

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

6-08-90 Circulating at 339'.

Move in and rig up Four Corners Drilling Rig No. 14. Spud pilot hole at 5:00 p.m., 6-07-90, with bit no. 1, 9-7/8" Hughes Tool Co., ATJ-1 (jets: 12-12-blank); all WOB, 90 RPM. Drill to 40' in 1/2 hour.

TIH with bit no. 2, 17-1/2" Smith Tool Co. TC (jets: 16-16-16); all WOB, 90 RPM. Mud weight 8.9 ppg, viscosity 75 sec. Pump pressure 1500 psi. Drill to 339' in 12-1/4 hours. Surveys: 1° at 141'; 3/4° at 300'. (RS)

6-09-90 Running 20" casing.

TIH with 26" hole opener. Drill 26" surface hole to 339' with 30,000# WOB, 90 RPM, 250 psi pump pressure. Mud weight 9.1 ppg, viscosity 130 sec. Survey: 3/4° at 300'. TOOH. Run 20" casing. (RS)

Estimated cumulative cost: \$37,206

6-10-90 Drilling at 358'.

Run 8 jts (326') 20" 133# J-55 8rd ST&C casing, set at 338' with a Howco guide shoe on bottom. Cement with 500 sx (575 cf) Class B with 2% CaCl₂ and 1/4 #/sk celloflake. Good circulation throughout. Circulate 20 Bbls good cement to surface. Float held OK. Plug down at 9:30 a.m., 6-09-90. WOC 6 hours. cut pipe. Weld on 20" casing spool. Nipple up BOP and pressure test casing and BOP to 600 psi for 30 minutes - held OK. Test pipe rams to 600 psi for 30 minutes - held OK.

Made 19' in 1-1/4 hours drilling with bit no. 3, 17-1/2" VTC V525 (jets: 14-14-15), 30,000# WOB, 70 RPM, 1250 psi pump pressure; water and polymer. (RS)

Estimated daily cost: \$13,423

Estimated cumulative cost: \$50,629

Drilling Report - NEBU PM SWD #1

6-11-90 Drilling at 1002'; 45' per hour.

Made 644' in 22-1/4 hours drilling with bit no. 3; 65,000# WOB, 65 BPM, 1450 psi pump pressure. Mud weight 8.3+ ppg, viscosity 28 sec. Surveys: 1-1/4° at 610'; 1-1/4° at 854'.

Bottom hole assembly: 18 drill collars (10 of 8" and 8 of 6-3/4"), 549'; 60,000#. (RS)

Estimated daily cost: \$43,628
Estimated cumulative cost: \$94,257

6-12-90 Drilling at 1865'; 34' per hour.

Made 525' in 22-3/4 hours drilling with bit no. 3, Varel Tool Co., V-525 (jets: 14-14-15)'; 65,000# WOB, 65 RPM, 1450 psi pump pressure. Mud weight 8.4+, viscosity 28 sec. (RS/AR)

Estimated daily cost: \$ 22,792
Estimated cumulative cost: \$117,049

6-13-90 Drilling at 2165'; 25' per hour.

Made 300' in last 24 hours. 100' in 4-1/2 hours drilling with bit no. 3; 55,000# WOB, 65 RPM. Out at 1965'. Drill 200' in 10 hours with bit no. 4, 17-1/2" Varel Tool CO., D-525 (jets: 14-14-15); 55,000# WOB, 65 RPM, 1450 psi pump pressure. Mud weight 8.4 ppg, viscosity 30 sec. Survey: 1/2° at 1848'. (RS/AR)

Estimated daily cost: \$ 13,074
Estimated cumulative cost: \$130,123

6-14-90 Drilling at 2488'; 16' per hour.

