Date of 1st production - 4/26/80

FILE NOTATIONS

Entered in N I D File _____ Checked by Chief _____

Entered On S R Sheet _____ Copy N I D to Field Office _____

Location Map Pinned _____ Approval Letter _____

Card Indexed _____ Disapproval Letter _____

I W R for State or Fee Land _____

COMPLETION DATA:

Date Well Completed 4-27-80 Location Inspected _____

OW ✓ WW _____ TA _____ Bond released _____

GW _____ OS _____ PA _____ State of Fee Land _____

LOGS FILED

Driller's Log ✓

Electric Logs (No. ) ✓

E _____ I _____ E-I _____ GR _____ GR-N _____ Micro _____

Lat _____ MI-L _____ Sonic _____ Others _____

FORM OGC-1a

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

THE STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

# APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL
OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
Bow Valley Petroleum Inc.

3. ADDRESS OF OPERATOR
1700 Broadway, Suite 900, Denver, CO 80290

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
(SE NW) 2,142' FNL, 1,478' FWL
At proposed prod. zone

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Nelson

9. WELL NO.
1-31A1E

10. FIELD AND POOL, OR WILDCAT
~~East~~ Bluebell, ~~Wasatch~~

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 31, T1S, R1E, USM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
4 mi NE of Roosevelt, Utah

12. COUNTY OR PARISH: Uintah
13. STATE: Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. line, if any) 1,478'

16. NO. OF ACRES IN LEASE: 640

17. NO. OF ACRES ASSIGNED TO THIS WELL: 640

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. NA

19. PROPOSED DEPTH: 12,700 Wasatch

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
5330 GL

22. APPROX. DATE WORK WILL START*
January 20, 1980

23. PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| 12¼ | 9 5/8 " | 40 | 3000 | 860 sx |
| 8 3/4 | 7" | 26, 29, 32 | 10,400 | 600 sx |
| 6 | 5" | 18 | 10,200-12,700 | 800 sx |

This application is to drill and complete a well in the Wasatch Formation. The well is to be drilled vertically with a hole deviation of not more than 1 degree/100'.

Blowout prevention equipment will include recording mud pit level indicator, flow meter, and other warning devices on the derrick floor.

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DIVISION OF OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
SIGNED E. B. Whicker TITLE Division Engineer DATE 1-11-80
E.B. Whicker

(This space for Federal or State office use)
PERMIT NO. 43-047-30671 APPROVAL DATE 1/14/80

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

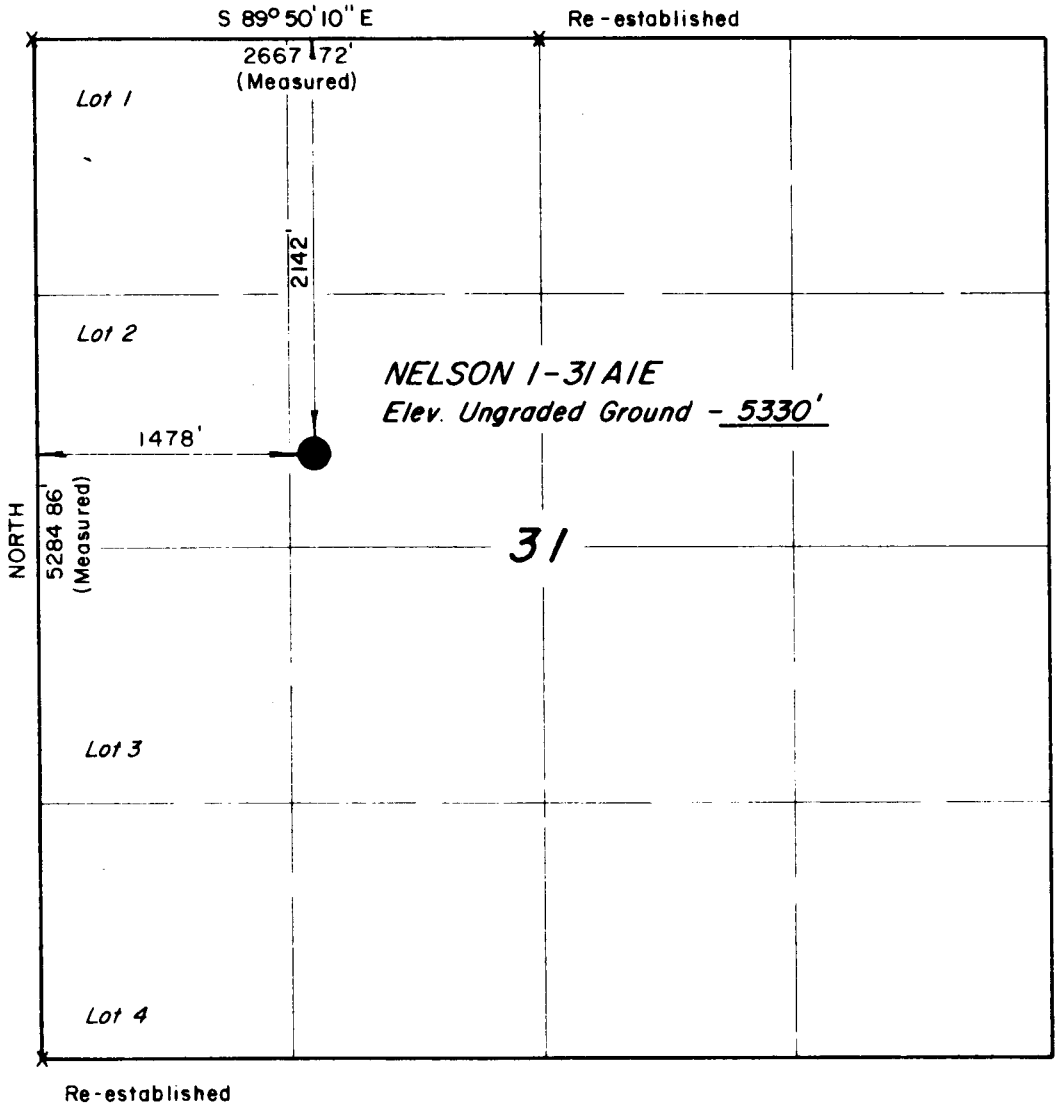
*See Instructions On Reverse Side

# T1S, R1E, U.S.B.&M.

PROJECT

**BOW VALLEY PETROLEUM INC.**

Well location, *NELSON 1-31 A1E*, located as shown in the SE 1/4 NW 1/4 Section 31, T1S, R1E, U.S.B.&M. Uintah County, Utah.




X = Section Corners Located

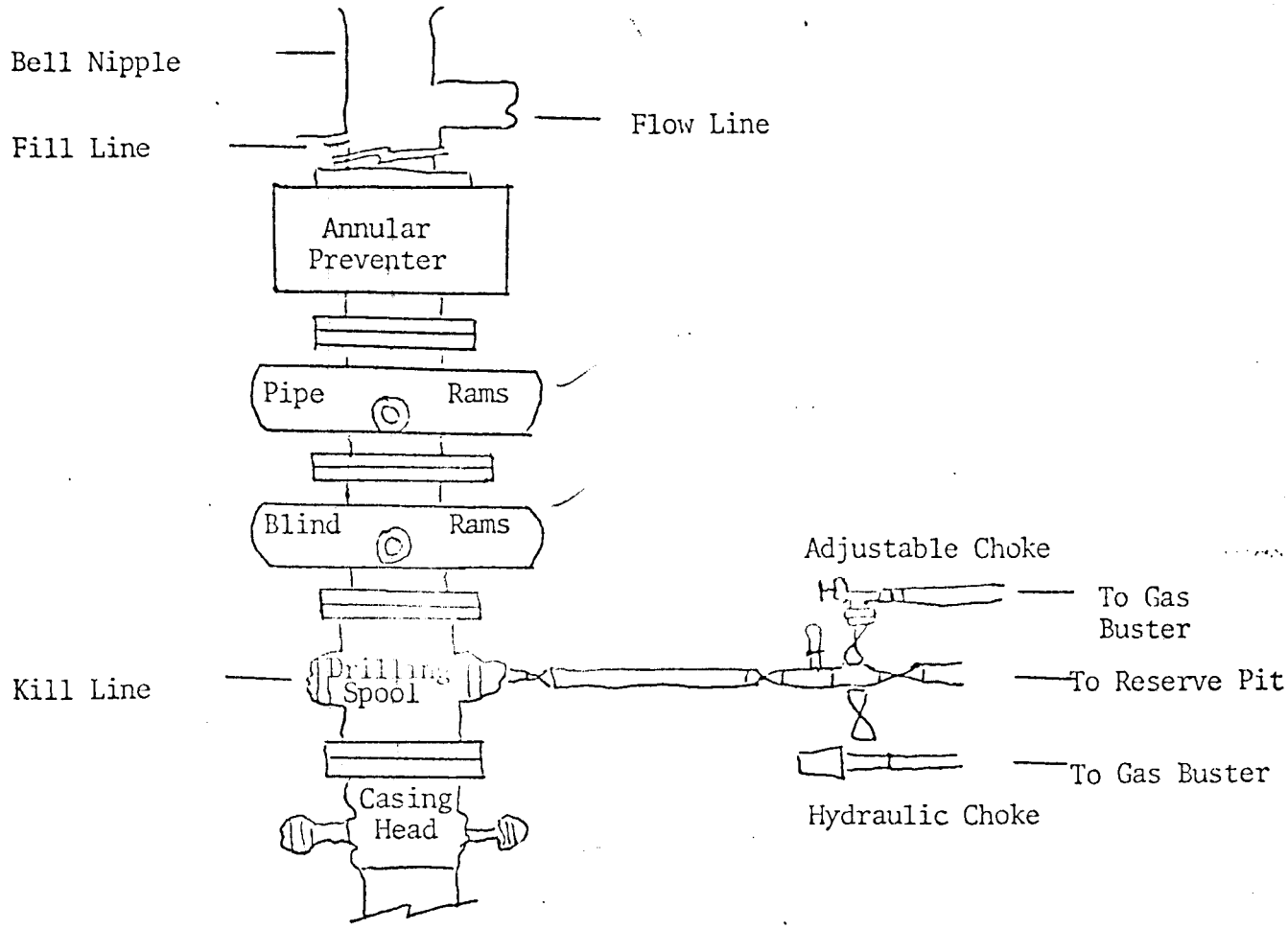
CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION № 2454
STATE OF UTAH

UINTAH ENGINEERING & LAND SURVEYING
P O BOX Q — 110 EAST - FIRST SOUTH
VERNAL, UTAH - 84078

| | |
|---|---|
| SCALE 1" = 1000' | DATE 1 / 11 / 80 |
| PARTY D.A., M.H., D.F., BFW | REFERENCES GLO Plat |
| WEATHER Cold | FILE BOW VALLEY |



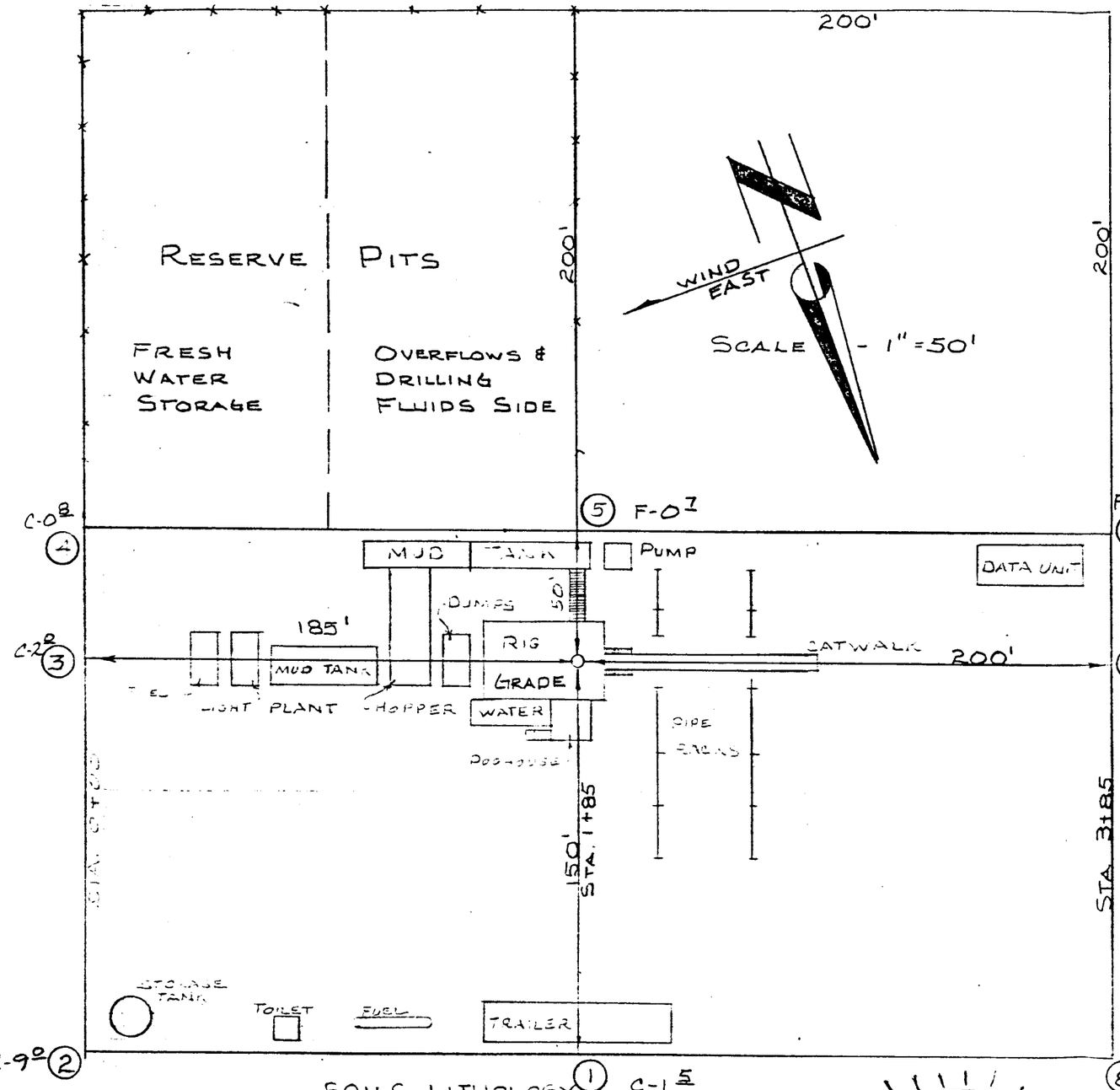

Above the top of the Wasatch, all BOP equipment shall be 3,000 psi working pressure. Below the top of the Wasatch, 5,000 psi equipment shall be utilized. All equipment will be pressure tested to the manufacturer's recommendations upon installation and, thereafter, at two week intervals.

Auxiliary equipment shall consist of upper and lower kelly cocks, full opening valves and inside BOP. Monitoring equipment shall be installed on the mud system.

# BOW VALLEY PETROLEUM INC.

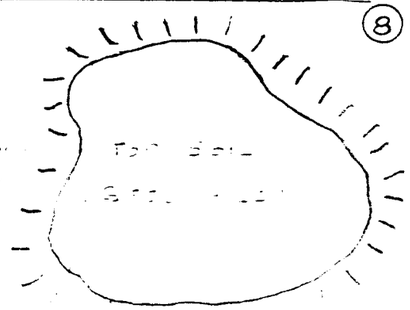
## NELSON 1-31 A1E

LOCATION LAYOUT & CUT SHEET

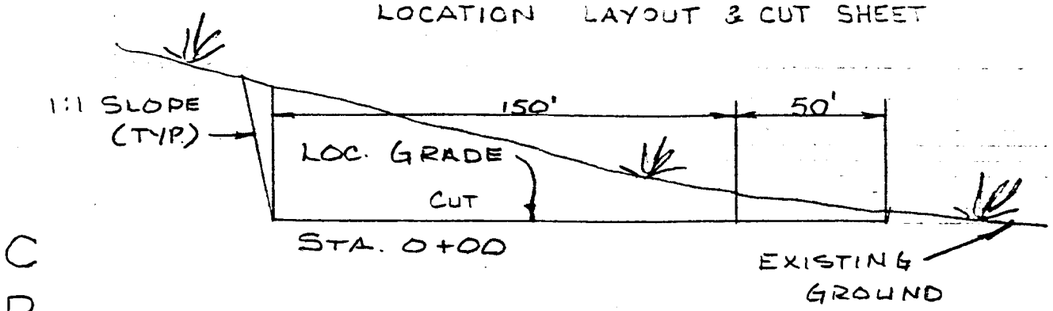


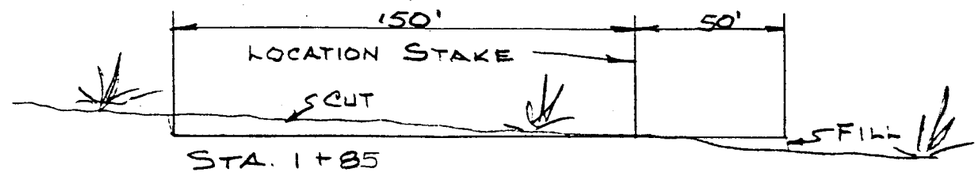

SOILS LITHOLOGY

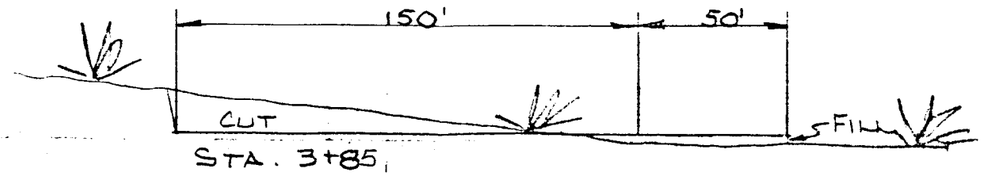
NO - SCALE




## CROSS SECTIONS




1" = 10'

SCALES

1" = 50'

APPROX. VARIANCES

CUT - 4,624 CU YDS.

FILL - 69 CU YDS

** FILE NOTATIONS **

DATE: January 15, 1980

Operator: Bow Valley Petroleum

Well No: Nelson #1-31A1E

Location: Sec. 31 T. 15 R. 1E County: Uintah

File Prepared: ✓ Entered on N.I.D.: ✓

Card Indexed: ✓ Completion Sheet: ✓

✓ API Number 43-047-30671

CHECKED BY:

Geological Engineer: M.J. Minder 1-15-80

Survey plate in mail - per phone conversation E. Whicker 1/15/80

Verbal given to commence -

Petroleum Engineer:

Director:

APPROVAL LETTER:

Bond Required: OK Survey Plat Required: OK

Order No. 131-24 1-16-74 O.K. Rule C-3

#3 Rule C-3(c), Topographic Exception/company owns or controls acreage within a 660' radius of proposed site

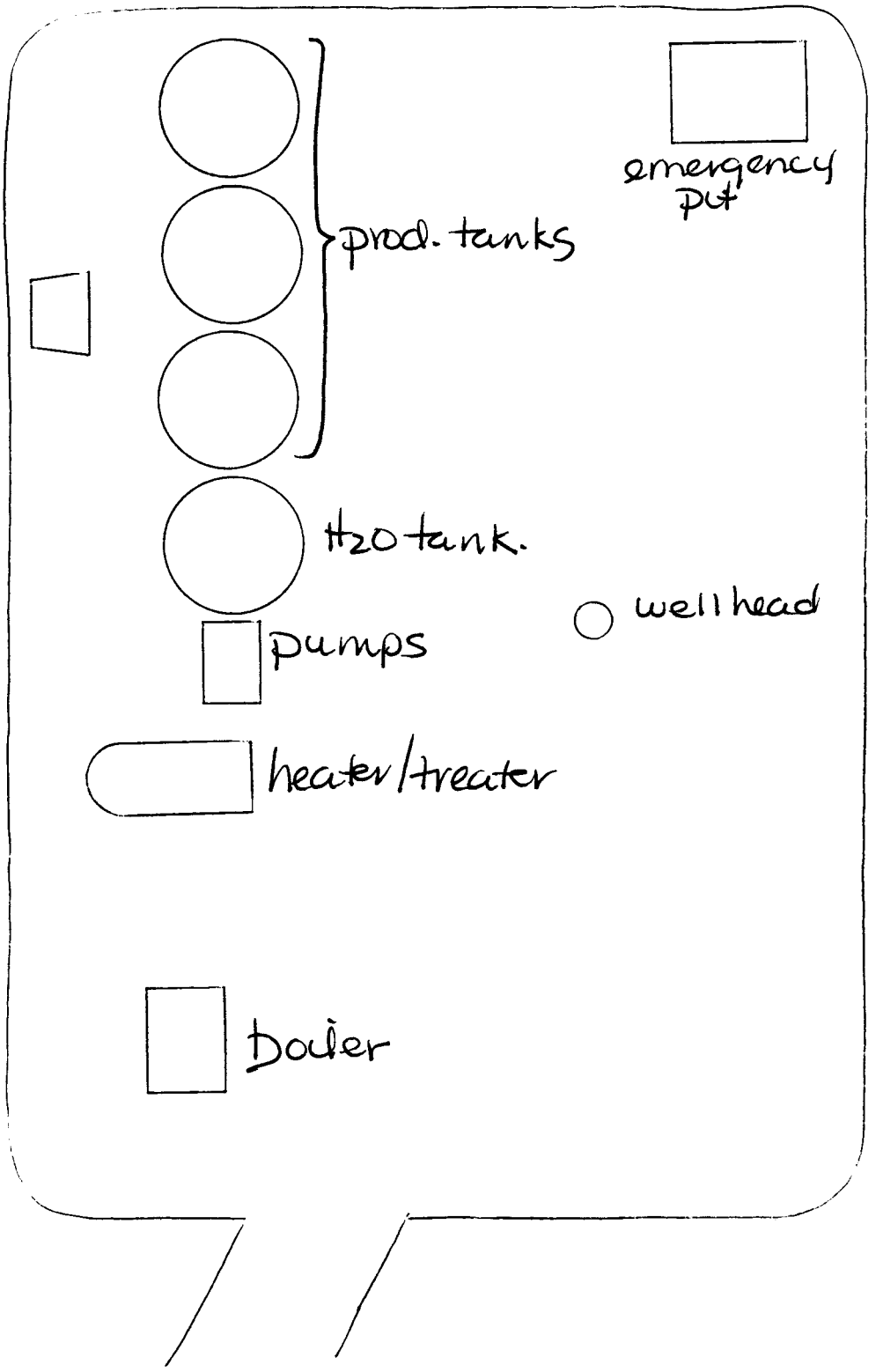
Lease Designation Fee Plotted on Map ✓

Approval Letter Written ✓

ktw

hl PI

Nelson 1-31 A1E Sec 31, T1S, R1E Kubly 12/1/88




NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE Made in U.S.A.

January 18, 1980

Bow Valley Petroleum
1700 Broadway, Suite 900
Denver, Colorado 80290

Re: Well No. Nelson #1-31A1E
Sec. 31, T. 1S, R. 1E.,
Uintah County, Utah

Insofar as this office is concerned, approval to drill the above referred to oil well is hereby granted in accordance with the Order issued in Cause No. 131-24 dated January 16, 1974.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

MICHAEL T. MINDER
Geological Engineer
Office: 533-5771
Home: 876-3001

Enclosed please find From OGC-8-X, which is to be completed whether or not water sands (acquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-047-30671.

Sincerely,

DIVISION OF OIL, GAS AND MINING

Michael T. Minder
Geological Engineer

/btm

cc

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR: Bow Valley Petroleum Inc.

8. FARM OR LEASE NAME: Nelson

3. ADDRESS OF OPERATOR: 1700 Broadway, Suite 900, Denver, CO 80290

9. WELL NO.: 1-31A1E

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: (SE, NW) 2,142' FNL, 1,478' FWL

10. FIELD AND POOL, OR WILDCAT: East Bluebell, Wasatch

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 31, T1S, R1E, USM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5330 GL

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:

| | | | |
|---|---|---|---|
| TEST WATER SHUT-OFF | [ ] | PULL OR ALTER CASING | [ ] |
| FRACTURE TREAT | [ ] | MULTIPLE COMPLETE | [ ] |
| SHOOT OR ACIDIZE | [ ] | ABANDON* | [ ] |
| REPAIR WELL | [ ] | CHANGE PLANS | [ ] |
| (Other) | | | [ ] |

SUBSEQUENT REPORT OF:

| | | | |
|---|---|---|---|
| WATER SHUT-OFF | [ ] | REPAIRING WELL | [ ] |
| FRACTURE TREATMENT | [ ] | ALTERING CASING | [ ] |
| SHOOTING OR ACIDIZING | [ ] | ABANDONMENT* | [ ] |
| (Other) Monthly Report | | | [X] |

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

January Operating Report

| DATE | DAY | OPERATION | DEPTH | MUD WT | DEVIATION |
|---|---|---|---|---|---|
| 1-30-80 | 1 | Drilling | 637' | 8.4 | 3/4 |
| 1-31-80 | 2 | Drilling | 1292' | 8.5 | 3/4 |

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APR 28 1980
DIVISION OF
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED E. B. Whicker
E.B. Whicker
TITLE Division Engineer
DATE 4-16-80

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

TABULAR LISTING

OF

S A R A B A N D

A SANDSTONE ANALYSIS

| | |
|---|---|
| COMPANY | BOW VALLEY EXPLORATION INC. |
| WELL | BOW VALLEY NELSON #1-31 A1E |
| FIELD | EAST BLUEBUE |
| COUNTY | DUCHESNE |
| STATE | UTAH JOB #[10066,76104] |

DATE 4-MR-80

TAPE IDENT. RM-76104 BOW VALLEY NELSON #1-31 A1E E.BLUEBEU DUCHESNE UTAH

Schlumberger

# TABULAR LISTING

OF

S A R A B A N D

A SANDSTONE ANALYSIS

COMPANY BOW VALLEY EXPLORATION INC.

WELL BOW VALLEY NELSON #1-31 A1E

FIELD EAST BLUEBUE

COUNTY DUCHESNE

STATE UTAH JOB #[10066,76104]

DATE 4-MR-80

TAPE IDENT. RM-76104 BOW VALLEY NELSON #1-31 A1E E.BLUEBEU DUCHESNE UTAH

| LS | LD | LN | LXO | LSN | LILM | LILD | LSP | LGR | LCAL |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 14 | 11 | 0 | 70 | 71 | 66 | 0 | 19 | 18 |

SP BASE LINE SHIFT

NONE

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CWSP ARRAY | 999. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| RW ARRAY | 0.060 | 0.200 | 0.400 | 0.200 | 0.000 | 0.000 | 0.000 | 0.000 |
| AT DEPTH | 10150. | 9672. | 6505. | 5429. | 0. | 0. | 0. | 0. |
| AT TEMP | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| TOP DEPTH | 9672. | 8970. | 5429. | 0. | 0. | 0. | 0. | 0. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ROG ARRAY | 2.71 | 2.71 | 2.71 | 2.68 | 2.68 | 0.00 | 0.00 | 0.00 |
| DTMA ARRAY | 55.5 | 55.5 | 55.5 | 55.5 | 55.5 | 0.0 | 0.0 | 0.0 |
| ZSNMA ARRAY | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOP DEPTH | 9320. | 8970. | 6006. | 5429. | 0. | 0. | 0. | 0. |

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| ISS - | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

INPUT PARAMETERS FROM 5429. TO 4500.

| WMUD | XLIT | BITSZ | BHT | BHTDEP | SUFT | RMF | RMFT | ROMFS | PHIMFS | DASIL |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.4 | 0.50 | 8.75 | 174. | 10150. | 75. | 4.78 | 62. | 0.997 | 0.997 | 0.600 |

| SPCK | DSPCK | RODC | DELRGM | START | STOPLG | ZSPNL | BGN | ZSPDL | REC | RESH | CSS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | 0. | 2.98 | 0.20 | 10150. | 4500. | 0.000 | 1.00 | 0.000 | 7.90 | 15.80 | 0.2 |

| WHY | PHILEV | BR | SLIM | AK | PK | SK | STOPIN | PHIMAX | PHINCL | PHIDCL |
|---|---|---|---|---|---|---|---|---|---|---|
| .200 | 0.000 | .10 | 0.30 | 0.8 | 2.0 | 2.0 | 0. | 0.160 | 0.450 | 0.130 |

| PHINSO | AR | PUN | DAX | DALIM | DAGA | DASH | DTSD | DTSH | CP | PSSH | PORPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.130 | .04 | .015 | 80. | 55. | 25. | 110. | 150. | 150. | 1.00 | .300 | .000 |

| EDIAM | PNLIM | PDLIM | RLIM | GRLIM | VARMC | CONST | ROP | VARLIM | CSF | TPCL | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | 1000.0 | 1000.0 | 0.07 | 0.333 | 0.70 | 0.20 | 0.50 | 21.00 | 5. |

RESISTIVITY STATISTICS OVER ENTIRE INTERVAL

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
GR COEFF. FROM STATISTICS
WASAMP ROUTINE USED

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 4500.0 | 0.2 | 7.3 | 100 | | 19 | 98.47 | 10.80 |
| 4501.0 | 0.0 | 5.0 | 100 | | 47 | 98.41 | 10.80 |
| 4502.0 | 0.0 | 6.8 | 100 | | 44 | 98.35 | 10.80 |
| 4503.0 | 0.2 | 8.3 | 86 | | 36 | 98.28 | 10.80 |
| 4504.0 | 0.3 | 8.9 | 78 | | 35 | 98.20 | 10.79 |
| 4505.0 | 0.2 | 7.8 | 84 | | 34 | 98.11 | 10.77 |
| 4506.0 | 0.1 | 7.4 | 74 | | 41 | 98.04 | 10.76 |
| 4507.0 | 0.6 | 9.6 | 65 | | 32 | 97.96 | 10.73 |
| 4508.0 | 20 | 14.4 | 62 | | 7 | 97.85 | 10.69 |
| 4509.0 | 20 | 13.6 | 66 | | 0 | 97.72 | 10.65 |
| 4510.0 | 1 | 9.3 | 75 | | 11 | 97.62 | 10.63 |
| 4511.0 | 2 | 11.5 | 66 | | 24 | 97.51 | 10.59 |
| 4520.0 | 0.1 | 7.0 | 100 | | 26 | 97.30 | 10.56 |
| 4521.0 | 0.0 | 3.7 | 100 | | 37 | 97.23 | 10.56 |
| 4522.0 | 0.0 | 4.0 | 100 | | 48 | 97.19 | 10.56 |
| 4565.0 | 0.0 | 4.3 | 100 | | 45 | 96.12 | 10.56 |
| 4571.0 | 700 | 29.3 | 52 | | 21 | 95.97 | 10.52 |
| 4572.0 | 2000 | 33.7 | 41 | | 16 | 95.64 | 10.35 |
| 4573.0 | 60 | 21.3 | 45 | | 32 | 95.32 | 10.16 |
| 4574.0 | 30 | 16.1 | 68 | | 12 | 95.14 | 10.08 |
| 4575.0 | 2 | 12.1 | 72 | | 28 | 94.98 | 10.03 |
| 4576.0 | 3 | 11.8 | 80 | | 18 | 94.86 | 9.99 |
| 4577.0 | 10 | 13.8 | 78 | | 7 | 94.75 | 9.98 |
| 4578.0 | 5 | 12.9 | 65 | | 21 | 94.64 | 9.96 |
| 4579.0 | 1 | 8.3 | 100 | | 5 | 94.50 | 9.91 |
| 4580.0 | 0.0 | 0.0 | 100 | | 33 | 94.43 | 9.91 |
| 4581.0 | 0.0 | 0.0 | 100 | | 34 | 94.43 | 9.91 |
| 4582.0 | 0.0 | 0.0 | 100 | | 40 | 94.43 | 9.91 |
| 4583.0 | 0.0 | 3.5 | 100 | | 36 | 94.43 | 9.91 |
| 4584.0 | 0.0 | 0.1 | 100 | | 50 | 94.41 | 9.91 |
| 4593.0 | 0.1 | 6.5 | 100 | | 36 | 94.36 | 9.91 |
| 4594.0 | 0.0 | 3.9 | 100 | | 36 | 94.30 | 9.91 |
| 4598.0 | 0.0 | 2.5 | 100 | | 38 | 94.22 | 9.91 |
| 4599.0 | 5 | 11.7 | 75 | | 8 | 94.19 | 9.91 |
| 4600.0 | 4 | 12.0 | 69 | | 13 | 94.08 | 9.88 |
| 4601.0 | 4 | 11.5 | 99 | | 12 | 93.96 | 9.85 |
| 4602.0 | 4 | 13.0 | 100 | | 29 | 93.85 | 9.85 |
| 4618.0 | 4 | 12.2 | 97 | | 14 | 93.58 | 9.85 |
| 4619.0 | 0.0 | 5.2 | 100 | | 35 | 93.48 | 9.85 |
| 4620.0 | 0.1 | 8.0 | 100 | | 48 | 93.42 | 9.84 |
| 4637.0 | 2 | 11.2 | 96 | | 20 | 92.97 | 9.81 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 4638.0 | 0.0 | 2.9 | 100 | | 11 | 92.89 | 9.81 |
| 4639.0 | 1 | 8.7 | 73 | | 2 | 92.85 | 9.81 |
| 4640.0 | 0.4 | 8.7 | 76 | | 24 | 92.73 | 9.77 |
| 4644.0 | 0.0 | 5.9 | 100 | | 41 | 92.50 | 9.75 |
| 4645.0 | 1 | 10.5 | 81 | | 19 | 92.43 | 9.75 |
| 4646.0 | 0.9 | 9.5 | 86 | | 18 | 92.33 | 9.74 |
| 4649.0 | 0.0 | 5.4 | 100 | | 21 | 92.25 | 9.73 |
| 4650.0 | 1 | 8.9 | 84 | | 5 | 92.19 | 9.73 |
| 4651.0 | 2 | 8.7 | 100 | | 0 | 92.10 | 9.72 |
| 4652.0 | 4 | 10.3 | 78 | | 0 | 92.01 | 9.72 |
| 4653.0 | 0.0 | 3.1 | 100 | | 22 | 91.88 | 9.67 |
| 4654.0 | 0.0 | 6.1 | 100 | | 37 | 91.83 | 9.67 |
| 4655.0 | 0.3 | 8.9 | 88 | | 34 | 91.76 | 9.67 |
| 4657.0 | 2 | 13.0 | 63 | | 49 | 91.62 | 9.66 |
| 4658.0 | 3000 | 33.7 | 47 | | 8 | 91.43 | 9.58 |
| 4669.0 | 0.0 | 0.1 | 100 | | 47 | 91.03 | 9.44 |
| 4670.0 | 0.0 | 0.1 | 100 | | 41 | 91.03 | 9.44 |
| 4671.0 | 0.0 | 4.6 | 100 | | 29 | 91.03 | 9.44 |
| 4672.0 | 0.0 | 1.9 | 100 | | 46 | 91.01 | 9.44 |
| 4673.0 | 0.0 | 4.3 | 100 | | 49 | 90.99 | 9.44 |
| 4699.0 | 0.0 | 3.1 | 100 | | 45 | 90.50 | 9.44 |
| 4700.0 | 0.0 | 3.2 | 100 | | 46 | 90.47 | 9.44 |
| 4716.0 | 0.0 | 3.9 | 100 | | 46 | 90.41 | 9.44 |
| 4717.0 | 0.3 | 7.7 | 100 | | 19 | 90.37 | 9.44 |
| 4718.0 | 0.5 | 8.8 | 100 | | 24 | 90.29 | 9.44 |
| 4727.0 | 0.0 | 5.2 | 100 | | 46 | 89.97 | 9.44 |
| 4743.0 | 0.1 | 6.5 | 100 | | 28 | 89.80 | 9.44 |
| 4760.0 | 0.0 | 4.2 | 100 | | 40 | 89.64 | 9.44 |
| 4766.0 | 0.1 | 6.4 | 100 | | 30 | 89.53 | 9.44 |
| 4767.0 | 0.0 | 4.5 | 100 | | 12 | 89.45 | 9.44 |
| 4768.0 | 0.0 | 3.1 | 100 | | 10 | 89.41 | 9.44 |
| 4769.0 | 0.0 | 3.8 | 100 | | 11 | 89.38 | 9.44 |
| 4770.0 | 0.1 | 5.2 | 100 | | 10 | 89.33 | 9.44 |
| 4771.0 | 0.0 | 5.0 | 100 | | 14 | 89.28 | 9.44 |
| 4772.0 | 0.2 | 6.2 | 100 | | 9 | 89.23 | 9.44 |
| 4773.0 | 0.0 | 4.6 | 100 | | 6 | 89.17 | 9.44 |
| 4774.0 | 0.8 | 7.4 | 100 | | 0 | 89.11 | 9.44 |
| 4775.0 | 3 | 9.5 | 82 | | 0 | 89.03 | 9.44 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 4776.0 | 2 | 9.3 | 93 | | 0 | 88.94 | 9.42 |
| 4777.0 | 1 | 8.5 | 100 | | 0 | 88.85 | 9.42 |
| 4778.0 | 2 | 9.3 | 100 | | 0 | 88.77 | 9.42 |
| 4779.0 | 7 | 11.4 | 86 | | 0 | 88.67 | 9.42 |
| 4780.0 | 7 | 11.2 | 91 | | 0 | 88.56 | 9.40 |
| 4781.0 | 7 | 11.4 | 91 | | 0 | 88.45 | 9.39 |
| 4782.0 | 10 | 12.4 | 82 | | 0 | 88.33 | 9.38 |
| 4783.0 | 7 | 11.4 | 88 | | 0 | 88.20 | 9.36 |
| 4784.0 | 3 | 9.9 | 98 | | 2 | 88.09 | 9.35 |
| 4785.0 | 0.4 | 7.7 | 100 | | 14 | 88.01 | 9.35 |
| 4786.0 | 2 | 10.6 | 85 | | 14 | 87.92 | 9.34 |
| 4787.0 | 0.0 | 4.1 | 100 | | 33 | 87.83 | 9.33 |
| 4788.0 | 1 | 9.3 | 85 | | 15 | 87.79 | 9.33 |
| 4789.0 | 0.5 | 7.5 | 100 | | 8 | 87.70 | 9.33 |
| 4790.0 | 10 | 13.7 | 68 | 0.7* | 7 | 87.61 | 9.32 |
| 4791.0 | 0.1 | 6.6 | 90 | | 32 | 87.50 | 9.29 |
| 4792.0 | 0.2 | 7.3 | 97 | | 23 | 87.44 | 9.29 |
| 4793.0 | 0.0 | 5.3 | 100 | | 15 | 87.37 | 9.29 |
| 4794.0 | 0.0 | 3.7 | 100 | | 17 | 87.33 | 9.29 |
| 4795.0 | 0.1 | 5.6 | 100 | | 18 | 87.25 | 9.29 |
| 4796.0 | 0.6 | 9.1 | 100 | | 22 | 87.18 | 9.29 |
| 4797.0 | 0.3 | 8.2 | 100 | | 26 | 87.11 | 9.29 |
| 4798.0 | 30 | 15.6 | 82 | | 6 | 87.02 | 9.29 |
| 4799.0 | 2 | 10.6 | 100 | | 11 | 86.89 | 9.27 |
| 4800.0 | 0.1 | 7.5 | 74 | | 46 | 86.80 | 9.27 |
| 4802.0 | 30 | 15.7 | 64 | | 5 | 86.54 | 9.14 |
| 4803.0 | 4 | 10.4 | 88 | | 0 | 86.40 | 9.11 |
| 4804.0 | 3 | 11.3 | 84 | | 12 | 86.27 | 9.07 |
| 4805.0 | 2 | 11.7 | 81 | | 36 | 86.14 | 9.05 |
| 4835.0 | 3000 | 32.8 | 56 | | 10 | 85.72 | 9.02 |
| 4836.0 | 10 | 17.3 | 72 | | 43 | 85.40 | 8.87 |
| 4863.0 | 0.0 | 3.3 | 100 | | 46 | 85.03 | 8.85 |
| 4864.0 | 0.4 | 6.6 | 100 | | 0 | 84.94 | 8.81 |
| 4865.0 | 0.0 | 3.7 | 100 | | 0 | 84.89 | 8.81 |
| 4866.0 | 0.5 | 6.8 | 100 | | 0 | 84.85 | 8.81 |
| 4871.0 | 0.6 | 8.9 | 100 | | 20 | 84.66 | 8.79 |
| 4872.0 | 0.0 | 5.1 | 100 | | 24 | 84.59 | 8.79 |
| 4874.0 | 20 | 18.8 | 32 | | 44 | 84.48 | 8.78 |
| 4875.0 | 4 | 11.3 | 79 | | 8 | 84.28 | 8.65 |
| 4876.0 | 0.4 | 6.6 | 100 | | 0 | 84.20 | 8.64 |
| 4877.0 | 0.2 | 7.3 | 72 | | 22 | 84.09 | 8.61 |
| 4878.0 | 0.0 | 5.7 | 100 | | 38 | 84.03 | 8.60 |
| 4879.0 | 0.1 | 6.6 | 100 | | 31 | 83.97 | 8.60 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 4880.0 | 0.0 | 5.1 | 100 | | 47 | 83.91 | 8.60 |
| 4884.0 | 0.0 | 5.6 | 100 | | 44 | 83.82 | 8.60 |
| 4885.0 | 0.0 | 4.3 | 100 | | 35 | 83.76 | 8.60 |
| 4886.0 | 0.0 | 0.8 | 100 | | 49 | 83.73 | 8.60 |
| 4893.0 | 0.0 | 0.8 | 100 | | 46 | 83.68 | 8.60 |
| 4908.0 | 0.0 | 4.8 | 100 | | 41 | 83.62 | 8.60 |
| 4909.0 | 0.0 | 4.3 | 100 | | 37 | 83.57 | 8.60 |
| 4910.0 | 0.0 | 1.7 | 100 | | 46 | 83.53 | 8.60 |
| 4915.0 | 0.0 | 4.5 | 100 | | 13 | 83.44 | 8.60 |
| 4916.0 | 0.0 | 0.7 | 100 | | 18 | 83.42 | 8.60 |
| 4917.0 | 0.1 | 5.0 | 100 | | 3 | 83.40 | 8.60 |
| 4918.0 | 0.4 | 6.6 | 100 | | 2 | 83.34 | 8.60 |
| 4919.0 | 0.1 | 6.0 | 100 | | 14 | 83.28 | 8.60 |
| 4920.0 | 0.0 | 3.8 | 100 | | 26 | 83.22 | 8.60 |
| 4921.0 | 0.5 | 8.2 | 92 | | 14 | 83.18 | 8.60 |
| 4922.0 | 0.7 | 7.9 | 100 | | 7 | 83.10 | 8.59 |
| 4923.0 | 2 | 9.1 | 100 | | 0 | 83.02 | 8.59 |
| 4924.0 | 0.6 | 8.9 | 93 | | 19 | 82.92 | 8.58 |
| 4929.0 | 0.0 | 3.8 | 100 | | 42 | 82.87 | 8.58 |
| 4930.0 | 0.0 | 4.0 | 100 | | 42 | 82.83 | 8.58 |
| 4931.0 | 0.0 | 4.3 | 100 | | 41 | 82.79 | 8.58 |
| 4932.0 | 0.0 | 4.1 | 100 | | 44 | 82.75 | 8.58 |
| 4933.0 | 0.0 | 5.7 | 100 | | 40 | 82.70 | 8.58 |
| 4934.0 | 0.0 | 4.6 | 100 | | 40 | 82.65 | 8.58 |
| 4935.0 | 0.0 | 4.4 | 100 | | 42 | 82.60 | 8.58 |
| 4936.0 | 0.0 | 6.1 | 100 | | 36 | 82.55 | 8.58 |
| 4937.0 | 0.0 | 5.2 | 100 | | 34 | 82.50 | 8.58 |
| 4938.0 | 0.0 | 3.9 | 100 | | 39 | 82.45 | 8.58 |
| 4939.0 | 0.0 | 4.5 | 100 | | 40 | 82.41 | 8.58 |
| 4940.0 | 0.0 | 0.4 | 100 | | 49 | 82.37 | 8.58 |
| 4941.0 | 0.0 | 0.8 | 100 | | 48 | 82.36 | 8.58 |
| 4942.0 | 0.0 | 2.0 | 100 | | 38 | 82.35 | 8.58 |
| 4943.0 | 0.2 | 6.3 | 100 | | 6 | 82.31 | 8.58 |
| 4944.0 | 1 | 8.2 | 100 | | 2 | 82.25 | 8.58 |
| 4945.0 | 0.6 | 8.5 | 88 | | 17 | 82.14 | 8.56 |
| 4946.0 | 0.2 | 7.8 | 88 | | 27 | 82.06 | 8.55 |
| 4947.0 | 0.3 | 7.8 | 100 | | 20 | 81.97 | 8.54 |
| 4958.0 | 0.0 | 5.8 | 100 | | 48 | 81.90 | 8.54 |
| 4959.0 | 1 | 10.9 | 100 | | 36 | 81.83 | 8.54 |
| 4960.0 | 20 | 15.8 | 100 | | 17 | 81.72 | 8.54 |
| 4961.0 | 8 | 13.5 | 100 | | 17 | 81.57 | 8.54 |
| 4962.0 | 70 | 16.6 | 90 | | 0 | 81.42 | 8.54 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 4963.0 | 4 | 11.4 | 100 | | 8 | 81.28 | 8.53 |
| 4964.0 | 4 | 11.8 | 96 | | 12 | 81.18 | 8.53 |
| 4965.0 | 0.9 | 10.6 | 74 | | 33 | 81.07 | 8.52 |
| 4966.0 | 0.3 | 8.9 | 98 | | 34 | 80.96 | 8.50 |
| 4971.0 | 0.0 | 3.7 | 100 | | 42 | 80.82 | 8.50 |
| 4972.0 | 0.0 | 3.3 | 100 | | 42 | 80.78 | 8.50 |
| 4973.0 | 0.0 | 3.3 | 100 | | 43 | 80.75 | 8.50 |
| 4974.0 | 0.0 | 4.4 | 100 | | 41 | 80.71 | 8.50 |
| 4975.0 | 0.0 | 4.1 | 100 | | 40 | 80.67 | 8.50 |
| 4976.0 | 0.0 | 3.2 | 100 | | 43 | 80.63 | 8.50 |
| 4977.0 | 0.0 | 3.8 | 100 | | 42 | 80.60 | 8.50 |
| 4978.0 | 0.0 | 2.9 | 100 | | 47 | 80.57 | 8.50 |
| 4979.0 | 0.0 | 3.1 | 100 | | 44 | 80.54 | 8.50 |
| 4980.0 | 0.0 | 2.2 | 100 | | 44 | 80.51 | 8.50 |
| 4981.0 | 0.0 | 1.0 | 100 | | 47 | 80.49 | 8.50 |
| 4982.0 | 0.0 | 0.1 | 100 | | 48 | 80.48 | 8.50 |
| 4983.0 | 0.0 | 4.2 | 100 | | 35 | 80.46 | 8.50 |
| 4984.0 | 0.0 | 3.2 | 100 | | 38 | 80.42 | 8.50 |
| 4985.0 | 0.0 | 1.7 | 100 | | 45 | 80.39 | 8.50 |
| 4986.0 | 0.0 | 2.9 | 100 | | 45 | 80.37 | 8.50 |
| 4987.0 | 0.0 | 4.6 | 100 | | 39 | 80.34 | 8.50 |
| 4988.0 | 0.0 | 3.6 | 100 | | 36 | 80.29 | 8.50 |
| 4989.0 | 0.0 | 0.1 | 100 | | 48 | 80.26 | 8.50 |
| 5022.0 | 0.0 | 3.4 | 100 | | 30 | 80.16 | 8.50 |
| 5023.0 | 0.0 | 4.5 | 100 | | 28 | 80.12 | 8.50 |
| 5026.0 | 0.0 | 6.1 | 100 | | 48 | 80.07 | 8.50 |
| 5039.0 | 2 | 9.7 | 100 | | 4 | 79.92 | 8.50 |
| 5040.0 | 0.0 | 0.4 | 100 | | 15 | 79.86 | 8.50 |
| 5041.0 | 0.1 | 5.2 | 100 | | 2 | 79.84 | 8.50 |
| 5042.0 | 0.3 | 6.4 | 100 | | 2 | 79.79 | 8.50 |
| 5043.0 | 0.1 | 5.2 | 100 | | 8 | 79.73 | 8.50 |
| 5044.0 | 50 | 15.6 | 71 | | 0 | 79.65 | 8.50 |
| 5045.0 | 0.1 | 7.0 | 100 | | 22 | 79.56 | 8.47 |
| 5046.0 | 0.7 | 8.7 | 93 | | 13 | 79.48 | 8.46 |
| 5047.0 | 0.6 | 7.1 | 100 | | 0 | 79.38 | 8.46 |
| 5048.0 | 3 | 9.5 | 95 | | 0 | 79.31 | 8.46 |
| 5049.0 | 3 | 9.9 | 95 | | 4 | 79.21 | 8.45 |
| 5050.0 | 1 | 8.8 | 100 | | 9 | 79.12 | 8.45 |
| 5051.0 | 0.1 | 6.8 | 100 | | 23 | 79.01 | 8.45 |
| 5053.0 | 0.1 | 6.6 | 100 | | 27 | 78.94 | 8.45 |
| 5054.0 | 0.2 | 6.8 | 100 | | 14 | 78.87 | 8.45 |
| 5055.0 | 0.2 | 6.9 | 100 | | 14 | 78.80 | 8.45 |
| 5056.0 | 1 | 9.8 | 99 | | 13 | 78.73 | 8.45 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5057.0 | 0.0 | 4.7 | 100 | | 47 | 78.65 | 8.45 |
| 5065.0 | 10 | 14.2 | 100 | | 9 | 78.37 | 8.44 |
| 5066.0 | 50 | 15.7 | 100 | | 0 | 78.24 | 8.44 |
| 5067.0 | 0.0 | 6.1 | 100 | | 47 | 78.13 | 8.44 |
| 5071.0 | 0.4 | 9.2 | 100 | | 36 | 78.03 | 8.44 |
| 5072.0 | 0.0 | 4.9 | 100 | | 20 | 77.94 | 8.44 |
| 5073.0 | 0.0 | 5.2 | 100 | | 48 | 77.88 | 8.44 |
| 5080.0 | 0.6 | 8.8 | 100 | | 17 | 77.72 | 8.44 |
| 5081.0 | 0.0 | 5.1 | 100 | | 12 | 77.64 | 8.44 |
| 5082.0 | 0.6 | 7.5 | 100 | | 4 | 77.59 | 8.44 |
| 5083.0 | 0.1 | 7.0 | 91 | | 22 | 77.48 | 8.42 |
| 5086.0 | 0.0 | 4.7 | 100 | | 44 | 77.40 | 8.42 |
| 5087.0 | 10 | 13.5 | 93 | | 7 | 77.35 | 8.42 |
| 5088.0 | 0.1 | 5.2 | 100 | | 7 | 77.24 | 8.41 |
| 5089.0 | 0.0 | 0.4 | 100 | | 21 | 77.20 | 8.41 |
| 5090.0 | 3 | 10.7 | 86 | | 7 | 77.17 | 8.41 |
| 5091.0 | 0.0 | 0.1 | 100 | | 48 | 77.05 | 8.38 |
| 5092.0 | 0.5 | 8.5 | 98 | | 18 | 77.05 | 8.38 |
| 5093.0 | 2 | 10.3 | 99 | | 12 | 76.95 | 8.38 |
| 5125.0 | 0.0 | 5.4 | 100 | | 45 | 76.83 | 8.38 |
| 5126.0 | 6 | 12.0 | 100 | | 7 | 76.77 | 8.38 |
| 5127.0 | 0.0 | 6.0 | 100 | | 35 | 76.68 | 8.38 |
| 5135.0 | 0.0 | 6.3 | 100 | | 39 | 76.60 | 8.38 |
| 5136.0 | 0.0 | 6.0 | 100 | | 32 | 76.53 | 8.38 |
| 5137.0 | 0.0 | 4.1 | 100 | | 38 | 76.47 | 8.38 |
| 5138.0 | 0.0 | 2.8 | 100 | | 43 | 76.43 | 8.38 |
| 5140.0 | 0.0 | 5.3 | 100 | | 45 | 76.38 | 8.38 |
| 5141.0 | 0.0 | 5.8 | 100 | | 33 | 76.32 | 8.38 |
| 5142.0 | 0.0 | 4.2 | 100 | | 32 | 76.26 | 8.38 |
| 5172.0 | 0.4 | 8.3 | 100 | | 23 | 76.07 | 8.38 |
| 5173.0 | 0.0 | 2.9 | 100 | | 29 | 75.97 | 8.38 |
| 5180.0 | 0.0 | 2.1 | 100 | | 46 | 75.91 | 8.38 |
| 5181.0 | 0.0 | 0.3 | 100 | | 41 | 75.88 | 8.38 |
| 5182.0 | 0.0 | 0.0 | 100 | | 37 | 75.88 | 8.38 |
| 5183.0 | 0.0 | 4.9 | 100 | | 25 | 75.87 | 8.38 |
| 5184.0 | 2 | 8.9 | 100 | | 3 | 75.81 | 8.38 |
| 5185.0 | 90 | 17.2 | 70 | | 0 | 75.71 | 8.38 |
| 5187.0 | 0.0 | 3.1 | 100 | | 47 | 75.59 | 8.35 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5189.0 | 0.0 | 4.8 | 100 | | 37 | 75.55 | 8.35 |
| 5190.0 | 0.0 | 3.0 | 100 | | 34 | 75.50 | 8.35 |
| 5193.0 | 0.0 | 3.9 | 100 | | 47 | 75.47 | 8.35 |
| 5194.0 | 0.0 | 5.4 | 100 | | 36 | 75.43 | 8.35 |
| 5195.0 | 1 | 8.9 | 100 | | 7 | 75.37 | 8.35 |
| 5196.0 | 0.2 | 6.7 | 100 | | 9 | 75.30 | 8.35 |
| 5197.0 | 0.0 | 5.0 | 100 | | 24 | 75.21 | 8.35 |
| 5201.0 | 0.2 | 8.4 | 100 | | 33 | 75.13 | 8.35 |
| 5202.0 | 90 | 17.2 | 95 | | 0 | 75.01 | 8.35 |
| 5203.0 | 0.0 | 4.5 | 100 | | 26 | 74.91 | 8.35 |
| 5205.0 | 0.0 | 6.4 | 100 | | 46 | 74.87 | 8.35 |
| 5206.0 | 0.0 | 6.1 | 100 | | 43 | 74.81 | 8.35 |
| 5219.0 | 0.0 | 3.9 | 100 | | 41 | 74.65 | 8.35 |
| 5220.0 | 0.1 | 6.0 | 100 | | 21 | 74.57 | 8.33 |
| 5221.0 | 0.0 | 0.3 | 100 | | 30 | 74.53 | 8.33 |
| 5222.0 | 0.0 | 1.5 | 100 | | 24 | 74.53 | 8.33 |
| 5223.0 | 0.0 | 0.5 | 100 | | 24 | 74.51 | 8.33 |
| 5224.0 | 0.0 | 0.5 | 100 | | 25 | 74.51 | 8.33 |
| 5225.0 | 0.0 | 2.0 | 100 | | 20 | 74.47 | 8.33 |
| 5226.0 | 0.0 | 5.8 | 100 | | 24 | 74.44 | 8.33 |
| 5229.0 | 60 | 16.0 | 70 | | 0 | 74.33 | 8.33 |
| 5230.0 | 0.2 | 6.0 | 100 | | 7 | 74.23 | 8.31 |
| 5231.0 | 0.0 | 3.4 | 100 | | 25 | 74.12 | 8.28 |
| 5234.0 | 20 | 16.5 | 58 | | 18 | 73.96 | 8.26 |
| 5235.0 | 0.6 | 8.2 | 99 | | 13 | 73.82 | 8.21 |
| 5236.0 | 0.5 | 7.5 | 99 | | 9 | 73.75 | 8.21 |
| 5237.0 | 2 | 10.8 | 84 | | 16 | 73.64 | 8.20 |
| 5242.0 | 3 | 11.6 | 89 | | 16 | 73.39 | 8.15 |
| 5243.0 | 20 | 14.9 | 67 | | 6 | 73.27 | 8.14 |
| 5244.0 | 0.0 | 5.6 | 100 | | 37 | 73.17 | 8.12 |
| 5245.0 | 2 | 9.7 | 95 | | 9 | 73.09 | 8.10 |
| 5246.0 | 2 | 10.1 | 81 | | 13 | 72.99 | 8.10 |
| 5247.0 | 2 | 10.2 | 73 | | 15 | 72.89 | 8.08 |
| 5248.0 | 0.1 | 5.9 | 100 | | 13 | 72.79 | 8.06 |
| 5249.0 | 20 | 14.0 | 97 | | 2 | 72.74 | 8.06 |
| 5257.0 | 0.0 | 5.8 | 100 | | 39 | 72.64 | 8.05 |
| 5258.0 | 0.1 | 6.4 | 100 | | 22 | 72.58 | 8.05 |
| 5259.0 | 0.1 | 5.8 | 100 | | 23 | 72.52 | 8.05 |
| 5260.0 | 0.0 | 4.5 | 100 | | 29 | 72.46 | 8.05 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5261.0 | 0.0 | 3.3 | 100 | | 37 | 72.42 | 8.05 |
| 5262.0 | 0.0 | 4.9 | 100 | | 37 | 72.39 | 8.05 |
| 5263.0 | 0.0 | 6.0 | 100 | | 29 | 72.33 | 8.05 |
| 5264.0 | 0.1 | 6.9 | 79 | | 25 | 72.27 | 8.05 |
| 5265.0 | 0.1 | 6.1 | 77 | | 27 | 72.19 | 8.04 |
| 5266.0 | 0.0 | 1.6 | 100 | | 40 | 72.14 | 8.03 |
| 5267.0 | 0.0 | 4.1 | 100 | | 34 | 72.13 | 8.03 |
| 5268.0 | 0.0 | 6.0 | 74 | | 29 | 72.08 | 8.03 |
| 5269.0 | 0.0 | 4.7 | 100 | | 33 | 72.02 | 8.02 |
| 5270.0 | 0.0 | 5.2 | 98 | | 27 | 71.98 | 8.02 |
| 5271.0 | 20 | 13.9 | 67 | | 0 | 71.92 | 8.02 |
| 5276.0 | 0.0 | 3.5 | 100 | | 41 | 71.77 | 7.99 |
| 5287.0 | 0.5 | 9.7 | 70 | | 38 | 71.63 | 7.99 |
| 5288.0 | 0.6 | 8.1 | 99 | | 10 | 71.52 | 7.96 |
| 5289.0 | 0.3 | 6.6 | 99 | | 7 | 71.45 | 7.96 |
| 5290.0 | 0.5 | 6.9 | 100 | | 0 | 71.39 | 7.96 |
| 5291.0 | 2 | 9.3 | 91 | | 0 | 71.32 | 7.96 |
| 5292.0 | 40 | 15.7 | 62 | | 2 | 71.21 | 7.94 |
| 5293.0 | 0.0 | 4.9 | 100 | | 28 | 71.10 | 7.91 |
| 5294.0 | 0.0 | 5.2 | 100 | | 25 | 71.03 | 7.91 |
| 5295.0 | 0.0 | 3.3 | 100 | | 50 | 70.98 | 7.91 |
| 5297.0 | 0.0 | 6.2 | 100 | | 46 | 70.91 | 7.91 |
| 5298.0 | 1 | 10.2 | 78 | | 18 | 70.84 | 7.90 |
| 5299.0 | 0.0 | 1.9 | 100 | | 18 | 70.76 | 7.89 |
| 5300.0 | 2 | 9.4 | 98 | | 3 | 70.73 | 7.89 |
| 5301.0 | 0.0 | 5.8 | 100 | | 25 | 70.68 | 7.89 |
| 5303.0 | 0.0 | 6.0 | 100 | | 50 | 70.59 | 7.89 |
| 5304.0 | 0.0 | 0.0 | 100 | | 47 | 70.54 | 7.89 |
| 5305.0 | 0.0 | 2.3 | 100 | | 39 | 70.54 | 7.89 |
| 5308.0 | 0.0 | 2.9 | 100 | | 42 | 70.48 | 7.89 |
| 5309.0 | 0.0 | 0.0 | 100 | | 38 | 70.47 | 7.89 |
| 5310.0 | 0.0 | 0.1 | 100 | | 37 | 70.47 | 7.89 |
| 5311.0 | 0.0 | 3.9 | 100 | | 23 | 70.47 | 7.89 |
| 5312.0 | 0.9 | 8.0 | 100 | | 3 | 70.41 | 7.89 |
| 5313.0 | 1 | 8.7 | 100 | | 6 | 70.33 | 7.89 |
| 5314.0 | 4 | 11.0 | 85 | | 6 | 70.24 | 7.88 |
| 5315.0 | 5 | 11.3 | 85 | | 6 | 70.12 | 7.87 |
| 5316.0 | 4 | 11.3 | 80 | | 9 | 70.01 | 7.85 |
| 5317.0 | 3 | 10.7 | 82 | | 9 | 69.90 | 7.83 |
| 5318.0 | 2 | 10.2 | 92 | | 8 | 69.80 | 7.81 |
| 5319.0 | 0.1 | 6.5 | 100 | | 24 | 69.67 | 7.78 |
| 5328.0 | 0.1 | 6.2 | 100 | | 27 | 69.51 | 7.78 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5329.0 | 20 | 14.1 | 80 | | 6 | 69.44 | 7.78 |
| 5341.0 | 0.0 | 5.3 | 100 | | 44 | 69.17 | 7.77 |
| 5342.0 | 0.0 | 0.1 | 100 | | 32 | 69.12 | 7.77 |
| 5343.0 | 0.0 | 0.2 | 100 | | 36 | 69.12 | 7.77 |
| 5347.0 | 0.0 | 3.6 | 100 | | 43 | 69.08 | 7.77 |
| 5348.0 | 0.0 | 1.7 | 100 | | 42 | 69.04 | 7.77 |
| 5352.0 | 0.0 | 6.4 | 100 | | 40 | 68.96 | 7.77 |
| 5353.0 | 4 | 11.6 | 83 | | 12 | 68.91 | 7.77 |
| 5354.0 | 0.0 | 0.2 | 100 | | 42 | 68.83 | 7.76 |
| 5355.0 | 0.0 | 4.0 | 100 | | 35 | 68.82 | 7.76 |
| 5356.0 | 0.4 | 7.7 | 100 | | 12 | 68.78 | 7.76 |
| 5357.0 | 0.1 | 6.5 | 100 | | 28 | 68.73 | 7.76 |
| 5359.0 | 0.0 | 2.2 | 100 | | 47 | 68.69 | 7.76 |
| 5360.0 | 0.0 | 0.1 | 100 | | 43 | 68.65 | 7.76 |
| 5361.0 | 0.0 | 3.5 | 100 | | 38 | 68.65 | 7.76 |
| 5362.0 | 0.0 | 3.6 | 100 | | 40 | 68.60 | 7.76 |
| 5367.0 | 0.1 | 6.9 | 75 | | 47 | 68.55 | 7.76 |
| 5368.0 | 0.3 | 8.3 | 77 | | 23 | 68.48 | 7.73 |
| 5369.0 | 0.0 | 0.0 | 100 | | 28 | 68.41 | 7.72 |
| 5370.0 | 0.0 | 2.3 | 100 | | 19 | 68.41 | 7.72 |
| 5371.0 | 0.0 | 0.0 | 100 | | 28 | 68.40 | 7.72 |
| 5372.0 | 0.0 | 0.1 | 100 | | 36 | 68.40 | 7.72 |
| 5373.0 | 0.1 | 6.5 | 98 | | 20 | 68.38 | 7.72 |
| 5374.0 | 4 | 11.5 | 70 | | 11 | 68.31 | 7.72 |
| 5375.0 | 0.0 | 6.0 | 82 | | 31 | 68.21 | 7.69 |
| 5376.0 | 3 | 10.2 | 75 | | 6 | 68.14 | 7.67 |
| 5377.0 | 0.0 | 2.6 | 100 | | 18 | 68.07 | 7.66 |
| 5378.0 | 0.0 | 5.7 | 100 | | 30 | 67.99 | 7.64 |
| 5381.0 | 0.0 | 3.5 | 100 | | 37 | 67.96 | 7.64 |
| 5382.0 | 0.1 | 5.9 | 100 | | 11 | 67.91 | 7.64 |
| 5383.0 | 0.0 | 0.7 | 100 | | 30 | 67.86 | 7.64 |
| 5384.0 | 0.0 | 4.0 | 100 | | 30 | 67.86 | 7.64 |
| 5396.0 | 4 | 11.8 | 100 | | 14 | 67.74 | 7.64 |
| 5397.0 | 0.0 | 3.9 | 100 | | 44 | 67.60 | 7.64 |
| 5399.0 | 0.0 | 3.2 | 100 | | 34 | 67.52 | 7.64 |
| 5400.0 | 0.0 | 3.6 | 100 | | 10 | 67.51 | 7.64 |
| 5401.0 | 0.2 | 5.9 | 100 | | 2 | 67.47 | 7.64 |
| 5402.0 | 10 | 13.4 | 57 | 0.5 | 8 | 67.38 | 7.62 |
| 5403.0 | 2 | 10.2 | 71 | | 17 | 67.26 | 7.57 |
| 5404.0 | 0.0 | 0.2 | 100 | | 47 | 67.17 | 7.56 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5409.0 | 0.0 | 2.0 | 100 | | 45 | 67.14 | 7.56 |
| 5410.0 | 0.0 | 0.5 | 100 | | 43 | 67.12 | 7.56 |
| 5411.0 | 0.0 | 0.7 | 100 | | 49 | 67.12 | 7.56 |
| 5413.0 | 0.0 | 4.4 | 100 | | 38 | 67.09 | 7.56 |
| 5414.0 | 0.0 | 5.6 | 100 | | 36 | 67.04 | 7.56 |
| 5415.0 | 0.0 | 3.7 | 100 | | 43 | 66.99 | 7.56 |
| 5416.0 | 0.0 | 1.1 | 100 | | 41 | 66.96 | 7.56 |
| 5417.0 | 0.0 | 3.3 | 100 | | 37 | 66.93 | 7.56 |
| 5418.0 | 0.0 | 2.1 | 100 | | 34 | 66.90 | 7.56 |
| 5419.0 | 0.6 | 8.9 | 91 | | 21 | 66.88 | 7.56 |
| 5427.0 | 0.0 | 4.6 | 100 | | 46 | 66.72 | 7.55 |
| 5428.0 | 0.0 | 4.6 | 100 | | 48 | 66.68 | 7.55 |
| 5429.0 | 0.0 | 5.3 | 100 | | 45 | 66.64 | 7.55 |

| ISS - | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

INPUT PARAMETERS FROM 6006. TO 5429.

