

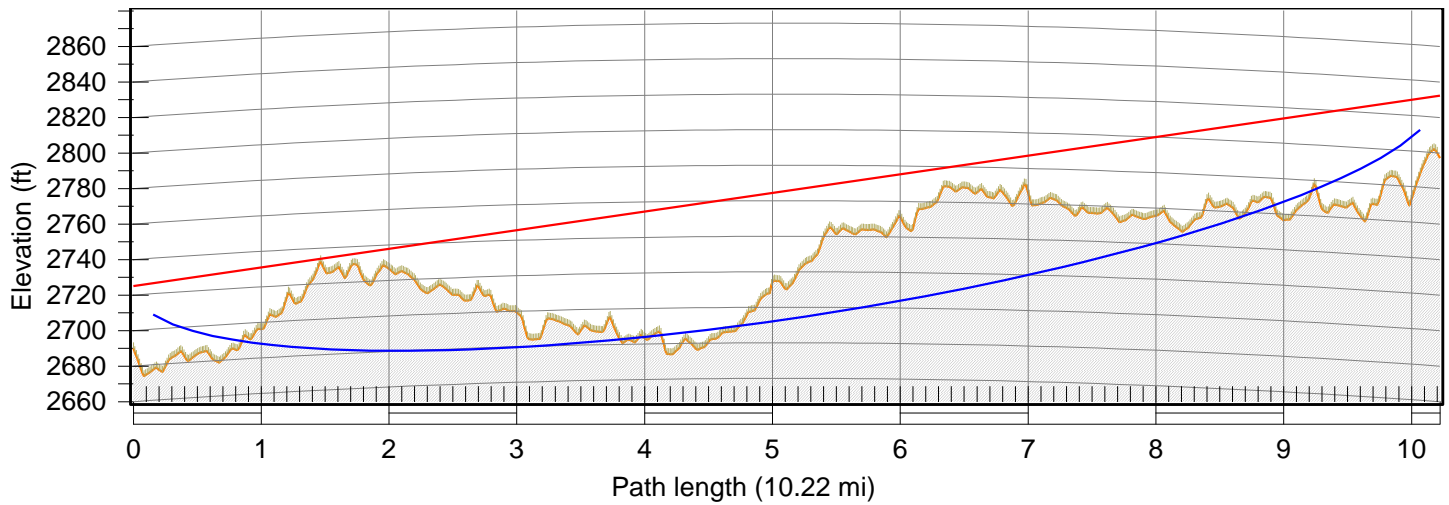
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	98.89°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Colt	
Latitude	31 50 52.00 N
Longitude	101 46 01.00 W
Azimuth	278.97°
Elevation	2618 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to colt.pl5)

	Boomer (Pump 3)	Colt
Latitude	31 52 04.00 N	31 50 52.00 N
Longitude	101 54 58.00 W	101 46 01.00 W
True azimuth (°)	98.89	278.97
Vertical angle (°)	-0.13	0.06
Elevation (ft)	2689.92	2617.75
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	45.00	45.00
TX line loss (dB)	1.77	1.77
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	8.88	
Free space loss (dB)	114.80	
Atmospheric absorption loss (dB)	0.07	
Diffraction loss	15.60	
Net path loss (dB)	119.20	119.20
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	32.88	38.38
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-89.20	-89.20
Receive signal (µv)	7.75	7.75
Receive field strength (µv/m)	87.93	87.93
Thermal fade margin (dB)	5.80	5.80
Annual location availability (%)	83.29865	83.29865
Annual location unavailability (min)	87782.29	87782.29
Annual multipath availability (%)	76.85446	76.85446
Annual multipath unavailability (min)	121652.94	121652.94