Made 323' in 22-3/4 hours drilling with bit no. 4; 55,000# WOB, 65 RPM, 1500 psi pump pressure. Mud weight 9.1 ppg, viscosity 43 sec. Survey: 3/4° at 2341'. (RS)

Estimated daily cost: \$ 14,154
Estimated cumulative cost: \$144,277

RECEIVED
JUL 25 1990
OIL CON. DIV.
EDMONT. A

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

6-15-90 Drilling at 2620'; 5.5' per hour.

Made 132' in 17-1/2 hours drilling with bits no. 4 and 5. Drill to 2568' with bit no. 4; 55,000# WOB, 65 RPM, 1450 psi pump pressure. TIH with bit no. 5, 17-1/2" Smith Tool Co., F2 (jets: 15-15-14); 55,000# WOB, 65 RPM, 1450 psi pump pressure. Mud weight 9.1 ppg, viscosity 36 sec. Drill to 2620'. (RS)

Estimated daily cost: \$ 5,818
Estimated cumulative cost: \$150,095

6-16-90 Drilling at 2776'; 6.5' per hour.

Made 156' in 23-1/4 hours drilling with bit no. 5; 55,000# WOB, 65 RPM, 1450 psi pump pressure. Mud weight 9.1 ppg, viscosity 42 sec. (RS)

Estimated daily cost: \$ 6,855
Estimated cumulative cost: \$156,950

6-17-90 Drilling at 2918'; 6' per hour.

Made 142' in 23 hours drilling with bit no. 5; 55,000# WOB, 55 RPM, 1450 psi pump pressure. Mud weight 9.1 ppg, viscosity 45 sec. Survey: 2-1/2° at 2842'. (RS)

Estimated daily cost: \$ 7,048
Estimated cumulative cost: \$163,998

6-18-90 Drilling at 3061'; 6' per hour.

Made 143' in 23 hours drilling with bit no. 5; 55,000# WOB, 65 RPM, 1450 psi pump pressure. Mud weight 9.8 ppg, viscosity 47 sec. (RS)

Estimated daily cost: \$ 6,293
Estimated cumulative cost: \$170,291

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

6-19-90 Drilling at 3145'; 7.5' per hour.

Made 84' in past 24 hours drilling with bits no. 5 and 6. Drill to 3068' with bit no. 5; 55,000# WOB, 65 RPM, 1600 psi pump pressure. TIH with bit no. 6, 17-1/2" Smith Tool Co., FJFL (jets: 15-15-14); 44,000# WOB, 65 RPM, 1600 psi pump pressure. Mud weight 9.9 ppg, viscosity 48 sec.

Ream hole 3008-3068'. (RS/AR)

Estimated daily cost: \$ 4,065
Estimated cumulative cost: \$174,356

6-20-90 Drilling at 3433'; 13' per hour.

Made 288' in 22-1/4 hours drilling with bit no. 6; 50,000# WOB, 65 RPM, 1600 psi pump pressure. Mud weight 10.4 ppg, viscosity 59 sec. Surveys: 2-1/4° at 3219'; 2-1/4° at 3376'. (RS)

Estimated daily cost: \$ 12,556
Estimated cumulative cost: \$186,912

6-21-90 Drilling at 3585'; 6.7' per hour.

Made 152' in 23-1/4 hours drilling with bit no. 6; 54,000# WOB, 65 RPM, 1650 psi pump pressure. Mud weight 10.2 ppg, viscosity 50 sec. (RS)

Estimated daily cost: \$ 7,002
Estimated cumulative cost: \$193,914

6-22-90 Drilling at 3712'; 5.5' per hour.

Made 127' in 23 hours drilling with bit no. 6; 64,000# WOB, 65 RPM, 1750 psi pump pressure. Mud weight 10.2 ppg, viscosity 51 sec. (RS/AR)

Estimated daily cost: \$ 5,602
Estimated cumulative cost: \$199,516

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

6-23-90 Drilling at 3712'; 5.5' per hour.

Logging at 13-3/8" casing point.

Made 63' in 11 hours drilling with bit no. 6; 64,000# WOB, 65 RPM, 1700 psi pump pressure. Mud weight 10.6 ppg, viscosity 75 sec. Survey: 1/4° at 3775'.

