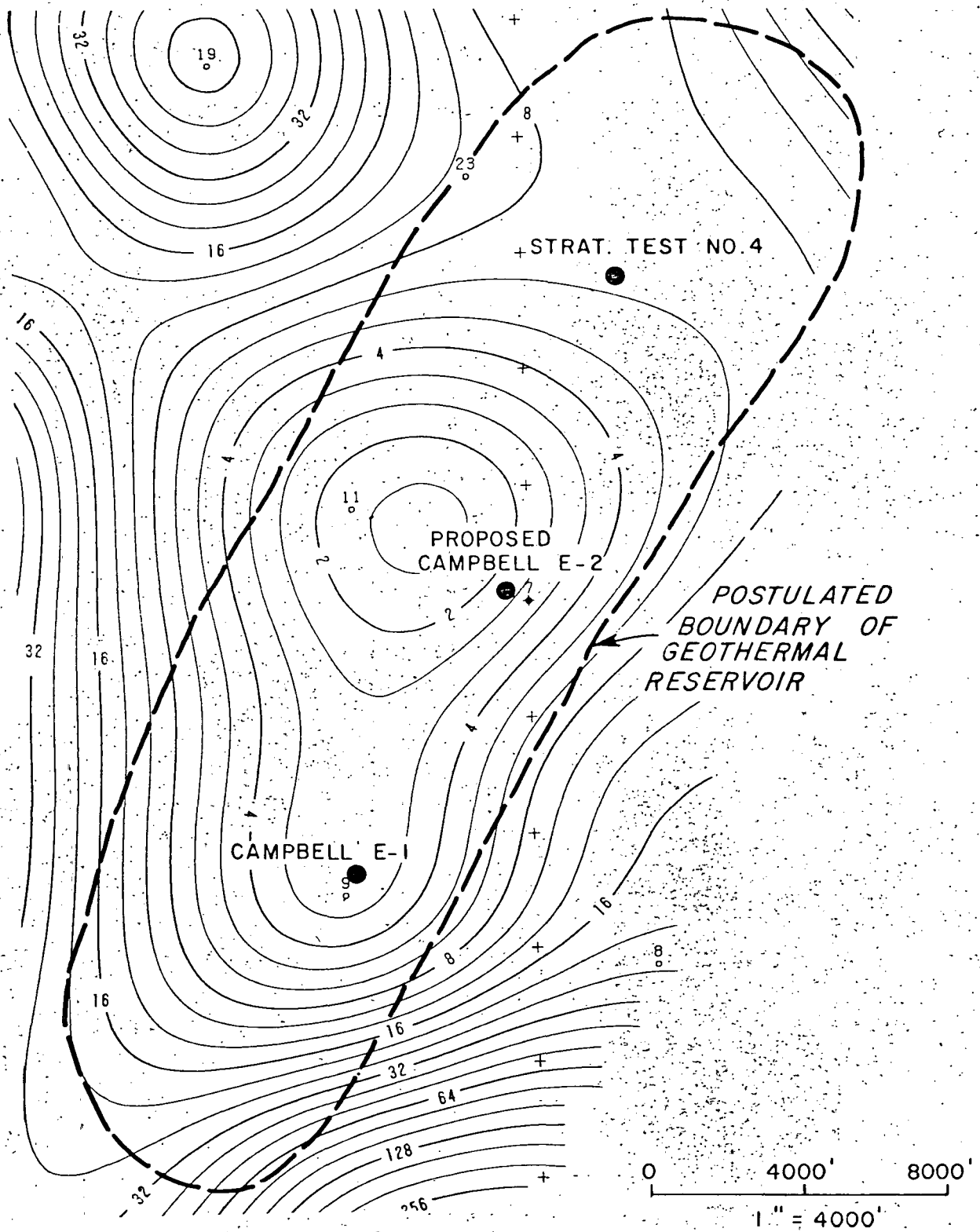


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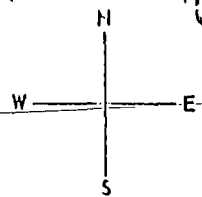


