

OPUS-RS solution : 400422230A.14O OP1408553599988

opus <opus@ngs.noaa.gov>

Wed 8/20/2014 10:56 AM

To:Chad Mozol <Chad.Mozol@neciusa.com>;

FILE: 400422230A.14O OP1408553599988

2005 NOTE: The IGS precise and IGS rapid orbits were not available
2005 at processing time. The IGS ultra-rapid orbit was/will be used to
2005 process the data.

2005
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.
6030

NGS OPUS-RS SOLUTION REPORT =====

All computed coordinate accuracies are listed as 1-sigma RMS values.
For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: cmozol@neciusa.com DATE: August 20, 2014
RINEX FILE: 4004231a.14o TIME: 16:56:25 UTC

SOFTWARE: rsgps 1.37 RS92.prl 1.99.2 START: 2014/08/19 00:30:05
EPHEMERIS: igu18062.eph [ultra-rapid] STOP: 2014/08/19 01:29:30
NAV FILE: brdc2310.14n OBS USED: 2406 / 2874 : 84%
ANT NAME: CHCX91B NONE QUALITY IND. 13.69/ 5.84
ARP HEIGHT: 1.8 NORMALIZED RMS: 0.514

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.63025)

X: -1371631.669(m) 0.014(m) -1371632.543(m) 0.014(m)
Y: -4054172.648(m) 0.019(m) -4054171.422(m) 0.019(m)
Z: 4714675.722(m) 0.140(m) 4714675.711(m) 0.140(m)

LAT: 47 57 31.31696 0.084(m) 47 57 31.33791 0.084(m)

E LON: 251 18 28.76211 0.008(m) 251 18 28.70327 0.008(m)
 W LON: 108 41 31.23789 0.008(m) 108 41 31.29673 0.008(m)
 EL HGT: 1176.078(m) 0.114(m) 1175.479(m) 0.114(m)
 ORTHO HGT: 1191.298(m) 0.115(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

	UTM (Zone 12)	SPC (2500 MT)
Northing (Y) [meters]	5314287.720	412416.905
Easting (X) [meters]	672298.255	660315.136
Convergence [degrees]	1.71447635	0.59104770
Point Scale	0.99996479	0.99952929
Combined Factor	0.99978050	0.99934508

US NATIONAL GRID DESIGNATOR: 12TXU7229814287(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7731	P053 WHITEWATERMT2007	CORS ARP	N484333.865 W1074331.456	111439.7
DM7133	MTLW LEWISTOWN	CORS ARP	N470314.929 W1092633.764	115398.2
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP	N472229.026 W1070107.185	141473.0
DI2257	P049 ARMINGTON_MT2006	CORS ARP	N472059.850 W1105422.382	179598.1
DI3422	P050 WICKUMRNCHMT2006	CORS ARP	N484834.096 W1111454.296	211685.5
DI3064	BIL6 BILLINGS 6	CORS ARP	N455816.251 W1075948.499	227221.1

NEAREST NGS PUBLISHED CONTROL POINT

Information on nearest mark is not available due to database connectivity issues or has restrictions on when or how it can be published.

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.