Energy, Minerals and Natural Resources Department

Susana Martinez Governor

David Martin Cabinet Secretary-Designate

Brett F. Woods, Ph.D. Deputy Cabinet Secretary Jami Bailey, Division Director Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: <u>9-23-14</u> Well information; Operator<u>Bridgecreek</u>, Well Name and Number <u>Prairie Falcon 19</u>#1 API#<u>30-045-35628</u>, Section <u>19</u>, Township <u>31</u> NS, Range <u>14</u> E

Conditions of Approval:

(See the below checked and handwritten conditions)

- Notify Aztec OCD 24hrs prior to casing & cement.
- o Hold C-104 for directional survey & "As Drilled" Plat
- Hold C-104 for NSL, NSP, DHC
- Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84

- Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

NMOCD Approved by Signature

Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505 Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

		1. Contract (1. Co		
		· _	OIL CONS. DIV DIST.	3
	ų		DEC 90 2014	
Form 3160-3 (August 2007)			DEC D FORMAPP OMB No. 1	PROVED 004-0136
	UNITED S DEPARTMENT OF	THE INTERIOREP 2 3 2014	. Expires July	31, 2010
	BUREAU OF LAND	MANAGEMENT	5. Lease Serial No. 751141038	
	APPLICATION FOR PERMIT	TO DRILL OR REENTER	6. If Indian, Allottee or Trib	e Name
la. Type of Work:	DRILL CREENTER		7. If Unit or CA Agreement	, Name and No.
		· · · ·	9 1 N	
Ib. Type of Well:	🗴 Oil Well 🔲 Gas Well 🔲 Ot	ther Single Zone 🔲 Multiple Zone	PRAIRIE FALCON 19-). 1
2 Name of Operat	or Contact: EK RESOURCES COEOMail OAN@	DAN GRALLA PALOMARNR COM	9. API Well No.	28
3a. Address 8100 SOUTHE	ARK WAY, SUITE A1	3b. Phone No. (include area code) Ph: 303-956-0884	10. Field and Pool, or Explo	pratory
LITTLETON, C	O 80127	111. 303-330-0804	VERDE GALLOP	
4 Location of We	(Report location clearly and in accord	ance with any State requirements.*)	11. Sec., T., R., M., or Blk.	and Survey or Are
At surface	NWNE 660FNL 1980FEL	36.891894 N Lat, 108.348377 W Lon	D Sec 19 T31N R14W SME: BIA	Mer NMP
At proposed p	es and direction from nearest town or post	36.891894 N Lat, 108.348377 W Lon	12. County or Parish	1.3 Stat
10.4 MILES 1			SAN JUAN	NM
15. Distance from	proposed location to nearest property or Also to nearest drig. unit line, if any)	16. No. of Acres in Lease	17. Spacing Unit dedicated	to this well
		8915.98	40.00	
completed, ap	blied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on	tile
21 Elevations (Sh	w whether DF_KB_RT_GL_etc	3200 TVD	23 Estimated duration	
5675 GL	www.euler D1, KB, K1, GE, etc.	11/15/2014	35 DAYS	
		24. Attachments		· ·
The following, comp	eted in accordance with the requirements of	of Onshore Oil and Gas Order No. 1, shall be attached to	o this form:	
1. Well plat certified 2. A Drilling Plan.	by a registered surveyor.	4. Bond to cover the operat Item 20 above).	ions unless covered by an existin	ig bond on file (see
3. A Surface Use Pla SUPO shall be f	n (if the location is on National Forest Sys iled with the appropriate Forest Service Of	tem Lands, the 5. Operator certification	nformation and/or plans as may b	he required by the
		authorized officer.		
25. Signature (Electronic Si	• ubmission)	Name (Printed/Typed) BARBARA WICKMAN Ph: 970-769-03	378	Date 09/23/2014
Title		1	APPROVED FOR	PERIOD
Approved by (Signa	ature)	Name (Printed/Typed)	NOT TO EXCEED	2 YEARS
	onnie Clementson	/S/ Connie Clement	son	DEC 2 2
	Field Manager	TRES RIOS FIELD OF	FICE	
Application approval operations thereon.	does not warrant or certify the applicant h	olds legal or equitable title to those rights in the subject $\frac{1}{2}$	lease which would entitle the ap	plicant to conduct
Conditions of approv	al, it any, are attached.			
States any false, fictit	on 1001 and 11the 43 U.S.C. Section 1212, ious or fraudulent statements or representa	make it a crime for any person knowingly and willfully ations as to any matter within its jurisdiction.	to make to any department or ag	ency of the United
	ator Remarke (see next page)	SEE ATTACHED	·	
Additional One-	ator nemarks (see next paye)	CONDITIONS OF APPROVAL	Approval of this agreem	ent does not
Additional Oper	and the 20 defilectronic Submiss		warrant of certify that the	a operator
Additional Oper Venting / Flaring app	noved for 30 dandectronic Submise For BRIDGEG	REEK-RESOURCES-COLOLLC, sent to the sent t	e Durango	s of operating
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Attachment D

