

## Project Report Appendices

The following section contains the appendices as listed in the Missouri FEMA 2017 LiDAR Project Report.

## Appendix A

# Flight Logs

There were 65 total lifts. Available flight logs are found on the following pages.

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# 20171202A (SN0754, C-FFRY)

## LIDAR Flight Log

 Julian Day **336** Flight **A**

Date	02-DEC-2017	Aircraft	PA-31 C-FFRY
Project	3136_QSH-RollaRolla	Pilot	M McQuarrie
Location	Springfield MO	Operator	E.R. Rutledge
Mission Objective			

System	Riegl Q1580
Unit	2220754
IMU	Applanix AP50
GPS Rx	Trimble
Scanner 1 Drive	A-1
Scanner 2 Drive	A-2

Additional Notes	
Temp	+13°C
Humidity	46%
Altitude	1019 hPa
Terrain Height	418m


**AIRBORNE**  
TIMING  
A Clean Harbors Company

Aircraft Block Time			
Engine On	15:51	Ramp Out	16:08
Engine Off	19:50	Ramp In	19:43
Total	4.0 hrs	Total	3.5 hrs

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Static Alignment		GPS Time	
Pre Mission	16:03	Start	End
Post Mission	19:43	16:08	19:48

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted		Mission ID	Comments
				Start	End	Time	nmi to End		
TEST STRIP		G	N/A	16:13	16:15			17202161322	
PPP B		G	2400'	16:24	16:28			N/A	
999		G	2400'	16:30	16:42			163023	X-TIE @ 500' AGL
PPP B		G	2400'	16:51	16:56			N/A	
998		G	2400'	16:57	17:09			165741	X-TIE @ 500' AGL
PPP B		G	2400'	17:09	17:13			N/A	
PPP B		G	2100'	17:40	17:45			N/A	
996		G	2100'	17:46	17:58			174610	X-TIE @ 500' AGL
PPP B		G	2100'	18:11	18:16			N/A	
997		G	2100'	18:17	18:24			181740	X-TIE @ 500' AGL
PPP B		G	2100'	18:24	18:29			N/A	
31		G	7600'	18:41	18:59			184150	CLOUDS FORMING @ FLIGHT LEVEL
PPP B		G	7600'	19:00	19:05			N/A	ABORT MISSION

# 20171205A (SN0754, C-FFRY)



**Additional Notes**  
 Temp 0°C  
 Humidity 54%  
 Altimeter 102.6 hPa  
 Terrain Height 420 m

**System** Riegl Q1560  
**Unit** 2220754  
**IMU** Applanix AP50  
**GPS Rx** Trimble  
**Scanner 1 Drive** B-1  
**Scanner 2 Drive** B-2

**Julian Day** 339 **Flight A**

**Date** 05-DEC-2017 **Aircraft** PA-31 C-FFRY  
**Project** 3136\_OSH-RollaRolla **Pilot** M McQuarrie  
**Location** Springfield MO **Operator** E.R. Rutledge  
**Mission Objective** 32 → EAST W/X-TIE

Static Alignment		GPS Time	
Start	End	Start	End
Pre Mission	14:00	14:00	14:05
Post Mission	20:23	20:23	20:28

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Aircraft Block Time			
Engine On	14:52	Ramp Out	14:05
Engine Off	20:30	Ramp In	20:23
Total	6.6 hrs	Total	6.2 hrs

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted	Mission ID	Comments
				Start	End			
TEST STRIP		C	N/A	14:14	14:18		17205_141410	
PPP B		C	7600'	14:40	14:45		N/A	
32		000.1°	7600'	14:49	15:09		144916	
33		180.1°	7600'	15:13	15:32		151309	
34		000.1°	7600'	15:35	15:55		153545	
35		180.1°	7600'	15:58	16:16		155839	
36		000.1°	7600'	16:21	16:41		162119	
37		180.1°	7600'	16:45	17:03		164519	
38		000.1°	7600'	17:07	17:28		170723	
39		180.1°	7600'	17:31	17:50		173133	
40		000.1°	7600'	17:54	18:15		175409	
41		180.1°	7600'	18:18	18:37		181859	
42		000.1°	7600'	18:41	19:03		184149	
43		180.1°	7600'	19:07	19:25		190705	
X-TIE		270° +/-	7600'	19:29	19:36		192903	X-TIE LN'S 43 → 32
PPP B		C	7600'	19:36	19:41		N/A	

X-TIE LN'S 43 → 32  
 Pg 1 of 1

# 20171206A (SN0754, C-FFRY)

## LIDAR Flight Log

Julian Day 340 Flight A

Date 00-Dec-2017 Aircraft PA-31 C-FFRY  
 Project 3136 OS-RolaRola Pilot M McQuarrie  
 Location Springfield MO Operator E.R. Rutledge  
 Mission Objective 44 → 605 WIK-TIS

System Riegl Q1560  
 Unit 2220754  
 IMU Applanix AP50  
 GPS Rx Trimble  
 Scanner 1 Drive A-1  
 Scanner 2 Drive A-2

Additional Notes  
 Temp 0°C  
 Humidity 57%  
 Altitude 1026 hPa  
 Terrain Height 420m



Aircraft Block Time			
Engine On 13:53	Ramp Out 14:05	Takeoff 14:07	
Engine Off 19:24	Ramp In 19:17	Landing 19:14	
Total 5.5 hrs	Total 5.1 hrs		

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Static Alignment		GPS Time	
Pre Mission	End	Start	End
14:00	14:05	19:17	19:22

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted		Mission ID	Comments
				Start	End	Time	nmi to End		
TEST STRIP		G	N/A	14:14	14:16			171206_141427	
PPP B		G	7600'	14:43	14:50			N/A	
44		000.1°	7600'	14:51	15:11			145117	
45		180.1°	7600'	15:15	15:33			151505	
46		000.1°	7600'	15:36	15:56			153640	
47		180.1°	7800'	16:08	16:14			160804	
48		000.1°	7800'	16:18	16:25			161823	
49		180.1°	7800'	16:28	16:35			162885	
50		000.1°	7800'	16:38	16:46			163848	
51		180.1°	7700'	16:49	16:56			164902	
52		000.1°	7700'	16:59	17:07			165935	
53		180.1°	7700'	17:10	17:15			171015	
54		000.1°	7700'	17:18	17:24			171834	
55		180.1°	7700'	17:27	17:32			172713	
56		000.1°	7700'	17:35	17:41			173541	



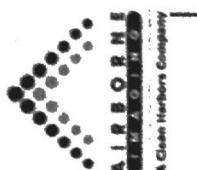


# 20171208A (SN0754, C-FFRY)

**Julian Day 342 Flight A**

**LIDAR Flight Log**

System	Riegl Q1560
Unit	2220754
IMU	Applanix AP50
GPS Rx	Trimble
Scanner 1 Drive	B-1
Scanner 2 Drive	B-2



Additional Notes

Temp -9°C  
Humidity 77%  
Altimeter 1026 hPa  
Terrain Height 420

Aircraft Block Time			
Engine On	12:35	Ramp Out	12:53
Engine Off	17:20	Ramp In	17:13
Total	4.8 hrs	Total	4.3 hrs

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted		Mission ID	Comments
				Start	End	Time	nmt to End		
TEST STRIP		C	N/A	12:59	13:01			171208125952	
PPP8		C	7900'	13:03	13:08			N/A	
30		360.0°	7900'	13:09	13:25			130951	
29		180.0°	7900'	13:28	13:43			132816	
28		000.0°	7900'	13:46	14:01			134623	
27		180.0°	7900'	14:04	14:19			140432	
26		000.0°	7900'	14:22	14:37			142248	
25		180.0°	8000'	14:41	14:56			144100	
24		000.0°	8000'	14:59	15:14			145920	
23		180.0°	8000'	15:17	15:32			151729	
22		000.0°	8000'	15:35	15:50			153541	
21		180.0°	7900'	15:53	16:09			155347	
20		000.0°	7900'	16:12	16:27			161208	
19		180.0°	7800'	16:30	16:46			163023	
X-TIE		090°+L	7800'	16:49	16:54			164906	X-TIE LN 3 19-30
PPP8		C	7800'	16:54	16:59			N/A	

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# 20171210A (SN329, N6GR)

Scanned by CamScanner

**Project:** M.O.-FEMA  
**Aircraft:** NGGR  
**Dep Apt:** KSGF  
**CORS:** Y/N  
**GPS Unit:** Y/N

**Date:** 12-10-17  
**UIC:** 0808  
**Page:** 2 of 2

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**Flight Mgmt File:** 3417-A  
**Pilot:** MUELLER  
**Co-Pilot:** -  
**Tech:** SC/BOONE

**Proj #:** 30396  
**Begin Hobbs:** 3652.7  
**End Hobbs:** 3657.0  
**Total:** 4.3  
**Alt Apt:** KSGF  
**Arr Time (Local):** [Z]  
**Tot Time Aloft:**

**Sta 1:** ZKC1  
**Sta 2:**

**Flyovers:** Y/N IF Y, times: Sta1) Sta2)  
**Flyovers:** Y/N IF Y, times: Sta1) Sta2)

**Gd Temp beg:** 11 °C **End:** 11 °C **OAT beg:** 4 °C **End:** 3 °C **Altimeter begin:** 30.14 **end:** 30.11

**Serial #:** 389  
**Max Alt:** 1863 ft  
**Power:** HIGH

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POF/Sea	GPS Altitude	Crab	Turb	FLIGHT LINE NOTES - visibility, clouds, smoke, porfils, etc
TEST		18:47	18:48			METERS			
79	90	19:04	19:23	144		2023	8		WIND 280/11 SKC Vis 9
78	270	19:27	19:46	134		2022	-6		GAP 16 Miles from W. END 14-19
77	90	19:55	20:12	138		2020	8		GAP E. END 4 MI IN
77	270	20:16	20:19	142		2020	-7		FLW E. END TO 7 MI TO FILL GAP
76	270	20:26	20:44	136		2016	-6		
75	90	20:47	21:05	136		2019	8		
74	270	21:09	21:27	134		2013	-6		
73	90	21:30	21:48	138		2010	8		
72	270	21:52	22:10	134		2010	-6		
CROSS	0	22:13	22:15	138		1990	-		
78	90	22:20	22:23	144		2022	9		FLW 12-19 From W. END

**Total Proj Lines:** 194

**Lines Flown:** 9

**Lines Remain:** 185

**Online Time:** 3.3


**Mob Time:** 1.0

**Notes:**

# 20171211A (SN0754, C-FFRY)

Julian Day 345 Flight A

## LIDAR Flight Log



**AIRBORNE**  
A Clean Harbors Company

Date 11-Dec-2017	Aircraft PA-31 C-FFRY
Project 3136_QSI-RolarRolla	Pilot M McQuarrie
Location Springfield MO	Operator E.R. Rutledge
Mission Objective 1B → WEST W/ X.T.V	

System Riegl Q1560	Additional Notes
Unit 2220754	Temp +2°C
IMU Applimac AP50	Humidity 57%
GPS Rx Trimble	Altimeter 1019 hPa
Scanner 1 Drive A-1	Terrain Height 420m
Scanner 2 Drive A-2	

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's


Aircraft Block Time			
Engine On	12:35	Ramp Out	12:49
Engine Off	19:52	Ramp In	19:45
Total	7.3 hrs	Total	6.8 hrs

Static Alignment		GPS Time	
Pre Mission	12:44	Start	12:44
Post Mission	19:45	End	19:50

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted		Mission ID	Comments
				Start	End	Time	nmi to End		
TEST STRIP		G	N/A	12:55	12:57			17211_25534	
PP0 B		G	7800'	13:03	13:08			N/A	
18		360.0°	7800'	13:10	13:25			131025	
17		180.0°	7800'	13:28	13:44			132843	
16		000.0°	7800'	13:47	14:02			134713	
15		180.0°	7800'	14:05	14:20			140523	
14		000.0°	7900'	14:23	14:39			142330	
13		180.0°	7900'	14:41	14:57			144154	
12		000.0°	7900'	14:59	15:15			145957	
11		180.0°	7900'	15:18	15:33			151823	
10		000.0°	7900'	15:37	15:53			153721	
09		180.0°	8000'	15:56	16:11			155602	
08		000.0°	7900'	16:14	16:30			161407	
07		180.0°	7900'	16:32	16:48			163232	
06		000.0°	8000'	16:50	17:03			165056	

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Julian Day 345 Flight A



**AIRBORNE**  
 A Clean Harbors Company

Date 11-Dec-2017	Aircraft PA-31 C-FFRY	System Riegl Q1560
Project 3136 QSI-RollerRolla	Pilot M McQuarrie	Unit 2220754
Location Springfield MO	Operator E.R. Rutledge	IMU Applimix AP50
Mission Objective 1B → WEST W/ X.T.V		GPS Rx Trimble
		Scanner 1 Drive A-1
		Scanner 2 Drive A-2

Additional Notes			
Temp	+ 2°C	Humidity	57%
Altimeter	1019 hPa	Terrain Height	420m

Aircraft Block Time			
Engine On	12:35	Ramp Out	12:49
Engine Off	19:52	Ramp In	19:45
Total	7.3 hrs	Total	6.8 hrs

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Static Alignment		GPS Time	
Pre Mission	12:44	Start	End
Post Mission	19:45	12:44	19:50

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted		Mission ID	Comments
				Start	End	Time	nmi to End		
TEST STRIP		G	N/A	12:55	12:57			17211_25534	
1B		G	7800'	13:03	13:08			N/A	
17		360.0°	7800'	13:10	13:25			131025	
16		180.0°	7800'	13:28	13:44			132843	
15		000.0°	7800'	13:47	14:02			134713	
14		180.0°	7800'	14:05	14:20			140523	
13		000.0°	7900'	14:23	14:39			142330	
12		180.0°	7900'	14:41	14:57			144154	
11		000.0°	7900'	14:59	15:15			145957	
10		180.0°	7900'	15:18	15:33			151823	
09		000.0°	8000'	15:37	15:53			153721	
08		180.0°	8000'	15:56	16:11			155602	
07		000.0°	7900'	16:14	16:30			161407	
06		180.0°	7900'	16:32	16:48			163232	
05		000.0°	8000'	16:50	17:03			165056	

# 20171212A (SN7161, N812TB)

AMission

**Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email: log.daily.to.flight\_log\_distribution\_list@quantumspatial.com)

Project: MO LIDAR USGS      Proj #: 30396      Date: 12-12-17A  
UNCD B C D E      Flight Mgmt File: 20171212-135525      Page 1 of 2

Aircraft: 812TB      Begin Hobbs: 48265      End Hobbs: 4830.1      Total: 3.9      Pilot: TRADTKE      Co-Pilot: JSWAN  
 Dep Apt: JEF      Dep Time (Lcl): 811 (Z)      Arr Apt: JEF      Arr Time (Local): 1215 (Z)      Tot Time Aloft: 3.9

CORS: YIN      Sta 1: MOEL/MOVE      Sta 2: \_\_\_\_\_      Flyovers: Y/N      If Y, times: Sta1      Sta2) \_\_\_\_\_

GPS Unit: YIN      Sta 1: \_\_\_\_\_      Sta 2: \_\_\_\_\_      Flyovers: Y/N      If Y, times: Sta1      Sta2) \_\_\_\_\_

Gd Temp beg: \_\_\_\_\_ °C      End: \_\_\_\_\_ °C      OAT beg: \_\_\_\_\_ °C      End: \_\_\_\_\_ °C      Altimeter begin: \_\_\_\_\_      end: \_\_\_\_\_

Line #	Type	Hdg	Start (UTC)	End (UTC)	Gd Spd	GPS Altitude	Crb	Turb (0..3)	Altimeter begin:				Altimeter end:				Storage Name/ #
									Alt AGL	Alt Anstl	Pulsos In Air	Mpia YIN	Avg Terr Ht	Max Gdspd	Avg Ft Spanding	PPSM	
ZA001	90	1430	1434	150	1.3/16	7000	-15	0									
ZA002	270	1438	1444	134	1.3/15	7010	+15	0									
ZA003	70	1447	1451	165	1.2/15	7000	-15	0									
ZA004	270	1455	1500	129	1.1/16	7000	+15	0									
ZA005	90	1504	1508	158	1.4/16	7000	-15	0									
ZA006	270	1520	1534	166	1.0/17	7000	+15	0									
ZA007	90	1538	1554	136	1.9/16	7000	-15	0									
ZA008	270	1558	1558	165	1.1/17	7000	+15	0									
ZA009	270	1604	1620	151	1.2/17	7013	+15	0									
ZA010	90	1622	1637	115	1.3/16	6950	-15	0									
ZA011	270	1644	1656	163	1.2/18	7000	+15	0									
ZA012	90	1659	1716	137	1.2/17	6988	-15	0									
ZA013	270	1718	1731	157	1.3/19	6990	+15	0									
ZA014	90	1736	1752	139	1.3/19	6978	-15	0									
ZA015	270	1755	1759	137	1.3/19	7000	0	0									

FLIGHT LINE NOTES - Visibility, cloud, smoke, partial, etc.

Aloft wing line ZA006

H665 = 3.7  
online = 3.4  
M06 = 0.5

# 20171212B (SN7161, N812TB)

**Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email Log daily to flight\_log\_distribution\_list@quantumspatial.com)

Project: B Mission Flight Mgmt File: Z 171212-185030 Date: 12-12-17 B  
Page 2 of 2

UIC: A 0 C D E Tech: \_\_\_\_\_

Aircraft: 812TB Begin Hobbs: 4830.4 End Hobbs: 4832.3 Total: 1.9 Pilot: \_\_\_\_\_ Co-Pilot: \_\_\_\_\_  
 Dep Apt: JEF Dep Time (Lcl): 1300 (Z): 1900 Arr Apt: JEF Arr Time (Local): 1454 (Z): 1854 Tot Time Aloft: 1.9  
 CORs: Y/N Sta 1: MOEL/MVE Sta 2: \_\_\_\_\_ Flyovers: Y/N IF Y, times: Sta 1 Sta2) \_\_\_\_\_  
 GPS Unit: Y/N Sta 1: \_\_\_\_\_ Sta 2: \_\_\_\_\_ Flyovers: Y/N IF Y, times: Sta 1 Sta2) \_\_\_\_\_

Gd Temp beg: \_\_\_\_\_ °C End: \_\_\_\_\_ °C OAT beg: \_\_\_\_\_ °C End: \_\_\_\_\_ °C Altimeter begin: \_\_\_\_\_ end: \_\_\_\_\_  
 Type ALS70 Serial # 7161 Alt ANSL \_\_\_\_\_ Avg Terr \_\_\_\_\_ Avg Ft \_\_\_\_\_  
 FOV 3 Scan Freq \_\_\_\_\_ Mpsia Y/N \_\_\_\_\_ Pulses in Air \_\_\_\_\_ Max Gddpd \_\_\_\_\_ Avg Ft Spacing \_\_\_\_\_  
 Power \_\_\_\_\_

Line #	Hdg	Slant (UTC)	Enf (UTC)	Gd Spd	MOEL-Hobbs	GPS Altitude	Grb	Hub (0.0-3)
2A014	90	1919	1934	148	1020	4986	-12	0
2A015	270	1938	1954	155	1020	7000	12	0
2A016	90	1957	2012	160	1119	7100	-12	0
2A017	270	2015	2032	132	1218	7021	12	0
Xtic	0	2035	2037	160	1218	7050	0	0

FLIGHT LINE NOTES - visibility, clouds, smoke, parat, etc.

18 Hobb = 1.9  
 ANline = 1.3  
 MOEL = 0.6

A18 Hobb = 5.8  
 ANline = 4.7  
 MOEL = 1.1

Storage Name: 01

B

# 20171212A (SN0754, C-FFRY)

## LIDAR Flight Log

Julian Day <b>346</b> Flight <b>A</b>		Date <b>12-DEC-2017</b>		Aircraft <b>PA-31C-FFRY</b>	
Project <b>3138_QSI-RollaRolla</b>		Pilot <b>M McQuarrie</b>		System <b>Riegl Q1560</b>	
Location <b>Springfield MO</b>		Operator <b>E.R. Rutledge</b>		Unit <b>2220754</b>	
Mission Objective		GPS Rx <b>Trimble</b>		IMU <b>Applanix AP50</b>	
Scanner 1 Drive <b>B-1</b>		Scanner 2 Drive <b>B-2</b>		Additional Notes Temp <b>-2°C</b> Humidity <b>67%</b> Altimeter <b>1029 MPA</b> Terrain Height <b>420m</b>	

Aircraft Block Time			Mission Plan			Static Alignment		GPS Time	
Engine On	Ramp Out	Takeoff	AGL Height	Pulse Rate	800,000	Hz	Start	End	Hz
15:15	15:27	15:30	2200	160	178	178	15:22	15:27	15:27
20:43	20:36	20:32	100	100	60	60	20:36	20:41	20:41
<b>Total</b>	<b>5.5</b>	<b>hrs</b>							

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted	Mission ID	Comments
				Start	End			
TEST STRIP		G	N/A	15:34	15:36		171212_153428	
89		G	8100'	15:41	15:46	15:48	N/A	
89		090.6°	8100'	15:54	16:10		154709	-SNAP SHOT FROZE
88		271.2°	8100'	16:14	16:33		155414	-SNAP SHOT OK
87		090.6°	8100'	16:36	16:52		161416	AFTER RE-BOOT
86		271.2°	8100'	16:55	17:14		163619	
85		090.6°	8100'	17:17	17:33		165543	
84		271.2°	8100'	17:37	17:56		171716	
83		090.6°	8100'	17:59	18:16		173714	
82		271.2°	8100'	18:19	18:38		175945	
67		090.6°	7900'	18:45	19:02		181934	-MOVE NORTH TO
66		271.2°	7900'	19:05	19:23		184531	AVOID ACTIVE
65		090.6°	7900'	19:26	19:42		190504	RESTRICTED AREA
64		271.2°	7900'	19:45	20:04		192630	
							194547	





# 20171212B (SN329, N6GR)

Scanned by CamScanner

**Alborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email log daily to flight\_log\_identification, link@quantumspatial.com)

**Date:** 12-12-17  
**File:** A010117

**Project:** MO-FEMA    **Proj #:** 30396    **Flight Mgmt File:** 7/617-D  
**Aircraft:** N6GR    **Begin Hobbs:** 36593    **End Hobbs:** 36630    **Total:** 37    **Pilot:** MUCLEB    **Co-Pilot:** -    **Tech:** Scl/col/JF

**Dep Apt:** KSGF    **Dep Time (Local):** 18:44 (Z: 18:12)    **Arr Apt:** KSGF    **Arr Time (Local):** 16:43 (Z: 20:12)    **Tot Time Aloft:**

**CORS:** D/N    **Sta 1:** 2KCD    **Sta 2:**    **Flyovers:** Y/N    **IF Y, times: Sta1**    **Sta2**

**GPS Unit:** Y(N)    **Sta 1:**    **Sta 2:**    **Flyovers:** Y/N    **IF Y, times: Sta1**    **Sta2**

**Gas Temp bag:** °C    **End:**    °C    **OAT beg:** -7    °C    **End:**    °C    **Altimeter begin:** 3022    **end:**

LIDAR	Type	Serial #	Alt AOL	Alt AMSL	Alt AV	Max Odep	Power	Avg Pt Spinning	Mag	Roll	Yaw	Heading
	FOV	20	50	MpA	IN	3	225	11611				006p

Line #	Mag	Start (UTC)	End (UTC)	Alt (ft)	Roll (°)	Yaw (°)	Heading	Notes
TEST		19:03	19:04					
71	90	19:18	19:35	138	10/18	2014	11	HIGH DARK CIRCUS VIS ±10
70	870	19:40	19:58	142	12/17	2015	-9	MOVE SWP DUE TO MOB-ACTIVE
48	90	20:03	20:19	150	11/18	2003	12	
47	270	20:24	20:41	142	12/17	2006	-9	
46	90	20:44	21:01	140	12/17	2030	13	
45	270	21:06	21:23	147	10/18	2034	-9	
44	90	21:27	21:44	140	13/16	2013	11	
43	270	21:48	22:05	136	11/16	2043	-9	
Cross	0	22:07	22:14	142	12/16	2050	-	BACK UP PASSPORT 4710 SHIFT WR 0724

**Total Proj Lines:**    **Lines Flown:**    **Lines Remain:**    **Online Time:** 2.9    **Job Time:** .8    **Notes:**





# 20171215B (SN329, N6GR)

**Project:** MO FEMA  
**Date:** 12/15/2017  
**UIN:** A B C D E  
**Flight Mgmt File:** 30396 MO FEMA-1650-ORION H  
**Pilot:** Tom Stevenson  
**Co-Pilot:** Tech: Gary Tao

