

OPUS-RS solution : 033845_14_247_A3.14O OP1410120586202

opus <opus@ngs.noaa.gov>

Sun 9/7/2014 2:14 PM

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

FILE: 033845_14_247_A3.14O OP1410120586202

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
RINEX FILE: 0338247x.14oDATE: September 07, 2014
TIME: 20:13:58 UTCSOFTWARE: rsgps 1.37 RS90.prl 1.99.2 START: 2014/09/04 23:18:45
EPHEMERIS: igr18084.eph [rapid] STOP: 2014/09/05 00:16:45
NAV FILE: brdc2470.14n OBS USED: 4024 / 4656 : 86%
ANT NAME: CHCX90D-OPUS NONE QUALITY IND. 14.21/ 40.57
ARP HEIGHT: 1.80000 NORMALIZED RMS: 0.248

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.67669)

X: -1298544.920(m) 0.009(m) -1298545.783(m) 0.009(m)
Y: -4233570.751(m) 0.016(m) -4233569.503(m) 0.016(m)
Z: 4576296.910(m) 0.023(m) 4576296.877(m) 0.023(m)LAT: 46 8 3.28618 0.007(m) 46 8 3.30739 0.007(m)
E LON: 252 56 52.36031 0.007(m) 252 56 52.30483 0.007(m)
W LON: 107 3 7.63969 0.007(m) 107 3 7.69517 0.007(m)
EL HGT: 965.914(m) 0.027(m) 965.239(m) 0.027(m)
ORTHO HGT: 980.858(m) 0.029(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5111010.374 212346.988
Easting (X) [meters] 341485.458 789037.950
Convergence [degrees] -1.47981592 1.79063295
Point Scale 0.99990889 0.99950909
Combined Factor 0.99975750 0.99935776

US NATIONAL GRID DESIGNATOR: 13TCM4148511010(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI3062	BIL5 BILLINGS 5 CORS ARP	N455816.237	W1075947.298	75307.0
DG9745	MTEI ENGINC CORS ARP	N454447.035	W1083600.736	127568.6
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	137940.4
DM7161	WYSH SHERIDAN CORS ARP	N4444801.769	W1070035.715	148293.8
DI2260	P054 TEREKALAKAMT2006 CORS ARP	N455046.833	W1042629.062	204800.2
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	209812.6
DL7758	P722 YNPBASSRCHMT2005 CORS ARP	N452725.985	W1093415.586	209815.6
DI2263	P055 GLENDIVEWTMT2006 CORS ARP	N470700.144	W1044106.394	211639.8

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.