

District I
1625 N. French Dr., Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
1220 S. 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 October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☒ AMENDED REPORT
"As Drilled"

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-30915		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code	*Property Name SCHALK 32		*Well Number 1A
*OGRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6978'

¹⁰ Surface Location

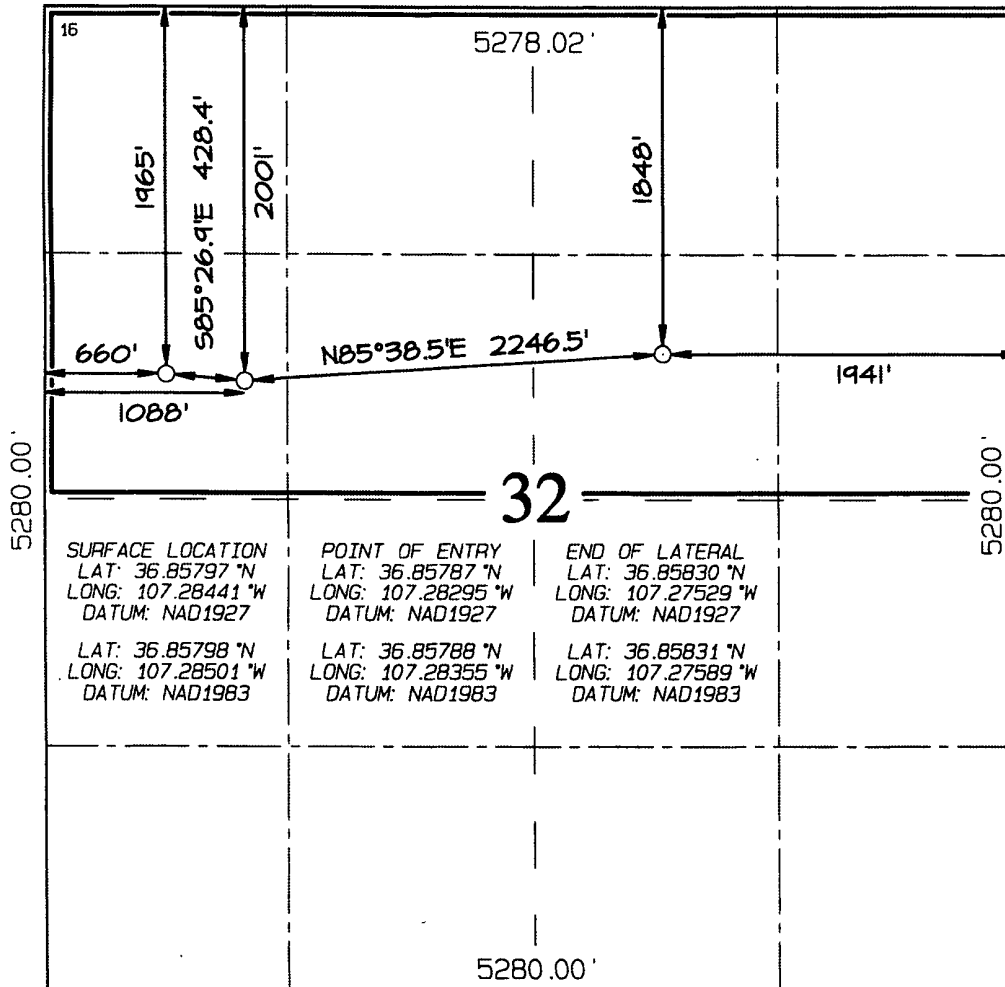
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	32	31N	4W		1965	NORTH	660	WEST	RIO ARriba

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
G	32	31N	4W		1848	NORTH	1941	EAST	RIO ARriba

¹² Dedicated Acres 320.0 Acres - (N/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD JUN 15 '11 OIL CONS. DIV.
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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



¹⁷ 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.

Larry Higgins 6-14-11
Signature Date

Larry Higgins
Printed Name

¹⁸ 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.

