

State of Colorado
Oil and Gas Conservation Commission
DEPARTMENT OF NATURAL RESOURCES

00815847

FOR OGCC USE ONLY

OCT 26 1998

APPLICATION FOR PERMIT TO:

a. TYPE OF WORK

☐ Drill, ☒ Deepen, ☐ Re-enter, ☐ Recomplete and Operate

1 b. TYPE OF WELL

OIL ☐ GAS ☒ COAL BED ☐ OTHER: _____SINGLE ZONE ☒ MULTIPLE ZONE ☐ COMMINGLE ZONES ☐Refilling ☐Side Track ☐

2. OGCC Operator Number: 49100

5. Contact Name & Phone

3. Name of Operator: KOCH EXPLORATION COMPANY

STAN LINDHOLM

4. Address: 2388 LELAND AVENUE, STE. B

No: 970-257-0727

City: GRAND JUNCTION

State: CO

Zip: 81505

Fax: 970-257-0727

6. Well Name: HORSESHOE CANYON

Well Number: 1-16

7. Unit Name (If Appl.): HORSESHOE CANYON UNIT

Unit No: 14-08-001-17035

8. Objective Formation(s): CORCORAN

Formation Code: CRCRN

9. Proposed Total Depth: 3144' TVD - 3980' MD

WELL LOCATION INFORMATION

10. QtrQtr: SW/SE Sec: 16 Twp: T9S Rng: R97W Meridian: 6th P.M.

11. Footage From Exterior Section Lines (If directional, submit drilling plan):

At Surface: 658' FSL, 1355' FEL

If directional, at Top Proposed Prod. Zone: SEE DIRECTIONAL PLAN 983 FSL 1913 FEL

If directional, at Bottom Hole: SEE DIRECTIONAL PLAN 1158 FSL 2216 FEL

12. Ground Elevation: 5203'

13. County: MESA

14. Field Name: ROBERTS CANYON - SHIRE GULCH

Field Number: 37440

LEASE, SPACING, AND POOLING INFORMATION

15. Spacing Order #(s):

16. # Acres In Unit:

17. Unit Description:

18. Mineral Ownership: ☐ Fee ☐ State ☒ Federal ☐ Indian

Lease #: C-13789

19. Surface Ownership: ☒ Fee ☐ State ☒ Federal ☐ Indian

Lease #:

Is The Surface Owner Also The Mineral Owner?: ☐ Yes ☒ NoIf no: ☐ Surface Owner Agreement Attached or ☒ \$25,000 Blanket Bond ☐ \$2,000 Bond ☐ \$5,000 Bond

20. Total Acres In Lease: 200

21. Describe Entire Lease by QtrQtr, Sec, Twp, Rng (attach separate sheet/map if require):

SEC 16: SE 1/4, SEC 18: SE 1/4, NE 1/4 T9S-R97W

22. Is Location in a high density area (Rule 603b)? ☒ No ☐ Yes

23. Distance to nearest Lease Line: N/A

24. Distance to nearest Property Line: N/A

25. Distance to nearest well completed in the same Formation: N/A

26. Distance to nearest building, public road, major above ground utility or railroad: 1.5 Miles

**The use of an earthen pit for recompletion fluids requires a pit permit (Rule 905b).

DRILLING PLANS AND PROCEDURES

27. Approx. Spud Date: NOVEMBER 1, 1998

*If Air/Gas Drilling, Notify Local Fire Officials.

28. Drilling Contractor Number: UNKNOWN

Name: UNKNOWN

Phone #: UNKNOWN

29. Is H2S Anticipated?: ☒ No ☐ Yes

If yes, attach contingency plan.

30. Will salt (> 15,000 ppm TDS Cl) or oil base muds be used during drilling? ☒ No ☐ Yes31. Will salt sections be encountered during drilling? ☒ No ☐ Yes32. If questions 30 or 31 are yes, is this location in a sensitive area (Rule 903)? ☒ No ☐ Yes33. Mud disposal: ☐ Offsite ☒ OnsiteMethod: ☐ Land Farming ☒ Land Spreading ☐ Disposal Facility ☐ Other

34. CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Sks Cement	Cement Bottom	Cement Top
4-3/4	N/A	N/A	N/A	N/A	N/A	N/A
existing	8 5/8	24# K-55	457'	325 sks		Surface
7-1/8	5 1/2	15.5#	3332'			2730' ETOC
Open Hole completion	4-3/4 New					
	Stage Tool					

