District I

1625 N. French Dr., Hobbs, NM 88240

State of New Mexico **Energy Minerals and Natural Resources**

Form C-101 May 27, 2004

District II

1301 W. Grand Avenue, Artesia, NM 88210 RECEIVED

District III 1000 Rio Brazos Road, Aztec, NM 87410

E-mail Address: Stephanie. Ysasaga@d n.com

Phone: (405)-552-7802

Date: 03/02/06

MAR 0 7 2006

Oil Conservation Division

1220 South St. Francis Dr.

Submit to appropriate District Office

☐ AMENDED REPORT

District IV Santa Fe, NM 87505 1220 S. St. Francis Dr., Santa Fe, NM 875000-ARTESIA APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE Operator Name and Address OGRID Number 6137 Devon Energy Production Company L.P. 20 North Broadway OKC, OK 73102-8260 API Number 30-015-29522 Well No. Property Code Property Name Hackberry 31 State 9 Proposed Pool 1 10 Proposed Pool 2 Happy Valley; Morrow Surface Location Feet from the North/South line UL or lot no. Section Township Range Lot Idn Feet from the Fast/West line County 26E 1980 North 660 **22S** East Eddy Н 31 ⁸ Proposed Bottom Hole Location If Different From Surface Feet from the North/South line East/West line III. or lot no Section Township Range Lot Idn Feet from the County 1920 710 Н 31 22S 26E North East Eddy Additional Well Information 13 Cable/Rotary 11 Work Type Code 12 Well Type Code 14 Lease Type Code 15 Ground Level Elevation 3374 N P&A 16 Multiple 17 Proposed Depth 18 Formation 19 Contractor Spud Date MD 11702; TVD 117003 Happy Valley; Delaware Depth to Groundwater Distance from nearest fresh water well Distance from nearest surface water Pit: Liner: Synthetic mils thick Clay Pit Volume: Drilling Method: Closed-Loop System 🛛 Fresh Water Brine Diesel/Oil-based Gas/Air Proposed Casing and Cement Program Hole Size Casing weight/foot Setting Depth **Estimated TOC** Casing Size Sacks of Cement 16" 20" (In place) 65# 604' 925 sx. 20 circ to pit Surface 14 3/4" (In place) 9 5/8" **∆**∩# 1612" 1850 sv. 25 circ to ni Surfac 8 3/4" 5 1/3" 17# 11702 160 ev 1112' ²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary. Devon plans to re-enter this P&A well, drill to a total depth of 11,702' and complete as a Morrow gas development well. If it is deemed non-commercial then it will be plugged and abandoned in accordance with the rules and regulations established by the New Mexico OCD or converted to salt water disposal after installing production casing and obtaining the necessary disposal permits. No H2S is expected to be encountered; H2S plan provided. 5000 psi Double and Hydril with drilling spool & rotating head to be used. City of Carlsbad Sheep Draw Wellfield Protection Area Permit filed with Dave Hennard (RESPEC) & Richard Aguilar (City of Carlsbad), Copy of OCD form C-101 provided to both agencies. ²³ I hereby certify that the information given above is true and complete to the OIL CONSERVATION DIVISION best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines , a general permit , or Approved by: Printed name: Stephanie A. Ysasaga Title: Sr. Staff Engineering Technician Approval Date

Conditions of Approval Attached

DISTRICT I P.O. Box 1980, Hobbs, NK 88240

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102 Revised February 10, 1994 Instruction on back Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

DISTRICT II P.O. Drawer DD, Artesia, NM 88210

OIL CONSERVATION DIVISION

DISTRICT III 1000 Rio Brazos Rd., Aztec. NM 87410 P.O. Box 2088 Santa Fe, New Mexico 87504-2088

□ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

		7	VELL LO	CATION	AND ACREA	AGE DEDICATI	ON PLAT			
API Number Pool Code Pool Name										
30-	-015-2952	78000 HAITI VADEET-HORROW								
Property	Code				Property Nam			Well Number		
		[Ho	ickberry "31'			1		
0GRED N 6137				Davos	Overator Nam					
0137		Devon Energy Production Co., LP					337	4		
				Surface Location						
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
H	31	22 \$	26 E		1980	North	660	East	Eddy	
			Bottom	Hole Lo	cation If Diffe	erent From Sur	face			
UL or lot No.	Section	Township	Range	Lot idn	Feet from the	North/South line	Feet from the	East/West line	County	
Н	31	22 S	26 E		1980	North	710	East	Eddy	
Dedicated Acre	s Joint o	r infill Co	nsolidation	Code Or	der No.		·	<u> </u>	·	
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NO ALLO	OWABLE W	TILL BE AS	SIGNED	то тніѕ	COMPLETION 1	JNTIL ALL INTER	RESTS HAVE BI	EEN CONSOLIDA	ATED	
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1/ //	/ //		//	//	_////		SURVEYO	OR CERTIFICAT	rion	
	"	•	/	//	// * //	/' //	I hereby certify	y that the well locat	ion shown	
					į			as plotted from field made by me or	- 1	
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Devon Energy Production Company 20 North Broadway – Suite 1500 Oklahoma City, Oklahoma 73102-8260 Phone: (405)-552-7802 Fax (405)-552-4553 Stephanie Ysasaqa@dvn.com

February 29th, 2006

City of Carlsbad Environmental Services Manager Attn: Richard Aguilar 101 N. Halagueno Carlbad, NM 88220

Re: City of Carlsbad - Wellhead Protection Area Use Application Hackberry 31 State 1 Lot H Sec 31-T22S-R26E Eddy, New Mexico

Dear Richard Aguilar:

Enclosed you will find the following:

- City of Carlsbad: Wellhead Protection Area Use Application
- Hydrogen Sulfide (H2S) Contingency Plan
- OCD C-101: Application for Permit to Drill, Re-enter, Deepen, Plugback or Add Zone
- C-102
- Drilling, Mud & Cementing Program
- Wellbore Skematic

Copy has been Fed-Ex'd to Dave Henard at the RESPEC. Should you have any questions or require additional information, please call me at (405)-552-7802.