Date Revised: JUNE 14, 2011
Survey Date: SEPTEMBER 9, 2008
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

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1625 N. French Dr., Hobbs, NM 88240

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*OGRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6978'

10 Surface Location

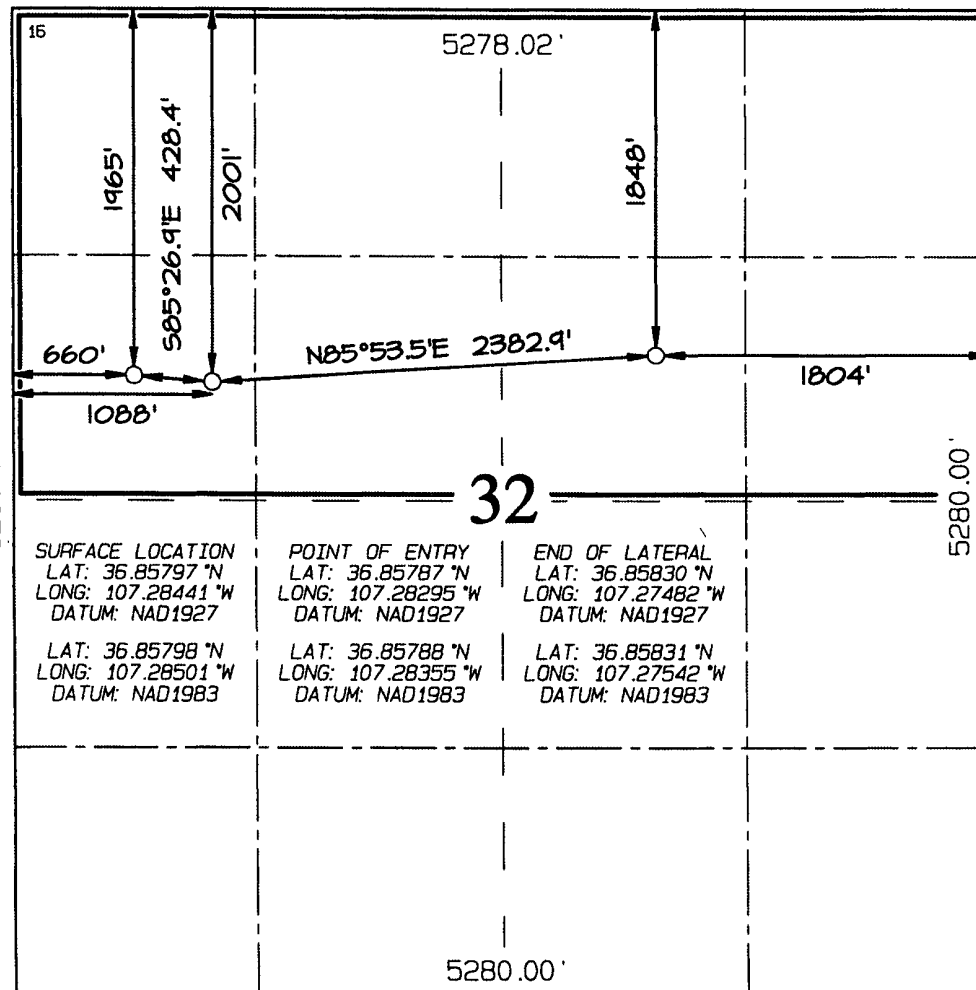
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	32	31N	4W		1965	NORTH	660	WEST	RIO ARRIBA

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
G	32	31N	4W		1848	NORTH	1804	EAST	RIO ARRIBA

12 Dedicated Acres 320.0 Acres - (N/2)	13 Joint or Infill	14 Consolidation Code	15 Order No.
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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



17 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.

Larry Higgins 5-24-11
Signature Date
LARRY HIGGINS
Printed Name

18 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

Date of Revisions: MAY 21, 2011
Survey Date: SEPTEMBER 9, 2008

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



Williams Production

Rio Arriba County

Schalk 32 *API #30-039-30915*

#1A

ST02

Design: ST02

Pathfinder X&Y Planning Report

17 May, 2011

PATHFINDER

A Schlumberger Company

U



Smith International, Inc.
Pathfinder X&Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Williams Production	Local Co-ordinate Reference:	Well #1A
Project:	Rio Arriba County	TVD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Site:	Schalk 32	MD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Well:	#1A	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM 5000.1 Single User Db

Project	Rio Arriba County		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site		Schalk 32				
Site Position:		Northing:	2,133,165.99	usft	Latitude:	36° 51' 28.692 N
From:	Lat/Long	Easting:	197,376.03	usft	Longitude:	107° 17' 3.876 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16	"	Grid Convergence:	-0.62 °

Well	#1A					
Well Position	+N-S	0.00 usft	Northing:	2,133,165.99 usft	Latitude:	36° 51' 28.692 N
	+E-W	0.00 usft	Easting:	197,376.03 usft	Longitude:	107° 17' 3.876 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,978.00 usft	

Wellbore	ST02				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/01/11	9.71	63.68	50,917