| WMUD | XLIT | BITSZ | BHT | BHTDEP | SUFT | RMF | RMFT | ROMFS | PHIMFS | DASIL |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.4 | 0.50 | 8.75 | 174. | 10150. | 75. | 4.78 | 62. | 0.997 | 0.997 | 0.600 |

| SPCK | DSPCK | RODC | DELRGM | START | STOPLG | ZSPNL | BGN | ZSPDL | REC | RESH | CSS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | 0. | 2.98 | 0.20 | 10150. | 4500. | 0.000 | 1.00 | 0.000 | 46.10 | 79.30 | 0.2 |

| WHY | PHILEV | BR | SLIM | AK | PK | SK | STOPIN | PHIMAX | PHINCL | PHIDCL |
|---|---|---|---|---|---|---|---|---|---|---|
| .200 | 0.000 | .10 | 0.30 | 0.8 | 2.0 | 2.0 | 5429. | 0.160 | 0.450 | 0.120 |

| PHINSO | AR | PUN | DAX | DALIM | DAGA | DASH | DTSD | DTSH | CP | PSSH | PORPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.120 | .04 | .015 | 90. | 44. | 25. | 120. | 150. | 150. | 1.00 | .300 | .000 |

| EDIAM | PNLIM | PDLIM | RLIM | GRLIM | VARMC | CONST | ROP | VARLIM | CSF | TPCL | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | 1000.0 | 1000.0 | 0.07 | 0.333 | 0.70 | 0.20 | 0.50 | 21.00 | 5. |

RESISTIVITY STATISTICS OVER ENTIRE INTERVAL

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
GR COEFF. FROM STATISTICS
WASAMP ROUTINE USED

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5430.0 | 0.0 | 5.3 | 100 | | 24 | 66.59 | 7.55 |
| 5431.0 | 0.0 | 0.1 | 100 | | 27 | 66.56 | 7.55 |
| 5432.0 | 0.0 | 0.0 | 100 | | 22 | 66.56 | 7.55 |
| 5433.0 | 0.0 | 0.0 | 100 | | 29 | 66.56 | 7.55 |
| 5434.0 | 0.0 | 0.1 | 100 | | 35 | 66.56 | 7.55 |
| 5435.0 | 0.0 | 4.0 | 100 | | 18 | 66.54 | 7.55 |
| 5436.0 | 0.0 | 4.2 | 100 | | 19 | 66.50 | 7.55 |
| 5437.0 | 0.1 | 5.9 | 100 | | 13 | 66.46 | 7.55 |
| 5438.0 | 0.2 | 6.3 | 100 | | 6 | 66.39 | 7.55 |
| 5439.0 | 0.0 | 3.3 | 100 | | 17 | 66.34 | 7.55 |
| 5440.0 | 0.0 | 1.0 | 100 | | 28 | 66.31 | 7.55 |
| 5441.0 | 0.0 | 0.0 | 100 | | 34 | 66.31 | 7.55 |
| 5445.0 | 0.0 | 2.0 | 100 | | 45 | 66.30 | 7.55 |
| 5446.0 | 0.0 | 0.9 | 100 | | 47 | 66.28 | 7.55 |
| 5447.0 | 0.0 | 2.3 | 100 | | 45 | 66.27 | 7.55 |
| 5448.0 | 0.0 | 2.1 | 100 | | 40 | 66.24 | 7.55 |
| 5449.0 | 0.0 | 2.1 | 100 | | 38 | 66.21 | 7.55 |
| 5450.0 | 0.0 | 3.0 | 100 | | 34 | 66.19 | 7.55 |
| 5451.0 | 0.0 | 1.2 | 100 | | 40 | 66.16 | 7.55 |
| 5455.0 | 0.0 | 1.3 | 100 | | 44 | 66.12 | 7.55 |
| 5458.0 | 0.0 | 0.1 | 100 | | 49 | 66.10 | 7.55 |
| 5459.0 | 0.0 | 2.2 | 100 | | 35 | 66.08 | 7.55 |
| 5460.0 | 0.0 | 4.2 | 100 | | 27 | 66.05 | 7.55 |
| 5461.0 | 0.0 | 0.8 | 100 | | 47 | 66.02 | 7.55 |
| 5466.0 | 0.0 | 0.4 | 100 | | 46 | 66.01 | 7.55 |
| 5468.0 | 0.0 | 0.0 | 100 | | 50 | 66.01 | 7.55 |
| 5469.0 | 0.0 | 0.0 | 100 | | 41 | 66.01 | 7.55 |
| 5470.0 | 0.0 | 0.0 | 100 | | 34 | 66.01 | 7.55 |
| 5471.0 | 0.0 | 0.4 | 100 | | 28 | 66.01 | 7.55 |
| 5472.0 | 0.0 | 0.1 | 100 | | 37 | 66.01 | 7.55 |
| 5473.0 | 0.0 | 0.0 | 100 | | 40 | 66.00 | 7.55 |
| 5474.0 | 0.0 | 0.2 | 100 | | 20 | 66.00 | 7.55 |
| 5475.0 | 0.0 | 0.0 | 100 | | 27 | 66.00 | 7.55 |
| 5478.0 | 0.0 | 3.5 | 100 | | 42 | 66.00 | 7.55 |
| 5479.0 | 0.0 | 3.5 | 100 | | 23 | 65.96 | 7.55 |
| 5480.0 | 0.0 | 0.0 | 100 | | 45 | 65.94 | 7.55 |
| 5483.0 | 0.0 | 0.0 | 100 | | 46 | 65.94 | 7.55 |
| 5484.0 | 0.0 | 0.0 | 100 | | 40 | 65.94 | 7.55 |
| 5487.0 | 0.0 | 0.0 | 100 | | 46 | 65.94 | 7.55 |
| 5488.0 | 0.0 | 0.0 | 100 | | 40 | 65.94 | 7.55 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5489.0 | 0.0 | 0.0 | 100 | | 47 | 65.94 | 7.55 |
| 5493.0 | 0.0 | 0.1 | 100 | | 48 | 65.94 | 7.55 |
| 5494.0 | 0.0 | 0.0 | 100 | | 38 | 65.94 | 7.55 |
| 5495.0 | 0.0 | 0.0 | 100 | | 38 | 65.94 | 7.55 |
| 5496.0 | 0.0 | 0.0 | 100 | | 42 | 65.94 | 7.55 |
| 5497.0 | 0.0 | 2.5 | 100 | | 40 | 65.93 | 7.55 |
| 5498.0 | 0.0 | 1.5 | 100 | | 47 | 65.90 | 7.55 |
| 5503.0 | 0.0 | 0.1 | 100 | | 37 | 65.89 | 7.55 |
| 5504.0 | 0.0 | 0.0 | 100 | | 23 | 65.89 | 7.55 |
| 5505.0 | 0.0 | 4.1 | 100 | | 9 | 65.88 | 7.55 |
| 5506.0 | 0.1 | 5.5 | 100 | | 10 | 65.83 | 7.55 |
| 5507.0 | 0.0 | 4.9 | 100 | | 17 | 65.78 | 7.55 |
| 5508.0 | 0.0 | 5.3 | 100 | | 21 | 65.73 | 7.55 |
| 5509.0 | 0.0 | 4.9 | 100 | | 21 | 65.68 | 7.55 |
| 5510.0 | 0.0 | 2.8 | 100 | | 29 | 65.63 | 7.55 |
| 5511.0 | 0.5 | 8.1 | 100 | | 14 | 65.60 | 7.55 |
| 5512.0 | 0.2 | 6.8 | 100 | | 17 | 65.52 | 7.55 |
| 5513.0 | 0.0 | 4.3 | 100 | | 24 | 65.46 | 7.55 |
| 5514.0 | 0.4 | 7.7 | 96 | | 15 | 65.41 | 7.55 |
| 5515.0 | 1 | 9.4 | 92 | | 10 | 65.33 | 7.55 |
| 5516.0 | 2 | 10.0 | 78 | | 11 | 65.23 | 7.54 |
| 5517.0 | 30 | 14.7 | 65 | | 0 | 65.12 | 7.51 |
| 5518.0 | 20 | 13.7 | 72 | | 1 | 64.97 | 7.46 |
| 5519.0 | 5 | 11.3 | 79 | | 5 | 64.84 | 7.42 |
| 5520.0 | 0.1 | 6.7 | 90 | | 19 | 64.74 | 7.40 |
| 5521.0 | 0.2 | 6.9 | 97 | | 18 | 64.68 | 7.40 |
| 5522.0 | 3 | 10.7 | 89 | | 6 | 64.60 | 7.39 |
| 5523.0 | 3 | 10.2 | 91 | | 5 | 64.49 | 7.38 |
| 5524.0 | 1 | 8.7 | 97 | | 8 | 64.39 | 7.37 |
| 5525.0 | 10 | 12.0 | 79 | | 0 | 64.30 | 7.37 |
| 5526.0 | 9 | 11.8 | 82 | | 0 | 64.18 | 7.34 |
| 5527.0 | 2 | 9.7 | 92 | | 4 | 64.06 | 7.32 |
| 5528.0 | 2 | 9.7 | 86 | | 6 | 63.96 | 7.31 |
| 5529.0 | 0.4 | 7.5 | 84 | | 13 | 63.87 | 7.30 |
| 5530.0 | 0.0 | 4.4 | 100 | | 24 | 63.80 | 7.29 |
| 5531.0 | 0.2 | 7.3 | 85 | | 17 | 63.75 | 7.29 |
| 5532.0 | 2 | 9.9 | 80 | | 9 | 63.67 | 7.28 |
| 5533.0 | 1 | 9.1 | 86 | | 9 | 63.57 | 7.26 |
| 5534.0 | 0.1 | 5.7 | 100 | | 19 | 63.49 | 7.25 |
| 5535.0 | 0.8 | 8.5 | 78 | | 11 | 63.43 | 7.25 |
| 5536.0 | 4 | 10.6 | 85 | | 3 | 63.34 | 7.23 |
| 5537.0 | 0.3 | 7.5 | 82 | | 18 | 63.23 | 7.22 |
| 5538.0 | 0.0 | 1.4 | 100 | | 49 | 63.19 | 7.21 |
| 5539.0 | 0.0 | 0.2 | 100 | | 49 | 63.19 | 7.21 |
| 5540.0 | 0.0 | 0.1 | 100 | | 37 | 63.18 | 7.21 |
| 5541.0 | 0.0 | 0.2 | 100 | | 37 | 63.18 | 7.21 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5542.0 | 0.0 | 1.8 | 100 | | 43 | 63.18 | 7.21 |
| 5543.0 | 0.0 | 2.4 | 100 | | 33 | 63.16 | 7.21 |
| 5544.0 | 0.0 | 3.1 | 100 | | 10 | 63.14 | 7.21 |
| 5545.0 | 0.0 | 2.7 | 100 | | 12 | 63.11 | 7.21 |
| 5546.0 | 0.0 | 0.1 | 100 | | 32 | 63.09 | 7.21 |
| 5547.0 | 0.0 | 0.0 | 100 | | 38 | 63.09 | 7.21 |
| 5548.0 | 0.0 | 0.0 | 100 | | 49 | 63.09 | 7.21 |
| 5549.0 | 0.0 | 0.0 | 100 | | 50 | 63.09 | 7.21 |
| 5550.0 | 0.0 | 0.5 | 100 | | 49 | 63.09 | 7.21 |
| 5551.0 | 0.0 | 2.1 | 100 | | 42 | 63.08 | 7.21 |
| 5552.0 | 0.0 | 1.9 | 100 | | 41 | 63.05 | 7.21 |
| 5553.0 | 0.0 | 2.5 | 100 | | 41 | 63.03 | 7.21 |
| 5554.0 | 0.0 | 3.5 | 100 | | 34 | 63.00 | 7.21 |
| 5555.0 | 0.0 | 3.5 | 100 | | 28 | 62.97 | 7.21 |
| 5556.0 | 0.0 | 4.8 | 100 | | 9 | 62.93 | 7.21 |
| 5557.0 | 0.3 | 6.3 | 83 | | 2 | 62.88 | 7.21 |
| 5558.0 | 0.1 | 4.9 | 99 | | 10 | 62.82 | 7.20 |
| 5559.0 | 0.0 | 4.2 | 100 | | 11 | 62.78 | 7.20 |
| 5560.0 | 0.1 | 5.2 | 100 | | 10 | 62.73 | 7.20 |
| 5561.0 | 0.0 | 4.7 | 100 | | 16 | 62.68 | 7.20 |
| 5562.0 | 0.0 | 1.1 | 100 | | 34 | 62.64 | 7.20 |
| 5563.0 | 0.0 | 0.1 | 100 | | 41 | 62.64 | 7.20 |
| 5564.0 | 0.0 | 2.7 | 100 | | 23 | 62.63 | 7.20 |
| 5565.0 | 0.0 | 4.0 | 100 | | 27 | 62.60 | 7.20 |
| 5566.0 | 0.0 | 3.4 | 100 | | 37 | 62.57 | 7.20 |
| 5567.0 | 0.0 | 0.8 | 100 | | 39 | 62.55 | 7.20 |
| 5568.0 | 0.0 | 4.2 | 100 | | 23 | 62.54 | 7.20 |
| 5569.0 | 0.0 | 4.1 | 100 | | 15 | 62.49 | 7.20 |
| 5570.0 | 0.0 | 4.2 | 100 | | 13 | 62.46 | 7.20 |
| 5571.0 | 0.0 | 1.4 | 100 | | 34 | 62.42 | 7.20 |
| 5574.0 | 0.0 | 0.1 | 100 | | 43 | 62.41 | 7.20 |
| 5575.0 | 0.0 | 4.3 | 100 | | 23 | 62.40 | 7.20 |
| 5576.0 | 0.0 | 5.1 | 100 | | 16 | 62.35 | 7.20 |
| 5577.0 | 0.0 | 1.5 | 100 | | 34 | 62.31 | 7.20 |
| 5578.0 | 0.0 | 0.1 | 100 | | 39 | 62.30 | 7.20 |
| 5579.0 | 0.0 | 4.1 | 100 | | 24 | 62.30 | 7.20 |
| 5580.0 | 0.0 | 0.4 | 100 | | 44 | 62.26 | 7.20 |
| 5581.0 | 0.0 | 1.5 | 100 | | 43 | 62.26 | 7.20 |
| 5582.0 | 0.0 | 4.1 | 100 | | 29 | 62.23 | 7.20 |
| 5583.0 | 0.1 | 5.9 | 92 | | 20 | 62.19 | 7.20 |
| 5584.0 | 0.1 | 6.0 | 100 | | 9 | 62.13 | 7.19 |
| 5585.0 | 0.1 | 5.8 | 79 | | 17 | 62.07 | 7.19 |
| 5586.0 | 0.2 | 6.3 | 83 | | 12 | 62.02 | 7.19 |
| 5587.0 | 0.5 | 7.3 | 94 | | 5 | 61.95 | 7.18 |
| 5588.0 | 0.0 | 4.9 | 100 | | 19 | 61.89 | 7.18 |
| 5589.0 | 0.0 | 4.0 | 100 | | 28 | 61.84 | 7.18 |
| 5590.0 | 0.0 | 3.2 | 100 | | 29 | 61.80 | 7.18 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5591.0 | 0.0 | 0.7 | 100 | | 31 | 61.78 | 7.18 |
| 5592.0 | 0.0 | 1.5 | 100 | | 26 | 61.77 | 7.18 |
| 5593.0 | 0.0 | 0.1 | 100 | | 33 | 61.75 | 7.18 |
| 5594.0 | 0.0 | 0.0 | 100 | | 44 | 61.75 | 7.18 |
| 5595.0 | 0.0 | 0.1 | 100 | | 45 | 61.75 | 7.18 |
| 5596.0 | 0.0 | 1.6 | 100 | | 36 | 61.75 | 7.18 |
| 5597.0 | 0.0 | 3.1 | 100 | | 36 | 61.73 | 7.18 |
| 5598.0 | 0.0 | 3.0 | 100 | | 31 | 61.69 | 7.18 |
| 5599.0 | 0.0 | 0.3 | 100 | | 34 | 61.67 | 7.18 |
| 5600.0 | 0.0 | 0.3 | 100 | | 38 | 61.67 | 7.18 |
| 5601.0 | 0.0 | 0.5 | 100 | | 33 | 61.67 | 7.18 |
| 5602.0 | 0.0 | 1.7 | 100 | | 24 | 61.66 | 7.18 |
| 5603.0 | 0.0 | 0.2 | 100 | | 32 | 61.65 | 7.18 |
| 5604.0 | 0.0 | 0.1 | 100 | | 37 | 61.64 | 7.18 |
| 5605.0 | 0.0 | 0.7 | 100 | | 34 | 61.64 | 7.18 |
| 5606.0 | 0.0 | 3.4 | 100 | | 28 | 61.62 | 7.18 |
| 5607.0 | 0.0 | 3.2 | 100 | | 30 | 61.59 | 7.18 |
| 5608.0 | 0.0 | 4.3 | 100 | | 22 | 61.56 | 7.18 |
| 5609.0 | 0.0 | 3.5 | 100 | | 26 | 61.51 | 7.18 |
| 5610.0 | 0.0 | 4.0 | 100 | | 31 | 61.48 | 7.18 |
| 5611.0 | 0.0 | 1.5 | 100 | | 42 | 61.44 | 7.18 |
| 5612.0 | 0.0 | 2.2 | 100 | | 32 | 61.43 | 7.18 |
| 5613.0 | 0.0 | 5.0 | 100 | | 14 | 61.40 | 7.18 |
| 5614.0 | 0.0 | 4.8 | 100 | | 16 | 61.34 | 7.18 |
| 5615.0 | 0.0 | 4.4 | 100 | | 18 | 61.30 | 7.18 |
| 5616.0 | 0.0 | 4.6 | 100 | | 13 | 61.26 | 7.18 |
| 5617.0 | 0.1 | 5.9 | 100 | | 18 | 61.21 | 7.18 |
| 5618.0 | 0.0 | 0.1 | 100 | | 47 | 61.18 | 7.18 |
| 5620.0 | 0.0 | 3.5 | 100 | | 32 | 61.15 | 7.18 |
| 5621.0 | 0.0 | 4.8 | 100 | | 9 | 61.11 | 7.18 |
| 5622.0 | 0.0 | 4.0 | 100 | | 14 | 61.06 | 7.18 |
| 5623.0 | 0.0 | 3.8 | 100 | | 25 | 61.02 | 7.18 |
| 5624.0 | 0.0 | 3.6 | 100 | | 26 | 60.99 | 7.18 |
| 5625.0 | 0.0 | 3.5 | 100 | | 22 | 60.95 | 7.18 |
| 5626.0 | 0.0 | 3.7 | 100 | | 23 | 60.91 | 7.18 |
| 5627.0 | 0.0 | 2.6 | 100 | | 30 | 60.88 | 7.18 |
| 5628.0 | 0.0 | 3.2 | 100 | | 25 | 60.86 | 7.18 |
| 5629.0 | 0.1 | 6.6 | 79 | | 17 | 60.81 | 7.18 |
| 5630.0 | 0.0 | 0.6 | 100 | | 36 | 60.75 | 7.17 |
| 5631.0 | 0.0 | 0.5 | 100 | | 40 | 60.73 | 7.17 |
| 5632.0 | 0.0 | 1.1 | 100 | | 30 | 60.73 | 7.17 |
| 5633.0 | 0.0 | 4.0 | 100 | | 20 | 60.71 | 7.17 |
| 5634.0 | 0.0 | 3.8 | 100 | | 25 | 60.67 | 7.17 |
| 5635.0 | 0.0 | 3.7 | 100 | | 25 | 60.63 | 7.17 |
| 5636.0 | 0.0 | 0.9 | 100 | | 37 | 60.60 | 7.17 |
| 5637.0 | 0.0 | 3.0 | 100 | | 37 | 60.59 | 7.17 |
| 5638.0 | 0.0 | 3.4 | 100 | | 33 | 60.56 | 7.17 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5639.0 | 0.0 | 4.3 | 100 | | 20 | 60.53 | 7.17 |
| 5640.0 | 0.0 | 0.2 | 100 | | 33 | 60.49 | 7.17 |
| 5641.0 | 0.0 | 0.1 | 100 | | 41 | 60.49 | 7.17 |
| 5642.0 | 0.0 | 3.3 | 100 | | 30 | 60.48 | 7.17 |
| 5643.0 | 0.0 | 1.1 | 100 | | 39 | 60.45 | 7.17 |
| 5644.0 | 0.0 | 3.2 | 100 | | 39 | 60.43 | 7.17 |
| 5645.0 | 0.0 | 0.9 | 100 | | 46 | 60.40 | 7.17 |
| 5646.0 | 0.0 | 0.3 | 100 | | 46 | 60.39 | 7.17 |
| 5647.0 | 0.0 | 2.1 | 100 | | 35 | 60.39 | 7.17 |
| 5648.0 | 0.0 | 4.9 | 100 | | 18 | 60.36 | 7.17 |
| 5649.0 | 0.4 | 7.5 | 90 | | 10 | 60.30 | 7.17 |
| 5650.0 | 0.0 | 0.8 | 100 | | 45 | 60.24 | 7.16 |
| 5651.0 | 0.0 | 3.8 | 100 | | 34 | 60.22 | 7.16 |
| 5652.0 | 0.0 | 5.0 | 100 | | 13 | 60.18 | 7.16 |
| 5653.0 | 0.0 | 3.6 | 100 | | 19 | 60.13 | 7.16 |
| 5654.0 | 0.0 | 0.4 | 100 | | 33 | 60.11 | 7.16 |
| 5655.0 | 0.0 | 4.2 | 100 | | 26 | 60.09 | 7.16 |
| 5656.0 | 0.0 | 0.7 | 100 | | 45 | 60.06 | 7.16 |
| 5657.0 | 0.0 | 0.4 | 100 | | 42 | 60.05 | 7.16 |
| 5658.0 | 0.0 | 4.3 | 100 | | 19 | 60.03 | 7.16 |
| 5659.0 | 0.0 | 0.4 | 100 | | 26 | 60.00 | 7.16 |
| 5660.0 | 0.0 | 1.0 | 100 | | 44 | 59.99 | 7.16 |
| 5661.0 | 0.0 | 3.8 | 100 | | 45 | 59.97 | 7.16 |
| 5662.0 | 0.0 | 4.1 | 100 | | 23 | 59.93 | 7.16 |
| 5663.0 | 0.0 | 4.7 | 100 | | 11 | 59.89 | 7.16 |
| 5664.0 | 0.0 | 1.2 | 100 | | 27 | 59.84 | 7.16 |
| 5665.0 | 0.0 | 0.0 | 100 | | 42 | 59.84 | 7.16 |
| 5666.0 | 0.0 | 4.7 | 100 | | 24 | 59.84 | 7.16 |
| 5667.0 | 0.7 | 8.3 | 88 | | 9 | 59.77 | 7.16 |
| 5668.0 | 0.0 | 1.4 | 100 | | 30 | 59.70 | 7.15 |
| 5669.0 | 0.0 | 0.0 | 100 | | 36 | 59.69 | 7.15 |
| 5670.0 | 0.0 | 2.1 | 100 | | 33 | 59.69 | 7.15 |
| 5671.0 | 0.0 | 1.2 | 100 | | 32 | 59.67 | 7.15 |
| 5672.0 | 0.0 | 4.0 | 100 | | 18 | 59.65 | 7.15 |
| 5673.0 | 0.0 | 4.2 | 100 | | 24 | 59.61 | 7.15 |
| 5674.0 | 0.0 | 2.8 | 100 | | 32 | 59.57 | 7.15 |
| 5675.0 | 0.0 | 3.9 | 100 | | 22 | 59.54 | 7.15 |
| 5676.0 | 0.0 | 4.7 | 100 | | 20 | 59.50 | 7.15 |
| 5677.0 | 0.0 | 3.8 | 100 | | 21 | 59.45 | 7.15 |
| 5678.0 | 0.0 | 0.0 | 100 | | 32 | 59.42 | 7.15 |
| 5679.0 | 0.0 | 5.4 | 100 | | 26 | 59.42 | 7.15 |
| 5680.0 | 1 | 9.5 | 98 | | 11 | 59.34 | 7.15 |
| 5681.0 | 0.0 | 4.9 | 100 | | 22 | 59.26 | 7.15 |
| 5682.0 | 0.2 | 7.3 | 99 | | 16 | 59.21 | 7.15 |
| 5683.0 | 0.0 | 5.1 | 100 | | 16 | 59.13 | 7.15 |
| 5684.0 | 0.0 | 3.3 | 100 | | 26 | 59.09 | 7.15 |
| 5685.0 | 0.1 | 6.4 | 100 | | 22 | 59.05 | 7.15 |
| 5686.0 | 3 | 10.5 | 100 | | 9 | 58.96 | 7.15 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5687.0 | 0.2 | 6.8 | 100 | | 19 | 58.87 | 7.14 |
| 5688.0 | 0.0 | 4.0 | 100 | | 29 | 58.81 | 7.14 |
| 5689.0 | 0.0 | 2.9 | 100 | | 34 | 58.77 | 7.14 |
| 5690.0 | 0.0 | 2.9 | 100 | | 36 | 58.75 | 7.14 |
| 5691.0 | 0.0 | 4.1 | 100 | | 29 | 58.71 | 7.14 |
| 5692.0 | 0.1 | 6.7 | 100 | | 19 | 58.67 | 7.14 |
| 5693.0 | 0.3 | 7.6 | 100 | | 15 | 58.60 | 7.14 |
| 5694.0 | 0.3 | 7.2 | 100 | | 16 | 58.52 | 7.14 |
| 5695.0 | 0.4 | 7.9 | 100 | | 15 | 58.45 | 7.14 |
| 5696.0 | 0.1 | 6.7 | 100 | | 22 | 58.37 | 7.14 |
| 5697.0 | 0.0 | 2.3 | 100 | | 36 | 58.31 | 7.14 |
| 5698.0 | 0.0 | 3.5 | 100 | | 31 | 58.28 | 7.14 |
| 5699.0 | 0.0 | 4.5 | 100 | | 24 | 58.24 | 7.14 |
| 5700.0 | 0.0 | 4.8 | 100 | | 25 | 58.19 | 7.14 |
| 5701.0 | 0.0 | 2.7 | 100 | | 35 | 58.15 | 7.14 |
| 5702.0 | 0.0 | 1.2 | 100 | | 34 | 58.12 | 7.14 |
| 5703.0 | 0.0 | 2.9 | 100 | | 23 | 58.11 | 7.14 |
| 5704.0 | 0.0 | 4.3 | 100 | | 20 | 58.07 | 7.14 |
| 5705.0 | 0.0 | 2.2 | 100 | | 32 | 58.03 | 7.14 |
| 5706.0 | 0.0 | 0.1 | 100 | | 40 | 58.02 | 7.14 |
| 5707.0 | 0.0 | 1.1 | 100 | | 47 | 58.01 | 7.14 |
| 5709.0 | 0.0 | 3.6 | 100 | | 44 | 58.01 | 7.14 |
| 5710.0 | 0.0 | 3.5 | 100 | | 40 | 57.99 | 7.14 |
| 5711.0 | 0.0 | 4.3 | 97 | | 32 | 57.95 | 7.14 |
| 5712.0 | 0.0 | 0.3 | 100 | | 45 | 57.92 | 7.14 |
| 5713.0 | 0.0 | 2.7 | 100 | | 37 | 57.92 | 7.14 |
| 5714.0 | 0.0 | 3.4 | 100 | | 32 | 57.88 | 7.14 |
| 5715.0 | 0.0 | 0.6 | 100 | | 36 | 57.86 | 7.14 |
| 5716.0 | 0.0 | 2.9 | 100 | | 23 | 57.85 | 7.14 |
| 5717.0 | 0.0 | 4.0 | 100 | | 21 | 57.82 | 7.14 |
| 5718.0 | 0.0 | 0.7 | 100 | | 36 | 57.78 | 7.14 |
| 5719.0 | 0.0 | 0.1 | 100 | | 44 | 57.77 | 7.14 |
| 5720.0 | 0.0 | 1.7 | 100 | | 43 | 57.77 | 7.14 |
| 5721.0 | 0.0 | 4.1 | 100 | | 27 | 57.74 | 7.14 |
| 5722.0 | 0.0 | 3.8 | 100 | | 22 | 57.70 | 7.14 |
| 5723.0 | 0.0 | 3.6 | 100 | | 24 | 57.67 | 7.14 |
| 5724.0 | 0.3 | 7.2 | 87 | | 11 | 57.63 | 7.14 |
| 5725.0 | 2 | 10.0 | 72 | | 7 | 57.55 | 7.13 |
| 5726.0 | 5 | 11.4 | 75 | | 5 | 57.44 | 7.10 |
| 5727.0 | 1 | 9.0 | 77 | | 10 | 57.33 | 7.07 |
| 5728.0 | 0.1 | 6.2 | 87 | | 21 | 57.25 | 7.05 |
| 5729.0 | 0.0 | 2.0 | 100 | | 36 | 57.20 | 7.05 |
| 5730.0 | 0.0 | 4.0 | 100 | | 25 | 57.18 | 7.05 |
| 5731.0 | 0.0 | 2.6 | 100 | | 27 | 57.14 | 7.05 |
| 5732.0 | 0.0 | 3.3 | 100 | | 28 | 57.12 | 7.05 |
| 5733.0 | 0.0 | 1.0 | 100 | | 37 | 57.08 | 7.05 |
| 5734.0 | 0.0 | 3.1 | 100 | | 36 | 57.07 | 7.05 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5735.0 | 0.0 | 1.2 | 100 | | 39 | 57.04 | 7.05 |
| 5736.0 | 0.0 | 2.3 | 100 | | 43 | 57.01 | 7.05 |
| 5737.0 | 0.0 | 3.6 | 100 | | 31 | 56.98 | 7.05 |
| 5738.0 | 0.0 | 1.5 | 100 | | 36 | 56.95 | 7.05 |
| 5739.0 | 0.0 | 0.3 | 100 | | 45 | 56.94 | 7.05 |
| 5740.0 | 0.0 | 0.0 | 100 | | 46 | 56.94 | 7.05 |
| 5741.0 | 0.0 | 0.1 | 100 | | 39 | 56.94 | 7.05 |
| 5742.0 | 0.0 | 3.0 | 100 | | 33 | 56.93 | 7.05 |
| 5743.0 | 0.0 | 0.4 | 100 | | 43 | 56.90 | 7.05 |
| 5744.0 | 0.0 | 0.7 | 100 | | 41 | 56.90 | 7.05 |
| 5745.0 | 0.0 | 3.0 | 100 | | 30 | 56.89 | 7.05 |
| 5746.0 | 0.0 | 5.2 | 100 | | 22 | 56.86 | 7.05 |
| 5747.0 | 0.0 | 4.9 | 100 | | 20 | 56.80 | 7.05 |
| 5748.0 | 0.0 | 4.4 | 100 | | 19 | 56.75 | 7.05 |
| 5749.0 | 0.1 | 5.8 | 98 | | 18 | 56.71 | 7.05 |
| 5750.0 | 0.0 | 0.1 | 100 | | 41 | 56.66 | 7.05 |
| 5751.0 | 0.0 | 0.1 | 100 | | 42 | 56.66 | 7.05 |
| 5752.0 | 0.0 | 0.1 | 100 | | 45 | 56.66 | 7.05 |
| 5755.0 | 0.0 | 3.0 | 100 | | 45 | 56.64 | 7.05 |
| 5756.0 | 0.0 | 1.2 | 100 | | 46 | 56.62 | 7.05 |
| 5757.0 | 0.0 | 1.3 | 100 | | 42 | 56.60 | 7.05 |
| 5758.0 | 0.0 | 2.1 | 100 | | 38 | 56.59 | 7.05 |
| 5759.0 | 0.0 | 3.5 | 100 | | 31 | 56.57 | 7.05 |
| 5760.0 | 0.8 | 8.7 | 72 | | 12 | 56.53 | 7.05 |
| 5761.0 | 0.3 | 7.7 | 64 | | 16 | 56.44 | 7.02 |
| 5762.0 | 0.0 | 2.5 | 100 | | 33 | 56.39 | 7.00 |
| 5763.0 | 0.0 | 0.8 | 100 | | 43 | 56.37 | 7.00 |
| 5764.0 | 0.0 | 4.6 | 100 | | 41 | 56.35 | 7.00 |
| 5766.0 | 0.0 | 0.1 | 100 | | 49 | 56.30 | 7.00 |
| 5767.0 | 0.0 | 0.1 | 100 | | 43 | 56.30 | 7.00 |
| 5768.0 | 0.0 | 0.0 | 100 | | 41 | 56.30 | 7.00 |
| 5769.0 | 0.0 | 0.5 | 100 | | 39 | 56.30 | 7.00 |
| 5770.0 | 0.0 | 1.1 | 100 | | 40 | 56.28 | 7.00 |
| 5771.0 | 0.0 | 0.2 | 100 | | 38 | 56.28 | 7.00 |
| 5772.0 | 0.0 | 4.3 | 100 | | 22 | 56.26 | 7.00 |
| 5773.0 | 0.0 | 1.4 | 100 | | 27 | 56.22 | 7.00 |
| 5774.0 | 0.0 | 0.4 | 100 | | 29 | 56.21 | 7.00 |
| 5775.0 | 0.0 | 0.6 | 100 | | 27 | 56.20 | 7.00 |
| 5776.0 | 0.0 | 0.0 | 100 | | 27 | 56.20 | 7.00 |
| 5777.0 | 0.0 | 5.3 | 69 | | 15 | 56.20 | 7.00 |
| 5778.0 | 1 | 8.7 | 61 | | 8 | 56.13 | 6.98 |
| 5779.0 | 0.2 | 6.5 | 71 | | 12 | 56.05 | 6.95 |
| 5780.0 | 0.1 | 5.8 | 71 | | 18 | 55.99 | 6.93 |
| 5781.0 | 0.3 | 7.0 | 90 | | 12 | 55.93 | 6.91 |
| 5782.0 | 0.1 | 6.4 | 84 | | 17 | 55.85 | 6.90 |
| 5783.0 | 0.0 | 4.0 | 100 | | 30 | 55.80 | 6.90 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5784.0 | 1 | 9.4 | 74 | | 15 | 55.74 | 6.89 |
| 5785.0 | 0.5 | 8.2 | 92 | | 13 | 55.65 | 6.87 |
| 5786.0 | 0.6 | 8.5 | 79 | | 15 | 55.57 | 6.87 |
| 5787.0 | 2 | 10.0 | 72 | | 13 | 55.48 | 6.85 |
| 5788.0 | 2 | 9.8 | 75 | | 12 | 55.38 | 6.82 |
| 5789.0 | 1 | 9.7 | 74 | | 15 | 55.29 | 6.80 |
| 5790.0 | 6 | 12.6 | 65 | | 12 | 55.18 | 6.77 |
| 5791.0 | 2 | 10.1 | 71 | | 14 | 55.06 | 6.72 |
| 5792.0 | 0.1 | 6.0 | 98 | | 20 | 54.97 | 6.70 |
| 5793.0 | 0.3 | 7.6 | 71 | | 18 | 54.91 | 6.69 |
| 5794.0 | 0.0 | 3.8 | 100 | | 30 | 54.83 | 6.67 |
| 5797.0 | 0.0 | 3.8 | 100 | | 38 | 54.80 | 6.67 |
| 5798.0 | 0.0 | 4.4 | 100 | | 20 | 54.76 | 6.67 |
| 5799.0 | 0.0 | 4.1 | 100 | | 17 | 54.71 | 6.67 |
| 5800.0 | 0.0 | 4.8 | 100 | | 18 | 54.66 | 6.67 |
| 5801.0 | 0.0 | 4.1 | 100 | | 21 | 54.62 | 6.67 |
| 5802.0 | 0.0 | 4.1 | 100 | | 18 | 54.58 | 6.67 |
| 5803.0 | 0.0 | 4.9 | 100 | | 15 | 54.53 | 6.67 |
| 5804.0 | 0.4 | 8.3 | 58 | | 19 | 54.47 | 6.66 |
| 5805.0 | 0.3 | 7.5 | 62 | | 18 | 54.39 | 6.62 |
| 5806.0 | 0.1 | 5.9 | 76 | | 15 | 54.32 | 6.60 |
| 5807.0 | 0.0 | 1.9 | 100 | | 21 | 54.27 | 6.59 |
| 5808.0 | 0.0 | 3.4 | 100 | | 22 | 54.26 | 6.59 |
| 5809.0 | 0.0 | 4.0 | 100 | | 25 | 54.22 | 6.59 |
| 5810.0 | 0.0 | 2.8 | 100 | | 34 | 54.18 | 6.59 |
| 5811.0 | 0.0 | 0.1 | 100 | | 43 | 54.17 | 6.59 |
| 5812.0 | 0.0 | 0.4 | 100 | | 40 | 54.16 | 6.59 |
| 5813.0 | 0.0 | 0.6 | 100 | | 35 | 54.16 | 6.59 |
| 5814.0 | 0.0 | 3.1 | 100 | | 32 | 54.14 | 6.59 |
| 5815.0 | 0.0 | 2.5 | 100 | | 46 | 54.11 | 6.59 |
| 5816.0 | 0.0 | 2.4 | 100 | | 41 | 54.09 | 6.59 |
| 5817.0 | 0.1 | 5.8 | 100 | | 21 | 54.06 | 6.59 |
| 5818.0 | 0.0 | 0.5 | 100 | | 42 | 53.99 | 6.58 |
| 5819.0 | 0.0 | 1.0 | 100 | | 42 | 53.99 | 6.58 |
| 5820.0 | 0.0 | 0.0 | 100 | | 41 | 53.98 | 6.58 |
| 5821.0 | 0.0 | 0.0 | 100 | | 41 | 53.98 | 6.58 |
| 5822.0 | 0.0 | 0.7 | 100 | | 49 | 53.98 | 6.58 |
| 5823.0 | 0.0 | 3.3 | 100 | | 46 | 53.96 | 6.58 |
| 5825.0 | 0.0 | 0.1 | 100 | | 41 | 53.93 | 6.58 |
| 5826.0 | 0.0 | 2.9 | 100 | | 30 | 53.93 | 6.58 |
| 5827.0 | 0.0 | 0.0 | 100 | | 31 | 53.92 | 6.58 |
| 5828.0 | 0.0 | 1.9 | 100 | | 28 | 53.92 | 6.58 |
| 5829.0 | 0.0 | 1.3 | 100 | | 35 | 53.89 | 6.58 |
| 5830.0 | 0.0 | 0.0 | 100 | | 40 | 53.88 | 6.58 |
| 5831.0 | 0.0 | 2.1 | 100 | | 41 | 53.88 | 6.58 |
| 5832.0 | 0.0 | 2.5 | 100 | | 40 | 53.86 | 6.58 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5833.0 | 0.0 | 1.1 | 100 | | 39 | 53.83 | 6.58 |
| 5834.0 | 0.0 | 1.1 | 100 | | 36 | 53.81 | 6.58 |
| 5835.0 | 0.0 | 0.4 | 100 | | 46 | 53.80 | 6.58 |
| 5836.0 | 0.0 | 1.7 | 100 | | 45 | 53.80 | 6.58 |
| 5837.0 | 0.0 | 3.9 | 100 | | 29 | 53.77 | 6.58 |
| 5838.0 | 0.0 | 1.9 | 100 | | 32 | 53.74 | 6.58 |
| 5839.0 | 0.0 | 2.0 | 100 | | 32 | 53.72 | 6.58 |
| 5840.0 | 0.0 | 3.8 | 100 | | 29 | 53.69 | 6.58 |
| 5841.0 | 0.0 | 2.1 | 100 | | 35 | 53.66 | 6.58 |
| 5842.0 | 0.0 | 3.0 | 100 | | 30 | 53.64 | 6.58 |
| 5843.0 | 0.1 | 6.2 | 61 | | 17 | 53.59 | 6.58 |
| 5844.0 | 2 | 10.5 | 49 | | 10 | 53.53 | 6.55 |
| 5845.0 | 2 | 10.4 | 43 | 0.3 | 15 | 53.42 | 6.49 |
| 5846.0 | 0.1 | 6.2 | 55 | | 17 | 53.32 | 6.44 |
| 5847.0 | 0.0 | 0.1 | 100 | | 29 | 53.28 | 6.42 |
| 5848.0 | 0.0 | 0.0 | 100 | | 27 | 53.28 | 6.42 |
| 5849.0 | 0.0 | 5.3 | 60 | | 20 | 53.26 | 6.42 |
| 5850.0 | 0.0 | 0.9 | 100 | | 39 | 53.21 | 6.41 |
| 5851.0 | 0.0 | 1.1 | 100 | | 41 | 53.20 | 6.41 |
| 5852.0 | 0.0 | 1.6 | 100 | | 40 | 53.19 | 6.41 |
| 5853.0 | 0.0 | 0.8 | 100 | | 40 | 53.18 | 6.41 |
| 5854.0 | 0.0 | 5.7 | 59 | | 25 | 53.17 | 6.41 |
| 5855.0 | 0.5 | 7.6 | 63 | | 9 | 53.10 | 6.39 |
| 5856.0 | 0.2 | 6.7 | 54 | | 15 | 53.03 | 6.36 |
| 5857.0 | 0.2 | 7.4 | 46 | | 18 | 52.96 | 6.33 |
| 5858.0 | 2 | 9.2 | 60 | | 7 | 52.89 | 6.29 |
| 5859.0 | 0.8 | 8.8 | 52 | | 14 | 52.79 | 6.25 |
| 5860.0 | 0.0 | 1.6 | 100 | | 35 | 52.73 | 6.23 |
| 5861.0 | 0.0 | 0.7 | 100 | | 45 | 52.72 | 6.23 |
| 5862.0 | 0.0 | 0.9 | 100 | | 49 | 52.71 | 6.23 |
| 5863.0 | 0.0 | 0.9 | 100 | | 47 | 52.70 | 6.23 |
| 5864.0 | 0.0 | 0.3 | 100 | | 45 | 52.69 | 6.23 |
| 5865.0 | 0.0 | 3.7 | 100 | | 40 | 52.67 | 6.23 |
| 5866.0 | 0.0 | 0.6 | 100 | | 47 | 52.65 | 6.23 |
| 5867.0 | 0.0 | 0.5 | 100 | | 44 | 52.64 | 6.23 |
| 5868.0 | 0.0 | 0.3 | 100 | | 47 | 52.64 | 6.23 |
| 5869.0 | 0.0 | 0.8 | 100 | | 36 | 52.63 | 6.23 |
| 5870.0 | 0.0 | 0.4 | 100 | | 43 | 52.61 | 6.23 |
| 5871.0 | 0.0 | 2.3 | 100 | | 41 | 52.60 | 6.23 |
| 5872.0 | 1 | 9.1 | 74 | | 12 | 52.57 | 6.23 |
| 5873.0 | 0.3 | 7.9 | 64 | | 18 | 52.48 | 6.20 |
| 5874.0 | 0.0 | 0.2 | 100 | | 45 | 52.43 | 6.19 |
| 5875.0 | 0.0 | 0.8 | 100 | | 44 | 52.43 | 6.19 |
| 5876.0 | 0.0 | 3.6 | 100 | | 29 | 52.41 | 6.19 |
| 5877.0 | 0.0 | 3.5 | 100 | | 26 | 52.37 | 6.19 |
| 5878.0 | 0.0 | 0.5 | 100 | | 42 | 52.35 | 6.19 |
| 5879.0 | 0.0 | 2.5 | 100 | | 39 | 52.35 | 6.19 |
| 5880.0 | 0.0 | 3.6 | 100 | | 37 | 52.31 | 6.19 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5881.0 | 0.0 | 1.0 | 100 | | 50 | 52.28 | 6.19 |
| 5882.0 | 0.0 | 0.1 | 100 | | 43 | 52.28 | 6.19 |
| 5883.0 | 0.0 | 0.1 | 100 | | 43 | 52.28 | 6.19 |
| 5884.0 | 0.0 | 0.2 | 100 | | 43 | 52.28 | 6.19 |
| 5885.0 | 0.0 | 0.1 | 100 | | 40 | 52.27 | 6.19 |
| 5886.0 | 0.0 | 0.1 | 100 | | 38 | 52.27 | 6.19 |
| 5887.0 | 0.0 | 0.0 | 100 | | 34 | 52.27 | 6.19 |
| 5888.0 | 0.0 | 1.0 | 100 | | 32 | 52.27 | 6.19 |
| 5889.0 | 0.0 | 2.6 | 100 | | 29 | 52.25 | 6.19 |
| 5890.0 | 0.0 | 2.0 | 100 | | 30 | 52.22 | 6.19 |
| 5891.0 | 0.0 | 0.6 | 100 | | 32 | 52.21 | 6.19 |
| 5892.0 | 0.0 | 0.0 | 100 | | 31 | 52.20 | 6.19 |
| 5893.0 | 0.0 | 0.0 | 100 | | 32 | 52.20 | 6.19 |
| 5894.0 | 0.0 | 0.0 | 100 | | 34 | 52.20 | 6.19 |
| 5895.0 | 0.0 | 0.8 | 100 | | 38 | 52.20 | 6.19 |
| 5896.0 | 0.0 | 1.5 | 100 | | 39 | 52.18 | 6.19 |
| 5897.0 | 0.0 | 5.6 | 100 | | 22 | 52.16 | 6.19 |
| 5898.0 | 0.1 | 5.8 | 74 | | 19 | 52.10 | 6.19 |
| 5899.0 | 0.0 | 3.1 | 100 | | 28 | 52.05 | 6.17 |
| 5900.0 | 0.0 | 0.3 | 100 | | 32 | 52.02 | 6.17 |
| 5901.0 | 0.0 | 0.6 | 100 | | 33 | 52.02 | 6.17 |
| 5902.0 | 0.0 | 0.1 | 100 | | 41 | 52.00 | 6.17 |
| 5903.0 | 0.0 | 0.1 | 100 | | 44 | 51.99 | 6.17 |
| 5904.0 | 0.0 | 2.8 | 100 | | 36 | 51.99 | 6.17 |
| 5905.0 | 0.0 | 0.1 | 100 | | 40 | 51.98 | 6.17 |
| 5906.0 | 0.0 | 2.0 | 100 | | 38 | 51.96 | 6.17 |
| 5907.0 | 0.0 | 2.0 | 100 | | 37 | 51.94 | 6.17 |
| 5908.0 | 0.0 | 2.2 | 100 | | 31 | 51.92 | 6.17 |
| 5909.0 | 0.0 | 0.2 | 100 | | 32 | 51.91 | 6.17 |
| 5910.0 | 0.0 | 3.8 | 100 | | 27 | 51.90 | 6.17 |
| 5911.0 | 0.0 | 1.1 | 100 | | 36 | 51.87 | 6.17 |
| 5912.0 | 0.0 | 0.1 | 100 | | 39 | 51.86 | 6.17 |
| 5913.0 | 0.0 | 0.1 | 100 | | 40 | 51.86 | 6.17 |
| 5914.0 | 0.0 | 0.2 | 100 | | 39 | 51.86 | 6.17 |
| 5915.0 | 0.0 | 0.7 | 100 | | 40 | 51.85 | 6.17 |
| 5916.0 | 0.0 | 1.7 | 100 | | 40 | 51.85 | 6.17 |
| 5917.0 | 0.0 | 3.8 | 100 | | 37 | 51.82 | 6.17 |
| 5918.0 | 0.0 | 3.5 | 100 | | 36 | 51.78 | 6.17 |
| 5919.0 | 0.0 | 1.8 | 100 | | 40 | 51.75 | 6.17 |
| 5920.0 | 0.0 | 3.4 | 100 | | 36 | 51.73 | 6.17 |
| 5921.0 | 0.0 | 0.3 | 100 | | 45 | 51.71 | 6.17 |
| 5922.0 | 0.0 | 0.1 | 100 | | 41 | 51.71 | 6.17 |
| 5923.0 | 0.0 | 0.0 | 100 | | 38 | 51.71 | 6.17 |
| 5924.0 | 0.0 | 0.1 | 100 | | 32 | 51.71 | 6.17 |
| 5925.0 | 0.0 | 4.0 | 100 | | 24 | 51.70 | 6.17 |
| 5926.0 | 0.0 | 3.2 | 100 | | 34 | 51.66 | 6.17 |
| 5927.0 | 0.0 | 2.6 | 100 | | 39 | 51.63 | 6.17 |
| 5928.0 | 0.0 | 1.5 | 100 | | 40 | 51.61 | 6.17 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5929.0 | 0.0 | 0.2 | 100 | | 38 | 51.59 | 6.17 |
| 5930.0 | 0.0 | 0.0 | 100 | | 35 | 51.59 | 6.17 |
| 5931.0 | 0.0 | 0.0 | 100 | | 39 | 51.59 | 6.17 |
| 5932.0 | 0.0 | 0.1 | 100 | | 31 | 51.59 | 6.17 |
| 5933.0 | 0.0 | 2.9 | 100 | | 17 | 51.59 | 6.17 |
| 5934.0 | 0.0 | 3.9 | 100 | | 18 | 51.56 | 6.17 |
| 5935.0 | 0.0 | 4.0 | 100 | | 24 | 51.52 | 6.17 |
| 5936.0 | 0.0 | 1.0 | 100 | | 33 | 51.48 | 6.17 |
| 5937.0 | 0.0 | 0.2 | 100 | | 29 | 51.47 | 6.17 |
| 5938.0 | 0.0 | 1.4 | 100 | | 22 | 51.47 | 6.17 |
| 5939.0 | 0.0 | 2.1 | 100 | | 19 | 51.45 | 6.17 |
| 5940.0 | 0.0 | 0.6 | 100 | | 23 | 51.43 | 6.17 |
| 5941.0 | 0.0 | 0.0 | 100 | | 31 | 51.43 | 6.17 |
| 5942.0 | 0.0 | 0.0 | 100 | | 40 | 51.43 | 6.17 |
| 5943.0 | 0.0 | 0.1 | 100 | | 39 | 51.43 | 6.17 |
| 5944.0 | 0.0 | 0.6 | 100 | | 35 | 51.43 | 6.17 |
| 5945.0 | 0.0 | 0.6 | 100 | | 32 | 51.42 | 6.17 |
| 5946.0 | 0.0 | 0.1 | 100 | | 33 | 51.42 | 6.17 |
| 5947.0 | 0.0 | 0.1 | 100 | | 33 | 51.42 | 6.17 |
| 5948.0 | 0.0 | 0.0 | 100 | | 33 | 51.42 | 6.17 |
| 5949.0 | 0.0 | 0.0 | 100 | | 39 | 51.42 | 6.17 |
| 5950.0 | 0.0 | 0.9 | 100 | | 37 | 51.42 | 6.17 |
| 5951.0 | 0.0 | 3.1 | 100 | | 32 | 51.40 | 6.17 |
| 5952.0 | 0.0 | 3.1 | 100 | | 37 | 51.36 | 6.17 |
| 5953.0 | 0.0 | 2.4 | 100 | | 37 | 51.33 | 6.17 |
| 5954.0 | 0.0 | 0.1 | 100 | | 35 | 51.32 | 6.17 |
| 5955.0 | 0.0 | 0.8 | 100 | | 28 | 51.32 | 6.17 |
| 5956.0 | 0.0 | 0.3 | 100 | | 31 | 51.30 | 6.17 |
| 5957.0 | 0.0 | 0.5 | 100 | | 33 | 51.30 | 6.17 |
| 5958.0 | 0.0 | 2.6 | 100 | | 32 | 51.29 | 6.17 |
| 5959.0 | 0.0 | 0.6 | 100 | | 35 | 51.27 | 6.17 |
| 5960.0 | 0.0 | 0.7 | 100 | | 31 | 51.26 | 6.17 |
| 5961.0 | 0.0 | 1.1 | 100 | | 26 | 51.26 | 6.17 |
| 5962.0 | 0.0 | 3.2 | 100 | | 20 | 51.24 | 6.17 |
| 5963.0 | 0.0 | 1.4 | 100 | | 27 | 51.21 | 6.17 |
| 5964.0 | 0.0 | 3.5 | 100 | | 29 | 51.19 | 6.17 |
| 5965.0 | 0.0 | 3.0 | 100 | | 39 | 51.15 | 6.17 |
| 5966.0 | 0.0 | 0.9 | 100 | | 41 | 51.13 | 6.17 |
| 5967.0 | 0.0 | 0.0 | 100 | | 38 | 51.12 | 6.17 |
| 5968.0 | 0.0 | 0.3 | 100 | | 38 | 51.12 | 6.17 |
| 5969.0 | 0.0 | 1.9 | 100 | | 38 | 51.11 | 6.17 |
| 5970.0 | 0.0 | 0.2 | 100 | | 41 | 51.10 | 6.17 |
| 5971.0 | 0.0 | 0.1 | 100 | | 36 | 51.09 | 6.17 |
| 5972.0 | 0.0 | 0.1 | 100 | | 34 | 51.09 | 6.17 |
| 5973.0 | 0.0 | 1.0 | 100 | | 32 | 51.09 | 6.17 |
| 5974.0 | 0.0 | 0.7 | 100 | | 34 | 51.08 | 6.17 |
| 5975.0 | 0.0 | 0.1 | 100 | | 34 | 51.07 | 6.17 |
| 5976.0 | 0.0 | 2.7 | 100 | | 29 | 51.07 | 6.17 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 5977.0 | 0.0 | 2.0 | 100 | | 27 | 51.04 | 6.17 |
| 5978.0 | 0.0 | 0.2 | 100 | | 33 | 51.02 | 6.17 |
| 5979.0 | 0.0 | 0.1 | 100 | | 35 | 51.02 | 6.17 |
| 5980.0 | 0.0 | 0.3 | 100 | | 30 | 51.02 | 6.17 |
| 5981.0 | 0.0 | 4.0 | 100 | | 24 | 51.00 | 6.17 |
| 5982.0 | 0.0 | 2.0 | 100 | | 33 | 50.96 | 6.17 |
| 5983.0 | 0.0 | 0.0 | 100 | | 38 | 50.95 | 6.17 |
| 5986.0 | 0.0 | 0.1 | 100 | | 45 | 50.95 | 6.17 |
| 5987.0 | 0.0 | 0.1 | 100 | | 32 | 50.95 | 6.17 |
| 5988.0 | 0.0 | 0.6 | 100 | | 27 | 50.95 | 6.17 |
| 5989.0 | 0.0 | 0.1 | 100 | | 30 | 50.94 | 6.17 |
| 5990.0 | 0.0 | 0.0 | 100 | | 30 | 50.94 | 6.17 |
| 5991.0 | 0.0 | 0.0 | 100 | | 34 | 50.94 | 6.17 |
| 5992.0 | 0.0 | 0.0 | 100 | | 38 | 50.94 | 6.17 |
| 5993.0 | 0.0 | 0.1 | 100 | | 31 | 50.94 | 6.17 |
| 5994.0 | 0.0 | 2.0 | 100 | | 23 | 50.94 | 6.17 |
| 5995.0 | 0.0 | 3.6 | 100 | | 16 | 50.91 | 6.17 |
| 5996.0 | 0.0 | 2.3 | 100 | | 23 | 50.88 | 6.17 |
| 5997.0 | 0.0 | 0.3 | 100 | | 28 | 50.86 | 6.17 |
| 5998.0 | 0.0 | 0.1 | 100 | | 35 | 50.86 | 6.17 |
| 5999.0 | 0.0 | 0.2 | 100 | | 46 | 50.85 | 6.17 |

| ISS - | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

INPUT PARAMETERS FROM 6505. TO 6006.

| WMUD | XLIT | BITSZ | BHT | BHTDEP | SUFT | RMF | RMFT | ROMFS | PHIMFS | DASIL |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.4 | 0.50 | 8.75 | 174. | 10150. | 75. | 4.78 | 62. | 0.997 | 0.997 | 0.600 |

| SPCK | DSPCK | RODC | DELRGM | START | STOPLG | ZSPNL | BGN | ZSPDL | REC | RESH | CSS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | 0. | 2.98 | 0.20 | 10150. | 4500. | 0.000 | 1.00 | 0.000 | 14.40 | 56.00 | 0.2 |

| WHY | PHILEV | BR | SLIM | AK | PK | SK | STOPIN | PHIMAX | PHINCL | PHIDCL |
|---|---|---|---|---|---|---|---|---|---|---|
| .200 | 0.000 | .10 | 0.30 | 0.8 | 2.0 | 2.0 | 6006. | 0.120 | 0.450 | 0.100 |

| PHINSO | AR | PUN | DAX | DALIM | DAGA | DASH | DTSD | DTSH | CP | PSSH | PORPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.120 | .04 | .015 | 80. | 40. | 25. | 120. | 150. | 150. | 1.00 | .300 | .000 |

| EDIAM | PNLIM | PDLIM | RLIM | GRLIM | VARMC | CONST | ROP | VARLIM | CSF | TPCL | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | 1000.0 | 1000.0 | 0.07 | 0.333 | 0.70 | 0.20 | 0.50 | 21.00 | 5. |

