

DAILY DRILLING - WORKOVER LOG

LOG 22549

LEASE /
WELL

USA 84-7

Page 9

SPUDED November 4 19 80

| ELEVATIONS: GND. | | BH | | DF | | RDB | |
|------------------|-------------|----------|-------------|-----------------------------------|-----|-----|---|
| CASING RECORD | | | | | | | |
| PIPE SIZE | HOLE | SEAT | F. C. | CEMENTING DATA: Sacks, Kind, etc. | | | |
| Conductor: | | | | | | | |
| Surface: | | | | | | | |
| Intermed: | | | | | | | |
| Oil String: | | | | | | | |
| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
| | | | DEG. | DEPTH | WT | VIS | |
| 1-7 | 8139 | 0 | | | | | Nipple up BOP stack, rig up to run drill pipe, RIH to 1,668', rig up safety valves & lubricator for Dresser Atlas, blow well at 1,668', RIH to 2,047' and blow well, well came in, rig up & RIH with Spinner & differential temperature surveys. |
| 1-8 | 8139 | 0 | | | | | Running logs, rig down Dresser Atlas, blow well on 10" flow nipple, shut in and kill well. |
| 1-9 | 8139 | 0 | | | | | Killing well, pump 200 bbl. HOH, check well for flow and POOH, install top blind ram and ram rubbers, RIH with 5" drill pipe open ended and tag fill at 8,121', spot 20-40 sand 8,121' to 7,983', POOH with 5" drill pipe. |
| 1-10 | 8139 | 0 | | | | | Strap out hole, pick up 8 1/2" bit, RIH to top of sand, tag sand 7,994', clean out to 8,000', circ. 1 hour, lost returns, POOH, thaw out water lines, rig up and run 34 joints 7" N-80-29# buttress USS casing, 6,494' to 7,997', casing on bottom at 6:30 p.m., RIH with 5" drill pipe and liner, circ. 6,997' with 7" casing. |
| 1-11 | 8139 | 0 | | | | | Circ. hole at 7,997 with no returns, cementing casing with 800 cu. ft. spherelite + 200 sq. ft., Class G with 40% SSA-1, .4% CFR, .3% HR-12, tail in, pump in 7 B/min., final pressure 800, POOH, rig down Midway tool, RIH to 2,506' and circ., WOC, RIH to top of 7" casing - no cement, circ. at low rate with full returns, POOH laying down 51 joints 5" drill pipe. |
| 1-12 | 8139 | 0 | | | | | POOH, WOC, pick up 9 5/8" RTTS set at 6,708', set packer, squeeze top of liner with 600 cu. ft. spherelite cement, with Class G, 40% SSA-1, .1% CFR-2, 4% gel, Halad 21 + .4% HR-12, cement in place at 11:45 a.m., final pressure 300#, WOC. |
| 1-13 | 8139 | 0 | | | | | POOH, pick up bit and RIH to 6,408' to clean out cement - no cement on liner top, circ., pressure test lap to 500 psi, OK, POOH, make up 6" drill assembly, RIH, tag cement at 7,485', circ., drill out cement 7,485 to 7,785'. |
| 1-14 | 8139 | 0 | | | | | Clean out cement 7,795-7,997', circ. hole clean 7,800', drill out shoe 7,997-7,800', circ. out 20/40 sand, 8,000-8,039' - lost returns, circ. with no returns, POOH to 6,138', circ. at 6,138' - no returns, POOH to 2,500', blow well at 2,500', ran in to 4,000' - blew well, RIH to 5,397', and blow well, well began flowing 2nd blow, RIH to |

Soil and Water Testing Laboratory
Division of
Plant, Soil and Water Science
College of Agriculture
Reno, Nevada 89557

Lab No. 6

Fee for Special Tests. _____

WATER ANALYSIS REPORT FORM

*WELL HAS BEEN PLUGGED
AND CSG CUT OFF, AS PER
INSTRUCTION OF NEVADA
WATER RESOURCES BOARD*

Fill in items 1 and 2 and submit one form with each sample. Submit only waters for Agricultural use. Domestic use water must be sent to the State Department of Health.

1. Name Sunedco 423-5648
Address Pick & Ranch
Fallon Zip 89406
County Churchill

2. Water Source and Location Dixie Valley
Well at Pick & Ranch USA - 62-21
Date Collected 11/10/80
Water Use Testing

STANDARD TESTS:

Conductivity _____
micromhos/cm 2600
pH 7.35
Cations and Anions
(milliequivalents per liter):
Calcium + Magnesium 6.08
Sodium 10.2
Carbonate 0
Bicarbonate 7.6
Chloride 5.6
Estimated Sulfate 3.1
SAR 5.85
pH_c _____

SPECIAL TESTS:

parts per million:
Nitrate Nitrogen _____
Phosphorus _____
Boron _____
Iron _____
Other _____

REMARKS:

Not recommended for irrigation - Domestic use water must be sent to the Nevada Division of Health.