**Aircraft:** N6GR  
**Begin Hobbs:** 3667  
**End Hobbs:** 3710  
**Total:** 43  
**Alt:** 1650m  
**Dep Apt:** KJEF  
**Arr Apt:** KJEF  
**Arr Time (Local):** 8:36 (Z): 02:36  
**Tot Time Aloft:**

**CORS:** Y / N  
**Sta 1:** Sta 2:  
**GPS Unit:** Y / N  
**Sta 1:** Sta 2:  
**Flyovers:** Y / N  
**Altimeter begin:** end:  
**Flyovers:** Y / N  
**Sta 1:** Sta 2:

**Gd Temp beg:** 6 °C  
**End:** °C  
**OAT beg:** °C  
**End:** °C  
**Alt:** 329  
**AGL:** 1650m  
**Alt:** 1950m  
**AGL:** 1650m  
**Scan Freq:** 50  
**Scan Freq:** 50  
**FOV:** 40°  
**Scan Freq:** 50

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	KPH/Min	GPS Altitude	Crab	Turb (0-1)	Max Cloud	Avg Pt Spacing	Power	Pulse Rate	Power	High	2.51	
67	E	22:49	22:50	253		192/14	201m	6°	0							
66	N	23:18	23:26	137		125/15	201m	6°	0							
65	E	23:40	23:51	144		121/15	201m	6°	0							
64	W	00:01	00:19	136		131/16	201m	6°	0							
63	E	00:23	00:40	146		121/17	201m	8°	0							
62	N	00:47	01:02	136		124/17	201m	5°	0							
61	E	01:06	01:24	138		131/16	201m	8°	0							
60	W	01:27	01:34	142		131/17	198m	5°	0							
	W	01:43	02:00	146		141/16	195m	5°	0							
	N	02:00	02:06	159			203m									
		02:06	02:09													

**FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.**  
 Test fire  
 opening start Twilight  
 large gap ~ 14mi F.E.E. \*  
 fill in portion for previous gap, flying eastern 17mi  
 cross TIE  
 close out S-turn  
 RTB KJEF

**Total Proj Lines:** 79  
**Lines Flown:** 8  
**Lines Remains:** N/A  
**Online Time:** 3.3  
**Job Time:** 1.0  
**Notes:** Clouds throughout afternoon. Cleared after 4PM

# 20171216A (SN329, N6GR)

Scanned by CamScanner

**Project:** MU-FEMA      **Proj #:** 30396      **Flight Mgmt File:** 35017-A      **Date:** 18-12-17

**Altcraft:** N6GR      **Begin Hobbs:** 3671.0      **End Hobbs:** 3674.8      **Total:** 3.8      **Pilot:** MUELLER      **Co-Pilot:** -      **Tech:** SCHLOSSER

**Dep Apt:** KJEF      **Dep Time (Ldt):** 08:17      **Arr Apt:** KSGF      **Arr Time (Local):** 18:06      **Tot Time Aloft:** 18:06

**CONDs:**  N      **Sta 1:**      **Sta 2:**      **Flyovers:** Y/N      **IF Y, times: Sta1**      **Sta2**

**GPS Unit:** Y/N      **Sta 1:**      **Sta 2:**      **Flyovers:** Y/N      **IF Y, times: Sta1**      **Sta2**

**Gd Temp beg:** 2 °C      **End:** 13 °C      **OAT beg:** 6 °C      **End:** 6 °C      **Altimeter begin:** 29.98      **end:** 29.96

Type	Serial #	Alt AGL	Alt AMSL	Mag Var	Max Gdspd	Avg Pt Spd	Power	Pulse Rate	Pulse In Air	Mag Cb	End Cb	Tot Cb	Storage Name
LIDAR	20	50	50	50	50	50	50	50	50	50	50	50	0066

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	mpja/sen	GPS Altitude	Crb	Turb	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.
TEST		14:43	14:43						
59	90	14:52	15:09	142		2012	-4		
58	270	15:14	15:31	136		13/14	2		SKC VIS 7-8
57	90	15:37	15:53	150		11/15	-3		
56	270	15:57	16:14	146		12/15	3		
55	90	16:18	16:34	150		11/17	-4		
54	270	16:40	16:57	146		12/16	3		
53	90	17:00	17:17	150		13/15	-4		
52	270	17:21	17:37	154		12/18	4		
Cross	0	17:40	17:41			13/17	-		

**Total Proj Lines:** 8      **Lines Flown:** 8      **Lines Remain:** 0      **Online Time:** 2.9      **Job Time:** .9      **Notes:**

SHIP wd 34HT  
BUP 7155 4710

5



# 20171216B1 (SN7161, N812TB)

**Project:** MO - FEMA  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)  
**Project #:** 30396  
**Flight Mgmt File:**

**Aircraft:** N812TB  
**Begin Hobbs:** 4837.5  
**End Hobbs:** 4842.2  
**Total:**  
**Pilot:** MAGNER  
**Co-Pilot:** SNINFORD

**Dep Apt:** KTEF  
**Dep Time (Lcl):** 3:50 (Z)  
**Arr Apt:** KTEF  
**Arr Time (Local):** 8:45  
**Tot Time Aloft:** 4.7

**CORS:** Y (N) Sta 1:  
 Y (N) Sta 2:  
**GPS Unit:** Y (N) Sta 1:  
 Y (N) Sta 2:

**Gd Temp beg:** °C End: °C OAT beg: °C End: °C  
**Alt:** AGL: 6000 MSL: 7280  
**Max Gspsd:** 140  
**Avg Pt Spacing:**  
**Pulse Rate:** 27  
**Power:** 100%  
**FSM:**

**Mag CB:** 484  
**End CB:** 412  
**Tot CB:** 72  
**Storage Handle:** 017

**Date:** 12/16/2017  
Pg 1 of 1

**Flyovers:** (N) / (N) If Y, times: Sta1) MOVE Sta2)  
**Flyovers:** Y / (N) If Y, times: Sta1) Sta2)

**FLIGHT LINE NOTES -** visibility, clouds, smoke, partial, etc.

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POOP/sats	GPS Altitude	Crab	Turb	Notes
24	90	22:16	22:32	141	13/16	7050	+5	0	Fig 8 @ 22:09
25	270	22:35	22:50	142	11/17	7075	-1	0	
26	90	22:54	23:09	140	15/16	7075	+5	0	
27	270	23:12	23:29	139	16/15	7075	-0	0	
28	90	23:32	23:49	146	12/17	7050	+5	0	FLIGHT PRO SHUT DOWN.
X-TIE	180	23:55	23:58	150	12/17	7050	0	0	CROSS TIE UNPLANNED - FLY OVER CORS (MOVE) GPS-MID-NIGHT RESTART SENSOR - FLY OVER CORS (MOVE)
29	270	00:22	00:39	146	12/19	7075	0	0	
30	90	00:42	00:56	142	13/19	7050	0	0	
31	270	00:59	01:14	140	10/19	7100	0	0	
32	90	01:17	01:34	142	12/17	7100	0	0	EXIT JOB FILE & RELOAD
33	270	01:37	01:54	136	12/18	7100	0	0	
34	90	01:57	02:12	145	12/18	7050	0	0	
X-TIE	360	02:15	02:18	140	11/19	7100	0	0	CROSS TIE UNPLANNED - FIG 8 @ 02:19

**Total Prof Lines:**    **Lines Flown:**    **Lines Remain:**    **Online Time:** 4.0    **Job Time:** 7.5    **Notes:**

# 20171216B2 (SN7161, N812TB)

**Q** Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Date: 12/16/2017 Pg 1 of 1  
 Ltr: A B C D E

Project: MO. - FEMA Proj #: 30396 Flight Mgmt File:  
 Aircraft: N812TB Begin Hobbs: 4837.5 End Hobbs: 4842.2 Total: Pilot: WAGNER Co-Pilot: WINFORD  
 Dep Apt: KTEF Dep Time (Lcl): 3:50 (Z): Arr Apt: KTEF Arr Time (Local): 8:45 Tot Time Aloft: 4.7  
 CORS: Y (N) Sta 1: Flyovers: (N) / N If Y, times: Sta1) MOVE Sta2)  
 GPS Unit: Y (N) Sta 1: Flyovers: Y / N If Y, times: Sta1) Sta2)  
 Gd Temp beg: °C End: °C OAT beg: °C End: °C Altimeter begin: end:

Type	Serial #	Alt AGL	Alt ANSL	Alt Pulses In Air	Max Gspsd	Avg Pt Spacing	Power	PFSM	Mag CB	End CB	Tot CB	Storage Handle
LIDAR	<u>4570</u>	<u>7161</u>	<u>6000</u>	<u>(N)</u>	<u>1257</u>	<u>140</u>	<u>100%</u>	<u>27</u>	<u>484</u>	<u>412</u>	<u>72</u>	<u>017</u>
	FOV	<u>40</u>	<u>53</u>									

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POOP/sats	GPS Altitude	Crab	Turb	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc
24	90	22:16	22:32	141	13/16	7050	+5	0	Fig 8 @ 22:09
25	270	22:35	22:50	142	11/17	7075	-1	0	
26	90	22:54	23:09	140	15/16	7075	+5	0	
27	270	23:12	23:29	139	16/15	7075	-0	0	
28	90	23:32	23:49	146	12/17	7050	+5	0	FLIGHT PRO SHUT DOWN.
X-TIE	180	23:55	23:58	150	12/17	7050	0	0	CROSS TIE UNPLANNED - FLY OVER CORS (MOVE) GPS-MID-NIGHT
									RESTART SENSOR - FLY OVER CORS (MOVE)
29	270	00:22	00:39	146	12/19	7075	0	0	
30	90	00:42	00:56	142	13/19	7050	0	0	
31	270	00:59	01:14	140	10/19	7100	0	0	
32	90	01:17	01:34	142	12/17	7100	0	0	EXIT JOB FILE & RELOAD
33	270	01:37	01:54	136	12/18	7100	0	0	
34	90	01:57	02:12	145	12/18	7050	0	0	
X-TIE	360	02:15	02:18	140	11/19	7100	0	0	CROSS TIE UNPLANNED - FIG 8 @ 02:19

Total Prof Lines: \_\_\_\_\_ Lines Flown: \_\_\_\_\_ Lines Remain: \_\_\_\_\_ Online Time: 4.0 Mob Time: 7.5 Notes:



# 20171218A (SN7161, N812TB)

**Project:** M0 - FEMA

**Flight Mgmt File:** 20171218-220838

**Proj #:** 30396

**Flight Mgmt File:** 20171218-220838

**Date:** 12/18/2017

LINE: A B C D E Pg 1 of 1

**Aircraft:** N812TB **Begin Hobbs:** 4844.2 **Total:** 2.0 **Pilot:** WAGNER **Co-Pilot:** Tech: SWINEGARD

**Dep Apt:** KJEF **Dep Time (Lcl):** 4:15 (Z): 22:15 **Arr Apt:** KJEF **Arr Time (Local):** 6:35 (Z): 00:35 **Tot Time Aloft:** 2.0

**CORS:** Y 10 **Sta 1:** **Sta 2:** **Flyovers:** Y / N If Y, times: Sta1) Sta2)

**GPS Unit:** Y 10 **Sta 1:** **Sta 2:** **Flyovers:** Y / N If Y, times: Sta1) Sta2)

Gd Temp beg:		°C		End:		°C		OAT beg:		°C		End:		°C		Altimeter begin:		end:		
Type	Serial #	Alt AGL	Alt AMSL	Pulse In Air	Alt	APSL	Alt	APSL	Pulse In Air	Alt	APSL	Pulse Rate	Max Gdspd	Avg Pt Spacing	Power	PRSM	beg ch	end ch	Storage Memble	
LIDAR	ALS 70	7161	6000	MPA 01 N	728	728	1255	140	275	100%	100%	140	140	140	100%	100%	411	385	017	
FOV	40	53																		

Line #	Hgt	Start (UTC)	End (UTC)	Gd Spd	POV/vars	GPS Altitude	Crab	Turb (0..-1)	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.
35	90	22:47	23:02	155	13/16	7075	0	0	Fig 8 @ 22:40 / 52 KTS. TAIL WIND / PITCH 50 OR LESS
36	270	23:05	23:24	120	13/15	7100	0	0	
37	90	23:27	23:41	155	11/18	7100	0	0	Pitch up to 8° at 4mi. from west end / UNABLE TO MAINTAIN LEVEL FLT.
38	270	23:46	00:00	117	12/17	7100	0	0	WIND INCREASED TO 63 KTS & GOT DARK.
X-TIE	300	00:00	00:12	142	11/18	7100	20°	0	UNPLANNED CROSS FLIGHT

<b>Total Proj Lines:</b>	<b>Lines Flown:</b>	<b>Lines Remain:</b>	<b>Online Time:</b> 1.5	<b>Job Time:</b> 1.5	<b>Notes:</b>
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# 20171218A (SN329, N6GR)

**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Date: 12/18/2017  
 Page of 1

Project: FEMA - MO  
 Flight Mgmt File: 30396 - MO FEMA - 1650 m - Orion H  
 Aircraft: N6GR Begin Hobbs: 36768 End Hobbs: 36811 Total: 43 Pilot: Cam Stevenson Co-Pilot: Tech: Gary Jans  
 Dep Apt: KJEF Dep Time (Local): 3:42 (Z): 2:42 Arr Apt: KJEF Arr Time (Local): 7:57 (Z): 6:57 Tot Time Aloft: 4:15

CORs: Y/N Sta 1: Flyovers: Y/N If Y, times: Sta1) Sta2)  
 GPS Unit: Y/N Sta 1: Flyovers: Y/N If Y, times: Sta1) Sta2)  
 Gd Temp beg: 11 °C End: °C OAT beg: °C End: °C Altimeter begin: 3000 end:

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	Foot-candle	GPS Altitude	Crab	Yrb (0-50)	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Power	PRSM	Mag CB	Storage Name
		21:16	22:19						350m	14SK				0	SSD 2
42	E	22:22	22:38	148 kt	12/16	2020m	2°	-	350m	14SK				65.9	SN
41	W	22:43	23:04	113	17/15	2000m	2°	0	225kHz	100%				65.9	4200168
40	E	23:07	23:23	152	15/14	2010m	3°	0							
39	W	23:27	23:48	115	13/14	2000m	1°	0							
38	E	23:51	00:07	148	13/15	2030m	3°	0							
37	W	00:12	00:33	113	13/16	2030m	3°	0							
36	E	00:36	00:51	150	12/17	2000m	3°	0							
35	W	00:55	01:15	130	12/17	2000m	2°	0							
	N	01:17	01:21	132	13/16	2000m									
		01:21	01:25												


FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.  
 Opening S-turn  
 Test fire  
 Hazy  
 Hazy  
 Hazy ; High tail wind  
 Hazy  
 Hazy  
 Scan angles exceeding 20°?  
 Cross TIE  
 Starn closeout

Total Proj Lines: 79 Lines Flown: 47 Lines Remain: 32 Online Time: 3:2 Mob Time: 1:1 Notes:

# 20171218A (SN0754, C-FFRY)

**Julian Day 352**    **Flight A**

**LIDAR Flight Log**



**AIRBORNE**  
SYSTEMS  
A Clean Harbors Company

**Additional Notes**  
 Temp 49°C  
 Humidity 70%  
 Altitude 1019 hPa  
 Terrain Height 420m

System	Riegl Q1560		
Unit	2220754		
IMU	Applanix AP50		
GPS Rx	Trimble		
Scanner 1 Drive	A-1		
Scanner 2 Drive	A-2		

Date	18-DEC-2017	Aircraft	PA-31 C-FFRY
Project	3136_QSI-RollaRolla	Pilot	M McQuarrie
Location	Springfield MO	Operator	E.R. Rutledge
Mission Objective	RE-FLY LN'S 75, 74 73 → 68 & 63 → 60 w/ X-TIE		

Aircraft Block Time			
Engine On	23:03	Ramp Out	23:18
Engine Off	04:43	Ramp In	04:36
<b>Total</b>	<b>5.7 hrs</b>	<b>Total</b>	<b>5.2 hrs</b>

Mission Plan			
AGL Height	2200 m	Pulse Rate	800,000 Hz
Target Speed	160 kts	Scan Rate	178 Hz
Laser Current	100 %	FOV	60 Deg's

Static Alignment		GPS Time	
Pre Mission	23:13	Start	End
Post Mission	04:36	04:36	04:41

Flight Line	LIDAR File Name	Flight Direction	Flight Altitude	GPS Time		Line Aborted	Mission ID	Comments
				Start	End			
TEST SETUP		G	N/A	23:25	23:27		171218_232504	
75		G	8000'	23:33	23:40		N/A	
74		090.6°	8000'	23:44	23:59		2344066	RE-FLIGHT 5417347A
73		271.2°	8000'	00:04	00:26		171219_000415	RE-FLIGHT 5417347A
72		090.6°	8000'	00:29	00:44		002909	
71		271.2°	8000'	00:48	01:09		004845	
70		090.6°	8000'	01:12	01:27		011220	
69		271.2°	7900'	01:31	01:53		013133	
68		090.6°	7900'	01:55	02:10		015536	
63		271.2°	7900'	02:15	02:36		021511	
62		090.6°	7900'	02:40	02:55		024034	
61		271.2°	7800'	03:00	03:20		030008	
60		090.6°	7800'	03:23	03:38		032321	
X-TIE		270.2°	7800'	03:42	04:02		034219	
PPP B		180° +/-	7800'	04:06	04:13		0410622	X-TIE LN'S 60 → 75
PPP B		G	7800'	04:13	04:18		N/A	

Pg 1 of

# 20171220A (SN329, N6GR)

Scanned by CamScanner

**Project:** M.D. FEMA\_HDENSIVY-7504A **Proj #:** 30396 **Date:** 12-20-17

**Altitude:** N6GR **Begin Hobbs:** 3681.1 **End Hobbs:** 3684.2 **Total:** 3.1 **Pilot:** MUELLER **Co-Pilot:** - **Tech:** SCHOOPE

**Dep Apt:** KJEF **Dep Time (Ldt):** 05:48 **Alt:** 15:48 **Arr Apt:** KJEF **Arr Time (Local):** 13:00 **Tot Time Aloft:** 19:00

**COAS:**  N **Sta 1:**  **Sta 2:**  **Flyovers:** Y  IFY, times: Stat1) **Stat2)**

**GPS Unit:** Y  **Sta 1:**  **Sta 2:**  **Flyovers:** Y  IFY, times: Stat1) **Stat2)**

**Gd Temp beg:** 3 °C **End:** °C **OAT beg:** 2 °C **End:** 2 °C **Aldimeter begin:** 30.09 **end:** 30.05

Type	Serial #	Alt AGL	Alt AMSL	Avg TWT HR	Max Gndspd	Avg FC Spd	Power	Pressure In Air	Pressure In Alt	Turn (0-1)	Remarks								
LIDAR	329	750	750	140	300	HIGH					0066								
TEST	16:15	16:25	16:30	16:35	16:40	16:45	16:50	16:55	16:59	17:04	17:08	17:13	17:17	17:22	17:27	17:31	17:35	17:39	
1	133	16:24	16:25	178	13/16	1006	3												
2	313	16:28	16:30	136	1.4/17	1004	-4												
3	133	16:34	16:35	136	1.2/16	1002	3												
4	313	16:38	16:40	132	1.3/16	1002	-4												
5	133	16:43	16:45	136	1.6/14	1002	3												
6	313	16:48	16:49	132	1.2/17	1002	-6												
7	133	16:53	16:55	134	1.0/18	1003	3												
8	313	16:57	16:59	138	1.1/17	1006	-6												
9	133	17:03	17:04	136	1.1/19	1010	3												
10	313	17:06	17:08	136	1.1/18	1015	-5												
32	56	17:12	17:13	124	1.1/19	1010	-9												
31	234	17:16	17:17	128	1.1/19	1001	12												
30	56	17:21	17:22	131	1.2/18	996	-9												
29	234	17:26	17:27	140	1.2/18	994	10												
28	56	17:30	17:31	142	1.2/18	995	-8												
27	234	17:34	17:35	136	1.2/18	1000	11												
26	56	17:38	17:39	136	1.2/18	1007	-9												

**Total Prof Lines:** 32 **Lines Flown:** 38 **Lines Remains:** 0 **Online Time:** 2:02 **Mobile Time:** \_\_\_\_\_ **Notes:**

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.

3km - DVC 5K

SKC OVER SITE VIS 10+

SHIP 5000

B.U.P PASSPORT 4710











# 20171220B (SN7161, N812TB)

**Project:** MO, - FEMA **Proj #:** 30396 **Flight Mgmt File:** 20171220-2045D7 **Date:** 12/20/2017

**Aircraft:** N812TB **Begin Hobbs:** 4848.3 **End Hobbs:** 4852.6 **Total:** 4.3 **Pilot:** WAGNER **Co-Pilot:** Tech: SWINFORD

**Dep Apt:** KJEF **Dep Time (Lcl):** 2:55 (Z): 20:55 **Arr Apt:** KJEF **Arr Time (Local):** 7:25 (Z): 01:25 **Tot Time Aloft:** 4:3

**CORS:** Y (N) **Sta 1:** 5 MIN, Static **Sta 2:** Flyovers: Y (N) IF Y, times: Sta 1) **Sta 2:** Flyovers: Y (N) IF Y, times: Sta 1) **Sta 2:**

**GPS Unit:** Y (N) **Sta 1:** **Sta 2:**

**Gd Temp beg:** °C **End:** °C **OAT beg:** °C **End:** °C **Altimeter beg:** end:

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POPs/sats	GPS Altitude	Crab	Turb (0, -, +)	Avg Terr Ht	Max Glsspd	Power	Avg Pt Spacing	PPSH	Reg CB	Storage Name/ID
40	090	21:18	21:33	144	11/17	7100	0	0	728	1255	140	100%		385	017
41	270	21:36	21:52	141	11/17	7100	0	0						316	
42	090	21:55	22:10	149	11/16	7100	0	0						69	
43	270	22:13	22:28	148	11/16	7100	0	0							
44	090	22:31	22:47	147	11/15	7100	0	0							
45	270	22:50	23:03	144	11/15	7100	0	0							
46	090	23:08	23:21	148	11/16	7100	0	0							
47	270	23:24	23:42	143	11/16	7100	0	0							
48	090	23:45	00:00	144	11/16	7100	0	0							
49	270	00:04	00:19	143	11/18	7100	0	0							
50	090	00:22	00:45	145	11/18	7100	0	0							
X-TIE	360	00:56	00:59	144	11/17	7100	0	0							

**FLIGHT LINE NOTES -** visibility, clouds, smoke, partial, etc.

STUEN@21:17

FEE 38-43 Low cloud deck / 38% RETURNS

FEE 43-58 " " / 38% RETURNS

FEE 37-43 " " / 62% RETURNS

FEE 54-64 " " / 65% RETURNS

UNPLANNED CROSS FLIGHT LINE / LAND FOR FUEL

**Total Proj Lines:** **Lines Flown:** **Lines Remain:** **Online Time:** 3:75 **Job Time:** 50 **Notes:**

FEE = FROM EAST END











# 20171231A (SN329, N6GR)

**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Project: **MO\_FEMA-1250M** Flight Mgmt File: **30796-MO-FEMA-011 orioah-1250m** Date: **12/31/2017** Pg. 1 of 3

Aircraft: **N6GR** Begin Hobbs: **36968** End Hobbs: **37009** Total: **4.1** Pilot: **Sam Stevenson** Co-Pilot: **Gary Lee** Tech: **Gary Lee**

Dep Apt: **KSEF** Dep Time (Local): **12:15 (Z: 18:15)** Arr Apt: **KJEF** Arr Time (Local): **4:17 (Z: 22:17)** Tot Time Aloft: **4:02**

CORS: **(Y)N** Sta 1: **MOHS** Sta 2:  Flyovers: **Y/N** If Y, times: **Sta1 18:36** Sta2:

GPS Unit: **Y (N)** Sta 1:  Sta 2:  Flyovers: **Y/N** If Y, times: **Sta1** Sta2:

Gd Temp beg:		°C		End:		°C		OAT beg:		°C		End:		°C	
Type	Serial	Alt	AGL	Alt	AGL	Alt	AGL	Pulse	Rate	Pulse	Rate	Pulse	Rate	Pulse	Rate
LIDAR	329	1500m	1500m	1500m	1500m	1500m	1500m	300kHz	4.0	300kHz	4.0	300kHz	4.0	300kHz	4.0
LIDAR		Scan Freq	52 Hz	Mpl	Y/N	Power	High	Power	High	Power	High	Power	High	Power	High