Loggers on bottom at 3:45 a.m.; logger's TD - 3782'.
(RS/AR)

Estimated daily cost: \$ 3,810
Estimated cumulative cost: \$203,326

6-24-90 Circulating 13-3/8" casing at TD of 2775'.

Finish logging with Schlumberger at 8:40 a.m. TIH to condition hole to run 13-3/8" casing. POOH.

Run 93 jts (3759.51') 13-3/8" 61# and 68# K-55 USS casing; set at 3771.51'. Casing at TD at 5:00 a.m. Circulate casing. (RS/AR)

Estimated daily cost: \$110,141
Estimated cumulative cost: \$313,467

6-25-90 Testing BOP and choke manifold to 1500 psi. TD 3775'.

Cement 13-3/8" casing with 1788 sx (3487 cf) Class G 65/35 Poz with 6% gel, 1% CaCl₂ and 4 #/sk perlite. Tail with 200 sx (300 cf) Class G with 1/4 #/sk celloflake. Good circulation throughout. Circulate 70 Bbls cement to surface. Did not bump plug. Displace with 566 Bbls water. Plug down at 10:18 a.m., 6-24-90. Float held OK. WOC 6 hours. Cut casing off. Weld on 13-3/8" casing head and base plate. Pressure test blind rams and choke manifold to 1500 psi - held OK. (RS/AR)

Estimated daily cost: \$ 33,198
Estimated cumulative cost: \$346,665

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

6-26-90 Running casing scraper at 3720'.

TIH with bit #7, 12-1/4" Hughes Tool Company, OSC3JRR (jets: 24-24-24) on casing scraper. Circulate with water - 600 psi.

Pressure test pipe rams and choke manifold to 1500 psi held OK. Fill cellar up to base plate with concrete, cement in pipe at 3617'. Started drilling cement 3710, drilled cement from 3710'; insert float at 3710 found no cement from insert + shoe at 3771'. Circulate and POOH.

Pick up 13-3/8" casing scraper, 12 1/4" bit, TIH scrap casing. (RS/AR)

Estimated daily cost: \$ 4,618
Estimated cumulative cost: \$351,283

6-27-90 Drilling cement ^{Shoe}retainer @ 3718' with bit no. 8, 12-1/4" Smith Tool Co. FVHRT (jets: 22-22-22); 7000# WOB, 100 RPM, and 4 MM air @ 200 psi.

Run casing scraper to 3761'. POOH. Pick up 13-3/8" cement retainer, TIH to 3718'. Establish injection rate of 2.25 BPM @ 1700 psi. Pump 8 Bbls water during injection rate test. Set cement retainer at 3718'. 13-3/8" casing TD - 3771'; open hole TD - 3777'.

Pressure test drill pipe, squeeze manifold and casing to 3000 psi. Squeeze casing shoe with 200 sx (230 cf) Class B with 2% CaCl₂, displace with 50.75 Bbls water. Final squeeze pressure 2850 psi. Reverse out 2 Bbls cement to surface.

Job complete at 3:30 p.m., 6-26-90. POOH. WOC 14 hours.

Drilling Report - NEBU PM SWD #1

(Cont'd)

6-27-90 TIH with 12-1/4" bit and junk basket. Unload 13-3/8" casing with air @ 2000' with water and 15 gal. of quick-foam. Drill cement 3716-3718'. (RS/AR)

Estimated daily cost: \$ 15,276
Estimated cumulative cost: \$366,559

6-28-90 Drilling with air at 4143'; 67' per hour.

With bit no. 8 drill cement retainer 3718-3721'. Drill cement 3721-3777'. Drill 33' of formation to 3811'; shoe dry and dusting @ 3811'. TOOH. TIH with bit no. 9, 12-1/4" button, Smith Tool Co. F3 (jets: 24-24-24); 20,000# WOB, 70 RPM. Drill ahead with air. Survey: 1° at 3978'. (RS)

Estimated daily cost: \$ 18,241
Estimated cumulative cost: \$384,800

6-29-90 Drilling C1 House with air at 5109'; 40.25' per hour.

