

RECEIVED

DEC 14 2010

Form 3160-5
(August 2007)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFarmington Field Office
Bureau of Land ManagementFORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other Instructions on page 2.**

1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		5. Lease Serial No. Contract 464
2. Name of Operator Black Hills Gas Resources		6. If Indian, Allottee, or Tribe Name Jicarilla Apache Tribe
3a. Address 3200 N 1st Street Bloomfield, NM 87413	3b. Phone No. (include area code) (505) 634-1111	7. If Unit or CA. Agreement Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Surface: 1550' FNL & 920' FEL SE/NE Section 30 T30N R3W Unit H Bottom Hole: 876' FNL & 50' FEL NE/NE Section 29, T30N R3W Unit A		8. Well Name and No. Jicarilla 464-30 #724
		9. API Well No. 30-039-30278
		10. Field and Pool, or Exploratory Area Basin Mancos
		11. County or Parish, State Rio Arriba County, New Mexico

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/ Resume)	☐ Water Shut-off
☐ Subsequent Report	☐ Altering Casing	☒ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Convert to
	☒ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	horizontal
	☐ Convert to Injection	☐ Plug back	☐ Water Disposal	

*13. Describe Proposed or Completed Operation Clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

The initial APD was approved for a vertical Mancos gas well on May 5, 2008, and given the API# 30-039-30278. After further studies in the surrounding area, Black Hills Gas Resources has determine to convert the vertical well to a horizontal well. Therefore BHGR will be submitting a new drilling plan, directional survey, and C-102.

BHGR also intends to fracture treat (frac) the horizontal well (see completion portion on drilling program), so to accommodate the frac equipment BHGR will be expanding the well pad. Therefore BHGR will be submitting a new surface use plan and well pad diagram with cuts and fills.

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

Hold C104

for Directional Survey
and "As Drilled" plat

RCVD FEB 7 '11

OIL CONS. DIV.

DIST. 3

14. I hereby certify that the foregoing is true and correct. Name (Printed/ Typed)

Daniel R. Manus

Regulatory Technician

Title

Signature

Date

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L Salvors

Title Petroleum Engineer

Date 2/7/2011

Conditions of approval, if any are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office FFO

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

Hold C104

for Directional Survey
and "As Drilled" plat

NMOCB

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised July, 16, 2010
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30278		² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 20469	⁵ Property Name JICARILLA 464-30		⁶ Well Number 724
⁷ GRID No. 013925	⁸ Operator Name BLACK HILLS GAS RESOURCES		⁹ Elevation 7226'

