KOLAR Document ID: 1663211

Confidentiality Requested:
☑ Yes ☐ No

# KANSAS CORPORATION COMMISSION
## OIL & GAS CONSERVATION DIVISION

**Form ACO-1**
January 2018
**Form must be Typed**
**Form must be Signed**
**All blanks must be Filled**

# WELL COMPLETION FORM
## WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30606
Name: Murfin Drilling Co., Inc.
Address 1: 250 N WATER STE 300
Address 2:
City: WICHITA State: KS Zip: 67202 + 1216
Contact Person: Mark Ballard
Phone: ( 316 ) 267-3241
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Larry Friend
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

06/14/2022 Spud Date or Recompletion Date
06/19/2022 Date Reached TD
08/08/2022 Completion Date or Recompletion Date

API No.: 15-167-24122-00-00
Spot Description:
W2 - SW - SE - NW Sec. 15 Twp. 15 S. R. 12 ☐ East ☑ West
2310 Feet from ☑ North / ☐ South Line of Section
1520 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Russell
Lease Name: KASTRUP A Well #: 8
Field Name:
Producing Formation: LKC
Elevation: Ground: 1770 Kelly Bushing: 1775
Total Vertical Depth: 3250 Plug Back Total Depth: 3214
Amount of Surface Pipe Set and Cemented at: 772 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

**Drilling Fluid Management Plan**
*(Data must be collected from the Reserve Pit)*
Chloride content: 44000 ppm Fluid volume: 650 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

**AFFIDAVIT**
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**
☐ **Confidentiality Requested**
Date: 09/07/2022
☐ **Confidential Release Date:** 09/06/2024
☑ **Wireline Log Received** ☐ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** David Befort **Date:** 09/08/2022

*Page Two*

Operator Name: Murfin Drilling Co., Inc. Lease Name: KASTRUP A Well #: 8

Sec. 15 Twp. 15 S. R. 12 ☐ East ☑ West County: Russell

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

| | | |
|---|---|---|
| Drill Stem Tests Taken *(Attach Additional Sheets)* | ☐ Yes | ☑ No |
| Samples Sent to Geological Survey | ☐ Yes | ☑ No |
| Cores Taken | ☐ Yes | ☑ No |
| Electric Log Run | ☑ Yes | ☐ No |
| Geologist Report / Mud Logs | ☑ Yes | ☐ No |

List All E. Logs Run: Attached

☑ Log Formation (Top), Depth and Datum ☑ Sample

| Name | Top | Datum |
|---|---|---|
| see attached | see attached | see attached |

CASING RECORD ☑ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface | 12.250 | 8.625 | 23 | 772 | Common, H325 | 330 | |
| Production | 7.875 | 5.500 | 15.5 | 3246 | H-Con, H-LD | 450 | |
| | | | | | | | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone | - | | | |
| | - | | | |

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/ Injection: 08/16/2022

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | 12 | | 41 | | |

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*

METHOD OF COMPLETION: ☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*

PRODUCTION INTERVAL:

| Top | Bottom |
|---|---|
| 2906 | 2936 |
| | |

| Shots Per Foot | Perforation Top | Perforation Bottom | Bridge Plug Type | Bridge Plug Set At | Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)* |
|---|---|---|---|---|---|
| Attached | Attached | Attached | Attached | Attached | Attached |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

TUBING RECORD: Size: 2.375 Set At: 2958 Packer At: 2961

**Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202**

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Murfin Drilling Co., Inc. |
| Well Name | KASTRUP A 8 |
| Doc ID | 1663211 |

All Electric Logs Run

| |
|---|
| DIL |
| DUCP |
| MEL |
| BHCS |

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Murfin Drilling Co., Inc. |
| Well Name | KASTRUP A 8 |
| Doc ID | 1663211 |

Perforations

| Shots Per Foot | Perforation Top | Perforation Bottom | BridgePlugType | BridgePlugSetAt | Material Record |
|---|---|---|---|---|---|
| 4 | 2906 | 2909 | | | 500g 15% MCA |
| 4 | 2932 | 2936 | | | 500g 15% MCA |
| 4 | 2968 | 2972 | | | |
| 4 | 2974 | 2977 | | | |
| 4 | 2984 | 2988 | | | |
| 4 | 3074 | 3080 | | | |
| 4 | 3160 | 3166 | | | 350g 15% MCA, 350g 15% Hydrofluoric Acid, 7.5% Hydrofluoric Acid |
| | | | | | 350g 15% Hydrofluoric Acid, 200g 7.5% Hydrochloric |

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Murfin Drilling Co., Inc. |
| Well Name | KASTRUP A 8 |
| Doc ID | 1663211 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Surface | 12.250 | 8.625 | 23 | 772 | Common, H325 | 330 | |
| Production | 7.875 | 5.500 | 15.5 | 3246 | H-Con, H-LD | 450 | |
| | | | | | | | |
| | | | | | | | |