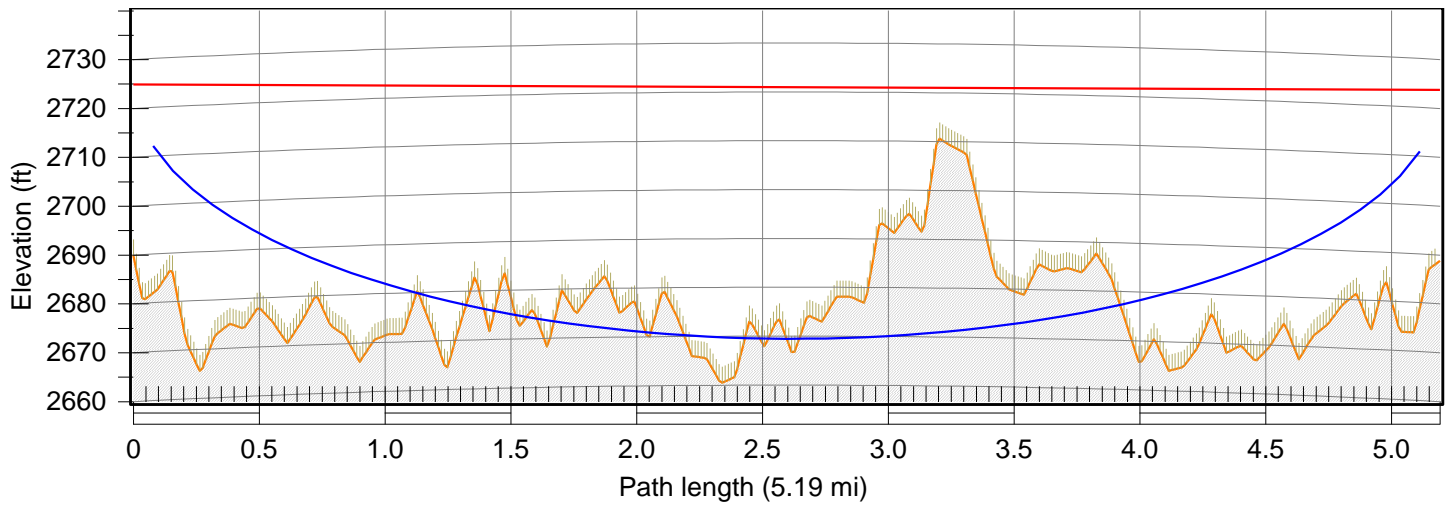
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	275.99°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

GBGH	
Latitude	31 52 59.31 N
Longitude	102 05 20.53 W
Azimuth	95.90°
Elevation	2797 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to GBGH.pl5)

	Boomer (Pump 3)	GBGH
Latitude	31 52 04.00 N	31 52 59.31 N
Longitude	101 54 58.00 W	102 05 20.53 W
True azimuth (°)	275.99	95.90
Vertical angle (°)	0.06	-0.17
Elevation (ft)	2689.92	2797.11
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	10.22	
Free space loss (dB)	116.02	
Atmospheric absorption loss (dB)	0.08	
Diffraction loss	11.30	
Net path loss (dB)	114.96	114.96
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-84.96	-84.96
Receive signal (µv)	12.63	12.63
Receive field strength (µv/m)	133.92	133.92
Thermal fade margin (dB)	10.04	10.04
Annual location availability (%)	95.28734	95.28734
Annual location unavailability (min)	24769.77	24769.77
Annual multipath availability (%)	90.56726	90.56726
Annual multipath unavailability (min)	49578.46	49578.46



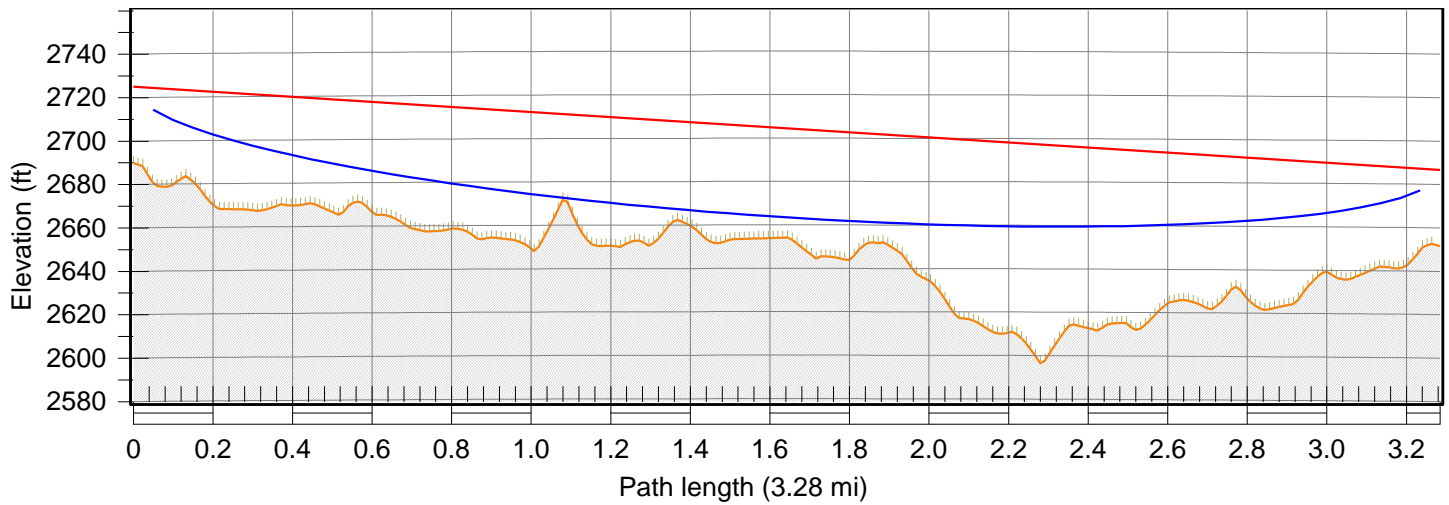
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	0.05°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Buchanan (Pump 1)	
Latitude	31 56 35.28 N
Longitude	101 54 57.72 W
Azimuth	180.05°
Elevation	2689 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 1.pl5)