¹⁰ Surface Location

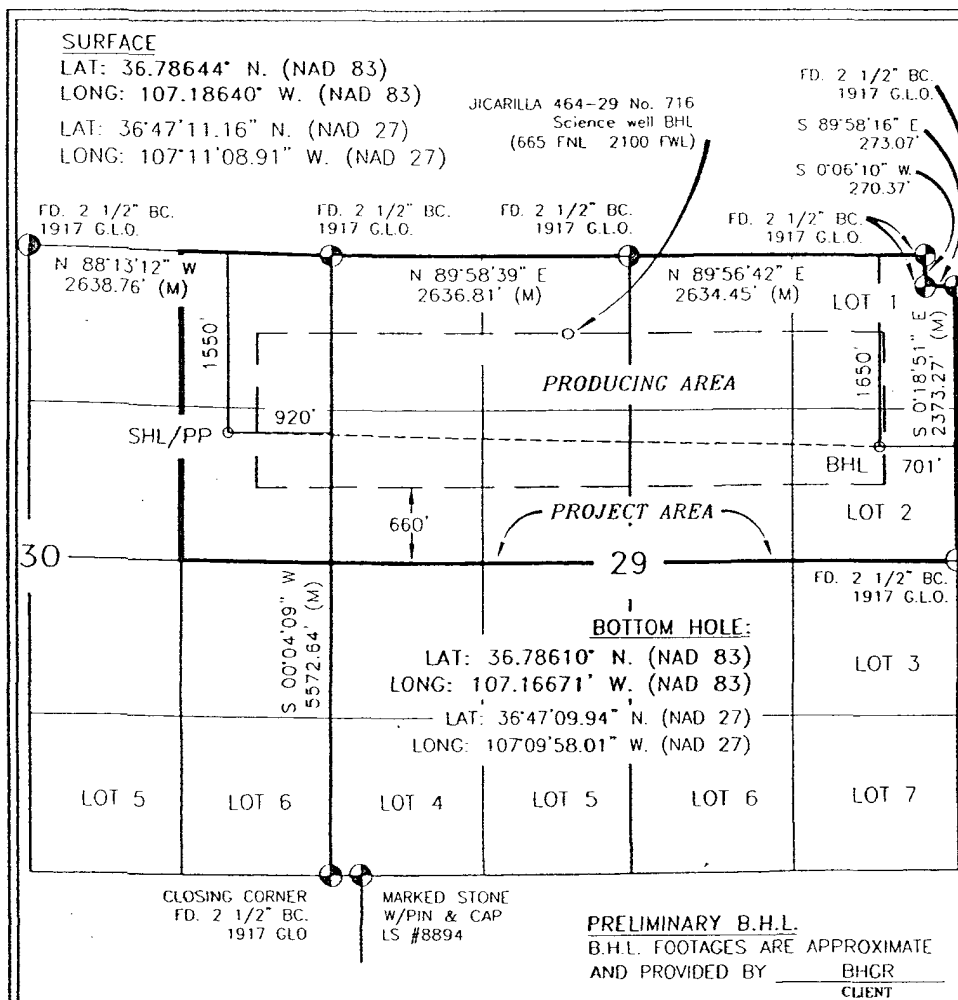
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	30-N	3-W		1550	NORTH	920	EAST	RIO ARRIBA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	29	30-N	3-W	2	1650	NORTH	701	EAST	RIO ARRIBA

¹² Dedicated Acres 80 E/2 NE/4 SEC. 30 320 N/2 SEC. 29	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSL-6316 NSP-1947
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Daniel Manus 12/14/10
Signature Date
Printed Name
E-mail Address
daniel.manus@blackhillscorp.com

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 20, 2010

Date of Survey
Signature and Seal of Professional Surveyor:

[Signature]
8894
13-10
8894
CERTIFIED PROFESSIONAL LAND SURVEYOR
Certificate Number



Black Hills Gas Resources

Jicarilla 464-30 #724

Surface Location: 1,550' FNL 920' FEL (SE/NE)

Sec.30 T30N R3W

Bottom Hole Location: 1650' FNL 701' FEL (NE/NE)

Sec.29 T30N R3W

Rio Arriba County, New Mexico

Lease: Contract 464

DRILLING PROGRAM

(Per Rule 320)

This Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This NOS process includes an onsite meeting which was held on December 5, 2006 as determined by Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA) and at which time the specific concerns of Black Hills Gas Resources (BHGR), BIA, and JOGA were discussed.

The initial APD for the Jicarilla 464-30 #724 was approved May 28, 2008. BHGR is proposing to convert the Jicarilla 464-30 #724 well from a vertical natural gas well to a horizontal natural gas well.

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,222'

ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,033'	Sandstone, shales & siltstones
Ojo Alamo	3,297'	Sandstone, shales & siltstones
Fruitland Coal	3,685'	Sandstone, shales, siltstones & coal
Pictured Cliffs	3,812'	Sandstone, shales & siltstones
Lewis	4,120'	Sandstone, shales & siltstones
Mesaverde	5,783'	Sandstone, shales & siltstones
Mancos	6,656'	Sandstone, shales & siltstones

TOTAL DEPTH **7,862' TVD**
 13,313' MD

Estimated depths of anticipated fresh water, oil, or gas:

Nacimiento	2,033'	Gas, water, sand
Ojo Alamo	3,297'	Gas, water, sand
Fruitland Coal	3,685'	Gas, water, sand
Pictured Cliffs	3,812'	Gas, water, sand
Lewis	4,120'	Gas, water, sand
Mesaverde	5,783'	Gas, water, sand
Mancos	6,656'	Gas, water, sand