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	Foot-cs	GPS Altitude	Crab	Turb (ft/s)
27	E	18:53	18:54	142kt	13/18	1527m	8°	0
28	W	18:57	18:58	134	13/18	589m	8°	0
29	E	19:01	19:02	142	14/18	1516m	8°	0
30	W	19:05	19:06	134	15/18	1501m	8°	0
31	E	19:09	19:10	138	13/18	516m	8°	0
32	S	19:13	19:14	132	13/18	1500m	2°	0
33	E	19:16	19:17	142kt	13/18	1524m	8°	0
34	W	19:19	19:21	132	13/18	1500m	8°	0
35	E	19:24	19:25	136	14/17	1514m	7°	0
36	S	19:28	19:29	134	13/17	1520m	2°	0

**FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.**

PD issues on taxi; rebooted system on ground before T.O

View in EMS Day after T.O top, lost Progress flyer of MOHS

Test fire

opening 5-stair AOI 5

clear

clear

clear

clear

Planned X-IE; AOI 5 complete

clear; AOI 6

clear

Planned Cross Tie; AOI 6 complete

Online Time: 2.9 Mob Time: 1.2 Notes: Multiple PD

Total Prof Lines: 36 Lines Flown: 36 Lines Remain: 0

Flickers and loss of signal

**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**

Date: 12/31/2017 Pg 22 of 3

UIC: A B C D E

Project: MO-FEMA-1250m Flight Mgmt File: 30296-MO-FEMA-QLL OrcaH-1250m

Aircraft: N6GR Begin Hobbs: 3700.9 Total: 4.1 Pilot: Gary Pearson Co-Pilot: Tech: Gary Pearson

Dep Apt: KSEF Dep Time (Lcl): 12:15Z Arr Apt: KJEF Arr Time (Local): 4:17 (Z): 22:17 Tot Time Aloft: 4:02

CONRS: QJN Sta 1: MOHS Flyovers: (Y) N IF Y, times: Sta 1) 18:36 Sta 2)

GPS Unit: Y/N Sta 1: Flyovers: Y/N IF Y, times: Sta 2)

Line #	Type	Hdg	Start (UTC)	End (UTC)	Gd Spd	FOO/Ht-As	GPS Altitude	Crb	Turb (0-3)	Alt AGL	Alt AGL	MpdA	Y/N	Pulse Rate	Pulse In Air	°C	End: °C	Altimeter begin:	end:	Avg Ft Spacing	PPM	Power	Hdg	Mag CB	End CB	Tot CB	Storage Name#	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.			
																												Mix	Gdspd	Power	Hdg
25	N	19:35	19:36	19:36	102kt	12/18	1570m	3°	0	1500m	1500m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 4			
24	S	19:40	19:41	19:41	140kt	11/19	1493	2°	0	1500m	1493m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	clear			
23	N	19:44	19:45	19:45	103	11/19	1492	2°	0	1500m	1492m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	clear			
22	S	19:48	19:49	19:49	136	11/19	1498	2°	0	1500m	1498m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	clear			
21	N	19:52	19:54	19:54	115	12/17	1532m	2°	0	1500m	1532m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	Planned X TIE, AOI complete			
26	W	19:56	19:58	19:58	132	11/18	1515m	8°	0	1500m	1515m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
20	W	20:01	20:03	20:03	135	1/18	1500m	7°	0	1500m	1500m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
13	W	20:06	20:07	20:07	126	12/17	1500m	7°	0	1500m	1500m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
14	E	20:10	20:11	20:11	140	13/16	1495m	9°	0	1500m	1495m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
15	N	20:15	20:16	20:16	134	14/15	1464m	8°	0	1500m	1464m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
16	E	20:19	20:20	20:20	138	14/15	1480m	8°	0	1500m	1480m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
17	W	20:23	20:24	20:24	132	14/15	1502m	8°	0	1500m	1502m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
18	E	20:27	20:29	20:29	138	14/15	1483m	9°	0	1500m	1483m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			
19	W	20:32	20:33	20:33	134	12/16	1510m	8°	0	1500m	1510m	300Hz	Y	300Hz	3	1500m	1500m	250m	140kt	4.0	4.0	300Hz	117.7	916	55D2	SN	14200068	AOI 3 X TIE			

Notes: Multiple PD stickers and loss of signal



**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email Log daily to flight\_log\_distribution\_list@quantumspatial.com)

Date: 12/31/2017  
 UIC: A B C D E Page 2 of 3

Project: MO-FEMA-1250M Proj #: 30396 Flight Mgmt File:  
 Aircraft: N6GR Begin Hobbs: 3676.8 End Hobbs: 3700.9 Total: 24.1 Pilot: Con Stearns Co-Pilot: Tech: Gary K...  
 Dep Apt: KJEF Dep Time (Lcl): 12:15 (Z): 18:15 Arr Apt: KJEF Arr Time (Local): 4:17 (Z): 22:17 Tot Time Aloft: 4:02  
 CONS: QYN Sta 1: MOHS Sta 2: Flyovers: Y/N IF Y, times: Sta1) 18:36 Sca2)  
 GPS Unit: Y/N Sta 1: Flyovers: Y/N IF Y, times: Sta1) Sca2)  
 Gd Temp beg: °C End: °C OAT beg: °C End: °C Altimeter begin: end:  
 LIDAR Type: Airborne Serial #: 329 Alt AGL: 1250M Alt APL: 1500M Max Alt: 1400M Avg Pt Spacing: 4.0  
 FOV: 38° Scan Rate: 52Hz MpuA: Y/N Release in Air: 3 Pulse Rate: 300kHz Power: High PPM: 4.0  
 Storage Name: 9416  
 End of 1177  
 Tot of 231  
 142000 68

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	FOV/Scan	GPS Altitude	Crab	Yrb (ft)	Notes
10	E	20:38	20:39	134	12/16	1464m	9°	+	ASEZ, clear
11	W	20:42	20:43	134	12/16	1454m	9°	+	
12	S	20:47	20:48	142	12/16	1485m	2°	-	XTIE, AOI 2 complete
1	S	20:54	20:56	138	12/17	1445m	0°	0	AOI 1 clear
2	N	20:59	21:00	113	12/17	1452m	2°	0	
3	S	21:01	21:05	134	13/16	1452m	2°	0	
4	N	21:09	21:10	128	12/16	1412m	1°	+	
5	S	21:13	21:14	140	12/16	1416m	2°	-	
6	N	21:17	21:19	120	12/16	1414m	1°	+	
7	S	21:22	21:23	142	12/16	1400m	3°	+	
8	N	21:27	21:28	141	12/16	1437m	1°	-	
9	W	21:31	21:32	138	12/16	1432m	8°	-	
		21:33	21:35						Closeout S-turn RTB JEF AOI Complete: all DSM lines complete

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.

Total Proj Lines: 36 Lines Flown: 36 Lines Remain: 0 Online Time: 2.9 Mob Time: 1.2 Notes: Multi-File P. Airlocks

# 20180101A (SN329, N6GR)

Date: 1/1/2018  
Pg 1 of 2

Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc  
(email log ability to flight\_log\_distribution\_list@quantumspatial.com)

Project: MD-FEMA-ORSON H-1650M Proj #: 30396 Flight Mgmt File: 30396-MD-FEMA-1650M-ORIONH  
 Aircraft: N6GR Begin Hobbs: 3700.9 End Hobbs: 3704.2 Total: 3.3 Pilot: Cam Stevenson Co-Pilot: Tech: Gary Law  
 Dep Apt: KJEF Dep Time (Lcl): 7:52Z Arr Apt: KJEF Arr Time (Local): 17:20 (Z) 17:20 Tot Time Aloft: 3:24  
 CORS: Y/N Sta 1: MOHS Sta 2: Flyovers: 0/N IF Y, times: Sta 1 17:09 (Sta 2) 17:20  
 GPS Unit: Y/N Sta 1: Sta 2: Flyovers: Y/N IF Y, times: Sta 1 Sta 2

Gd Temp beg: -21 °C End: °C OAT beg: °C End: °C Altimeter begin: 30.93 end:		Alt: 190m		Avg Pt Spacing: 145kt		Storage Name/No	
Type	Serial #	Alt AGL	Alt AMSL	Mix Gate	Power	End CB	Start CB
LIDAR	FOV 40°	329	1650m	High	2-1	19.9	329.25
	Scan Freq	50Hz	MplA Y/N	Pulse Rate 225kHz			
	Start (UTC)	End (UTC)	GPS Altitude	Crab	Urb (0..1)		
	16:17	16:22	2100m				
	16:22	16:25					
	16:41						
	16:48						
	16:51		2000m				
	17:01		1970m				
	17:07	17:13					
	17:13						
22	E	17:32	1317				
21	W	17:41	1119				
20	E	17:44	1119				
19	W	17:59					
19R	E	18:06	1119				

FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc

flyover of MOHS  
 Test Shot  
 Opening 3 turn  
 No Laser at start and manual button effect  
 rebooting in air  
 New Pos log created  
 reflyover MOHS CORs  
 Persistent PD flicker again  
 flyover of MOHS CORs  
 Test fire  
 clear  
 POS stream lost in FMS but maintained in POSAV continuing  
 PD went away; refly going east ducto  
 Laser shut off

Total Prof Lines: 79 Lines Remain: 6 Lines Flown: 6 Online Time: 1-6 Mob Time: 1-7 Notes: USE POSAV data not FMS NAV POS due to log interrupt.

**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Date: 1/11/2018  
 UTM: 18 Q D E Pg 2 of 2

Project: MO-FEMA-orientH-1650M Proj #: 30396  
 Flight Mgmt File: 30396\_MO-FEMA-1650M-orientH

Aircraft: N6GR Begin Hobbs: 37009 End Hobbs: 37422 Total: 33 Pilot: Cam Stevens Co-Pilot: Tech: Gary Leo

Dep Apt: KJEE Dep Time (Lcl): 9:56Z Air Apt: KJEE Arr Time (Local): 1:20Z (Z): 19:20 Tot Time Aloft: 5:24

CORS: (Y) N Sta 1: MDHS Sta 2:  
 GPS Unit: Y (N) Sta 1: Sta 2:

Flyovers: (Y) N If Y, times: Sta 1) 17:09 Sta 2)  
 Flyovers: Y / N If Y, times: Sta 1)  
 Sta 2)

Gd Temp beg: -21 °C End: °C OAT beg: °C End: °C Altimeter begin: 30.93 end:  
 Type: orientH Serial #: 329 Alt AMSL: 1990M Mix: 145kt Avg Pt Spacing: 50D  
 FOV: 40° Scan Freq: 50Hz AGL: 1650M M (Gdspd): 1.4h Power: 2-1 Tor Job: 19.9  
 Tor Job: 19.9

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	Foot-cs	GPS Altitude	Crab	Roll	Roll	Roll	Roll
18	W	18:16	18:21	136	1/7	1980M	7°	0			
17	E	18:24	18:30	138	1.1/18	1784M	8°	0			
X TIE	N	18:32	18:36	140							
		18:36	18:38								

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.  
 clear  
 cross tie  
 closeout turn  
 RTB

Total Proj Lines: 19 Lines Flown: 6 Lines Remain: 2 Online Time: 1:06 Mob Time: 1:7  
 Notes: Use POSAV data  
 NOT FMSNAV POS due to log interrupt.

# 20180101A (SN7161, N262AS)

Date: 1-1-18  
 Lift: A B C D E Pg 1 of 1

30396\_MD\_ALS70\_2000.m

## Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

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**Project:** MD LIDAR      **Proj #:** 30396      **Flight Mgmt File:** 20180101  
**Aircraft:** 262AS      **Begin Hobbs:** 6830.1      **End Hobbs:** 6834.4      **Total:** 4.3      **Pilot:** D WAGNER      **Co-Pilot:** Tech: M ALST  
**Dep Apt:** KJEF      **Dep Time (Lcl):** 10:35Z      **Arr Apt:** KJEF      **Arr Time (Local):** (Z):      **Tot Time Aloft:**  
**CORS:** ~~GN~~      **Sta 1:** MOJE      **Sta 2:**      **Flyovers:** Y / N      **IF Y, times:** Sta1)      **Sta2)**  
**GPS Unit:** Y / N      **Sta 1:**      **Sta 2:**      **Flyovers:** Y / N      **IF Y, times:** Sta1)      **Sta2)**

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Line #	Hdg	Start(UTC)	End(UTC)	Gd Spd	POOP/srs	GPS Altitude	Crab	Turb (0,-4)	Alt AMSL	Alt AGL	Pulse Rate	Max Gdspd	Avg Pt Spacing	Power	PPSM	Alt AMSL	Alt AGL	Pulse Rate	Max Gdspd	Avg Pt Spacing	Power	PPSM	Beg GB	End GB	Tot GB	Storage Name	
																											Alt AMSL
2A047	W	1702	1705	144	1.2/19	7125			7100		375			100													
2A048	E	1708	1710	145	1.1/19	7130																					
2A049	W	1717	1723	136	1.3/19	7120																					
2A050	E	1726	1732	135	1.1/19	7120																					
2A051	E	1745	1808	147	1.0/20	7110																					
2A052	W	1811	1835	144	1.0/20	7090																					
2A053	E	1830	1852	148	1.2/19	7090																					
2A054	W	1855	1914	142	1.3/18	7115																					
2A055	E	1917	1935	145	1.3/19	7125																					
2A056	W	1938	1957	145	1.1/20	7160																					
2A057	E	2000	2019	148	1.1/19	7130																					
2A058	W	2021	2040	147	1.3/14	7100																					
4003	N	2043	2045	134	1.3/17	7140																					

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.

RF 0-6 FWE      SOME SNOW ON GROUND  
 RF 0-6 FWE      WIND 32° @ 18kts  
 RF 0-15 FWE  
 RF 0-15 FWE  
 MANUAL X-TIE

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<b>Total Proj Lines:</b>	<b>Lines Flown:</b>	<b>Lines Remain:</b>	<b>Online Time:</b> 3.75	<b>Mob Time:</b> 35	<b>Notes:</b>
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# 20180102A (SN7161, N262AS)

30396 MD - ALS70 - 2000m

Date: 1-2-18  
Pg 1 of 1

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Project: MD LIDAR      Proj #: 30396      Flight Mgmt File: 20180102\_144009      Tech: M A457

Altcraft: 2624AS      Begin Hobbs: 68344      End Hobbs: 68358      Total: 14      Pilot: D WAGNER      Co-Pilot:

Dep Apt: RDEF      Dep Time (Lcl): 8:50 (Z): 14:50      Arr Apt: RDEF      Arr Time (Local): 10:15 (Z): 16:15      Tot Time Aloft:

CORS: ED/N      Sta 1: MDTC      Sta 2:

GPS Unit: Y/N      Sta 1:      Sta 2:

Flyovers: Y/N      If Y, times: Sta 1)      Sta 2)

Flyovers: Y/N      If Y, times: Sta 1)      Sta 2)

Gd Temp beg: -19 °C      End: -15 °C      OAT beg:      °C      End:      °C      Altimeter begin: 30.77      end: 30.76

LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Storage Name/Id
	FOV	Scan Freq	Mpl	Pulses In Air	Pulse Rate	Power	PPSM	beg CB
		ALS70	7161	7100	140	100		559
		40	53	275				523
								15

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POF/s	GPS Altitude	Crab	Turb	FLIGHT LINE NOTES - viability, clouds, smoke, partial, etc.
20057	E	1531	1530	147	1.2/18	7130			HEATER MOP
212055	W	1533	1532	136	1.2/17	7150			PNEUMATIC TAMP OUT
46001	N	1555	1556	153	1.2/19	7120			X-TIE RTB
									SOME SNOW ON GROUND

Total Proj Lines:      Lines Flown:      Lines Remain:      Online Time: 75      Mob Time: 65      Notes:

# 20180102B (SN7161, N262AS)

30396.MS.ALS70.2000.m

## Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-2-18  
Lift: A B C D E Pg 1 of 1

Project: MO LIDAR Proj #: 30396 Flight Mgmt File: 20180102 195957  
 Aircraft: N262AS Begin Hobbs: 6835.8 End Hobbs: 6838.8 Total: 3 Pilot: D WAGNER Co-Pilot: Tech: M ALST  
 Dep Apt: KJEF Dep Time (Lcl): 2:10 (Z): 20:10 Arr Apt: KJEF Arr Time (Local): 5:05 (Z): 23:05 Tot Time Aloft: 3  
 CORS: DJN Sta 1: MDC Sta 2: Flyovers: Y / N IF Y, times: Sta1) Sta2)  
 GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N IF Y, times: Sta1) Sta2)

Gd Temp	beg	-7	°C	End:	-6	°C	OAT beg:	°C	End:	°C	Altimeter begin:	30.57	end:	30.51
LIDAR	Type	ALS70	Serial #	7161	Alt	AVSL	7100'	Ave Terr	Ht	Max	Gdspd	140	Ave Ft	Spacing
	FOV	70	Scan	53	Mpl	Y	N	Pulse	Rate	Power	275	100	PPSM	

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	POPE/s	GPS Altitude	Ceb	Turb	(0..+)	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc
2A061 E		20:30	20:49	145	1.3/16	7140				
2A062 W		20:52	21:11	135	1.2/17	7140				WIND 274 @ 17kts
2A063 E		21:14	21:32	142	1.3/14	7260				
2A064 W		21:35	21:54	139	1.2/17	7160				
2A065 E		21:57	22:16	143	1.3/15	7150				
2A066 W		22:19	22:37	140	1.1/17	7190				
40001 N		22:40	22:42	148	1.4/16	7240				MANUAL X-TIE

Total Proj Lines: \_\_\_\_\_ Lines Flownt: \_\_\_\_\_ Lines Remant: \_\_\_\_\_ Online Time: 2.25 Mob Time: 1.75 Notes:

# 20180102A (SN8119, N916WC)

LIDAR

KeyW-Aeropic LIDAR FLIGHT REPORT									
CREW <input type="text" value="Chris &amp; Greg"/> <input type="text" value="mm/dd/yy"/>		AIRCRAFT <input type="text" value="N916WC"/>		WEATHER <input type="text" value="Sky conditions, light conditions, horizon, shadowing, visibility/haze, cloud types, wind, turbulence, etc."/>		GPS <input type="text" value="Kappa 180"/>		SSD <input type="text" value="8119, 3"/>	
UTC DATE <input type="text" value="10/02/2018"/>		LIDAR SN <input type="text" value="8119"/>		Camera System <input type="text" value="iviz/air"/>		@ Beginning <input type="text" value="unk"/>		Space Used <input type="text" value="102"/>	
Camera Location (Hole) <input type="text" value="Fwd"/>		Location <input type="text" value="Columbus, Mo"/>		Compact flash drive space <input type="checkbox"/>		Space Used During Mission <input type="text" value="unk"/>		Remaining Tot Space <input type="text" value="unk"/>	
Startup <input type="text" value="16:30 GMT"/>		Time <input type="text" value="21:44 GMT"/>		SSDs have space <input type="checkbox"/>		Initials: <input type="text" value="DM"/>		Remarks	
Shut-down <input type="text" value=""/>		Location <input type="text" value="Columbus, Mo"/>		Startup beeps & IPAS recording <input type="checkbox"/>					
Job #	Location/ Site/Block	Line #	Flight Dir	Crab Angle	Remarks				
3DEP	N	N059	N						
		N058	S						
		N057	N						
		N056	S						
		N055	N						
		N054	S						
		N053	N						
		N052	S						
		N051	N						
		N050	S						
		N049	N						
		N048	S						
		N047	N						
		N046	S						
		UL01	E						





# 20180102A (SN8237, N915WC)

LIDAR

Job #		Location/ Site/Block	Line #	Flight Dir.	Crab Angle	Remarks
3DEP	N		N032	S		
			N033	N		
			N034	S		
			N035	N		
			N036	S		
			N037	N		
			N038	S		
			N039	N		
			N002	S		
			N001	N		
			UL001	E		

<b>CREW</b> Pilot/Operator: Dalton O mmddyy UTC DATE: 01/02/2018		<b>AIRCRAFT</b> Tail Number: N915WC	<b>WEATHER</b> Sky conditions, light conditions, horizon, shadowing, visibility/haze, cloud types, wind, turbulence, etc.
<b>Camera System</b> Camera Location (Hole): LIDAR SM: 8237 fwd/aft: Fwd	<b>GPS</b> Source: Kappa 180 Location: Columbus, Mo Columbus, Mo Columbus, Mo	<b>SSD</b> Drive #: 8237_3 @ Beginning: Space Used Space Used During Mission: 63 Remaining Tot Space: unk	<b>LIDAR STARTUP CHECKS</b> <input checked="" type="checkbox"/> Lens cleaned <input checked="" type="checkbox"/> All fpts updated <input checked="" type="checkbox"/> Pilot's screen functional <input checked="" type="checkbox"/> Compact flash drive space <input checked="" type="checkbox"/> SSDs have space <input checked="" type="checkbox"/> Startup beeps & IPAS recording Initials: DM





# 20180104A (SN7161, N262AS)

30396.MD.ALSTO.0000.in

**Project:** MD LIDAR  
**Flight Mgmt File:** 20180104  
**Date:** 1-4-18  
UTC A B C D E Pg 1 of 1

**Aircraft:** 262AS  
**Begin Hobbs:** 68388  
**End Hobbs:** 68434  
**Total:** 46  
**Pilot:** D MAGNELL  
**Co-Pilot:** Tech: M AUST  
**Dep Apt:** KTFE  
**Dep Time (Lcl):** 9:10  
**Arr Apt:** RJE  
**Arr Time (Local):** 19:55  
**Tot Time Aloft:** 4:15  
**CORS:** Y N  
**Sta 1:** MDJC  
**Sta 2:**  
**GPS Unit:** Y N  
**Sta 1:**  
**Sta 2:**

**Flyovers:** Y / N If Y, times: Sta 1) Sta 2)  
**Flyovers:** Y / N If Y, times: Sta 1) Sta 2)

**Alt:** 7161  
**Alt AGL:** 53  
**Alt MSL:** 7214  
**Alt AMSL:** 7161  
**Alt in Air:** MPA/D/N  
**Max Gdspd:** 140  
**Avg Pt Spacing:** 140  
**Pulse Rate:** 375  
**Power:** 100  
**Max Power:** 100  
**Storage Name:** 559  
**End CB:** 431  
**Tot CB:** 78

**Gd Temp beg:** -14 °C  
**End:** -3 °C  
**OAT beg:** -3 °C  
**End:** 30.33 °C  
**Altimeter beg:** 3044  
**end:** 3033

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	Foot+5m	GPS Altitude	Grab	Turb (0..1)	FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.			
20577	E	15:33	15:50	140	1.2/17	7300			WINDS 357 @ 36kts			
20576	W	15:53	16:11	133	1.1/19	7240						
20575	E	16:14	16:31	151	1.2/19	7210						
20574	W	16:35	16:50	146	1.2/18	7230						
20573	E	16:53	17:12	143	1.2/19	7300						
20572	W	17:15	17:33	139	1.1/19	7220						
20571	E	17:35	17:53	138	1.0/20	7315						
20570	W	17:55	18:13	129	1.0/20	7200						
20569	E	18:15	18:33	148	1.1/18	7270						
20568	W	18:35	18:53	139	1.1/19	7150						
20567	E	18:55	19:14	147	1.2/18	7250						
20566	W	19:19	19:28	123	1.2/19	7170			MANUEL X-TIE			

**Total Proj Lines:**

**Lines Flown:**

**Lines Remain:**

**Online Time:** 4

**Job Time:** .6

**Notes:**

# 20180104A (SN329, N6GR)

Date: 1/4/2018  
 U.S. A B C D E F

**Airborne LIDAR Data Collection Log Sheet :: Quantum Spatial, Inc**  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Project: **MO FEMA DRGNH**    Proj #: **30396**    Flight Mgmt File: **30396-MO-FEMA-1650a-DLGNH**  
 Aircraft: **N6GR**    Begin Hobbs: **37061**    End Hobbs: **37088**    Total: **27**    Pilot: **6.0m Stinson**    Co-Pilot:  
 Dep Apt: **KSEF**    Dep Time (Local): **8:10 [Z]**    Arr Apt: **KSEF**    Arr Time (Local): **10:52 [Z]**    16:52    Tot Time Aloft: **2:42**  
 CORRS: Y (N)    Sea 1:    Sea 2:    Flyovers: Y / N    IF Y, times: Sea1)    Sea2)    Sea2)  
 GPS Unit: Y (N)    Sea 1:    Sea 2:    Flyovers: Y / N    IF Y, times: Sea1)    Sea2)    Sea2)  
 Gd Temp beg: **-5**    °C    End:    °C    OAT beg:    °C    End:    °C    Altimeter begin: **3032**    end:    °C

