

P&A Surface Casing Check

| | | | | |
|--|----------------------|-------------------------|-----------------|--------------|
| Date | 12/23/2020 | | | |
| Operator | St Croix Op Inc | | | |
| Well Name | HICKERT 41C-18349 | | API | 121-10753-00 |
| Location | NENE 18 3S49W 6 PM | 39.798500 / -102.898806 | 780FNL 740 FEL | |
| Elevations: GL, TD-MD/TVD, PBTD-MD/TVD (ft) | 4466 | 3930 | 3870 | |
| Permit Formation | DK-JD,JSND,LYNS,NBRR | | | |
| Operator-Existing Surface Casing Depth (ft) | 365 | | | |
| Fox Hills Protection Area 5% Rule (ft) | 3930 | times .05 + 50 | 0.05 | 246.5 |
| Production within | 1 | mile(s), | J,NBRR | |
| Deepest Water Well w/in 1 mile, WW GL (ft) | 238 | | Number of Wells | 3 |
| Deepest Water Well w/in 2 miles, WW GL (ft) | 238 | | Number of Wells | 17 |
| Deepest Water Well w/in 3 miles, WW GL (ft) | 280 | 4482 | Number of Wells | 68 |
| Deepest Water Well to consider, WW GL (ft) | 280 | 4482 | | |
| Deepest Water Depth corrected for elevation, WW depth + (Local GL - WW GL) + 50' (ft) | 280 | -16 | 50 | 314 |
| Base of Fox Hills - SB5 (ft) | NA | | | |
| Base of Fox Hills - Cheyenne Basin (ft) | NA | | | |
| Base of Fox Hills - Log , GL (ft) | NA | NA | API | NA |
| Base of Fox Hills - Offset Log corrected for elevation, FH depth + (Local GL - Log GL) + 50' | NA | #VALUE! | 50 | #VALUE! |
| Upper Pierre base - Log, GL (ft) | 720 | 4466 | API | 121-10849 |
| Base of Upper Pierre - Offset Log corrected for elevation, UP depth + (Local GL - Log GL) + 50' | 720 | 0 | 50 | 770 |
| Operator Proposed/Existing Surface Casing Depth (ft) | 365 | | 365 | |
| Minimum Surface Casing Depth (ft) | 314 | | 314 | |
| Increase Permit Surface Casing Depth | from | | to | |
| Provide Remedial Cement | squeeze | 1200 | 40 sks | |
| | shoe | 415-0 | 125 sks | |

