

OPUS solution : 033845_14_249_A1.14O OP1410278021845

opus <opus@ngs.noaa.gov>

Tue 9/9/2014 9:57 AM

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

FILE: 033845_14_249_A1.14O OP1410278021845

NGS OPUS SOLUTION REPORT

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All computed coordinate accuracies are listed as peak-to-peak values.

For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>USER: john.freetly@neciusa.com
RINEX FILE: 0338249x.14oDATE: September 09, 2014
TIME: 15:56:37 UTCSOFTWARE: page5 1209.04 master51.pl 022814 START: 2014/09/06 23:27:00
EPHEMERIS: igr18086.eph [rapid] STOP: 2014/09/07 01:37:00
NAV FILE: brdc2490.14n OBS USED: 4852 / 5062 : 96%
ANT NAME: CHCX90D-OPUS NONE # FIXED AMB: 28 / 33 : 85%
ARP HEIGHT: 1.8000 OVERALL RMS: 0.015(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.6823)

X: -1340230.403(m) 0.035(m) -1340231.266(m) 0.035(m)
Y: -4237837.207(m) 0.047(m) -4237835.960(m) 0.047(m)
Z: 4560284.520(m) 0.030(m) 4560284.485(m) 0.030(m)LAT: 45 55 39.40823 0.026(m) 45 55 39.42905 0.026(m)
E LON: 252 27 0.95210 0.023(m) 252 27 0.89646 0.023(m)
W LON: 107 32 59.04790 0.023(m) 107 32 59.10354 0.023(m)
EL HGT: 876.493(m) 0.055(m) 875.822(m) 0.055(m)
ORTHO HGT: 891.277(m) 0.094(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5089166.200 188318.133
Easting (X) [meters] 302312.809 751190.149
Convergence [degrees] -1.83247798 1.42662666
Point Scale 1.00008046 0.99957010
Combined Factor 0.99994306 0.99943277

US NATIONAL GRID DESIGNATOR: 13TCL0231289166(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7728	P051 BILLINGSAPMT2005	CORS ARP	N454823.741 W1083246.070	78540.4
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP	N472229.026 W1070107.185	165941.4
DM7161	WYSH SHERIDAN	CORS ARP	N444801.769 W1070035.715	132232.7

NEAREST NGS PUBLISHED CONTROL POINT

QV0362	SANDY	N455358.280	W1073034.162	4415.3
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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.