

Form 3160- 5 (April 2004)

Type of Well

3a. Address

2. Name of Operator
Black Hills Gas Resources

▲ / Gas Well

3200 N 1st Street PO Box 249 Bloomfield, NM 87413

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

MAR 12 2

FORM APPROVED

OMB No. 1004- 0137

Expires: March 31, 2007

				Bureau of L
<b>SUNDRY</b>	<b>NOTICES</b>	AND	<b>REPORTS</b>	ON WEIGHT

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 reverse side.

5. Lease Serial No.
Jioanilla 458

	6. If Indian, Allottee, or Tribe Name
	Jicarilla Apache Nation
	7. If Unit or CA. Agreement Name and/or No.
	8. Well Name and No.
	Jicarilla 458-08 #124
	9. API Well No.
	30-039-03169 30169
	10. Field and Pool, or Exploratory Area
	Cabresto Canyon Tertiary
	11. County or Parish, State
	Rio Arriba, NM
POR	T, OR OTHER DATA
	•

Surface Location: 2.255' FNL 745' FEL Sec 8 T30N R3W SE/NE Unit H Bottom Hole: 1,832' FNL 1,786' FEL Sec 9 T30N R3W SW/NE Unit G CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, RE TYPE OF SUBMISSION TYPE OF ACTION Notice of Intent Acidize Production (Start/Resume) Water Shut-off Altering Casing Fracture Treat Well Integrity Reclamation Converting Casing Repair New Construction Other Subsequent Report Recomplete undrilled vertical well Change Plans Plug and abandon Temporarily Abandon to horizontal well Final Abandonment Notice Convert to Injection Water Disposal

3b. Phone No. (include area code)

505-634-1111 ext 27

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 or pertinent markers and sands. Attach the Bond under which the work will 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 reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

The Jicarilla 458-08 #124 was approved as a Dakota (DK) well, with an API number 30-039-30169. After evaluation of data from surrounding wells in the area, Black Hills Gas Resources (BHGR) has determined that this undrilled vertical well is best drilled into the Ojo Alamo (OA) Formation as a horizontal well. BHGR is submitting an updated drilling plan and a revised C102, to change the well from a vertical DK well to a horizontal OA well.

Surface disturbance will not change for the initial APD, therefore the Surface Use Plan will not be updated or modified.

# **CONDITIONS OF APPROVAL**

Adhere to previously issued stipulations.

HOLD CTOAFOR NSL, Dirational Surveil,

States any false, fictitiousor fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)



HoS POTENTIAL EXIST

ROVD MAR 30 '09 CIL CONS. DIV.

14. Should include reasons for the abandonment; data on any former or Name (Printed/ Typed) Title **Daniel Manus** Regulatory Technician Signature Date THIS SPACE FOR FEDERAL OR STATE OFFICE USE Conditions of approval, if any are attached. Approval of this notice does not warrant o certify that the applicant holds legal or equitable title to those rights in the subject lease the applicant conduct operations to Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and

NMOCD

Current NMOCD rules and regulations must be met at time of drilling

#

#### **GENERAL INSTRUCTIONS**

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this

form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from the local Federal office.

#### **SPECIFIC INSTRUCTIONS**

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13 - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or

TELL TRENTAL FALSE

present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well and date well site conditioned for final inspection looking to approval of the abandonment.

#### NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as requited by 43 CFR 3162.4-1(c); and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to

appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3 - 2, 3162.3 - 3, 3162.3 - 4.

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) requires us to inform you that:

This information is being collected to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

BLM would like you to know that you, do, not; have to trespond a to, this for sany to the Federal agency -sponsored information collection unless it displays a currently valid OMB control number.

