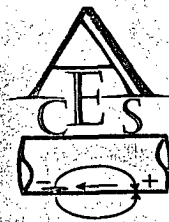


**CATHODIC PROTECTION
GROUNDBED INSTALLATION
AT**

**DEVON ENERGY
N.E.B.U # 78A WELL MV/DK
LOCATION: SEC. 21, T31N, R7W
SAN JUAN COUNTY, NEW MEXICO
30-045-31024**



**Advanced Corrosion & Environmental Services
P.O. Box 2767
Farmington, New Mexico 87499**

June 30, 2003

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator DEVON ENERGY PRODUCTION, LP Location: Unit Sec. 21 Twp 31N Rng 7W

Name of Well/Wells or Pipeline Serviced N.E.B.U. #78A WELL M/DK

Elevation 490' Completion Date 6/24/03 Total Depth 400' Land Type* Fee/Prop
Casing, Sizes, Types & Depths 8" PVC SURFACE CASING TO 20'.

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used
N/A

Depths & thickness of water zones with description of water when possible:
Fresh, Clear, Salty, Sulphur, Etc. GROUNDWATER WAS NEVER
ENCOUNTERED TO THE DEPTH OF 400'.

Depths gas encountered: N/A

Type & amount of coke breeze used: 84-50LB. BAGS (4620 LBS) SW. LONGVIEW.

Depths anodes placed: 230', 255', 265', 275', 285', 325', 335', 345', 355', 365', 375', 385'

Depths vent pipes placed: FROM SURFACE TO 400' bgs.

Vent pipe perforations: APPROXIMATELY EVERY TWO FEET.

Remarks: THIS HOLE WAS DRY FROM MOISTURE AS INDICATED FROM
DRILL CUTTINGS TO THE TOTAL DEPTH DRILLED (i.e. 400')

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Soil Boring/Well Log

Client: Devon Energy Production, LP

Well Location/No: N.E.B.U. #78A - Well MV/DK

TNSP: T - 31 - N

RNGE: R - 7 - W

SEC: 21

County: San Juan

State: New Mexico

Contractor: Advanced Corrosion & Env. Svs.

Drilling Co: Baily Drilling Co.

Spud Date: 6/23/2003

Date Completed: 6/24/2003

Elevation (if available): 6490'

Type of well: Cathodic Protection

Drilling method: Air Drilling

Logged by: Al Chaharlang

Remarks: Lithology was described visually from the cuttings.

Depth (ft)	Sample Type	Lithology	Lithology Description
0	excavation pit	silt/clay	Reddish brown silty clay and dry to 4' from surface excavation pit.
10			From 0 to 20', 8" PVC surface casing was installed.
20	cuttings	sand/clay	From 4' to 20' greenish sandy clay, dry.
30	cuttings	shale/sandstone	From 30' to 70' greenish clay/shale to sandstone, dry.
40			
50			
60			
70	cuttings	sand/shale	Lt. green shale to sandstone, dry.
80	cuttings	sand/clay/shale	Lt. brown sandy clay also interchanged to sanstone to 120', dry.
90			
100			
110	cuttings	shale/sandstone	
120	cuttings		
130	cuttings	shale/shale	Lt. blue to gray sandy shale to sandstone, dry.
140	cuttings	shale/shale	Same as above.
150	cuttings	shale	Blue to gray shale/clay, dry.
160	cuttings	shale	Same as above.
170	cuttings	shale	Same as above.
180	cuttings	shale	Same as above.
190	cuttings	shale/sand	Lt. gray to brown brown sandy shale, dry.
200	cuttings	shale/sand	Same as above.
210	cuttings	sandstone	Gray to lt. blue sand to sandstone, dry, hard.
220	cuttings	sandstone	Same as above.
230	cuttings	sandstone/shale	From 230' to 300' greenish gray sandstone and shale ineterchanging, hard, dry.
240	cuttings	sandstone/shale	Same as above.
250	cuttings	sandstone/shale	Same as above.
260	cuttings	sandstone/shale	Same as above.
270	cuttings	sandstone/shale	Same as above.
280	cuttings	sandstone/shale	Same as above.

Soil Boring/Well Log

Client: Devon Energy Production, LP

Well Location/No: N.E.B.U. #78A - Well MV/DK

TNSP: T - 31 - N

RNGE: R - 7 - W

SEC: 21

County: San Juan

State: New Mexico

Contractor: Advanced Corrosion & Env. Svs.

Drilling Co: Baily Drilling Co.