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N 89°59'01" W 2632.90" N 89°42'53" W 2639.31'	

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OCT 17 2014

5. LOCATION AND TYPES OF WATER SUPPLY

BUREAU OF LAND MANAGEMENT

A. Water used during drilling and completing operations will be sourced from the municipal grid of either the City of Farmington or the City of Kirtland. No water will be taken from creeks or other natural sources.

Water will be transported by road tanker using the route shown on Attachment A.

We anticipate using the following suppliers:

M&R Trucking – Source is thru Water Users Association who have access to fire hydrants located at Hwy 64 & Road 6520, and Hwy 64 and Road 6523 in Kirtland, NM.

Triple S Water Hauling - Source is the fire hydrant outside the 7 2 11 store at the corner of Hwy 64 and Road 6500.

6. ROAD AND PAD CONSTRUCTION MATERIALS

A. Road and well pad construction materials will consist of crushed rock and road base material. The characteristics of the crushed rock will be sized between ¾" and 3" with the coarser size placed on the bottom to prevent embedment into the soil. The crushed rock and road base material will come from the local Harper Hill gravel pit run by Consolidated Constructors or the Sterling Brothers Construction pit located in Kirtland, NM.

Other than the oil and gas production and processing facilities, no new construction activities are proposed. Suitable topsoil will be removed from the proposed well location area and stockpiled as directed by the BLM for utilization during interim and final reclamation and to minimize environmental damage from any spills.

7. METHODS FOR HANDLING WASTE

A. Solid waste will be transported to Industrial Ecosystems, Inc., a permitted land farm located at 49 Road 3150, Aztec, NM 87410.

Hazardous and Non-hazardous waste fluids will be reused at another drill site or hauled to the Agua Moss LLC commercial Class I disposal well located at 345 CR 350 Farmington NM 87413. This well name is the Sunco Disposal #001 API #30-045-28653

Attachment A shows the route which will be used to get to Hwy 64 from the well site. From here the most direct route is to go east on HWY 64 to CR350 and go north to the well. Of course, Bridgecreek has no control of how the drivers get there. Attachment I to Application for Permit to Drill. Drilling program RECEIVED ELECTRONIC REPORT

OCT 2 2 2014

Bridgecreek Resources (Colorado), LbGEAU OF LAND MANAGEMENT

Prairie Falcon No. 19-1

Surface Location: 660' FNL & 1980' FEL Section 19, T31N, R14W Ungraded GL Elevation = 5675'

San Juan County, New Mexico

Drilling program written in compliance with onshore Oil and Gas Order No. 1 (001 III.D.3, effective May 2007) and Onshore Order No. 2 Dated November 18, 1988

1. Geological Name of Surface Formation / Estimate Formation Top

The following table identifies the expected geologic markers and formation tops (depth in feet from surface) based on mud logs and open hole logs from the nearest offset wells. The well will be drilled to approximately 50 feet above the Dakota formation.