Oil and Gas Wells within Map Selection

| API | County | API Sequence | Location ID | Status | Well | Operator | Qtr | Qtr | Section | Township | Range | Meridian | Lat | Long | Formation Information | | | Bottom | TD | Formation Status |
|-----|--------|--------------|-------------|--------|-------------------------|---------------|------|-----|---------|----------|-------|----------|-----------|------------|-----------------------|-----------|-----|--------|------|------------------|
| | | | | | | | | | | | | | | | Sidetrack | Formation | Top | | | |
| 121 | | 7549 | 401923 | DA | F W CLAYPOC | UNITED STATES | SWSE | | 7 | 3S | 49W | 6 | 39.80139 | -102.90194 | | | | | | |
| 121 | | 7550 | 401924 | DA | F W CLAYPOC | UNITED STATES | NENE | | 18 | 3S | 49W | 6 | 39.7996 | -102.89728 | 0 | JSND | | 3745 | 3745 | 3909 AB |
| 121 | | 8060 | 402166 | DA | PRICE RANCH-DONZOIL INC | SWNW | | | 17 | 3S | 49W | 6 | 39.79508 | -102.89373 | | | | | | |
| 121 | | 8814 | 402873 | DA | PRICE *1 | ALLISON DRILL | SWNE | | 18 | 3S | 49W | 6 | 39.79504 | -102.90315 | | | | | | |
| 121 | | 8956 | 403002 | DA | JIM PRICE CA | HAWKS INDUST | NWNW | | 17 | 3S | 49W | 6 | 39.79874 | -102.89374 | | | | | | |
| 121 | | 10717 | 404522 | DA | HICKERT *22 | PAR PACIFIC | SEW | | 8 | 3S | 49W | 6 | 39.81097 | -102.89029 | | | | | | |
| 121 | | 10720 | 404485 | AL | HICKERT *32 | PAR PACIFIC | SWNE | | 7 | 3S | 49W | 6 | 39.80848 | -102.90348 | | | | | | |
| 121 | | 10719 | 317372 | PR | HICKERT *32 | SMITH ENER | SWNE | | 17 | 3S | 49W | 6 | 39.79646 | -102.88293 | 0 | NBRR | | 2786 | 2824 | 3995 PR |
| 121 | | 10724 | 404489 | PA | HICKERT *22 | PAR PACIFIC | SEW | | 17 | 3S | 49W | 6 | 39.79619 | -102.88797 | 0 | N-COM | | | | 3956 AB |
| 121 | | 10722 | 404487 | AL | HICKERT *12 | PAR PACIFIC | SWNW | | 8 | 3S | 49W | 6 | 39.80887 | -102.89248 | | | | | | |
| 121 | | 10721 | 404486 | AL | HICKERT *31 | PAR PACIFIC | NWNE | | 7 | 3S | 49W | 6 | 39.81239 | -102.90077 | | | | | | |
| 121 | | 10742 | 317373 | PR | HICKERT *24 | SMITH ENER | SESW | | 8 | 3S | 49W | 6 | 39.802758 | -102.88884 | 0 | NBRR | | 2800 | 2836 | 4015 PR |
| 121 | | 10749 | 404511 | PA | HICKERT *31 | PAR PACIFIC | NWNE | | 17 | 3S | 49W | 6 | 39.79864 | -102.88417 | 0 | NBRR | | 2762 | 2796 | 3950 AB |
| 121 | | 10753 | 317374 | PR | HICKERT *41 | ST CROIX OPI | NENE | | 18 | 3S | 49W | 6 | 39.7985 | -102.89881 | 0 | NBRR | | 2851 | 2887 | 3930 PR |
| 121 | | 10752 | 404514 | PA | HICKERT *31 | PAR PACIFIC | NWNE | | 18 | 3S | 49W | 6 | 39.79722 | -102.903 | 0 | NBRR | | 2857 | 2870 | 4070 AB |
| 121 | | 10763 | 404522 | DA | HICKERT *22 | PAR PACIFIC | SEW | | 8 | 3S | 49W | 6 | 39.8109 | -102.89024 | | | | | | |
| 121 | | 10768 | 404527 | PA | HICKERT *34 | PAR PACIFIC | SWSE | | 18 | 3S | 49W | 6 | 39.78792 | -102.90358 | 0 | | | 2868 | 2898 | 4058 AB |
| 121 | | 10769 | 404528 | PA | HICKERT *33 | PAR PACIFIC | NWSE | | 7 | 3S | 49W | 6 | 39.80604 | -102.9035 | 0 | NBRR | | 2864 | 2876 | 4055 AB |
| 121 | | 10797 | 404545 | PA | HICKERT *23 | PAR PACIFIC | NESW | | 17 | 3S | 49W | 6 | 39.79008 | -102.88956 | 0 | N-COM | | | | 4050 AB |
| 121 | | 10798 | 404546 | PA | HICKERT *13 | PAR PACIFIC | NWSW | | 17 | 3S | 49W | 6 | 39.79239 | -102.89267 | 0 | NBRR | | 2815 | 2850 | 4040 AB |
| 121 | | 10802 | 404550 | PA | HICKERT *34 | PAR PACIFIC | SWSE | | 7 | 3S | 49W | 6 | 39.80153 | -102.90392 | 0 | NBRR | | 2857 | 2884 | 4040 AB |
| 121 | | 10808 | 404556 | AL | HICKERT *22 | PAR PACIFIC | SEW | | 18 | 3S | 49W | 6 | 39.79496 | -102.90796 | | | | | | |