HORIZONTAL DRILLING PROGRAM

Kick-Off Point is estimated to be ±7,140' TVD

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0'-400'	17 ½"	13 ¾"	54.5# & J-55	±640 sxs Premium Cement w/ 0.125 lbm/sxs Poly-E-Flakes & 1% CaCl (yield 1.16 ft³/sxs : wt 15.80 lbm/gal)*
0' MD – 4,200' MD	12 ¼"	9 ⅝"	40# & J-55	Lead: ±1,100 sxs Lite Premium cement w/ 0.5 lbm/sxs Gilsonite & 0.125 lbm/sxs Poly-E-Flake (yield 1.82 ft³/sxs : wt 12.50 lbm/gal)* Tail: ±150 sxs Premium cement w/ 0.125 lbm/sxs Poly-E-Flake & 2% Halad®-9 (yield 1.15 ft³/sxs : wt 15.80 lbm/gal)*
3,900' MD – 8,202' MD	8 ¾"	7"	23# & HCN-80	Lead: ±680 sxs 50/50 Poz Premium cement w/ 0.4% Halad®-413, 0.5% Halad®-344, 0.1% CFR-3, 0.2% Versaset & 0.2% HR-5 (yield 1.44 ft³/sxs : wt 13 lbm/gal)* Tail: ±150 sxs 50/50 Poz Premium cement w/ 0.4% Halad®-413, 0.5% Halad®, 0.015% CRF-3, 0.2% Versaset & 0.4%HR-5 (yield 1.1ft³/sxs : Wt. 15.80/gal)*
0' MD – 13,313' MD	6 ⅞"	4 ½"	11.6# & HCP-110	510 sxs Poz Premium w/ 0.4% Halad®-413, 0.5% Halad®-344, .01% Versaset, 0.4% HR-5 & 0.3% Supe CBL (yield 1.44ft³/sxs : Wt 13.0/gal)*

* Actual cement volume to be determined by caliper log.

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

PRESSURE CONTROL

BOPs and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to 1,500 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 2,500 psi. All casing strings will be pressure tested to 0.22 psi/ft. or 1,500 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be either double gate rams or an annular preventor as per Onshore Order No. 2.

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 5M systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

	Interval to	Type	M.W.	Vis	W.L.	Sld's
Surface	0' - 400'	Fresh Water / Spud Mud	±8.4 - 9.0 ppg	28 - 32 sec	n/c	1 – 5%
Intermidate	400' MD - 4,200' MD	Low solids non-dispersed	±9.0 - 9.2 ppg	40 - 50 sec	≥ 6 - 8 cc	≥ 6%
2 nd Intermidate	4,100' MD – 8,202' MD	Low solids non-dispersed	±9.2 - 9.4 ppg	40 - 50 sec	≥ 4 - 6 cc	≥ 6%
KOP to Casing Point	7,140' MD – 8,202' MD		±9.5 – 9.8 ppg	40 - 50 sec	≥ 4 - 6 cc	≥ 6%
BIC to TD of Lateral	8,263' MD – 13,313' MD	Invert OBM	±10.0 - 10.3 ppg	28 - 32 sec	n/c	1 - 2%

Sufficient mud materials to maintain mud properties, control lost circulation and to contain “kick” will be available at well site.

AUXILIARY EQUIPMENT

- A) A Kelly cock will be kept in the drill string at all times
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- | | | | | |
|----|----------|--|-------------------------------------|-------------------|
| A) | Logging: | Mud log | 2-Man Unit | 3,500' to 13,313' |
| | | OpenHole | Tripel Combo w/Spectral GR | |
| | | | DIL/FDC/CNL-SONIC | 1,000' to 4,200' |
| | | Lateral | MWD/GR | 8,202' to 13,313' |
| | | | Measurement while drilling-GR | |
| B) | Coring: | None | | |
| C) | Testing: | DST – None anticipated. Drill stem tests may be run on shows of interest | | |
| | | Manned mudlogging unit from 3,500' to 13,313' | | |
| | | Samples | 100 ft samples from 400' to 4,200' | |
| | | | 30 ft samples from 4,200' to 6,000' | |
| | | | 10 ft samples from 6,300' to 6,530' | |
| | | | 10 ft samples from 9,526' to 9,719' | |