FORMATION	ESTIMATED	ESTIMATED	EXPECTED
	FORMATION TOP	FORMATION	PRODUCTION
	FEET TVD	THICKNESS, FT	
Lewis	Surface	340	Water
Cliff House	340	140	Water
Menefee	480	552	Water
Point Lookout	1032	393	Water
Upper Mancos	1425	1006	Water
Gallup	2431	151	Oil and Gas
Tocito	2582	148	Oil and Gas
Greenhorn	2730	381	Water
Graneros	3111	120	Water
Total Well Depth	3200		

2. Estimated Depth of all Zones Anticipated to Have Fluid Occurrences (Oil, Gas, Water)

The moveable fluids in each zone are shown in the table above. Historically the Gallup producers did not produce any water, and so we do not expect water production from the Gallup at this time.

3. Pressure Control Equipment

a. Pressure control will be performed using a Blowout Preventer (BOP) similar to the one shown on Exhibit #1. The table below shows the intervals where the BOP will be used.

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DEPTH INTERVAL	BOP EQUIPMENT
0-225'	No pressure control required
225' – 1800'	11" 2000 psi double ram BOP
1800' – 3200'	11" 2000 psi double ram BOP

BUREAU OF LAND MANAGEMENT

b. BOP Testing Procedure

- i. Initial 11" 2M BOP stack will be installed in casing head after setting 9-5/8" surface casing.
- ii. The BLM (Durango Office) and State of NM will be notified 24 hours in advance of all BOP pressure tests. BLM to provide contact name and phone number.
- iii. Pressure tests will be conducted on the BOP stack using a test plug and independent test company after nipple up.
- iv. Subsequent BOP tests will be conducted a minimum of every 30 days. A new test will be conducted each time the stack is altered.
- v. All BOP and manifold tests will be in accordance with the requirements of Onshore Order No. 2.

c. BOP Test Pressures

9.625" BOP			
Pressure Test	Ram Test	Hydrill Test	Manifold Test
High Pressure	2000 psi	NA	2500 psi
Low Pressure	200 psi	NA	250 psi

- d. Ancillary Equipment
 - i. Upper Kelly cock and lower Kelley cock will be installed while drilling.
 - ii. Inside BOP or stab in valve will be available in open position on rig floor at all times.
 - iii. Safety valves and subs to fit all string connections in use.
 - iv. Choke Manifold will be installed and tested when drilling out of surface casing.
 - v. Drilling spool to accommodate choke and kill lines with choke manifold rated at 2000 psi.

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4. Proposed Bit and Casing Program

Hole Casing **Casing Setting** Coupling Size Size Weight Grade Depth (MD) Comments New casing. 12 1/4" 9 5/8 " 36 ppf J-55 ST&C 0' - 225' Cement to surface. New Casing. 8-3/4" 7" 0' - > 1800' MD 20 ppf J-55 LT&C Cement to surface. New Casing 6-1/4" 4 1/2 " LT&C Surface to TD 11.6 ppf N-80 Foamed Cement 200 feet into previous casing.

a. Casing Program – all casing strings are new casing

Casing strings below the conductor casing will be tested to .22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

			e .	
Vinimum	casing	design	factors	used.

Collapse -	1.125
Burst -	1.0
lt. Strength -	1.80

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint, for a total of (4) minimum centralizers. Centralizers will be placed 10' above the shoe on the shoe joint, on the 1st, 2nd and 3rd casing collars then every other joint to surface.

The production casing will be centralized using 1 centralizer on the first 10 jts and then every 4th joint to the surface.

It is proposed to set the 7" casing string at the top of the oil bearing rock. This depth which will be picked during drilling by the mud logger and may be deeper than 1800 feet. This is to maximize dipole sonic data acquisition which must be acquired in liquid, not air.

5. Proposed Cementing Program

The proposed cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

a. The proposed cementing program is as follows:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

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BUREAU OF LAND MANAGEMENT

Surface Casing Single Stage Job (0-225'): Excess – 125% over gauge hole – 12-1/4" hole and 9-5/8" casing Top of Cement - Surface

Main Slurry: 130 sx Premium, - 15.8 ppg, yield 1.16 cf/sx

Intermediate Casing – Single Stage Job (0-1800'MD): Excess – 50% over gauge hole – 8-3/4" hole and 7" casing Top of Cement – Surface.