RESISTIVITY STATISTICS OVER ENTIRE INTERVAL

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
GR COEFF. FROM STATISTICS
WASAMP ROUTINE USED

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6007.0 | 0.0 | 1.4 | 100 | | 44 | 50.82 | 6.17 |
| 6008.0 | 0.0 | 3.7 | 100 | | 43 | 50.80 | 6.17 |
| 6009.0 | 0.0 | 4.3 | 100 | | 46 | 50.76 | 6.17 |
| 6010.0 | 0.0 | 3.6 | 100 | | 49 | 50.72 | 6.17 |
| 6013.0 | 0.0 | 3.1 | 100 | | 48 | 50.64 | 6.17 |
| 6014.0 | 0.0 | 4.3 | 100 | | 44 | 50.60 | 6.17 |
| 6015.0 | 0.0 | 4.1 | 100 | | 47 | 50.56 | 6.17 |
| 6016.0 | 0.0 | 4.6 | 100 | | 44 | 50.52 | 6.17 |
| 6017.0 | 0.0 | 5.9 | 100 | | 44 | 50.47 | 6.17 |
| 6018.0 | 0.0 | 6.1 | 100 | | 49 | 50.41 | 6.17 |
| 6021.0 | 0.0 | 4.2 | 100 | | 43 | 50.35 | 6.17 |
| 6022.0 | 0.0 | 3.8 | 100 | | 43 | 50.31 | 6.17 |
| 6023.0 | 0.0 | 4.7 | 100 | | 41 | 50.27 | 6.17 |
| 6024.0 | 0.0 | 6.2 | 100 | | 41 | 50.21 | 6.17 |
| 6025.0 | 0.0 | 4.8 | 100 | | 45 | 50.16 | 6.17 |
| 6026.0 | 0.0 | 4.6 | 100 | | 45 | 50.11 | 6.17 |
| 6027.0 | 0.0 | 3.7 | 100 | | 42 | 50.07 | 6.17 |
| 6028.0 | 0.0 | 3.2 | 100 | | 37 | 50.03 | 6.17 |
| 6029.0 | 0.0 | 4.8 | 100 | | 39 | 50.00 | 6.17 |
| 6030.0 | 0.0 | 5.2 | 100 | | 44 | 49.95 | 6.17 |
| 6031.0 | 0.0 | 5.0 | 100 | | 46 | 49.90 | 6.17 |
| 6032.0 | 0.0 | 4.3 | 100 | | 47 | 49.86 | 6.17 |
| 6033.0 | 0.0 | 5.8 | 80 | | 43 | 49.81 | 6.17 |
| 6034.0 | 0.0 | 4.9 | 100 | | 45 | 49.76 | 6.17 |
| 6035.0 | 0.0 | 4.4 | 100 | | 46 | 49.71 | 6.17 |
| 6036.0 | 0.0 | 3.4 | 100 | | 49 | 49.67 | 6.17 |
| 6037.0 | 0.0 | 3.1 | 100 | | 45 | 49.64 | 6.17 |
| 6038.0 | 0.0 | 3.7 | 100 | | 45 | 49.60 | 6.17 |
| 6042.0 | 0.0 | 5.4 | 100 | | 43 | 49.54 | 6.17 |
| 6043.0 | 0.1 | 7.3 | 100 | | 42 | 49.48 | 6.17 |
| 6044.0 | 0.1 | 6.9 | 100 | | 43 | 49.41 | 6.17 |
| 6045.0 | 0.2 | 7.8 | 100 | | 37 | 49.34 | 6.17 |
| 6046.0 | 0.1 | 6.6 | 100 | | 41 | 49.26 | 6.17 |
| 6047.0 | 0.0 | 5.7 | 100 | | 43 | 49.20 | 6.17 |
| 6048.0 | 0.0 | 5.1 | 100 | | 49 | 49.14 | 6.17 |
| 6054.0 | 0.0 | 0.1 | 100 | | 49 | 48.96 | 6.17 |
| 6055.0 | 0.0 | 3.2 | 100 | | 39 | 48.96 | 6.17 |
| 6056.0 | 0.0 | 1.0 | 100 | | 45 | 48.94 | 6.17 |
| 6057.0 | 0.0 | 0.7 | 100 | | 47 | 48.93 | 6.17 |
| 6060.0 | 0.0 | 5.1 | 100 | | 47 | 48.89 | 6.17 |
| 6061.0 | 0.0 | 2.6 | 100 | | 48 | 48.84 | 6.17 |
| 6063.0 | 0.0 | 5.0 | 100 | | 43 | 48.78 | 6.17 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6064.0 | 0.0 | 4.5 | 100 | | 36 | 48.73 | 6.17 |
| 6065.0 | 0.0 | 4.3 | 100 | | 45 | 48.69 | 6.17 |
| 6068.0 | 0.0 | 4.4 | 100 | | 47 | 48.58 | 6.17 |
| 6069.0 | 0.0 | 5.4 | 100 | | 40 | 48.53 | 6.17 |
| 6070.0 | 0.3 | 8.6 | 99 | | 36 | 48.47 | 6.17 |
| 6071.0 | 0.7 | 10.3 | 93 | | 39 | 48.38 | 6.17 |
| 6072.0 | 0.1 | 8.0 | 100 | | 49 | 48.28 | 6.16 |
| 6073.0 | 0.1 | 7.5 | 100 | | 50 | 48.21 | 6.16 |
| 6074.0 | 0.0 | 5.2 | 100 | | 49 | 48.14 | 6.16 |
| 6075.0 | 0.0 | 4.7 | 100 | | 48 | 48.09 | 6.16 |
| 6082.0 | 0.0 | 2.4 | 100 | | 49 | 47.96 | 6.15 |
| 6086.0 | 0.0 | 3.6 | 100 | | 43 | 47.86 | 6.15 |
| 6087.0 | 0.0 | 5.9 | 60 | | 42 | 47.82 | 6.14 |
| 6088.0 | 0.0 | 5.8 | 61 | | 46 | 47.75 | 6.12 |
| 6089.0 | 0.0 | 3.8 | 100 | | 49 | 47.70 | 6.10 |
| 6092.0 | 0.0 | 4.6 | 99 | | 45 | 47.62 | 6.10 |
| 6093.0 | 0.0 | 5.1 | 65 | | 50 | 47.57 | 6.10 |
| 6109.0 | 0.0 | 3.5 | 100 | | 42 | 47.18 | 6.02 |
| 6110.0 | 0.0 | 0.1 | 100 | | 47 | 47.16 | 6.02 |
| 6111.0 | 0.0 | 0.1 | 100 | | 50 | 47.16 | 6.02 |
| 6115.0 | 0.4 | 8.2 | 100 | | 18 | 47.14 | 6.02 |
| 6116.0 | 1 | 9.6 | 100 | | 8 | 47.06 | 6.02 |
| 6117.0 | 0.0 | 0.1 | 100 | | 42 | 46.99 | 6.02 |
| 6118.0 | 0.0 | 4.2 | 100 | | 47 | 46.98 | 6.02 |
| 6120.0 | 0.1 | 6.9 | 100 | | 48 | 46.88 | 6.02 |
| 6121.0 | 0.1 | 6.9 | 100 | | 47 | 46.80 | 6.02 |
| 6122.0 | 0.0 | 4.6 | 100 | | 50 | 46.74 | 6.02 |
| 6123.0 | 0.0 | 3.3 | 100 | | 49 | 46.70 | 6.02 |
| 6124.0 | 0.0 | 4.4 | 100 | | 49 | 46.66 | 6.02 |
| 6126.0 | 0.0 | 5.2 | 100 | | 47 | 46.57 | 6.02 |
| 6127.0 | 0.0 | 5.1 | 100 | | 44 | 46.51 | 6.02 |
| 6128.0 | 0.0 | 3.9 | 100 | | 49 | 46.46 | 6.02 |
| 6129.0 | 0.0 | 3.7 | 100 | | 47 | 46.43 | 6.02 |
| 6130.0 | 0.0 | 3.7 | 100 | | 40 | 46.38 | 6.02 |
| 6131.0 | 0.0 | 3.4 | 100 | | 40 | 46.34 | 6.02 |
| 6132.0 | 0.0 | 2.8 | 100 | | 44 | 46.31 | 6.02 |
| 6142.0 | 0.0 | 4.1 | 100 | | 47 | 46.16 | 6.02 |
| 6143.0 | 0.0 | 4.7 | 100 | | 39 | 46.11 | 6.02 |
| 6144.0 | 0.0 | 3.2 | 100 | | 41 | 46.07 | 6.02 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6145.0 | 0.0 | 5.4 | 100 | | 41 | 46.03 | 6.02 |
| 6146.0 | 0.0 | 5.7 | 100 | | 47 | 45.98 | 6.02 |
| 6147.0 | 0.0 | 5.7 | 100 | | 46 | 45.92 | 6.02 |
| 6148.0 | 0.0 | 4.8 | 100 | | 42 | 45.87 | 6.02 |
| 6149.0 | 0.0 | 4.7 | 100 | | 46 | 45.82 | 6.02 |
| 6152.0 | 0.0 | 3.9 | 100 | | 47 | 45.68 | 6.02 |
| 6153.0 | 0.0 | 3.3 | 100 | | 46 | 45.64 | 6.02 |
| 6154.0 | 0.0 | 2.7 | 100 | | 44 | 45.61 | 6.02 |
| 6155.0 | 0.0 | 1.0 | 100 | | 42 | 45.59 | 6.02 |
| 6156.0 | 0.0 | 0.8 | 100 | | 42 | 45.58 | 6.02 |
| 6161.0 | 0.0 | 0.3 | 100 | | 38 | 45.55 | 6.02 |
| 6170.0 | 0.0 | 3.4 | 100 | | 42 | 45.54 | 6.02 |
| 6171.0 | 0.0 | 3.3 | 100 | | 39 | 45.51 | 6.02 |
| 6172.0 | 0.0 | 3.3 | 100 | | 44 | 45.48 | 6.02 |
| 6175.0 | 0.0 | 2.8 | 100 | | 49 | 45.40 | 6.02 |
| 6176.0 | 0.0 | 3.3 | 100 | | 45 | 45.37 | 6.02 |
| 6177.0 | 0.0 | 3.1 | 100 | | 48 | 45.34 | 6.02 |
| 6178.0 | 0.0 | 4.7 | 100 | | 47 | 45.30 | 6.02 |
| 6190.0 | 0.2 | 8.2 | 100 | | 47 | 44.57 | 6.02 |
| 6191.0 | 0.2 | 8.5 | 100 | | 45 | 44.49 | 6.02 |
| 6194.0 | 0.1 | 7.1 | 100 | | 48 | 44.28 | 6.02 |
| 6202.0 | 0.0 | 3.6 | 100 | | 43 | 44.08 | 6.02 |
| 6203.0 | 0.0 | 2.0 | 100 | | 44 | 44.04 | 6.02 |
| 6204.0 | 0.0 | 0.8 | 100 | | 49 | 44.03 | 6.02 |
| 6207.0 | 0.0 | 3.3 | 100 | | 47 | 44.00 | 6.02 |
| 6211.0 | 0.0 | 4.7 | 100 | | 46 | 43.84 | 6.02 |
| 6212.0 | 0.0 | 3.7 | 100 | | 43 | 43.80 | 6.02 |
| 6221.0 | 0.0 | 3.1 | 100 | | 44 | 43.51 | 6.02 |
| 6222.0 | 0.0 | 3.4 | 100 | | 34 | 43.48 | 6.02 |
| 6223.0 | 0.0 | 4.6 | 100 | | 45 | 43.45 | 6.02 |
| 6225.0 | 0.1 | 6.3 | 100 | | 28 | 43.35 | 6.02 |
| 6226.0 | 0.1 | 6.3 | 100 | | 20 | 43.29 | 6.02 |
| 6227.0 | 0.0 | 4.8 | 100 | | 38 | 43.23 | 6.02 |
| 6228.0 | 0.0 | 2.0 | 100 | | 46 | 43.19 | 6.02 |
| 6229.0 | 0.0 | 2.0 | 100 | | 48 | 43.17 | 6.02 |
| 6230.0 | 0.0 | 1.7 | 100 | | 48 | 43.15 | 6.02 |
| 6231.0 | 0.0 | 3.2 | 100 | | 45 | 43.13 | 6.02 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6232.0 | 0.0 | 5.5 | 100 | | 47 | 43.10 | 6.02 |
| 6233.0 | 0.0 | 5.7 | 100 | | 47 | 43.04 | 6.02 |
| 6234.0 | 0.1 | 6.7 | 100 | | 46 | 42.99 | 6.02 |
| 6236.0 | 0.0 | 4.3 | 100 | | 45 | 42.87 | 6.02 |
| 6237.0 | 0.0 | 4.0 | 100 | | 25 | 42.83 | 6.02 |
| 6238.0 | 0.0 | 2.6 | 100 | | 19 | 42.79 | 6.02 |
| 6239.0 | 0.0 | 3.9 | 100 | | 18 | 42.76 | 6.02 |
| 6240.0 | 0.0 | 2.6 | 100 | | 22 | 42.72 | 6.02 |
| 6241.0 | 0.0 | 2.6 | 100 | | 25 | 42.70 | 6.02 |
| 6242.0 | 0.0 | 3.2 | 95 | | 27 | 42.67 | 6.02 |
| 6243.0 | 0.0 | 4.2 | 100 | | 26 | 42.64 | 6.02 |
| 6244.0 | 0.0 | 3.4 | 100 | | 38 | 42.60 | 6.02 |
| 6245.0 | 0.0 | 3.0 | 100 | | 48 | 42.57 | 6.02 |
| 6246.0 | 0.0 | 3.5 | 100 | | 47 | 42.54 | 6.02 |
| 6247.0 | 0.0 | 3.9 | 100 | | 46 | 42.51 | 6.02 |
| 6250.0 | 0.0 | 3.4 | 100 | | 48 | 42.41 | 6.02 |
| 6255.0 | 0.1 | 7.4 | 100 | | 49 | 42.22 | 6.02 |
| 6260.0 | 1 | 11.6 | 100 | | 45 | 42.01 | 6.02 |
| 6264.0 | 0.2 | 8.6 | 100 | | 47 | 41.68 | 6.02 |
| 6265.0 | 0.1 | 7.1 | 100 | | 48 | 41.59 | 6.02 |
| 6266.0 | 0.0 | 5.4 | 100 | | 49 | 41.53 | 6.02 |
| 6268.0 | 0.2 | 8.3 | 100 | | 42 | 41.41 | 6.02 |
| 6269.0 | 0.4 | 9.5 | 100 | | 43 | 41.32 | 6.02 |
| 6276.0 | 0.1 | 7.6 | 100 | | 49 | 41.00 | 6.02 |
| 6277.0 | 0.0 | 6.3 | 100 | | 47 | 40.93 | 6.02 |
| 6278.0 | 0.1 | 7.6 | 100 | | 42 | 40.86 | 6.02 |
| 6279.0 | 0.1 | 7.1 | 100 | | 44 | 40.79 | 6.02 |
| 6280.0 | 0.0 | 5.1 | 100 | | 46 | 40.72 | 6.02 |
| 6281.0 | 0.0 | 4.7 | 100 | | 48 | 40.67 | 6.02 |
| 6284.0 | 0.0 | 5.8 | 100 | | 48 | 40.52 | 6.02 |
| 6285.0 | 0.0 | 6.0 | 100 | | 47 | 40.47 | 6.02 |
| 6286.0 | 0.0 | 6.4 | 100 | | 50 | 40.40 | 6.02 |
| 6289.0 | 0.0 | 6.7 | 100 | | 49 | 40.20 | 6.02 |
| 6290.0 | 0.0 | 6.6 | 100 | | 47 | 40.13 | 6.02 |
| 6292.0 | 0.0 | 6.7 | 100 | | 49 | 40.00 | 6.02 |
| 6293.0 | 0.0 | 6.4 | 100 | | 48 | 39.93 | 6.02 |
| 6294.0 | 0.0 | 5.0 | 100 | | 50 | 39.87 | 6.02 |
| 6295.0 | 0.0 | 3.7 | 100 | | 49 | 39.82 | 6.02 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6297.0 | 0.0 | 4.8 | 100 | | 50 | 39.75 | 6.02 |
| 6298.0 | 0.0 | 5.7 | 100 | | 48 | 39.70 | 6.02 |
| 6301.0 | 0.0 | 4.2 | 100 | | 46 | 39.58 | 6.02 |
| 6303.0 | 0.1 | 7.4 | 100 | | 49 | 39.47 | 6.02 |
| 6304.0 | 0.0 | 6.2 | 100 | | 46 | 39.40 | 6.02 |
| 6305.0 | 0.0 | 6.5 | 100 | | 48 | 39.34 | 6.02 |
| 6306.0 | 0.0 | 5.5 | 100 | | 47 | 39.27 | 6.02 |
| 6307.0 | 0.0 | 5.1 | 100 | | 47 | 39.22 | 6.02 |
| 6308.0 | 0.0 | 6.2 | 100 | | 48 | 39.17 | 6.02 |
| 6309.0 | 0.0 | 5.4 | 100 | | 50 | 39.10 | 6.02 |
| 6312.0 | 0.0 | 0.9 | 100 | | 48 | 39.00 | 6.02 |
| 6313.0 | 0.0 | 2.8 | 100 | | 46 | 38.99 | 6.02 |
| 6314.0 | 0.0 | 0.7 | 100 | | 50 | 38.97 | 6.02 |
| 6315.0 | 0.0 | 2.2 | 100 | | 42 | 38.96 | 6.02 |
| 6316.0 | 0.0 | 0.8 | 100 | | 47 | 38.93 | 6.02 |
| 6319.0 | 0.0 | 2.6 | 100 | | 46 | 38.90 | 6.02 |
| 6322.0 | 0.0 | 2.9 | 100 | | 47 | 38.84 | 6.02 |
| 6324.0 | 0.0 | 3.9 | 100 | | 47 | 38.79 | 6.02 |
| 6325.0 | 0.0 | 3.8 | 100 | | 47 | 38.75 | 6.02 |
| 6326.0 | 0.0 | 2.5 | 100 | | 46 | 38.71 | 6.02 |
| 6327.0 | 0.0 | 1.7 | 100 | | 49 | 38.69 | 6.02 |
| 6328.0 | 0.0 | 3.3 | 100 | | 49 | 38.67 | 6.02 |
| 6341.0 | 0.0 | 5.2 | 100 | | 48 | 38.01 | 6.02 |
| 6342.0 | 0.1 | 7.5 | 100 | | 42 | 37.95 | 6.02 |
| 6343.0 | 0.1 | 7.7 | 100 | | 40 | 37.88 | 6.02 |
| 6344.0 | 0.0 | 4.5 | 100 | | 44 | 37.81 | 6.02 |
| 6345.0 | 0.0 | 3.3 | 100 | | 46 | 37.77 | 6.02 |
| 6346.0 | 0.0 | 4.4 | 100 | | 43 | 37.73 | 6.02 |
| 6347.0 | 0.0 | 3.4 | 100 | | 42 | 37.69 | 6.02 |
| 6348.0 | 0.0 | 1.0 | 100 | | 45 | 37.66 | 6.02 |
| 6349.0 | 0.0 | 2.0 | 100 | | 43 | 37.65 | 6.02 |
| 6350.0 | 0.0 | 2.3 | 100 | | 42 | 37.63 | 6.02 |
| 6351.0 | 0.0 | 3.1 | 100 | | 40 | 37.60 | 6.02 |
| 6352.0 | 0.0 | 3.3 | 100 | | 39 | 37.57 | 6.02 |
| 6353.0 | 0.0 | 3.2 | 100 | | 40 | 37.53 | 6.02 |
| 6354.0 | 0.0 | 1.9 | 100 | | 48 | 37.50 | 6.02 |
| 6358.0 | 0.0 | 3.7 | 100 | | 48 | 37.46 | 6.02 |
| 6361.0 | 0.0 | 1.2 | 100 | | 49 | 37.42 | 6.02 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6362.0 | 0.0 | 2.2 | 100 | | 48 | 37.39 | 6.02 |
| 6365.0 | 0.0 | 5.4 | 100 | | 45 | 37.35 | 6.02 |
| 6367.0 | 0.1 | 6.9 | 100 | | 48 | 37.24 | 6.02 |
| 6368.0 | 0.2 | 8.2 | 100 | | 39 | 37.16 | 6.02 |
| 6369.0 | 0.0 | 6.2 | 100 | | 35 | 37.08 | 6.02 |
| 6370.0 | 0.0 | 3.4 | 100 | | 44 | 37.03 | 6.02 |
| 6374.0 | 0.0 | 6.4 | 98 | | 46 | 36.93 | 6.01 |
| 6375.0 | 0.0 | 6.3 | 100 | | 48 | 36.86 | 6.01 |
| 6376.0 | 0.0 | 4.4 | 100 | | 48 | 36.80 | 6.01 |
| 6379.0 | 0.0 | 3.9 | 100 | | 41 | 36.71 | 6.01 |
| 6380.0 | 0.0 | 4.7 | 100 | | 42 | 36.67 | 6.01 |
| 6381.0 | 0.0 | 3.3 | 100 | | 43 | 36.62 | 6.01 |
| 6382.0 | 0.0 | 2.5 | 100 | | 38 | 36.59 | 6.01 |
| 6383.0 | 0.0 | 2.2 | 100 | | 35 | 36.57 | 6.01 |
| 6384.0 | 0.0 | 0.1 | 100 | | 46 | 36.55 | 6.01 |
| 6385.0 | 0.0 | 0.1 | 100 | | 49 | 36.55 | 6.01 |
| 6386.0 | 0.0 | 2.4 | 100 | | 44 | 36.55 | 6.01 |
| 6387.0 | 0.0 | 3.7 | 100 | | 40 | 36.52 | 6.01 |
| 6389.0 | 0.0 | 2.2 | 100 | | 46 | 36.49 | 6.01 |
| 6390.0 | 0.0 | 0.1 | 100 | | 49 | 36.47 | 6.01 |
| 6394.0 | 0.0 | 3.7 | 100 | | 40 | 36.47 | 6.01 |
| 6395.0 | 0.0 | 3.4 | 100 | | 39 | 36.43 | 6.01 |
| 6396.0 | 0.0 | 3.2 | 100 | | 38 | 36.40 | 6.01 |
| 6397.0 | 0.0 | 3.6 | 51 | | 34 | 36.37 | 6.01 |
| 6398.0 | 0.0 | 3.0 | 100 | | 35 | 36.34 | 6.00 |
| 6399.0 | 0.0 | 2.6 | 100 | | 39 | 36.30 | 5.99 |
| 6400.0 | 0.0 | 2.5 | 100 | | 42 | 36.28 | 5.99 |
| 6401.0 | 0.0 | 3.3 | 100 | | 39 | 36.25 | 5.99 |
| 6402.0 | 0.0 | 2.9 | 100 | | 36 | 36.21 | 5.99 |
| 6403.0 | 0.0 | 2.9 | 100 | | 35 | 36.19 | 5.99 |
| 6404.0 | 0.0 | 3.0 | 100 | | 41 | 36.16 | 5.99 |
| 6405.0 | 0.0 | 1.4 | 100 | | 47 | 36.14 | 5.99 |
| 6406.0 | 0.0 | 2.2 | 100 | | 41 | 36.13 | 5.99 |
| 6407.0 | 0.0 | 2.7 | 100 | | 43 | 36.10 | 5.99 |
| 6408.0 | 0.0 | 2.5 | 100 | | 46 | 36.08 | 5.99 |
| 6411.0 | 0.0 | 4.0 | 100 | | 44 | 36.02 | 5.99 |
| 6412.0 | 0.0 | 4.0 | 100 | | 47 | 35.98 | 5.99 |
| 6421.0 | 0.0 | 6.1 | 100 | | 47 | 35.63 | 5.99 |
| 6427.0 | 0.0 | 2.7 | 100 | | 49 | 35.42 | 5.99 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6429.0 | 0.0 | 4.8 | 97 | | 44 | 35.40 | 5.99 |
| 6430.0 | 0.0 | 3.8 | 100 | | 42 | 35.35 | 5.99 |
| 6431.0 | 0.0 | 1.7 | 100 | | 47 | 35.32 | 5.99 |
| 6432.0 | 0.0 | 4.1 | 100 | | 43 | 35.30 | 5.99 |
| 6433.0 | 0.0 | 4.7 | 100 | | 45 | 35.26 | 5.99 |
| 6434.0 | 0.0 | 5.4 | 100 | | 42 | 35.21 | 5.99 |
| 6435.0 | 0.0 | 4.7 | 100 | | 44 | 35.16 | 5.99 |
| 6436.0 | 0.0 | 4.3 | 100 | | 48 | 35.11 | 5.99 |
| 6437.0 | 0.0 | 4.6 | 100 | | 48 | 35.06 | 5.99 |
| 6438.0 | 0.0 | 3.8 | 100 | | 48 | 35.02 | 5.99 |
| 6444.0 | 0.0 | 3.2 | 100 | | 49 | 34.91 | 5.99 |
| 6446.0 | 0.0 | 4.3 | 100 | | 47 | 34.87 | 5.99 |
| 6452.0 | 0.0 | 4.8 | 100 | | 48 | 34.57 | 5.99 |
| 6453.0 | 0.0 | 4.9 | 100 | | 45 | 34.53 | 5.99 |
| 6454.0 | 0.0 | 6.1 | 100 | | 37 | 34.48 | 5.99 |
| 6458.0 | 0.0 | 3.3 | 100 | | 48 | 34.37 | 5.99 |
| 6461.0 | 0.0 | 6.0 | 100 | | 49 | 34.24 | 5.99 |
| 6462.0 | 0.0 | 5.8 | 100 | | 49 | 34.18 | 5.99 |
| 6468.0 | 0.0 | 6.6 | 97 | | 44 | 33.96 | 5.99 |
| 6469.0 | 0.0 | 6.2 | 100 | | 42 | 33.90 | 5.99 |
| 6474.0 | 0.0 | 5.0 | 100 | | 35 | 33.81 | 5.98 |
| 6475.0 | 0.0 | 2.4 | 100 | | 40 | 33.76 | 5.98 |
| 6479.0 | 0.0 | 3.9 | 100 | | 34 | 33.73 | 5.98 |
| 6480.0 | 0.0 | 2.5 | 100 | | 46 | 33.69 | 5.98 |
| 6481.0 | 0.0 | 2.1 | 100 | | 45 | 33.66 | 5.98 |
| 6482.0 | 0.0 | 2.6 | 100 | | 43 | 33.64 | 5.98 |
| 6483.0 | 0.0 | 3.8 | 100 | | 47 | 33.61 | 5.98 |
| 6484.0 | 0.0 | 4.6 | 100 | | 48 | 33.57 | 5.98 |
| 6485.0 | 0.0 | 3.3 | 100 | | 49 | 33.53 | 5.98 |
| 6487.0 | 0.0 | 3.0 | 100 | | 44 | 33.47 | 5.98 |
| 6488.0 | 0.0 | 2.7 | 100 | | 45 | 33.44 | 5.98 |
| 6491.0 | 0.0 | 2.9 | 100 | | 46 | 33.40 | 5.98 |
| 6492.0 | 0.0 | 3.4 | 100 | | 42 | 33.36 | 5.98 |
| 6494.0 | 0.0 | 3.3 | 100 | | 40 | 33.31 | 5.98 |
| 6495.0 | 0.0 | 2.4 | 100 | | 43 | 33.28 | 5.98 |
| 6498.0 | 0.0 | 1.0 | 100 | | 49 | 33.26 | 5.98 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 6499.0 | 0.0 | 3.6 | 100 | | 39 | 33.25 | 5.98 |
| 6500.0 | 0.0 | 3.1 | 100 | | 41 | 33.21 | 5.98 |
| 6501.0 | 0.0 | 3.7 | 100 | | 38 | 33.19 | 5.98 |
| 6502.0 | 0.0 | 0.8 | 100 | | 45 | 33.15 | 5.98 |
| 6503.0 | 0.0 | 0.9 | 100 | | 47 | 33.15 | 5.98 |
| 6504.0 | 0.0 | 0.7 | 100 | | 48 | 33.14 | 5.98 |
| 6505.0 | 0.0 | 3.4 | 100 | | 39 | 33.13 | 5.98 |

| ISS - | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

INPUT PARAMETERS FROM 9320. TO 8970.

| WMUD | XLIT | BITSZ | BHT | BHTDEP | SUFT | RMF | RMFT | ROMFS | PHIMFS | DASIL |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.4 | 0.50 | 8.75 | 174. | 10150. | 75. | 4.78 | 62. | 0.997 | 0.997 | 0.600 |

| SPCK | DSPCK | RODC | DELRGM | START | STOPLG | ZSPNL | BGN | ZSPDL | REC | RESH | CSS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | 0. | 2.98 | 0.20 | 10150. | 4500. | 0.000 | 1.00 | 0.000 | 6.60 | 44.50 | 0.2 |

| WHY | PHILEV | BR | SLIM | AK | PK | SK | STOPIN | PHIMAX | PHINCL | PHIDCL |
|---|---|---|---|---|---|---|---|---|---|---|
| .200 | 0.000 | .10 | 0.30 | 0.8 | 2.0 | 2.0 | 8970. | 0.090 | 0.450 | 0.070 |

| PHINSO | AR | PUN | DAX | DALIM | DAGA | DASH | DTSD | DTSH | CP | PSSH | PORPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.100 | .04 | .015 | 110. | 40. | 25. | 160. | 150. | 150. | 1.00 | .300 | .000 |

| EDIAM | PNLIM | PDLIM | RLIM | GRLIM | VARMC | CONST | ROP | VARLIM | CSF | TPCL | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | 1000.0 | 1000.0 | 0.07 | 0.333 | 0.70 | 0.20 | 0.50 | 21.00 | 5. |

RESISTIVITY STATISTICS OVER ENTIRE INTERVAL

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
GR COEFF. FROM STATISTICS
WASAMP ROUTINE USED

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9039.0 | 0.3 | 9.0 | 25 | | 46 | 31.70 | 5.63 |
| 9070.0 | 0.1 | 7.5 | 15 | | 50 | 30.17 | 4.55 |
| 9078.0 | 0.0 | 6.6 | 26 | | 47 | 29.78 | 4.28 |
| 9079.0 | 0.0 | 5.5 | 25 | | 48 | 29.71 | 4.24 |
| 9092.0 | 0.0 | 3.0 | 100 | | 49 | 29.37 | 4.13 |
| 9093.0 | 0.0 | 3.7 | 96 | | 48 | 29.34 | 4.13 |
| 9146.0 | 0.0 | 4.7 | 46 | | 47 | 28.21 | 3.60 |
| 9151.0 | 0.0 | 5.8 | 40 | | 50 | 28.00 | 3.51 |
| 9189.0 | 0.0 | 5.0 | 64 | | 49 | 27.07 | 3.45 |
| 9242.0 | 0.0 | 4.8 | 62 | | 47 | 26.24 | 3.39 |
| 9248.0 | 0.0 | 3.1 | 100 | | 49 | 26.03 | 3.36 |
| 9250.0 | 0.0 | 5.1 | 60 | | 46 | 25.96 | 3.36 |
| 9294.0 | 0.0 | 0.1 | 100 | | 47 | 24.67 | 3.01 |
| 9295.0 | 0.0 | 2.7 | 100 | | 46 | 24.66 | 3.01 |
| 9298.0 | 0.0 | 2.0 | 100 | | 50 | 24.59 | 3.01 |
| 9301.0 | 0.0 | 3.6 | 100 | | 44 | 24.51 | 3.01 |
| 9302.0 | 0.0 | 3.8 | 100 | | 32 | 24.48 | 3.01 |
| 9320.0 | 0.0 | 2.3 | 100 | | 47 | 24.12 | 3.01 |

| ISS - | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

INPUT PARAMETERS FROM 10150. TO 9320.

| WMUD | XLIT | BITSZ | BHT | BHTDEP | SUFT | RMF | RMFT | ROMFS | PHIMFS | DASIL |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.4 | 0.50 | 8.75 | 174. | 10150. | 75. | 4.78 | 62. | 0.997 | 0.997 | 0.600 |

| SPCK | DSPCK | RODC | DELRGM | START | STOPLG | ZSPNL | BGN | ZSPDL | REC | RESH | CSS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0. | 0. | 2.98 | 0.20 | 10150. | 4500. | 0.000 | 1.00 | 0.000 | 6.30 | 12.60 | 0.2 |

| WHY | PHILEV | BR | SLIM | AK | PK | SK | STOPIN | PHIMAX | PHINCL | PHIDCL |
|---|---|---|---|---|---|---|---|---|---|---|
| .200 | 0.000 | .10 | 0.30 | 0.8 | 2.0 | 2.0 | 9320. | 0.090 | 0.450 | 0.050 |

| PHINSO | AR | PUN | DAX | DALIM | DAGA | DASH | DTSD | DTSH | CP | PSSH | PORPR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.060 | .04 | .015 | 80. | 35. | 20. | 120. | 150. | 150. | 1.00 | .300 | .000 |

| EDIAM | PNLIM | PDLIM | RLIM | GRLIM | VARMC | CONST | ROP | VARLIM | CSF | TPCL | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | 1000.0 | 1000.0 | 0.07 | 0.333 | 0.70 | 0.20 | 0.50 | 21.00 | 5. |

RESISTIVITY STATISTICS OVER ENTIRE INTERVAL

GAMMA - RAY STATISTICS OVER ENTIRE INTERVAL

ANALYSIS BY QUASI MODEL
GR COEFF. FROM STATISTICS
WASAMP ROUTINE USED

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9321.0 | 0.0 | 1.2 | 100 | | 42 | 24.10 | 3.01 |
| 9322.0 | 0.0 | 3.7 | 100 | | 25 | 24.08 | 3.01 |
| 9323.0 | 0.0 | 5.1 | 60 | | 15 | 24.04 | 3.00 |
| 9324.0 | 0.0 | 4.5 | 100 | | 10 | 23.99 | 2.99 |
| 9325.0 | 0.0 | 3.5 | 100 | | 34 | 23.95 | 2.99 |
| 9326.0 | 0.0 | 2.9 | 100 | | 43 | 23.92 | 2.99 |
| 9327.0 | 0.0 | 2.9 | 100 | | 42 | 23.89 | 2.99 |
| 9328.0 | 0.0 | 3.0 | 100 | | 39 | 23.85 | 2.99 |
| 9329.0 | 0.0 | 2.7 | 100 | | 42 | 23.83 | 2.99 |
| 9330.0 | 0.0 | 3.0 | 100 | | 38 | 23.80 | 2.99 |
| 9331.0 | 0.0 | 2.9 | 100 | | 39 | 23.77 | 2.99 |
| 9332.0 | 0.0 | 3.3 | 100 | | 43 | 23.74 | 2.99 |
| 9333.0 | 0.0 | 2.6 | 100 | | 42 | 23.71 | 2.99 |
| 9334.0 | 0.0 | 2.4 | 100 | | 39 | 23.68 | 2.99 |
| 9335.0 | 0.0 | 3.0 | 100 | | 39 | 23.66 | 2.99 |
| 9336.0 | 0.0 | 3.1 | 100 | | 38 | 23.63 | 2.99 |
| 9337.0 | 0.0 | 3.2 | 100 | | 45 | 23.60 | 2.99 |
| 9338.0 | 0.0 | 2.3 | 100 | | 49 | 23.57 | 2.99 |
| 9339.0 | 0.0 | 2.4 | 100 | | 41 | 23.55 | 2.99 |
| 9340.0 | 0.0 | 3.0 | 100 | | 34 | 23.52 | 2.99 |
| 9343.0 | 0.0 | 2.7 | 100 | | 40 | 23.48 | 2.99 |
| 9347.0 | 0.0 | 2.3 | 100 | | 49 | 23.39 | 2.99 |
| 9349.0 | 0.0 | 2.5 | 100 | | 48 | 23.36 | 2.99 |
| 9350.0 | 0.0 | 2.6 | 100 | | 44 | 23.34 | 2.99 |
| 9351.0 | 0.0 | 2.9 | 100 | | 40 | 23.31 | 2.99 |
| 9352.0 | 0.0 | 2.3 | 100 | | 42 | 23.28 | 2.99 |
| 9353.0 | 0.0 | 1.7 | 100 | | 49 | 23.26 | 2.99 |
| 9354.0 | 0.0 | 3.1 | 100 | | 46 | 23.24 | 2.99 |
| 9355.0 | 0.0 | 1.6 | 100 | | 48 | 23.22 | 2.99 |
| 9358.0 | 0.0 | 3.0 | 100 | | 48 | 23.17 | 2.99 |
| 9359.0 | 0.0 | 3.4 | 100 | | 34 | 23.14 | 2.99 |
| 9360.0 | 0.0 | 2.8 | 100 | | 44 | 23.11 | 2.99 |
| 9361.0 | 0.0 | 3.0 | 100 | | 49 | 23.08 | 2.99 |
| 9362.0 | 0.0 | 3.3 | 100 | | 45 | 23.05 | 2.99 |
| 9364.0 | 0.0 | 3.1 | 100 | | 50 | 22.99 | 2.99 |
| 9365.0 | 0.0 | 2.5 | 100 | | 50 | 22.97 | 2.99 |
| 9368.0 | 0.0 | 3.5 | 100 | | 36 | 22.91 | 2.99 |
| 9369.0 | 0.0 | 3.4 | 100 | | 28 | 22.87 | 2.99 |
| 9370.0 | 0.0 | 2.5 | 100 | | 43 | 22.84 | 2.99 |
| 9373.0 | 0.0 | 0.9 | 100 | | 47 | 22.79 | 2.99 |
| 9374.0 | 0.0 | 2.7 | 100 | | 39 | 22.78 | 2.99 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9379.0 | 0.0 | 3.1 | 100 | | 36 | 22.72 | 2.99 |
| 9380.0 | 0.0 | 1.0 | 100 | | 50 | 22.69 | 2.99 |
| 9383.0 | 0.0 | 3.0 | 100 | | 42 | 22.64 | 2.99 |
| 9384.0 | 0.0 | 1.9 | 100 | | 44 | 22.61 | 2.99 |
| 9389.0 | 0.0 | 2.4 | 100 | | 42 | 22.56 | 2.99 |
| 9390.0 | 0.0 | 2.7 | 100 | | 29 | 22.53 | 2.99 |
| 9391.0 | 0.0 | 3.4 | 100 | | 31 | 22.50 | 2.99 |
| 9392.0 | 0.0 | 3.1 | 100 | | 41 | 22.46 | 2.99 |
| 9393.0 | 0.0 | 2.9 | 100 | | 44 | 22.43 | 2.99 |
| 9394.0 | 0.0 | 1.7 | 100 | | 48 | 22.41 | 2.99 |
| 9399.0 | 0.0 | 3.1 | 100 | | 47 | 22.32 | 2.99 |
| 9405.0 | 0.0 | 1.8 | 100 | | 48 | 22.27 | 2.99 |
| 9406.0 | 0.0 | 1.9 | 100 | | 49 | 22.26 | 2.99 |
| 9408.0 | 0.0 | 2.1 | 100 | | 47 | 22.22 | 2.99 |
| 9412.0 | 0.0 | 3.5 | 100 | | 48 | 22.17 | 2.99 |
| 9432.0 | 0.0 | 3.3 | 100 | | 45 | 21.95 | 2.99 |
| 9433.0 | 0.0 | 0.7 | 100 | | 42 | 21.93 | 2.99 |
| 9434.0 | 0.0 | 2.8 | 100 | | 41 | 21.91 | 2.99 |
| 9444.0 | 0.0 | 3.1 | 100 | | 34 | 21.78 | 2.99 |
| 9445.0 | 0.0 | 3.3 | 100 | | 26 | 21.74 | 2.99 |
| 9446.0 | 0.0 | 3.2 | 100 | | 29 | 21.71 | 2.99 |
| 9447.0 | 0.0 | 3.5 | 100 | | 43 | 21.68 | 2.99 |
| 9450.0 | 0.0 | 3.8 | 100 | | 46 | 21.57 | 2.99 |
| 9451.0 | 0.0 | 2.8 | 100 | | 47 | 21.54 | 2.99 |
| 9453.0 | 0.0 | 3.7 | 100 | | 35 | 21.50 | 2.99 |
| 9454.0 | 0.0 | 1.1 | 100 | | 26 | 21.47 | 2.99 |
| 9455.0 | 0.0 | 1.6 | 100 | | 30 | 21.45 | 2.99 |
| 9456.0 | 0.0 | 2.1 | 100 | | 38 | 21.44 | 2.99 |
| 9457.0 | 0.0 | 2.6 | 100 | | 49 | 21.42 | 2.99 |
| 9459.0 | 0.0 | 0.8 | 100 | | 50 | 21.35 | 2.99 |
| 9460.0 | 0.0 | 1.7 | 100 | | 48 | 21.34 | 2.99 |
| 9471.0 | 0.0 | 2.1 | 100 | | 48 | 21.20 | 2.99 |
| 9472.0 | 0.0 | 2.8 | 100 | | 44 | 21.18 | 2.99 |
| 9498.0 | 0.0 | 3.5 | 100 | | 31 | 20.94 | 2.99 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9499.0 | 0.0 | 2.1 | 100 | | 47 | 20.92 | 2.99 |
| 9508.0 | 0.0 | 2.1 | 100 | | 49 | 20.86 | 2.99 |
| 9510.0 | 0.0 | 3.5 | 100 | | 47 | 20.81 | 2.99 |
| 9511.0 | 0.0 | 3.1 | 100 | | 47 | 20.78 | 2.99 |
| 9512.0 | 0.0 | 4.2 | 100 | | 37 | 20.74 | 2.99 |
| 9513.0 | 0.0 | 3.5 | 100 | | 33 | 20.70 | 2.99 |
| 9514.0 | 0.0 | 2.2 | 100 | | 40 | 20.67 | 2.99 |
| 9516.0 | 0.0 | 3.3 | 100 | | 48 | 20.63 | 2.99 |
| 9517.0 | 0.0 | 3.4 | 100 | | 39 | 20.59 | 2.99 |
| 9518.0 | 0.0 | 3.0 | 100 | | 39 | 20.56 | 2.99 |
| 9519.0 | 0.0 | 1.6 | 100 | | 48 | 20.54 | 2.99 |
| 9534.0 | 0.0 | 2.5 | 100 | | 49 | 20.39 | 2.99 |
| 9535.0 | 0.0 | 3.3 | 100 | | 46 | 20.37 | 2.99 |
| 9538.0 | 0.0 | 1.2 | 100 | | 48 | 20.33 | 2.99 |
| 9539.0 | 0.0 | 3.7 | 100 | | 38 | 20.31 | 2.99 |
| 9540.0 | 0.0 | 2.1 | 100 | | 49 | 20.28 | 2.99 |
| 9544.0 | 0.0 | 3.1 | 100 | | 44 | 20.22 | 2.99 |
| 9545.0 | 0.0 | 4.7 | 100 | | 35 | 20.19 | 2.99 |
| 9546.0 | 0.0 | 2.7 | 100 | | 42 | 20.14 | 2.99 |
| 9547.0 | 0.0 | 2.0 | 100 | | 41 | 20.12 | 2.99 |
| 9548.0 | 0.0 | 2.0 | 100 | | 44 | 20.10 | 2.99 |
| 9549.0 | 0.0 | 1.0 | 100 | | 49 | 20.08 | 2.99 |
| 9551.0 | 0.0 | 0.1 | 100 | | 47 | 20.07 | 2.99 |
| 9552.0 | 0.0 | 1.9 | 100 | | 49 | 20.07 | 2.99 |
| 9555.0 | 0.0 | 2.8 | 100 | | 49 | 20.03 | 2.99 |
| 9556.0 | 0.0 | 0.0 | 100 | | 46 | 20.01 | 2.99 |
| 9557.0 | 0.0 | 0.0 | 100 | | 47 | 20.01 | 2.99 |
| 9558.0 | 0.0 | 2.9 | 100 | | 48 | 20.01 | 2.99 |
| 9583.0 | 0.2 | 7.1 | 100 | | 21 | 19.62 | 2.99 |
| 9584.0 | 0.0 | 5.6 | 100 | | 36 | 19.54 | 2.99 |
| 9601.0 | 0.0 | 3.7 | 100 | | 39 | 19.31 | 2.99 |
| 9602.0 | 0.0 | 3.8 | 100 | | 32 | 19.28 | 2.99 |
| 9603.0 | 0.0 | 3.9 | 100 | | 32 | 19.24 | 2.99 |
| 9604.0 | 0.0 | 3.3 | 100 | | 34 | 19.20 | 2.99 |
| 9605.0 | 0.0 | 3.1 | 100 | | 44 | 19.17 | 2.99 |
| 9607.0 | 0.0 | 2.7 | 100 | | 48 | 19.11 | 2.99 |
| 9608.0 | 0.0 | 3.0 | 100 | | 40 | 19.09 | 2.99 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9609.0 | 0.0 | 3.2 | 100 | | 38 | 19.05 | 2.99 |
| 9610.0 | 0.0 | 3.4 | 100 | | 36 | 19.02 | 2.99 |
| 9614.0 | 0.0 | 2.7 | 100 | | 47 | 18.96 | 2.99 |
| 9615.0 | 0.0 | 2.9 | 100 | | 41 | 18.93 | 2.99 |
| 9616.0 | 0.0 | 3.1 | 100 | | 41 | 18.90 | 2.99 |
| 9617.0 | 0.0 | 3.2 | 100 | | 38 | 18.87 | 2.99 |
| 9618.0 | 0.0 | 1.7 | 100 | | 37 | 18.83 | 2.99 |
| 9619.0 | 0.0 | 0.0 | 100 | | 45 | 18.83 | 2.99 |
| 9621.0 | 0.0 | 2.0 | 100 | | 40 | 18.81 | 2.99 |
| 9622.0 | 0.0 | 2.9 | 100 | | 12 | 18.79 | 2.99 |
| 9623.0 | 0.0 | 3.9 | 100 | | 0 | 18.76 | 2.99 |
| 9624.0 | 0.3 | 7.4 | 68 | | 0 | 18.71 | 2.99 |
| 9625.0 | 1 | 9.1 | 65 | | 0 | 18.63 | 2.97 |
| 9626.0 | 0.8 | 8.7 | 76 | | 0 | 18.54 | 2.94 |
| 9627.0 | 0.6 | 8.3 | 78 | | 5 | 18.46 | 2.92 |
| 9628.0 | 0.0 | 3.4 | 100 | | 24 | 18.40 | 2.91 |
| 9629.0 | 0.0 | 2.6 | 100 | | 48 | 18.37 | 2.91 |
| 9632.0 | 0.0 | 1.9 | 100 | | 36 | 18.34 | 2.91 |
| 9633.0 | 0.0 | 2.0 | 100 | | 27 | 18.32 | 2.91 |
| 9634.0 | 0.0 | 1.6 | 100 | | 24 | 18.30 | 2.91 |
| 9635.0 | 0.0 | 0.0 | 100 | | 29 | 18.29 | 2.91 |
| 9636.0 | 0.0 | 0.3 | 100 | | 41 | 18.29 | 2.91 |
| 9641.0 | 0.0 | 0.0 | 100 | | 40 | 18.27 | 2.91 |
| 9642.0 | 0.0 | 2.2 | 100 | | 10 | 18.27 | 2.91 |
| 9643.0 | 0.0 | 3.5 | 100 | | 3 | 18.24 | 2.91 |
| 9644.0 | 0.0 | 2.6 | 100 | | 19 | 18.21 | 2.91 |
| 9645.0 | 0.0 | 1.6 | 100 | | 38 | 18.19 | 2.91 |
| 9646.0 | 0.0 | 1.1 | 100 | | 38 | 18.17 | 2.91 |
| 9647.0 | 0.0 | 4.8 | 100 | | 7 | 18.15 | 2.91 |
| 9648.0 | 0.1 | 6.7 | 100 | | 0 | 18.10 | 2.91 |
| 9649.0 | 0.1 | 6.5 | 100 | | 0 | 18.03 | 2.91 |
| 9650.0 | 0.0 | 4.9 | 100 | | 10 | 17.97 | 2.91 |
| 9651.0 | 0.0 | 2.8 | 100 | | 22 | 17.92 | 2.91 |
| 9652.0 | 0.0 | 2.3 | 100 | | 19 | 17.91 | 2.91 |
| 9653.0 | 1 | 9.2 | 100 | | 0 | 17.87 | 2.91 |
| 9654.0 | 0.0 | 3.9 | 100 | | 2 | 17.77 | 2.91 |
| 9655.0 | 0.1 | 6.6 | 100 | | 6 | 17.71 | 2.91 |
| 9656.0 | 0.0 | 3.1 | 100 | | 30 | 17.66 | 2.91 |
| 9657.0 | 0.0 | 1.0 | 100 | | 48 | 17.63 | 2.91 |
| 9666.0 | 0.0 | 2.3 | 100 | | 31 | 17.56 | 2.91 |
| 9667.0 | 0.0 | 4.8 | 100 | | 12 | 17.54 | 2.91 |
| 9668.0 | 0.0 | 0.4 | 100 | | 43 | 17.52 | 2.91 |
| 9673.0 | 0.0 | 2.1 | 100 | | 46 | 17.50 | 2.91 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9674.0 | 0.0 | 2.1 | 100 | | 49 | 17.47 | 2.91 |
| 9675.0 | 0.0 | 1.2 | 100 | | 46 | 17.45 | 2.91 |
| 9676.0 | 0.0 | 3.1 | 100 | | 13 | 17.43 | 2.91 |
| 9677.0 | 0.0 | 2.0 | 100 | | 4 | 17.40 | 2.91 |
| 9678.0 | 0.0 | 3.3 | 100 | | 1 | 17.38 | 2.91 |
| 9679.0 | 0.0 | 3.6 | 100 | | 13 | 17.35 | 2.91 |
| 9680.0 | 0.0 | 0.3 | 100 | | 46 | 17.32 | 2.91 |
| 9682.0 | 0.0 | 2.4 | 100 | | 30 | 17.29 | 2.91 |
| 9683.0 | 0.0 | 3.2 | 100 | | 1 | 17.26 | 2.91 |
| 9684.0 | 0.0 | 2.8 | 100 | | 0 | 17.24 | 2.91 |
| 9685.0 | 0.0 | 4.8 | 100 | | 0 | 17.21 | 2.91 |
| 9686.0 | 0.0 | 3.7 | 100 | | 0 | 17.16 | 2.91 |
| 9687.0 | 0.0 | 3.0 | 100 | | 2 | 17.13 | 2.91 |
| 9688.0 | 0.0 | 3.0 | 100 | | 14 | 17.09 | 2.91 |
| 9689.0 | 0.0 | 0.2 | 100 | | 31 | 17.07 | 2.91 |
| 9690.0 | 0.0 | 0.1 | 100 | | 32 | 17.07 | 2.91 |
| 9691.0 | 0.0 | 0.1 | 100 | | 36 | 17.06 | 2.91 |
| 9692.0 | 0.0 | 0.1 | 100 | | 49 | 17.06 | 2.91 |
| 9694.0 | 0.0 | 2.2 | 100 | | 42 | 17.02 | 2.91 |
| 9695.0 | 0.0 | 3.1 | 100 | | 27 | 17.00 | 2.91 |
| 9696.0 | 0.1 | 6.1 | 84 | | 6 | 16.97 | 2.91 |
| 9697.0 | 0.1 | 5.9 | 74 | | 1 | 16.91 | 2.90 |
| 9698.0 | 0.0 | 5.6 | 75 | | 1 | 16.85 | 2.89 |
| 9699.0 | 0.0 | 4.0 | 98 | | 10 | 16.80 | 2.88 |
| 9700.0 | 0.0 | 1.5 | 100 | | 25 | 16.77 | 2.88 |
| 9701.0 | 0.0 | 0.3 | 100 | | 44 | 16.75 | 2.88 |
| 9702.0 | 0.0 | 0.7 | 100 | | 47 | 16.75 | 2.88 |
| 9703.0 | 0.0 | 1.2 | 100 | | 42 | 16.74 | 2.88 |
| 9704.0 | 0.0 | 1.1 | 100 | | 38 | 16.72 | 2.88 |
| 9705.0 | 0.0 | 1.0 | 100 | | 36 | 16.71 | 2.88 |
| 9706.0 | 0.0 | 1.9 | 100 | | 26 | 16.70 | 2.88 |
| 9707.0 | 0.0 | 1.7 | 100 | | 14 | 16.68 | 2.88 |
| 9708.0 | 0.0 | 1.9 | 100 | | 12 | 16.66 | 2.88 |
| 9709.0 | 0.0 | 3.6 | 91 | | 15 | 16.63 | 2.88 |
| 9710.0 | 0.0 | 3.4 | 100 | | 15 | 16.60 | 2.87 |
| 9711.0 | 0.0 | 3.5 | 100 | | 8 | 16.57 | 2.87 |
| 9712.0 | 0.1 | 6.4 | 84 | | 9 | 16.52 | 2.87 |
| 9713.0 | 0.0 | 2.3 | 100 | | 40 | 16.49 | 2.87 |
| 9714.0 | 0.0 | 2.7 | 100 | | 44 | 16.46 | 2.87 |
| 9715.0 | 0.0 | 3.0 | 100 | | 27 | 16.43 | 2.87 |
| 9716.0 | 0.0 | 1.2 | 100 | | 20 | 16.41 | 2.87 |
| 9717.0 | 0.0 | 4.6 | 100 | | 0 | 16.39 | 2.87 |
| 9718.0 | 0.1 | 6.2 | 66 | | 0 | 16.34 | 2.86 |
| 9719.0 | 0.0 | 2.7 | 100 | | 20 | 16.28 | 2.84 |
| 9720.0 | 0.0 | 3.5 | 100 | | 25 | 16.25 | 2.84 |
| 9721.0 | 0.0 | 0.7 | 100 | | 28 | 16.22 | 2.84 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9722.0 | 0.0 | 1.6 | 100 | | 22 | 16.22 | 2.84 |
| 9723.0 | 0.0 | 3.6 | 100 | | 15 | 16.20 | 2.84 |
| 9724.0 | 0.0 | 1.0 | 100 | | 25 | 16.17 | 2.84 |
| 9725.0 | 0.0 | 0.9 | 100 | | 41 | 16.16 | 2.84 |
| 9726.0 | 0.0 | 2.1 | 100 | | 47 | 16.14 | 2.84 |
| 9727.0 | 0.0 | 1.7 | 100 | | 48 | 16.12 | 2.84 |
| 9728.0 | 0.0 | 3.3 | 100 | | 42 | 16.10 | 2.84 |
| 9729.0 | 0.0 | 1.6 | 100 | | 49 | 16.07 | 2.84 |
| 9731.0 | 0.0 | 1.9 | 100 | | 46 | 16.04 | 2.84 |
| 9732.0 | 0.0 | 4.2 | 100 | | 16 | 16.02 | 2.84 |
| 9733.0 | 0.0 | 5.1 | 100 | | 3 | 15.96 | 2.84 |
| 9734.0 | 0.0 | 0.5 | 100 | | 29 | 15.91 | 2.84 |
| 9741.0 | 0.0 | 2.2 | 100 | | 48 | 15.89 | 2.84 |
| 9742.0 | 0.0 | 4.7 | 99 | | 22 | 15.86 | 2.84 |
| 9743.0 | 0.1 | 6.9 | 100 | | 0 | 15.79 | 2.83 |
| 9744.0 | 0.0 | 3.4 | 100 | | 24 | 15.73 | 2.83 |
| 9745.0 | 0.0 | 2.3 | 100 | | 40 | 15.71 | 2.83 |
| 9746.0 | 0.0 | 2.3 | 100 | | 28 | 15.69 | 2.83 |
| 9749.0 | 0.0 | 2.1 | 100 | | 41 | 15.63 | 2.83 |
| 9750.0 | 0.0 | 3.1 | 100 | | 36 | 15.61 | 2.83 |
| 9751.0 | 0.0 | 2.2 | 100 | | 35 | 15.58 | 2.83 |
| 9752.0 | 0.0 | 3.4 | 100 | | 24 | 15.55 | 2.83 |
| 9753.0 | 0.0 | 3.4 | 100 | | 17 | 15.52 | 2.83 |
| 9754.0 | 0.0 | 3.9 | 100 | | 15 | 15.48 | 2.83 |
| 9755.0 | 0.0 | 2.9 | 100 | | 26 | 15.44 | 2.83 |
| 9756.0 | 0.0 | 0.7 | 100 | | 41 | 15.42 | 2.83 |
| 9757.0 | 0.0 | 0.6 | 100 | | 36 | 15.41 | 2.83 |
| 9758.0 | 0.0 | 1.4 | 100 | | 30 | 15.40 | 2.83 |
| 9759.0 | 0.0 | 2.5 | 100 | | 35 | 15.38 | 2.83 |
| 9760.0 | 0.0 | 2.5 | 100 | | 32 | 15.35 | 2.83 |
| 9761.0 | 0.0 | 2.9 | 100 | | 23 | 15.33 | 2.83 |
| 9762.0 | 0.0 | 2.2 | 100 | | 27 | 15.30 | 2.83 |
| 9763.0 | 0.0 | 2.3 | 100 | | 29 | 15.28 | 2.83 |
| 9764.0 | 0.0 | 3.8 | 100 | | 27 | 15.25 | 2.83 |
| 9765.0 | 0.0 | 4.0 | 92 | | 17 | 15.21 | 2.83 |
| 9766.0 | 0.0 | 4.2 | 99 | | 6 | 15.17 | 2.83 |
| 9767.0 | 0.1 | 6.1 | 97 | | 0 | 15.12 | 2.83 |
| 9768.0 | 0.0 | 0.2 | 100 | | 46 | 15.07 | 2.83 |
| 9777.0 | 0.0 | 3.2 | 100 | | 39 | 15.04 | 2.83 |
| 9778.0 | 0.2 | 7.0 | 84 | | 6 | 15.00 | 2.83 |
| 9779.0 | 0.1 | 5.9 | 92 | | 0 | 14.94 | 2.82 |
| 9780.0 | 0.3 | 7.5 | 55 | | 0 | 14.87 | 2.80 |
| 9781.0 | 1 | 9.5 | 51 | 0.1 | 0 | 14.79 | 2.77 |
| 9782.0 | 0.0 | 3.4 | 100 | | 0 | 14.73 | 2.74 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9783.0 | 0.1 | 6.3 | 58 | | 0 | 14.67 | 2.72 |
| 9784.0 | 0.1 | 6.5 | 57 | | 0 | 14.61 | 2.70 |
| 9785.0 | 1 | 9.0 | 56 | 0.2 | 0 | 14.53 | 2.66 |
| 9786.0 | 0.4 | 7.9 | 54 | | 0 | 14.45 | 2.62 |
| 9787.0 | 2 | 9.6 | 56 | 0.1 | 0 | 14.37 | 2.59 |
| 9788.0 | 0.6 | 8.4 | 62 | 0.1 | 0 | 14.28 | 2.55 |
| 9789.0 | 2 | 9.9 | 72 | | 0 | 14.19 | 2.52 |
| 9790.0 | 0.2 | 6.9 | 92 | | 3 | 14.12 | 2.50 |
| 9793.0 | 0.1 | 5.9 | 77 | | 13 | 13.99 | 2.49 |
| 9794.0 | 0.0 | 1.4 | 100 | | 21 | 13.94 | 2.49 |
| 9795.0 | 0.0 | 0.0 | 100 | | 29 | 13.93 | 2.49 |
| 9796.0 | 0.0 | 0.0 | 100 | | 27 | 13.93 | 2.49 |
| 9797.0 | 0.0 | 0.0 | 100 | | 25 | 13.93 | 2.49 |
| 9798.0 | 0.2 | 7.4 | 75 | | 12 | 13.92 | 2.49 |
| 9799.0 | 0.0 | 1.6 | 100 | | 38 | 13.87 | 2.48 |
| 9801.0 | 0.0 | 2.2 | 100 | | 48 | 13.85 | 2.48 |
| 9802.0 | 0.0 | 2.8 | 100 | | 31 | 13.82 | 2.48 |
| 9803.0 | 0.0 | 2.5 | 100 | | 22 | 13.79 | 2.48 |
| 9804.0 | 0.0 | 1.7 | 100 | | 19 | 13.76 | 2.48 |
| 9805.0 | 0.0 | 0.0 | 100 | | 19 | 13.75 | 2.48 |
| 9806.0 | 0.0 | 0.0 | 100 | | 16 | 13.75 | 2.48 |
| 9807.0 | 0.0 | 0.0 | 100 | | 15 | 13.75 | 2.48 |
| 9808.0 | 0.0 | 0.1 | 100 | | 14 | 13.75 | 2.48 |
| 9809.0 | 0.0 | 2.4 | 100 | | 14 | 13.74 | 2.48 |
| 9810.0 | 0.0 | 2.8 | 100 | | 14 | 13.72 | 2.48 |
| 9811.0 | 0.0 | 3.9 | 87 | | 8 | 13.69 | 2.48 |
| 9812.0 | 0.1 | 6.4 | 60 | | 2 | 13.65 | 2.47 |
| 9813.0 | 0.0 | 5.6 | 57 | | 4 | 13.58 | 2.44 |
| 9814.0 | 0.0 | 4.5 | 68 | | 6 | 13.53 | 2.42 |
| 9815.0 | 0.0 | 4.3 | 73 | | 10 | 13.48 | 2.40 |
| 9816.0 | 0.0 | 4.1 | 87 | | 9 | 13.44 | 2.39 |
| 9817.0 | 0.0 | 3.7 | 94 | | 14 | 13.40 | 2.39 |
| 9818.0 | 0.0 | 3.6 | 84 | | 19 | 13.36 | 2.39 |
| 9819.0 | 0.1 | 6.6 | 59 | | 4 | 13.32 | 2.38 |
| 9820.0 | 0.6 | 8.4 | 41 | 0.3 | 0 | 13.25 | 2.35 |
| 9821.0 | 0.1 | 6.8 | 48 | 0.2 | 0 | 13.17 | 2.30 |
| 9822.0 | 0.0 | 5.0 | 76 | | 0 | 13.10 | 2.26 |
| 9823.0 | 0.0 | 4.1 | 89 | | 6 | 13.06 | 2.26 |
| 9824.0 | 0.0 | 3.8 | 94 | | 16 | 13.02 | 2.25 |
| 9825.0 | 0.0 | 2.5 | 100 | | 31 | 12.99 | 2.25 |
| 9826.0 | 0.0 | 3.9 | 95 | | 16 | 12.96 | 2.25 |
| 9827.0 | 0.0 | 5.4 | 100 | | 0 | 12.91 | 2.25 |
| 9828.0 | 0.0 | 3.7 | 100 | | 17 | 12.86 | 2.25 |
| 9829.0 | 0.0 | 2.3 | 100 | | 42 | 12.83 | 2.25 |
| 9830.0 | 0.0 | 5.4 | 70 | | 26 | 12.80 | 2.25 |
| 9831.0 | 0.2 | 7.3 | 74 | | 0 | 12.73 | 2.22 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9832.0 | 0.0 | 5.7 | 70 | | 0 | 12.67 | 2.21 |
| 9833.0 | 0.0 | 5.1 | 56 | | 7 | 12.61 | 2.20 |
| 9834.0 | 0.0 | 4.7 | 59 | | 8 | 12.56 | 2.17 |
| 9835.0 | 0.0 | 5.4 | 62 | | 3 | 12.51 | 2.15 |
| 9836.0 | 0.1 | 5.9 | 56 | | 3 | 12.46 | 2.13 |
| 9837.0 | 0.0 | 5.4 | 54 | | 5 | 12.40 | 2.10 |
| 9838.0 | 0.0 | 4.0 | 85 | | 5 | 12.35 | 2.08 |
| 9839.0 | 0.0 | 4.6 | 75 | | 6 | 12.31 | 2.08 |
| 9840.0 | 0.0 | 4.3 | 73 | | 13 | 12.26 | 2.07 |
| 9841.0 | 0.0 | 3.5 | 94 | | 13 | 12.23 | 2.06 |
| 9842.0 | 0.0 | 4.2 | 99 | | 3 | 12.19 | 2.06 |
| 9843.0 | 0.0 | 3.7 | 100 | | 7 | 12.15 | 2.06 |
| 9844.0 | 0.0 | 3.2 | 100 | | 18 | 12.11 | 2.06 |
| 9845.0 | 0.0 | 2.1 | 100 | | 21 | 12.08 | 2.06 |
| 9846.0 | 0.0 | 4.3 | 100 | | 16 | 12.05 | 2.06 |
| 9847.0 | 0.0 | 0.4 | 100 | | 39 | 12.02 | 2.06 |
| 9851.0 | 0.0 | 3.3 | 100 | | 18 | 11.98 | 2.06 |
| 9852.0 | 0.0 | 2.4 | 100 | | 25 | 11.95 | 2.06 |
| 9855.0 | 0.0 | 3.9 | 100 | | 39 | 11.90 | 2.06 |
| 9856.0 | 0.1 | 5.9 | 96 | | 10 | 11.86 | 2.06 |
| 9857.0 | 0.1 | 5.7 | 88 | | 6 | 11.80 | 2.06 |
| 9858.0 | 0.1 | 5.7 | 78 | | 3 | 11.74 | 2.05 |
| 9859.0 | 0.1 | 6.1 | 74 | | 2 | 11.68 | 2.03 |
| 9860.0 | 0.5 | 8.1 | 60 | | 0 | 11.62 | 2.02 |
| 9861.0 | 0.3 | 7.7 | 56 | 0.5 | 1 | 11.54 | 1.98 |
| 9862.0 | 0.5 | 8.2 | 52 | 0.5 | 1 | 11.46 | 1.95 |
| 9863.0 | 0.4 | 7.8 | 60 | | 0 | 11.38 | 1.91 |
| 9864.0 | 0.2 | 7.2 | 59 | | 0 | 11.30 | 1.88 |
| 9865.0 | 0.2 | 6.9 | 63 | | 2 | 11.23 | 1.85 |
| 9866.0 | 0.0 | 5.1 | 79 | | 7 | 11.16 | 1.82 |
| 9867.0 | 0.0 | 4.2 | 98 | | 12 | 11.11 | 1.82 |
| 9868.0 | 0.0 | 3.7 | 100 | | 17 | 11.07 | 1.82 |
| 9869.0 | 0.0 | 2.4 | 100 | | 30 | 11.04 | 1.82 |
| 9870.0 | 0.0 | 2.3 | 100 | | 47 | 11.01 | 1.82 |
| 9871.0 | 0.0 | 0.7 | 100 | | 46 | 10.99 | 1.82 |
| 9872.0 | 0.0 | 3.5 | 100 | | 29 | 10.98 | 1.82 |
| 9873.0 | 0.0 | 2.7 | 100 | | 23 | 10.95 | 1.82 |
| 9874.0 | 0.0 | 5.7 | 95 | | 2 | 10.91 | 1.81 |
| 9875.0 | 0.0 | 3.9 | 100 | | 0 | 10.86 | 1.81 |
| 9876.0 | 0.0 | 3.9 | 100 | | 0 | 10.82 | 1.81 |
| 9877.0 | 0.0 | 4.7 | 100 | | 0 | 10.78 | 1.81 |
| 9878.0 | 0.0 | 5.5 | 73 | | 1 | 10.73 | 1.81 |
| 9879.0 | 0.0 | 3.4 | 100 | | 8 | 10.68 | 1.80 |
| 9880.0 | 0.0 | 3.2 | 100 | | 6 | 10.65 | 1.80 |
| 9881.0 | 0.0 | 5.6 | 73 | | 0 | 10.61 | 1.80 |
| 9882.0 | 0.0 | 5.6 | 77 | | 0 | 10.55 | 1.78 |