Design	ST02			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/S (usft)	+E/W (usft)	Direction (°)
	0.00	0 00	0.00	159.41



Smith International, Inc.
Pathfinder X&Y Planning Report



Company: Williams Production
Project: Rio Arriba County
Site: Schalk 32
Well: #1A
Wellbore: ST02
Design: ST02

Local Co-ordinate Reference: Well #1A
TVD Reference: RKB-12' @ 6990.00usft (Aztec 781)
MD Reference: RKB-12' @ 6990.00usft (Aztec 781)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey/Program Date 05/17/11

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
293.38	3,339.10	Scientific Gyro MWD (ST02)	MWD	MWD - Standard
3,378.00	6,260.00	MWD (ST02)	MWD	MWD - Standard

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	6,990.00	0.00	0.00	0.00	0.00	2,133,165.99	197,376.03
293.38	1.06	152.40	293.36	6,696.64	-2.40	1.26	2.69	0.36	2,133,163.58	197,377.26
421.12	1.23	156.45	421.08	6,568.92	-4.71	2.35	5.24	0.15	2,133,161.26	197,378.33
548.86	1.23	160.93	548.79	6,441.21	-7.26	3.35	7.98	0.08	2,133,158.70	197,379.30
674.84	1.06	143.88	674.74	6,315.26	-9.48	4.48	10.45	0.30	2,133,156.47	197,380.41
761.84	0.97	147.57	761.73	6,228.27	-10.75	5.35	11.95	0.13	2,133,155.18	197,381.26
1,047.44	0.79	146.78	1,047.30	5,942.70	-14.44	7.72	16.23	0.06	2,133,151.47	197,383.60
1,233.67	0.79	139.31	1,233.51	5,756.49	-16.49	9.26	18.69	0.06	2,133,149.41	197,385.11
1,425.56	0.88	140.54	1,425.38	5,564.62	-18.63	11.06	21.33	0.05	2,133,147.25	197,386.89
1,618.63	1.23	155.30	1,618.42	5,371.58	-21.66	12.87	24.80	0.23	2,133,144.20	197,388.67
1,809.58	0.88	148.18	1,809.33	5,180.67	-24.76	14.50	28.28	0.20	2,133,141.07	197,390.26
2,000.37	0.53	140.71	2,000.11	4,989.89	-26.69	15.83	30.55	0.19	2,133,139.13	197,391.57
2,192.83	0.35	164.53	2,192.56	4,797.44	-27.95	16.55	31.98	0.13	2,133,137.87	197,392.28
2,382.10	0.18	122.96	2,381.83	4,608.17	-28.67	16.95	32.80	0.13	2,133,137.15	197,392.67
2,573.31	0.18	290.65	2,573.04	4,416.96	-28.72	16.92	32.84	0.19	2,133,137.09	197,392.64
2,765.51	0.26	314.21	2,765.24	4,224.76	-28.31	16.33	32.25	0.06	2,133,137.51	197,392.05
2,956.74	0.53	293.55	2,956.46	4,033.54	-27.66	15.21	31.24	0.16	2,133,138.17	197,390.94
3,148.47	0.62	295.14	3,148.18	3,841.82	-26.86	13.46	29.88	0.05	2,133,138.99	197,389.20
3,339.10	0.88	277.73	3,338.80	3,651.20	-26.23	11.07	28.44	0.18	2,133,139.65	197,386.82
3,378.00	3.78	87.00	3,377.67	3,612.33	-26.12	12.06	28.69	11.95	2,133,139.75	197,387.80
3,410.00	7.83	85.93	3,409.50	3,580.50	-25.91	15.29	29.63	12.66	2,133,139.92	197,391.04



Smith International, Inc.
Pathfinder X&Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Williams Production	Local Co-ordinate Reference:	Well #1A
Project:	Rio Arriba County	TVD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Site:	Schalk 32	MD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
Well:	#1A	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM 5000.1 Single User.Db

Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
3,437.00	11.34	84.35	3,436.12	3,553.88	-25.52	19.76	30.84	13.04	2,133,140.26	197,395.52
3,469.00	15.21	80.16	3,467.26	3,522.74	-24.49	27.03	32.43	12.45	2,133,141.21	197,402.80
3,502.00	19.43	84.16	3,498.76	3,491.24	-23.19	36.76	34.64	13.28	2,133,142.41	197,412.54
3,533.00	23.57	85.39	3,527.60	3,462.40	-22.17	48.08	37.66	13.43	2,133,143.31	197,423.86
3,561.00	26.82	87.46	3,552.93	3,437.07	-21.44	59.97	41.16	12.02	2,133,143.91	197,435.77
3,592.00	28.84	97.33	3,580.36	3,409.64	-22.08	74.38	46.83	16.21	2,133,143.11	197,450.17
3,623.00	35.61	100.54	3,606.57	3,383.43	-24.69	90.69	55.01	22.52	2,133,140.32	197,466.45
3,654.00	42.74	98.93	3,630.59	3,359.41	-27.98	109.98	64.87	23.23	2,133,136.83	197,485.70
3,686.00	48.72	97.48	3,652.91	3,337.09	-31.23	132.65	75.89	18.97	2,133,133.33	197,508.33
3,718.00	54.61	95.65	3,672.76	3,317.24	-34.08	157.57	87.33	18.94	2,133,130.21	197,533.23
3,750.00	58.39	91.64	3,690.42	3,299.58	-35.76	184.19	98.26	15.77	2,133,128.24	197,559.83
3,782.00	61.20	95.68	3,706.52	3,283.48	-37.54	211.78	109.62	14.00	2,133,126.16	197,587.39
3,814.00	62.61	92.62	3,721.59	3,268.41	-39.58	239.93	121.43	9.52	2,133,123.82	197,615.52
3,845.00	65.16	95.44	3,735.24	3,254.76	-41.54	267.69	133.03	11.59	2,133,121.56	197,643.26
3,877.00	69.82	94.45	3,747.49	3,242.51	-44.08	297.13	145.77	14.84	2,133,118.70	197,672.67
3,909.00	73.60	91.02	3,757.53	3,232.47	-45.52	327.47	157.79	15.59	2,133,116.93	197,702.99
3,941.00	75.53	85.88	3,766.05	3,223.95	-44.68	358.29	167.84	16.62	2,133,117.44	197,733.82
3,973.00	78.17	80.58	3,773.34	3,216.66	-41.00	389.22	175.27	18.11	2,133,120.78	197,764.78
4,006.00	82.92	78.74	3,778.76	3,211.24	-35.16	421.23	181.06	15.41	2,133,126.28	197,796.86
4,012.00	83.46	78.75	3,779.47	3,210.53	-33.99	427.08	182.03	9.07	2,133,127.38	197,802.71
Top of Coal @ 4012.00' MD; 3779.47' TVD; 182.03' VS										
4,038.00	85.82	78.81	3,781.90	3,208.10	-28.96	452.47	186.24	9.07	2,133,132.14	197,828.16
4,070.00	88.99	78.97	3,783.34	3,206.66	-22.80	483.83	191.51	9.92	2,133,137.96	197,859.59
4,103.00	89.43	80.98	3,783.80	3,206.20	-17.06	516.32	197.56	6.23	2,133,143.35	197,892.14
4,135.00	88.99	82.55	3,784.24	3,205.76	-12.47	547.99	204.41	5.09	2,133,147.59	197,923.85
4,167.00	89.25	82.79	3,784.73	3,205.27	-8.39	579.72	211.75	1.11	2,133,151.32	197,955.63
4,199.00	89.96	83.95	3,784.95	3,205.05	-4.70	611.51	219.47	4.25	2,133,154.67	197,987.45



Smith International, Inc.
Pathfinder X&Y Planning Report

PATHFINDER
A Schlumberger Company

Company: Williams Production
Project: Rio Arriba County
Site: Schalk 32
Well: #1A
Wellbore: ST02
Design: ST02