| Water Wells within Map Selection | | | | | | | 238 | 169 | 211 ft | |
|----------------------------------|---------|----------------------------|---------|---------|----------|--------|-------|----------|-------------|----------------------|
| Receipt | Permit | Water Well | Quarter | Section | Township | Range | Depth | Top Perf | Bottom Perf | Aquifer |
| C610156 | 156-WCB | J E WRAPE EST | NWSE | 17 | 3.0 S | 49.0 W | 238 | | | ALL UNNAMED AQUIFERS |
| | 9057685 | 74155- JIM PRICE CATTLE CO | NWNE | 18 | 3.0 S | 49.0 W | 211 | 161 | 211 | ALL UNNAMED AQUIFERS |
| | 9057631 | 69700- JIM PRICE CATTLE CO | NWNW | 18 | 3.0 S | 49.0 W | 206 | 169 | 206 | ALL UNNAMED AQUIFERS |

| Water Wells within Map Selection | | | | | | | 238 | 169 | 211 ft | |
|----------------------------------|---------|--|---------|---------|----------|--------|----------|----------|-------------|----------------------|
| Receipt | Permit | Water Well | Quarter | Section | Township | Range | Depth | Top Perf | Bottom Perf | Aquifer |
| | | | | | | | 17 wells | | | 2 mile |
| C610156 | 9056643 | 12350-STATE BOARD OF LAND COMMISSIONER | NESW | 16 | 3.0 S | 49.0 W | 169 | | | ALL UNNAMED AQUIFERS |
| | 156-WCB | J E WRAPE EST | NWSE | 17 | 3.0 S | 49.0 W | 238 | | | ALL UNNAMED AQUIFERS |
| | 9057685 | 74155-JIM PRICE CATTLE CO | NWNE | 18 | 3.0 S | 49.0 W | 211 | 161 | 211 | ALL UNNAMED AQUIFERS |
| | 9057631 | 69700-JIM PRICE CATTLE CO | NWNW | 18 | 3.0 S | 49.0 W | 206 | 169 | 206 | ALL UNNAMED AQUIFERS |
| | 9056642 | 12338-KING, HOWARD | NENE | 30 | 3.0 S | 49.0 W | 165 | | | ALL UNNAMED AQUIFERS |
| | 9057969 | 104331-JAWS LAND CO | SWNW | 4 | 3.0 S | 49.0 W | 175 | 135 | 175 | OGALLALA |
| | 9057180 | 29484-DONALD, A M | NWSW | 5 | 3.0 S | 49.0 W | 155 | | | ALL UNNAMED AQUIFERS |
| | 9057809 | 83694-JAWS LAND CO | SWNE | 5 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064233D | 20228-F | CHRISTIANSON, DON | SWSW | 5 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064170A | 20232-F | CHRISTIANSON, DON | SWNW | 6 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057330 | 37821-PRICE, JIM | NESW | 8 | 3.0 S | 49.0 W | 232 | | | ALL UNNAMED AQUIFERS |
| | 9057429 | 42237-DONALD, ARTHUR M | SENE | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064170D | 20230-F | CHRISTIANSON, DON | SENW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064170E | 20227-F | CHRISTIANSON, SANDRA | NENW | 12 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0092979A | | HEIN, R E | NWSE | 12 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0065115A | 5760-AD | CHRISTIANSON, SANDRA | NENW | 13 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0092979B | | HEIN, R E | NWNW | 13 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |

| Water Wells within Map Selection | | | | | | | 280 | 240 | 280 ft | |
|----------------------------------|-------------------|---|---------|---------|----------|--------|-------|----------|-------------|----------------------|
| Receipt | Permit | Water Well | Quarter | Section | Township | Range | Depth | Top Perf | Bottom Perf | Aquifer |
| | 202869 113405- | SMALL, R | SENE | 31 | 2.0 S | 49.0 W | 250 | 0 | 40 | ALL UNNAMED AQUIFERS |
| 0065115B | 20290-F | HICKERT JOHN & WENDY | SENE | 31 | 2.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| 0207745B | 116092- | HICKERT JOHN J JR & WENDY J | SESE | 31 | 2.0 S | 49.0 W | 246 | | | OGALLALA |
| | 83568 91915- | SMALL, RAYMOND | SWSW | 31 | 2.0 S | 49.0 W | 222 | 192 | 202 | ALL UNNAMED AQUIFERS |
| 0067031B | 5940-AD | ALLEN, WILBUR I | SWNW | 32 | 2.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057428 42236- | JAWS LAND CO | SWNE | 33 | 2.0 S | 49.0 W | 191 | | | ALL UNNAMED AQUIFERS |
| 0063468A | 5746-AD | CHRISTIANSON, DON | SESW | 10 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 97401 7790-AD | CHRISTIANSON, DON | SESW | 10 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9056226 2803-FP | SWAN VALLEY LAND & LIVESTOCK INC | SESW | 10 | 3.0 S | 49.0 W | 216 | 116 | 216 | OGALLALA |
| 0064233F | 5810-AD | CHRISTIANSON, DON | SWNW | 10 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9056945 19825-FP | LICHTY MICHAEL D & CAROL J | NESE | 15 | 3.0 S | 49.0 W | 230 | | | OGALLALA |
| | 9056944 19824-FP | LICHTY MICHAEL D & CAROL J | NWNW | 15 | 3.0 S | 49.0 W | 230 | | | OGALLALA |
| | 3628899 19824-FP | SMELKER, TERRI D | NWNW | 15 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 99381 19824-F-R | JOHNSON, K L | NWNW | 15 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057650 72210- | DIBLE KENNA J & ANDREW | SENE | 15 | 3.0 S | 49.0 W | 204 | 184 | 204 | ALL UNNAMED AQUIFERS |
| | 9057951 102050- | STATE BOARD OF LAND COMMISSIONER | NENE | 16 | 3.0 S | 49.0 W | 222 | | | OGALLALA |
| | 9056643 12350- | STATE BOARD OF LAND COMMISSIONER | NESW | 16 | 3.0 S | 49.0 W | 169 | | | ALL UNNAMED AQUIFERS |
| C610156 | 156-WCB | J E WRAP EST | NWSE | 17 | 3.0 S | 49.0 W | 238 | | | ALL UNNAMED AQUIFERS |
| | 9057685 74155- | JIM PRICE CATTLE CO | NWNE | 18 | 3.0 S | 49.0 W | 211 | 161 | 211 | ALL UNNAMED AQUIFERS |
| | 9057631 69700- | JIM PRICE CATTLE CO | NWNW | 18 | 3.0 S | 49.0 W | 206 | 169 | 206 | ALL UNNAMED AQUIFERS |
| | 9057048 22757- | WOODARD, NORMAN | SESE | 20 | 3.0 S | 49.0 W | 200 | | | ALL UNNAMED AQUIFERS |
| | 3653971 22757--A | RAD LAND & CATTLE CO | SESE | 20 | 3.0 S | 49.0 W | 240 | 200 | 240 | OGALLALA |
| 0415236B | 203586--A | HICKERT LAND CO | NENW | 22 | 3.0 S | 49.0 W | | | | OGALLALA |
| | 9056558 10620- | KING, HOWARD F | SWSW | 22 | 3.0 S | 49.0 W | 210 | | | ALL UNNAMED AQUIFERS |
| 0522143A | 258235- | DAISY LANE FARMS LLC | NENE | 28 | 3.0 S | 49.0 W | | | | OGALLALA |
| | 9056742 14387-FP | DAISY LANE FARM LLC | NENE | 29 | 3.0 S | 49.0 W | 207 | 157 | 207 | ALL UNNAMED AQUIFERS |
| | 9056801 16013-FP | DAISY LANE FARM LLC | SWNW | 29 | 3.0 S | 49.0 W | 219 | 129 | 219 | ALL UNNAMED AQUIFERS |
| | 9056642 12338- | KING, HOWARD | NENE | 30 | 3.0 S | 49.0 W | 165 | | | ALL UNNAMED AQUIFERS |
| | 9056502 9075- | FORRISTALL & WOODARD | SESE | 30 | 3.0 S | 49.0 W | 180 | | | ALL UNNAMED AQUIFERS |
| | 9056846 17270-FP | DAISY LANE FARM LLC | SESW | 30 | 3.0 S | 49.0 W | 220 | 145 | 225 | ALL UNNAMED AQUIFERS |
| 3653621A | 287364- | JAWS, LANDCO | SENE | 4 | 3.0 S | 49.0 W | 120 | | | ALL UNNAMED AQUIFERS |
| 3653621B | 287364--A | JAWS, LANDCO | SENE | 4 | 3.0 S | 49.0 W | 200 | 160 | 200 | OGALLALA |