Made 966' in 19-1/2 hours drilling with bit no. 9; 20,000# WOB, 60-70 RPM; 270 psi. Gauge Cliff House at 4921' - too small to measure. Work out of fracture at 5015'. Surveys: 1-1/4° at 4445'; 1-3/4° at 4950'. (RS)

Estimated daily cost: \$ 41,839
Estimated cumulative cost: \$426,639

6-30-90 Drilling at 5570'; 36' per hour.

Made 461' in 12-3/4 hours drilling with air and bit no. 9; 20,000# WOB, 70 RPM, 270 psi pump pressure. Surveys: 1-3/4° at 5194'; 2° at 5378'. (RS)

Estimated daily cost: \$ 22,194
Estimated cumulative cost: \$448,833

7-01-90 Running 9-5/8" liner.

Made 320' in 10 hours drilling with air and bit no. 9; 20,000# WOB, 70 RPM, 250 psi pump pressure. Survey: 3-1/4° at 5885'.

Gauge well for 15 minutes at 5580' - too small to measure. Gauge well at 5619' - TSTM. Strap out of hole (TD - 5890'). Log. Lay down 8" drill collars. Rig up and run 9-5/8" casing. (RS)

Estimated daily cost: \$ 22,568
Estimated cumulative cost: \$471,401

Drilling Report - NEBU PM SWD #1

7-02-90 Waiting on cement at 5890'.

Run 54 jts (2263') 9-5/8" 40# K-55 USS casing, set at 5872'. Top of liner at 3622'. Top of Baker High Flo II liner hanger at 3608'.

Cement with 600 sx (1169 cf) Class G 65/35 Poz with 6% gel, 0.6% FL, 6-1/4 #/sk gilsonite, and 1/4 #/sk celloflake. Tail with 200 sx (236 cf) Class G with 0.8% FL and 0.2% retarder. Drop DP plug on fly, displace with 215 Bbls water @ 8.8 BPM. Plug down at 2:15 p.m., 7-1-90. Check float - held OK. Set liner packoff with 20,000#. Release setting tool.

Load hole to reverse annulus, pump 549 Bbls water (70 Bbls above annulus capacity). No returns to surface. Shut down, well on vacuum. POOH with liner hanger setting tool. Run temperature survey after 8 hours; top of cement at 5600'. Pick up 12-1/4" bit and TIH. Set 30,000# on tie-back sleeve. WOC. (RS/AR)

Estimated daily cost: \$ 64,534

Estimated cumulative cost: \$535,935

7-03-90 Rigging down to skid substructure away from wellhead to compact foundation.

RIH, set 30,000# on liner tie back sleeve at 3608', load hole with 550 bbls water. Close pipe rams and pressure test liner pack off to 1500 psi. Pressure after 30 minutes - 300 psi.

Bled off pressure, open pipe rams. Pick up off liner hanger, close pipe rams and pressure up to establish injection rate. Pressure to 2400 psi, shut down, pressure dropped 200 psi every 10 minutes,

POOH, pick up bit #10 8-3/4 RT Smith Tool Company SVH (jets: 22-22-22). TIH, tag wiper plugs at 5830', set 50,000# down and hang remainder of drill pipe weight on 13-3/8" RTTS at 53'. Back off bypass valve on top of 13-3/8 packer. Lay down 2 jts drill pipe, TIW valve and bypass mandrel. Close blind rams. Rigging down rig.

Estimated daily cost: \$ 8,568

Estimated cumulative cost: \$544,503

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-04-90 TIH with 13-3/8" cement retainer.

Move rig, water tank, and doghouse. Dug 8' deep x 7' x 22' hole on rig side of cellar; put 70 yds. 3/4" road base gravel in hole and compacted. Rig back up. Pick up 2 jts drill pipe and 13-3/8" RTTS bypass mandrel sub. Screw on to by pass mandrel. Release 13-3/8" RTTS and TOOH.