	Boomer (Pump 3)	Buchanan (Pump 1)
Latitude	31 52 04.00 N	31 56 35.28 N
Longitude	101 54 58.00 W	101 54 57.72 W
True azimuth (°)	0.05	180.05
Vertical angle (°)	-0.03	-0.03
Elevation (ft)	2689.92	2688.80
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	5.19	
Free space loss (dB)	110.14	
Atmospheric absorption loss (dB)	0.04	
Diffraction loss	12.14	
Net path loss (dB)	109.87	109.87
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-79.87	-79.87
Receive signal (µv)	22.69	22.69
Receive field strength (µv/m)	240.52	240.52
Thermal fade margin (dB)	15.13	15.13
Annual location availability (%)	99.41504	99.41504
Annual location unavailability (min)	3074.53	3074.53
Annual multipath availability (%)	96.97523	96.97523
Annual multipath unavailability (min)	15898.18	15898.18



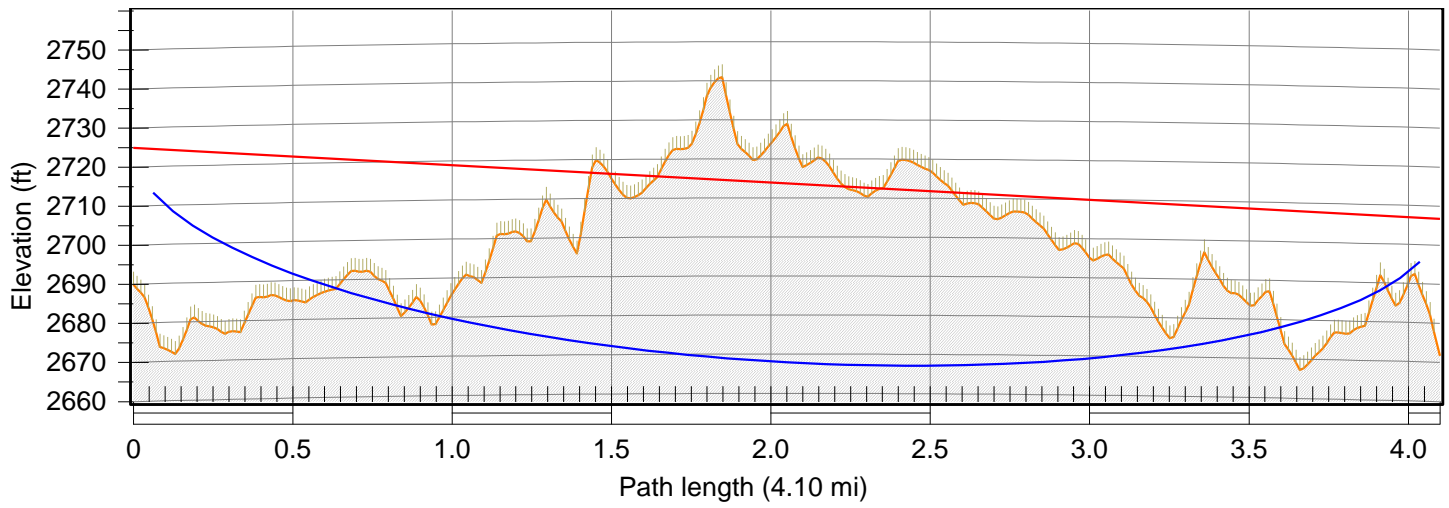
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	43.91°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Meissner (Pump 2)	
Latitude	31 54 07.60 N
Longitude	101 52 38.50 W
Azimuth	223.93°
Elevation	2652 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 2.pl5)

