

RESISTIVITY OHM-M

64"

200

RESISTIVITY OHM-M

16"

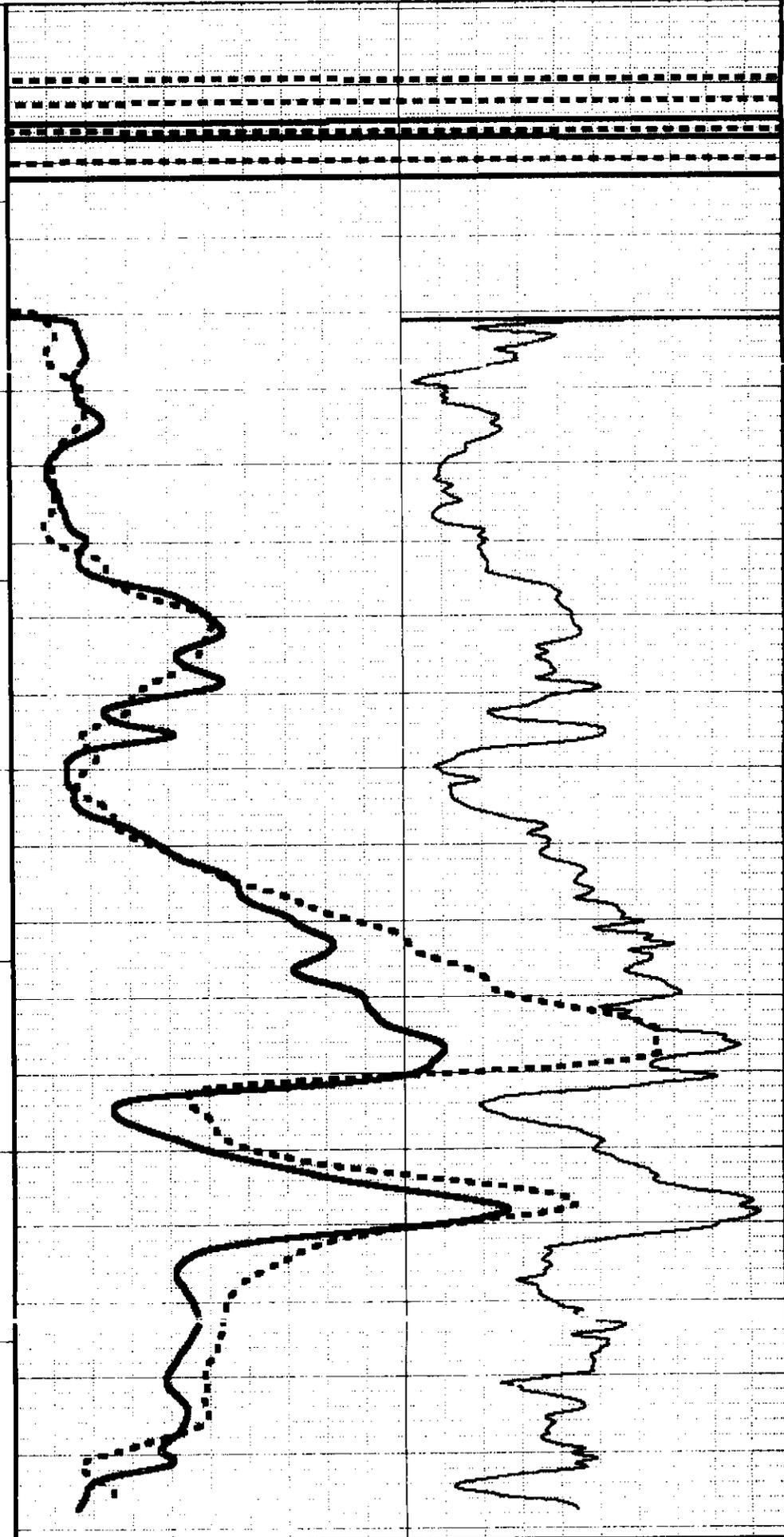
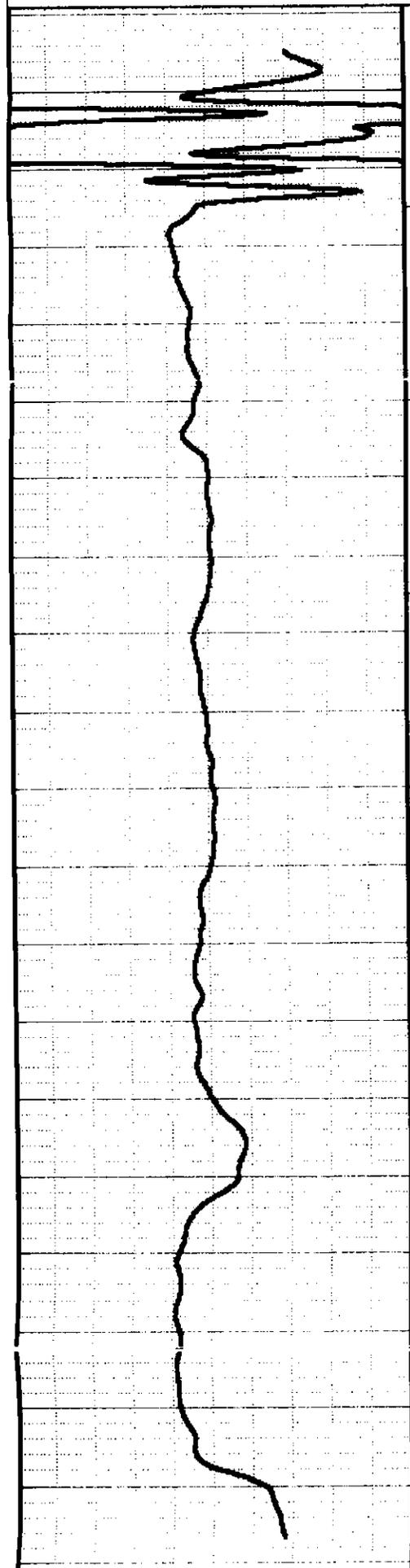
200

