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

API NUMBER: 017 25363

Approval Date: 01/15/2019
Expiration Date: 07/15/2020

Horizontal Hole Oil & Gas
Multi Unit

## PERMIT TO DRILL

WELL LOCATION: Sec: 19 Twp: 13N Rge: 8W County: CANADIAN

SPOT LOCATION: SW SW SE SW FEET FROM QUARTER: FROM **SOUTH** FROM **WEST**
SECTION LINES: **300** **1410**

**Lease Name: LEOTA** **Well No: 3H-1918X** **Well will be 300 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

LEOTA HARMAN REV. TRUST C/O DAVID HARMAN
5600 NORTH BRANDLEY ROAD
CALUMET OK 73014

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

| | Name | Depth | | Name | Depth |
|---|---|---|---|---|---|
| 1 | WOODFORD | 11500 | 6 | | |
| 2 | | | 7 | | |
| 3 | | | 8 | | |
| 4 | | | 9 | | |
| 5 | | | 10 | | |

Spacing Orders: 183538, 210676, 188458, 687587

Location Exception Orders: 688325, 686879

Increased Density Orders: 686386, 686385

Pending CD Numbers:

Special Orders:

Total Depth: 21644 Ground Elevation: 1385 **Surface Casing: 1500** Depth to base of Treatable Water-Bearing FM: 290

Under Federal Jurisdiction: No Fresh Water Supply Well Drilled: No Surface Water used to Drill: Yes

PIT 1 INFORMATION

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? N
Wellhead Protection Area? N
Pit **is not** located in a Hydrologically Sensitive Area.
**Category of Pit: C**
**Liner not required for Category: C**
Pit Location is NON HSA
Pit Location Formation: DOG CREEK

Approved Method for disposal of Drilling Fluids:

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 18-35546
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 18 Twp 13N Rge 8W County CANADIAN

Spot Location of End Point: NE NE NW NW

Feet From: NORTH 1/4 Section Line: 150

Feet From: WEST 1/4 Section Line: 1100

Depth of Deviation: 11263

Radius of Turn: 477

Direction: 355

Total Length: 9632

Measured Total Depth: 21644

True Vertical Depth: 11699

End Point Location from Lease,
Unit, or Property Line: 150

Notes:

| Category | Description |
|---|---|
| DEEP SURFACE CASING | 11/21/2018 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY FOR ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON CONDUCTOR OR SURFACE CASING |
| EXCEPTION TO RULE - 686879 | 1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W<br>X165:10-3-28(C)(2)(B) WDFD (LEOTA 3H-1918X)<br>MAY BE CLOSER THAN 600' TO EXISTING/PROPOSED WELL<br>CIMAREX ENERGY CO.<br>11-19-2018 |
| HYDRAULIC FRACTURING | 11/21/2018 - G71 - OCC 165:10-3-10 REQUIRES:<br><br>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;<br><br>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,<br><br>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 |
| INCREASED DENSITY - 686385 | 1/10/2019 - G75 - 18-13N-8W<br>X210676 WDFD **<br>11 WELLS<br>CIMAREX ENERGY CO.<br>11-8-2018<br><br>** S/B X183538/210676 WDFD; NUNC PRO TUNC HAS BEEN PREPARED BY ATTORNEY FOR OPERATOR AND A COPY REVIEWED BY OCC |
| INCREASED DENSITY - 686386 | 1/10/2019 - G75 - 19-13N-8W<br>X188458 WDFD<br>11 WELLS<br>CIMAREX ENERGY CO.<br>11-8-2018 |
| LOCATION EXCEPTION - 688325 | 1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W<br>X188458 WDFD 19-13N-8W<br>X210676 WDFD 18-13N-8W **<br>COMPL. INT. (19-13N-8W) NCT 150' FSL, NCT 0' FNL, NCT 1020' FWL<br>COMPL. INT. (18-13N-8W) NCT 0' FSL, NCT 150' FNL, NCT 1020' FWL<br>CIMAREX ENERGY CO.<br>12-14-2018<br><br>** S/B X183538/210676 WDFD 18-13N-8W; TO BE CORRECTED AT HEARING FOR FINAL ORDER PER ATTORNEY FOR OPERATOR |

This permit does not address the right of entry or settlement of surface damages.
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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.

| Category | Description |
| --- | --- |
| SPACING - 183538 | 1/10/2019 - G75 - (640) 18-13N-8W<br>EXT OTHERS<br>EST WDFD, OTHERS |
| SPACING - 188458 | 1/10/2019 - G75 - (640) 19-13N-8W<br>EXT 183538 WDFD, OTHER<br>EXT OTHERS<br>EST OTHER |
| SPACING - 210676 | 1/10/2019 - G75 - NPT 183538 TO ADD VIOL & SMPS 20-13N-8W |
| SPACING - 687587 | 1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W<br>EST MULTIUNIT HORIZONTAL WELL<br>X188458 WDFD 19-13N-8W<br>X210676 WDFD 18-13N-8W **<br>50% 19-13N-8W<br>50% 18-13N-8W<br>CIMAREX ENERGY CO.<br>12-4-2018<br><br>** S/B X183538/210676 WDFD 18-13N-8W; TO BE CORRECTED AT HEARING FOR FINAL ORDER PER ATTORNEY FOR OPERATOR |

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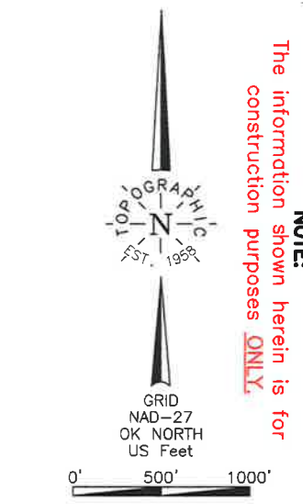
# TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