Rig up Wireline Specialty. RIH with 4" gun, shoot 2 holes (0.4" - 0.45"), 180° phasing at 3700', POOH. Pick up 13-3/8" cement retainer and TIH to squeeze 9-5/8" liner. (RS)

Estimated daily cost: \$ 10,670
Estimated cumulative cost: \$555,173

7-05-90 Drilling cement in 13-3/8" casing at 3592'.

TIH with 13-3/8" cement retainer, set at 3568'; top of liner at 3608'. Load casing with 80 Bbls water, put 500 psi on backside. Pressure test drill pipe, squeeze manifold and lines to 3500 psi, held OK. Establish injection rate of 1.5 BPM @ 800 psi. Squeeze liner top with 300 sx (345 cf) 15.8 ppg Class G with 2% CaCl₂. Displace with 43.9 Bbls water. Well on vacuum, let well suck 42.7 Bbls of displacement, hesitating every 10 minutes. Was able to perform walking squeeze on last 1.2 Bbls displacement, final squeeze pressure - 2000 psi. Squeeze total of 222 cf. Sting out of retainer at 10:45 a.m., 7-04-90. Reverse out 7-3/4 Bbls cement to surface. POOH with setting tool. WOC 12 hours. TIH with 12-1/4" RT. Tag cement at 3567'.

Drilling Report - NEBU PM SWD #1
July 5, 1990

(Cont'd)

7-05-90

Drill cement and retainer at 10:45 p.m., 7-04-90, with bit no. 11, 12-1/4" Smith Tool Co. FDS RT (jets: 22-22-22). Made 25' in 7-1/4 hours; 12,000# WOB, 80 RPM. (RS)

Estimated daily cost: \$ 16,190
Estimated cumulative cost: \$571,364

7-06-90 Pull up hole to unload water.

Drilled cement and retainer (13-3/8") 3567'-3625'. POOH. TIH with bit #10. Drill cement at 3625'-3708', tag float collar at 5848. Pressure test squeeze hole to 1000 psi for 30 min; held - O.K.

Drill float collar and shoe jt, lost circulation under shoe, pumped 40 bbl water. No returns.

Rig up air equipment, hole would not circulate or unload. Pull 8 stands drill pipe, break circulation with water.

Estimated daily cost: \$ 5,967
Estimated cumulative cost: \$577,331

7-07-90 Blowing hole with air to dry at 5904'.

Circulate cement out of 9-5/8" casing with water to 5888' - lost circulation. POOH to 2760'. Unload hole. TIH to 5170'. Unload hole. TIH to 5888'. Unload and dry hole. Drill 8' to 5896', hole wet.

Run 10 gal. soap sweeps at 2760', 4330', 5170', 5888', and 5896'. Run 5 gal. soap sweep at 5904'. (RS)

Estimated daily cost: \$ 4,434
Estimated cumulative cost: \$581,765

7-08-90 TIH with 9-5/8" cement retainer.

Blow to dry hole at 5896'. Noticed gas bubbles around 13-3/8" casing. Shut down air. Pull 1 stand drill pipe. Observe well and check gas - 1280 total units in gas: 88,200 ppm C₁, 544 ppm C₂, and 250 ppm C₃. TOOH, pick up 9-5/8" cement retainer. TIH. (RS)

Estimated daily cost: \$ 9,211
Estimated cumulative cost: \$590,976

Drilling Report - PM SWD #1

7-09-90 Drilling cement inside 4-1/2" drill pipe at 4369'.

Set 9-5/8" cement retainer at 5814'. Pressure test drill pipe, lines, and squeeze manifold to 3500 psi - test backside to 800 psi.

