

OPUS-RS solution : 018773_14_260_A2.14O OP1411501751850

opus <opus@ngs.noaa.gov>

Tue 9/23/2014 1:54 PM

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

FILE: 018773_14_260_A2.14O OP1411501751850

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: 0187260x.14oDATE: September 23, 2014
TIME: 19:53:25 UTCSOFTWARE: rsgps 1.37 RS52.prl 1.99.2 START: 2014/09/17 23:48:30
EPHEMERIS: igr18103.eph [rapid] STOP: 2014/09/18 00:47:00
NAV FILE: brdc2600.14n OBS USED: 2816 / 2852 : 99%
ANT NAME: CHCX90D-OPUS NONE QUALITY IND. 12.46/ 36.61
ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.355

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.71236)

X: -1371359.392(m) 0.013(m) -1371360.251(m) 0.013(m)
Y: -4296047.791(m) 0.038(m) -4296046.537(m) 0.038(m)
Z: 4497456.906(m) 0.037(m) 4497456.863(m) 0.037(m)LAT: 45 6 54.07235 0.006(m) 45 6 54.09279 0.006(m)
E LON: 252 17 46.24587 0.004(m) 252 17 46.19100 0.004(m)
W LON: 107 42 13.75413 0.004(m) 107 42 13.80900 0.004(m)
EL HGT: 1522.842(m) 0.054(m) 1522.152(m) 0.054(m)
ORTHO HGT: 1534.919(m) 0.055(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 4999284.605 97766.891
Easting (X) [meters] 287324.584 741317.555
Convergence [degrees] -1.91643958 1.31391279
Point Scale 1.00015619 0.99993291
Combined Factor 0.99991745 0.99969422

US NATIONAL GRID DESIGNATOR: 13TBK8732499284(NAD 83)

BASE STATIONS USED

| PID | DESIGNATION | LATITUDE | LONGITUDE | DISTANCE(m) |
|--------|--------------------------------|-------------|--------------|-------------|
| DM7161 | WYSH SHERIDAN CORS ARP | N444801.769 | W1070035.715 | 64972.1 |
| DI3062 | BIL5 BILLINGS 5 CORS ARP | N455816.237 | W1075947.298 | 97881.1 |
| DG9745 | MTEI ENGINC CORS ARP | N454447.035 | W1083600.736 | 99237.8 |
| DL7758 | P722 YNPBASSRCHMT2005 CORS ARP | N452725.985 | W1093415.586 | 151370.4 |

NEAREST NGS PUBLISHED CONTROL POINT

| | | | | |
|--------|--------|-------------|--------------|--------|
| QV0349 | SPRING | N450430.189 | W1074418.593 | 5217.4 |
|--------|--------|-------------|--------------|--------|

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.