35. BOP Equipment: ☒ Annular Preventor ☒ Double Ram ☒ Rotating Head ☐ None

36. Comments, if any:

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Stanley P Lindholm

Signed: Stanley P Lindholm

Title: Superintendent

Date: 10-22-98

OGCC Approved: E. Brubaker

Director of COGCC

Date: JAN 08 1999

API NUMBER

05- 077-8650 -1

Permit Number:

990011

Expiration Date:

JAN 07 2000

CONDITIONS OF APPROVAL, IF ANY: PILLAGE

24 Hour Spud Notice required.
Contact COGCC NW Area Engineer
Jaime Adkins @ 970-858-7521.

J. WAYNE FISHER

Oilfield Consultant

8002 W CR 24H

Loveland, CO 80538

OCT 26 1998



Prepared For Koch Exploration Company

Horseshoe Canyon #1-16 Horizontal Re-entry

Surface location: 658' FSL, 1355' FEL, Sec 16 - T9S - R97W, Mesa county, Co.

KB = 5214' GL = 5203'

Bottom Hole locations: #1 TVD-3144' MD-3980' @ 1294' FSL, 1986' FEL

#2 TVD-3144' MD-3972' @ 22' FSL, 714' FEL

Final footage will be determined when window cutting is completed.

Re-entry proposal: With two 750' laterals.

1. Suspend production operations.
2. Upgrade location as necessary to position drilling, air and solid control equipment.
3. Rig up pulling unit, pits, pump and solids control equipment. Kill well with brine water and pull tubing and packers. Lay down production string.
4. Pick up work string. Make clean out run to 3200' with 4 3/4" bit and scraper. (Use polymer sweeps to clean hole as necessary). TOOH.
5. RIH with cement retainer to 3120' and set. Pull out of retainer, break circulation.
6. Pump cement from 3120' to 2940'. (If no retainer used will need to set plug from 3220' to 2940'). **POOH slow for 300'**. Reverse out string. Continue to POOH. **WOC 12 hours.**
7. Pick up squeeze tools and RIH to squeeze perforations with 12 ppg cement from 2910' to 2942' as needed. **WOC 8 hours.**
8. RIH with 4 3/4" bit and scraper, clean out cement to 2945' and test casing. When casing test is OK drill out cement to 3040'. (Use polymer sweeps to clean hole as necessary). POOH.
9. Pick up casing window cutting mill. RIH to 2950'. **USE DITCH MAGNETS AT ALL TIMES.** Cut window from 2950' to 3030'. POOH.

10. RIH with magnet, break circulation at a slow rate (no more than 3 bpm). Work magnet through milled section. POOH. Clean magnet and make additional runs as necessary.
11. RIH open ended to set kick off plug from 2910' to 3040'. Spot 130' of 15 ppg cement. POOH slow for 300'. **Reverse out.**
12. Before continuing to POOH convert mud system to 3 % KCL water substitute (will use polymer and gel as necessary to clean hole and reduce torque). Continue to POOH. **WOC 18 hours.**
13. Rig up air equipment before RIH with directional tools.
14. Pick up directional tools. RIH. Polish plug and do drill off test, until cement is OK. **(Possible we will drill bend with fluid and convert to air after reaching the pay zone, if not will blow hole clean before starting to orient directional tools.)** Orient directional tools and start kick off for #1 leg. Build at 38.2 deg/100' until reaching 90 deg. at 3144' TVD, 3230' MD. Blow hole clean and POOH to Reset motor. RIH. Drill to 3980' MD. **(Will consider spotting oil based gunk plug in open hole section before pulling out of hole for additional legs if hole dictates the need to do so.)** POOH to start next leg. Repeat per directional program for next leg.
15. When all laterals are completed, blow hole clean. POOH, lay down mud motor and monel DC. **(Possible lay down drill pipe at this time and pick up production string to make clean out run.)**
16. Pick up bent joint with orient sub and RIH to clean out individual well bores. **(If tubing is used to do clean out run, should consider leaving orient sub and bent joint in hole at top of last kick-off.)** POOH laying down BHA and drill string.
17. Nipple down BOPE, install wellhead, clean pits and air equipment. Release rig.

Office: (970) 669-8217 / Fax: (970) 635-9337 / Cell: (970) 217-8525

jwfisher@sprynet.com

Horseshoe Canyon #1-16 Vertical well Preexisting conditions

Casing Size: 5 1/2" – 15.5# - K55

Kelly Bushing elevation: 5214' Ground Level elevation: 5203'

All depths are based on Kelly Bushing measurements and assumed TVD/MD to be the same.