Type	FOV	Serial #	Start [UTC]	End [UTC]	Gd Spd	Height	GPS Altitude	Crab	Turb [ft/s]	°C		Wind Dir	Wind Spd	Pressure	Fuel	Power	Avg Pt Spinning	PPH	
										Alt	Hum								
LIDAR	40°	329	14:29	14:33															
E			14:56		136kt	12/16	2000m	19°	0										
W			15:16		134	12/18	2000m	18°	0										
E			15:36		142	12/16	2015m	16°	0										
W			15:57		138	15/15	2010m	17°	0										
E			16:00		142	13/17	2010m	15°	0										
S			16:17		142														
S			16:18		142														

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.

opening 2 turn  
 Test fire  
 clear  
 clear  
 clear  
 clear  
 Real Time display stopped working, laser stopped, body  
 Restricted area going HOT, blind XITE  
 close out S turn  
 RTB KSEF

Total Proj Lines: **N/A**    Lines Flown: **4**    Lines Remain:    Online Time: **1:9**    Mob Time: **-8**    Notes:

Suggest  
 party →



# 20180106A (SN7161, N262AS)

30396, MO, ALS70, 2000 M

**Quantum Spatial** Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc  
(email log daily to flight\_log\_distribution\_list@quantumspatial.com)

Project: MO LIDAR Proj #: 30396 Flight Mgmt File: 20180106\_173011 Date: 1-18-18  
Page 1 of 1

Aircraft: N262AS Begin Hobbs: 6843.4 End Hobbs: 6847.2 Total: 3.8 Pilot: TED Co-Pilot: M AKST Tech: M AKST

Dep Apt: KJEF Dep Time (Lcl): 1145Z Air Apt: KJEF Air Time (Local): [Z] Tot Time Aloft: [Z]

CORS:  N Sta 1: MOJC Sta 2: Flyovers: Y / N If Y, times: Sta 1) Sta 2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta 1) Sta 2)

Gd Temp beg: -8 °C End: -3 °C OAT beg: °C End: °C Altimeter begin: 30.61 end: 30.45

Line #	Hdg	Start UTC	End UTC	Gd Spd	FOV/Rate	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Power	Avg Pt Spacing	PPSM	Bag CB	End CB	Tot CB	Storage Name	
20076	E	1811	1826	157	1.1/18	7161	7100	7100	140	100			559			016	
20075	W	1829	1845	142	1.2/18												
20074	E	1849	1904	160	1.2/18												
20073	W	1907	1923	145	1.1/18												
20072	E	1926	1941	152	1.0/19												
20071	W	1944	2000	137	1.1/17												
20070	E	2003	2017	159	1.2/17												
20069	W	2020	2036	144	1.2/17												
20068	E	2039	2054	156	1.3/16												
20067	N	2058	2100	166	1.2/16												

FLIGHT LINE NOTES - visibility, clouds, smoke, partial, etc.  
 WIND 281° @ 18 kts

---ANNAAL X-TIE---  
 MANUAL X-TIE

Total Proj Lines: Lines Flown: Lines Remain: 0 Online Time: 2:75 Mob Time: 1:05 Notes:























# 20180424A (SN8237, N917WC)

LIDAR

FORM 7-16-2014

**KeyW-Aeroptic**  
LIDAR FLIGHT REPORT

FLY conditions, light conditions, horizon, shadowing, visibility/haze, cloud types, wind, turbulence, etc.  
clear

CREW: Pilot/Operator: Kyle O. / Rob R.  
mm/dd/yy: 04/24/2018

AIRCRAFT: N917WC

GPS: Source: Keppia 180

LIDAR SM: 8237  
Flyz/air: Pwd

WEATHER: clear

SSD	Drive #	Space Used @ Beginning	Space Used During Mission	Remaining Tot Space
	8237_3			56
		0		unk

LIDAR STARTUP CHECKS:

- Lens cleaned
- All IPDS uploaded
- Pix's screen functional
- Compact flash drive space
- SSDs have space

Startup beeps & IPAS recording: 

Initials: DM

Job #	Location / Site/Block	Line #	Flight Dir	Crab Angle	Remarks
3DEP	NAOI	R005			
		R004			
		R003			
		R002			
		R001			
		R0X 62k			cross line

Start-up: 20:00 GMT, Shut-down: 22:30 GMT

Location: Columbia, Mo

## Appendix B

# Survey Report



**Survey Report** of  
LiDAR Calibration & Quality Control Points

**March 15, 2018**

USGS Contract: G16PC00016

MO FEMA R7\_2018

USGS Task Order: 140G0218F0015



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• <i>NVA - Bare Earth Points</i> .....	282
• <i>NVA - Urban Area Points</i> .....	474
• <i>VVA - Tall Weed Points</i> .....	516
• <i>VVA - Forest Points</i> .....	568
• <i>VVA - Brush Land Points</i> .....	682

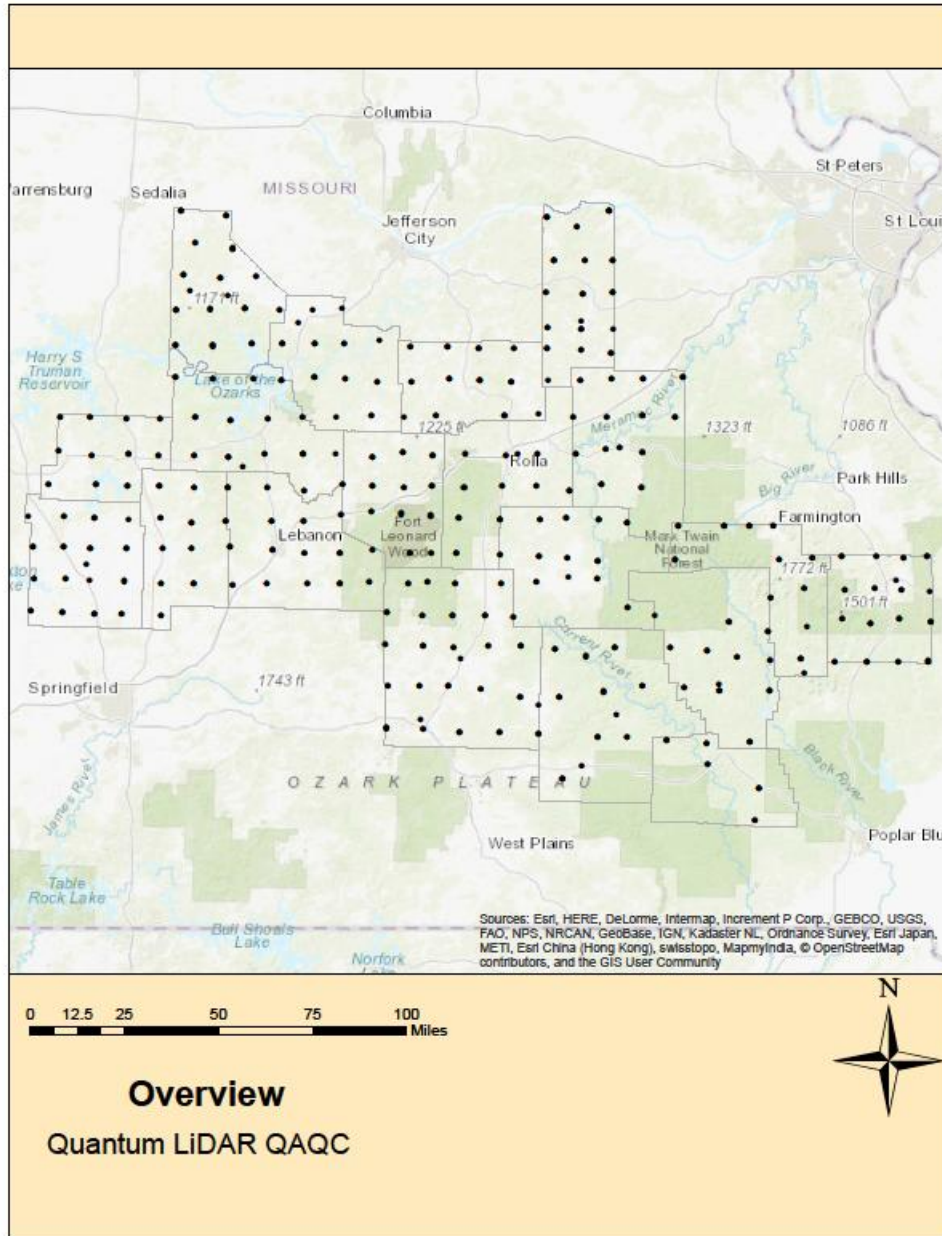


Amec Foster Wheeler Environment and Infrastructure, Inc. was contracted by Quantum Spatial, Inc. under USGS task order 140G0218F0015 to Survey LiDAR calibration and quality control points in support of MO FEMA R7 2018. This is the report of the technical approach used and detail of each point surveyed.



## Project Area

The Project Areas, shown in the figure below, consists of approximately 12,632 square miles.



The requested point classes are detailed below:

<u>Calibration Point</u>	<u># of Points</u> 232	Forested	110
<u>NVA Class</u>	<u># of Points</u> 224	Tall Weeds/Crops	47
Bare Earth	185	Brush land/Trees	1
Urban Area	39		
<u>VVA Class</u>	<u># of Points</u> 158		



## Survey Accuracy Requirements

All Calibration Control points will be surveyed at an accuracy of  $\leq 6.5\text{cm}$  (95<sup>th</sup> percentile) (3.3 cm RMSE) to support calibration of the collected LiDAR data to ground following initial post-flight processing. In accordance with ASPRS Standards all checkpoints will be at least three times more accurate than the required accuracy of the data being tested. Therefore, NVA QC points will be collected at an accuracy of  $\leq 6.5\text{cm}$  (95<sup>th</sup> percentile), while VVA QC points will be collected at an accuracy of  $\leq 9.8\text{cm}$  (95<sup>th</sup> percentile).

Date Range: January 22, 2018 – March 01, 2018

### Equipment Used:

Field crews used Topcon HiperV and Spectra SP80 dual frequency GNSS receivers as base stations and rovers.

### GNSS Methodology:

A combination of fast static GPS and traditional surveying methods were used during this project. The fast static GPS method consisted of collecting a minimum 30 minutes of static data. The data was downloaded and baselines processed to NGS CORS using OPUS.





## Overall Project Accuracy Statement

All point coordinates have been reported in the North American Datum of 1983 (NAD83 2011). Universal Transverse Mercator Zone 15 (UTM15) coordinates in meters for points in the following Missouri Counties: Camden, Carter, Crawford, Dallas, Dent, Gasconade, Hickory, Iron, Laclede, Madison, Maries, Miller, Morgan, Phelps, Polk, Pulaski, Reynolds, Shannon and Texas. All elevations are relative to the North American Vertical Datum of 1988 (NAVD 88) which were derived using the Geoid 12B model and are reported in meters.