# CEMENT TREATMENT REPORT

| | | | | | |
|---|---|---|---|---|---|
| Customer: | Murfin Drilling Co | Well: | Kastrup A #8 | Ticket: | WP 2939 |
| City, State: | | County: | Russell, KS | Date: | 6/15/2022 |
| Field Rep: | Spencer Savage | S-T-R: | 15-15S-12W | Service: | Surface |

| Downhole Information | |
|---|---|
| Hole Size: | 12.25 in |
| Hole Depth: | 775 ft |
| Casing Size: | 8 5/8 in |
| Casing Depth: | 772 ft |
| Tubing / Liner: | in |
| Depth: | ft |
| Tool / Packer: | |
| Tool Depth: | ft |
| Displacement: | 48.0 bbls |

| Calculated Slurry - Lead | |
|---|---|
| Blend: | H-Con |
| Weight: | 12.0 ppg |
| Water / Sx: | 15.5 gal / sx |
| Yield: | 2.56 $ft^3$ / sx |
| Annular Bbls / Ft.: | 0.0735 bbs / ft. |
| Depth: | ft |
| Annular Volume: | 0.0 bbls |
| Excess: | 100% |
| Total Slurry: | 70.7 bbls |
| Total Sacks: | 155 sx |

| Calculated Slurry - Tail | |
|---|---|
| Blend: | H-325 |
| Weight: | 14.8 ppg |
| Water / Sx: | 6.9 gal / sx |
| Yield: | 1.41 $ft^3$ / sx |
| Annular Bbls / Ft.: | 0.0735 bbs / ft. |
| Depth: | ft |
| Annular Volume: | 0 bbls |
| Excess: | 100% |
| Total Slurry: | 44.0 bbls |
| Total Sacks: | 175 sx |

| TIME | RATE | PSI | STAGE BBLs | TOTAL BBLs | REMARKS |
|---|---|---|---|---|---|
| 1015am | | | - | - | Arrive on Location |
| 1020am | | | | - | Safety Meeting |
| 1035am | | | | - | Rig Up |
| | | | | - | 765' of casing plus 7' landing joint |
| 1048am | 2.7 | 50.0 | 5.0 | 5.0 | Start H2O ahead |
| 1050am | 8.8 | 200.0 | 70.6 | 75.6 | Start Pumping Lead Slurry 12ppg |
| 1059am | 8.0 | 200.0 | 10.0 | 85.6 | Start Tail Cement Slurry 14.8ppg |
| 1100am | 6.7 | 150.0 | 44.0 | 129.6 | |
| 1115am | | | | 129.6 | shut down and drop plug |
| 1117am | 6.5 | 210.0 | 1.0 | 130.6 | start displacement |
| 1124am | 6.4 | 300.0 | 46.0 | 176.6 | |
| 1125am | 3.0 | 400.0 | 48.0 | | shut down |
| 1127am | | | | | Close in Cement Head and bleed line pressure off Circulated 5bbls of cement to pit |
| 1129am | | | | | Wash up |
| 1140am | | | | | rig down |
| 1155am | | | | | Leave Location |

| CREW | | UNIT |
|---|---|---|
| Cementer: | Spencer | 26 |
| Pump Operator: | Christian | 520 |
| Bulk #1: | Charlie | 530 |
| Bulk #2: | | |

| SUMMARY | | |
|---|---|---|
| Average Rate | Average Pressure | Total Fluid |
| 6.0 bpm | 216 psi | 225 bbls |

ftv: 15-2021/01/25
mplv: 264-2022/05/23

# CEMENT TREATMENT REPORT

| | | | | | |
|---|---|---|---|---|---|
| **Customer:** | Murfin Drilling | **Well:** | Kastup A #8 | **Ticket:** | WP 2960 |
| **City, State:** | Oakley KS | **County:** | Russell KS | **Date:** | 6/19/2022 |
| **Field Rep:** | Mark | **S-T-R:** | 15-15S-12W | **Service:** | Long String |

| Downhole Information | |
|---|---|
| **Hole Size:** | 7.875 in |
| **Hole Depth:** | 3250 ft |
| **Casing Size:** | 5 1/2 in |
| **Casing Depth:** | 3246 ft |
| **Tubing / Liner:** | in |
| **Depth:** | ft |
| **Tool / Packer:** | |
| **Tool Depth:** | ft |
| **Displacement:** | 76.7 bbls |