Location: Will require a visual inspection to determine amount of upgrading required to accommodate this program.

Perforations at: 2910' to 2942' = 34'
3133' to 3152' = 20'
3162' to 3165' = 4'

Formation tops: Cozzette @ 2893'
Corcoran @ 3087' With 4' coal located at 3085'.
Sego @ 3235'

Top of pay zone: 3123". Bottom of pay zone: 3165'. Length of pay = 42'.

Objective: Drill two horizontal legs with 750' laterals each.

Target: 3144', equals top of bottom half of zone.

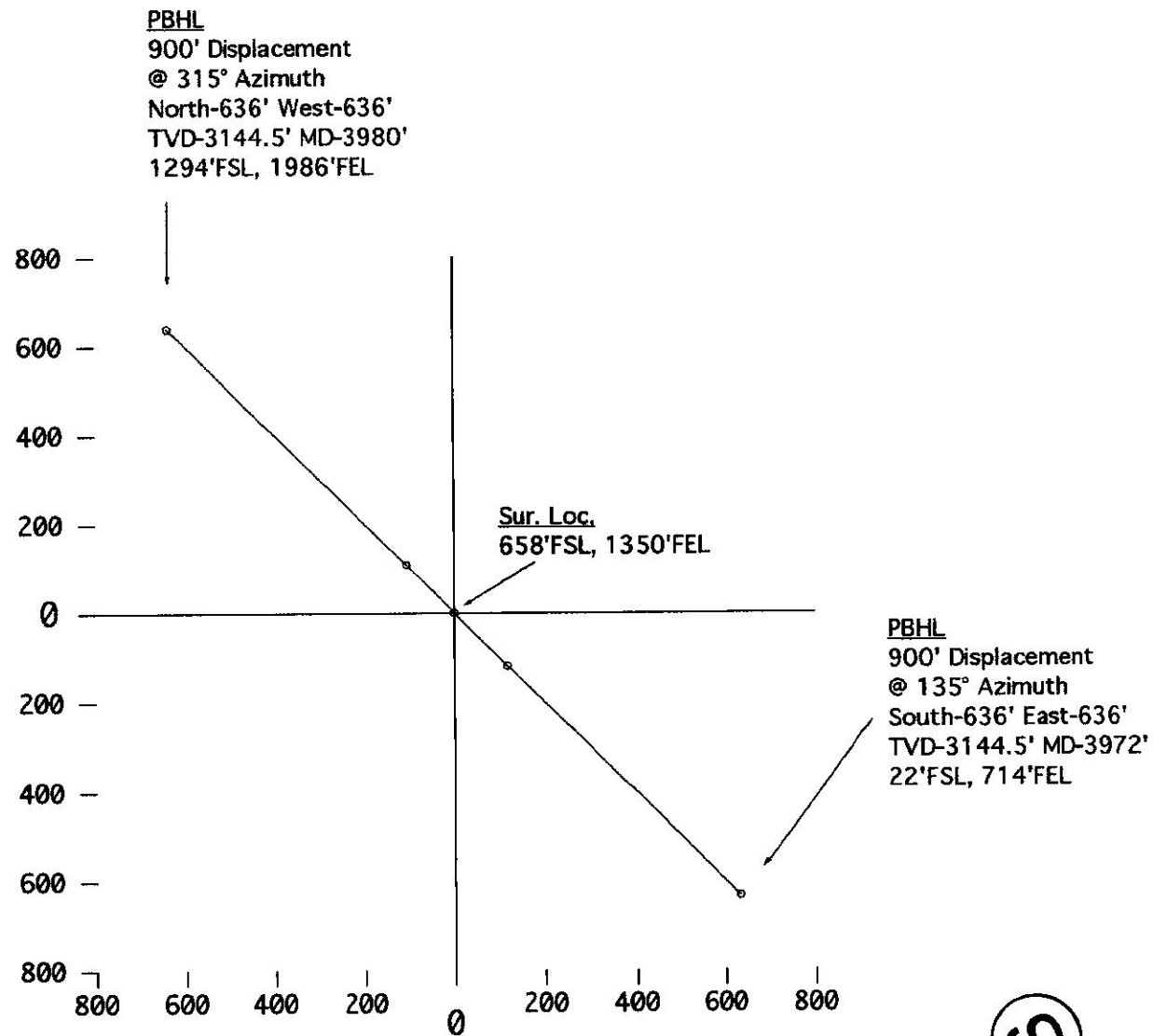
Window to start at 2950' through 3030'. Collars located at 2974', 3019' and 3067'.

