

Results of Directional Survey

API number:	30-025-40474		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	HALLERTA 4 FEDERAL # 3H

surface	ULSTR:	B	04	T 26S	R 32E
				330 FNL	2180 FEL

BH Loc	ULSTR:	O	04	T 26S	R 32E
13948	MD	9463.3	TVD	285 FSL	1679 FEL
				4995 FNL	

Top Perf/OH	ULSTR:	B	04	T 26S	R 32E
12086	MD	9433.7	TVD	3138 FNL	1797 FEL

Bot Perf/OH	ULSTR:	O	04	T 26S	R 32E
13869	MD	9462.0	TVD	363 FSL	1687 FEL
				4917 FNL	

	MD	N/S	E/W	VD
	12075	-2796.89	382.67	9433.49
TOP PERFS/OH	12086	-2807.89	382.80	9433.66
	12169	-2890.87	383.79	9434.90
	13780	-4498.03	486.13	9461.61
BOT PERFS/OH	13869	-4586.74	493.33	9462.03
	13875	-4592.72	493.82	9462.06

NEXT TO LAST	13875	-4592.72	493.82	9462.06
LAST READING	13948	-4665.37	500.81	9463.25
TD	13948	-4665.37	500.81	9463.25

Surface Location	330	FN	2180	FE
Projected BHL	4995	FN	1679	FE
Location of				
Top Perfs/OH	3138	FN	1797	FE
Bottom Perfs/OH	4917	FN	1687	FE

SUMMARY of Subsurface Locations

Surface Location	B-04-26S-32E	330	FN	2180	FE	Vert. Depth
Top Perfs/OH	B-04-26S-32E	3138	FN	1797	FE	9433.66
Bottom Perfs/OH	O-04-26S-32E	4917	FN	1687	FE	9462.03
Projected TD	O-04-26S-32E	4995	FN	1679	FE	9463.25

JAN 29 2014

Reservoir Development

Drilling & Measurements (Anadrill)

4301 SW 44th St

Oklahoma City, Oklahoma 73119 USA

Phone: (405) 682-2284

Fax: (405) 682-3937

October 15, 2013

Cimarex

600 N MARIENFELD STREET SUITE 600

MIDLAND, TX 79701

HOBBS OCD

JAN 13 2014

RECEIVED

Re:

S4-T26S-R32E 330 FNL 660 FEL
N 32.07875 W 103.67361CLIENT: Cimarex Energy Co.
WELL: Hallertau 4 Federal #3H
FIELD: Bone Spring Wildcat
RIG: Cactus 116
COUNTY: Lea
API NO: 30-025-40474
JOB NO: 13MLD0409

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation.

Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Sam Maxfield MWD	Hallertau 4 Federal #3H Original Hole	8922.00 Ft to 13875.00 Ft	September 19, 2013 to September 25, 2013	SlimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.

Sincerely,

Jasem Alharer
Field Service Manager

Reservoir Development

Drilling & Measurements (Anadrill)

4301 SW 44th St

Oklahoma City, Oklahoma 73119 USA

Phone: (405) 682-2284

Fax: (405) 682-3937

HOBBS OCD

Schlumberger

JAN 13 2014

RECEIVED

Well Reference:

S4-T26S-R32E 330 FNL 660 FEL

N 32.07875 W 103.67361

I, Sam Maxfield certify that; I am employed by Drilling & Measurements (formerly Anadrill), a division of Schlumberger Technology Corporation; that I did on the day(s) of September 19, 2013 through September 25, 2013, conduct or supervise the taking of the SlimPulse surveys from a depth of 0.00 feet to a depth of 13875.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Cimarex Energy Co. for the Hallertau 4 Federal #3H Well (Original Hole) API No. 30-025-40474 and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Sam Maxfield
MWD

[Signature]
for
Sam Maxfield

Subscribed and Sworn to before me this 15th day of October (month) 2013 (yr)

My Commission expires:

September 5, 2016

Michelle Ellwood

Notary Public

Midland, Texas

(County State)



SCHLUMBERGER

Survey Report

23-Oct-2013

Client.....: CIMAREX ENERGY CO. OF COL
Field.....: Bone Spring Wildcat

Well.....: Hallertau 4 Federal #3H
API number.....: 30-025-40474
Engineer.....: S. Maxfield

