

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

API NUMBER: 043 23640

Approval Date: 07/09/2018

Expiration Date: 01/09/2019

Horizontal Hole Oil & Gas

PERMIT TO DRILL

WELL LOCATION: Sec: 23 Twp: 16N Rge: 15W

County: DEWEY

SPOT LOCATION: ☐ SW ☐ NW ☐ SW ☐ SW

FEET FROM QUARTER: FROM SOUTH FROM WEST

SECTION LINES: 675 311

Lease Name: CALDERWOOD FIU

Well No: 1-23-14XHW

Well will be 311 feet from nearest unit or lease boundary.

Operator Name: CONTINENTAL RESOURCES INC

Telephone: 4052349020; 4052349

OTC/OCC Number: 3186 0

CONTINENTAL RESOURCES INC
PO BOX 269000
OKLAHOMA CITY, OK 73126-9000

RICHARD L. & EVA J. JOHNSON TRUST
7545 HWY 75
HOLDENVILLE OK 74848

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

	Name	Depth	Name	Depth
1	MISSISSIPPIAN	12131	6	
2	WOODFORD	12995	7	
3	HUNTON	13145	8	
4			9	
5			10	

Spacing Orders: No Spacing

Location Exception Orders:

Increased Density Orders:

Pending CD Numbers: 201801701
201801700

Special Orders:

Total Depth: 22625

Ground Elevation: 1721

Surface Casing: 1500

Depth to base of Treatable Water-Bearing FM: 230

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: RUSH SPRINGS

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 18-34284
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: RUSH SPRINGS

HORIZONTAL HOLE 1

Sec 14 Twp 16N Rge 15W County DEWEY

Spot Location of End Point: N2 NW NW NW

Feet From: NORTH 1/4 Section Line: 50

Feet From: WEST 1/4 Section Line: 330

Depth of Deviation: 11986

Radius of Turn: 477

Direction: 5

Total Length: 9890

Measured Total Depth: 22625

True Vertical Depth: 13145

End Point Location from Lease,
Unit, or Property Line: 50

Notes:

Category

Description

DEEP SURFACE CASING

6/22/2018 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY OF ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON ANY CONDUCTOR OR SURFACE CASING

HYDRAULIC FRACTURING

6/22/2018 - 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

6/22/2018 - 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

MEMO

6/22/2018 - G71 - PITS 1 & 2 - CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST, PIT 2 - OBM RETURNED TO VENDOR, CUTTINGS PERMITTED PER DISTRICT

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.

043 23640 CALDERWOOD FIU 1-23-14XHW

Category	Description
PENDING CD - 201801700	7/6/2018 - G58 - (1280)(HOR) 14 & 23-16N-15W VAC 117758 CSTR VAC 144221 MSSSD, HNTN EST MSSP, HNTN, WDFD COMPL. INT. (MSSP, HNTN) NLT 660' FB COMPL. INT. (WDFD) NLT 165' FNL & FSL, NLT 330' FEL & FWL REC 6/13/2018 (M. PORTER)
PENDING CD - 201801701	7/9/2018 - G58 - (I.O.) 14 & 23-16N-15W X201801700 MSSP, WDFD,HNTN COMPL. INT. (23-16N-15W) NCT 150' FSL, NCT 0' FNL, NCT 330' FWL COMPL. INT. (14-16N-15W) NCT 150' FNL, NCT 0' FSL, NCT 330' FWL NO OP. NAMED REC 6/13/2018 (M. PORTER)

EXHIBIT: A (1 of 2)
SHEET: 8.5x11
SHL: 23-16N-15W
BHL: 14-16N-15W



043-23640

COVER SHEET

CONTINENTAL RESOURCES, INC.

P.O. BOX 26900 OKLAHOMA CITY, OK 73126 * (T) 1-800-256-8955 (F) 405-234-9253

Section 23 Township 16N Range 15W I.M.

County DEWEY State OK

Operator CONTINENTAL RESOURCES, INC.

Well: CALDERWOOD FIU
1-23-14-XHW

Well: --

NAD-83

POINT	WELL NAME	NORTHING	EASTING	LATITUDE LONGITUDE	LATITUDE LONGITUDE		EXISTING ELEVATION	DESIGN ELEVATION
W1	CALDERWOOD FIU 1-23-14-XHW	307726	1739365	35° 50' 34.28" -98° 46' 23.17"	35.842855 -98.773104	675' FSL / 311' FWL (SW/4 SEC 23)	1721.33'	1720.76'
LP-1	LANDING POINT	307726	1739384	35° 50' 34.28" -98° 46' 22.95"	35.842855 -98.773041	675' FSL / 330' FWL (SW/4 SEC 23)	--	--
BHL-1	BOTTOM HOLE LOCATION	317616	1739484	35° 52' 12.09" -98° 46' 22.68"	35.870026 -98.772968	50' FNL / 330' FWL (NW/4 SEC 14)	--	--
X-1	CLINE A-1	316339	1743157	35° 51' 59.76" -98° 45' 37.94"	35.866600 -98.760539	14-16N-15W:NE4 TD: 13,221' 1,320' FSL / 1,320' FEL	--	--
X-2	JOHNSON UNIT B-1	312982	1739745	35° 51' 26.29" -98° 46' 19.07"	35.857303 -98.771964	14-16N-15W:SW4SW4 TD: 10,742' 660' FSL / 660' FWL	--	--
X-3	VANDIVER #1	310831	1740443	35° 51' 05.07" -98° 46' 10.38"	35.851408 -98.769550	23-16N-15W:NW4SE4NW4 TD: 10,630' 1,155' FSL / 1,375' FWL	--	--
X-4	HUBER A-1	308587	1742750	35° 50' 43.06" -98° 45' 42.14"	35.845295 -98.761705	23-16N-15W:SE4NW4SE4 TD: 10,800' 1,600' FSL / 1,040' FWL	--	--