Date of Report 1/23/81 Analyst D. Thran

CLASSIFICATION: I C4-S3

*II RSC _____

**III EEESP _____

*RSC--Residual Sodium Carbonate

**EEESP--Expected Equilibrium Exchangeable Sodium Percentage. A soil irrigated with this water is expected to have an exchangeable sodium percentage of this value.

*John W. Beddingfield 1-29-81
DRLG FOREMAN*

LOG 22549

INTERPRETATION OF IRRIGATION WATERS FOR
SALINITY AND SODIUM HAZARDS

CLASSIFICATION I

Low-Salinity Water (C1) can be used for irrigation with most crops on most soils with little likelihood that soil salinity will develop. Some leaching is required, but this occurs under normal irrigation practices except in soils of extremely low permeability.

Medium-Salinity Water (C2) can be used if a moderate amount of leaching occurs. Plants with moderate salt tolerance can be grown in most cases without special practices for salinity control.

High-Salinity Water (C3) cannot be used on soils with restricted drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.

Very High-Salinity Water (C4) is not suitable for irrigation under ordinary conditions, but may be used occasionally under very special circumstances. The soils must be permeable, drainage must be adequate, irrigation water must be applied in excess to provide considerable leaching, and very salt-tolerant crops should be selected.

Sodium

The classification of irrigation waters with respect to SAR is based primarily on the effect of exchangeable sodium on the physical condition of the soil. Sodium-sensitive plants may, however, suffer injury as a result of sodium accumulation in plant tissues when exchangeable sodium values are lower than those effective in causing deterioration of the physical condition of the soil.

Low-Sodium Water (S1) can be used for irrigation on almost all soils with little danger of the development of harmful levels of exchangeable sodium. However, sodium-sensitive crops such as stone-fruit trees and avocados may accumulate injurious concentrations of sodium.

Medium-Sodium Water (S2) will present an appreciable sodium hazard in fine-textured soils having high cation-exchange-capacity, especially under low-leaching conditions, unless gypsum is present in the soil. This water may be used on coarse-textured or organic soils with good permeability.

High-Sodium Water (S3) may produce harmful levels of exchangeable sodium in most soils and will require special soil management—good drainage, high leaching, and organic matter additions. Gypsiferous soils may not develop harmful levels of exchangeable sodium from such waters. Chemical amendments may be required for replacement of exchangeable sodium, except that amendments may not be feasible with waters of very high salinity.

Very High-Sodium Water (S4) is generally unsatisfactory for irrigation purposes except at low and perhaps medium salinity, where the solution of calcium from the soil or use of gypsum or other amendments may make the use of these waters feasible.

Sometimes the irrigation water may dissolve sufficient calcium from calcareous soils to decrease the sodium hazard appreciably, and this should be taken into account in the use of C1-S3 and C1-S4 waters. For calcareous soils with high pH values or for non-calcareous soils, the sodium status of waters in classes C1-S3, C1-S4 and C2-S4 may be improved by the addition of gypsum to the water. Similarly, it may be beneficial to add gypsum to the soil periodically when C2-S3 and C3-S2 waters are used.

CLASSIFICATION II* - Residual Sodium Carbonate

(Used only for waters containing more carbonate + bicarbonate than calcium + magnesium)

- 0 - 1.25 Probably safe
- 1.25 - 2.50 Marginal
- over 2.50 Not suitable for irrigation

CLASSIFICATION III* - Expected Equilibrium Exchangeable Sodium Percentage

(Used only for water containing more carbonate + bicarbonate than calcium + magnesium)

- 0 - 10 Usually safe for use on all soils
- 11 - 18 Marginal (especially on fine-textured soils)
- 19 or more—Adverse soil physical conditions expected. If used, amendments probably will be required (see discussion on Sodium under Classification I above).

*If interpretations by Classifications I, II and III differ, it is recommended that you be guided by Classification III.

CASING CEMENTING DATA

SUN-7646

| | | | | | | | | |
|---|---------------|------------|-----------|---------------------------------|-------------|-----------|----------------------------------|--|
| WELL NAME AND NUMBER USA 84-7 | | | | DISTRICT Dixie Valley | | | DATE CEMENTED 12-13-80 | |
| TD | HOLE SIZE | MUD WT | VIS | CAKE | PH | WL | MUD TYPE | |
| 7,470 | 12 1/4 | 8.6 | 35 | 2 | 11.0 | 45 | Sepolite | |

CEMENT DATA

| | | | | | | | |
|-------------------------------|------------|-------------|--|--|--|--|-----------------------------|
| STAGE I | SAX | YIELD | SLURRY COMPOSITION | | | | AVG. SLURRY WT. |
| | 123 | 1.62 | Class II/40% SSA-1, .5% CFR-2, .5% HR7, .5% Halad | | | | 116 #/ft³ |
| STAGE II | SAX | YIELD | SLURRY COMPOSITION | | | | NO. SAMPLES |
| | | | | | | | 3 |
| CENTRAL SCRATCHERS ZERS | SAX | YIELD | SLURRY COMPOSITION | | | | AVG. SLURRY WT. |
| | | | | | | | |
| CENTRAL SCRATCHERS ZERS | SAX | YIELD | SLURRY COMPOSITION | | | | NO. SAMPLES |
| | | | | | | | |