Spud date.....: 9-Sep-13
Last survey date.....: 25-Sep-13
Total accepted surveys...: 73
MD of first survey.....: 8922.00 ft
MD of last survey.....: 13875.00 ft

County.....: Lea
State.....: New Mexico
Rig.....: Cactus 116

Latitude.....: 32° 4' 43.468" N
Longitude.....: 103° 40' 42.676" W

----- Survey calculation methods-----

Method for positions...: Minimum curvature
Method for DLS.....: Lubinski

----- Depth reference -----

Permanent datum.....: MSL
Depth reference.....: Driller's Depth
GL above permanent.....: 3306.00
KB above permanent.....: 3324.00
DF above permanent.....: 3324.00

----- Vertical section origin-----

Latitude (+N/-).....: 0.00 ft
Departure (+E/-).....: 0.00 ft

----- Grid Coordinates -----

NAD83 New Mexico State Planes, Eastern Zone, US Foot

X.....: 392998.69 ft
Y.....: 744149.72 ft

Azimuth from Vsect Origin to target: 175.44 degrees

----- MWD Survey Reference Criteria-----

-----Run1----- Calculation Date: 19-Sep-2013
Location G....: 998.81488 mgn Tolerance G....: 2.50 mgn
Location B....: 48255.89 nT Tolerance B....: 300.00 nT
Magnetic Dip: 59.929 degrees Tolerance Dip: 0.45 degrees

-----Run2----- Calculation Date: 22-Sep-2013
Location G....: 998.81488 mgn Tolerance G....: 2.50 mgn
Location B....: 48255.89 nT Tolerance B....: 300.00 nT
Magnetic Dip: 59.929 degrees Tolerance Dip: 0.45 degrees

BGGM Model: BGGM 2012

-----Run1-----
Magnetic dec (+E/-).....: 7.456 degrees
Grid Conv (+E/-).....: 0.34777 degrees
Total Azim Corr (+E/-)....: 7.10823 degrees

-----Run2-----
Magnetic dec (+E/-).....: 7.456 degrees
Grid Conv (+E/-).....: 0.34777 degrees
Total Azim Corr (+E/-)....: 7.10823 degrees

----- Survey Correction Index Description-----

0 = Uncorrected 1 = Sag Corrected

2 = DMAG Corrected 3 = Sag + DMAG Corrected

===== Survey List =====													
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azi (deg)	DLS (deg/100ft)	Tool	Correction
1	0.00	0.00	0.00	-999.25	0.00	0.00	0.00	0.00	0	90.00	0.00	TIP	0
2	143.00	0.22	34.47	143.00	143.00	-0.21	0.23	0.16	0.27454	34.47	0.15	Other	0
3	325.60	0.48	26.56	182.60	325.60	-1.14	1.20	0.70	1.3867	30.12	0.14	Other	0
4	467.80	0.31	53.98	142.20	467.79	-1.85	1.96	1.27	2.33601	33.03	0.18	Other	0
5	563.00	0.65	40.45	95.20	562.99	-2.37	2.52	1.83	3.1162	36.01	0.37	Other	0
6	755.00	1.32	49.09	192.00	754.96	-4.45	4.80	4.21	6.38296	41.26	0.36	Other	0
7	896.68	1.58	40.18	141.68	896.59	-6.80	7.36	6.70	9.95429	42.33	0.24	Other	0
8	986.62	2.02	38.07	89.94	986.49	-8.85	9.55	8.48	12.77517	41.59	0.49	Other	0
9	1076.59	2.20	30.47	89.97	1076.40	-11.43	12.29	10.33	16.05804	40.06	0.37	Other	0
10	1124.28	2.20	26.95	47.69	1124.05	-12.96	13.90	11.21	17.85575	38.90	0.28	Other	0