MAGNETOTELLURIC SLICE MAP AT A DEPTH OF
3000' - HUMBOLDT HOUSE PROSPECT
PERSHING COUNTY, NEVADA

SURVEY TABULATION SHEET SPERRY - SUN



CUSTOMER PHILLIPS PETROLEUM COMPANY
 WELL NO. Cambell #E-1
 FIELD Humboldt



SHEET NO. 1 OF 1
 SURVEY JOB NO. SU3-12245
 SURVEY DATE 12-03-77

| MEASURED DEPTH | | VERTICAL DEPTH | | INCLINATION | | CORRECTED DIRECTION | | | MEASURED COURSE DISPLACEMENT | | | | TOTAL DISPLACEMENT | | | |
|----------------|------|----------------|---------|-------------|------|---------------------|----|---|--|-------|------|------|--------------------|-------|------|-------|
| | | COURSE | TOTAL | DEG. | MIN. | | | | NORTH | SOUTH | EAST | WEST | NORTH | SOUTH | EAST | WEST |
| 00 | 100 | | 99.99 | 0 | 29 | N | 30 | E | | | | | .362 | | | .207 |
| | 200 | | 199.99 | 0 | 29 | N | 14 | E | | | | | 1.131 | | | .511 |
| | 300 | | 299.99 | 0 | 49 | N | 01 | E | | | | | 2.242 | | | .625 |
| | 400 | | 399.98 | 1 | 04 | N | 01 | W | | | | | 3.870 | | | .618 |
| | 500 | | 499.95 | 1 | 33 | N | 00 | W | | | | | 6.150 | | | .594 |
| | 600 | | 599.90 | 1 | 48 | N | 01 | W | | | | | 9.085 | | | .577 |
| | 700 | | 699.84 | 2 | 18 | N | 03 | W | | | | | 12.669 | | | .444 |
| | 800 | | 799.74 | 2 | 48 | N | 00 | E | | | | | 17.125 | | | .332 |
| | 900 | | 899.62 | 2 | 53 | N | 08 | W | | | | | 22.067 | | | .020 |
| | 1000 | | 999.48 | 3 | 08 | N | 14 | W | | | | | 27.213 | | | 1.061 |
| | 1100 | | 1099.33 | 3 | 08 | N | 11 | W | | | | | 32.552 | | | 2.260 |
| | 1200 | | 1199.18 | 3 | 03 | N | 13 | W | | | | | 37.834 | | | 3.324 |
| | 1300 | | 1299.05 | 2 | 53 | N | 14 | W | | | | | 42.875 | | | 4.607 |
| 00 | 1400 | | 1398.91 | 3 | 03 | N | 25 | W | | | | | 47.743 | | | 6.321 |
| 70 | 1470 | | 1468.81 | 3 | 13 | N | 28 | W | | | | | 51.171 | | | 8.031 |
| | | | | | | | | | HORIZONTAL DISPLACEMENT = 51.8 FEET @ NORTH 08° 55' WEST | | | | | | | |
| | | | | | | | | | CALCULATED MINIMUM CURVATURE | | | | | | | |

DAILY REPORT DETAILED

LEASE Campbell E #1WELL NO. 1SHEET NO. 1

| DATE | TOTAL DEPTH | NATURE OF WORK PERFORMED |
|------|-------------|--------------------------|
|------|-------------|--------------------------|

| | | |
|----------|------|--|
| 11-03-77 | | Prep. to spud. Loc: 342' FSL & 830' FEL Sec. 21-31N-33E Pershing Co., NV. 6000' Geothermal Exploratory Well. Phillips Petroleum Company 100% oper. AFE PE-5516. Camay Drilling Company, contractor. MI&RU Burns Rat Hole Drilling, Inc. Set 30" 1/4" wall 73.9# PE conductor pipe at 21' GL. Cemented to surface w/9 yds. ready mix. MI&RUR. Elev: GL 450'. |
| 11-04-77 | 150 | Picking up 17 1/2" bottom hole assembly. Spdd. 12 1/4" hole at 9:15 a.m. 11-03-77, drilled to 150'. Pulled out of hole to pick up 17 1/2" drilling assembly. Totco 3/4° at 107', mis-run at 150'. |
| 11-05-77 | 400 | Drilling alluvial fill. Reamed hole to 17 1/2". Mud 8.9 Vis. 60. Totco 1/2° at 220', 3/4° at 347'. |
| 11-06-77 | 590 | Drilling alluvial fill. Mud 9.3, Vis. 52. Totco 3/4° at 431'. |
| 11-07-77 | 794 | Drilling alluvial fill & limestone. Mud 9.5, Vis. 55. Totco 1 3/4° at 619', 1 3/4° at 722'. Flow line temperature at 794'-89°F in, 95°F out. |
| 11-08-77 | 961 | Drilling gravel, quartz & silica. Mud 9.5, Vis. 49. Trip for bit at 891'. Flow line temperature at 961'-85°F in, 94°F out. Totco 3° at 890', 3 1/4° at 955'. |
| 11-09-77 | 1058 | Drilling Sinter. Mud 9.5, Vis. 65. Totco 3 1/4° at 1039'. Flow line temperature at 1058', 95°F in, 100°F out. |
| 11-10-77 | 1159 | Drilling siliceous sinter. Mud 9.7, Vis. 55. Flow line temperature at 1159'-96°F in, 105°F out. Totco 3 1/4° at 1039'. |
| 11-11-77 | 1318 | Drilling interbedded travertine & gravel. Totco 3° at 1237'. Flow line temperature at 1318'-101°F in, 108°F out. |
| 11-12-77 | 1423 | Drilling Travertine, interbedded sediments & gravel. Mud 9.5, Vis. 48. Trip for bit at 1330'. Reduced hole to 12 1/4" at 1330'. Totco 3° at 1376'. Flow line temperature at 1423', 98°F in, 109°F out. |