NAD-27

POINT	WELL NAME	NORTHING	EASTING	LATITUDE LONGITUDE	LATITUDE LONGITUDE		EXISTING ELEVATION	DESIGN ELEVATION
W1	CALDERWOOD FIU 1-23-14-XHW	307700	1770968	35° 50' 34.11" -98° 46' 21.86"	35.842808 -98.772739	675' FSL / 311' FWL (SW/4 SEC 23)	1721.33'	1720.76'
LP-1	LANDING POINT	307700	1770986	35° 50' 34.11" -98° 46' 21.63"	35.842809 -98.772676	675' FSL / 330' FWL (SW/4 SEC 23)	--	--
BHL-1	BOTTOM HOLE LOCATION	317590	1771087	35° 52' 11.93" -98° 46' 21.37"	35.869980 -98.772602	50' FNL / 330' FWL (NW/4 SEC 14)	--	--
X-1	CLINE A-1	316314	1774759	35° 51' 59.59" -98° 45' 36.62"	35.866554 -98.760174	14-16N-15W:NE4 TD: 13,221' 1,320' FSL / 1,320' FEL	--	--
X-2	JOHNSON UNIT B-1	312956	1771347	35° 51' 26.12" -98° 46' 17.75"	35.857257 -98.771598	14-16N-15W:SW4SW4 TD: 10,742' 660' FSL / 660' FWL	--	--
X-3	VANDIVER #1	310805	1772046	35° 51' 04.90" -98° 46' 09.07"	35.851362 -98.769185	23-16N-15W:NW4SE4NW4 TD: 10,630' 1,155' FSL / 1,375' FWL	--	--
X-4	HUBER A-1	308561	1774353	35° 50' 42.89" -98° 45' 40.83"	35.845248 -98.761341	23-16N-15W:SE4NW4SE4 TD: 10,800' 1,600' FSL / 1,040' FWL	--	--

Certificate of Authorization No. 7318

Date Staked: 03-15-18
Date Drawn: 03-15-18



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

REVISIONS

No.	DATE	BY	DESCRIPTION	COMMENTS
00	03-15-18	MJL	ISSUED FOR APPROVAL	--
01	03-26-18	MJL	UPDATED GRADING PLAN	REV. THIS SHEET & EXHIBIT I
02	06-15-18	TJW	MOVED PAD 330' FWL	REV. ALL EXHIBITS