#### **BURDEN HOURS STATEMENT**

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau information Collection Clearance Officer, (WO-630), Mail Stop 401 LS, 1849 C St., N.W., Washington D.C. 20240

(Form 3160-5, page 2)



RECEIVED

DISTRICT 1 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

MAR 28 2009 State of New Mexico

Form C-102 Revised October 12, 2005

Energy, Minerals & Natural Resources Department Bureau of Lang Managamani
OIL CONSERVATION DIVISION Minington Field Office
State Lease - 4 Copies

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

State Lease - 4 Copies Fee Lease - 3 Copies

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

# WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-039-30169	*Pool Code 97037	Pool Name CABRESTO CANYON TERTIA	ARY		
<sup>4</sup> Property Code 22182	Property Name  JICARILLA 458-08				
OGRID No.	Operator Name				
013925	BLACK HILLS GA	AS RESOURCES	7120		

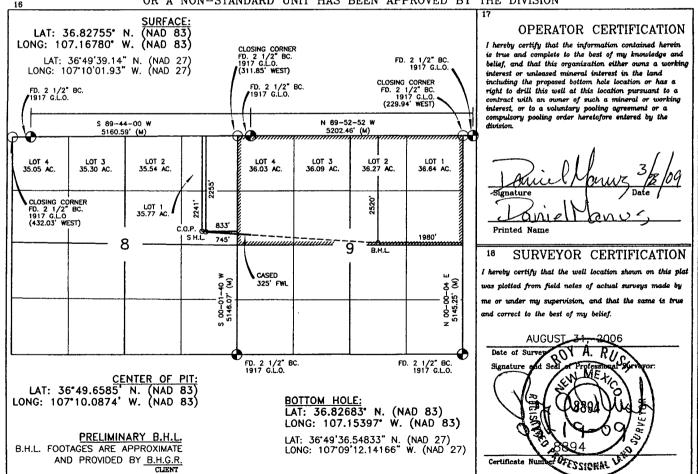
<sup>10</sup> Surface Location

	UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
i	Н	8	30-N	3-W		2255	NORTH	745	EAST	RIO ARRIBA	l
											-

11 Bottom Hole Location If Different From Surface

Bottom Hote Eccation in Birter one 110th Barrace											
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line		County	
G	9	30-N	3-W		2520	NORTH	1980	EAST	RIO	ARRIBA	
18 Dedicated Acres			18 Joint or	<sup>3</sup> Joint or Infill 14 Consolidation Code		16 Order No.					
PROJECT AR	PROJECT AREA									ł	
SEC. 9 - N/2 305.03 AC.							R-1270	<b>1</b>			
B	•				B			1			

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





# **Black Hills Gas Resources**

#### Jicarilla 458-08 #124

Suface: 2,255' FNL 745' FEL (SE/NE)

Sec.8 T30N R3W

Bottom Hole: 2,520 FNL 1,980 FEL (SW/NE)

Sec.9 T30N R3W

Rio Arriba County, New Mexico

Lease: Contract 458

# **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 October 26, 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.

This well was originally permitted and approved as a vertical Dakota well. This new drilling plan addresses changing the un-drilled well to a horizontal Ojo Alamo well.

**SURFACE FORMATION** - San Jose

**GROUND ELEVATION - 7,120'** 

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

San Jose Surface TVD Surface TMD Sandstone, shales & siltstones

Nacimiento 1,952' MD 1,952' TVD Sandstone, shales & siltstones

Ojo Alamo 3,120' MD 3,679 TVD Sandstone, shales & siltstones

TOTAL DEPTH 6,762' MD 3,122' TVD

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

San Jose Surface TVD Gas, water, sand Nacimiento 1,952' MD 1,952' TVD Gas, water, sand Ojo Alamo 3,120' MD 3679' TVD Gas, water, sand

# HORIZONTAL DRILLING PROGRAM

Kick Off Point is estimated to be ±2158' TVD

#### CASING PROGRAM

Depth	Hole Diamete r	Casing Diameter	Casing Weight and Grade	Cement			
0'-275'	12-1/4"	9 5/8"	J-55 36# ST&C	+/-140 sxs Standard Type II cement			
275'-3774'	8-3/4"	7"	J-55 23# LT&C	+/- 410 sxs lite or 65:35 poz and +/- 300 sxs 50:50 poz			
3774'-6762'	6-1/8"	4-1/2"	J-55 10.5# LT&C	Un-cemented Retrievable Liner			