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated
Bottom hole pressure gradient – 0.49 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H₂S: See attached H₂S plan in event H₂S is encountered.
- D) Estimated bottomhole pressure: 3,852 psi

ANTICIPATED START DATE

February 16, 2011

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. BHGR plans to complete the well as follows: Perforate and perform multi-stage slickwater frac in lateral section using plug & perf method for each stage. Perforation intervals and frac volumes will be determined once well logs are run. A sundry notice will be submitted with a revised completion program if warranted.

5000 psi System

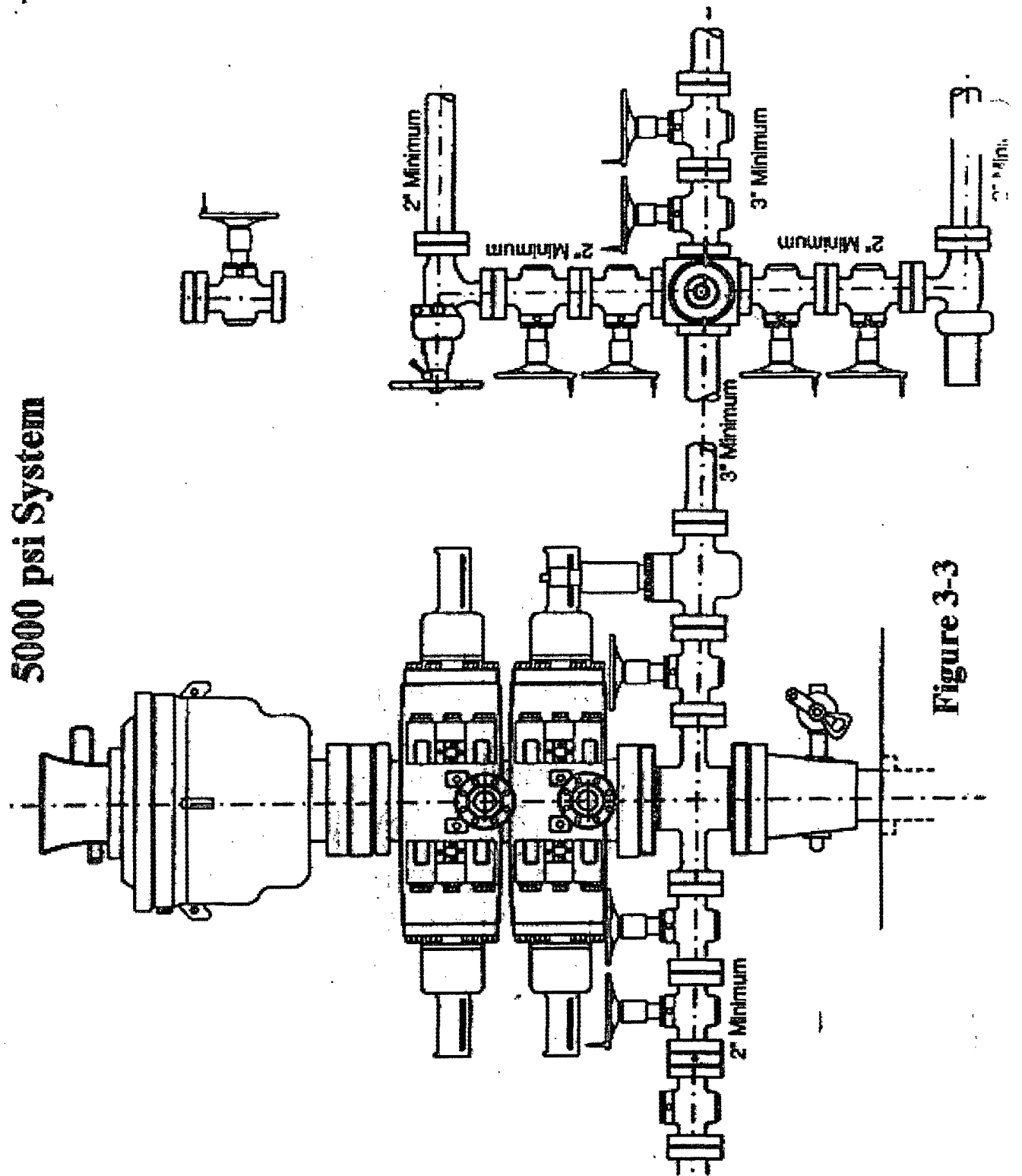


Figure 3-3



PHOENIX

TECHNOLOGY SERVICES

Job Number: 1010xxx
 Company: Black Hills E & P
 Lease/Well: Jicarilla 464-30 #724
 Location: Rio Arriba, County NM
 Rig Name: ☐
 RKB: 7235'
 G.L. or M.S.L.: 7222'

State/Country: TX
 Declination: ☐
 Grid: ☐
 File name: Y:\JOB\DAT-1\BLACKH-1\2010\JICARI-3\J724.SVY
 Date/Time: 09-Dec-10 / 08:19
 Curve Name: Jicarilla 464-30 #724 plan 12-09-10