DAILY REPORT DETAILED

LEASE Cambell E #1 WELL NO. 1 SHEET NO. 2

| DATE | TOTAL DEPTH | NATURE OF WORK PERFORMED |
|----------|-------------|--|
| 11-13-77 | 1742 | Drilling basalt. Totco 3 ^o at 1511', 3 1/4 ^o at 1637', 3 1/4 ^o at 1761'. |
| 11-14-77 | 1825 | Running 13 3/8" OD casing. Drilled 12 1/4" hole to 1825'. Ran 17 1/2" bit, circulated & conditioned hole to 1330'. Started running casing. Flow line temperature at 1825' -122 ^o F in, 130 ^o F out. |
| 11-15-77 | 1825 | WOC. Ran 31 jts., 1212', 13 3/8" OD, 54.5#, K-55, BT&C Casing, set at 1214' RKB. Cemented with 706 sacks class G cement, 1:1 perlite, 3% gel, 3/10% R-5 & 3/4 % D-31. Plug down at 9:40 a.m. 11-14-77, good cement returns to surface. WOC. |
| 11-16-77 | 1825 | Nippling up. |
| 11-17-77 | 1825 | Waiting on 2' spacer spool for BOP stack. Will test stack today. |
| 11-18-77 | 1825 | GIH w/12 1/4" BHA. Fin. N.U. BOP stack. Tested 13 3/8" casing, blind rams, pipe rams & hydril with 1000# for 15 minutes each-ok. RIH w/rerun bit & slick BHA. TOC 1173' RKB. Drilled cement & float equipment. Circulated 1/2 hr. & POOH. Picked up rerun 12 1/4" button bit & BHA. |
| 11-19-77 | 1841 | Circulating & conditioning hole. Finished going in hole with BHA, drilled to 1841', limestone with fractures, hot water flow. Flowed 2 hrs., max. flwg. temperature 196 ^o F. H ₂ S 40 ppm, decr. to 12 ppm, CO ₂ 8500 ppm, Methane 300 ppm, petroleum vapors 10 ppm, dissolved salts 3200 ppm. Shut well in, SIP 150#. Mixed mud to 11.5#/gal., killed well, circulated & conditioned mud. |
| 11-22-77 | 1841 | Waiting on cementers. Circulated & conditioned mud 24 hrs. |
| 11-23-77 | 1841 | WOC. Circulated and conditioned hole 14 hrs., spotted 25 sacks geothermal mix cement 1825-1800'. Pulled out of hole. Job complete at 12 midnight 11-22-77. WOC. |