Kick off point to start at +/- 2995'.

Drill Laterals with 38.2 to 33.6 deg/100' build rate, = 150' radius to hit zone at 90 deg. at 3144'.

Will drill with air/nitrogen when and where hole conditions allow. If well can not be drilled with safely will convert to 3 % KCL substitute at 8.4 ppg and air to lighten fluid column to reach a partial under balanced condition. Goal will be to drill with an equivalent of 6.2 to 7 ppg ECD. Well will not be killed during trips if hole conditions will allow. Gas will be vented through a gas buster and flared as necessary.

Koch Petroleum
Horseshoe Canyon 1-16
Section 28, T-9-S, R-97-W
Mesa County, Colorado



PDS PERFORMANCE
DRILLING
SPECIALISTS INC.

HORIZONTAL PLAN
Scale 1" = 400'

N
North

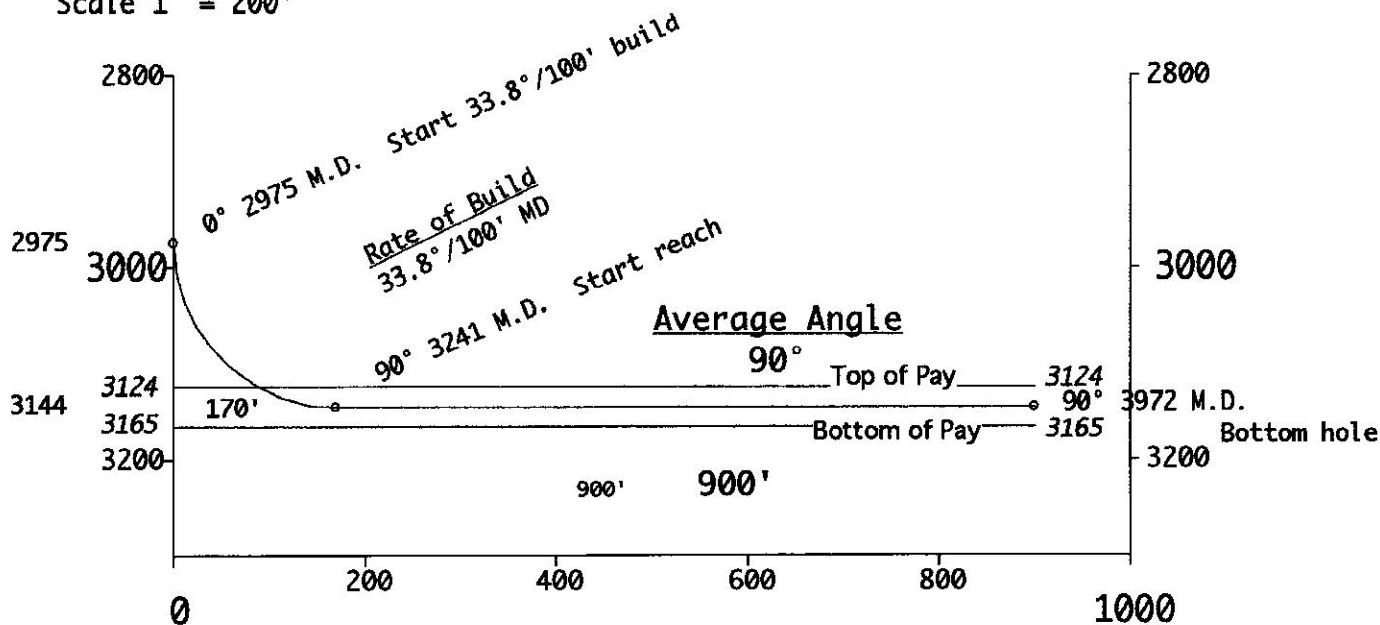


09-21-1998

Koch Petroleum
Horseshoe Canyon 1-16
Section 28, T-9-S, R-97-W
Mesa County, Colorado