| Calculated Slurry - Lead | |
|---|---|
| **Blend:** | H-Con |
| **Weight:** | 12.0 ppg |
| **Water / Sx:** | 15.5 gal / sx |
| **Yield:** | 2.56 $ft^3$ / sx |
| **Annular Bbls / Ft.:** | 0.0309 bbs / ft. |
| **Depth:** | ft |
| **Annular Volume:** | 0.0 bbls |
| **Excess:** | |
| **Total Slurry:** | 159.5 bbls |
| **Total Sacks:** | 350 sx |

| Calculated Slurry - Tail | |
|---|---|
| **Blend:** | H-LD |
| **Weight:** | 14.8 ppg |
| **Water / Sx:** | 6.6 gal / sx |
| **Yield:** | 1.52 $ft^3$ / sx |
| **Annular Bbls / Ft.:** | 0.0309 bbs / ft. |
| **Depth:** | ft |
| **Annular Volume:** | 0 bbls |
| **Excess:** | |
| **Total Slurry:** | 40.6 bbls |
| **Total Sacks:** | 150 sx |

| TIME | RATE | PSI | STAGE BBLs | TOTAL BBLs | REMARKS |
|---|---|---|---|---|---|
| 7:43 PM | | | - | - | Arrived on location |
| 7:53 PM | | | | - | Safety meeting |
| 8:03 PM | | | | - | Rigged up |
| 1:40 AM | | | | - | Casing on bottom |
| 2:14 AM | | | | - | Ciculated mud |
| 3:33 AM | 3.0 | 250.0 | 5.0 | 5.0 | Water ahead |
| 3:35 AM | 30.0 | 250.0 | 12.0 | 17.0 | Pumped 500 gallons super mud flush |
| 3:40 AM | 3.0 | 250.0 | 10.0 | 27.0 | Water behind |
| 3:46 AM | 3.2 | 150.0 | 13.6 | 40.6 | Mixed 30 sacks H-Con cement @ 12.0 ppg for rat hole plug |
| 3:52 AM | 2.7 | 150.0 | 9.1 | 49.7 | Mixed 20 sacks H-Con cement @ 12.0 ppg for mouse hole plug |
| 3:58 AM | 4.6 | 250.0 | 136.7 | 186.4 | Mixed 300 sacks H-Con lead cement @ 12.0 ppg down hole |
| 4:52 AM | 5.2 | 250.0 | 40.6 | | Mixed 150 sacks H-LD tail cement @ 14.8 ppg down hole |
| 5:04 AM | | | | | Shut down, load plug, cleared lines and pump |
| 5:12 AM | 5.9 | 250.0 | 76.7 | | Begin displacement with KCL in first 40 bbls |
| 5:28 AM | | 1,400.0 | | | Plug down 900 landing psi with 1400 bump psi with 15 bbls cement circulated to pit |
| 5:30 AM | | | | | Wash up and rigged down |
| 6:08 AM | | | | | Left location |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| CREW | | UNIT |
|---|---|---|
| **Cementer:** | John | 64 |
| **Pump Operator:** | Jose V | 208 |
| **Bulk #1:** | Kale | 194-250 |
| **Bulk #2:** | Charlie | 205 |

| SUMMARY | | |
|---|---|---|
| Average Rate | Average Pressure | Total Fluid |
| 7.2 bpm | 356 psi | 304 bbls |

# DRILLING REPORT - LOG TOPS - KASTRUP A 8

| | MDCI<br>Kastrup A #8<br>2310'FNL 1520'FWL<br>Sec. 15-T15S-R12W<br>1775' KB | | | | | |
|---|---|---|---|---|---|---|
| Formation | Sample top | Datum | Ref | Log Top | Datum | Ref |
| Anhydrite | 668 | +1107 | -4 | 668 | +1107 | -4 |
| B/Anhydrite | 699 | +1076 | -6 | 699 | +1076 | -6 |
| Topeka | 2534 | -759 | -1 | 2528 | -753 | +5 |
| Oread | 2729 | -954 | +3 | 2726 | -951 | +6 |
| Lansing | 2895 | -1120 | +5 | 2890 | -1115 | +10 |
| Stark | 3102 | -1327 | +8 | 3099 | -1324 | +11 |
| Mound City | 3160 | -1385 | +6 | 3155 | -1380 | +11 |
| Basement | 3162 | -1387 | +20 | 3160 | -1385 | +22 |
| RTD | 3250 | | | | | |
| LTD | | | | 3245 | | |