EQUIPMENT DATA

| | |
|---|--|
| MFG, TYPE, POSITION | |
| None | |
| MFG, TYPE, POSITION | |
| B & W, clamp on with pin, 2 shoe jt., 1 every other collar for a total of 15 | |

| | | | |
|-------------------------------------|--|--------------------|-------------------------------|
| CEMENTING CO. Halliburton | WASH AHEAD OF CMT. TYPE Sep/Barite | BBLs. 18 | THREAD COMPOUND API |
|-------------------------------------|--|--------------------|-------------------------------|

OPERATIONAL DATA

| | | | | | | | |
|--|-----------------------|--|-------------------|--|-----------------|---------------|----------------------|
| STARTED RING CASING ON BTM. | START CIRC | END CIRC | RATE | START MIX CMT | END MIX | RATE | START PLUG |
| 3:00 PM | 10:00 PM | 10:00 PM | 9 BBLs / M | 4:45 a M | 4:53 a M | 27 / M | 4:55 a M |
| PLUG DOWN | RATE | PIPE MOVED: HOW | START | STOP | START | STOP | SHUT DOWN TIME |
| 6:15 a M | 26.89 BBLs / M | - | - | - | - | - | 2 minutes |
| CSG FILLED EVERY 5 JOINTS WHILE RUNNING | | DISPLACED PLUG W/ <input checked="" type="checkbox"/> WATER <input type="checkbox"/> MUD | | LOST RETURNS (SEE REMARKS) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | |
| BREAK CIRC. | PSI | CIRC. PRIOR TO MIX | PSI | JUST PRIOR TO PLUG DOWN | PSI | | |
| 325 | | 325 | | 350 | | | |
| FINAL | PSI | BLEED BACK TO | PSI | CEMENT TOP | ACTUAL | CALCULATED | VOL. CEMENT RETURNED |
| 350 | | 0 | | 200+ | 220 | | None |
| CSG FLANGE (MFG, MODEL, SIZE, SERIES) NA | | | | | | | |

CASING DATA

| LIST POSITION IN STRING FROM TOP TO BOTTOM | | | | | | RDB-GND | 25.05 | RDB-BH | 30.05 |
|--|-------|--------|-------|-------------------|-------|---------|--------------|-------------------------------|--------------|
| MFR - ITEM | SIZE | WEIGHT | GRADE | THREAD CONNECTION | COND. | NO. JTS | FOOTAGE | RDB SPACE | |
| | | | | | | | | NA-Liner | |
| Midway-Hanger | 9 5/8 | 40 | - | Buttress | | 1 | 7.00 | 2,413.65 ADD TO TOP | |
| USS | 9 5/8 | 40 | K-55 | Buttress | 1 | 40 | 1,625.49 | 4,045.64 | |
| USS | 9 5/8 | 40 | N-80 | Buttress | 1 | 25 | 1,036.34 | 5,081.98 | |
| USS | 9 5/8 | 43.5 | N-80 | Buttress | 1 | 30 | 1,284.54 | 6,366.98 | |
| USS | 9 5/8 | 47 | N-80 | Buttress | 1 | 7 | 293.02 | 6,659.54 | |
| B & W <i>Float</i> Collar | 9 5/8 | 47 | - | Buttress | 1 | 1 | .71 | 6,660.25 | |
| USS | 9 5/8 | 47 | N-80 | Buttress | 1 | 2 | 85.29 | 6,745.54 | |
| B & W Shoe | 9 5/8 | 47 | | Buttress | 1 | 1 | 1.24 | 6,746.78 | |

Perf. 9 5/8 casg. @ 6500 to 6502 4 shots per ft. and Cir. 2800 cuft of class 2 w/ 50#per sx of spherelite + 40% SSA 1 + 1% CFR 2 + 4% Gel + .5% Halad22 + 5% lime + retarded

| | |
|---------|--------------------------------|
| REMARKS | CASING SEAT 6,746.78 |
|---------|--------------------------------|

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ELEVATIONS: GND. _____ BH _____ DF _____ RDB _____