PLANE OF PROPOSAL
135.0°

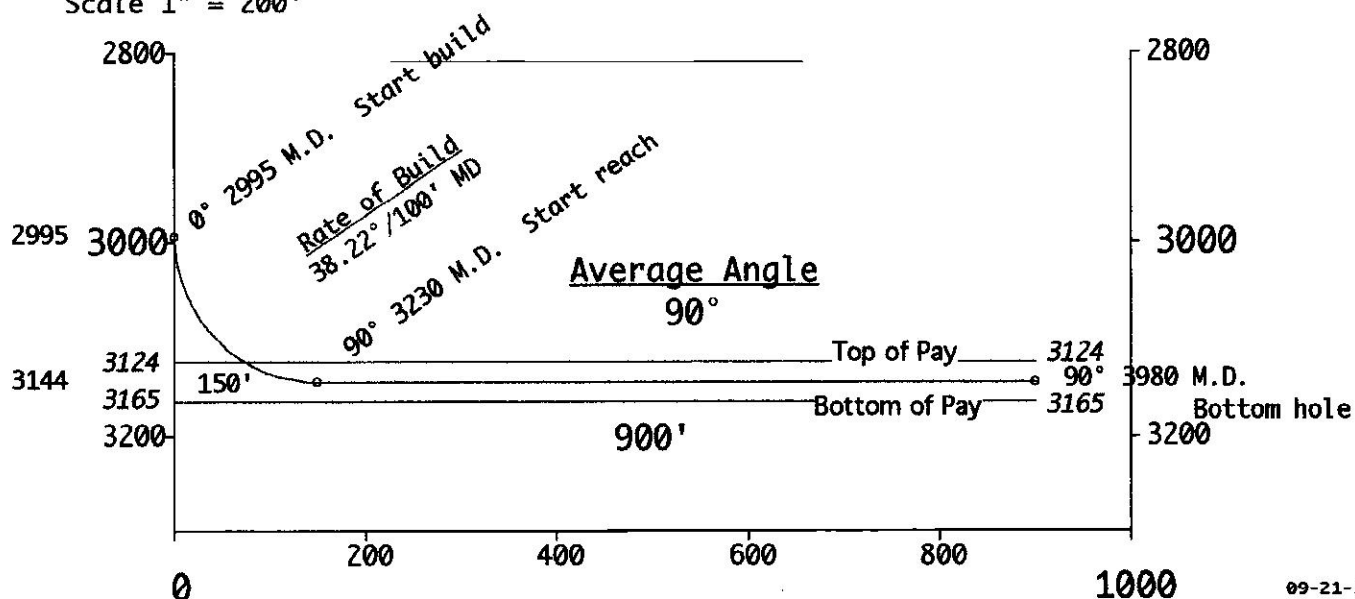
VERTICAL SECTION
Scale 1" = 200'



PLANE OF PROPOSAL
315.0°

VERTICAL SECTION
Scale 1" = 200'

PDS PERFORMANCE
DRILLING
SPECIALISTS INC.



) Lateral #1

Performance Drilling Specialist, Inc.

