

OPUS-RS solution : 940123268V.14O OP1412016480575

opus <opus@ngs.noaa.gov>

Mon 9/29/2014 12:53 PM

To: John Freetly <John.Freetly@neciusa.com>;

FILE: 940123268V.14O OP1412016480575

6030 ***** WARNING *****

6030 One or both of the standard deviations associated with

6030 horizontal coordinates is greater than 5 cm, and/or the

6030 standard deviation associated with the vertical coordinate

6030 is greater than 10 cm. This means that the vectors used to

6030 determine your position did not agree as well as expected.

6030 Often this is the result of problems with the adopted coordinates

6030 at one or more of the reference stations selected by OPUS-RS.

6030 If a problem reference station can be identified, it can

6030 be excluded with the Exclude feature on the OPUS Options

6030 page.

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NGS OPUS-RS SOLUTION REPORT

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All computed coordinate accuracies are listed as 1-sigma RMS values.

For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: john.freetly@neciusa.com DATE: September 29, 2014

RINEX FILE: 9401268v.14o TIME: 18:52:28 UTC

SOFTWARE: rsgps 1.37 RS52.prl 1.99.2 START: 2014/09/25 21:11:25

EPHEMERIS: igr18114.eph [rapid] STOP: 2014/09/25 22:01:30

NAV FILE: brdc2680.14n OBS USED: 1152 / 1436 : 80%

ANT NAME: CHCX91R NONE QUALITY IND. 7.23/ 15.77

ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.324

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.73397)

X: -1346669.004(m) 0.007(m) -1346669.869(m) 0.007(m)

Y: -4226158.278(m) 0.063(m) -4226157.032(m) 0.063(m)

Z: 4569335.914(m) 0.124(m) 4569335.880(m) 0.124(m)

LAT: 46 2 36.94983 0.044(m) 46 2 36.97062 0.044(m)

E LON: 252 19 31.71055 0.014(m) 252 19 31.65464 0.014(m)

W LON: 107 40 28.28945 0.014(m) 107 40 28.34536 0.014(m)

EL HGT: 1004.980(m) 0.131(m) 1004.314(m) 0.131(m)
 ORTHO HGT: 1019.641(m) 0.131(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters]	5102369.416	200967.401
Easting (X) [meters]	293070.709	741217.637
Convergence [degrees]	-1.92598573	1.33534275
Point Scale	1.00012642	0.99953428
Combined Factor	0.99996888	0.99937683

US NATIONAL GRID DESIGNATOR: 13TBM9307002369(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI3064	BIL6 BILLINGS 6 CORS ARP	N455816.251	W1075948.499	26231.4
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	147647.3
DL7728	P051 BILLINGSAPMT2005 CORS ARP	N454823.741	W1083246.070	72570.3
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	156260.8

NEAREST NGS PUBLISHED CONTROL POINT

RU0602	MISSION	N460105.535	W1074031.685	2827.7
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This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.