Very truly yours,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Stephanie A. Ysasaga

Sr. Staff Engineering Technician

Enclosure

cc: RESPEC

Dave Henard

4775 Indian School Road

NE, St 300

Albequeque, NM 87110-3927

CITY OF CARLSBAD P. O. BOX 1569 CARLSBAD, NM 88221

TYPE OF LICENSE REQUESTED

WELLHEAD & WATER FACILITIES PROTECTION AREA APPLICATION FOR LICENSE OR PERMIT

TYPE OF PERMIT REQUESTED

A separate application shall be required for each proposed crossing or use within the Wellhead or Water Facilities Protection Areas.

☐ Water Facility Crossing	☑ Wellhead Protection Area Use				
☐ Water Facility Use	☑ Sheep Draw Wellfield				
•	☐ Double Eagle Wellfield				
Applicant Name: Devon Energy Production Co., L.P.	Filing Date: 2/28/06				
If not Corporation, name of local Agent:					
In Corporation, Name of Registered Agent: Devon En	ergy Production Co. L.P.				
Telephone number(s): (405)-558-7802					
Applicant Address: 20 N. Broadway, Suite 1500	City, State, Zip Code: Oklahoma City, OK 73102				
Proposed site (including location of gathering lines, cros	sings, etc.):				
See attached H2S Plan.					
Name of lease owner: Devon Energy Production Co.,	L.P.				
Accurate description of location (with legal description of easements to be used by pipeline, crossing, etc.):	fall acreage dedicated to well or legal description of				
See C-102:					
Lot H Sec 31-T22S-R26E					
Location with respect to property lines, right-of-way bour	ndaries, and surface contours:				
See C-102					
SENE 1980' FNL & 660' FEL					
If in City limits, identify location of public notice signs:					
N/A					
Ground elevation at well site: 3374'					
Type of derrick, if applicable: 142 Jackknife					

Application continues on reverse side

Note: Attach all applications and forms submitted to or received from OCD, State Land Office, and/or BLM, as applicable.

Proposed depth of well or pipeline: 11,700'	
Detailed explanation of operating pressures of pip	pelines and facilities:
Minimum working pressure of the blowout preven 9 5/8" intermediate casing shall be 5000 psi.	ter and related equipment (BOPE) required for drilling below the
Location and operating characteristics of compres	ssor, compressor control or safety devices:
Typed or printed name of Emergency Contract wi	
Don Mayberry, Superintendent (505)-748-3371 or	
Have you attached a current certified financial sta	tement: Yes X No
Signature of authorized agent:	Date: February 28, 2006
Typed or Printed name of authorized	agent: /Stephanie Ysasaga
License: Preliminary Approval	Date:
	City Administrator
☐ Final Approval	Date:
	City Administrator
Permit: □ Approved □ Disap	proved by Council Date:
Ordinances and regulations, and all ap	e and requires compliance with all applicable City oplicable laws, rules, regulations and requirements the Oil Conservation Division, the State Land Office
	City Administrator Date

f



Devon Energy Production Company 20 North Broadway – Suite 1500 Oklahoma City, Oklahoma 73102-8260 Phone: (405)-552-7802 Fax (405)-552-4553 Stephanie.Ysasaga@dvn.com

February 29th, 2006

RESPEC

Environmental Division Manager Attn: Dave Henard 4775 Indian School Road NE, St 300 Albequerque, NM 87110-3927

Re: City of Carlsbad - Wellhead Protection Area Use Application Hackberry 31 State 1 Lot H Sec 31-T22S-R26E Eddy County, NM

Dear Dave Henard:

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- Wellbore Skematic

Original and copy have been Fed-Ex'd to Richard Aguilar at the City of Carlsbad. Should you have any questions or require additional information, please call me at (405)-552-7802.

Very truly yours,

DEVON ENERGY PRODUCTION COMPANY, L.P.

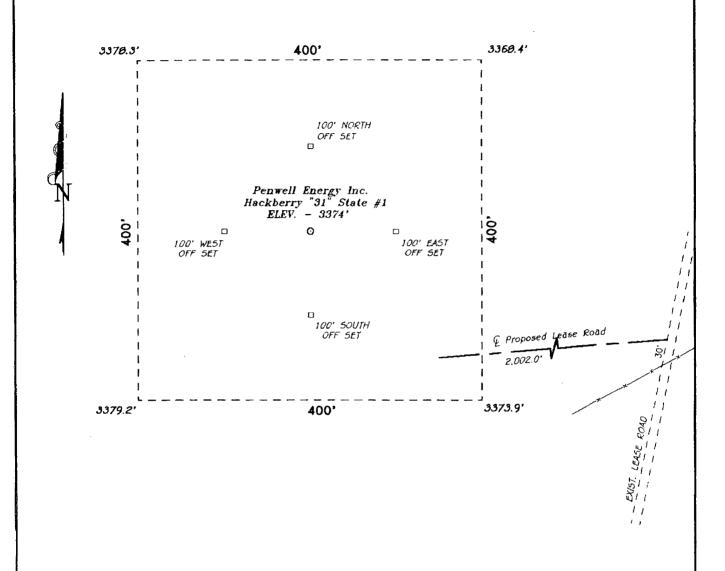
Stephanie A. Ysasaga

Sr. Staff Engineering Technician

Enclosure

cc: City of Carlsbad

Richard Aguilar 101 N. Halagueno Carlsbad, NM 88220 SECTION 31, TOWNSHIP 22 SOUTH, RANGE 26 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.



DIRECTIONS

FROM JCT US 62-180 & COUNTY RD. 672 (HIDALGO RD.) IN CARLEBAD, N.M. GO WEST/SOUTH/VEST ON COUNTY RD. 672 5.3 MILES TO A LEASE ROAD, GO WESTERLY ON LEASE ROAD 9.4 MILES TO A 5.2 RIGHT, GO NORTH ON LEASE ROAD 0.2 MILES TO A 5.7 TAKE LEFT FORK OF 5.4 0.4 MILES TO A 5TAKED ROAD 3.0 NORTH OF A FENCE CROSSING, FOLLOW STAKED ROAD WEST 2002' TO THE SOUTHEAST CORNER OF PAD OF LOCATION.

BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 7051 Drown By: S.C. NICHOLS

Date: 02-05-97 | Disk: SCN #34 - 7051AA.DWG

100 0 100 200 FEET

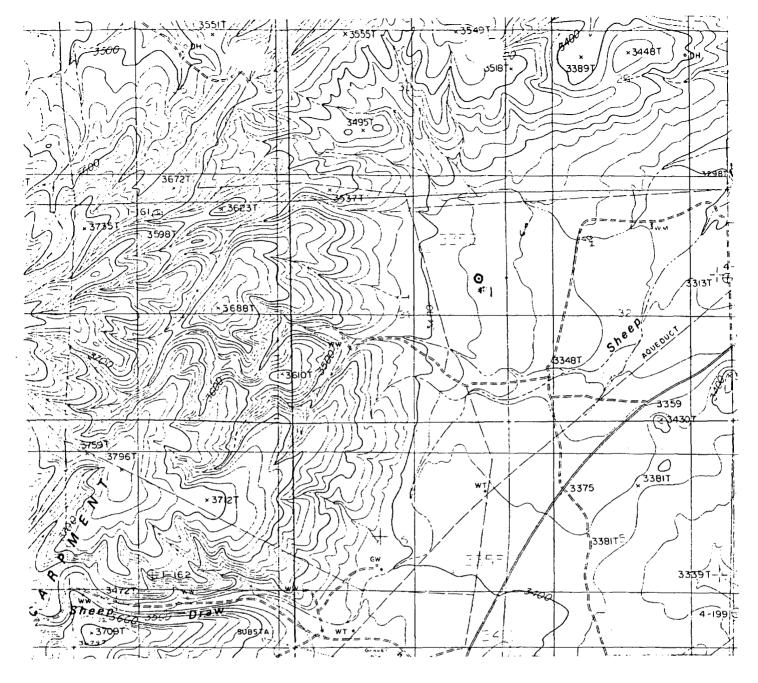
SCALE: 1" = 100'

Penwell Energy Inc.

REF: Hackberry "31" State No. 1 / Well Pad Topo

THE HACKBERRY "31" STATE No. 1 LOCATED 1980' FROM THE NORTH LINE AND 660' FROM THE EAST LINE OF SECTION 31, TOWNSHIP 22 SOUTH, RANGE 26 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 02-04-97 | Sheet 1 of 1 Sheets



PENWELL ENERGY INC.
HACKBERRY "31" STATE #1
1980' FNL & 660' FEL
Sec. 31, T-22-S, R-26-E,
Eddy County, New Mexico.



		2000	0	2000*	4000 Feet
BASIN SURVEYS P.O. BO	OX 1786-HOBES, NEW MEXICO	He			
W.O. Number: 7051	Drawn By: S.C. Nichols	Survey Date:	02-04-97	Sheet 1 c	of 1 Sheets

DRILLING PROGRAM

Devon Energy Production Company, LP Hackberry 31 State 1

Surface Location: 1980' FNL & 660' FEL, Unit H, Sec 31 T22S R26E, Eddy, NM Bottom hole Location: 1980' FSL & 710' FEL, Unit H, Sec 31 T22S R26E, Eddy, NM

1. Geologic Name of Surface Formation

a. Undesignated Permian

2. Estimated tops of geological markers:

a.	Yates/Seven Rivers	428'
b.	Capitan	570'
c.	Delaware Mtn Grp	1618'
d.	Bone Spring Lm	4820'
e.	1 st Bone Spring Sand	5740'
f.	2 nd Bone Spring Sand	6220'
g.	3 rd Bone Spring Sand	8046'
_	Wolfcamp	8443'
i.	Pennylvanian	9404'
j.	Strawn Lm	9995'
k.	Atoka	10234'
l.	Morrow	10750'
m.	M Mrrw Lm	11060'
n.	Lr Mrrw Shale Mkr.	11329'
o.	Barnett Shale	11600'

3. Casing Program:

Hole Size	<u>Interval</u>	OD Csg	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
20"	0' -604'	16"	65#	ST&C	H-40 (in place)
14 ¾"	0-1612'	9 5/8"	40#	LT&C	J-55 (in place)
8 3/4"	0-11702' MD	5 1/2"	17#	LT&C	HCP110

The Morrow intervals will be isolated by setting $5 \frac{1}{2}$ " casing to total depth and circulating cement above the base of the $9 \frac{5}{8}$ " casing.

4. Cement Program:

a.	16"	Surface	In place, cemented to surface.

b. 9 5/8" Intermediate In place, cemented to surface.

c. 5 1/2" Long String

Cement with Stage 1: 653 sacks (15:61:11) Poz (Fly Ash):Class C Cement:CSE-2 + 2% bwow Potassium Chloride + 0.6% bwoc FL-25 + 0.6% bwoc FL-25 + 0.6% bwoc FL-52A + 0.5% bwoc BA-10 + 0.7% bwoc CD-32 + 0.75% bwoc EC-1 + 5 lbs/sack LCM-1 + 0.25 lbs/sack Cello Flake + 0.1% bwoc R-3 + 70.6% Fresh Water. Stage 2 with 1277 sacks (60:40) Poz (Fly Ash):Premium Plus H Cement + 4% bwoc MPA-1 + 1% bwow Sodium Chloride + 0.75% bwoc BA-10 + 2 lbs/sack Kol Seal + 0.25 lbs/sack Cello Flake + 0.15% bwoc R-3 + 61.2% Fresh Water. Stage 3 with 1344 sacks (60:40) Poz (Fly Ash):Class C Cement + 4% bwoc MPA-1 + 5% bwow Sodium Chloride +0.75% bwoc BA-10 + 0.25% bwoc Cello Flake + 0.1% bwoc Sodium Metasilicate + 64.3% Fresh Water

5. Pressure Control Equipment:

The blowout preventor equipment (BOP) shown in Exhibit #1 will consist of a (5M system) double ram type (5000 psi WP) preventor and a bag-type (Hydril) preventor (5000 psi WP) and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4 ½" drill pipe rams on bottom. Prior to drilling out the 9 5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

6. Proposed Mud Circulation System

Depth	Mud Wt.	<u>Visc</u>	Fluid Loss	Type System
1612 – 9800'	8.5-9.5	28	NC	Fresh Water/Cut Brine
9800'-11700'	9.5-10.2	32-40	10-6cc	Cut Brine