Sting out of retainer, mix and spot 200 sx (236 cf) 15.6 ppg Class G cement with 2% CaCl_2 . Sting into retainer, displace 25 Bbls cement with booster pump. Shut down for 15 minutes - pump 1.5 Bbls water, Drill pipe pressure 2000 psi, backside pressure 750 psi. Could not sting out of retainer. Pulled 190,000#, 2 times string weight + 10,000#.

Call Homco for 1-1/2 MT drill pipe, power swivel, and pump to drill cement inside 4-1/2" drill pipe. Pick up 2-7/8" drag bit and 1-1/2" drill pipe; strap, rabbit, and TIH. Tag cement at 4307'. Drill cement inside 4-1/2" drill pipe 4307-4369'. (RS)

Estimated daily cost:	\$ 22,005
Estimated cumulative cost:	\$612,981

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-10-90 Repairing swivel.

Drill cement inside 4-1/2" drill pipe with 2-7/8" HVM blade/drag bit and 1-1/2" MT drill pipe with reverse circulation 4369-4858'. Total: 489'. Circulating pressure increased to 1500 psi. Blew discharge hose and plugged bit. Pull 52 stands. MT drill pipe went on vacuum.

Pick up power swivel and break circulation. Swivel packing leaking. Shut down to repair same. No packing on location. Rig up circulating swedge. TIH breaking circulation every 10 stands. Tag cement at 4737'.

Circulate and wait on swivel repair. (RS)

Estimated daily cost: \$ 5,557
Estimated cumulative cost: \$618,538

7-11-90 Drilling in 4-1/2" drill pipe @ 5315'; 24' per hour.

Pick up swivel and crossover subs; wash 121' to bottom @ 4858'.

Drill cement 4858-5315' (457'). Circulate and work pipe to overcome bridging (2 hours). Circulate back cement 1/2" to 1-3/4" in diameter using conventional circulation because of cutting size (Four Corners Air took 3 compressors and 2 boosters from location). (RS/MD)

Estimated daily cost: \$ 5,697
Estimated cumulative cost: \$624,235

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-12-90 Servicing rig.

Circulate direct at 5315' to clean hole (3 hours). Run two polymer sweeps. Reverse circulate and drilled cement 5315-5340'. Plug bit and TOH. Lay down 1 jt 1-1/2" MT drill pipe - plugged.

Pick up new 2-7/8" drag bit and TIH. Tag cement at 4455', circulate and clean hole. Reciprocate drill pipe. Got bridge in annulus, pressure to 2500 psi. Blow pop off on pump and plugged bit. TOH. (RS/MD).

Estimated daily cost: \$ 6,931
Estimated cumulative cost: \$631,166

7-13-90 Drilling cement inside 4-1/2" drill pipe at 5392'; 24' per hour.

Circulate with water and polymer; viscosity 30 sec, 1000 psi, 60 SPM, 1.38 BPM water.

Lay down 1 jt 1-1/2" MT drill pipe, plugged. TIH, wash from 4455-5340'. Circulate back 1/8" to 1-3/4" cement. Drill cement at 5340' at 3:30 a.m. (RS/AR)

Est. daily cost: \$ 10,272 Daily mud: \$ 216
Est. cumulative cost: \$641,438 Cum. mud: \$ 540

7-14-90 Drilling cement inside 4-1/2" weight pipe @ 5770'; 28.5' per hour.

Drill cement inside 4-1/2" drill pipe to 5616'. Circulate annulus clean. POOH with 1-1/2" MT drill pipe. Pick up 2-1/4" blade drag bit. TIH, no fill. Drill cement inside 4-1/2" weight pipe 5616-5770'. (RS/AR)

Est. daily cost: \$ 8,098 Daily mud: \$ 218
Est. cumulative cost: \$649,536 Cum. mud: \$ 758

Drilling Report - NEBU PM SWD #1

7-15-90 TIH with 8-1/8" wash over shoe, 180' washpipe, and jars.

Drill cement in 4-1/2" drill pipe to 5794'. Run polymer sweep. Run 25 Bbls 28% HCl with 4 gal. HAI85. Displace with 6.5 Bbls water.