CASING RECORD

| PIPE SIZE | HOLE | SEAT | F. C. | CEMENTING DATA: Sacks, Kind, etc. |
|-------------|------|------|-------|-----------------------------------|
| Conductor: | | | | |
| Surface: | | | | |
| Intermed: | | | | |
| Oil String: | | | | |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|-------|-------------|----------|-------------|-------|-----|-----|--|
| | | | DEG. | DEPTH | WT | VIS | |
| 11-4 | 130 | 130 | 0 | 124 | 8.7 | 56 | Spudded at 6 p.m., drilling and Totco |
| 11-5 | 320 | 190 | 0 | 231 | 8.8 | 60 | Drilling, Totco survey, circ. for wiper trip, wiper trip, circ. to run casing, POOH to run casing, rig up and run 8 joints 20" H-40 94# STC casing seat at 320', rig up Howco and circ. hole, cementing with 920 cu. ft. Class G with 3% CaCl ₂ , circ. 326 cu. ft. cement, WOC. |
| | | | 0 | 320 | | | |
| 11-6 | 320 | 0 | | | 8.9 | 62 | WOC and nipple up flow line, slab gate had to be modified to fit rig, pick up drill collar and drill pipe, RIH, test casing to 500#, finish in hole, tag, cement at 232', drilling cement from 232-320'. |
| 11-7 | 1035 | 715 | 1/2 | 468 | 8.7 | 54 | Drilling, Totco, POOH, RIH. |
| | | | 1/2 | 620 | | | |
| | | | 1/2 | 905 | | | |
| 11-8 | 1670 | 635 | 1/2 | 1066 | 8.8 | 45 | Totco, drilling, circ., POOH for bit, RIH no fill. |
| | | | 1/2 | 1224 | | | |
| | | | 1/2 | 1470 | | | |
| 11-9 | 2062 | 392 | 1/2 | 1670 | 9.0 | 45 | Drilling, Totco, circ., trip for bit. |
| | | | 1/2 | 1943 | | | |
| 11-10 | 2572 | 110 | 1/2 | 2350 | 9.0 | 34 | Drilling, circ., Totco, POOH for wiper trip. |
| 11-11 | 2572 | 0 | | | 9.0 | 35 | Finish strapping out of hole 2.5' correction, RIH for wiper trip, circ. prior to running casing, POOH and try to break out 10" drill collars, rig up to run 13 3/8" casing, run 65 jts. to 13 3/8", 61# buttress casing, casing seat 2,572', float collar 2,488', rig down casing, crew and set spider, rig up and run drill pipe inside casing. |
| 11-12 | 2572 | 0 | | | | | Finish in hole with 5" drill pipe and stab in tool, circ., cement 13 3/8" casing with 3,000 cu. ft. Howco Class G with 40% SSA-1, spherelite, 3% gel, 1% CFR-2, .5% HA 22 A, 5% lime, 4% HR-7, tail in with 185 sxs Class 2 with 5% CFR-2, 4% HR-7, 5% HA 22 A, spherelite was mixed at 10.5 #/gal., final pressure 1,000 psig, bump pressure 1,500, circ. 600' cement, maintain good returns throughout job, 9 a.m. cement complete, POOH with 5" drill |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|-------|-------------|----------|-------------|-------|-----|-----|--|
| | | | DEG. | DEPTH | WT | VIS | |
| 11-12 | continued | | | | | | pipe and stab in tool, WOC, cut off 13 3/8, tear out BOE. |
| 11-13 | 2572 | 0 | | | | | Weld on casing head, rig up for top job, water lines frozen, thaw out same, filling water tanks, run 1" pipe outside 13 3/8" casing, found cement at 135', cement top outside job, strip out 1" pipe, install centralizer around 13 3/8" casing, rigging up BOP stack, snubbing in with Hydro-crane, nipping up BOP. |
| 11-14 | 2572 | | | | | | Nipple up, test stack with test plug, both CSO and pipe rams, repair one pipe ram, replace rubber on CSO, test at 1,000# for 30 minutes, test manifold, valve failed, replaced 3" valve, test to 1,000#, attempt to break 10" drill collar, broke short jaw on back up tongs, replaced tongs, sectioned box on drill collar 10", lay down 2 10" drill collars, making up BHA, TIH, tag float collar, drill out, drilling cement to 2572' with water, drilling to 2,645', mudding up. |
| 11-15 | 2945 | 298 | 1/2 | 2768 | 9.0 | 42 | Drilling with RR bit, circ. for survey, survey at 2,768', POOH, strap out, make up BHA, TIH, rig repair electrical, finish TIH, reaming behind slick BHA starting at 2,625', reaming from 2,625 to 2,768', drilling with bit #6. |
| | | | 1/4 | 2934 | | | |
| 11-16 | 3711 | 768 | 3/4 | 3133 | 9.2 | 42 | Drilling, circ. and survey. |
| | | | 1 1/2 | 3689 | | | |
| 11-17 | 3857 | 146 | | | 9.2 | 45 | Drilling, twist off at 60' stab, leaving stab, 1 10" drill collar, monel, bit sub, shock sub and bit in hole, twisted off in bottom 8" drill collar pin, TD - 3,788', top of fish - 3,721', POOH, make up overshot jars and crossover, TIH, circ. and work over fish and chain out, POOH, change out power tongs, laying down fish tool, lay down 1 8" drill collar with bad pin, TIH, drilling. |
| 11-18 | 4680 | 823 | 1 1/4 | 3893 | 9.0 | 43 | Drilling, circ. and survey. |
| | | | 1 1/2 | 4294 | | | |
| | | | 1 3/4 | 4603 | | | |
| 11-19 | 5064 | 384 | 3/4 | 4895 | 9.0 | 35 | Drilling, Totco, circ., POOH, make up new drilling assembly, cut drill line, RIH. |
| 11-20 | 5648 | 584 | 2 | 5079 | 9.2 | 44 | Drilling, survey. |
| | | | 2 | 5360 | | | |
| 11-21 | 5856 | 208 | 3 1/2 | 5856 | 9.5 | 35 | Drilling, POOH, shock sub twisted off 16" down on body, left bit, 3 point reamer, bottom half of shock sub in hole, make up 11 3/4 |

