NEW YORK COASTAL LIDAR DATA ACQUISITION AND PROCESSING

POST-FLIGHT AERIAL ACQUISITION AND CALIBRATION REPORT

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Completed by Photo Science, Inc.

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1. SUMMARY / SCOPE

1.1. SUMMARY

This report contains a summary of the New York Coastal LiDAR acquisition task order, issued by the NOAA Coastal Service's Center, and which included a number of other government agency partners: The intent of this document is to only provide specific validation information for the LiDAR data acquisition/collection work completed for the NOAA project.

1.2. SCOPE

The scope of the New York Coastal LiDAR task order included the acquisition of aerial topographic LiDAR using state of the art technology, along with necessary surveyed ground control points (GCPs) and airborne GPS and inertial navigation systems, for the following areas: ALB, 1B1, 20N, Hudson South, Roundout Vanderberg, POU, Marlborough Wappinger, Moodna Fishkill, Constitution, SWF, Haverstraw, Croton, Iona Manitou Annsville, HPN, Piermont, FRG, HWV, HTO, and GON. The aerial data collection was designed with the following specifications listed in Table 1 below.

Table 1. Planned LiDAR Specifications

LiDAR				
Average Point Density	Flight Altitude (AGL)	Field of View	Side Overlap	RMSEz
1.3 pts / m^2	3,500 ft	17.0 degrees	30%	15 cm or better

1.3. LOCATION / COVERAGE

The New York Coastal LiDAR project boundary consists of nineteen areas, separated for base station coverage as well as tide restricted areas. The project area totals approximately 1331 square miles as shown in Figure 1 on the following page.

Figure 1. LiDAR Project Boundary

1.4. Duration

Fifty four sorties occurred between November 16, 2011 and April 7, 2012.

1.5. Issues

The primary issues of concern with this task order were tide controlled areas. Typical issues such as weather and restricted or limited access areas also played a part in causing so many flights.

2. Planning / Equipment

The entire target area was comprised of 742 planned flight lines and approximately 8161 flight line miles. Please refer to Figures 2-25 on the following pages.

