

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
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies
☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-27270	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code 21996	⁵ Property Name San Juan 32-5 Unit	⁶ Well Number #100S
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 7590'

¹⁰ Surface Location

UL or lot no. F	Section 23	Township 32N	Range 06W	Lot Idn	Feet from the 2385	North/South line North	Feet from the 2460	East/West line West	County RIO ARRIBA
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¹¹ Bottom Hole Location If Different From Surface

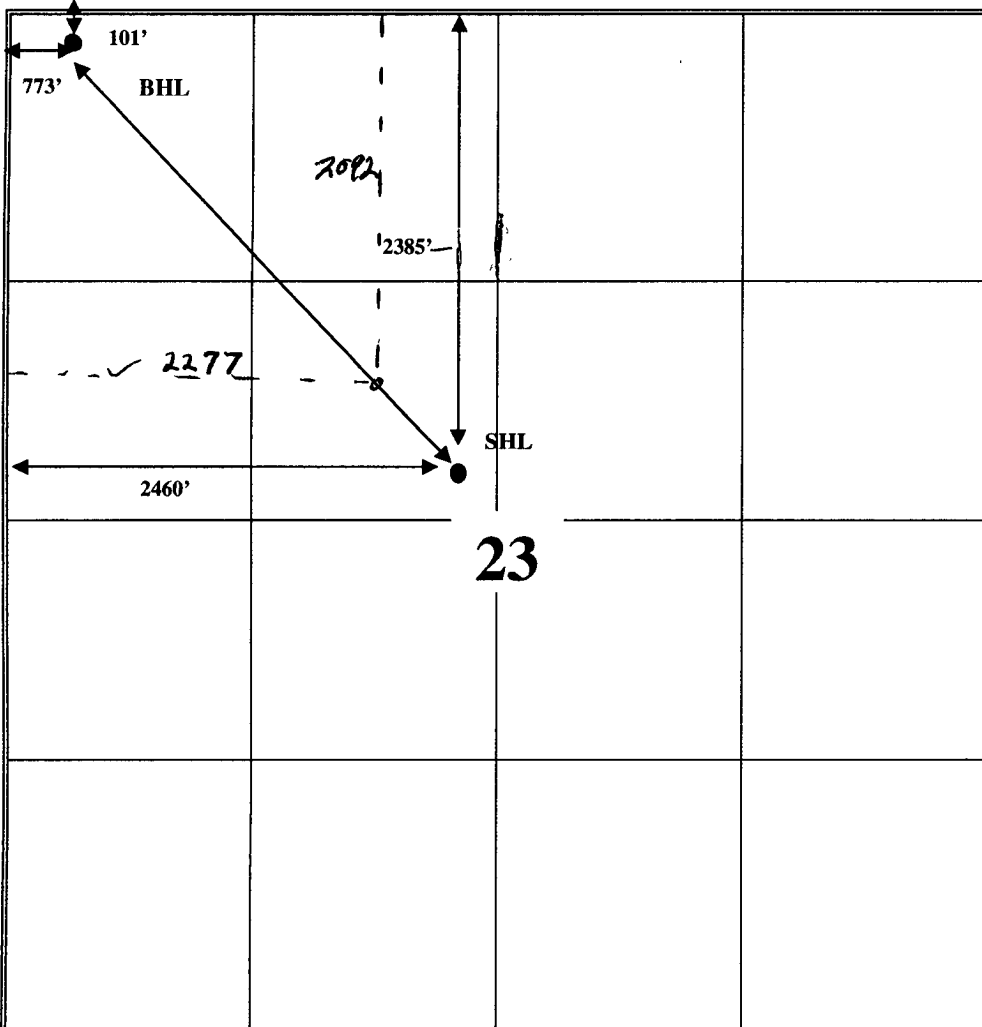
UL or lot no. D	Section 23	Township 32N	Range 06W	Lot Idn	Feet from the 101	North/South line North	Feet from the 773	East/West line West	County RIO ARRIBA
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¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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RCVD JUN 24 '10
OIL CONS. DIV.