Koch Petroleum Horseshoe Canyon 1-16 Section 16, T-9-S, R-97-W Mesa County, Colorado	<div> <div>PDS</div> <div>PERFORMANCE DRILLING SPECIALISTS INC.</div> </div>	<div> <div>Page: 1</div> <div>Radius of Curvature</div> <div>Slot Location: 658.00', -1350.00'</div> <div>Plane of Vertical Section: 315.00°</div> </div>
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Measured Depth Feet	B O R E Inc Degrees	H O L E Direction Degrees	True Vertical Depth Feet	R E C T A N G U L A R C O O R D I N A T E S North(-South) East(-West) Feet	R E C T A N G U L A R C O O R D I N A T E S FSL Feet	R E C T A N G U L A R C O O R D I N A T E S FEL Feet	Vertical Section Feet	C L O S U R E S Distance Feet	D i r e c t i o n Deg	Dogleg Severity Deg/100'
2994.59	0.00	315.00	2994.59	0.00	0.00	658.00	-1350.00	0.00	0.00	0.00
Start 38.22°/100' build										
3009.59	5.73	315.00	3009.56	0.53	-0.53	658.53	-1350.53	0.75	0.75	38.22
3024.59	11.47	315.00	3024.39	2.12	-2.12	660.12	-1352.12	2.99	2.99	38.22
3039.59	17.20	315.00	3038.92	4.74	-4.74	662.74	-1354.74	6.70	6.70	38.22
3054.59	22.93	315.00	3053.00	8.38	-8.38	666.38	-1358.38	11.85	11.85	38.22
3069.59	28.66	315.00	3066.50	12.99	-12.99	670.99	-1362.99	18.37	18.37	38.22
3084.59	34.40	315.00	3079.28	18.54	-18.54	676.54	-1368.54	26.21	26.21	38.22
3099.59	40.13	315.00	3091.21	24.96	-24.96	682.96	-1374.96	35.29	35.29	38.22
3114.59	45.86	315.00	3102.18	32.19	-32.19	690.19	-1382.19	45.52	45.52	38.22
3129.59	51.60	315.00	3112.07	40.16	-40.16	698.16	-1390.16	56.79	56.79	38.22
3144.59	57.33	315.00	3120.78	48.78	-48.78	706.78	-1398.78	68.99	68.99	38.22
3159.59	63.06	315.00	3128.23	57.98	-57.98	715.98	-1407.98	82.00	82.00	38.22
3174.59	68.80	315.00	3134.35	67.66	-67.66	725.66	-1417.66	95.69	95.69	38.22
3189.59	74.53	315.00	3139.07	77.73	-77.73	735.73	-1427.73	109.92	109.92	38.22
3204.59	80.26	315.00	3142.34	88.07	-88.07	746.07	-1438.07	124.55	124.55	38.22
3219.59	86.00	315.00	3144.13	98.60	-98.60	756.60	-1448.60	139.44	139.44	38.22
3230.07	90.00	315.00	3144.50	106.00	-106.00	764.00	-1456.00	149.91	149.91	38.22
Start reach										
3730.07	90.00	315.00	3144.50	459.56	-459.56	1117.56	-1809.56	649.91	649.91	0.00
3980.16	90.00	315.00	3144.50	636.40	-636.40	1294.40	-1986.40	900.00	900.00	0.00
Bottom hole										
Final Station Closure Distance: 900.00' Direction: 315.00°										



Performance Drilling Specialist, Inc.

Koch Petroleum Horseshoe Canyon 1-16 Section 16, T-9-S, R-97-W Mesa County, Colorado	<div style="font-size: 48pt; font-weight: bold; margin: 0;">PDS</div> <div style="margin: 0;">PERFORMANCE DRILLING SPECIALISTS INC.</div>	Page: 1 Radius of Curvature Slot Location: 658.00', -1350.00' Plane of Vertical Section: 135.00°
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Measured Depth Feet	B O R E Inc Degrees	H O L E Direction Degrees	True Vertical Depth Feet	R E C T A N G U L A R C O O R D I N A T E S North(-South) East(-West) Feet Feet		R E C T A N G U L A R C O O R D I N A T E S FSL FEL Feet Feet		Vertical Section Feet	C L O S U R E S Distance Direction Feet Deg		Dogleg Severity Deg/100'
2974.99	0.00	135.00	2974.99	0.00	0.00	658.00	-1350.00	0.00	0.00	0.00	0.00
Start 33.80°/100' build											
3004.99	10.14	135.00	3004.83	-1.87	1.87	656.13	-1348.13	2.65	2.65	135.00	33.80
3034.99	20.28	135.00	3033.74	-7.43	7.43	650.57	-1342.57	10.51	10.51	135.00	33.80
3064.99	30.42	135.00	3060.82	-16.50	16.50	641.50	-1333.50	23.34	23.34	135.00	33.80
3094.99	40.56	135.00	3085.21	-28.80	28.80	629.20	-1321.20	40.73	40.73	135.00	33.80
3124.99	50.70	135.00	3106.16	-43.94	43.94	614.06	-1306.06	62.15	62.15	135.00	33.80
3154.99	60.84	135.00	3123.02	-61.46	61.46	596.54	-1288.54	86.92	86.92	135.00	33.80
3184.99	70.98	135.00	3135.25	-80.80	80.80	577.20	-1269.20	114.27	114.27	135.00	33.80
3214.99	81.12	135.00	3142.47	-101.36	101.36	556.64	-1248.64	143.35	143.35	135.00	33.80
3241.26	90.00	135.00	3144.50	-119.86	119.86	538.14	-1230.14	169.51	169.51	135.00	33.80
Start reach											
3741.26	90.00	135.00	3144.50	-473.42	473.42	184.58	-876.58	669.51	669.51	135.00	0.00
3971.74	90.00	135.00	3144.50	-636.40	636.40	21.60	-713.60	900.00	900.00	135.00	0.00

Bottom hole

Final Station Closure Distance: 900.00' Direction: 135.00°