Lead – 215 sx Premium – 12.7 ppg, yield 1.81 cf/sx Tail -100 sx Premium – 15.8 ppg, yield 1.15 cf/sx

Production Casing – Single Stage Foam Job (3200' - 1600' MD): Excess – 50% over gauge hole – 6-1/4'' hole and 4-1/2'' casing Top of Cement – Top of Liner or equivalent into 7'' casing

Lead Cement - Cap Cement		
ELASTISEAL (TM) SYSTEM	Fluid Weight	13 lbm/gal
0.2 % Versaset (Thixotropic Additive)	Slurry Yield:	1.43 ft3/sk
0.15 % HALAD-766 (Low Fluid Loss Control)	Total Mixing Fluid:	6.75 Gal/sk
0.2 % Halad(R)-344 (Low Fluid Loss Control)	Volume:	7.15 bbl
	Calculated Sacks:	30 sx

Tail Cement	· · ·	
ELASTISEAL (TM) SYSTEM	Fluid Weight:	13.50 lbm/ga
0.2 % Versaset (Thixotropic Additive)	Slurry Yield:	1.28 ft3/sk
0.15 % HALAD-766 (Low Fluid Loss Control)	Total Mixing Fluid:	5.64 Gal/sk
0.05 % SA-1015 (Suspension Agent)	Volume:	128 cf
	Calculated Sacks:	50 sx

Foamed Lead Cement		
ELASTISEAL (TM) SYSTEM	Fluid Weight:	13 lbm/gal At Surface
	Foamed Fluid Weight:	10 lbm/gal
0.2 % Versaset (Thixotropic Additive)	Unfoamed Slurry Yield:	1.43 ft3/sk
	Foamed Slurry Yield:	1.80 ft3/sk
0.15 % HALAD-766 (Low Fluid Loss Con	trol). Total Mixing Fluid:	6.75 Gal/sk ⁻
2.5 % CHEM - FOAMER 760, TOTETANK	(Foamer) Volume:	43 cfl
0.2 % Halad(R)-344 (Low Fluid Loss Cor	ntrol) Calculated Sacks:	30 sx

Total sacks of cement pumped = ~555 sx

Cement volumes are minimums and may be adjusted based on caliper log results.

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and State of New Mexico Oil & Gas Division requirements. Slurries used

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will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

6. Proposed Drilling Fluid Program

a. Mud type and properties

Hole Size (in)	Drilled Hole TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
12 1/4"	0-225'	Fresh Mud	8.4 - 8.6	70-100	NC
8-3/4"	225' - 1800'	Fresh Mud	8.5 - 8.8	40-50	6 - 8
6-1/4"	1800' – 3200'	Air/Mist	NA	NA	NA

- i. The reserve pit will be ~ 30' x 70'x 14' with a flare pit in the far corner. The pit will be lined with a 20 mil thick plastic impervious membrane material. In regards to the pit and disposal of cuttings within the pit, all applicable rules from the NMOCD 19.15.17 will apply. Enough barite will be kept onsite to weight mud sufficiently to contain any unexpected pressures.
- ii. Air drilling will use an anchored 6-inch blooie line with an igniter and dust suppression at the end of the blooie line where it enters the flare pit. The end of the blooie line will be at least 100 feet from the wellhead. Air compression equipment will be on the opposite side of the wellbore from the flare pit and be a safe distance from the wellhead. The compression equipment will be equipped with an emergency kill switch, a pressure relief valve, and spark arresters on the motors, and be capable of 2400 CFM at 800 psi.

b. Monitoring

i. Mud volume and flow will be monitored visually.

7. Formation Evaluation Program

Cores	Possible Sidewall (percussion or rotary)	
Testing	None anticipated	
Sampling	30' samples from 250' to TD	
Surveys	Single shot surveys as needed, or at a minimum every 500' to TD.	
Log	DIL-GR-SP, FDC-CNL-GR-Caliper in zones of interest	
program		

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8. Drilling Conditions

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a. Anticipated abnormal pressures or temperatures.

i. No abnormal pressures or temperatures or other hazards are anticipated.

ii. Maximum bottom hole pressure equals approximately 1497.6 psig (pounds per square inch gauge)*

- * Max mud wt x 0.052 x TD = A (bottom hole pressure) 9 x 0.052 x 3200 = 1497.6 psig
- ** Maximum surface pressure = A (0.22 x TD) 1497.6 – (0.22 x 3200) = 793.6 psig
- b. Hydrogen Sulfide (H2S)

H2S is not expected but standard monitoring and personal monitors will be in place on the rig and drilling crew.