Jicarilla 464-30 #724 plan 12-09-10

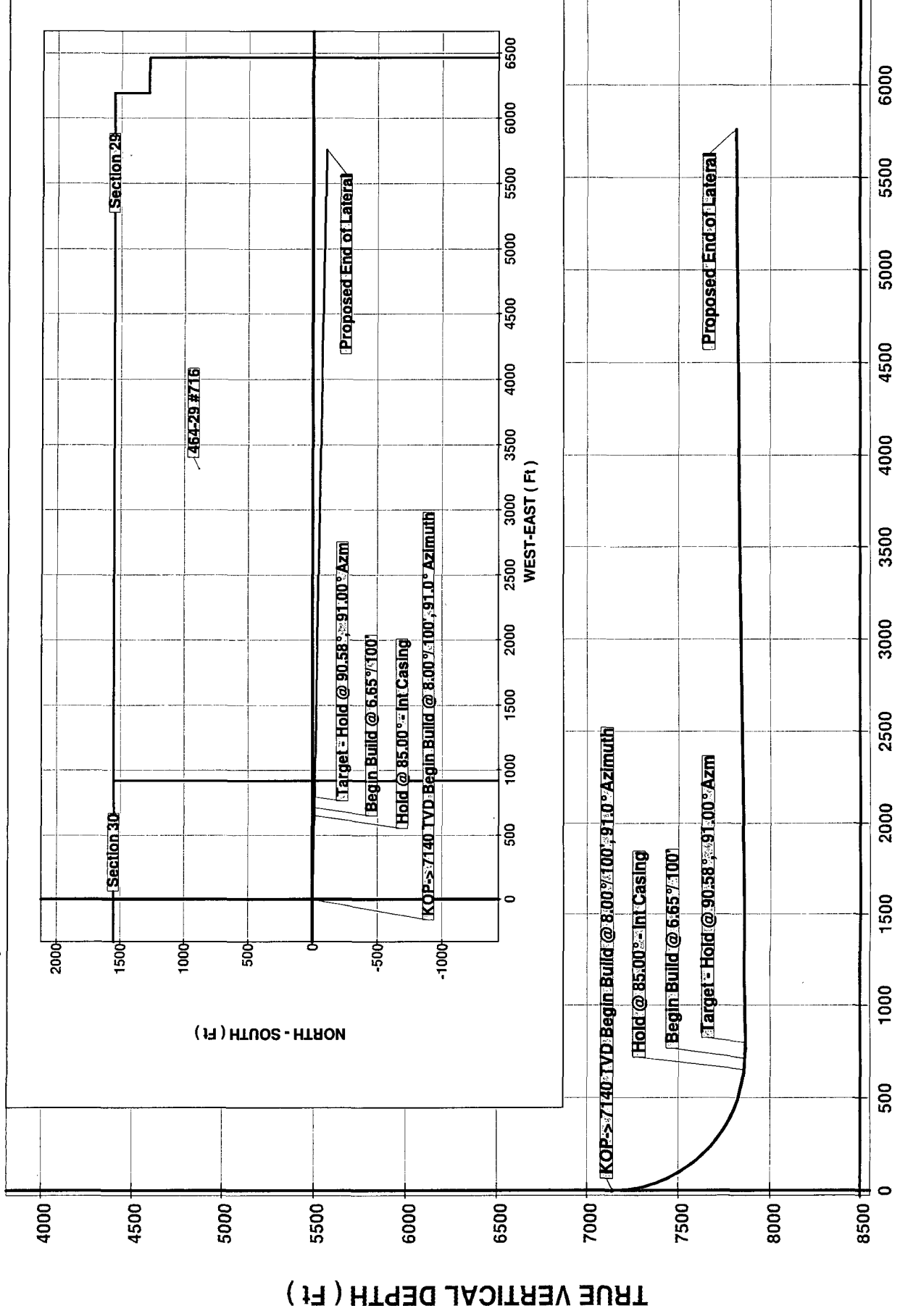
WINSERVE PROPOSAL REPORT
 Minimum Curvature Method
 Vertical Section Plane 91.00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
KOP-> 7140 TVD Begin Build @ 8.00°/100', 91.0° Azimuth									
7140.00	.00	91.00	7140.00	.00	.00	.00	.00	.00	.00
7170.00	2.40	91.00	7169.99	-.01	.63	.63	.63	91.00	8.00
7200.00	4.80	91.00	7199.93	-.04	2.51	2.51	2.51	91.00	8.00
7230.00	7.20	91.00	7229.76	-.10	5.65	5.65	5.65	91.00	8.00
7260.00	9.60	91.00	7259.44	-.18	10.03	10.03	10.03	91.00	8.00
7290.00	12.00	91.00	7288.91	-.27	15.65	15.65	15.65	91.00	8.00
7320.00	14.40	91.00	7318.11	-.39	22.50	22.50	22.50	91.00	8.00
7350.00	16.80	91.00	7347.00	-.53	30.56	30.57	30.57	91.00	8.00
7380.00	19.20	91.00	7375.53	-.70	39.83	39.84	39.84	91.00	8.00
7410.00	21.60	91.00	7403.65	-.88	50.28	50.29	50.29	91.00	8.00
7440.00	24.00	91.00	7431.30	-1.08	61.91	61.92	61.92	91.00	8.00
7470.00	26.40	91.00	7458.45	-1.30	74.68	74.69	74.69	91.00	8.00
7500.00	28.80	91.00	7485.03	-1.55	88.57	88.59	88.59	91.00	8.00
7530.00	31.20	91.00	7511.01	-1.81	103.57	103.58	103.58	91.00	8.00
7560.00	33.60	91.00	7536.34	-2.09	119.64	119.66	119.66	91.00	8.00
7590.00	36.00	91.00	7560.97	-2.39	136.76	136.78	136.78	91.00	8.00
7620.00	38.40	91.00	7584.87	-2.70	154.89	154.91	154.91	91.00	8.00
7650.00	40.80	91.00	7607.98	-3.04	174.01	174.03	174.03	91.00	8.00
7680.00	43.20	91.00	7630.27	-3.39	194.08	194.10	194.10	91.00	8.00
7710.00	45.60	91.00	7651.71	-3.75	215.06	215.09	215.09	91.00	8.00
7740.00	48.00	91.00	7672.24	-4.14	236.92	236.96	236.96	91.00	8.00
7770.00	50.40	91.00	7691.85	-4.53	259.63	259.67	259.67	91.00	8.00
7800.00	52.80	91.00	7710.48	-4.94	283.13	283.18	283.18	91.00	8.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