MILLIVOLTS

-50

S.P.

50



MILLIVOLTS

RESISTIVITY OHM-M

-50

S.P.

50

0

100

200

WELL CONSTRUCTION & COMPLETION REPORTProperty Name Church Rock SiteWell Name PB-4Status or Function of Well as of 06/24/2002 : Completed
(Date)Well Location: N 77675.3395 Driller Boart LongyearE 62100.2226Collar Elev. 6897.45

Cored Hole: Interval _____ Disposition _____

Geophysical Logs:	Natural Gamma	<u>Yes</u>
	Resistance	<u>Yes</u>
	Self Potential	<u>Yes</u>
	Caliper	<u>No</u>
	Spinner	<u>No</u>
	Drift	<u>No</u>
	Other	_____

Basic Well Construction:	Telescoping Screen	_____
	Gravel Pack	<u>Yes</u>
	Perforation	_____
	Underreamed	_____
	Cement Basket & Screen on Casing	_____
	Open Hole	_____
	Other	_____

Basic Lithology: Sandstones, Mudstones, Shales, Carbonaceous Shales, and Coal

Basic Mineralization: Minor Oil

Static Water Level: _____

Well Total Depth (or elevation) 6788.45'

Casing Depth (elevation) 6796.45'

Screen Interval (elevation) 6777.85' - 6795.85'

Perforated Interval 170.4' - 190.4'

Underreamed Interval _____

Open Hole Interval _____

Gravel Packed Interval 166' - 191'

Cemented Interval _____

Location of Centralizers 90' - 170' - 190'

Depth (or elevation) of packer _____

Depth (or elevation) of wash plug _____

Depth (or elevation) of bottom of screen string 190.4'

Depth (or elevation) of cement basket _____

Hole: Method Rotary.w/ Clear Water

Diameter 9 7/8" From 0' To 199'

From _____ To _____

Fluid if Any Water Only

Casing: Material PVC Sch. 40 Ceritlock

Dimensions ID 4.45"

OD 4.96"

Joints Flared w/ Locking Splines

Centralizers 5" opened to 10"

Cement: Method _____

Done By _____

Description of Mixture _____

Screen: Construction & Material Sch. 40 PVC Certilock Casing
 Nominal 5" ID 4.45" OD 4.97"
 Length 20'
 Slot Size .032"
 Open Area/Ft 15.4 sq.in./ft.
 Other Material Associated with Screen Slip fit with splines
hammered into locking grooves. Joints flared Down Hole.

Peforations:

Underream:

Slotted Casing:

Gravel: Size 10 X 20 Amount 50 lb./Bag - 17 Bags Used

Method of Completion & Description: Rotary hole 9 7/8" drilled and logged. Screen
centralizer, and casing hung in Hole. Screen washed, screen graveled packed, and
betonite pellets placed. Annulus mud of 60 vis. or higher filled to gravel level
4 Bags Pellets used to fill over drill prior to casing.
3 Bags Pellets to seal Gravel Packed, Gravel Pack trim lined in.

"DAILY DRILL REPORT"



EQUIPMENT ON SITE (CCD #1)

Drill R, 3828
 TYPE DRILL NO. TRUCK NO.
 Pick-Up Trucks 4058
 Water/Service Trucks 3917
 Other Equipment _____

Contract: UNC , 1499 Date: 6-24 2002
MONTH DAY

Location: Gallup N. Mex. Supervisor Signature: [Signature]

Shift	Hole No.	Angle	Bit Size	Footage Summary		Total Footage	Casing Summary	
				From	To		From	To
A	<u>PD-4</u>	<u>90°</u>	<u>9 1/8</u>	<u>0</u>	<u>199</u>			
B								
C								