11	1163.21	2.20	25.59	38.93	1162.96	-14.24	15.24	11.87	19.31668	37.93	0.13	Other	0
12	1186.51	2.20	25.59	23.30	1186.24	-15.02	16.04	12.26	20.19134	37.39	0.00	Other	0
13	1294.23	2.29	30.16	107.72	1293.88	-18.57	19.77	14.24	24.3601	35.76	0.19	Other	0
14	1388.69	1.41	29.15	94.46	1388.29	-21.09	22.41	15.75	27.39464	35.09	0.93	Other	0
15	1482.87	1.32	24.27	94.18	1482.44	-23.01	24.42	16.76	29.61439	34.47	0.16	Other	0
16	1578.61	1.41	25.59	95.74	1578.15	-24.99	26.48	17.72	31.86576	33.79	0.10	Other	0
17	1674.47	1.41	27.96	95.86	1673.98	-27.00	28.59	18.78	34.20761	33.31	0.06	Other	0
18	1769.44	0.88	15.88	94.97	1768.93	-28.67	30.32	19.53	36.06829	32.79	0.61	Other	0
19	1864.44	0.70	359.27	95.00	1863.92	-29.94	31.60	19.72	37.2539	31.97	0.30	Other	0
20	1958.53	0.79	6.83	94.09	1958.01	-31.15	32.82	19.79	38.32926	31.09	0.14	Other	0
21	2052.11	0.48	301.57	93.58	2051.58	-32.01	33.67	19.54	38.92623	30.12	0.78	Other	0
22	2240.58	0.48	333.69	188.47	2240.05	-33.21	34.79	18.51	39.4092	28.02	0.14	Other	0
23	2431.54	0.40	355.97	190.96	2431.00	-34.62	36.17	18.11	40.45304	26.60	0.10	Other	0
24	2526.68	0.31	2.39	95.14	2526.14	-35.20	36.76	18.10	40.97447	26.21	0.10	Other	0
25	2620.58	0.22	300.07	93.90	2620.04	-35.56	37.10	17.95	41.21994	25.82	0.30	Other	0
26	2780.00	0.31	26.95	159.42	2779.46	-36.10	37.64	17.89	41.67485	25.41	0.23	Other	0
27	2808.59	0.40	216.66	28.59	2808.05	-36.09	37.63	17.86	41.65429	25.39	2.47	Other	0
28	2902.99	0.48	232.75	94.40	2902.44	-35.63	37.13	17.35	40.98068	25.05	0.16	Other	0
29	2997.85	0.48	228.88	94.86	2997.30	-35.18	36.63	16.73	40.26691	24.55	0.03	Other	0
30	3091.26	0.31	200.98	93.41	3090.71	-34.72	36.13	16.35	39.65844	24.34	0.27	Other	0
31	3185.87	0.22	192.89	94.61	3185.32	-34.31	35.72	16.22	39.22495	24.42	0.10	Other	0
32	3282.79	0.22	122.18	96.92	3282.24	-34.02	35.44	16.33	39.01813	24.74	0.26	Other	0
33	3469.21	0.40	89.49	186.42	3468.65	-33.76	35.25	17.29	39.26078	26.12	0.13	Other	0
34	3563.33	0.48	86.06	94.12	3562.77	-33.74	35.28	18.01	39.61062	27.04	0.09	Other	0
35	3659.87	0.62	88.56	96.54	3659.31	-33.70	35.32	18.93	40.07595	28.19	0.15	Other	0
36	3719.74	0.40	77.58	59.87	3719.17	-33.72	35.37	19.46	40.37454	28.82	0.40	Other	0
37	3915.00	0.62	28.89	195.26	3914.43	-34.69	36.45	20.64	41.88341	29.52	0.24	Other	0
38	3942.72	0.88	91.77	27.72	3942.14	-34.79	36.57	20.92	42.13291	29.77	2.93	Other	0