DAILY DRILLING - WORKOVER LOG

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| ELEVATIONS: GND. | | BH | | DF | | RDB | |
|------------------|-------------|----------|-------------|-----------------------------------|-----|-----|--|
| CASING RECORD | | | | | | | |
| PIPE SIZE | HOLE | SEAT | F. C. | CEMENTING DATA: Sacks, Kind, etc. | | | |
| Conductor: | | | | | | | |
| Surface: | | | | | | | |
| Intermed: | | | | | | | |
| Oil String: | | | | | | | |
| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
| | | | DEG. | DEPTH | WT | VIS | |
| 11-21 | continued | | | | | | overshot, TIH, tag fish, got over-fish, Chain out of hole with fish. |
| 11-22 | 6095 | 239 | | | 9.2 | 38 | Finish in hole, break out fish and overshot, RIH, pick up 1 10" drill collar and 1 8" drill collar, ream 5,783 - 5,856', drilling. |
| 11-23 | 6244 | 149 | 3 3/4 | 6100 | 9.0 | 35 | Drilling, stuck survey in float, POOH, RIH and ream 6,065-6,100', POOH for wash out (8" drill collar). |
| 11-24 | 6244 | 0 | | | 9.2 | 35 | Rig repair, magnaflux 8" drill collar and subs while RIH. |
| 11-25 | 6351 | 107 | 3 1/2 | 6345 | 9.1 | 38 | Magnaglo drill collar and subs, RIH, drilling, survey. |
| 11-26 | 6535 | 184 | | | 9.0 | 37 | Drilling, POOH to find wash out, 4th joint down in hole, circ. and check pressure, RIH. |
| 11-27 | 6628 | 93 | 3 | 6608 | 9.0 | 32 | Drilling, circ. to POOH, Totco, POOH, make up new BHA, RIH. |
| 11-28 | 6870 | 242 | | | 9.0 | 37 | Drilling with bit #10, losing returns, average of 100 bbls. per hour at 6,870'±, reduced pressure and strokes to 400 psi and 45 spm respectively, prep to POOH. |
| 11-29 | 6870 | 0 | | | 8.6 | 34 | POOH, lay down #6-7 8" drill collar due to 1/2" wash out, rig up BJ-500 tongs, break out and service 10" drill collar, allowing hole to heat, while awaiting Pruett Wireline, run #1 wireline Kuster temperature survey, allowing hole to heat building 750 bbls of 8.6 #/gal., sepolite drilling fluid, transfer to storage, run #2 wireline Kuster temperature survey. |
| 11-30 | 7094 | 223 | 3 | 6973 | 8.9 | 33 | Run temp survey #2, read temperature survey, rig down Pruett, TIH to shoe, very high winds, circ. shoe at 50 stk/min - had circ without LCM material, mud at 590, 580' fluid level while running temp. survey, TIH to 6,776 break circ, add cotton seed hulls, wash to bottom, drilling with rerun bit #10, survey. |
| 12-1 | 7177 | 83 | | | 8.9 | 40 | Drilling with rerun bit #10, lost 35,000# stg. wt., |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|------|-------------|----------|-------------|-------|-----|-----|---|
| | | | DEG. | DEPTH | WT | VIS | |
| 12-1 | continued | | | | | | pump pressure fell to 400 psi, twisted off, POOH, layed down #5 8" drill collar up from 10" drill collar, #5 O.K. but has broken box from #4 on pin, #4 has lost box conn, pin washed internally, signs of internal washing with fatigue cracks, pick up 11 3/4" overshot dress with 8" basket grapple, TIH to top of fish at 6,915' work over fish, could not hold with 8" grapple, POOH, change from 8" grapple to 7 7/8" grapple, TIH, over fish with no problems, fish stuck, jarred on fish, fish came free, POOH with fish, chain out of hole. |
| 12-2 | 7177 | 0 | | | 8.9 | 34 | POOH with fish, magnaglo all BHA assembly, will reface all pin & box conn. on 10' drill collar, & 6-8 8" drill collars. |
| 12-3 | 7177 | | | | 9.0 | 36 | Magnaglo 8" drill collar and heavy weight, POOH, test BOP to 1,000# 30 minutes with test plug, refacing 8" drill collar, magnaglo 10" drill collar and cross-over subs, pick up and make up bottom hole assembly, RIH. |
| 12-4 | 7429 | 252 | | | 8.6 | 32 | TIH to 6,877', wash and ream to bottom after fishing job, drilling with bit #11 to 7,426, lost returns, did not fully regain, made 3' of hole to 7,429', lost approximately 175 bbls. while doing so, running slow pump, spot 55 bbls. LCM pill consisting of 15 sxs of compressed hulls, POOH to 6,488', wait 1 hour, attempt to regain circ. - no good, pump 200 bbls. mud, TIH to 7,429' spot 57 bbls. of LCM pill consisting of 15 sxs of compressed hulls, displaced same with 145 bbls. mud, POOH to 6,488', wait on LCM pill, building mud volume in surface pits. |
| 12-5 | 7430 | 1 | | | 8.5 | 30 | Mix and pump down LCM 15#/bbl. pill, spotted opposite loss zone outside drill pipe, POOH to 6,700', allowed to set 1 hour, TIH to 7,425', establishing circ. with 50 spm on mud pump, POOH, run temp. survey, Kuster wireline #1, allow hole to heat, also mix mud for storage, run temp. survey, Kuster Wireline #2, allowing hole to heat. |
| 12-6 | 7457 | 27 | | | 8.6 | 32 | Running Kuster Wireline #3, TIH to shoe, service and check BHA, circ. at 2,567' full returns, TIH and circ. at 4,514' full returns, TIH and circ. at 6,467' full returns, TIH and circ. at 7,415' full returns, TIH, hit bridge at 7,429-7,434', circ. full returns, drilling, lost returns at 7,457', mix LCM pill and displace, used 262 bbls. of drilling fluid, POOH strap out, tally 39 joints of N-80 47# casing on rack. |
| 12-7 | 7460 | 3 | | | 8.8 | 30 | TIH to 7,385', set sand plug, 145 bbls H ₂ O in front of sand when 80% of sand was displaced, lose circ., POOH to 5,165, wait on sand to settle, TIH to 7,353, tag plug, POOH to 6,000' wait on sand, tried to circ., could not, build mud volume, TIH to 6,870' spotted loss, circ. slurry 13# per bbl., had 80% returns after spot, POOH, change jet in bit, TIH and wash out sand plug, drilling from 7457-60'. |
| 12-8 | 7470 | 10 | | | 8.8 | 30 | Drilling, POOH, electric log, running compensated |