| | 9057969 104331- | JAWS LAND CO | SWNW | 4 | 3.0 S | 49.0 W | 175 | 135 | 175 | OGALLALA |
| | 9057180 29484- | DONALD, A M | NWSW | 5 | 3.0 S | 49.0 W | 155 | | | ALL UNNAMED AQUIFERS |
| | 9057809 83694- | JAWS LAND CO | SWNE | 5 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064233D | 20228-F | CHRISTIANSON, DON | SWSW | 5 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 912303 85065- | SMALL, RAYMOND | NWNW | 6 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064170A | 20232-F | CHRISTIANSON, DON | SWNW | 6 | 3.0 S | 49.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057330 37821- | PRICE, JIM | NESW | 8 | 3.0 S | 49.0 W | 232 | | | ALL UNNAMED AQUIFERS |
| 0064170C | 20231-F | CHRISTIANSON, DON | NENE | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 914924 121110- | SMALL, RAYMOND | NWNW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057429 42237- | DONALD, ARTHUR M | SENE | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0064170D | 20230-F | CHRISTIANSON, DON | SENE | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 105959 20229-F-R | CHRISTIANSON, D | SWNW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9056962 20229-F | YOUNG JONEAL & RITA & JR BIRDSALL * | SWNW | 1 | 3.0 S | 50.0 W | 266 | | | ALL UNNAMED AQUIFERS |
| | 9057009 21331-F | YOUNG JR BIRDSALL,DARLENE,JONEAL,& SWNW | 1 | 3.0 S | 50.0 W | 220 | | | | ALL UNNAMED AQUIFERS |
| | 68398 6075-AD | CHRISTIANSON, DON | SWSW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0076512B | | SHEDD, DAVIE | SWSW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 88186 21331-F-R | CHRISTIANSON, DON | SWSW | 1 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 466886 228896- | SWAN VALLEY LAND & LIVESTOCK INC | NENE | 11 | 3.0 S | 50.0 W | 232 | 192 | 232 | OGALLALA |
| | 9058066 123705- | YOUNG BIRDSALL JR | SWNW | 11 | 3.0 S | 50.0 W | 240 | | | ALL UNNAMED AQUIFERS |
| | 9057014 21538-F | YOUNG BIRDSALL JR | SWNW | 11 | 3.0 S | 50.0 W | 230 | | | ALL UNNAMED AQUIFERS |
| 0064170E | 20227-F | CHRISTIANSON, SANDRA | NENW | 12 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0092979A | | HEIN, R E | NWSE | 12 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 67957 6067-AD | CHRISTIANSON, DENNIS L | NWSW | 12 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9056960 20171-FP | SWAN VALLEY LAND & LIVESTOCK INC | NWSW | 12 | 3.0 S | 50.0 W | 240 | 120 | 240 | ALL UNNAMED AQUIFERS |
| 0067957A | 21330-FP | SWAN VALLEY LAND & LIVESTOCK INC | NWSW | 12 | 3.0 S | 50.0 W | 240 | 120 | 240 | OGALLALA |
| 0065115A | 5760-AD | CHRISTIANSON, SANDRA | NENW | 13 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| 0092979B | | HEIN, R E | NWNW | 13 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 74359 6505-AD | YOUNG JR BIRDSALL | NENW | 14 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057925 97848- | SMALL, RAYMOND | NENE | 2 | 3.0 S | 50.0 W | 280 | 240 | 280 | ALL UNNAMED AQUIFERS |
| | 9056319 5237- | AUSTIN, F R | NENE | 2 | 3.0 S | 50.0 W | 200 | | | ALL UNNAMED AQUIFERS |
| | 9057102 25319- | DONALD, A M | SESE | 23 | 3.0 S | 50.0 W | 130 | | | ALL UNNAMED AQUIFERS |
| | 105753 8169-AD | HILL, DEAN E | SENE | 24 | 3.0 S | 50.0 W | | | | ALL UNNAMED AQUIFERS |
| | 9057103 25320- | DONALD, A M | NENE | 25 | 3.0 S | 50.0 W | 150 | | | ALL UNNAMED AQUIFERS |
| | 9056912 18891-FP | KING MASON A & LINDA | SESE | 25 | 3.0 S | 50.0 W | 230 | | | ALL UNNAMED AQUIFERS |
| | 9056957 20014-FP | PAGE, RICHARD I | SWNE | 25 | 3.0 S | 50.0 W | 223 | 163 | 223 | ALL UNNAMED AQUIFERS |
| | 472057 20014-FP-R | PAGE, RICHARD I | SWNE | 25 | 3.0 S | 50.0 W | 240 | 180 | 240 | OGALLALA |