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| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9883.0 | 0.0 | 5.4 | 81 | | 0 | 10.50 | 1.77 |
| 9884.0 | 0.0 | 5.8 | 67 | | 0 | 10.44 | 1.76 |
| 9885.0 | 0.1 | 5.8 | 74 | | 0 | 10.38 | 1.74 |
| 9886.0 | 0.1 | 5.9 | 76 | | 4 | 10.32 | 1.72 |
| 9887.0 | 0.0 | 2.3 | 100 | | 20 | 10.27 | 1.71 |
| 9888.0 | 0.0 | 1.9 | 100 | | 37 | 10.24 | 1.71 |
| 9891.0 | 0.0 | 3.9 | 100 | | 28 | 10.19 | 1.71 |
| 9892.0 | 0.3 | 7.7 | 74 | | 1 | 10.14 | 1.71 |
| 9893.0 | 0.0 | 5.5 | 83 | | 0 | 10.07 | 1.69 |
| 9894.0 | 0.0 | 5.6 | 72 | | 0 | 10.01 | 1.68 |
| 9895.0 | 0.0 | 4.5 | 63 | | 2 | 9.96 | 1.66 |
| 9896.0 | 0.0 | 4.8 | 54 | | 2 | 9.91 | 1.64 |
| 9897.0 | 0.1 | 6.2 | 45 | | 0 | 9.86 | 1.62 |
| 9898.0 | 0.4 | 7.9 | 45 | | 0 | 9.80 | 1.58 |
| 9899.0 | 0.7 | 8.6 | 41 | 0.1 | 0 | 9.73 | 1.54 |
| 9900.0 | 0.3 | 7.6 | 48 | | 0 | 9.64 | 1.49 |
| 9901.0 | 0.0 | 5.2 | 64 | | 5 | 9.57 | 1.46 |
| 9902.0 | 0.0 | 5.1 | 61 | | 10 | 9.52 | 1.44 |
| 9903.0 | 0.1 | 6.6 | 57 | | 1 | 9.47 | 1.42 |
| 9904.0 | 0.1 | 5.8 | 67 | | 0 | 9.40 | 1.39 |
| 9905.0 | 0.0 | 3.7 | 90 | | 4 | 9.35 | 1.37 |
| 9906.0 | 0.0 | 2.4 | 100 | | 9 | 9.31 | 1.37 |
| 9907.0 | 0.0 | 3.7 | 94 | | 12 | 9.28 | 1.37 |
| 9908.0 | 0.0 | 3.9 | 96 | | 13 | 9.24 | 1.37 |
| 9909.0 | 0.0 | 3.2 | 100 | | 12 | 9.20 | 1.37 |
| 9910.0 | 0.0 | 0.1 | 100 | | 25 | 9.18 | 1.37 |
| 9911.0 | 0.0 | 2.0 | 100 | | 34 | 9.17 | 1.37 |
| 9912.0 | 0.0 | 2.0 | 100 | | 40 | 9.15 | 1.37 |
| 9913.0 | 0.0 | 2.3 | 100 | | 45 | 9.13 | 1.37 |
| 9914.0 | 0.0 | 2.8 | 100 | | 28 | 9.11 | 1.37 |
| 9915.0 | 0.0 | 5.2 | 100 | | 10 | 9.08 | 1.37 |
| 9916.0 | 0.0 | 3.6 | 100 | | 15 | 9.03 | 1.37 |
| 9917.0 | 0.0 | 2.7 | 100 | | 24 | 8.99 | 1.37 |
| 9918.0 | 0.0 | 2.3 | 100 | | 31 | 8.97 | 1.37 |
| 9919.0 | 0.0 | 2.3 | 100 | | 26 | 8.94 | 1.37 |
| 9920.0 | 0.0 | 1.8 | 100 | | 37 | 8.91 | 1.37 |
| 9922.0 | 0.0 | 2.8 | 100 | | 42 | 8.89 | 1.37 |
| 9923.0 | 0.0 | 2.9 | 100 | | 41 | 8.86 | 1.37 |
| 9924.0 | 0.0 | 2.5 | 100 | | 38 | 8.83 | 1.37 |
| 9925.0 | 0.0 | 3.9 | 100 | | 28 | 8.81 | 1.37 |
| 9926.0 | 0.0 | 2.4 | 100 | | 33 | 8.77 | 1.37 |
| 9927.0 | 0.0 | 3.4 | 100 | | 32 | 8.75 | 1.37 |
| 9928.0 | 0.0 | 4.0 | 100 | | 28 | 8.71 | 1.37 |
| 9929.0 | 0.0 | 2.3 | 100 | | 25 | 8.67 | 1.37 |
| 9930.0 | 0.0 | 2.0 | 100 | | 24 | 8.65 | 1.37 |
| 9931.0 | 0.0 | 2.6 | 100 | | 26 | 8.63 | 1.37 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9932.0 | 0.0 | 3.3 | 100 | | 21 | 8.60 | 1.37 |
| 9933.0 | 0.0 | 3.8 | 100 | | 14 | 8.56 | 1.37 |
| 9934.0 | 0.0 | 2.7 | 100 | | 15 | 8.53 | 1.37 |
| 9935.0 | 0.0 | 2.6 | 100 | | 15 | 8.50 | 1.37 |
| 9936.0 | 0.0 | 5.1 | 94 | | 4 | 8.47 | 1.37 |
| 9937.0 | 0.0 | 5.0 | 81 | | 10 | 8.42 | 1.36 |
| 9938.0 | 0.1 | 6.2 | 71 | | 5 | 8.37 | 1.35 |
| 9939.0 | 0.1 | 6.6 | 73 | | 0 | 8.31 | 1.34 |
| 9940.0 | 0.0 | 5.0 | 100 | | 0 | 8.25 | 1.32 |
| 9941.0 | 0.0 | 4.0 | 100 | | 10 | 8.20 | 1.32 |
| 9942.0 | 0.0 | 4.6 | 98 | | 10 | 8.15 | 1.32 |
| 9943.0 | 0.0 | 4.6 | 99 | | 11 | 8.11 | 1.32 |
| 9944.0 | 0.0 | 4.3 | 97 | | 19 | 8.06 | 1.32 |
| 9945.0 | 0.0 | 1.4 | 100 | | 28 | 8.02 | 1.32 |
| 9946.0 | 0.0 | 0.1 | 100 | | 23 | 8.02 | 1.32 |
| 9947.0 | 0.0 | 2.2 | 100 | | 17 | 8.01 | 1.32 |
| 9948.0 | 0.0 | 5.1 | 100 | | 2 | 7.98 | 1.32 |
| 9949.0 | 0.0 | 4.6 | 100 | | 9 | 7.93 | 1.32 |
| 9950.0 | 0.0 | 0.4 | 100 | | 39 | 7.90 | 1.32 |
| 9951.0 | 0.0 | 1.5 | 100 | | 39 | 7.89 | 1.32 |
| 9952.0 | 0.0 | 0.6 | 100 | | 35 | 7.88 | 1.32 |
| 9953.0 | 0.0 | 1.9 | 100 | | 33 | 7.87 | 1.32 |
| 9954.0 | 0.0 | 1.9 | 100 | | 40 | 7.85 | 1.32 |
| 9958.0 | 0.0 | 2.6 | 100 | | 43 | 7.81 | 1.32 |
| 9959.0 | 0.0 | 4.0 | 100 | | 26 | 7.79 | 1.32 |
| 9960.0 | 0.0 | 4.0 | 98 | | 24 | 7.75 | 1.32 |
| 9961.0 | 0.0 | 2.3 | 100 | | 22 | 7.71 | 1.32 |
| 9962.0 | 0.0 | 1.8 | 100 | | 18 | 7.69 | 1.32 |
| 9963.0 | 0.0 | 2.1 | 100 | | 22 | 7.66 | 1.32 |
| 9964.0 | 0.0 | 2.5 | 100 | | 25 | 7.64 | 1.32 |
| 9965.0 | 0.0 | 3.7 | 100 | | 21 | 7.61 | 1.32 |
| 9966.0 | 0.0 | 2.1 | 100 | | 21 | 7.58 | 1.32 |
| 9967.0 | 0.0 | 5.0 | 93 | | 11 | 7.55 | 1.32 |
| 9968.0 | 0.0 | 5.1 | 100 | | 4 | 7.49 | 1.31 |
| 9969.0 | 0.0 | 3.7 | 100 | | 12 | 7.45 | 1.31 |
| 9970.0 | 0.0 | 2.5 | 100 | | 19 | 7.41 | 1.31 |
| 9971.0 | 0.0 | 4.9 | 99 | | 7 | 7.39 | 1.31 |
| 9972.0 | 0.1 | 6.3 | 84 | | 0 | 7.33 | 1.31 |
| 9973.0 | 0.0 | 5.3 | 100 | | 0 | 7.27 | 1.30 |
| 9974.0 | 0.0 | 4.4 | 95 | | 7 | 7.22 | 1.30 |
| 9975.0 | 0.0 | 4.7 | 100 | | 0 | 7.18 | 1.30 |
| 9976.0 | 0.0 | 4.3 | 100 | | 0 | 7.13 | 1.30 |
| 9977.0 | 0.0 | 5.3 | 98 | | 0 | 7.09 | 1.30 |
| 9978.0 | 0.0 | 5.4 | 75 | | 3 | 7.03 | 1.29 |
| 9979.0 | 0.0 | 4.8 | 85 | | 4 | 6.98 | 1.28 |
| 9980.0 | 0.0 | 4.0 | 99 | | 2 | 6.93 | 1.27 |
| 9981.0 | 0.0 | 2.8 | 100 | | 7 | 6.89 | 1.27 |

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 9982.0 | 0.0 | 3.0 | 100 | | 10 | 6.86 | 1.27 |
| 9983.0 | 0.0 | 3.7 | 97 | | 9 | 6.83 | 1.27 |
| 9984.0 | 0.0 | 3.4 | 100 | | 9 | 6.79 | 1.27 |
| 9985.0 | 0.0 | 2.8 | 100 | | 12 | 6.75 | 1.27 |
| 9986.0 | 0.0 | 2.9 | 100 | | 22 | 6.72 | 1.27 |
| 9987.0 | 0.0 | 1.2 | 100 | | 40 | 6.70 | 1.27 |
| 9988.0 | 0.0 | 4.0 | 100 | | 27 | 6.68 | 1.27 |
| 9989.0 | 0.0 | 4.0 | 100 | | 12 | 6.64 | 1.27 |
| 9990.0 | 0.0 | 1.8 | 100 | | 18 | 6.61 | 1.27 |
| 9991.0 | 0.0 | 2.9 | 100 | | 17 | 6.59 | 1.27 |
| 9992.0 | 0.0 | 3.7 | 100 | | 10 | 6.56 | 1.27 |
| 9993.0 | 0.0 | 3.6 | 100 | | 6 | 6.52 | 1.27 |
| 9994.0 | 0.0 | 4.8 | 98 | | 3 | 6.48 | 1.27 |
| 9995.0 | 0.1 | 6.1 | 90 | | 0 | 6.43 | 1.27 |
| 9996.0 | 0.0 | 4.6 | 100 | | 0 | 6.37 | 1.26 |
| 9997.0 | 0.0 | 3.6 | 100 | | 0 | 6.33 | 1.26 |
| 9998.0 | 0.0 | 4.3 | 100 | | 0 | 6.30 | 1.26 |
| 9999.0 | 0.0 | 4.6 | 71 | | 8 | 6.25 | 1.25 |
| 10000.0 | 0.0 | 5.3 | 62 | | 6 | 6.20 | 1.23 |
| 10001.0 | 0.0 | 4.0 | 100 | | 0 | 6.15 | 1.22 |
| 10002.0 | 0.0 | 5.2 | 79 | | 0 | 6.11 | 1.22 |
| 10003.0 | 0.0 | 4.7 | 65 | | 6 | 6.06 | 1.21 |
| 10004.0 | 0.0 | 5.2 | 68 | | 4 | 6.01 | 1.19 |
| 10005.0 | 0.0 | 4.5 | 81 | | 8 | 5.96 | 1.17 |
| 10006.0 | 0.0 | 4.5 | 88 | | 9 | 5.91 | 1.17 |
| 10007.0 | 0.0 | 4.7 | 98 | | 8 | 5.87 | 1.16 |
| 10008.0 | 0.0 | 4.0 | 100 | | 24 | 5.82 | 1.16 |
| 10009.0 | 0.0 | 3.5 | 100 | | 31 | 5.78 | 1.16 |
| 10010.0 | 0.0 | 2.6 | 100 | | 27 | 5.75 | 1.16 |
| 10011.0 | 0.0 | 2.6 | 100 | | 23 | 5.72 | 1.16 |
| 10012.0 | 0.0 | 3.6 | 100 | | 19 | 5.70 | 1.16 |
| 10013.0 | 0.0 | 3.1 | 100 | | 15 | 5.66 | 1.16 |
| 10014.0 | 0.0 | 4.7 | 95 | | 12 | 5.63 | 1.16 |
| 10015.0 | 0.1 | 5.8 | 72 | | 7 | 5.58 | 1.16 |
| 10016.0 | 0.0 | 5.3 | 100 | | 0 | 5.52 | 1.14 |
| 10017.0 | 0.0 | 5.5 | 100 | | 0 | 5.47 | 1.14 |
| 10018.0 | 0.0 | 4.5 | 92 | | 12 | 5.42 | 1.14 |
| 10019.0 | 0.0 | 3.0 | 100 | | 20 | 5.38 | 1.14 |
| 10020.0 | 0.0 | 2.5 | 100 | | 17 | 5.35 | 1.14 |
| 10021.0 | 0.0 | 3.7 | 100 | | 7 | 5.32 | 1.14 |
| 10022.0 | 0.0 | 4.8 | 99 | | 1 | 5.27 | 1.14 |
| 10023.0 | 0.0 | 3.5 | 100 | | 15 | 5.23 | 1.14 |
| 10024.0 | 0.0 | 2.2 | 100 | | 29 | 5.19 | 1.14 |
| 10025.0 | 0.0 | 2.8 | 100 | | 24 | 5.17 | 1.14 |
| 10026.0 | 0.0 | 0.6 | 100 | | 27 | 5.14 | 1.14 |
| 10027.0 | 0.0 | 0.0 | 100 | | 38 | 5.14 | 1.14 |
| 10028.0 | 0.0 | 4.6 | 89 | | 27 | 5.14 | 1.14 |
| 10029.0 | 0.1 | 6.7 | 95 | | 2 | 5.08 | 1.13 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 10030.0 | 0.2 | 7.2 | 75 | | 0 | 5.02 | 1.13 |
| 10031.0 | 1 | 9.0 | 56 | | 0 | 4.94 | 1.10 |
| 10032.0 | 0.5 | 8.2 | 58 | | 0 | 4.85 | 1.06 |
| 10033.0 | 0.3 | 7.7 | 59 | | 0 | 4.77 | 1.03 |
| 10034.0 | 0.2 | 7.0 | 66 | | 0 | 4.69 | 1.00 |
| 10035.0 | 0.1 | 5.9 | 76 | | 0 | 4.63 | 0.98 |
| 10036.0 | 0.0 | 2.1 | 100 | | 27 | 4.58 | 0.97 |
| 10038.0 | 0.0 | 1.7 | 100 | | 49 | 4.55 | 0.97 |
| 10041.0 | 0.0 | 2.8 | 100 | | 48 | 4.53 | 0.97 |
| 10042.0 | 0.0 | 3.2 | 100 | | 17 | 4.50 | 0.97 |
| 10043.0 | 0.0 | 4.4 | 100 | | 5 | 4.45 | 0.97 |
| 10044.0 | 0.0 | 5.0 | 96 | | 2 | 4.41 | 0.97 |
| 10045.0 | 0.0 | 5.3 | 99 | | 0 | 4.35 | 0.97 |
| 10046.0 | 0.1 | 6.7 | 69 | | 0 | 4.30 | 0.96 |
| 10047.0 | 0.1 | 6.2 | 71 | | 0 | 4.23 | 0.94 |
| 10048.0 | 0.0 | 5.7 | 90 | | 0 | 4.17 | 0.93 |
| 10049.0 | 0.0 | 5.0 | 97 | | 8 | 4.12 | 0.92 |
| 10050.0 | 0.0 | 2.2 | 100 | | 23 | 4.07 | 0.92 |
| 10051.0 | 0.0 | 2.5 | 100 | | 23 | 4.04 | 0.92 |
| 10052.0 | 0.0 | 4.9 | 93 | | 8 | 4.02 | 0.92 |
| 10053.0 | 0.0 | 5.1 | 100 | | 0 | 3.97 | 0.92 |
| 10054.0 | 0.0 | 4.9 | 100 | | 0 | 3.92 | 0.92 |
| 10055.0 | 0.0 | 4.7 | 100 | | 0 | 3.87 | 0.92 |
| 10056.0 | 0.0 | 2.0 | 100 | | 9 | 3.82 | 0.92 |
| 10057.0 | 0.0 | 0.7 | 100 | | 42 | 3.81 | 0.92 |
| 10059.0 | 0.0 | 3.4 | 100 | | 27 | 3.77 | 0.92 |
| 10060.0 | 0.0 | 4.0 | 100 | | 8 | 3.73 | 0.92 |
| 10061.0 | 0.0 | 3.1 | 100 | | 24 | 3.69 | 0.92 |
| 10065.0 | 0.0 | 3.0 | 100 | | 36 | 3.63 | 0.92 |
| 10066.0 | 0.0 | 3.7 | 100 | | 19 | 3.59 | 0.92 |
| 10067.0 | 0.0 | 5.6 | 99 | | 1 | 3.55 | 0.92 |
| 10068.0 | 0.0 | 4.2 | 100 | | 4 | 3.50 | 0.92 |
| 10069.0 | 0.0 | 0.1 | 100 | | 28 | 3.46 | 0.92 |
| 10070.0 | 0.0 | 1.6 | 100 | | 48 | 3.46 | 0.92 |
| 10076.0 | 0.0 | 2.3 | 100 | | 41 | 3.40 | 0.92 |
| 10077.0 | 0.0 | 2.4 | 100 | | 29 | 3.37 | 0.92 |
| 10078.0 | 0.0 | 3.8 | 100 | | 15 | 3.35 | 0.92 |
| 10079.0 | 0.1 | 5.8 | 92 | | 3 | 3.30 | 0.91 |
| 10080.0 | 0.0 | 4.9 | 93 | | 4 | 3.24 | 0.91 |
| 10081.0 | 0.0 | 2.5 | 100 | | 13 | 3.20 | 0.91 |
| 10082.0 | 0.0 | 4.3 | 95 | | 4 | 3.17 | 0.91 |
| 10083.0 | 0.1 | 5.8 | 65 | | 0 | 3.12 | 0.90 |
| 10084.0 | 0.2 | 7.3 | 53 | | 0 | 3.06 | 0.88 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 10085.0 | 0.1 | 6.4 | 56 | | 0 | 2.99 | 0.85 |
| 10086.0 | 0.0 | 5.3 | 76 | | 0 | 2.93 | 0.82 |
| 10087.0 | 0.1 | 6.1 | 57 | | 0 | 2.88 | 0.81 |
| 10088.0 | 0.3 | 7.6 | 46 | | 0 | 2.81 | 0.78 |
| 10089.0 | 0.2 | 7.3 | 46 | | 0 | 2.74 | 0.74 |
| 10090.0 | 0.1 | 6.1 | 48 | | 0 | 2.67 | 0.70 |
| 10091.0 | 0.1 | 6.7 | 42 | | 0 | 2.61 | 0.67 |
| 10092.0 | 0.2 | 7.1 | 39 | | 0 | 2.54 | 0.63 |
| 10093.0 | 0.1 | 6.2 | 43 | | 0 | 2.47 | 0.59 |
| 10094.0 | 0.0 | 5.6 | 53 | | 0 | 2.41 | 0.56 |
| 10095.0 | 0.1 | 6.4 | 45 | | 0 | 2.36 | 0.54 |
| 10096.0 | 0.0 | 5.5 | 68 | | 0 | 2.30 | 0.50 |
| 10097.0 | 0.0 | 4.1 | 72 | | 10 | 2.25 | 0.49 |
| 10098.0 | 0.0 | 4.9 | 57 | | 12 | 2.21 | 0.48 |
| 10099.0 | 0.1 | 6.2 | 57 | | 0 | 2.16 | 0.46 |
| 10100.0 | 0.1 | 6.7 | 54 | | 0 | 2.10 | 0.43 |
| 10101.0 | 0.0 | 4.4 | 86 | | 0 | 2.03 | 0.40 |
| 10102.0 | 0.0 | 4.4 | 78 | | 0 | 1.99 | 0.40 |
| 10103.0 | 0.1 | 6.8 | 45 | | 0 | 1.94 | 0.38 |
| 10104.0 | 0.1 | 6.5 | 66 | | 0 | 1.87 | 0.34 |
| 10105.0 | 0.0 | 4.6 | 97 | | 0 | 1.81 | 0.33 |
| 10106.0 | 0.0 | 5.5 | 76 | | 0 | 1.77 | 0.33 |
| 10107.0 | 0.1 | 6.7 | 59 | | 0 | 1.71 | 0.31 |
| 10108.0 | 0.1 | 6.5 | 66 | | 0 | 1.64 | 0.28 |
| 10109.0 | 0.0 | 5.2 | 82 | | 0 | 1.58 | 0.26 |
| 10110.0 | 0.0 | 5.1 | 79 | | 0 | 1.52 | 0.25 |
| 10111.0 | 0.0 | 4.9 | 96 | | 0 | 1.47 | 0.24 |
| 10112.0 | 0.1 | 5.8 | 65 | | 4 | 1.42 | 0.23 |
| 10113.0 | 0.2 | 7.4 | 55 | 0.8* | 3 | 1.36 | 0.20 |
| 10114.0 | 0.4 | 7.9 | 55 | | 0 | 1.28 | 0.17 |
| 10115.0 | 0.1 | 6.8 | 62 | | 0 | 1.21 | 0.14 |
| 10116.0 | 0.0 | 5.3 | 83 | | 0 | 1.14 | 0.11 |
| 10117.0 | 0.0 | 5.0 | 83 | | 0 | 1.09 | 0.10 |
| 10118.0 | 0.0 | 5.6 | 100 | | 0 | 1.04 | 0.10 |
| 10119.0 | 0.0 | 5.5 | 87 | | 2 | 0.98 | 0.09 |
| 10120.0 | 0.0 | 2.0 | 100 | | 32 | 0.94 | 0.09 |
| 10121.0 | 0.0 | 3.3 | 100 | | 34 | 0.92 | 0.09 |
| 10122.0 | 0.0 | 4.2 | 99 | | 15 | 0.88 | 0.09 |
| 10123.0 | 0.0 | 4.7 | 100 | | 0 | 0.83 | 0.08 |
| 10124.0 | 0.0 | 5.2 | 85 | | 2 | 0.79 | 0.08 |
| 10125.0 | 0.0 | 4.9 | 79 | | 8 | 0.73 | 0.07 |
| 10126.0 | 0.0 | 4.0 | 96 | | 14 | 0.69 | 0.07 |
| 10127.0 | 0.0 | 3.8 | 99 | | 13 | 0.65 | 0.06 |
| 10128.0 | 0.0 | 2.6 | 100 | | 13 | 0.61 | 0.06 |
| 10129.0 | 0.0 | 3.9 | 93 | | 9 | 0.58 | 0.06 |
| 10130.0 | 0.2 | 7.2 | 55 | | 0 | 0.53 | 0.05 |
| 10131.0 | 0.2 | 7.2 | 67 | 0.1 | 0 | 0.46 | 0.02 |
| 10132.0 | 0.0 | 4.1 | 100 | | 0 | 0.39 | 0.00 |

Schlumberger

| DEPTH FEET | PERM. MD | POROSITY % | WATER SAT. % | HYCARB DENS. GM/CC | CLAY VOLUME % | CUM. POROSITY FEET | CUM. HYCARB FEET |
|---|---|---|---|---|---|---|---|
| 10133.0 | 0.0 | 2.0 | 100 | | 13 | 0.36 | 0.00 |
| 10134.0 | 0.0 | 1.9 | 100 | | 22 | 0.34 | 0.00 |
| 10135.0 | 0.0 | 3.8 | 100 | | 8 | 0.31 | 0.00 |
| 10136.0 | 0.0 | 4.3 | 100 | | 4 | 0.27 | 0.00 |
| 10137.0 | 0.0 | 0.6 | 100 | | 44 | 0.23 | 0.00 |
| 10139.0 | 0.0 | 0.9 | 100 | | 43 | 0.21 | 0.00 |
| 10140.0 | 0.0 | 0.1 | 100 | | 41 | 0.21 | 0.00 |
| 10144.0 | 0.0 | 3.8 | 100 | | 26 | 0.18 | 0.00 |
| 10145.0 | 0.0 | 3.6 | 100 | | 18 | 0.14 | 0.00 |
| 10146.0 | 0.0 | 3.6 | 100 | | 21 | 0.11 | 0.00 |
| 10147.0 | 0.0 | 0.4 | 100 | | 29 | 0.08 | 0.00 |
| 10148.0 | 0.0 | 0.3 | 100 | | 27 | 0.08 | 0.00 |
| 10149.0 | 0.0 | 3.2 | 100 | | 9 | 0.06 | 0.00 |
| 10150.0 | 0.0 | 4.6 | 100 | | 0 | 0.02 | 0.00 |

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* SARABAND PERM STUDY *
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COMPANY :BOW VALLEY EXPLORATION INC.

WELL :BOW VALLEY NELSON #1-31 A1E

FIELD :EAST BLUEBUE

COUNTY :~~[illegible]~~ Uintah

STATE :UTAH

DATE :MAR.4,1980

JOB # :10066,76105

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 4500.0 | 7.3 | 100. | 7.38 | 0.00 | 0.21 | 0.21 | 2917.69 | 1196.39 | 9599.54 |
| 4503.0 | 8.3 | 86. | 7.38 | 0.01 | 0.10 | 0.20 | 2917.69 | 1196.28 | 9599.43 |
| 4504.0 | 8.9 | 78. | 7.37 | 0.03 | 0.10 | 0.31 | 2917.68 | 1196.19 | 9599.24 |
| 4507.0 | 9.6 | 65. | 7.36 | 0.14 | 0.06 | 0.57 | 2917.66 | 1196.14 | 9599.08 |
| 4508.0 | 14.4 | 62. | 7.32 | 4.50 | 1.92 | 17.95 | 2916.69 | 1195.61 | 9594.77 |
| 4509.0 | 13.6 | 66. | 7.28 | 4.10 | 3.08 | 20.68 | 2914.06 | 1194.03 | 9583.00 |
| 4510.0 | 9.3 | 75. | 7.25 | 0.16 | 0.27 | 1.20 | 2912.01 | 1192.49 | 9572.66 |
| 4511.0 | 11.5 | 66. | 7.21 | 0.46 | 0.29 | 2.16 | 2910.34 | 1192.05 | 9567.26 |
| 4571.0 | 29.3 | 52. | 7.15 | 197.85 | 61.12 | 691.99 | 2908.06 | 1189.06 | 9552.47 |
| 4572.0 | 33.7 | 41. | 6.98 | 880.84 | 79.76 | 2106.21 | 1989.33 | 1022.96 | 6882.36 |
| 4573.0 | 21.3 | 45. | 6.79 | 25.98 | 2.33 | 62.26 | 1408.85 | 975.91 | 5537.02 |
| 4574.0 | 16.1 | 68. | 6.70 | 4.36 | 5.44 | 27.78 | 1394.43 | 973.74 | 5498.92 |
| 4575.0 | 12.1 | 72. | 6.65 | 0.32 | 0.56 | 2.44 | 1390.63 | 968.72 | 5473.97 |
| 4576.0 | 11.8 | 80. | 6.62 | 0.23 | 1.12 | 3.14 | 1390.32 | 968.27 | 5471.83 |
| 4577.0 | 13.8 | 78. | 6.60 | 1.14 | 4.39 | 13.56 | 1390.20 | 966.55 | 5469.09 |
| 4578.0 | 12.9 | 65. | 6.59 | 0.99 | 0.63 | 4.66 | 1389.63 | 964.18 | 5462.15 |
| 4579.0 | 8.3 | 100. | 6.53 | 0.00 | 0.99 | 0.99 | 1386.49 | 962.46 | 5448.32 |
| 4599.0 | 11.7 | 75. | 6.53 | 0.59 | 1.23 | 4.91 | 1386.49 | 961.97 | 5447.82 |
| 4600.0 | 12.0 | 69. | 6.51 | 0.78 | 0.76 | 4.45 | 1386.01 | 961.11 | 5444.18 |
| 4601.0 | 11.5 | 99. | 6.48 | 0.00 | 3.63 | 3.63 | 1385.57 | 960.19 | 5440.73 |
| 4602.0 | 13.0 | 100. | 6.48 | 0.00 | 3.72 | 3.72 | 1385.57 | 956.88 | 5437.42 |
| 4618.0 | 12.2 | 97. | 6.48 | 0.00 | 4.48 | 4.48 | 1385.57 | 955.02 | 5435.56 |
| 4637.0 | 11.2 | 96. | 6.48 | 0.00 | 2.17 | 2.17 | 1385.57 | 952.78 | 5433.32 |
| 4639.0 | 8.7 | 73. | 6.47 | 0.22 | 0.29 | 1.47 | 1385.57 | 951.69 | 5432.24 |
| 4640.0 | 8.7 | 76. | 6.43 | 0.05 | 0.10 | 0.41 | 1379.00 | 950.16 | 5411.37 |
| 4645.0 | 10.5 | 81. | 6.42 | 0.11 | 0.53 | 1.48 | 1378.97 | 950.12 | 5411.16 |
| 4646.0 | 9.5 | 86. | 6.40 | 0.03 | 0.42 | 0.89 | 1378.88 | 949.49 | 5409.61 |
| 4650.0 | 8.9 | 84. | 6.39 | 0.07 | 0.56 | 1.37 | 1378.87 | 949.28 | 5409.17 |
| 4651.0 | 8.7 | 100. | 6.38 | 0.00 | 1.69 | 1.69 | 1378.80 | 948.40 | 5407.39 |
| 4652.0 | 10.3 | 78. | 6.38 | 0.37 | 1.26 | 4.12 | 1378.80 | 946.61 | 5405.60 |
| 4655.0 | 8.9 | 88. | 6.34 | 0.01 | 0.19 | 0.34 | 1372.21 | 943.39 | 5378.57 |
| 4657.0 | 13.0 | 63. | 6.33 | 0.42 | 0.28 | 2.00 | 1372.21 | 943.30 | 5378.39 |
| 4658.0 | 33.7 | 47. | 6.25 | 1160.34 | 222.11 | 3446.26 | 1336.58 | 933.43 | 5258.38 |
| 4717.0 | 7.7 | 100. | 6.11 | 0.00 | 0.27 | 0.27 | 736.73 | 806.40 | 3433.33 |
| 4718.0 | 8.8 | 100. | 6.11 | 0.00 | 0.46 | 0.46 | 736.73 | 805.97 | 3432.90 |
| 4774.0 | 7.4 | 100. | 6.11 | 0.00 | 0.77 | 0.77 | 736.73 | 805.25 | 3432.19 |

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 4775.0 | 9.5 | 82. | 6.11 | 0.18 | 1.00 | 2.70 | 736.73 | 803.92 | 3430.86 |
| 4776.0 | 9.3 | 93. | 6.10 | 0.00 | 2.37 | 2.37 | 736.57 | 802.77 | 3428.08 |
| 4777.0 | 8.5 | 100. | 6.10 | 0.00 | 1.49 | 1.49 | 736.57 | 801.18 | 3426.48 |
| 4778.0 | 9.3 | 100. | 6.10 | 0.00 | 2.36 | 2.36 | 736.57 | 799.99 | 3425.30 |
| 4779.0 | 11.4 | 86. | 6.09 | 0.24 | 3.70 | 7.23 | 736.57 | 796.56 | 3421.87 |
| 4780.0 | 11.2 | 91. | 6.08 | 0.00 | 6.65 | 6.65 | 736.34 | 792.63 | 3414.32 |
| 4781.0 | 11.4 | 91. | 6.07 | 0.00 | 7.45 | 7.45 | 736.34 | 786.19 | 3407.88 |
| 4782.0 | 12.4 | 82. | 6.05 | 0.67 | 4.94 | 12.07 | 736.14 | 779.92 | 3398.94 |
| 4783.0 | 11.4 | 88. | 6.03 | 0.17 | 4.13 | 7.28 | 735.53 | 775.15 | 3387.52 |
| 4784.0 | 9.9 | 98. | 6.02 | 0.00 | 3.10 | 3.10 | 735.44 | 770.56 | 3381.36 |
| 4785.0 | 7.7 | 100. | 6.02 | 0.00 | 0.37 | 0.37 | 735.44 | 768.75 | 3379.55 |
| 4786.0 | 10.6 | 85. | 6.02 | 0.09 | 0.99 | 2.14 | 735.44 | 768.21 | 3379.00 |
| 4788.0 | 9.3 | 85. | 6.01 | 0.04 | 0.45 | 1.00 | 735.40 | 767.60 | 3377.82 |
| 4789.0 | 7.5 | 100. | 6.00 | 0.00 | 0.50 | 0.50 | 735.38 | 766.99 | 3376.94 |
| 4790.0 | 13.7 | 68. | 6.00 | 2.37 | 2.37 | 13.61 | 735.38 | 765.33 | 3375.28 |
| 4792.0 | 7.3 | 97. | 5.97 | 0.00 | 0.17 | 0.17 | 734.18 | 764.11 | 3368.33 |
| 4796.0 | 9.1 | 100. | 5.96 | 0.00 | 0.61 | 0.61 | 734.18 | 759.87 | 3364.09 |
| 4797.0 | 8.2 | 100. | 5.96 | 0.00 | 0.29 | 0.29 | 734.18 | 759.57 | 3363.79 |
| 4798.0 | 15.6 | 82. | 5.96 | 1.65 | 14.00 | 32.56 | 734.18 | 759.26 | 3363.48 |
| 4799.0 | 10.6 | 100. | 5.95 | 0.00 | 2.46 | 2.46 | 733.35 | 751.07 | 3346.02 |
| 4802.0 | 15.7 | 64. | 5.87 | 7.10 | 4.97 | 34.66 | 651.55 | 747.65 | 3197.14 |
| 4803.0 | 10.4 | 88. | 5.84 | 0.11 | 2.45 | 4.37 | 647.99 | 741.56 | 3176.20 |
| 4804.0 | 11.3 | 84. | 5.80 | 0.15 | 1.45 | 3.27 | 637.72 | 736.29 | 3134.53 |
| 4805.0 | 11.7 | 81. | 5.77 | 0.09 | 0.63 | 1.58 | 636.82 | 733.29 | 3124.85 |
| 4835.0 | 32.8 | 56. | 5.74 | 594.01 | 314.46 | 2553.20 | 635.94 | 726.53 | 3108.70 |
| 4836.0 | 17.3 | 72. | 5.60 | 1.40 | 3.45 | 12.74 | 143.84 | 466.96 | 996.40 |
| 4864.0 | 6.6 | 100. | 5.54 | 0.00 | 0.42 | 0.42 | 136.16 | 464.52 | 972.51 |
| 4866.0 | 6.8 | 100. | 5.54 | 0.00 | 0.50 | 0.50 | 136.16 | 464.31 | 972.30 |
| 4871.0 | 8.9 | 100. | 5.52 | 0.00 | 0.61 | 0.61 | 132.69 | 458.63 | 947.23 |
| 4874.0 | 18.8 | 32. | 5.52 | 13.19 | 0.10 | 20.06 | 132.69 | 458.32 | 946.92 |
| 4875.0 | 11.3 | 79. | 5.39 | 0.36 | 1.42 | 4.36 | 93.84 | 456.51 | 868.24 |
| 4876.0 | 6.6 | 100. | 5.38 | 0.00 | 0.43 | 0.43 | 93.65 | 455.80 | 866.06 |
| 4877.0 | 7.3 | 72. | 5.35 | 0.03 | 0.03 | 0.18 | 88.11 | 453.59 | 845.16 |
| 4918.0 | 6.6 | 100. | 5.34 | 0.00 | 0.36 | 0.36 | 88.10 | 440.90 | 832.39 |
| 4921.0 | 8.2 | 92. | 5.34 | 0.00 | 0.52 | 0.52 | 88.10 | 440.59 | 832.09 |
| 4922.0 | 7.9 | 100. | 5.34 | 0.00 | 0.66 | 0.66 | 88.10 | 440.01 | 831.50 |
| 4923.0 | 9.1 | 100. | 5.34 | 0.00 | 2.14 | 2.14 | 88.10 | 439.44 | 830.93 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 4924.0 | 8.9 | 93. | 5.33 | 0.00 | 0.61 | 0.61 | 87.96 | 435.31 | 824.42 |
| 4944.0 | 8.2 | 100. | 5.33 | 0.00 | 1.13 | 1.13 | 87.96 | 435.00 | 824.11 |
| 4945.0 | 8.5 | 88. | 5.31 | 0.02 | 0.30 | 0.56 | 86.71 | 432.06 | 813.62 |
| 4946.0 | 7.8 | 88. | 5.30 | 0.01 | 0.10 | 0.20 | 86.70 | 431.87 | 813.26 |
| 4947.0 | 7.8 | 100. | 5.29 | 0.00 | 0.28 | 0.28 | 86.70 | 431.25 | 812.59 |
| 4959.0 | 10.9 | 100. | 5.29 | 0.00 | 1.01 | 1.01 | 86.70 | 431.11 | 812.45 |
| 4960.0 | 15.8 | 100. | 5.29 | 0.00 | 18.71 | 18.71 | 86.70 | 429.90 | 811.24 |
| 4961.0 | 13.5 | 100. | 5.29 | 0.00 | 7.64 | 7.64 | 86.70 | 413.78 | 795.12 |
| 4962.0 | 16.6 | 90. | 5.28 | 0.00 | 73.97 | 73.97 | 86.70 | 386.81 | 768.15 |
| 4963.0 | 11.4 | 100. | 5.28 | 0.00 | 4.48 | 4.48 | 86.70 | 349.02 | 730.36 |
| 4964.0 | 11.8 | 96. | 5.28 | 0.00 | 4.18 | 4.18 | 86.70 | 345.60 | 726.94 |
| 4965.0 | 10.6 | 74. | 5.27 | 0.11 | 0.24 | 0.95 | 86.69 | 343.32 | 724.51 |
| 4966.0 | 8.9 | 98. | 5.24 | 0.00 | 0.33 | 0.33 | 86.60 | 343.02 | 723.52 |
| 5039.0 | 9.7 | 100. | 5.24 | 0.00 | 2.23 | 2.23 | 86.60 | 342.85 | 723.35 |
| 5044.0 | 15.6 | 71. | 5.24 | 6.71 | 10.58 | 48.17 | 86.60 | 340.58 | 721.08 |
| 5046.0 | 8.7 | 93. | 5.21 | 0.00 | 0.72 | 0.72 | 83.21 | 335.23 | 696.76 |
| 5047.0 | 7.1 | 100. | 5.21 | 0.00 | 0.61 | 0.61 | 83.21 | 332.19 | 693.73 |
| 5048.0 | 9.5 | 95. | 5.21 | 0.00 | 2.66 | 2.66 | 83.21 | 331.28 | 692.81 |
| 5049.0 | 9.9 | 95. | 5.20 | 0.00 | 2.68 | 2.68 | 83.21 | 328.12 | 689.65 |
| 5050.0 | 8.8 | 100. | 5.20 | 0.00 | 1.04 | 1.04 | 83.21 | 326.30 | 687.83 |
| 5054.0 | 6.8 | 100. | 5.19 | 0.00 | 0.20 | 0.20 | 83.21 | 321.53 | 683.06 |
| 5055.0 | 6.9 | 100. | 5.19 | 0.00 | 0.20 | 0.20 | 83.21 | 321.32 | 682.85 |
| 5056.0 | 9.8 | 99. | 5.19 | 0.00 | 1.46 | 1.46 | 83.21 | 321.04 | 682.57 |
| 5065.0 | 14.2 | 100. | 5.19 | 0.00 | 14.79 | 14.79 | 83.21 | 317.74 | 679.27 |
| 5066.0 | 15.7 | 100. | 5.19 | 0.00 | 51.75 | 51.75 | 83.21 | 304.73 | 666.26 |
| 5071.0 | 9.2 | 100. | 5.19 | 0.00 | 0.37 | 0.37 | 83.21 | 278.86 | 640.39 |
| 5080.0 | 8.8 | 100. | 5.19 | 0.00 | 0.63 | 0.63 | 83.21 | 278.33 | 639.86 |
| 5082.0 | 7.5 | 100. | 5.19 | 0.00 | 0.59 | 0.59 | 83.21 | 277.79 | 639.32 |
| 5087.0 | 13.5 | 93. | 5.17 | 0.00 | 12.72 | 12.72 | 81.96 | 276.10 | 631.44 |
| 5090.0 | 10.7 | 86. | 5.16 | 0.12 | 1.57 | 3.23 | 81.96 | 268.38 | 623.72 |
| 5092.0 | 8.5 | 98. | 5.13 | 0.00 | 0.50 | 0.50 | 80.83 | 266.74 | 616.55 |
| 5093.0 | 10.3 | 99. | 5.13 | 0.00 | 2.07 | 2.07 | 80.83 | 265.21 | 615.03 |
| 5126.0 | 12.0 | 100. | 5.13 | 0.00 | 6.41 | 6.41 | 80.83 | 264.18 | 613.99 |
| 5172.0 | 8.3 | 100. | 5.13 | 0.00 | 0.36 | 0.36 | 80.83 | 260.98 | 610.79 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 5184.0 | 8.9 | 100. | 5.13 | 0.00 | 1.62 | 1.62 | 80.83 | 256.88 | 606.69 |
| 5185.0 | 17.2 | 70. | 5.13 | 12.41 | 21.83 | 94.18 | 80.83 | 250.71 | 600.52 |
| 5195.0 | 8.9 | 100. | 5.10 | 0.00 | 1.21 | 1.21 | 74.62 | 239.79 | 553.43 |
| 5196.0 | 6.7 | 100. | 5.10 | 0.00 | 0.25 | 0.25 | 74.62 | 239.19 | 552.83 |
| 5201.0 | 8.4 | 100. | 5.10 | 0.00 | 0.25 | 0.25 | 74.62 | 235.25 | 548.89 |
| 5202.0 | 17.2 | 95. | 5.10 | 0.00 | 94.11 | 94.11 | 74.62 | 210.11 | 523.75 |
| 5229.0 | 16.0 | 70. | 5.08 | 8.24 | 12.68 | 58.39 | 74.31 | 162.45 | 474.28 |
| 5234.0 | 16.5 | 58. | 5.01 | 6.74 | 2.20 | 24.24 | 64.61 | 151.65 | 416.25 |
| 5235.0 | 8.2 | 99. | 4.96 | 0.00 | 0.56 | 0.56 | 61.09 | 150.06 | 402.51 |
| 5236.0 | 7.5 | 99. | 4.96 | 0.00 | 0.46 | 0.46 | 61.09 | 149.61 | 402.06 |
| 5237.0 | 10.8 | 84. | 4.95 | 0.10 | 0.93 | 2.09 | 60.74 | 145.86 | 394.09 |
| 5242.0 | 11.6 | 89. | 4.91 | 0.06 | 1.86 | 3.09 | 59.92 | 145.15 | 390.28 |
| 5243.0 | 14.9 | 67. | 4.90 | 4.28 | 4.20 | 24.36 | 59.89 | 140.16 | 384.68 |
| 5245.0 | 9.7 | 95. | 4.86 | 0.00 | 1.67 | 1.67 | 57.42 | 137.67 | 370.44 |
| 5246.0 | 10.1 | 81. | 4.86 | 0.12 | 0.64 | 1.72 | 57.42 | 135.97 | 368.75 |
| 5247.0 | 10.2 | 73. | 4.83 | 0.24 | 0.34 | 1.62 | 57.28 | 135.54 | 367.33 |
| 5249.0 | 14.0 | 97. | 4.81 | 0.00 | 21.07 | 21.07 | 57.14 | 135.14 | 366.01 |
| 5271.0 | 13.9 | 67. | 4.80 | 4.44 | 3.76 | 23.63 | 57.13 | 124.40 | 355.17 |
| 5287.0 | 9.7 | 70. | 4.77 | 0.08 | 0.09 | 0.49 | 54.91 | 122.52 | 343.35 |
| 5288.0 | 8.1 | 99. | 4.74 | 0.00 | 0.62 | 0.62 | 54.68 | 121.94 | 341.24 |
| 5289.0 | 6.6 | 99. | 4.74 | 0.00 | 0.27 | 0.27 | 54.68 | 121.63 | 340.93 |
| 5290.0 | 6.9 | 100. | 4.74 | 0.00 | 0.53 | 0.53 | 54.68 | 121.50 | 340.79 |
| 5291.0 | 9.3 | 91. | 4.74 | 0.00 | 2.39 | 2.39 | 54.68 | 121.04 | 340.33 |
| 5292.0 | 15.7 | 62. | 4.72 | 10.66 | 5.02 | 44.13 | 53.25 | 118.42 | 330.94 |
| 5298.0 | 10.2 | 78. | 4.69 | 0.13 | 0.39 | 1.32 | 47.92 | 115.43 | 308.39 |
| 5300.0 | 9.4 | 98. | 4.68 | 0.00 | 2.23 | 2.23 | 47.85 | 115.23 | 307.73 |
| 5312.0 | 8.0 | 100. | 4.68 | 0.00 | 0.94 | 0.94 | 47.85 | 113.94 | 306.43 |
| 5313.0 | 8.7 | 100. | 4.68 | 0.00 | 1.14 | 1.14 | 47.85 | 112.68 | 305.18 |
| 5314.0 | 11.0 | 85. | 4.67 | 0.17 | 1.97 | 4.22 | 47.85 | 111.23 | 303.73 |
| 5315.0 | 11.3 | 85. | 4.66 | 0.20 | 2.30 | 4.86 | 47.68 | 109.24 | 299.49 |
| 5316.0 | 11.3 | 80. | 4.64 | 0.30 | 1.37 | 3.96 | 47.51 | 107.48 | 295.63 |
| 5317.0 | 10.7 | 82. | 4.62 | 0.17 | 1.13 | 2.86 | 47.24 | 106.29 | 292.14 |
| 5318.0 | 10.2 | 92. | 4.60 | 0.00 | 2.35 | 2.35 | 47.15 | 105.11 | 290.10 |
| 5329.0 | 14.1 | 80. | 4.57 | 1.10 | 6.39 | 16.90 | 39.68 | 93.85 | 239.93 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 5353.0 | 11.6 | 83. | 4.56 | 0.21 | 1.59 | 3.85 | 39.13 | 90.65 | 231.48 |
| 5356.0 | 7.7 | 100. | 4.55 | 0.00 | 0.40 | 0.40 | 39.02 | 89.86 | 229.55 |
| 5368.0 | 8.3 | 77. | 4.53 | 0.04 | 0.08 | 0.33 | 38.99 | 89.65 | 229.24 |
| 5374.0 | 11.5 | 70. | 4.52 | 0.65 | 0.65 | 3.73 | 38.97 | 89.50 | 228.88 |
| 5376.0 | 10.2 | 75. | 4.47 | 0.34 | 0.66 | 2.72 | 38.54 | 89.12 | 226.53 |
| 5396.0 | 11.8 | 100. | 4.45 | 0.00 | 3.81 | 3.81 | 37.97 | 87.42 | 220.88 |
| 5402.0 | 13.4 | 57. | 4.43 | 3.86 | 0.65 | 11.19 | 37.27 | 60.09 | 190.61 |
| 5403.0 | 10.2 | 71. | 4.38 | 0.25 | 0.27 | 1.50 | 35.05 | 59.68 | 184.01 |
| 5419.0 | 8.9 | 91. | 4.36 | 0.00 | 0.56 | 0.56 | 34.93 | 59.45 | 183.16 |
| 5511.0 | 8.1 | 100. | 4.36 | 0.00 | 0.49 | 0.49 | 34.93 | 59.03 | 182.74 |
| 5514.0 | 7.7 | 96. | 4.36 | 0.00 | 0.36 | 0.36 | 34.93 | 58.40 | 182.11 |
| 5515.0 | 9.4 | 92. | 4.35 | 0.00 | 1.37 | 1.37 | 34.93 | 57.73 | 181.44 |
| 5516.0 | 10.0 | 78. | 4.34 | 0.18 | 0.57 | 1.91 | 34.89 | 56.69 | 179.99 |
| 5517.0 | 14.7 | 65. | 4.31 | 6.93 | 4.82 | 33.77 | 34.32 | 55.95 | 176.32 |
| 5518.0 | 13.7 | 72. | 4.26 | 2.86 | 4.55 | 20.67 | 27.03 | 50.78 | 140.51 |
| 5519.0 | 11.3 | 79. | 4.22 | 0.42 | 1.77 | 5.28 | 24.46 | 46.35 | 121.13 |
| 5521.0 | 6.9 | 97. | 4.20 | 0.00 | 0.17 | 0.17 | 24.22 | 45.28 | 118.02 |
| 5522.0 | 10.7 | 89. | 4.20 | 0.07 | 1.95 | 3.37 | 24.22 | 44.64 | 117.38 |
| 5523.0 | 10.2 | 91. | 4.19 | 0.00 | 2.90 | 2.90 | 24.08 | 42.23 | 112.84 |
| 5524.0 | 8.7 | 97. | 4.18 | 0.00 | 1.03 | 1.03 | 24.08 | 40.26 | 110.87 |
| 5525.0 | 12.0 | 79. | 4.17 | 0.75 | 3.42 | 9.90 | 24.08 | 38.07 | 108.68 |
| 5526.0 | 11.8 | 82. | 4.15 | 0.53 | 3.47 | 8.82 | 23.14 | 34.77 | 98.12 |
| 5527.0 | 9.7 | 92. | 4.13 | 0.00 | 2.34 | 2.34 | 22.81 | 31.21 | 90.60 |
| 5528.0 | 9.7 | 86. | 4.12 | 0.08 | 0.99 | 2.07 | 22.77 | 29.47 | 88.35 |
| 5529.0 | 7.5 | 84. | 4.11 | 0.02 | 0.14 | 0.36 | 22.69 | 28.68 | 86.58 |
| 5531.0 | 7.3 | 85. | 4.10 | 0.01 | 0.10 | 0.23 | 22.68 | 28.60 | 86.40 |
| 5532.0 | 9.9 | 80. | 4.09 | 0.16 | 0.64 | 1.96 | 22.63 | 28.37 | 85.72 |
| 5533.0 | 9.1 | 86. | 4.07 | 0.05 | 0.58 | 1.22 | 22.49 | 27.50 | 83.50 |
| 5535.0 | 8.5 | 78. | 4.06 | 0.08 | 0.21 | 0.78 | 22.45 | 27.10 | 82.65 |
| 5536.0 | 10.6 | 85. | 4.04 | 0.17 | 1.90 | 4.05 | 22.35 | 26.48 | 81.03 |
| 5537.0 | 7.5 | 82. | 4.02 | 0.02 | 0.09 | 0.25 | 22.23 | 24.76 | 77.63 |
| 5587.0 | 7.3 | 94. | 4.02 | 0.00 | 0.50 | 0.50 | 22.22 | 24.53 | 77.32 |
| 5649.0 | 7.5 | 90. | 4.01 | 0.01 | 0.24 | 0.42 | 22.22 | 24.28 | 77.08 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 5667.0 | 8.3 | 88. | 4.01 | 0.02 | 0.39 | 0.74 | 22.22 | 23.86 | 76.56 |
| 5680.0 | 9.5 | 98. | 4.00 | 0.00 | 1.34 | 1.34 | 22.20 | 22.60 | 75.13 |
| 5682.0 | 7.3 | 99. | 4.00 | 0.00 | 0.25 | 0.25 | 22.20 | 21.84 | 74.36 |
| 5686.0 | 10.5 | 100. | 4.00 | 0.00 | 2.72 | 2.72 | 22.20 | 20.76 | 73.29 |
| 5693.0 | 7.6 | 100. | 4.00 | 0.00 | 0.34 | 0.34 | 22.20 | 18.69 | 71.22 |
| 5694.0 | 7.2 | 100. | 4.00 | 0.00 | 0.25 | 0.25 | 22.20 | 18.41 | 70.94 |
| 5695.0 | 7.9 | 100. | 4.00 | 0.00 | 0.41 | 0.41 | 22.20 | 18.09 | 70.61 |
| 5724.0 | 7.2 | 87. | 4.00 | 0.01 | 0.16 | 0.33 | 22.20 | 17.59 | 70.12 |
| 5725.0 | 10.0 | 72. | 3.99 | 0.37 | 0.43 | 2.28 | 22.18 | 17.41 | 69.68 |
| 5726.0 | 11.4 | 75. | 3.96 | 0.61 | 1.36 | 5.29 | 21.57 | 16.62 | 65.69 |
| 5727.0 | 9.0 | 77. | 3.93 | 0.13 | 0.29 | 1.13 | 21.07 | 15.51 | 61.38 |
| 5760.0 | 8.7 | 72. | 3.91 | 0.14 | 0.14 | 0.80 | 20.96 | 15.27 | 60.40 |
| 5761.0 | 7.7 | 64. | 3.88 | 0.11 | 0.02 | 0.34 | 20.72 | 15.14 | 59.40 |
| 5778.0 | 8.7 | 61. | 3.85 | 0.34 | 0.06 | 1.00 | 20.55 | 15.12 | 58.94 |
| 5781.0 | 7.0 | 90. | 3.81 | 0.00 | 0.26 | 0.26 | 20.31 | 15.05 | 58.12 |
| 5784.0 | 9.4 | 74. | 3.80 | 0.15 | 0.23 | 1.07 | 20.29 | 14.79 | 57.67 |
| 5785.0 | 8.2 | 92. | 3.78 | 0.00 | 0.53 | 0.53 | 20.20 | 14.45 | 56.68 |
| 5786.0 | 8.5 | 79. | 3.77 | 0.06 | 0.18 | 0.62 | 20.20 | 14.09 | 56.24 |
| 5787.0 | 10.0 | 72. | 3.75 | 0.26 | 0.29 | 1.58 | 20.08 | 13.89 | 55.38 |
| 5788.0 | 9.8 | 75. | 3.73 | 0.19 | 0.36 | 1.51 | 19.80 | 13.52 | 53.51 |
| 5789.0 | 9.7 | 74. | 3.70 | 0.18 | 0.27 | 1.25 | 19.66 | 13.22 | 52.34 |
| 5790.0 | 12.6 | 65. | 3.67 | 1.45 | 0.75 | 6.24 | 19.30 | 12.85 | 50.24 |
| 5791.0 | 10.1 | 71. | 3.63 | 0.28 | 0.29 | 1.65 | 18.16 | 12.21 | 45.16 |
| 5793.0 | 7.6 | 71. | 3.61 | 0.06 | 0.04 | 0.29 | 18.01 | 12.03 | 44.21 |
| 5804.0 | 8.3 | 58. | 3.57 | 0.18 | 0.02 | 0.44 | 17.86 | 11.93 | 43.51 |
| 5805.0 | 7.5 | 62. | 3.54 | 0.10 | 0.02 | 0.28 | 17.71 | 11.92 | 43.12 |
| 5844.0 | 10.5 | 49. | 3.51 | 1.37 | 0.03 | 2.48 | 17.59 | 11.91 | 42.83 |
| 5845.0 | 10.4 | 43. | 3.45 | 1.22 | 0.00 | 1.76 | 16.28 | 11.89 | 40.72 |
| 5855.0 | 7.6 | 63. | 3.38 | 0.15 | 0.03 | 0.47 | 15.23 | 11.87 | 38.99 |
| 5857.0 | 7.4 | 46. | 3.36 | 0.17 | 0.00 | 0.24 | 15.12 | 11.84 | 38.60 |
| 5858.0 | 9.2 | 60. | 3.32 | 0.52 | 0.09 | 1.51 | 14.88 | 11.83 | 38.15 |
| 5859.0 | 8.8 | 52. | 3.28 | 0.39 | 0.01 | 0.75 | 14.33 | 11.76 | 36.67 |
| 5872.0 | 9.1 | 74. | 3.26 | 0.15 | 0.20 | 1.00 | 14.14 | 11.75 | 36.30 |

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 5873.0 | 7.9 | 64. | 3.23 | 0.10 | 0.02 | 0.34 | 13.90 | 11.56 | 35.05 |
| 6043.0 | 7.3 | 100. | 3.22 | 0.00 | 0.09 | 0.09 | 13.84 | 11.52 | 34.85 |
| 6044.0 | 6.9 | 100. | 3.22 | 0.00 | 0.07 | 0.07 | 13.84 | 11.47 | 34.81 |
| 6045.0 | 7.8 | 100. | 3.22 | 0.00 | 0.16 | 0.16 | 13.84 | 11.39 | 34.73 |
| 6046.0 | 6.6 | 100. | 3.22 | 0.00 | 0.05 | 0.05 | 13.84 | 11.28 | 34.62 |
| 6070.0 | 8.6 | 99. | 3.22 | 0.00 | 0.29 | 0.29 | 13.84 | 11.23 | 34.57 |
| 6071.0 | 10.3 | 93. | 3.21 | 0.00 | 0.72 | 0.72 | 13.84 | 10.76 | 34.09 |
| 6115.0 | 8.2 | 100. | 3.21 | 0.00 | 0.36 | 0.36 | 13.84 | 10.28 | 33.61 |
| 6116.0 | 9.6 | 100. | 3.21 | 0.00 | 1.31 | 1.31 | 13.84 | 9.94 | 33.27 |
| 6190.0 | 8.2 | 100. | 3.21 | 0.00 | 0.15 | 0.15 | 13.84 | 9.24 | 32.57 |
| 6191.0 | 8.5 | 100. | 3.21 | 0.00 | 0.20 | 0.20 | 13.84 | 9.05 | 32.39 |
| 6225.0 | 6.3 | 100. | 3.21 | 0.00 | 0.06 | 0.06 | 13.84 | 8.96 | 32.29 |
| 6226.0 | 6.3 | 100. | 3.21 | 0.00 | 0.08 | 0.08 | 13.84 | 8.86 | 32.19 |
| 6260.0 | 11.6 | 100. | 3.21 | 0.00 | 1.21 | 1.21 | 13.84 | 8.70 | 32.03 |
| 6264.0 | 8.6 | 100. | 3.21 | 0.00 | 0.21 | 0.21 | 13.84 | 7.57 | 30.90 |
| 6268.0 | 8.3 | 100. | 3.21 | 0.00 | 0.19 | 0.19 | 13.84 | 7.40 | 30.73 |
| 6269.0 | 9.5 | 100. | 3.21 | 0.00 | 0.40 | 0.40 | 13.84 | 7.16 | 30.49 |
| 6278.0 | 7.6 | 100. | 3.21 | 0.00 | 0.11 | 0.11 | 13.84 | 6.85 | 30.18 |
| 6279.0 | 7.1 | 100. | 3.21 | 0.00 | 0.07 | 0.07 | 13.84 | 6.72 | 30.06 |
| 6342.0 | 7.5 | 100. | 3.21 | 0.00 | 0.10 | 0.10 | 13.84 | 6.69 | 30.02 |
| 6343.0 | 7.7 | 100. | 3.21 | 0.00 | 0.13 | 0.13 | 13.84 | 6.55 | 29.89 |
| 6368.0 | 8.2 | 100. | 3.21 | 0.00 | 0.19 | 0.19 | 13.84 | 6.40 | 29.74 |
| 6369.0 | 6.2 | 100. | 3.21 | 0.00 | 0.04 | 0.04 | 13.84 | 6.24 | 29.58 |
| 9039.0 | 9.0 | 25. | 3.20 | 0.30 | 0.00 | 0.31 | 13.84 | 6.18 | 29.49 |
| 9070.0 | 7.5 | 15. | 3.10 | 0.10 | 0.00 | 0.10 | 13.57 | 6.18 | 29.21 |
| 9078.0 | 6.6 | 26. | 3.05 | 0.05 | 0.00 | 0.05 | 13.50 | 6.18 | 29.14 |
| 9323.0 | 5.1 | 60. | 2.99 | 0.02 | 0.00 | 0.03 | 13.45 | 6.18 | 29.09 |
| 9324.0 | 4.5 | 100. | 2.98 | 0.00 | 0.01 | 0.01 | 13.44 | 6.17 | 29.06 |
| 9545.0 | 4.7 | 100. | 2.98 | 0.00 | 0.01 | 0.01 | 13.44 | 6.15 | 29.05 |
| 9583.0 | 7.1 | 100. | 2.98 | 0.00 | 0.16 | 0.16 | 13.44 | 6.15 | 29.05 |
| 9584.0 | 5.6 | 100. | 2.98 | 0.00 | 0.03 | 0.03 | 13.44 | 5.91 | 28.81 |

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 9623.0 | 3.9 | 100. | 2.98 | 0.00 | 0.00 | 0.00 | 13.44 | 5.90 | 28.80 |
| 9624.0 | 7.4 | 68. | 2.98 | 0.10 | 0.01 | 0.26 | 13.44 | 5.88 | 28.78 |
| 9625.0 | 9.1 | 65. | 2.95 | 0.39 | 0.06 | 1.12 | 13.30 | 5.86 | 28.35 |
| 9626.0 | 8.7 | 76. | 2.92 | 0.13 | 0.13 | 0.78 | 12.98 | 5.77 | 27.29 |
| 9627.0 | 8.3 | 78. | 2.91 | 0.08 | 0.11 | 0.55 | 12.89 | 5.62 | 26.63 |
| 9643.0 | 3.5 | 100. | 2.90 | 0.00 | 0.00 | 0.00 | 12.85 | 5.56 | 26.36 |
| 9647.0 | 4.8 | 100. | 2.90 | 0.00 | 0.02 | 0.02 | 12.85 | 5.56 | 26.36 |
| 9648.0 | 6.7 | 100. | 2.90 | 0.00 | 0.12 | 0.12 | 12.85 | 5.52 | 26.31 |
| 9649.0 | 6.5 | 100. | 2.90 | 0.00 | 0.10 | 0.10 | 12.85 | 5.39 | 26.19 |
| 9650.0 | 4.9 | 100. | 2.90 | 0.00 | 0.02 | 0.02 | 12.85 | 5.32 | 26.11 |
| 9653.0 | 9.2 | 100. | 2.90 | 0.00 | 1.22 | 1.22 | 12.85 | 5.28 | 26.08 |
| 9654.0 | 3.9 | 100. | 2.90 | 0.00 | 0.01 | 0.01 | 12.85 | 3.05 | 23.85 |
| 9655.0 | 6.6 | 100. | 2.90 | 0.00 | 0.12 | 0.12 | 12.85 | 2.70 | 23.50 |
| 9667.0 | 4.8 | 100. | 2.90 | 0.00 | 0.02 | 0.02 | 12.85 | 2.64 | 23.44 |
| 9685.0 | 4.8 | 100. | 2.90 | 0.00 | 0.01 | 0.01 | 12.85 | 2.63 | 23.42 |
| 9686.0 | 3.7 | 100. | 2.90 | 0.00 | 0.00 | 0.00 | 12.85 | 2.61 | 23.41 |
| 9696.0 | 6.1 | 84. | 2.90 | 0.01 | 0.02 | 0.07 | 12.85 | 2.61 | 23.41 |
| 9697.0 | 5.9 | 74. | 2.89 | 0.02 | 0.00 | 0.06 | 12.84 | 2.60 | 23.35 |
| 9698.0 | 5.6 | 75. | 2.87 | 0.02 | 0.00 | 0.04 | 12.82 | 2.60 | 23.30 |
| 9699.0 | 4.0 | 98. | 2.86 | 0.00 | 0.01 | 0.01 | 12.81 | 2.59 | 23.26 |
| 9712.0 | 6.4 | 84. | 2.86 | 0.01 | 0.02 | 0.09 | 12.81 | 2.58 | 23.25 |
| 9717.0 | 4.6 | 100. | 2.85 | 0.00 | 0.01 | 0.01 | 12.81 | 2.57 | 23.20 |
| 9718.0 | 6.2 | 66. | 2.85 | 0.05 | 0.00 | 0.08 | 12.81 | 2.55 | 23.17 |
| 9732.0 | 4.2 | 100. | 2.83 | 0.00 | 0.01 | 0.01 | 12.76 | 2.55 | 23.10 |
| 9733.0 | 5.1 | 100. | 2.83 | 0.00 | 0.03 | 0.03 | 12.76 | 2.49 | 23.04 |
| 9742.0 | 4.7 | 99. | 2.83 | 0.00 | 0.01 | 0.01 | 12.76 | 2.46 | 23.01 |
| 9743.0 | 6.9 | 100. | 2.82 | 0.00 | 0.15 | 0.15 | 12.59 | 2.29 | 22.02 |
| 9754.0 | 3.9 | 100. | 2.82 | 0.00 | 0.01 | 0.01 | 12.59 | 2.21 | 21.94 |
| 9765.0 | 4.0 | 92. | 2.82 | 0.00 | 0.01 | 0.01 | 12.59 | 2.21 | 21.94 |
| 9766.0 | 4.2 | 99. | 2.82 | 0.00 | 0.01 | 0.01 | 12.59 | 2.20 | 21.93 |
| 9767.0 | 6.1 | 97. | 2.82 | 0.00 | 0.07 | 0.07 | 12.59 | 2.18 | 21.91 |
| 9778.0 | 7.0 | 84. | 2.81 | 0.02 | 0.05 | 0.17 | 12.59 | 2.14 | 21.87 |
| 9779.0 | 5.9 | 92. | 2.81 | 0.00 | 0.06 | 0.06 | 12.58 | 2.08 | 21.75 |
| 9780.0 | 7.5 | 55. | 2.79 | 0.22 | 0.00 | 0.27 | 12.55 | 2.05 | 21.65 |