Figure 2. Planned Flight Lines: Overview

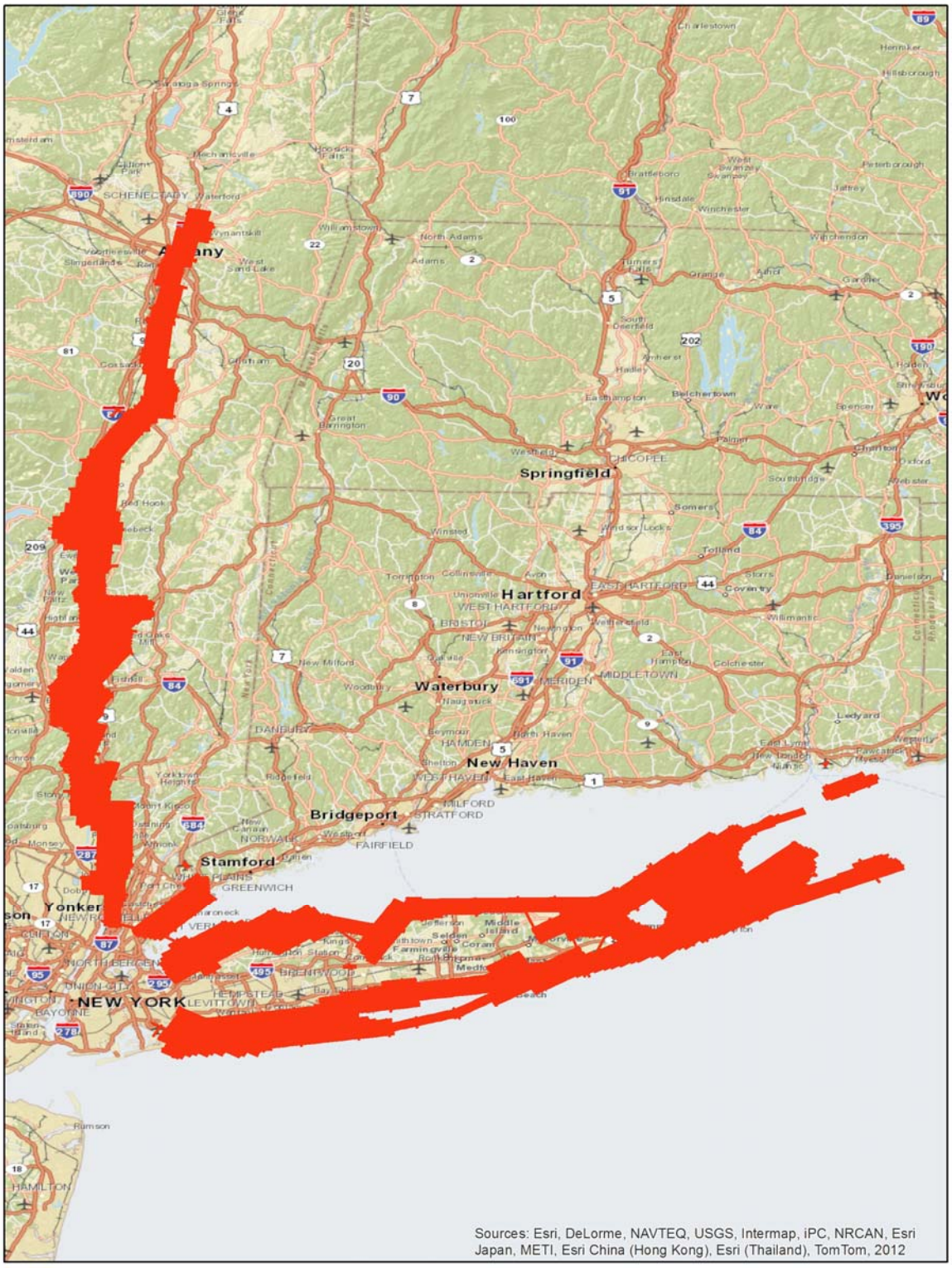


Figure 3. Planned Flight Lines: ALB

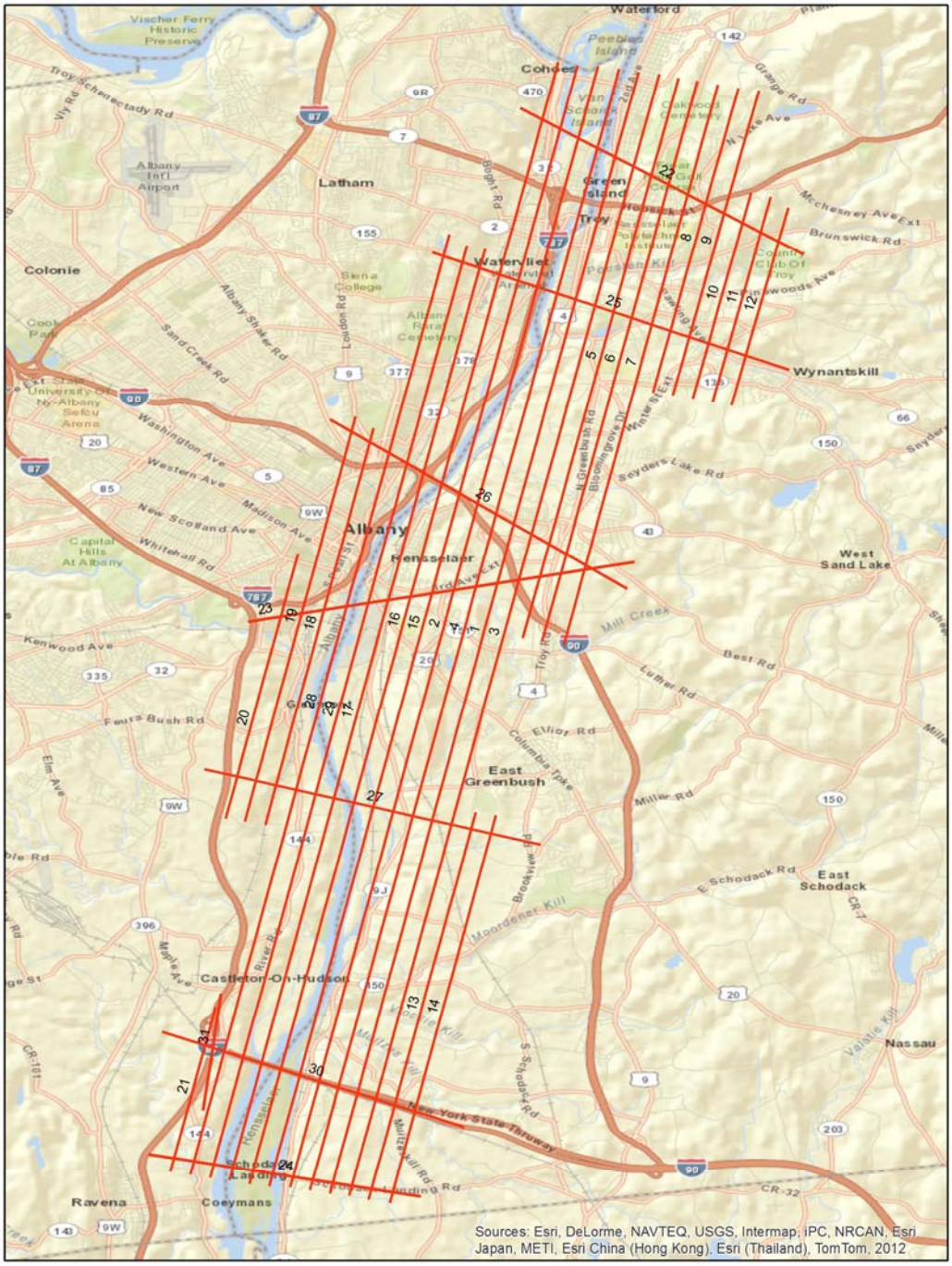


Figure 4. Planned Flight Lines: 1B1

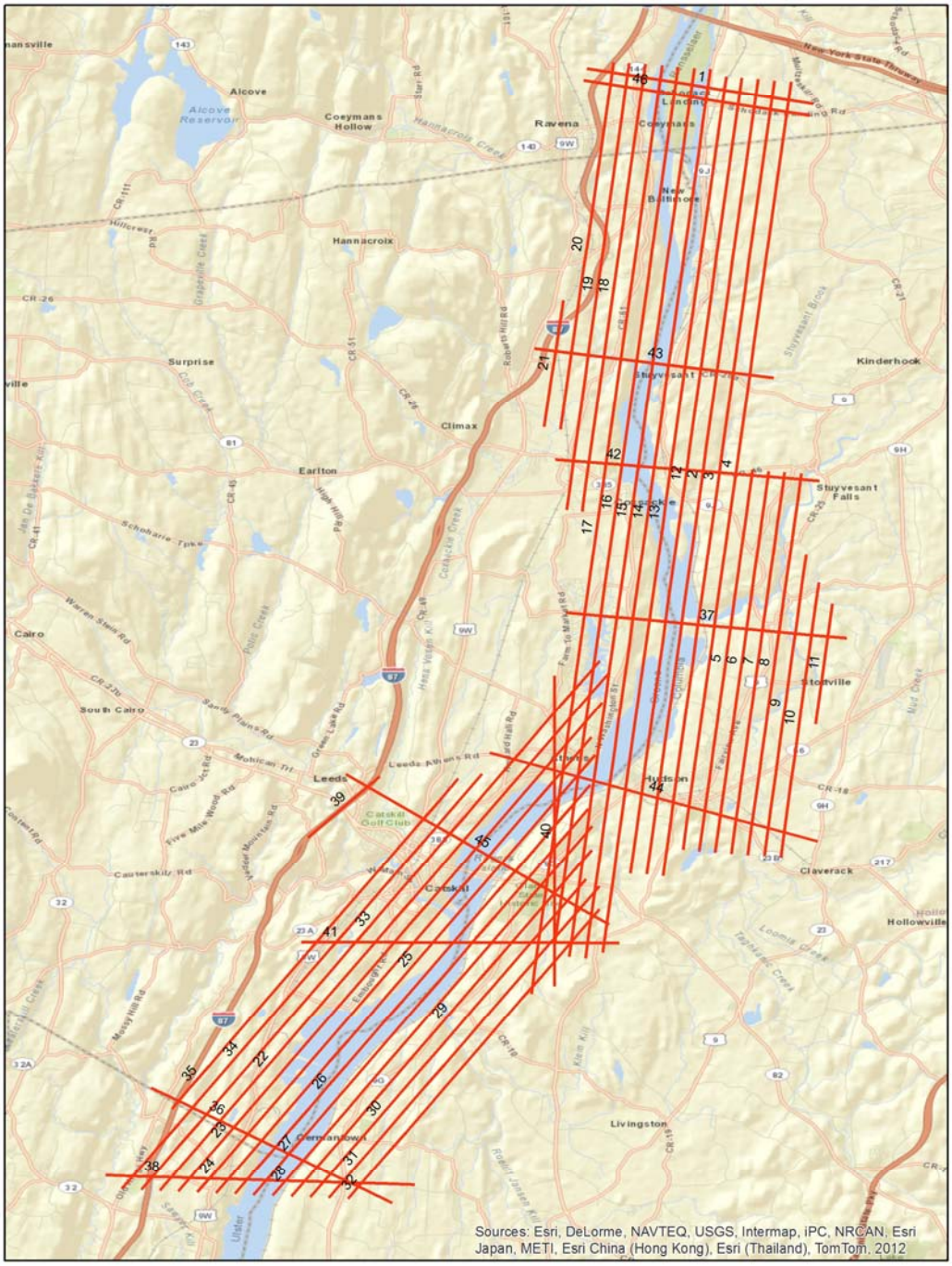


Figure 5. Planned Flight Lines: 20N

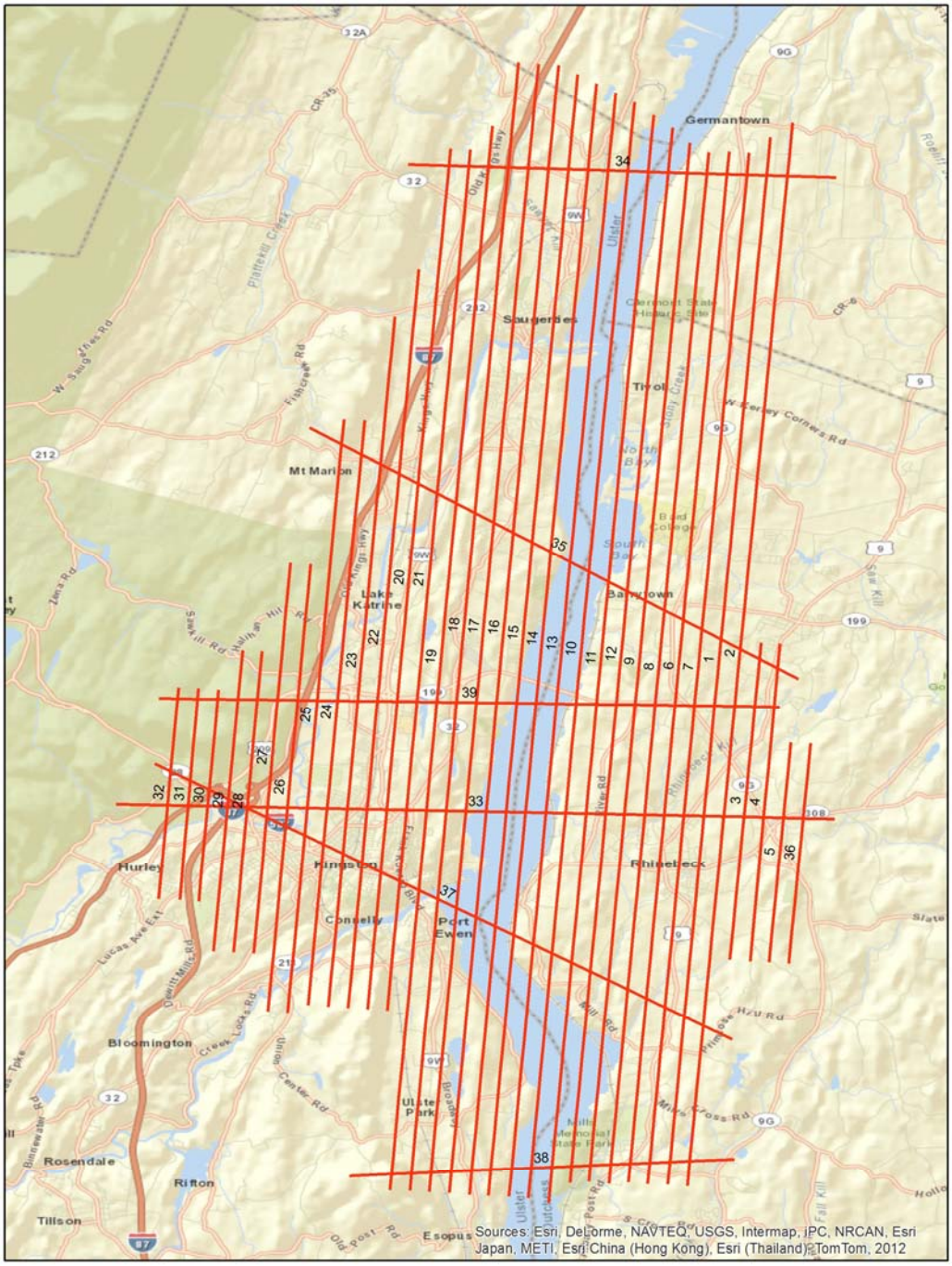


Figure 6. Planned Flight Lines: Hudson South

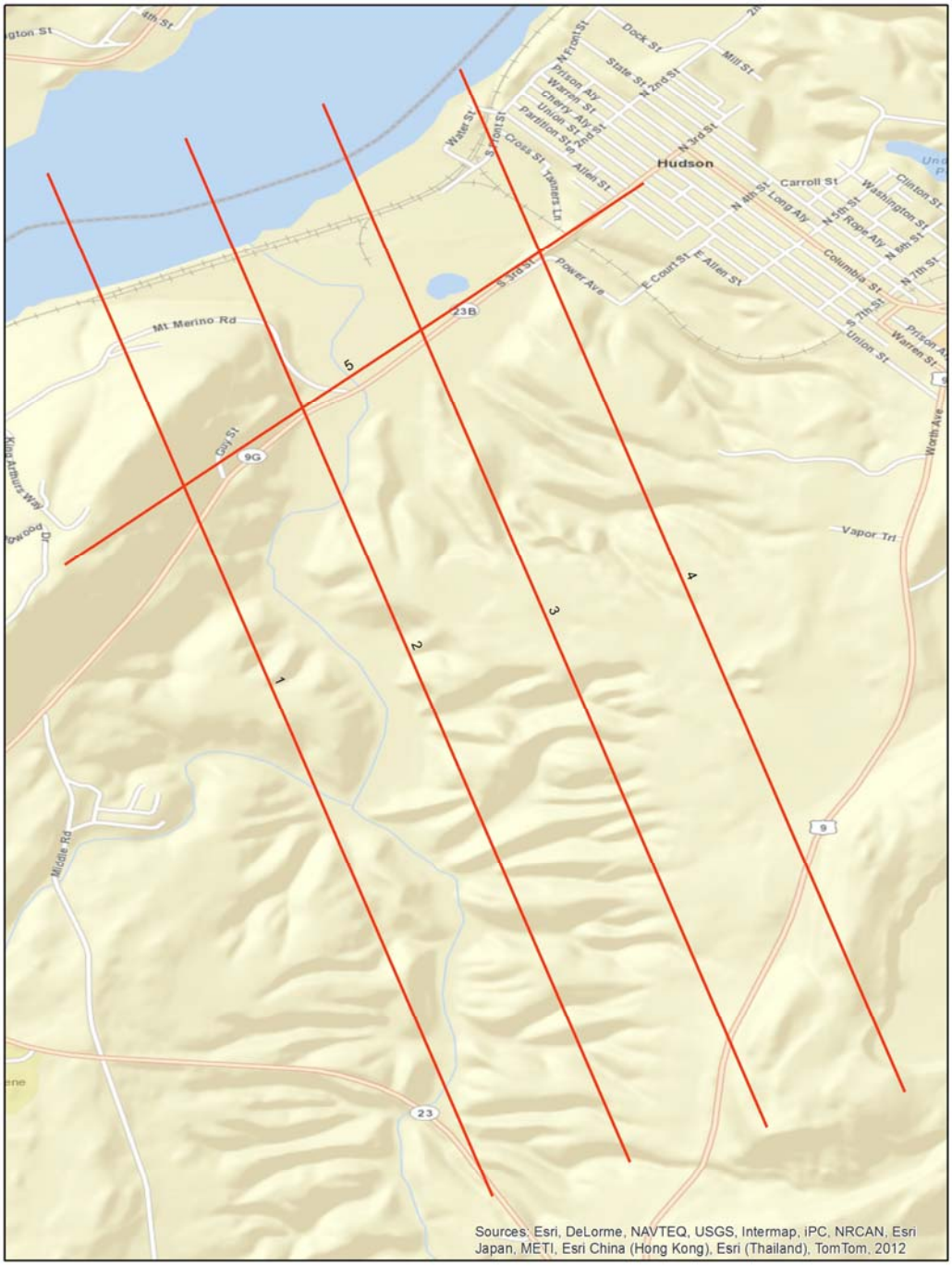


Figure 7. Planned Flight Lines: Roundout Vandeberg

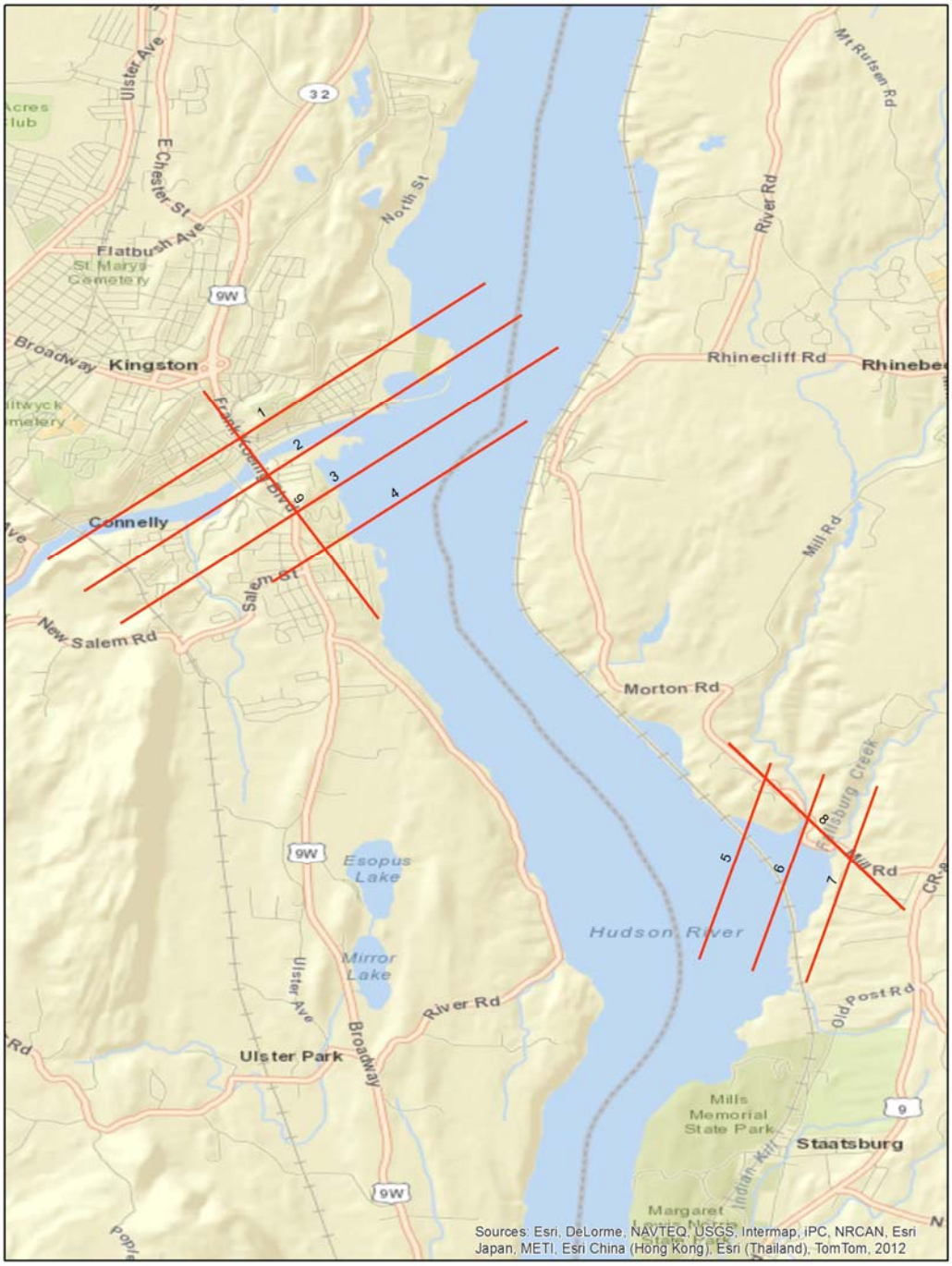


Figure 8. Planned Flight Lines: 20N Calibration

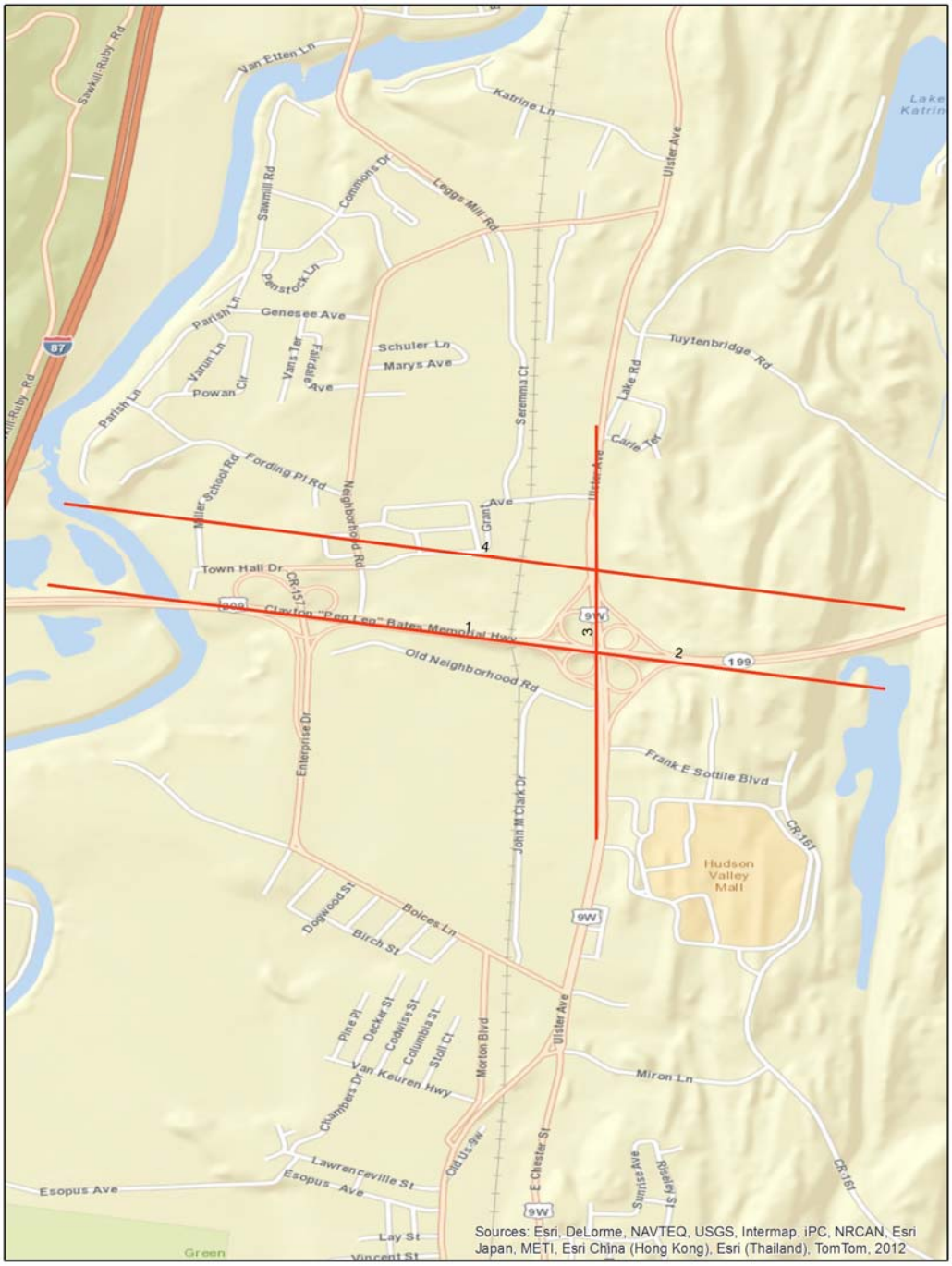


Figure 9. Planned Flight Lines: POU

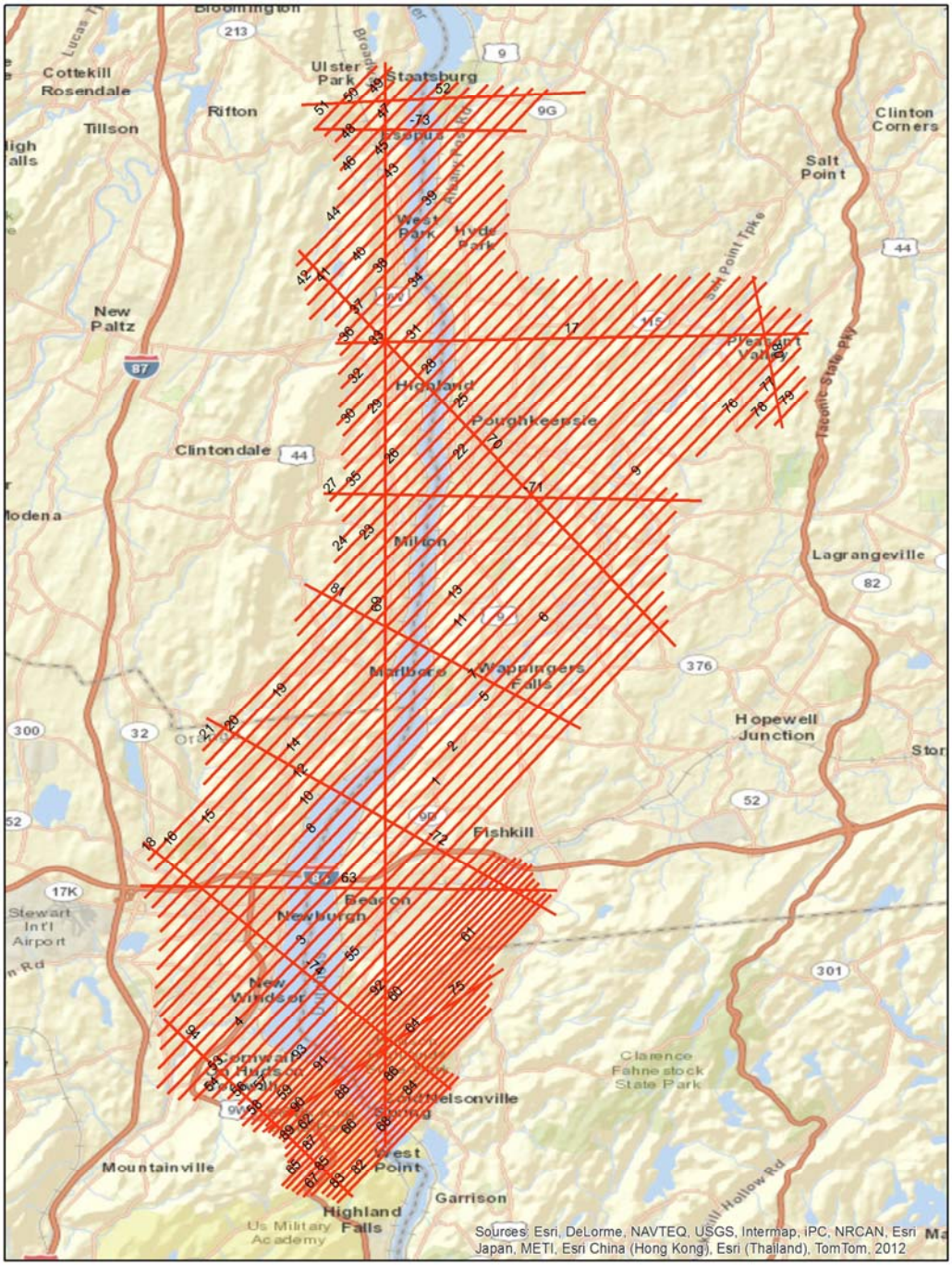


Figure 10. Planned Flight Lines: Marlborough Wappinger

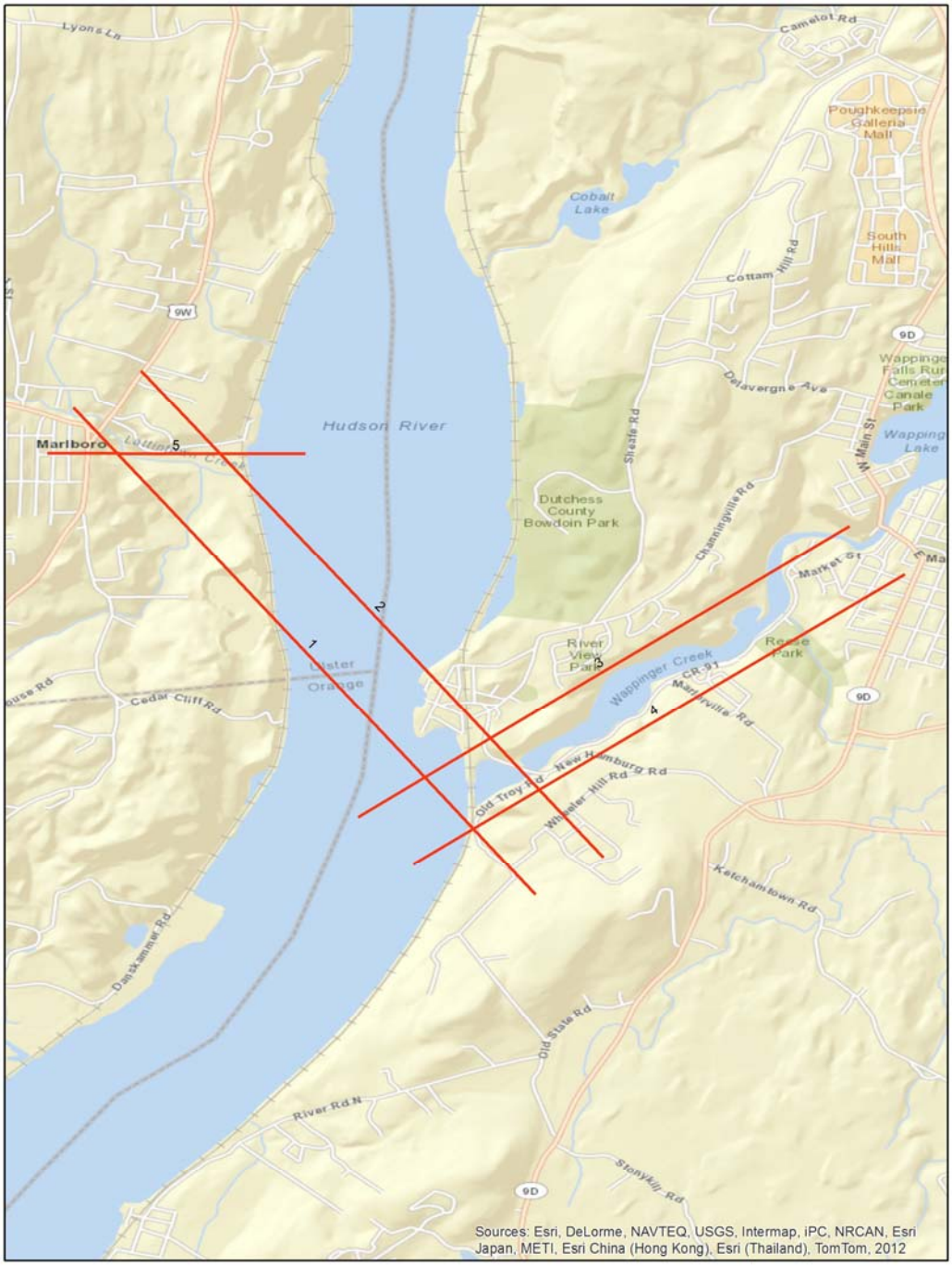


Figure 11. Planned Flight Lines: Moodna Fishkill

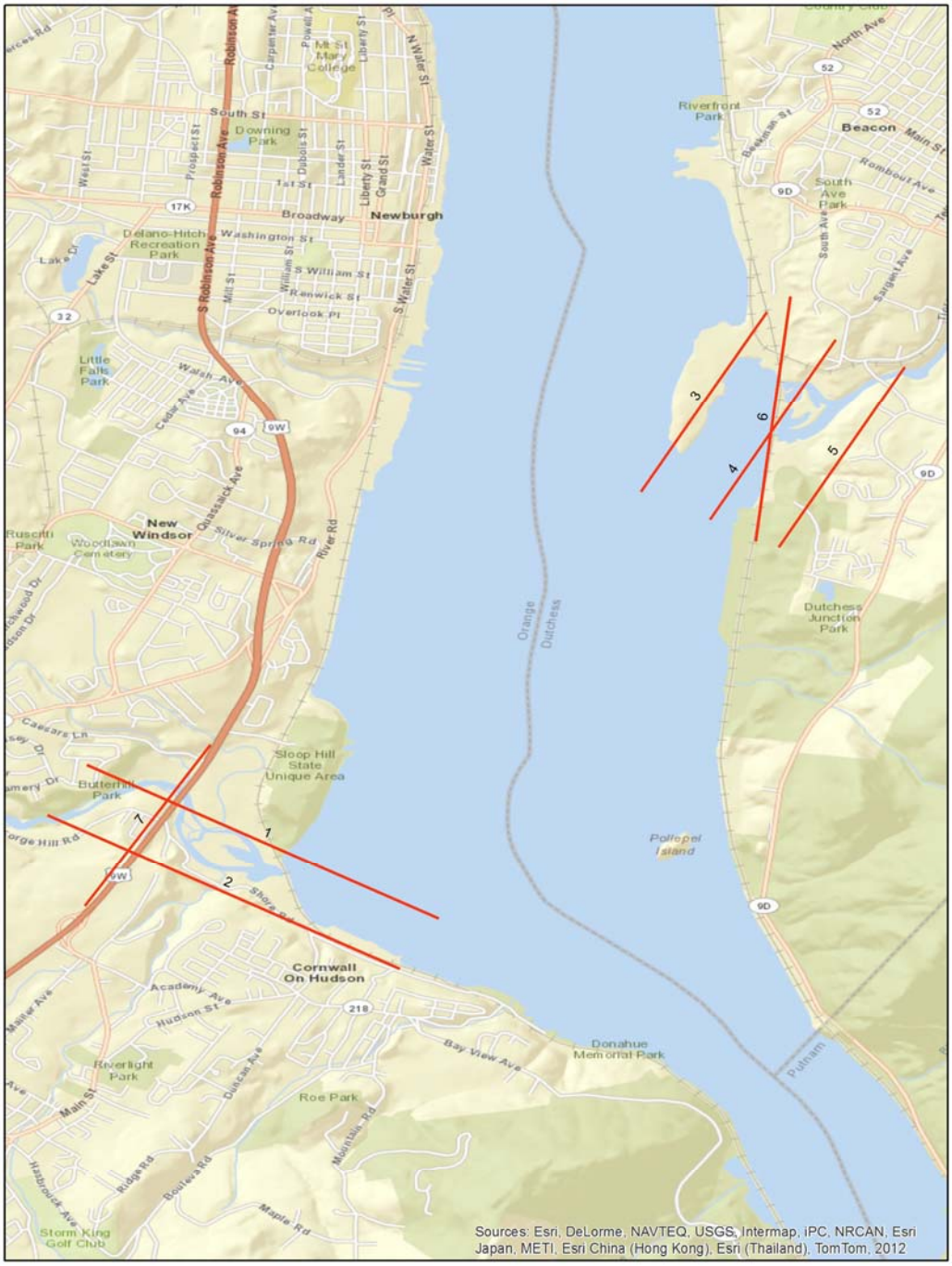


Figure 12. Planned Flight Lines: Constitution

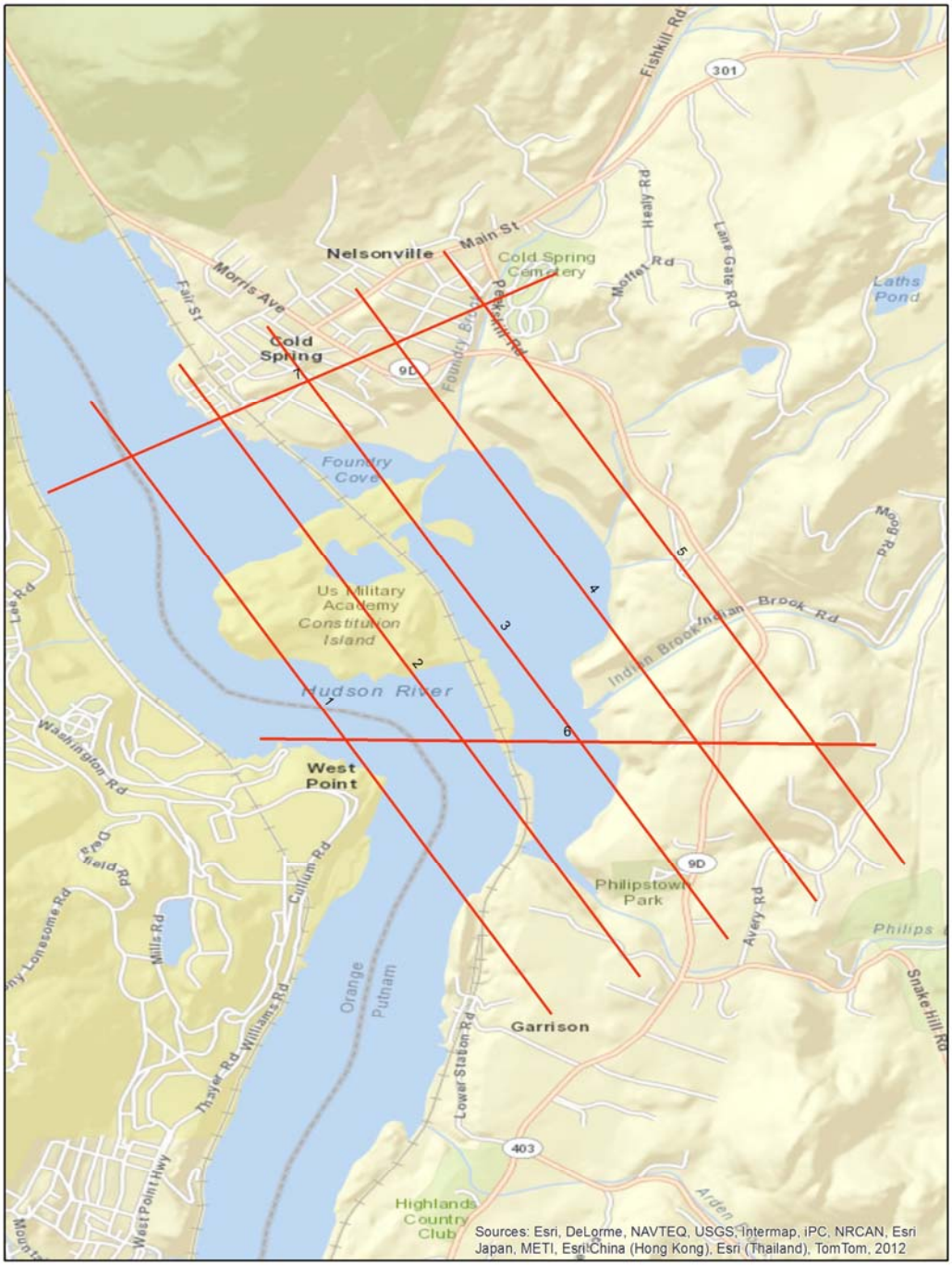


Figure 13. Planned Flight Lines: SWF

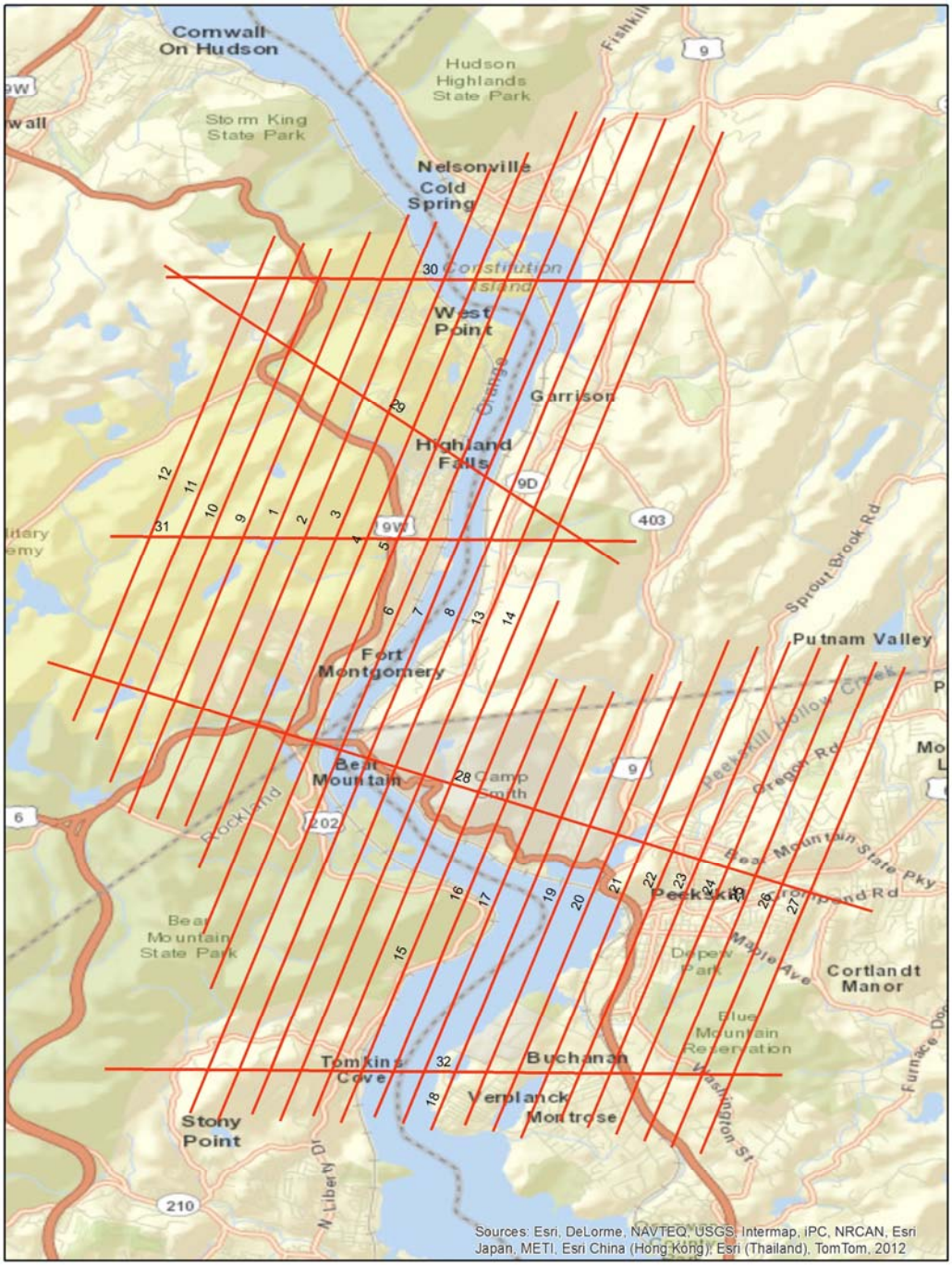


Figure 14. Planned Flight Lines: Haverstraw

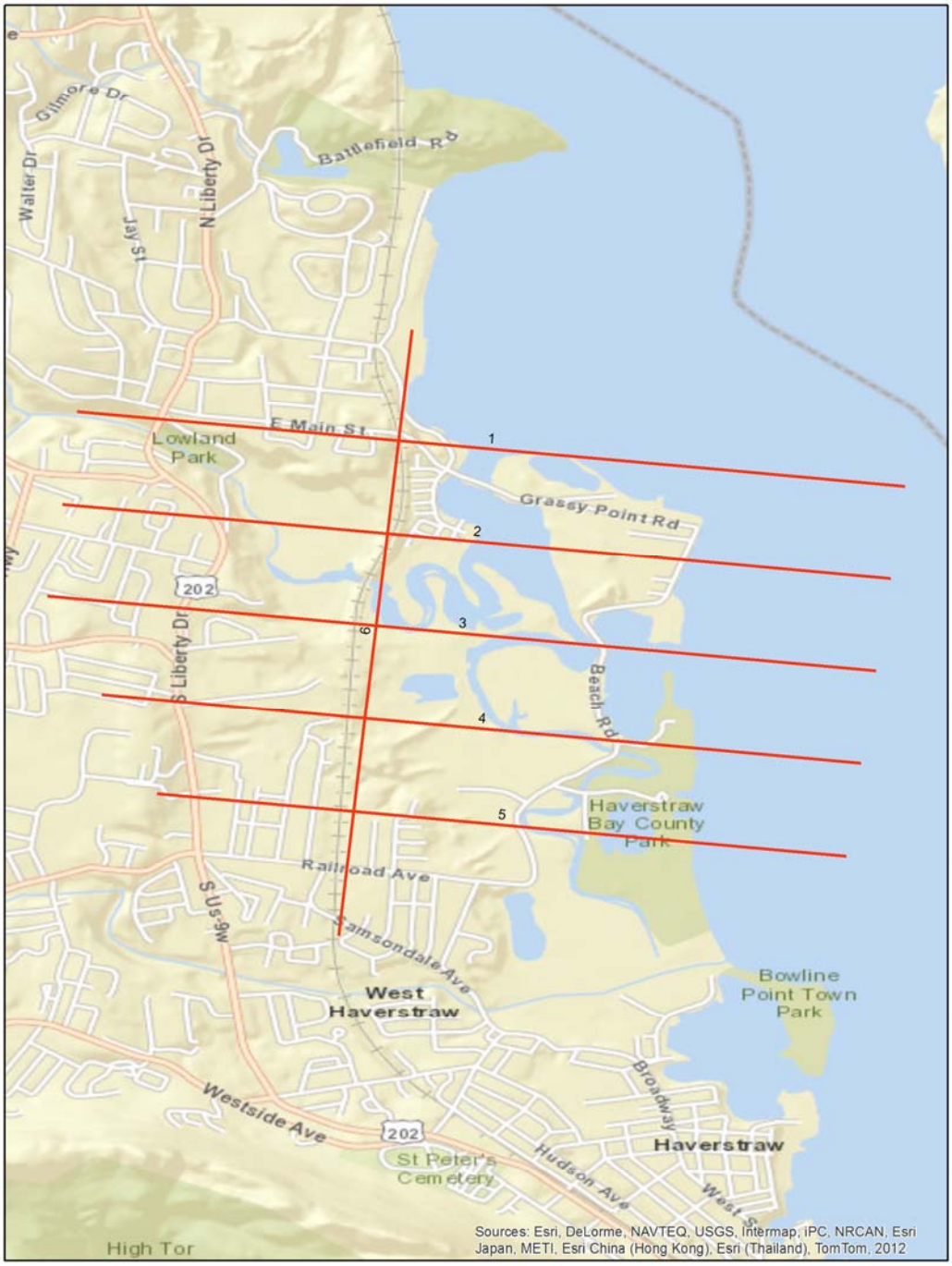


Figure 15. Planned Flight Lines: Croton

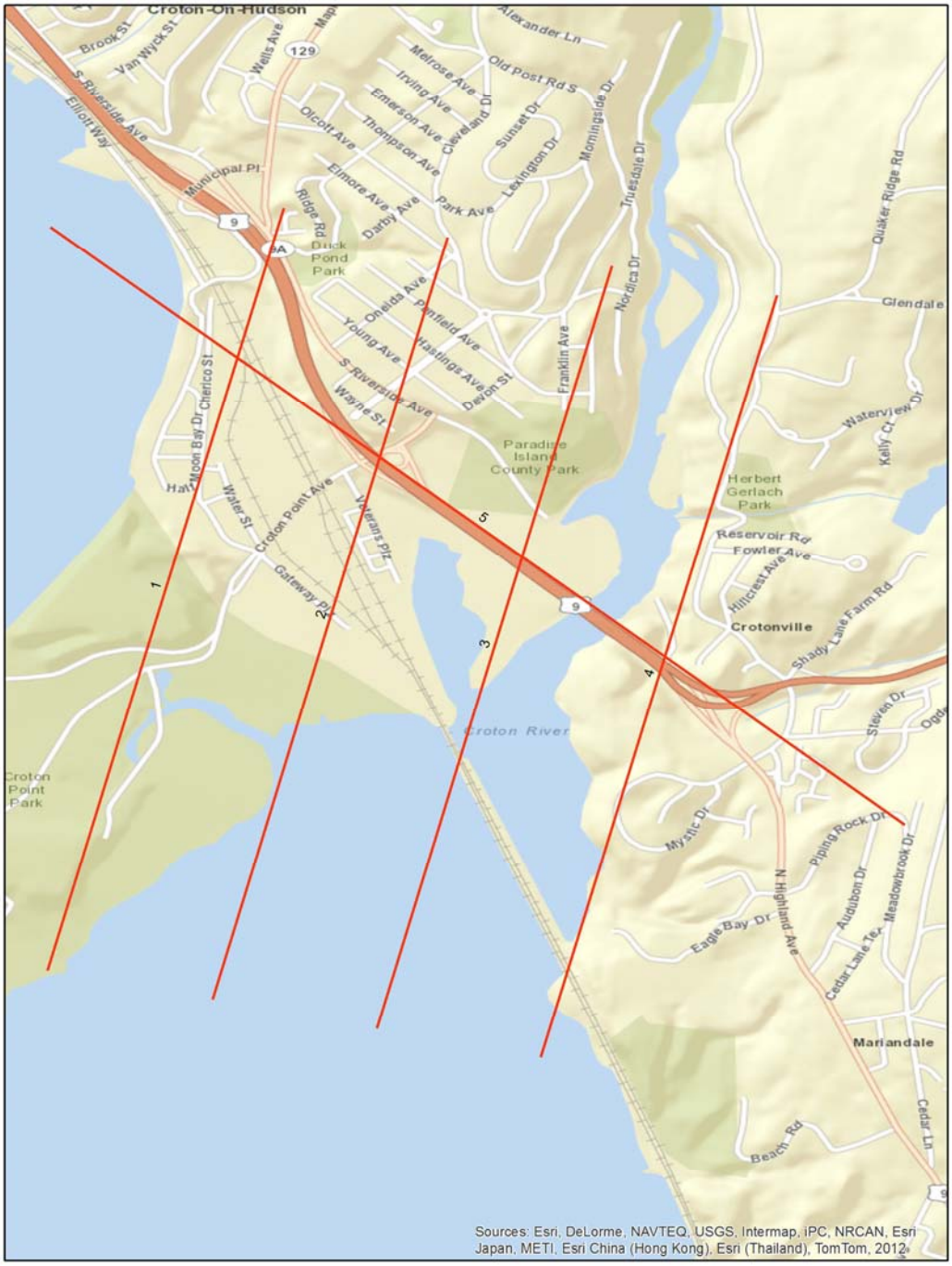


Figure 16. Planned Flight Lines: Iona Manitou Annsville

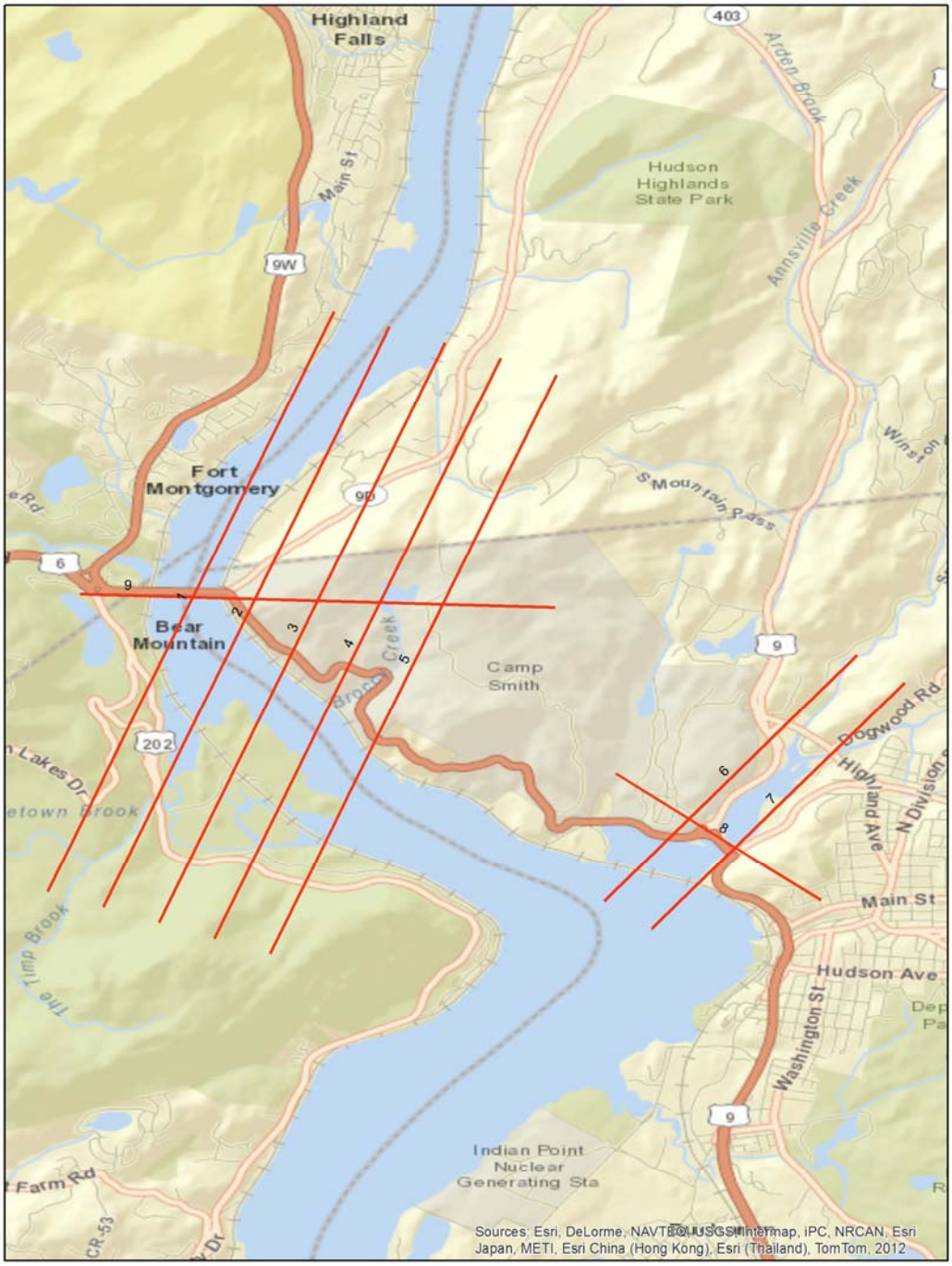


Figure 17. Planned Flight Lines: HPN

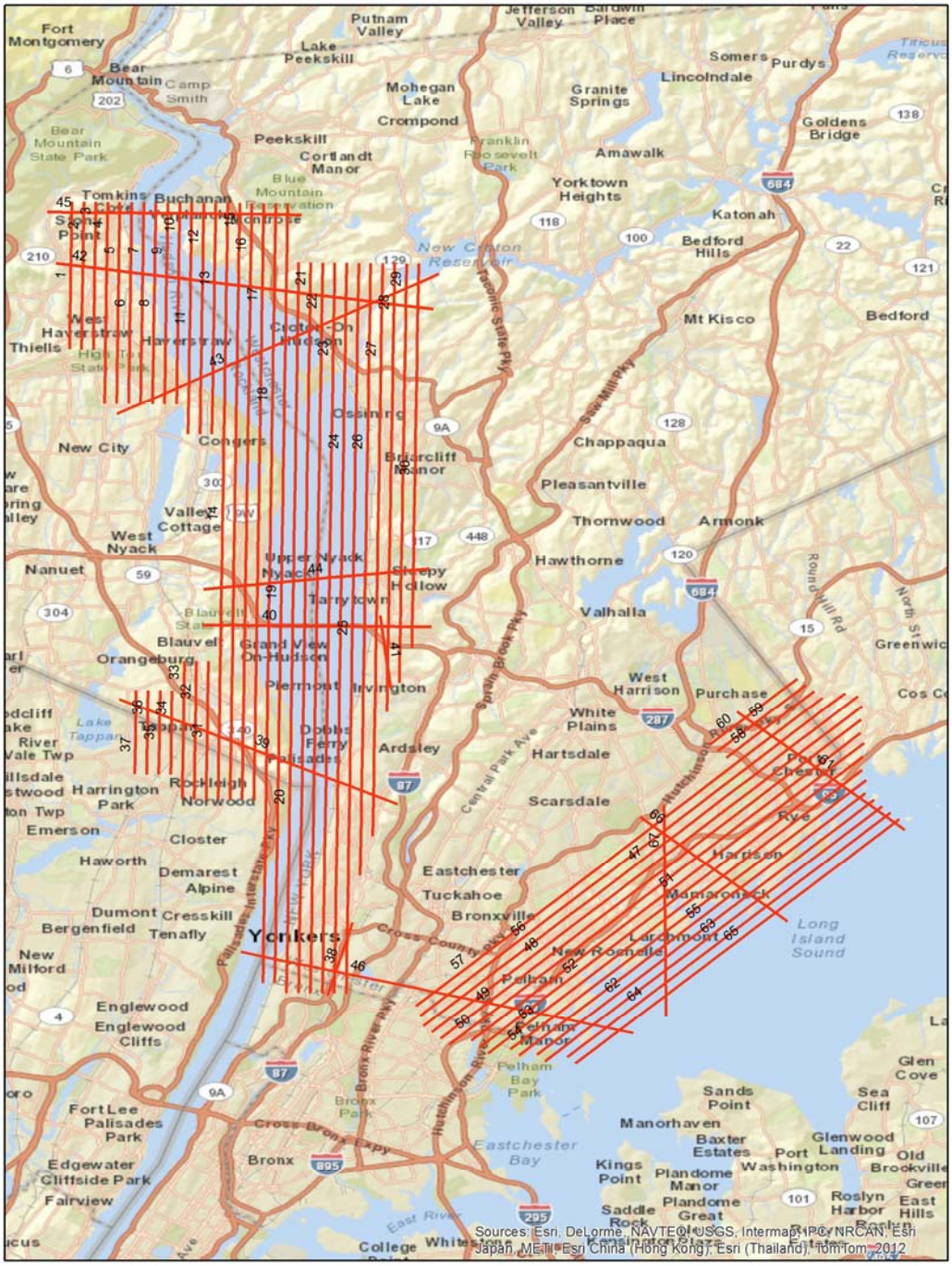


Figure 18. Planned Flight Lines: Piermont

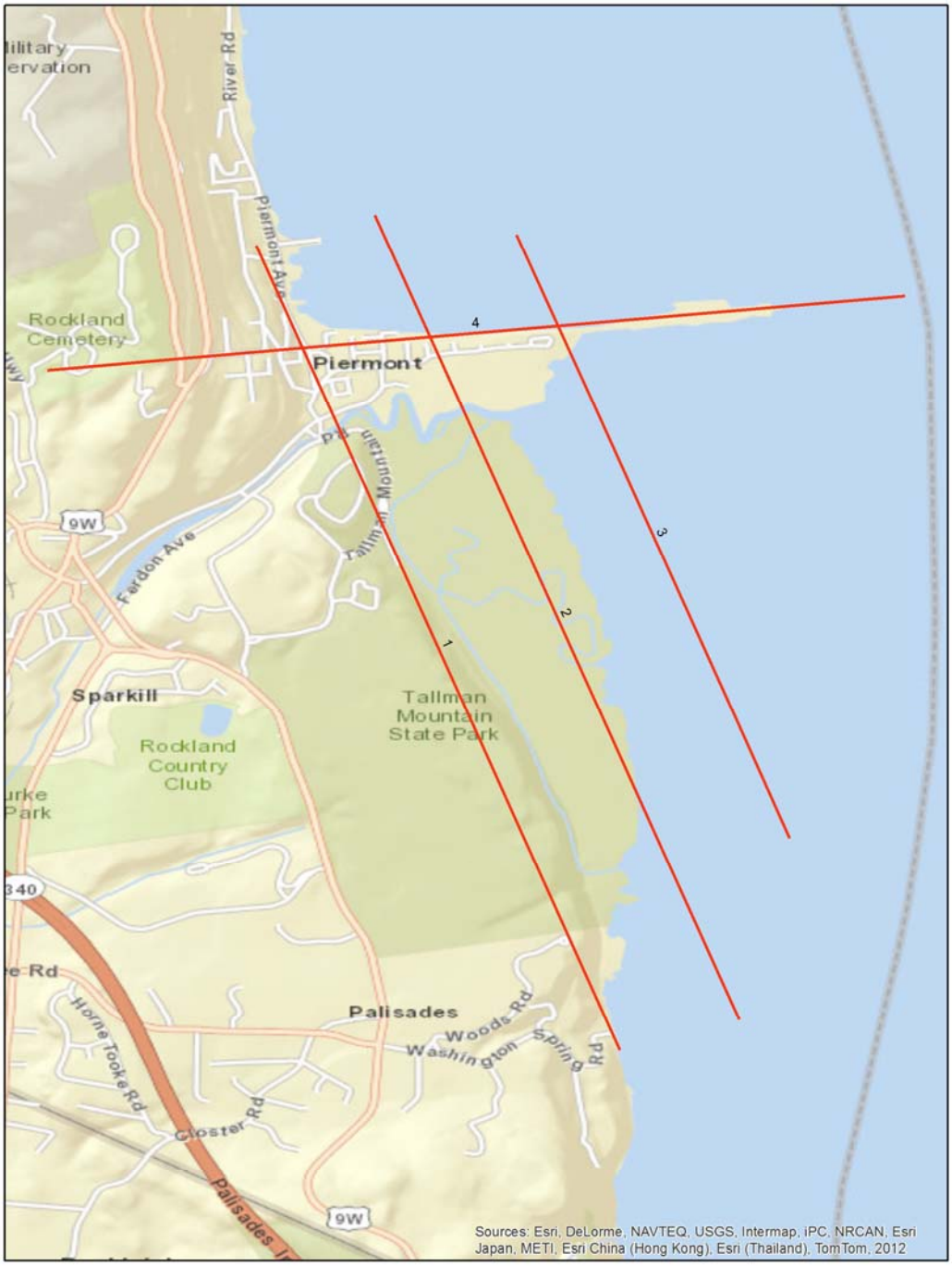


Figure 19. Planned Flight Lines: HPN Calibration

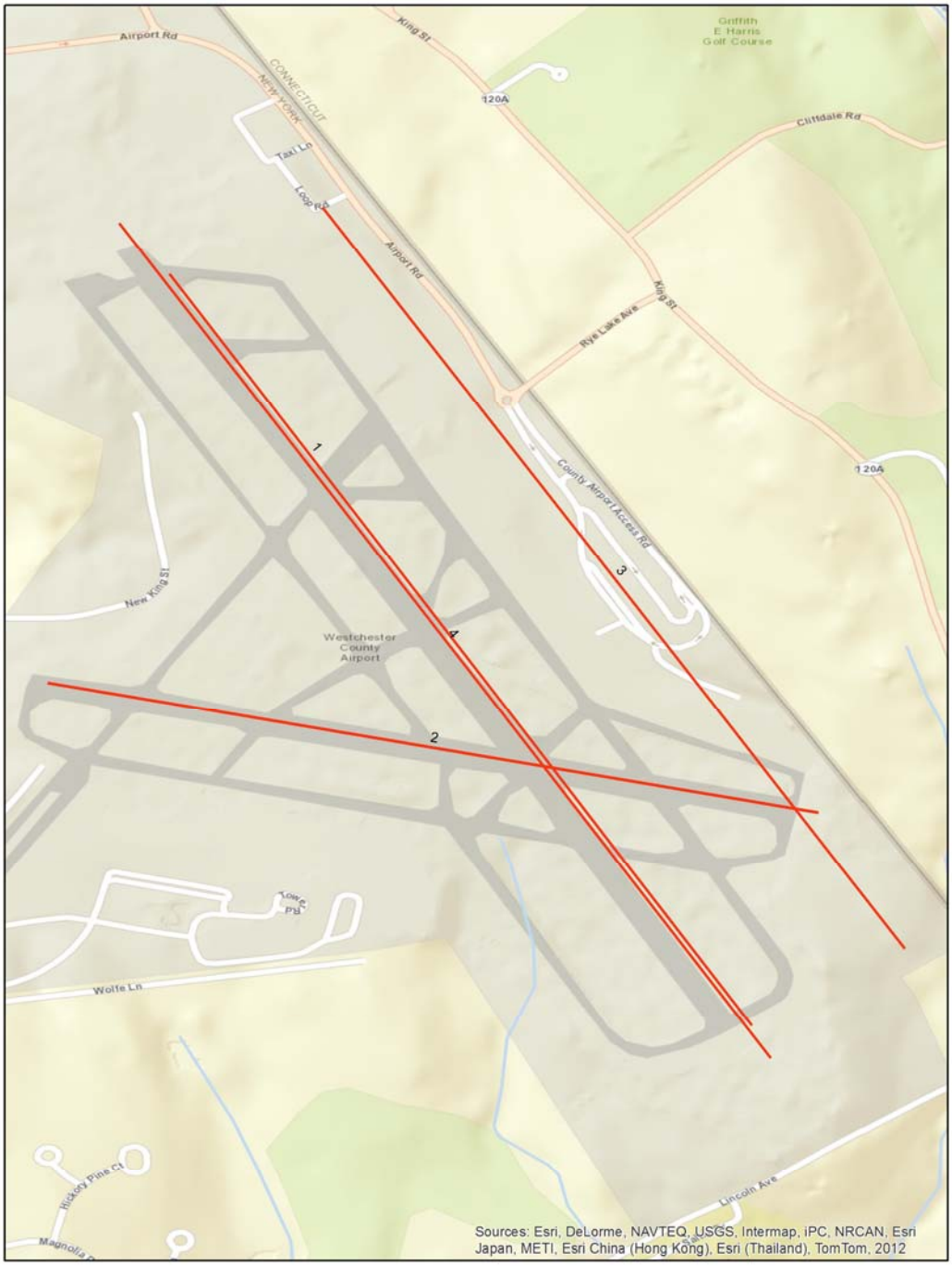


Figure 20. Planned Flight Lines: FRG

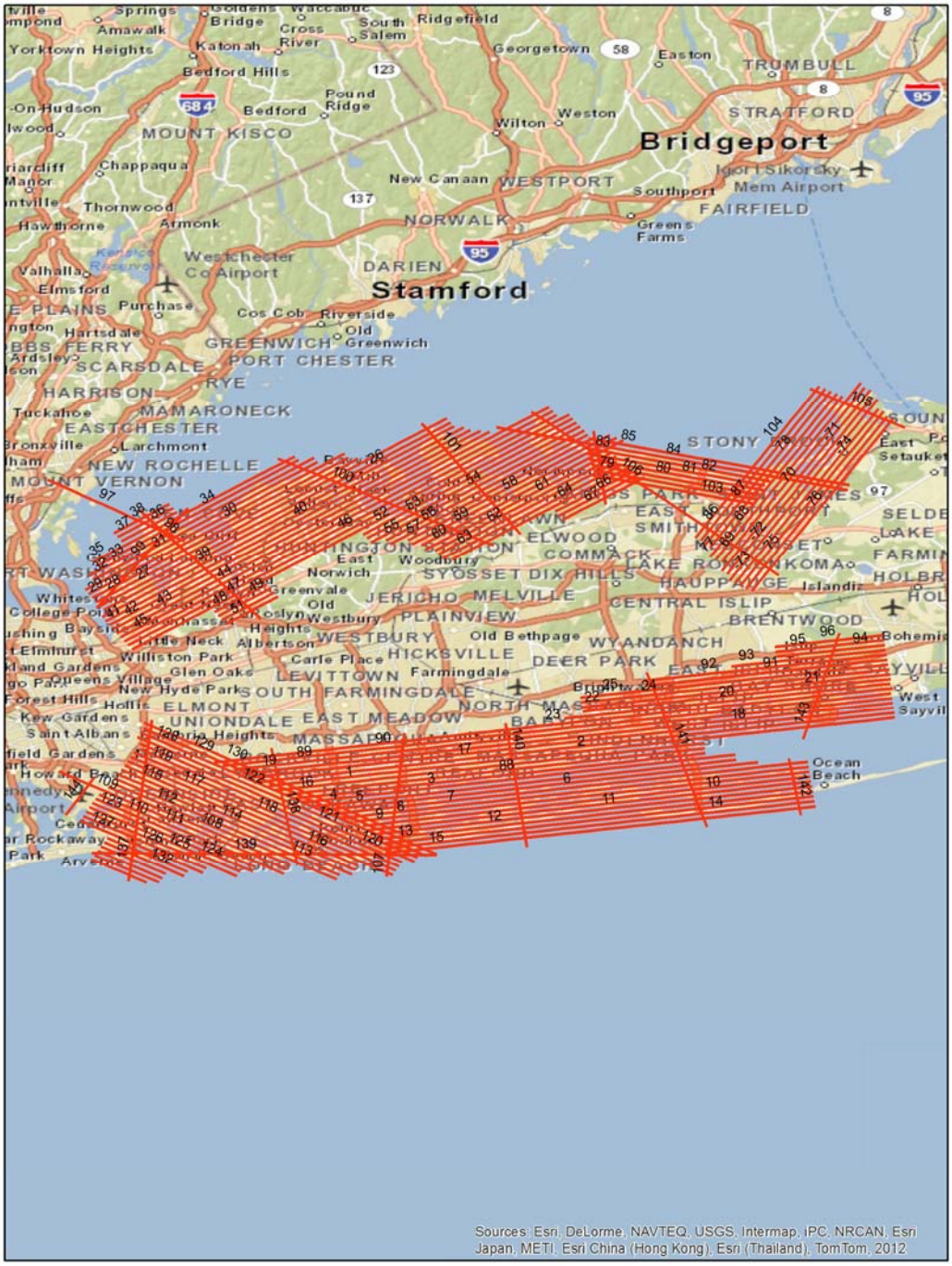


Figure 21. Planned Flight Lines: FRG Calibration

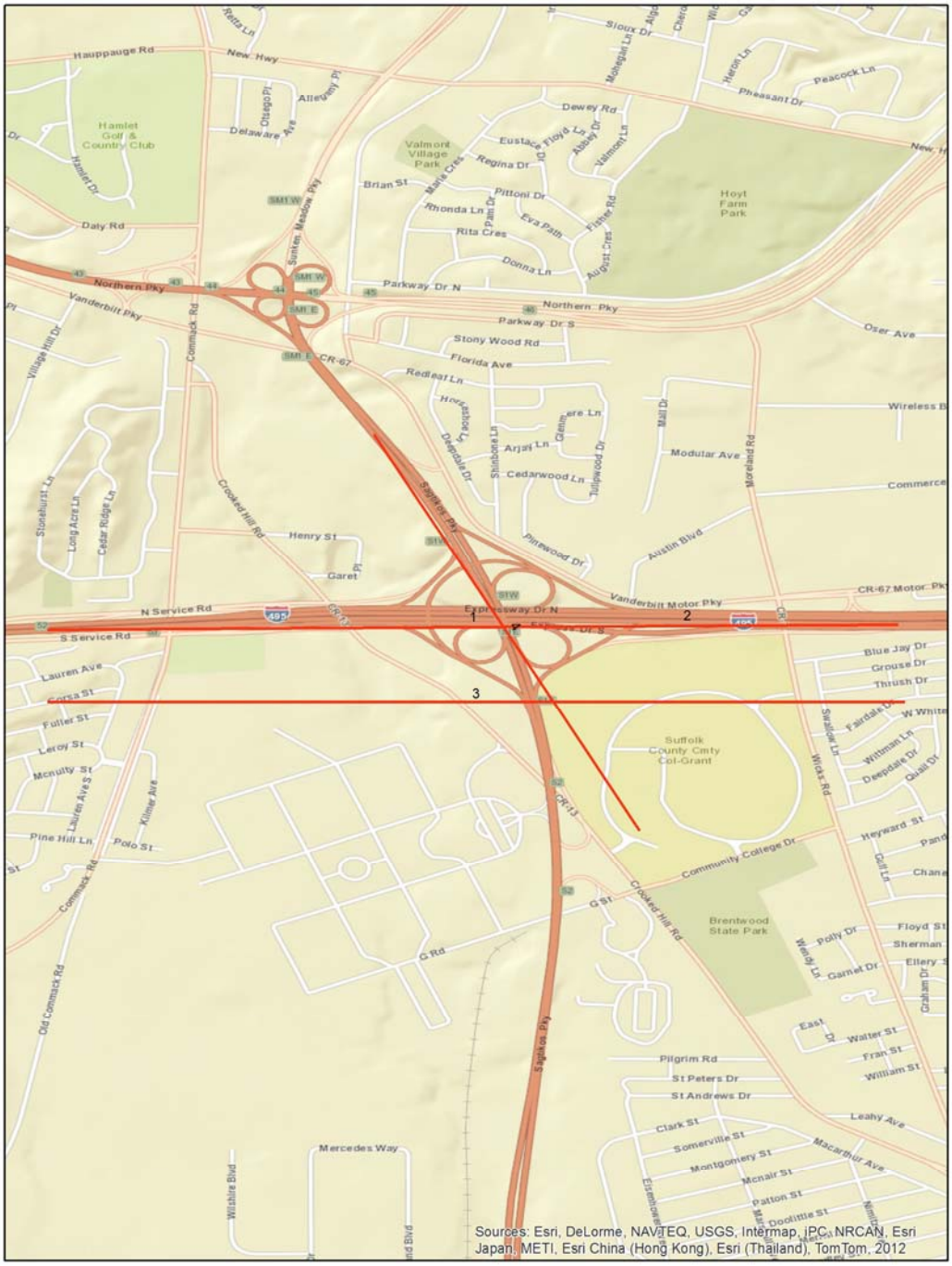


Figure 22. Planned Flight Lines: HWV

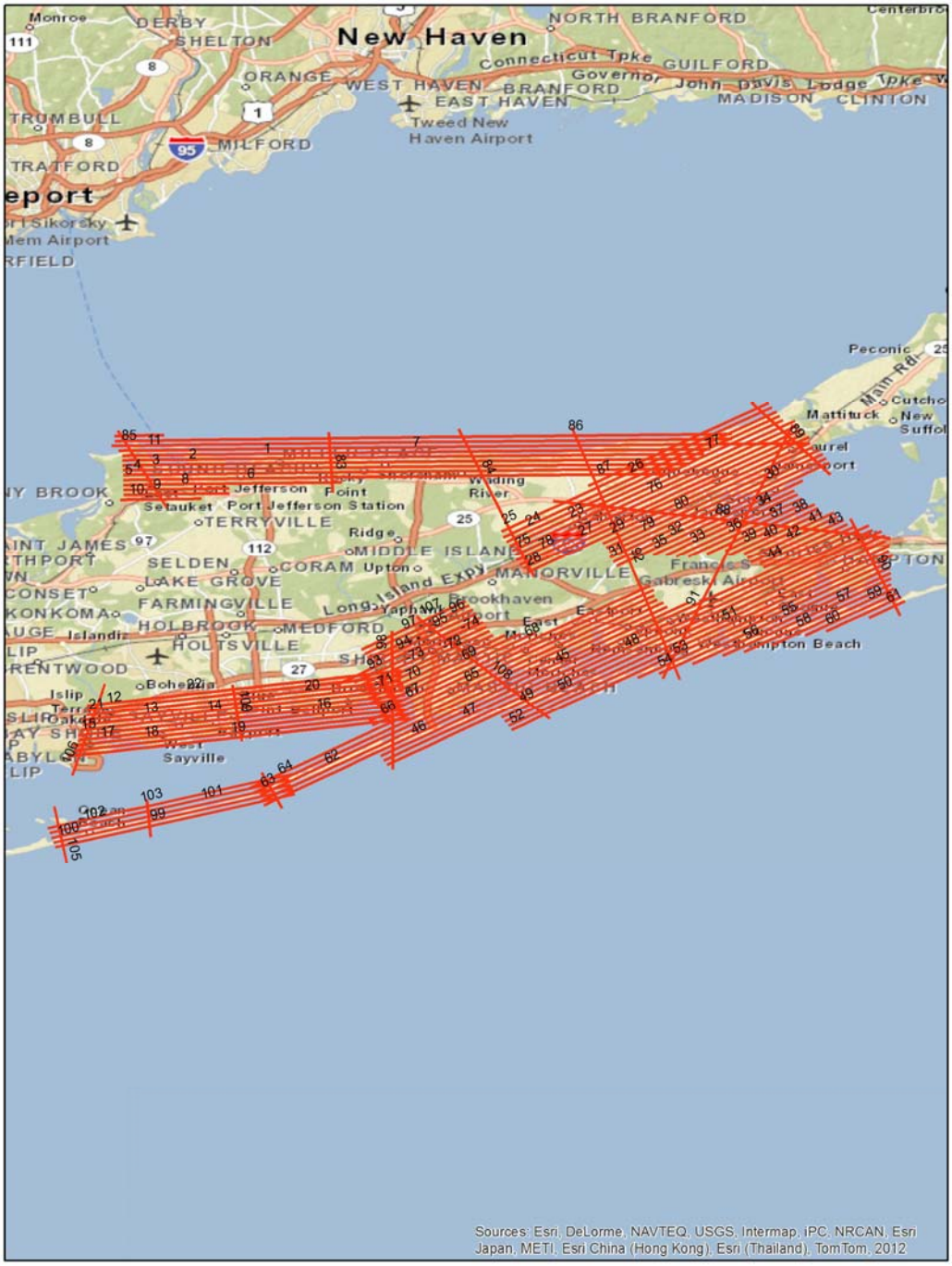


Figure 23. Planned Flight Lines: HTO

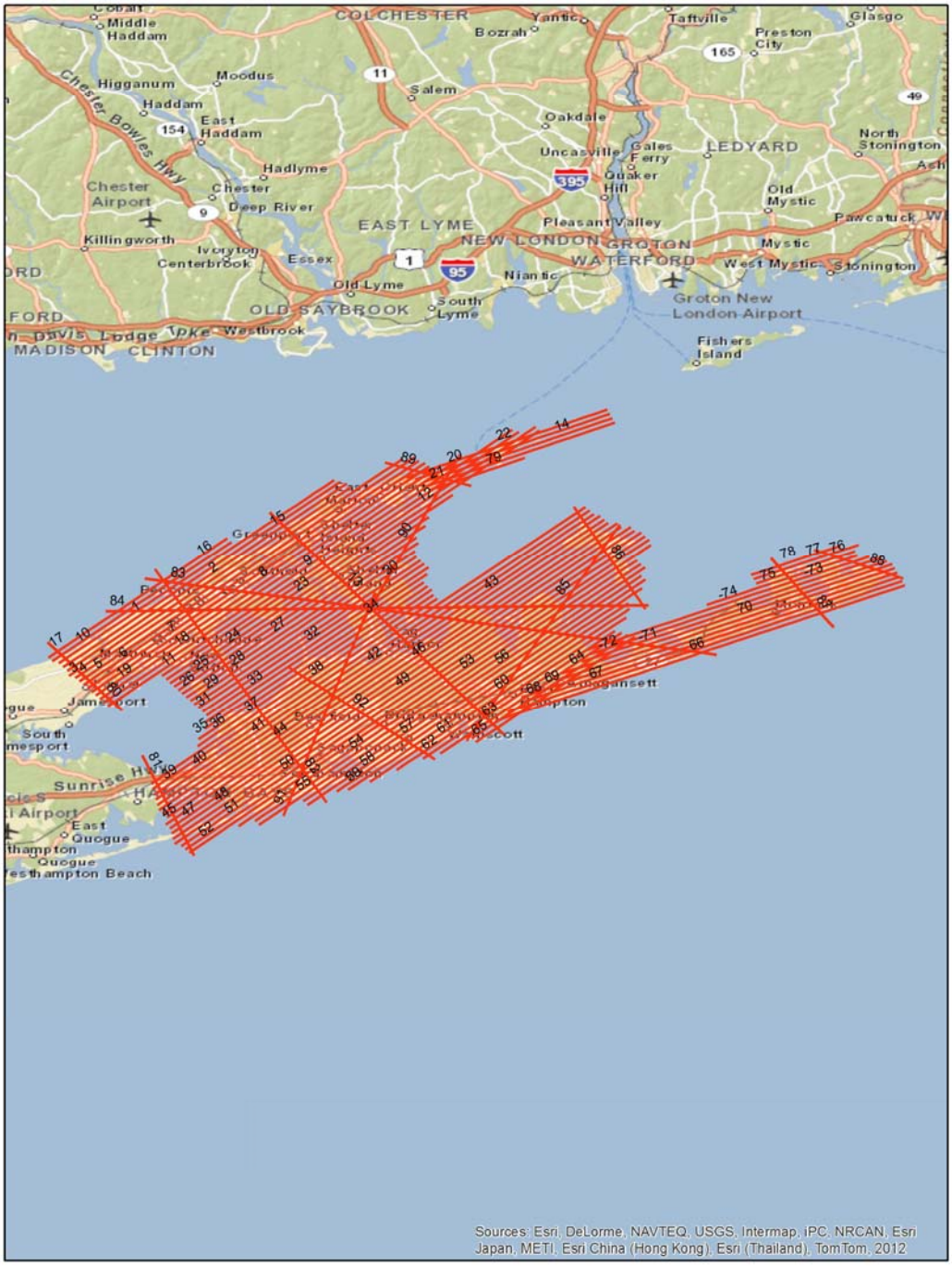


Figure 24. Planned Flight Lines: GON

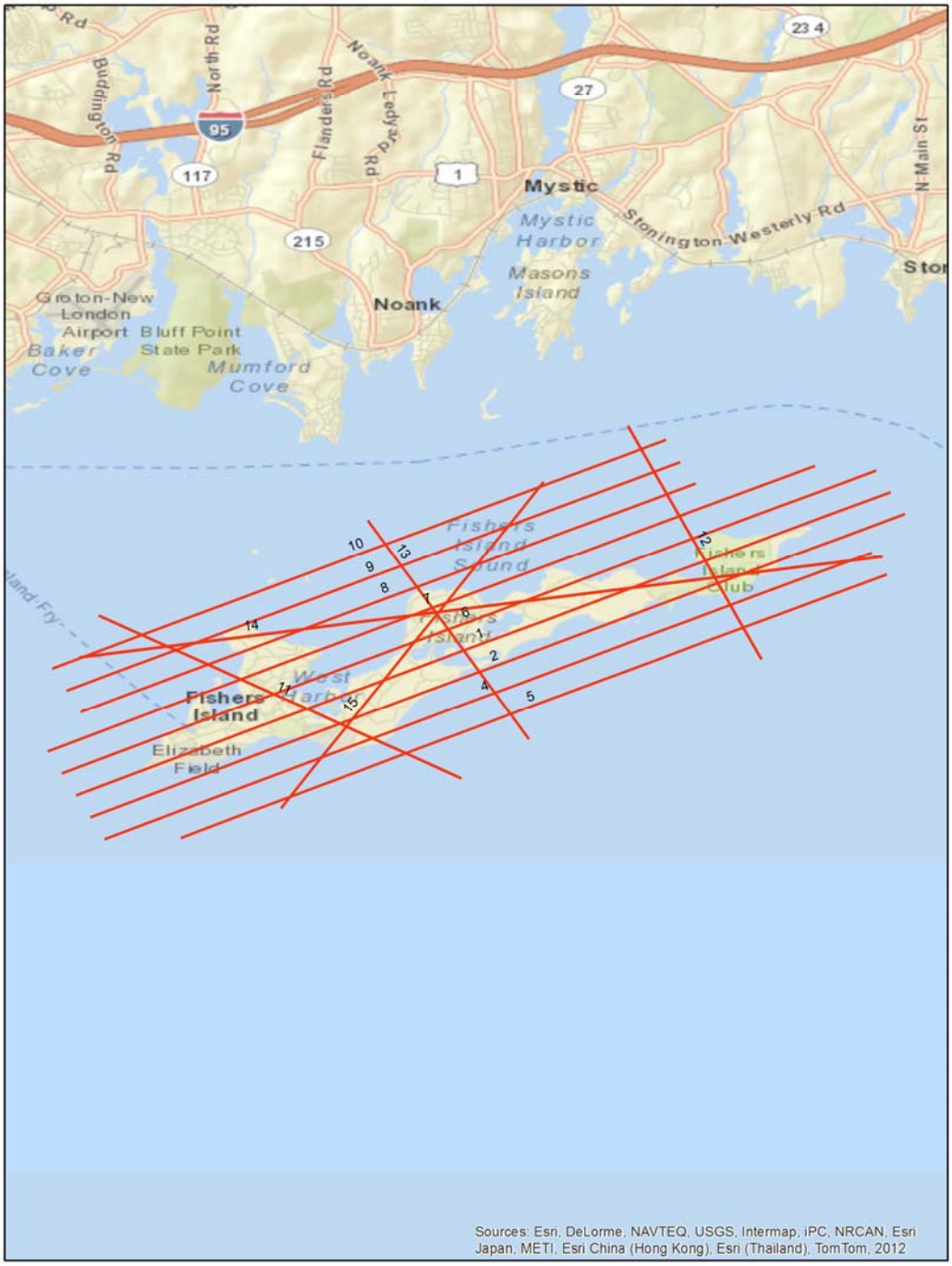
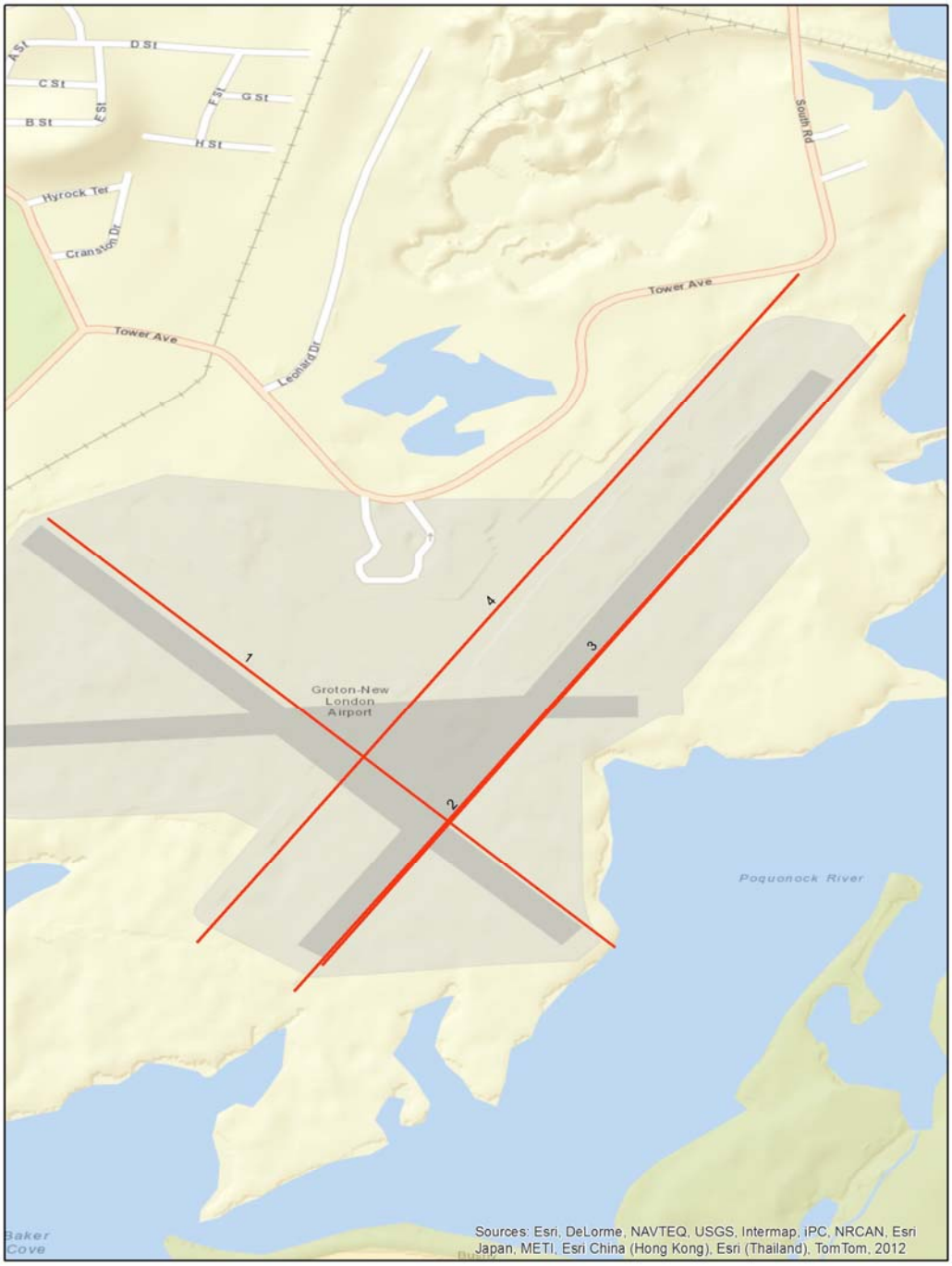


Figure 25. Planned Flight Lines: GON Calibration



Detailed project flight planning calculations were performed for using both Optech ALTM Nav planning software. Flight planning was based on the unique project requirements and characteristics of the project site. The basis of planning included: required accuracies, type of development, tide control, water levels, required data posting, and potential altitude restrictions for flights in project vicinity. A brief summary of the aerial acquisition parameters for the project are shown in the LiDAR System Specification Table 2 below:

Table 2. LiDAR System Specifications

LiDAR System Specifications	
Terrain and Aircraft	Flying Height AGL: 1066 m;3,500 feet
	Recommended Ground Speed (GS): 115 kts
Scanner	Field of View (FOV): 17.0; degrees
	Scan Rate Setting used (SR): 34 Hz
Laser	Laser Pulse Rate used: 50,000 Hz
	Multi Pulse in Air Mode: Enabled
Coverage	Full Swath Width: 791 m
Point Spacing and Density	Maximum Point Spacing Across Track: 0.887 m
	Maximum Point Spacing Along Track: 0.87 m
	Average Point Density: 1.3 pts / m^2

2.1. EQUIPMENT: AIRCRAFT

Flights for the project were accomplished through the use of a customized twin-engine Cessna 206 (Tail Numbers N2448G; N9471R; and N7266Z).This aircraft provided an ideal, stable aerial base for LiDAR acquisition. This aerial platform has relatively fast cruise speeds which are beneficial for project mobilization / demobilization while maintaining relatively slow stall speeds which proved ideal for collection of high-density, consistent data posting using a state-of-the-art Optech LiDAR system.