39	4037.12	1.10	81.58	94.40	4036.53	-34.77	36.68	22.54	43.05479	31.57	0.30	Other	0
40	4131.70	1.10	98.36	94.58	4131.09	-34.63	36.68	24.34	44.0227	33.57	0.34	Other	0
41	4226.53	1.49	104.16	94.83	4225.90	-34.03	36.25	26.44	44.86396	36.10	0.43	Other	0
42	4321.39	1.49	100.96	94.86	4320.73	-33.31	35.71	28.84	45.9045	38.93	0.09	Other	0
43	4416.45	0.88	98.36	95.06	4415.77	-32.81	35.37	30.78	46.88684	41.03	0.64	Other	0
44	4495.72	0.88	122.67	79.27	4495.03	-32.31	34.95	31.89	47.31703	42.38	0.47	Other	0
45	4684.73	1.10	80.08	189.01	4684.01	-31.60	34.48	34.90	49.06303	45.35	0.40	Other	0
46	4781.58	1.01	79.29	96.85	4780.84	-31.78	34.80	36.66	50.54514	46.49	0.09	Other	0
47	4970.26	0.88	81.27	188.68	4969.50	-32.06	35.33	39.72	53.16095	48.35	0.07	Other	0
48	5064.01	1.10	96.87	93.75	5063.24	-31.93	35.33	41.33	54.37173	49.47	0.37	Other	0
49	5158.36	1.01	97.88	94.35	5157.57	-31.58	35.11	43.05	55.55169	50.80	0.10	Other	0
50	5252.93	0.88	85.49	94.57	5252.13	-31.40	35.05	44.60	56.72564	51.83	0.26	Other	0
51	5348.65	0.79	81.75	95.72	5347.84	-31.44	35.21	45.99	57.91413	52.56	0.11	Other	0
52	5443.49	1.01	94.58	94.84	5442.66	-31.35	35.23	47.47	59.11246	53.41	0.31	Other	0
53	5538.03	0.70	5.87	94.54	5537.20	-31.78	35.74	48.35	60.1297	53.53	1.29	Other	0
54	5632.84	0.70	98.76	94.81	5632.00	-32.22	36.23	48.99	60.92767	53.52	1.07	Other	0
55	5725.59	0.62	87.77	92.75	5724.75	-32.07	36.16	50.05	61.74514	54.15	0.16	Other	0
56	5821.45	0.88	86.19	95.86	5820.60	-32.04	36.23	51.30	62.80469	54.77	0.27	Other	0
57	6012.78	0.88	86.37	191.33	6011.91	-31.99	36.42	54.23	65.32793	56.12	0.00	Other	0
58	6107.21	0.70	69.36	94.43	6106.33	-32.14	36.67	55.50	66.51765	56.54	0.31	Other	0
59	6202.93	1.01	58.55	95.72	6202.04	-32.69	37.32	56.76	67.93109	56.68	0.36	Other	0
60	6390.66	0.70	5.87	187.73	6389.75	-34.56	39.32	58.29	70.31439	56.00	0.43	Other	0
61	6497.00	0.79	68.48	106.34	6496.08	-35.41	40.24	59.04	71.44741	55.73	0.73	Other	0
62	6593.61	0.88	84.08	96.61	6592.68	-35.63	40.56	60.40	72.75158	56.12	0.25	Other	0
63	6687.27	0.62	93.09	93.66	6686.33	-35.58	40.60	61.62	73.7945	56.62	0.30	Other	0
64	6780.40	0.70	106.27	93.13	6779.46	-35.31	40.42	62.67	74.5716	57.18	0.18	Other	0
65	6875.23	0.70	116.78	94.83	6874.28	-34.80	39.99	63.74	75.24993	57.89	0.14	Other	0
66	6969.35	0.88	107.29	94.12	6968.39	-34.23	39.52	64.95	76.02455	58.68	0.24	Other	0