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 9781.0 | 9.5 | 51. | 2.76 | 1.00 | 0.01 | 1.50 | 12.20 | 2.05 | 21.23 |
| 9783.0 | 6.3 | 58. | 2.71 | 0.08 | 0.00 | 0.08 | 11.32 | 2.04 | 19.90 |
| 9784.0 | 6.5 | 57. | 2.69 | 0.10 | 0.00 | 0.11 | 11.26 | 2.04 | 19.83 |
| 9785.0 | 9.0 | 56. | 2.65 | 0.60 | 0.01 | 1.02 | 10.95 | 2.04 | 19.40 |
| 9786.0 | 7.9 | 54. | 2.61 | 0.32 | 0.00 | 0.41 | 10.56 | 2.04 | 18.80 |
| 9787.0 | 9.6 | 56. | 2.58 | 0.86 | 0.02 | 1.63 | 10.24 | 2.03 | 18.24 |
| 9788.0 | 8.4 | 62. | 2.54 | 0.30 | 0.01 | 0.64 | 9.57 | 2.01 | 16.99 |
| 9789.0 | 9.9 | 72. | 2.51 | 0.42 | 0.31 | 2.11 | 9.17 | 1.98 | 16.06 |
| 9790.0 | 6.9 | 92. | 2.49 | 0.00 | 0.16 | 0.16 | 8.96 | 1.83 | 15.00 |
| 9793.0 | 5.9 | 77. | 2.48 | 0.02 | 0.00 | 0.06 | 8.96 | 1.74 | 14.90 |
| 9798.0 | 7.4 | 75. | 2.48 | 0.05 | 0.03 | 0.23 | 8.95 | 1.73 | 14.86 |
| 9811.0 | 3.9 | 87. | 2.47 | 0.00 | 0.00 | 0.01 | 8.92 | 1.72 | 14.75 |
| 9812.0 | 6.4 | 60. | 2.46 | 0.08 | 0.00 | 0.10 | 8.91 | 1.72 | 14.73 |
| 9813.0 | 5.6 | 57. | 2.43 | 0.04 | 0.00 | 0.05 | 8.82 | 1.72 | 14.63 |
| 9814.0 | 4.5 | 68. | 2.41 | 0.01 | 0.00 | 0.02 | 8.79 | 1.72 | 14.59 |
| 9815.0 | 4.3 | 73. | 2.39 | 0.01 | 0.00 | 0.01 | 8.78 | 1.72 | 14.57 |
| 9816.0 | 4.1 | 87. | 2.38 | 0.00 | 0.00 | 0.01 | 8.77 | 1.72 | 14.56 |
| 9819.0 | 6.6 | 59. | 2.37 | 0.10 | 0.00 | 0.13 | 8.76 | 1.71 | 14.55 |
| 9820.0 | 8.4 | 41. | 2.34 | 0.56 | 0.00 | 0.59 | 8.55 | 1.71 | 14.26 |
| 9821.0 | 6.8 | 48. | 2.29 | 0.13 | 0.00 | 0.13 | 8.09 | 1.71 | 13.77 |
| 9822.0 | 5.0 | 76. | 2.26 | 0.01 | 0.00 | 0.02 | 7.99 | 1.71 | 13.67 |
| 9823.0 | 4.1 | 89. | 2.25 | 0.00 | 0.00 | 0.01 | 7.99 | 1.71 | 13.66 |
| 9824.0 | 3.8 | 94. | 2.25 | 0.00 | 0.01 | 0.01 | 7.99 | 1.71 | 13.65 |
| 9826.0 | 3.9 | 95. | 2.25 | 0.00 | 0.01 | 0.01 | 7.99 | 1.70 | 13.65 |
| 9827.0 | 5.4 | 100. | 2.24 | 0.00 | 0.03 | 0.03 | 7.99 | 1.68 | 13.63 |
| 9830.0 | 5.4 | 70. | 2.24 | 0.01 | 0.00 | 0.03 | 7.99 | 1.65 | 13.59 |
| 9831.0 | 7.3 | 74. | 2.22 | 0.06 | 0.02 | 0.23 | 7.73 | 1.64 | 13.03 |
| 9832.0 | 5.7 | 70. | 2.21 | 0.02 | 0.00 | 0.05 | 7.70 | 1.62 | 12.91 |
| 9833.0 | 5.1 | 56. | 2.19 | 0.03 | 0.00 | 0.03 | 7.67 | 1.62 | 12.87 |
| 9834.0 | 4.7 | 59. | 2.17 | 0.02 | 0.00 | 0.02 | 7.65 | 1.62 | 12.84 |
| 9835.0 | 5.4 | 62. | 2.15 | 0.03 | 0.00 | 0.04 | 7.63 | 1.62 | 12.82 |
| 9836.0 | 5.9 | 56. | 2.12 | 0.06 | 0.00 | 0.06 | 7.59 | 1.62 | 12.78 |
| 9837.0 | 5.4 | 54. | 2.10 | 0.04 | 0.00 | 0.04 | 7.53 | 1.62 | 12.72 |
| 9838.0 | 4.0 | 85. | 2.08 | 0.00 | 0.00 | 0.01 | 7.51 | 1.62 | 12.69 |
| 9839.0 | 4.6 | 75. | 2.07 | 0.01 | 0.00 | 0.02 | 7.51 | 1.61 | 12.68 |
| 9840.0 | 4.3 | 73. | 2.06 | 0.01 | 0.00 | 0.01 | 7.50 | 1.61 | 12.67 |
| 9842.0 | 4.2 | 99. | 2.06 | 0.00 | 0.01 | 0.01 | 7.50 | 1.61 | 12.66 |
| 9843.0 | 3.7 | 100. | 2.05 | 0.00 | 0.01 | 0.01 | 7.50 | 1.60 | 12.65 |
| 9846.0 | 4.3 | 100. | 2.05 | 0.00 | 0.01 | 0.01 | 7.50 | 1.59 | 12.64 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 9856.0 | 5.9 | 96. | 2.05 | 0.00 | 0.06 | 0.06 | 7.50 | 1.57 | 12.62 |
| 9857.0 | 5.7 | 88. | 2.05 | 0.00 | 0.02 | 0.05 | 7.50 | 1.51 | 12.56 |
| 9858.0 | 5.7 | 78. | 2.04 | 0.01 | 0.00 | 0.05 | 7.49 | 1.50 | 12.51 |
| 9859.0 | 6.1 | 74. | 2.03 | 0.03 | 0.00 | 0.07 | 7.48 | 1.50 | 12.46 |
| 9860.0 | 8.1 | 60. | 2.01 | 0.25 | 0.00 | 0.45 | 7.43 | 1.50 | 12.35 |
| 9861.0 | 7.7 | 56. | 1.98 | 0.24 | 0.00 | 0.33 | 7.14 | 1.49 | 11.87 |
| 9862.0 | 8.2 | 52. | 1.94 | 0.40 | 0.00 | 0.49 | 6.88 | 1.49 | 11.54 |
| 9863.0 | 7.8 | 60. | 1.90 | 0.21 | 0.00 | 0.37 | 6.43 | 1.49 | 10.94 |
| 9864.0 | 7.2 | 59. | 1.87 | 0.15 | 0.00 | 0.22 | 6.26 | 1.49 | 10.65 |
| 9865.0 | 6.9 | 63. | 1.84 | 0.10 | 0.00 | 0.15 | 6.08 | 1.49 | 10.39 |
| 9866.0 | 5.1 | 79. | 1.82 | 0.01 | 0.00 | 0.03 | 6.01 | 1.49 | 10.27 |
| 9867.0 | 4.2 | 98. | 1.81 | 0.00 | 0.01 | 0.01 | 6.01 | 1.48 | 10.25 |
| 9874.0 | 5.7 | 95. | 1.81 | 0.00 | 0.05 | 0.05 | 6.00 | 1.46 | 10.18 |
| 9875.0 | 3.9 | 100. | 1.80 | 0.00 | 0.00 | 0.00 | 6.00 | 1.43 | 10.15 |
| 9876.0 | 3.9 | 100. | 1.80 | 0.00 | 0.00 | 0.00 | 6.00 | 1.43 | 10.15 |
| 9877.0 | 4.7 | 100. | 1.80 | 0.00 | 0.01 | 0.01 | 6.00 | 1.42 | 10.14 |
| 9878.0 | 5.5 | 73. | 1.80 | 0.02 | 0.00 | 0.04 | 6.00 | 1.40 | 10.12 |
| 9881.0 | 5.6 | 73. | 1.79 | 0.02 | 0.00 | 0.04 | 5.98 | 1.39 | 10.09 |
| 9882.0 | 5.6 | 77. | 1.77 | 0.01 | 0.00 | 0.04 | 5.96 | 1.39 | 10.04 |
| 9883.0 | 5.4 | 81. | 1.76 | 0.01 | 0.00 | 0.03 | 5.95 | 1.38 | 10.01 |
| 9884.0 | 5.8 | 67. | 1.75 | 0.03 | 0.00 | 0.05 | 5.95 | 1.38 | 9.97 |
| 9885.0 | 5.8 | 74. | 1.73 | 0.02 | 0.00 | 0.05 | 5.92 | 1.38 | 9.92 |
| 9886.0 | 5.9 | 76. | 1.72 | 0.02 | 0.00 | 0.06 | 5.90 | 1.38 | 9.87 |
| 9892.0 | 7.7 | 74. | 1.71 | 0.08 | 0.03 | 0.33 | 5.89 | 1.36 | 9.79 |
| 9893.0 | 5.5 | 83. | 1.69 | 0.01 | 0.01 | 0.04 | 5.82 | 1.34 | 9.56 |
| 9894.0 | 5.6 | 72. | 1.67 | 0.02 | 0.00 | 0.04 | 5.81 | 1.34 | 9.52 |
| 9895.0 | 4.5 | 63. | 1.66 | 0.01 | 0.00 | 0.01 | 5.79 | 1.34 | 9.49 |
| 9896.0 | 4.8 | 54. | 1.64 | 0.02 | 0.00 | 0.02 | 5.78 | 1.34 | 9.48 |
| 9897.0 | 6.2 | 45. | 1.61 | 0.07 | 0.00 | 0.08 | 5.74 | 1.34 | 9.44 |
| 9898.0 | 7.9 | 45. | 1.58 | 0.36 | -0.00 | 0.39 | 5.66 | 1.34 | 9.36 |
| 9899.0 | 8.6 | 41. | 1.54 | 0.69 | 0.00 | 0.73 | 5.42 | 1.34 | 9.10 |
| 9900.0 | 7.6 | 48. | 1.49 | 0.27 | 0.00 | 0.29 | 4.84 | 1.34 | 8.48 |
| 9901.0 | 5.2 | 64. | 1.46 | 0.03 | 0.00 | 0.03 | 4.68 | 1.34 | 8.31 |
| 9902.0 | 5.1 | 61. | 1.44 | 0.03 | 0.00 | 0.03 | 4.65 | 1.34 | 8.28 |
| 9903.0 | 6.6 | 57. | 1.42 | 0.10 | 0.00 | 0.11 | 4.61 | 1.34 | 8.24 |
| 9904.0 | 5.8 | 67. | 1.39 | 0.03 | 0.00 | 0.05 | 4.47 | 1.34 | 8.08 |
| 9905.0 | 3.7 | 90. | 1.37 | 0.00 | 0.01 | 0.01 | 4.45 | 1.34 | 8.05 |
| 9907.0 | 3.7 | 94. | 1.37 | 0.00 | 0.01 | 0.01 | 4.45 | 1.33 | 8.04 |
| 9908.0 | 3.9 | 96. | 1.36 | 0.00 | 0.01 | 0.01 | 4.45 | 1.33 | 8.04 |
| 9915.0 | 5.2 | 100. | 1.36 | 0.00 | 0.03 | 0.03 | 4.45 | 1.32 | 8.03 |
| 9933.0 | 3.8 | 100. | 1.36 | 0.00 | 0.01 | 0.01 | 4.45 | 1.29 | 8.00 |

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| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 9936.0 | 5.1 | 94. | 1.36 | 0.00 | 0.03 | 0.03 | 4.45 | 1.28 | 7.99 |
| 9937.0 | 5.0 | 81. | 1.36 | 0.01 | 0.00 | 0.02 | 4.45 | 1.26 | 7.97 |
| 9938.0 | 6.2 | 71. | 1.35 | 0.04 | 0.00 | 0.08 | 4.44 | 1.26 | 7.94 |
| 9939.0 | 6.6 | 73. | 1.33 | 0.04 | 0.01 | 0.11 | 4.41 | 1.25 | 7.85 |
| 9940.0 | 5.0 | 100. | 1.32 | 0.00 | 0.02 | 0.02 | 4.39 | 1.25 | 7.77 |
| 9941.0 | 4.0 | 100. | 1.32 | 0.00 | 0.01 | 0.01 | 4.39 | 1.23 | 7.75 |
| 9942.0 | 4.6 | 98. | 1.32 | 0.00 | 0.02 | 0.02 | 4.39 | 1.21 | 7.74 |
| 9943.0 | 4.6 | 99. | 1.31 | 0.00 | 0.02 | 0.02 | 4.39 | 1.20 | 7.72 |
| 9944.0 | 4.3 | 97. | 1.31 | 0.00 | 0.01 | 0.01 | 4.39 | 1.18 | 7.71 |
| 9948.0 | 5.1 | 100. | 1.31 | 0.00 | 0.03 | 0.03 | 4.39 | 1.17 | 7.70 |
| 9949.0 | 4.6 | 100. | 1.31 | 0.00 | 0.02 | 0.02 | 4.39 | 1.14 | 7.67 |
| 9967.0 | 5.0 | 93. | 1.31 | 0.00 | 0.03 | 0.03 | 4.39 | 1.13 | 7.66 |
| 9968.0 | 5.1 | 100. | 1.31 | 0.00 | 0.03 | 0.03 | 4.39 | 1.10 | 7.63 |
| 9969.0 | 3.7 | 100. | 1.31 | 0.00 | 0.01 | 0.01 | 4.39 | 1.08 | 7.61 |
| 9971.0 | 4.9 | 99. | 1.31 | 0.00 | 0.02 | 0.02 | 4.39 | 1.08 | 7.61 |
| 9972.0 | 6.3 | 84. | 1.31 | 0.01 | 0.02 | 0.09 | 4.39 | 1.04 | 7.57 |
| 9973.0 | 5.3 | 100. | 1.30 | 0.00 | 0.03 | 0.03 | 4.38 | 1.02 | 7.50 |
| 9974.0 | 4.4 | 95. | 1.30 | 0.00 | 0.01 | 0.01 | 4.38 | 1.00 | 7.48 |
| 9975.0 | 4.7 | 100. | 1.30 | 0.00 | 0.01 | 0.01 | 4.38 | 0.98 | 7.46 |
| 9976.0 | 4.3 | 100. | 1.30 | 0.00 | 0.01 | 0.01 | 4.38 | 0.97 | 7.45 |
| 9977.0 | 5.3 | 98. | 1.30 | 0.00 | 0.03 | 0.03 | 4.38 | 0.96 | 7.44 |
| 9978.0 | 5.4 | 75. | 1.29 | 0.01 | 0.00 | 0.04 | 4.37 | 0.95 | 7.39 |
| 9979.0 | 4.8 | 85. | 1.27 | 0.00 | 0.00 | 0.02 | 4.36 | 0.94 | 7.36 |
| 9980.0 | 4.0 | 99. | 1.27 | 0.00 | 0.01 | 0.01 | 4.35 | 0.93 | 7.34 |
| 9983.0 | 3.7 | 97. | 1.27 | 0.00 | 0.01 | 0.01 | 4.35 | 0.92 | 7.33 |
| 9989.0 | 4.0 | 100. | 1.27 | 0.00 | 0.01 | 0.01 | 4.35 | 0.91 | 7.32 |
| 9992.0 | 3.7 | 100. | 1.27 | 0.00 | 0.01 | 0.01 | 4.35 | 0.91 | 7.32 |
| 9993.0 | 3.6 | 100. | 1.27 | 0.00 | 0.00 | 0.00 | 4.35 | 0.91 | 7.32 |
| 9994.0 | 4.8 | 98. | 1.27 | 0.00 | 0.02 | 0.02 | 4.35 | 0.90 | 7.31 |
| 9995.0 | 6.1 | 90. | 1.26 | 0.00 | 0.03 | 0.07 | 4.35 | 0.89 | 7.29 |
| 9996.0 | 4.6 | 100. | 1.25 | 0.00 | 0.01 | 0.01 | 4.34 | 0.87 | 7.22 |
| 9997.0 | 3.6 | 100. | 1.25 | 0.00 | 0.00 | 0.00 | 4.34 | 0.87 | 7.21 |
| 9998.0 | 4.3 | 100. | 1.25 | 0.00 | 0.01 | 0.01 | 4.34 | 0.86 | 7.21 |
| 9999.0 | 4.6 | 71. | 1.25 | 0.01 | 0.00 | 0.02 | 4.34 | 0.86 | 7.20 |
| 10000.0 | 5.3 | 62. | 1.23 | 0.03 | 0.00 | 0.03 | 4.31 | 0.86 | 7.17 |
| 10001.0 | 4.0 | 100. | 1.22 | 0.00 | 0.01 | 0.01 | 4.30 | 0.85 | 7.14 |
| 10002.0 | 5.2 | 79. | 1.22 | 0.01 | 0.00 | 0.02 | 4.30 | 0.84 | 7.14 |
| 10003.0 | 4.7 | 65. | 1.20 | 0.02 | 0.00 | 0.02 | 4.28 | 0.84 | 7.11 |
| 10004.0 | 5.2 | 68. | 1.19 | 0.02 | 0.00 | 0.03 | 4.26 | 0.84 | 7.09 |
| 10005.0 | 4.5 | 81. | 1.17 | 0.00 | 0.00 | 0.02 | 4.24 | 0.84 | 7.06 |
| 10006.0 | 4.5 | 88. | 1.16 | 0.00 | 0.00 | 0.01 | 4.24 | 0.84 | 7.05 |

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 10007.0 | 4.7 | 98. | 1.16 | 0.00 | 0.02 | 0.02 | 4.24 | 0.83 | 7.03 |
| 10014.0 | 4.7 | 95. | 1.16 | 0.00 | 0.02 | 0.02 | 4.24 | 0.81 | 7.01 |
| 10015.0 | 5.8 | 72. | 1.15 | 0.02 | 0.00 | 0.06 | 4.24 | 0.80 | 6.99 |
| 10016.0 | 5.3 | 100. | 1.14 | 0.00 | 0.03 | 0.03 | 4.22 | 0.80 | 6.94 |
| 10017.0 | 5.5 | 100. | 1.14 | 0.00 | 0.04 | 0.04 | 4.22 | 0.77 | 6.92 |
| 10018.0 | 4.5 | 92. | 1.14 | 0.00 | 0.01 | 0.01 | 4.22 | 0.74 | 6.89 |
| 10021.0 | 3.7 | 100. | 1.13 | 0.00 | 0.01 | 0.01 | 4.22 | 0.73 | 6.88 |
| 10022.0 | 4.8 | 99. | 1.13 | 0.00 | 0.02 | 0.02 | 4.22 | 0.72 | 6.86 |
| 10028.0 | 4.6 | 89. | 1.13 | 0.00 | 0.00 | 0.01 | 4.22 | 0.70 | 6.85 |
| 10029.0 | 6.7 | 95. | 1.13 | 0.00 | 0.13 | 0.13 | 4.21 | 0.68 | 6.80 |
| 10030.0 | 7.2 | 75. | 1.12 | 0.05 | 0.02 | 0.20 | 4.21 | 0.56 | 6.68 |
| 10031.0 | 9.0 | 56. | 1.10 | 0.62 | 0.01 | 1.06 | 4.05 | 0.55 | 6.27 |
| 10032.0 | 8.2 | 58. | 1.06 | 0.32 | 0.00 | 0.51 | 3.48 | 0.54 | 5.30 |
| 10033.0 | 7.7 | 59. | 1.03 | 0.20 | 0.00 | 0.32 | 3.23 | 0.54 | 4.91 |
| 10034.0 | 7.0 | 66. | 1.00 | 0.09 | 0.00 | 0.18 | 3.07 | 0.53 | 4.64 |
| 10035.0 | 5.9 | 76. | 0.98 | 0.02 | 0.00 | 0.05 | 3.02 | 0.53 | 4.51 |
| 10043.0 | 4.4 | 100. | 0.97 | 0.00 | 0.01 | 0.01 | 3.01 | 0.51 | 4.47 |
| 10044.0 | 5.0 | 96. | 0.97 | 0.00 | 0.02 | 0.02 | 3.01 | 0.49 | 4.45 |
| 10045.0 | 5.3 | 99. | 0.97 | 0.00 | 0.03 | 0.03 | 3.01 | 0.47 | 4.42 |
| 10046.0 | 6.7 | 69. | 0.96 | 0.06 | 0.00 | 0.13 | 2.99 | 0.45 | 4.38 |
| 10047.0 | 6.2 | 71. | 0.94 | 0.03 | 0.00 | 0.07 | 2.94 | 0.45 | 4.25 |
| 10048.0 | 5.7 | 90. | 0.92 | 0.00 | 0.02 | 0.04 | 2.91 | 0.45 | 4.19 |
| 10049.0 | 5.0 | 97. | 0.92 | 0.00 | 0.02 | 0.02 | 2.91 | 0.42 | 4.15 |
| 10052.0 | 4.9 | 93. | 0.92 | 0.00 | 0.02 | 0.02 | 2.91 | 0.40 | 4.13 |
| 10053.0 | 5.1 | 100. | 0.91 | 0.00 | 0.02 | 0.02 | 2.91 | 0.38 | 4.11 |
| 10054.0 | 4.9 | 100. | 0.91 | 0.00 | 0.02 | 0.02 | 2.91 | 0.36 | 4.09 |
| 10055.0 | 4.7 | 100. | 0.91 | 0.00 | 0.01 | 0.01 | 2.91 | 0.34 | 4.07 |
| 10060.0 | 4.0 | 100. | 0.91 | 0.00 | 0.01 | 0.01 | 2.91 | 0.33 | 4.06 |
| 10067.0 | 5.6 | 99. | 0.91 | 0.00 | 0.04 | 0.04 | 2.91 | 0.30 | 4.03 |
| 10068.0 | 4.2 | 100. | 0.91 | 0.00 | 0.01 | 0.01 | 2.91 | 0.27 | 4.00 |
| 10078.0 | 3.8 | 100. | 0.91 | 0.00 | 0.01 | 0.01 | 2.91 | 0.27 | 3.99 |
| 10079.0 | 5.8 | 92. | 0.91 | 0.00 | 0.06 | 0.06 | 2.91 | 0.24 | 3.97 |
| 10080.0 | 4.9 | 93. | 0.90 | 0.00 | 0.02 | 0.02 | 2.91 | 0.21 | 3.91 |
| 10082.0 | 4.3 | 95. | 0.90 | 0.00 | 0.01 | 0.01 | 2.91 | 0.20 | 3.90 |
| 10083.0 | 5.8 | 65. | 0.90 | 0.04 | 0.00 | 0.05 | 2.91 | 0.18 | 3.89 |
| 10084.0 | 7.3 | 53. | 0.87 | 0.21 | 0.00 | 0.23 | 2.84 | 0.18 | 3.79 |
| 10085.0 | 6.4 | 56. | 0.84 | 0.08 | 0.00 | 0.09 | 2.65 | 0.18 | 3.58 |
| 10086.0 | 5.3 | 76. | 0.82 | 0.01 | 0.00 | 0.03 | 2.60 | 0.18 | 3.52 |
| 10087.0 | 6.1 | 57. | 0.81 | 0.06 | 0.00 | 0.07 | 2.58 | 0.18 | 3.49 |

Schlumberger

| DEPTH FEET | POR. TOTAL % | WAT SAT. % | CUM HC-FT | PERM HC | PERM WATER | PERM TOTAL | CUMULATIVE PERM HC | CUMULATIVE PERM WATER | CUMULATIVE PERM TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 10088.0 | 7.6 | 46. | 0.78 | 0.27 | 0.00 | 0.29 | 2.49 | 0.18 | 3.39 |
| 10089.0 | 7.3 | 46. | 0.73 | 0.21 | 0.00 | 0.22 | 2.21 | 0.18 | 3.09 |
| 10090.0 | 6.1 | 48. | 0.70 | 0.06 | 0.00 | 0.07 | 2.06 | 0.18 | 2.93 |
| 10091.0 | 6.7 | 42. | 0.67 | 0.12 | 0.00 | 0.12 | 2.00 | 0.18 | 2.87 |
| 10092.0 | 7.1 | 39. | 0.63 | 0.18 | 0.00 | 0.19 | 1.87 | 0.18 | 2.73 |
| 10093.0 | 6.2 | 43. | 0.59 | 0.07 | 0.00 | 0.07 | 1.74 | 0.18 | 2.59 |
| 10094.0 | 5.6 | 53. | 0.56 | 0.04 | 0.00 | 0.04 | 1.69 | 0.18 | 2.54 |
| 10095.0 | 6.4 | 45. | 0.53 | 0.09 | 0.00 | 0.09 | 1.65 | 0.18 | 2.50 |
| 10096.0 | 5.5 | 68. | 0.50 | 0.02 | 0.00 | 0.03 | 1.58 | 0.18 | 2.42 |
| 10097.0 | 4.1 | 72. | 0.49 | 0.01 | 0.00 | 0.01 | 1.57 | 0.18 | 2.40 |
| 10098.0 | 4.9 | 57. | 0.48 | 0.02 | 0.00 | 0.02 | 1.57 | 0.18 | 2.40 |
| 10099.0 | 6.2 | 57. | 0.46 | 0.07 | 0.00 | 0.07 | 1.54 | 0.18 | 2.37 |
| 10100.0 | 6.7 | 54. | 0.43 | 0.12 | 0.00 | 0.13 | 1.47 | 0.18 | 2.29 |
| 10101.0 | 4.4 | 86. | 0.40 | 0.00 | 0.00 | 0.01 | 1.38 | 0.18 | 2.20 |
| 10102.0 | 4.4 | 78. | 0.40 | 0.00 | 0.00 | 0.01 | 1.38 | 0.17 | 2.19 |
| 10103.0 | 6.8 | 45. | 0.38 | 0.13 | 0.00 | 0.14 | 1.36 | 0.17 | 2.16 |
| 10104.0 | 6.5 | 66. | 0.34 | 0.06 | 0.00 | 0.10 | 1.20 | 0.17 | 1.99 |
| 10105.0 | 4.6 | 97. | 0.33 | 0.00 | 0.01 | 0.01 | 1.17 | 0.17 | 1.93 |
| 10106.0 | 5.5 | 76. | 0.33 | 0.01 | 0.00 | 0.03 | 1.17 | 0.16 | 1.91 |
| 10107.0 | 6.7 | 59. | 0.31 | 0.11 | 0.00 | 0.13 | 1.13 | 0.16 | 1.85 |
| 10108.0 | 6.5 | 66. | 0.28 | 0.06 | 0.00 | 0.11 | 1.01 | 0.16 | 1.70 |
| 10109.0 | 5.2 | 82. | 0.26 | 0.01 | 0.00 | 0.03 | 0.96 | 0.16 | 1.61 |
| 10110.0 | 5.1 | 79. | 0.25 | 0.01 | 0.00 | 0.02 | 0.95 | 0.15 | 1.58 |
| 10111.0 | 4.9 | 96. | 0.24 | 0.00 | 0.02 | 0.02 | 0.95 | 0.15 | 1.56 |
| 10112.0 | 5.8 | 65. | 0.23 | 0.04 | 0.00 | 0.06 | 0.94 | 0.14 | 1.54 |
| 10113.0 | 7.4 | 55. | 0.20 | 0.20 | 0.00 | 0.24 | 0.84 | 0.14 | 1.41 |
| 10114.0 | 7.9 | 55. | 0.17 | 0.30 | 0.00 | 0.39 | 0.65 | 0.14 | 1.18 |
| 10115.0 | 6.8 | 62. | 0.14 | 0.09 | 0.00 | 0.14 | 0.39 | 0.14 | 0.83 |
| 10116.0 | 5.3 | 83. | 0.11 | 0.00 | 0.00 | 0.03 | 0.32 | 0.14 | 0.72 |
| 10117.0 | 5.0 | 83. | 0.10 | 0.00 | 0.00 | 0.02 | 0.32 | 0.14 | 0.69 |
| 10118.0 | 5.6 | 100. | 0.10 | 0.00 | 0.04 | 0.04 | 0.31 | 0.13 | 0.67 |
| 10119.0 | 5.5 | 87. | 0.09 | 0.00 | 0.01 | 0.04 | 0.31 | 0.11 | 0.62 |
| 10122.0 | 4.2 | 99. | 0.09 | 0.00 | 0.01 | 0.01 | 0.30 | 0.10 | 0.60 |
| 10123.0 | 4.7 | 100. | 0.08 | 0.00 | 0.01 | 0.01 | 0.30 | 0.08 | 0.58 |
| 10124.0 | 5.2 | 85. | 0.08 | 0.00 | 0.01 | 0.03 | 0.30 | 0.06 | 0.56 |
| 10125.0 | 4.9 | 79. | 0.07 | 0.01 | 0.00 | 0.02 | 0.30 | 0.06 | 0.53 |
| 10126.0 | 4.0 | 96. | 0.07 | 0.00 | 0.01 | 0.01 | 0.29 | 0.06 | 0.51 |
| 10127.0 | 3.8 | 99. | 0.06 | 0.00 | 0.01 | 0.01 | 0.29 | 0.05 | 0.50 |
| 10129.0 | 3.9 | 93. | 0.06 | 0.00 | 0.01 | 0.01 | 0.29 | 0.04 | 0.50 |
| 10130.0 | 7.2 | 55. | 0.05 | 0.18 | 0.00 | 0.21 | 0.27 | 0.04 | 0.47 |
| 10131.0 | 7.2 | 67. | 0.02 | 0.09 | 0.01 | 0.22 | 0.06 | 0.04 | 0.17 |
| 10132.0 | 4.1 | 100. | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.04 | 0.04 |
| 10135.0 | 3.8 | 100. | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.03 | 0.03 |
| 10136.0 | 4.3 | 100. | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.02 | 0.02 |
| 10150.0 | 4.6 | 100. | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 |

Schlumberger

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Bow Valley Petroleum Inc.

3. ADDRESS OF OPERATOR: 1700 Broadway, Suite 900, Denver, CO 80290

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: (SE, NW) 2,142' FNL, 1,478' FWL

5. LEASE DESIGNATION AND SERIAL NO.:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Nelson

9. WELL NO.: 1-31A1E

10. FIELD AND POOL, OR WILDCAT: East Bluebell, Wasatch

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 31, T1S, R1E, USM

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5330 GL

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | [ ] | PULL OR ALTER CASING | [ ] | WATER SHUT-OFF | [ ] | REPAIRING WELL | [ ] |
| FRACTURE TREAT | [ ] | MULTIPLE COMPLETE | [ ] | FRACTURE TREATMENT | [ ] | ALTERING CASING | [ ] |
| SHOOT OR ACIDIZE | [ ] | ABANDON* | [ ] | SHOOTING OR ACIDIZING | [ ] | ABANDONMENT* | [ ] |
| REPAIR WELL | [ ] | CHANGE PLANS | [ ] | (Other) Monthly Report | | | [X] |
| (Other) | | | [ ] | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

## March Operating Report

| DATE | DAY | OPERATION | DEPTH | MUD WT | DEVIATION |
|---|---|---|---|---|---|
| 3-1-80 | 32 | Logging | 10,198 | 9.4 | 1¼ |
| 3-2-80 | 33 | LDDP | 10,200 | 9.4 | |
| 3-3-80 | 34 | ND BOP | 10,200 | 9.4 | |
| | | Ran 236 jts of 7" S-95 LT & C. | | | |
| | | Casing Detail: | | | |
| | | 8914-12200 30 Jts (1285.80') 32#, S-95, LTC | | | |
| | | 1884-8914 162 jts (7030.03) 29#, S-95, LTC | | | |
| | | 0-1884' 44 jts (1892.00) 26, S-95, LTC. | | | |
| 3-4-80 | 35 | PU 3½ Drill Collar | 10,200 | 9.4 | |
| 3-5-80 | 36 | Trip | 10,205 | 9.4 | |
| 3-6-80 | 37 | Trip | 10,231 | 9.2 | |
| 3-7-80 | 38 | Drilling | 10,292 | 9.3 | |
| 3-8-80 | 39 | Drilling | 10,461 | 9.3 | |
| 3-9-80 | 40 | Drilling | 10,650 | 9.3 | (over) |

18. I hereby certify that the foregoing is true and correct

SIGNED E. B. Whicker (E.B. Whicker) TITLE Division Engineer DATE 4-23-80

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

| | | | | |
|---|---|---|---|---|
| 3-10-80 | 41 | Drilling | 10,828 | 9.4+ |
| 3-11-80 | 42 | Drilling | 10,971 | 9.5 |
| 3-12-80 | 43 | Drilling | 11,143 | 11.0 |
| 3-13-80 | 44 | Drilling | 11,317 | 11 |
| 3-14-80 | 45 | Trip | 11,423 | 11 |
| 3-15-80 | 46 | Back Off | 11,423 | 11.6 |
| 3-16-80 | 47 | Wt on fish-tools | 11,423 | 12 |
| 3-17-80 | 48 | Trip | 11,423 | 12.4 |
| 3-18-80 | 49 | Circ out oil | 11,423 | 12.7 |
| 3-19-80 | 50 | Trip | 11,423 | 12.8 |
| 3-20-80 | 51 | Reaming | 11,423 | 13.3 |
| 3-21-80 | 52 | Reaming | 11,423 | 13.3 |
| 3-22-80 | 53 | Reaming | 11,423 | 13.5 |
| 3-23-80 | 54 | Trip | 11,423 | 13.2 |
| 3-24-80 | 55 | Drilling | 11,464 | 13.4 |
| 3-25-80 | 56 | Drilling | 11,615 | 13.3 |
| 3-26-80 | 57 | Drilling | 11,762 | 13.3 |
| 3-27-80 | 58 | Drilling | 11,916 | 13.4 |
| 3-28-80 | 59 | Wait on-drive sprachet | 12,001 | 13.4 |
| 3-29-80 | 60 | Drilling | 12,102 | 13.4 |
| 3-30-80 | 61 | Drilling | 12,235 | 13.4 |
| 3-31-80 | 62 | Drilling | 12,389 | 13.3 |

Form OGC-1b

SUBMIT TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Bow Valley Petroleum Inc.

3. ADDRESS OF OPERATOR: 1700 Broadway, Suite 900, Denver, CO 80290

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: (SE, NW) 2,142' FNL, 1,478' FWL

5. LEASE DESIGNATION AND SERIAL NO.:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Nelson

9. WELL NO.: 1-31A1E

10. FIELD AND POOL, OR WILDCAT: East Bluebell, Wasatch

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 31, T1S, R1E, USM

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5330 GL

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | [ ] | PULL OR ALTER CASING | [ ] | WATER SHUT-OFF | [ ] | REPAIRING WELL | [ ] |
| FRACTURE TREAT | [ ] | MULTIPLE COMPLETE | [ ] | FRACTURE TREATMENT | [ ] | ALTERING CASING | [ ] |
| SHOOT OR ACIDIZE | [ ] | ABANDON* | [ ] | SHOOTING OR ACIDIZING | [ ] | ABANDONMENT* | [ ] |
| REPAIR WELL | [ ] | CHANGE PLANS | [ ] | (Other) Monthly Report | | | [X] |
| (Other) | | | [ ] | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

February Operating Report

| DATE | DAY | OPERATION | DEPTH | MUD WT | DEVIATION |
|---|---|---|---|---|---|
| 2-1-80 | 3 | Drilling | 1773 | 9.3 | 3/4 |
| 2-2-80 | 4 | Drilling | 2296 | 9.5 | 3/4 |
| 2-3-80 | 5 | Drilling | 2751 | 8.7 | 1 |
| 2-4-80 | 6 | Run csg. | 3000 | 8.9 | 1 |
| 2-5-80 | 7 | NU BOP | 3000 | 9.2 | |
| | | Ran 70 jts 9-5/8" K-55 40# STC. | | | |
| 2-6-80 | 8 | Trip | 3005 | 8.5 | ¼ |
| 2-7-80 | 9 | Drilling | 3482 | 8.5 | |
| 2-8-80 | 10 | Drilling | 4026 | 8.5 | 1 |
| 2-9-80 | 11 | Drilling | 4596 | 8.5 | |
| 2-10-80 | 12 | Wash, to Btm. | 4897 | 8.6 | ½ |
| 2-11-80 | 13 | Drilling | 5333 | 8.6 | |
| 2-12-80 | 14 | Drilling | 5811 | 8.6 | |
| 2-13-80 | 15 | Drilling | 6070 | 8.5 | 1 |
| 2-14-80 | 16 | Drilling | 6433 | 8.6 | |
| 2-15-80 | 17 | Drilling | 6759 | 8.8 | |
| 2-16-80 | 18 | Drilling | 6981 | 8.7 | 3/4 (over) |

RECEIVED
APR 28 1980
DIVISION OF
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED E. B. Whicker TITLE Division Engineer DATE 4-23-80
E.B. Whicker

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

| | | | | | |
|---|---|---|---|---|---|
| 2-17-80 | 19 | Drilling | 7299 | 8.8 | |
| 2-18-80 | 20 | Drilling | 7656 | 8.9 | |
| 2-19-80 | 21 | Drilling | 7968 | 8.8 | |
| 2-20-80 | 22 | Drilling | 8192 | 8.7 | |
| 2-21-80 | 23 | Drilling | 8567 | 8.8 | |
| 2-22-80 | 24 | Drilling | 8928 | 8.8 | |
| 2-23-80 | 25 | Drilling | 9295 | 9.1 | |
| 2-24-80 | 26 | Drilling | 9408 | 9.2 | 1 |
| 2-25-80 | 27 | Drilling | 9654 | 9.1 | |
| 2-26-80 | 28 | Drilling | 9791 | 9.4 | |
| 2-27-80 | 29 | Trip | 9793 | 9.4 | 1½ |
| 2-28-80 | 30 | Drilling | 9940 | 9.4 | |
| 2-29-80 | 31 | Drilling | 10,115 | 9.4 | |

Form OGC-3

SUBMIT IN DU[illegible]E*
(See other instructions on reverse side)

6

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

API #43-047-30671

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Bow Valley Petroleum Inc.

3. ADDRESS OF OPERATOR: 1700 Broadway, Suite 900, Denver, CO 80290

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1478' FWL, 2,142' FNL (SE, NW)
At top prod. interval reported below: Same
At total depth:

5. LEASE DESIGNATION AND SERIAL NO.:
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Nelson
9. WELL NO.: 1-31 A1E
10. FIELD AND POOL, OR WILDCAT: East Bluebell
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 31, T1S, R1E, USM

14. PERMIT NO.: 43-047-30671 DATE ISSUED: 1-18-80
12. COUNTY OR PARISH: Uintah
13. STATE: Utah

| 15. DATE SPUDDED | 16. DATE T.D. REACHED | 17. DATE COMPL. (*Ready to prod.*) | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* | 19. ELEV. CASINGHEAD |
|---|---|---|---|---|
| 1-30-80 | 4-2-80 | 4-27-80 | 5314 KB | 5301 |

| 20. TOTAL DEPTH, MD & TVD | 21. PLUG, BACK T.D., MD & TVD | 22. IF MULTIPLE COMPL., HOW MANY* | 23. INTERVALS DRILLED BY | ROTARY TOOLS | CABLE TOOLS |
|---|---|---|---|---|---|
| 12,650 | 12,642 | | → | All | None |

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
11,258-12,594 Wasatch (134' Net, 250 Holes)

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL-GR

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

| CASING SIZE | WEIGHT, LB./FT. | DEPTH SET (MD) | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
|---|---|---|---|---|---|
| 9-5/8" | 40# | 2,994 | 12¼ | 700 sx Lite, 200 sx "H" | None |
| 7" | 26,29,32# | 10,152 | 8-3/4 | 360 sx Lite, 200 sx "G" | None |

29. LINER RECORD

| SIZE | TOP (MD) | BOTTOM (MD) | SACKS CEMENT* | SCREEN (MD) |
|---|---|---|---|---|
| 5" | 10,035 | 12,650 | 700 sx | |

30. TUBING RECORD

| SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|
| 2-7/8 | 10,256 | 10,256 |

31. PERFORATION RECORD (*Interval, size and number*)
See attached detail

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL (MD) | AMOUNT AND KIND OF MATERIAL USED |
|---|---|
| 11,418-11,430 | 3,000 gal 15% HCl |
| 11,258-12,594 | 35,000 gal 15% HCl |

33.* PRODUCTION

| DATE FIRST PRODUCTION | PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*) | WELL STATUS (*Producing or shut-in*) |
|---|---|---|
| 4-20-80 | Flowing | Producing |

| DATE OF TEST | HOURS TESTED | CHOKE SIZE | PROD'N. FOR TEST PERIOD | OIL—BBL. | GAS—MCF. | WATER—BBL. | GAS-OIL RATIO |
|---|---|---|---|---|---|---|---|
| 4-28-80 | 24 | 25/64 | → | 1163 | 630 | 0 | 542 |

| FLOW. TUBING PRESS. | CASING PRESSURE | CALCULATED 24-HOUR RATE | OIL—BBL. | GAS—MCF. | WATER—BBL. | OIL GRAVITY-API (CORR.) |
|---|---|---|---|---|---|---|
| 400 PSIG | N/A | → | 1163 | 630 | 0 | 42 |

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)
200 MCFD used for fuel, balance is flared

TEST WITNESSED BY: Bill Shiner

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED E. B. Whicker E.B. Whicker TITLE Division Engineer DATE 5-20-80

*(See Instructions and Spaces for Additional Data on Reverse Side)

# INSTRUCTIONS

**General:** This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
**Item 4:** If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
**Item 18:** Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
**Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
**Item 29:** *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

| FORMATION | TOP | BOTTOM | DESCRIPTION, CONTENTS, ETC. |
|---|---|---|---|
| | | | |

38. GEOLOGIC MARKERS

| NAME | TOP MEAS. DEPTH | TOP TRUE VERT. DEPTH |
|---|---|---|
| Green River | 6,532 | 6,532 |
| Wasatch | 9,142 | 9,142 |

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JUN 3 1980
DIVISION OF
OIL, GAS & MINING

Bow Valley Petroleum Inc.

Nelson 1-31A1E
May 15, 1980
Supplement to OGC-3

PERFORATION DETAIL

All perforations are 0.34" diameter & 2 JSPS per ft.

| Interval | No. Perfs | Interval | No. Perfs |
|---|---|---|---|
| 12592-94 | 4 | 11831-34 | 6 |
| 12556-58 | 4 | 11796-98 | 4 |
| 12530-34 | 8 | 11788-90 | 4 |
| 12512-16 | 8 | 11782-84 | 4 |
| 12506-10 | 8 | 11776-78 | 4 |
| 12488-92 | 8 | 11758-62 | 8 |
| 12480-84 | 8 | 11696-98 | 4 |
| 12426-28 | 4 | 11687-90 | 6 |
| 12418-20 | 4 | 11674-76 | 4 |
| 12360-64 | 8 | 11622-26 | 8 |
| 12352-56 | 8 | 11612-18 | 12 |
| 11966-70 | 8 | 11572-78 | 12 |
| 11956-58 | 4 | 11538-40 | 4 |
| 11940-42 | 4 | 11466-68 | 4 |
| 11923-27 | 8 | 11452-54 | 4 |
| 11886-94 | 16 | 11442-44 | 4 |
| 11870-74 | 8 | 11375-77 | 4 |
| 11862-64 | 4 | 11318-22 | 8 |
| 11850-54 | 8 | 11258-62 | 8 |

TOTAL-250 holes

FORM OGC-8-X
FILE IN QUADRUPLICATE

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS CONSERVATION
1588 West North Temple
Salt Lake City, Utah 84116

# REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name and Number Nelson 1-31 A1F

Operator Bow Valley Petroleum Inc.

Address 1700 Broadway, Suite 900, Denver, CO 80290

Contractor Chase Drilling Co.

Address

Location SE 1/4, NW 1/4, Sec. 31, T. 1 S, R. 1 E/W., Uintah County.

Water Sands:

| | Depth: From - | To - | Volume: Flow Rate or Head - | Quality: Fresh or Salty - |
|---|---|---|---|---|
| 1. | None Idnetified | | | |
| 2. | 2400' | | 25 Bbl pit gain | Salty-Contaminated-Mud. |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

(Continue on Reverse Side if Necessary)

Formation Tops:

| | |
|---|---|
| Green River FM | 6506 |
| Wasatch FM | 9320 |

NOTE: (a) Upon diminishing supply of forms, please inform this office.
(b) Report on this form as provided for in Rule C-20, General Rules and Regulations and Rules of Practice and Procedure, (see back of this form)
(c) If a water quality analysis has been made of the above reported zone, please forward a copy along with this form.

6705-108
Rev. 6-84

042901

# STATE OF UTAH
# Business Regulation

AMENDED
CERTIFICATE OF AUTHORITY
OF

GW PETROLEUM INC.

The Department of Business Regulation, Division of Corporations and Commercial Code, pursuant to the Utah Business Corporation Act, hereby issues an Amended Certificate of Authority to GW PETROLEUM INC., formerly BOW VALLEY PETROLEUM INC.

to transact business in the State of Utah.

File No. #79959

RECEIVED
APR 27 1987
DIVISION OF
OIL, GAS & MINING

DIVISION OF CORPORATIONS AND COMMERCIAL CODE
STATE OF UTAH

Dated this 23rd day of February A.D. 19 87

Director, Division of Corporations and Commercial Code

6705-36
Rev. 6-84

Filing Fee: $25.00

File Duplicate Originals

1987 FEB 23 PM 2:28

# APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY OF

23rd Feb 87

M-C

BOW VALLEY PETROLEUM INC.
(corporate name)

35.00

To the Division of Corporations and Commercial Code
State of Utah

Pursuant to the provisions of Section 16-10-14 of the Utah Business Corporation Act, the undersigned corporation hereby applies for an Amended Certificate of Authority to transact business Utah, and for that purpose submits the following statement:

**FIRST:** A Certificate of Authority was issued to the corporation by your office on December 19, 19 78, authorizing it to transact business in your State.

**SECOND:** The corporate name of the corporation has been changed to GW PETROLEUM INC.

**THIRD:** The corporation will use the changed name hereafter in Utah.

**FOURTH:** It desires to pursue in the transaction of businesss in Utah other or additional purposes than those set forth in its prior Application for a Certificate of Authority, as follows:

No change

Dated February 3, 19 87.

Notes: 1. If the corporate name has not been changed, insert "No Change".

2. If no other or additional purposes are proposed, insert "NO Change".

Under penalties of perjury, we declare that this application for Amended Certificate of Authority has been exmined by us and is, to the best of our knowledge and belief, true, correct and complete.

Send completed forms to:
STATE OF UTAH
Department of Business Regulation
Div. of Corporations & Commercial Code
160 E. 300 South / P.O. Box 5801
Salt Lake City, Utah 84110 - 5801

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APR 27 1987
DIVISION OF
OIL, GAS & MINING

G W PETROLEUM INC.
(exact corporate name)

By _____
~~President~~ or Vice President

By _____
~~Secretary~~ or Assistant Secretary

UTAH
NATURAL RESOURCES
Oil, Gas & Mining

355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Ut
84180-1203. ● (801-538-5340)

DOGM 56-64-2
an equal opportunity employe



# MONTHLY OIL AND GAS PRODUCTION REPORT

Operator name and address:

● BOW VALLEY PETROLEUM, INC.
1675 BROADWAY, SUITE 2100
DENVER CO 80202
ATTN: JUDY WILSON

Utah Account No. N0130

Report Period (Month/Year) 3 / 87

Amended Report ☐

| Well Name API Number | Entity | Location | Producing Zone | Days Oper | Production Volume Oil (BBL) | Gas (MSCF) | Water (BBL) |
|---|---|---|---|---|---|---|---|
| UTE TRIBAL 1-22A1E 4304730429 | 00810 | 01S 01E 22 | GRRV | | | | |
| LARSEN 1-25A1 4304730552 | 00815 | 01S 01W 25 | WSTC | | | | |
| DRY GULCH 1-36A1 4304730569 | 00820 | 01S 01W 36 | GRRV | | | | |
| NELSON 1-31A1E 4304730671 | 00830 | 01S 01E 31 | WSTC | | | | |
| UTE TRIBAL 1-32A1E 4304730676 | 00835 | 01S 01E 32 | GR-WS | | | | |
| ROSEMARY LLOYD 1-24A1E 4304730707 | 00840 | 01S 01E 24 | WSTC | | | | |
| [illegible]. LANDY 1-30A1E [illegible]04730790 | 00845 | 01S 01E 30 | WSTC | | | | |
| UTE TRIBAL 1-15A1E 4304730820 | 00850 | 01S 01E 15 | WSTC | | | | |
| WALKER 1-14A1E 4304730805 | 00855 | 01S 01E 14 | WSTC | | | | |
| UTE TRIBAL 1-17A1E 4304730829 | 00860 | 01S 01E 17 | GRRV | | | | |
| UTE TRIBAL 1-25A1E 4304730830 | 00865 | 01S 01E 25 | WSTC | | | | |
| FAUSETT 1-26A1E 4304730821 | 00870 | 01S 01E 26 | WSTC | | | | |
| HOUSTON 1-34Z1 4301330566 | 00885 | 01N 01W 34 | WSTC | | | | |
| | | TOTAL | | | | | |

Comments (attach separate sheet if necessary) _____

I have reviewed this report and certify the information to be accurate and complete. Date _____

A[illegible]orized signature _____ Telephone _____

PLEASE COMPLETE FORMS IN BLACK INK

DOGM Form 5
May 5, 1987

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

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DIVISION OF
OIL, GAS & MINING

1. OIL WELL ☐ GAS WELL ☐ OTHER

2. NAME OF OPERATOR: Flying J, Inc.

3. ADDRESS OF OPERATOR: P.O. Box 175 North Salt Lake, Utah 84054

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

5. LEASE DESIGNATION AND SERIAL NO.:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Nelson

9. WELL NO.: 1-31A1E

10. FIELD AND POOL, OR WILDCAT:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: T. 1S R. 1E Sec. 31

14. API NUMBER: 43-047-30671

15. ELEVATIONS (Show whether DF, RT, GR, etc.):

12. COUNTY OR PARISH: Uintah

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Change of Operator | | | X |
| (Other) | | | ☐ | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

The above well was taken over by Flying J, Inc. from GW Petroleum, effective March 15, 1989.

18. I hereby certify that the foregoing is true and correct

SIGNED Dan Kerns TITLE Technical Assistant DATE October 25, 1989

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: GW Petroleum Inc.

3. ADDRESS OF OPERATOR: 1111 Bagby, Suite 1700 Houston, Texas 77002

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: See Attached

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME: See Attached

9. WELL NO.: See Attached

10. FIELD AND POOL, OR WILDCAT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

12. COUNTY OR PARISH: Duchesne & Uintah

13. STATE: Utah

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

NOV 03 1989

DIVISION OF OIL, GAS & MINING

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | [ ] | PULL OR ALTER CASING | [ ] | WATER SHUT-OFF | [ ] | REPAIRING WELL | [ ] |
| FRACTURE TREAT | [ ] | MULTIPLE COMPLETE | [ ] | FRACTURE TREATMENT | [ ] | ALTERING CASING | [ ] |
| SHOOT OR ACIDIZE | [ ] | ABANDON* | [ ] | SHOOTING OR ACIDIZING | [ ] | ABANDONMENT* | [ ] |
| REPAIR WELL | [ ] | CHANGE PLANS | [ ] | (Other) Change of Operator | | | [ ] |
| (Other) | | | [ ] | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Effective April 1, 1989, Flying J Corporation took over operation of the wells listed on the following attachment.

| OIL AND GAS | |
|---|---|
| DRN | RJF |
| JRB | GLH |
| 2. DTS | SLS |
| 5. | |
| 1-TAS | |
| 3. MICROFILM | |
| 4. FILE | |

18. I hereby certify that the foregoing is true and correct

SIGNED Debby Sanders TITLE Engineering Aide DATE 10/27/89

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

| WELL NAME | API NUMBER | LOCATION |
|---|---|---|
| UTE TRIBAL #2 | 4301330020 00690 | 1S 1W 8 |
| GOSE GOVT #1 | 4304720171 00695 | 6S 21E 19 |
| GOST GOVT 2-18 | 4304720062 00697 | 6S 21E 18 |
| K. SHISLER #1 | 4301330041 00700 | 1S 1W 9 |
| UTE TRIBAL 2-35B | 4301330106 00705 | 1N 2W 35 |
| E. YUMP #1 | 4301330167 00710 | 1N 1W 31 |
| UTE TRIBAL 1-26B | 4301330168 00715 | 1N 2W 26 |
| FARNSWORTH #1 | 4301~~330109~~ 30279 00730 | 1S 4W 18 — Fee |
| SHINER #1-14A4 | 4301330258 00735 | 1S 4W 14 — Fee |
| BASTIAN 1-2A1 | 4304731373 00736 | 1S 1W 2 — Fee |
| CARSON 2-36A1 | 4304731407 00737 | 1S 1W 36 |
| V. MILES #1 | 4301330275 00740 | 1S 4W 20 — Fee |
| A. RUST #2 | 4301330290 00745 | 1S 4W 22 — Fee |
| REARY 1-X17A3 | 4301330326 00750 | 1S 3W 17 — Fee |
| UTE TRIBAL 1-32Z1 | 4301330324 00755 | 1N 1W 32 |
| GOVT 4-14 | 4304730155 00760 | 6S 20E 14 |
| SADIE BLANK 1-33Z1 | 4301330355 00765 | 1N 1W 33 — Fee |
| UTE TRIBAL 1-34B | 4301310494 00775 | 1N 2W 34 |
| UTE TRIBAL 1-16 | 4304730231 00780 | 1S 1E 16 |
| PAPADOPULOS 1-34A1E | 4304730241 00785 | 1S 1E 34 — Fee |
| C. J. HACKFORD 1-23 | 4304730279 00790 | 1S 1E 23 — Fee |
| UTE TRIBAL 1-35A1E | 4304730286 00795 | 1S 1E 35 |
| UTE TRIBAL 1-~~17~~ 27A1E (DTS) | 4304730421 00800 | 1S 1E 27 |
| DAVIS 1-33 | 4304730384 00805 | 1S 1E 33 — Fee |
| UTE TRIBAL 1-22A1E | 4304730429 00810 | 1S 1E 22 |
| LARSEN 1-25A1 | 4304730552 00815 | 1S 1W 25 — Fee |
| DRY GULCH 1-36A1 | 4304730569 00820 | 1S 1W 36 — Fee |
| NELSON 1-31A1E | 4304730671 00830 | 1S 1E 31 — Fee |
| UTE TRIBAL 1-32A1E | 4304730676 00835 | 1S 1E 32 |
| ROSEMARY LLOYD 1-24A1E | 4304730707 00840 | 1S 1E 24 — Fee |
| H. D. LANDY 1-30A1E | 4304730790 00845 | 1S 1E 30 — Fee |
| UTE TRIBAL 1-15A1E | 4304730820 00850 | 1S 1E 15 |
| WALKER 1-14A1E | 4304730~~820~~ 05 (DTS) 00855 | 1S 1E 14 — Fee |
| UTE TRIBAL 1-17A1E | 4304730829 00860 | 1S 1E 17 |
| UTE TRIBAL 1-25A1E | 4304730830 00865 | 1S 1E 25 |
| FAUSETT 1-26A1E | 4304730821 00870 | 1S 1E 26 — Fee |
| HOUSTON 1-34Z1 | 4301330566 00885 | 1N 1W 34 — Fee |
| E. FISHER #2-26A4 | 4301331119 00890 | 1S 4W 26 — Fee |
| UTE TRIBAL 1-29A1E | 4304730937 00895 | 1S 1E 29 |
| BOLTON 2-29A1E | 4304731112 00900 | 1S 1E 29 — Fee |
| WISSE 1-28Z1 | 4301330609 00905 | 1N 1W 28 — Fee |
| POWELL 1-21B1 | 4301330621 00910 | 2S 1W 21 — Fee |
| UTE TRIBAL 2-22A1E | 4304731265 00915 | 1S 1E 22 — Fee |
| L. BOLTON 1-12A1 | 4304731295 00920 | 1S 1W 12 — Fee |
| H. MARTIN 1-21Z1 | 4301330707 00925 | 1N 1W 21 — Fee |
| FOWLES 1-26A1 | 4304731296 00930 | 1S 1W 26 — Fee |
| LAWSON 1-21A1 | 4301330738 00935 | 1S 1W 21 — Fee |
| R. HOUSTON 1-22Z1 | 4301330884 00936 | 1N 1W 22 — Fee |
| BIRCHELL 1-27A1 | 4301330758 00940 | 1S 1W 27 — Fee |
| WESLEY BASTIAN FEE #1 | 4301310496 00942 | 1S 1W 8 — Fee |
| KNIGHT #1 | 4301330184 01090 | 2S 3W 28 — Fee |
| MYRIN RANCH #1 | 4301330176 01091 | 2S 3W 20 — Fee |
| DUSTIN #1 | 4301330122 01092 | 2S 3W 22 — Fee |
| HANSEN #1 | 4301330161 01093 | 2S 3W 23 — Fee |
| PRESCOTT 1-35Z1 | 4304731173 01425 | 1N 1W 35 — Fee |

| WELL NAME | API NUMBER | LOCATION |
|---|---|---|
| KW CARRELL #1 | 4301330158 02307 | 2S 3W 27 — Fee |
| D. R. LONG 2-19A1E | 4304731470 09505 | 1S 1E 19 — Fee |
| OBERHANSLY 2-31Z1 | 4301330970 09725 | 1N 1W 31 — Fee |
| O MOON 2-26Z1 | 4304731480 10135 | 1N 1W 26 — Fee |
| PAPADOPULOS 2-34A1E | 4304730683 10610 | 1S 1E 34 — Fee |
| JESSEN 2-14A4 | 4301331160 10611 | 1S 4W 14 — Fee |
| UTE TRIBAL #2-34Z2 | 4301331167 10668 | 1N 2W 34 |
| BASTIAN #3-8A1 | 4301331181 10758 | 1S 1W 8 — Fee |
| LILA D. #2-25A1 | 4304731797 10790 | 1S 1W 25 — Fee |

no documentation from Flying J on operator change

RECEIVED
NOV 03 1999
DIVISION OF OIL, GAS & MINING

| WELL NAME | API NUMBER | LOCATION |
|---|---|---|
| UTE TRIBAL #2 | 4301330020 00690 | 1S 1W 8 |
| GOSE GOVT #1 | 4304720171 00695 | 6S 21E 19 |
| GOST GOVT 2-18 | 4304720062 00697 | 6S 21E 18 |
| K. SHISLER #1 | 4301330041 00700 | 1S 1W 9 |
| UTE TRIBAL 2-35B | 4301330106 00705 | 1N 2W 35 |
| E. YUMP #1 | 4301330167 00710 | 1N 1W 31 |
| UTE TRIBAL 1-26B | 4301330168 00715 | 1N 2W 26 |
| FARNSWORTH #1 | 4301330109 00730 30204 | 1S 4W 18 — Fee |
| SHINER #1-14A4 | 4301330258 00735 | 1S 4W 14 — Fee |
| BASTIAN 1-2A1 | 4304731373 00736 | 1S 1W 2 — Fee |
| CARSON 2-36A1 | 4304731407 00737 | 1S 1W 36 |
| V. MILES #1 | 4301330275 00740 | 1S 4W 20 — Fee |
| A. RUST #2 | 4301330290 00745 | 1S 4W 22 — Fee |
| REARY 1-X17A3 | 4301330326 00750 | 1S 3W 17 — Fee |
| UTE TRIBAL 1-32Z1 | 4301330324 00755 | 1N 1W 32 |
| GOVT 4-14 | 4304730155 00760 | 6S 20E 14 |
| SADIE BLANK 1-33Z1 | 4301330355 00765 | 1N 1W 33 — Fee |
| UTE TRIBAL 1-34B | 4301310494 00775 | 1N 2W 34 |
| UTE TRIBAL 1-16 | 4304730231 00780 | 1S 1E 16 |
| PAPADOPULOS 1-34A1E | 4304730241 00785 | 1S 1E 34 — Fee |
| C. J. HACKFORD 1-23 | 4304730279 00790 | 1S 1E 23 — Fee |
| UTE TRIBAL 1-35A1E | 4304730286 00795 | 1S 1E 35 |
| UTE TRIBAL 1-27A1E (DTS) | 4304730421 00800 | 1S 1E 27 |
| DAVIS 1-33 | 4304730384 00805 | 1S 1E 33 — Fee |
| UTE TRIBAL 1-22A1E | 4304730429 00810 | 1S 1E 22 |
| LARSEN 1-25A1 | 4304730552 00815 | 1S 1W 25 — Fee |
| DRY GULCH 1-36A1 | 4304730569 00820 | 1S 1W 36 — Fee |
| NELSON 1-31A1E | 4304730671 00830 | 1S 1E 31 — Fee |
| UTE TRIBAL 1-32A1E | 4304730676 00835 | 1S 1E 32 |
| ROSEMARY LLOYD 1-24A1E | 4304730707 00840 | 1S 1E 24 — Fee |
| H. D. LANDY 1-30A1E | 4304730790 00845 | 1S 1E 30 — Fee |
| UTE TRIBAL 1-15A1E | 4304730820 00850 | 1S 1E 15 |
| WALKER 1-14A1E | 4304730820 00855 05 (DTS) | 1S 1E 14 — Fee |
| UTE TRIBAL 1-17A1E | 4304730829 00860 | 1S 1E 17 |
| UTE TRIBAL 1-25A1E | 4304730830 00865 | 1S 1E 25 |
| FAUSETT 1-26A1E | 4304730821 00870 | 1S 1E 26 — Fee |
| HOUSTON 1-34Z1 | 4301330566 00885 | 1N 1W 34 — Fee |
| E. FISHER #2-26A4 | 4301331119 00890 | 1S 4W 26 — Fee |
| UTE TRIBAL 1-29A1E | 4304730937 00895 | 1S 1E 29 |
| BOLTON 2-29A1E | 4304731112 00900 | 1S 1E 29 — Fee |
| WISSE 1-28Z1 | 4301330609 00905 | 1N 1W 28 — Fee |
| POWELL 1-21B1 | 4301330621 00910 | 2S 1W 21 — Fee |
| UTE TRIBAL 2-22A1E | 4304731265 00915 | 1S 1E 22 — Fee |
| L. BOLTON 1-12A1 | 4304731295 00920 | 1S 1W 12 — Fee |
| H. MARTIN 1-21Z1 | 4301330707 00925 | 1N 1W 21 — Fee |
| FOWLES 1-26A1 | 4304731296 00930 | 1S 1W 26 — Fee |
| LAWSON 1-21A1 | 4301330738 00935 | 1S 1W 21 — Fee |
| R. HOUSTON 1-22Z1 | 4301330884 00936 | 1N 1W 22 — Fee |
| BIRCHELL 1-27A1 | 4301330758 00940 | 1S 1W 27 — Fee |
| WESLEY BASTIAN FEE #1 | 4301310496 00942 | 1S 1W 8 — Fee |
| KNIGHT #1 | 4301330184 01090 | 2S 3W 28 — Fee |
| MYRIN RANCH #1 | 4301330176 01091 | 2S 3W 20 — Fee |
| DUSTIN #1 | 4301330122 01092 | 2S 3W 22 — Fee |
| HANSEN #1 | 4301330161 01093 | 2S 3W 23 — Fee |
| PRESCOTT 1-35Z1 | 4304731173 01425 | 1N 1W 35 — Fee |

| WELL NAME | API NUMBER | LOCATION |
|---|---|---|
| KW CARRELL #1 | 4301330158 02307 | 2S 3W 27 — Fee |
| D. R. LONG 2-19A1E | 4304731470 09505 | 1S 1E 19 — Fee |
| OBERHANSLY 2-31Z1 | 4301330970 09725 | 1N 1W 31 — Fee |
| O MOON 2-26Z1 | 4304731480 10135 | 1N 1W 26 — Fee |
| PAPADOPULOS 2-34A1E | 4304730683 10610 | 1S 1E 34 — Fee |
| JESSEN 2-14A4 | 4301331160 10611 | 1S 4W 14 — Fee |
| UTE TRIBAL #2-34Z2 | 4301331167 10668 | 1N 2W 34 |
| BASTIAN #3-8A1 | 4301331181 10758 | 1S 1W 8 — Fee |
| LILA D. #2-25A1 | 4304731797 10790 | 1S 1W 25 — Fee |
| Tenneco 21-19 | 4304731004 | 2S 1E 19 |

RECEIVED
NOV 03 1999
DIVISION OF
OIL, GAS & MINING

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

# State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

December 14, 1989

GW Petroleum Inc.
1111 Bagby
Suite 1700
Houston, Texas 77002

Gentlemen:

Re: Notification of Lease Sale or Transfer

The division recently received notification of a change of operator from GW Petroleum Inc. to Flying J Corporation for the following wells located on fee leases:

| | |
|---|---|
| Farnsworth #1 1S 4W S-18 | API No. 43-013-30209 |
| Shiner #1-14A4 | API No. 43-013-30258 |
| Bastian 1-2A1 | API No. 43-047-31373 |
| V. Miles #1 1S 4W S-20 | API No. 43-013-30275 |
| A. Rust #2 1S 4W S-22 | API No. 43-013-30290 |
| Reary 1-X17A3 | API No. 43-013-30326 |
| Sadie Blank 1-33Z1 | API No. 43-013-30355 |
| Papadopulos 1-34A1E | API No. 43-047-30241 |
| C.J. Hackford 1-23 1S 1E 23 | API No. 43-047-30279 |
| Davis 1-33 1S 1E 33 | API No. 43-047-30384 |
| Larsen 1-25A1 | API No. 43-047-30552 |
| Dry Gulch 1-36A1 | API No. 43-047-30569 |
| Nelson 1-31A1E | API No. 43-047-30671 |
| Rosemary Lloyd 1-24A1E | API No. 43-047-30707 |
| H.D. Landy 1-30A1E | API No. 43-047-30790 |
| Walker 1-14A1E | API No. 43-047-30805 |
| Fausett 1-26A1E | API No. 43-047-30821 |
| Houston 1-34Z1 | API No. 43-013-30566 |
| E. Fisher #2-26A4 | API No. 43-013-31119 |
| Boulton 2-29A1E | API No. 43-047-31112 |
| Wisse 1-28Z1 | API No. 43-013-30609 |
| Powell 1-21B1 | API No. 43-013-30621 |
| Ute Tribal 2-22A1E | API No. 43-047-31265 |
| L. Bolton 1-12A1 | API No. 43-047-31295 |
| H. Martin 1-21Z1 | API No. 43-013-30707 |

an equal opportunity employer

| | | | | |
|---|---|---|---|---|
| H. Martin 1-21Z1 | | | | API No. 43-013-30707 |
| Fowles 1-26A1 | | | | API No. 43-047-31296 |
| Lawson 1-21A1 | | | | API No. 43-013-30738 |
| R. Houston 1-22Z1 | | | | API No. 43-013-30884 |
| Birchell 1-27A1 | | | | API No. 43-013-30758 |
| Wesley Bastian Fee #1 | 1S | 2W | 8 | API No. 43-013-10496 |
| Knight #1 | 2S | 3W | 20 | API No. 43-013-30184 |
| Myrin Ranch #1 | 2S | 3W | 20 | API No. 43-013-30176 |
| Dustin #1 | 2S | 3W | 22 | API No. 43-013-30122 |
| Hansen #1 | 2S | 3W | 23 | API No. 43-013-30161 |
| Prescott 1-35Z1 | | | | API No. 43-047-31173 |
| KW Carrell #1 | 2S | 3W | 27 | API No. 43-013-30158 |
| D. R. Long 2-19A1E | | | | API No. 43-047-31470 |
| Oberhansly 2-31Z1 | | | | API No. 43-013-30970 |
| O Moon 2-26Z1 | | | | API No. 43-047-31480 |
| Papadopulos 2-34A1E | | | | API No. 43-047-30683 |
| Jessen 2-14A4 | | | | API No. 43-013-31160 |
| Bastian #3-8A1 | | | | API No. 43-013-31181 |
| Lila D. #2-25A1 | | | | API No. 43-047-31797 |

Rule R615-2-10, of the Utah Oil and Gas Conservation General Rules, states:

> "The owner of a lease shall provide notification to any person with an interest in such lease, when all or part of that interest in the lease is sold or transferred."

