Henry Hub								

Economic Outputs

BT NPV10	\$	2,987	\$	3,187	\$	23,896	\$	47,805
BT ROR		41%		57%		41%		57%
M\$, Net present value discounted at 10%								
Rate of Return as %								

Estimated Improved Value

Due to improved Recovery Factor from increase in well density and pad development lowering per well cost.					50%			
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