## WELL INFORMATION

| | | | |
|---|---|---|---|
| Company: | MURFIN DRILLING COMPANY, INC. | | |
| Address: | 250 N. WATER ST., STE 300<br>WICHITA, KS 67202 | | |
| Well Name: | KASTRUP A #8 | | |
| Location: | 2310 FNL 1520 FWL<br>SECTION 15 - T15S - R12W<br>RUSSELL COUNTY, KANSAS | | |
| API: | 15-167-24122-00-00 | | |
| Field: | INFILL FIELD DEVELOPMENT | | |
| K. B. Elevation: | 1775 | Rotary Depth: | 3250 |
| Ground Elevation: | 1770 | Log Depth: | 3245 |
| Spud Date: | 6/14/2022 | Drilling Completed: | 6/19/2022 |
| Completion: | | | |
| Surface Casing: | 8 5/8's set @ 775' | Production Casing: | 5 1/2" set @ 3243' |
| Formation at TD: | PRECAMBRIAN | | |
| Drilling Fluid Type: | CHEMICAL | | |
| Rig Contractor: | MURFIN RIG # 16 | | |
| Logger: | MIDWEST WIRELINE | Logs Run: | DI, CND, SONIC & MICRO |
| Wellsite Geologist: | LARRY P. FRIEND | | |

## FORMATION DEPTHS

| FORMATION DEPTHS: | SAMPLE | LOG | COMPARED TO: CITIES SERVICE OIL CO. KASTRUP A #7 NW SE NW, 15-T15S-R12W |
|---|---|---|---|
| ANHYDRITE | 668 (+1107) | 669 (+1106 | -5 |
| B/ANHYDRITE | 699 (+1076 | 696 (+1079) | -3 |
| TOPEKA | 2534 (-759) | 2528 (-753) | +5 |
| OREAD | 2729 (-954) | 2726 (-951) | +6 |
| LANSING | 2895 (-1120) | 2890 (-1115) | +10 |
| STARK | 3102 (-1327) | 3099 (-1324) | +11 |
| MOUND CITY (BKC) | 3160 (-1385) | 3155 (-1380) | +11 |
| BASEMENT | 3165 (-1390) CORR | 3160 (-1385) | +22 |

## NOTES

DUE TO A FAVORABLE STRUCTURAL POSITION, SHOWS OF OIL & GAS AND POSITIVE LOG CALCULATIONS, IT WAS DECIDED TO RUN PRODUCTION CASING AND ATTEMPT PRODUCTION ON THIS WELL.
LP FRIEND

## DRILLSTEM TESTS

| No | Interval | Formation |
|---|---|---|
| 0 | 0.00 | |

## ROCK TYPES

Coal
Lmst fw7>
Meta
Shgy
Shblck
Ool grnst

## ACCESSORIES

**MINERAL**
- Carbonaceous Flakes
- Silty
- Chert White

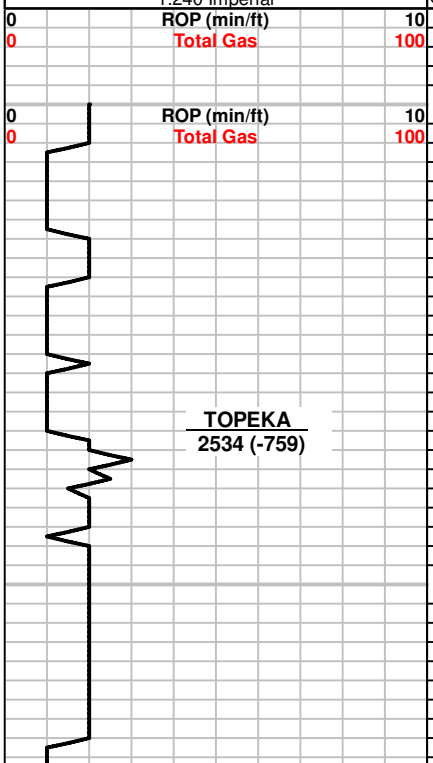
**FOSSIL**
- Bioclastic or Fragmental
- Oolite

## OTHER SYMBOLS

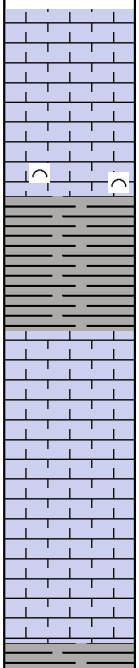
**OIL SHOWS**
- Even Stn
- Spotted Stn 50 - 75 %
- Spotted Stn 25 - 50 %
- Spotted Stn 1 - 25 %
- Questionable Stn
- Dead Oil Stn
- Fluorescence

**Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)**

Curve Track #01
ROP (min/ft)
Total Gas
1:240 Imperial




Depth | Intervals
Cored Interval
DST Interval




Interpreted Lithology
Oil Shows

Geological Descriptions

30: LS, BRN, FN GRAN - FXLN, SLI. FOSS, PR-FR POROSITY; NS

40: LS, BRN, VFXLN, SLI. FOSS, PR POR; NS

50: SM. AMT. LS, BRN FN GRAN, FOSS. TO CSELY FOSS, PR-FR INTERGRAN. POR; NS

60: SHALE, GRY & LS, TAN-BRN, FN GRAN W/ FR. GRAN. POR TO LS, FXLN, FOSS W/ PR. VIS. POR; NS

7O: POOR SMP, MUD VIS DROPPED; FN GRAN - FXLN LS; NS

80: TR LS BRN FN GRAN, FOSS W/ PR-FR INTERGRAN POR; NS

90: SHALE, GRY & LS, GRY-BRN, VFXLN, DSE;

