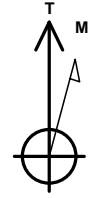


Project: Mesa
 Site: NWNW Sec 24-T6S-R97W
 Well: Puckett 11D-24D
 Wellbore: DD
 Design: DD

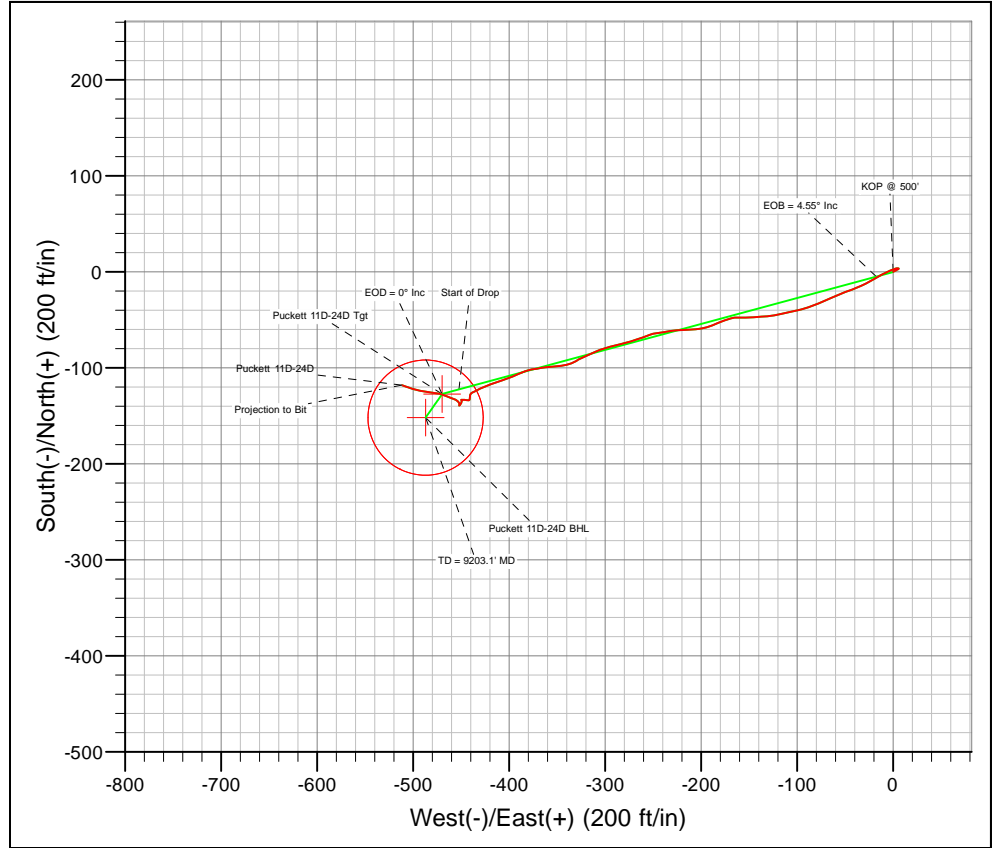
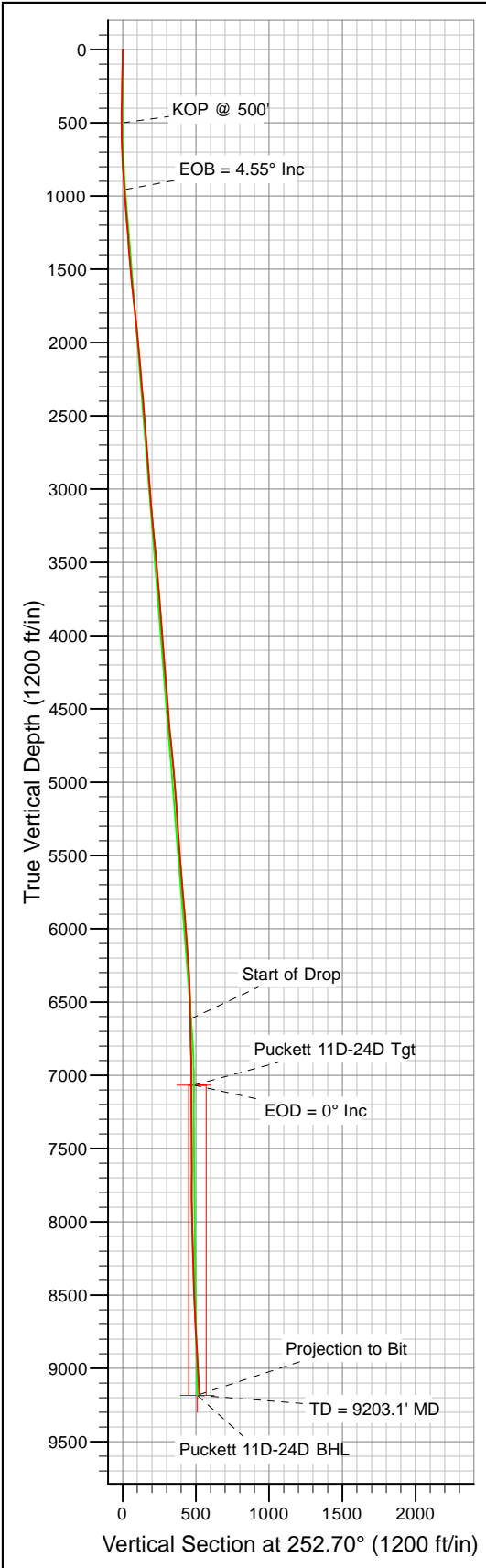