EXHIBIT: A (2 of 2)
SHEET: 8.5x14
SHL: 23-16N-15W
BHL-1: 14-16N-15W

PETRO LAND SERVICES SOUTH, LLC

10400 VINEYARD BLVD. SUITE C, OKLA. CITY, OKLA. 73120 * OFFICE (405) 212-3108
Certificate of Authorization No. 7318

043-23640

DEWEY

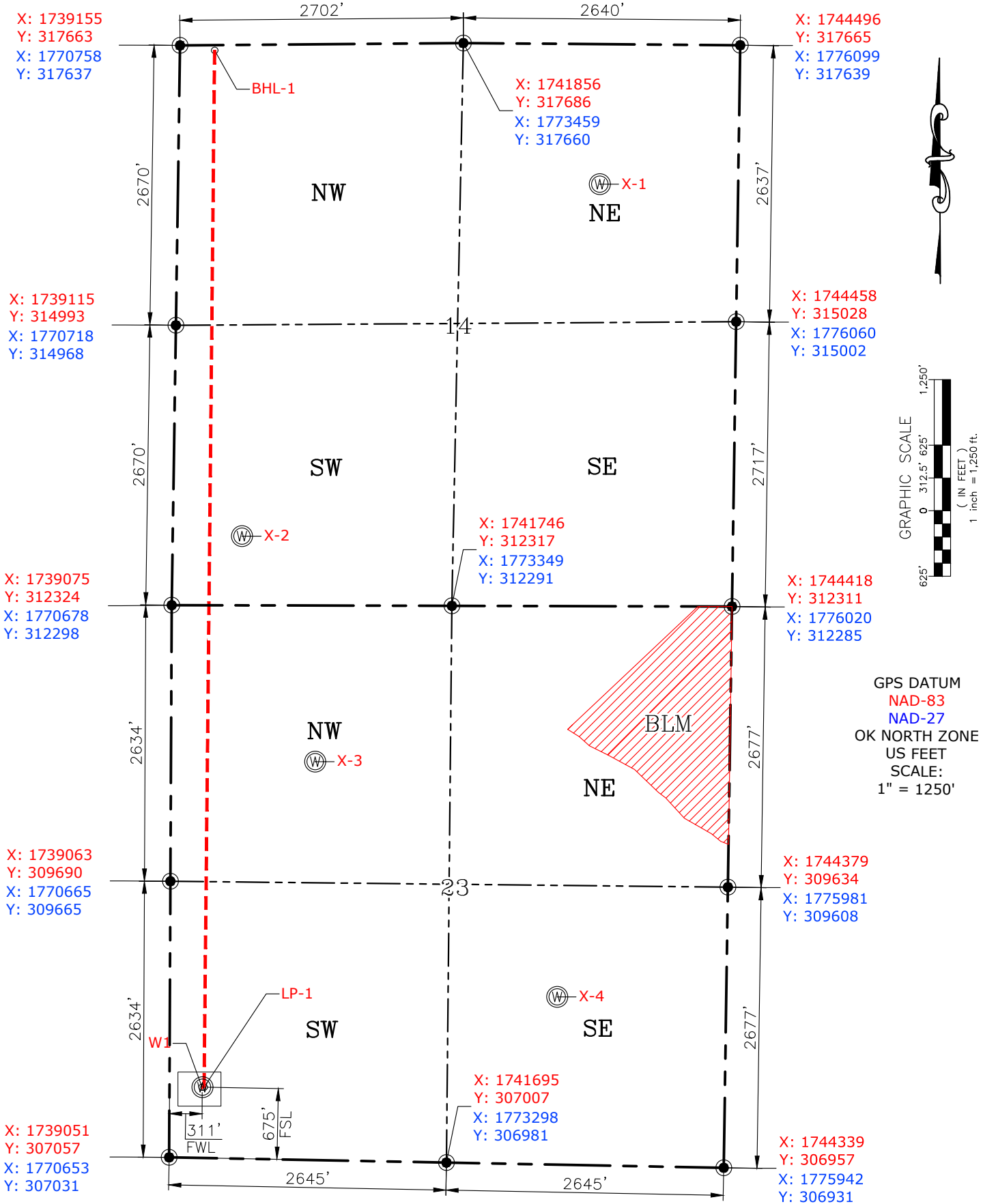
County Oklahoma

675' FSL-311' FWL Section 23 Township 16N Range 15W I.M.



CONTINENTAL
RESOURCES, INC
(OPERATOR)

WELL: CALDERWOOD FIU
1-23-14-XHW



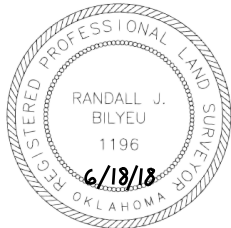
CURRENT REV: 2

Please note that this location was staked on the ground under the supervision of a Licensed Professional Land Surveyor, but the accuracy of this survey is not guaranteed. Please contact PLS promptly if any inconsistency is determined. GPS data is observed from RTK-GPS. NOTE: X and Y data shown hereon for Section Corners may NOT have been surveyed on-the-ground, and further, does NOT represent a true Boundary Survey. Quarter Section distances may be assumed from a Government Survey Plat or assumed at a proportionate distance from opposing section corners, or occupation thereof, and may not have been measured on-the-ground, and further, does not represent a true Boundary Survey.

CERTIFICATE:

I, RANDALL J. BILYEU an Oklahoma Licensed Land Surveyor and an authorized agent of Petro Land Services South, LLC, do hereby certify to the information shown herein.

Date Staked: 03-15-18
Date Drawn: 03-15-18



Randall J. Bilyeu

Oklahoma PLS No.1196 DATE

EXHIBIT: B
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W

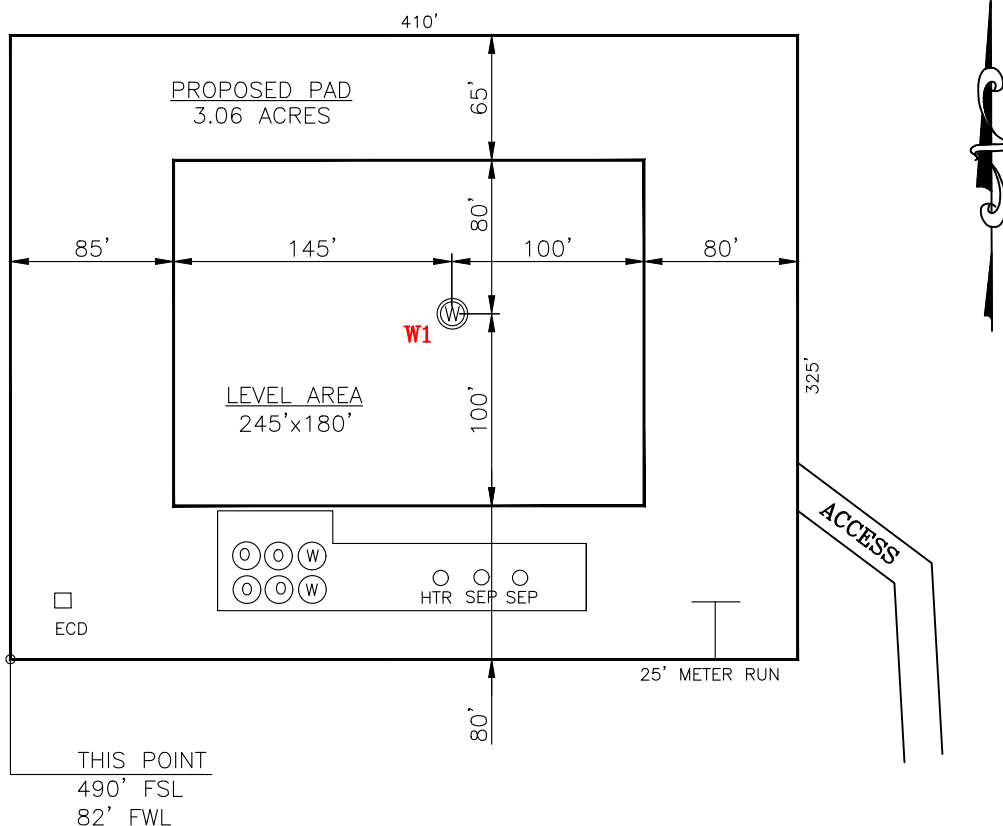
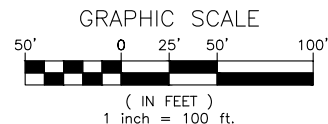
PETRO LAND SERVICES SOUTH, LLC