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Wyatt Abbitt	Don Mayberry
Operations Engineer Advisor	Superintendent
Devon Energy Production Company, L.P. 20 North Broadway, Suite 1500 Oklahoma City, OK 73102-8260	Devon Energy Production Company, L.P. Post Office Box 250 Artesia, NM 88211-0250
(405) 552-8137 (office) (405) 245-3471 (Cellular)	(505) 748-3371 (office) (505) 746-4945 (home)

Certification

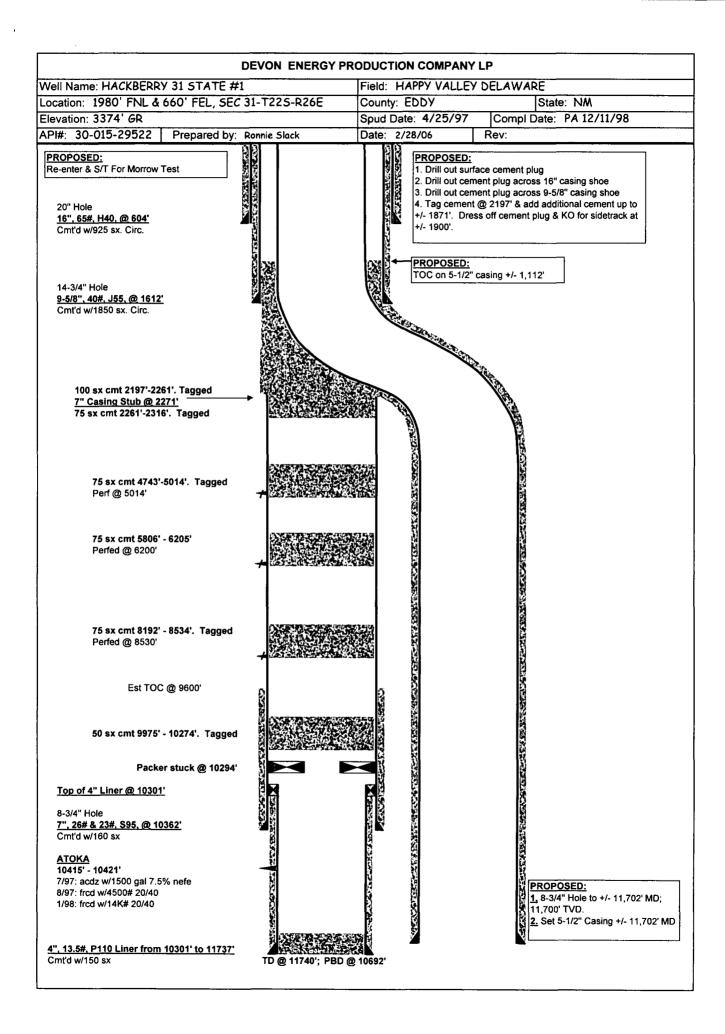
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Devon Energy Production Company, L.P. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Signed: Staffhania A Vacabase

Staff Engineering Technician

Date:

March 2nd, 2006



DEVON ENERGY Hackeberry 31 State #1

slot #1

Eddy County New Mexico

PROPOSAL LISTING

by Baker Hughes INTEQ

Your ref : Plan 1 Our ref : prop4984 License :

License :

Date printed : 28-Feb-2006 Date created : 28-Feb-2006 Last revised : 28-Feb-2006

Field is centred on n32 40 29.200,w103 55 30.8 Structure is centred on n32 40 29.200,w103 55 30.8

Slot location is n32 40 29.200,w103 55 30.800 Slot Grid coordinates are N 609436.710, E 625577.476 Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is True North

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DEVON ENERGY Hackeberry 31 State #1,slot #1 ,Eddy County New Mexico

PROPOSAL LISTING Page 1 Your ref : Plan 1 Last revised : 28-Feb-2006

		Azimuth Degrees	True Vert Depth	RECTANG COORDIN		Dogleg Deg/100ft	Vert Sect
0.00	0.00	270.00	0.00	0.00 N	0.00 E	0.00	0.00
500.00	0.00	270.00	500.00	0.00 N	0.00 E		0.00
1000.00	0.00	270.00	1000.00	0.00 N	0.00 E		0.00
1500.00	0.00	270.00	1500.00	0.00 N	0.00 E		0.00
1900.00	0.00	270.00	1900.00	0.00 N	0.00 E		0.00
2000.00	2.00	270.00	1999.98	0.00 S	1.75 W	2.00	1.75
2100.00	4.00	270.00	2099.84	0.00 S	6.98 W	2.00	6.98
2169.12	5.38	270.00	2168.73	0.00 S	12.63 W	2.00	12.63
2432.83	5.38	270.00	2431.27	0.00 N	37.37 W	0.00	37.37
2501.95	4.00	270.00	2500.16	0.00 N	43.02 W	2.00	43.02
2601.95	2.00	270.00	2600.02	0.00 N	48.25 W		48.25
2701.95	0.00	270.00	2700.00	0.00 N	50.00 W		50.00 Target no.1
3000.00	0.00	270.00	2998.05	0.00 N	50.00 W		50.00
3500.00	0.00	270.00	3498.05	0.00 N	50.00 W		50.00
4000.00	0.00	270.00	3998.05	0.00 N	50.00 W	0.00	50.00
4500.00	0.00	270.00	4498.05	0.00 N	50.00 W		50.00
5000.00	0.00	270.00	4998.05	0.00 N	50.00 W		50.00
5500.00	0.00	270.00	5498.05	0.00 N	50.00 W		50.00
6000.00	0.00	270.00	5998.05	0.00 N	50.00 W		50.00
6500.00	0.00	270.00	6498.05	0.00 N	50.00 W	0.00	50.00
7000.00	0.00	270.00	6998.05	0.00 N	50.00 W	0.00	50.00
7500.00	0.00	270.00	7498.05	0.00 N	50.00 W		50.00
8000.00	0.00	270.00	7998.05	0.00 N	50.00 W		50.00
8500.00	0.00	270.00	8498.05	0.00 N	50.00 W		50.00
9000.00	0.00	270.00	8998.05	0.00 N	50.00 W		50.00
3000.00	0.00	270.00	0990.03	0.00 14	50.00 M	0.00	30.00
9500.00	0.00	270.00	9498.05	0.00 N	50.00 W	0.00	50.00
10000.00	0.00	270.00	9998.05	0.00 N	50.00 W		50.00
10500.00	0.00	270.00	10498.05	0.00 N	50.00 W	0.00	50.00
11000.00	0.00	270.00	10998.05	0.00 N	50.00 W	0.00	50.00
11500.00	0.00	270.00	11498.05	0.00 N	50.00 W	0.00	50.00
11701.95	0.00	270.00	11700.00	0.00 N	50.00 W	0.00	50.00

BHL = 1980 FNL \$ 710 FEL

All data is in feet unless otherwise stated.

