

OPUS-RS solution : 940123251X.14O OP1410385023613

opus <opus@ngs.noaa.gov>

Wed 9/10/2014 3:41 PM

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

FILE: 940123251X.14O OP1410385023613

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 10, 2014
 RINEX FILE: 9401251x.14o TIME: 21:41:01 UTC

SOFTWARE: rsgps 1.37 RS51.prl 1.99.2 START: 2014/09/08 23:28:10
 EPHEMERIS: igr18091.eph [rapid] STOP: 2014/09/09 00:25:15
 NAV FILE: brdc2510.14n OBS USED: 3130 / 3230 : 97%
 ANT NAME: CHCX91R NONE QUALITY IND. 13.98/ 27.01
 ARP HEIGHT: 2.000 NORMALIZED RMS: 0.305

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.68767)

X: -1411207.294(m) 0.007(m) -1411208.155(m) 0.007(m)
 Y: -4257857.161(m) 0.014(m) -4257855.912(m) 0.014(m)
 Z: 4520914.120(m) 0.024(m) 4520914.081(m) 0.024(m)

LAT: 45 25 0.66190 0.010(m) 45 25 0.68211 0.010(m)
 E LON: 251 39 46.59581 0.004(m) 251 39 46.54016 0.004(m)
 W LON: 108 20 13.40419 0.004(m) 108 20 13.45984 0.004(m)
 EL HGT: 1301.545(m) 0.027(m) 1300.876(m) 0.027(m)
 ORTHO HGT: 1314.032(m) 0.028(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 12) SPC (2500 MT)

Northing (Y) [meters] 5032708.640 130361.615
 Easting (X) [meters] 708352.251 691003.294
 Convergence [degrees] 1.89731454 0.85069790
 Point Scale 1.00013377 0.99977536
 Combined Factor 0.99992973 0.99957139

US NATIONAL GRID DESIGNATOR: 12TYR0835232708(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI3064	BIL6 BILLINGS 6 CORS ARP	N455816.251	W1075948.499	67081.7
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	124921.0
AI5647	MAWY MAMMOTH WYOMING CORS ARP	N445824.319	W1104121.433	191324.4
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	201012.6
DK7547	MTSU BOZEMAN CORS ARP	N453940.376	W1110242.008	213264.4

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.