

OPUS-RS solution : 018506_14_263_A1.14O OP1411502278760

opus <opus@ngs.noaa.gov>

Tue 9/23/2014 2:17 PM

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

FILE: 018506_14_263_A1.14O OP1411502278760

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: 0185263b.14oDATE: September 23, 2014
TIME: 20:16:39 UTCSOFTWARE: rsgps 1.37 RS54.prl 1.99.2 START: 2014/09/20 01:30:00
EPHEMERIS: igr18106.eph [rapid] STOP: 2014/09/20 02:26:45
NAV FILE: brdc2630.14n OBS USED: 5446 / 5446 : 100%
ANT NAME: CHCX90D-OPUS NONE QUALITY IND. 33.62/ 29.00
ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.357

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.71803)

X: -1330011.376(m) 0.007(m) -1330012.240(m) 0.007(m)
Y: -4237542.927(m) 0.023(m) -4237541.679(m) 0.023(m)
Z: 4563764.259(m) 0.022(m) 4563764.224(m) 0.022(m)LAT: 45 58 15.76399 0.006(m) 45 58 15.78490 0.006(m)
E LON: 252 34 29.33178 0.005(m) 252 34 29.27614 0.005(m)
W LON: 107 25 30.66822 0.005(m) 107 25 30.72386 0.005(m)
EL HGT: 1047.212(m) 0.032(m) 1046.539(m) 0.032(m)
ORTHO HGT: 1062.065(m) 0.033(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5093690.239 193389.919
Easting (X) [meters] 312116.167 760715.621
Convergence [degrees] -1.74418899 1.51773544
Point Scale 1.00003398 0.99955622
Combined Factor 0.99986983 0.99939215

US NATIONAL GRID DESIGNATOR: 13TCL1211693690(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7728	P051 BILLINGSAPMT2005 CORS ARP	N454823.741	W1083246.070	88918.4
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	134118.9
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	159129.3
DL7758	P722 YNPBASSRCHMT2005 CORS ARP	N452725.985	W1093415.586	176589.0
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	196153.3
DJ8992	P033 TENSLEEPTRWY2005 CORS ARP	N435710.415	W1072315.121	224330.3
DI2260	P054 TEREKALAKAMT2006 CORS ARP	N455046.833	W1042629.062	231940.3

NEAREST NGS PUBLISHED CONTROL POINT

QV0313	TULLOCK	N455938.565	W1072632.698	2886.5
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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.