Coordinates from structure and TVD from rotary table.

Bottom hole distance is 50.00 on azimuth 270.00 degrees from wellhead.

Vertical section is from N 0.00 E 0.00 on azimuth 270.00 degrees.

Calculation uses the minimum curvature method.

Presented by Baker Hughes INTEQ

DEVON ENERGY Hackeberry 31 State #1, slot #1 , Eddy County New Mexico

PROPOSAL LISTING Page 2 Your ref : Plan 1 Last revised : 28-Feb-2006

Comments in wellpath

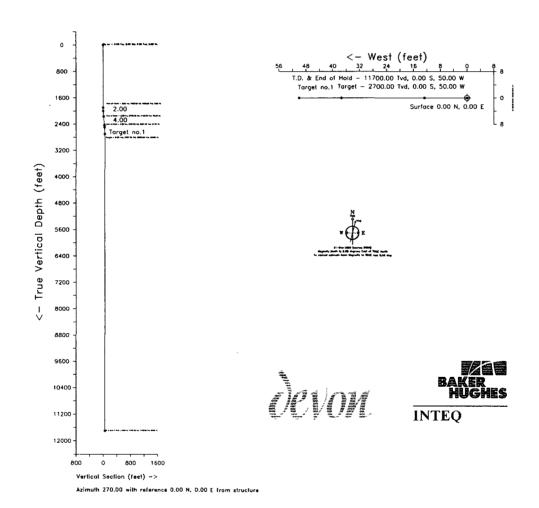
MD TVD Rectangular Coords. Comment

2701.95 2700.00 0.00 N 50.00 W Target no.1

Targets associated with this wellpath

Geographic Location T.V.D. Rectangular Coordinates Revised Target name Target no.1 2700.00 0.00N 50.00W 28-Feb-2006 Target no.1

DE	VON	I E	NE]	RGY		Dote	Created by advya platted: 28-Fe at Reference is P are in feet refer	b-2008 Ian 1.	
Structure : Hackeberry 31 State #1 Slot : stot #1							True Vertical Depths are reference structure.		
Field:	Lo	Location : Eddy County New Mexico				Baker Hughes INTEQ			
-		WELL	PROF	TLE DA	TA –			***************************************	
Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100	
Tie on	0.00	0.00	270.00	0.00	0.00	0.00	0.00	0.00	
KOP	1900.00	0.00	270.00	1900.00	0.00	0.00	0.00	0.00	
End of Build	2169.12	5.38	270.00	2168.73	0.00	-12.63	12.63	2.00	
End of Hold	2432.83	5.38	270.00	2431.27	0.00	-37.37	37.37	0.00	
Target Target no.1	2701.95	0.00	270.00	2700.00	0.00	-50.00	50.00	2.00	
T.D. & End of Hold	11701.95	0.00	270.00	11700.00	0.00	-50.00	50.00	0.00	



devon

Devon Energy Corporation 20 North Broadway Oklahoma City, Oklahoma 73102-8260

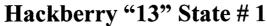
Hydrogen Sulfide (H₂S) Contingency Plan

For

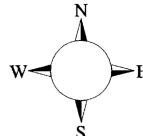
Hackberry "31" State #1

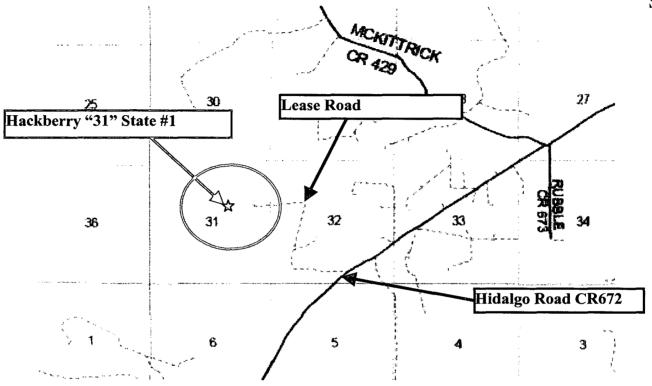
1980' FNL & 660' FEL, Sec-31, T-22S R-26E

Eddy County NM



This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.





Assumed 100 ppm ROE = 3000' (Radius of Exposure) 100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from lease road East on the lease road. Drivers on the lease road must be flagged and stopped so as to prevent entering into a hazardous area. There are no homes in or near the assumed ROE. Crews should then block off the road and not allow entry into hazardous gas areas.

Emergency Procedures

In the case of a release of gas containing H₂S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H_2S , measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H_2S monitors and air packs in order to control the release. Use the "buddy system" to ensure no injuries during the response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentr- ation
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Devon Energy Corp. Company Call List

	Artesia	(505)	Cellular	Office	Home	
		DIG 4	200 5002	740 017 <i>6</i>	007 6006	
		– BJ Cathey				
		reman – Bobby Jones				
		yberry				2020
		yers				
	Engineer	r – Tom Pepper	(405) 203-2242	.(405) 552-4513	. (405) 728	-8641
Ag	ency C	Call List				
Eddy	Ar	tesia				
Coun	ty	State Police				. 746-2703
<u>(505)</u>		City Police		•••••		. 746-2703
		Sheriff's Office				. 746-9888
		Ambulance		•••••		.911
		Fire Department				. 746-2701
		LEPC (Local Emer				
		NMOCD		•••••		. 748-1283
	Ca	rlsbad				
		State Police				. 885-3137
		City Police				. 885-2111
		Sheriff's Office	•••••			. 887-7551
		Ambulance				. 911
		Fire Department				. 885-2111
		LEPC (Local Em	ergency Planning	Committee)		887-3798
		US Bureau of Lar	nd Management			887-6544
		New Mexico Em	ergency Response	e Commission (s	anta Fe)	(505)476-9600
		24 HR		,	,	` '
		National Emerger				(800) 424-8802
	_	•	ine y recoposition of	(, asimge	1, 20)	(000) 12: 0002
		nergency Services				
		Boots & Coots IWC.				
		Cudd Pressure Contro				or (915) 563-3356
		Halliburton		, ,		
	ŀ	B. J. Services	••••••	(505)	746-3569	
Give	H	Flight For Life - Lubb	ock, TX	•••••		(806) 743-9911
GPS		Aerocare - Lubbock,				
positi		Med Flight Air Amb -				
-		Lifeguard Air Med S				
		_				