Spot acid from 3402-5794'; wait 30 minutes. Run 10 Bbls water spacer then polymer sweep. Flush acid with 100 Bbls water. POOH and lay down 1-1/2" MT drill pipe.

Run freepoint tool to 5011'; drill pipe free to 4942'; partially stuck at 4948'. Back off 4-1/2" drill pipe with string shot at 4916', left 698' of 4-1/2" drill pipe and 180' of 4-1/2" weight pipe in hole. POOH with 4-1/2" drill pipe. Pick up 8-1/8" washover shoe, 1.92' of washpipe, and jars. TIH. (RS/AR)

Estimated daily cost: \$ 15,224
Estimated cumulative cost: \$664,760

7-16-90 Rigging up to run 1-1/2" MT drill pipe.

TIH with 192' of 8-1/8" washover pipe and jars; wash over 4-1/2" drill pipe from 4925-5108'.

POOH. Pick up screw-in sub, jars, eight 8" drill collars, and accelerator. TIH, screw into 4-1/2" at 4916', jar for 2 hours - no movement.

Run wireline with sinker bars and pointed sucker rod on bottom to break through bridge in drill pipe. Spud on bridge in drill pipe at 4958' for 1 hour. Could not break through. POOH with wireline, release grapple, POOH with fishing assembly. TIH with 4-1/2" drill pipe. Screw back into fish, rig up to run 1-1/2" MT drill pipe. (RS/AR)

Estimated daily cost: \$ 13,556
Estimated cumulative cost: \$678,316

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-17-90 Wash cement in 4-1/2" drill pipe at 5223'.

Pick up and run 163 jts of 1-1/2" MT drill pipe. Tag and wash cement in 4-1/2" drill pipe at 4972'. Circulate back cement; fine to 2-1/4" diameter, 2" flowline plugging, install tee spool with 4" outlet. Wash 4972'-5223'. 251' in 10.5 hrs. Average 24' per hr.

Estimated Daily Mud Cost: \$ 475
Estimated Cumulative Cost: \$ 1,233

Estimated Daily Cost: \$ 10,425
Estimated Cumulative Cost: \$688,741

7-18-90 RIH with sinker bar on wireline.

Wash cement inside 4-1/2" drill pipe from 5223' to top of 4-1/2" weight pipe at 5616'.

Circulate cement (1" to 2-1/4" diameter). Circulate annulus clean, POOH with 1-1/2" drill pipe.

Rig up and run free point to 5393'; could not get deeper. POOH, RIH with sinker bar. (RS/MD)

Estimated daily cost: \$ 8,747
Estimated cumulative cost: \$697,488

7-19-90 Washing over 4-1/2" drill pipe at 5480'.

TIH with sinker bar, spudding jars, and pointed sucker rod. Spud on cement in 4-1/2" drill pipe 5393-5726' (333' total, 110' inside 4-1/2" heavy weight drill pipe). POOH.

Pick up free point and back-off tool and TIH. Drill pipe 100% free at 5464'; 15% free 5464-5720'. Attempt back-off at 5695' - no good. POOH.

Drilling Report - NEBU PM SWD #1

(Cont'd)

7-19-90

TIH with string shot and back off drill pipe at 5449'.
POOH with 4-1/2" drill pipe. Lay down 18 jts. Install
11" Grant shorty rotating head. Pick up 221' of 8-1/8"
wash pipe and shoe, jars, bumper sub, and four 6-3/4"
drill collars and TIH. Wash on cement 5450-5480'.
(RS/MD)

Estimated daily cost: \$ 12,134

Estimated cumulative cost: \$709,622

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-20-90 Washing over 4-1/2" drill pipe at 5472'.

Wash pipe torquing at 5482'. POOH to look at shoe. Wash pipe twisted at 5351'. Left 131' of 8-1/8" wash pipe and shoe in hole.