9. Other Information

This is a vertical well and no directional drilling equipment should be used. The anticipated completion zone will be the Tocito reservoir. The well will be cased, perforated to allow the fluids to flow thru the casing, stimulated with N2 and sand proppant in up to four stages.

a. Drilling and Completion Schedule

Activity	Date
Location Construction	November 2014
Spud	November 2014
Total Drilling Duration	12 days drilling time
Clean up and site prep	15 days
Total Completion Duration	10 days completion time

Bridgecreek Resources Tribal IMDA: 751-14-1038 Well: Prairie Falcon # 19-1 Surface Location: 660' FNL & 1980' FEL Sec. 19, T. 31 N., R. 16 W. San Juan County, New Mexico

Conditions of Approval - Drilling Plan:

1. Notify this office at least 3 days prior to:

- a. spudding the well
- b. running casing strings and cementing
- c. BOP tests
- d. Drill Stem Testing

For the above procedures, Operators must talk to BLM personnel directly. Do not leave messages on answering machines. Contact Dan Rabinowitz, BLM Petroleum Engineer: office: 970-385-1363, or Rod Brashear: office: 970-385-1347, and cell: 970-799-1244.

2. All BOP tests will be performed with a test plug in place. BOP will be tested to full stack working pressure and annular preventer to 50% maximum stack working pressure. All accumulators will be function tested as per Onshore Order #2. All 2M or greater systems require **adjustable** chokes as per Onshore Order #2.

3. No additional zones will be commingled without UMU Tribal and BLM approval.

4. If a BLM Inspector is not present during the initial BOP test, please provide chart record.

5. Submit copies of all logs to this office both paper and in Log ASCII Standard (LAS) format.

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6. If any operations are to start over the weekend, notify this office by <u>noon</u> Friday. If any problems arise after hours or on weekends, call BLM personnel using the home phone numbers listed on the following 'INFORMATIONAL NOTICE - APD's'. Do not leave messages on answering machines.

7. The Surface Casing must be set to 270 feet minimum depth.

8. The BLM must witness the topping-off of the Surface Casing Cement.

9. A CBL is required if cement is not circulated to the surface on either the Surface or Intermediate casing strings. BLM verbal approval will be required prior to squeezing.

10. The tops of all major identifiable geologic units (formations) from surface to TD will be logged and recorded.

11. Stabilized bottomhole pressure measurements and flowrates <u>must</u> be collected and submitted to the BLM.

12. Please provide the following information if possible. All tests and operations on any well on subject lands shall be conducted at Operator's sole discretion.

All Wire Line Logs - Fields & Final Print (Electrical, Radioactive, Sonic, Velocity, Cement Bond, Temperature, etc with digitized and log analysis).

Drill Stem Tests - Field and Final Reports.

Core Analysis - Field and Final Reports.

Mud Log - Final Report.

Structure and Isopach Maps.

Location (Surveyors) Plat.

Application to Drill (Drilling Permit).

Daily Drilling Reports, Daily Work Over Reports and Final Drilling Report Summary.

Directional Survey.

Continued on page 3.

Geological Summary Report.

Completion Report.

Production Tests (All Production Tests during Completion, AOF, Potential, GOR, etc).

30 Day Well Production Test Record

Bottom Hole Pressure Surveys including build up tests.

Shut in Surface Pressure Surveys.

Gas, Oil and Water Analyses.

State and/or BLM Completion Reports.

State and/or BLM and/or MMS Monthly Production and OGOR Reports.

Additional Governmental Permits and Reports.

Drilling Contracts.

Operating Agreements.

Oil and Gas Sales Contracts.

Plug and Abandon Reports.

Monthly, Gas and/or Plant Products Purchasing Statements.

Well Bore Profiles.

Division Orders/Title Opinions.

AFEs.

Final Drill and Completion Costs.

Other wellfile information as requested by the Tribal Department of Energy.