WELL DETAILS: Puckett 11D-24D

+N/-S	+E/-W	Northing	Ground Level: Easting	8381.0 Latitude	Longitude	Slot
0.0	0.0	1622887.40	2245686.44	39.513127	-108.174007	

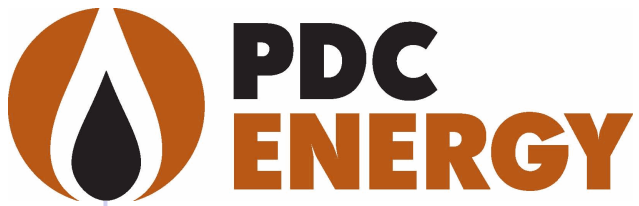


Azimuths to True North
 Magnetic North: 10.57°
 Magnetic Field
 Strength: 52321.3snT
 Dip Angle: 65.75°
 Date: 06/01/2010
 Model: IGRF2010-14



Survey: Survey #1 (Puckett 11D-24D/DD)

Created By: Jon Schweigert	Date: 10:01, April 08 2011
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____



Petroleum Development Corp.

Mesa

NWNW Sec 24-T6S-R97W

Puckett 11D-24D

DD

Survey: Survey #1

Standard Survey Report

08 April, 2011



Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 11D-24D
Project:	Mesa	TVD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 11D-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Project	Mesa		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	NWNW Sec 24-T6S-R97W				
Site Position:			Northing:		
From:	Lat/Long		Easting:	Latitude:	
Position Uncertainty:	0.0	ft	Slot Radius:	Longitude:	
				Grid Convergence:	1.00

Well	Puckett 11D-24D					
Well Position	+N/-S	0.0 ft	Northing:	1,622,887.40 ft	Latitude:	39.513127
	+E/-W	0.0 ft	Easting:	2,245,686.44 ft	Longitude:	-108.174008
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,381.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	06/01/10	10.57	65.75	52,321

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	252.70	

Survey Program		Date	09/02/10		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
149.0	9,200.0	Survey #1 (DD)	MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	-8,399.0	0.0	0.0	0.0	0.00	0.00	0.00
149.0	1.20	58.70	149.0	-8,250.0	0.8	1.3	-1.5	0.81	0.81	0.00
241.0	1.20	61.30	241.0	-8,158.0	1.8	3.0	-3.4	0.06	0.00	2.83
333.0	0.70	64.10	333.0	-8,066.1	2.5	4.4	-4.9	0.55	-0.54	3.04
425.0	0.60	59.00	425.0	-7,974.1	3.0	5.3	-5.9	0.13	-0.11	-5.54
517.0	0.40	28.70	516.9	-7,882.1	3.5	5.8	-6.6	0.35	-0.22	-32.93
610.0	1.30	277.70	609.9	-7,789.1	3.9	4.9	-5.9	1.60	0.97	-119.36
704.0	2.50	248.10	703.9	-7,695.1	3.3	2.0	-2.9	1.61	1.28	-31.49
796.0	3.90	248.00	795.7	-7,603.3	1.4	-2.8	2.2	1.52	1.52	-0.11

Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 11D-24D
Project:	Mesa	TVD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 11D-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
890.0	4.00	246.70	889.5	-7,509.5	-1.1	-8.7	8.7	0.14	0.11	-1.38
985.0	4.10	238.10	984.3	-7,414.7	-4.2	-14.7	15.3	0.65	0.11	-9.05
1,079.0	4.00	239.40	1,078.0	-7,321.0	-7.7	-20.4	21.7	0.14	-0.11	1.38
1,172.0	4.80	241.80	1,170.8	-7,228.2	-11.1	-26.6	28.7	0.88	0.86	2.58
1,268.0	3.90	246.70	1,266.5	-7,132.5	-14.3	-33.1	35.9	1.01	-0.94	5.10
1,362.0	4.10	246.80	1,360.3	-7,038.8	-16.9	-39.1	42.4	0.21	0.21	0.11
1,457.0	5.10	248.70	1,455.0	-6,944.1	-19.8	-46.2	50.0	1.06	1.05	2.00
1,551.0	6.00	250.40	1,548.5	-6,850.5	-23.0	-54.7	59.1	0.97	0.96	1.81
1,645.0	6.00	244.60	1,642.0	-6,757.0	-26.7	-63.8	68.8	0.64	0.00	-6.17
1,740.0	6.10	247.00	1,736.5	-6,662.5	-30.8	-72.9	78.8	0.29	0.11	2.53
1,834.0	5.60	249.60	1,830.0	-6,569.0	-34.4	-81.8	88.3	0.60	-0.53	2.77
1,928.0	5.50	250.80	1,923.5	-6,475.5	-37.4	-90.4	97.4	0.16	-0.11	1.28
2,023.0	5.40	258.90	2,018.1	-6,380.9	-39.8	-99.0	106.4	0.82	-0.11	8.53
2,117.0	5.20	256.10	2,111.7	-6,287.3	-41.7	-107.5	115.1	0.35	-0.21	-2.98
2,211.0	5.10	257.70	2,205.3	-6,193.7	-43.6	-115.7	123.5	0.19	-0.11	1.70
2,306.0	4.60	259.50	2,300.0	-6,099.0	-45.2	-123.6	131.5	0.55	-0.53	1.89
2,400.0	4.60	267.40	2,393.7	-6,005.3	-46.0	-131.1	138.8	0.67	0.00	8.40
2,482.0	4.20	265.90	2,475.5	-5,923.6	-46.4	-137.4	144.9	0.51	-0.49	-1.83
2,581.0	5.10	264.50	2,574.1	-5,824.9	-47.1	-145.4	152.8	0.92	0.91	-1.41
2,677.0	4.70	269.70	2,669.8	-5,729.2	-47.5	-153.5	160.7	0.62	-0.42	5.42
2,771.0	4.80	271.70	2,763.5	-5,635.6	-47.4	-161.3	168.1	0.21	0.11	2.13
2,865.0	4.50	255.00	2,857.1	-5,541.9	-48.3	-168.8	175.5	1.47	-0.32	-17.77
2,960.0	4.20	249.50	2,951.9	-5,447.1	-50.4	-175.7	182.7	0.54	-0.32	-5.79
3,054.0	3.80	246.70	3,045.6	-5,353.4	-52.9	-181.8	189.3	0.47	-0.43	-2.98
3,148.0	4.90	249.90	3,139.4	-5,259.6	-55.5	-188.4	196.4	1.20	1.17	3.40
3,242.0	5.50	254.30	3,233.0	-5,166.0	-58.1	-196.5	204.9	0.77	0.64	4.68
3,336.0	5.80	266.40	3,326.5	-5,072.5	-59.6	-205.6	214.0	1.30	0.32	12.87
3,431.0	5.70	267.00	3,421.1	-4,978.0	-60.2	-215.1	223.2	0.12	-0.11	0.63
3,524.0	5.30	266.70	3,513.6	-4,885.4	-60.6	-224.0	231.9	0.43	-0.43	-0.32
3,618.0	4.70	260.50	3,607.3	-4,791.7	-61.5	-232.1	239.9	0.86	-0.64	-6.60
3,712.0	4.60	259.70	3,701.0	-4,698.1	-62.8	-239.6	247.5	0.13	-0.11	-0.85
3,806.0	4.20	265.10	3,794.7	-4,604.3	-63.8	-246.8	254.6	0.61	-0.43	5.74
3,900.0	4.40	247.10	3,888.4	-4,510.6	-65.5	-253.5	261.5	1.45	0.21	-19.15
3,995.0	4.60	250.80	3,983.1	-4,415.9	-68.2	-260.5	268.9	0.37	0.21	3.89
4,090.0	4.50	253.10	4,077.8	-4,321.2	-70.5	-267.6	276.5	0.22	-0.11	2.42
4,183.0	4.50	253.00	4,170.5	-4,228.5	-72.6	-274.6	283.8	0.01	0.00	-0.11
4,277.0	4.60	256.30	4,264.2	-4,134.8	-74.6	-281.8	291.2	0.30	0.11	3.51
4,372.0	4.70	256.50	4,358.9	-4,040.1	-76.4	-289.3	298.9	0.11	0.11	0.21
4,466.0	4.30	253.80	4,452.6	-3,946.4	-78.3	-296.4	306.3	0.48	-0.43	-2.87
4,560.0	4.00	252.30	4,546.4	-3,852.6	-80.3	-302.9	313.1	0.34	-0.32	-1.60
4,655.0	5.80	246.30	4,641.0	-3,758.0	-83.2	-310.5	321.2	1.97	1.89	-6.32

Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 11D-24D
Project:	Mesa	TVD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 11D-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,749.0	5.80	245.20	4,734.6	-3,664.5	-87.1	-319.1	330.6	0.12	0.00	-1.17
4,843.0	5.70	243.60	4,828.1	-3,570.9	-91.2	-327.6	339.9	0.20	-0.11	-1.70
4,937.0	5.10	244.30	4,921.7	-3,477.3	-95.1	-335.6	348.7	0.64	-0.64	0.74
5,032.0	4.00	260.60	5,016.4	-3,382.6	-97.5	-342.6	356.1	1.78	-1.16	17.16
5,126.0	4.30	270.00	5,110.1	-3,288.9	-98.0	-349.4	362.7	0.79	0.32	10.00
5,220.0	4.40	259.70	5,203.9	-3,195.2	-98.6	-356.5	369.7	0.84	0.11	-10.96
5,315.0	4.20	261.90	5,298.6	-3,100.4	-99.8	-363.5	376.7	0.27	-0.21	2.32
5,409.0	4.10	262.50	5,392.3	-3,006.7	-100.7	-370.2	383.4	0.12	-0.11	0.64
5,504.0	3.60	261.90	5,487.1	-2,911.9	-101.6	-376.6	389.7	0.53	-0.53	-0.63
5,598.0	4.80	249.40	5,580.9	-2,818.1	-103.4	-383.2	396.6	1.60	1.28	-13.30
5,692.0	4.80	247.70	5,674.6	-2,724.5	-106.2	-390.5	404.4	0.15	0.00	-1.81
5,787.0	4.70	245.70	5,769.2	-2,629.8	-109.3	-397.7	412.2	0.20	-0.11	-2.11
5,881.0	4.70	252.30	5,862.9	-2,536.1	-112.1	-404.9	419.9	0.57	0.00	7.02
5,975.0	4.10	249.10	5,956.6	-2,442.4	-114.5	-411.7	427.1	0.69	-0.64	-3.40
6,069.0	4.60	253.10	6,050.4	-2,348.7	-116.8	-418.4	434.2	0.62	0.53	4.26
6,164.0	4.50	245.60	6,145.1	-2,254.0	-119.4	-425.5	441.7	0.63	-0.11	-7.89
6,258.0	4.80	243.80	6,238.8	-2,160.3	-122.7	-432.4	449.3	0.35	0.32	-1.91
6,352.0	2.90	245.30	6,332.5	-2,066.5	-125.4	-438.1	455.5	2.02	-2.02	1.60
6,447.0	2.10	186.60	6,427.5	-1,971.6	-128.1	-440.4	458.6	2.68	-0.84	-61.79
6,541.0	2.40	188.30	6,521.4	-1,877.6	-131.8	-440.9	460.2	0.33	0.32	1.81
6,635.0	1.00	268.80	6,615.4	-1,783.7	-133.8	-442.0	461.8	2.60	-1.49	85.64
6,729.0	1.60	281.00	6,709.3	-1,689.7	-133.5	-444.1	463.7	0.70	0.64	12.98
6,824.0	1.30	277.80	6,804.3	-1,594.7	-133.1	-446.5	465.9	0.33	-0.32	-3.37
6,918.0	1.50	267.40	6,898.3	-1,500.7	-133.0	-448.8	468.0	0.34	0.21	-11.06
7,012.0	0.10	45.80	6,992.3	-1,406.8	-133.0	-450.0	469.2	1.68	-1.49	147.23
7,106.0	0.50	139.40	7,086.3	-1,312.8	-133.3	-449.6	468.9	0.55	0.43	99.57