10400 VINEYARD BLVD. SUITE C, OKLA. CITY, OKLA. 73120 * OFFICE (405) 212-3108
Certificate of Authorization No. 7318



CONTINENTAL
RESOURCES, INC
(OPERATOR)

DEWEY County Oklahoma
675' FSL-311' FWL Section 23 Township 16N Range 15W I.M.



CURRENT REV: 2

DATUM: NAD-83
LAT: 35°50'34.28"
LONG: -98°46'23.17"
LAT: 35.842855°
LONG: -98.773104°

STATE PLANE
COORDINATES
(US FEET): OK NORTH

X: 1739365
Y: 307726

Operator: CONTINENTAL RESOURCES, INC.

Lease Name: --

Topography & Vegetation: Pasture

Good Drill Site? Yes

Reference Stakes or Alternate Location Stakes Set: No

Best Accessibility to Location: From The South Line

Distance & Direction From Hwy. or Town: Starting from the Intersection of SH-47 & N-2360 Rd. Head north following N-2360 Rd 7.32 miles to SW corner of Section 23 Township 16N Range 15W, follow existing access road in a north / northeast direction for 0.15 miles to the proposed access road.

THE INFORMATION SHOWN HEREIN IS FOR
CONSTRUCTION PURPOSES ONLY

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

Well W1: CALDERWOOD FIU 1-23-14-XHW

Well W2: --



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

(This Information Was Gathered
With a GPS Receiver With ±1
Foot Horiz./Vert. Accuracy)

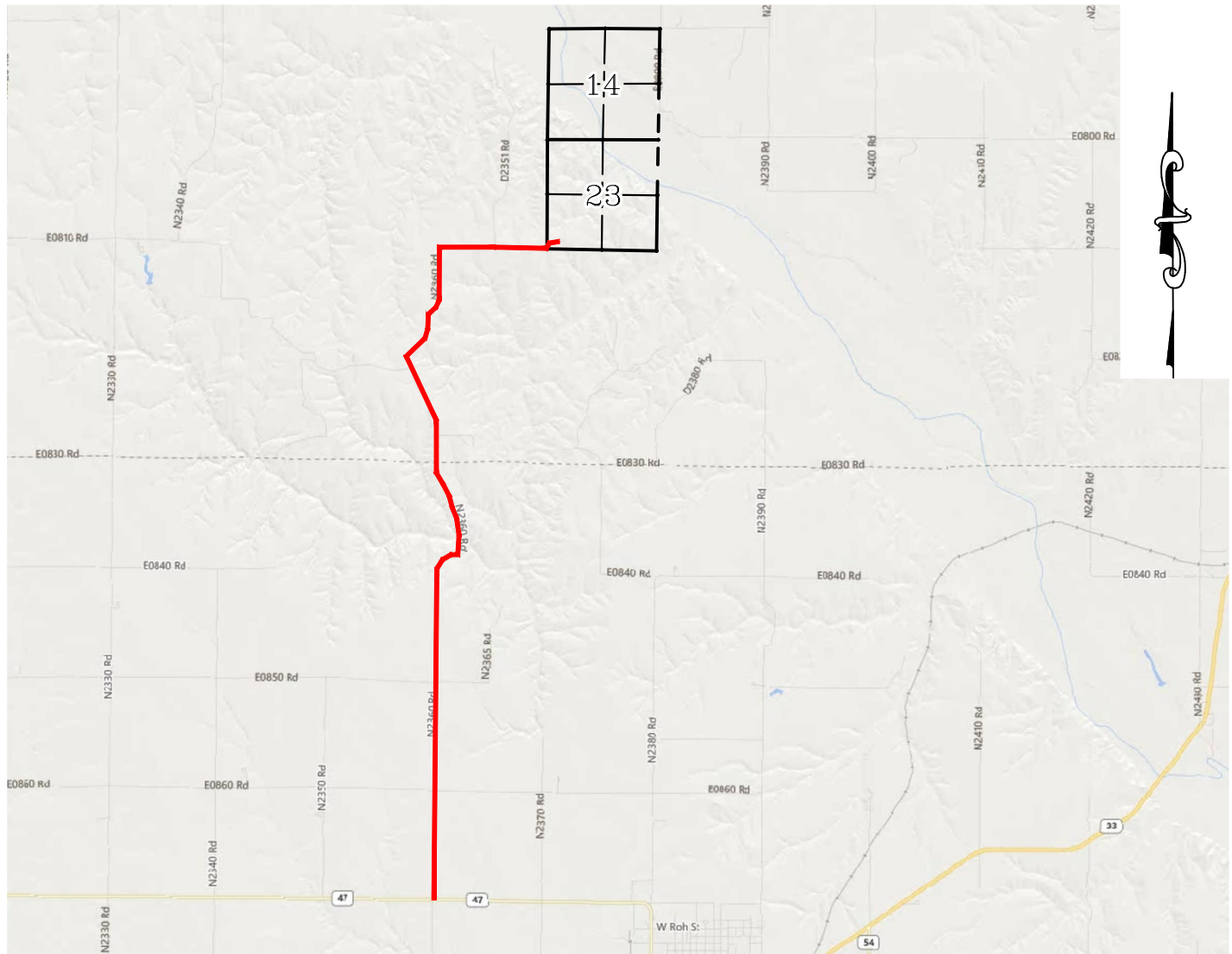
Certificate of Authorization No. 7318

EXHIBIT: C
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W



GRAPHIC SCALE
4,000' 0 4,000' 8,000'
(IN FEET)
1 inch = 8,000 ft.