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WELL

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| ELEVATIONS: GND. | | BH | | DF | | RDB | |
|------------------|-------------|----------|-------------|-----------------------------------|-----|-----|---|
| CASING RECORD | | | | | | | |
| PIPE SIZE | HOLE | SEAT | F. C. | CEMENTING DATA: Sacks, Kind, etc. | | | |
| Conductor: | | | | | | | |
| Surface: | | | | | | | |
| Intermed: | | | | | | | |
| Oil String: | | | | | | | |
| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
| | | | DEG. | DEPTH | WT | VIS | |
| 12-8 | continued | | | | | | density neutron gamma ray with caliper, repositioned drill collar in derrick, rig up to run 2 7/8" tubing stinger, later cancelled, TIH to 6,872', strap in, breaking circ. in good shape, cooling hole down. |
| 12-9 | 7470 | 0 | | | 8.7 | 31 | Circ. while thawing out pump truck and rig mud lines, set cement plug at 6,830' consisting of Class 2 40% SSA-1, .5% Halad 22-A, .5% CFR-2, 5% HR-7, pumped 80 cu. ft. water in front, 20 cu. ft. of cement slurry, 10 cu. ft. of water in back, displaced with 760 cu. ft. mud, POOH 15 stands to 5,455', circ. slow at 5,455' while WOC, TIH to 6,814', feel for plug - no plug, washed to 6,920' - no plug, circ. for bottoms up and to cool hole, set cement plug #2 at 6,830', consisting of Class 2, 40% SSA-1, .5% Halad 22-A, .5% CFR-2, .5% HR-7, pumped 80 cu. ft. water in front, 40 cu. ft. cement slurry, 10 cu. ft. of water in back, displaced with 660 cu. ft. mud, pump rate 5.18 bbls. per minute for 27 minutes, 250# psi, POOH 15 stands to 5,455', circ. slow at 5,455, while WOC. |
| 12-10 | 7470 | 0 | | | 8.7 | 34 | WOC on plug #2, TIH, feeling for plug, 7,230' - no plug, circ. and cool hole, thawing out lines and Howco, set cement plug #3 - Class G with 40% SSA-1, .5% CFR-2, .5% HA 22-A, .5% HR-7, plug set at 6,830', pump 25 cu. ft. HOH ahead, 81 cu. ft. cement followed by 5 cu. ft. HOH displaced with 672 cu. ft. mud, pump time 24 minutes, 250 psi, POOH, WOC, TIH, tag top of cement at 6,808, POOH to 5,887, WOC. |
| 12-11 | 7470 | 0 | | | 8.6 | 32 | TIH to 5,887-6,808', soft but will stand 15,000#, POOH, pick up drilling assembly, TIH to 6,808', tag plug, seems to move down 6,810', test plug 500#, bleed back to 350#, POOH, pull tight at 50', run up and down, could not retag, make up 9 5/8" liner hanger and stood back, TIH with cement shoe to 6,810', set plug from 6,810 - 6,720', mix 125 cu. ft. cement, 40% SSA-1, .5% CFR-2, .5% HR-7, .5% Halad 22-A in place at 5:42 p.m., POOH, WOC. |
| 12-12 | 7470 | 0 | | | 8.6 | 32 | TIH to 6,600', WOC, top of cement at 6,708', drill out w/6,000# weight, drill to 6,795', circ. bottoms up, POOH, rig up and run 9 5/8" liner, 40#, 43.5#, 47#, K-55 & N-80 csg., top at 2,413', shoe 6,742. |
| 12-13 | 7470 | 0 | | | 8.4 | 30 | Circ. 9 5/8" casing, rig up Halliburton, cement |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|-------|-------------|----------|-------------|-------|-----|-----|--|