DAILY REPORT DETAILED

LEASE Cambell E #1WELL NO. 1SHEET NO. 3

| DATE | TOTAL DEPTH | NATURE OF WORK PERFORMED |
|----------|----------------------|--|
| 11-24-77 | OTD 1841 PTD 1790 | WOC. Ran DP & bit, top of cement 1790'. Ran 41 jts., 1774', 9 5/8" OD, 40#, K-55 BT&C casing, set at 1777'. Cemented w/400 sacks class G cement, 1:1 perlite, 40% silica flour, 2% gel, 3/4% D-31 & 1% R-11, plug down at 12 midnight 11-23-77, good cement returns to surface. |
| 11-25-77 | PTD 1790 | Nippling up. |
| 11-26-77 | PTD 1790 | Shut down, repairing rig. Finished nipping up, shut down at 4:00 pm 11-25-77 to winterize rig. |
| 11-27-77 | PTD 1790 | Shut down. |
| 11-28-77 | PTD 1790 | Shut down. Will repair Hydromatic. |
| 11-29-77 | PTD 1790 | Repairing rig. |
| 11-30-77 | PTD 1790 | Repairing rig. |
| 12-01-77 | PTD 1790 | Repairing rig. |
| 12-02-77 | PTD 1790 | Repairing rig. |
| 12-03-77 | PTD 1790 | Repairing rig. |
| 12-04-77 | PTD 1790 | Repairing rig. |
| 12-05-77 | PTD 1790 | Going in hole to drill cement. Finished repairs, installed boiler & winterized rig. |
| 12-06-77 | 1847 | Circulating and conditioning hole. Went in hole to top of cement at 1729'. Tested casing and BOP's to 1000#, 15 mins each, OK. Drilled cement 1729-77'. Pulled out of hole, worked on BOP & accumulator 1 hr. Went in hole, circulated and cleaned out to 1838', well tried to kick. Circulated 6 hrs, pulled up to 1768' to let mud set. Went back to bottom, had 15-20' fill on bottom. Drilled to 1847', circulated and cleaned hole 1 hr. |

DAILY REPORT DETAILED

LEASE Campbell E #1WELL NO. 1SHEET NO. 4

| DATE | TOTAL DEPTH | NATURE OF WORK PERFORMED |
|----------|-------------|---|
| 12-07-77 | OTD 1847 | Going in hole to drill cement plug. Pulled out of hole, reran DP open ended, spotted 100 sacks cement on bottom. Pulled up 5 stands, WOC 7 hrs. Reran open ended, tagged top of cement at 1591'. Pulled out of hole. |
| 12-08-77 | 1847 | Drilling limestone w/quartz veins. Washed cement stringers 1591-1695', drilled solid cement 1695-1847'. Circulated 2 1/2 hrs. to clean hole & 3 hrs. to condition mud. Max. bottoms up temp. 127°F. Came out of hole, started drilling ahead, no indication of hole sloughing. Mud 11.5, Vis. 68. |
| 12-09-77 | 1848 | WOC. Drilled to 1848', lost complete returns. Mixed mud & LCM, no returns, FL 500' from top. Spotted 31 sacks class G cement on bottom, attempted to squeeze w/20C#, would not hold. Job complete at 1:30 am 12-09-77. Pulled out of hole, WOC. |
| 12-10-77 | 1849 | Flowing well. WOC 1 1/2 hrs. Went in hole, drld. cement, lost full returns, well tried to flow. Pulled out of hole. Opened well to pit at 4:05 pm 12-09-77. FWHP 20C#, manifold press 150#, FWHT 325°F. Flwg. thru 3" line to manifold, 1-2 7/8" line w/1 1/4" choke & 1-3" line (wide open) to pit. (Corrected TD 1848' to 1849'). |
| 12-11-77 | 1849 | Running Agnew & Sweet Temperature Survey. Flwd. well 6 hrs., laid down drill pipe. Removed BOP. |
| 12-12-77 | 1849 | Tearing down rotary. Ran Agnew & Sweet Temperature Survey. Max. temp. 325.9°F at 1816'. Released rig at 6:00 pm 12-11-77. |
| 12-13-77 | 1849 | Moving out rotary. |
| 12-14-77 | 1849 | Waiting to test. |
| 12-15-77 | 1849 | Waiting to test well. |
| 12-16-77 | 1848 | Moving out rotary. |

DAILY REPORT DETAILED

LEASE Campbell-E #1 WELL NO. 1 SHEET NO. 5

DATE NATURE OF WORK PERFORMED
 TOTAL DEPTH

12-22-77

1848

Shut-in geothermal well.
 Opened well through test unit at 4:10 p.m. 12-20-77,
 shut in at 9:20 a.m. 12-21-77 due to lack of pit capacity.
 ISIWHP 150 psig, IFWHP 175 psig gradually decreasing to
 163 psig at shut in. Average flow rate for the period
 was 798,28#/Hr of saturated hot water at 350°F. Several
 flow rates vs wellhead pressures were obtained prior to
 shut in.

| <u>LBS/HR</u> | <u>PRESS-Psig</u> | <u>LBS/HR</u> | <u>Press-Psig</u> |
|---------------|-------------------|---------------|-------------------|
| 849,645 | 163 | 304,677 | 180 |
| 731,516 | 166 | 225,814 | 184 |
| 429,895 | 176 | 169,589 | 186 |

Shut in geothermal well producing from open hole 1777-
 1848'. 9 5/8" casing set at 1777'.
FINAL REPORT.