

# OPUS-RS solution : 400422231A.14O OP1408628015641

opus <opus@ngs.noaa.gov>

Thu 8/21/2014 7:38 AM

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

FILE: 400422231A.14O OP1408628015641

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 =====

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 21, 2014  
RINEX FILE: 4004232a.14o                      TIME: 13:37:46 UTC

SOFTWARE: rsgps 1.37 RS50.prl 1.99.2                      START: 2014/08/20 00:01:30  
EPHEMERIS: igu18063.eph [ultra-rapid]                      STOP: 2014/08/20 01:00:40  
NAV FILE: brdc2320.14n                      OBS USED: 2070 / 2660 : 78%  
ANT NAME: CHCX91B                      NONE                      QUALITY IND. 3.99/ 35.98  
ARP HEIGHT: 1.8                      NORMALIZED RMS:                      0.381

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000)                      IGS08 (EPOCH:2014.63294)

X: -1339299.390(m) 0.006(m)                      -1339300.265(m) 0.006(m)  
Y: -4045752.727(m) 0.009(m)                      -4045751.502(m) 0.009(m)  
Z: 4730517.608(m) 0.022(m)                      4730517.599(m) 0.022(m)

LAT: 48 10 33.42616 0.009(m)                      48 10 33.44738 0.009(m)  
E LON: 251 41 0.51022 0.007(m)                      251 41 0.45138 0.007(m)  
W LON: 108 18 59.48978 0.007(m)                      108 18 59.54862 0.007(m)  
EL HGT: 768.207(m) 0.022(m)                      767.609(m) 0.022(m)  
ORTHO HGT: 784.643(m) 0.023(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES    STATE PLANE COORDINATES  
UTM (Zone 12)        SPC (2500 MT )  
Northing (Y) [meters] 5339339.220                      436916.589  
Easting (X) [meters] 699485.558                      687977.922  
Convergence [degrees] 2.00037151                      0.86571698  
Point Scale                      1.00008898                      0.99959955  
Combined Factor                      0.99996858                      0.99947921

US NATIONAL GRID DESIGNATOR: 12UXU9948539339(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7731	P053 WHITEWATERMT2007	CORS ARP	N484333.865 W1074331.456	75202.6
DG9749	MTMS MONTANA STATE UNI	CORS ARP	N483227.426 W1094111.858	109355.5
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP	N472229.026 W1070107.185	131913.0
DM7133	MTLW LEWISTOWN	CORS ARP	N470314.929 W1092633.764	150764.0
DI2257	P049 ARMINGTON_MT2006	CORS ARP	N472059.850 W1105422.382	214774.8

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.