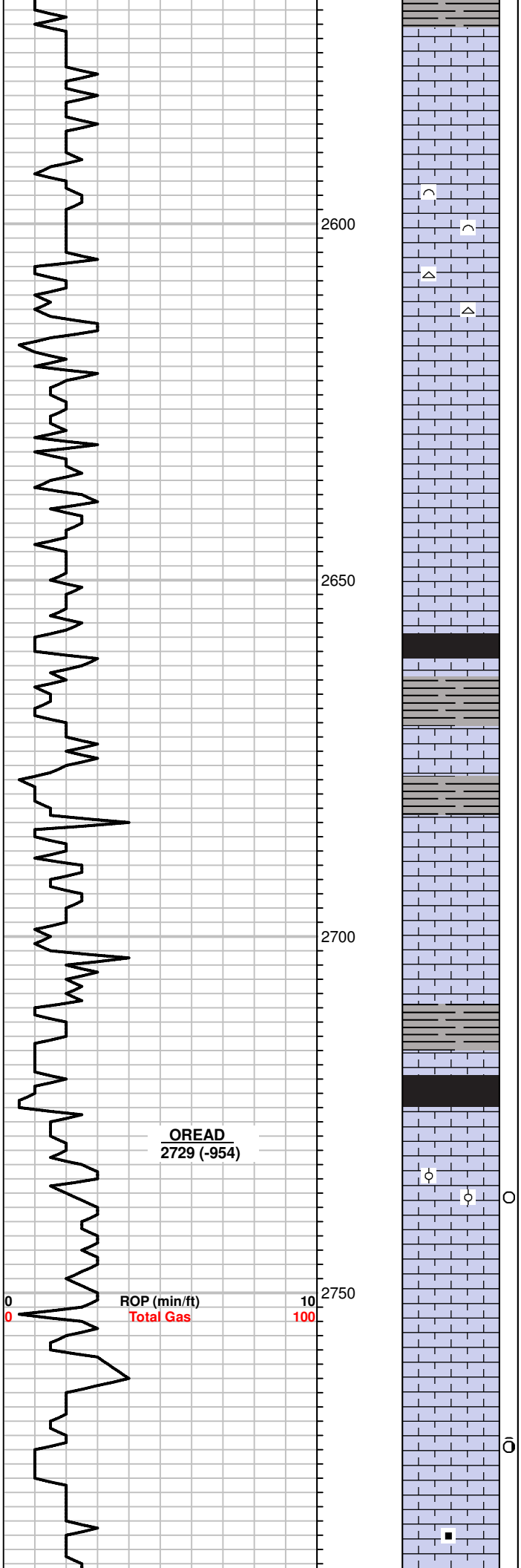
Comment

7:00 AM DEPTHS:
6/13/22: MIRT
6/14/22: SPUD @ 9:45AM
6/15/22: 775', SET SURF CSG @ 11:30AM, DO @ 9:30PM.
6/16/22: 1240'
6/17/22: 2325', SHORT TRIP @ 2889'
6/18/22: 2921'
6/19/22: 3250 RTD @ 3:15AM.

DEVIATION SURVEYS:
0.75 DEGREES @ 775'
1.0 DEGREES @ 3250'

MUD-UP COMPLETE AT 2400'

