

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

API NUMBER: 063 24722

Approval Date: 11/08/2017

Expiration Date: 05/08/2018

Horizontal Hole Oil & Gas

PERMIT TO DRILL

WELL LOCATION: Sec: 36 Twp: 8N Rge: 10E County: HUGHES

SPOT LOCATION: FEET FROM QUARTER: FROM SOUTH FROM WEST

SECTION LINES: 295 343

Lease Name: KELLER

Well No: 3526-2HX

Well will be 295 feet from nearest unit or lease boundary.

Operator Name: ANTIOCH OPERATING LLC

Telephone: 4052360080

OTC/OCC Number: 23947 0

ANTIOCH OPERATING LLC
PO BOX 1557
OKLAHOMA CITY, OK 73101-1557

KIMBERLY CROSSLEY
605 EAGLE TRAIL
KELLER TX 76248

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

	Name	Depth	Name	Depth
1	MISSISSIPPIAN	4350	6	
2	WOODFORD	4475	7	
3			8	
4			9	
5			10	

Spacing Orders: 667977

Location Exception Orders: 669655

Increased Density Orders:

Pending CD Numbers: 201703494

Special Orders:

Total Depth: 14500

Ground Elevation: 873

Surface Casing: 320

Depth to base of Treatable Water-Bearing FM: 270

Under Federal Jurisdiction: No

Fresh Water Supply Well Drilled: No

Surface Water used to Drill: Yes

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: 8000 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 located in a Hydrologically Sensitive Area.

Category of Pit: C

Liner not required for Category: C

Pit Location is BED AQUIFER

Pit Location Formation: CALVIN

D. One time land application -- (REQUIRES PERMIT)

PERMIT NO: 17-33231

H. SEE MEMO

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.

PIT 2 INFORMATION

Type of Pit System: CLOSED Closed System Means Steel Pits

Type of Mud System: OIL BASED

Chlorides Max: 300000 Average: 200000

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 located in a Hydrologically Sensitive Area.

Category of Pit: C

Liner not required for Category: C

Pit Location is BED AQUIFER

Pit Location Formation: CALVIN

HORIZONTAL HOLE 1

Sec 26 Twp 8N Rge 10E County HUGHES

Spot Location of End Point: NW NE NE NE

Feet From: NORTH 1/4 Section Line: 165

Feet From: EAST 1/4 Section Line: 440

Depth of Deviation: 3944

Radius of Turn: 573

Direction: 355

Total Length: 9656

Measured Total Depth: 14500

True Vertical Depth: 4575

End Point Location from Lease,
Unit, or Property Line: 165

Notes:

Category

Description

GAS STORAGE UNIT

10/9/2017 - G71 - DRILLING IN GREASY CREEK SPRINGS GAS STORAGE FOR CHANNEL BOOCH (ORDER # 95952/96291); MUST NOTIFY GAS STORAGE OPERATOR PER OCC 165:10-3-5

HYDRAULIC FRACTURING

10/9/2017 - 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

LOCATION EXCEPTION - 669655

11/8/2017 - G75 - (I.O.)
X667977 MSSP, WDFD
SHL (36-8N-10E) SW4
COMPL. INT. (35-8N-10E) NCT 165' FSL, NCT 0' FNL, NCT 330' FEL
COMPL. INT. (26-8N-10E) NCT 0' FSL, NCT 165' FNL, NCT 330' FEL
ANTIOCH OP., LLC
11-2-2017

MEMO

10/9/2017 - G71 - PIT 1 & 2 - CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST; PIT 2 - OBM TO VENDOR, OBM CUTTINGS PER DISTRICT

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

063 24722 KELLER 3526-2HX

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.

Category	Description
PENDING CD - 201703494	11/8/2017 - G75 - (I.O.) 35 & 26-8N-10E EST MULTIUNIT HORIZONTAL WELL X667977 MSSP, WDFD, OTHERS (WDFD ASSOCIATED COMMON SOURCE OF SUPPLY TO MSSP) 50% 35-8N-10E 50% 26-8N-10E NO OP. NAMED REC 8-18-2017 (MINMIER)
SPACING - 667977	11/8/2017 - G75 - (640)(HOR) 35 & 26-8N-10E VAC 155881 WDFD, OTHER VAC 185892/189993 WDFD, OTHER EST MSSP, WDFD, OTHERS POE TO BHL (MSSP) NCT 660' FB POE TO BHL (WDFD) NCT 165' FNL & FSL, NCT 330' FEL & FWL
SURFACE LOCATION & WELL NUMBER	11/8/2017 - G75 - 295' FSL, 343' FWL SW4 36-8N-10E, GROUND ELEVATION 873', WELL NUMBER 3526-2HX PER STAKING PLAT

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.