7830.00	55.20	91.00	7728.11	-5.37	307.40	307.44	307.44	91.00	8.00
7860.00	57.60	91.00	7744.71	-5.80	332.38	332.43	332.43	91.00	8.00
7890.00	60.00	91.00	7760.25	-6.25	358.03	358.09	358.09	91.00	8.00
7920.00	62.40	91.00	7774.71	-6.71	384.32	384.37	384.37	91.00	8.00
7950.00	64.80	91.00	7788.05	-7.18	411.18	411.24	411.24	91.00	8.00
7980.00	67.20	91.00	7800.25	-7.66	438.58	438.65	438.65	91.00	8.00
8010.00	69.60	91.00	7811.29	-8.14	466.47	466.54	466.54	91.00	8.00
8040.00	72.00	91.00	7821.16	-8.64	494.79	494.87	494.87	91.00	8.00
8070.00	74.40	91.00	7829.83	-9.14	523.50	523.58	523.58	91.00	8.00
8100.00	76.80	91.00	7837.29	-9.64	552.55	552.64	552.64	91.00	8.00
8130.00	79.20	91.00	7843.53	-10.16	581.89	581.98	581.98	91.00	8.00
8160.00	81.60	91.00	7848.54	-10.67	611.46	611.56	611.56	91.00	8.00
8190.00	84.00	91.00	7852.30	-11.19	641.22	641.32	641.32	91.00	8.00
Hold @ 85.00° - Int Casing									
8202.54	85.00	91.00	7853.50	-11.41	653.70	653.80	653.80	91.00	8.00
Begin Build @ 6.65% 100'									
8262.54	85.00	91.00	7858.73	-12.45	713.47	713.57	713.57	91.00	.00
8292.54	87.00	91.00	7860.82	-12.98	743.39	743.50	743.50	91.00	6.65
8322.54	88.99	91.00	7861.87	-13.50	773.36	773.48	773.48	91.00	6.65
Target - Hold @ 90.58°, 91.00° Azm									
8346.38	90.58	91.00	7861.96	-13.92	797.20	797.32	797.32	91.00	6.65
8350.00	90.58	91.00	7861.93	-13.98	800.81	800.94	800.94	91.00	.01
8450.00	90.58	91.00	7860.92	-15.72	900.79	900.93	900.93	91.00	.00
8550.00	90.58	91.00	7859.92	-17.47	1000.77	1000.93	1000.93	91.00	.00
8650.00	90.58	91.00	7858.91	-19.21	1100.75	1100.92	1100.92	91.00	.00
8750.00	90.58	91.00	7857.90	-20.96	1200.73	1200.92	1200.92	91.00	.00