Figure 26. Operations Aircraft

2.2. LIDAR SENSOR

Photo Science utilized an Optech LiDAR sensor, serial numbers 240, 246, and 247 during the project. This system is capable of collecting data at a maximum frequency of 500 kHz, which affords elevation data collection of up to 500,000 points per second. The system utilizes a Multi-Pulse in the Air option (MPIA). This sensor is also equipped with the ability to measure up to 5 returns per outgoing pulse from the laser and these come in the form of 1st, 2nd, 3rd, 4th, and last returns. The intensity of the first four returns is also captured during aerial acquisition. During mission collection of the New Jersey project the LiDAR operator monitored point density and swath to ensure data integrity and desired coverages were obtained.

Figure 27. Optech Gemini LiDAR System

2.3. BASE STATION INFORMATION

GPS base stations were utilized during all phases of flight. Base stations “Satellite Triang Station 022” (PID AA3709) and “TAU A” (PID AA4463) were occupied during airborne operations of the project. Both base station locations were verified using NGS

OPUS service and subsequent surveys. Data sheets, graphical depiction of base station locations and log sheets used during station occupation are available in Appendix A.

2.4. TIME PERIOD

Project specific flights were conducted over (32) days. Fifty Four (54) sorties, or aircraft lifts were completed. Accomplished sorties are listed below:

- 111126a-240
- 111212a-240
- 111213a-240
- 111213b-240
- 111213c-240
- 111214a-240
- 111216a-240
- 111216b-240
- 111218b-240
- 111218c-240
- 111219a-240
- 111219b-240
- 120107a-247
- 120109a-247
- 120109b-247
- 120111a-247
- 120115a-247
- 120115b-247
- 120116a-247
- 120116b-247
- 120118a-247
- 120118b-247
- 120120a-247
- 120125a-247
- 120125b-247
- 120125c-247
- 120128a-247
- 120128b-247
- 120130a-247
- 120130b-247
- 120131a-247
- 120131b-247
- 120202a-247
- 120203a-247
- 120203b-247
- 120204a-247
- 120205a-247
- 120205b-247
- 120206a-247

- 120206b-247
- 120209a-247
- 120213b-247
- 120217a-247
- 120217b-247
- 120217c-247
- 120218a-247
- 120219a-247
- 120219b-247
- 120220a-247
- 120220c-247
- 120222a-247
- 120406a-246
- 120407a-246
- 120407c-246

3. Processing Summary

3.1. Flight Logs

Flight logs were completed by LIDAR sensor technicians for each mission during acquisition. These logs depict various information including:

- Job / Project #
- Flight Date / Lift Number
- FOV (Field of View)
- Scan Rate (HZ)
- Pulse Rate Frequency (Hz)
- Ground Speed
- Altitude
- Base Station
- PDOP avoidance times
- Flight Line #
- Flight Line Start and Stop Times
- Flight Line Altitude (AMSL)
- Heading
- Speed
- Returns
- Crab

Notes: (Visibility, winds, ride, weather, temperature, dewpoint, pressure, etc). Project specific flight logs for each sortie are available in Appendix C.

3.2. INITIAL PROCESSING

Applanix + POSPac Mobile Mapping Suite software was used for post-processing of airborne GPS and inertial data (IMU), which is critical to the positioning and orientation of the LiDAR sensor during all flights. POSPac combines aircraft raw trajectory data with stationary GPS base station data yielding a "Smoothed Best Estimate Trajectory" (SBET) necessary for additional post processing software to develop the resulting geo-referenced point cloud from the LiDAR missions.

