

## OPUS-RS solution : 018697\_14\_230\_A0.14O OP1408468665480

opus &lt;opus@ngs.noaa.gov&gt;

Tue 8/19/2014 11:21 AM

To: John Freetly &lt;John.Freetly@neciusa.com&gt;;

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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

## 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: August 19, 2014  
 RINEX FILE: 0186230t.14o                TIME: 17:21:10 UTC

SOFTWARE: rsgps 1.37 RS91.prl 1.99.2       START: 2014/08/18 19:51:35  
 EPHEMERIS: igu18061.eph [ultra-rapid]     STOP: 2014/08/18 21:13:45  
 NAV FILE: brdc2300.14n                   OBS USED: 4330 / 4800 : 90%  
 ANT NAME: CHCX91R       NONE            QUALITY IND. 34.80/ 70.41  
 ARP HEIGHT: 1.8000                    NORMALIZED RMS:    0.363

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000)       IGS08 (EPOCH:2014.62974)

X: -1367660.161(m) 0.008(m)   -1367661.038(m) 0.008(m)  
 Y: -4017230.507(m) 0.022(m)   -4017229.285(m) 0.022(m)  
 Z: 4746627.447(m) 0.021(m)    4746627.441(m) 0.021(m)

LAT: 48 23 35.69952   0.007(m)   48 23 35.72055   0.007(m)  
 E LON: 251 11 56.16517   0.004(m)   251 11 56.10567   0.004(m)  
 W LON: 108 48 3.83483   0.004(m)   108 48 3.89433   0.004(m)  
 EL HGT:    807.434(m) 0.030(m)       806.849(m) 0.030(m)  
 ORTHO HGT:    823.434(m) 0.032(m) [NAVD88 (Computed using GEOID12A)]

## UTM COORDINATES   STATE PLANE COORDINATES

UTM (Zone 12)       SPC (2500 MT )

Northing (Y) [meters]   5362345.901    460636.762  
 Easting (X) [meters]   662775.488    651743.612  
 Convergence [degrees]   1.64454635    0.51127372

Point Scale	0.99992555	0.99968451
Combined Factor	0.99979903	0.99955802

US NATIONAL GRID DESIGNATOR: 12UXU6277562345(NAD 83)

#### BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DG9749	MTMS MONTANA STATE UNI CORS ARP	N483227.426	W1094111.858	67522.5
DL7731	P053 WHITEWATERMT2007 CORS ARP	N484333.865	W1074331.456	87611.0
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	156496.8
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	174927.7
DI3422	P050 WICKUMRNCHMT2006 CORS ARP	N484834.096	W1111454.296	186356.4

#### 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.