8850.00	90.58	91.00	7856.90	-22.70	1300.71	1300.91	1300.91	91.00	.00
8950.00	90.58	91.00	7855.89	-24.45	1400.69	1400.91	1400.91	91.00	.00
9050.00	90.58	91.00	7854.88	-26.19	1500.67	1500.90	1500.90	91.00	.00
9150.00	90.58	91.00	7853.88	-27.94	1600.65	1600.90	1600.90	91.00	.00
9250.00	90.58	91.00	7852.87	-29.68	1700.63	1700.89	1700.89	91.00	.00
9350.00	90.58	91.00	7851.87	-31.43	1800.61	1800.89	1800.89	91.00	.00
9450.00	90.58	91.00	7850.86	-33.17	1900.59	1900.88	1900.88	91.00	.00
9550.00	90.58	91.00	7849.85	-34.92	2000.57	2000.88	2000.88	91.00	.00
9650.00	90.58	91.00	7848.85	-36.67	2100.55	2100.87	2100.87	91.00	.00
9750.00	90.58	91.00	7847.84	-38.41	2200.53	2200.87	2200.87	91.00	.00
9850.00	90.58	91.00	7846.84	-40.16	2300.51	2300.86	2300.86	91.00	.00
9950.00	90.58	91.00	7845.83	-41.90	2400.49	2400.86	2400.86	91.00	.00
10050.00	90.58	91.00	7844.82	-43.65	2500.47	2500.85	2500.85	91.00	.00
10150.00	90.58	91.00	7843.82	-45.39	2600.45	2600.85	2600.85	91.00	.00
10250.00	90.58	91.00	7842.81	-47.14	2700.43	2700.84	2700.84	91.00	.00
10350.00	90.58	91.00	7841.81	-48.88	2800.41	2800.84	2800.84	91.00	.00
10450.00	90.58	91.00	7840.80	-50.63	2900.39	2900.83	2900.83	91.00	.00
10550.00	90.58	91.00	7839.79	-52.37	3000.37	3000.83	3000.83	91.00	.00
10650.00	90.58	91.00	7838.79	-54.12	3100.35	3100.82	3100.82	91.00	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
10750.00	90.58	91.00	7837.78	-55.86	3200.33	3200.82	3200.82	91.00	.00
10850.00	90.58	91.00	7836.78	-57.61	3300.31	3300.81	3300.81	91.00	.00
10950.00	90.58	91.00	7835.77	-59.35	3400.29	3400.81	3400.81	91.00	.00
11050.00	90.58	91.00	7834.76	-61.10	3500.27	3500.80	3500.80	91.00	.00
11150.00	90.58	91.00	7833.76	-62.84	3600.25	3600.80	3600.80	91.00	.00