During the sensor trajectory processing (combining GPS & IMU datasets) certain statistical graphs and tables are generated within the Applanix POSPac processing environment which are commonly used as indicators of processing stability and accuracy. This data for analysis include: Max horizontal / vertical GPS variance, separation plot, altitude plot, PDOP plot, base station baseline length, processing mode, number of satellite vehicles, and mission trajectory. All relevant graphs produced in the POSPac processing environment for each sortie during the Photo Science New York Coastal project mobilization are available in Appendix B.

The generated point cloud is the mathematical three dimensional composite of all returns from all laser pulses as determined from the aerial mission. Point clouds were created using Optech DASHMap Post Processor software. GeoCue distributive processing software was used in the creation of some files needed in downstream processing, as well as in the tiling of the dataset into more manageable file sizes. TerraMatch is used to perform an assessment of the system offsets for pitch, roll, heading and scale, and the subsequent removal of these systematic biases. The data is now ready for analysis, classification, and filtering to generate a bare earth surface model in which the above-ground features are removed from the data set. TerraScan and TerraModeler software packages were then used for the automated data classification, manual cleanup, and bare earth generation. Project specific macros were developed to classify the ground and remove side overlap between parallel flight lines.

3.3. LAS CLASSIFICATION SCHEME

The classification classes are determined by the USGS Version 1.0 specifications and are an industry standard for the classification of LIDAR point clouds. All data starts the process as Class 1 (Unclassified),
and then through automated classification routines, classifications are determined using TerraScan macro processing.

The classes used in the dataset are as follows and have the following descriptions:

- Class 1 – Processed, but Unclassified – These points would be the catch all for points that do not fit any of the other deliverable classes. This would cover things like vegetation, buildings, cars, bridges, etc.
- Class 2 – Bare earth ground – This is the bare earth surface
- Class 7 – Noise – Low or high points, manually identified above or below the surface that could be noise points in point cloud.
- Class 9 – In-land Water – Points found inside of inland lake/ponds
- Class 10 – Ignored Ground – Points found to be close to breakline features. Points are typically moved to this class from Class 2. This class is ignored during the DEM creation.
- Class 11 – Withheld – Points found to be noise during automated processing.
- Class 14 – Tidal Water – Points found to be inside tidal water features.
- Class 17 – Overlap Default (Unclassified) – Points found in the overlap between flight lines. These points are created through automated processing methods and not cleaned up during processing.
- Class 18 – Overlap Bare-earth ground – Points found in the overlap between flight lines. These points are created through automated processing, matching the specifications determined during the automated process, that are close to the Class 2 dataset (when analyzed using height from ground analysis)
- Class 25 – Overlap Water – Points found in the overlap between flight lines that are also located inside of hydro breaklines.

- Class 30 – Overlap Bare Water – Points found in the overlap between flight lines that are also located inside of the tidal water breaklines.

3.4. CLASSIFIED LAS PROCESSING

The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare-earth surface is finalized, it is then used to generate all hydro-breaklines through heads-up digitization.