APPLICATION TO DRILL, RECOMPLETE OR REENTER

FORM 1000
REV. 2014

FILE ORIGINAL ONLY

PLEASE TYPE OR USE BLACK INK

1. OTC/OCC OPERATOR NUMBER

23947

2. API NUMBER

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

BATCH NUMBER (OCC USE ONLY)

3. NOTICE OF INTENT TO:

(CHECK ONLY ONE)

☒ DRILL ☐ RECOMPLETE ☐ REENTER ☐ DEEPEN ☐ AMEND - REASON

NOTE: ATTACH COPY OF 1002-A IF RECOMPLETION OR REENTRY.

4. TYPE OF DRILLING OPERATION >>>>>>> (NOTE: If directional or horizontal, see reverse side for bottom hole location)

A. ☐ STRAIGHT HOLE ☐ DIRECTIONAL HOLE ☒ HORIZONTAL HOLEB. ☒ OIL/GAS ☐ INJECTION ☐ DISPOSAL ☐ WATER SUPPLY ☐ STRAT TEST ☐ SERVICE WELL

5. WELL LOCATION:

SECTION 36 TOWNSHIP 08N RANGE 10E COUNTY Hughes

SPOT LOCATION: SE 1/4 SW 1/4 SW 1/4 SW 1/4 FEET FROM QUARTER from SOUTH LINE from WEST LINE
SECTION LINES: 295 343

7. Well will be 295 feet from nearest unit or property boundary.

8. LEASE NAME: Keller 3526 WELL NUMBER: 2HX

9. NAME OF OPERATOR: Antioch Operating, LLC.

EMAIL ADDRESS:

runderwood@antioch.energy

ADDRESS: 12 E. California AVE PHONE (AC/NUMBER) (405)236-0080

CITY Oklahoma City STATE OK ZIP CODE 73103

10. SURFACE OWNER (ONE ONLY, ATTACH SHEET FOR ADDITIONAL OWNERS)

Kimberly Crossley

ADDRESS 605 Eagle Trail

CITY Keller STATE TX ZIP CODE 76248

14. LIST TARGET FORMATIONS AND DEPTHS OF EACH BELOW (LIMITED TO TEN)

1) MISSISSIPPIAN 4350'

6)

2) WOODFORD 4475'

7)

3)

8)

4)

9)

5)

10)

TEMPORARY AUTHORIZATION
TO DRILL

Expiration Date: 11-1-2017

Signature: [Signature]

165:10-3-1

15. SPACING ORDER NUMBER(S) AND SIZE UNIT(S):

667 977

16. PENDING APPLICATION C.D. NO.

201703493 + 3494

17. LOCATION EXCEPTION ORDER NO.

18. INCREASED DENSITY ORDER NO.

19. TOTAL DEPTH 14,500 20. GROUND ELEV. 873 21. BASE OF TREATABLE WATER 270' 22. SURFACE CASING 320' 23. ALT CASING PROG USED? Y X N

24. ALTERNATIVE CASING PROCEDURE, check box and fill in blank (AFFIDAVIT REQUIRED, see reverse side, line 31.)

A. Cement will be circulated from total depth to ground surface on the production casing string.
B. Cement will be circulated from depth to depth by use of a two stage cementing tool.

25.1. PIT INFORMATION: Using more than one pit or mud system? Y X N If yes, fill out line 25.2 on top reverse side.

A. TYPE OF MUD SYSTEM: X WATER BASED OIL BASED GAS BASED (AIR DRILL)
B. EXPECTED MUD CHLORIDE CONTENT: maximum: 8000 ppm; average: 5000 ppm.