<sup>\*</sup> 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 1,000 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 1,000 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 2M 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**

0' - 275' Fresh water - M.W. 8.5 ppg, Vis 30-33
275' - 3774' Klean Faze- Low solids non-dispersed
M.W. 8.5 - 8.9 ppg
Vis - 28 - 50 sec
W.L. 8 cc or less
3774' - 6762' Low solids non-dispersed

Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kick" will be available at wellsite.

### **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: DIL-CNL

DIL-CNL-FDC-GR - TD - BSC (GR to surface)

Sonic (BSC to TD)

B) Coring: None

C) Testing: Possible DST - None anticipated. Drill stem tests may be run on shows of interest

# ABNORMAL CONDITIONS

A) Pressures: No abnormal conditions are anticipated

Bottom hole pressure gradient - 0.31 psi/ft

B) Temperatures: No abnormal conditions are anticipated

C)  $H_2S$ : See attached  $H_2S$  plan in event  $H_2S$  is encountered.

D) Estimated bottomhole pressure: 400 psi

# **ANTICIPATED START DATE**

April 1, 2009

#### **COMPLETION**

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-3/8" J-55 4.7#/ft tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.



Job Number: 091xxxx

Company: Black Hills Gas Resources

Lease/Well: Jicarilla 458-08 # 124

Location: Rio Arriba County, NM

Rig Name:

RKB: 7133' G.L. or M.S.L.: State/Country: NM

Declination:

Grid:

File name: N:\BLACKH~1\NEWWEL~1\458-08~2\45808124.SVY

Date/Time: 20-Feb-09 / 10:25

Curve Name: Jicarilla 458-08 # 124 plan 2-20-09

# Jicarilla 458-08 # 124 plan 2-20-09

# WINSERVE PROPOSAL REPORT Minimum Curvature Method Vertical Section Plane 93.74 Vertical Section Referenced to Wellhead Rectangular Coordinates Referenced to Wellhead