Pick up spear, grapple, stop sub, jars, four 6-3/4" drill collars, and TIH. Spear into fish. POOH. Lay down all used wash pipe (7 jts) and shoe. Pick up new string (7 jts) of 8-1/8" wash pipe and 8-1/8" shoe (total wash pipe length 219.04'), four 6-3/4" drill collars (116.35'), and jars (10.85'). TIH, wash 5450-5472'. (RS/MD)

Estimated daily cost: \$ 11,514
Estimated cumulative cost: \$721,136

Drilling Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

7-21-90 Rigging up floor to run 1-1/2" MT drill pipe.

Wash over 4-1/2" drill pipe to 5482'. Returns rounded cement 1/2" to 1" and metal. Pipe torquing at 5482'. POOH with wash pipe. TIH with 4-1/2" drill pipe open ended; screw into 4-1/2" drill pipe at 5449'. Test drill pipe and liner to 2500 psi for 15 minutes - held OK. RIH with wireline perf, 4-1/2" drill pipe 5602-5603' with five 1-13/16" shots, staggered 180°. POOH with Wireline. Attempt to circulate through perfs at 5602-5603'; held 2400 psi for 10 minutes. Run 5 more shots on wireline, hit obstruction at 5462'. POOH. RIH with sinker bar, spudding jars, spud on obstruction 5469-5445'. Lost 24'. POOH and rig down wireline. Rig up floor to run 1-1/2" MT drill pipe. (MD)

Estimated daily cost: \$ 10,375

Estimated cumulative cost: \$731,511

7-22-90 Pumping with Howco down drill pipe out perf holes @ 3.7 BPM @ 4500 psig.

Pick up 2-7/8" RR bit, bit sub, and string float. TIH, tag bridge at 5432'. Rig up swivel and pump; break circulation at 11:30 a.m.; wash cement 5432-5616'. Returns moderate fine cement. Circulate on bottom 2 hours. Hang back swivel.

POOH and stand back 1-1/2" MT drill pipe. Rig down floor. Rig up Homco Wireline. RIH with five 1-13/16" shots in 8', could not get past 5462'. Pull 4-1/2" drillpipe to 25,000# over string weight. Run spud bars to 5650'. Rerun bi-wire perf gun, shoot 5 holes 5484-5492'.

Pick up Kelly. Establish a rate of 1.6 BPM @ 3000 psi with no returns. Increase rate to 2.3 BPM @ 4000 psi. Returns 20-25 GPM, rate dropping along with returns. Increase pressure to 4500 psi @ 2.3 BPM and 23 GPM returns.

(Cont'd)

7-22-90

Work pipe periodically - very little difference. Pressure dropped 4500-1500 psi. Rate increased to 4.2 BPM @ 4000 psi. Returns 40 GPM, then began to decline to 3.7 BPM @ 4000 psi. Worked pipe, increase pressure to 4500 @ 3.5 BPM.

Estimated daily cost: \$ 11,567

Estimated cumulative cost: \$743,078

7-23-90

TIH with 8-1/8" wash pipe and new mill shoe.

Pump through perfs in drill pipe at 2.9 to 7.9 BPM @ 3150-4500 psi. 60% returns: gray water and soap. Shut down, rig up Homco and run free point: 4-1/2" 100% free at 5470' and 5480'; 10% free at 5486'. Could not get deeper than 5490'.

Back off 4-1/2" drill pipe at 5449'. Attempt to reverse circulate. Pump 25 Bbls - no returns and POOH with 4-1/2" drill pipe.

Pick up 8-1/8" wash pipe and shoe, four 6-3/4" drill collars, and jars and TIH. Wash over 4-1/2" drill pipe 5460-5482' pumping 4 BPM and no circulation. POOH with wash pipe. Put on new 8-1/8" mill shoe and TIH with wash pipe on 4-1/2" drill pipe. (MD)

Estimated daily cost: \$ 19,710

Estimated cumulative cost: \$762,788