Company: Delta Petroleum Corporation

Well: Hickert 41C - 18349

Field: No Name

County: Washington

State: Colorado

Platform Express

Triple Combo Log

| | | | |
|---|--|---|--|
| County: Washington Field: No Name Location: NE NE Sec 18 T38 R46W Well: Hickert 41C 18349 Company: Delta Petroleum Corporation | | LOCATION NE NE Sec 18 T38 R46W 707 FUL & 747 FEL Permanent Datum Log Measured From Kelly Building Drilling Measured From Kelly Building API Serial No. 05-121-10725-00 Section 18 Township 35 Range 49W | |
| Logging Data Run Number 1 Depth Order Schlumberger Depth Bottom Log Interval Top Log Interval Casing Order Size @ Depth 8 625 in @ 205 ft Casing Schlumberger Bit Size 7 875 in Type Fluid In Hole Density 9.6 lbm/gal Viscosity 80 s Fluid Loss 4.8 cm Mud Pk 8.5 | | EWR KB 4475 ft GL 4466 ft DF 4474 ft EWR 4468 ft 9.0 ft above Perm Datum | |
| Run 1 Run 2 Run 3 Run 4 | | | |

DEPTH SUMMARY LISTING

Date Created: 3-SEP-2004 8:33:40

Depth System Equipment

| Depth Measuring Device | Tension Device | Logging Cable |
|-------------------------------|--------------------------------|-----------------------------|
| Type: IDW-B | Type: CMTD-B/A | Type: 7-39Z |
| Serial Number: 872 | Serial Number: 100513 | Serial Number: 3120 |
| Calibration Date: 10-May-2004 | Calibration Date: 28-Jul-2004 | Length: 10650.00 FT |
| Calibrator Serial Number: 1 | Calibrator Serial Number: 1937 | Conveyance Method: Wireline |
| Calibration Cable Type: 7-39Z | Calibration Gain: 1.08 | Rig Type: LAND |
| Wheel Correction 1: -3 | Calibration Offset: 681.00 | |
| Wheel Correction 2: -3 | | |

Depth Control Parameters

| | |
|----------------------------|-----------------------|
| Log Sequence | First Log In the Well |
| Rig Up Length At Surface | 0.00 FT |
| Rig Up Length At Bottom | 0.00 FT |
| Rig Up Length Correction | 0.00 FT |
| Stretch Correction | 4.00 FT |
| Tool Zero Check At Surface | 0.20 FT |