7,201.0	0.70	178.00	7,181.3	-1,217.8	-134.2	-449.3	468.9	0.46	0.21	40.63
7,295.0	0.80	190.40	7,275.2	-1,123.8	-135.4	-449.4	469.4	0.20	0.11	13.19
7,389.0	1.00	211.10	7,369.2	-1,029.8	-136.8	-450.0	470.3	0.40	0.21	22.02
7,484.0	1.60	222.70	7,464.2	-934.8	-138.4	-451.3	472.1	0.69	0.63	12.21
7,578.0	0.40	30.40	7,558.2	-840.8	-139.1	-452.0	473.0	2.12	-1.28	178.40
7,672.0	0.50	17.40	7,652.2	-746.8	-138.4	-451.7	472.5	0.15	0.11	-13.83
7,767.0	0.80	353.10	7,747.2	-651.8	-137.4	-451.7	472.1	0.42	0.32	-25.58
7,861.0	1.10	326.90	7,841.2	-557.8	-136.0	-452.3	472.2	0.55	0.32	-27.87
7,956.0	1.60	307.30	7,936.2	-462.9	-134.4	-453.8	473.3	0.71	0.53	-20.63
8,050.0	1.80	297.90	8,030.1	-368.9	-132.9	-456.2	475.1	0.36	0.21	-10.00
8,144.0	1.90	289.20	8,124.1	-275.0	-131.7	-458.9	477.4	0.32	0.11	-9.26
8,239.0	2.10	289.90	8,219.0	-180.0	-130.6	-462.1	480.0	0.21	0.21	0.74
8,333.0	2.10	294.00	8,312.9	-86.1	-129.3	-465.3	482.7	0.16	0.00	4.36
8,427.0	2.10	287.20	8,406.9	7.9	-128.1	-468.5	485.4	0.26	0.00	-7.23
8,522.0	2.50	287.30	8,501.8	102.8	-127.0	-472.1	488.5	0.42	0.42	0.11
8,616.0	3.00	276.90	8,595.7	196.7	-126.1	-476.5	492.5	0.75	0.53	-11.06

Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 11D-24D
Project:	Mesa	TVD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 11D-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 11D-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,711.0	3.40	277.70	8,690.5	291.5	-125.4	-481.8	497.3	0.42	0.42	0.84
8,805.0	3.40	277.40	8,784.4	385.4	-124.7	-487.3	502.3	0.02	0.00	-0.32
8,899.0	3.60	281.50	8,878.2	479.2	-123.7	-493.0	507.5	0.34	0.21	4.36
8,994.0	3.70	288.10	8,973.0	574.0	-122.2	-498.8	512.6	0.45	0.11	6.95
9,088.0	3.70	289.20	9,066.8	667.8	-120.2	-504.6	517.5	0.08	0.00	1.17
9,145.0	3.90	287.70	9,123.7	724.7	-119.0	-508.1	520.5	0.39	0.35	-2.63
Projection to Bit										
9,200.0	4.09	286.25	9,178.6	779.5	-117.9	-511.8	523.7	0.39	0.35	-2.64

Survey Annotations				
Measured Depth (')	Vertical Depth (')	Local Coordinates		Comment
		+N/-S (')	+E/-W (')	
9,200.0	9,178.6	-117.9	-511.8	Projection to Bit

Checked By: _____	Approved By: _____	Date: _____
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