All ground (ASPRS Class 2) LiDAR data inside of the Lake Pond and Double Line Drain hydro flattening breaklines were then classified to water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 1 meter was also used around each hydro flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 10). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed.

A class has been added to the dataset to represent the tidal water of the ocean/tidal areas collected throughout the project area. ASPRS Class 14 is being used to represent the tidal water ocean surface. While attempts were made to remove all extraneous features above the surface of the water, there may still be above surface features classified to this class. Some islands below the required collection specifications have been classified to this class as well. This class was also used during the creation of the ERDAS Imagine Tidal Water Raster DEM files. The Tidal Water breaklines were used to complete the automated classification of these classes within the final LAS files.

All overlap data was processed through automated functionality provided by TerraScan to classify the overlapping flight line data to approved classes by NOAA-CSC. The overlap data was classified to Class 17 (Overlap Default) and Class 18 (Overlap Ground). These classes were created through automated processes only and were not verified for classification accuracy. Due to software limitations within TerraScan, these classes were used to trip the withheld bit within various software packages. These processes were reviewed and accepted by NOAA through numerous conference calls and pilot study areas.

All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. QT Modeler was used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for both the All Point Cloud Data and the Bare Earth. Photo Science proprietary software was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information

3.5. HYDRO FLATTENING BREAKLINE PROCESS

Class 2 LiDAR was used to create a bare earth surface model. The surface model was then used to heads-up digitize 2D breaklines of inland streams and rivers with a 30 meter nominal width and Inland Ponds and Lakes of 8,000 sq. meters or greater surface area.

Tidal Shoreline and Tidal Island features were collected in a 2D collection method during an overall review of the surface models to determine the land water breaklines. These features were used to determine the classification within the Classified LAS files. These features can be used to represent a flat water surface, but were not run through the same project quality control procedures as the inland water body features. Elevation differences between ocean shoreline and ocean islands will be found. This is due in large part to the coastal water elevation changes, found between missions, as well as flightline to flightline. Final elevations on the Tidal Water breaklines was determined by interpolation from the Mean High Water elevations provided through the New York Harbor Observing and Prediction System (NYHOPS) surface model.

Elevation values were assigned to all Inland Ponds and Lakes, Inland Pond and Lake Islands, Inland Stream and River Islands, using TerraModeler functionality.

Elevation values were assigned to all Inland streams and rivers using Photo Science proprietary software.

All ground (ASPRS Class 2) LiDAR data inside of the collected inland breaklines were then classified to water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 1 meter was also used around each hydro flattened feature. These points were moved from ground (ASPRS Class 2) to Ignored Ground (ASPRS Class 10).

All ground (ASPRS Class 2) LiDAR data inside of the collected tidal/ocean breaklines were then classified to tidal water (Class 14) using TerraScan macro functionality. A buffer of 1 meter was also used around each hydro flattened feature. These points were moved from ground (ASPRS Class 2) to Ignored Ground (ASPRS Class 10).

The breakline files were then translated to ESRI Shapefile/File GeoDatabase format using ESRI conversion tools.

3.6. TIDAL WATER RASTER DEM PROCESSING

Using automated scripting routines within ArcMap, the ground (ASPRS Class 2) and bare water (Class 14) were combined with the Hydro Flattened Breaklines (excluding the Tidal/Ocean Shoreline and Tidal/Ocean Island line types) to create the 1.0 meter DEM. The data found on the bare water (Class 14) are points located at or near the water surface. These points will cause the bare water surface to look irregular, showing wave patterns, larger triangles in areas where the LIDAR points have been absorbed by water, or near vertical triangulation around pier, headwalls, etc. When using Bare Water (Class 14) points as part of the bare earth surface, this type of triangulation is normal. While efforts were made to remove any extraneous features above the surface of the water, residual artifacts may remain in some areas.

ERDAS IMG files were created as a check of the surface model. The files were reviewed and verified for completeness. ESRI Grid files were then created as the project deliverable.

In generating the Hydro Flattening Raster DEM surface, we used the Tidal Water Raster DEM surface, and incorporated the client provided V-Datum surface to flatten the final surface.

4. PROJECT COVERAGE VERIFICATION

The New York Coastal project area coverage verification was performed by comparing coverage of processed .LAS files capured during project collection to generated project shape files depicting boundaries of specified project areas. Please refer to Figures 28-44 on the following pages.