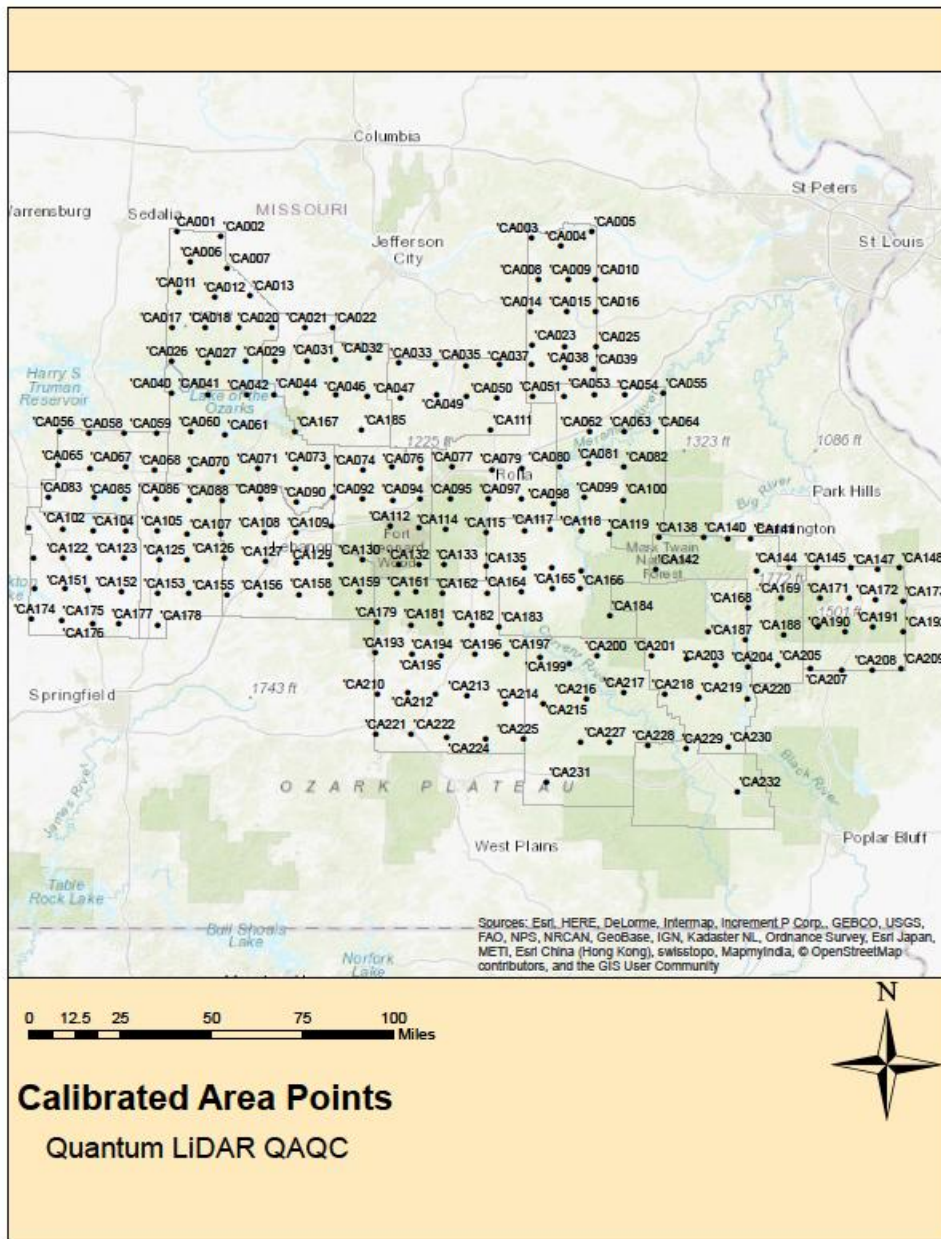


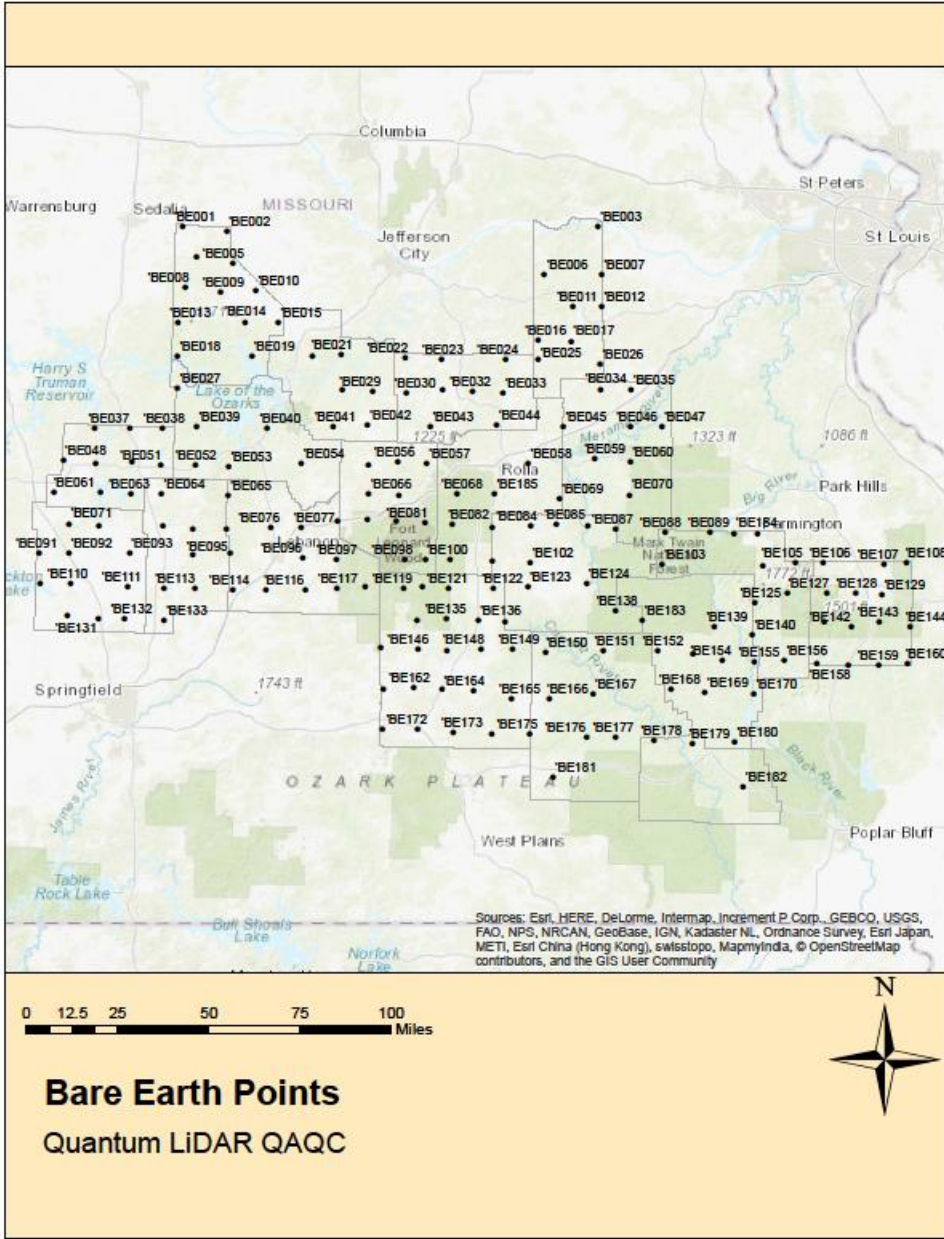
Phillip Grant Chapman, PLS

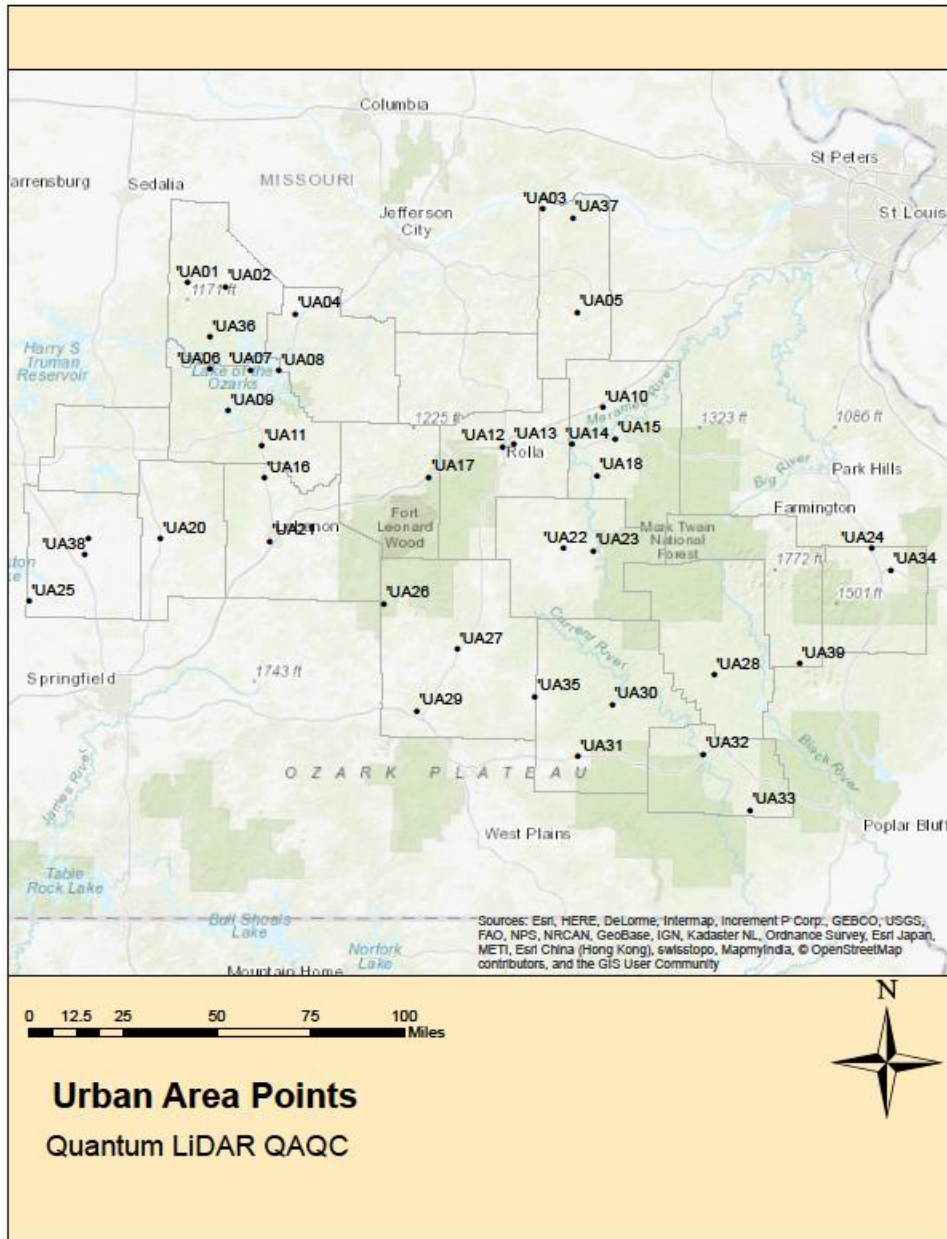


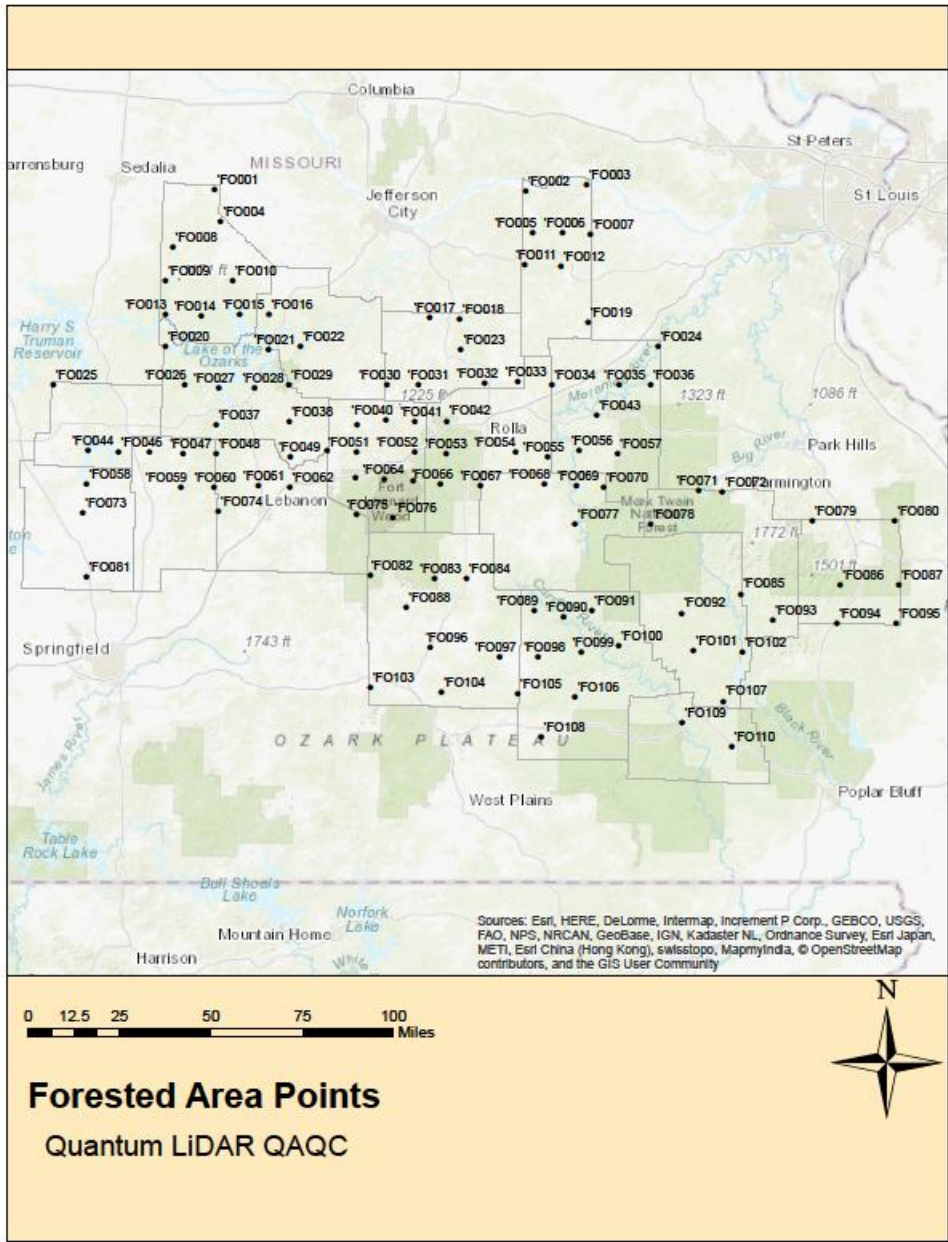
*Project AOI & Point Location Maps*

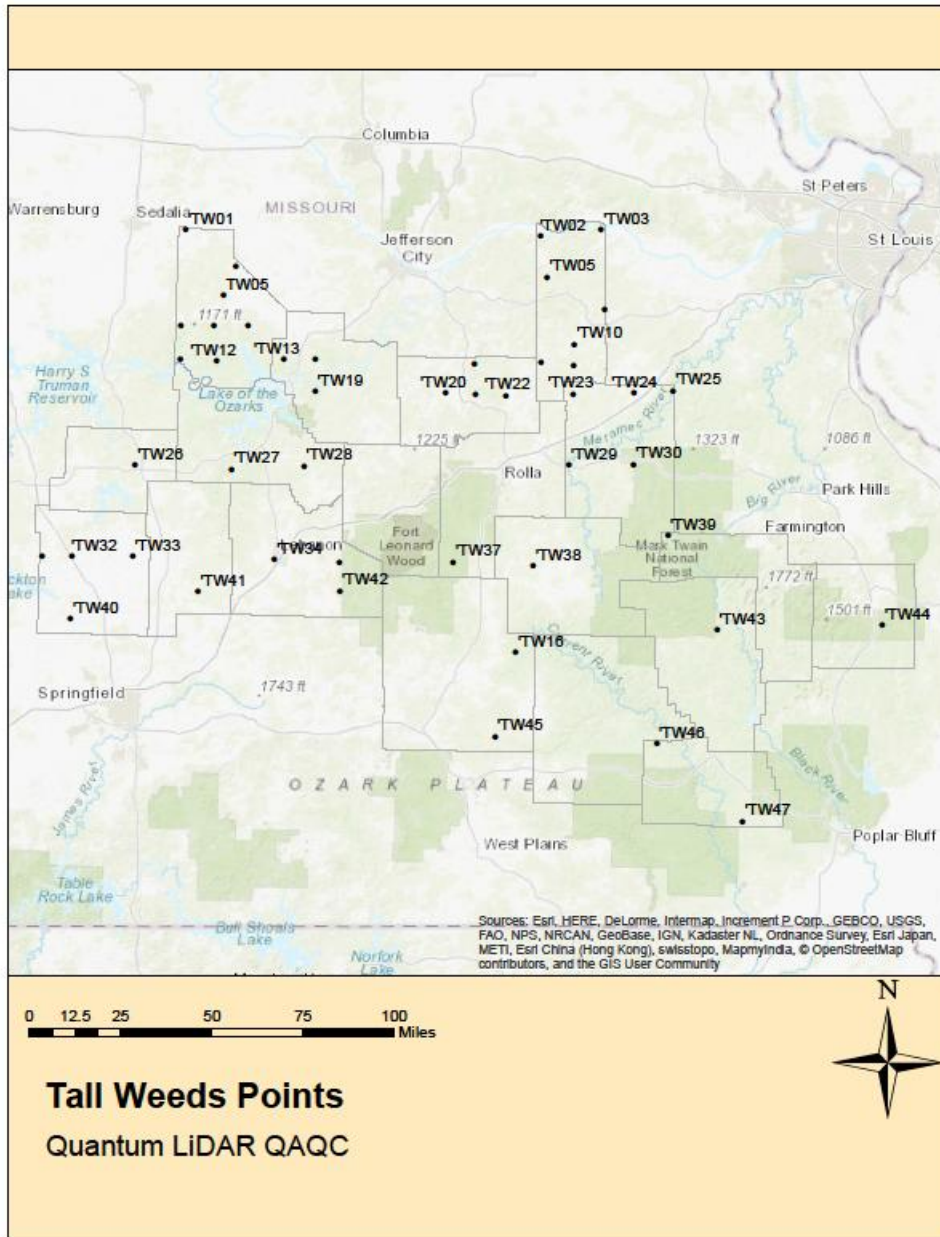


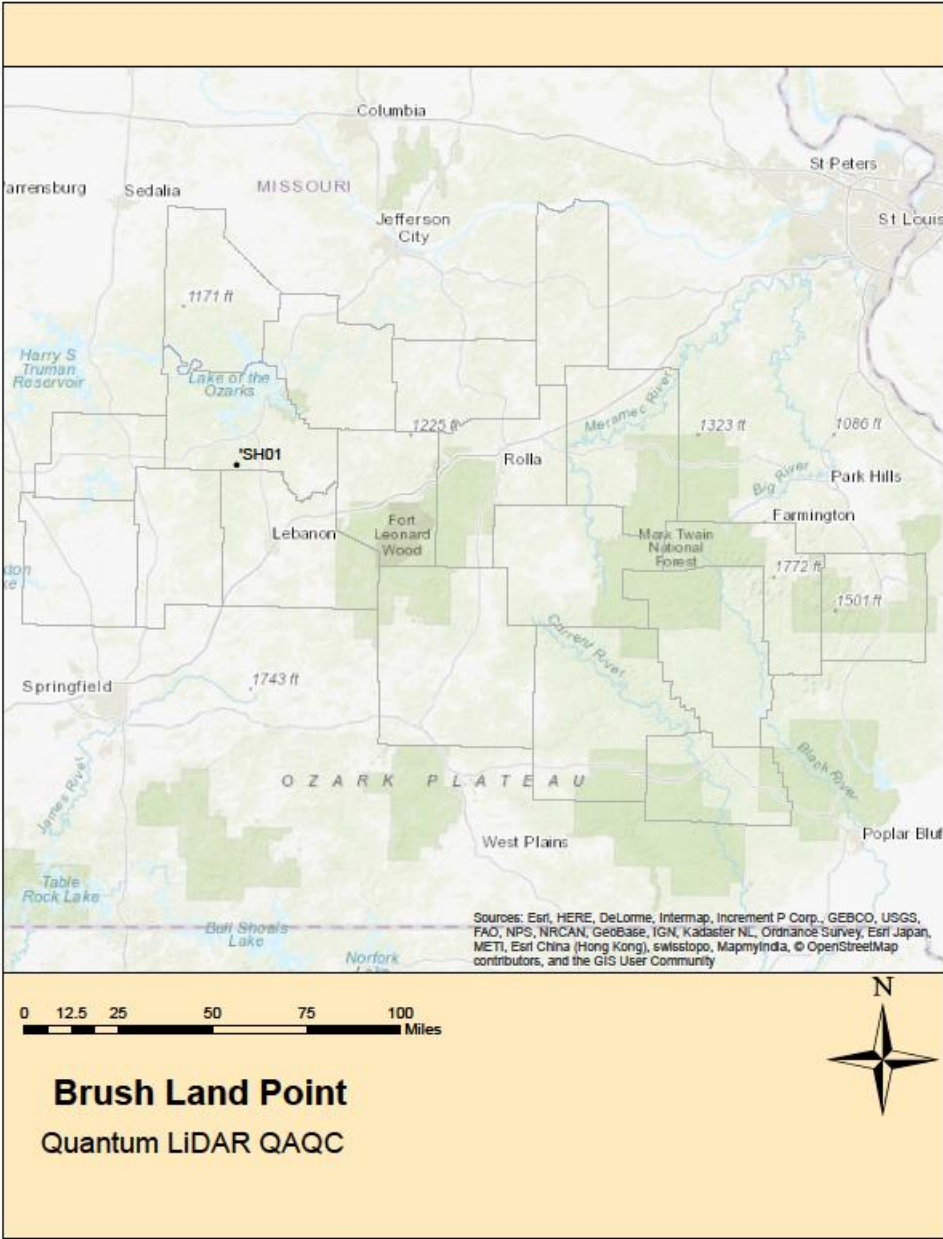














*Final Point Coordinates*

*UTM Zone 15*



## *Calibration Point Coordinates*

Horizontal Datum - NAD83(2011)  
UTM ZONE 15  
Vertical Datum - NAVD 88  
Geoid - GEOID12B  
Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'CA001	4281663.504	497134.443	254.531
'CA002	4280402.172	512240.478	279.642
'CA003	4280434.153	619440.503	216.998
'CA004	4277795.314	629611.435	165.406
'CA005	4282976.155	640290.546	163.796
'CA006	4271160.902	501800.894	287.469
'CA007	4269188.077	514315.911	290.181
'CA008	4266340.217	622009.332	184.583
'CA009	4266216.600	632400.548	264.446
'CA010	4266331.991	641792.591	252.783
'CA011	4260672.810	497942.054	314.406
'CA012	4259318.917	510204.339	298.256
'CA013	4260068.623	522343.554	292.020
'CA014	4255279.259	619594.506	227.434
'CA015	4255205.538	631978.746	268.667
'CA016	4255740.916	642037.479	219.953
'CA017	4248840.530	495356.934	340.054
'CA018	4248923.429	506890.416	252.945
'CA019	4249037.677	518543.099	238.685
'CA020	4248815.895	530025.208	271.131
'CA021	4248830.738	541358.915	254.636
'CA022	4249161.711	551060.002	290.402
'CA023	4243876.426	620227.252	216.944
'CA024	4243489.674	631590.218	280.219
'CA025	4242789.164	642030.593	250.303
'CA026	4237085.912	495229.032	282.958
'CA027	4236582.180	507745.969	341.441
'CA028	4237297.344	520969.788	258.235
'CA029	4237262.659	531137.246	237.231
'CA030	4237351.306	542102.557	215.667
'CA031	4237674.101	551984.711	178.613
'CA032	4238712.989	563676.295	219.320
'CA033	4236786.591	574162.880	261.168
'CA034	4236791.635	586712.250	236.268
'CA035	4235010.030	597644.228	259.306



'CA036	4236582.412	609402.448	318.458
'CA037	4236950.128	620264.805	255.731
'CA038	4236149.930	631656.908	245.386
'CA039	4235640.903	641728.060	251.559
'CA040	4225986.364	495225.698	241.115
'CA041	4225832.898	507746.912	213.188
'CA042	4225608.130	521336.208	209.896
'CA043	4225398.162	530866.991	204.288
'CA044	4225034.286	540207.290	263.501
'CA045	4225828.795	552387.031	300.311
'CA046	4225050.412	563137.284	261.664
'CA047	4224954.148	574737.962	269.095
'CA048	4225970.973	587330.157	233.829
'CA049	4223981.869	598147.335	243.296
'CA050	4225389.154	608183.757	312.040
'CA051	4225919.019	620681.266	279.816
'CA052	4226271.683	631574.349	299.421
'CA053	4227079.330	642135.573	250.856
'CA054	4226957.984	652744.407	263.473
'CA055	4228069.009	665797.371	204.137
'CA056	4212981.730	456295.374	278.042
'CA057	4212669.449	466452.071	303.106
'CA058	4212371.805	478689.552	293.875
'CA059	4212372.827	490016.294	302.229
'CA060	4212774.032	501862.658	217.964
'CA061	4211896.405	513796.024	221.136
'CA062	4214189.259	640664.187	309.512
'CA063	4214522.502	652694.751	267.607
'CA064	4214509.515	663691.328	280.400
'CA065	4201530.390	455634.824	317.534
'CA066	4200059.758	466862.566	296.374
'CA067	4200559.083	479360.518	324.776
'CA068	4199726.722	489351.749	296.594
'CA069	4199818.450	501421.892	312.160
'CA070	4199180.817	512938.890	245.432
'CA071	4200122.149	525306.428	327.356
'CA072	4200454.365	538273.539	296.924
'CA073	4200677.536	549387.065	332.876
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'CA075	4200984.484	571990.192	273.616
'CA076	4200371.068	581996.993	311.050
'CA077	4200935.658	593105.711	296.555
'CA078	4200419.521	606866.162	333.353
'CA079	4201272.703	617610.834	307.819
'CA080	4201496.353	630453.719	248.442
'CA081	4202858.722	640466.612	297.680



'CA082	4202101.469	652870.071	307.354
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'CA084	4190009.710	468371.161	259.398
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'CA087	4189184.553	501436.943	327.094
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'CA089	4189373.858	526287.022	307.719
'CA090	4188224.684	538811.380	324.148
'CA091	4190127.287	551601.644	340.132
'CA092	4189886.328	561844.466	311.343
'CA093	4189547.665	572430.856	310.268
'CA094	4189910.779	581986.918	221.070
'CA095	4189866.102	592701.147	240.145
'CA096	4190287.431	605717.086	317.712
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'CA098	4188991.886	628530.461	305.247
'CA099	4191134.636	639232.145	322.225
'CA100	4190675.838	652809.828	305.347
'CA101	4179803.522	445355.661	311.217
'CA102	4179385.472	457284.568	332.279
'CA103	4178689.474	467773.153	319.374
'CA104	4178312.030	479148.512	299.907
'CA105	4178469.843	490105.990	340.925
'CA106	4177282.938	500627.729	360.765
'CA107	4177456.567	512277.852	259.854
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'CA110	4180084.141	551135.108	304.488
'CA111	4214042.809	606230.672	308.550
'CA112	4179616.561	570284.130	264.844
'CA113	4179707.324	583023.263	238.916
'CA114	4179287.711	591062.532	358.889
'CA115	4178644.124	605175.697	339.718
'CA116	4179247.551	618581.030	367.875
'CA117	4179688.576	627476.649	334.919
'CA118	4179385.891	638487.802	286.557
'CA119	4178617.794	648151.790	337.403
'CA120	4169038.448	446917.216	291.869
'CA121	4169104.834	457203.093	332.831
'CA122	4168728.682	466328.216	308.972
'CA123	4168755.858	478502.172	317.822
'CA124	4168448.316	490920.106	327.323
'CA125	4168226.592	500537.246	340.474
'CA126	4169014.388	513664.206	358.293
'CA127	4167771.412	528121.325	385.220



'CA128	4167207.010	538919.818	355.547
'CA129	4166961.004	550806.110	349.794
'CA130	4168336.649	561926.710	281.553
'CA131	4165136.652	575295.193	371.844
'CA132	4167109.775	581921.912	318.607
'CA133	4167260.660	590470.239	359.828
'CA134	4166966.273	605290.123	368.345
'CA135	4166335.798	618511.754	347.948
'CA136	4166389.554	628211.365	371.387
'CA137	4165597.536	638436.847	372.358
'CA138	4177819.262	665455.199	378.612
'CA139	4177998.728	681153.817	402.719
'CA140	4178139.747	689555.411	314.014
'CA141	4179695.623	697761.634	284.216
'CA142	4166516.578	664631.946	439.772
'CA143	4167017.341	699979.687	363.945
'CA144	4167975.294	711254.123	337.363
'CA145	4168728.366	721095.056	234.831
'CA146	4168806.138	732997.369	258.038
'CA147	4168816.032	742317.456	336.760
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'CA150	4158165.148	457810.329	358.095
'CA151	4157942.540	465907.037	340.190
'CA152	4157470.057	477783.695	356.986
'CA153	4156808.520	490382.402	358.953
'CA154	4156479.566	501313.786	373.078
'CA155	4155985.613	514528.545	408.930
'CA156	4156376.330	526130.282	373.592
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'CA158	4156954.556	550975.448	385.886
'CA159	4157295.600	560975.247	342.456
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'CA161	4157583.148	580772.784	373.787
'CA162	4157114.215	590158.948	375.417
'CA163	4157530.234	605705.774	415.851
'CA164	4158009.739	617741.327	370.878
'CA165	4159506.960	628578.823	402.671
'CA166	4159399.563	638299.057	403.395
'CA167	4212640.249	538316.183	258.228
'CA168	4154156.477	697513.583	278.561
'CA169	4157435.695	708767.287	302.989
'CA170	4157689.805	722514.721	271.938
'CA171	4158104.088	732823.031	210.470
'CA172	4157835.556	741815.553	259.621
CA173	4157514.138	751506.908	211.062



'CA174	4147667.962	446021.237	311.927
'CA175	4147043.927	456648.758	312.888
'CA176	4146272.258	467485.818	345.214
'CA177	4146256.276	476740.850	354.458
'CA178	4145833.455	490382.092	400.045
'CA179	4146925.454	567075.793	406.035
'CA180	4146010.655	579124.634	433.269
'CA181	4146374.543	589447.512	286.074
'CA182	4146267.893	600558.146	383.266
'CA183	4145883.838	610052.852	381.256
'CA184	4149930.614	648788.903	405.472
'CA185	4213599.086	561361.583	316.218
'CA186	4145303.181	683350.745	256.472
'CA187	4142752.308	696745.745	226.445
'CA188	4144699.232	710040.017	265.917
'CA189	4147689.907	721985.525	182.134
'CA190	4146445.603	731587.148	318.144
'CA191	4148193.039	741255.965	273.490
CA192	4147367.567	752054.582	242.650
'CA193	4136385.904	566641.450	414.035
'CA194	4135987.369	579613.787	430.765
'CA195	4134750.323	589906.425	331.743
'CA196	4136268.863	601875.631	394.506
'CA197	4136215.949	612802.069	390.933
'CA198	4135395.692	624508.455	386.152
'CA199	4133013.685	634912.674	223.462
'CA200	4135946.700	644734.253	240.880
'CA201	4136672.657	663717.413	365.813
'CA202	4135536.382	676116.919	339.504
'CA203	4133751.750	686406.189	231.840
'CA204	4133137.905	697731.536	177.633
'CA205	4133976.704	708221.095	195.447
'CA206	4133064.357	719720.869	173.738
'CA207	4133238.174	730782.976	168.719
'CA208	4133493.402	741431.975	171.560
'CA209	4133088.398	750468.618	169.281
'CA210	4121907.792	567536.635	399.724
'CA211	4122251.482	578239.014	368.237
'CA212	4122401.036	587999.389	346.506
'CA213	4121394.393	599267.687	391.664
'CA214	4119037.366	612729.188	418.973
'CA215	4118948.305	625982.234	354.383
'CA216	4121105.832	641241.290	326.628
'CA217	4123328.384	654328.762	344.363
'CA218	4123183.892	668733.043	242.477
'CA219	4122395.236	680632.752	269.275



CA220	4122362.177	697810.674	161.008
CA221	4107780.883	567217.536	441.107
'CA222	4107741.897	579637.566	407.927
'CA223	4106661.672	592239.035	388.866
'CA224	4106707.223	605873.748	395.190
'CA225	4106452.556	619153.170	364.021
'CA226	4105480.447	639336.407	235.884
'CA227	4105877.274	649495.500	255.811
'CA228	4104821.362	663027.674	228.486
'CA229	4104225.801	676663.410	172.314
'CA230	4105086.728	691446.585	253.486
'CA231	4091373.404	627631.432	314.581
'CA232	4089168.048	694903.195	264.788



## *Bare Earth Point Coordinates*

Horizontal Datum - NAD83(2011)

UTM ZONE 15

Vertical Datum - NAVD88

Geoid - GEOID12B

Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'BE001	4281669.703	497121.102	254.869
'BE002	4280395.615	512239.330	279.370
'BE003	4282976.963	640256.826	163.772
'BE004	4271152.950	501803.096	287.834
'BE005	4269193.053	514313.640	290.181
'BE006	4266349.289	622005.912	184.128
'BE007	4266315.500	641793.069	253.482
'BE008	4260667.038	497943.917	314.360
'BE009	4259318.063	510212.544	297.985
'BE010	4260060.766	522342.450	292.084
'BE011	4255187.516	631975.231	269.138
'BE012	4255740.969	642020.087	219.056
'BE013	4248832.714	495355.756	340.112
'BE014	4249035.193	518549.723	238.679
'BE015	4248815.506	530033.228	271.433
'BE016	4243877.533	620230.846	217.081
'BE017	4243508.577	631590.098	280.142
'BE018	4237090.725	495233.577	283.229
'BE019	4237298.945	520963.917	258.208
'BE020	4237353.538	542098.649	215.764
'BE021	4237684.142	551979.412	178.314
'BE022	4236792.671	574157.170	261.047
'BE023	4236798.137	586715.925	236.585
'BE024	4236578.884	609408.868	318.087
'BE025	4236951.326	620273.061	255.917
'BE026	4235632.625	641738.461	252.166
'BE027	4225990.845	495219.699	241.990
'BE028	4225829.289	552404.740	300.360
'BE029	4225048.641	563129.435	261.466
'BE030	4224959.381	574742.852	268.987
'BE031	4225975.460	587336.794	234.340
'BE032	4223974.350	598133.214	243.001
'BE033	4225390.433	608188.511	311.864
'BE034	4227086.765	642135.351	250.919
'BE035	4226974.991	652745.181	262.613





'BE036	4212664.469	466456.291	303.215
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'BE038	4212379.655	490014.394	302.061
'BE039	4212780.143	501862.482	218.144
'BE040	4212041.877	526308.303	258.340
'BE041	4212843.699	549366.679	293.592
'BE042	4213601.119	561352.520	316.346
'BE043	4213551.836	583070.059	303.158
'BE044	4214043.172	606213.565	308.518
'BE045	4213919.452	629339.858	308.762
'BE046	4214510.167	652698.179	268.160
'BE047	4214511.359	663699.665	280.029
'BE048	4201530.452	455627.266	317.556
'BE049	4200066.050	466853.648	297.833
'BE050	4200563.084	479365.947	324.681
'BE051	4199711.475	489352.459	296.251
'BE052	4199813.474	501417.505	312.404
'BE053	4199176.467	512947.601	246.124
'BE054	4200462.217	538272.076	297.201
'BE055	4199569.498	561843.201	316.156
'BE056	4200979.409	571946.929	269.724
'BE057	4200365.523	582004.088	310.697
'BE058	4201266.120	617603.186	307.395
'BE059	4202861.115	640472.728	297.813
'BE060	4202100.943	652878.836	307.152
'BE061	4190300.354	452191.085	303.646
'BE062	4190004.347	468377.386	259.917
'BE063	4189552.963	478947.935	262.617
'BE064	4189365.636	489703.525	324.304
'BE065	4189031.774	512899.886	252.110
'BE066	4189890.254	561841.174	311.118
'BE067	4189554.939	572425.139	309.965
'BE068	4189861.353	592706.869	240.071
'BE069	4188979.030	628535.462	305.457
'BE070	4190671.761	652821.945	305.225
'BE071	4179392.130	457283.853	332.407
'BE072	4178703.746	467770.152	319.425
'BE073	4178471.206	490112.616	340.996
'BE074	4177281.233	500620.716	360.644
'BE075	4177443.793	512275.734	259.907
'BE076	4177819.713	527734.755	364.855
'BE077	4177689.698	538524.946	337.015
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'BE080	4179614.940	570288.390	264.723
'BE081	4179687.008	583014.920	237.965



'BE082	4179278.022	591069.020	358.596
'BE083	4178640.222	605183.797	339.178
'BE084	4179257.767	618571.871	368.406
'BE085	4179692.783	627493.204	334.878
'BE086	4179377.421	638506.989	286.717
'BE087	4178616.107	648141.163	336.536
'BE088	4177809.334	665449.446	378.502
'BE089	4178006.706	681174.826	402.860
'BE090	4178205.053	697813.452	284.751
'BE091	4169039.340	446897.640	293.341
'BE092	4169110.423	457209.156	333.047
'BE093	4168750.991	478502.530	317.820
'BE094	4168217.814	500540.747	340.209
'BE095	4169020.072	513676.567	358.701
'BE096	4167205.819	538932.518	355.117
'BE097	4166963.201	550815.477	349.934
'BE098	4165143.874	575293.166	372.013
'BE099	4167102.328	581924.073	318.445
'BE100	4167268.263	590473.965	360.154
'BE101	4166961.430	605300.160	368.531
'BE102	4166363.236	618509.018	350.188
'BE103	4166528.752	664622.024	440.217
'BE104	4167012.517	699976.133	364.031
'BE105	4167986.752	711256.970	336.909
'BE106	4168727.026	721087.037	235.016
'BE107	4168831.436	742324.912	337.153
'BE108	4169572.629	750038.860	314.405
'BE109	4158504.343	447187.370	286.838
'BE110	4158173.894	457805.785	357.805
'BE111	4157458.768	477782.735	357.355
'BE112	4156805.339	490387.473	359.151
'BE113	4156485.927	501320.526	373.309
'BE114	4155995.866	514526.893	408.878
'BE115	4156364.195	526132.918	372.784
'BE116	4156458.806	539912.415	361.055
'BE117	4156955.475	550957.468	386.721
'BE118	4157291.964	560976.450	342.285
'BE119	4156873.880	574317.149	417.961
'BE120	4157590.406	580782.514	373.821
'BE121	4157109.943	590155.673	375.149
'BE122	4157529.501	605711.679	415.670
'BE123	4158013.568	617709.288	370.811
'BE124	4159399.462	638309.747	403.468
'BE125	4154150.603	697511.938	278.360
'BE126	4157425.201	708756.069	303.298
'BE127	4157672.408	722517.444	271.901