VICINITY MAP



STARTING FROM THE INTERSECTION OF SH-47 & N-2360 ROAD. HEAD NORTH FOLLOWING N-2360 ROAD 7.32 MILES TO SW CORNER OF SECTION 23 T16N RANGE 15W, FOLLOW EXISTING ACCESS ROAD IN A NORTH / NORTHEAST DIRECTION FOR 0.15 MILES TO THE PROPOSED ACCESS ROAD.

CONTINENTAL RESOURCES, INC.

P.O. BOX 26900 OKLAHOMA CITY, OK 73126 * (T) 1-800-256-8955 (F) 405-234-9253

Certificate of Authorization No. 7318

Section 23 Township 16N Range 15W I.M. Well W1: CALDERWOOD FIU
1-23-14-XHW

Date Staked: 03-15-18

County DEWEY State OK Well W2: --



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

Operator CONTINENTAL RESOURCES, INC.

CURRENT REV: 2

EXHIBIT: D
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W



CALDERWOOD FIU
WELL W1: 1-23-14-XHW
WELL W2: --

FACING NORTH

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FACING SOUTH

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CURRENT REV: 2



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

TERRAIN

DRAWN BY:	TJW	SCALE:	N.T.S.
CHECKED BY:	MVA	JOB No.:	--
APPROVED BY:	--	DWG. NO.:	TERRAIN-1
DATE ISSUED:	03-15-18	SHEET:	1 OF 2

EXHIBIT: E
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W



CALDERWOOD FIU
1-23-14-XHW
WELL W1: _____
WELL W2: --

FACING EAST

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FACING WEST

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CURRENT REV: 2



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

TERRAIN

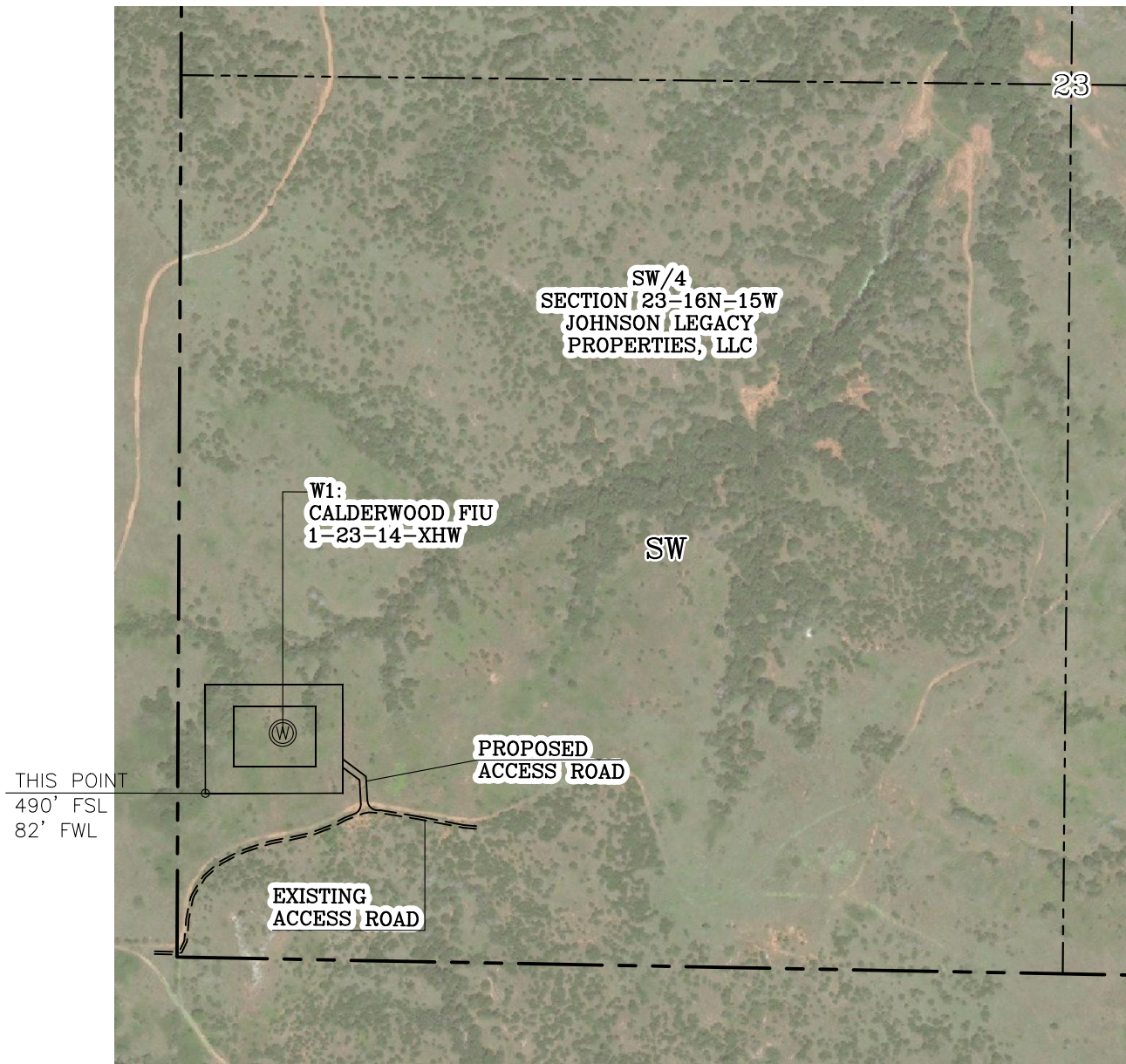
DRAWN BY:	TJW	SCALE:	N.T.S.
CHECKED BY:	MVA	JOB No.:	--
APPROVED BY:	--	DWG. NO.:	TERRAIN-2
DATE ISSUED:	03-15-18	SHEET:	2 OF 2