Figure 28. LAS File Coverage: Overall

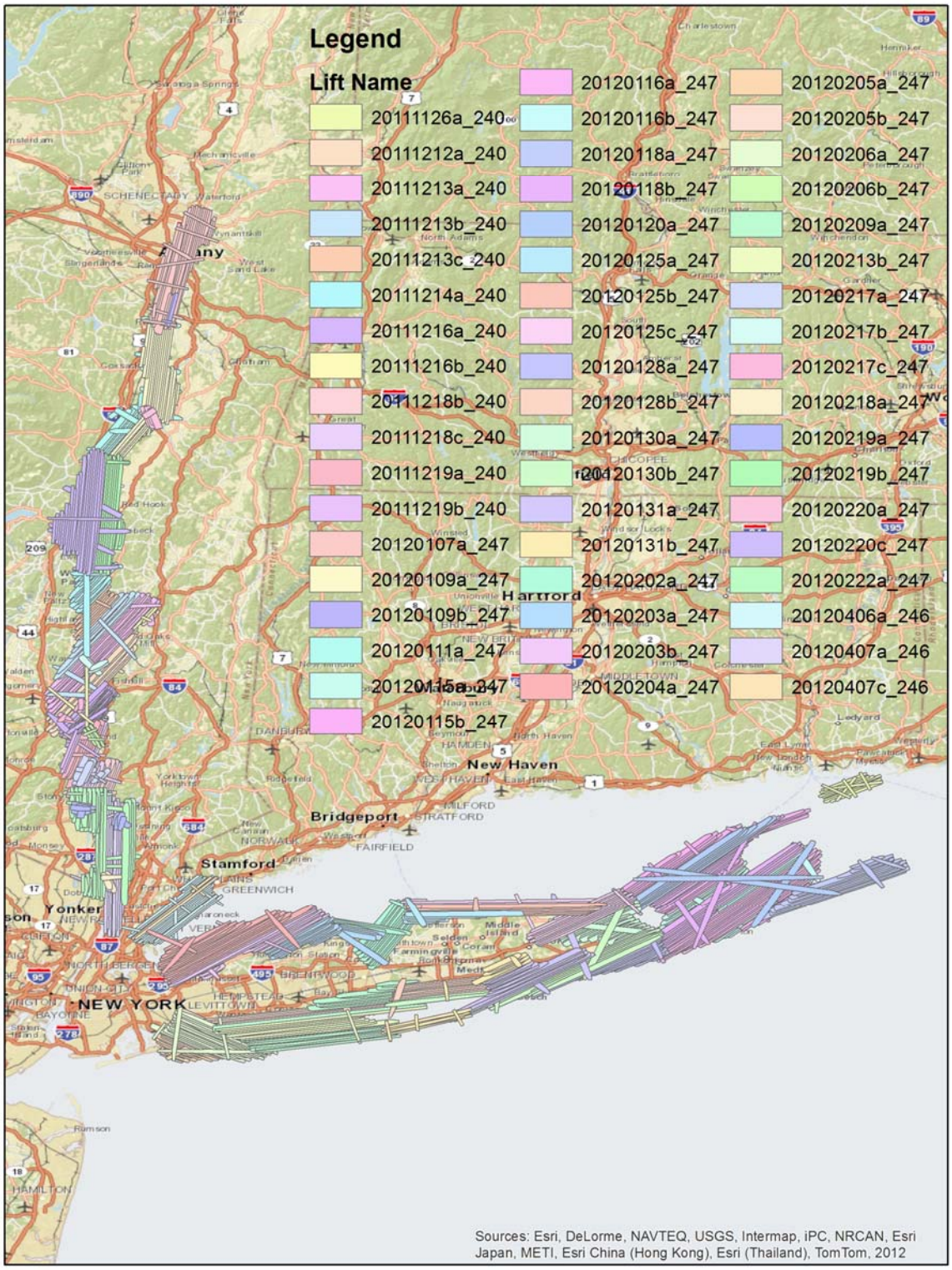


Figure 29. LAS File Coverage: ALB

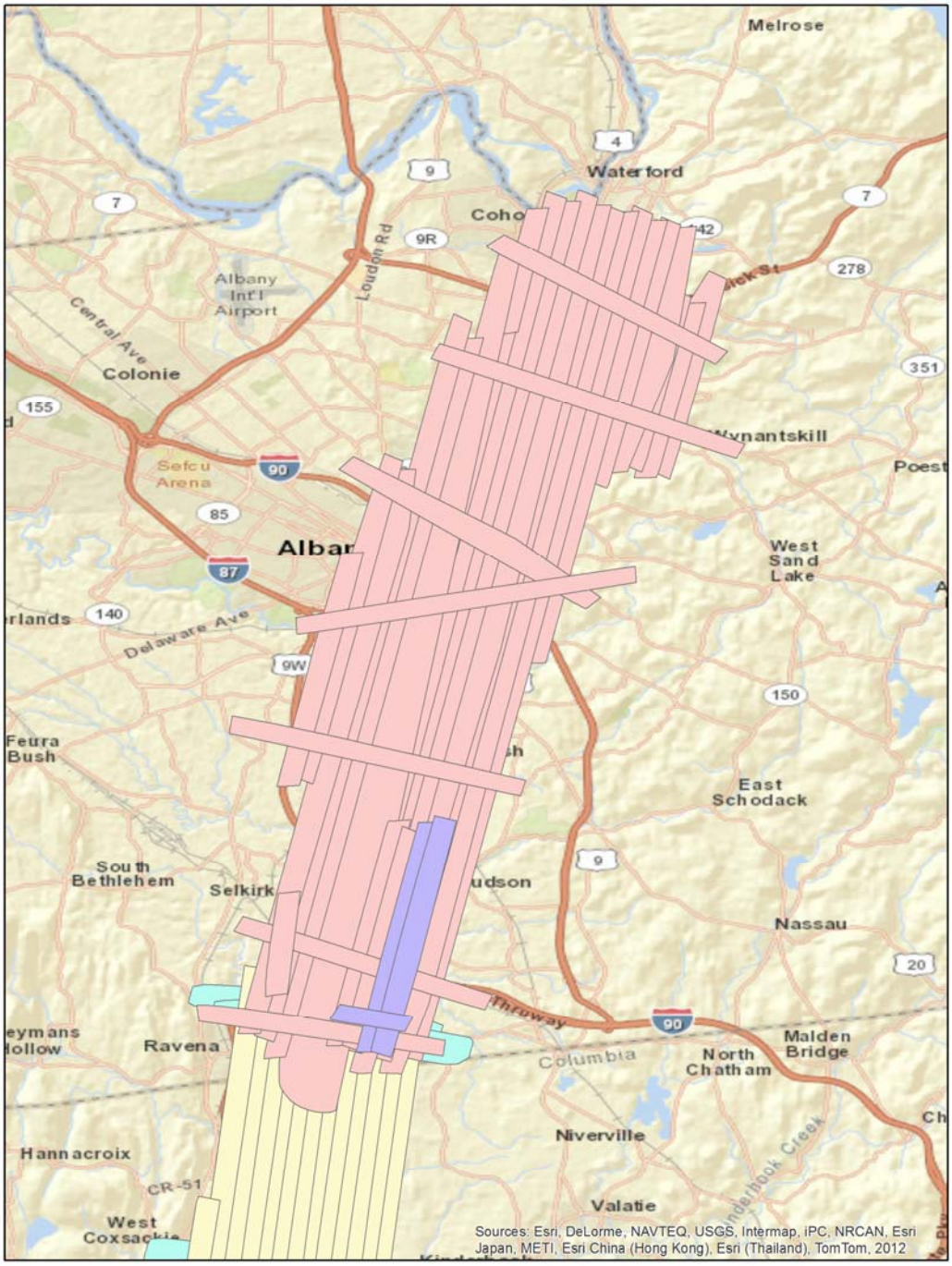


Figure 30. LAS File Coverage: 1B1

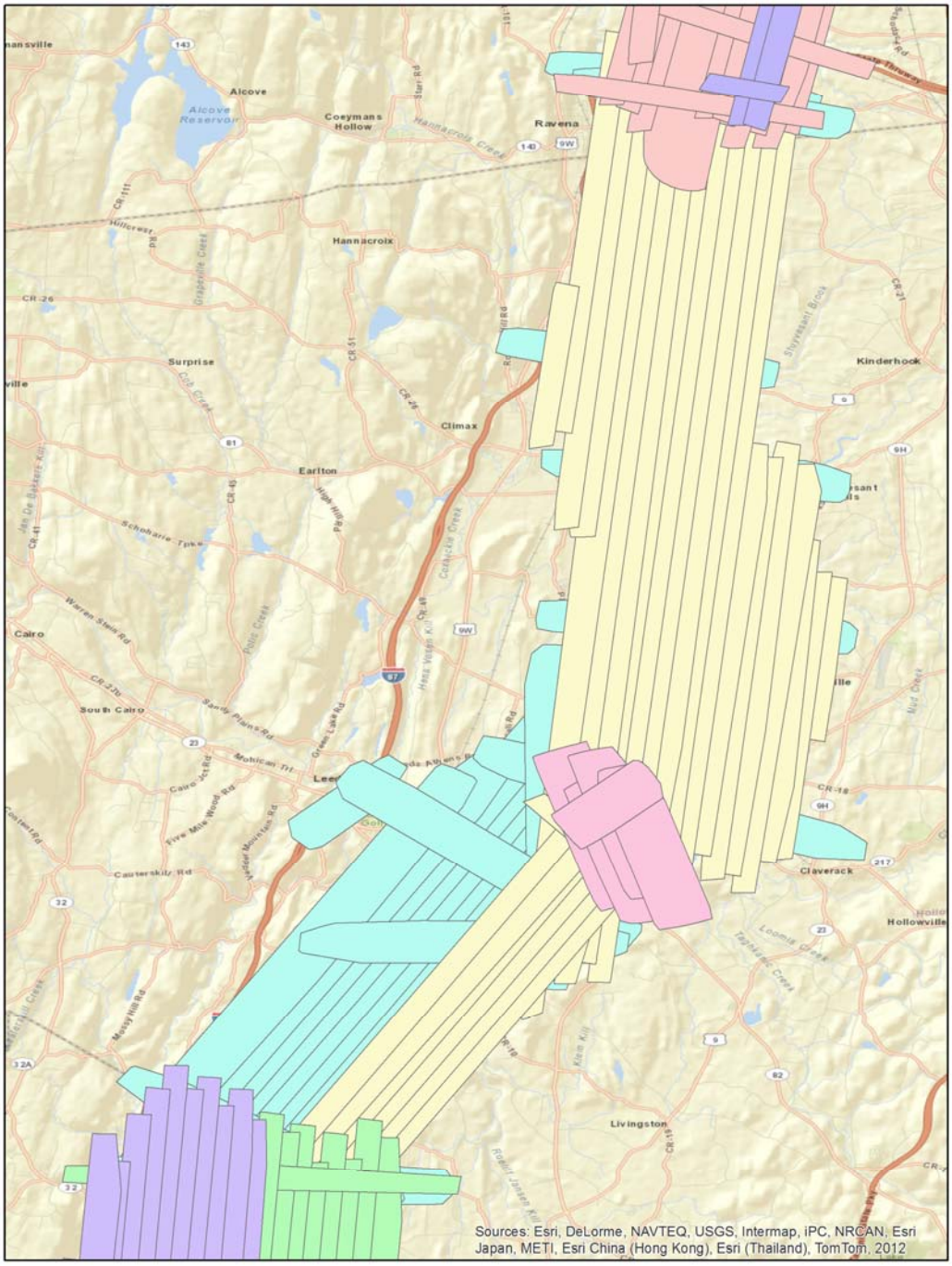


Figure 31. LAS File Coverage: Hudson South

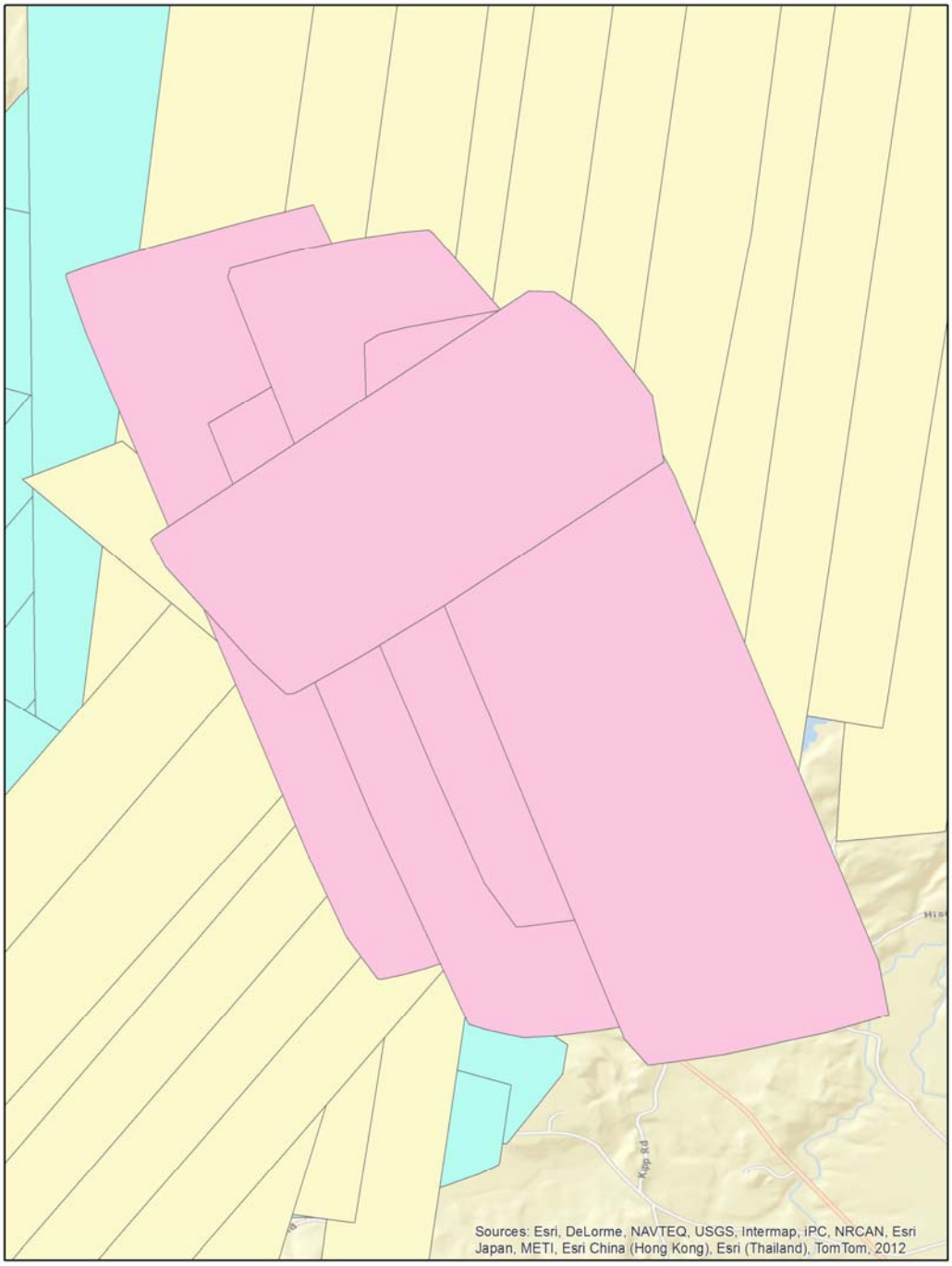


Figure 32. LAS File Coverage: POU

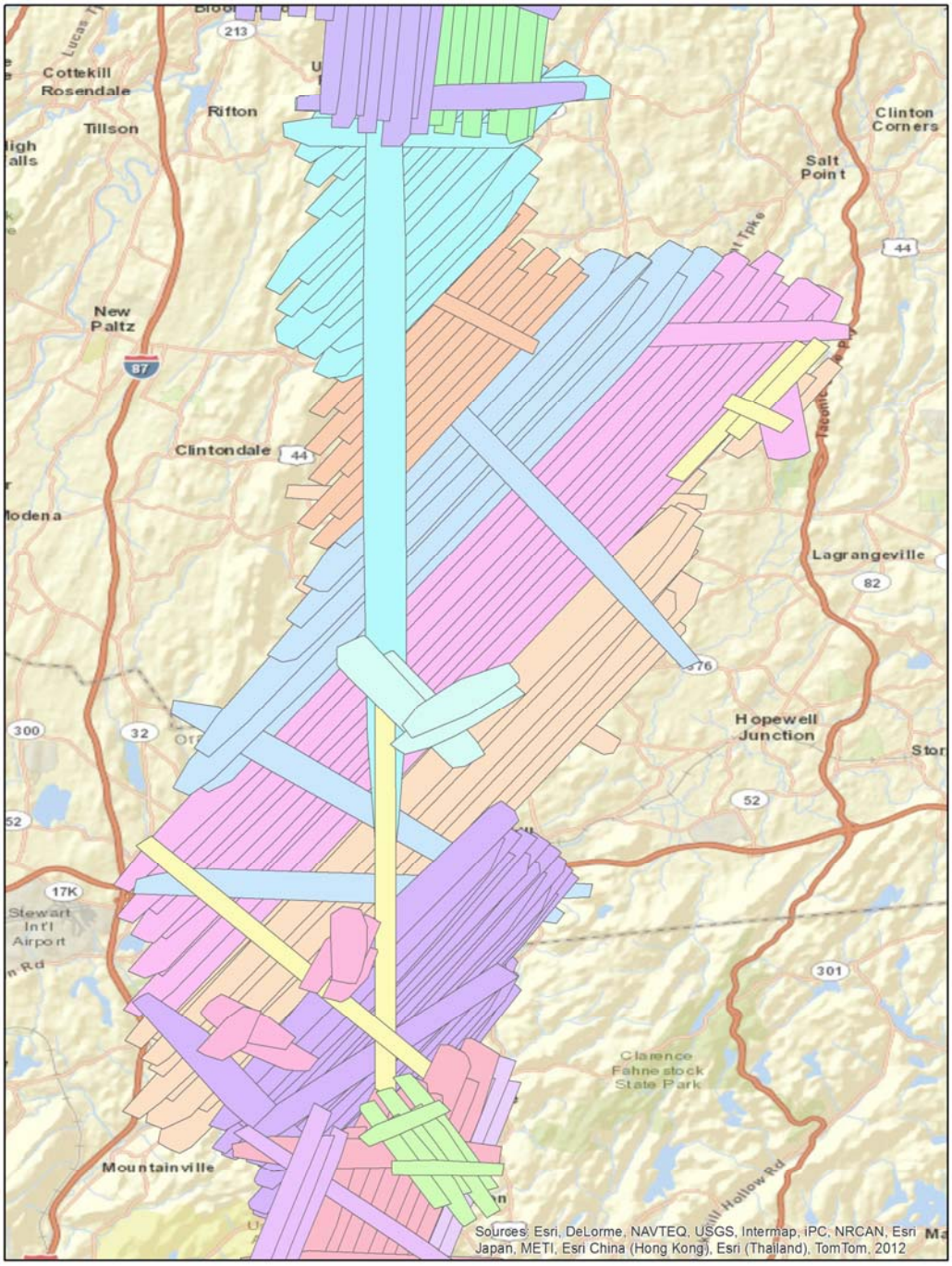


Figure 33. LAS File Coverage: Marlborough Wappinger

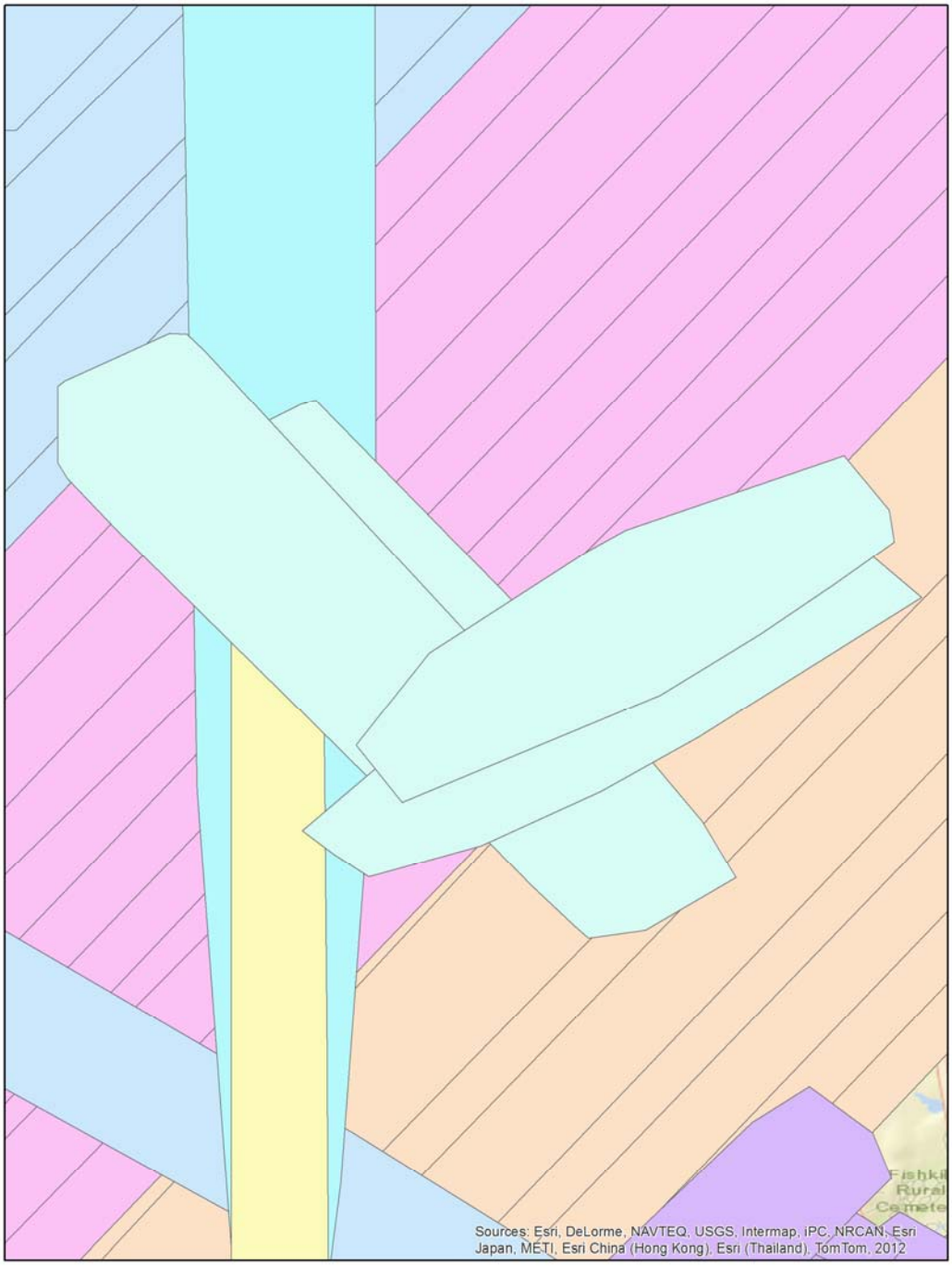


Figure 34. LAS File Coverage: Moonda Fishkill

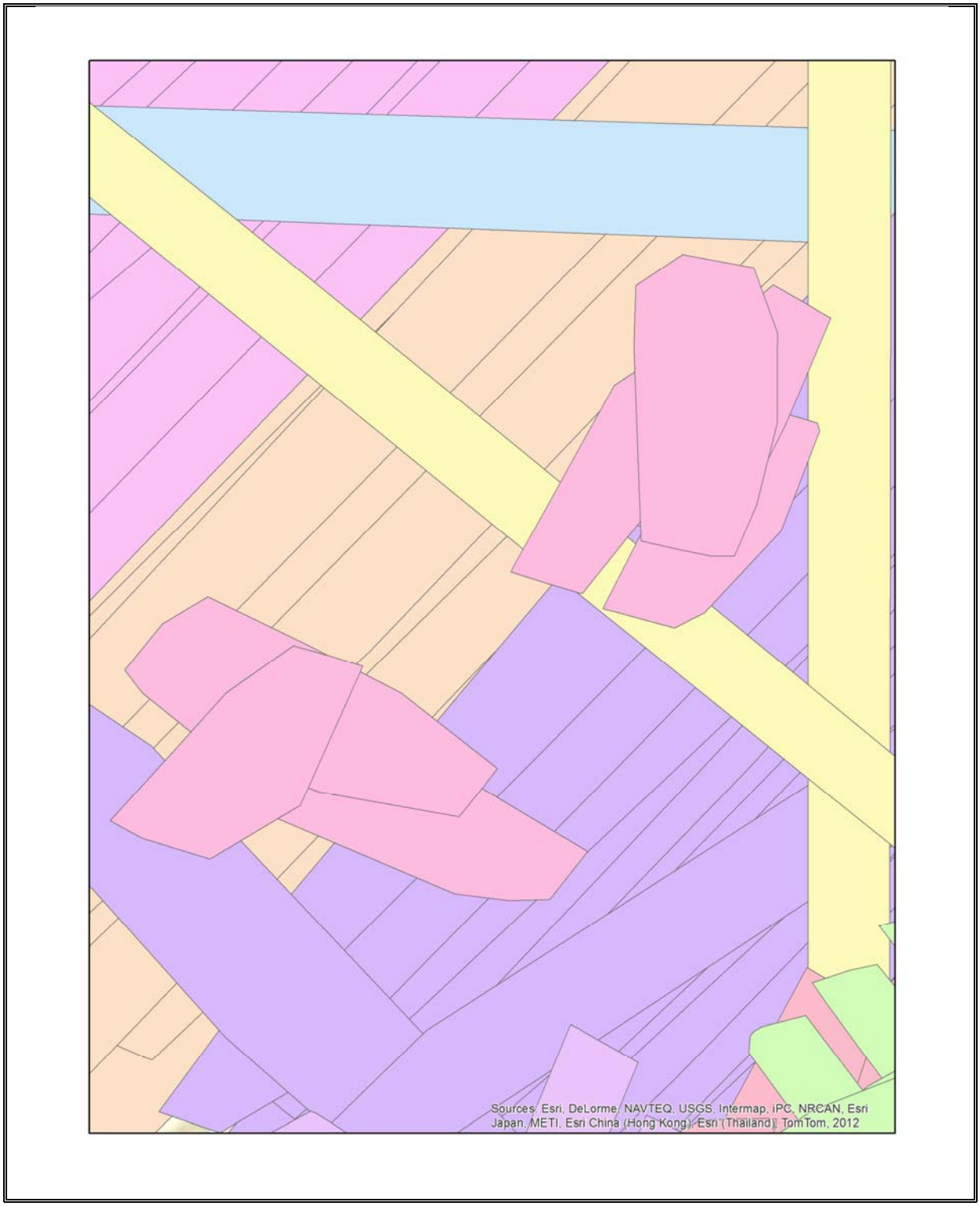


Figure 35. LAS File Coverage: Constitution

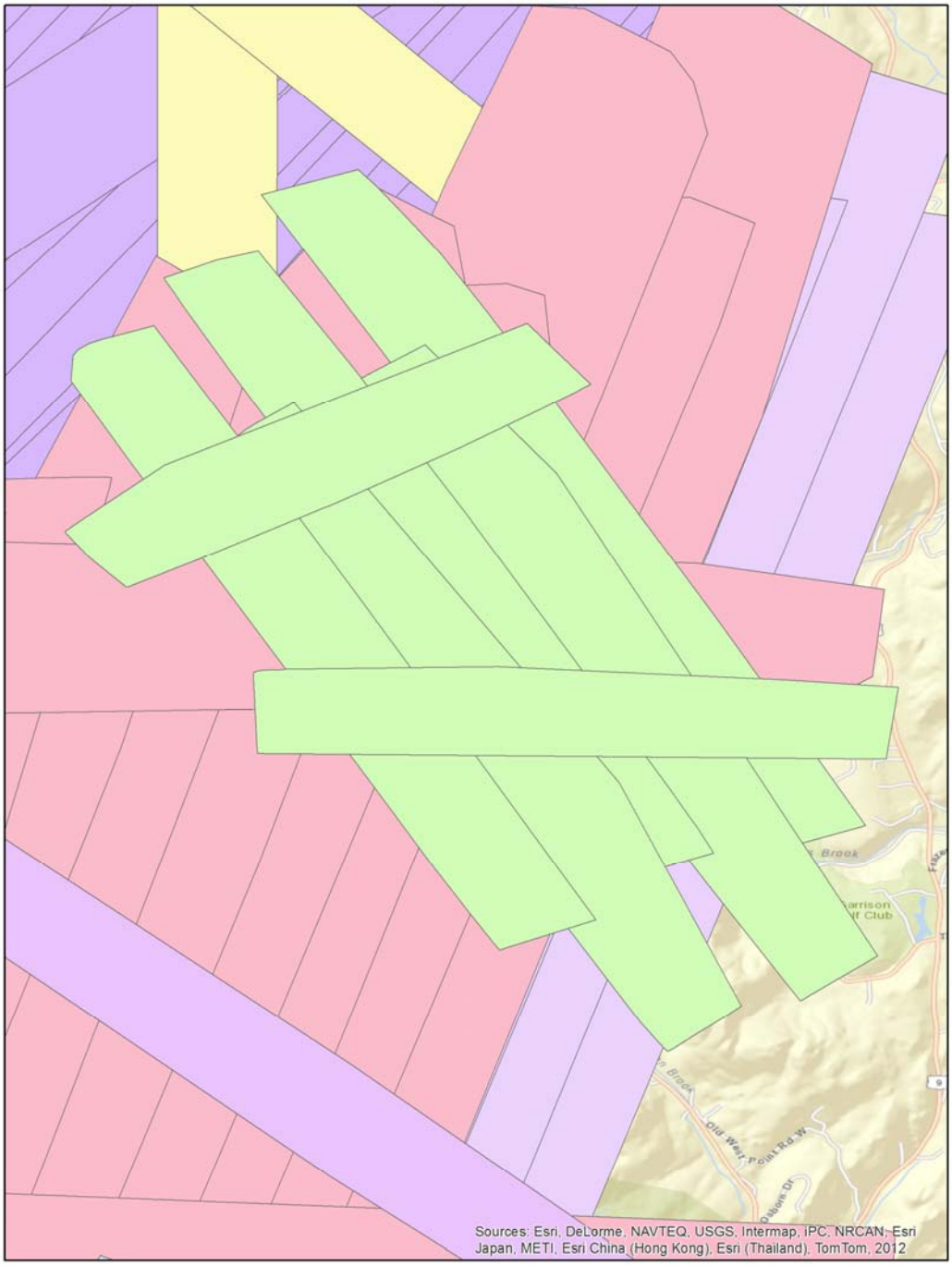


Figure 36. LAS File Coverage: SWF

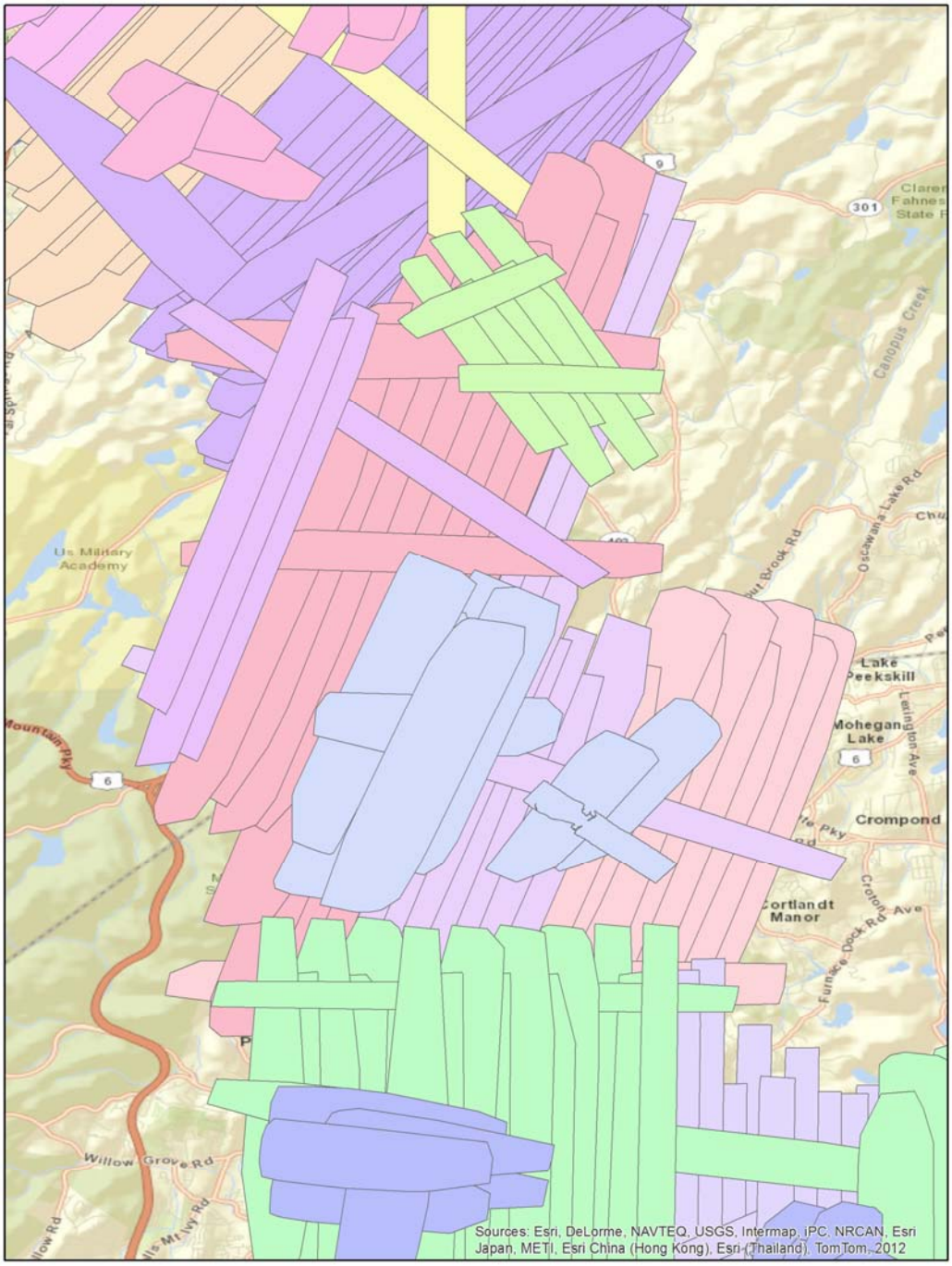


Figure 37. LAS File Coverage: Haverstraw

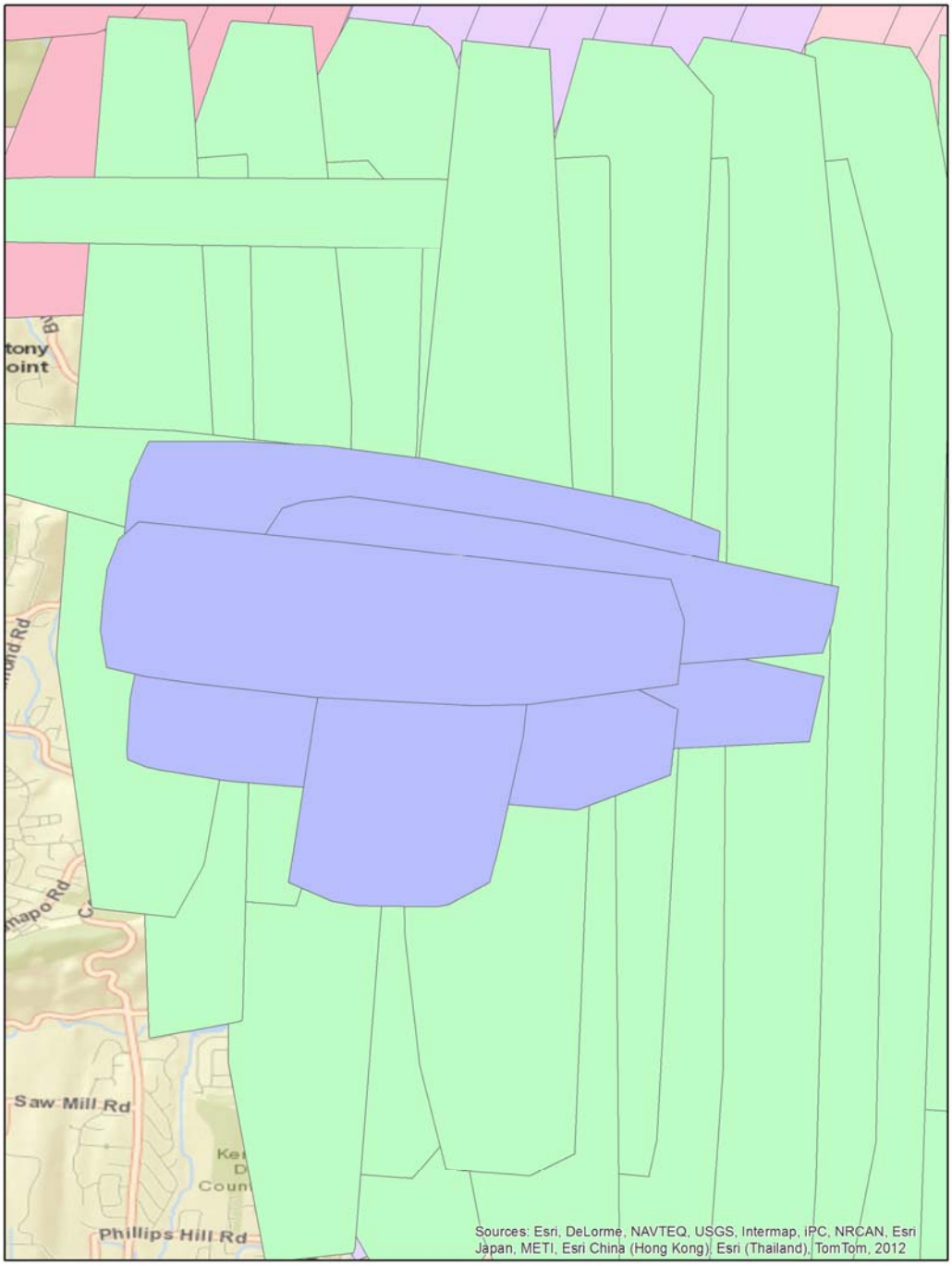


Figure 38. LAS File Coverage: Croton

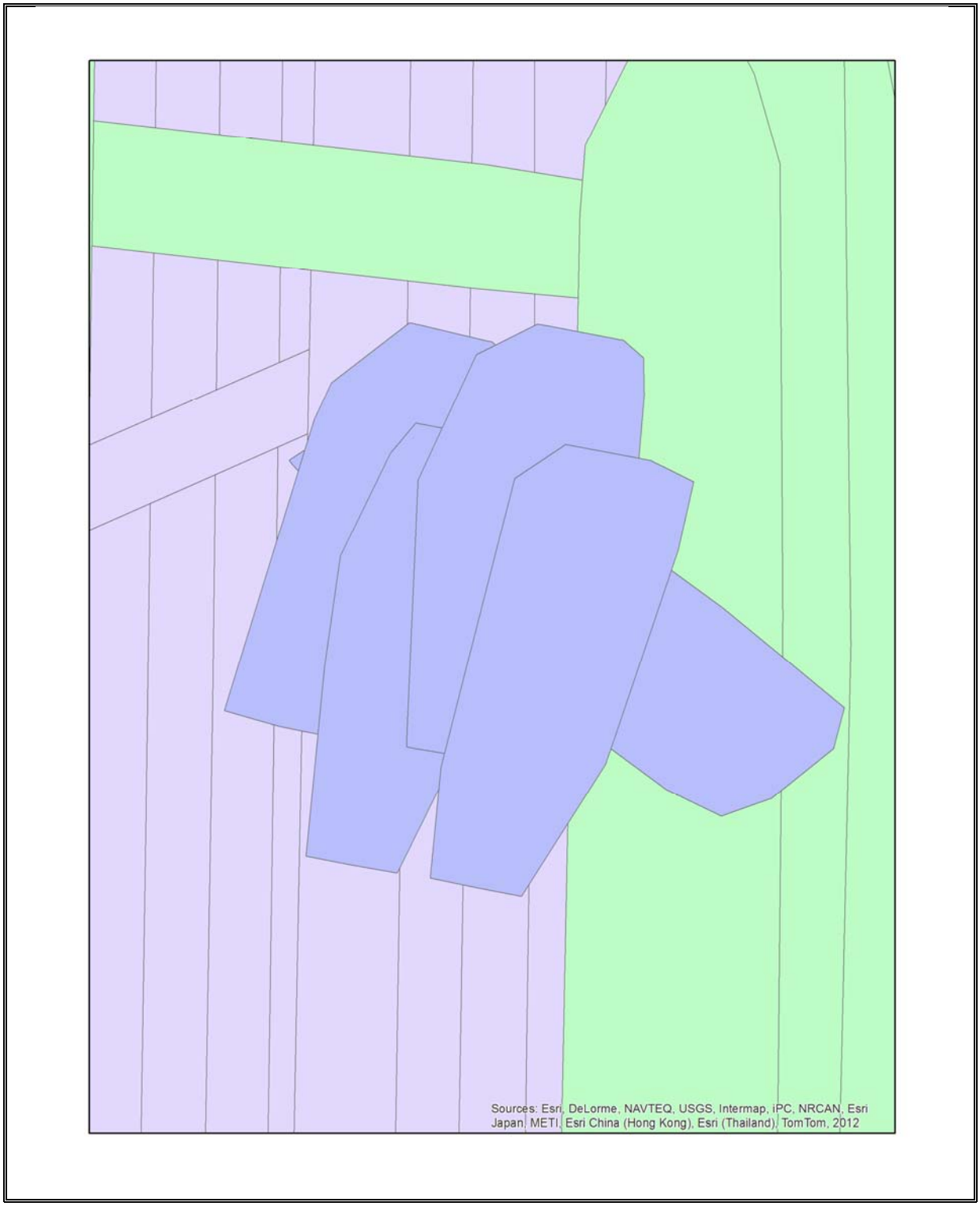


Figure 39. LAS File Coverage: Iona Manitou Annsville

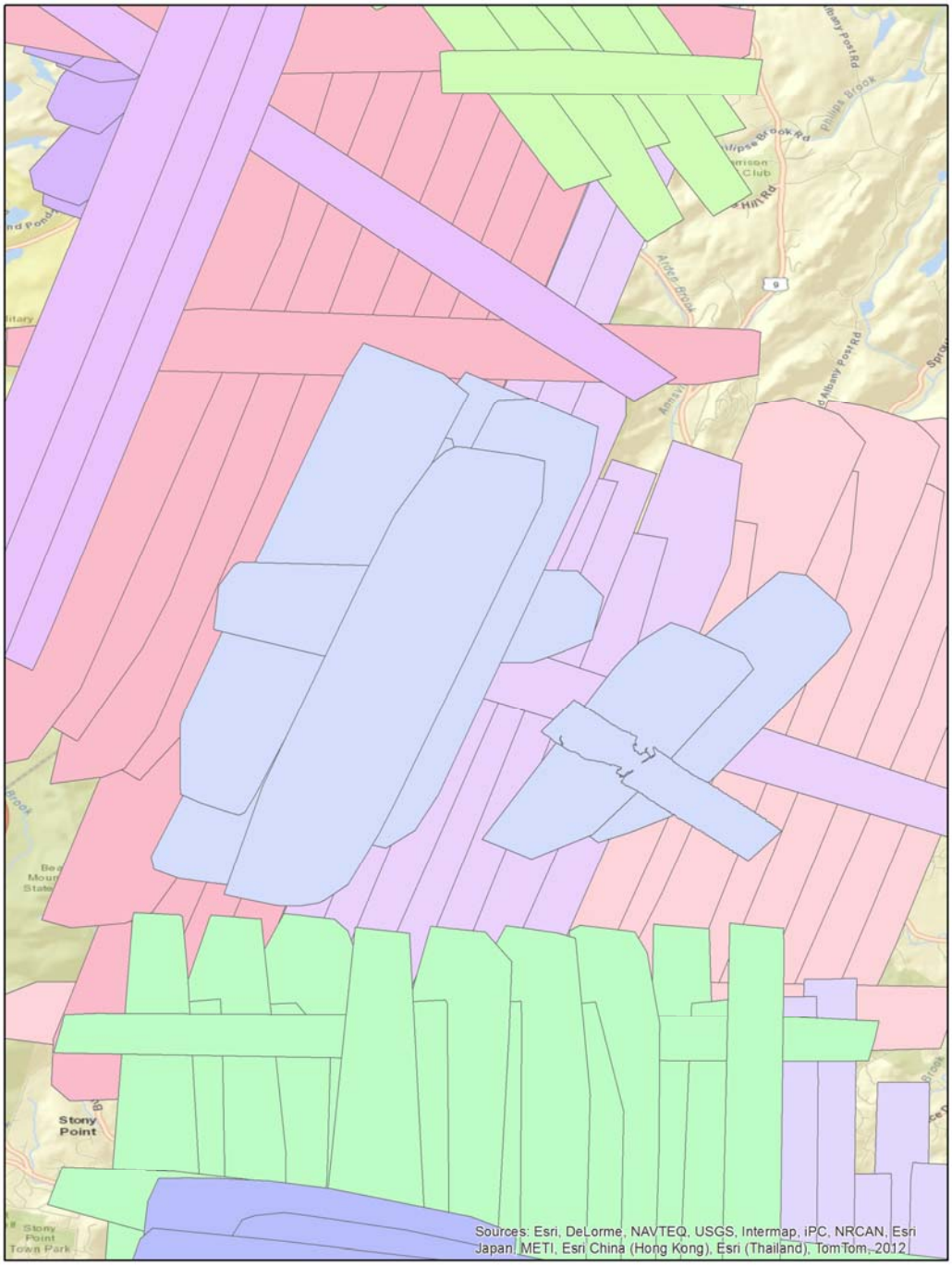


Figure 40. LAS File Coverage: HPN

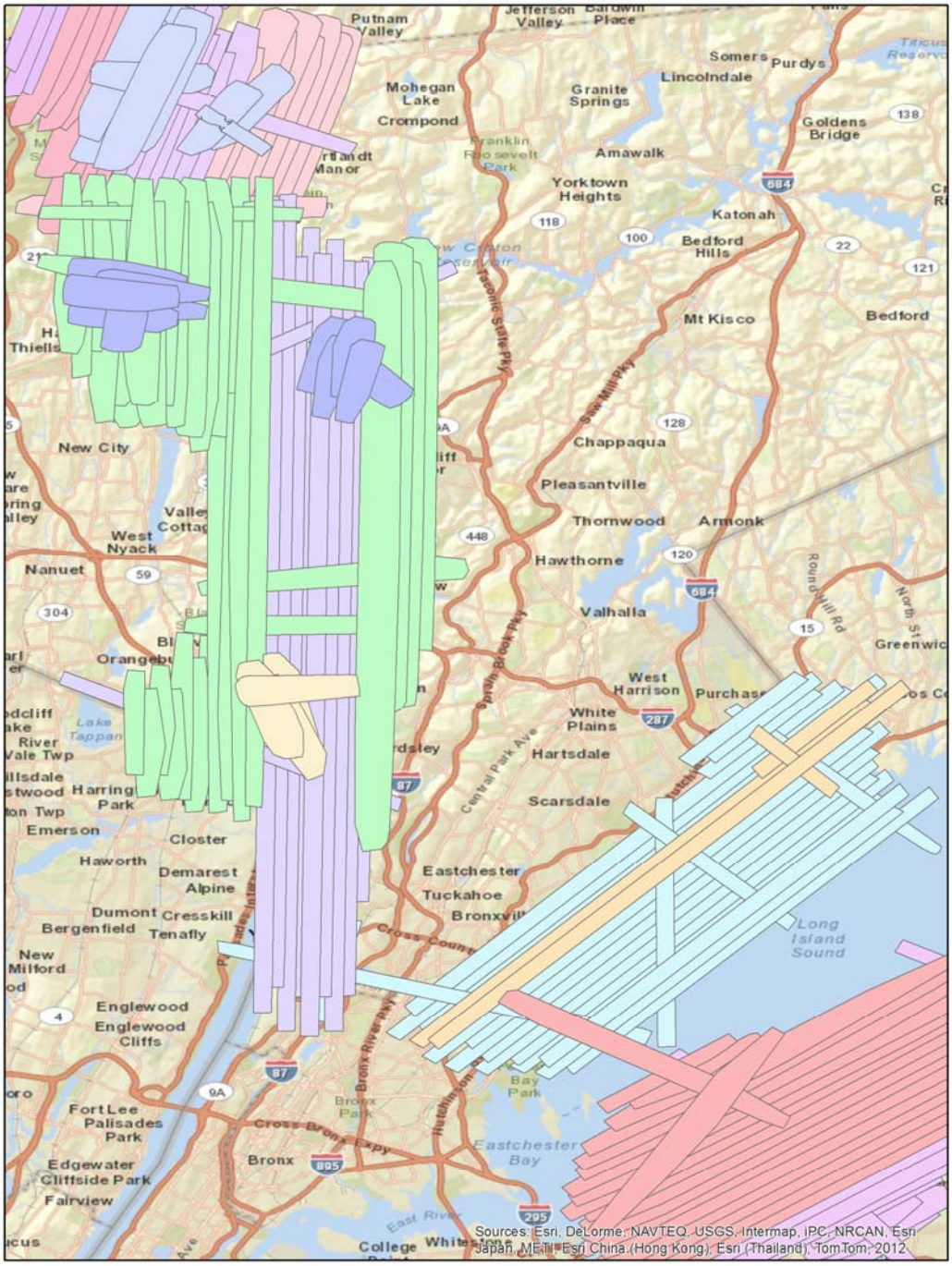


Figure 41. LAS File Coverage: FRG

Figure 42. LAS File Coverage: HWV

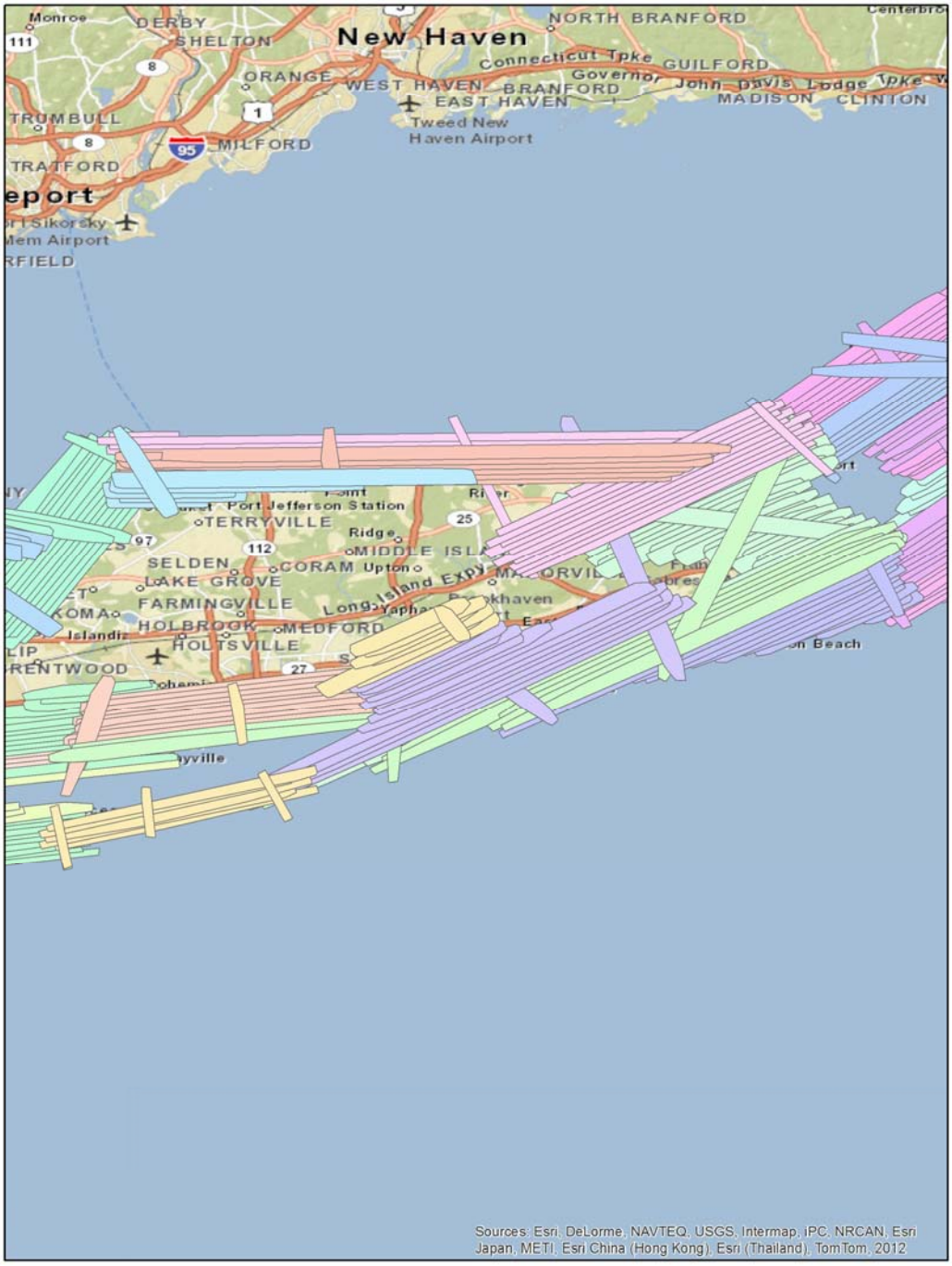
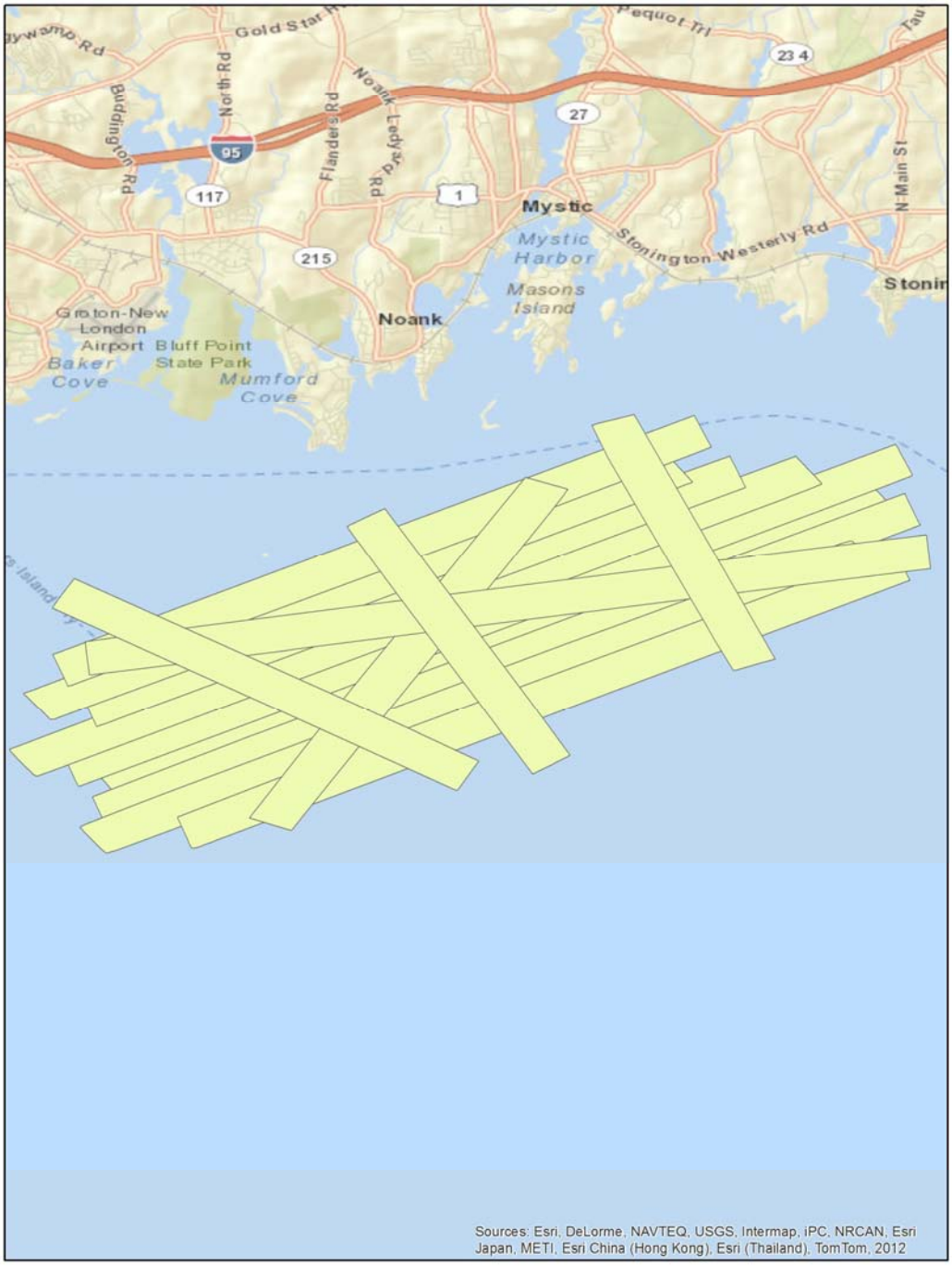


Figure 43. LAS File Coverage: HTO

Figure 44. LAS File Coverage: GON



5. GROUND CONTROL AND CHECK POINT COLLECTION

The Photo Science completed a GPS survey of variously selected ground control points for LiDAR accuracy validation. Figure 45 shows control point locations across the project area. Table 3 depict the Final Control Report as computed in TerraScan as a quality assurance check. Additional ground control points, collected for various other projects completed by Photo Science were used as additional blind check points for validation of the LiDAR data. These points proved to be good additions to the overall validation process.

The Ground Control Points Survey Report is available in Appendix D.

Figure 45. Control Point Locations

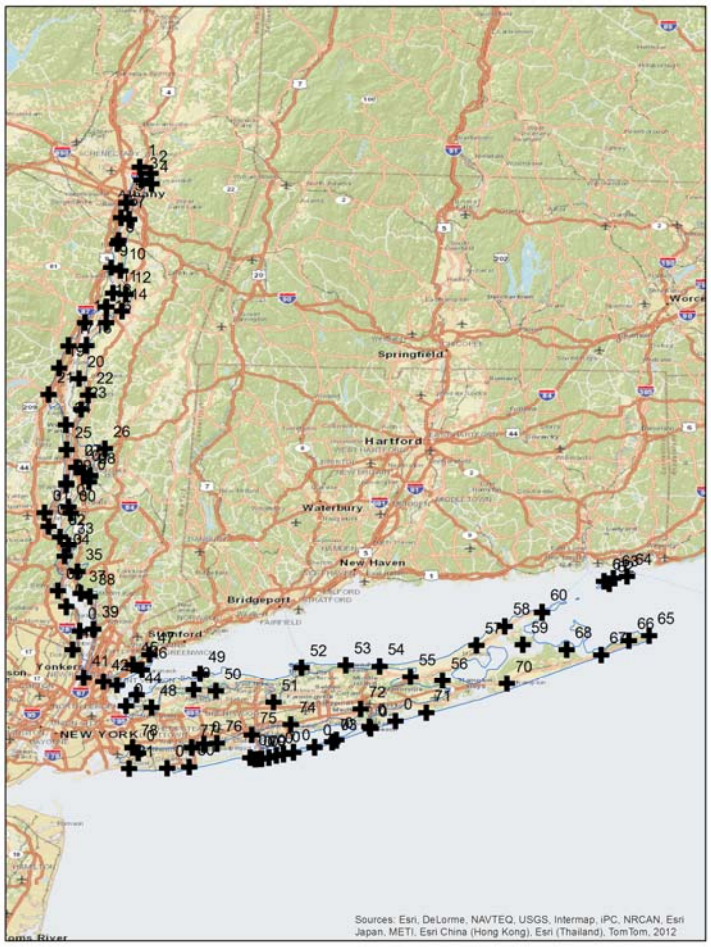


Table 3. Final Control Report (units = meters)
L:\7525052\Ground_Control\NY_Coastal_GCP.ctl

Final Control Report					
Number	Easting	Northing	Known Z	Laser Z	Dz
1	606458.41	4735184.56	11.70	11.69	-0.01
2	609741.08	4732743.56	121.79	121.76	-0.03
3	606964.24	4729979.71	8.53	8.52	-0.01
4	610014.02	4728596.50	99.79	99.75	-0.04
5	602709.74	4720972.07	4.52	4.53	0.01
6	601236.01	4715048.78	12.11	12.10	-0.01
7	603587.76	4714518.22	4.97	5.04	0.07
8	600249.55	4704601.73	4.41	4.46	0.05
0	600576.19	4705885.75	5.12	5.19	0.08
9	598534.26	4694870.62	39.53	39.51	-0.02
10	601345.43	4693716.17	49.12	49.11	-0.01
11	599277.90	4684589.29	45.84	45.83	-0.01
12	603082.75	4684171.52	45.20	45.20	0.00
13	597394.27	4679033.35	4.08	4.05	-0.03
14	602038.34	4677325.46	51.55	51.60	0.05
15	591024.69	4672603.13	46.00	46.00	0.00
16	597386.96	4672735.47	68.38	68.35	-0.03
17	586286.65	4663361.84	46.96	46.92	-0.04
18	591676.25	4663649.52	62.69	62.75	0.06
19	583621.23	4654493.33	57.62	57.67	0.05
20	589601.97	4650396.90	45.02	44.94	-0.08
21	580514.88	4643929.55	47.77	47.74	-0.03
22	592421.46	4643734.02	88.51	88.51	0.00
23	590396.81	4637819.11	41.21	41.20	-0.01
24	585912.22	4631559.75	54.39	54.43	0.04
25	586174.94	4621620.72	93.91	93.92	0.02
26	597679.86	4622070.44	61.36	61.31	-0.05
27	589201.22	4614539.38	53.28	53.30	0.02
28	593481.25	4611350.06	51.29	51.25	-0.04
29	586295.52	4608388.52	89.52	89.51	-0.01
30	587741.43	4596363.32	51.31	51.34	0.03
31	579872.60	4596429.91	71.86	71.85	-0.01
32	584691.05	4586824.44	62.82	62.81	-0.01
33	587237.03	4583428.55	1.61	1.62	0.00
34	586137.23	4578866.50	51.08	51.06	-0.02
35	590051.07	4572676.29	82.58	82.60	0.02
36	584231.60	4565028.30	34.15	34.11	-0.04
37	591185.64	4563992.80	41.58	41.58	-0.01
38	593969.14	4562848.87	43.55	43.58	0.03
39	595164.29	4549891.74	17.34	17.28	-0.06
40	588947.31	4541695.25	17.63	outside	*
41	592494.22	4530363.42	14.72	14.69	-0.03
42	598538.90	4528763.02	39.82	39.81	-0.01
43	602664.68	4527457.39	2.31	2.30	-0.01
44	608736.08	4523596.96	23.72	23.75	0.03
45	607421.64	4535888.91	18.92	18.93	0.01
46	610186.90	4533771.04	4.89	4.89	0.00
47	612381.72	4539985.10	4.87	4.89	0.02

48	613355.81	4518547.54	13.06	13.14	0.08
49	627926.50	4532522.21	32.66	32.72	0.06
50	632851.28	4525601.67	28.19	28.14	-0.05
51	650411.26	4521276.65	22.65	22.60	-0.05
52	658662.91	4535517.36	2.10	2.23	0.13
53	672075.85	4536933.91	10.35	10.40	0.05
54	682364.90	4536577.88	48.64	48.62	-0.02
55	691895.28	4532576.28	15.84	15.92	0.09
56	701659.69	4531423.45	1.89	1.90	0.01
57	711616.44	4545939.51	12.98	13.02	0.04
58	719946.17	4553719.38	5.04	5.12	0.08
59	725659.17	4546590.32	1.47	1.61	0.14
60	731141.47	4559575.53	1.92	1.91	-0.01
61	749454.04	4572531.74	1.89	1.94	0.06
62	751055.15	4571686.86	4.34	4.28	-0.06
63	752271.50	4573881.02	16.73	16.70	-0.03
64	756314.94	4574757.01	2.86	2.88	0.02
65	763886.48	4551499.90	12.90	12.95	0.05
66	757854.72	4549240.81	4.92	4.87	-0.05
67	749576.20	4543272.12	1.75	1.68	-0.07
68	739061.89	4545023.37	2.30	2.38	0.08
70	721334.11	4530744.42	6.82	6.91	0.09
71	697062.23	4518140.91	1.09	0.98	-0.11
72	677022.17	4519174.53	9.06	9.11	0.05
73	668587.37	4505695.63	0.52	0.61	0.09
74	655860.94	4512371.81	2.89	2.74	-0.15
75	644036.46	4507965.28	6.50	6.50	0.00
76	633533.98	4504336.67	6.01	5.97	-0.04