Prepared in conjunction with Wade Rohloff of;





Proposal No: 440150028A

Devon Energy Corporation Hackberry 31 State #1

API# 30-015-29522-0000 Happy Valley Field Sec.31 - 22S - 26E Eddy County, New Mexico March 1, 2006

Cement Recommendation

Prepared for:

Bill Dougherty

Oklahoma City, Oklahoma

Bus Phone:

(405) 552-4590

Prepared by:

Scott Nelson Region Engineer

Oklahoma City, Oklahoma

Bus Phone: (405) 552-4524



PowerVision®

POWERPRO • POWERTRAX • POWERLINK

Service Point:

Artesia

Bus Phone:

Fax:

(505) 746-3140 (505) 746-2293

Service Representatives:

Larry Johnson Senior Sales Rep Artesia, New Mexico

Mobile:

(505) 746-7165

Date:

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Job Description: Re-Entry 3 Stage Long String

March 1, 2006



Proposal No: 440150028A

JOB AT A GLANCE

Depth (TVD) 11,700 ft

Depth (MD) 11,702 ft

Hole Size 8.75 in

Casing Size/Weight: 5 1/2 in, 17 lbs/ft

Pump Via 5 1/2" O.D. (4.892" .I.D) 17

Total Mix Water Required 20,983 gals

Stage No: 1 Float Collar set @ 11,622 ft

Spacer

Turbo Flow III 40 bbls **Density** 11.5 ppg

Spacer

Fresh Water 5 bbls **Density** 8.3 ppg

Spacer

Surebond III 1,000 gals **Density** 9.4 ppg

Spacer

Fresh Water 10 bbls **Density** 8.3 ppg

Cement Slurry

Super C Modified 653 sacks **Density** 13.3 ppg Yield 1.59 cf/sack

Displacement

Displacement Fluid 270 bbls

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Gr4109

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

JOB AT A GLANCE (Continued)

Stage Collar set @ 9,000 ft Stage No: 2

Spacer

Fresh Water 10 bbls **Density** 8.3 ppg

Spacer

Mud Clean II 1,500 gals **Density** 8.5 ppg

Cement Slurry

60:40 Poz:Class H (MPA) 1,277 sacks Density 13.8 ppg Yield 1.35 cf/sack

Displacement

Displacement Fluid 209 bbls

Stage No: 3 Stage Collar set @ 5,000 ft

Spacer

Fresh Water 10 bbls **Density** 8.3 ppg

Cement Slurry

60:40 Poz:Class C (MPA) 1,344 sacks **Density** 13.8 ppg Yield 1.37 cf/sack

Displacement

Displacement Fluid 116 bbls

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D.	DEPTH(ft)		
(in)	MEASURED	TRUE VERTICAL	
8.835 CASING	1,612	1,612	
8.750 HOLE	11,702	11,700	

SUSPENDED PIPES

DIAMETI	ER (in)	WEIGHT	DEPTH(ft)		
O.D.	1.D.	(lbs/ft)	MEASURED	TRUE VERTICAL	
5.500	4.892	17	11,702	11,700	

STAGE: 1

Float Collar set @

11,622 ft

Mud Density

10.00 ppg

Est. Static Temp.

179 ° F

Est. Circ. Temp.

143 ° F

VOLUME CALCULATIONS

2,702 ft

Х 0.2526 cf/ft

with

50 % excess

1023.8 cf

1034.2 cf

80 ft

0.1305 cf/ft х

with

0 % excess

10.4 cf (inside pipe)

TOTAL SLURRY VOLUME =

184 bbls

STAGE: 2

Stage Collar set @

9,000 ft

Mud Density

10.00 ppg

Est. Static Temp.

155 ° F

Est. Circ. Temp.

132 ° F

VOLUME CALCULATIONS

4,000 ft

0.2526 cf/ft

with

70 % excess

1718.5 cf

TOTAL SLURRY VOLUME =

1718.5 cf

306 bbls

Operator Name: Devon Energy Corporation Well Name:

Hackberry 31 State #1 Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

WELL DATA (Continued)

STAGE: 3 Stage Collar set @ 5,000 ft

> **Mud Density** 10.00 ppg Est. Static Temp. 119°F Est. Circ. Temp. 105 ° F

VOLUME CALCULATIONS

0.2607 cf/ft 0 % excess 500 ft Х with 130.4 cf 3,388 ft 0.2526 cf/ft with 100 % excess 1711.6 cf

> TOTAL SLURRY VOLUME = 1842.0 cf

> > 328 bbls =

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Well Name: Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

FLUID SPECIFICATIONS

STAGE NO.: 1

Spacer 40.0 bbls Turbo Flow III @ 11.5 ppg

Spacer 5.0 bbls Fresh Water @ 8.34 ppg

Spacer 1,000.0 gals Surebond III @ 9.35 ppg

Spacer 10.0 bbls Fresh Water @ 8.34 ppg

VOLUME VOLUME

AMOUNT AND TYPE OF CEMENT **FLUID CU-FT FACTOR**

Cement Slurry 1034 1 1.5 = 653 sacks (15:61:11) Poz (Fly Ash):Class C

> Cement:CSE-2 + 2% bwow Potassium Chloride + 0.6% bwoc FL-25 + 0.6% bwoc FL-52A + 0.5% bwoc BA-10 + 0.7% bwoc CD-32 + 0.75% bwoc EC-1 + 5 lbs/sack LCM-1 + 0.25 lbs/sack Cello Flake + 0.1% bwoc R-3 + 70.6% Fresh Water