| | | | DEG. | DEPTH | WT | VIS | |
| 12-13 | continued | | | | | | 9 5/8" casing, with 100 cu. ft. of Sepolite/Barite flush, 50 cu. ft. water, 200 cu. ft. Class G consisting of 40% SSA-1, .5% CFR-2, .5% HR-7, .5% Halad 22-A, displaced with 2,070 cu. ft. of water, bumped plug, cement in place at 6:15 a.m., released setting tool from liner, POOH, break down hanger tools, unload and strap 6" drill collars, unload and talley K-55, 9 5/8" 40# casing, make up BHA, TIH, strap in tag top of liner at 2,413', WOC. |
| 12-14 | 7470 | 0 | | | 8.4 | 33 | WOC, circ. and wash out to 6,634', POOH, rig up and run Schlumberger CBL log, 1 misrun, TIH with 8 1/2" bit, tag fill at 6,634', clean out from 6,634 to 6,655', drill float, clean out cement to 6,725', circ. hole clean, POOH, run Schlumberger CBLGR, perforate at 6,670 to 6,672, 4 shots per foot. |
| 12-15 | 7470 | 0 | | | 8.5 | 40 | TIH with RTTS tool set at 2,520', breakdown, circ. at 950#, made up EZSV, TIH, set at 6,620', circ. 6,620', squeeze 200 cu. ft. Class II/40% SSA-1, .5% CFR-2, .5% HR-7, .5% Halad 22-A, POOH with setting tool, lay down drilling jars, rig up Schlumberger, perforate at 6,500-6,502' 8 holes, TIH with RTTS, set at 2,515', break circ., POOH and break down RTTS tool, TIH with EZSV, set at 2,507', circ. perforations, squeeze 2,800 cu. ft. Spherelite, 200 cu. ft. Class G through perforations at 6,500-6,502'. |
| 12-16 | 7470 | 0 | | | 8.5 | 40 | Finish cementing and POOH with setting tool, WOC, while WOC made trip in hole to top of liner, 2,413', with 12 1/2" bit, circ. out, found no cement, POOH and trip in with 8 1/2" bit to top of EZSV at 2,500', POOH to 1,000', test liner lap with 1,000#, would hold 900#, very slight bleed back from 1,000#, POOH, load Howco tools and rig up casing tools. |
| 12-17 | 7470 | 0 | | | 8.5 | 42 | Running 9 5/8" K-55, 40#, tie back string, circ. with Halliburton at 2,413', install WKM centralizer, rig up to cement, cementing tie back with 200 cu. ft. of water, in front, 1,000 cu. ft. Class G 40% SSA-1, .5% CFR-2, displaced with 1,008 cu. ft. of mud, WOC, lift BOP, cut off 9 5/8" casing. |
| 12-18 | 7470 | 0 | | | 8.5 | 39 | Removed top spool and rotating head, removed bottom spool, install expansion spool, nipple up BOP stack and blooie line, making up BHA, TIH. |
| 12-19 | 7470 | 0 | | | 8.4 | 36 | Tested BOPE stack to 1,000 psi for 30 minutes, TIH to 1,970', drilling cement from 1,970 - 2,493', drilling EZSV, pushing same to 5,219' by rotating, single in with Kelly. |
| 12-20 | 7470 | 0 | | | | | Pushing EZSV, drilling hard cement from 5,970-6,076', POOH for bit change, pick up jars, one stand heavy-wall drill pipe, new bit #15, drilling and washing out cement stringers to 6,620', EZSV topped at that depth. |

LEASE /
WELL

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ELEVATIONS: GND. _____ BH _____ DF _____ RDB _____