This letter is written to advise GW Petroleum Inc. of its responsibility to notify all individuals with an interest in these leases of the change of operator. Please provide written documentation of this notification to the division no later than January 15, 1990.

Sincerely,

Don Staley

Don Staley
Administrative Supervisor
Oil and Gas

ldc
cc: D.R. Nielson
R.J. Firth
Well files

HOI3/1

**FLYING J INC.**
333 WEST CENTER - NORTH SALT LAKE, UTAH 84054
(801) 298-7733

① - Rwm ✓ (film)
② - Well Files (see attached list)

December 19, 1989

RECEIVED
DEC 22 1989
DIVISION OF
OIL, GAS & MINING

Mr. Don Staley
Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180

RE: GW Petroleum Sale of Properties to Flying J
Bluebell/Altamont Fields
Duchesne, Uintah Counties, UT

Dear Mr. Staley:

Norman Zeiler of GW Petroleum informed me today that he had received a letter from the Division or Oil, Gas & Mining indicating that per Utah statute, owners under the properties which they sold to Flying J needed to be informed of the sale. Please be advised that Flying J has sent new division orders to all royalty, overriding royalty and working interest owners based on the pay sheets we received from GW Petroleum. With the new division orders we enclosed a letter stating that Flying J had purchased these properties from GW Petroleum. That would cover all the owners in FJ operated properties for whom we had correct addresses. We have also contacted the operators for non-operated wells in order to have the revenue stream converted to FJ. The assignment showing all leases we purchased has been recorded in both Uintah and Duchesne counties. We are in the process of having non-operators under communitized locations sign designations of operator naming Flying J the new operator.

Please advise if this does not constitute notice under Utah law. If it does not, please let me know as soon as possible what additional steps need to be taken to comply.

Yours very truly,

LaVonne J. Garrison-Stringer

LaVonne J. Garrison-Stringer
Land Manager

cc: Mr. Norman Zeiler

Form 9

ST. : OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: Fee

7. Indian Allottee or Tribe Name:

# SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT— for such proposals.

8. Unit or Communitization Agreement:

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other (specify)

9. Well Name and Number: Nelson 1-31A1E

2. Name of Operator: Flying J Oil & Gas Inc.

10. API Well Number: 43-047-30671

3. Address of Operator: P.O. Box 540180 North Salt Lake, UT 84054-0180

4. Telephone Number: (801)298-7733

11. Field and Pool, or Wildcat: Bluebell

5. Location of Well
Footage : 1478' FWL, 2142' FNL
QQ, Sec, T., R., M. : SE NW Sec. 31, T.1S, R.1E
County : Uintah
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

**NOTICE OF INTENT** (Submit in Duplicate)

- [ ] Abandonment
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Multiple Completion
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Recompletion
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off
- [X] Other Clean up pit & install tank

Approximate Date Work Will Start 8-15-92

**SUBSEQUENT REPORT** (Submit Original Form Only)

- [ ] Abandonment *
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Date of Work Completion

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Flying J requests approval to close the existing emergency pit at the referenced location and install an above ground tank for containment of fluids. The tank will receive produced fluids only in emergency situation involving upsets at the well's production facilities and fluids in the tank will be removed & properly disposed in a timely manner. The existing pit will be cleaned up by treating and separating as much fluid as possible through the production facility and by using newly developed bioremediation and composting techniques on any remaining hydrocarbons.

Accepted by the State of Utah Division of Oil, Gas and Mining
Date: 8-20-92
By:

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AUG 3 1992
DIV. OIL, GAS, MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature: John R. Baza  Title: Sr. Petroleum Engineer  Date: 7-31-92

(State Use Only)

(8/90)

See Instructions on Reverse Side

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number

7. Indian Allottee or Tribe Name

8. Unit or Communitization Agreement

# SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other (specify)

9. Well Name and Number
NELSON 1-31A1E

2. Name of Operator
FLYING J OIL AND GAS

10. API Well Number
43 047 30671

3. Address of Operator
PO DRAWER 130 ROOSEVELT UTAH 84066

4. Telephone Number
722 5166

11. Field and Pool, or Wildcat
EAST BLUEBELL

5. Location of Well
Footage : 1478' FWL 2142' FNL (SE, NW)
QQ, Sec, T., R., M. : SEC 31 T1S R1E USM
County : UINTAH
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

**NOTICE OF INTENT**
(Submit in Duplicate)

- [ ] Abandonment
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Multiple Completion
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Recompletion
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Approximate Date Work Will Start _____

**SUBSEQUENT REPORT**
(Submit Original Form Only)

- [ ] Abandonment *
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [X] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Date of Work Completion 8/11/92

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

SEE ATTACHMENT

RECEIVED
AUG 27 1992
DIVISION OF
OIL GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature [signature] Title PRODUCTION SUPERINTENDENT Date 8/19/92

(State Use Only)

(8/90) See Instructions on Reverse Side

ATTACHMENT
NELSON 1-31A1E
PAGE 1

7/27/92-8/11/92

MILL & RECOVER BAKER #32FAB30 PKR & ACCESSORIES, SET @10,256'.

C/O TO ORIGINAL PBTD @12,642' W/4.151" OD MILL & 5" 18# CSG SCRAPER.

ACIDIZE WASATCH PERFS, REF LOG DIL-GR DATED 4/3/80. PERFS 11,258' TO 12,594', 39 INTV, 134', 244 PERFS. PUMPED:

17,000 GAL 15% HCL & ADDITIVES
6/1000 GAL HIGH TEMP CORROSION INHIBITOR
3/1000 GAL NON EMULSIFIER
10#/1000 GAL IRON CONTROL
165 GAL COTE 598 SCALE INHIBITOR
1/1000 GAL FRICTION REDUCER
3/1000 GAL CORROSION INHIBITOR IN FLUSH
500-1.3 RCN BALL SEALERS
3000# BA FLAKES

| | |
|---|---|
| MAX PRESSURE | 8200# |
| AVG PRESSURE | 6000# |
| ISIP | 5085# |
| 5 MIN | 4458# |
| 10 MIN | 4010# |
| 15 MIN | 3556# |
| 1 1/2 HRS SITP | 1100# |
| 17 1/2 HRS SITP | 300# |

SET 5" 18# R-3 DBL GRIP RET CSG PKR BTM @10,244.59' IN 14,000# COMPRESSION.

NAT OILWELL STD VALVE @9934'.

PRODUCE WELL W/NAT OILWELL JET PUMP, 8/11/92.

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

AUG 19 1992

6. Lease Designation and Serial Number

7. Indian Allottee or Tribe Name

8. Unit or Communitization Agreement

# SUNDRY NOTICES AND REPORTS ON WELLS

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Use APPLICATION FOR PERMIT— for such proposals

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other (specify)

9. Well Name and Number
NELSON 1-31A1F

2. Name of Operator
FLYING J OIL AND GAS

10. API Well Number
43 047 30671

3. Address of Operator
PO DRAWER 130 ROOSEVELT UTAH 84066

4. Telephone Number
722 5166

11. Field and Pool, or Wildcat
EAST BLUEBELL

5. Location of Well
Footage : 1478' FWL 2142' FNL (SE, NW)
QQ, Sec, T., R., M. : SEC 31 T1S R1E USM
County : UINTAH
State : UTAH

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- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Multiple Completion
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Recompletion
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Approximate Date Work Will Start _____

**SUBSEQUENT REPORT**
(Submit Original Form Only)

- [ ] Abandonment *
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [X] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Date of Work Completion 8/11/92

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SEE ATTACHMENT

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NOV 16 1992
DIVISION OF
OIL GAS & MINING

14. I hereby certify that the foregoing is true and correct

Name & Signature Original signed by J. Kreg Hill Title PRODUCTION SUPERINTENDENT Date 8/19/92

(State Use Only)

(8/90)

See Instructions on Reverse Side

ATTACHMENT
NELSON 1-31A1E
PAGE 1

7/27/92-8/11/92

MILL & RECOVER BAKER #32FAB30 PKR & ACCESSORIES, SET @10,256'.

C/O TO ORIGINAL PBTD @12,642' W/4.151" OD MILL & 5" 18# CSG SCRAPER.

ACIDIZE WASATCH PERFS, REF LOG DIL-GR DATED 4/3/80. PERFS 11,258' TO 12,594', 39 INTV, 134', 244 PERFS. PUMPED:

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3/1000 GAL CORROSION INHIBITOR IN FLUSH
500-1.3 RCN BALL SEALERS
3000# BA FLAKES

| | |
|---|---|
| MAX PRESSURE | 8200# |
| AVG PRESSURE | 6000# |
| ISIP | 5085# |
| 5 MIN | 4458# |
| 10 MIN | 4010# |
| 15 MIN | 3556# |
| 1 1/2 HRS SITP | 1100# |
| 17 1/2 HRS SITP | 300# |

SET 5" 18# R-3 DBL GRIP RET CSG PKR BTM @10,244.59' IN 14,000# COMPRESSION.

NAT OILWELL STD VALVE @9934'.

PRODUCE WELL W/NAT OILWELL JET PUMP, 8/11/92.

RECEIVED
NOV 1 6 1992
DIVISION OF
OIL GAS & MINING

Form 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: Fee

7. Indian Allottee or Tribe Name:

8. Unit or Communitization Agreement:

# SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells.
Use APPLICATION FOR PERMIT— for such proposals

RECEIVED MAR 8 1994

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other (specify)

9. Well Name and Number: Nelson 1-31A1E

2. Name of Operator: Flying J Oil and Gas Inc

10. API Well Number: 43 047 30671

3. Address of Operator: PO Drawer 130 Roosevelt, Utah 84066

4. Telephone Number: 722-5166

11. Field and Pool, or Wildcat: Bluebell

5. Location of Well
Footage : 1478' FWL 2142' FNL
QQ, Sec, T., R., M. : Sec 31 T1S R1E SE/NW
County : Uintah
State : UTAH

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

**NOTICE OF INTENT** (Submit in Duplicate)

- [ ] Abandonment
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [ ] Multiple Completion
- [ ] Other
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Recompletion
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Approximate Date Work Will Start _____

**SUBSEQUENT REPORT** (Submit Original Form Only)

- [ ] Abandonment *
- [ ] Casing Repair
- [ ] Change of Plans
- [ ] Conversion to Injection
- [ ] Fracture Treat
- [X] Other Pit reclamation
- [ ] New Construction
- [ ] Pull or Alter Casing
- [ ] Shoot or Acidize
- [ ] Vent or Flare
- [ ] Water Shut-Off

Date of Work Completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG form.

* Must be accompanied by a cement verification report.

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

The emergency pit reclamation has been accomplished as per our original Sundry notice.

14. I hereby certify that the foregoing is true and correct

Name & Signature: J. Kreg Hill  Title: Production Superintendent  Date: 3/7/94

(State Use Only)

(8/90)

See Instructions on Reverse Side

**FLYING J OIL & GAS INC.**
333 WEST CENTER STREET • P.O. BOX 540180 • NORTH SALT LAKE, UTAH 84054-0180
PHONE (801) 298-7733 • FAX (801) 298-9394

March 8, 1995

Ms. Diane Mitchell
Bureau of Indian Affairs
P. O. Box 130
Fort Duchesne, Utah 84026

Re: State of Utah
Communitization Agreements
Duchesne and Uintah Counties

Dear Diane:

Enclosed, herewith is a recorded copies of the following list documents in order for you to approve all of the Communitization Agreements from Flying J Inc. and Flying J Exploration & Production Inc. into Flying J Oil & Gas Inc:

1. Affidavit with Articles of Merger of Flying J Uintah Inc with and into Flying J Oil & Gas Inc.

2. Assignment from Flying J Inc. into Flying J Uintah Inc.

3. Assignment from Flying J Uintah Inc. into Flying J Inc.

4. Assignment from Flying J Inc. and Flying J Exploration and Production Inc. into Flying J Uintah Inc.

Attached is a list of the Communitization Agreements that are still in the name of Flying J Inc. and Flying J Exploration and Production Inc.

Should you need any additional information, please contact the undersigned.

Sincerely,

FLYING J OIL & GAS INC.

Coralie Timothy

Coralie Timothy
Lease Records Administrator

cc: Ms. Theresa Thompson, Bureau of Land Management, Salt Lake
Ms. Lisha Cordova, State of Utah, Oil, Gas and Mining

**COMMUNITIZATION AGREEMENTS**
**STATE OF UTAH**

March 8, 1995

Listed below are the Communitization Agreements to be changed into the name of Flying J Oil & Gas Inc.:

| Comm Agreement No. | Operator |
|---|---|
| UT080I49-85C680 | Flying J Inc. |
| UT080I49-85C705 | Flying J Inc. |
| UT080I49-84C713 | Flying J Inc. |
| 9C-000122 | Flying J Inc. |
| 9C-000144 | Flying J Inc. |
| VR49I-84683C | Flying J Inc. |
| UT080I49-86C681 | Flying J Explor. & Prod. |
| VR49I-84689C | Flying J Inc. |
| 9C-000171 | Flying J Explor. & Prod. |
| 9C-000175 | Flying J Inc. |
| UT080I49-84C712 | Flying J Inc. |
| CR-I-157 | Flying J Inc. |
| 9C-000176 | Flying J Inc. |
| 9C-000149 | Flying J Inc. |
| 9C-000173 | Flying J Inc. |
| 96-000111 | Flying J Explor. & Prod. |
| VR49I-84670C | Flying J Inc. |
| VR49I-84671C | Flying J Inc. |
| VR49I-84673C | Flying J Inc. |
| VR49I-84677C | Flying J Inc. |
| NRM-696 | Flying J Inc. |
| 96-000115 | Flying J Explor. & Prod. |
| CR-I-156 | Flying J Inc. |
| UT080I49-85C680 | Flying J Inc. |
| UT080I49-85C705 | Flying J Inc. |
| UT080I49-84C713 | Flying J Inc. |
| 9C-000122 | Flying J Inc. |
| 9C-000144 | Flying J Inc. |
| VR49I-84683C | Flying J Inc. |
| UT080I49-86C681 | Flying J Explor. & Prod. |
| VR49I-84689C | Flying J Inc. |
| 9C-000171 | Flying J Explor. & Prod. |
| 9C-000175 | Flying J Inc. |
| UT080I49-84C712 | Flying J Inc. |
| CR-I-157 | Flying J Inc. |
| 9C-000176 | Flying J Inc. |
| 9C-000149 | Flying J Inc. |
| 9C-000173 | Flying J Inc. |
| 96-000111 | Flying J Explor. & Prod. |
| VR49I-84670C | Flying J Inc. |
| VR49I-84671C | Flying J Inc. |
| VR49I-84673C | Flying J Inc. |
| VR49I-84677C | Flying J Inc. |
| NRM-696 | Flying J Inc. |

| | |
|---|---|
| 96-000115 | Flying J Explor. & Prod. |
| CR-I-156 | Flying J Inc. |
| NW-616 | Flying J Explor. & Prod. |

# A F F I D A V I T

STATE OF UTAH )
) SS
County of Davis )

ENTRY 93004995
BOOK 556 PAGE 219

I, LaVonne J. Garrison-Stringer, of lawful age, and being first duly sworn, upon my oath, deposes and says:

1. That I am the Land Manager for Flying J Oil & Gas Inc. and am duly authorized to make this Affidavit on behalf of the corporation.

2. That attached hereto and by this reference made a part hereof is a certified copy of the Articles of Merger of Flying J Uintah Inc. with and into Flying J Oil & Gas Inc. dated effective Jaunary 2, 1991.

3. That Flying J Oil & Gas Inc. has interests in the following described sections located in Duchesne and/or Uintah Counties, Utah.

ENTRY NO. 93004995 DATE 8-30-93 TIME 8:44AM BOOK 556 PAGE 220-221
FEE $ 11.00 RECORDED AT REQUEST OF Flying J Exploration
LaVonne Malan DUCHESNE COUNTY RECORDER DEPUTY

Township 1 North, Range 1 West, USM
Sections 20, 21, 22, 23, 26, 27, 28, 30, 31, 32, 33, 34, 35

Township 1 North, Range 2 West, USM
Sections 26, 31, 34, 35

Township 1 South, Range 1 East, USM
Sections 10, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 34, 35

Township 1 South, Range 1 West, USM
Sections 2, 4, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 21, 22, 23, 25, 26, 27, 28, 29 30, 31, 32, 33, 34, 35, 36

Township 1 South, Range 2 East, USM
Section 30

Township 1 South, Range 2 West, USM
Sections 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 32, 33, 34, 35, 36

Township 1 South, Range 3 West, USM
Sections 5, 8, 9, 10, 15, 16, 17, 20, 21, 29, 30, 32, 33

Township 1 South, Range 4 West, USM
Sections 13, 14, 18, 19, 20, 21, 22, 24, 26, 27, 28, 29 30, 33, 35

Township 1 South, Range 5 West, USM
Sections 24, 25, 35

ENTRY 93004995
BOOK 556 PAGE 219 $90.00
30-AUG-93 04:43
RANDY SIMMONS
RECORDER, UINTAH COUNTY, UTAH
FLYING J OIL AND GAS
P O BOX 540180 NO SLC UT 84054-0180
REC BY: BRENDA MCDONALD , DEPUTY

Township 2 South, Range 1 East, USM
Sections 2, 5, 6, 7, 10, 18, 19

Township 2 South, Range 1 West, USM
Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21

Township 2 South, Range 2 West, USM
Sections 2, 3, 4, 5, 7, 8, 10, 11, 14, 17, 18, 19, 23, 24

Township 2 South, Range 3 West, USM
Sections 2, 4, 5, 7, 8, 9, 10, 11, 12, 14, 16, 20, 21, 22, 23, 24, 26, 27, 28

Township 3 South, Range 5 West, USM
Sections 14, 15, 16, 26

Township 6 South, Range 20 East, USM
Sections 14

Township 6 South, Range 21 East, USM
Sections 6, 18, 19

4. That said merger affects Flying J's interest in the sections captioned above and any other lands previously owned by Flying J Uintah Inc. located in Duchesne and/or Uintah Counties, Utah, which are not described herein.

Further Affiant sayeth not.

LAVONNE J. GARRISON-STRINGER

Subscribed and sworn to before me this 20th day of March 1991.

Coralie Timothy
Notary Public for the State of Utah
Residing at Salt Lake City, Utah

My Commission Expires:
9-9-93

Notary Public
CORALIE TIMOTHY
3291 South 4440 West
West Valley, Utah 84120
My Commission Expires
September 9, 1993
State of Utah

STATE OF UTAH
DEPARTMENT OF COMMERCE
DIVISION OF CORPORATIONS AND COMMERCIAL CODE

I hereby certify that the foregoing has been filed and approved on the 9th day of June 91 in the office of this Division

EXAMINER _____ Date 1/9/91

PETER VAN ALSTYNE
DIVISION DIRECTOR

# 191158

ENTRY 93004995
BOOK 556 PAGE 221

RECEIVED

1991 JAN -9 PM 2:59

DIVISION OF CORPORATIONS
STATE OF UTAH

ARTICLES OF MERGER
OF
FLYING J UINTAH INC.
WITH AND INTO
FLYING J OIL & GAS INC.

co 138596

co 147768

THESE ARTICLES OF MERGER (the "Articles") are filed pursuant to Section 69 of the Utah Business Corporation Act by Flying J Uintah Inc., a Utah corporation ("Flying J Uintah"), and Flying J Oil & Gas Inc., a Utah corporation ("Oil & Gas").

Flying J Uintah and Oil & Gas hereby certify as follows:

1. The Boards of Directors of Flying J Uintah and Oil & Gas have approved a Plan of Merger relating to the merger of Flying J Uintah with and into Oil & Gas, with Oil & Gas being the surviving corporation. A copy of this Plan of Merger, in the form so approved, is attached to these Articles as Exhibit A.

2. Flying J Uintah has 1,000 shares of Common Stock outstanding, and Oil & Gas has 3,000,000 shares of Common Stock outstanding.

3. All outstanding shares of Flying J Uintah and of Oil & Gas were voted for the Plan of Merger.

Oil & Gas, as the surviving corporation, hereby requests that the Utah Department of Commerce, Division of Corporations and Commercial Code: (i) endorse on the original and one copy of these Articles the word "filed" and the month, day and year of the filing; (ii) file the original in its office; and (iii) issue a Certificate of Merger, together with an attached copy of the Articles of Merger, to Oil & Gas's representative: P. Christian Anderson, Esq., Rogers, Mackey, Price, Anderson & Cannon, 900

ENTRY NO. _____ DATE _____ TIME _____ BOOK _____ PAGE _____
FEE $ _____ RECORDED AT REQUEST OF _____
_____ DUCHESNE COUNTY RECORDER _____ DEPUTY

1009910077

First Interstate Plaza, 170 South Main Street, Salt Lake City, Utah 84101.

IN WITNESS WHEREOF, Flying J Uintah and Oil & Gas have caused these Articles of Merger to be executed effective as of the 2nd day of January, 1991 by their duly authorized officers. The undersigned declare, under penalty of perjury, that the matters set forth above are true.

FLYING J UINTAH INC.

By: _____
J. Phillip Adams,
President

By: _____
Barre G. Burgon,
Secretary

FLYING J OIL & GAS INC.

By: _____
J. Phillip Adams,
President

By: _____
Barre G. Burgon,
Secretary



017A-FJI.AOM
101890

EXHIBIT A

# AGREEMENT AND PLAN OF MERGER
# OF FLYING J UINTAH INC.
# AND FLYING J OIL & GAS INC.

THIS AGREEMENT AND PLAN OF MERGER, dated as of December 1, 1990 (the "Agreement") is entered into by and between Flying J Uintah Inc., a Utah corporation ("Flying J Uintah"), and Flying J Oil & Gas Inc., a Utah corporation ("Oil & Gas"). Uintah and Oil & Gas are sometimes referred to herein as the "Constituent Corporations."

## RECITALS

A. Flying J Uintah is a corporation duly organized and existing under the laws of the State of Utah and has an authorized capital of 1,000 shares of Common Stock, having a par value of $1.00 per share. All 1,000 authorized shares of Flying J Uintah's Common Stock (the "Flying J Uintah Shares") are issued and outstanding. No options, warrants, or other rights or securities exercisable for or convertible into Common Stock of Flying J Uintah have been issued or are outstanding.

B. Oil & Gas is a corporation duly organized and existing under the laws of the State of Utah and has an authorized capital of 10,000,000 shares of Common Stock, $1.00 par value per share, and 2,000,000 shares of Preferred Stock, $1.00 par value per share. Oil & Gas has issued and outstanding 3,000,000 shares of Common Stock (the "Oil & Gas Shares") and no shares of Preferred Stock.

C. All of the Flying J Uintah Shares and the Oil & Gas Shares are held by Big West Oil Company, a Delaware corporation ("Parent"), so that both Oil & Gas and Flying J Uintah are wholly owned subsidiaries of Parent.

D. Parent and the respective Boards of Directors of Flying J Uintah and Oil & Gas have determined that, for the purpose of consolidating oil and gas properties and operations, it is advisable that Flying J Uintah merge with and into Oil & Gas, with Oil & Gas to be the surviving corporation, upon the terms and conditions herein provided.

NOW THEREFORE, in consideration of the mutual agreements and covenants set forth herein, the Constituent Corporations hereby agree, subject to the terms and conditions hereinafter set forth, as follows:

## I. MERGER

1.1 Merger. In accordance with the provisions of this Agreement and the Utah Business Corporation Act, Flying J Uintah shall be merged with and into Oil & Gas (the "Merger") and Oil & Gas shall be, and is herein sometimes referred to as, the "Surviving Corporation," and the name of the Surviving Corporation shall be "Flying J Oil & Gas Inc."

1.2 Filing and Effectiveness. The Merger shall become effective when the following actions shall have been completed:

(a) This Agreement and the Merger shall have been approved by the Board of Directors of each of the Constituent

Corporations and by Parent as the sole shareholder of each of the Constituent Corporations, in accordance with the requirements of the Utah Business Corporation Act; and

(b) An executed form of Articles of Merger or an executed counterpart of this Agreement shall have been filed with the Utah Department of Commerce, Division of Corporations and Commercial Code.

The date and time when the Merger shall become effective, as aforesaid, is herein called the "Effective Date of Merger."

1.3 Certificate of Incorporation. The Articles of Incorporation of Oil & Gas as in effect immediately prior to the Effective Date of Merger shall continue in full force and effect as the Articles of Incorporation of the Surviving Corporation until duly amended in accordance with the provisions thereof and applicable law.

1.4 Bylaws. The Bylaws of Oil & Gas as in effect immediately prior to the Effective Date of Merger shall continue in full force and effect as the Bylaws of the Surviving Corporation until duly amended in accordance with the provisions thereof and applicable law.

1.5 Directors and Officers. The directors and officers of Oil & Gas immediately prior to the Effective Date of Merger shall be the directors and officers of the Surviving Corporation until their successors shall have been elected and qualified or until otherwise provided by law, the Articles of Incorporation of the

Surviving Corporation, or the Bylaws of the Surviving Corporation.



1.6 Effect of Merger. Upon the Effective Date of Merger, the separate existence of Flying J Uintah shall cease and Oil & Gas, as the Surviving Corporation: (i) shall continue to possess all of its assets, rights, powers and property as constituted immediately prior to the Effective Date of Merger, and shall succeed, without other transfer, to all of the assets, rights, powers and property of Flying J Uintah in the manner of and as more fully set forth in Section 71 of the Utah Business Corporation Act, and (ii) shall continue to be subject to all of its debts, liabilities and obligations as constituted immediately prior to the Effective Date of Merger and shall succeed, without other transfer, to all of the debts, liabilities and obligations of Flying J Uintah in the same manner as if Oil & Gas had itself incurred them, all as more fully provided under the applicable provisions of Section 71 of the Utah Business Corporation Act.

## II. MANNER OF CONVERSION OF STOCK

2.1 Flying J Uintah Common Stock. Upon the Effective Date of Merger, each of the Flying J Uintah Shares shall, by virtue of the Merger and without any action by the holder of such shares or any other person, be cancelled.

2.2 Oil & Gas Common Stock. Upon the Effective Date of Merger, each of the Oil & Gas Shares shall remain fully paid and non-assessable shares of the duly issued and outstanding Common Stock of Oil & Gas, as the Surviving Corporation.

## III. GENERAL

3.1 Covenants of Oil & Gas. Oil & Gas covenants and agrees that it will, on or before the Effective Date of Merger:

(a) Qualify to do business as a foreign corporation in any jurisdictions where such a qualification is required, including the States of North Dakota, Wyoming and Montana, and in connection therewith establish a registered office and a registered agent if and as required by each state's respective corporation law.

(b) File any and all documents with the tax authority of the State of Utah necessary to the assumption by Oil & Gas of all the Utah state tax liabilities of Flying J Uintah.

(c) Take such other actions as may be required by the Utah Business Corporation Act.

3.2 Abandonment. At any time before the Effective Date of Merger, this Agreement may be terminated and the Merger may be abandoned for any reason whatsoever by the Board of Directors of either Flying J Uintah or Oil & Gas or both, notwithstanding the approval of this Agreement by Parent, as the sole shareholder of Flying J Uintah and Oil & Gas.

3.3 Amendment. The Boards of Directors of the Constituent Corporations may amend this Agreement at any time prior to the filing of Articles of Merger of a counterpart of this Agreement with the Utah Department of Commerce, provided that an amendment made subsequent to the approval of this Agreement by the Parent as the sole shareholder of the Constituent Corporations shall

not: (1) alter or change the amount or kind of shares, securities, cash, property and/or rights to be received in exchange for or on conversion of all or any of the shares of any class or series thereof of such Constituent Corporation; (2) alter or change any term of the Certificate of Incorporation of the Surviving Corporation to be effected by the merger or consolidation; or (3) alter or change any of the terms and conditions of this Agreement if such alteration or change would adversely affect the Parent as the holder of the Flying J Uintah Shares and the Oil & Gas Shares.

3.4 Registered Office. The registered office of the Surviving Corporation in the State of Utah is located at 50 West 990 South, Brigham City, Utah 84603. O. Jay Call is the registered agent of the Surviving Corporation at such address.

3.5 Governing Law. This Agreement shall in all respects be construed, interpreted and enforced in accordance with and governed by the laws of the State of Utah applicable to contracts entered into and to be performed entirely within such state.

3.6 Counterparts. In order to facilitate the filing and recording of this Agreement, the same may be executed in any number of counterparts, each of which shall be deemed to be an original.

IN WITNESS WHEREOF, this Agreement, having first been approved by resolution of the Boards of Directors of Flying J Uintah and Oil & Gas and by resolution of Parent as the sole shareholder of each of the Constituent Corporations, is hereby executed on

behalf of each of the Constituent Corporations and attested by their respective officers thereunto duly authorized.

**FLYING J OIL & GAS INC.,**
**a Utah corporation**

By: J. Phillip Adams
J. Phillip Adams, President

ATTEST:

Barre G. Burgon, Secretary

**FLYING J UINTAH INC.,**
**a Utah corporation**

By: J. Phillip Adams
J. Phillip Adams, President

ATTEST:

Barre G. Burgon, Secretary

STATE OF UTAH
DEPARTMENT OF COMMERCE
DIVISION OF CORPORATIONS AND COMMERCIAL CODE

ENTRY 93004995
BOOK 556 PAGE 230

I hereby certify that the foregoing is a true copy of Articles of Merger and the endorsements thereon, as the same is taken from and compared with the original filed in the office of this Division on the 9th day of January A.D. 1991 and now remaining on file and of record therein.

DIVISION OF CORPORATIONS AND COMMERCIAL CODE

Peter Van Alstyne
PETER VAN ALSTYNE
DIVISION DIRECTOR

Date 1-9-91 File # 147758

By Elizabeth H. Edwards

WHEN RECORDED, RETURN TO:
Flying J Uintah Inc.
Attn: LaVonne Garrison-Stringer
P. O. Box 540180
North Salt Lake, UT 84054-0180

TRY NO. [illegible] DATE [illegible] TIME [illegible] BOOK [illegible] PAGE [illegible]
FEE $ 55.00 RECORDED AT REQUEST OF [illegible]
[illegible] DUCHESNE COUNTY RECORDER [illegible] DEP

**ASSIGNMENT**

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, FLYING J INC., hereinafter called Assignor, does hereby give grant, assign, transfer and convey unto FLYING J UINTAH INC., hereinafter called Assignee, all of Assignor's right, title, and interest, of whatsoever kind and character, lying within the following described sections located in Duchesne and/or Uintah Counties, Utah.

Township 1 North, Range 1 West, USM
Sections: 20, 21, 22, 23, 26, 27, 28, 30, 31, 32, 33, 34, 35

Township 1 North, Range 2 West, USM
Sections: 26, 31, 34, 35

Township 1 South, Range 1 East, USM
Sections: 10, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25 26, 27, 29, 30, 31, 32, 33, 34, 35

Township 1 South, Range 1 West, USM
Sections: 2, 4, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

Township 1 South, Range 2 East, USM
Section: 30

Township 1 South, Range 2 West, USM
Sections: 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 32, 33, 34, 35, 36

Township 1 South, Range 3 West, USM
Sections: 5, 6, 8, 9, 10, 15, 16, 17, 20, 21, 29, 30, 32, 33

Township 1 South, Range 4 West, USM
Sections: 13, 14, 18, 19, 20, 21, 22, 24, 26, 28, 29, 30, 33, 35

Township 1 South, Range 5 West, USM
Sections: 24, 25, 35

Township 2 South, Range 1 East, USM
Sections: 2, 5, 6, 7, 10, 18, 19

Township 2 South, Range 1 West, USM
Sections: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21

Township 2 South, Range 2 West, USM
Sections: 2, 3, 4, 5, 7, 8, 10, 11, 14, 17, 18, 19, 23

Township 2 South, Range 3 West, USM
Sections: 2, 4, 5, 7, 8, 9, 10, 11, 12, 14, 16, 20, 21, 22, 23, 24, 26, 27, 28

Township 3 South, Range 5 West, USM
Sections: 14, 15, 16

Township 3 South, Range 6 West, USM
Section: 26

Township 6 South, Range 20 East, SLM
Section: 14

Township 6 South, Range 21 East, SLM
Sections: 6, 18, 19

This assignment also covers and includes all of Assignor's interest in all wells, equipment, personal property, and fixtures located on the lands and all contracts and agreements to which these properties are subject.

It is the intent of Assignor to convey to Assignee all of their currently owned interest in Duchesne and Uintah Counties, Utah, in case a description has been omitted from this Assignment.

The interests assigned are conveyed subject to all burdens currently affecting Assignor's interest on the date of this Assignment.

Dated this 9th day of August 1990.

ASSIGNOR, FLYING J INC.

ATTEST

By: _____

STATE OF Utah )
) ss.
COUNTY OF Box Elder )

On the 9th day of August, 1990, personally appeared before me, Richard E. Germer, to me personally known, who, being by me duly sworn, did say that he is the Senior Vice President of FLYING J INC., that said instrument was signed in behalf of said corporation by authority of its Board of Directors, and acknowledged said instrument to be the free act and deed of said corporation.

Witness by hand and seal this 9th day of August, 1990.

Notary Public

Notary Public
GLORIA NORR UIBEL
322 Greenwood Drive
Brigham City, Utah 84302
My Commission Expires
February 15, 1993
State of Utah

41.0

WHEN RECORDED, RETURN TO:
Flying J Inc.
P. O. Box 540180
North Salt Lake, UT 84054-0180
Attn: LaVonne Garrison-Stringer

ENTRY NO. 276791 DATE Aug 7 90 TIME 11:08 BOOK M8-240 PAGE 617-618
FEE $ 52.00 RECORDED AT REQUEST OF Flying J Inc.
Carolyn Madsen DUCHESNE COUNTY RECORDER Cheryl Young DEPUTY

ENT 3901-90 BK 490 PG 324-325
MARIE GARDNER UINTAH CO RECORDER
DATE 8-9-90 AT 12:49PM Fee 41.00
Dep C. Allen Rec for Flying J. Inc.

**ASSIGNMENT**

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, FLYING J UINTAH INC., hereinafter called Assignor, does hereby give grant, assign, transfer and convey unto FLYING J INC., hereinafter called Assignee, all of Assignor's right, title, and interest, of whatsoever kind and character, lying within the following described sections located in Duchesne and/or Uintah Counties, Utah.

Township 1 North, Range 1 West, USM
Sections: 20, 21, 22, 23, 26, 27, 28, 30, 31, 32, 33, 34, 35

Township 1 North, Range 2 West, USM
Sections: 26, 31, 34, 35

Township 1 South, Range 1 East, USM
Sections: 10, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25 26, 27, 29, 30, 31, 32, 33, 34, 35

Township 1 South, Range 1 West, USM
Sections: 2, 4, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

Township 1 South, Range 2 East, USM
Section: 30

Township 1 South, Range 2 West, USM
Sections: 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 32, 33, 34, 35, 36

Township 1 South, Range 3 West, USM
Sections: 5, 8, 9, 10, 15, 16, 17, 20, 21, 29, 30, 32, 33

Township 1 South, Range 4 West, USM
Sections: 13, 14, 18, 19, 20, 21, 22, 24, 26, 27, 28, 29, 30, 33, 35

Township 1 South, Range 5 West, USM
Sections: 24, 25, 35

Township 2 South, Range 1 East, USM
Sections: 2, 5, 6, 7, 10, 18, 19

Township 2 South, Range 1 West, USM
Sections: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21

Township 2 South, Range 2 West, USM
Sections: 2, 3, 4, 5, 7, 8, 10, 11, 14, 17, 18, 19, 23, 24

Township 2 South, Range 3 West, USM
Sections: 2, 4, 5, 7, 8, 9, 10, 11, 12, 14, 16, 20, 21, 22, 23, 24, 26, 27, 28

Township 3 South, Range 5 West, USM
Sections: 14, 15, 16, 26

Township 6 South, Range 20 East, USM
Section: 14

Township 6 South, Range 21 East, USM
Sections: 6, 18, 19

This assignment also covers and includes all of Assignor's interest in all wells, equipment, personal property, and fixtures located on the lands and all contracts and agreements to which these properties are subject.

It is the intent of Assignor to convey to Assignee all of their currently owned interest in Duchesne and Uintah Counties, Utah, in case a description has been omitted from this Assignment.

The interests assigned are conveyed subject to all burdens currently affecting Assignor's interest on the date of this Assignment.

Dated this 7th day of August 1990.

ASSIGNOR, FLYING J UINTAH INC. 325

ATTEST

By:

STATE OF Utah )
) ss.
COUNTY OF Bay Lake )

On the 7th day of August, 1990, personally appeared before me, Richard E. Geemer, to me personally known, who, being by me duly sworn, did say that he is the Senior Vice President of FLYING J UINTAH INC., that said instrument was signed in behalf of said corporation by authority of its Board of Directors, and acknowledged said instrument to be the free act and deed of said corporation.

Witness by hand and seal this 7th day of August, 1990.

Notary Public

Notary Public
GLORIA NORR UIBEL
322 Greenwood Drive
Brigham City, Utah 84302
My Commission Expires
February 15, 1993
State of Utah

State of Utah
County of Duchesne } ss.

I, Cheryl Young, Deputy, County Recorder in and for Duchesne County, hereby certify that the foregoing is a full, true and correct copy of the Assignment Entry # 276791 Book MR-240 page 617-618

and now on file and of record in my office.

In witness whereof, I have hereunto set my hand and affixed the official seal of said office, this 9th day of August, 1990.

Cheryl Young Deputy
County Recorder

ENT 3823-90 BK 490 Pg 177-178
MARIE GARDNER UINTAH CO RECORDER
DATE 8-3-90 AT 11:45AM Fee 38.00
Dep C White Rec for Flying J Exploration

**ASSIGNMENT**

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Flying J Inc. and Flying J Exploration and Production Inc., hereinafter called Assignors', do hereby give grant, assign, transfer and convey unto Flying J Uintah Inc., hereinafter called Assignee, all of Assignors' right, title, and interest, of whatsoever kind and character, lying within the following described sections located in Duchesne and/or Uintah Counties, Utah.



Township 1 North, Range 1 West, USM
Sections: 20, 21, 22, 23, 26, 27, 28, 30, 31, 32, 33, 34, 35

Township 1 North, Range 2 West, USM
Sections: 26, 31, 34, 35

Township 1 South, Range 1 East, USM
Sections: 10, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25 26, 27, 29, 30, 31, 32, 33, 34, 35

Township 1 South, Range 1 West, USM
Sections: 2, 4, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

Township 1 South, Range 2 East, USM
Section: 30

Township 1 South, Range 2 West, USM
Sections: 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 32, 33, 34, 35, 36

Township 1 South, Range 3 West, USM
Sections: 5, 8, 9, 10, 15, 16, 17, 20, 21, 29, 30, 32, 33

Township 1 South, Range 4 West, USM
Sections: 13, 14, 18, 19, 20, 21, 22, 24, 26, 27, 28, 29, 30, 33, 35

Township 1 South, Range 5 West, USM
Sections: 24, 25, 35

Township 2 South, Range 1 East, USM
Sections: 2, 5, 6, 7, 10, 18, 19

Township 2 South, Range 1 West, USM
Sections: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 21

Township 2 South, Range 2 West, USM
Sections: 2, 3, 4, 5, 7, 8, 10, 11, 14, 17, 18, 19, 23, 24

Township 2 South, Range 3 West, USM
Sections: 2, 4, 5, 7, 8, 9, 10, 11, 12, 14, 16, 20, 21, 22, 23, 24, 26, 27, 28

Township 3 South, Range 5 West, USM
Sections: 14, 15, 16, 26

Township 6 South, Range 20 East, USM
Section: 14

Township 6 South, Range 21 East, USM
Sections: 6, 18, 19

This assignment also covers and includes all of Assignors' interest in all wells, equipment, personal property, and fixtures located on the lands and all contracts and agreements to which these properties are subject.

ENTRY NO. 278 DATE 7-16-90 TIME 8:42am BOOK M2-296 PAGE 443-445
FEE $ 7.00 RECORDED AT REQUEST OF Flying J Exploration
Charlene Norton DUCHESNE COUNTY RECORDER DEPUTY

It is the intent of Assignors to convey to Assignee all of their currently owned interest in Duchesne and Uintah Counties, Utah, in case a description has been omitted from this Assignment.

The interests assigned are conveyed subject to all burdens currently affecting Assignor's interest on the date of this Assignment.

Dated this 25th day of June 1990.

178

ATTEST

Secretary

FLYING J INC.

~~Barre G. Burgon~~ Executive Vice President

ATTEST

James W. Wilson
Assistant Secretary

FLYING J EXPLORATION AND PRODUCTION INC.

John R. Scales
Vice President/General Manager

STATE OF )
) ss.
COUNTY OF )

On the 26th day of June, 1990, personally appeared before me, Barre G. Burgon and J. Phillip Adams to me personally known, who, being by me duly sworn, did say that they are the Secretary and Executive Vice Pres. of Flying J Inc., that said instrument was signed in behalf of said corporation by authority of its Board of Directors, and acknowledged said instrument to be the free act and deed of said corporation.

Witness by hand and seal this 26th day of June, 1990.

Notary Public

Notary Public
GLORIA NORN UBBEL
322 Greenwood Drive
Brigham City, Utah 84302
My Commission Expires
February 15, 1993
State of Utah

STATE OF Utah )
) ss.
COUNTY OF Salt Lake )

On the 29th day of June, 1990, personally appeared before me, John R. Scales and James W. Wilson, to me personally known, who, being by me duly sworn, did say that they are the Vice President and Assistant Secretary of Flying J Exploration and Production Inc., that said instrument was signed in behalf of said corporation by authority of its Board of Directors, and acknowledged said instrument to be the free act and deed of said corporation.

Witness by hand and seal this 29th day of June, 1990.

Notary Public

NOTARY PUBLIC
VICKI L. DELLAR
1035 E. Somerset Way
Salt Lake City, Utah 84117
My Commission Expires
March 12, 1993
STATE OF UTAH

COMMUNITIZATION AGREEMENTS
UTAH STATE OFFICE

| COMM AGREEMENT NO. | CRS NUMB. | OPERATOR | ACRES | SEC DESCRIP. | SEC TWN RNG | EFFECTIVE DATE | COUNTY |
|---|---|---|---|---|---|---|---|
| 96-000111 | UTU58815 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 8 01S 01W | 04/01/73 | DUCHESNE |
| 96-000109 | UTU58813 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 29 01S 01W | 11/01/73 | DUCHESNE |
| UT08049I-84C729 | UTU60873 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 15 01S 01W | 10/22/84 | DUC & UIN |
| UT08049I-84C730 | UTU66535 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 10 01S 01W | 09/26/84 | UIN & DUC |
| VR49I-84679C | UTU60980 | FLYING J OIL & GAS INC. | 480.000000 | S2N2,S2 | 23 01S 01W | 05/04/83 | UINTAH |
| VR49I-84685C | UTU60991 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 16 01S 01W | 03/27/84 | DUCHESNE |
| VR49I-84691C | UTU61000 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 22 01S 01W | 12/05/83 | DUC & UIN |
| VR49I-84689C | UTU60994 | FLYING J OIL & GAS INC. | 560.000000 | IRR | 17 01S 01E | 01/26/77 | UINTAH |
| VR49I-84683C | UTU60985 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 14 01S 01E | 02/22/81 | UINTAH |
| VR49I-84677C | UTU60970 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 36 01S 01W | 05/10/79 | UINTAH |
| VR49I-84673C | UTU60965 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 27 01S 01W | 09/17/83 | DUCHESNE |
| VR49I-84671C | UTU60953 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 21 01S 01W | 06/26/83 | DUCHESNE |
| VR49I-84670C | UTU60952 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 12 01S 01W | 05/06/83 | UINTAH |
| UT080I49-85C705 | UTU60907 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 26 01N 01W | 02/18/85 | UINTAH |
| UT080I49-85C680 | UTU60892 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 21 01N 01W | 09/20/83 | DUCHESNE |
| UT080I49-84C712 | UTU60886 | FLYING J OIL & GAS INC. | 480.000000 | IRR | 29 01S 01E | 02/10/82 | UINTAH |
| UT080I49-84C713 | UTU60887 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 28 01N 01W | 04/15/82 | DUCHESNE |
| NW-644 | UTU60836 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 14 01S 04W | 08/29/73 | DUCHESNE |
| NRM-696 | UTU60813 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 17 01S 03W | 03/12/74 | DUCHESNE |
| CR-I-157 | UTU60782 | FLYING J OIL & GAS INC. | 440.000000 | IRR | 30 01S 01E | 02/24/82 | UINTAH |
| CR-I-156 | UTU60781 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 26 01S 04W | 02/05/82 | DUCHESNE |
| 96-000115 | UTU58819 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 22 01S 04W | 07/23/73 | DUCHESNE |
| 9C-000176 | UTU58860 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 33 01S 01E | 08/24/78 | UINTAH |
| NW-616 | UTU60833 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 28 02S 03W | 02/01/73 | DUCHESNE |
| UT080I49-86C681 | UTU60915 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 15 01S 01E | 04/03/81 | UINTAH |
| 96-000100 | UTU58805 | FLYING J OIL & GAS INC. | 638.500000 | ALL | 31 01N 01W | 01/02/74 | DUCHESNE |
| 9C-000122 | UTU58826 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 32 01N 01W | 06/01/74 | DUCHESNE |
| 9C-000144 | UTU58848 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 33 01N 01W | 12/02/75 | DUCHESNE |
| 9C-000149 | UTU58852 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 34 01S 01E | 11/05/76 | UINTAH |
| 9C-000173 | UTU58858 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 35 01S 01E | 05/11/78 | UINTAH |
| 9C-000175 | UTU58859 | FLYING J OIL & GAS INC. | 520.000000 | E2,E2W2,SWSW | 27 01S 01E | 06/27/78 | UINTAH |
| 9C-000171 | UTU58857 | FLYING J OIL & GAS INC. | 640.000000 | ALL | 23 01S 01E | 01/31/78 | UINTAH |

RECEIVED
JUN 21 1995
DIV. OF OIL, GAS & MINING

# United States Department of the Interior

**BUREAU OF INDIAN AFFAIRS**

UINTAH AND OURAY AGENCY
FORT DUCHESNE, UTAH 84026
(801) 722-2406 Ext. 51/52/54

IN REPLY REFER TO:

Minerals and Mining

Name Change

RECEIVED JUN. 22 1995

JUN 23 1995
DIV. OF OIL, GAS & MINING

Flying J Oil and Gas, Inc.
Attention: Coralie Timothy
P. O. Box 540180
N. Salt Lake City, UT 84054-0180

Dear Coralie:

As discussed on the telephone regarding the name changes of various Flying J and its subsidiaries, we have reviewed all documents submitted, and hereby approve of the name change for the following companies.

| | | |
|---|---|---|
| Flying J Uintah Inc. | to | Flying J Oil & Gas Inc. |
| Flying J Inc. | to | Flying J Uintah Inc. |
| Flying J Uintah Inc. | to | Flying J, Inc. |
| Flying J Inc. and Flying J Exploration and Production Inc. | to | Flying J Uintah Inc. |

All records will be changed to reflect that Flying J Oil & Gas, Inc. will be operator of the subject wells listed on the attached sheet. With the exception of the following:

| | | |
|---|---|---|
| CA No. VR49I84-679C | Bradley 1-23A1 | * BIA previously aprv. 12/94 see file. |
| CA No. VR49I-84691C | Fred Bassett 1-22A1 | * BIA previously aprv. 12/94 see file. |

The sundries submitted indicate a change of operator from Badger Oil Corporation to Flying J Oil and Gas, Inc. This requires the Designation of Operator forms to be completed and approved by this office.

If you have any questions regarding the above, please contact this office.

Sincerely,

Acting Superintendent

cc: Lisha Cordova, Utah State Office
Theresa Thonpson, BLM State Office
Margie Hermann, Vernal BLM District Office
Energy & Minerals, Ute Indian Tribe
Ute Distribution Corporation, Roosevelt, UT

**ROUTING AND TRANSMITTAL SLIP**

Date 6-19

| TO: (Name, office symbol, room number, building, Agency/Post) | Initials | Date |
|---|---|---|
| 1. Lisha Cordova | | |
| 2. DOGM | | |
| 3. | | |
| 4. | | |
| 5. | | |

| | | | | | |
|---|---|---|---|---|---|
| | Action | | File | | Note and Return |
| | Approval | | For Clearance | | Per Conversation |
| | As Requested | | For Correction | | Prepare Reply |
| | Circulate | | For Your Information | | See Me |
| | Comment | | Investigate | | Signature |
| | Coordination | | Justify | | |

**REMARKS**

CA's showing Flying J Oil + Gas Inc. as operator. I notified Coralie with Flying J. BIA accepted the name change without issuing a decision. Not sure what they are going to do. We changed our records to reflect Flying J Oil + Gas Inc. effective 3-8-95. Date of letter.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

| FROM: (Name, org. symbol, Agency/Post) | Room No.—Bldg. |
|---|---|
| Teresa | Phone No. |

5041-102

☆ U.S. G.P.O. 1993 342-198/60012

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Division of Oil, Gas and Mining
**OPERATOR CHANGE WORKSHEET**

Routing:

| | |
|---|---|
| 1- LEC | |
| 2- LWP | 7-PL |
| 3- DTS/S | 8-SJ |
| 4- VLC | 9-FILE |
| 5- RJF | |
| 6- LWP | |

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XX Change of Operator (~~well sold~~) ☐ Designation of Agent
☐ Designation of Operator XX Operator Name Change ~~Only~~

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 1-2-91)

TO (new operator) FLYING J OIL & GAS INC
(address) PO DRAWER 130
ROOSEVELT UT 84066

phone ( 801) 722-5166
account no. N 8080

FROM (former operator) FLYING J INC
(address) PO DRAWER 130
ROOSEVELT UT 84066
C/O FLYING J O&G INC
phone (801 )722-5166
account no. N1195

**Well(s)** (attach additional page if needed):

| Name: | API: | Entity: | Sec | Twp | Rng | Lease Type: |
|---|---|---|---|---|---|---|
| **SEE ATTACHED** | 047-30671 | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**OPERATOR CHANGE DOCUMENTATION**

Lec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Rec'd 3-10-95)

Lec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Rec'd 3-10-95)

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

Lec 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (6-30-95)

Lwp 6. Cardex file has been updated for each well listed above. 7-12-95

Lwp 7. Well file labels have been updated for each well listed above. 7-12-95

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (6-30-95)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

- OVER -

**OPERATOR CHANGE WORKSHEET (CONTINUED)** Initial each item when completed. Write N/A if item is not applicable.

**ENTITY REVIEW**

✓ 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

**BOND VERIFICATION (Fee wells only)** #610200730/80,000 Surety "The North River Ins. Co." (Trust Lands/Bond OK)

✓ 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

___ 2. A copy of this form has been placed in the new and former operators' bond files.

N/A 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

**LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY**

N/A DTS 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.

DTS 2. Copies of documents have been sent to State Lands for changes involving **State leases**. 7-14-95 to Ed Bonner

**FILMING**

✓ 1. All attachments to this form have been microfilmed. Date: July 21 19 95.

**FILING**

___ 1. Copies of all attachments to this form have been filed in each well file.

___ 2. The original of this form and the original attachments have been filed in the Operator Change file.

**COMMENTS**

3/95 Flying J / Coralie Timothy "chg. all wells over to Flying J O&G at the same time if possible". (Wait for C.A. approvals and chg. C.A. & non C.A. wells at same time)

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
355 West North Temple, 3 Triad, Suite 350, Salt Lake City, UT 84180-1203



# MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

C/O FLYING J O&G INC
FLYING J INC
PO DRAWER 130/G ROBB
ROOSEVELT UT 84066

UTAH ACCOUNT NUMBER: N1195

REPORT PERIOD (MONTH/YEAR): 2 / 95

AMENDED REPORT ☐ **(Highlight Changes)**

| Well Name API Number | Entity | Location | Producing Zone | Well Status | Days Oper | Production Volumes OIL(BBL) | GAS(MCF) | WATER(BBL) |
|---|---|---|---|---|---|---|---|---|
| C.J. HACKFORD 1-23 4304730279 | 00790 | 01S 01E 23 | GR-WS | | | Fee | 9C-000171 | (EEP) |
| UTE TRIBAL 1-35A1E 4304730286 | 00795 | 01S 01E 35 | GR-WS | | | 1420H622665 | 9C-000173 | (INC) |
| UTE TRIBAL 1-27A1E 4304730421 | 00800 | 01S 01E 27 | GR-WS | | | 1420H622662 | 9C-000175 | (INC) |
| DAVIS 1-33 4304730384 | 00805 | 01S 01E 33 | GR-WS | | | Fee | 9C-000176 | (INC) |
| UTE TRIBAL 1-22A1E 4304730429 | 00810 | 01S 01E 22 | GRRVL | | | 1420H623103 | (7/95 BIA APPRV) | |
| LARSEN 1-25A1 4304730552 | 00815 | 01S 01W 25 | GR-WS | | | Fee | | |
| [illegible]Y GULCH 1-36A1 4304730569 | 00820 | 01S 01W 36 | GR-WS | | | Fee | VR491-84677C | (INC) |
| NELSON 1-31A1E 4304730671 | 00830 | 01S 01E 31 | GR-WS | | | Fee | | |
| ROSEMARY LLOYD 1-24A1E 4304730707 | 00840 | 01S 01E 24 | GR-WS | | | Fee | | |
| H.D. LANDY 1-30A1E 4304730790 | 00845 | 01S 01E 30 | GR-WS | | | Fee | CR-I-157 | (INC) |
| UTE TRIBAL 1-15A1E 4304730820 | 00850 | 01S 01E 15 | GR-WS | | | 1420H622717 | UT0801 49-86C681 | (EEP) |
| WALKER 1-14A1E 4304730805 | 00855 | 01S 01E 14 | GR-WS | | | Fee | VR491-84683C | (INC) |
| UTE TRIBAL 1-17A1E 4304730829 | 00860 | 01S 01E 17 | GR-WS | | | 1420H622658 | VR491-84689C | (INC) |
| | | | | | TOTALS | | | |

COMMENTS:

hereby certify that this report is true and complete to the best of my knowledge. Date:

Name and Signature: Telephone Number:

(12/93)

From 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

6. Lease Designation and Serial Number: FEE

7. Indian Allottee or Tribe Name: NA

8. Unit or Communitization Agreement: NA

9. Wel Name and Number: **NELSON 1-31A1E**

10. API Well Number: 43 047 30671

11. Field and Pool, or Exploratory Area: BLUEBELL

## SUNDRY NOTICE AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells

Use APPLICATION FOR PERMIT -- for such proposals

1. Title of Well
[X] Oil Well [ ] Gas Well [ ] Other

2. Name of Operator: Flying J Oil and Gas Inc

3. Address and Telephone No.: PO Drawer 130, Roosevelt, Utah 84066

4. Telephone Number: 801-722-5166

5. Location of Well
Footage 1478' FWL 2142' FNL County: UINTAH
QQ, Sec. T.,R.,M.: SEC 31 T1S R1E SENW State: UTAH

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| NOTICE OF INTENT (Submit in Duplicate) | | SUBSEQUENT REPORT (Submit Original Form Only) | |
|---|---|---|---|
| [ ] Abandonment | [ ] New Construction | [ ] Abandonment | [ ] New Construction |
| [ ] Casing Repair | [ ] Pull or Alter Casing | [ ] Casing Repair | [ ] Pull or Alter Casing |
| [ ] Change of Plans | [ ] Recompletion | [ ] Change of Plans | [ ] Recompletion |
| [ ] Conversion to Injection | [ ] Shoot or Acidize | [ ] Conversion to Injection | [ ] Shoot or Acidize |
| [ ] Fracture Test | [ ] Vent or Flare | [ ] Fracture Test | [ ] Vent or Flare |
| [ ] Multiple Completion | [ ] Water Shut-Off | [ ] Multiple Completion | [ ] Water Shut-Off |
| [ ] Other _____ | | [X] Other ACIDIZE & CONVERT TO RODS | |
| Approzimate Date Work Will Start _____ | | Date of Work Completion 2/20/97 | |

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION AND LOG FORM.
*Must be accompanied by a cement verification report

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface location and measured and true vertical depths for all markers and zones pertinent to this work.

**2/11/97 POOH w/2 7/8" production string**
**2/12/97 Clean out 5" liner to 12,604' w4 1/8" bit & scraper.**
**2/15/97 Acidize Wasatch formation w/10,000 gal 15% HCL & additives.**
**2/16-17/97 Swab**
**2/18/97 POOH w/stimulation string. Run 2 7/8" production string w/tbg anchor to 11,038'.**
**2/19/97 Run rods**
**2/20/97 Return well to production**

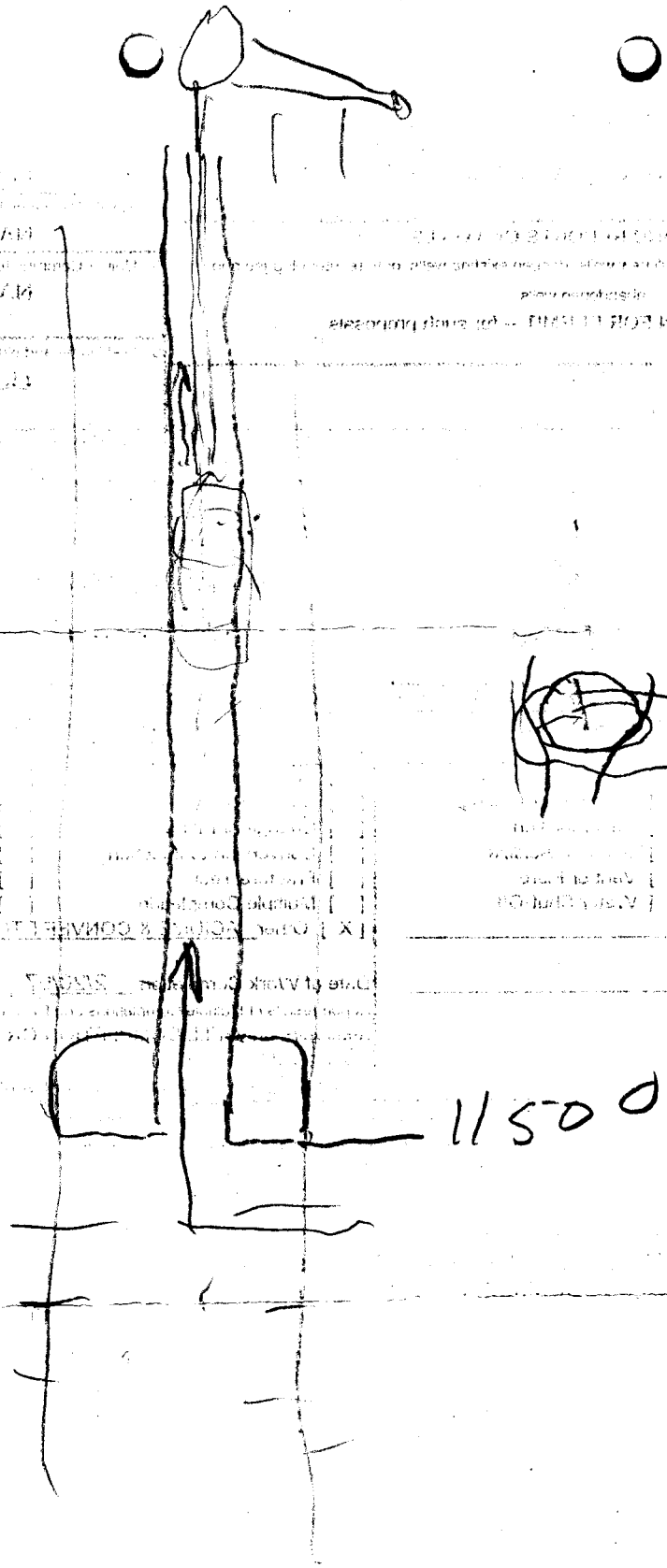
14. I hereby certify that the foregoing is true and correct

Signed Larry Rich Title Production Superintendent Date 3/4/97

(State Use Only)

(8/90)

RECEIVED
MAR 06 1997
DIV. OF OIL, GAS & MINING


11500

Form OGC-3

SUBMIT IN DUPLICATE

FOR APPROVED
OMB NO. 1004-137
Expires: December 31, 1991

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b. TYPE OF COMPLETION:
NEW WELL [ ] WORKOVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RSVR. [X] OTHER

2. NAME OF OPERATOR
Flying J Oil & Gas Inc

3. ADDRESS AND TELEPHONE
PO Drawer 130 Roosevelt, Utah 84066 435-722-5166

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 1478' FWI 2142' FNL SENW
At top prod. interval reported below Same
At total depth Same

5. LEASE DESIGNATION AND SERIAL NO.
FEE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
NA

7. UNIT AGREEMENT NAME
NA

8. FARM OR LEASE NAME, WELL NO.
Nelson 1-31A1E

9. API WELL NO.
43 047 30671

10. FIELD AND POOL, OR WILDCAT
Bluebell

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
Sec 31 T1S R1E

| 14. PERMIT NO | DATE ISSUED | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 4304730671 | 1/18/80 | Uintah | Utah |

| 15. DATE SPUDDED | 16. DATE T.D. REACHED | 17. DATE COMPL. (Ready to prod.) | 18. ELEVATIONS (DF, RKB, RT, GR, ETC)* | 19. ELEV. CASING HEAD |
|---|---|---|---|---|
| 1/30/80 | 4/2/80 | 11/5/03 - recompleted | 5344' KB | 5301' |

| 20. TOTAL DEPTH, MD & TVD | 21. PLUG, BACK T.D., MD & TVD | 22. IF MULTIPLE COMPL, HOW MANY* | 23. INTERVALS DRILLED BY | ROTARY TOOLS | CABLE TOOLS |
|---|---|---|---|---|---|
| 12,650' | 12,642' | | | 0' - 12,650' | |

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
9622 - 9790' Green River 10,520' - 12,596' Wasatch

25. WAS DIRECTIONAL SURVEY MADE
No

26. TYPE ELECTRIC AND OTHER LOGS RUN
No new logs

27. WAS WELL CORED
No

28 CASING RECORD (Report all strings set in well)

| CASING SIZE | WEIGHT, LB./FT | DEPTH SET (MD) | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
|---|---|---|---|---|---|
| 9 5/8" | 40# | 2994' | 12 1/4 | 700 sx Lite, 200 sx "H" | None |
| 7" | 26, 29, 32# | 10,152' | 8 3/4" | 360 sx Lite, 200 sx "G" | None |

29 LINER RECORD

| SIZE | TOP (MD) | BOTTOM (MD) | SACKS CEMENT* | SCREEN (MD) |
|---|---|---|---|---|
| 5" | 10,035' | 12,650' | 700 sx | |

30 TUBING RECORD

| SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|
| 2 7/8" | 11,035' | |

31. PERFORATION RECORD (Interval, size and number)
Green River & Wasatch Formations, 3 SPF, 11 intervals, 210 holes

| | | |
|---|---|---|
| 9622' - 626' | 9752' - 756' | 10,590' - 596' |
| 9640' - 643' | 9778' - 790' | 10,618' - 622' |
| 9646' - 656' | 10,520' - 527' | 10,648' - 653' |
| 9676' - 687' | 10,580' - 584' | |

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL (MD) | AMOUNT AND KIND OF MATERIAL USED |
|---|---|
| 11,528' - 12,596' - Wasatch | 10,000 gal 15% HCL w/additives |
| 9622'-9790' GR and 10,520' - 10,653 - Wasatch | 10,000 gal 15% HCL w/additives |

33* PRODUCTION

| DATE FIRST PRODUCTION | PRODUCTION METHOD (Flowing, gas lift, pumping--size and type of pump) | WELL STATUS (Prod. or shut-in) |
|---|---|---|
| 11/5/03 | Rods | Producing |

| DATE OF TEST | HOURS TESTED | CHOKE SIZE | PROD'N FOR TEST PERIOD | OIL--BBL. | GAS--MCF | WATER--BBL | GAS-OIL RATIO |
|---|---|---|---|---|---|---|---|
| 11/6/2003 | 24 | | | 133 | 78 | 79 | |

| FLOW.TUBING PRESS | CASING PRESSURE | CALCULATED 24 HOUR RATE | OIL--BBL. | GAS--MCF | WATER--BBL | OIL GRAVITY-API (CORR.) |
|---|---|---|---|---|---|---|
| | 40 | | 133 | 78 | 79 | 39.7 |

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
Sold

TEST WITNESSED BY
Wayne Lee

35. LIST OF ATTACHMENTS
None

36 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Larry Rich TITLE Production Superintendent DATE 11/7/2003

*(See Instructions and Spaces for Additional Data on Reverse Side)

RECEIVED
NOV 13 2003
DIV. OF OIL, GAS & MINING

# INSTRUCTIONS

**General:** This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will e issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs, (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
**Item 4:** If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
**Item 18:** Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
**Item 22 and 24:** If this well is completed for separate production from more than on interval zone (multiple completion), so state in item 22 and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in **Item 33**. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
**Item 29:** *"Sacks Cement"*: Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above).

| 37 SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries): | | | | 38. GEOLOGIC MARKERS | | |
|---|---|---|---|---|---|---|
| FORMATION | TOP | BOTTOM | DESCRIPTION, CONTENTS, ETC. | NAME | TOP MEAS. DEPTH | TOP TRUE VERT.DEPTH |
| | | | | Green River | 6532 | |
| | | | | Wasatch | 9142 | |

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

| | |
|---|---|
| SUNDRY NOTICE AND REPORTS ON WELLS<br>Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals. | 5. LEASE DESIGNATION AND SERIAL NUMBER: FEE<br>6. IF INIDAN, ALLOTTEE OR TRIBE NAME:<br>7. UNIT or CA AGREEMENT NAME: |
| 1. TYPE OF WELLS [X] Oil Well [ ] Gas Well [ ] Other | 8. WELL NAME and NUMBER NELSON 1-31A1E |
| 2. NAME OF OPERATOR FLYING J OIL & GAS INC. | 9. API NUMBER: 43-047-30671 |
| 3. ADDRESS OF OPERATOR PO Drawer 130 Roosevelt, Utah 84066 / PHONE NUMBER 435-722-5166 | 10. FIELD AND POOL, OR WILDCAT BLUEBELL |

4. LOCATION OF WELLS
FOOTAGES AT SURFACE: 2142' FNL 1478 FWL — COUNTY: Uintah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW Sec 31 T1S R1E — STATE: **UTAH**

11 CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| [ ] NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start | [ ] ACIDIZE | [ ] DEEPEN | [ ] REPERFORATE CURRENT FORMATION |
| | [ ] ALTER CASING | [ ] FRACTURE TREAT | [ ] SIDETRACK TO REPAIR WELL |
| | [ ] CASING REPAIR | [ ] NEW CONSTRUCTION | [ ] TEMPORARILY ABANDON |
| | [ ] CHANGE TO PREVIOUS PLANS | [ ] OPERATOR CHANGE | [ ] TUBING REPAIR |
| | [ ] CHANGE TUBING | [ ] PLUG AND ABANDON | [ ] VENT OR FLARE |
| [x] SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: 1/7/05 | [ ] CHANGE WELL NAME | [ ] PLUG BACK | [ ] WATER DISPOSAL |
| | [ ] CHANGE WELL STATUS | [ ] PRODUCTION (START/RESUME) | [ ] WATER SHUT-OFF |
| | [ ] COMMINGLE PRODUCING FORMATIONS | [ ] RECLAMATION OF WELL SITE | [ ] OTHER |
| | [ ] CONVERT WELL TYPE | [ ] RECOMPLETE-DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS, Clearly show all pertinent details including dates, depths, volumes, etc.