77	625869.68	4502596.40	3.51	3.55	0.04
78	607819.76	4502322.59	3.74	3.71	-0.03
79	647048.93	4498493.30	6.62	6.63	0.01
80	625180.79	4494859.21	4.12	4.06	-0.06
81	606818.30	4493998.57	2.53	2.55	0.02
CTL_1	687843.43	4514568.19	3.09	3.15	0.06
CTL_2	680233.94	4511345.73	6.09	6.21	0.12
CTL_3	679909.79	4512142.40	2.70	2.73	0.03
CTL_4	669932.15	4506503.57	0.54	0.62	0.08
CTL_5	668737.41	4505671.14	2.64	2.68	0.04
CTL_6	663327.43	4503433.32	1.55	1.65	0.10
CTL_7	656926.47	4501344.85	0.96	1.02	0.06
CTL_8	651768.61	4499996.18	1.26	1.21	-0.05
CTL_9	653924.45	4500482.23	1.07	1.09	0.02
CTL_10	649452.62	4499022.73	4.91	4.92	0.01
CTL_11	643741.91	4498902.82	0.45	0.35	-0.10
FTR_1	647260.12	4498628.98	2.76	2.72	-0.04
FTR_2	645297.00	4498373.20	3.86	3.86	0.00
FTR_3	646459.58	4498485.50	4.54	4.51	-0.03
MGI17	581137.09	4591010.59	39.38	39.44	0.06
MGI18	587008.92	4598836.90	53.87	53.93	0.06
MGI19	586272.97	4607711.71	53.93	53.97	0.04
MGI20	591368.94	4612466.73	33.77	33.84	0.07
ARP	593080.09	4608944.02	46.92	46.97	0.05

HPN14	586908.91	4558713.10	50.52	50.46	-0.06
HPN15	591051.36	4549100.48	2.11	2.11	0.00
27(FEMA_CTL)	589201.22	4614539.38	53.28	53.30	0.02
28(FEMA_CTL)	593481.25	4611350.06	51.29	51.25	-0.04
29(FEMA_CTL)	586295.52	4608388.52	89.52	89.51	-0.01
30(FEMA_CTL)	587741.43	4596363.32	51.31	51.34	0.03
31(FEMA_CTL)	579872.60	4596429.91	71.86	71.85	-0.01
32(FEMA_CTL)	584691.05	4586824.44	62.82	62.81	-0.01
34(FEMA_CTL)	586137.23	4578866.50	51.08	51.06	-0.02
36(FEMA_CTL)	584231.60	4565028.30	34.15	34.11	-0.04
FRG1	609502.58	4500196.74	1.87	1.89	0.02
FRG2	618421.61	4494301.06	2.17	2.14	-0.03
FRG3	629471.27	4504054.46	5.34	5.31	-0.03
FRG4	626019.04	4525997.88	2.37	2.35	-0.02
FRG6	605554.41	4519037.53	6.29	6.21	-0.08

Average dz	+0.006 m
Minimum dz	-0.15 m
Maximum dz	+0.14 m
Root Mean Square	0.0051 m
Std Deviation	0.051 m

Appendix A
Base Station Location / Data Sheets

PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: NOAA NY

Location: 1B1 Columbia County Airport, NY

Project Number: 7525-052

Completed by: Berry

Date: 1-9-2012

Receiver: Trimble 2

Receiver Type: R7 GNSS

Antenna Type: Zephyr Geodetic 2

Station ID: HUDPORT

Start -- H.I. (m): 1.654 1.655 1.656

End -- H.I. (m): 1.655

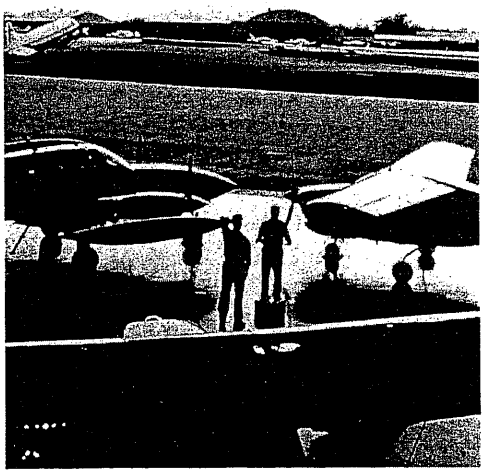
H.I. (ft): 5.425

Start Time: 5:18 pm

End Time: 11:08 pm

Time Zone: EST

Operator: Berry



Comments 120109ab-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: IBI Noaa

Location: IBI Airport

Project Number: 7525-052

Completed by: Nathan Galieti

Date: 1/11/2012

Receiver: Trimble R7 #2

Receiver Type: GNSS R7

Antenna Type: Zeyphr Geodetic

Station ID: hudport

Start -- H.I. (m): 1.622 1.623 1.624 m

End -- H.I. (m): 1.623m

H.I. (ft): 5.3

Start Time: 7:23 AM

End Time: 10:30 AM

Time Zone: EST

Operator: Nathan Galieti

Comments 120111a-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: 20N NOAA TID area

Location: Kingston, NY
Project Number: 7525-052
Completed by: Galieti
Date: ~~12/~~ 2/19/2012

Receiver: Trimble #2
Receiver Type: GNSS R7
Antenna Type: Zephyr Geodetic 2
Station ID: Custom 20N
Start -- H.I. (m): 1.559 1.561 1.559m
End -- H.I. (m): 1.560m
H.I. (ft): 5.11 ft
Start Time: 4:43 pm
End Time: 7:40 PM
Time Zone: EST
Operator: Galieti

Comments 120219b-247

* point is on top of grass hill between above ground fuel tank and FBO house.

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PHOTO SCIENCE
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Station Occupation Report
For Airborne GPS

Project: 20N NOAA Ny

Location: 20N Airport
Project Number: 7525-052
Completed by: Galieti
Date: 2/20/2012

Receiver: Trimble #2
Receiver Type: GNSS R7
Antenna Type: Zephyr Geodetic 2
Station ID: Woolpert 1,000 point on field
Start -- H.I. (m): 1.567 1.567 1.565
End -- H.I. (m): 1.566 m
H.I. (ft): 4.95ft
Start Time: 2:50 pm
End Time: 4:40 pm
Time Zone: EST
Operator: Galieti

Comments 120220b-247 (calibration), 120222c-247
point is between taxiway and runway by the fuel pump/ramp @ the N end of the field. The point was marked with Woolpert 1000.

I smart-based processed both missions. I was unable to retrieve an OPUS from point. The site said unable

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Station Occupation Report
For Airborne GPS

Project: NOAA NY 2012

Location: KALB (ALBANY INTL AIRPORT)

Project Number: 7525-025

Completed by: Berry

Date: 1/7/2012

Receiver: Trimble 2

Receiver Type: R7 GNSS

Antenna Type: Zephyr Geodetic 2

Station ID: ALB F

Start -- H.I. (m): 1.666 1.6665 1.664

End -- H.I. (m): 1.665

H.I. (ft): 5.46

Start Time: 5:34 PM

End Time: ~1:05 AM

Time Zone: EST

Operator: Berry

Comments 1201007q-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: NOAA FRG Farmington, Ny

Location: PSI Custom Point KFRG **Project Number:** 7525-051

Completed by: Nathan Galieti **Date:** 2/2/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: PSI Custom

Start -- H.I. (m): 1.521 1.523 1.521

End -- H.I. (m): 1.522 m

H.I. (ft): 4.99 ft

Start Time: 10:33 AM

End Time: 2:45 PM

Time Zone: EST

Operator: Nathan Galieti

Comments 120202a-247
from atlantic FBO, proceed North on primeter road 1/2 mile to gated area just prior to airport fire station. Point is in the grass 10ft ~~from~~ East from access road abeam metal containers.