67	7063.67	0.88	97.66	94.32	7062.70	-33.81	39.21	66.35	77.07294	59.42	0.16	Other	0
68	7158.10	0.79	106.05	94.43	7157.12	-33.43	38.93	67.70	78.09499	60.10	0.16	Other	0
69	7252.62	0.79	130.75	94.52	7251.63	-32.73	38.33	68.82	78.77136	60.89	0.36	Other	0
70	7346.88	1.01	122.58	94.26	7345.88	-31.77	37.45	70.01	79.40033	61.85	0.27	Other	0
71	7441.88	0.79	138.18	95.00	7440.87	-30.74	36.52	71.15	79.97625	62.83	0.34	Other	0
72	7537.08	0.70	120.38	95.20	7536.06	-29.89	35.73	72.09	80.4622	63.63	0.26	Other	0
73	7726.57	0.88	126.58	189.49	7725.53	-28.27	34.28	74.26	81.79013	65.22	0.11	Other	0
74	7820.00	1.00	143.90	93.43	7818.95	-27.10	33.19	75.32	82.30648	66.22	0.33	Other	0
75	7914.00	1.50	129.80	94.00	7912.93	-25.54	31.74	76.74	83.0506	67.53	0.62	Other	0
76	8008.00	0.10	170.80	94.00	8006.91	-24.60	30.87	77.70	83.61243	68.33	1.52	Other	0
77	8104.00	0.60	147.20	96.00	8102.91	-24.07	30.37	77.99	83.69334	68.72	0.53	Other	0
78	8198.00	0.90	146.00	94.00	8196.90	-23.00	29.34	78.67	83.96288	69.54	0.32	Other	0
79	8292.00	1.00	142.80	94.00	8290.89	-21.66	28.08	79.58	84.38548	70.56	0.12	Other	0
80	8480.00	1.40	124.30	188.00	8478.85	-18.84	25.48	82.47	86.31208	72.83	0.29	Other	0
81	8668.00	0.90	125.60	188.00	8666.81	-16.45	23.32	85.56	88.68594	74.75	0.27	Other	0
82	8856.00	0.30	106.00	188.00	8854.80	-15.32	22.33	87.24	90.04985	75.64	0.33	Other	0
83	8922.00	0.76	147.17	66.00	8920.80	-14.88	21.91	87.64	90.33888	75.96	0.86	SlimPulse	0
84	8954.00	5.06	148.54	32.00	8952.75	-13.43	20.53	88.49	90.84338	76.94	13.45	SlimPulse	0
85	8985.00	9.26	149.49	31.00	8983.50	-9.97	17.21	90.47	92.09681	79.23	13.54	SlimPulse	0
86	9017.00	13.54	148.60	32.00	9014.86	-4.31	11.80	93.73	94.47294	82.83	13.39	SlimPulse	0
87	9048.00	18.39	147.55	31.00	9044.66	3.26	4.57	98.25	98.35724	87.34	15.69	SlimPulse	0
88	9080.00	23.21	146.10	32.00	9074.56	13.22	-4.93	104.48	104.59753	92.70	15.13	SlimPulse	0
89	9112.00	28.03	143.23	32.00	9103.41	25.09	-16.20	112.50	113.66474	98.19	15.55	SlimPulse	0
90	9144.00	32.42	141.54	32.00	9131.05	38.58	-28.94	122.35	125.72348	103.31	13.97	SlimPulse	0
91	9176.00	35.95	141.96	32.00	9157.52	53.54	-43.06	133.47	140.24871	107.88	11.06	SlimPulse	0
92	9207.00	38.84	143.03	31.00	9182.15	69.34	-58.00	144.93	156.10509	111.81	9.55	SlimPulse	0
93	9239.00	41.82	143.53	32.00	9206.54	86.87	-74.60	157.31	174.10136	115.37	9.36	SlimPulse	0