	Boomer (Pump 3)	Meissner (Pump 2)
Latitude	31 52 04.00 N	31 54 07.60 N
Longitude	101 54 58.00 W	101 52 38.50 W
True azimuth (°)	43.91	223.93
Vertical angle (°)	-0.14	0.11
Elevation (ft)	2689.92	2651.61
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	3.28	
Free space loss (dB)	106.16	
Atmospheric absorption loss (dB)	0.03	
Diffraction loss	0.00	
Net path loss (dB)	93.74	93.74
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-63.74	-63.74
Receive signal (µv)	145.33	145.33
Receive field strength (µv/m)	1540.62	1540.62
Thermal fade margin (dB)	31.26	31.26
Annual location availability (%)	99.99999	99.99999
Annual location unavailability (min)	0.05	0.05
Annual multipath availability (%)	99.92516	99.92516
Annual multipath unavailability (min)	393.33	393.33



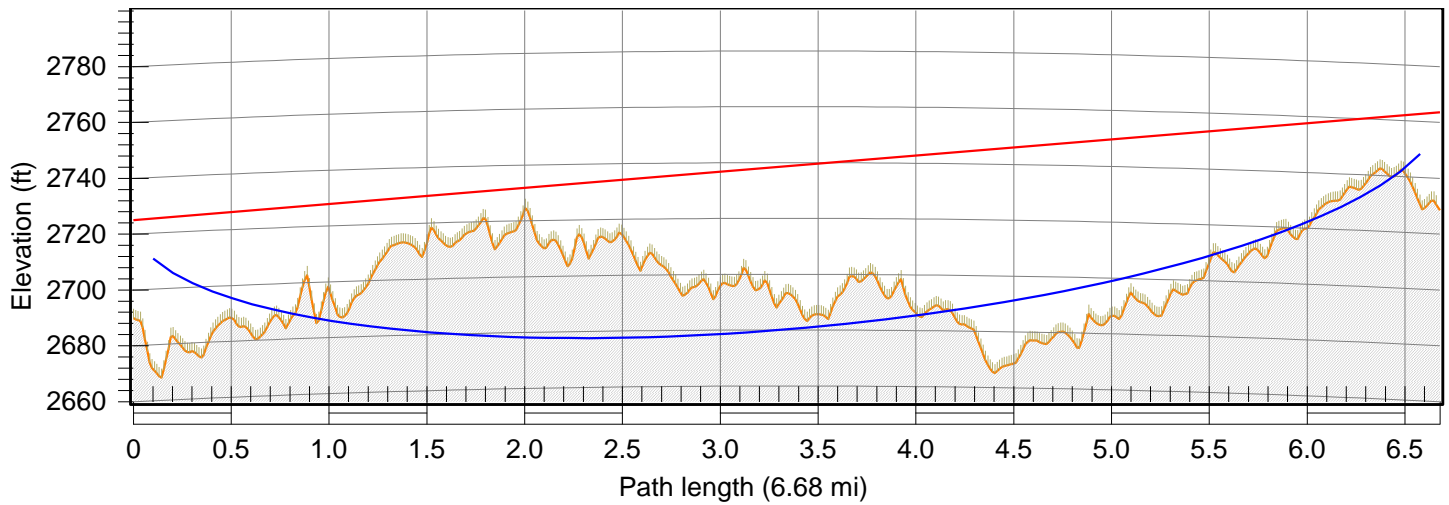
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	256.52°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

1160 (Pump 4)	
Latitude	31 51 14.00 N
Longitude	101 59 02.00 W
Azimuth	76.48°
Elevation	2672 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 4.pl5)