Displacement

270.2 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO. 1
Slurry Weight (ppg)	13.30
Slurry Yield (cf/sack)	1.59
Amount of Mix Water (gps)	7.36
Estimated Pumping Time - 70 BC (HH:MM)	3:30
Free Water (mls) @ 143 ° F @ 90 ° angle	0.0
Fluid Loss (cc/30min) at 1000 psi and 143 ° F	40.0
COMPRESSIVE STRENGTH	
12 hrs @ 179 ° F (psi)	1400
24 hrs @ 179 ° F (psi)	2000
72 hrs @ 179 ° F (psi)	2500

Operator Name: Devon Energy Corporation
Well Name: Hackberry 31 State #1
Job Description: Re-Entry 3 Stage Long String

Date: March 1, 2006



Proposal No: 440150028A

FLUID SPECIFICATIONS (Continued)

STAGE NO.: 2

Spacer 10.0 bbls Fresh Water @ 8.34 ppg

Spacer 1,500.0 gals Mud Clean II @ 8.45 ppg

Cement Slurry 1719 / 1.3 = 1277 sacks (60:40) Poz (Fly Ash):Premium Plus H

Cement + 4% bwoc MPA-1 + 1% bwow Sodium Chloride + 0.75% bwoc BA-10 + 2 lbs/sack Kol Seal + 0.25 lbs/sack Cello Flake + 0.15% bwoc R-3

+ 61.2% Fresh Water

CEMENT PROPERTIES

	SLURRY NO. 1
Slurry Weight (ppg)	13.80
Slurry Yield (cf/sack)	1.35
Amount of Mix Water (gps)	6.02
Estimated Pumping Time - 70 BC (HH:MM)	3:15
Free Water (mls) @ 132 ° F @ 90 ° angle	0.0
Fluid Loss (cc/30min) at 1000 psi and 132 ° F	300.0
COMPRESSIVE STRENGTH	
12 hrs @ 155 ° F (psi)	1500
24 hrs @ 155 ° F (psi)	2300
72 hrs @ 155 ° F (psi)	2800

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Gr4129

Operator Name: Devon Energy Corporation

Well Name:

Hackberry 31 State #1 Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

FLUID SPECIFICATIONS (Continued)

STAGE NO.: 3

Spacer

10.0 bbls Fresh Water @ 8.34 ppg

Cement Slurry

1842

= 1344 sacks (60:40) Poz (Fly Ash):Class C Cement

+ 4% bwoc MPA-1 + 5% bwow Sodium Chloride + 0.75% bwoc BA-10 + 0.25% bwoc Cello Flake + 0.1% bwoc Sodium Metasilicate + 64.3% Fresh

Water

Displacement

116.2 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO. 1
Slurry Weight (ppg)	13.80
Slurry Yield (cf/sack)	1.37
Amount of Mix Water (gps)	6.32
Estimated Pumping Time - 70 BC (HH:MM)	3:00
Free Water (mls) @ 105 ° F @ 90 ° angle	0.0
Fluid Loss (cc/30min) at 1000 psi and 119 ° F	300.0
COMPRESSIVE STRENGTH	
12 hrs @ 119 ° F (psi)	800
24 hrs @ 119 ° F (psi)	2200
72 hrs @ 119 ° F (psi)	3000

ACTUAL CEMENT VOLUMES MAY VARY BASED ON CALIPER.

PUMP THE TURBO FLOW III SPACER ON THE FLY.

BATCH MIX THE FIRST STAGE SUPER C MODIFIED CEMENT SLURRY.

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Gr4120

Operator Name: Devon Energy Corporation Well Name:

Hackberry 31 State #1 Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

PRICE ESTIMATE

Product Material

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
962	94lbs	Class C Cement	9,248.48
801	lbs	Potassium Chloride	232.13
111	lbs	Sodium Metasilicate	136.60
214	lbs	R-3	236.38
3265	lbs	LCM-1	1,179.32
759	lbs	Cello Flake	1,166.73
1705	74lbs	Poz (Fly Ash)	6,609.60
4178	lbs	Sodium Chloride	614.17
1500	gals	Mud Clean II	756.00
1000	gals	Surebond III Spacer	1,478.40
40	bbls	Turbo Flow III, 11.5 - 11.9 ppg	1,495.20
341	lbs	FL-52A	2,756.99
1896	lbs	BA-10	11,666.09
398	lbs	CD-32	1,579.66
427	lbs	EC-1	968.44
341	lbs	FL-25	2,320.16
8597	lbs	MPA-1	5,741.08
7183	lbs	CSE-2	3,620.23
2554	lbs	Kol Seal	901.05
511	94lbs	Premium Plus H Cement	4,831.10
		Product Material Subtotal:	\$57,537.81

Service Charges

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
1	ea	Personnel Surcharge - Cement Svc	53.97
1	4hrs	Batch Mix Truck, 100-150 bbl, 1st 4 Hrs	863.10
4	hrs	Batch Mix Truck, 100-150 bbl, Loc. Time	209.58
3960	cu ft	Bulk Materials Service Charge	4,756.75
		Service Charges Subtotal:	\$5,883.40

Customer will be charged for all 'SPECIAL PROPPANTS' delivered to location, whether they are pumped or not. All proppants other than standard grade frac sand are considered 'SPECIAL PROPPANTS'.

The technical data contained in this proposal is based on the best information available at the time of writing and is subject to further analysis and testing. The pricing data contained in this proposal are estimates only and may vary depending on the work actually performed. Pricing does not include federal, state and local taxes or royalties.

This quotation is based on BJ Services Company being awarded the work on a first call basis and within thirty (30) days of the proposal date. These prices will be subject to review if the work is done after thirty (30) days from the proposal date, or on a second or third call basis.