PIT #1 C. TYPE OF PIT SYSTEM: on-site off-site X closed If off-site, specify location:

D. IS DEPTH TO TOP OF GROUND WATER GREATER THAN 10 FT BELOW BASE OF PIT? X Y N

E. WITHIN 1 MILE OF MUNICIPAL WATER WELL? Y X N

F. WELLHEAD PROTECTION AREA? Y X N

Off-Site Pit No. Drilling in Greasy Creek Springs Gas Storage

26.1 OCC USE ONLY A. CATEGORY 1A 1B 2 3 4 C

B. PIT LOCATION: Alluvial Plain Terrace Deposit X Bedrock Aquifer Other H.S.A. Non-H.S.A. Fm: Calvin

C. Special area or field rule? 9295a 96391 D. DEEP SCA? Y X N E. CBL required? Y X N

F. SOIL COMPACTED LINER REQUIRED? Y X N G. 20 mil GEOMEMBRANE LINER REQUIRED? Y X N

27. PROPOSED METHOD FOR DISPOSAL OF DRILLING FLUIDS (MUST BE COMPLETED)

A. Evaporation/dewater and backfilling of reserve pit.

B. Public Landfill: Location

C. Annular Injection (REQUIRES PERMIT and surface casing set 200 feet below base of treatable water-bearing formation.) PERMIT NO.

D. One time land application (REQUIRES PERMIT) PERMIT NO. 17-33231

E. Haul to Commercial pit facility; Specify site: Order No.

F. Haul to Commercial soil farming facility; Specify site: Order No.

G. Haul to recycling/re-use facility; Specify site: Order No.

H. Other, Specify: closed system = steel pits per operator request

I hereby certify I am authorized to submit this two page application prepared by me or under my supervision.

The facts and proposals made herein are true, correct and complete to the best of my knowledge and belief.

SIGNATURE: Robert P. Underwood NAME (Print or Type) Rob Underwood PHONE (AC/NO.) 405-236-0080 FAX (AC/NO.) DATE

NOTICE: Approval is void if operations have not commenced within six months of the date of approval. An approved permit must be posted at the location during drilling and completion operations. File the Form 1001A, Spud Report, within fourteen days of commencement of operations.

NOTIFY DISTRICT OFFICE 24 HOURS PRIOR TO CEMENTING SURFACE CASING.

25.2. PIT INFORMATION:

A. TYPE OF MUD SYSTEM: WATER BASED OIL BASED GAS BASED (AIR DRILL)

B. EXPECTED MUD CHLORIDE CONTENT: maximum: ppm; average: ppm.

PIT #2 C. TYPE OF PIT SYSTEM: on-site off-site closed If off-site, specify location:

D. IS DEPTH TO TOP OF GROUND WATER GREATER THAN 10 FT BELOW BASE OF PIT? Y N

E. WITHIN 1 MILE OF MUNICIPAL WATER WELL? Y N

F. WELLHEAD PROTECTION AREA? Y N Off-Site Pit No.

26.2 **OCC USE ONLY** A. CATEGORY 1A 1B 2 3 4 C Fm:

B. PIT LOCATION: Alluvial Plain Terrace Deposit Bedrock Aquifer Other H.S.A. Non-H.S.A.

C. Special area or field rule? D. DEEP SCA? Y N E. CBL? Y N

F. SOIL COMPACTED LINER REQUIRED? Y N G. 20 mil GEOMEMBRANE LINER REQUIRED Y N

29 Bottom Hole Location SEC TWP RGE COUNTY

SPOT LOCATION: 1/4 1/4 1/4 1/4 FEET FROM QUARTER from SOUTH LINE from WEST LINE

SECTION LINES:

Measured Total True Vertical BHL from nearest Lease, Unit, Or Property Line:
Depth Depth

30. Bottom Hole Location for Horizontal Hole: (LATERALS)

LATERAL #1: SEC 26 TWP 08N RGE 10E COUNTY HUGHES

SPOT LOCATION: NW 1/4 NE 1/4 NE 1/4 FEET FROM QUARTER from SOUTH LINE from WEST LINE

SECTION LINES: 165 FNL 440 FEL

Depth of Deviation 3944 Radius of Turn 5073 Direction 355 Total Length 9656

Measured Total True Vertical End Point location from nearest lease, unit
Depth 14500' Depth 4500' or property line: 165' FNL

LATERAL #2: SEC TWP RGE COUNTY

SPOT LOCATION: 1/4 1/4 1/4 1/4 FEET FROM QUARTER from SOUTH LINE from WEST LINE

SECTION LINES:

Depth of Deviation Radius of Turn Direction Total Length

Measured Total True Vertical End Point location from nearest lease, unit
Depth Depth or property line:

LATERAL #3: SEC TWP RGE COUNTY

SPOT LOCATION: 1/4 1/4 1/4 1/4 FEET FROM QUARTER from SOUTH LINE from WEST LINE

SECTION LINES:

Depth of Deviation Radius of Turn Direction Total Length

Measured Total True Vertical End Point location from nearest lease, unit
Depth Depth or property line:

31. AFFIDAVIT FOR ALTERNATIVE CASING PROGRAM (Signature on front of this form attests to this affidavit)

- This well WILL WILL NOT penetrate any known lost circulation zones.
- During the drilling of this well, withdrawals from any water well within 1/4 mile WILL WILL NOT exceed 50 gallons per minute.
- The projected depth of the well IS IS NOT less than 100 feet from the top of any enhanced recovery project or gas storage facility.
- List the following for all water wells within 1/4 mile of this well. (Information concerning some water wells may be obtained from the OKLAHOMA WATER RESOURCES BOARD, 3800 N. Classen Blvd., Oklahoma City, OK 73118). IF NO WATER WELLS FOUND, SO STATE. (ATTACH ADDITIONAL SHEET IF NECESSARY)

Name of Owner/Operator	Address of Owner/Operator	Location (Nearest 1/4 1/4 1/4 1/4)	Depth of Well

- A cement bond log is required to be run and submitted from not less than 100 feet below the base of the treatable water-bearing formation to the surface. **OCC USE ONLY**
- If casing depth is more than 250 feet deeper than base of the treatable water-bearing formation, operator must submit a letter of request listing reasons and precautions to be taken.

INTENT TO DRILL CHECKLIST **OCC USE ONLY** **OCC USE ONLY**

APPROVED Sp REJECTED

1. SURETY 11/4/17

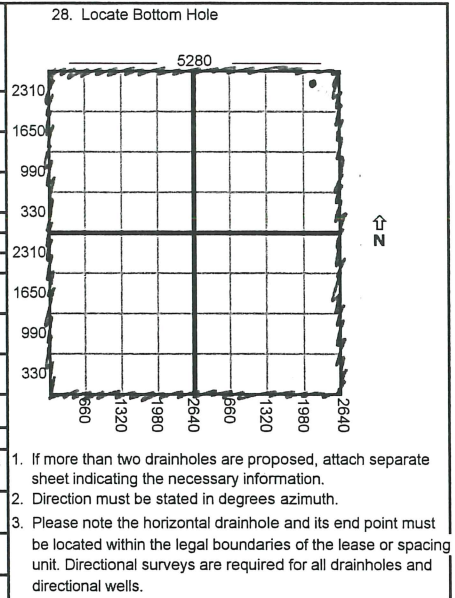
A. NONE filed.