11250.00	90.58	91.00	7832.75	-64.59	3700.23	3700.79	3700.79	91.00	.00
11350.00	90.58	91.00	7831.75	-66.33	3800.21	3800.78	3800.78	91.00	.00
11450.00	90.58	91.00	7830.74	-68.08	3900.19	3900.78	3900.78	91.00	.00
11550.00	90.58	91.00	7829.73	-69.82	4000.17	4000.77	4000.77	91.00	.00
11650.00	90.58	91.00	7828.73	-71.57	4100.15	4100.77	4100.77	91.00	.00
11750.00	90.58	91.00	7827.72	-73.31	4200.12	4200.76	4200.76	91.00	.00
11850.00	90.58	91.00	7826.72	-75.06	4300.10	4300.76	4300.76	91.00	.00
11950.00	90.58	91.00	7825.71	-76.80	4400.08	4400.75	4400.75	91.00	.00
12050.00	90.58	91.00	7824.70	-78.55	4500.06	4500.75	4500.75	91.00	.00
12150.00	90.58	91.00	7823.70	-80.29	4600.04	4600.74	4600.74	91.00	.00
12250.00	90.58	91.00	7822.69	-82.04	4700.02	4700.74	4700.74	91.00	.00
12350.00	90.58	91.00	7821.69	-83.78	4800.00	4800.73	4800.73	91.00	.00
12450.00	90.58	91.00	7820.68	-85.53	4899.98	4900.73	4900.73	91.00	.00
12550.00	90.58	91.00	7819.67	-87.27	4999.96	5000.72	5000.72	91.00	.00
12650.00	90.58	91.00	7818.67	-89.02	5099.94	5100.72	5100.72	91.00	.00
12750.00	90.58	91.00	7817.66	-90.76	5199.92	5200.71	5200.71	91.00	.00
12850.00	90.58	91.00	7816.65	-92.51	5299.90	5300.71	5300.71	91.00	.00
12950.00	90.58	91.00	7815.65	-94.26	5399.88	5400.70	5400.70	91.00	.00
13050.00	90.58	91.00	7814.64	-96.00	5499.86	5500.70	5500.70	91.00	.00
13150.00	90.58	91.00	7813.64	-97.75	5599.84	5600.69	5600.69	91.00	.00
13250.00	90.58	91.00	7812.63	-99.49	5699.82	5700.69	5700.69	91.00	.00
Proposed End of Lateral									
13313.03	90.58	91.00	7812.00	-100.59	5762.84	5763.72	5763.72	91.00	.00

Job Number: 1010xxx
 Company: Black Hills E & P
 Lease/Well: Jicarilla 464-30 #724
 Location: Rio Arriba, County NM



VERTICAL SECTION (Ft) @ 91.00 °