'BE128	4158100.902	732811.101	210.281
'BE129	4157846.402	741810.958	259.321
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'BE131	4146262.359	467490.822	344.382
'BE132	4146245.534	476733.446	354.269
'BE133	4145825.310	490392.805	399.850
'BE134	4146018.071	579126.738	432.807
'BE135	4146384.614	589449.897	286.315
'BE136	4146258.938	600555.692	383.346
'BE137	4145883.944	610046.181	381.248
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'BE139	4145299.744	683360.988	255.493
'BE140	4142761.797	696752.526	226.548
'BE141	4147673.463	721985.022	182.156
'BE142	4146452.649	731591.317	318.540
'BE143	4148192.982	741266.942	273.499
'BE144	4147372.057	752064.136	242.357
'BE145	4136385.733	566646.229	413.884
'BE146	4135980.300	579616.020	430.699
'BE147	4134757.606	589905.030	331.509
'BE148	4136268.959	601864.760	394.329
'BE149	4136218.656	612805.170	390.996
'BE150	4135405.978	624518.884	385.816
'BE151	4135954.677	644741.366	241.023
'BE152	4136671.003	663704.409	365.635
'BE153	4135532.621	676107.718	339.572
'BE154	4133751.683	686415.716	232.460
'BE155	4133140.837	697750.614	176.620
'BE156	4133976.564	708227.477	196.068
'BE157	4133069.706	719716.991	173.244
'BE158	4133237.523	730777.592	168.860
'BE159	4133484.791	741436.128	171.070
'BE160	4133060.762	750466.661	169.031
'BE161	4121891.251	567538.109	400.107
'BE162	4122249.442	578244.178	368.140
'BE163	4122419.263	588000.435	347.403
'BE164	4121393.813	599276.794	391.426
'BE165	4119050.721	612715.368	419.214
'BE166	4118938.613	625983.744	354.672
'BE167	4121094.453	641246.805	327.629
'BE168	4123175.858	668727.589	241.853
'BE169	4122403.206	680635.995	269.158
'BE170	4122381.062	697803.798	160.756
'BE171	4107789.546	567216.526	441.416
'BE172	4107742.457	579657.221	408.717
'BE173	4106655.191	592241.151	388.528



'BE174	4106709.011	605857.209	395.343
'BE175	4106449.036	619153.579	364.130
'BE176	4105478.319	639343.643	236.265
'BE177	4105879.757	649499.140	255.896
'BE178	4104815.112	663021.014	227.652
'BE179	4104229.763	676670.798	172.503
'BE180	4105090.329	691439.807	253.353
'BE181	4091370.492	627640.134	314.712
'BE182	4089176.812	694901.097	265.123
'BE183	4146976.618	658170.916	431.808
'BE184	4178132.437	689556.384	314.182
'BE185	4190293.311	605713.193	317.746



## *Urban Area Point Coordinates*

Horizontal Datum - NAD83(2011)  
 UTM ZONE 15  
 Vertical Datum - NAVD 88  
 Geoid - GEOID12B  
 Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'UA01	4254991.944	500147.250	309.172
'UA02	4253736.240	512834.400	300.166
'UA03	4280449.914	619433.169	216.972
'UA04	4244566.228	536348.414	283.925
'UA05	4246047.672	631618.243	287.564
'UA06	4225834.493	507738.317	212.725
'UA07	4225620.443	521340.620	210.822
'UA08	4225402.196	530871.970	203.565
'UA09	4211899.834	513788.582	220.673
'UA10	4214189.706	640678.271	309.491
'UA11	4200123.621	525312.333	327.426
'UA12	4200414.732	606864.160	333.305
'UA13	4201151.209	610740.238	320.624
'UA14	4201500.034	630444.130	248.447
'UA15	4203637.820	645161.988	229.812
'UA16	4189383.362	526285.548	307.864
'UA17	4189919.417	581995.653	221.273
'UA18	4191124.108	639225.264	323.335
'UA19	4168735.174	466317.587	310.316
'UA20	4168450.475	490928.134	327.249
'UA21	4167773.279	528133.379	385.107
'UA22	4166378.556	628224.361	371.840
'UA23	4165593.587	638415.153	372.249
'UA24	4168816.554	732990.036	258.275
'UA25	4147650.725	446020.320	312.963
UA26	4146917.061	567073.387	405.891
'UA27	4131617.549	592278.897	344.729
'UA28	4124422.958	680429.747	199.711
'UA29	4110506.749	578759.920	415.847
'UA30	4113472.270	645664.263	197.575
'UA31	4095477.530	634156.709	310.037
'UA32	4097273.312	677280.261	152.113
'UA33	4078376.970	693781.429	181.303
'UA34	4161359.012	739887.958	238.611
'UA35	4115991.544	619091.409	379.862
UA36	4236593.806	507727.374	341.465



'UA37	4277795.418	629619.536	166.527
'UA38	4163194.333	464982.601	306.359
'UA39	4128903.200	709523.874	165.202



## *Tall Weed Point Coordinates*

Horizontal Datum - NAD83(2011)  
 UTM ZONE 15  
 Vertical Datum - NAVD 88  
 Geoid - GEOID12B  
 Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'TW01	4281641.729	497108.542	255.143
'TW02	4280469.509	619431.570	217.526
'TW03	4282987.879	640288.371	163.887
'TW04	4269202.386	514305.085	289.967
'TW05	4266357.795	621994.702	183.303
'TW05	4259311.793	510192.837	298.421
'TW06	4255754.997	642019.141	217.936
'TW07	4248827.416	495354.048	339.664
'TW08	4248933.992	506885.817	252.341
'TW09	4249029.353	518570.410	238.340
'TW10	4243451.839	631597.126	277.833
'TW11	4237096.535	495224.124	283.126
'TW12	4236596.694	507721.811	341.215
'TW13	4237265.091	531142.316	236.719
'TW14	4237371.685	542088.906	217.611
'TW15	4234988.812	597645.352	260.478
'TW16	4136224.796	612794.984	390.554
'TW17	4236937.339	620268.574	255.406
'TW18	4236153.509	631655.739	246.071
'TW19	4225037.176	540194.358	262.754
'TW20	4225963.009	587335.017	233.854
'TW21	4223981.672	598139.998	242.836
'TW22	4225382.848	608186.755	311.994
'TW23	4226261.576	631582.843	298.658
'TW24	4226970.373	652739.951	262.904
TW25	4228048.633	665819.120	201.171
'TW26	4200571.374	479364.979	324.935
'TW27	4199172.577	512951.739	249.013
'TW28	4200447.615	538276.788	296.744
'TW29	4201489.765	630456.407	247.850
'TW30	4202090.197	652872.947	307.381
'TW31	4169046.815	446909.239	293.189
'TW32	4169121.657	457203.927	333.008
'TW33	4168763.264	478503.714	317.578



'TW34	4167776.800	528089.471	385.202
'TW35	4166974.612	550810.292	350.437
'TW37	4167241.951	590486.135	359.290
'TW38	4166322.896	618497.325	347.211
'TW39	4177801.995	665435.989	379.145
'TW40	4147034.977	456653.306	312.702
'TW41	4156488.617	501313.730	373.044
'TW42	4156948.089	550984.192	385.221
'TW43	4145310.983	683363.620	254.379
'TW44	4148213.817	741283.429	273.845
'TW45	4106719.729	605897.486	393.036
'TW46	4104818.288	663010.175	226.777
'TW47	4078355.454	693800.084	180.735





## *Forest Point Coordinates*

Horizontal Datum - NAD83(2011)  
 UTM ZONE 15  
 Vertical Datum - NAVD 88  
 Geoid - GEOID12B  
 Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'FO001	4280412.878	512262.405	280.416
'FO002	4280465.965	619325.895	204.027
'FO003	4282958.603	640303.426	163.476
'FO004	4269248.195	514291.497	287.941
'FO006	4266198.691	632420.005	263.537
'FO007	4266330.024	641766.401	251.534
'FO008	4260663.942	497976.328	315.119
'FO009	4248816.586	495339.518	340.109
'FO010	4249069.330	518523.756	238.862
'FO011	4255317.959	619494.236	225.998
'FO012	4255199.225	631954.369	268.257
'FO013	4237099.169	495249.870	284.589
'FO014	4236595.368	507696.083	343.267
'FO015	4237285.484	520958.937	257.619
'FO016	4237270.959	531110.379	239.517
'FO017	4236805.503	586646.561	234.023
'FO018	4234998.525	597676.366	257.530
FO019	4235627.556	641695.112	246.614
'FO020	4225989.033	495252.389	239.716
'FO021	4225414.276	530905.551	204.544
'FO022	4225024.344	540177.733	260.721
'FO023	4223910.164	598149.082	246.687
'FO024	4228065.840	665776.977	204.184
'FO025	4212971.299	456307.661	277.704
'FO026	4212793.047	501869.579	218.235
'FO027	4211911.292	513779.556	220.596
'FO028	4212014.095	526282.269	250.177
'FO029	4212622.616	538304.141	257.957
'FO030	4212730.852	571994.022	305.334
'FO031	4213555.933	583047.960	302.786
'FO032	4214028.826	606238.836	308.333
'FO033	4214788.376	617631.134	291.328
'FO034	4213937.995	629357.715	310.434
'FO035	4214514.567	652716.299	266.778



'FO036	4214528.968	663720.028	277.982
'FO037	4199201.694	512943.212	245.154
'FO038	4200462.987	538299.430	295.875
'FO039	4199540.889	561867.679	313.732
'FO040	4200995.900	571964.982	271.219
'FO041	4200385.625	582035.674	308.451
'FO042	4200958.686	593086.530	298.983
'FO043	4203604.221	645137.736	232.343
'FO044	4189969.978	468369.228	261.313
'FO045	4189535.217	478965.685	262.519
'FO046	4189372.376	489682.642	325.735
'FO047	4189166.563	501456.624	326.321
'FO048	4189037.882	512877.153	252.917
'FO049	4188264.367	538814.688	321.301
'FO050	4190090.422	551610.255	338.913
'FO051	4189899.390	561870.944	311.859
'FO052	4189928.210	581948.036	219.616
'FO053	4189777.817	592846.101	238.552
'FO054	4190332.228	617236.038	279.127
'FO055	4188935.483	628538.920	311.241
'FO056	4191144.230	639212.419	321.313
'FO057	4190695.698	652814.974	305.182
'FO058	4178712.260	467796.168	318.616
'FO059	4177266.879	500606.552	359.880
'FO060	4177463.524	512242.122	258.405
'FO061	4177800.979	527739.440	365.717
'FO062	4177693.134	538503.345	340.472
'FO063	4181007.135	561605.140	326.022
'FO064	4179589.668	570272.803	266.300
'FO065	4179750.121	583011.191	238.652
'FO066	4179312.880	591053.384	358.997
'FO067	4178663.640	605147.733	340.993
'FO068	4179683.685	627445.355	333.588
'FO069	4179420.610	638524.356	285.433
'FO070	4178599.221	648184.687	337.261
'FO071	4178020.720	681139.199	402.536
'FO072	4178132.981	689539.422	312.870
'FO073	4168720.722	466374.697	310.675
'FO074	4168988.568	513717.860	357.875
'FO075	4168372.681	561808.952	280.854
'FO076	4165133.121	575272.338	374.076
'FO077	4165554.476	638407.516	371.604
'FO078	4166483.914	664617.341	439.269
'FO079	4168705.822	721103.898	237.039
'FO080	4169568.718	750014.928	312.909
'FO081	4146286.105	467470.242	346.622



'FO082	4146879.015	567085.099	404.804
'FO083	4146437.843	589480.446	286.045
'FO084	4146283.030	600534.207	380.686
'FO085	4142731.939	696727.701	226.188
'FO086	4146470.868	731589.031	319.458
'FO087	4147347.931	752040.991	242.192
'FO088	4135999.536	579650.802	427.801
'FO089	4135408.575	624494.809	385.929
'FO090	4133065.439	634897.896	222.316
'FO091	4135972.433	644736.637	240.164
'FO092	4135545.166	676141.463	339.171
'FO093	4133999.308	708216.648	197.409
'FO094	4133258.825	730761.298	171.740
'FO095	4133089.764	750447.929	169.235
'FO096	4122409.783	587979.498	345.226
'FO097	4119126.358	612675.680	415.194
'FO098	4118985.929	625990.774	353.963
'FO099	4121119.819	641208.128	323.027
'FO100	4123320.467	654362.731	343.741
'FO101	4122400.092	680655.544	266.936
'FO102	4122379.721	697843.989	162.732
'FO103	4107803.175	567168.757	445.877
'FO104	4106646.670	592211.343	386.546
'FO105	4106456.322	619175.625	362.794
'FO106	4105495.387	639318.081	236.921
'FO107	4105091.961	691472.991	255.207
'FO108	4091393.852	627596.896	316.774
'FO109	4097298.835	677251.343	154.405
'FO110	4089156.078	694871.624	264.026



### *Brush Land Point Coordinates*

Horizontal Datum - NAD83(2011)  
UTM ZONE 15  
Vertical Datum - NAVD 88  
Geoid - GEOID12B  
Units – Meters

Point ID	Northing (m)	Easting (m)	Elev. (m)
'SH01	4195864.581	517816.055	341.744



## Point Data and Accuracy Log Sheet



## Calibration Point Log Sheets



Point ID	CA001
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Otterville West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4281663.504	497134.443	254.531

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA002
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Tipton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4280402.172	512240.478	279.642

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:







Point ID	CA003
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Morrison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4280434.153	619440.503	216.998

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA004
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Gasconade

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4277795.314	629611.435	165.406

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA005
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Hermann

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4282976.155	640290.546	163.796

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA006
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Florence

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4271160.902	501800.894	287.469

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA007
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Morgan
Quad	Fortuna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4269188.077	514315.911	290.181

Operator	Zane Vanlandingham
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Date (MM-DD-YYYY)	02-20-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA008
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Pershing

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4266340.217	622009.332	184.583
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA009
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Swiss

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4266216.6	632400.548	264.446

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA010
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B





Quad	Dissen	Published Control	Meters
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Northing	Easting	Elevation
4266331.991	641792.591	252.783

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA011
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Morgan
Quad	Crockerville

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4260672.81	497942.054	314.406

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA012
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4259318.917	510204.339	298.256

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA013
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Barnett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4260068.623	522343.554	292.02

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA014
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Cooper Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4255279.259	619594.506	227.434

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA015
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Rosebud

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4255205.538	631978.746	268.667

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA016
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Gerald

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4255740.916	642037.479	219.953

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA017
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4248840.53	495356.934	340.054

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA018
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4248923.429	506890.416	252.945

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA019
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Versailles

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4249037.677	518543.099	238.685

Operator	Zane Vanlandingham
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Date (MM-DD-YYYY)	02-21-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA020
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Barnett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4248815.895	530025.208	271.131



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA021
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Olean

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4248830.738	541358.915	254.636

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA022
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Enon	Published Control	Meters
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Northing	Easting	Elevation
4249161.711	551060.002	290.402

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA023
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Gasconade
Quad	Owensville West

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4243876.426	620227.252	216.944

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA024
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4243489.674	631590.218	280.219

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA025
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Strain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4242789.164	642030.593	250.303

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA026
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Boylers Mill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4237085.912	495229.032	282.958

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA027
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Proctor Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4236582.18	507745.969	341.441

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA028
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Gravois Mills

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4237297.344	520969.788	258.235

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA029
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Rocky Mount

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4237262.659	531137.246	237.231

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA030
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Eldon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4237351.306	542102.557	215.667

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA031
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Eugene

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4237674.101	551984.711	178.613

Operator	Zane Vanlandingham
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Date (MM-DD-YYYY)	02-24-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA032
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Saint Elizabeth

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4238712.989	563676.295	219.32





Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA033
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Meta

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4236786.591	574162.88	261.168
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA034
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Argyle

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4236791.635	586712.25	236.268

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA035
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Freeburg	Published Control	Meters
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Northing	Easting	Elevation
4235010.03	597644.228	259.306

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA036
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Maries
Quad	Summerfield

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236582.412	609402.448	318.458

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA037
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Belle

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236950.128	620264.805	255.731

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA038
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4236149.93	631656.908	245.386

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA039
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4235640.903	641728.06	251.559

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:







Point ID	CA040
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Knobby

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4225986.364	495225.698	241.115

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA041
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Bollinger Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225832.898	507746.912	213.188

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA042
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Sunrise Beach

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4225608.13	521336.208	209.896

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA043
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Lake Ozark

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225398.162	530866.991	204.288

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	



Antenna Height 2.1046 Meters

GPS Method Static (OPUS)

PHOTOS:



Point ID	CA044
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Bagnell

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225034.286	540207.29	263.501

Operator Zane Vanlandingham

Date (MM-DD-YYYY) 02-24-2018



Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA045
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Tuscumbia

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4225828.795	552387.031	300.311



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA046
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Saint Anthony

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4225050.412	563137.284	261.664
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Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA047
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Van Cleve

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters





Northing	Easting	Elevation
4224954.148	574737.962	269.095

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA048
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Brinktown	Published Control	Meters
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Northing	Easting	Elevation
4225970.973	587330.157	233.829

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA049
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Maries
Quad	Vienna

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4223981.869	598147.335	243.296

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA050
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Paydown

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225389.154	608183.757	312.04

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA051
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Redbird

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225919.019	620681.266	279.816

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA052
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Oak Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4226271.683	631574.349	299.421

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA053
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Oak Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4227079.33	642135.573	250.856

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA054
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Argo

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4226957.984	652744.407	263.473

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA055
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Meramec State Park

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4228069.009	665797.371	204.137

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA056
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Quincy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4212981.73	456295.374	278.042

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA057
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Quincy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212669.449	466452.071	303.106

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	02-27-2018
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Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA058
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Cross Timbers

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4212371.805	478689.552	293.875



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA059
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Climax Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4199711.475	489352.459	296.251
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Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA060
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Barnumton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4212774.032	501862.658	217.964

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA061
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Camden

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Green Bay Terrace	Published Control	Meters
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Northing	Easting	Elevation
4211896.405	513796.024	221.136

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA055
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15





State	Missouri
County	Crawford
Quad	Meramec State Park

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4228069.009	665797.371	204.137

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA063
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Leasburg

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214522.502	652694.751	267.607

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA064
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Onondaga Cave

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4214509.515	663691.328	280.4

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA065
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Weaubleau

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4201530.39	455634.824	317.534

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA066
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Wheatland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200059.758	466862.566	296.374

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



Point ID	CA067
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Preston

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4200559.083	479360.518	324.776

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



Point ID	CA068
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Branch

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4199726.722	489351.749	296.594

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA069
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Macks Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4199818.45	501421.892	312.16

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:







Point ID	CA070
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Hahatonka

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4199180.817	512938.89	245.432

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA071
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Decaturville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4200122.149	525306.428	327.356

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA072
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Montreal

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200454.365	538273.539	296.924

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA073
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Conns Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200677.536	549387.065	332.876

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	



Antenna Height 2.1046 Meters

GPS Method Static (OPUS)

PHOTOS:



Point ID	CA074
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Pulaski
Quad	Crocker

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4199562.854	561837.503	315.94

Operator Daniel Szostak

Date (MM-DD-YYYY) 02-15-2018



Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA075
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Hancock

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200984.484	571990.192	273.616



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA076
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Dixon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4200371.068	581996.993	311.05
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA077
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Newburg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters





Northing	Easting	Elevation
4200935.658	593105.711	296.555

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA078
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Rolla	Published Control	Meters
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Northing	Easting	Elevation
4200419.521	606866.162	333.353

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA079
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Phelps
Quad	Dillon

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4201272.703	617610.834	307.819

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA080
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Maramec Spring

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4201496.353	630453.719	248.442

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA081
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Indian Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4202858.722	640466.612	297.68

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA082
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Steelville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4202101.469	652870.071	307.354

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA083
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Humansville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4190292.156	452194.015	303.658

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA084
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Sentinel

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4190009.71	468371.161	259.398

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA085
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Urbana

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189557.852	478941.692	262.648

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA086
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Tunas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4189356.604	489703.568	324.475

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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**PHOTOS:**



Point ID	CA087
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Leadmine

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4189184.553	501436.943	327.094

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	02-28-2018
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Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA088
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Eldridge West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189031.988	512894.073	252.619



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA089
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Eldridge East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4189373.858	526287.022	307.719
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Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA090
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Stoutland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4188224.684	538811.38	324.148

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA091
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Richland	Published Control	Meters
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Northing	Easting	Elevation
4190127.287	551601.644	340.132

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA092
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15





State	Missouri
County	Pulaski
Quad	Ozark Springs

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189886.328	561844.466	311.343

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA093
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Waynesville

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189547.665	572430.856	310.268

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA094
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Devils Elbow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189910.779	581986.918	221.07

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA095
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Kaintuck Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189866.102	592701.147	240.145

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA096
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Yancy Mills

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4190287.431	605717.086	317.712

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA097
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Lecoma

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4190374.784	617244.243	280.328

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA098
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Seaton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4188991.886	628530.461	305.247

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA099
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cook Station

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4191134.636	639232.145	322.225

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	





Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA100
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cherryville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4190675.838	652809.828	305.347

Operator	Grant Chapman
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Date (MM-DD-YYYY)	01-25-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA101
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Humansville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179803.522	445355.661	311.217



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE071
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Elkton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4179392.13	457283.853	332.407
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	CA103
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Sentinel

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4178689.474	467773.153	319.374

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA104
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Urbana	Published Control	Meters
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Northing	Easting	Elevation
4178312.03	479148.512	299.907

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA105
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Madison
Quad	Tunas

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4178469.843	490105.99	340.925

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA106
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Windyville

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4177282.938	500627.729	360.765

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA107
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA108
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177818.764	527725.635	365.112

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA109
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Oakland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA110
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Richland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4180084.141	551135.108	304.488

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA111
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Vichy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4214042.809	606230.672	308.55

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA112
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Waynesville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4179616.561	570284.13	264.844

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA113
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Devils Elbow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179707.324	583023.263	238.916

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA114
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Kaintuck Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179287.711	591062.532	358.889

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA115
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Edgar Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4178644.124	605175.697	339.718

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA116
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Lecoma

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179247.551	618581.03	367.875

Operator	Grant Chapman
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Date (MM-DD-YYYY)	01-25-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA117
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Seaton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179688.576	627476.649	334.919



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA118
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Cook Station

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4179385.891	638487.802	286.557
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA119
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Howes Mill Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4178617.794	648151.79	337.403

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA120
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Fair Play	Published Control	Meters
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Northing	Easting	Elevation
4169038.448	446917.216	291.869

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA121
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Polk
Quad	Cliquot

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4169104.834	457203.093	332.831

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA122
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Cliquot

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4168728.682	466328.216	308.972

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA123
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Buffalo NW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168755.858	478502.172	317.822

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA124
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Buffalo

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168448.316	490920.106	327.323

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA125
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Windyville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168226.592	500537.246	340.474

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA126
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4169014.388	513664.206	358.293

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA127
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167771.412	528121.325	385.22

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA128
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Oakland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4167207.01	538919.818	355.547

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA129
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Drynob

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4166961.004	550806.11	349.794

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	





Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA130
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Brownfield

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4168336.649	561926.71	281.553

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-16-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA131
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Bloodland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4165136.652	575295.193	371.844



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA132
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Big Piney

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4167109.775	581921.912	318.607
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA133
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Flat

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4167260.66	590470.239	359.828

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA134
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Edgar Springs	Published Control	Meters
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Northing	Easting	Elevation
4166966.273	605290.123	368.345

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA135
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Dent
Quad	Anutt

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4166335.798	618511.754	347.948

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA136
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Salem

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4166389.554	628211.365	371.387

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA137
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Short Bend

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4165597.536	638436.847	372.358

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA138
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177819.262	665455.199	378.612

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA139
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Johnson Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177998.728	681153.817	402.719

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA140
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Banner

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4178139.747	689555.411	314.014

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA141
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Banner

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179695.623	697761.634	284.216

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA142
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4166516.578	664631.946	439.772

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA143
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Graniteville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167017.341	699979.687	363.945