HOURLY DISTRIBUTION	A		B		C		SUPPLIES CONSUMED					
	HOURS	EVENT	HOURS	EVENT	HOURS	EVENT	DESCRIPTION	SIZE	WEIGHT	QUANTITY		
Drilling	<u>12.5</u>									A	B	C
Well Construction							PVC Riser					
Vaults							PVC Screen					
Hydro Punches							Bottom Cap					
Split Spoon							Compression Cap					
Development							Sand					
Cementing							Hole Plug					
Moving - Hole to Hole							Cement					
Rigging up - Rigging down							Vaults					
Re-entry							Sacrete					
Hole Abandonment							Barrels					
Decontamination							Volclay Grout					
Mobilization/Demobilization							Granular Bentonite					
Delays - Client Acct.							Core Boxes					
Stand By							Other					
Pre-shift Safety Mfg.												
Crane Inspection												
Pre-Shift Inspection	<u>.5</u>											
Travel												
Other (Explain)												
TOTAL HOURS/EVENTS	13											
Initials												

Shift	Driller	Hours	Drilling Assistant	Hours	Drilling Assistant	Hours
A	<u>[Signature]</u>	<u>13</u>	<u>M. PEARSAI</u>	<u>13</u>	<u>D. FRISSELL</u>	<u>13</u>
B						
C						

Remarks: (Note any problems from pre-shift inspections here.) T.D. WOLF @ 199' - LOG WELL -
SET CASING & SCREEN @ 191' - TREMIE SAND
TO 166' & PLACE BENTONITE SEAL ABOVE SAND
TO 160'.

Client Signature: [Signature] Date: _____

ELECTRIC LOG	DEPTH	STRIP LOG	LITHOLOGY LOG
	5		Lt. Brown Silty Soil w/minor ss cobbles
	10		Lt. Brown Silty Soil w/minor ss cobbles
	15		Lt. Brown Silty Sandy Soil w/subangular fine gr. white silty ss
	20		Lt. Brown Silty Sandy Soil w/minor fine gr. white silty ss
	25		Lt. Brown Silty Sandy Soil
	30		Lt. Brown fine gr. Silty SS w/minor limonitic fine gr. silty ss + white fine gr. silty ss fragments
	35		Lt. Brown fine gr. Silty SS + Tan mudstone w/dk Gray shale
	40		Lt. Brown fine gr. Silty SS + Tan mudstone w/dk Gray shale
	45		Lt. Brown fine gr. Silty SS w/minor limonitic stained fine gr. silty ss + dk. Gray Mudstone
	50		Lt. Gray fine gr. Silty SS w/ limonitic stained fine gr. Silty SS
	55		Lt. Gray to white fine gr. Silty SS
	60		Lt. Gray fine gr. Silty SS - Dk. Gray shale, Dk Brown Mudstones w/ minor coal fragments
	65		Lt. Gray to white fine gr. Silty SS w/ Dk Gray shale
	70		Lt. Gray fine gr. Silty SS w/minor coal + shale
	75		Lt. Gray fine gr. Silty SS
	80		Lt. Gray to Dk. Gray fine gr. Silty SS w/minor coal + shale
	85		Lt. Gray to white fine gr. Silty SS w/oil staining + minor dk gray shale
	90	Oil	Lt. Gray fine gr. Silty SS w/oil staining
	95		Lt. Gray fine gr. Silty SS w/ minor oil staining
	100		Dk Gray shale w/ coal, oil stained fine gr. silty SS
	105		Lt. Gray to Dk Gray shale w/ coal fragments
	110		

ELECTRIC LOG		DEPTH	STRIP LOG	LITHOLOGY LOG
				Lt. Gray to white fine gr. Silty SS w/ oil staining, Lt. gray shale-minor
		115		Lt. Gray to white fine gr. Silty SS w/ minor oil staining & minor gray shale
		120		Lt. Gray to white fine gr. Silty SS w/ minor gray shale & very minor oil staining
		125		Lt. Gray fine gr. Silty SS w/ oil staining
		130		Lt. Gray fine gr. Silty SS w/ oil staining
		135		Lt. Gray fine gr. Silty SS w/ oil staining
		140		Lt. Gray fine gr. Silty SS w/ oil staining & minor thin layers white fine gr. silty SS
		145		Lt. Gray shale w/ minor oil stained fine gr. SS, coal, & white fine gr. silty SS
		150		Lt. Gray to Dk Gray shale w/ white fine gr. silty SS
		155	Grauling Zone 3 SS 3	Lt. Gray fine gr. Silty SS w/ minor shale
		160		Lt. Gray med.-coarse gr. Qtz. SS w/ minor feldspar - minor coal fragments
		165		Lt. Gray med.-very coarse gr. Qtz SS w/ 1-3% feldspar & minor coal
		170		Lt. Gray med.-very coarse gr. Qtz. SS w/ 3-5% feldspar
		175		Lt. Gray med-very coarse gr. Qtz. SS w/ 1-2% feldspar
		180		Lt. Gray med-very coarse gr. Qtz SS w/ minor feldspar & gray shale
		185		Lt. Gray med-very coarse gr. Qtz SS w/ minor feldspar gray shale
		190		Coal 191-193
		195		Dk Gray shale
		199'	T.D.	Dk Gray shale