**Fracture stimulate Green River perforations 9622' - 9687' with 2000 gallons 15% HCL with additives followed by 357 bbls gelled pad, followed by 69,321# 20/40 sand and 5000# flex sand.**

NAME (PLEASE PRINT) Gordon Bastian — TITLE Workover Foreman

SIGNATURE Gordon Bastian — DATE January 10, 2005

(This space for State use only)

RECEIVED
JAN 12 2005
DIV. OF OIL, GAS & MINING

(5/2000)

Division of Oil, Gas and Mining

# OPERATOR CHANGE WORKSHEET

| ROUTING |
|---|
| 1. DJJ |
| 2. CDW |

**X - Change of Operator (Well Sold)** Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **1/1/2010**

| **FROM:** (Old Operator): | **TO:** ( New Operator): |
|---|---|
| N8080-Flying J Oil & Gas, Inc.<br>333 West Center Street<br>North Salt Lake, UT 84054<br><br>Phone: 1 (801) 296-7726 | N3065-El Paso E&P Company, LP<br>1099 18th Street, Suite 1900<br>Denver, CO 80202<br><br>Phone: 1 (303) 291-6400 |

**CA No.** **Unit:**

| WELL NAME | SEC | TWN | RNG | API NO | ENTITY NO | LEASE TYPE | WELL TYPE | WELL STATUS |
|---|---|---|---|---|---|---|---|---|
| SEE ATTACHED LIST | | | | | | | | |

## OPERATOR CHANGES DOCUMENTATION

**Enter date after each listed item is completed**

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 1/13/2010
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 1/13/2010
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 2/24/2010

4a. Is the new operator registered in the State of Utah: Business Number: 2114377-0181

5a. (R649-9-2)Waste Management Plan has been received on: IN PLACE

5b. Inspections of LA PA state/fee well sites complete on: 8/10/2009 *

5c. Reports current for Production/Disposition & Sundries on: 2/22/2010

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM not yet BIA not yet
7. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: n/a
8. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
9. **Underground Injection Control ("UIC")** approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 2/8/2010

## DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 2/24/2010
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 2/24/2010
3. Bond information entered in RBDMS on: 2/24/2010
4. Fee/State wells attached to bond in RBDMS on: 2/24/2010
5. Injection Projects to new operator in RBDMS on: 2/24/2010
6. Receipt of Acceptance of Drilling Procedures for APD/New on: *

## BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: WYB3457
2. Indian well(s) covered by Bond Number: RLB0009692

3a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number 400JU0708

3b. The **FORMER** operator has requested a release of liability from their bond on: not yet

## LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 2/25/2010

**COMMENTS:** * Due to Flying J's bankruptcy, these items are being accepted as is.

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

# SUNDRY NOTICE AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

| | |
|---|---|
| 5. LEASE DESIGNATION AND SERIAL NUMBER: | See Attachment |
| 6. IF INDIAN, ALLOTTEE OR TRIBE NAME: | See Attachment |
| 7. UNIT or CA AGREEMENT NAME: | See Attachment |
| 1. TYPE OF WELLS [X] Oil Well [ ] Gas Well [ ] Other | 8. WELL NAME and NUMBER: See Attachment |
| 2. NAME OF OPERATOR: El Paso E&P Company, L.P. N 3065 | 9. API NUMBER: See Attachment |
| 3. ADDRESS OF OPERATOR: 1099 18th Street, Suite 1900, Denver, CO 80202 — PHONE NUMBER: 303-291-6400 | 10. FIELD AND POOL, OR WILDCAT: See Attachment |

4. LOCATION OF WELLS
FOOTAGES AT SURFACE: See Attachment — COUNTY: Duchesne & Uintah
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: — STATE: UTAH

11 CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| [ ] NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start | [ ] ACIDIZE | [ ] DEEPEN | [ ] REPERFORATE CURRENT FORMATION |
| | [ ] ALTER CASING | [ ] FRACTURE TREAT | [ ] SIDETRACK TO REPAIR WELL |
| | [ ] CASING REPAIR | [ ] NEW CONSTRUCTION | [ ] TEMPORARILY ABANDON |
| | [ ] CHANGE TO PREVIOUS PLANS | [ ] OPERATOR CHANGE | [ ] TUBING REPAIR |
| | [ ] CHANGE TUBING | [ ] PLUG AND ABANDON | [ ] VENT OR FLARE |
| [ ] SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: | [ ] CHANGE WELL NAME | [ ] PLUG BACK | [ ] WATER DISPOSAL |
| | [ ] CHANGE WELL STATUS | [ ] PRODUCTION (START/RESUME) | [ ] WATER SHUT-OFF |
| | [ ] COMMINGLE PRODUCING FORMATIONS | [ ] RECLAMATION OF WELL SITE | [X] OTHER |
| | [ ] CONVERT WELL TYPE | [ ] RECOMPLETE-DIFFERENT FORMATION | Change of Operator |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS, Clearly show all pertinent details including dates, depths, volumes, etc.

Effective January 1, 2010, operations of the wells on the attached exhibit were taken over by:
El Paso E&P Company, L.P., a Delaware limited partnership
1099 18th Street, Suite 1900
Denver, CO 80202

The previous operator was:
FLYING J OIL & GAS INC. N 8080
333 WEST CENTER STREET
NORTH SALT LAKE, UT 84054
801 296-7726

By: Chris J. Malan
Executive Vice President

Effective January 1, 2010, El Paso E&P Company, L.P. is responsible under the terms and conditions of the leases for operations conducted on the leased lands or a portion thereof under Utah Department of Natural Resources Bond 400JU0708 issued by Travelers Casualty and Surety

BLM WYB2457 BIA RLB0009692

NAME (PLEASE PRINT) Mary Sharon Balakas — TITLE Attorney in Fact
SIGNATURE Mary Sharon Balakas — DATE 12/29/09

(This space for State use only)

APPROVED 2/24/2010
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
JAN 13 2010
DIV. OF OIL, GAS & MINING

(5/2000)

Flying J Oil Gas Inc (N8080) to El Paso E1 Company LP (N3065)

| well_name | sec | twp | rng | api | entity | Lease | well | stat | flag |
|---|---|---|---|---|---|---|---|---|---|
| GOVT 4-14 | 14 | 060S | 200E | 4304730155 | 760 | Federal | OW | S | |
| GOVERNMENT 10-14 | 14 | 060S | 200E | 4304732709 | 12009 | Federal | OW | S | |
| GOVERNMENT 12-14 | 14 | 060S | 200E | 4304732850 | 12150 | Federal | OW | P | |
| | | | | | | | | | |
| MAXIMILLIAN-UTE 14-1 | 14 | 010S | 030W | 4301330726 | 8437 | Indian | OW | P | |
| FRED BASSETT 1-22A1 | 22 | 010S | 010W | 4301330781 | 9460 | Indian | OW | P | |
| THE PERFECT "10" 1-10A1 | 10 | 010S | 010W | 4301330935 | 9461 | Indian | OW | P | |
| BADGER-SAM H U MONGUS 1-15A1 | 15 | 010S | 010W | 4301330949 | 9462 | Indian | OW | P | |
| UTE TRIBAL 1-35A1E | 35 | 010S | 010E | 4304730286 | 795 | Indian | OW | P | |
| UTE TRIBAL 1-27A1E | 27 | 010S | 010E | 4304730421 | 800 | Indian | OW | P | |
| UTE TRIBAL 1-22A1E | 22 | 010S | 010E | 4304730429 | 810 | Indian | OW | P | |
| UTE TRIBAL 1-15A1E | 15 | 010S | 010E | 4304730820 | 850 | Indian | OW | P | |
| UTE TRIBAL 1-17A1E | 17 | 010S | 010E | 4304730829 | 860 | Indian | OW | P | |
| UTE TRIBAL 1-29A1E | 29 | 010S | 010E | 4304730937 | 895 | Indian | OW | P | |
| CARSON 2-36A1 | 36 | 010S | 010W | 4304731407 | 737 | Indian | OW | P | |
| UTE 2-17A1E | 17 | 010S | 010E | 4304737831 | 16709 | Indian | OW | P | |
| | | | | | | | | | |
| SADIE BLANK 1-33Z1 | 33 | 010N | 010W | 4301330355 | 765 | Fee | OW | P | |
| HOUSTON 1-34Z1 | 34 | 010N | 010W | 4301330566 | 885 | Fee | OW | P | |
| WISSE 1-28Z1 | 28 | 010N | 010W | 4301330609 | 905 | Fee | OW | P | |
| POWELL 1-21B1 | 21 | 020S | 010W | 4301330621 | 910 | Fee | OW | P | |
| H MARTIN 1-21Z1 | 21 | 010N | 010W | 4301330707 | 925 | Fee | OW | P | |
| BIRCHELL 1-27A1 | 27 | 010S | 010W | 4301330758 | 940 | Fee | OW | P | |
| EULA-UTE 1-16A1 | 16 | 010S | 010W | 4301330782 | 8443 | Fee | OW | P | |
| R HOUSTON 1-22Z1 | 22 | 010N | 010W | 4301330884 | 936 | Fee | OW | P | |
| BADGER MR BOOM BOOM 2-29A1 | 29 | 010S | 010W | 4301331013 | 9463 | Fee | OW | P | |
| REARY 2-17A3 | 17 | 010S | 030W | 4301331318 | 11251 | Fee | OW | P | |
| MAGDALENE PAPADOPULOS 1-34A1E | 34 | 010S | 010E | 4304730241 | 785 | Fee | OW | P | |
| DAVIS 1-33A1E | 33 | 010S | 010E | 4304730384 | 805 | Fee | WD | A | |
| LARSEN 1-25A1 | 25 | 010S | 010W | 4304730552 | 815 | Fee | OW | TA | |
| DRY GULCH 1-36A1 | 36 | 010S | 010W | 4304730569 | 820 | Fee | OW | TA | |
| NELSON 1-31A1E | 31 | 010S | 010E | 4304730671 | 830 | Fee | OW | P | |
| ROSEMARY LLOYD 1-24A1E | 24 | 010S | 010E | 4304730707 | 840 | Fee | OW | P | |
| H D LANDY 1-30A1E | 30 | 010S | 010E | 4304730790 | 845 | Fee | OW | P | |
| WALKER 1-14A1E | 14 | 010S | 010E | 4304730805 | 855 | Fee | OW | P | |
| BOLTON 2-29A1E | 29 | 010S | 010E | 4304731112 | 900 | Fee | OW | P | |
| PRESCOTT 1-35Z1 | 35 | 010N | 010W | 4304731173 | 1425 | Fee | OW | P | |
| BISEL GURR 11-1 | 11 | 010S | 010W | 4304731213 | 8438 | Fee | OW | P | |
| UTE TRIBAL 2-22A1E | 22 | 010S | 010E | 4304731265 | 915 | Fee | OW | P | |
| L. BOLTON 1-12A1 | 12 | 010S | 010W | 4304731295 | 920 | Fee | OW | P | |
| FOWLES 1-26A1 | 26 | 010S | 010W | 4304731296 | 930 | Fee | OW | P | |
| BRADLEY 23-1 | 23 | 010S | 010W | 4304731297 | 8435 | Fee | OW | P | |
| BASTIAN 1-2A1 | 02 | 010S | 010W | 4304731373 | 736 | Fee | OW | P | |
| D R LONG 2-19A1E | 19 | 010S | 010E | 4304731470 | 9505 | Fee | OW | P | |
| O MOON 2-26Z1 | 26 | 010N | 010W | 4304731480 | 10135 | Fee | OW | P | |
| LILA D 2-25A1 | 25 | 010S | 010W | 4304731797 | 10790 | Fee | OW | P | |
| LANDY 2-30A1E | 30 | 010S | 010E | 4304731895 | 11127 | Fee | OW | P | |
| BISEL-GURR 2-11A1 | 11 | 010S | 010W | 4304735410 | 14428 | Fee | OW | P | |
| KNIGHT 16-30 | 30 | 030S | 020E | 4304738499 | 16466 | Fee | OW | P | |
| ELIASON 6-30 | 30 | 030S | 020E | 4304738500 | 16465 | Fee | OW | S | |

2/24/2010

Flying J Oil Gas Inc (N8080) to El Paso E2 Company LP (N3065)

| well_name | sec | twp | rng | api | entity | Lease | well | stat | flag |
|---|---|---|---|---|---|---|---|---|---|
| KNIGHT 14-30 | 30 | 030S | 020E | 4304738501 | 15848 | Fee | OW | P | |
| FLYING J FEE 2-12A1 | 12 | 010S | 010W | 4304739467 | 16686 | Fee | OW | P | |
| OBERHANSLY 3-11A1 | 11 | 010S | 010W | 4304739679 | | Fee | OW | APD | |
| BISEL GURR 4-11A1 | 11 | 010S | 010W | 4304739961 | 16791 | Fee | OW | P | |
| ULT 4-31 | 31 | 030S | 020E | 4304740017 | 16985 | Fee | OW | P | |
| DEEP CREEK 2-31 | 31 | 030S | 020E | 4304740026 | 16950 | Fee | OW | P | |
| DEEP CREEK 8-31 | 31 | 030S | 020E | 4304740032 | 17053 | Fee | OW | P | |
| ULT 6-31 | 31 | 030S | 020E | 4304740033 | | Fee | OW | APD | |
| ULT 12-29 | 29 | 030S | 020E | 4304740039 | 17010 | Fee | OW | P | |
| ELIASON 12-30 | 30 | 030S | 020E | 4304740040 | 17011 | Fee | OW | P | C |
| OBERHANSLY 2-2A1 | 02 | 010S | 010W | 4304740164 | | Fee | OW | APD | |
| KILLIAN 3-12A1 | 12 | 010S | 010W | 4304740226 | | State | OW | APD | |

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: Oil Well

8. WELL NAME and NUMBER: NELSON 1-31A1E

2. NAME OF OPERATOR: EL PASO E&P COMPANY, LP

9. API NUMBER: 43047306710000

3. ADDRESS OF OPERATOR: 1001 Louisiana St. , Houston, TX, 77002

PHONE NUMBER: 713 420-5038 Ext

9. FIELD and POOL or WILDCAT: BLUEBELL

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2142 FNL 1478 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

COUNTY: UINTAH

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start:<br>7/28/2011 | ✓ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: Add Perfs |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

See attached procedure.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** 08/02/2011

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Maria S. Gomez | 713 420-5038 | Sr. Regulatory Analyst |

| SIGNATURE | DATE |
|---|---|
| N/A | 7/21/2011 |

RECEIVED Jul. 21, 2011

# NELSON 1-31A1E RECOMPLETION SUMMARY

- POOH with rods and tubing.
- Set a CBP with wireline at approximately 9,600'.
- Perforate the Lower Green River from approximately 8,756' – 9,550'.
- Acidize new Lower Green River perforations above CIBP in three stages with approximately a total of 36,000 gal 15% HCl acid + additives.
- Run tubing and rods and produce the well from the Lower Green River.

7/14/2011

RECEIVED Jul. 21, 2011

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

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6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: Oil Well

8. WELL NAME and NUMBER: NELSON 1-31A1E

2. NAME OF OPERATOR: EL PASO E&P COMPANY, LP

9. API NUMBER: 43047306710000

3. ADDRESS OF OPERATOR: 1001 Louisiana St. , Houston, TX, 77002

PHONE NUMBER: 713 420-5038 Ext

9. FIELD and POOL or WILDCAT: BLUEBELL

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2142 FNL 1478 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

COUNTY: UINTAH

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ✓ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ✓ SUBSEQUENT REPORT<br>Date of Work Completion:<br>9/24/2011 | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT<br>Report Date: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: Add Perfs |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Added perfs at 8756' - 9551' and acidized. Please see attached opertions summary for further detail.

**Accepted by the Utah Division of Oil, Gas and Mining**

**FOR RECORD ONLY**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Maria S. Gomez | 713 420-5038 | Sr. Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 10/11/2011 |

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WESTERN

ALTAMONT FIELD
NELSON 1-31A1E
NELSON 1-31A1E
RECOMPLETE LAND

# Operation Summary Report

Disclaimer: Although the information contained in this report is based on sound engineering practices, the copyright owner (s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

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# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | WESTERN |
| **Representative** | |
| **Address** | |

## 1.2 Well Information

| | | | |
|---|---|---|---|
| **Well** | NELSON 1-31A1E | | |
| **Project** | ALTAMONT FIELD | **Site** | NELSON 1-31A1E |
| **Rig Name/No.** | PEAK/1100*, BASIC/1480 | **Event** | RECOMPLETE LAND |
| **Start Date** | 8/12/2011 | **End Date** | |
| **Spud Date** | 1/30/1980 | **UWI** | 031-001-S 001-E 30 |
| **Active Datum** | GROUND LEVEL @5,330.0ft (above Mean Sea Level) | | |
| **Afe No./Description** | 154703/42796 / | | |

# 2 Summary

## 2.1 Operation Summary

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 8/12/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON RIGGING UP. FILL OUT & REVIEW JSA |
| | 7:30 | 10:30 | 3.00 | MIRU | 01 | | P | | MOVE RIG FROM THE MILES 3-12B5 & RU. LD HORSE HEAD |
| | 10:30 | 12:00 | 1.50 | PRDHEQ | 18 | | P | | WORK PUMP OFF SEAT. FLUSH RODS & TBG W/ 60 BBLS 2% KCL WTR |
| | 12:00 | 15:30 | 3.50 | PRDHEQ | 39 | | P | | TOOH W/ 131 1" RODS, 141 7/8" RODS, 195 3/4" RODS, 10 WEIGHT BARS & 2" X 1-1/2" X 23' RHBC PUMP |
| | 15:30 | 18:00 | 2.50 | PRDHEQ | 18 | | P | | ND WELLHEAD. NU BOP. ATTEMPT TO RELEASE TAC. TAC WOULD NOT RELEASE. SDFN<br><br>WTR LOSS FOR DAY 140 BBLS |
| 8/13/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON RIGGING UP POWER SWIVEL. FILL OUT & REVIEW JSA |
| | 7:30 | 8:30 | 1.00 | PRDHEQ | 18 | | P | | RU POWER SWIVEL. ROTATE & WORK TBG TO RELEASE TAC. RD POWER SWIVEL |
| | 8:30 | 18:00 | 9.50 | PRDHEQ | 39 | | P | | TOOH W/ 320 JTS 2-7/8"EUE TBG, X-OVER, 68 JTS 2-7/8"EUE TBG, SEAT NIPPLE, 5" TAC & 2-3/8"EUE PBGA. RU HYDROTEST UNIT. TIH W/ 6"OD BIT, 7" CSG SCRAPER, BIT SUB, SEAT NIPPLE & 136 JTS 2-7/8"EUE TBG, TESTING ALL TBG ABOVE SEAT NIPPLE TO 8500 PSI. SDFN<br><br>WATER LOSS FOR DAY 105 BBLS 2% KCL WTR |
| 8/14/2011 | 6:00 | 6:00 | 24.00 | PRDHEQ | | | P | | NO ACTIVETY TODAY. SHUT DOWN FOR WEEKEND |
| 8/15/2011 | 6:00 | 6:00 | 24.00 | PRDHEQ | | | P | | NO ACTIVETY TODAY. SHUT DOWN FOR WEEKEND |
| 8/16/2011 | 6:00 | 7:30 | 1.50 | WBP | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON TRIPPING TBG. FILL OUT & REVIEW JSA |
| | 7:30 | 12:30 | 5.00 | WBP | 39 | | P | | CONTINUE TIH W/ CSG SCRAPER TO LINER TOP @ 10029' SLM. LD 6 JTS TBG. |
| | 12:30 | 13:30 | 1.00 | WBP | 16 | | P | | ND BOP. LAND TBG. |
| | 13:30 | 19:00 | 5.50 | WBP | 18 | | P | | TIH W/ 90 7/8" & 131 1' RODS & LD SAME. SDFN<br><br>WTR LOSS FOR DAY 168 BBLS 2% KCL WTR |
| 8/17/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ONNIPPLING UP BOP. FILL OUT & REVIEW JSA |



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## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 7:30 | 9:00 | 1.50 | PRDHEQ | 16 | | P | | ND WELLHEAD. NU BOP. |
| | 9:00 | 18:00 | 9.00 | PRDHEQ | 39 | | P | | TOOH W/ 319 JTS 2-7/8"EUE TBG, SEAT NIPPLE, BIT SUB, CSG SCRAPER & BIT. TIH W/ 2-3/8"EUE PBGA,TAC, SEAT NIPPLE, 68 JTS 2-7/8"EUE TBG, X-OVER & 319 JTS 2-7/8"EUE TBG. |
| | 18:00 | 19:30 | 1.50 | WBP | 18 | | P | | PUMP 2500 GALLON ACID JOB AS FOLLOWS, 5 BBLS 2% KCL WTR, 1 DRUM SCALE INHIBITOR, 5 BBLS 2% KCL WTR, 1 DRUM PARIFEN SOLVENT, 5 BBLS 2% KCL WTR, 2500 GALLONS 15% HCL ACID & FLUSH TO EOT W/ 65 BBLS 2% KCL WTR. HU TO CSG & PUMP 75 BBLS 2% KCL WTR DOWN CSG TO FLUSH TO BOTTOM PERF. SDFN |
| 8/18/2011 | 6:00 | 6:00 | 24.00 | | | | P | | NO ACTIVETY TODAY. CONSULTANTS ATTENDING QUARTERLY SAFETY MEETING |
| 8/19/2011 | 6:00 | 7:30 | 1.50 | INARTLT | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON NIPPLING DOWN BOP. FILL OUT & REVIEW JSA |
| | 7:30 | 9:00 | 1.50 | INARTLT | 18 | | P | | SET TAC @ 12011' IN 25K TENSION. SN @ 12008'. EOT @ 12045'. ND BOP. NU WELLHEAD |
| | 9:00 | 10:00 | 1.00 | INARTLT | 06 | | P | | FLUSH TBG W/ 60 BBLS 2% KCL WTR. |
| | 10:00 | 14:00 | 4.00 | INARTLT | 18 | | P | | RIH W/ 2" X 2-1/2" RHBC ROD PUMP, 10 1-1/2" WEIGHT RODS, 195 3/4" RODS & 51 7/8" RODS FROM DERRICK. PU 90 7/8" RODS & 131 1' RODS. SPACE OUT W/ 4' & 2' X 1' PONY RODS. PU POLISH ROD. |
| | 14:00 | 15:00 | 1.00 | INARTLT | 18 | | P | | FILL TBG W/ 30 BBLS 2% KCL WTR. STROKE TEST PUMP TO 1000 PSI. TESTED GOOD |
| | 15:00 | 17:30 | 2.50 | RDMO | 02 | | P | | HANG HORSE HEAD & ROD STRING. RD RIG & MOVE OFF LOCATION. |
| 9/4/2011 | 6:00 | 7:30 | 1.50 | MIRU | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON RIGGING UP. FILL OUT & REVIEW JSA |
| | 7:30 | 11:00 | 3.50 | MIRU | 01 | | P | | MOVE RIG FROM 1-19B3 TO LOCATION & RIG UP. REMOVE HORSE HEAD |
| | 11:00 | 12:30 | 1.50 | PRDHEQ | 18 | | P | | WORK PUMP OFF SEAT. FLUSH RODS & TBG W/ 60 BBLS 2% KCL WTR |
| | 12:30 | 16:00 | 3.50 | PRDHEQ | 39 | | P | | TOOH W/ RODS & PUMP |
| | 16:00 | 18:00 | 2.00 | PRDHEQ | 16 | | P | | ND WELLHEAD. NU BOP STACK. RELEASE TAC |
| | 18:00 | 19:00 | 1.00 | PRDHEQ | 39 | | P | | TOOH W/ 76 JTS 2-7/8"EUE TBG. SDFN |
| 9/5/2011 | 6:00 | 6:00 | 24.00 | | | | | | NO ACTIVETY TODAY. SHUT DOWN FOR LABORDAY WEEKEND |
| 9/6/2011 | 6:00 | 6:00 | 24.00 | | | | | | NO ACTIVETY TODAY. SHUT DOWN FOR LABOR DAY WEEKEND |
| 9/7/2011 | 6:00 | 7:30 | 1.50 | WBP | 28 | | P | | CREW TRAVEL AND SAFETY MEETING. (TRIPPING TUBING) |
| | 7:30 | 10:30 | 3.00 | WBP | 39 | | P | | PULL OUT OF WELL WITH 244 JOINTS 2 7/8" PIPE, 68 JOINTS 2 3/8" TUBING, LAY DOWN PRODUCTION BOTTOM HOLE ASSEMBLY. |
| | 10:30 | 12:30 | 2.00 | CHLOG | 18 | | P | | RIG UP ELECTRIC LINE TRUCK AND RUN GR/CCL LOG FROM 10, 070' TO 8,500' AND CORRELATE TO DUAL INDUCTION LOG DATED 8/01/1980 AND CORRELATE PERFS |
| | 12:30 | 17:30 | 5.00 | CHLOG | 18 | | P | | PERFORATE THE GREENRIVER FROM 8756' TO 9551' IN 20 ZONES WITH 126' OF PERFS AND 378 SHOTS, 3 SHOTS PER FOOT |
| | 17:30 | 18:00 | 0.50 | CHLOG | 18 | | P | | RIG DOWN WIRE LINE TRUCK |
| | 18:00 | 20:30 | 2.50 | INSTUB | 18 | | P | | SPOT IN CAT WALK AND 310 JOINTS( + OR - )3 1/2" TUBING SHUT DOWN FOR DAY |
| 9/8/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON PICKING UP TBG. FILL OUT & REVIEW JSA |
| | 7:30 | 15:00 | 7.50 | PRDHEQ | 24 | | P | | MU 7" PLUG & PKR. PU 303 JTS 3-1/2"EUE TBG. SET RBP @ 9562'. SET PKR @ 9270'. |



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## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 15:00 | 17:00 | 2.00 | MIRU | 01 | | P | | MIRU FRAC TECH PUMP EQUIPMENT. |
| | 17:00 | 19:00 | 2.00 | STG01 | 35 | | P | | PRESSURE TEST LINES TO 9560 PSI.PUMP 74 BBLS 2% KCL WTR TO FILL TBG. BREAK DOWN STAGE 1 PERFORATIONS @ 6200 PSI PUMPING 11.1 BPM. TREAT STAGE 1 PERFORATIONS W/ 12000 GALLONS 15% HCL ACID, FLUSH TO BOTTOM PERF + 10 BBLS. AVG RATE 15.5 BPM. AVG PSI 7700 PSI. MAX RATE 16.4 BPM. MAX PSI 8710 PSI. ISIP 3818 PSI. F G .84. 5 MINUTE 3741 PSI. 10 MINUTE 3712 PSI. 15 MINUTE 3700 PSI. |
| | 19:00 | 20:00 | 1.00 | STG01 | 16 | | P | | RU FLOW BACK LINE |
| | 20:00 | 0:00 | 4.00 | STG01 | 19 | | P | | FLOW WELL TO FLOW BACK TANK OPEN WELL @ 3700 PSI ON 16/64" CHOKE. FLOWED 4 HRS RECOVERED 129 BBLS WTR W/ TRACE OF OIL. @ 1200 MID WELL DIED. SDFN |
| 9/9/2011 | 6:00 | 7:30 | 1.50 | STG02 | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON BLEEDING OFF WELL. FILL OUT & REVIEW JSA |
| | 7:30 | 9:30 | 2.00 | STG02 | 27 | | P | | 7 HR SITP 2200 PSI. BLOW DOWN TBG. RELEASE PKR. RIH & RELEASE RBP. POOH SETING RBP @ 9220' & PKR @ 8914'. |
| | 9:30 | 10:30 | 1.00 | STG02 | 16 | | P | | RU PUMP EQUIPMENT. |
| | 10:30 | 12:00 | 1.50 | STG02 | 35 | | P | | PRESSURE TEST LINES TO 9600 PSI.PUMP 47 BBLS 2% KCL WTR TO FILL TBG. BREAK DOWN STAGE 2 PERFORATIONS @ 4564 PSI PUMPING 4.6 BPM. TREAT STAGE 2 PERFORATIONS W/ 12000 GALLONS 15% HCL ACID, FLUSH TO BOTTOM PERF + 10 BBLS. AVG RATE 17.6 BPM. AVG PSI 7680 PSI. MAX RATE 19.9 BPM. MAX PSI 8017 PSI. ISIP 3765 PSI. F G .85. 5 MINUTE 3712 PSI. 10 MINUTE 3688 PSI. 15 MINUTE 3676 PSI. |
| | 12:00 | 17:00 | 5.00 | STG02 | 19 | | P | | FLOW WELL TO FLOW BACK TANK. RECOVERED 232 BBLS WTR W/ TRACE OF OIL IN 5 HRS |
| | 17:00 | 19:00 | 2.00 | PRDHEQ | 27 | | P | | RELEASE PKR & PLUG. MOVE PLUG & PKR UP HOLE FOR STAGE 3 STIMULATION. SDFN |
| 9/10/2011 | 6:00 | 7:30 | 1.50 | STG03 | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON PUMPING ACID. FILL OUT & REVIEW JSA |
| | 7:30 | 8:30 | 1.00 | STG03 | 16 | | P | | RU FRAC TECH PUMP EQUIPMENT |
| | 8:30 | 9:30 | 1.00 | STG03 | 35 | | P | | PRESSURE TEST LINES TO 9500 PSI.PUMP 62 BBLS 2% KCL WTR TO FILL TBG. BREAK DOWN STAGE 3 PERFORATIONS @ 3465 PSI PUMPING 11.1 BPM. TREAT STAGE 3 PERFORATIONS W/ 12000 GALLONS 15% HCL ACID,USING 264 BIO BALLS FOR DIVERSION. FLUSH TO BOTTOM PERF + 10 BBLS. AVG RATE 20.1 BPM. AVG PSI 7140 PSI. MAX RATE 24.4 BPM. MAX PSI 7266 PSI. ISIP 1765 PSI. F G .63. 5 MINUTE 590 PSI. 10 MINUTE 0 PSI |
| | 9:30 | 9:30 | 0.00 | STG03 | 16 | | P | | RD FRAC TECH PUMP EQUIPMENT |
| | 9:30 | 16:00 | 6.50 | PRDHEQ | 24 | | P | | TOOH LATING DOWN 3-1/2" TBG & PACKER & PLUG |
| | 16:00 | 19:00 | 3.00 | PRDHEQ | 25 | | P | | TIH W/ 2-3/8"EUE BULL PLUG, 2 JTS 2-3/8"EUE TBG, 3-1/2" PBGA, SEAT NIPPLE, 7 JTS 2-3/8"EUE TBG, 5" TAC, 48 JTS 2-3/8"EUE TBG, X-OVER & 130 JTS 2-7/8"EUE TBG. SDFN |
| | 19:00 | 19:00 | 0.00 | | | | | | |
| 9/11/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | TRAVEL TO LOCATION. HOLD SAFETY MEETING ON BLEEDING OFF TBG |
| | 7:30 | 12:30 | 5.00 | INSTUB | 25 | | P | | SITP 550. SICP 500 PSI. BLEED OFF TBG & CSG. CONTINUE TIH W/ PRODUCTION TBG. ND BOP. SET TAC @ 11431' IN 25K TENSION. SN @ 11566', EOT @ 11670' |
| | 12:30 | 13:30 | 1.00 | INARTLT | 06 | | P | | FLUSH TBG W/ 65 BBLS 2% KCL WTR |
| | 13:30 | 17:00 | 3.50 | INARTLT | 18 | | P | | RIH W/ 2-1/2" X 1-1/2" ROD PUMP & ROD STRING AS PER ROD STAR. |
| | 17:00 | 7:00 | | INARTLT | 18 | | P | | SEAT & SPACE OUT PUMP. FILL TBG W/ 37 BBLS 2% KCL WTR. STROKE TEST PUMP TO 1000 PSI. OK. HANG HORSE HEAD & ROD STRING. PWOP. |



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## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD From (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 9/23/2011 | 16:00 | 17:00 | 1.00 | MIRU | 01 | | P | | MOVE FROM MONSON 1-21A3 |
| | 17:00 | 17:30 | 0.50 | MIRU | 01 | | P | | SPOT RIG AND SHUT DOWN FOR DAY |
| 9/24/2011 | 6:00 | 7:30 | 1.50 | MIRU | 28 | | P | | CREW TRAVEL, SAFETY MEETING, ( RIGGING UP AND PROPER ROD TONG USAGE) |
| | 7:30 | 10:00 | 2.50 | PRDHEQ | 18 | | P | | PUMP 60 BBLS 2% KCL DOWN B/S WHILE RIGGING UP AND UNSEATING PUMP |
| | 10:00 | 12:00 | 2.00 | PRDHEQ | 18 | | P | | FLUSH TUBING WITH 60 BBLS 2% KCL, RESEAT PUMP AND FILL AND TEST WITH 10 BBLS. TEST GOOD |
| | 12:00 | 15:30 | 3.50 | PRDHEQ | 39 | | P | | LAY DOWN POLISH ROD, AND ROD SUBS, PULL OUT OF HOLE WITH 124-1" RODS, 138-7/8" RODS, 190-3/4" RODS, LAY DOWN 10- 1 1/2" WEIGHT BARS AND 2" X 1 1/2" X 28' ROD PUMP ( PUMP WAS SCALED UP AND STUCK OPEN) |
| | 15:30 | 16:30 | 1.00 | PRDHEQ | 18 | | P | | FLUSH TUBING WITH 60 BARRELS 2% KCL |
| | 16:30 | 18:30 | 2.00 | PRDHEQ | 39 | | P | | PICK UP 2" X 1 1/2" X 30' RHBC WEATHERFORD PUMP, NO TAP TOOL, 10- 1 1/2" WEIGHT BARS, AND 30 3/4' RODS SHUT WELL IN SHUT DOWN FOR DAY<br><br>225 BBLS 2% KCL<br>66 GALLONS DIESEL<br>175 GALLONS PROPANE |
| 9/25/2011 | 6:00 | 7:30 | 1.50 | PRDHEQ | 28 | | P | | CREW TRAVEL, SAFETY MEETING ( TRIPPING RODS AND HANGING HORSES HEAD) |
| | 7:30 | 10:00 | 2.50 | PRDHEQ | 39 | | P | | TRIP MIN HOLE WITH 160- 3/4" SLICK RODS (TTL OF 190 3/4" RODS IN HOLE) 138-7/8" SLICK RODS, 124-1" SLICK RODS AND SPACE PUMP WITH 20' OF ROD SUBS |
| | 10:00 | 11:00 | 1.00 | PRDHEQ | 18 | | P | | FILL AND TEST PUMP AND TUBING WITH 35 BBLS 2% KCL TO 1000 PSI. TEST GOOD. GOOD PUMP ACTION |
| | 11:00 | 12:00 | 1.00 | RDMO | 02 | | P | | HANG HORSES HEAD AND RODS. RIG DOWN LEAVE RIG ON LOCATION LAST DAY ON JOB.<br>195 BBLS 2% KCL<br>30 GALLONS DIESEL<br>25 GALLONS PROPANE |



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Division of Oil, Gas and Mining

# OPERATOR CHANGE WORKSHEET (for state use only)

**ROUTING**
CDW

**X - Change of Operator (Well Sold)** Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **6/1/2012**

| **FROM:** (Old Operator): | **TO:** ( New Operator): |
|---|---|
| N3065- El Paso E&P Company, L.P. | N3850- EP Energy E&P Company, L.P. |
| 1001 Louisiana Street | 1001 Louisiana Street |
| Houston, TX. 77002 | Houston, TX. 77002 |
| Phone: 1 (713) 997-5038 | Phone: 1 (713) 997-5038 |

**CA No.** **Unit:** N/A

| WELL NAME | SEC | TWN | RNG | API NO | ENTITY NO | LEASE TYPE | WELL TYPE | WELL STATUS |
|---|---|---|---|---|---|---|---|---|
| See Attached List | | | | | | | | |

## OPERATOR CHANGES DOCUMENTATION

**Enter date after each listed item is completed**

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 6/25/2012
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 6/25/2012
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 6/27/2012

4a. Is the new operator registered in the State of Utah: _____ Business Number: 2114377-0181

5a. (R649-9-2)Waste Management Plan has been received on: Yes

5b. Inspections of LA PA state/fee well sites complete on: N/A

5c. Reports current for Production/Disposition & Sundries on: 6/25/2012

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM N/A BIA Not Received
7. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: N/A
8. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: N/A
9. **Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: Second Oper Chg

## DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/29/2012
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/29/2012
3. Bond information entered in RBDMS on: 6/29/2012
4. Fee/State wells attached to bond in RBDMS on: 6/29/2012
5. Injection Projects to new operator in RBDMS on: 6/29/2012
6. Receipt of Acceptance of Drilling Procedures for APD/New on: N/A

## BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: 103601420
2. Indian well(s) covered by Bond Number: 103601473

3a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number 400JU0705

3b. The **FORMER** operator has requested a release of liability from their bond on: N/A

## LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 6/29/2012

**COMMENTS:**

Disposal and Injections wells will be moved when UIC 5 is received.

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: Multiple Leases

# SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER _____

8. WELL NAME and NUMBER: See Attached

2. NAME OF OPERATOR: El Paso E&P Company, L.P. Attn: Maria Gomez

9. API NUMBER:

3. ADDRESS OF OPERATOR: 1001 Louisiana CITY Houston STATE TX ZIP 77002 PHONE NUMBER: (713) 997-5038

10. FIELD AND POOL, OR WILDCAT: See Attached

4. LOCATION OF WELL

FOOTAGES AT SURFACE: See Attached

COUNTY:

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☑ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☐ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☑ OTHER: Change of Name/Operator |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Please be advised that El Paso E&P Company, L.P. (current Operator) has changed names to EP Energy E&P Company, L.P. (new Operator) effective June 1, 2012 and that EP Energy E&P Company, L.P. is considered the new operator of the attached well locations.

EP Energy E&P Company, L.P. is responsible under the terms and conditions of the lease(s) for the operations conducted upon leased lands. Bond coverage is provided by the State of Utah Statewide Blanket Bond No. 400JU0705, Bureau of Land Management Nationwide Bond No. 103601420, and Bureau of Indian Affairs Nationwide Bond No. 103601473.

Frank W. Falleri
Vice President
El Paso E&P Company, L.P.

Frank W. Falleri
Sr. Vice President
EP Energy E&P Company, L.P.

NAME (PLEASE PRINT) Maria S. Gomez TITLE Principal Regulatory Analyst

SIGNATURE Maria S. Gomez DATE 6/22/2012

(This space for State use only)

APPROVED 6/29/2012
Rachel Medina
Division of Oil, Gas and Mining
~~Earlene Russell, Engineering Technician~~
Rachel Medina

RECEIVED
JUN 25 2012
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

El Paso E1 Company, L.P. (N3065) to EP Energy E1 Company, L.P. (N3850) effective 6/1/2012

| Well Name | Sec | TWP | RNG | API Number | Entity | Lease Type | Well Type | Well Status | Conf |
|---|---|---|---|---|---|---|---|---|---|
| DWR 3-17C6 | 17 | 030S | 060W | 4301350070 | | 14204621118 | OW | APD | C |
| LAKEWOOD ESTATES 3-33C6 | 33 | 030S | 060W | 4301350127 | | 1420H621328 | OW | APD | C |
| YOUNG 3-15A3 | 15 | 010S | 030W | 4301350122 | | FEE | OW | APD | C |
| WHITING 4-1A2 | 01 | 010S | 020W | 4301350424 | | Fee | OW | APD | C |
| EL PASO 4-34A4 | 34 | 010S | 040W | 4301350720 | | Fee | OW | APD | C |
| YOUNG 2-2B1 | 02 | 020S | 010W | 4304751180 | | FEE | OW | APD | C |
| LAKE FORK RANCH 3-10B4 | 10 | 020S | 040W | 4301350712 | 18221 | Fee | OW | DRL | C |
| LAKE FORK RANCH 4-26B4 | 26 | 020S | 040W | 4301350714 | 18432 | Fee | OW | DRL | C |
| LAKE FORK RANCH 4-24B4 | 24 | 020S | 040W | 4301350717 | 18315 | Fee | OW | DRL | C |
| Cook 4-14B3 | 14 | 020S | 030W | 4301351162 | 18449 | Fee | OW | DRL | C |
| Peterson 4-22C6 | 22 | 030S | 060W | 4301351163 | 18518 | Fee | OW | DRL | C |
| Lake Fork Ranch 4-14B4 | 14 | 020S | 040W | 4301351240 | 99999 | Fee | OW | DRL | C |
| Melesco 4-20C6 | 20 | 030S | 060W | 4301351241 | 99999 | Fee | OW | DRL | C |
| Peck 3-13B5 | 13 | 020S | 050W | 4301351364 | 99999 | Fee | OW | DRL | C |
| Jensen 2-9C4 | 09 | 030S | 040W | 4301351375 | 99999 | Fee | OW | DRL | C |
| El Paso 3-5C4 | 05 | 030S | 040W | 4301351376 | 18563 | Fee | OW | DRL | C |
| ULT 6-31 | 31 | 030S | 020E | 4304740033 | | FEE | OW | LA | |
| OBERHANSLY 2-2A1 | 02 | 010S | 010W | 4304740164 | | FEE | OW | LA | |
| DWR 3-15C6 | 15 | 030S | 060W | 4301351433 | | 14-20-H62-4724 | OW | NEW | C |
| Lake Fork Ranch 5-23B4 | 23 | 020S | 040W | 4301350739 | | Fee | OW | NEW | |
| Duchesne Land 4-10C5 | 10 | 030S | 050W | 4301351262 | | Fee | OW | NEW | C |
| Cabinland 4-9B3 | 09 | 020S | 030W | 4301351374 | | Fee | OW | NEW | C |
| Layton 4-2B3 | 02 | 020S | 030W | 4301351389 | | Fee | OW | NEW | C |
| Golinski 4-24B5 | 24 | 020S | 050W | 4301351404 | | Fee | OW | NEW | C |
| Alba 1-21C4 | 21 | 030S | 040W | 4301351460 | | Fee | OW | NEW | C |
| Allison 4-19C5 | 19 | 030S | 050W | 4301351466 | | Fee | OW | NEW | C |
| Seeley 4-3B3 | 03 | 020S | 030W | 4301351486 | | Fee | OW | NEW | C |
| Allen 4-25B5 | 25 | 020S | 050W | 4301351487 | | Fee | OW | NEW | C |
| Hewett 2-6C4 | 06 | 030S | 040W | 4301351489 | | Fee | OW | NEW | C |
| Young 2-7C4 | 07 | 030S | 040W | 4301351500 | | Fee | OW | NEW | C |
| Brighton 3-31A1E | 31 | 010S | 010E | 4304752471 | | Fee | OW | NEW | C |
| Hamaker 3-25A1 | 25 | 010S | 010W | 4304752491 | | Fee | OW | NEW | C |
| Bolton 3-29A1E | 29 | 010S | 010E | 4304752871 | | Fee | OW | NEW | C |
| HORROCKS 5-20A1 | 20 | 010S | 010W | 4301334280 | 17378 | FEE | OW | OPS | C |
| DWR 3-19C6 | 19 | 030S | 060W | 4301334263 | 17440 | 14-20-462-1120 | OW | P | |
| DWR 3-22C6 | 22 | 030S | 060W | 4301334106 | 17298 | 14-20-462-1131 | OW | P | |
| DWR 3-28C6 | 28 | 030S | 060W | 4301334264 | 17360 | 14-20-462-1323 | OW | P | |
| UTE 1-7A2 | 07 | 010S | 020W | 4301330025 | 5850 | 14-20-462-811 | OW | P | |
| UTE 2-17C6 | 17 | 030S | 060W | 4301331033 | 10115 | 14-20-H62-1118 | OW | P | |
| WLR TRIBAL 2-19C6 | 19 | 030S | 060W | 4301331035 | 10250 | 14-20-H62-1120 | OW | P | |
| CEDAR RIM 10-A-15C6 | 15 | 030S | 060W | 4301330615 | 6420 | 14-20-H62-1128 | OW | P | |
| CEDAR RIM 12A | 28 | 030S | 060W | 4301331173 | 10672 | 14-20-H62-1323 | OW | P | |
| UTE-FEE 2-33C6 | 33 | 030S | 060W | 4301331123 | 10365 | 14-20-H62-1328 | OW | P | |
| TAYLOR 3-34C6 | 34 | 030S | 060W | 4301350200 | 17572 | 1420H621329 | OW | P | |
| BAKER UTE 2-34C6 | 34 | 030S | 060W | 4301332634 | 14590 | 14-20-H62-1329 | OW | P | |
| UTE 3-35Z2 K | 35 | 010N | 020W | 4301331133 | 10483 | 14-20-H62-1614 | OW | P | |
| UTE 1-32Z2 | 32 | 010N | 020W | 4301330379 | 1915 | 14-20-H62-1702 | OW | P | |
| UTE TRIBAL 1-33Z2 | 33 | 010N | 020W | 4301330334 | 1851 | 14-20-H62-1703 | OW | P | |
| UTE 2-33Z2 | 33 | 010N | 020W | 4301331111 | 10451 | 14-20-H62-1703 | OW | P | |
| UTE TRIBAL 2-34Z2 | 34 | 010N | 020W | 4301331167 | 10668 | 14-20-H62-1704 | OW | P | |
| LAKE FORK RANCH 3-13B4 | 13 | 020S | 040W | 4301334262 | 17439 | 14-20-H62-1743 | OW | P | |
| UTE 1-28B4 | 28 | 020S | 040W | 4301330242 | 1796 | 14-20-H62-1745 | OW | P | |
| UTE 1-34A4 | 34 | 010S | 040W | 4301330076 | 1585 | 14-20-H62-1774 | OW | P | |
| UTE 1-36A4 | 36 | 010S | 040W | 4301330069 | 1580 | 14-20-H62-1793 | OW | P | |
| UTE 1-1B4 | 01 | 020S | 040W | 4301330129 | 1700 | 14-20-H62-1798 | OW | P | |
| UTE 1-31A2 | 31 | 010S | 020W | 4301330401 | 1925 | 14-20-H62-1801 | OW | P | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| UTE 1-25A3 | 25 | 010S | 030W | 4301330370 | 1920 | 14-20-H62-1802 | OW | P | |
| UTE 2-25A3 | 25 | 010S | 030W | 4301331343 | 11361 | 14-20-H62-1802 | OW | P | |
| UTE 1-26A3 | 26 | 010S | 030W | 4301330348 | 1890 | 14-20-H62-1803 | OW | P | |
| UTE 2-26A3 | 26 | 010S | 030W | 4301331340 | 11349 | 14-20-H62-1803 | OW | P | |
| UTE TRIBAL 4-35A3 | 35 | 010S | 030W | 4301350274 | 18009 | 1420H621804 | OW | P | C |
| UTE 2-35A3 | 35 | 010S | 030W | 4301331292 | 11222 | 14-20-H62-1804 | OW | P | |
| UTE 3-35A3 | 35 | 010S | 030W | 4301331365 | 11454 | 14-20-H62-1804 | OW | P | |
| UTE 1-6B2 | 06 | 020S | 020W | 4301330349 | 1895 | 14-20-H62-1807 | OW | P | |
| UTE 2-6B2 | 06 | 020S | 020W | 4301331140 | 11190 | 14-20-H62-1807 | OW | P | |
| UTE TRIBAL 3-6B2 | 06 | 020S | 020W | 4301350273 | 18008 | 14-20-H62-1807 | OW | P | C |
| POWELL 4-19A1 | 19 | 010S | 010W | 4301330071 | 8302 | 14-20-H62-1847 | OW | P | |
| COLTHARP 1-27Z1 | 27 | 010N | 010W | 4301330151 | 4700 | 14-20-H62-1933 | OW | P | |
| UTE 1-8A1E | 08 | 010S | 010E | 4304730173 | 1846 | 14-20-H62-2147 | OW | P | |
| UTE TRIBE 1-31 | 31 | 010N | 020W | 4301330278 | 4755 | 14-20-H62-2421 | OW | P | |
| UTE 1-28B6X | 28 | 020S | 060W | 4301330510 | 11165 | 14-20-H62-2492 | OW | P | |
| RINKER 2-21B5 | 21 | 020S | 050W | 4301334166 | 17299 | 14-20-H62-2508 | OW | P | |
| MURDOCK 2-34B5 | 34 | 020S | 050W | 4301331132 | 10456 | 14-20-H62-2511 | OW | P | |
| UTE 1-35B6 | 35 | 020S | 060W | 4301330507 | 2335 | 14-20-H62-2531 | OW | P | |
| UTE TRIBAL 1-17A1E | 17 | 010S | 010E | 4304730829 | 860 | 14-20-H62-2658 | OW | P | |
| UTE 2-17A1E | 17 | 010S | 010E | 4304737831 | 16709 | 14-20-H62-2658 | OW | P | |
| UTE TRIBAL 1-27A1E | 27 | 010S | 010E | 4304730421 | 800 | 14-20-H62-2662 | OW | P | |
| UTE TRIBAL 1-35A1E | 35 | 010S | 010E | 4304730286 | 795 | 14-20-H62-2665 | OW | P | |
| UTE TRIBAL 1-15A1E | 15 | 010S | 010E | 4304730820 | 850 | 14-20-H62-2717 | OW | P | |
| UTE TRIBAL P-3B1E | 03 | 020S | 010E | 4304730190 | 4536 | 14-20-H62-2873 | OW | P | |
| UTE TRIBAL 1-22A1E | 22 | 010S | 010E | 4304730429 | 810 | 14-20-H62-3103 | OW | P | |
| B H UTE 1-35C6 | 35 | 030S | 060W | 4301330419 | 10705 | 14-20-H62-3436 | OW | P | |
| BH UTE 2-35C6 | 35 | 030S | 060W | 4301332790 | 15802 | 14-20-H62-3436 | OW | P | |
| MCFARLANE 1-4D6 | 04 | 040S | 060W | 4301331074 | 10325 | 14-20-H62-3452 | OW | P | |
| UTE TRIBAL 1-11D6 | 11 | 040S | 060W | 4301330482 | 6415 | 14-20-H62-3454 | OW | P | |
| CARSON 2-36A1 | 36 | 010S | 010W | 4304731407 | 737 | 14-20-H62-3806 | OW | P | |
| UTE 2-14C6 | 14 | 030S | 060W | 4301330775 | 9133 | 14-20-H62-3809 | OW | P | |
| DWR 3-14C6 | 14 | 030S | 060W | 4301334003 | 17092 | 14-20-H62-3809 | OW | P | |
| THE PERFECT "10" 1-10A1 | 10 | 010S | 010W | 4301330935 | 9461 | 14-20-H62-3855 | OW | P | |
| BADGER-SAM H U MONGUS 1-15A1 | 15 | 010S | 010W | 4301330949 | 9462 | 14-20-H62-3860 | OW | P | |
| MAXIMILLIAN-UTE 14-1 | 14 | 010S | 030W | 4301330726 | 8437 | 14-20-H62-3868 | OW | P | |
| FRED BASSETT 1-22A1 | 22 | 010S | 010W | 4301330781 | 9460 | 14-20-H62-3880 | OW | P | |
| UTE TRIBAL 1-30Z1 | 30 | 010N | 010W | 4301330813 | 9405 | 14-20-H62-3910 | OW | P | |
| UTE LB 1-13A3 | 13 | 010S | 030W | 4301330894 | 9402 | 14-20-H62-3980 | OW | P | |
| UTE 2-22B6 | 22 | 020S | 060W | 4301331444 | 11641 | 14-20-H62-4614 | OW | P | |
| UINTA OURAY 1-1A3 | 01 | 010S | 030W | 4301330132 | 5540 | 14-20-H62-4664 | OW | P | |
| UTE 1-6D6 | 06 | 040S | 060W | 4301331696 | 12058 | 14-20-H62-4752 | OW | P | |
| UTE 2-11D6 | 11 | 040S | 060W | 4301350179 | 17667 | 1420H624801 | OW | P | |
| UTE 1-15D6 | 15 | 040S | 060W | 4301330429 | 10958 | 14-20-H62-4824 | OW | P | |
| UTE 2-15D6 | 15 | 040S | 060W | 4301334026 | 17193 | 14-20-H62-4824 | OW | P | |
| HILL 3-24C6 | 24 | 030S | 060W | 4301350293 | 18020 | 1420H624866 | OW | P | C |
| BARCLAY UTE 2-24C6R | 24 | 030S | 060W | 4301333730 | 16385 | 14-20-H62-4866 | OW | P | |
| BROTHERSON 1-2B4 | 02 | 020S | 040W | 4301330062 | 1570 | FEE | OW | P | |
| BOREN 1-24A2 | 24 | 010S | 020W | 4301330084 | 5740 | FEE | OW | P | |
| FARNSWORTH 1-13B5 | 13 | 020S | 050W | 4301330092 | 1610 | FEE | OW | P | |
| BROADHEAD 1-21B6 | 21 | 020S | 060W | 4301330100 | 1595 | FEE | OW | P | |
| ASAY E J 1-20A1 | 20 | 010S | 010W | 4301330102 | 8304 | FEE | OW | P | |
| HANSON TRUST 1-5B3 | 05 | 020S | 030W | 4301330109 | 1635 | FEE | OW | P | |
| ELLSWORTH 1-8B4 | 08 | 020S | 040W | 4301330112 | 1655 | FEE | OW | P | |
| ELLSWORTH 1-9B4 | 09 | 020S | 040W | 4301330118 | 1660 | FEE | OW | P | |
| ELLSWORTH 1-17B4 | 17 | 020S | 040W | 4301330126 | 1695 | FEE | OW | P | |
| CHANDLER 1-5B4 | 05 | 020S | 040W | 4301330140 | 1685 | FEE | OW | P | |
| HANSON 1-32A3 | 32 | 010S | 030W | 4301330141 | 1640 | FEE | OW | P | |
| JESSEN 1-17A4 | 17 | 010S | 040W | 4301330173 | 4725 | FEE | OW | P | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| JENKINS 1-1B3 | 01 | 020S | 030W | 4301330175 | 1790 | FEE | OW | P | |
| GOODRICH 1-2B3 | 02 | 020S | 030W | 4301330182 | 1765 | FEE | OW | P | |
| ELLSWORTH 1-19B4 | 19 | 020S | 040W | 4301330183 | 1760 | FEE | OW | P | |
| DOYLE 1-10B3 | 10 | 020S | 030W | 4301330187 | 1810 | FEE | OW | P | |
| JOS. SMITH 1-17C5 | 17 | 030S | 050W | 4301330188 | 5510 | FEE | OW | P | |
| RUDY 1-11B3 | 11 | 020S | 030W | 4301330204 | 1820 | FEE | OW | P | |
| CROOK 1-6B4 | 06 | 020S | 040W | 4301330213 | 1825 | FEE | OW | P | |
| HUNT 1-21B4 | 21 | 020S | 040W | 4301330214 | 1840 | FEE | OW | P | |
| LAWRENCE 1-30B4 | 30 | 020S | 040W | 4301330220 | 1845 | FEE | OW | P | |
| YOUNG 1-29B4 | 29 | 020S | 040W | 4301330246 | 1791 | FEE | OW | P | |
| GRIFFITHS 1-33B4 | 33 | 020S | 040W | 4301330288 | 4760 | FEE | OW | P | |
| POTTER 1-2B5 | 02 | 020S | 050W | 4301330293 | 1826 | FEE | OW | P | |
| BROTHERSON 1-26B4 | 26 | 020S | 040W | 4301330336 | 1856 | FEE | OW | P | |
| SADIE BLANK 1-33Z1 | 33 | 010N | 010W | 4301330355 | 765 | FEE | OW | P | |
| POTTER 1-24B5 | 24 | 020S | 050W | 4301330356 | 1730 | FEE | OW | P | |
| WHITEHEAD 1-22A3 | 22 | 010S | 030W | 4301330357 | 1885 | FEE | OW | P | |
| CHASEL MILLER 2-1A2 | 01 | 010S | 020W | 4301330360 | 5830 | FEE | OW | P | |
| ELDER 1-13B2 | 13 | 020S | 020W | 4301330366 | 1905 | FEE | OW | P | |
| BROTHERSON 2-10B4 | 10 | 020S | 040W | 4301330443 | 1615 | FEE | OW | P | |
| FARNSWORTH 2-7B4 | 07 | 020S | 040W | 4301330470 | 1935 | FEE | OW | P | |
| TEW 1-15A3 | 15 | 010S | 030W | 4301330529 | 1945 | FEE | OW | P | |
| UTE FEE 2-20C5 | 20 | 030S | 050W | 4301330550 | 4527 | FEE | OW | P | |
| HOUSTON 1-34Z1 | 34 | 010N | 010W | 4301330566 | 885 | FEE | OW | P | |
| GALLOWAY 1-18B1 | 18 | 020S | 010W | 4301330575 | 2365 | FEE | OW | P | |
| SMITH 1-31B5 | 31 | 020S | 050W | 4301330577 | 1955 | FEE | OW | P | |
| LEBEAU 1-34A1 | 34 | 010S | 010W | 4301330590 | 1440 | FEE | OW | P | |
| LINMAR 1-19B2 | 19 | 020S | 020W | 4301330600 | 9350 | FEE | OW | P | |
| WISSE 1-28Z1 | 28 | 010N | 010W | 4301330609 | 905 | FEE | OW | P | |
| POWELL 1-21B1 | 21 | 020S | 010W | 4301330621 | 910 | FEE | OW | P | |
| HANSEN 1-24B3 | 24 | 020S | 030W | 4301330629 | 2390 | FEE | OW | P | |
| OMAN 2-4B4 | 04 | 020S | 040W | 4301330645 | 9125 | FEE | OW | P | |
| DYE 1-25Z2 | 25 | 010N | 020W | 4301330659 | 9111 | FEE | OW | P | |
| H MARTIN 1-21Z1 | 21 | 010N | 010W | 4301330707 | 925 | FEE | OW | P | |
| JENSEN 1-29Z1 | 29 | 010N | 010W | 4301330725 | 9110 | FEE | OW | P | |
| CHASEL 2-17A1 V | 17 | 010S | 010W | 4301330732 | 9112 | FEE | OW | P | |
| BIRCHELL 1-27A1 | 27 | 010S | 010W | 4301330758 | 940 | FEE | OW | P | |
| CHRISTENSEN 2-8B3 | 08 | 020S | 030W | 4301330780 | 9355 | FEE | OW | P | |
| LAMICQ 2-5B2 | 05 | 020S | 020W | 4301330784 | 2302 | FEE | OW | P | |
| BROTHERSON 2-14B4 | 14 | 020S | 040W | 4301330815 | 10450 | FEE | OW | P | |
| MURRAY 3-2A2 | 02 | 010S | 020W | 4301330816 | 9620 | FEE | OW | P | |
| HORROCKS 2-20A1 V | 20 | 010S | 010W | 4301330833 | 8301 | FEE | OW | P | |
| BROTHERSON 2-2B4 | 02 | 020S | 040W | 4301330855 | 8420 | FEE | OW | P | |
| ELLSWORTH 2-8B4 | 08 | 020S | 040W | 4301330898 | 2418 | FEE | OW | P | |
| OMAN 2-32A4 | 32 | 010S | 040W | 4301330904 | 10045 | FEE | OW | P | |
| BELCHER 2-33B4 | 33 | 020S | 040W | 4301330907 | 9865 | FEE | OW | P | |
| BROTHERSON 2-35B5 | 35 | 020S | 050W | 4301330908 | 9404 | FEE | OW | P | |
| HORROCKS 2-4A1 T | 04 | 010S | 010W | 4301330954 | 9855 | FEE | OW | P | |
| JENSEN 2-29A5 | 29 | 010S | 050W | 4301330974 | 10040 | FEE | OW | P | |
| UTE 2-34A4 | 34 | 010S | 040W | 4301330978 | 10070 | FEE | OW | P | |
| CHANDLER 2-5B4 | 05 | 020S | 040W | 4301331000 | 10075 | FEE | OW | P | |
| BABCOCK 2-12B4 | 12 | 020S | 040W | 4301331005 | 10215 | FEE | OW | P | |
| BADGER MR BOOM BOOM 2-29A1 | 29 | 010S | 010W | 4301331013 | 9463 | FEE | OW | P | |
| BLEAZARD 2-18B4 | 18 | 020S | 040W | 4301331025 | 1566 | FEE | OW | P | |
| BROADHEAD 2-32B5 | 32 | 020S | 050W | 4301331036 | 10216 | FEE | OW | P | |
| ELLSWORTH 2-16B4 | 16 | 020S | 040W | 4301331046 | 10217 | FEE | OW | P | |
| RUST 3-4B3 | 04 | 020S | 030W | 4301331070 | 1576 | FEE | OW | P | |
| HANSON TRUST 2-32A3 | 32 | 010S | 030W | 4301331072 | 1641 | FEE | OW | P | |
| BROTHERSON 2-11B4 | 11 | 020S | 040W | 4301331078 | 1541 | FEE | OW | P | |