EXHIBIT: F
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W



WELL W1: CALDERWOOD FIU
1-23-14-XHW
WELL W2: --

PROPOSED ACCESS ROAD = 176' | 10.67 RODS (TOTAL)
EXISTING ACCESS ROAD = 1748' | 109.94 RODS (TOTAL)

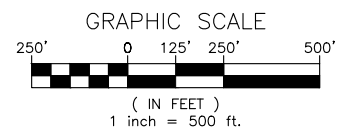


GPS DATUM - OK NORTH ZONE
US FEET SCALE: 1" = 500'

Section 23 Township 16N Range 15W I.M.

County DEWEY State OK

Operator CONTINENTAL RESOURCES, INC.



CURRENT REV: 2



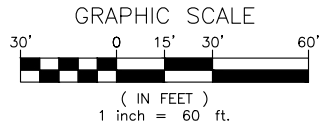
Prepared By:
Petro Land Services South
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Suite C
Oklahoma City, OK 73120

AERIAL PLAT

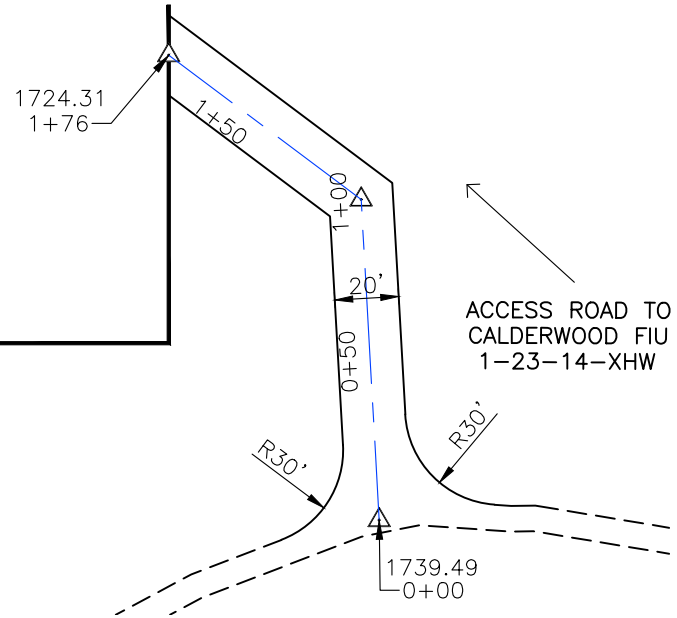
DRAWN BY:	TJW	SCALE:	1" = 500'
CHECKED BY:	MVA	JOB No.:	--
APPROVED BY:	--	DWG. NO.:	AERIAL-1
DATE ISSUED:	03-15-18	SHEET:	1 OF 4

EXHIBIT: G
 SHEET: 8.5x11
 SHL: 23-16N-15W
 BHL-1: 14-16N-15W

GPS DATUM - OK NORTH ZONE
 US FEET SCALE: 1" = 60'



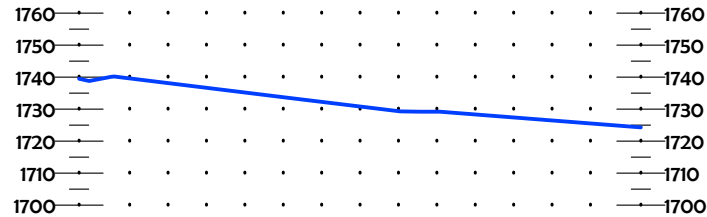
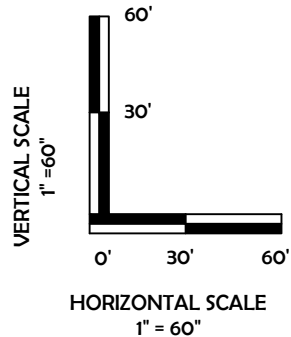
SW/4
 SECTION 23-16N-15W
 JOHNSON LEGACY
 PROPERTIES, LLC



- * THIS PROPOSED LEASE ROAD PLAT DOES NOT REPRESENT A TRUE BOUNDARY SURVEY.
- * THE FOOTAGES AND TIES SHOWN HEREON ARE FROM LINES OF OCCUPATION AND MAY NOT BE FROM ACTUAL PROPERTY CORNERS.