B. EXPIRED: Date

C. OUTSTANDING CONTEMPT ORDER.

4. GEOLOGY

DO NOT WRITE INSIDE THIS BOX



OKLA CORP CONM

RECEIPT 1803620124

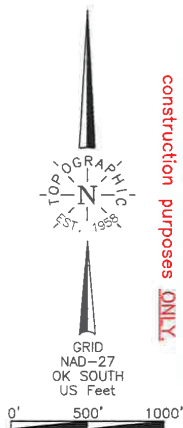
Date: 10/04/2017 Time: 14:06

Case: 000000000 Cashier: DBS

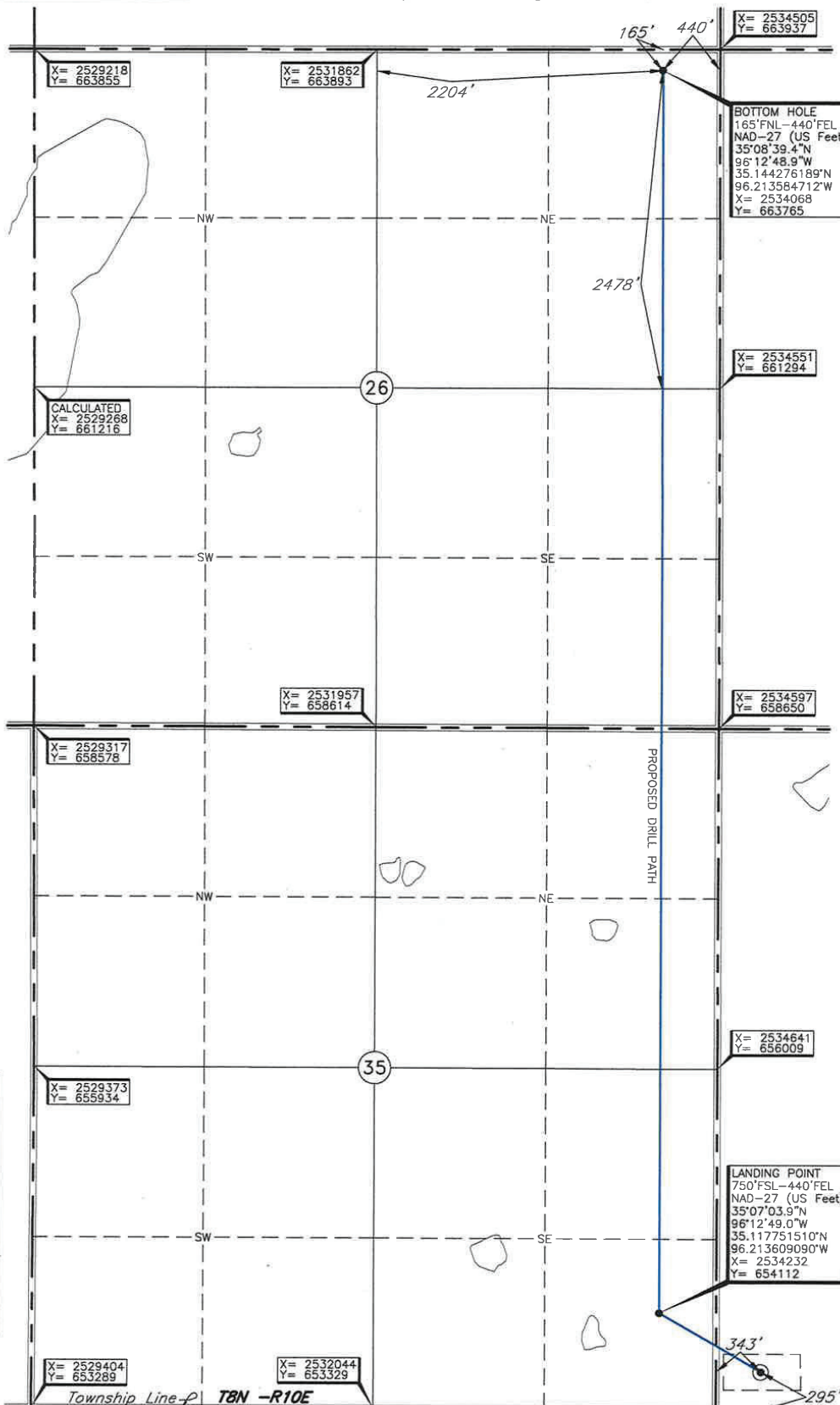
Payor: ANTIUCH OPERATING, LLC

Check: 002598 \$175.10

46 Intent to Dr-11



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



Operator: ANTIOCH ENERGY
Lease Name: KELLER
Topography & Vegetation: Loc. fell on pod under construction.
Well No.: 3526-2HX
ELEVATION: 873' Gr. at Stake
Good Drill Site? Yes
Reference Stakes or Alternate Location
Stakes Set None
Best Accessibility to Location: From South off county road
Distance & Direction: From Harttown, OK, go North on US Hwy. 75 for ±2 miles, then East on 1310 RD for ± 2 miles to the SW Cor. of Sec. 36-T8N-R10E.

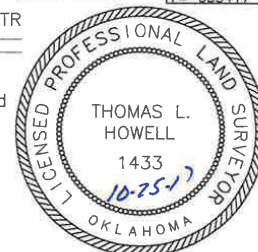
LANDING POINT, BOTTOM HOLE, AND DRILL PATH INFORMATION
PROVIDED BY OPERATOR LISTED, NOT SURVEYED.

Revision ☒ B Date of Drawing: Oct. 24, 2017
Invoice # 280875C Date Staked: Oct. 24, 2017

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



This information was gathered with a GPS receiver with ±1 foot horiz./vert. accuracy.
DATUM: NAD-27
LAT: 35°06'59.4"N
LONG: 96°12'39.6"W
LAT: 35.116498331°N
LONG: 96.210992813°W
STATE PLANE
COORDINATES: (US Feet)
ZONE: OK SOUTH
X: 2535022
Y: 653670