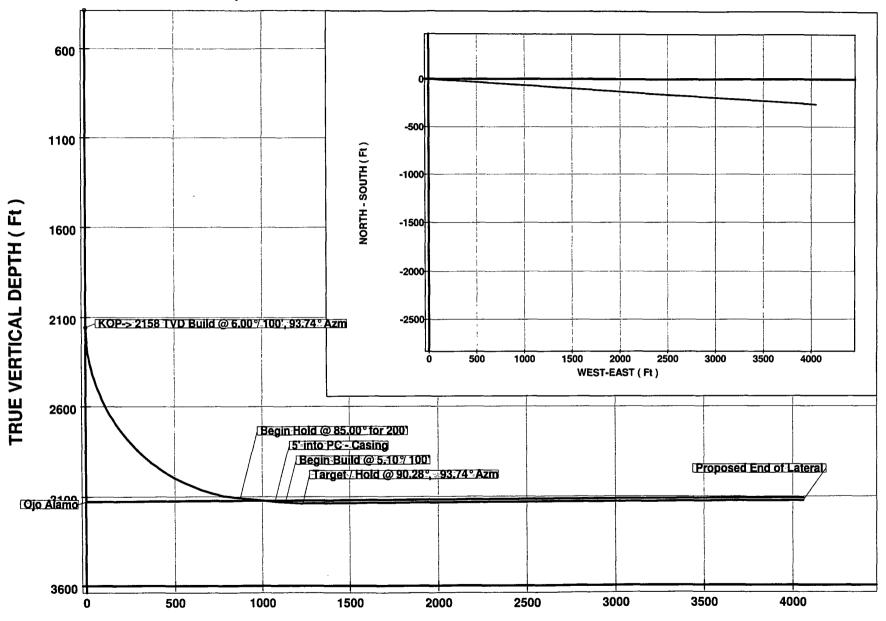
	Measured	Inci	Drift	True	N 0	E 14/	Vertical		SURE	Dogleg	
	Depth FT	Angle Deg	Direction Deg	Vertical Depth	N-S FT	E-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100	
_											
	Surface - 2	2255 FNL,	745 FEL - T3	ON, R3W Se	c. 8					]}	
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
	KOP-> 2158 TVD Begin Build @ 6.00 % 100', 93.74° Azimuth										
	2158.00	.00	93.74	2158.00	.00	.00	.00	.00	.00	.00	
_	2188.00	1.80	93.74	2188.00	03	.47	.47	.47	93.72	6.00	
	2218.00	3.60	93.74	2217.96	12	1.88	1.89	1.89	93.74	6.00	
	2248.00	5.40	93.74	2247.87	28	4.23	4.24	4.24	93.74	6.00	
	2278.00	7.20	93.74	2277.68	49	7.52	7.53	7.53	93.74	6.00	
	2308.00	9.00	93.74	2307.38	77	11.74	11.76	11.76	93.74	6.00	
	2338.00	10.80	93.74	2336.94	-1.10	16.88	16.92	16.92	93.74	6.00	
	2368.00	12.60	93.74	2366.31	-1.50	22.96	23.01	23.01	93.74	6.00	
	2398.00	14.40	93.74	2395.48	-1.96	29.95	30.01	30.01	93.74	6.00	
	2428.00	16.21	93.74	2424.41	-2.48	37.85	37.93	37.93	93.74	6.00	
	2458.00	18.01	93.74	2453.09	-3.05	46.65	46.75	46.75	93.74	6.00	
	2488.00	19.81	93.74	2481.47	-3.69	56.35	56.47	56.47	93.74	6.00	
	2518.00	21.61	93.74	2509.53	-4.38	66.94	67.08	67.08	93.74	6.00	
	2548.00	23.41	93.74	2537.24	-5.13	78.39	78.56	78.56	93.74	6.00	
	2578.00	25.21	93.74	2564.58	-5.94	90.72	90.91	90.91	93.74	6.00	
	20,0.00	20.27		200 1.00	0.0 ,	00	00.0.				
	0000 00	07.04	00.74	0504.50	0.00	100.00	40444	10111	00.74	6.00	
	2608.00	27.01	93.74	2591.52	-6.80	103.89	104.11	104.11	93.74	6.00	
	2638.00	28.81	93.74	2618.03	-7.72	117.90	118.15	118.15	93.74	6.00	
	2668.00	30.61	93.74	2644.08	-8.69	132.74	133.02	133.02	93.74	6.00	
	2698.00	32.41	93.74	2669.66	-9.71	148.38	148.70	148.70	93.74	6.00	
	2728.00	34.21	93.74	2694.73	-10.79	164.82	165.17	165.17	93.74	6.00	