NO DRILL STEM TESTS




NS

100: LS, TAN-BRN, VFXLN TO FN GRAN. TR V. FOSS, PR POR, NS

10: LS, TAN, FN GRAN, MOSTLY PR. POR, NS

20: TR. LS, FXLN - FN GRAN, CSELY FOSS/ FRAGMENTAL, PR. VIS. POR; NS

30: LS, TAN, FN GRAN, FOSS W/ PR. POR; TR. GRY SHP CHERT; NS

40: AS ABOVE; NS

50: LS, TAN, FN GRAN TO FXLN, FOSS, PR - FR. INTERGRAN. POR; NS

60: LS, AS ABV WITH SOME FR. INTERGRANULAR POR; NS

70: LS, TAN-BRN, FN GRAN, SLI. FOSS W/ PR-FR INTERGRAN. POR; NS

80: LS, CRM-TAN, FN GRAN, SOME FOSS, SOFT, FR. POR; TR. BLACK SHALE; NS

90: LS, CRM -TAN, FXLN, PR. POR & LS, AS ABV; NS

100: AS ABV; NS

10: MOSTLY LS, TAN, FN GRAN, SLI. FOSS, PR - FR INTERGRAN. POR; SHALE, GRY; NS

20: LS AS ABV; NS

30: LS, BRN, VFXLN, PR. VIS. POR; LS AS ABV; SH. GRY; TR. GRY SILTSTN; NS

40: SHALE, BLK; LS CRM, FN GRAN, SOFT TO LS, BRN, XLN WITH PR. VIS. POR; NS

50: LS, BRN, FXLN, SLI. FOSS, PR. POR; NS

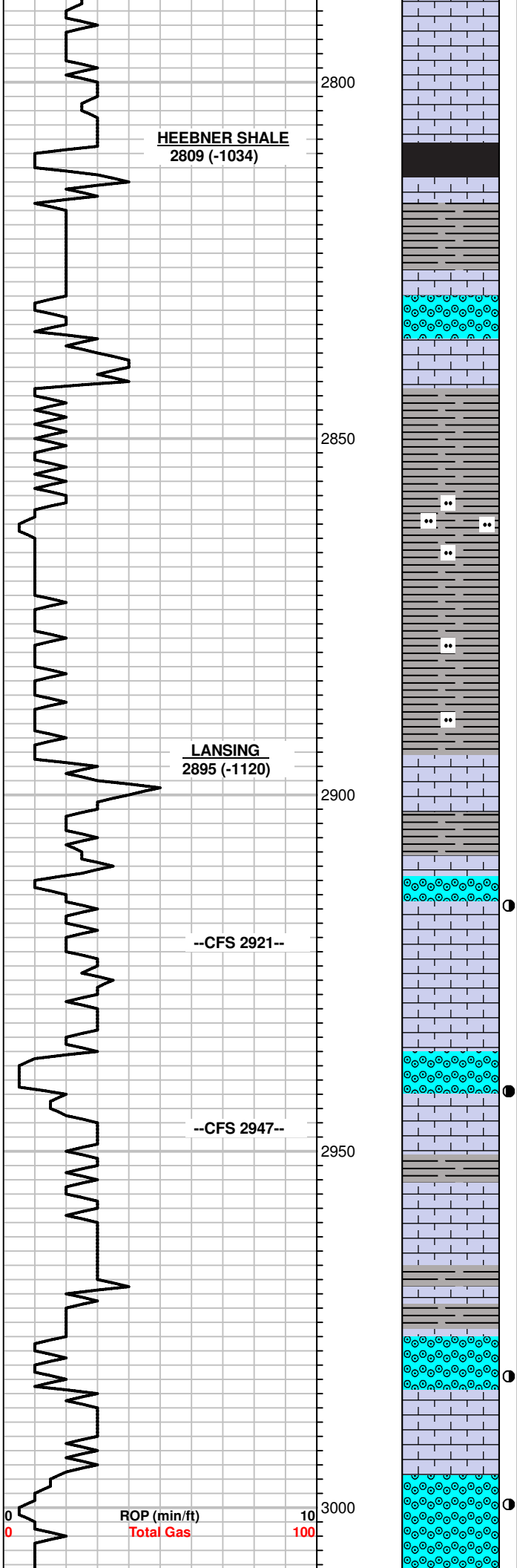
60: TR. LS, BRN, FXLN, OOLITIC/FOSS, W/ TR. FR. XLN POR; TR. DULL FLUOR, SLI. ODOR, NO CUT.

70: SM. AMT. LS, BRN, FN. GRAN, V. FOSS W/ PR. VIS. POR; NS

80: TR. LS, AS ABV; NS

90: TR. LS, FN. GRAN, SOFT, FR-GD INTERGRAN. POR, ?ABLE PERM, TR. FO, TR SPTY BRN SAT. STN, NO FLUOR, V. SLI. ODOR

100 & 10: MOSTLY LS, BRN, FN- VFXLN, PR. POR, TR. BLK CARB. MAT. ON FEW FRACS, NO FLUOR.




20: LS, AS ABV TO LS, CRM, SOFT W/ FR. INTERGRAN. POR; TR. CHERT; NS

30: SHALE, BLK, CARB.

40: SOFT, LT. GRN, LMY SHALE.

50: TR. LS, BRN, FXLN, W/ CALCITE FILLED OOMOLDS, FR. XLN. POR; NS

60: LS, TAN-BRN, W/ PR. XLN POR TO LS, CRM, GRANULAR, SOFT; NS

70 & 80: SHALE, GRY & TR. GRY SHALEY SILTSTN.

90: LT. GRY, SLI. MICA. SILTSTN, FRIABLE TO TITE.

100: LT. GRY SHALE, SLI. SILTY.

10: SHALE, GRY, SLI. SILTY.