Local Co-ordinate Reference: Well #1A
TVD Reference: RKB-12' @ 6990.00usft (Aztec 781)
MD Reference: RKB-12' @ 6990.00usft (Aztec 781)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,263.00	91.19	85.07	3,784.31	3,205.69	1.43	675.21	236.14	2.60	2,133,160.11	198,051.21	
4,327.00	90.84	85.48	3,783.18	3,206.82	6.70	738.98	253.63	0.84	2,133,164.69	198,115.04	
4,391.00	90.04	84.85	3,782.69	3,207.31	12.09	802.75	271.01	1.59	2,133,169.39	198,178.86	
4,455.00	88.37	85.11	3,783.57	3,206.43	17.69	866.49	288.19	2.64	2,133,174.30	198,242.67	
4,519.00	88.72	85.09	3,785.20	3,204.80	23.16	930.24	305.49	0.55	2,133,179.07	198,306.47	
4,582.00	89.34	85.98	3,786.27	3,203.73	28.06	993.04	322.99	1.72	2,133,183.30	198,369.32	
4,647.00	89.78	86.30	3,786.76	3,203.24	32.44	1,057.89	341.70	0.84	2,133,186.97	198,434.21	
4,710.00	90.57	85.75	3,786.57	3,203.43	36.80	1,120.74	359.72	1.53	2,133,190.66	198,497.10	
4,775.00	90.40	86.44	3,786.02	3,203.98	41.23	1,185.58	378.38	1.09	2,133,194.38	198,561.99	
4,838.00	90.13	86.55	3,785.73	3,204.27	45.08	1,248.46	396.89	0.46	2,133,197.55	198,624.91	
4,902.00	87.85	85.49	3,786.86	3,203.14	49.52	1,312.29	415.18	3.93	2,133,201.30	198,688.79	
4,967.00	88.99	85.30	3,788.65	3,201.35	54.74	1,377.06	433.08	1.78	2,133,205.81	198,753.60	
5,031.00	88.72	85.26	3,789.93	3,200.07	60.00	1,440.83	450.58	0.43	2,133,210.39	198,817.43	
5,094.00	89.78	86.97	3,790.75	3,199.25	64.27	1,503.68	468.69	3.19	2,133,213.97	198,880.32	
5,158.00	90.13	88.05	3,790.80	3,199.20	67.05	1,567.61	488.57	1.77	2,133,216.06	198,944.28	
5,221.00	90.13	87.41	3,790.66	3,199.34	69.55	1,630.56	508.37	1.02	2,133,217.88	199,007.25	
5,285.00	90.48	88.62	3,790.32	3,199.68	71.76	1,694.52	528.79	1.97	2,133,219.40	199,071.23	
5,349.00	90.66	88.15	3,789.68	3,200.32	73.57	1,758.50	549.60	0.79	2,133,220.51	199,135.22	
5,414.00	91.10	87.21	3,788.69	3,201.31	76.20	1,823.43	569.98	1.60	2,133,222.44	199,200.18	
5,477.00	90.84	87.64	3,787.62	3,202.38	79.03	1,886.36	589.46	0.80	2,133,224.59	199,263.14	
5,541.00	90.48	86.84	3,786.88	3,203.12	82.11	1,950.28	609.06	1.37	2,133,226.98	199,327.09	
5,605.00	90.75	86.10	3,786.20	3,203.80	86.05	2,014.16	627.84	1.23	2,133,230.22	199,391.00	
5,669.00	90.66	85.14	3,785.41	3,204.59	90.94	2,077.96	645.70	1.51	2,133,234.42	199,454.86	
5,733.00	91.01	85.79	3,784.48	3,205.52	96.00	2,141.76	663.40	1.15	2,133,238.79	199,518.70	
5,795.00	86.61	84.47	3,785.76	3,204.24	101.26	2,203.50	680.19	7.41	2,133,243.38	199,580.50	
5,858.00	87.67	84.85	3,788.91	3,201.09	107.11	2,266.15	696.75	1.79	2,133,248.56	199,643.21	
5,922.00	89.78	84.92	3,790.33	3,199.67	112.82	2,329.88	713.82	3.30	2,133,253.57	199,706.99	



Smith International, Inc.
Pathfinder X&Y Planning Report

PATHFINDER
A Schlumberger Company

Company:	Williams Production	Local Co-ordinate Reference:	Well #1A
Project:	Rio Arriba County	TVD Reference:	RKB-12' @ 6990.00usft (Aztec 781)
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Well:	#1A	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM 5000.1 Single User Db

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,986.00	89.96	85.63	3,790.48	3,199.52	118.09	2,393.66	731.32	1.14	2,133,258.15	199,770.83
6,050.00	90.57	85.85	3,790.18	3,199.82	122.84	2,457.48	749.31	1.01	2,133,262.21	199,834.70
6,114.00	90.66	85.87	3,789.49	3,200.51	127.46	2,521.31	767.44	0.14	2,133,266.14	199,898.57
6,177.00	91.19	86.49	3,788.48	3,201.52	131.66	2,584.16	785.61	1.29	2,133,269.66	199,961.47
6,260.00	91.19	86.49	3,786.75	3,203.25	136.74	2,666.99	809.99	0.00	2,133,273.84	200,044.34

Projection to Bit @6260.00'MD;3786.75'TVD;809.99'VS

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,012.00	3,779.47	-33.99	427.08	Top of Coal @4012.00'MD,3779.47'TVD,182.03'VS
6,260.00	3,786.75	136.74	2,666.99	Projection to Bit @6260.00'MD,3786.75'TVD,809.99'VS

Checked By: _____ Approved By: _____ Date: _____