

OKLAHOMA CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
P.O. BOX 52000
OKLAHOMA CITY, OK 73152-2000
(Rule 165:10-3-1)

API NUMBER: 017 25247

Approval Date: 07/19/2018

Expiration Date: 01/19/2019

Horizontal Hole Oil & Gas

PERMIT TO DRILL

WELL LOCATION: Sec: 16 Twp: 14N Rge: 10W

County: CANADIAN

SPOT LOCATION: ☐ NW ☐ NE ☐ NE ☐ NE

FEET FROM QUARTER: FROM NORTH FROM EAST

SECTION LINES: 207 630

Lease Name: CROWDER BIA

Well No: 1H-1621X

Well will be 207 feet from nearest unit or lease boundary.

Operator Name: CIMAREX ENERGY CO

Telephone: 9185851100

OTC/OCC Number: 21194 0

CIMAREX ENERGY CO
202 S CHEYENNE AVE STE 1000
TULSA, OK 74103-3001

CAROL ADAMSON
117 SOUTHWEST BLVD
GEARY OK 73040

Formation(s) (Permit Valid for Listed Formations Only):

Name	Depth	Name	Depth
1 MISSISSIPPIAN	10246	6	
2		7	
3		8	
4		9	
5		10	

Spacing Orders: 640590

Location Exception Orders:

Increased Density Orders:

Pending CD Numbers: 201804296
201804298
201804297

Special Orders:

Total Depth: 21505

Ground Elevation: 1410

Surface Casing: 350

Depth to base of Treatable Water-Bearing FM: 120

Under Federal Jurisdiction: Yes

Fresh Water Supply Well Drilled: No

Surface Water used to Drill: No

PIT 1 INFORMATION

Approved Method for disposal of Drilling Fluids:

Type of Pit System: CLOSED Closed System Means Steel Pits

Type of Mud System: WATER BASED

Chlorides Max: 10000 Average: 5000

Is depth to top of ground water greater than 10ft below base of pit? Y

Within 1 mile of municipal water well? Y

Wellhead Protection Area? Y

Pit is located in a Hydrologically Sensitive Area.

Category of Pit: C

Liner not required for Category: C

Pit Location is ALLUVIAL

Pit Location Formation: ALLUVIUM

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 18-34201
H. CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST

This permit does not address the right of entry or settlement of surface damages.
The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.
Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

HORIZONTAL HOLE 1

Sec 21 Twp 14N Rge 10W County CANADIAN

Spot Location of End Point: SW SE SE SE

Feet From: SOUTH 1/4 Section Line: 150

Feet From: EAST 1/4 Section Line: 450

Depth of Deviation: 10121

Radius of Turn: 1100

Direction: 178

Total Length: 9656

Measured Total Depth: 21505

True Vertical Depth: 11483

End Point Location from Lease,
Unit, or Property Line: 180

Notes:

Category

Description

HYDRAULIC FRACTURING

7/10/2018 - G71 - OCC 165:10-3-10 REQUIRES:

1) PRIOR TO COMMENCEMENT OF HYDRAULIC FRACTURING OPERATIONS FOR HORIZONTAL WELLS, NOTICE GIVEN FIVE BUSINESS DAYS IN ADVANCE TO OFFSET OPERATORS WITH WELLS COMPLETED IN THE SAME COMMON SOURCE OF SUPPLY WITHIN 1/2 MILE;

2) WITH NOTICE ALSO GIVEN 48 HOURS IN ADVANCE OF HYDRAULIC FRACTURING ALL WELLS TO BOTH THE OCC CENTRAL OFFICE AND LOCAL DISTRICT OFFICES, USING THE "FRAC NOTICE FORM" FOUND AT THE FOLLOWING LINK: OCCEWEB.COM/OG/OGFORMS.HTML; AND,

3) THE CHEMICAL DISCLOSURE OF HYDRAULIC FRACTURING INGREDIENTS FOR ALL WELLS TO BE REPORTED TO FRACFOCUS WITHIN 60 DAYS AFTER THE CONCLUSION THE HYDRAULIC FRACTURING OPERATIONS, USING THE FOLLOWING LINK: FRACFOCUS.ORG

INTERMEDIATE CASING

7/10/2018 - G71 - DUE TO THE KNOWN POTENTIAL RISK OF ENCOUNTERING AN OVER-PRESSURED ZONE IN THE MORROW SERIES IN THIS AREA, THE TECHNICAL MANAGER RECOMMENDS SETTING AN INTERMEDIATE STRING OF CASING IMMEDIATELY ABOVE THE MORROW SERIES