94	9271.00	45.21	143.45	32.00	9229.74	105.56	-92.30	170.42	193.80933	118.44	10.60	SlimPulse	0
95	9302.00	49.16	143.16	31.00	9250.81	124.81	-110.53	184.01	214.65199	120.99	12.77	SlimPulse	0
96	9334.00	52.97	143.33	32.00	9270.91	145.87	-130.47	198.90	237.87243	123.26	11.90	SlimPulse	0
97	9365.00	56.16	144.48	31.00	9288.88	167.40	-150.88	213.77	261.6551	125.21	10.74	SlimPulse	0
98	9397.00	57.69	145.01	32.00	9306.35	190.46	-172.78	229.25	287.06527	127.00	4.96	SlimPulse	0
99	9428.00	61.00	145.97	31.00	9322.15	213.56	-194.75	244.35	312.46678	128.55	11.03	SlimPulse	0
100	9460.00	64.20	147.27	32.00	9336.87	238.45	-218.47	259.98	339.58539	130.04	10.61	SlimPulse	0
101	9491.00	65.81	149.26	31.00	9349.97	263.44	-242.37	274.75	366.37447	131.42	7.81	SlimPulse	0
102	9523.00	67.01	152.21	32.00	9362.78	290.08	-267.95	289.08	394.16284	132.83	9.25	SlimPulse	0
103	9555.00	67.93	156.07	32.00	9375.05	317.62	-294.54	301.96	421.82748	134.29	11.50	SlimPulse	0
104	9586.00	68.95	159.17	31.00	9386.44	345.06	-321.20	312.94	448.44005	135.75	9.87	SlimPulse	0
105	9617.00	70.86	162.36	31.00	9397.09	373.22	-348.68	322.52	474.97368	137.23	11.45	SlimPulse	0
106	9649.00	73.24	164.80	32.00	9406.95	403.01	-377.88	331.12	502.4298	138.77	10.38	SlimPulse	0
107	9681.00	75.68	167.12	32.00	9415.53	433.42	-407.79	338.60	530.03508	140.30	10.36	SlimPulse	0
108	9712.00	77.84	168.77	31.00	9422.62	463.33	-437.30	344.89	556.93757	141.74	8.66	SlimPulse	0
109	9744.00	79.49	170.12	32.00	9428.91	494.53	-468.14	350.64	584.89552	143.17	6.61	SlimPulse	0
110	9775.00	82.86	171.86	31.00	9433.67	525.07	-498.39	355.43	612.14786	144.50	12.21	SlimPulse	0
111	9807.00	86.25	174.66	32.00	9436.70	556.89	-530.02	359.17	640.25007	145.88	13.70	SlimPulse	0
112	9838.00	87.80	176.35	31.00	9438.31	587.85	-560.88	361.59	667.33365	147.19	7.39	SlimPulse	0
113	9870.00	88.35	176.44	32.00	9439.39	619.83	-592.80	363.61	695.42538	148.48	1.74	SlimPulse	0
114	9897.00	89.00	177.74	27.00	9440.01	646.81	-619.75	364.98	719.23708	149.51	5.41	SlimPulse	0
115	9992.00	90.14	179.70	95.00	9440.72	741.64	-714.72	367.09	803.4821	152.81	2.38	SlimPulse	0
116	10087.00	90.24	179.75	95.00	9440.41	836.38	-809.72	367.55	889.23356	155.59	0.12	SlimPulse	0
117	10182.00	89.93	179.12	95.00	9440.27	931.15	-904.71	368.49	976.87801	157.84	0.74	SlimPulse	0
118	10277.00	90.28	178.54	95.00	9440.10	1025.98	-999.69	370.43	1066.11765	159.67	0.71	SlimPulse	0
119	10372.00	89.79	177.00	95.00	9440.04	1120.90	-1094.62	374.13	1156.79028	161.13	1.70	SlimPulse	0
120	10467.00	90.31	176.15	95.00	9439.95	1215.88	-1189.45	379.81	1248.61527	162.29	1.04	SlimPulse	0
121	10561.00	90.24	176.98	94.00	9439.50	1309.86	-1283.28	385.44	1339.91209	163.28	0.89	SlimPulse	0
122	10655.00	90.07	177.62	94.00	9439.25	1403.81	-1377.17	389.87	1431.29308	164.19	0.71	SlimPulse	0
123	10749.00	90.34	179.24	94.00	9438.91	1497.68	-1471.13	392.45	1522.57794	165.06	1.75	SlimPulse	0
124	10938.00	90.38	180.87	189.00	9437.72	1686.05	-1660.12	392.27	1705.83745	166.71	0.86	SlimPulse	0
125	11033.00	90.10	181.18	95.00	9437.32	1780.60	-1755.11	390.58	1798.03946	167.45	0.44	SlimPulse	0