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|---|---|---|---|---|---|---|---|---|---|
| HANSON TRUST 2-5B3 | 05 | 020S | 030W | 4301331079 | 1636 | FEE | OW | P | |
| BROTHERSON 2-15B4 | 15 | 020S | 040W | 4301331103 | 1771 | FEE | OW | P | |
| MONSEN 2-27A3 | 27 | 010S | 030W | 4301331104 | 1746 | FEE | OW | P | |
| ELLSWORTH 2-19B4 | 19 | 020S | 040W | 4301331105 | 1761 | FEE | OW | P | |
| HUNT 2-21B4 | 21 | 020S | 040W | 4301331114 | 1839 | FEE | OW | P | |
| JENKINS 2-1B3 | 01 | 020S | 030W | 4301331117 | 1792 | FEE | OW | P | |
| POTTER 2-24B5 | 24 | 020S | 050W | 4301331118 | 1731 | FEE | OW | P | |
| POWELL 2-13A2 K | 13 | 010S | 020W | 4301331120 | 8306 | FEE | OW | P | |
| JENKINS 2-12B3 | 12 | 020S | 030W | 4301331121 | 10459 | FEE | OW | P | |
| MURDOCK 2-26B5 | 26 | 020S | 050W | 4301331124 | 1531 | FEE | OW | P | |
| BIRCH 3-27B5 | 27 | 020S | 050W | 4301331126 | 1783 | FEE | OW | P | |
| ROBB 2-29B5 | 29 | 020S | 050W | 4301331130 | 10454 | FEE | OW | P | |
| LAKE FORK 2-13B4 | 13 | 020S | 040W | 4301331134 | 10452 | FEE | OW | P | |
| DUNCAN 3-1A2 K | 01 | 010S | 020W | 4301331135 | 10484 | FEE | OW | P | |
| HANSON 2-9B3 | 09 | 020S | 030W | 4301331136 | 10455 | FEE | OW | P | |
| ELLSWORTH 2-9B4 | 09 | 020S | 040W | 4301331138 | 10460 | FEE | OW | P | |
| UTE 2-31A2 | 31 | 010S | 020W | 4301331139 | 10458 | FEE | OW | P | |
| POWELL 2-19A1 K | 19 | 010S | 010W | 4301331149 | 8303 | FEE | OW | P | |
| CEDAR RIM 8-A | 22 | 030S | 060W | 4301331171 | 10666 | FEE | OW | P | |
| POTTER 2-6B4 | 06 | 020S | 040W | 4301331249 | 11038 | FEE | OW | P | |
| MILES 2-1B5 | 01 | 020S | 050W | 4301331257 | 11062 | FEE | OW | P | |
| MILES 2-3B3 | 03 | 020S | 030W | 4301331261 | 11102 | FEE | OW | P | |
| MONSEN 2-22A3 | 22 | 010S | 030W | 4301331265 | 11098 | FEE | OW | P | |
| WRIGHT 2-13B5 | 13 | 020S | 050W | 4301331267 | 11115 | FEE | OW | P | |
| TODD 2-21A3 | 21 | 010S | 030W | 4301331296 | 11268 | FEE | OW | P | |
| WEIKART 2-29B4 | 29 | 020S | 040W | 4301331298 | 11332 | FEE | OW | P | |
| YOUNG 2-15A3 | 15 | 010S | 030W | 4301331301 | 11344 | FEE | OW | P | |
| CHRISTENSEN 2-29A4 | 29 | 010S | 040W | 4301331303 | 11235 | FEE | OW | P | |
| BLEAZARD 2-28B4 | 28 | 020S | 040W | 4301331304 | 11433 | FEE | OW | P | |
| REARY 2-17A3 | 17 | 010S | 030W | 4301331318 | 11251 | FEE | OW | P | |
| LAZY K 2-11B3 | 11 | 020S | 030W | 4301331352 | 11362 | FEE | OW | P | |
| LAZY K 2-14B3 | 14 | 020S | 030W | 4301331354 | 11452 | FEE | OW | P | |
| MATTHEWS 2-13B2 | 13 | 020S | 020W | 4301331357 | 11374 | FEE | OW | P | |
| LAKE FORK 3-15B4 | 15 | 020S | 040W | 4301331358 | 11378 | FEE | OW | P | |
| STEVENSON 3-29A3 | 29 | 010S | 030W | 4301331376 | 11442 | FEE | OW | P | |
| MEEKS 3-8B3 | 08 | 020S | 030W | 4301331377 | 11489 | FEE | OW | P | |
| ELLSWORTH 3-20B4 | 20 | 020S | 040W | 4301331389 | 11488 | FEE | OW | P | |
| DUNCAN 5-13A2 | 13 | 010S | 020W | 4301331516 | 11776 | FEE | OW | P | |
| OWL 3-17C5 | 17 | 030S | 050W | 4301332112 | 12476 | FEE | OW | P | |
| BROTHERSON 2-24 B4 | 24 | 020S | 040W | 4301332695 | 14652 | FEE | OW | P | |
| BODRERO 2-15B3 | 15 | 020S | 030W | 4301332755 | 14750 | FEE | OW | P | |
| BROTHERSON 2-25B4 | 25 | 020S | 040W | 4301332791 | 15044 | FEE | OW | P | |
| CABINLAND 2-16B3 | 16 | 020S | 030W | 4301332914 | 15236 | FEE | OW | P | |
| KATHERINE 3-29B4 | 29 | 020S | 040W | 4301332923 | 15331 | FEE | OW | P | |
| SHRINERS 2-10C5 | 10 | 030S | 050W | 4301333008 | 15908 | FEE | OW | P | |
| BROTHERSON 2-26B4 | 26 | 020S | 040W | 4301333139 | 17047 | FEE | OW | P | |
| MORTENSEN 4-32A2 | 32 | 010S | 020W | 4301333211 | 15720 | FEE | OW | P | |
| FERRARINI 3-27B4 | 27 | 020S | 040W | 4301333265 | 15883 | FEE | OW | P | |
| RHOADES 2-25B5 | 25 | 020S | 050W | 4301333467 | 16046 | FEE | OW | P | |
| CASE 2-31B4 | 31 | 020S | 040W | 4301333548 | 16225 | FEE | OW | P | |
| ANDERSON-ROWLEY 2-24B3 | 24 | 020S | 030W | 4301333616 | 16284 | FEE | OW | P | |
| SPROUSE BOWDEN 2-18B1 | 18 | 020S | 010W | 4301333808 | 16677 | FEE | OW | P | |
| BROTHERSON 3-11B4 | 11 | 020S | 040W | 4301333904 | 16891 | FEE | OW | P | |
| KOFFORD 2-36B5 | 36 | 020S | 050W | 4301333988 | 17048 | FEE | OW | P | |
| ALLEN 3-7B4 | 07 | 020S | 040W | 4301334027 | 17166 | FEE | OW | P | |
| BOURNAKIS 3-18B4 | 18 | 020S | 040W | 4301334091 | 17264 | FEE | OW | P | |
| MILES 3-12B5 | 12 | 020S | 050W | 4301334110 | 17316 | FEE | OW | P | |
| OWL and HAWK 2-31B5 | 31 | 020S | 050W | 4301334123 | 17388 | FEE | OW | P | |

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|---|---|---|---|---|---|---|---|---|---|
| OWL and HAWK 4-17C5 | 17 | 030S | 050W | 4301334193 | 17387 | FEE | OW | P | |
| DWR 3-32B5 | 32 | 020S | 050W | 4301334207 | 17371 | FEE | OW | P | |
| LAKE FORK RANCH 3-22B4 | 22 | 020S | 040W | 4301334261 | 17409 | FEE | OW | P | |
| HANSON 3-9B3 | 09 | 020S | 030W | 4301350065 | 17570 | FEE | OW | P | |
| DYE 2-28A1 | 28 | 010S | 010W | 4301350066 | 17531 | FEE | OW | P | |
| MEEKS 3-32A4 | 32 | 010S | 040W | 4301350069 | 17605 | FEE | OW | P | |
| HANSON 4-8B3 | 08 | 020S | 030W | 4301350088 | 17571 | FEE | OW | P | C |
| LAKE FORK RANCH 3-14B4 | 14 | 020S | 040W | 4301350097 | 17484 | FEE | OW | P | |
| ALLEN 3-9B4 | 09 | 020S | 040W | 4301350123 | 17656 | FEE | OW | P | |
| HORROCKS 4-20A1 | 20 | 010S | 010W | 4301350155 | 17916 | FEE | OW | P | |
| HURLEY 2-33A1 | 33 | 010S | 010W | 4301350166 | 17573 | FEE | OW | P | |
| HUTCHINS/CHIODO 3-20C5 | 20 | 030S | 050W | 4301350190 | 17541 | FEE | OW | P | |
| ALLEN 3-8B4 | 08 | 020S | 040W | 4301350192 | 17622 | FEE | OW | P | |
| OWL and HAWK 3-10C5 | 10 | 030S | 050W | 4301350193 | 17532 | FEE | OW | P | |
| OWL and HAWK 3-19C5 | 19 | 030S | 050W | 4301350201 | 17508 | FEE | OW | P | |
| EL PASO 4-29B5 | 29 | 020S | 050W | 4301350208 | 17934 | FEE | OW | P | C |
| DONIHUE 3-20C6 | 20 | 030S | 060W | 4301350270 | 17762 | FEE | OW | P | |
| HANSON 3-5B3 | 05 | 020S | 030W | 4301350275 | 17725 | FEE | OW | P | C |
| SPRATT 3-26B5 | 26 | 020S | 050W | 4301350302 | 17668 | FEE | OW | P | |
| REBEL 3-35B5 | 35 | 020S | 050W | 4301350388 | 17911 | FEE | OW | P | C |
| FREEMAN 4-16B4 | 16 | 020S | 040W | 4301350438 | 17935 | Fee | OW | P | C |
| WILSON 3-36B5 | 36 | 020S | 050W | 4301350439 | 17936 | Fee | OW | P | C |
| EL PASO 3-21B4 | 21 | 020S | 040W | 4301350474 | 18123 | Fee | OW | P | C |
| IORG 4-12B3 | 12 | 020S | 030W | 4301350487 | 17981 | Fee | OW | P | C |
| CONOVER 3-3B3 | 03 | 020S | 030W | 4301350526 | 18122 | Fee | OW | P | C |
| ROWLEY 3-16B4 | 16 | 020S | 040W | 4301350569 | 18151 | Fee | OW | P | C |
| POTTS 3-14B3 | 14 | 020S | 030W | 4301350570 | 18366 | Fee | OW | P | C |
| POTTER 4-27B5 | 27 | 020S | 050W | 4301350571 | 99999 | Fee | OW | P | C |
| EL PASO 4-21B4 | 21 | 020S | 040W | 4301350572 | 18152 | Fee | OW | P | C |
| LAKE FORK RANCH 3-26B4 | 26 | 020S | 040W | 4301350707 | 18270 | Fee | OW | P | C |
| LAKE FORK RANCH 3-25B4 | 25 | 020S | 040W | 4301350711 | 18220 | Fee | OW | P | C |
| LAKE FORK RANCH 4-23B4 | 23 | 020S | 040W | 4301350713 | 18271 | Fee | OW | P | C |
| LAKE FORK RANCH 4-15B4 | 15 | 020S | 040W | 4301350715 | 18314 | Fee | OW | P | C |
| LAKE FORK RANCH 3-24B4 | 24 | 020S | 040W | 4301350716 | 18269 | Fee | OW | P | C |
| GOLINSKI 1-8C4 | 08 | 030S | 040W | 4301350986 | 18301 | Fee | OW | P | C |
| J ROBERTSON 1-1B1 | 01 | 020S | 010W | 4304730174 | 5370 | FEE | OW | P | |
| TIMOTHY 1-8B1E | 08 | 020S | 010E | 4304730215 | 1910 | FEE | OW | P | |
| MAGDALENE PAPADOPULOS 1-34A1E | 34 | 010S | 010E | 4304730241 | 785 | FEE | OW | P | |
| NELSON 1-31A1E | 31 | 010S | 010E | 4304730671 | 830 | FEE | OW | P | |
| ROSEMARY LLOYD 1-24A1E | 24 | 010S | 010E | 4304730707 | 840 | FEE | OW | P | |
| H D LANDY 1-30A1E | 30 | 010S | 010E | 4304730790 | 845 | FEE | OW | P | |
| WALKER 1-14A1E | 14 | 010S | 010E | 4304730805 | 855 | FEE | OW | P | |
| BOLTON 2-29A1E | 29 | 010S | 010E | 4304731112 | 900 | FEE | OW | P | |
| PRESCOTT 1-35Z1 | 35 | 010N | 010W | 4304731173 | 1425 | FEE | OW | P | |
| BISEL GURR 11-1 | 11 | 010S | 010W | 4304731213 | 8438 | FEE | OW | P | |
| UTE TRIBAL 2-22A1E | 22 | 010S | 010E | 4304731265 | 915 | FEE | OW | P | |
| L. BOLTON 1-12A1 | 12 | 010S | 010W | 4304731295 | 920 | FEE | OW | P | |
| FOWLES 1-26A1 | 26 | 010S | 010W | 4304731296 | 930 | FEE | OW | P | |
| BRADLEY 23-1 | 23 | 010S | 010W | 4304731297 | 8435 | FEE | OW | P | |
| BASTIAN 1-2A1 | 02 | 010S | 010W | 4304731373 | 736 | FEE | OW | P | |
| D R LONG 2-19A1E | 19 | 010S | 010E | 4304731470 | 9505 | FEE | OW | P | |
| D MOON 1-23Z1 | 23 | 010N | 010W | 4304731479 | 10310 | FEE | OW | P | |
| O MOON 2-26Z1 | 26 | 010N | 010W | 4304731480 | 10135 | FEE | OW | P | |
| LILA D 2-25A1 | 25 | 010S | 010W | 4304731797 | 10790 | FEE | OW | P | |
| LANDY 2-30A1E | 30 | 010S | 010E | 4304731895 | 11127 | FEE | OW | P | |
| WINN P2-3B1E | 03 | 020S | 010E | 4304732321 | 11428 | FEE | OW | P | |
| BISEL-GURR 2-11A1 | 11 | 010S | 010W | 4304735410 | 14428 | FEE | OW | P | |
| FLYING J FEE 2-12A1 | 12 | 010S | 010W | 4304739467 | 16686 | FEE | OW | P | |

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|---|---|---|---|---|---|---|---|---|---|
| HARVEST FELLOWSHIP CHURCH 2-14B1 | 14 | 020S | 010W | 4304739591 | 16546 | FEE | OW | P | |
| OBERHANSLY 3-11A1 | 11 | 010S | 010W | 4304739679 | 17937 | FEE | OW | P | |
| DUNCAN 2-34A1 | 34 | 010S | 010W | 4304739944 | 17043 | FEE | OW | P | |
| BISEL GURR 4-11A1 | 11 | 010S | 010W | 4304739961 | 16791 | FEE | OW | P | |
| KILLIAN 3-12A1 | 12 | 010S | 010W | 4304740226 | 17761 | ML 39760 | OW | P | |
| WAINOCO ST 1-14B1 | 14 | 020S | 010W | 4304730818 | 1420 | ML-24306-A | OW | P | |
| UTAH ST UTE 1-35A1 | 35 | 010S | 010W | 4304730182 | 5520 | ML-25432 | OW | P | |
| STATE 1-19A4 | 19 | 010S | 040W | 4301330322 | 9118 | ML-27912 | OW | P | |
| FEDERAL 2-28E19E | 28 | 050S | 190E | 4304732849 | 12117 | UTU-0143512 | OW | P | |
| FEDERAL 1-28E19E | 28 | 050S | 190E | 4304730175 | 5680 | UTU143512 | OW | P | |
| BLANCHARD 1-3A2 | 03 | 010S | 020W | 4301320316 | 5877 | FEE | OW | PA | |
| W H BLANCHARD 2-3A2 | 03 | 010S | 020W | 4301330008 | 5775 | FEE | OW | PA | |
| YACK U 1-7A1 | 07 | 010S | 010W | 4301330018 | 5795 | FEE | OW | PA | |
| JAMES POWELL 3 | 13 | 010S | 020W | 4301330024 | 8305 | FEE | WD | PA | |
| BASTIAN 1 (3-7D) | 07 | 010S | 010W | 4301330026 | 5800 | FEE | OW | PA | |
| LAMICQ-URRUTY 1-8A2 | 08 | 010S | 020W | 4301330036 | 5975 | FEE | OW | PA | |
| BLEAZARD 1-18B4 | 18 | 020S | 040W | 4301330059 | 11262 | FEE | OW | PA | |
| OLSEN 1-27A4 | 27 | 010S | 040W | 4301330064 | 1565 | FEE | OW | PA | |
| EVANS 1-31A4 | 31 | 010S | 040W | 4301330067 | 5330 | FEE | OW | PA | |
| HAMBLIN 1-26A2 | 26 | 010S | 020W | 4301330083 | 2305 | FEE | OW | PA | |
| HARTMAN 1-31A3 | 31 | 010S | 030W | 4301330093 | 10700 | FEE | OW | PA | |
| FARNSWORTH 1-7B4 | 07 | 020S | 040W | 4301330097 | 5725 | FEE | OW | PA | |
| POWELL 1-33A3 | 33 | 010S | 030W | 4301330105 | 4526 | FEE | OW | PA | |
| LOTRIDGE GATES 1-3B3 | 03 | 020S | 030W | 4301330117 | 1625 | FEE | OW | PA | |
| REMINGTON 1-34A3 | 34 | 010S | 030W | 4301330139 | 1670 | FEE | OW | PA | |
| ANDERSON 1-28A2 | 28 | 010S | 020W | 4301330150 | 5895 | FEE | OW | PA | |
| RHOADES MOON 1-35B5 | 35 | 020S | 050W | 4301330155 | 5270 | FEE | OW | PA | |
| JOHN 1-3B2 | 03 | 020S | 020W | 4301330160 | 5765 | FEE | OW | PA | |
| SMITH 1-6C5 | 06 | 030S | 050W | 4301330163 | 5385 | FEE | OW | PA | |
| HORROCKS FEE 1-3A1 | 03 | 010S | 010W | 4301330171 | 5505 | FEE | OW | PA | |
| WARREN 1-32A4 | 32 | 010S | 040W | 4301330174 | 9139 | FEE | OW | PA | |
| JENSEN FENZEL 1-20C5 | 20 | 030S | 050W | 4301330177 | 4730 | FEE | OW | PA | |
| MYRIN RANCH 1-13B4 | 13 | 020S | 040W | 4301330180 | 4524 | FEE | OW | PA | |
| BROTHERSON 1-27B4 | 27 | 020S | 040W | 4301330185 | 1775 | FEE | OW | PA | |
| JENSEN 1-31A5 | 31 | 010S | 050W | 4301330186 | 4735 | FEE | OW | PA | |
| ROBERTSON 1-29A2 | 29 | 010S | 020W | 4301330189 | 4740 | FEE | OW | PA | |
| WINKLER 1-28A3 | 28 | 010S | 030W | 4301330191 | 5465 | FEE | OW | PA | |
| CHENEY 1-33A2 | 33 | 010S | 020W | 4301330202 | 1750 | FEE | OW | PA | |
| J LAMICQ STATE 1-6B1 | 06 | 020S | 010W | 4301330210 | 5730 | FEE | OW | PA | |
| REESE ESTATE 1-10B2 | 10 | 020S | 020W | 4301330215 | 5700 | FEE | OW | PA | |
| REEDER 1-17B5 | 17 | 020S | 050W | 4301330218 | 5460 | FEE | OW | PA | |
| ROBERTSON UTE 1-2B2 | 02 | 020S | 020W | 4301330225 | 1710 | FEE | OW | PA | |
| HATCH 1-5B1 | 05 | 020S | 010W | 4301330226 | 5470 | FEE | OW | PA | |
| BROTHERSON 1-22B4 | 22 | 020S | 040W | 4301330227 | 5935 | FEE | OW | PA | |
| ALLRED 1-16A3 | 16 | 010S | 030W | 4301330232 | 1780 | FEE | OW | PA | |
| BIRCH 1-35A5 | 35 | 010S | 050W | 4301330233 | 9116 | FEE | OW | PA | |
| MARQUERITE UTE 1-8B2 | 08 | 020S | 020W | 4301330235 | 9122 | FEE | OW | PA | |
| BUZZI 1-11B2 | 11 | 020S | 020W | 4301330248 | 6335 | FEE | OW | PA | |
| SHISLER 1-3B1 | 03 | 020S | 010W | 4301330249 | 5960 | FEE | OW | PA | |
| TEW 1-1B5 | 01 | 020S | 050W | 4301330264 | 5580 | FEE | OW | PA | |
| EVANS UTE 1-19B3 | 19 | 020S | 030W | 4301330265 | 1870 | FEE | OW | PA | |
| SHELL 2-27A4 | 27 | 010S | 040W | 4301330266 | 1776 | FEE | WD | PA | |
| DYE 1-29A1 | 29 | 010S | 010W | 4301330271 | 99990 | FEE | OW | PA | |
| VODA UTE 1-4C5 | 04 | 030S | 050W | 4301330283 | 4530 | FEE | OW | PA | |
| BROTHERSON 1-28A4 | 28 | 010S | 040W | 4301330292 | 9114 | FEE | OW | PA | |
| MEAGHER 1-4B2 | 04 | 020S | 020W | 4301330313 | 8402 | FEE | OW | PA | |
| NORLING 1-9B1 | 09 | 020S | 010W | 4301330315 | 1811 | FEE | OW | PA | |
| S. BROADHEAD 1-9C5 | 09 | 030S | 050W | 4301330316 | 5940 | FEE | OW | PA | |

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|---|---|---|---|---|---|---|---|---|---|
| TIMOTHY 1-09A3 | 09 | 010S | 030W | 4301330321 | 10883 | FEE | OW | PA | |
| BARRETT 1-34A5 | 34 | 010S | 050W | 4301330323 | 9115 | FEE | OW | PA | |
| MEAGHER TRIBAL 1-9B2 | 09 | 020S | 020W | 4301330325 | 9121 | FEE | OW | PA | |
| PHILLIPS UTE 1-3C5 | 03 | 030S | 050W | 4301330333 | 1816 | FEE | OW | PA | |
| ELLSWORTH 1-20B4 | 20 | 020S | 040W | 4301330351 | 6375 | FEE | OW | PA | |
| LAWSON 1-28A1 | 28 | 010S | 010W | 4301330358 | 5915 | FEE | OW | PA | |
| AMES 1-23A4 | 23 | 010S | 040W | 4301330375 | 1901 | FEE | OW | PA | |
| HORROCKS 1-6A1 | 06 | 010S | 010W | 4301330390 | 5675 | FEE | OW | PA | |
| SHRINE HOSPITAL 1-10C5 | 10 | 030S | 050W | 4301330393 | 5565 | FEE | OW | PA | |
| GOODRICH 1-18B2 | 18 | 020S | 020W | 4301330397 | 5485 | FEE | OW | PA | |
| SWD POWELL 3 | 13 | 010S | 020W | 4301330478 | 10708 | FEE | WD | PA | |
| BODRERO 1-15B3 | 15 | 020S | 030W | 4301330565 | 4534 | FEE | OW | PA | |
| MOON TRIBAL 1-30C4 | 30 | 030S | 040W | 4301330576 | 2360 | FEE | OW | PA | |
| DUNCAN 2-9B5 | 09 | 020S | 050W | 4301330719 | 5440 | FEE | OW | PA | |
| FISHER 1-16A4 | 16 | 010S | 040W | 4301330737 | 2410 | FEE | OW | PA | |
| URRUTY 2-34A2 | 34 | 010S | 020W | 4301330753 | 9117 | FEE | OW | PA | |
| GOODRICH 1-24A4 | 24 | 010S | 040W | 4301330760 | 2415 | FEE | OW | PA | |
| CARL SMITH 2-25A4 | 25 | 010S | 040W | 4301330776 | 9136 | FEE | OW | PA | |
| ANDERSON 1-A30B1 | 30 | 020S | 010W | 4301330783 | 9137 | FEE | OW | PA | |
| CADILLAC 3-6A1 | 06 | 010S | 010W | 4301330834 | 6316 | FEE | OW | PA | |
| MCELPRANG 2-31A1 | 31 | 010S | 010W | 4301330836 | 8439 | FEE | OW | PA | |
| REESE ESTATE 2-10B2 | 10 | 020S | 020W | 4301330837 | 2417 | FEE | OW | PA | |
| CLARK 2-9A3 | 09 | 010S | 030W | 4301330876 | 2416 | FEE | OW | PA | |
| JENKINS 3-16A3 | 16 | 010S | 030W | 4301330877 | 9790 | FEE | OW | PA | |
| CHRISTENSEN 2-26A5 | 26 | 010S | 050W | 4301330905 | 10710 | FEE | OW | PA | |
| FORD 2-36A5 | 36 | 010S | 050W | 4301330911 | 9630 | FEE | OW | PA | |
| MORTENSEN 2-32A2 | 32 | 010S | 020W | 4301330929 | 9486 | FEE | OW | PA | |
| WILKERSON 1-20Z1 | 20 | 010N | 010W | 4301330942 | 5452 | FEE | OW | PA | |
| UTE TRIBAL 2-4A3 S | 04 | 010S | 030W | 4301330950 | 10230 | FEE | OW | PA | |
| OBERHANSLY 2-31Z1 | 31 | 010N | 010W | 4301330970 | 9262 | FEE | OW | PA | |
| MORRIS 2-7A3 | 07 | 010S | 030W | 4301330977 | 9725 | FEE | OW | PA | |
| POWELL 2-08A3 | 08 | 010S | 030W | 4301330979 | 10175 | FEE | OW | PA | |
| FISHER 2-6A3 | 06 | 010S | 030W | 4301330984 | 10110 | FEE | OW | PA | |
| JACOBSEN 2-12A4 | 12 | 010S | 040W | 4301330985 | 10480 | FEE | OW | PA | |
| CHENEY 2-33A2 | 33 | 010S | 020W | 4301331042 | 10313 | FEE | OW | PA | |
| HANSON TRUST 2-29A3 | 29 | 010S | 030W | 4301331043 | 5306 | FEE | OW | PA | |
| BURTON 2-15B5 | 15 | 020S | 050W | 4301331044 | 10205 | FEE | OW | PA | |
| EVANS-UTE 2-17B3 | 17 | 020S | 030W | 4301331056 | 10210 | FEE | OW | PA | |
| ELLSWORTH 2-20B4 | 20 | 020S | 040W | 4301331090 | 5336 | FEE | OW | PA | |
| REMINGTON 2-34A3 | 34 | 010S | 030W | 4301331091 | 1902 | FEE | OW | PA | |
| WINKLER 2-28A3 | 28 | 010S | 030W | 4301331109 | 4519 | FEE | OW | PA | |
| TEW 2-10B5 | 10 | 020S | 050W | 4301331125 | 1751 | FEE | OW | PA | |
| LINDSAY 2-33A4 | 33 | 010S | 040W | 4301331141 | 1756 | FEE | OW | PA | |
| FIELDSTED 2-28A4 | 28 | 010S | 040W | 4301331293 | 10665 | FEE | OW | PA | |
| POWELL 4-13A2 | 13 | 010S | 020W | 4301331336 | 11177 | FEE | GW | PA | |
| DUMP 2-20A3 | 20 | 010S | 030W | 4301331505 | 11691 | FEE | OW | PA | |
| SMITH 2X-23C7 | 23 | 030S | 070W | 4301331634 | 12382 | FEE | D | PA | |
| MORTENSEN 3-32A2 | 32 | 010S | 020W | 4301331872 | 11928 | FEE | OW | PA | |
| TODD USA ST 1-2B1 | 02 | 020S | 010W | 4304730167 | 99998 | FEE | OW | PA | |
| STATE 1-7B1E | 07 | 020S | 010E | 4304730180 | 5555 | FEE | OW | PA | |
| BACON 1-10B1E | 10 | 020S | 010E | 4304730881 | 5550 | FEE | OW | PA | |
| PARIETTE DRAW 28-44 | 28 | 040S | 010E | 4304731408 | 4537 | FEE | OW | PA | |
| REYNOLDS 2-7B1E | 07 | 020S | 010E | 4304731840 | 4960 | FEE | OW | PA | |
| STATE 2-35A2 | 35 | 010S | 020W | 4301330156 | 4715 | ML-22874 | OW | PA | |
| UTAH STATE L B 1-11B1 | 11 | 020S | 010W | 4304730171 | 5530 | ML-23655 | OW | PA | |
| STATE 1-8A3 | 08 | 010S | 030W | 4301330286 | 5655 | ML-24316 | OW | PA | |
| UTAH FEDERAL 1-24B1 | 24 | 020S | 010W | 4304730220 | 590 | ML-26079 | OW | PA | |
| CEDAR RIM 15 | 34 | 030S | 060W | 4301330383 | 6395 | 14-20-462-1329 | OW | S | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| UTE TRIBAL 2-24C7 | 24 | 030S | 070W | 4301331028 | 10240 | 14-20-H62-1135 | OW | S | |
| CEDAR RIM 12 | 28 | 030S | 060W | 4301330344 | 6370 | 14-20-H62-1323 | OW | S | |
| CEDAR RIM 16 | 33 | 030S | 060W | 4301330363 | 6390 | 14-20-H62-1328 | OW | S | |
| SPRING HOLLOW 2-34Z3 | 34 | 010N | 030W | 4301330234 | 5255 | 14-20-H62-1480 | OW | S | |
| EVANS UTE 1-17B3 | 17 | 020S | 030W | 4301330274 | 5335 | 14-20-H62-1733 | OW | S | |
| UTE JENKS 2-1-B4 G | 01 | 020S | 040W | 4301331197 | 10844 | 14-20-H62-1782 | OW | S | |
| UTE 3-12B3 | 12 | 020S | 030W | 4301331379 | 11490 | 14-20-H62-1810 | OW | S | |
| UTE TRIBAL 9-4B1 | 04 | 020S | 010W | 4301330194 | 5715 | 14-20-H62-1969 | OW | S | |
| UTE TRIBAL 2-21B6 | 21 | 020S | 060W | 4301331424 | 11615 | 14-20-H62-2489 | OW | S | |
| UTE 1-33B6 | 33 | 020S | 060W | 4301330441 | 1230 | 14-20-H62-2493 | OW | S | |
| UTE 2-22B5 | 22 | 020S | 050W | 4301331122 | 10453 | 14-20-H62-2509 | OW | S | |
| UTE 1-18B1E | 18 | 020S | 010E | 4304730969 | 9135 | 14-20-H62-2864 | OW | S | |
| LAUREN UTE 1-23A3 | 23 | 010S | 030W | 4301330895 | 9403 | 14-20-H62-3981 | OW | S | |
| UTE 2-28B6 | 28 | 020S | 060W | 4301331434 | 11624 | 14-20-H62-4622 | OW | S | |
| UTE 1-27B6X | 27 | 020S | 060W | 4301330517 | 11166 | 14-20-H62-4631 | OW | S | |
| UTE 2-27B6 | 27 | 020S | 060W | 4301331449 | 11660 | 14-20-H62-4631 | OW | S | |
| CEDAR RIM 10-15C6 | 15 | 030S | 060W | 4301330328 | 6365 | 14-20-H62-4724 | OW | S | |
| UTE 5-30A2 | 30 | 010S | 020W | 4301330169 | 5910 | 14-20-H62-4863 | OW | S | |
| UTE TRIBAL G-1 (1-24C6) | 24 | 030S | 060W | 4301330298 | 4533 | 14-20-H62-4866 | OW | S | |
| UTE TRIBAL FEDERAL 1-30C5 | 30 | 030S | 050W | 4301330475 | 665 | 14-20-H62-4876 | OW | S | |
| SMB 1-10A2 | 10 | 010S | 020W | 4301330012 | 5865 | FEE | OW | S | |
| KENDALL 1-12A2 | 12 | 010S | 020W | 4301330013 | 5875 | FEE | OW | S | |
| CEDAR RIM 2 | 20 | 030S | 060W | 4301330019 | 6315 | FEE | OW | S | |
| URRUTY 2-9A2 | 09 | 010S | 020W | 4301330046 | 5855 | FEE | OW | S | |
| BROTHERSON 1-14B4 | 14 | 020S | 040W | 4301330051 | 1535 | FEE | OW | S | |
| RUST 1-4B3 | 04 | 020S | 030W | 4301330063 | 1575 | FEE | OW | S | |
| MONSEN 1-21A3 | 21 | 010S | 030W | 4301330082 | 1590 | FEE | OW | S | |
| BROTHERSON 1-10B4 | 10 | 020S | 040W | 4301330110 | 1614 | FEE | OW | S | |
| FARNSWORTH 1-12B5 | 12 | 020S | 050W | 4301330124 | 1645 | FEE | OW | S | |
| ELLSWORTH 1-16B4 | 16 | 020S | 040W | 4301330192 | 1735 | FEE | OW | S | |
| MARSHALL 1-20A3 | 20 | 010S | 030W | 4301330193 | 9340 | FEE | OW | S | |
| CHRISTMAN BLAND 1-31B4 | 31 | 020S | 040W | 4301330198 | 4745 | FEE | OW | S | |
| ROPER 1-14B3 | 14 | 020S | 030W | 4301330217 | 1850 | FEE | OW | S | |
| BROTHERSON 1-24B4 | 24 | 020S | 040W | 4301330229 | 1865 | FEE | OW | S | |
| BROTHERSON 1-33A4 | 33 | 010S | 040W | 4301330272 | 1680 | FEE | OW | S | |
| BROTHERSON 1-23B4 | 23 | 020S | 040W | 4301330483 | 8423 | FEE | OW | S | |
| SMITH ALBERT 2-8C5 | 08 | 030S | 050W | 4301330543 | 5495 | FEE | OW | S | |
| VODA JOSEPHINE 2-19C5 | 19 | 030S | 050W | 4301330553 | 5650 | FEE | OW | S | |
| HANSEN 1-16B3 | 16 | 020S | 030W | 4301330617 | 9124 | FEE | OW | S | |
| BROTHERSON 1-25B4 | 25 | 020S | 040W | 4301330668 | 9126 | FEE | OW | S | |
| POWELL 2-33A3 | 33 | 010S | 030W | 4301330704 | 2400 | FEE | OW | S | |
| BROWN 2-28B5 | 28 | 020S | 050W | 4301330718 | 9131 | FEE | OW | S | |
| EULA-UTE 1-16A1 | 16 | 010S | 010W | 4301330782 | 8443 | FEE | OW | S | |
| JESSEN 1-15A4 | 15 | 010S | 040W | 4301330817 | 9345 | FEE | OW | S | |
| R HOUSTON 1-22Z1 | 22 | 010N | 010W | 4301330884 | 936 | FEE | OW | S | |
| FIELDSTED 2-27A4 | 27 | 010S | 040W | 4301330915 | 9632 | FEE | OW | S | |
| HANSKUTT 2-23B5 | 23 | 020S | 050W | 4301330917 | 9600 | FEE | OW | S | |
| TIMOTHY 3-18A3 | 18 | 010S | 030W | 4301330940 | 9633 | FEE | OW | S | |
| BROTHERSON 2-3B4 | 03 | 020S | 040W | 4301331008 | 10165 | FEE | OW | S | |
| BROTHERSON 2-22B4 | 22 | 020S | 040W | 4301331086 | 1782 | FEE | OW | S | |
| MILES 2-35A4 | 35 | 010S | 040W | 4301331087 | 1966 | FEE | OW | S | |
| ELLSWORTH 2-17B4 | 17 | 020S | 040W | 4301331089 | 1696 | FEE | OW | S | |
| RUST 2-36A4 | 36 | 010S | 040W | 4301331092 | 1577 | FEE | OW | S | |
| EVANS 2-19B3 | 19 | 020S | 030W | 4301331113 | 1777 | FEE | OW | S | |
| FARNSWORTH 2-12B5 | 12 | 020S | 050W | 4301331115 | 1646 | FEE | OW | S | |
| CHRISTENSEN 3-4B4 | 04 | 020S | 040W | 4301331142 | 10481 | FEE | OW | S | |
| ROBERTSON 2-29A2 | 29 | 010S | 020W | 4301331150 | 10679 | FEE | OW | S | |
| CEDAR RIM 2A | 20 | 030S | 060W | 4301331172 | 10671 | FEE | OW | S | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| HARTMAN 2-31A3 | 31 | 010S | 030W | 4301331243 | 11026 | FEE | OW | S | |
| GOODRICH 2-2B3 | 02 | 020S | 030W | 4301331246 | 11037 | FEE | OW | S | |
| JESSEN 2-21A4 | 21 | 010S | 040W | 4301331256 | 11061 | FEE | OW | S | |
| BROTHERSON 3-23B4 | 23 | 020S | 040W | 4301331289 | 11141 | FEE | OW | S | |
| MYRIN RANCH 2-18B3 | 18 | 020S | 030W | 4301331297 | 11475 | FEE | OW | S | |
| BROTHERSON 2-2B5 | 02 | 020S | 050W | 4301331302 | 11342 | FEE | OW | S | |
| DASTRUP 2-30A3 | 30 | 010S | 030W | 4301331320 | 11253 | FEE | OW | S | |
| YOUNG 2-30B4 | 30 | 020S | 040W | 4301331366 | 11453 | FEE | OW | S | |
| IORG 2-10B3 | 10 | 020S | 030W | 4301331388 | 11482 | FEE | OW | S | |
| MONSEN 3-27A3 | 27 | 010S | 030W | 4301331401 | 11686 | FEE | OW | S | |
| HORROCKS 2-5B1E | 05 | 020S | 010E | 4304732409 | 11481 | FEE | OW | S | |
| LARSEN 1-25A1 | 25 | 010S | 010W | 4304730552 | 815 | FEE | OW | TA | |
| DRY GULCH 1-36A1 | 36 | 010S | 010W | 4304730569 | 820 | FEE | OW | TA | |

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

**FORM 9**

**5.LEASE DESIGNATION AND SERIAL NUMBER:** FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:**

**1. TYPE OF WELL**
Oil Well

**8. WELL NAME and NUMBER:**
NELSON 1-31A1E

**2. NAME OF OPERATOR:**
EP ENERGY E&P COMPANY, L.P.

**9. API NUMBER:**
43047306710000

**3. ADDRESS OF OPERATOR:**
1001 Louisiana , Houston, TX, 77002

**PHONE NUMBER:**
713 997-5038 Ext

**9. FIELD and POOL or WILDCAT:**
BLUEBELL

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2142 FNL 1478 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

**COUNTY:**
UINTAH

**STATE:**
UTAH

**11.**
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start:<br>2/27/2013 | ✓ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: pump change |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

Please see attachment for procedure.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** February 28, 2013

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Lisa Morales | 713 997-3587 | Regulatory Analyst |

| SIGNATURE | DATE |
|---|---|
| N/A | 2/27/2013 |

RECEIVED: Feb. 27, 2013

# Nelson 1-31A1E Pump Change Procedure Summary

- POOH w/rods & pump
- Acidize existing perfs w/ 7,500 gal 15% HCl.
- RIH w/ pump and rod string
- Clean location and resume production

RECEIVED: Feb. 27, 2013

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:**

**1. TYPE OF WELL**
Oil Well

**8. WELL NAME and NUMBER:**
NELSON 1-31A1E

**2. NAME OF OPERATOR:**
EP ENERGY E&P COMPANY, L.P.

**9. API NUMBER:**
43047306710000

**3. ADDRESS OF OPERATOR:**
1001 Louisiana , Houston, TX, 77002

**PHONE NUMBER:**
713 997-5038 Ext

**9. FIELD and POOL or WILDCAT:**
BLUEBELL

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2142 FNL 1478 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

**COUNTY:**
UINTAH

**STATE:**
UTAH

**11.**
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

**TYPE OF SUBMISSION**

- [x] NOTICE OF INTENT
  Approximate date work will start: 4/19/2013
- [ ] SUBSEQUENT REPORT
  Date of Work Completion:
- [ ] SPUD REPORT
  Date of Spud:
- [ ] DRILLING REPORT
  Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| [x] ACIDIZE | [ ] ALTER CASING | [ ] CASING REPAIR |
| [ ] CHANGE TO PREVIOUS PLANS | [ ] CHANGE TUBING | [ ] CHANGE WELL NAME |
| [ ] CHANGE WELL STATUS | [ ] COMMINGLE PRODUCING FORMATIONS | [ ] CONVERT WELL TYPE |
| [ ] DEEPEN | [ ] FRACTURE TREAT | [ ] NEW CONSTRUCTION |
| [ ] OPERATOR CHANGE | [ ] PLUG AND ABANDON | [ ] PLUG BACK |
| [ ] PRODUCTION START OR RESUME | [ ] RECLAMATION OF WELL SITE | [ ] RECOMPLETE DIFFERENT FORMATION |
| [ ] REPERFORATE CURRENT FORMATION | [ ] SIDETRACK TO REPAIR WELL | [ ] TEMPORARY ABANDON |
| [ ] TUBING REPAIR | [ ] VENT OR FLARE | [ ] WATER DISPOSAL |
| [ ] WATER SHUTOFF | [ ] SI TA STATUS EXTENSION | [ ] APD EXTENSION |
| [ ] WILDCAT WELL DETERMINATION | [x] OTHER | OTHER: rod repair |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

Sundry No. 35058 approved 2/27/13 for acidize and pump change. The pump was changed but no acid was pumped. At this time request approval to repair the road and acidize. See attachment for procedure.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** April 18, 2013

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Lisa Morales | 713 997-3587 | Regulatory Analyst |

| SIGNATURE | DATE |
|---|---|
| N/A | 4/18/2013 |

RECEIVED: Apr. 18, 2013

# Nelson 1-31A1E Rod Part Procedure Summary

- POOH w/rods & pump
- Acidize existing perfs w/ 7,500 gal 15% HCl.
- RIH w/ pump and rod string
- Clean location and resume production

RECEIVED: Apr. 18, 2013

FORM 9

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

**5.LEASE DESIGNATION AND SERIAL NUMBER:** FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

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**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:**

**1. TYPE OF WELL**
Oil Well

**8. WELL NAME and NUMBER:**
NELSON 1-31A1E

**2. NAME OF OPERATOR:**
EP ENERGY E&P COMPANY, L.P.

**9. API NUMBER:**
43047306710000

**3. ADDRESS OF OPERATOR:**
1001 Louisiana , Houston, TX, 77002

**PHONE NUMBER:**
713 997-5038 Ext

**9. FIELD and POOL or WILDCAT:**
BLUEBELL

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2142 FNL 1478 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

**COUNTY:**
UINTAH

**STATE:**
UTAH

**11.**
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

**TYPE OF SUBMISSION**

- ✓ NOTICE OF INTENT
  Approximate date work will start: 4/23/2014
- ☐ SUBSEQUENT REPORT
  Date of Work Completion:
- ☐ SPUD REPORT
  Date of Spud:
- ☐ DRILLING REPORT
  Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: Treatment |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

EP would like to perform a Acrolein Treatment. The well currently has 60 ppm H2S. See attached for details.

**Approved by the Utah Division of Oil, Gas and Mining**

**Date:** April 23, 2014

**By:** Dark K Quist

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Maria S. Gomez | 713 997-5038 | Principal Regulatory Analyst |

| SIGNATURE | DATE |
|---|---|
| N/A | 4/23/2014 |

RECEIVED: Apr. 23, 2014

Technical Report

# EP Energy- Nelson 1-31A1E
# MAGNACIDE™ B Microbiocide Proposal

| | |
|---|---|
| Purpose: | **Bacteria, $H_2S$ Control** |
| Opportunity Profile Number: | **WO-09-22243** |
| Key Words: | **MAGNACIDE™ B, acrolein** |

Project Sponsor: Rob Riley; Account Manager

Author: Jerry Conaway; Acrolein Technical Specialist

Reviewer:

Distribution: Rob Riley, Josh Henderson, Landon Moore, Joe Penkala

Related Reports:

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Rev: | Date: 4/3/14 | Description: Report | By: JC | Approved: |

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RECEIVED: Apr. 23, 2014

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RECEIVED: Apr. 23, 2014

# 1. Executive Summary

The EP Energy Nelson 1-31A1E is a vertically completed oil well that is located in the Altamont-Bluebell Field in Duchesne Co., Utah. The well is completed in the Wasatch and LGR formations. The $H_2S$ is elevated in this well as compared to other wells in the area and it is suspected, but not confirmed, that the $H_2S$ is bacteria related as a result of sulfate reducing bacteria (SRB) contamination.

Baker Hughes proposes a MAGNACIDE™ B Microbiocide (acrolein) bacteria downhole squeeze treatment. The casing in the perforated areas will be filled with chemical solution and a portion will be squeezed into the immediate wellbore area. At this time diverting agents or treating under an isolation packer is not recommended.

The goal of this treatment is to provide an effective bacteria kill and remove iron sulfide solids, if present, from the casing, and immediate wellbore area. This design (3,144 ppm acrolein solution) provides for 4.25 feet of radial penetration based on even distribution over the perforated intervals. Even distribution of chemical solution over the large intervals is unlikely therefore areas of lower resistance will achieve a greater concentration than areas of higher resistance. At the applied concentration the bacteria kill will be quick however due to the relatively slow reaction process between the acrolein and iron sulfide the well should remain shut-in for 24 hours in order to maximize the benefit of this chemistry. Due to planned maintenance at the facility it is recommended to treat this well just prior to startup.



RECEIVED: Apr. 23, 2014

## 2. Discussion

MAGNACIDE B is a broad spectrum biocide that Baker Hughes has been applied for 50+ years as an oilfield microbiocide. As a microbiocide, acrolein has demonstrated to be highly effective against SRB and GAB, which include acid producing bacteria (APB), two common classes of bacteria encountered in the oilfield. In 89% of the laboratory studies conducted over the past six years, acrolein showed superior biocide performance against GAB and SRB in a cost competitive manner. Although it is non-surface active its properties of oil solubility and biofilm penetrability render it a versatile and effective biocide for targeting persistent sessile populations of bacteria that are often inaccessible to conventional biocides. Due to its low minimum inhibitory concentration, acrolein finds success not only in batch applications but also in continuous treatment programs. Additionally, acrolein is not corrosive, will not change system pH, and any unreacted acrolein will degrade to $CO_2$ and water.

Acrolein's successful performance in oilfield systems is its ability to remove sulfides, i.e., hydrogen sulfide and iron sulfide. Acrolein reacts rapidly with dissolved $H_2S$ in a 2-step reaction to form thiopyran, a water soluble sulfur compound. Acrolein reacts with $H_2S$ in a 2:1 molar ratio; 1 ppm of $H_2S$ consumes approximately 4 ppm acrolein. This is an added benefit such that not only may SRB responsible for biogenic $H_2S$ be targeted, but the toxic and corrosive product of their metabolism ($H_2S$) can be removed as well.

Similarly, with iron sulfide, acrolein can dissolve the solid thereby resolving issues such as black water, iron sulfide scale and plugging, iron sulfide-stabilized emulsions, and formation damage. Acrolein reacts with $H_2S$ that is in equilibrium with soluble iron and sulfide and follows the same reaction process as described above for $H_2S$.



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## 3. Recommendation

This treatment design utilizes a 70 barrel KCl (with additives) pre-flush to pressure test the pumping equipment, establish a pumping rate, and precondition the treatments zones. A 3,144 ppm MAGNACIDE B concentration mixed on-the-fly into KCl, with additives, (400 bbls) will be pumped immediately behind the pre-flush. The pre-flush and treatment solution should be pumped at as fast a rate as possible, but not to exceed maximum pressure as determined by EP Energy. The MAGNACIDE B solution will be displaced to the top perforation with 30 barrels of KCl. If possible shoot a fluid level prior to treatment, since the well will be shut in for a few weeks, and recalculate displacement if required. The displacement KCl does not necessarily require additives. Based on calculated volumes the displacement KCl will likely be on a separate truck and be used without additives (WAW 3003 and SRW 4804). A 5,280 ppm concentration of SRW4804 and WAW3003 should be pre-mixed into the treatment volume (470 bbl) of KCl. SRW4804, an acetic acid formulation, will lower the pH of the acrolein pill, thus inhibiting the rate at which acrolein reacts with water. This will provide a longer downhole half-life for the acrolein and ensure the most thorough treatment possible. The WAW3003 non-ionic surfactant will further aid in dispersal of hydrocarbons and permit the acrolein better penetration of iron sulfide solids. Additionally the WAW3003 will leave the formation in the preferred water-wet state. The casing in the perforated areas will be filled with MAGNACIDE B solution then a portion will be squeezed into the wellbore to achieve a 4.25 foot radial penetration. See **Table 1** for well data and **Tables 2 & 3** for Treatment Requirements and Volume Calculations. See **Table 4** for Chemical Costs.

This treatment design should provide a high ratio bacteria kill in the areas where the MAGNACIDE B would contact the bacteria and also dissolve any iron sulfide solids that may be present in the casing and immediate wellbore area. This treatment will provide for approximately 4.25 feet of radial penetration of a 3,144 ppm concentration of MAGNACIDE B into the formation based on an average of 10% porosity, 317 feet of net perforations, and an even distribution into the formation. Even distribution is very unlikely therefore the areas of lowest resistance will receive more treatment solution than areas of higher resistance. As stated previously it is not recommended to utilize diverting agents or treat under a packer at this time. If positive results are obtained diverting agents or a packer could be considered for any future treatments providing this would be cost effective.



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## TABLE 1
## Well Information

| Nelson 1-31A1E | Value | Units |
|---|---|---|
| Average Daily Production (water/oil/gas) | NA | BFPD |
| TD | 12,626 | ft |
| Casing Size and specification 7” 32# | 10,200 | ft |
| Casing Size and specification 5” 18# | 12,626 | ft |
| Tubing Size and specification 2 7/8” 4.7# | 10,590 | In |
| LGR Perforations 46’/138 holes | 8,756’- 8,888’ | ft |
| LGR Perforations 39’/117 holes | 8,946’- 9,190’ | ft |
| LGR Perforations 40’/120 holes | 9,320’- 9,551’ | ft |
| LGR Perforations 19’/51 holes | 9,622’- 9,678’ | ft |
| LGR Perforations 13’/36 holes | 9,678’- 9,790’ | ft |
| UW Perforations 26’/78 holes | 10,520’- 10,653’ | ft |
| W Perforations 134’/244 holes | 11,258’- 12,594’ | ft |
| Net Perfs | 317 | ft |
| Bottom Hole Temperature | 200° | F |
| Porosity (average) | 10% | $\phi$ |
| Fluid Level | 2,870 | ft |

## TABLE 2
## Treatment Requirements

| Nelson 1-31A1E | Volume | Units |
|---|---|---|
| Pre-flush Volume (KCl with additives) | 70 | Bbls |
| Displacement Volume (KCl without additives) | 30 | Bbls |
| Acrolein Treatment Volume (KCl with additves) | 400 | Bbls |
| Total Treatment Volume | 500 | Bbls |
| MAGNACIDE B Volume | 52/370 | Gals/Lbs |
| WAW 3003 Volume | 110 | Gals |
| SRW 4804 Volume | 110 | Gals |
| Injection Rate of Water (example) | 3 | BPM |
| Acrolein Injection Rate (example) | 0.39 | GPM |
| Acrolein Application Fee (estimate) | 4 | Hours |



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## TABLE 3
## Volume Calculations

| Nelson 1-31A1E | Value | Units |
|---|---|---|
| Capacity of 2 7/8" Tubing in 7" Casing | 0.0281 | bbls / Linear ft |
| Capacity of 2 7/8" Tubing in 5" Casing | 0.0097 | bbls / Linear ft |
| Capacity of 5" Casing | 0.0177 | bbls / Linear ft |
| Pre-flush Volume = $\mathbf{V_p}$ | 70 | bbls |
| Volume of 1,444 ft of 2 7/8" Tubing in 7" Casing (top perf to 5") = $\mathbf{V_c}$ | **40.6** | bbls |
| Volume of 390 ft of 2 7/8" Tubing in 5" Casing (top 5" to EOT) = $\mathbf{V_{c2}}$ | **3.8** | bbls |
| Volume of 2,004 ft of 5'' Casing (EOT to bottom perf) = $\mathbf{V_{c3}}$ | **35.5** | bbls |
| Volume for 4.25 ft of radial penetration ($\phi\pi R^2h(0.178)$ = .10 x $\pi$ x ($4.25^2$) x 317' x (0.178) $ft^3$ = $\mathbf{V_r}$ | **320.0** | bbls |
| Displacement Volume (displace to top perf) = $V_{p2}$ | 30 | bbls |
| Acrolein Solution Volume = $\mathbf{V_c + V_{c2} + V_{c3} + V_r}$ | **399.9** | bbls |
| Total Treatment Volume = $\mathbf{V_p + V_c + V_{c2} + V_{c3} + V_r + V_{p2}}$ | 500 | bbls |

## TABLE 4
## Chemical Costs

| Chemical | Gals/Lbs | Price Gal/Lb | Treatment Cost |
|---|---|---|---|
| MAGNACIDE B (acrolein) | 52 gals/370 lbs | $ 14.09 lb | $5,213.30 |
| WAW 3003 | 110 gals | $12.91 | $1,420.10 |
| SRW 4804 | 110 gals | $14.94 | $1,643.40 |
| | | **Sub Total** | $8,276.80 |
| Nitrogen | | | $50.00 |
| Application fee | 4 | $125.00/hr. | $500.00 |
| | | **Total** | **$8,826.80** |

NOTE: Cost does not include pump truck or KCl.



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## 4. Application Procedures

1. Conduct a tailgate safety meeting with all parties that will be on location which should include MSDS information, 1st aid, muster point, application procedures, JSA, etc..

2. Pre-mix 110 gals. each of WAW 3003 and SRW 4804 into 500 bbls. of KCl. If a frac tank or workover tank is used the displacement can be in a separate truck without additives. Circulate water to mix the chemical or add to the tank prior to filling.

3. A pump truck should be rigged-up to the casing of the well and all connections pressure tested and determined to be leak free in advance of the treatment. The pump of the truck should also be verified to be leak free. If a leak cannot be repaired DO NOT BEGIN THE JOB! Additionally, the pump truck should have an in-line meter or another means for accurate determination of the water pump rate to the well. BHI personnel should set-up the MAGNACIDE B application line to the suction of the pump according to standard operating procedures.

4. Begin metering the pre-flush (70 bbls) down the casing. The pumping rate should be set at as fast as possible.

5. Begin side-stream injection of MAGNACIDE B (52 gals) and continue to pump the chemical solution (400 bbls) as fast as possible but do not exceed pressure established by EP Energy. Meter the MAGNACIDE B at a rate of 0.13 gallons of MAGNACIDE B per 1 bbl of KCl.

6. Discontinue MAGNACIDE B application and purge equipment as per BHI SOP's.

7. After MAGNACIDE B injection is complete pump 30 bbls to displace treatment solution to the top perforation (based on 2,870 ft. fluid level). If the shut in fluid level is higher recalculate the displacement.

8. The well should remain shut-in for 24 hours to allow adequate time for the MAGNACIDE B to react with iron sulfide.

9. Return well to production and monitor $H_2S$, water quality, bacteria, and production volumes.



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**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** FEE

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:**

**1. TYPE OF WELL**
Oil Well

**8. WELL NAME and NUMBER:**
NELSON 1-31A1E

**2. NAME OF OPERATOR:**
EP ENERGY E&P COMPANY, L.P.

**9. API NUMBER:**
43047306710000

**3. ADDRESS OF OPERATOR:**
1001 Louisiana , Houston, TX, 77002

**PHONE NUMBER:**
713 997-6717 Ext

**9. FIELD and POOL or WILDCAT:**
BLUEBELL

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2142 FNL 1478 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SENW Section: 31 Township: 01.0S Range: 01.0E Meridian: U

**COUNTY:**
UINTAH

**STATE:**
UTAH

**11.**
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ✓ SUBSEQUENT REPORT<br>Date of Work Completion:<br>4/27/2013 | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: replace rods |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

See attached report for completed procedure.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
February 02, 2017

**NAME (PLEASE PRINT)**
Joe Araiza

**PHONE NUMBER**
713 997-5452

**TITLE**
HSER Manager

**SIGNATURE**
N/A

**DATE**
1/19/2017

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CENTRAL DIVISION

ALTAMONT FIELD
NELSON 1-31A1E
NELSON 1-31A1E
LOE LAND

# Operation Summary Report

Disclaimer: Although the information contained in this report is based on sound engineering practices, the copyright owner (s) does (do) not accept any responsibility whatsoever, in negligence or otherwise, for any loss or damage arising from the possession or use of the report whether in terms of correctness or otherwise. The application, therefore, by the user of this report or any part thereof, is solely at the user's own risk.

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# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | CENTRAL DIVISION |
| **Representative** | |
| **Address** | |

## 1.2 Well Information

| | | | |
|---|---|---|---|
| **Well** | NELSON 1-31A1E | | |
| **Project** | ALTAMONT FIELD | **Site** | NELSON 1-31A1E |
| **Rig Name/No.** | BASIC/1544 | **Event** | LOE LAND |
| **Start date** | 4/22/2013 | **End date** | 4/27/2013 |
| **Spud Date/Time** | 1/30/1980 | **UWI** | 031-001-S 001-E 30 |
| **Active datum** | KB @5,344.0ft (above Mean Sea Level) | | |
| **Afe No./Description** | 161129/48863 / NELSON 1-31A1E | | |

# 2 Summary

## 2.1 Operation Summary

| Date | Time Start-End | | Duration (hr) | Phase | Activity Code | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 4/23/2013 | 6:00 | 7:30 | 1.50 | MNTSSO | 46 | | P | | CREW TRAVEL, SAFETY MEETING ( MOVING RIG ON HIGHWAYS SAFELY) FILL OUT AND REVIEW JSA |
| | 7:30 | 9:00 | 1.50 | MNTSSO | 18 | | P | | LOAD UP AND MOVE OFF TAYLOR 3-9C4 |
| | 9:00 | 11:30 | 2.50 | MNTSSO | 18 | | N | | RIG BLEW 2 TIRES ON SAME SIDE OF DRIVE AXEL. REPLACE TIRES |
| | 11:30 | 12:30 | 1.00 | MNTSSO | 18 | | P | | FINISH MOVING TO LOCATION WHILE SLIDING ROTAFLEX |
| | 12:30 | 13:30 | 1.00 | MNTSSO | 16 | | P | | SPOT RIG IN AND PREPARE TO RIG UP RIG. |
| | 13:30 | 15:00 | 1.50 | MNTSSO | 18 | | N | | WAIT FOR WIND TO DIE DOWN TO RIG UP. (IT WAS DECIDED WIND WOULDN'T SLOW DOWN ENOUGH TO RIG UP TODAY. SHUT DOWN UNTIL AM |
| 4/24/2013 | 6:00 | 7:30 | 1.50 | MNTSSO | 46 | | P | | CREW TRAVEL, SAFETY MEETING ( RIGGING UP SAFELY) FILL OUT AND REVIEW JSA |
| | 7:30 | 13:00 | 5.50 | MNTSSO | 18 | | P | | RIG UP RIG,DO MAINTENENCE ON RIG. |
| | 13:00 | 17:00 | 4.00 | MNTSSO | 18 | | P | | P.U. ON POLISH ROD & LAY DOWN POLISH ROD,PUMP 70BBLS DOWN CSG,L.D. 2'&6' PONY SUBS. POOH W131-1",119-7/8,109-3/4..DATE ON ROD 4/12...BACKED OFF-PIN SHOWING. |
| | 17:00 | 19:00 | 2.00 | MNTSSO | 18 | | P | | M.U. 2 1/2 X 1 5/8 OBANNON GRAPPLE. RIH W/107-3/4 & 4-7/8 @ 2775',SDFTN. |
| 4/25/2013 | 6:00 | 7:30 | 1.50 | MNTSSO | 46 | | P | | CREW TRAVEL, SAFETY MEETING, ( FISHING RODS AND RUNNING ROD TONGS SAFELY. ROD BASKET AND TRANSFER SAFETY) FILL OUT AND REVIEW JSA |
| | 7:30 | 11:30 | 4.00 | MNTSSO | 18 | | P | | FINISH RIH W/RODS,LATCH ONTO FISH, FILL TUBING AND PRESSURE TEST TUBING TO 1000 PSI WITH A SLOW LEAK OFF. SCREW INTO STANDING VALVE-UNSEAT VALVE. |
| | 11:30 | 12:30 | 1.00 | MNTSSO | 18 | | P | | FLUSH RODS. W/60 BBLS 2% KCL. |
| | 12:30 | 16:30 | 4.00 | MNTSSO | 18 | | P | | POOH W/ RODS-LAY DOWN 13-3/4 ACROSS ROD BACK-OFF,CONTINUE POOH W/RODS. LAY DOWN PUMP |
| | 16:30 | 18:00 | 1.50 | MNTSSO | 18 | | P | | CHANGE OVER TO HANDLE TBG. N.D. WELLHEAD,STRIP BOPS ON.R.U. RIG FLOOR,RELEASE 5" TAC, |
| | 18:00 | 19:00 | 1.00 | MNTSSO | 18 | | P | | LAY DOWN 16 JTS 2 7/8 TBG = 517',TRY RE-SETTING 5" TAC, KEEPS SLIPPING ,P.U. ONE JT, TRY AGAIN, KEEPS SLIPPING, SDFTN. |
| 4/26/2013 | 6:00 | 7:30 | 1.50 | MNTSSO | 18 | | P | | CREW TRAVEL, SAFETY MEETING. ( RUNNING TUBING TONGS SAFELY AND RIGGING UP HYDROTESTERS) FILL OUT AND REVIEW JSA. HOT OILER FLUSHED TUBING WITH 60 BBLS 2% KCL FLUID |



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## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity Code | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 7:30 | 13:00 | 5.50 | PRDHEQ | 18 | | P | | PULL OUT OF HOLE WITH 304 JOINTS 2 7/8" TUBING, X-OVER TO POOH WITH 2 3/8" TUBING AND POOH WITH 28 JOINTS 2 3/8" TUBING 5" 18# TAC, 4 JOINTS 2 3/8" TUBING, 2 3/8" TUBING SUB, 1 3/4" ID TUBING PUMP CAVITY, 2 3/8" MECHINICAL SEAT NIPPLE, 2 3/8" TUBING SUB, 3 1/2" PBGA, AND 2 JOINTS 2 3/8" MUD ANCHOR WITH A SOLID PLUG. FLUSHING TUBING 3 DIFFRENT TIMES TO KEEP CLEAN TO HYDROTEST. |
| | 13:00 | 16:30 | 3.50 | PRDHEQ | 18 | | P | | RIG UP HYDROTEST TRUCK, PICK UP 2 3/8" BULL PLUG, 2 JOINTS 2 3/8" TUBING, 3 1/2" POOR BOY GAS ANCHOR, 2 3/8" TUBING SUB, MECHINICAL SEAT NIPPLE, 1 3/4" TUBING PUMP CAVITY, 2 3/8" TUBING SUB, HYDROTEST 4 JOINTS 2 3/8" TUBING, 5" TUBING ANCHOR CATCHER WITH CARBIDE SLIPS AND 28 JOINTS 2 3/8" TUBING TO 8500 PSI. CHANGE OVER RIG AND HYDROTEST EQUIPMENT TO RIH AND TEST 2 7/8" TUBING. |
| | 16:30 | 19:00 | 2.50 | PRDHEQ | 18 | | P | | HYDROTEST 144 JOINTS 2 7/8" TUBING INTO WELL.EOT @ 5621'. PULL HYDROTEST TOOLS AND SECURE WELL FOR NIGHT. |
| 4/27/2013 | 6:00 | 7:30 | 1.50 | PRDHEQ | 46 | | P | | CREW TRAVEL, SAFETY MTG ( R.D. HYDROTESTER AND PUMPING ACID PUMP 20 BBLS 2% KCL DOWN TUBING AND BLEED OFF CASING. FILL OUT AND REVIEW JSA |
| | 7:30 | 10:30 | 3.00 | PRDHEQ | 18 | | P | | OPEN WELL,FINISH HYDROTESTING TBG IN FROM 5621-144JTS TO 10,590-304 JTS. TEST ALL GOOD. |
| | 10:30 | 12:30 | 2.00 | PRDHEQ | 18 | | P | | R.D.HYDROTESTER, SET 5"TAC, R.D.RIG FLOOR & EQUIPMENT, STRIP BOP'S OFF, N.U. WELLHEAD. 5"TAC @ 10,318.10, MSN@ 10,489.08, E.O.T.@ 10,590.22. |
| | 12:30 | 14:00 | 1.50 | PMPNG | 18 | | P | | FLUSH TUBING WITH 60 BBLS 2% KCL, 55 GALLONS PARRIFIN SOLVENT, 5 BBL PAD, 55 GALLONS SCALE INHIBATOR AND A 10 BBLS 2% KCL PAD WHILE RIGGING UP PLATINUM TO PUMP 5000 GAL ACID JOB. |
| | 14:00 | 16:30 | 2.50 | PMPNG | 10 | | P | | HOLD PRE PUMP JSA. PRESSURE TEST LINE TO 1500 PSI. PUMP 5000 GALLONS 15% HCL AND DISPLACE TUBING WITH 70 BBLS 2% KCL. DISPLACE CASING WITH 175 BBLS 2% KCL. RIG DOWN PLATINUM |
| | 16:30 | 19:00 | 2.50 | PRDHEQ | 42 | | P | | PUMP 15 BBLS 2% KCL AND DROP STANDING VALVE, PUMP 35 BBLS 2% TO FILL AND TEST TUBING. TUBING WOULD PRESSURE UP TO 1000 PSI BUT BLEED TO 0 PSI IN APPZ 2 MINUTES. P.U. 5'PLUNGER, STROKE ROD W/2'PONY GUIDED, P.U. 10-1 1/2 K-BARS,RIH W/160-3/4 RODS, CHECKING EACH CONNECTION. ( DECIDED TO TIH AND SEAT MSN WIT PUMP AND TRY TO PT TUBING AGAIN). SECURE WELL SHUT DOWN FOR DAY |
| 4/28/2013 | 6:00 | 7:30 | 1.50 | PRDHEQ | 46 | | P | | CREW TRAVEL, SAFETY MEETING ( RIGGING DOWN RIG AND SLIDING UNIT ) FILL OUT AND REVIEW |
| | 7:30 | 10:30 | 3.00 | PRDHEQ | 42 | | P | | CONTINUE RIH W/117-7/8,128-1" SPACE OUT RODS,ADD 8',6',2' PONYS.P.U. POLISH ROD,. |
| | 10:30 | 11:00 | 0.50 | PRDHEQ | 42 | | P | | FILL TUBING WITH 10 BBLS AND TEST TO 1000. TEST GOOD, |
| | 11:00 | 12:30 | 1.50 | PRDHEQ | 18 | | P | | RDMO-SLIDE UNIT FORWARD PUT WELL ON PRODUCTION |



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