CALDERWOOD FIU
 1-23-14-XHW
 Well W1: _____
 Well W2: _____

PROPOSED ACCESS ROAD = 176' | 10.67 RODS (TOTAL)
 EXISTING ACCESS ROAD = 771' | 46.73 RODS (TOTAL)



CURRENT REV: 2



Prepared By:
 Petro Land Services South
 10400 Vineyard Blvd.
 Suite C
 Oklahoma City, OK 73120



P.O. Box 26900
 Oklahoma City
 Oklahoma, 73126
 (T) 1-800-256-8955
 (F) 405-234-9253

LEASE ROAD PLAN & PROFILE

DRAWN BY:	TJW	SCALE:	AS NOTED
CHECKED BY:	MVA	JOB No.:	--
APPROVED BY:	--	DWG. NO.:	P&P
DATE ISSUED:	03-15-18	SHEET:	2 OF 4

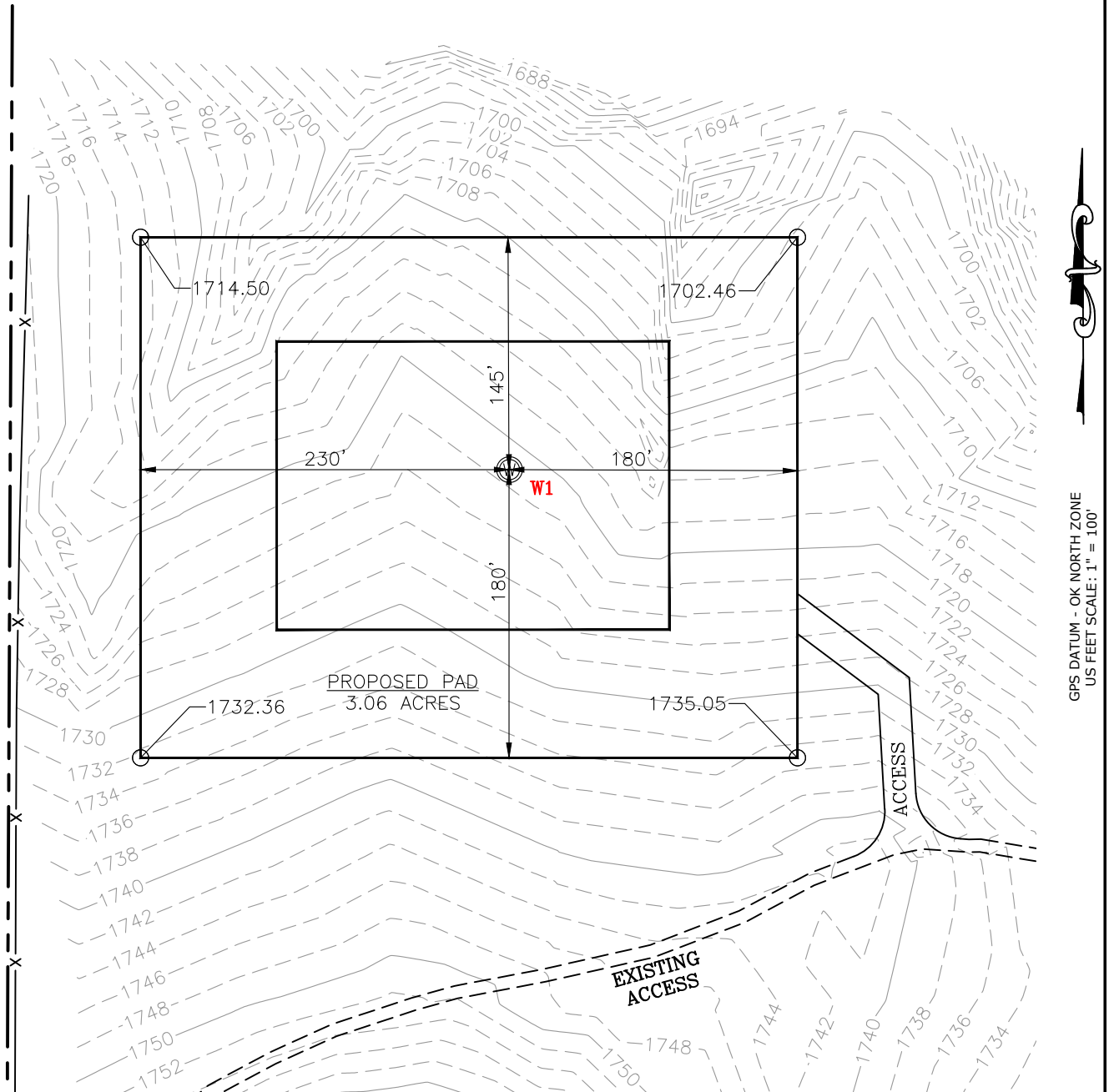
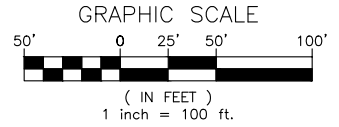
EXHIBIT: H
SHEET: 8.5x11
SHL: 23-16N-15W
BHL-1: 14-16N-15W



CALDERWOOD FIU
1-23-14-XHW

WELL W1: ---

WELL W2: ---



GPS DATUM - OK NORTH ZONE
US FEET SCALE: 1" = 100'

CURRENT REV: 2



Prepared By:
Petro Land Services South
10400 Vineyard Blvd.
Suite C
Oklahoma City, OK 73120