	Boomer (Pump 3)	1160 (Pump 4)
Latitude	31 52 04.00 N	31 51 14.00 N
Longitude	101 54 58.00 W	101 59 02.00 W
True azimuth (°)	256.52	76.48
Vertical angle (°)	0.08	0.15
Elevation (ft)	2689.92	2671.70
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	4.10	
Free space loss (dB)	108.08	
Atmospheric absorption loss (dB)	0.03	
Diffraction loss	17.69	
Net path loss (dB)	113.36	113.36
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-83.36	-83.36
Receive signal (µv)	15.19	15.19
Receive field strength (µv/m)	160.99	160.99
Thermal fade margin (dB)	11.64	11.64
Annual location availability (%)	97.38020	97.38020
Annual location unavailability (min)	13769.66	13769.66
Annual multipath availability (%)	93.37360	93.37360
Annual multipath unavailability (min)	34828.35	34828.35



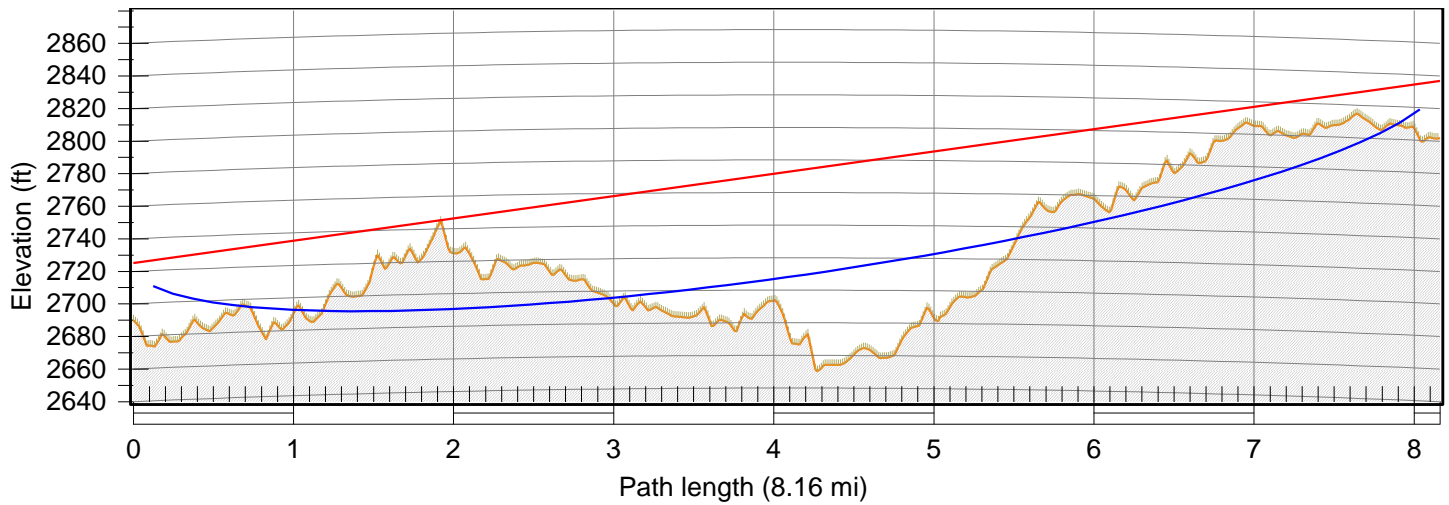
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	246.91°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

BR (Pump 5)	
Latitude	31 49 47.00 N
Longitude	102 01 14.00 W
Azimuth	66.86°
Elevation	2729 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 5.pl5)

	Boomer (Pump 3)	BR (Pump 5)
Latitude	31 52 04.00 N	31 49 47.00 N
Longitude	101 54 58.00 W	102 01 14.00 W
True azimuth (°)	246.91	66.86
Vertical angle (°)	0.03	-0.10
Elevation (ft)	2689.92	2728.57
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	6.68	
Free space loss (dB)	112.32	
Atmospheric absorption loss (dB)	0.05	
Diffraction loss	11.35	
Net path loss (dB)	111.28	111.28
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-81.28	-81.28
Receive signal (µv)	19.29	19.29
Receive field strength (µv/m)	204.50	204.50
Thermal fade margin (dB)	13.72	13.72
Annual location availability (%)	98.88783	98.88783
Annual location unavailability (min)	5845.54	5845.54
Annual multipath availability (%)	95.84000	95.84000
Annual multipath unavailability (min)	21864.98	21864.98