PENDING CD - 201804296

7/19/2018 - G57 - (640)(HOR) 16-14N-10W
EXT 640590 MSSP
POE TO BHL NLT 660' FB
(COEXIST W/ SP. 514682 CSTR)
REC 6-18-2018 (DUNN)

PENDING CD - 201804297

7/19/2018 - G57 - (I.O.) 16 & 21-14N-10W
EST MULTIUNIT HORIZONTAL WELL
X201804296 MSSP 16-14N-10W
X640590 MSSP 21-14N-10W
50% 16-14N-10W
50% 21-14N-10W
CIMAREX ENERGY, CO.
REC 6-18-2018 (DUNN)

PENDING CD - 201804298

7/19/2018 - G57 - (I.O.) 16 & 21-14N-10W
X201804296 MSSP 16-14N-10W
X640590 MSSP 21-14N-10W
COMPL. INT. (16-14N-10W) NCT 150' FNL, NCT 0' FSL, NCT 370' FEL
COMPL. INT. (21-14N-10W) NCT 0' FNL, NCT 150' FSL, NCT 370' FEL
NO OP. NAMED
REC 6-18-2018 (DUNN)

PUBLIC WATER SUPPLY WELL

7/10/2018 - G71 - GEARY - 1 PWS/WPA, NW/4 10-14N-10W

SPACING - 640590

7/19/2018 - G57 - (640)(HOR) 21-14N-10W
EST MSSP
POE TO BHL NLT 660' FB
(COEXIST W/ SPACING 202425 CSTR)

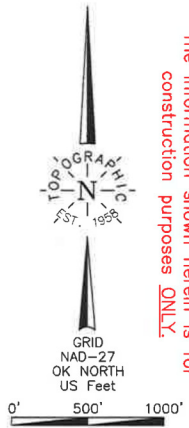
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017 25247 CROWDER BIA 1H-1621X

CANADIAN County, Oklahoma
207° FNL-630° FEL Section 16 Township 14N Range 10W I.M.



NOTE:
The information shown herein is for construction purposes ONLY.

Best Accessibility to Location From East off county road.
Distance & Direction From the junction of US Hwy. 281 and US Hwy. 270 at Geary, OK, Go ± 1.25 mile East on US Hwy. 270, then go north ± 5 mile, then ± 2 miles East to the NE Cor. of Sec. 16-T14N-R10W.

Good Drill Site? Yes

Reference Stakes or Alternate Location
Stakes Set None

Topography & Vegetation Loc. fall in level wheat field.

Operator: CIMAREX ENERGY CO.
Lease Name: CROWDER BIA

Well No.: 1H-1621X

ELEVATION:
1410' Gr. at Stake NGVD29

X= 1917485
Y= 243007

X= 1917518
Y= 253570

X= 1917503
Y= 250929

X= 1920159
Y= 253564

X= 1917489
Y= 248289

X= 1917487
Y= 245648

X= 1920141
Y= 248281

BOTTOM HOLE
150' FSL-450' FEL
NAD-27 (US Feet)
35°40'03.6"N
98°15'41.6"W
35.687677651"N
98.261547105"W
X= 1922308
Y= 243146

X= 1920159
Y= 253564

X= 1920122
Y= 243001

LANDING POINT
756' FNL-450' FEL
NAD-27 (US Feet)
35°41'39.1"N
98°15'41.4"W
35.694204813"N
98.261499174"W
X= 1922348
Y= 252802

X= 1922794
Y= 250916

X= 1922791
Y= 248276

X= 1922775
Y= 245635

X= 1922757
Y= 242893

X= 1922800
Y= 253557

LANDING POINT, BOTTOM HOLE, AND DRILL PATH INFORMATION
PROVIDED BY OPERATOR LISTED, NOT SURVEYED.

DATUM: NAD-27
LAT: 35°41'44.6"N
LONG: 98°15'43.6"W
LAT: 35.695714461"N
LONG: 98.262106370"W
STATE PLANE
COORDINATES: (US Feet)
ZONE: OK NORTH
X: 1922169
Y: 253352

Date of Drawing: Mar. 16, 2018
Invoice # 289009A Date Staked: Mar. 14, 2018 TR

CERTIFICATE:

I, Thomas L. Howell an Oklahoma Licensed Land Surveyor and an authorized agent of Topographic Land Surveyors of Oklahoma, do hereby certify to the information shown herein

Thomas L. Howell
Oklahoma Lic. No. 1433