EXISTING GRADING PLAN

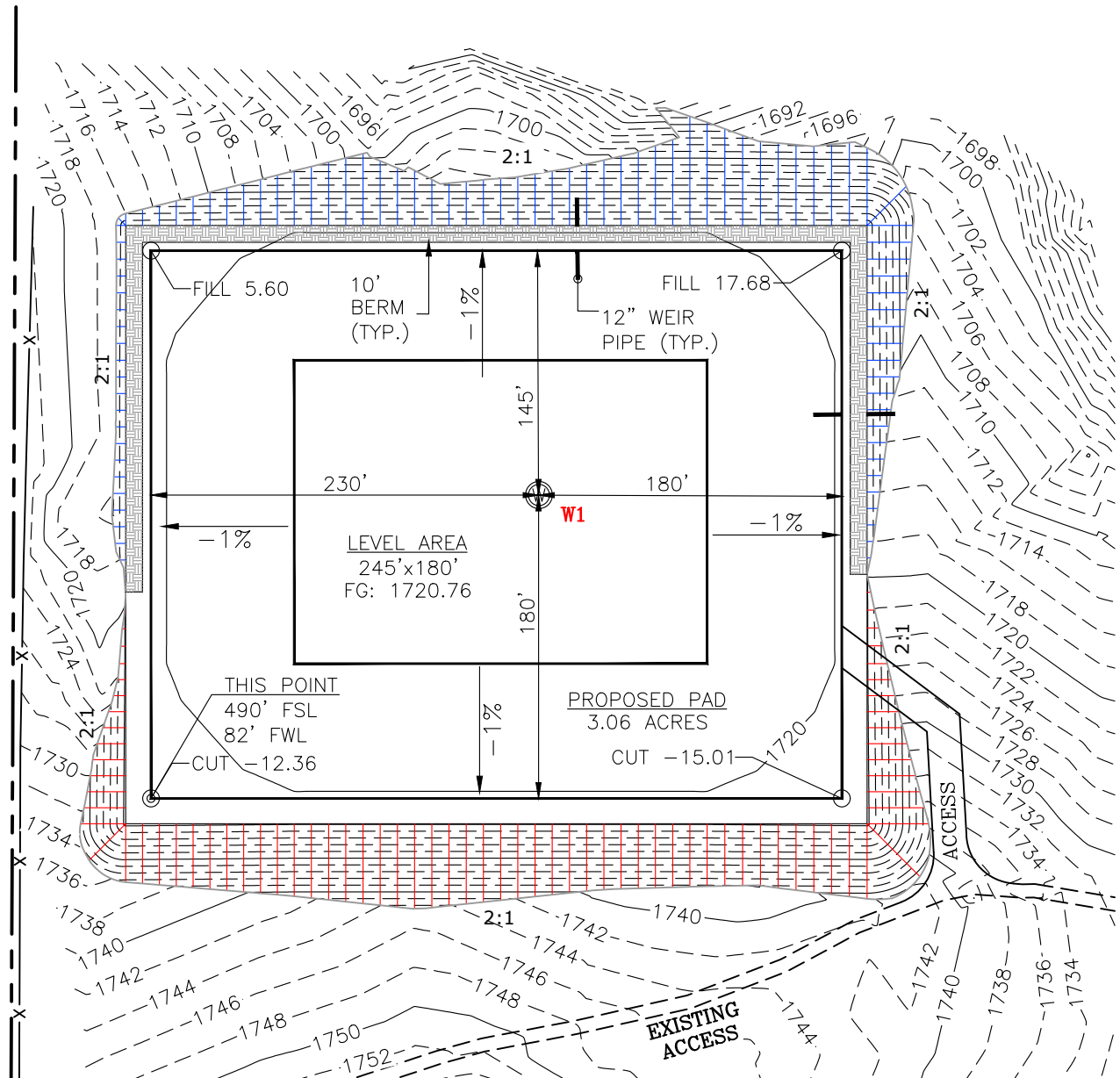
DRAWN BY:	TJW	SCALE:	1" = 100'
CHECKED BY:	MVA	JOB No.:	---
APPROVED BY:	---	DWG. NO.:	EX-GR.
DATE ISSUED:	03-15-18	SHEET:	3 OF 4

EXHIBIT: I
 SHEET: 8.5x11
 SHL: 23-16N-15W
 BHL-1: 14-16N-15W



WELL W1: CALDERWOOD FIU
1-23-14-XHW
 WELL W2: --
 GRAPHIC SCALE
 50' 0 25' 50' 100'
 (IN FEET)
 1 inch = 100 ft.

TOTAL PROPOSED DISTURBED AREA: 4.64 ACRES



GPS DATUM - OK NORTH ZONE
 US FEET SCALE: 1" = 100'

CUT VOLUME 31851.01 CU. YD. | STRIPPED 6" TOP SOIL 3,743.93 CU. YD.
 FILL VOLUME 31856.25 CU. YD. | BERM LENGTH: 844' (565.48 CU. YD.)
 (CUT/FLL VOLUMES INCLUDE 6" STRIPPED TOP SOIL)

CURRENT REV: 2



Prepared By:
 Petro Land Services South
 10400 Vineyard Blvd.
 Suite C
 Oklahoma City, OK 73120

PROPOSED GRADING PLAN

DRAWN BY:	TJW	SCALE:	1" = 100'
CHECKED BY:	MVA	JOB No.:	--
APPROVED BY:	--	DWG. NO.:	PRO-GR.
DATE ISSUED:	03-15-18	SHEET:	4 OF 4