13800 WIRELESS WAY, OKLA. CITY, OKLA. 73134 * LOCAL (405) 843-4847 * OUT OF STATE (800) 654-3219
*Certificate of Authorization No. 1293 LS*

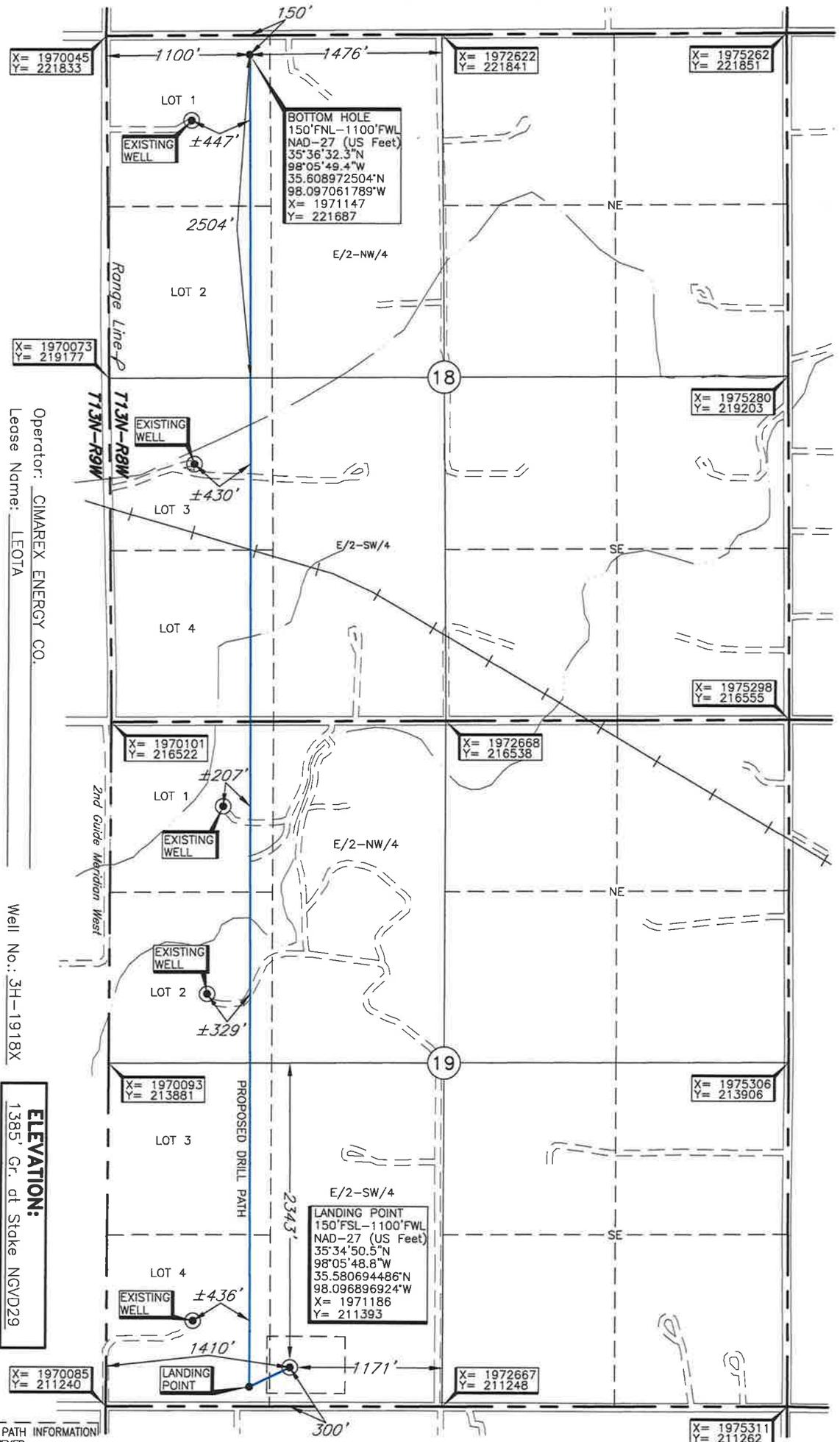
API 017-25363

CANADIAN County, Oklahoma

300'FSL–1410'FWL Section 19 Township 13N Range 8W I.M.




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




Operator: CIMAREX ENERGY CO.

Lease Name: LEOTA Well No.: 3H–1918X

Topography & Vegetation Loc. fell in level alfalfa field.

Good Drill Site? Yes Stakes Set None Reference Stakes or Alternate Location

Best Accessibility to Location From South off county road.

Distance & Direction from Hwy Jct or Town From Calumet, OK, go South on US Hwy. 270 ±1.3 miles, then go East ±1 mile to the SW Cor. of Sec. 19–T13N–R8W.

**ELEVATION:** 1385' Gr. at Stake NGVD29

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

Date of Drawing: Aug. 21, 2018

Invoice # 300585A Date Staked: Aug. 16, 2018 TR

This information was gathered with a GPS receiver with ±1 foot Horiz./Vert. accuracy.

DATUM: NAD–27
LAT: 35°34'52.0"N
LONG: 98°05'45.1"W
LAT: 35.581110090°N
LONG: 98.095853356°W
STATE PLANE COORDINATES: (US Feet)
ZONE: OK NORTH
X: 1971496
Y: 211544

## 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

LICENSED PROFESSIONAL LAND SURVEYOR
THOMAS L. HOWELL
1433
8.24.18
OKLAHOMA