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA144
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Iron Mountain Lake

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167975.294	711254.123	337.363

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA145
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Wachita Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168728.366	721095.056	234.831

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA146
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Knob Lick

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168806.138	732997.369	258.038

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA147
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Knob Lick

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4168816.032	742317.456	336.76

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA148
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Womack

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4169558.217	750037.747	314.381

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA149
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Aldrich

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4158518.823	447183.401	286.381

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA150
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Bolivar

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4158165.148	457810.329	358.095

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	



Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA151
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Bolivar

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4157942.54	465907.037	340.19



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA152
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Cedar Vista

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4157470.057	477783.695	356.986
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA153
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Charity

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4156808.52	490382.402	358.953

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA154
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Long Lane	Published Control	Meters
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Northing	Easting	Elevation
4156479.566	501313.786	373.078

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA155
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Laclede
Quad	Phillipsburg

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4155985.613	514528.545	408.93

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA156
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Brush Creek

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4156376.33	526130.282	373.592

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA157
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Russ

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4156463.83	539899.366	360.793

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA158
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Drew

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4156954.556	550975.448	385.886

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA159
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Winnipeg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157295.6	560975.247	342.456

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA160
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Roby

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4156877.773	574310.985	417.918

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA161
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Slabtown Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4157583.148	580772.784	373.787

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA162
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Beulah

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4157114.215	590158.948	375.417

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA163
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Maples

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4157530.234	605705.774	415.851

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-21-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA164
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Rhyse

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4158009.739	617741.327	370.878



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA165
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Darien

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4159506.96	628578.823	402.671
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA166
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Doss

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4159399.563	638299.057	403.395

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA167
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B





Quad	Toronto	Published Control	Meters
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Northing	Easting	Elevation
4212640.249	538316.183	258.228

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA168
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Iron
Quad	Johnson Shut-ins

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4154156.477	697513.583	278.561

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA169
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Ironton

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4157435.695	708767.287	302.989

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA170
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Rhodes Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157689.805	722514.721	271.938

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA171
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Fredericktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4158104.088	732823.031	210.47

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA172
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Fredericktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157835.556	741815.553	259.621

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA173
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Higdon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157514.138	751506.908	211.062

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA174
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Walnut Grove

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4147667.962	446021.237	311.927

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA175
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Morrisville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4147043.927	456648.758	312.888

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	



Antenna Height 2.1046 Meters

GPS Method Static (OPUS)

PHOTOS:



Point ID	CA176
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Pleasant Hope

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4146272.258	467485.818	345.214

Operator Grant Chapman

Date (MM-DD-YYYY) 02-27-2018



Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA177
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Pleasant Hope

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4146256.276	476740.85	354.458



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA178
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Elkland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4145833.455	490382.092	400.045
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA179
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Roubidoux

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4146925.454	567075.793	406.035

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA180
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Success	Published Control	Meters
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Northing	Easting	Elevation
4146010.655	579124.634	433.269

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA181
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Texas
Quad	Prescott

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146374.543	589447.512	286.074

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA182
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Licking

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146267.893	600558.146	383.266

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA183
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Licking

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4145883.838	610052.852	381.256

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA184
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Loggers Lake

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4149930.614	648788.903	405.472

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA185
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Iberia

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4213599.086	561361.583	316.218

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA186
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Centerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4145303.181	683350.745	256.472

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA187
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Lesterville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4142752.308	696745.745	226.445

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA188
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Glover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4144699.232	710040.017	265.917

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA189
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison
Quad	Rock Pile Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4147689.907	721985.525	182.134

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	01-24-2018
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Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA190
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Rock Pile Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4146445.603	731587.148	318.144



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA191
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Cherokee Pass

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4148193.039	741255.965	273.49
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Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA192
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Marquand

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4147367.567	752054.582	242.65

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA193
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Huggins	Published Control	Meters
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Northing	Easting	Elevation
4136385.904	566641.45	414.035

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA194
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Texas
Quad	Bucyrus

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4135987.369	579613.787	430.765

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA195
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Houston

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4134750.323	589906.425	331.743

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA196
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Raymondville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4136268.863	601875.631	394.506

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**





Point ID	CA197
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Hartshorn

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4136215.949	612802.069	390.933

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA198
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Lewis Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4135395.692	624508.455	386.152

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA199
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Round Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133013.685	634912.674	223.462

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA200
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	The Sinks

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4135946.7	644734.253	240.88

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA201
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Midridge

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4136672.657	663717.413	365.813

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	



Antenna Height 2.1046 Meters

GPS Method Static (OPUS)

PHOTOS:



Point ID	CA202
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison
Quad	Corridon SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4135536.382	676116.919	339.504

Operator Grant Chapman

Date (MM-DD-YYYY) 01-24-2018



Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA203
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Redford

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133751.75	686406.189	231.84



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA204
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Lesterville SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4133137.905	697731.536	177.633
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA205
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Des Arc

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4133976.704	708221.095	195.447

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA206
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Brunot	Published Control	Meters
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Northing	Easting	Elevation
4133064.357	719720.869	173.738

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	56365500015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA207
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Madison
Quad	Coldwater

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133238.174	730782.976	168.719

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA208
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Cascade

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133493.402	741431.975	171.56

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5620550015
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA209
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Allbright

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4133088.398	750468.618	169.281

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA210
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4121907.792	567536.635	399.724

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA211
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4122251.482	578239.014	368.237

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA212
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4122401.036	587999.389	346.506

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA213
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Elk Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4121394.393	599267.687	391.664

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA214
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Summersville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4119037.366	612729.188	418.973

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.1046 Meters
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GPS Method	Static (OPUS)
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PHOTOS:



Point ID	CA215
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Shannon
Quad	Summersville NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4118948.305	625982.234	354.383

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-05-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA216
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Alley Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4121105.832	641241.29	326.628



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA217
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Eminence

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4123328.384	654328.762	344.363
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA218
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Exchange

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4123183.892	668733.043	242.477

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA219
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B





Quad	Ellington	Published Control	Meters
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Northing	Easting	Elevation
4122395.236	680632.752	269.275

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA220
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System	NAD83(2011)
	UTM15



State	Missouri
County	Madison
Quad	Clearwater Dam

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4122362.177	697810.674	161.008

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA221
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool SW

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4107780.883	567217.536	441.107

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA222
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4107741.897	579637.566	407.927

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA223
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Willow Springs North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4106661.672	592239.035	388.866

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	CA224
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Clear Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4106707.223	605873.748	395.19

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA225
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Pine Crest

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4106452.556	619153.17	364.021

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	CA226
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Bartlett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4105480.447	639336.407	235.884

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)





PHOTOS:



Point ID	CA227
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Winona

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4105877.274	649495.5	255.811

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	



Antenna Height 2.1046 Meters

GPS Method Static (OPUS)

PHOTOS:



Point ID	CA228
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Carter
Quad	Stegall Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4104821.362	663027.674	228.486

Operator Daniel Szostak

Date (MM-DD-YYYY) 02-03-2018



Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	CA229
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Van Buren North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4104225.801	676663.41	172.314



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA230
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4105086.728	691446.585	253.486
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA231
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Montier

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4091373.404	627631.432	314.581

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	CA232
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Hunter	Published Control	Meters
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Northing	Easting	Elevation
4089168.048	694903.195	264.788

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



## Bare Earth Point Log Sheets





Point ID	BE001
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Otterville West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4281669.703	497121.102	254.869

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE002
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Tipton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4280395.615	512239.33	279.37

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE003
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Hermann

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4282976.963	640256.826	163.772

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE004
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Florence

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4271152.95	501803.096	287.834

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE005
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Fortuna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4269193.053	514313.64	290.181

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE006
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Pershing

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4266349.289	622005.912	184.128

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE007
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Dissen

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4266315.5	641793.069	253.482

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE008
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4260667.038	497943.917	314.36

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE009
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4259318.063	510212.544	297.985

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE010
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Morgan
Quad	Barnett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4260060.766	522342.45	292.084

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE011
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Rosebud

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4255187.516	631975.231	269.138

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992h

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE012
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Gasconade
Quad	Gerald

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4255740.969	642020.087	219.056

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE013
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4248832.714	495355.756	340.112

Operator	Zane Vanlandingham
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Date (MM-DD-YYYY)	02-21-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE014
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Versailles

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4249035.193	518549.723	238.679



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE015
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Barnett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4248815.506	530033.228	271.433



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE016
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4243877.533	620230.846	217.081
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE017
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4243508.577	631590.098	280.142

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE018
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Boylers Mill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4157291.964	560976.45	342.285

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE019
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B



Quad	Gravois Mills	Published Control	Meters
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Northing	Easting	Elevation
4237298.945	520963.917	258.208

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE020
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Miller
Quad	Eldon

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4237353.538	542098.649	215.764

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE021
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Miller
Quad	Eugene

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4237684.142	551979.412	178.314

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE022
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Meta

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236792.671	574157.17	261.047

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE023
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Argyle

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236798.137	586715.925	236.585

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE024
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Summerfield

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4236578.884	609408.868	318.087

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE025
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Belle

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4236951.326	620273.061	255.917

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE026
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4235632.625	641738.461	252.166

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE027
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Knobby

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225990.845	495219.699	241.99

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE028
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Tuscumbia

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4225829.289	552404.74	300.36

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE029
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Saint Anthony

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225048.641	563129.435	261.466

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE030
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Van Cleve

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4224959.381	574742.852	268.987

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE031
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Brinktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4225975.46	587336.794	234.34

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE032
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Vienna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4223974.35	598133.214	243.001

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE033
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Paydown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225390.433	608188.511	311.864

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE034
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Oak Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4227086.765	642135.351	250.919

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	



Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE035
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Argo

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4226974.991	652745.181	262.613

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	01-25-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE036
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Quincy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212664.469	466456.291	303.215



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE037
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Cross Timbers

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212384.756	478690.382	293.744



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE038
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Climax Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212379.655	490014.394	302.061



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE039
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Camden
Quad	Barnumton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4212780.143	501862.482	218.144
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Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE040
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Camdenton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4212041.877	526308.303	258.34

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE041
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Brumley

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4212843.699	549366.679	293.592

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE042
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Iberia	Published Control	Meters
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Northing	Easting	Elevation
4213601.119	561352.52	316.346

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE043
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Maries
Quad	Big Bend

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4213551.836	583070.059	303.158

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	BE044
Project No.	7621181006
Project Name	Quantum LiDAR Survey

Aerial Target	
LiDAR Ground Control	
X LiDAR QC Point	

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Maries
Quad	Vichy

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214043.172	606213.565	308.518

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE045
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Rosati

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4213919.452	629339.858	308.762

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	BE046
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Leasburg

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214510.167	652698.179	268.16

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**





Point ID	BE047
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Onondaga Cave

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4214511.359	663699.665	280.029

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE048
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Weaubleau

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4201530.452	455627.266	317.556

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE049
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Wheatland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200066.05	466853.648	297.833

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE050
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Preston

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200563.084	479365.947	324.681

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE051
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Branch

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4199711.475	489352.459	296.251

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE052
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Macks Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4199813.474	501417.505	312.404

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE053
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Hahatonka

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4199176.467	512947.601	246.124

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE054
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Montreal

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200462.217	538272.076	297.201

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE055
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Crocker

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4199569.498	561843.201	316.156

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE056
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Hancock

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200979.409	571946.929	269.724

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE057
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Dixon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200365.523	582004.088	310.697

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE058
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Dillon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4201266.12	617603.186	307.395

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE059
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Crawford
Quad	Indian Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4202861.115	640472.728	297.813

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	



Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE060
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Steelville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4202100.943	652878.836	307.152

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	01-25-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE061
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Humansville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4190300.354	452191.085	303.646



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE062
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Sentinel

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4190004.347	468377.386	259.917





Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE063
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Urbana

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4189552.963	478947.935	262.617



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE064
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison
Quad	Tunas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4189365.636	489703.525	324.304
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Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE065
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Eldridge West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4189031.774	512899.886	252.11

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE066
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Ozark Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4189890.254	561841.174	311.118

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE067
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Waynesville	Published Control	Meters
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Northing	Easting	Elevation
4189554.939	572425.139	309.965

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE068
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Phelps
Quad	Kaintuck Hollow

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4189861.353	592706.869	240.071

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE069
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Phelps
Quad	Seaton

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4188979.03	628535.462	305.457

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE070
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cherryville

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4190671.761	652821.945	305.225

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE072
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Sentinel

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4178703.746	467770.152	319.425

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE073
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Tunas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178471.206	490112.616	340.996

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE074
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Windyville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177281.233	500620.716	360.644

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE075
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE076
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177819.713	527734.755	364.855

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE077
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Oakland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4177689.698	538524.946	337.015

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE078
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Richland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4180086.328	551140.688	304.548

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE079
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Ozark Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4180941.014	561564.715	326.086

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	BE080
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Waynesville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4179614.94	570288.39	264.723

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE081
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Devils Elbow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179687.008	583014.92	237.965

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE082
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Kaintuck Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179278.022	591069.02	358.596

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE083
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Edgar Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178640.222	605183.797	339.178

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE084
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Lecoma

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4179257.767	618571.871	368.406

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE085
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Seaton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179692.783	627493.204	334.878

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE086
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Cook Station

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4179377.421	638506.989	286.717

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE087
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Howes Mill Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178616.107	648141.163	336.536

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE088
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4177809.334	665449.446	378.502

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE089
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Johnson Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178006.706	681174.826	402.86

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE090
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Banner

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178205.053	697813.452	284.751

Operator	Grant Chapman
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Date (MM-DD-YYYY)	01-23-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE091
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Fair Play

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4169039.34	446897.64	293.341



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE092
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Cliquot

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4169110.423	457209.156	333.047



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE093
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Buffalo NW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4168750.991	478502.53	317.82
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Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE094
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Windyville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters





Northing	Easting	Elevation
4168217.814	500540.747	340.209

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE095
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4169020.072	513676.567	358.701

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE096
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Oakland	Published Control	Meters
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Northing	Easting	Elevation
4167205.819	538932.518	355.117

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE097
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Laclede
Quad	Drynob

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4166963.201	550815.477	349.934

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE098
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Pulaski
Quad	Bloodland

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4165143.874	575293.166	372.013

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE099
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Big Piney

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4167102.328	581924.073	318.445

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE100
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Flat

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4167268.263	590473.965	360.154

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE101
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Edgar Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4166961.43	605300.16	368.531

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE102
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Anutt

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4166363.236	618509.018	350.188

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE103
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4166528.752	664622.024	440.217

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE104
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Graniteville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167012.517	699976.133	364.031

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE105
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Iron Mountain Lake

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167986.752	711256.97	336.909

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE106
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Wachita Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168727.026	721087.037	235.016

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE107
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Knob Lick

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4168831.436	742324.912	337.153

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE108
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Womack

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4169572.629	750038.86	314.405

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE109
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Aldrich

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4158504.343	447187.37	286.838

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE110
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Bolivar

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4158173.894	457805.785	357.805

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE111
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Polk
Quad	Cedar Vista

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4157458.768	477782.735	357.355

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE112
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Charity

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4156805.339	490387.473	359.151

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE113
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison
Quad	Long Lane

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4156485.927	501320.526	373.309

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	



Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE114
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Phillipsburg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4155995.866	514526.893	408.878

Operator	Grant Chapman
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Date (MM-DD-YYYY)	03-01-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE115
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Brush Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4156364.195	526132.918	372.784



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE116
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Russ

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4156458.806	539912.415	361.055



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE117
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Drew

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4156955.475	550957.468	386.721
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE118
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Winnipeg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4157291.964	560976.45	342.285

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE119
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Roby

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4156873.88	574317.149	417.961

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE120
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Slabtown Spring	Published Control	Meters
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Northing	Easting	Elevation
4169038.448	446917.216	291.869

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE121
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Texas
Quad	Beulah

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4157109.943	590155.673	375.149

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE122
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Texas
Quad	Maples

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4157529.501	605711.679	415.67

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE123
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Rhyse

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4158013.568	617709.288	370.811

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE124
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Doss

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4159399.462	638309.747	403.468

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE125
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Johnson Shut-ins

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4154150.603	697511.938	278.36

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



Point ID	BE126
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Ironton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157425.201	708756.069	303.298

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE127
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Rhodes Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4157672.408	722517.444	271.901

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE128
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Fredericktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4158100.902	732811.101	210.281

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE129
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Fredericktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4157846.402	741810.958	259.321

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE130
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Morrisville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4147041.086	456656.821	313.089

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE131
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Pleasant Hope

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4146262.359	467490.822	344.382

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE132
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Pleasant Hope

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4146245.534	476733.446	354.269

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE133
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Elkland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4145825.31	490392.805	399.85

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE134
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Success

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4146018.071	579126.738	432.807

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE135
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas
Quad	Prescott

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146384.614	589449.897	286.315

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE136
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Licking

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146258.938	600555.692	383.346

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-21-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE137
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Licking

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4145883.944	610046.181	381.248



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE138
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Loggers Lake

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4149941.357	648781.915	405.487



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE139
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Centerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4145299.744	683360.988	255.493
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Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE140
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Lesterville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters





Northing	Easting	Elevation
4142761.797	696752.526	226.548

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE141
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Rock Pile Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	



Northing	Easting	Elevation
4147673.463	721985.022	182.156

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE142
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Rock Pile Mountain	Published Control	Meters
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Northing	Easting	Elevation
4146452.649	731591.317	318.54

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE143
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Madison
Quad	Cherokee Pass

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4148192.982	741266.942	273.499

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE144
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Madison
Quad	Marquand

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4167975.294	711254.123	337.363

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE145
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Huggins

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4136385.733	566646.229	413.884

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE146
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Bucyrus

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4135980.3	579616.02	430.699

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE147
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Houston

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4134757.606	589905.03	331.509

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE148
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Raymondville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4136268.959	601864.76	394.329

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE149
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Hartshorn

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4136218.656	612805.17	390.996

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE150
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Lewis Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4135405.978	624518.884	385.816

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE151
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	The Sinks

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4135954.677	644741.366	241.023

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE152
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Midridge

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4136671.003	663704.409	365.635

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE153
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Corridor SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4135532.621	676107.718	339.572

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE154
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Redford

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133751.683	686415.716	232.46

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE155
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Lesterville SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4133140.837	697750.614	176.62

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE156
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Des Arc

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4133976.564	708227.477	196.068

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	CA157
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Brunot

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4156463.83	539899.366	360.793

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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**PHOTOS:**



Point ID	BE158
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Madison
Quad	Coldwater

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133237.523	730777.592	168.86

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	



Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE159
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Cascade

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133484.791	741436.128	171.07

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	01-23-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE160
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Allbright

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4133060.762	750466.661	169.031



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE161
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4121891.251	567538.109	400.107



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	BE162
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4122249.442	578244.178	368.14
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE163
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters





Northing	Easting	Elevation
4122419.263	588000.435	347.403

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE164
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Elk Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4121393.813	599276.794	391.426

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE165
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Summersville	Published Control	Meters
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Northing	Easting	Elevation
4119050.721	612715.368	419.214

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE166
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Shannon
Quad	Summersville NE

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4118938.613	625983.744	354.672

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE167
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Shannon
Quad	Alley Spring

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4121094.453	641246.805	327.629

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE168
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Exchange

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4123175.858	668727.589	241.853

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE169
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4122403.206	680635.995	269.158

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE170
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Clearwater Dam

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4122381.062	697803.798	160.756

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**





Point ID	BE171
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool SW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4107789.546	567216.526	441.416

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	BE172
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4107742.457	579657.221	408.717

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE173
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Willow Springs North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4106655.191	592241.151	388.528

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	BE174
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Clear Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4106709.011	605857.209	395.343

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE175
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Pine Crest

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4106449.036	619153.579	364.13

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE176
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Bartlett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4105478.319	639343.643	236.265

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE177
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Winona

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4105879.757	649499.14	255.896

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	BE178
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Stegall Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4104815.112	663021.014	227.652

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	BE179
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Van Buren North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4104229.763	676670.798	172.503

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE180
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4105090.329	691439.807	253.353

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	BE181
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Shannon
Quad	Montier

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4091370.492	627640.134	314.712

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE182
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Hunter

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4089176.812	694901.097	265.123

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-03-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	BE183
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Bunker

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4146976.618	658170.916	431.808



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	BE184
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Banner

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178132.437	689556.384	314.182



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



## Urban Area Point Log Sheets





Point ID	UA01
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4254991.944	500147.25	309.172

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**



Point ID	UA02
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Versailles

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4253736.24	512834.4	300.166

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	UA03
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Morrison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4280449.914	619433.169	216.972

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	UA04
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Eldon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4244566.228	536348.414	283.925

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	UA05
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4246047.672	631618.243	287.564

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	



Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	UA06
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Bollinger Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225834.493	507738.317	212.725



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA07
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Sunrise Beach

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4225620.443	521340.62	210.822

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA08
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88





County	Camden
Quad	Lake Ozark

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4225402.196	530871.97	203.565

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA09
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Aerial Target	
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Green Bay Terrace

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4211899.834	513788.582	220.673

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA10
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Meramec State Park

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4214189.706	640678.271	309.491

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	UA11
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Decaturville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200123.621	525312.333	327.426

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	UA12
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Rolla

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200414.732	606864.16	333.305

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	UA13
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Dillon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4201151.209	610740.238	320.624

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	UA14
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Maramec Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4201500.034	630444.13	248.447

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	



Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA15
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Steelville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4203637.82	645161.988	229.812





Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	UA16
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Eldridge East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4189383.362	526285.548	307.864

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA17
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Devils Elbow	Published Control	Meters
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Northing	Easting	Elevation
4189919.417	581995.653	221.273

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA18
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cook Station

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4191124.108	639225.264	323.335

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA19
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Cliquot

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4168735.174	466317.587	310.316

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA20
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Buffalo

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168450.475	490928.134	327.249

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA21
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4167773.279	528133.379	385.107

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	UA22
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Salem

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4166378.556	628224.361	371.84

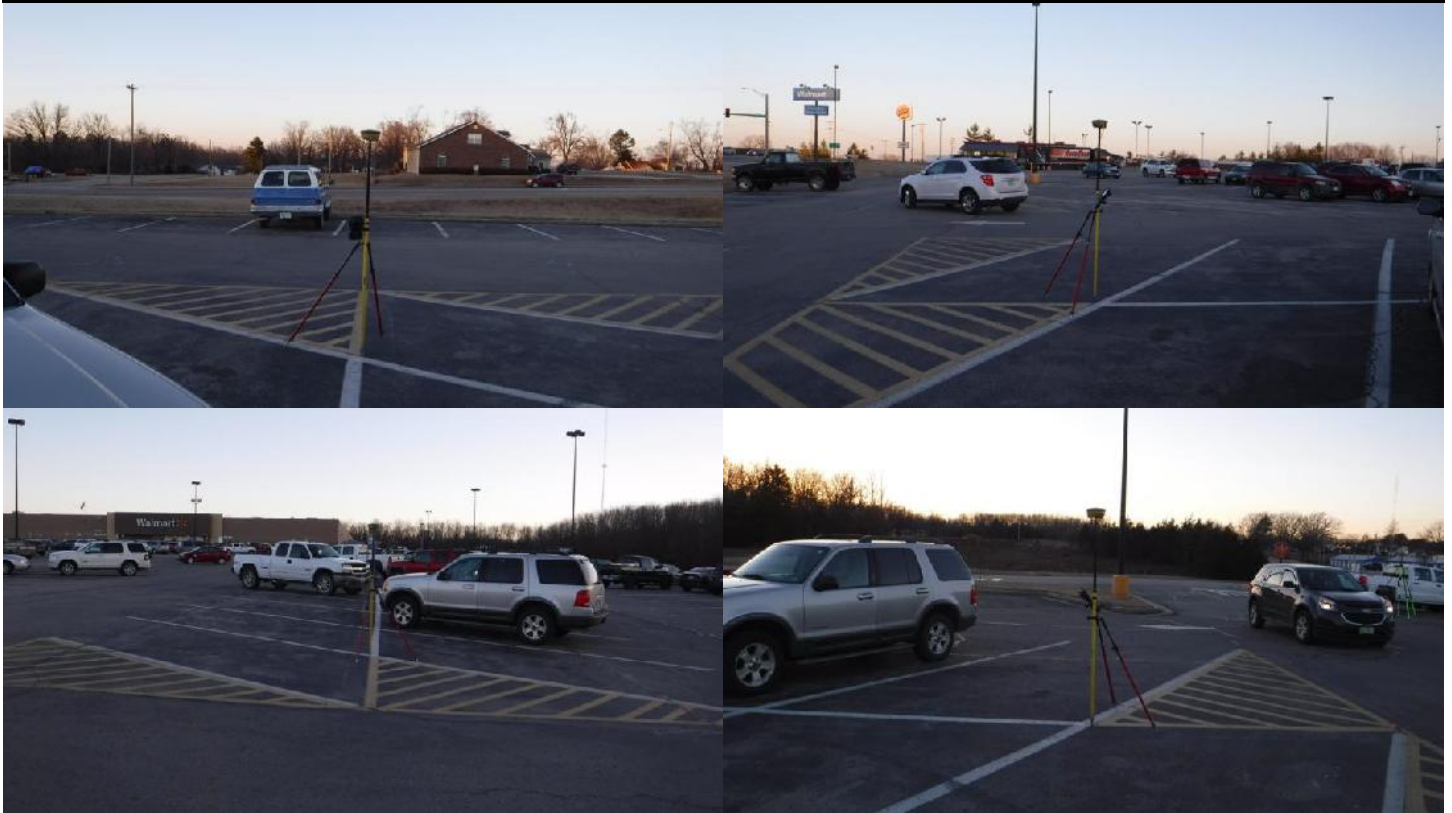
Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	UA23
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Short Bend