126	11128.00	90.55	181.38	95.00	9436.78	1875.11	-1850.08	388.45	1890.42117	168.14	0.52	SlimPulse	0
127	11223.00	91.58	181.50	95.00	9435.01	1969.57	-1945.03	386.06	1982.97661	168.77	1.09	SlimPulse	0
128	11317.00	90.72	181.54	94.00	9433.12	2063.02	-2038.98	383.57	2074.7447	169.35	0.92	SlimPulse	0
129	11411.00	89.48	181.04	94.00	9432.95	2156.53	-2132.95	381.46	2166.7957	169.86	1.42	SlimPulse	0
130	11506.00	89.55	181.52	95.00	9433.75	2251.03	-2227.93	379.34	2259.99027	170.34	0.52	SlimPulse	0
131	11600.00	90.21	179.80	94.00	9433.95	2344.64	-2321.92	378.26	2352.52522	170.75	1.96	SlimPulse	0
132	11694.00	90.45	179.43	94.00	9433.41	2438.39	-2415.91	378.90	2445.44311	171.09	0.47	SlimPulse	0
133	11790.00	89.90	179.10	96.00	9433.12	2534.17	-2511.90	380.12	2540.50216	171.39	0.67	SlimPulse	0
134	11885.00	90.34	179.58	95.00	9432.92	2628.95	-2606.90	381.21	2634.62179	171.68	0.69	SlimPulse	0
135	11980.00	89.93	179.56	95.00	9432.69	2723.70	-2701.89	381.93	2728.75308	171.95	0.44	SlimPulse	0
136	12075.00	89.11	179.54	95.00	9433.49	2818.46	-2796.89	382.67	2822.94307	172.21	0.87	SlimPulse	0
137	12169.00	89.17	179.10	94.00	9434.90	2912.23	-2890.87	383.79	2916.23267	172.44	0.48	SlimPulse	0
138	12264.00	89.00	177.96	95.00	9436.41	3007.08	-2985.82	386.23	3010.69995	172.63	1.21	SlimPulse	0
139	12359.00	89.38	177.47	95.00	9437.75	3101.99	-3080.74	390.02	3105.3279	172.78	0.65	SlimPulse	0
140	12454.00	90.21	178.24	95.00	9438.10	3196.91	-3175.67	393.58	3199.96541	172.94	1.19	SlimPulse	0
141	12549.00	89.66	177.63	95.00	9438.21	3291.82	-3270.61	397.01	3294.6136	173.08	0.86	SlimPulse	0
142	12644.00	87.94	176.78	95.00	9440.21	3386.75	-3365.47	401.63	3389.34865	173.19	2.02	SlimPulse	0
143	12739.00	88.90	176.67	95.00	9442.83	3481.68	-3460.28	407.06	3484.13596	173.29	1.02	SlimPulse	0
144	12833.00	88.35	175.78	94.00	9445.09	3575.65	-3554.04	413.25	3577.98787	173.37	1.11	SlimPulse	0
145	12928.00	89.59	176.18	95.00	9446.80	3670.63	-3648.79	419.91	3672.87428	173.44	1.37	SlimPulse	0
146	13023.00	89.11	175.47	95.00	9447.88	3765.62	-3743.53	426.83	3767.78665	173.50	0.91	SlimPulse	0
147	13118.00	89.62	175.53	95.00	9448.94	3860.61	-3838.23	434.28	3862.72374	173.54	0.55	SlimPulse	0
148	13213.00	89.21	175.62	95.00	9449.91	3955.61	-3932.95	441.60	3957.66022	173.59	0.44	SlimPulse	0
149	13308.00	89.52	175.64	95.00	9450.96	4050.60	-4027.66	448.84	4052.59555	173.64	0.33	SlimPulse	0
150	13402.00	88.04	175.55	94.00	9452.97	4144.57	-4121.36	456.06	4146.51819	173.69	1.58	SlimPulse	0
151	13497.00	87.94	175.12	95.00	9456.30	4239.52	-4215.99	463.78	4241.42098	173.72	0.46	SlimPulse	0
152	13592.00	88.69	175.21	95.00	9459.10	4334.47	-4310.61	471.79	4336.34974	173.75	0.80	SlimPulse	0
153	13686.00	88.93	175.53	94.00	9461.04	4428.45	-4404.28	479.37	4430.29276	173.79	0.43	SlimPulse	0
154	13780.00	90.38	176.22	94.00	9461.61	4522.44	-4498.03	486.13	4524.22689	173.83	1.70	SlimPulse	0
155	13875.00	89.07	174.50	95.00	9462.06	4617.44	-4592.72	493.82	4619.18709	173.86	2.28	SlimPulse	0
156	13948.00	89.07	174.50	73.00	9463.25	4690.42	-4665.37	500.81	4692.17308	173.87	0.01	Other	7