CASING RECORD

| PIPE SIZE | HOLE | SEAT | F. C. | CEMENTING DATA: Sacks, Kind, etc. |
|-------------|------|------|-------|-----------------------------------|
| Conductor: | | | | |
| Surface: | | | | |
| Intermed: | | | | |
| Oil String: | | | | |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|-------|-------------|----------|-------------|-------|-----|-----|--|
| | | | DEG. | DEPTH | WT | VIS | |
| 12-21 | 7470 | 0 | | | | | Drill out EZSV at 6,620', chasing and drilling up remainder of EZSV, drilling cement to 6,700', drill shoe and cement stringers, circ. bottoms up at 6,758', picked up top of cement plug at 6,795', drilled to 6,867', washed into fill at that depth, washed out fill to TD 7,470', circ. bottoms up, POOH, change pipe rams to 2 3/8", pick up and strap tubing, TIH to 1,022' and unload well. |
| 12-22 | 7470 | 0 | | | | | Lifting well at approximately 1,500', 2,000', 2,500', 3,000', and 3,500'. |
| 12-23 | 7470 | 0 | | | 8.6 | 43 | Testing well at 3,468' by lifting with air every two hours, POOH, running temp. surveys by GO Differential Temp. log. |
| 12-24 | 7470 | 0 | | | 8.6 | 38 | Running temp. survey, lay down 8" drill collars, change to 5" pipe rams, finish rigging up blooie line to air drilling, dress rotating head, making up BHA, start TIH, continue TIH, unloading well in stages of 1,017', 2,037', 3,062', 3,990', 5,009', 6,035', 6,749', started in foam and inhibitor establishing rate of 2,100 CFM at 450 psi. |
| 12-25 | 7505 | 35 | | | | | Establishing rate after changing rotating head rubber, TIH to 7,158', pressure raised to 2,350 psi plugged bit, POOH, clean debris off top of float, TIH, unloading hole at 2,410', 3,527', 4,640', 5,569', 6,035', 6,747', 7,120', 7,430', cleaning out fill from 7,433 - 7,470', drilling. |
| 12-26 | 7634 | 129 | | | | | Change out rotating head, ream and wash from 7,474' to 7,504', circ. out fill and water, drilling, ream back after connection, drilling, circ., changing over to mud filling open hole while POOH. |
| 12-27 | 7732 | 98 | | | 8.6 | 29 | POOH, make up BHA, TIH to 6,552', fill casing with mud, cooling hole, partial returns 70% for 20 minutes, then fell away to complete loss, spotted LCM just out of bit, pulled 3 stands, wait 1 hour, regained 90% returns, TIH, ream 58' out of gauge hole, drilling. |
| 12-28 | 7886 | 154 | 2 1/2 | 7846 | 8.6 | 36 | Drilling, survey, lost rotating head drive bushings due to equipment failure in rotating head, bushings wedged at WKM valve and at top of casing head, cannot pull up pipe due to bushings hanging on tool joint, circ. while |

| DATE | DEPTH TODAY | FOOT-AGE | DEGREES OFF | | MUD | | REMARKS (Activity) (Formation) (D.S.T.) (Coring) (etc.) |
|-------|-------------|----------|-------------|-------|-----|-----|---|
| | | | DEG. | DEPTH | WT | VIS | |
| 12-28 | continued | | | | | | waiting on BOPE lifting kit. |
| 12-29 | 7886 | 0 | | | 8.6 | 32 | Circ. 7,815', condition hole, loss of circ. while waiting on lift, unflange blooie line, remove flow line valve, jacking up blow out equipment, remove one segment of rotating head drive bushing from bit guide and expansion spool, POOH slowly, junk dragging against tool joints and drilling assembly, POOH to 2,418', junk stopped us at that point, will not clear top stabilizer through liner hanger and stab in equipment. |
| 12-30 | 7886 | 0 | | | 8.6 | 32 | Working pipe, awaiting watermelon string mill, make up milling and fishing assembly, TIH to 2,418', milling on junk, pushed down to bottom, POOH, dragging 18-20,000#, junk stopped at 2,417. |
| 12-31 | 7886 | 0 | | | 8.6 | 32 | Finish in hole to 2,428', worked tight spot, POOH, lay down mill, RIH to bottom, circ. and work pipe, POOH, make up magnet, change out drilling assembly, RIH, work magnet over junk, POOH. |
| 1-1 | 7946 | 60 | | | 8.6 | 45 | Circ. on bottom, POOH, remove junk from magnet, retrieved 2/3 of bushings, RIH, tag bottom and work magnet, POOH with remaining junk, left 2 11/16 bolts, break down magnet, make up drilling assembly, cut drill line, RIH, drilling. |
| 1-2 | 8139 | 193 | | | 8.6 | 38 | Drilling, partial loss circ. @ 8,134, complete loss at 8,139, loss 600 bbls±, POOH, change out rams, flange up blooie line, RIH to 500' w/2 3/8 tubing, blow well at 500', 1,020', 1,488', first fluid at 1,488', RIH to 1,955', blow well at 1,955. |
| 1-3 | 8139 | 0 | | | | | Blow at 1,955', RIH to 2,506', blow at 2,506'. |
| 1-4 | 8139 | 0 | | | | | Testing |
| 1-5 | 8139 | 0 | | | | | Flowed well through 10" blooie line, rig up Dresser Atlas and vent well (blew rotary head rubber, cable bushings, 2 joints, 2 3/8" tubing and WKM safety valve out of hole), close lower blind rams - did not hold, close upper blind rams - OK, rig up new rotating head rubber and try to RIH 60', well blew out tubing and new rubber, closed upper blind rams, flowed well out 10" blooie line and vent line, attempt to close WKM drilling valve to repair lower blind rams - would not hold, shut in well and waited 5 hours, check flow at 11 p.m., well alive, pumped 7 bbls. water down annulus to try and kill 6 a.m., 1-6-81, well dead. |
| 1-6 | 8139 | 0 | | | | | Shut in well, RIH with 32 stands to 3,000', cool well with water (pump 722 bbls), POOH tubing, unflanged BOP, pick up hydraulic lifters, remove bad 10" master valve, install new WKM master valve, nipple up BOP. |