DIST. 3

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. Signature: <i>Vicki Donaghey</i> Date: 06/22/10 Vicki Donaghey 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. July 21, 1988 Date of Survey Original Survey Conducted and Recorded By: Neale C. Edwards 6857 Certificate Number



RCVD JUN 24 '10
OIL CONS. DIV.
DIST. 3

Energen Resources

Rio Arriba County

Eul Canyon

San Juan 32-5 Unit #100S

ST01

Design: ST01

Energen EOW

07 May, 2010

PATHFINDER

Company: Energen Resources
 Project: Rio Arriba County
 Site: Eul Canyon
 Well: San Juan 32-5 Unit #100S
 Wellbore: ST01
 Design: ST01

Local Co-ordinate Reference: Well San Juan 32-5 Unit #100S
 TVD Reference: KB @ 6403.00ft (KB)
 MD Reference: KB @ 6403.00ft (KB)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

Project	Rio Arriba County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site		Eul Canyon				
Site Position:		Northing:	2,173,184.728 ft	Latitude:	36° 57' 59.000 N	
From:	Lat/Long	Easting:	1,296,505.935 ft	Longitude:	107° 25' 38.000 W	
Position Uncertainty:		0.00 ft	Slot Radius:	"	Grid Convergence:	-0.71 °

Well	San Juan 32-5 Unit #100S					
Well Position	+N/-S	0.00 ft	Northing:	2,173,184.728 ft	Latitude:	36° 57' 59.000 N
	+E/-W	0.00 ft	Easting:	1,296,505.935 ft	Longitude:	107° 25' 38.000 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	6,388.00 ft	Ground Level:	6,388.00 ft	

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	11/11/2009	(°)	(°)	(nT)
			9.96	63.77	51,097

Design	ST01			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	350.97

Survey Program	Date 05/07/2010			
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
100.00	2,700.00	GYRO (ST01)	CB-GYRO-MS	Camera based gyro multishot
2,755.82	5,697.00	MWD (ST01)	MWD	MWD - Standard

Survey	MD	Inc	Azi	TVD	N/S	E/W	DLeg	V. Sec
	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(ft)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100.00	0.36	313.39	100.00	0.22	-0.23	0.36	0.25
	200.00	0.33	121.34	200.00	0.28	-0.21	0.69	0.31
	300.00	0.37	80.01	300.00	0.19	0.35	0.25	0.13
	400.00	0.28	86.22	400.00	0.26	0.92	0.10	0.11
	500.00	0.37	44.89	499.99	0.51	1.39	0.24	0.28
	600.00	0.37	34.06	599.99	1.00	1.80	0.07	0.71
	700.00	0.50	17.80	699.99	1.68	2.11	0.18	1.33
	800.00	0.90	351.89	799.98	2.88	2.13	0.50	2.51
	900.00	1.06	354.80	899.97	4.58	1.94	0.17	4.22
	1,000.00	1.05	355.77	999.95	6.41	1.79	0.02	6.05

Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #100S
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well San Juan 32-5 Unit #100S
TVD Reference: KB @ 6403.00ft (KB)
MD Reference: KB @ 6403.00ft (KB)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
1,100.00	0.88	7.13	1,099.94	8.09	1.81	0.26	7.70
1,200.00	0.76	15.29	1,199.93	9.49	2.08	0.17	9.04
1,300.00	0.75	7.15	1,299.92	10.78	2.34	0.11	10.28
1,400.00	0.97	10.78	1,399.91	12.26	2.58	0.23	11.70
1,500.00	0.95	359.65	1,499.89	13.92	2.73	0.19	13.32
1,600.00	0.96	345.19	1,599.88	15.56	2.51	0.24	14.97
1,700.00	1.21	343.93	1,699.86	17.38	2.01	0.25	16.85
1,800.00	1.04	342.13	1,799.84	19.26	1.44	0.17	18.80
1,900.00	0.95	338.84	1,899.83	20.90	0.86	0.11	20.50
2,000.00	0.95	345.34	1,999.81	22.47	0.35	0.11	22.14
2,100.00	0.95	348.97	2,099.80	24.09	-0.02	0.06	23.79
2,200.00	0.92	350.62	2,199.78	25.69	-0.31	0.04	25.42
2,300.00	1.04	359.42	2,299.77	27.39	-0.45	0.19	27.12
2,400.00	1.17	352.89	2,399.75	29.31	-0.58	0.18	29.04
2,500.00	0.99	348.75	2,499.73	31.17	-0.88	0.20	30.93
2,600.00	1.25	321.98	2,599.72	32.88	-1.72	0.58	32.74
2,700.00	1.36	319.45	2,699.69	34.64	-3.16	0.12	34.71
2,755.82	1.38	314.55	2,755.49	35.62	-4.07	0.21	35.81
2,829.90	18.29	331.44	2,828.22	46.53	-10.31	22.91	47.57
2,860.60	27.08	331.82	2,856.52	56.94	-15.92	28.64	58.74
2,889.40	35.09	327.75	2,881.17	69.74	-23.45	28.74	72.56
2,920.40	43.70	324.89	2,905.10	86.07	-34.39	28.38	90.40
2,951.50	50.56	326.63	2,926.25	104.91	-47.19	22.43	111.02
2,983.00	57.42	326.00	2,944.76	126.10	-61.31	21.84	134.16
3,014.20	65.25	325.36	2,959.71	148.69	-76.74	25.16	158.89
3,045.60	73.16	323.91	2,970.85	172.60	-93.73	25.56	185.17
3,076.90	79.32	323.27	2,978.30	197.06	-111.76	19.78	212.15
3,108.30	81.60	323.44	2,983.50	221.90	-130.24	7.28	239.58
3,140.10	83.71	323.40	2,987.56	247.22	-149.04	6.64	267.54
3,172.00	83.36	323.06	2,991.16	272.62	-168.01	1.52	295.60
3,198.00	83.28	324.04	2,994.18	293.39	-183.36	3.76	318.52
Coal Entry-3198.00'MD,83.28°INC,324.04°AZI, 2994.18'TVD, 318.52'VS, 293.39'N, -183.36'E							
3,203.00	83.27	324.23	2,994.77	297.41	-186.26	3.78	322.95
3,234.00	85.56	325.91	2,997.78	322.70	-203.93	9.15	350.70
3,265.00	87.58	326.48	2,999.64	348.42	-221.14	6.77	378.79
3,296.00	89.60	326.66	3,000.40	374.28	-238.22	6.54	407.01
3,328.00	90.40	326.04	3,000.40	400.92	-255.95	3.16	436.10
3,359.00	90.57	324.60	3,000.14	426.41	-273.58	4.68	464.05
3,410.00	90.84	323.27	2,999.51	467.63	-303.61	2.66	509.47
3,441.00	90.57	323.22	2,999.13	492.46	-322.15	0.89	536.90
3,472.00	90.75	321.94	2,998.77	517.08	-340.99	4.17	564.17
3,504.00	91.19	322.50	2,998.23	542.37	-360.59	2.23	592.22
3,535.00	91.01	322.31	2,997.64	566.93	-379.50	0.84	619.44
3,566.00	90.40	321.19	2,997.25	591.27	-398.69	4.11	646.50
3,597.00	89.52	321.01	2,997.28	615.40	-418.16	2.90	673.38

Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #100S
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well San Juan 32-5 Unit #100S
TVD Reference: KB @ 6403.00ft (KB)
MD Reference: KB @ 6403.00ft (KB)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
3,629.00	89.78	320.54	2,997.47	640.18	-438.39	1.68	701.03
3,660.00	88.72	320.87	2,997.88	664.17	-458.02	3.58	727.80
3,692.00	88.37	320.74	2,998.69	688.96	-478.24	1.17	755.46
3,723.00	88.20	320.22	2,999.62	712.87	-497.96	1.76	782.16
3,754.00	88.37	319.42	3,000.54	736.54	-517.95	2.64	808.68
3,785.00	88.81	319.89	3,001.31	760.16	-538.01	2.08	835.15
3,816.00	89.78	319.78	3,001.69	783.85	-558.00	3.15	861.68
3,846.00	90.40	319.95	3,001.64	806.78	-577.34	2.14	887.37
3,877.00	90.22	319.57	3,001.47	830.45	-597.37	1.36	913.88
3,908.00	90.13	320.00	3,001.38	854.12	-617.38	1.42	940.40
3,940.00	89.52	321.05	3,001.48	878.82	-637.73	3.79	967.98
3,971.00	89.34	320.96	3,001.79	902.91	-657.23	0.65	994.84
4,002.00	89.25	321.23	3,002.17	927.03	-676.70	0.92	1,021.72
4,033.00	89.43	322.25	3,002.52	951.37	-695.89	3.34	1,048.76
4,064.00	89.52	322.36	3,002.81	975.90	-714.85	0.46	1,075.96
4,095.00	89.43	322.43	3,003.09	1,000.46	-733.76	0.37	1,103.19
4,127.00	89.87	322.88	3,003.29	1,025.90	-753.18	1.97	1,131.35
4,157.00	90.04	323.64	3,003.31	1,049.94	-771.12	2.60	1,157.91
4,188.00	89.08	324.77	3,003.55	1,075.08	-789.25	4.78	1,185.59
4,219.00	90.48	324.97	3,003.67	1,100.44	-807.09	4.56	1,213.43
4,251.00	90.66	324.64	3,003.35	1,126.58	-825.53	1.17	1,242.14
4,282.00	90.84	324.49	3,002.94	1,151.84	-843.50	0.76	1,269.91
4,314.00	91.36	324.29	3,002.33	1,177.85	-862.13	1.74	1,298.52
4,345.00	91.98	325.01	3,001.43	1,203.13	-880.06	3.06	1,326.29
4,377.00	91.45	324.21	3,000.47	1,229.20	-898.58	3.00	1,354.95
4,408.00	90.92	324.08	2,999.83	1,254.32	-916.74	1.76	1,382.61
4,440.00	91.45	324.17	2,999.17	1,280.24	-935.49	1.68	1,411.15
4,472.00	91.80	324.30	2,998.26	1,306.20	-954.18	1.17	1,439.72
4,503.00	94.09	324.02	2,996.67	1,331.29	-972.31	7.44	1,467.35
4,534.00	93.30	323.07	2,994.67	1,356.18	-990.69	3.98	1,494.80
4,565.00	93.47	322.98	2,992.84	1,380.90	-1,009.30	0.62	1,522.14
4,597.00	91.80	322.20	2,991.37	1,406.29	-1,028.72	5.76	1,550.26
4,628.00	92.15	322.58	2,990.30	1,430.83	-1,047.63	1.67	1,577.47
4,659.00	91.80	321.89	2,989.23	1,455.32	-1,066.60	2.49	1,604.63
4,691.00	91.28	321.65	2,988.37	1,480.45	-1,086.40	1.79	1,632.55
4,722.00	91.19	321.41	2,987.70	1,504.72	-1,105.68	0.83	1,659.54
4,753.00	89.43	322.85	2,987.53	1,529.19	-1,124.71	7.34	1,686.70
4,784.00	89.87	322.86	2,987.72	1,553.90	-1,143.42	1.42	1,714.04
4,816.00	90.84	322.46	2,987.52	1,579.34	-1,162.83	3.28	1,742.21
4,847.00	90.57	321.34	2,987.14	1,603.73	-1,181.96	3.72	1,769.30
4,878.00	89.69	320.72	2,987.07	1,627.83	-1,201.46	3.47	1,796.16
4,910.00	90.22	320.12	2,987.10	1,652.49	-1,221.84	2.50	1,823.72
4,941.00	91.71	320.42	2,986.58	1,676.33	-1,241.66	4.90	1,850.37
4,972.00	90.57	320.43	2,985.96	1,700.22	-1,261.40	3.68	1,877.06

Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #100S
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well San Juan 32-5 Unit #100S
TVD Reference: KB @ 6403.00ft (KB)
MD Reference: KB @ 6403.00ft (KB)
North Reference: True
Survey Calculation Method: Minimum Curvature
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Survey