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4165593.587	638415.153	372.249

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	UA24
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Knob Lick

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4168816.554	732990.036	258.275

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	01-22-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	UA25
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Walnut Grove

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4147650.725	446020.32	312.963

Operator	Grant Chapman
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Date (MM-DD-YYYY)	02-27-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA26
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Roubidoux

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4146917.061	567073.387	405.891
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	UA27
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B



Quad	Houston	Published Control	Meters
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Northing	Easting	Elevation
4131617.549	592278.897	344.729

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	UA28
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4124422.958	680429.747	199.711

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA29
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4110506.749	578759.92	415.847

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**





Point ID	UA30
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Eminence

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4113472.27	645664.263	197.575

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:





Point ID	UA32
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Van Buren North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4097273.312	677280.261	152.113

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	UA33
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Grandin

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4078376.97	693781.429	181.303

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	UA34
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Fredericktown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4161359.012	739887.958	238.611

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	



Receiver S/N	5620550015
Antenna Height	2.1046 Meters

RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	UA35
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Summersville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4115991.544	619091.409	379.862



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



Point ID	UA36
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Proctor Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4236593.806	507727.374	341.465

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA37
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System
NAD83(2011)
UTM15
NAVD88



County	Gasconade
Quad	Gasconade

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4277795.418	629619.536	166.527

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	UA38
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Aerial Target	
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Bolivar

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4163194.333	464982.601	306.359

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

PHOTOS:



## Tall Weed Point Log Sheets



Point ID	TW01
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Oterville West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4281641.729	497108.542	255.143

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW02
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Morrison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4280469.509	619431.57	217.526

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW03
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Hermann

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4282987.879	640288.371	163.887

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	TW04
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Fortuna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4269202.386	514305.085	289.967

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW05
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4259311.793	510192.837	298.421

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW05
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Pershing

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4259311.793	510192.837	298.421

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	TW06
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Gerald

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4255754.997	642019.141	217.936

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW07
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4248827.416	495354.048	339.664

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW08
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Stover

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4248933.992	506885.817	252.341

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	TW09
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Morgan
Quad	Versailles

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4249029.353	518570.41	238.34

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	



Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW10
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4243451.839	631597.126	277.833

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-07-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW11
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Boylers Mill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4237096.535	495224.124	283.126



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW12
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Proctor Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4236596.694	507721.811	341.215



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW13
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Rocky Mount

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4237265.091	531142.316	236.719
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Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW14
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Eldon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4237371.685	542088.906	217.611

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW15
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Freeburg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4234988.812	597645.352	260.478

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW16
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Hartshorn	Published Control	Meters
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Northing	Easting	Elevation
4136224.796	612794.984	390.554

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW17
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Gasconade
Quad	Belle

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4236937.339	620268.574	255.406

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW18
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Gasconade
Quad	Owensville East

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236153.509	631655.739	246.071

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW19
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Bagnell

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225037.176	540194.358	262.754

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW20
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Brinktown

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225963.009	587335.017	233.854

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	TW21
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Vienna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4223981.672	598139.998	242.836

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW22
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Paydown

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225382.848	608186.755	311.994

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW23
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Oak Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4226261.576	631582.843	298.658

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW24
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Argo

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4226970.373	652739.951	262.904

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	TW25
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Meramec State Park

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4228048.633	665819.12	201.171

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW26
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Preston

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200571.374	479364.979	324.935

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW27
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Hahatonka

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4199172.577	512951.739	249.013

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW28
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Montreal

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4200447.615	538276.788	296.744

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	TW29
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Maramec Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4201489.765	630456.407	247.85

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW30
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Steelville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4202090.197	652872.947	307.381

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	TW31
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Fair Play

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4169046.815	446909.239	293.189

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	TW32
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Polk
Quad	Cliquot

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4169121.657	457203.927	333.008

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	



Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW33
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Buffalo NW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4168763.264	478503.714	317.578

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	02-28-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW34
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4167776.8	528089.471	385.202



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW35
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Drynob

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4166974.612	550810.292	350.437



Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW37
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Flat

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4167241.951	590486.135	359.29
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW38
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Anutt

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4166322.896	618497.325	347.211

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW39
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4177801.995	665435.989	379.145

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW40
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Morrisville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4147034.977	456653.306	312.702

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW41
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Long Lane	Published Control	Meters
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Northing	Easting	Elevation
4156488.617	501313.73	373.044

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW42
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Laclede
Quad	Drew

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4156948.089	550984.192	385.221

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW43
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Madison
Quad	Centerville

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4145310.983	683363.62	254.379

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW44
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Cherokee Pass

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4148213.817	741283.429	273.845

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	TW45
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Clear Springs

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4106719.729	605897.486	393.036

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW46
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Stegall Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4104818.288	663010.175	226.777

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	TW47
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Grandin

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4078355.454	693800.084	180.735

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





## Forest Point Log Sheets



Point ID	FO001
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Tipton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4280412.878	512262.405	280.416

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO002
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Morrison

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4225024.344	540177.733	260.721

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO003
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Hermann

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4282958.603	640303.426	163.476

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**





Point ID	FO004
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Fortuna

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

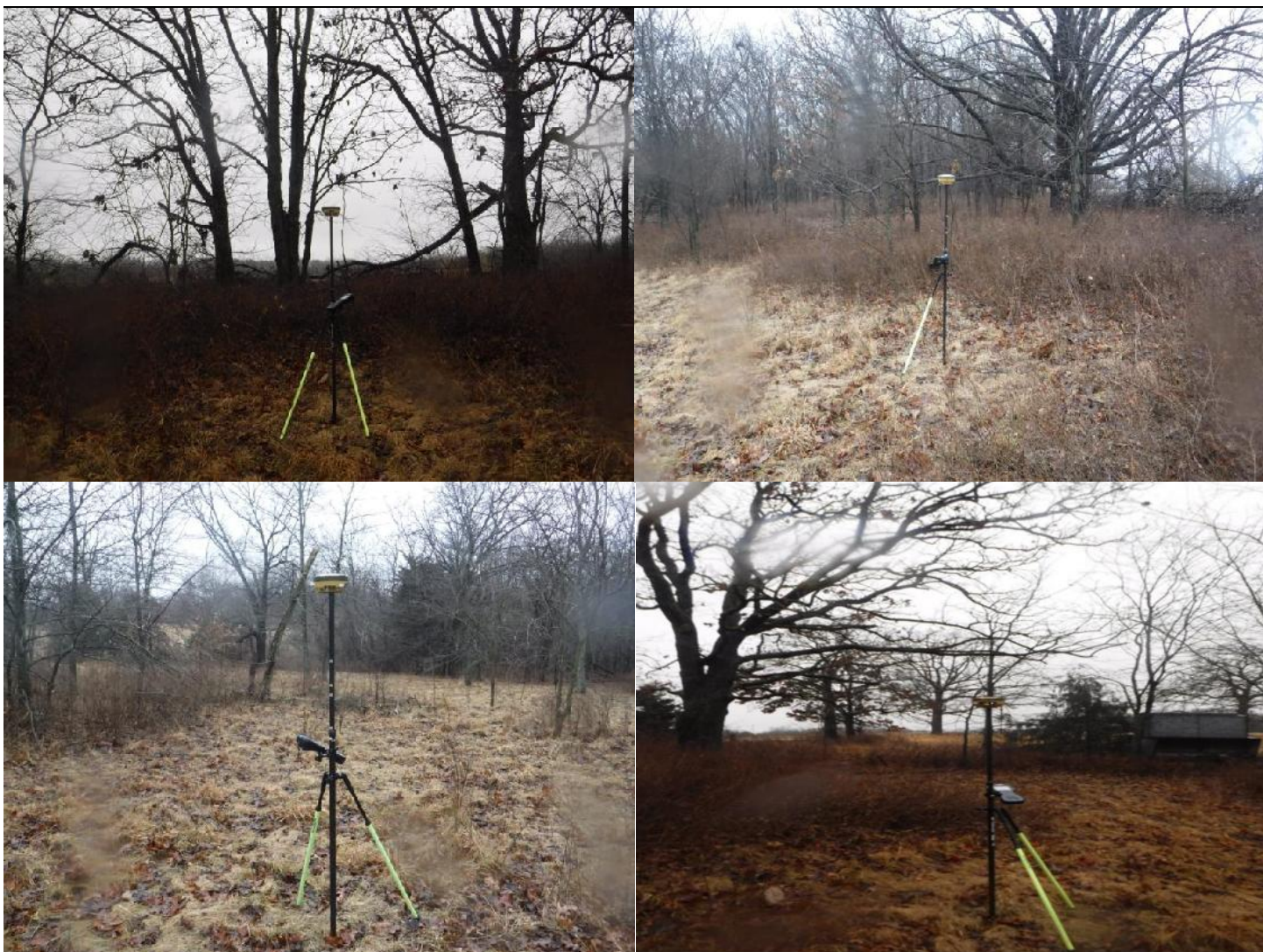
Northing	Easting	Elevation
4269248.195	514291.497	287.941

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	FO006
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Swiss

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4266198.691	632420.005	263.537

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO007
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Dissen

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4266330.024	641766.401	251.534

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-08-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO008
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

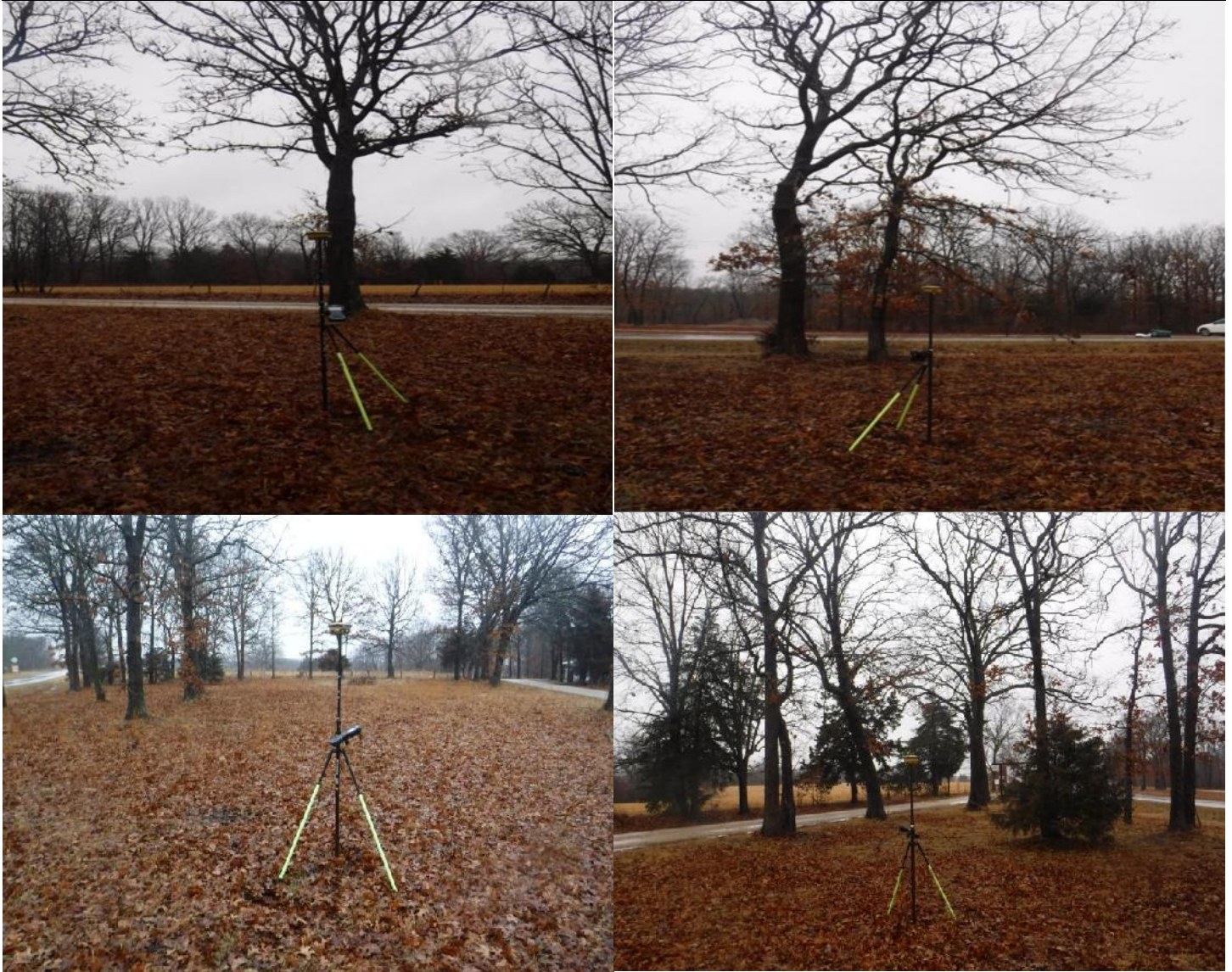
Northing	Easting	Elevation
4260663.942	497976.328	315.119

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO009
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Crockerville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4248816.586	495339.518	340.109

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO010
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Versailles

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4249069.33	518523.756	238.862

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO011
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Cooper Hill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4255317.959	619494.236	225.998

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO012
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Gasconade
Quad	Rosebud

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4255199.225	631954.369	268.257

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-07-2018
RMSE Hz	
RMSE Z	





Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	FO013
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Morgan
Quad	Boylers Mill

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4237099.169	495249.87	284.589

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	



Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO014
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Proctor Creek

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236595.368	507696.083	343.267

Operator	Zane Vanlandingham
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Date (MM-DD-YYYY)	02-21-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO015
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Morgan
Quad	Gravois Mills

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4237285.484	520958.937	257.619



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO016
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Miller
Quad	Rocky Mount

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4237270.959	531110.379	239.517



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO017
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Argyle

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4236805.503	586646.561	234.023
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO018
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Freeburg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4234998.525	597676.366	257.53

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO019
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Gasconade
Quad	Owensville East

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4235627.556	641695.112	246.614

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO020
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B





Quad	Knobby	Published Control	Meters
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Northing	Easting	Elevation
4225989.033	495252.389	239.716

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO021
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System
NAD83(2011)
UTM15
NAVD88



County	Camden
Quad	Lake Ozark

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4225414.276	530905.551	204.544

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO022
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Miller
Quad	Bagnell

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4225024.344	540177.733	260.721

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO023
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Vienna

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4236805.503	586646.561	234.023

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	F0024
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Meramec State Park

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4228065.84	665776.977	204.184

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO025
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Quincy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212971.299	456307.661	277.704

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



Point ID	FO026
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Barnumton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4212793.047	501869.579	218.235

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO027
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Green Bay Terrace

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4211911.292	513779.556	220.596

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	FO028
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Camdenton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4212014.095	526282.269	250.177

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	FO029
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Toronto

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4212622.616	538304.141	257.957

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO030
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Brays

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4212730.852	571994.022	305.334

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-20-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	FO031
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Big Bend

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4213555.933	583047.96	302.786

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO032
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Vichy

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214028.826	606238.836	308.333

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11922
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO033
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Maries
Quad	Safe

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4214788.376	617631.134	291.328

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11751
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-19-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)



PHOTOS:



Point ID	FO034
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Rosati

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4213937.995	629357.715	310.434

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	FO035
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Crawford
Quad	Leasburg

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214514.567	652716.299	266.778

Operator	Barry Blackwell
Receiver Model	Spectra SP80

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	





Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO036
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Onondaga Cave

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4214528.968	663720.028	277.982

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	01-25-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO037
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Hahatonka

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4199201.694	512943.212	245.154



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO038
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Montreal

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4200462.987	538299.43	295.875



Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO039
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Crocker

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4199540.889	561867.679	313.732
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO040
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Hancock

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4200995.9	571964.982	271.219

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO041
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Dixon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4200385.625	582035.674	308.451

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO042
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B



Quad	Newburg	Published Control	Meters
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Northing	Easting	Elevation
4200958.686	593086.53	298.983

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO043
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88





County	Crawford
Quad	Steelville

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4203604.221	645137.736	232.343

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	F0044
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Hickory
Quad	Sentinel

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189969.978	468369.228	261.313

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO045
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Hickory
Quad	Urbana

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189535.217	478965.685	262.519

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



Point ID	FO046
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Tunas

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4189372.376	489682.642	325.735

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO047
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Leadmine

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189166.563	501456.624	326.321

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO048
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Eldridge West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189037.882	512877.153	252.917

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO049
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Stoutland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4188264.367	538814.688	321.301

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO050
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Richland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4190090.422	551610.255	338.913

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:







Point ID	FO051
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Ozark Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189899.39	561870.944	311.859

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO52
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Devils Elbow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189928.21	581948.036	219.616

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO053
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Kaintuck Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4189777.817	592846.101	238.552

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO054
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Lecoma

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4190332.228	617236.038	279.127

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO055
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Phelps
Quad	Seaton

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4188935.483	628538.92	311.241

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-18-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO056
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cook Station

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4191124.108	639225.264	323.335

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	FO057
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Crawford
Quad	Cherryville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4190695.698	652814.974	305.182

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO058
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Sentinel

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4178712.26	467796.168	318.616

Operator	Barry Blackwell
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Date (MM-DD-YYYY)	02-28-2018
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Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO060
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO061
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Lebanon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4177800.979	527739.44	365.717



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO062
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Oakland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4177693.134	538503.345	340.472



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO063
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Pulaski
Quad	Ozark Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4181007.135	561605.14	326.022
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-15-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO064
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Waynesville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4179589.668	570272.803	266.3

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO065
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Devils Elbow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4179750.121	583011.191	238.652

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO066
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps
Quad	Kaintuck Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters



Northing	Easting	Elevation
4179312.88	591053.384	358.997

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO067
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Phelps

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B





Quad	Edgar Springs	Published Control	Meters
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Northing	Easting	Elevation
4178663.64	605147.733	340.993

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-17-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO068
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System
NAD83(2011)
UTM15
NAVD88



County	Dent
Quad	Seaton

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4179683.685	627445.355	333.588

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO069
Project No.	7621181006
Project Name	Quantum LiDAR Survey

Aerial Target	
LiDAR Ground Control	
X LiDAR QC Point	

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Dent
Quad	Cook Station

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4179420.61	638524.356	285.433

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO070
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Howes Mill Spring

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4178599.221	648184.687	337.261

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO071
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Aerial Target
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Coordinate System
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Johnson Mountain

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4178020.72	681139.199	402.536

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO072
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Banner

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4178132.981	689539.422	312.87

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO073
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Cliquot

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168720.722	466374.697	310.675

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-28-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO074
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Bennett Springs

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168988.568	513717.86	357.875

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**





Point ID	FO075
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Laclede
Quad	Brownfield

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4168372.681	561808.952	280.854

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-16-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	FO076
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Pulaski
Quad	Bloodland

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4165133.121	575272.338	374.076

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	03-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO077
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Dent
Quad	Short Bend

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4165554.476	638407.516	371.604

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-26-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO078
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Iron
Quad	Viburnum West

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4166483.914	664617.341	439.269

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO079
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Wachita Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4168705.822	721103.898	237.039

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO080
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Womack

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
4169568.718	750014.928	312.909

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO081
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Polk
Quad	Pleasant Hope

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4146286.105	467470.242	346.622

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-15058
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-27-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO082
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Roubidoux

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4146879.015	567085.099	404.804

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-22-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK





PHOTOS:



Point ID	FO083
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas
Quad	Prescott

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4146437.843	589480.446	286.045

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	



Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	FO084
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas
Quad	Licking

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146283.03	600534.207	380.686

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-21-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO085
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Lesterville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4142731.939	696727.701	226.188

Operator	Grant Chapman
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Date (MM-DD-YYYY)	01-23-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO086
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Rock Pile Mountain

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4146470.868	731589.031	319.458



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO087
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Marquand

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4147347.931	752040.991	242.192



Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO088
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Bucyrus

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4135999.536	579650.802	427.801
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO089
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Lewis Hollow

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters



Northing	Easting	Elevation
4135408.575	624494.809	385.929

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO090
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Round Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters





Northing	Easting	Elevation
4133065.439	634897.896	222.316

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO091
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B



Quad	The Sinks	Published Control	Meters
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Northing	Easting	Elevation
4135972.433	644736.637	240.164

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO092
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88



County	Madison
Quad	Corridon SE

Photo ID	
Published Control	

GEOID12B
Meters

Northing	Easting	Elevation
4135545.166	676141.463	339.171

Operator	Grant Chapman
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO93
Project No.	7621181006
Project Name	Quantum LiDAR Survey

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point

Coordinate System
NAD83(2011)
UTM15



State	Missouri
County	Iron
Quad	Des Arc

New Control	
Photo ID	
Published Control	

NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133999.308	708216.648	197.409

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO094
Project No.	7621181006

Aerial Target	
LiDAR Ground Control	

Coordinate System	NAD83(2011)
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Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Coldwater

X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133258.825	730761.298	171.74

Operator	Barry Blackwell
Receiver Model	Spectra SP80
Receiver S/N	5636550001
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	01-23-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO095
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Aerial Target	
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Coordinate System	
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Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Allbright

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4133089.764	750447.929	169.235

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO096
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4122409.783	587979.498	345.226

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO097
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Summersville

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4119126.358	612675.68	415.194

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-25-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**





Point ID	FO098
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Summersville NE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4118985.929	625990.774	353.963

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO099
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Alley Spring

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4121119.819	641208.128	323.027

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-05-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:





Point ID	FO100
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Eminence

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4123320.467	654362.731	343.741

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-06-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO101
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4122400.092	680655.544	266.936

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-02-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO102
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Clearwater Dam

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4122379.721	697843.989	162.732

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-01-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO103
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Cabool SW

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4107803.175	567168.757	445.877

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO104
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Texas
Quad	Willow Springs North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4106646.67	592211.343	386.546

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-24-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK



PHOTOS:



Point ID	FO105
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Texas
Quad	Pine Crest

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4106456.322	619175.625	362.794

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992

Date (MM-DD-YYYY)	02-26-2018
RMSE Hz	
RMSE Z	





Antenna Height	2.0000 Meters
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GPS Method	RTK
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PHOTOS:



Point ID	FO106
Project No.	7621181006
Project Name	Quantum LIDAR Survey
State	Missouri
County	Shannon
Quad	Bartlett

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4105495.387	639318.081	236.921

Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	



Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Z	
GPS Method	RTK

PHOTOS:



Point ID	FO107
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Madison
Quad	Ellington SE

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM15
NAVD88
GEOID12B
Meters

Northing	Easting	Elevation
4105091.961	691472.991	255.207

Operator	Daniel Szostak
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Date (MM-DD-YYYY)	02-03-2018
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Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



jPoint ID	FO108
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Shannon
Quad	Montier

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4091393.852	627596.896	316.774



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-04-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO109
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Van Buren North

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

Northing	Easting	Elevation
4097298.835	677251.343	154.405



Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

**PHOTOS:**



Point ID	FO110
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Carter
Quad	Hunter

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	NAD83(2011)
	UTM15
	NAVD88
	GEOID12B
	Meters

<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>
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4089156.078	694871.624	264.026
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Operator	Daniel Szostak
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11992
Antenna Height	2.0000 Meters

Date (MM-DD-YYYY)	02-03-2018
RMSE Hz	
RMSE Z	
GPS Method	RTK

PHOTOS:



## Brush Land Point Log Sheets



Point ID	SH01
Project No.	7621181006
Project Name	Quantum LiDAR Survey
State	Missouri
County	Camden
Quad	Hahatonka

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System	
NAD83(2011)	
UTM15	
NAVD88	
GEOID12B	
Meters	

Northing	Easting	Elevation
4195864.581	517816.055	341.744

Operator	Zane Vanlandingham
Receiver Model	Topcon, Hiper V
Receiver S/N	1122-11976
Antenna Height	2.1046 Meters

Date (MM-DD-YYYY)	02-23-2018
RMSE Hz	
RMSE Z	
GPS Method	Static (OPUS)

**PHOTOS:**