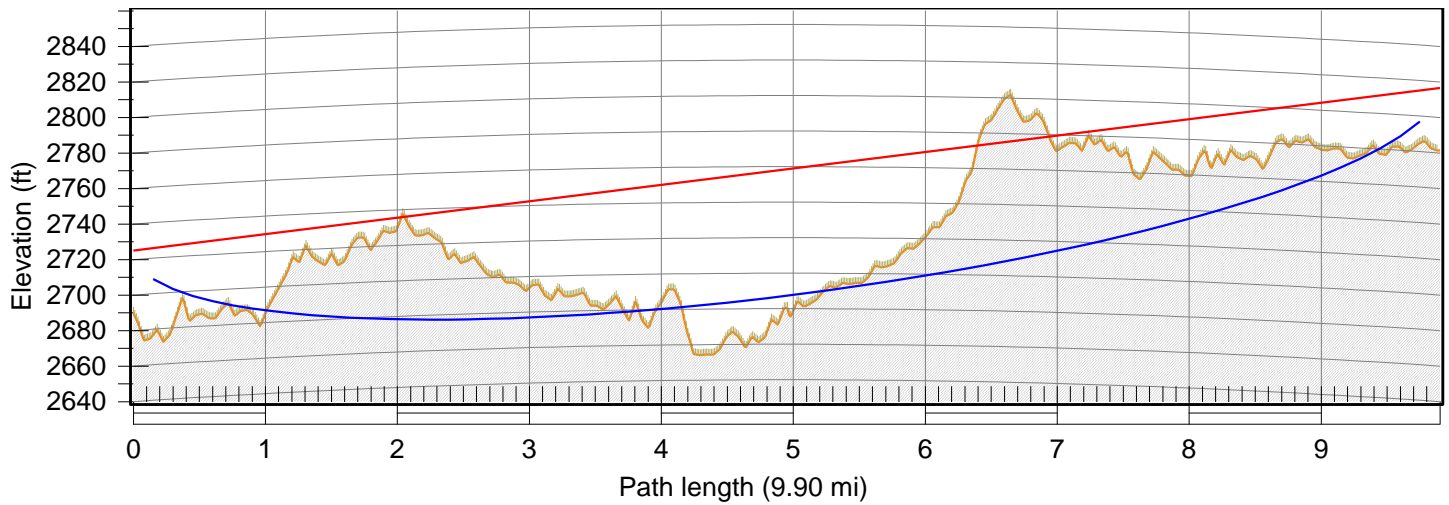
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	260.04°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Sooner (Pump 6)	
Latitude	31 50 50.00 N
Longitude	102 03 10.00 W
Azimuth	79.97°
Elevation	2802 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 6.pl5)

	Boomer (Pump 3)	Sooner (Pump 6)
Latitude	31 52 04.00 N	31 50 50.00 N
Longitude	101 54 58.00 W	102 03 10.00 W
True azimuth (°)	260.04	79.97
Vertical angle (°)	0.10	-0.19
Elevation (ft)	2689.92	2801.84
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	8.16	
Free space loss (dB)	114.06	
Atmospheric absorption loss (dB)	0.06	
Diffraction loss	10.77	
Net path loss (dB)	112.45	112.45
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-82.45	-82.45
Receive signal (µv)	16.86	16.86
Receive field strength (µv/m)	178.74	178.74
Thermal fade margin (dB)	12.55	12.55
Annual location availability (%)	98.17494	98.17494
Annual location unavailability (min)	9592.52	9592.52
Annual multipath availability (%)	94.58998	94.58998
Annual multipath unavailability (min)	28435.06	28435.06