Measured	Incl	Drift	True			Vortical	C I O	SURE	Daglar
Depth	Angle	Direction	Vertical	N-S	E-W	Vertical Section	Distance	Direction	Dogleg Severity
<u> </u>	Deg	Deg	Depth	FT	FT	FT	FT	Deg	Deg/100
2758.00	36.01	93.74	2719.27	-11.91	182.04	182.43	182.43	93.74	6.00
2788.00	37.81	93.74	2743.26	-13.09	200.02	200.45	200.45	93.74	6.00
2818.00	39.61	93.74	2766.66	-14.32	218.74	219.21	219.21	93.74	6.00
2848.00	41.41	93.74	2789.47	-15.59	238.18	238.69	238.69	93.74	6.00
2878.00	43.21	93.74	2811.65	-16.91	258.34	258.89	258.89	93.74	6.00
			2011.00	10.01	200.01	200.00	200.00	00.74	0.00
2908.00	45.01	93.74	2833.19	-18.27	279.17	279.77	279.77	93.74	6.00
2938.00	46.81	93.74	2854.06	-19.68	300.68	301.32	301.32	93.74	6.00
2968.00	48.62	93.74	2874.25	-21.13	322.82	323.51	323.51	93.74	6.00
2998.00	50.42	93.74	2893.72	-22.62	345.59	346.33	346.33	93.74	6.00
3028.00	52.22	93.74	2912.47	-24.15	368.96	369.75	369.75	93.74	6.00
0050.00	54.00	00.74	0000 40	05.74	200.00	000.74	000 74	00.74	0.00
3058.00	54.02	93.74	2930.48	-25.71	392.90	393.74	393.74	93.74	6.00
3088.00	55.82	93.74	2947.72	-27.32	417.40	418.29	418.29	93.74	6.00
3118.00	57.62	93.74	2964.18	-28.96	442.42	443.37	443.37	93.74	6.00
3148.00	59.42	93.74	2979.85	-30.63	467.95	468.95	468.95	93.74	6.00
3178.00	61.22	93.74	2994.70	-32.33	493.96	495.01	495.01	93.74	6.00
3208.00	63.02	93.74	3008.73	-34.06	520.42	521.53	521.53	93.74	6.00
3238.00	64.82	93.74	3021.92	-35.82	547.30	548.47	548.47	93.74	6.00
3268.00	66.62	93.74	3034.26	-37.61	574.59	575.82	575.82	93.74	6.00
3298.00	68.42	93.74	3045.73	-39.42	602.25	603.54	603.54	93.74	6.00
3328.00	70.22	93.74	3056.32	-41.25	630.26	631.61	631.61	93.74	6.00
3320.00	10.22	33.74	3030.32	-41.25	030.20	031.01	031.01	33.74	0.00
3358.00	72.02	93.74	3066.02	-43.10	658.58	659.99	659.99	93.74	6.00
3388.00	73.82	93.74	3074.83	-44.98	687.20	688.67	688.67	93.74	6.00
3418.00	75.62	93.74	3082.74	-46.87	716.07	717.61	717.61	93.74	6.00
3448.00	77.42	93.74	3089.73	-48.77	745.18	746.78	746.78	93.74	6.00
3478.00	79.22	93.74	3095.80	-50.69	774.50	776.16	776.16	93.74	6.00
0500.00	04.00	00.74	0400.05	50.00	000.00	005.74	005.74	00.74	0.00
3508.00	81.03	93.74	3100.95	-52.62	803.99	805.71	805.71	93.74	6.00
3538.00	82.83	93.74	3105.16	-54.56	833.63	835.41	835.41	93.74	6.00
3568.00	84.63 d @ <b>85.00</b> ° fo	93.74	3108.44	-56.51	863.38	865.23	865.23	93.74	6.00
3574.23	85.00	93.74	3109.00	-56.91	869.57	871.43	871.43	93.74	6.00
3674.23	85.00	93.74	3117.72	-63.42	968.98	971.05	971.05	93.74	.00
5' into PC		33.74	3117.72	-03.42	300.30	9/1.03	971.03	33.74	
IL	•	00.74	0400 40	00.00	1000.00	4070.07	4070.07	00.74	
3774.23	85.00	93.74	3126.43	-69.92	1068.38	1070.67	1070.67	93.74	.00
"	d @ 5.10 % 10								
3834.23	85.00	93.74	3131.66	-73.83	1128.03	1130.44	1130.44	93.74	.00