20: TR. LS, BRN, VFXLN, DSE.

30: TR. LS, BRN, OOLITIC W/ FR-GD. OOMOLDIC POR, RARE TR. FO&G, TR. PR SPTY LIVE STN, WK. STRMING CUT, FR. ODOR

40: LS, BRN, VFXLN, SLI. FOSS, DSE & GRY LMY SHALE; NS

47: 30": SEV. PCS LS, W/ FR=GD. OOMOLDIC POR, VSSFO&G, SPTY. LT. BRN. LIVE STN & SAT. STN, MOD. FLUSH CUT, SLI. ODOR, SOME W/ NS

70: LS, FN. GRAN, V. OOLITIC/ FOSS. PR. INTERGRAN. POR; NS

80: LS, BRN, FXLN, FOSS, PR. XLN POR; NS

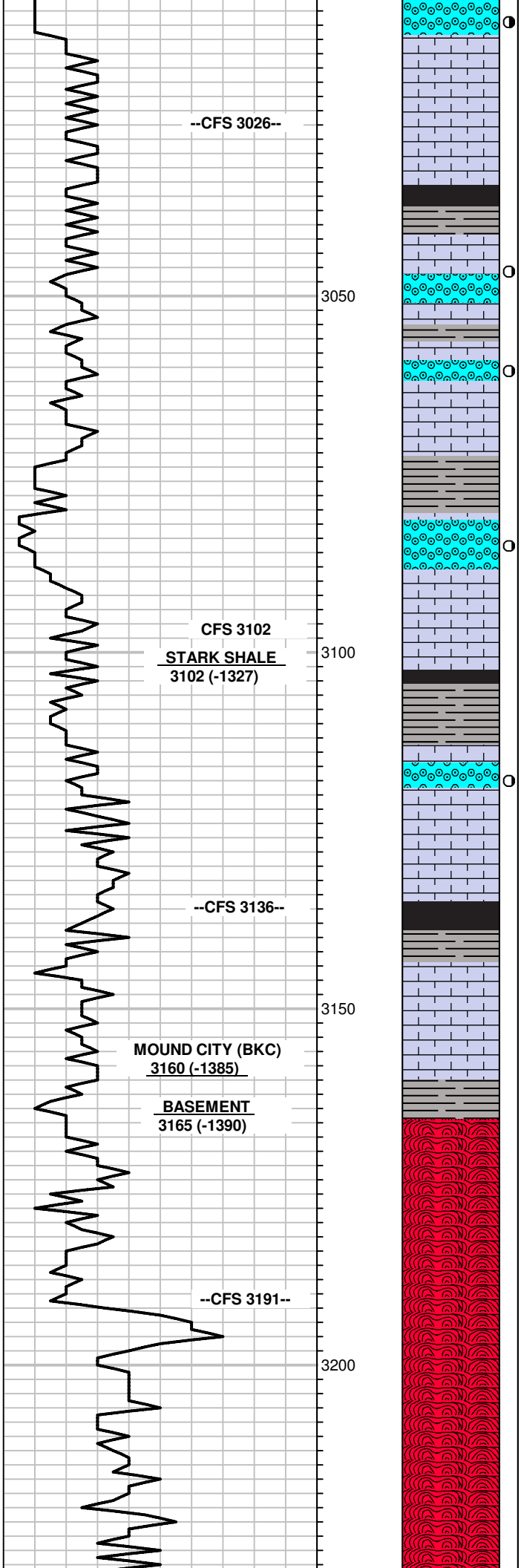
90 : LS, DK BRN, VFXLN, DSE; SHALE, GRY; NS

100: TR. LS, CRM, V. OOLITIC, W/ PR. INTEROOL. PPT POR & FR. XLN POR, ?ABLE PERM, TR. FO&G, SPTY BRN. LIVE & SAT. STN, NO FLUOR OR CUT, FR. ODOR

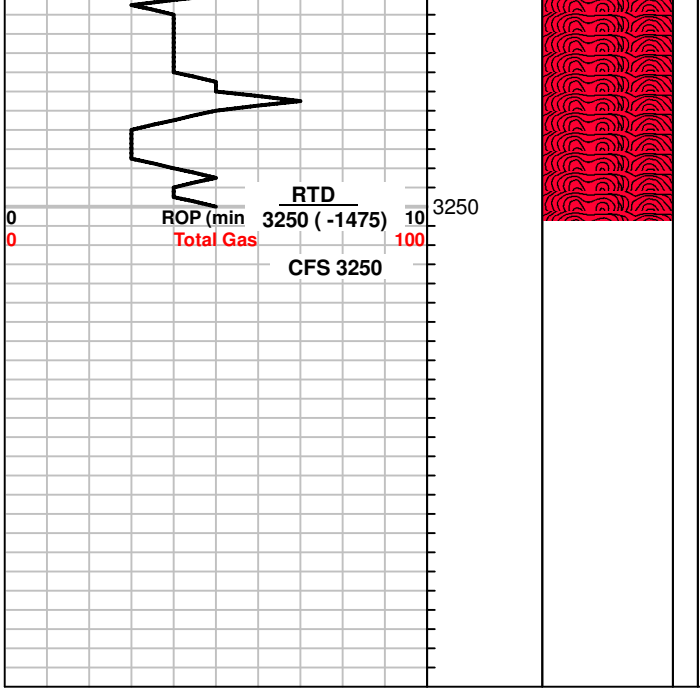
10: LS, GRY-BRN, VFXLN, DSE & CHERT, CRM, GRY, SHP; NS