Spud Date: 6/23/2003

Date Completed: 6/24/2003

Elevation (if available): 6490'

Type of well: Cathodic Protection

Drilling method: Air Drilling

Logged by: Al Chaharlang

Remarks: Lithology was described visually from the cuttings.

[illegible]

Proposed location of
CP Junction Box

8" PVC cap
2x2 concrete
pad

20'-8" PVC casing

8" PVC casing

8" dia borehole

12-Anode leadwire
(gauge #8 HMW/PE)

1" perforated
PVC ventpipe

TD = 400'

Length of Coke Breeze
(Loreco SW, 4620 Lbs)

234'

Length of anode string plus spacing
(12-2"x60"-D51 Cast iron anodes)

225'

Coke Breeze

Devon
N.E.B.U. #78A
Well MV/DK



Advanced Corrosion & Environmental Services P.O. Box 2767 Farmington, New Mexico 87499	
Tel: (505) 327-9461	
Site: Devon N.E.B.U. #78A	
Address: Sec. 21, T31N, R7W San Juan County, NM	
Fig. 1: Schematic diagram of groundbed installation	
Drn by: Al Chaharlang	
Prj Mgr: Al Chaharlang	
e:\devon\enrg\cp-78	Date: 7/8/2003

Not to Scale

Advanced Corrosion & Environmental Services

**CATHODIC PROTECTION (CP) GROUNDBED
INITIAL INSTALLATION RECORD**

CLIENT: Devon Energy Production Company	WELL NO: N.E.B.U. #78A	NO. OF ANODES & TYPE:	12-D51 Cast Iron w/#8 HMW PE
CONTACT PERSON: Dwane Oliver	WELL LOCATION: T31N, R7W, Sec. 21	COKE BREEZE AMOUNT:	84 bags or 4620 Lbs Loresco SW
JOB TYPE: Cathodic Protection	CP WELL DIAMETER: 8"	CASING DIAM. & LENGTH:	20.0 ft. 8" PVC surface casing
DATE: 6/23/2003	TOTAL DEPTH: 400 FT.		

Remarks: Groundwater was not encountered throughout the total depth.

Well	Anode Log	Well	Anode Log	Well	Anode Log	Well	Anode Log	Well	Anode Log	Well	Anode Log	Anode Design	Before Coke Brze	After Coke Brze
Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	Depth (ft)	(+/-mv reading)	(+/-mv reading)
0	PVC casing	105	-0.4	205	-0.1	305	-0.2	405				385	0.40	2.20
5	PVC casing	110	-0.3	210	-0.2	310	0.1	410				375	0.40	3.00
10	PVC casing	115	-0.1	215	-0.4	315	0.1	415				365	0.50	3.80
15	PVC casing	120	-0.1	220	-0.2	320	0.1	420				355	0.40	4.00
20	PVC casing	125	-0.1	225	-0.2	325	0.3	425				345	0.20	2.70
25	-0.3	130	-0.3	230	-0.3	330	0.3	430				335	0.20	2.50
30	-0.2	135	-0.9	235	-0.1	335	0.2	435				325	0.30	2.00
35	-0.1	140	-0.8	240	-0.2	340	0.2	440				285	0.40	3.20
40	0	145	-0.6	245	-0.1	345	0.2	445				275	0.50	5.60
45	0	150	-0.3	250	-0.3	350	0.4	450				265	0.60	5.00
50	-0.1	155	-0.3	255	-0.6	355	0.6	455				255	0.50	4.10
55	0	160	-0.2	260	-0.6	360	0.6	460				230	0.30	3.80
60	-0.1	165	-0.2	265	-0.6	365	0.5	465						
65	-0.3	170	-0.1	270	-0.7	370	0.5	470						
70	0	175	-0.3	275	-0.5	375	0.4	475						
75	-0.1	180	-0.5	280	-0.2	380	0.4	480						
80	-0.1	185	-0.5	285	-0.3	385	0.4 @ TD	485						
85	-0.1	190	-0.4	290	-0.1	390		490						
90	-0.1	195	-0.1	295	0	395		495						
95	-0.2	200	-0.1	300	-0.1	400		500						
100	-0.4													

c:\cp-dgnlog

Useful Equations:

External Shunt reading conversion:

Current = I = 50A/50mv x (+/- mv meter reading)

Anode Spacing =

10 ft.

$V = I \times R$ or $R = V/I$

Total Current, I = 12.0

Ampere (note: meter reading)

V = Voltage Applied = 14.2 Volts

R = Total Resistance =

V/I =

1.18 Ohm