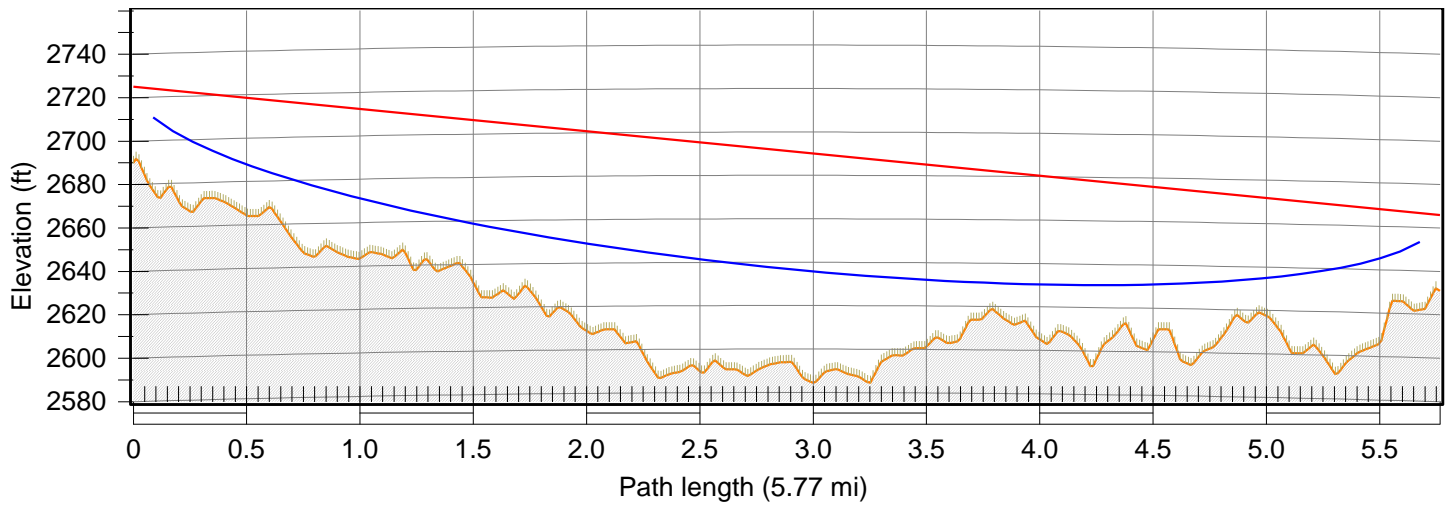
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	269.05°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Puentes (Pump 7)	
Latitude	31 51 55.00 N
Longitude	102 05 04.00 W
Azimuth	88.96°
Elevation	2781 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 7.pl5)

	Boomer (Pump 3)	Puentes (Pump 7)
Latitude	31 52 04.00 N	31 51 55.00 N
Longitude	101 54 58.00 W	102 05 04.00 W
True azimuth (°)	269.05	88.96
Vertical angle (°)	0.09	-0.07
Elevation (ft)	2689.92	2781.42
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	9.90	
Free space loss (dB)	115.74	
Atmospheric absorption loss (dB)	0.08	
Diffraction loss	17.30	
Net path loss (dB)	120.68	120.68
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-90.68	-90.68
Receive signal (µv)	6.54	6.54
Receive field strength (µv/m)	69.32	69.32
Thermal fade margin (dB)	4.32	4.32
Annual location availability (%)	76.42406	76.42406
Annual location unavailability (min)	123915.16	123915.16
Annual multipath availability (%)	69.08565	69.08565
Annual multipath unavailability (min)	162485.81	162485.81



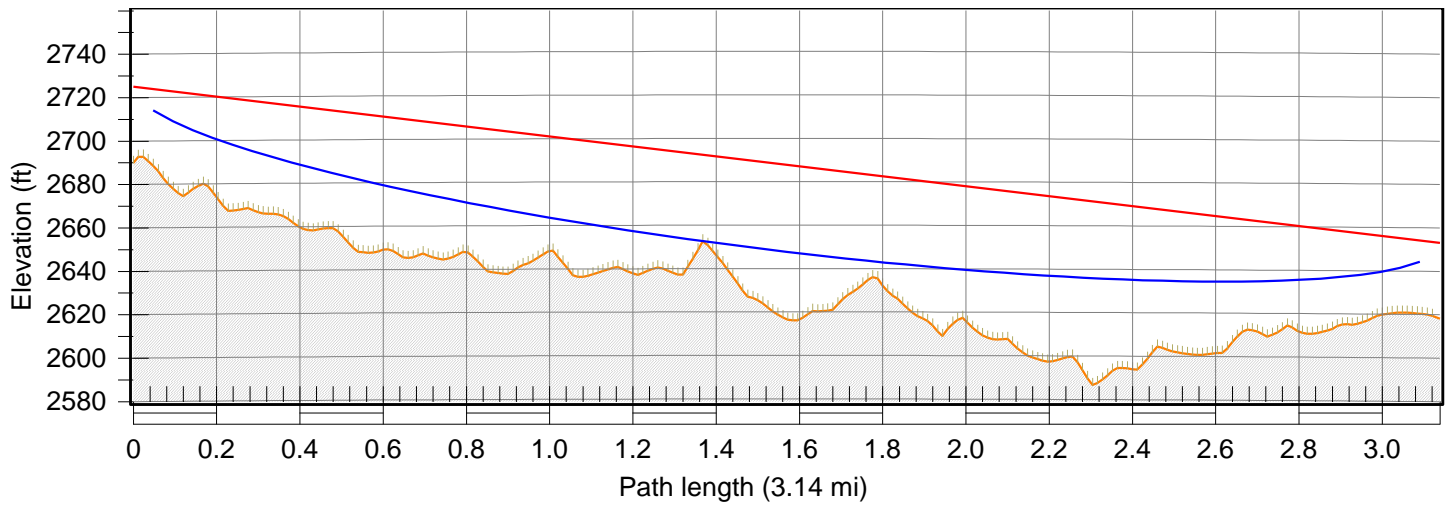
Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	89.97°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