Operator Name: Devon Energy Corporation Well Name: Hackberry 31 State #1

Job Description: Re-Entry 3 Stage Long String

Date:

March 1, 2006



Proposal No: 440150028A

PRICE ESTIMATE

Equipment

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
1	8hrs	Cement Pump Casing, 11001 - 12000 ft	4,389.00
1	job	Cement Head	189.84
1	job	Data Acquisition, Cement, Standard	493.50
540	miles	Mileage, Heavy Vehicle	1,406.16
90	miles	Mileage, Auto, Pick-Up or Treating Van	133.43
2	stage	Multiple Stage Cementing	2,310.00
1	6hrs	Cement Pump, Reserve, 1st 6 hrs	1,176.00
7	hrs	Cement Pump, Reserve, After 6 hours	1,058.40
2	job	Field Storage Bin	768.60
1	job	Centrifugal Transfer Pump, Trailer	361.20
		Equipment Subtotal:	\$12,286.13

Freight/Delivery Charges

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
6	hrs	Bulk Delivery, Trans., Over 3000 gals	351.54
6652	tonmi	Bulk Delivery, Dry Products	5,811.19
		Freight/Delivery Charges Subtotal:	\$6,162.73
		TOTAL:	\$81,870.07

Customer will be charged for all 'SPECIAL PROPPANTS' delivered to location, whether they are pumped or not. All proppants other than standard grade frac sand are considered 'SPECIAL PROPPANTS'.

The technical data contained in this proposal is based on the best information available at the time of writing and is subject to further analysis and testing. The pricing data contained in this proposal are estimates only and may vary depending on the work actually performed. Pricing does not include federal, state and local taxes or royalties.

This quotation is based on BJ Services Company being awarded the work on a first call basis and within thirty (30) days of the proposal date. These prices will be subject to review if the work is done after thirty (30) days from the proposal date, or on a second or third call basis.



CONDITIONS

BJ Services' performance of services and sale of materials is expressly conditioned upon the applicability of the Terms and Conditions contained in the current BJ Services Price Book. The Terms and Conditions include, among other things, an indemnity in favor of BJ Services from Customer for damage to the well bore, reservoir damage, loss of the hole, blowouts and loss of control of the well, even if caused by the negligence or other fault of BJ Services. The Terms and Conditions also limit the warranties provided by the BJ Services and the remedies to which Customer may be entitled in the event of a breach of warranty by BJ Services. For these reasons, we strongly recommend that you carefully review a copy of the Terms and Conditions. If you do not have a copy of the BJ Services Price Book, you can view the Terms and Conditions on BJ Services Web Site, www.bjservices.com. By requesting that BJ Services perform the services described herein, Customer acknowledges that such Terms and Conditions are applicable to the services. Further, by requesting the services, Customer warrants that its representative on the well location or other service site will be fully authorized to acknowledge such Terms and Conditions by executing a Field Receipt or other document presented by BJ Services containing such Terms and Conditions.

In the event that Customer and BJ Services have executed a Master Services Agreement covering the work to be performed, such Master Services Agreement shall govern in place of the Terms and Conditions. If you are interested in entering into Master Services Agreement with BJ Services, please contact us through the "Go BJ" button on the BJ Services Web Site.

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 Gr4175

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Date:

March 1, 2006



Proposal No: 440150028A

PRODUCT DESCRIPTIONS

BA-10

Improves cement bonding and acts as a matrix flow control agent. It can be used in lightweight, standard and densified slurries at moderate temperatures.

CD-32

A patented, free-flowing, water soluble polymer that is an efficient and effective dispersant for primary and remedial cementing.

CSE-2

An additive which contributes to low density, high compressive strength development of cement slurries at all temperature ranges. This material also controls free water without the need for standard extenders.

Cello Flake

Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

Class C Cement

Intended for use from surface to 6000 ft., and for conditions requiring high early strength and/or sulfate resistance.

EC-1

A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.

FL-25

An all purpose salt-tolerant fluid loss additive that provides exceptional fluid loss control across a wide range of temperatures and salinity conditions and remedial cementing applications.

FL-52A

A water soluble, high molecular weight fluid loss additive used in medium to low density slurries. It is functional from low to high temperature ranges.

Kol Seal

A granular, lightweight material (specific gravity of 1.3) used to control lost circulation in zones of natural and induced fractures, cavities and high permeability.

LCM-1

A graded (8 to 60 mesh) naturally occurring hydrocarbon, asphaltite. It is used as a lost circulation material at low to moderate temperatures and will act as a slurry extender. Cement compressive strength is reduced.

MPA-1

MPA-1 is a fine white pozzolanic type powder used to enhance various cement properties. These properties include: Enhanced Compressive Strength Development, Improved Sulfate Resistance, Increased Tensile and Flexural Strength, and Gas Control. MPA-1 is functional over a broad temperature range, and can be used in foamed lightweight, normal, and heavyweight cement designs. Concentrations range from 1 to 30% BWOC.

Mud Clean II

A water-base mud wash designed for use ahead of cement slurries to aid in mud and drilling debris removal and to prevent contamination of the cement slurry. It should be used only when water-base mud is used.

Operator Name: Devon Energy Corporation Hackberry 31 State #1

Date:

March 1, 2006



Proposal No: 440150028A

PRODUCT DESCRIPTIONS (Continued)

Potassium Chloride

A granular salt used to reduce clay swelling caused by water-base cementing fluids.

Poz (Fly Ash)

A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.

Premium Plus H Cement

Class H cement is an API type, all purpose oil well cement which is used without modification in wells up to 8,000 ft. It possesses a moderate sulfate resistance. With the use of accelerators or retarders, it can be used in a wide range of well depths and temperatures.

R-3

A low temperature retarder used in a wide range of slurry formulations to extend the slurry thickening time.

Sodium Chloride

At low concentrations, it is used an accelerator for cement slurries. At high concentrations, it is used for formation compatibility.

Sodium Metasilicate

An extender used to produce an economical, low density cement slurry.

Surebond III Spacer

A blend of liquid components which when run as a preflush ahead of cement, will leave both the formation and pipe water wet, thus enhancing bonding. Surebond is also effective in combating slurry loss to fractured formations due to its coating action. A fresh water spacer should always be run between the Surebond and cement slurries.

Turbo Flow III

A water-based weighted cement spacer designed for water based drilling muds. Turbo Flow III easily achieves turbulence in most hole geometries and is compatible with cements and most drilling muds.

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Operator Name: Devon Energy Corporation Hackberry 31 State #1 March 1, 2006



Proposal No: 440150028A

End of Report