Depth Control Remarks

- 1 IDW used as primary depth reference
- 2
- 3

4
5
6

DISCLAIMER

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OTHER SERVICES1

OS1 AIT/CNL/TLD
OS2 ML/BHC
OS3 InterACT/TransACT
OS4
OS5

OTHER SERVICES2

OS1
OS2
OS3
OS4
OS5

REMARKS RUN NUMBER 1

This log is the first run in the hole

REMARKS RUN NUMBER 2

Tool string run as per tool sketch

Tool string run without standoffs and bowstring

Matrix and matrix densities annotated on logs

Rig Encore 232

Schlumberger crew Ian Derry and Curt Erickson

RUN 1

SERVICE ORDER #
PROGRAM VERSION
FLUID LEVEL

10836413
11C0 305
245 ft

RUN 2

SERVICE ORDER #
PROGRAM VERSION
FLUID LEVEL

LOGGED INTERVAL

START

STOP

LOGGED INTERVAL

START

STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT
WITM (DTS) A

GSR-U 1825
NCT-B
CNB-AB
NCS-VB

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT
LEH-QT

64.2

DTC-H
ECH-KC
DTC-H-A

CTEM
TelStatus
ToolStatus

60.4
58.3

61.3

DSL-T-H
DSL-C-H
ECH-KH
SL-S-W

DSL-T-Aux
LQPS
HMCA
Gamma-Ray

58.3
45.8
45.0
44.8
42.1
41.9
41.1
37.6
37.6
36.9

58.3


HILTB-FTB
HGNSD-B 1699
HMCA
HGNIH 1634
NLS-KL
NSR-F 2539
HAOCZ
HCNT
HGR
HRCC-B 932
HRMS-B 1716
HRGD-B 885
GLS-VJ
MCFL Device
HIL-T Nuci L 890
HIL-T Nuci S 890
HIL-T Nuci 890
AIT-H 836
AHIS-BA 236
AHRM-A
NPV-N


Neutron F
Neutron N
HGNS sens
HRCC cart
MCFL
HIL-T cali
HRDD LS
HRDD SS
HRDD SS

31.1
30.8
28.2
24.2
18.8
18.3
17.9
7.9
0.1

37.6

Induction
Temperatu
Power Sup
SP SENSOR
OF
HTEN HMAS HV
Accelerom
Mud Resist

Tension  00
 TOOL ZERO
 MAXIMUM STRING DIAMETER 4.63 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN FEET

| Production String | Rt | | | Well Schematic | Rt | | | Casing String |
|-------------------|----|----|----|--|--------|-------|----|---------------------------|
| | OO | ID | MD | | MD | OO | ID | |
| | | | |  | 0 0 | 0.021 | | Casing String |
| | | | | | 355 0 | 0.020 | | Casing Shoe |
| | | | | | 355 0 | 7.47% | | Screenhole Segment |
| | | | | | 3530 0 | 7.47% | | Screenhole Segment Bottom |

All depths are driller's depth

Schlumberger
FORT MORGAN

MAIN LOG 5" = 100'

MAXIS 500 Field Log

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_017LUP FN 16 PRODUCER 03-Sep-2004 07 54 3942 0 FT 99 5 FT

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_031PUP FN 27 PRODUCER 03-Sep-2004 09 25 3942 0 FT 104 0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 1268 82 F3
Cement Volume = 875 36 F3 (assuming 4 50 IN casing O D)
Computed from 3929 0 FT to 397 0 FT using data channel(s) HCAL

OP System Version: 11C0-305

MCM

HILTS-FTB 11C0-305 DBLT-H OP11-KP1
DTC-H 11C0-305

Changed Parameter Summary

| DLIS Name | New Value | Previous Value | Depth & Time |
|-----------|-----------|----------------|-----------------|
| MATR | LIMESTONE | SANDSTONE | 3411 5 09 27 10 |
| MDEN | SANDSTONE | LIMESTONE | 2833 5 09 32 29 |
| | 2 71 G/C3 | 2 85 G/C3 | 3411 5 09 27 14 |
| | 2 85 G/C3 | 2 71 G/C3 | 2833 5 09 32 33 |

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