Floyd Pits (Pump 8)	
Latitude	31 52 04.00 N
Longitude	101 49 05.00 W
Azimuth	270.03°
Elevation	2631 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to pump 8.pl5)

	Boomer (Pump 3)	Floyd Pits (Pump 8)
Latitude	31 52 04.00 N	31 52 04.00 N
Longitude	101 54 58.00 W	101 49 05.00 W
True azimuth (°)	89.97	270.03
Vertical angle (°)	-0.14	0.08
Elevation (ft)	2689.92	2630.87
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	30.00	30.00
TX line loss (dB)	1.18	1.18
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	5.77	
Free space loss (dB)	111.05	
Atmospheric absorption loss (dB)	0.04	
Diffraction loss	0.00	
Net path loss (dB)	98.65	98.65
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	33.47	38.97
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-68.65	-68.65
Receive signal (µv)	82.60	82.60
Receive field strength (µv/m)	875.59	875.59
Thermal fade margin (dB)	26.35	26.35
Annual location availability (%)	99.99944	99.99944
Annual location unavailability (min)	2.96	2.96
Annual multipath availability (%)	99.76850	99.76850
Annual multipath unavailability (min)	1216.76	1216.76



Boomer (Pump 3)	
Latitude	31 52 04.00 N
Longitude	101 54 58.00 W
Azimuth	109.58°
Elevation	2690 ft ASL
Antenna CL	35.0 ft AGL

Frequency (MHz) = 915.0
K = 1.33
%F1 = 60.00

T Pump	
Latitude	31 51 09.00 N
Longitude	101 51 57.00 W
Azimuth	289.61°
Elevation	2618 ft ASL
Antenna CL	35.0 ft AGL

Transmission details (boomer pump 3 to t pump.pl5)

	Boomer (Pump 3)	T Pump
Latitude	31 52 04.00 N	31 51 09.00 N
Longitude	101 54 58.00 W	101 51 57.00 W
True azimuth (°)	109.58	289.61
Vertical angle (°)	-0.27	0.23
Elevation (ft)	2689.92	2618.11
Antenna model	MFB9153 (TR)	PC906N (TR)
Antenna gain (dBd)	3.00	8.50
Antenna height (ft)	35.00	35.00
TX line model	LMR 400	LMR 400
TX line unit loss (dB/100 ft)	3.93	3.93
TX line length (ft)	45.00	45.00
TX line loss (dB)	1.77	1.77
Connector loss (dB)	0.50	0.50
Frequency (MHz)	915.00	
Polarization	Vertical	
Path length (mi)	3.14	
Free space loss (dB)	105.76	
Atmospheric absorption loss (dB)	0.02	
Diffraction loss	0.00	
Net path loss (dB)	94.53	94.53
Radio model	Orbit 900MHz 1.25-1.0Mbps	Orbit 900MHz 1.25-1.0Mbps
TX power (dBm)	30.00	30.00
EIRP (dBm)	32.88	38.38
RX threshold level (dBm)	-95.00	-95.00
RX threshold level (µv)	3.98	3.98
Receive signal (dBm)	-64.53	-64.53
Receive signal (µv)	132.78	132.78
Receive field strength (µv/m)	1506.53	1506.53
Thermal fade margin (dB)	30.47	30.47
Annual location availability (%)	99.99998	99.99998
Annual location unavailability (min)	0.10	0.10
Annual multipath availability (%)	99.91036	99.91036
Annual multipath unavailability (min)	471.13	471.13