MD (ft)	Inc (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
5,004.00	90.22	319.33	2,985.74	1,724.69	-1,282.02	3.61	1,904.46
5,034.00	90.92	319.91	2,985.44	1,747.54	-1,301.46	3.03	1,930.08
5,066.00	91.28	320.71	2,984.83	1,772.16	-1,321.89	2.74	1,957.60
5,097.00	91.01	320.36	2,984.21	1,796.09	-1,341.59	1.43	1,984.32
5,128.00	90.92	319.76	2,983.68	1,819.85	-1,361.49	1.96	2,010.91
5,159.00	90.31	318.64	2,983.35	1,843.32	-1,381.74	4.11	2,037.26
5,190.00	89.87	318.68	2,983.30	1,866.59	-1,402.22	1.43	2,063.46
5,221.00	90.04	320.64	2,983.33	1,890.22	-1,422.28	6.35	2,089.94
5,251.00	90.48	320.64	2,983.19	1,913.42	-1,441.31	1.47	2,115.84
5,283.00	90.57	321.07	2,982.90	1,938.23	-1,461.51	1.37	2,143.51
5,314.00	91.54	321.56	2,982.33	1,962.43	-1,480.88	3.51	2,170.45
5,345.00	90.48	323.63	2,981.78	1,987.05	-1,499.71	7.50	2,197.72
5,376.00	90.04	324.92	2,981.64	2,012.21	-1,517.81	4.40	2,225.41
5,407.00	89.96	325.91	2,981.64	2,037.73	-1,535.40	3.20	2,253.38
5,438.00	90.40	327.32	2,981.54	2,063.62	-1,552.46	4.76	2,281.61
5,470.00	90.84	327.47	2,981.20	2,090.57	-1,569.70	1.45	2,310.94
5,501.00	90.31	328.57	2,980.89	2,116.87	-1,586.12	3.94	2,339.48
5,532.00	90.57	328.64	2,980.65	2,143.33	-1,602.27	0.87	2,368.15
5,564.00	90.13	328.82	2,980.45	2,170.68	-1,618.88	1.49	2,397.77
5,595.00	90.31	328.89	2,980.33	2,197.21	-1,634.91	0.62	2,426.49
5,626.00	90.57	328.80	2,980.09	2,223.74	-1,650.95	0.89	2,455.20
5,697.00	90.57	328.80	2,979.39	2,284.46	-1,687.73	0.00	2,520.95

BHL-5697.00°MD,90.57°INC,328.80°AZI, 2979.39°TVD, 2520.95°VS, 2284.46°N, -1687.73°E

Company: Energen Resources
Project: Rio Arriba County
Site: Eul Canyon
Well: San Juan 32-5 Unit #100S
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Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
KOP #100S		0.00	0.00	2,750.00	0.00	0.08	2,173,184.727	1,296,506.016	36° 57' 59.000 N	107° 25' 37.999 W
	- actual wellpath misses target center by 35.75ft at 2749.64ft MD (2749.31 TVD, 35.51 N, -3.97 E)									
	- Point									
TGT WELL		0.00	0.00	0.00	135.19	1,864.69	2,173,296.864	1,298,372.154	36° 58' 0.336 N	107° 25' 15.024 W
	- actual wellpath misses target center by 1869.59ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
	- Point									
Land Curve#100S		0.00	0.00	2,997.00	196.60	-146.12	2,173,383.118	1,296,362.256	36° 58' 0.944 N	107° 25' 39.800 W
	- actual wellpath misses target center by 31.61ft at 3099.86ft MD (2982.22 TVD, 215.20 N, -125.27 E)									
	- Point									
TD Lateral #100S		0.00	0.00	2,997.00	2,285.00	-1,699.92	2,175,490.559	1,294,834.382	36° 58' 21.592 N	107° 25' 58.947 W
	- actual wellpath misses target center by 21.43ft at 5697.00ft MD (2979.39 TVD, 2284.46 N, -1687.73 E)									
	- Point									
Enter Coal #100S		0.00	0.00	2,985.00	135.90	-100.92	2,173,321.864	1,296,406.703	36° 58' 0.344 N	107° 25' 39.243 W
	- actual wellpath misses target center by 34.90ft at 3026.53ft MD (2964.57 TVD, 157.98 N, -83.23 E)									
	- Point									

Design Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
3,198.00	2,994.18	293.39	-183.36	Coal Entry-3198.00'MD,83.28°INC,324.04°AZI, 2994.18'TVD, 318.52°V:
5,697.00	2,979.39	2,284.46	-1,687.73	BHL-5697.00'MD,90.57°INC,328.80°AZI, 2979.39'TVD, 2520.95°VS, 22

Checked By: _____ Approved By: _____ Date: _____