3864.23	86.53	93.74	3133.88	-75.78	1157.88	1160.36	1160.36	93.74	5.10
3894.23	88.06	93.74	3135.29	-77.74	1187.78	1190.32	1190.32	93.74	5.10
3924.23	89.59	93.74	3135.90	-79.70	1217.71	1220.32	1220.32	93.74	5.10
Target / Ho	old @ 90.28°,	93.74° Az	zm						
3937.74	90.28	93.74	3135.92	-80.58	1231.20	1233.83	1233.83	93.74	5.10
4037.74	90.28	93.74	3135.43	-87.11	1330.98	1333.83	1333.83	93.74	.00
4137.74	90.28	93.74	3134.93	-93.64	1430.77	1433.83	1433.83	93.74	.00
4237.74	90.28	93.74	3134.44	-100.17	1530.56	1533.83	1533.83	93.74	.00
4337.74	90.28	93.74	3133.95	-106.70	1630.34	1633.83	1633.83	93.74	.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 Distance FT	S U R E Direction Deg	Dogleg Severity Deg/100
4437.74	90.28	93.74	3133.45	-113.23	1730.13	1733.83	1733.83	93.74	.00
4537.74	90.28	93.74	3132.96	-119.77	1829.91	1833.83	1833.83	93.74	.00
4637.74	90.28	93.74	3132.47	-126.30	1929.70	1933.82	1933.82	93.74	.00
4737.74	90.28	93.74	3131.98	-132.83	2029.48	2033.82	2033.82	93.74	.00
4837.74	90.28	93.74	3131.48	-139.36	2129.27	2133.82	2133.82	93.74	.00
4937.74	90.28	93.74	3130.99	-145.89	2229.05	2233.82	2233.82	93.74	.00
5037.74	90.28	93.74	3130.59	-152.42	2328.84	2333.82	2333.82	93.74 93.74	.00
5137.74	90.28	93.74	3130.00	-152.42	2428.62	2433.82	2433.82	93.74	.00
5237.74	90.28	93.74	3129.51	-136. <del>9</del> 3 -165.48	2528.41	2533.82	2533.82	93.74	.00
5337.74	90.28	93.74	3129.02	-172.01	2628.19	2633.82	2633.82	93.74	.00
3337.74	30.20	30.74	3129.02	-1/2.01	2020.19	2033.02	2033.02	53.74	.00
5437.74	90.28	93.74	3128.53	-178.54	2727.98	2733.82	2733.82	93.74	.00
5537.74	90.28	93.74	3128.03	-185.07	2827.76	2833.81	2833.81	93.74	.00
5637.74	90.28	93.74	3127.54	-191.60	2927.55	2933.81	2933.81	93.74	.00
5737.74	90.28	93.74	3127.05	-198.14	3027.33	3033.81	3033.81	93.74	.00
5837.74	90.28	93.74	3126.55	-204.67	3127.12	3133.81	3133.81	93.74	.00
5937.74	90.28	93.74	3126.06	-211.20	3226.91	3233.81	3233.81	93.74	.00
6037.74	90.28	93.74	3125.57	-217.73	3326.69	3333.81	3333.81	93.74	.00
6137.74	90.28	93.74	3125.08	-224.26	3426.48	3433.81	3433.81	93.74	.00
6237.74	90.28	93.74	3124.58	-230.79	3526.26	3533.81	3533.81	93.74	.00
6337.74	90.28	93.74	3124.09	-237.32	3626.05	3633.80	3633.80	93.74	.00
0.407.74	00.00	00.74	0400.00	040.05	0705.00	0700.00	0700.00	00.74	22
6437.74	90.28	93.74	3123.60	-243.85	3725.83	3733.80	3733.80	93.74	.00
6537.74	90.28	93.74	3123.10	-250.38	3825.62	3833.80	3833.80	93.74	.00
6637.74	90.28	93.74	3122.61	-256.91	3925.40	3933.80	3933.80	93.74	.00
6737.74	90.28	93.74	3122.12	-263.44	4025.19	4033.80	4033.80	93.74	.00
' <b>!</b>			NL, 1980 FE	•					
6761.60	90.28	93.74	3122.00	-265.00	4049.00	4057.66	4057.66	93.74	.00

Job Number: 091xxxx Company: Black Hills Gas Resources Lease/Well: Jicarilla 458-08 # 124 Location: Rio Arriba County, NM





VERTICAL SECTION (Ft)@93.74°