20: LS, BRN, XLN, V. OOLITIC, W/ FR-GD OOMOLDIC POR; SSFO&G IN MOST PCS, PR. SPTY LT. BRN SAT. STN, NO FLUOR, WK. CRUSH CUT, FR. ODOR.

DRILLING MUD @ 2794:
WT: 8.9
VIS: 50
LCM: 3#




| | | |
|---|---|---|
| | 26: OOMOLDIC LS, AS ABV, SSFO&G, PR. SPTY STN, 50% W/ NS, FR. ODOR | |
| | 26: 30": LS, BRN, VFXLN, DSE; NS | |
| | 50: LS, DK BRN, VFXLN, SLI. FOSS, DSE AND SHALE, BLK. | |
| | 60: TR. LS, BRN, XLN, W/ PR-FR OOMOLDIC POR, TR. FO&G, V. PR. SPTY. SAT. STN, NO FLUOR. | |
| | 70: TR. LS, OOLITIC W/ PR. TR. OOMOLDIC POR, 1 PC W/ PR. TR. FO & PR. SPTY. STN' NO FLUOR, SLI. ODOR. | |
| | 80 & 90: INC. LS, TAN V. OOLITIC W/ PR. TR. OOMOLDIC POR, TR. FR. XLN POR, TR. FO&G, V. PR. TR. SPTY. SAT STN, SLI. ODOR | |
| | 100: FEW PCS LS, PR. SCAT. OOMOLDIC POR & FR. XLN POR, RARE TR. FO&G, TR. V. PR. SPTY. SAT. STN, SLI. ODOR | |
| | 3102: 30": TR. LS, V. OOLITIC, W/ PR. TR. OOMOLD. POR, SOME FR. XLN POR, PR. SPTY. BRN SAT. STN, TR. LT. SPTY FLUOR. & WK. FLUSH CUT, SLI ODOR. | |
| | 20: LS TAN, FN. GRAN, PR. POR & BLK SHALE. | |
| | 30: FEW PCS LS CRM, V. OOL, W/ RARE TR. PR, INTEROOL. PPT. POR, RARE TR. FO&G, PR. TR. SPTY. SAT. STN, NO FLUOR, FR. FLUSH CUT | |
| | 36 & 30": LS, BRN, VFXLN, DSE; NS | |
| | 60: SHALE, BLK; LS, BRN, VFXLN, DSE. | |
| | 70: LS, BRN, VFXLN, DSE, NS | |
| | 80: QTZITE, GRY, YELL, PINK, SUB-TRANSLUCENT W/ DK. SPKS (IMPURITIES); NS | |
| | 90: QTZITE AS ABOVE; NS | |
| | 91: 30": QTZITE, AS ABV, TR. BLK. TARRY SPKS, NO FLUOR, NO CUT. | |
| | 10: QTZITE AS ABV, TR. BLK TARRY LOOKING SPKS, CP PCS W/ WK. FLUSH CUT & RING ON DIMPLE DISH. | DIFFERENT DRILLER TOOK WEIGHT OFF BIT & SLOWED DOWN |
| | 20 & 30: QTZITE AS ABV, TR, BLK TARRY SPKS, NO FLUOR, NO CUT; TR. QTZ SST, VF-MED, ANG- SUBRD | |
| | 40 & 50: QTZITE AS ABV, STILL TR. BLK TARRY LOOKING SPKS, NO FLUOR, NO CUT | |




& SOME QTZ SST, VF - MED GRNS, ANG - SBRD

50: 30": QTZITE AS ABV; SM AMT QTZ SST, VF - FN, ANG GRNS; NS NO FLUOR.

DRILLING MUD @ 3250:
WT: 9.2
VIS: 56
FILTRATE: 6.0
CHLOR: 3800
LCM: 4#

RAN 86 JTS OF 5.5", 15.5# PROD CSG, SET @ 3243'
300SX H-CON, 150SX HLD
30SX IN RH, 20SX IN MH
PD @ 5:30AM 6/20/22