

OPUS solution : 018506_14_248_A0.14O OP1410277804927

opus <opus@ngs.noaa.gov>

Tue 9/9/2014 9:54 AM

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

FILE: 018506_14_248_A0.14O OP1410277804927

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: 0185248p.14oDATE: September 09, 2014
TIME: 15:53:13 UTCSOFTWARE: page5 1209.04 master53.pl 022814 START: 2014/09/05 15:36:00
EPHEMERIS: igr18085.eph [rapid] STOP: 2014/09/05 22:15:00
NAV FILE: brdc2480.14n OBS USED: 15557 / 16747 : 93%
ANT NAME: CHCX90D-OPUS NONE # FIXED AMB: 93 / 100 : 93%
ARP HEIGHT: 1.8000 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.6789)

X: -1360996.662(m) 0.002(m) -1360997.521(m) 0.002(m)
Y: -4295489.717(m) 0.002(m) -4295488.463(m) 0.002(m)
Z: 4500681.489(m) 0.009(m) 4500681.446(m) 0.009(m)LAT: 45 9 32.04251 0.007(m) 45 9 32.06302 0.007(m)
E LON: 252 25 10.37805 0.002(m) 252 25 10.32322 0.002(m)
W LON: 107 34 49.62195 0.002(m) 107 34 49.67678 0.002(m)
EL HGT: 1217.797(m) 0.006(m) 1217.106(m) 0.006(m)
ORTHO HGT: 1230.832(m) 0.013(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5003842.000 102871.915
Easting (X) [meters] 297184.244 750902.537
Convergence [degrees] -1.83032888 1.40415850
Point Scale 1.00010580 0.99990834
Combined Factor 0.99991489 0.99971746

US NATIONAL GRID DESIGNATOR: 13TBL9718403842(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	60106.7
DL7728	P051 BILLINGSAPMT2005 CORS ARP	N454823.741	W1083246.070	104332.9
DI3062	BIL5 BILLINGS 5 CORS ARP	N455816.237	W1075947.298	95958.1

NEAREST NGS PUBLISHED CONTROL POINT

QV0340	WAVE	N450858.687	W1073149.176	4067.8
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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.