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Station Occupation Report
For Airborne GPS

Project: NOAA FRG Farmington, NY

Location: PSI Custom Point KFRG **Project Number:** 7515-052

Completed by: Galiefi **Date:** 2/3/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: PSI Custom

Start -- H.I. (m): 1.522 1.524 1.522 m

End -- H.I. (m): 1.523m

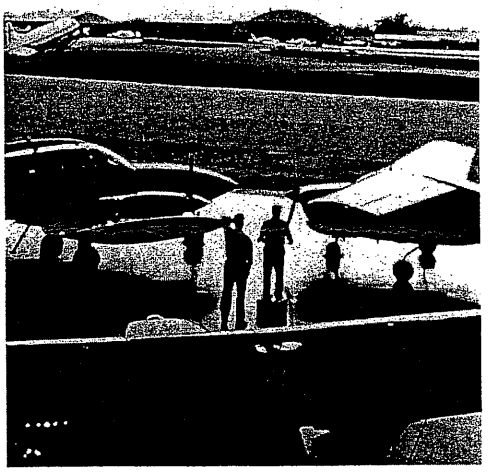
H.I. (ft): 4.98ft

Start Time: 8:52 AM

End Time: 6:30 PM

Time Zone: EST

Operator: Nathan Galiefi



Comments 1202039-247, 1202036-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: NOAA FRG Farmingdale, Ny

Location: PSI Custom Point KFRG **Project Number:** 7525-052

Completed by: Galieti **Date:** 2/4/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: PSI Custom

Start -- H.I. (m): 1.532 1.532 1.530 m

End -- H.I. (m): 1.531 m

H.I. (ft): ~~5~~ 5.02 ft

Start Time: 10:25 AM

End Time: 4:30 PM

Time Zone: EST

Operator: Nathan Galieti

Comments 120204a-247

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: NOAA FRG Farmingdale NY

Location: PSI Custom Farmingdale, NY **Project Number:** 7525-052

Completed by: Nathan Galiefi **Date:** 2/5/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: PSI Custom

Start -- H.I. (m): 1.505 1.504 1.502 m

End -- H.I. (m): 1.504m

H.I. (ft): 4.92ft

Start Time: 8:55 AM

End Time: 2:15 PM

Time Zone: EST

Operator: Nathan Galiefi

Comments 120205a-247, 120205b-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: FRG NOAA Farmingdale, Ny

Location: Custom FRG

Project Number: 7525-052

Completed by: Nathan Galleti

Date: 2/6/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: PSI Custom FRG

Start -- H.I. (m): 1.520 1.523 1.522m

End -- H.I. (m): 1.522m

H.I. (ft): 4.99 ft

Start Time: 10:39

End Time: 3:00PM

Time Zone: EST

Operator: Nathan Galleti

Comments 1202069-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: FRG NOAA NY Farmingdale Area

Location: Farmingdale Custom Point **Project Number:** 7525-052

Completed by: Nathan Galieti **Date:** 2/9/2012

Receiver: Trimble

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: Custom PSI FRG

Start -- H.I. (m): 1.513 1.515 1.513 m

End -- H.I. (m): 1.514m

H.I. (ft): 4.96 ft

Start Time: 11:36 AM

End Time: 4:30 PM

Time Zone: EST

Operator: Nathan Galieti

Comments 120209a-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: FRG NOAA Ny

Location: Farmingdale, Ny KFRG
Project Number: 7525-052
Completed by: Galieti
Date: 2/10/2012

Receiver: Trimble
Receiver Type: GNSS R7
Antenna Type: Zephyr Geodetic 2
Station ID: Custom PSI FRG
Start -- H.I. (m): 1.614 1.614 1.613 m
End -- H.I. (m): 1.614 m
H.I. (ft): 5.29ft
Start Time: 9:41 AM
End Time:
Time Zone: EST
Operator: Galieti

Comments 120210a-247 (FRG Calibration)

First Calibration lift had PDOP spike so the calibration was reflown on 2/13/2012 #2 120213b-247

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: FRG NOAA NY Farmingdale Area

Location: Farmingdale Custom Point **Project Number:** 7525-052

Completed by: Galiefi **Date:** 2/13/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: Custom PS1

Start -- H.I. (m): 1.563 1.563 1.562 m

End -- H.I. (m): 1.563 m

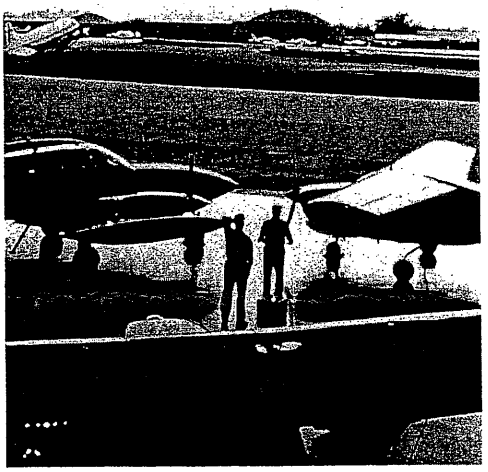
H.I. (ft): 5.13ft

Start Time: 10:57 AM

End Time: 7:15 PM

Time Zone: EST

Operator: Galiefi



Comments 120213a-247 (Calibration site), 120213b-247

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: FRG NOAA NY

Location: Farmingdale, NY
Project Number: 7525-052
Completed by: Galieti
Date: 2/14/2012

Receiver: Trimble #2
Receiver Type: GNSS R7
Antenna Type: Zephyr Geodetic 2
Station ID: Custom FRG
Start -- H.I. (m): 1.571 1.571 1.569m
End -- H.I. (m): 1.570m
H.I. (ft): 5.15ft
Start Time: 3:30 PM
End Time: 4:45 PM
Time Zone: EST
Operator: Galieti

Comments 120214a-247

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: Fisher's Island

Location: KGON

Project Number: 7525-052

Completed by: B. Bush

Date: 11/26/11

Receiver: 1

Receiver Type: Trimble R7

Antenna Type: Zephyr Geod. II

Station ID: GON_Custom

Start -- H.I. (m): 1.396 1.398 1.397

End -- H.I. (m): 1.397

H.I. (ft): 4.58

Start Time: 3:05 PM

End Time: 6:30 PM

Time Zone: EST

Operator: B. Bush

Comments 111126a-240

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: NOAA NY

Location: KHPN Westchester County Airport

Project Number: 7525-052

Completed by: Berry

Date: April 6/7, 2012

Receiver: Trimble 2

Receiver Type: R7 GNSS

Antenna Type: Zephyr Geodetic

Station ID: HPN ARP (PACS)

Start -- H.I. (m): 1.661 1.663 1.662

End -- H.I. (m): 1.662

H.I. (ft): 5.455

Start Time: 1107 PM

End Time: 733 AM

Time Zone: EDT

Operator: Berry

Comments

120406A-246
120407A-246
120407B-246

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Station Occupation Report
For Airborne GPS

Project: NOAANY

Location: KHPN

Project Number: 7525-052

Completed by: Berry

Date: 4/7/12

Receiver: Trimble "2"

Receiver Type: R7 GNSS

Antenna Type: Zephyr Geodetic 2

Station ID: HPN ARP

Start -- H.I. (m): 1.713 1.715 1.714

End -- H.I. (m): 1.714

H.I. (ft): 5.62

Start Time: 1027 PM

End Time: 105 AM (4/8/12)

Time Zone: EDT

Operator: Berry

Comments 120407c-246

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Station Occupation Report
For Airborne GPS

Project: HPN NOAA Hudson Small Tidal Sites

Location: White Plains, Ny

Project Number: 7525-052

Completed by: Galiefi

Date: 2/18/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: ARP HPN

Start -- H.I. (m): 1.591 1.589 1.589m

End -- H.I. (m): 1.590m

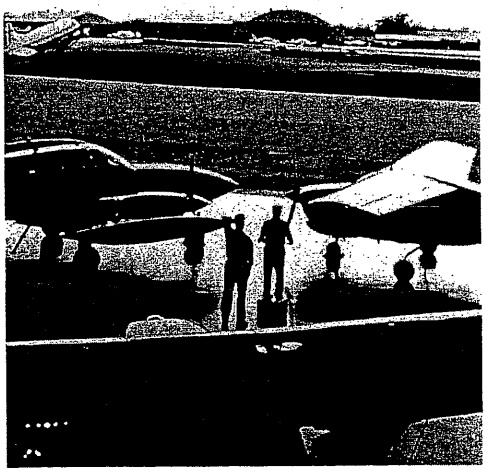
H.I. (ft): 5.20ft

Start Time: 11:19 AM

End Time: 3:45 PM

Time Zone: EST

Operator: Nathan Galiefi



Comments 120218a-247, 120218b-247

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PHOTO SCIENCE
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: HPN NOAA Ny Hudson Small Sites

Location: White Plains, Ny

Project Number: 7525-052

Completed by: Galieti

Date: 12/19/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic

Station ID: ARP HPN

Start -- H.I. (m): 1.629 1.629 1.627m

End -- H.I. (m): 1.628m

H.I. (ft): 5.34 ft

Start Time: 11:26 AM

End Time: 3:30 PM

Time Zone: EST

Operator: Galieti

Comments 120219a-247

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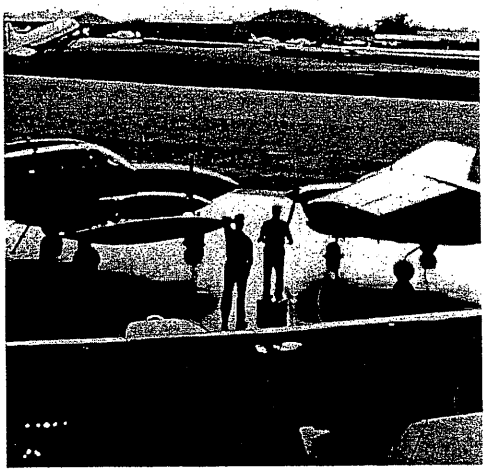
Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: H70 NOAA 7525-052

Location: KHTO East Hampton, NY
Project Number: 7525-052
Completed by: Nathan Galiefi
Date: 1/16/2012

Receiver: Trimble R7 #2
Receiver Type: GNSS R7
Antenna Type: Zeyphr Geodetic
Station ID: L372
Start -- H.I. (m): 1.231 1.233 1.234m
End -- H.I. (m): 1.233 m
H.I. (ft): 4.5 ft
Start Time: 8:12 AM
End Time: 3:00 PM
Time Zone: EST
Operator: Nathan Galiefi



Comments 120116a-247, 120116b-247
Another note the base monument sits on a concrete post probably 1 ft. high! I ~~be~~ overheard the line man talk about how the post was hit by a car, semi knocked over, and put back in place. He said something like it's 4 inches higher now to be more conspicuous.

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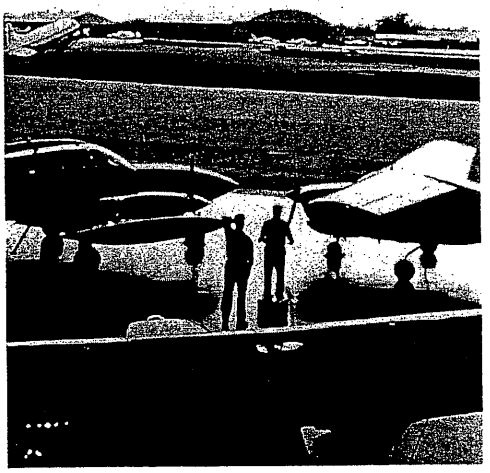
Station Occupation Report
For Airborne GPS

Project: HTO NOAA 7525-052

Location: HTO East Hampton
Project Number: 7525-052
Completed by: Nathan Galieti
Date: 1/20/2012

Receiver: Trimble R7 GNSS #2
Receiver Type: GNSS R7
Antenna Type: Zeyphr Geodetic
Station ID: Custom PSI HTO
Start -- H.I. (m): 1.524 1.525 1.527 m
End -- H.I. (m): 1.525m
H.I. (ft): 5.0 ft
Start Time: 11:45 AM
End Time: 3:40 PM
Time Zone: EST
Operator: Nathan Galieti



Comments Custom point in the grass next to the main airport parking lot. See OPUS folder for pics and solution.

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Station Occupation Report
For Airborne GPS

Project: NOAA HTO East Hampton

Location: East Hampton, HTO
Project Number: 7525-052
Completed by: Nathan Galieti
Date: 1/18/2012

Receiver: Trimble R7 #2
Receiver Type: GNSS R7
Antenna Type: Zephr Geodetic
Station ID: L372
Start -- H.I. (m): 1.190 1.192 1.193 m
End -- H.I. (m): 1.192 m
H.I. (ft): 3.91 ft
Start Time: 7:55 AM
End Time: 5:00 PM
Time Zone: EST
Operator: Nathan Galieti

Comments

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Station Occupation Report
For Airborne GPS

Project: NOAA Ng Brookhaven, Ny

Location: Hwy Brookhaven, NY

Project Number: 7525-052

Completed by: Galieti

Date: 1/31/2012

Receiver: Trimble #2

Receiver Type: R7 GNSS

Antenna Type: Zephyr Geodetic 2

Station ID: Brookport

Start -- H.I. (m): 1.573 1.576 1.574 m

End -- H.I. (m): 1.574 m

H.I. (ft): 5.16 ft

Start Time: 7:45 AM

End Time: 2:30 PM

Time Zone: EST

Operator: Galieti

Comments 120131a-247, 120131b-247

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Station Occupation Report
For Airborne GPS

Project: NOAA NY Brookhaven

Location: Hwy Brookhaven, NY
Project Number: 7525-052
Completed by: Galieti
Date: 1/30/2012

Receiver: Trimble #2
Receiver Type: R7 GNSS
Antenna Type: Zephy Geodetic 2
Station ID: Brookport
Start -- H.I. (m): 1.661 1.662 1.659 m
End -- H.I. (m): 1.660 m
H.I. (ft): 5.44 ft
Start Time: 8:14 AM
End Time: 4:10 PM
Time Zone: EST
Operator: Galieti

Comments 120130a-247, 120130b-247

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Station Occupation Report
For Airborne GPS

Project: NOAANY 2012

Location: HWV (Brookhaven Airport, NY

Project Number: 7525-052

Completed by: Berry

Date: 1-25-12

Receiver: Trimble "2"

Receiver Type: RT GNS

Antenna Type: Zephyr Geodetic 2

Station ID: Brookport

Start -- H.I. (m): 1.661 1.662 1.663

End -- H.I. (m): 1.662

H.I. (ft): 5.445

Start Time: 9:32 am

End Time: ~7:45 pm

Time Zone: EST

Operator: Berry

Comments 120125abc-247

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Station Occupation Report
For Airborne GPS

Project: NOAA NY

Location: KHWV (Brookhaven Airport, NY)

Project Number: 7525-052

Completed by: Berry

Date:

Receiver: Trimble "2"

Receiver Type: R7 GNSS

Antenna Type: Zephy Geodetic 2

Station ID: Brookport

Start -- H.I. (m): 1.766 1.767 1.768

End -- H.I. (m): 1.767

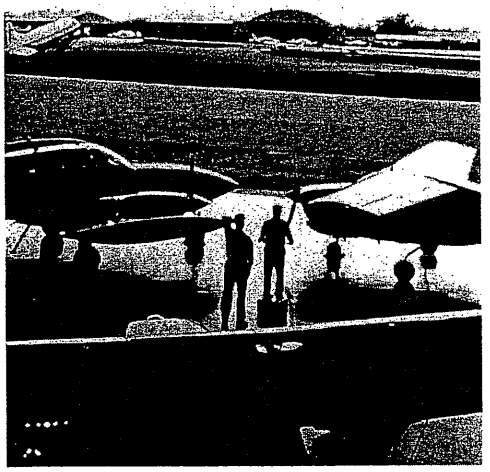
H.I. (ft): 5.795

Start Time: 8:28am

End Time: ~4:30 PM

Time Zone: EST

Operator: Berry



Comments 120128ab-247

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Station Occupation Report
For Airborne GPS

Project: POU Area

Location: KPOU

Project Number: 7525-052

Completed by: Nathan Galicti

Date: 12/12/11

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zeyphr Geodetic

Station ID: ARP POU

Start -- H.I. (m): 1.481 1.481 1.480 m

End -- H.I. (m): ~~[illegible]~~ 1.481 m

H.I. (ft): 4.85 ft

Start Time: 11:30 AM

End Time: 4:45 PM

Time Zone: EST

Operator: Nathan Galicti

Comments N9471R ~~[illegible]~~ 111212a-240, 111212b-240

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Station Occupation Report
For Airborne GPS

Project: POU

Location: ARP KPOU

Project Number: 7525-052

Completed by: Nathan Galieti

Date: 12/13/2011

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zeyphr Geodetic

Station ID: ARP POU

Start -- H.I. (m): 1.514 1.515 1.516 m

End -- H.I. (m): 1.515m

H.I. (ft): 4.97 ft

Start Time: 7:50 AM

End Time: 5:15 PM

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R 111213a-240, 111213b-240, 111213c-240

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Station Occupation Report
For Airborne GPS

Project: POV

Location: ARP POV KPOV

Project Number: 7525-052

Completed by: Nathan Galieti

Date: 12/14/2011

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Leyphr Geodetic

Station ID: ARP POV

Start -- H.I. (m): 1.566 1.566 1.568 m

End -- H.I. (m): 1.567 m

H.I. (ft): 5.14ft

Start Time: 7:50

End Time: 12:45

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R 1112IHa-240

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Station Occupation Report
For Airborne GPS

Project: POU

Location: KPOU Poughkeepsie, Ny *Project Number:* 7525-052

Completed by: Nathan Galieti *Date:* 12/16/2011

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zeyphr Geodetic

Station ID: ARP POU

Start -- H.I. (m): 1.421 1.421 1.421m

End -- H.I. (m): 1.421m

H.I. (ft): 4.66Ft

Start Time: 8:50 AM

End Time:

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R 11/12/16a-240, 11/12/16b-240

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Station Occupation Report
For Airborne GPS

Project: SWF NOAA Hudson Sites Tidal

Location: Custom SWF Stewart

Project Number: 7525-052

Completed by: Galieti

Date: 2/17/2012

Receiver: Trimble #2

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic 2

Station ID: Custom SWF

Start -- H.I. (m): 1.577 1.579 1.577m

End -- H.I. (m): 1.578 m

H.I. (ft): 5.18 ft

Start Time: 10:26 AM

End Time: 4:00 PM

Time Zone: EST

Operator: Galieti

Comments 120217a-247, 120217b-247, 120217c-247

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Geospatial Solutions

Station Occupation Report
For Airborne GPS

Project: SWF

Location: KSWF

Project Number: 7575-052

Completed by: Nathan Galieti

Date: 12/18/11

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zephr Geodetic

Station ID: Custom SWF

Start -- H.I. (m): 1.505 1.505 1.506m

End -- H.I. (m): 1.505m

H.I. (ft): 4.94 ft

Start Time: 9:12 AM

End Time: 4:40 PM

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R SWF_calibration SWF
111218a-240, 111218b-240, 111218c-240

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Station Occupation Report
For Airborne GPS

Project: SWF

Location: KSWF

Project Number: 7525-052

Completed by: Nathan Galieti

Date: 12/19/11

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zeyphr Geodetic

Station ID: Custom KSWF

Start -- H.I. (m): 1.459 1.459 1.460 m

End -- H.I. (m):

H.I. (ft): 4.78ft

Start Time: 11:45 AM

End Time: 4:00 PM

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R 1112191a-240 , 1112191b-240

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Station Occupation Report For Airborne GPS

Project: SWF

Location: KSWF

Project Number: 7525-052

Completed by: Nathan Galiefi

Date: 12/18/11

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zephr Geodetic

Station ID: Custom SWF

Start -- H.I. (m): 1.505 1.505 1.506m

End -- H.I. (m): 1.505m

H.I. (ft): 4.94 ft

Start Time: 9:12 AM

End Time: 4:40 PM

Time Zone: EST

Operator: Nathan Galiefi

Comments N9471R SWF_calibration SWF
111218a-240, 111218b-240, 111218c-240

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Station Occupation Report
For Airborne GPS

Project: SWF

Location: KSWF

Project Number: 7525-052

Completed by: Nathan Galieti

Date: 12/19/11

Receiver: Trimble R7 #1

Receiver Type: GNSS R7

Antenna Type: Zephyr Geodetic

Station ID: Custom KSWF

Start -- H.I. (m): 1.459 1.459 1.460 m

End -- H.I. (m):

H.I. (ft): 4.78ft

Start Time: 11:45 AM

End Time: 4:00 PM

Time Zone: EST

Operator: Nathan Galieti

Comments N9471R 1112190-240, 1112190-240

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Station Occupation Report
For Airborne GPS

Project: SWF TID CONS NOAA NY

Location: Stewart, Ny KSWF
Project Number: 7525-052
Completed by: Nathan Galieti
Date: 2/6/2012

Receiver: Trimble #2
Receiver Type: GNSS R7
Antenna Type: Zephyr Geodetic 2
Station ID: SWF Custom
Start -- H.I. (m): 1.541 1.544 1.544 m
End -- H.I. (m): 1.543 m
H.I. (ft): 5.70 ft
Start Time: 4:28 PM
End Time: 6:30 PM
Time Zone: EST
Operator: Nathan Galieti

Comments
120206b-247
Point is located in the grass in the Richmor FBO Parking lot. Used the same OPUS as I used for lidar 240 N9471R when operating base station from KSWF.

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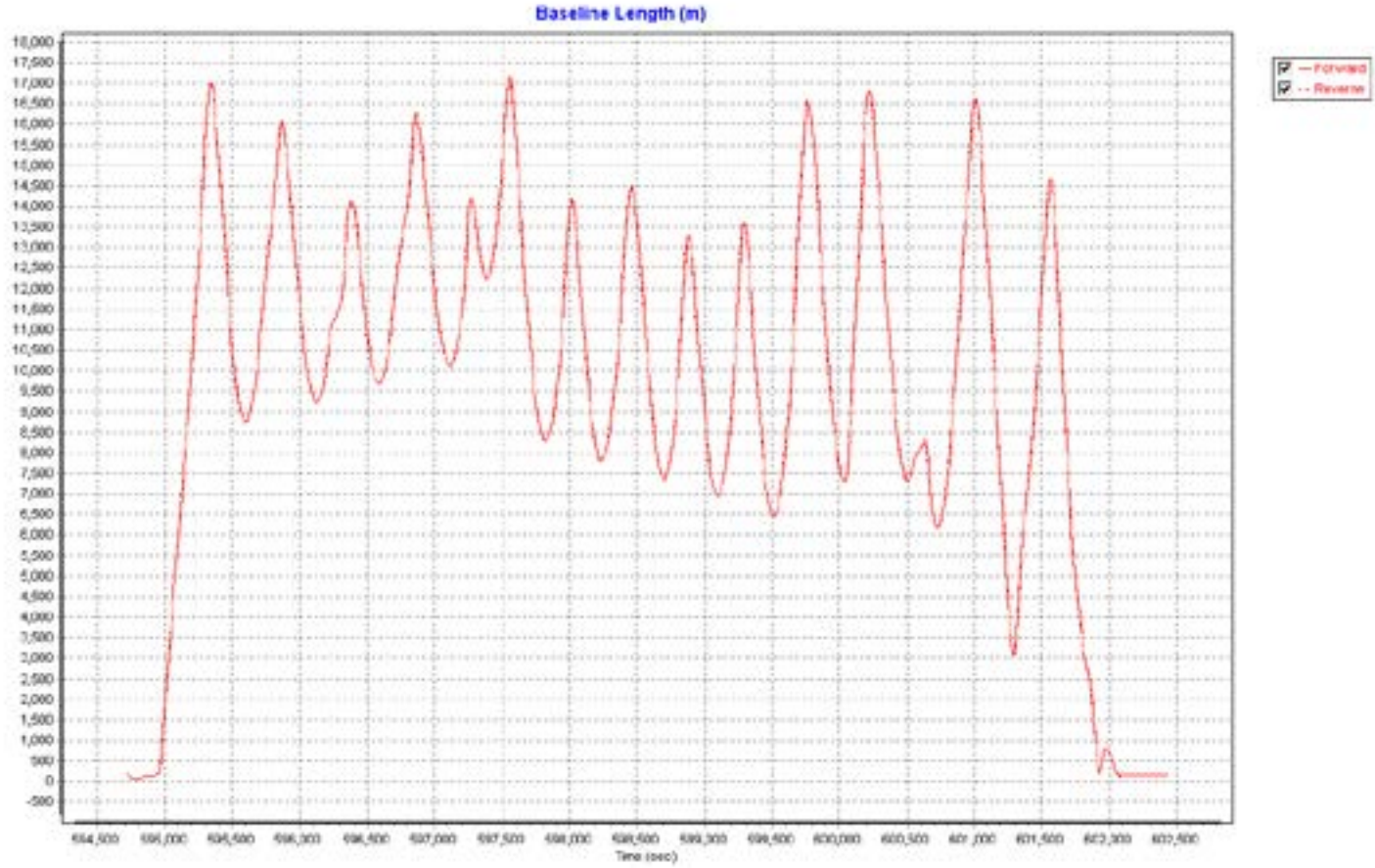
Appendix B
Airborne GPS/IMU Processing Report

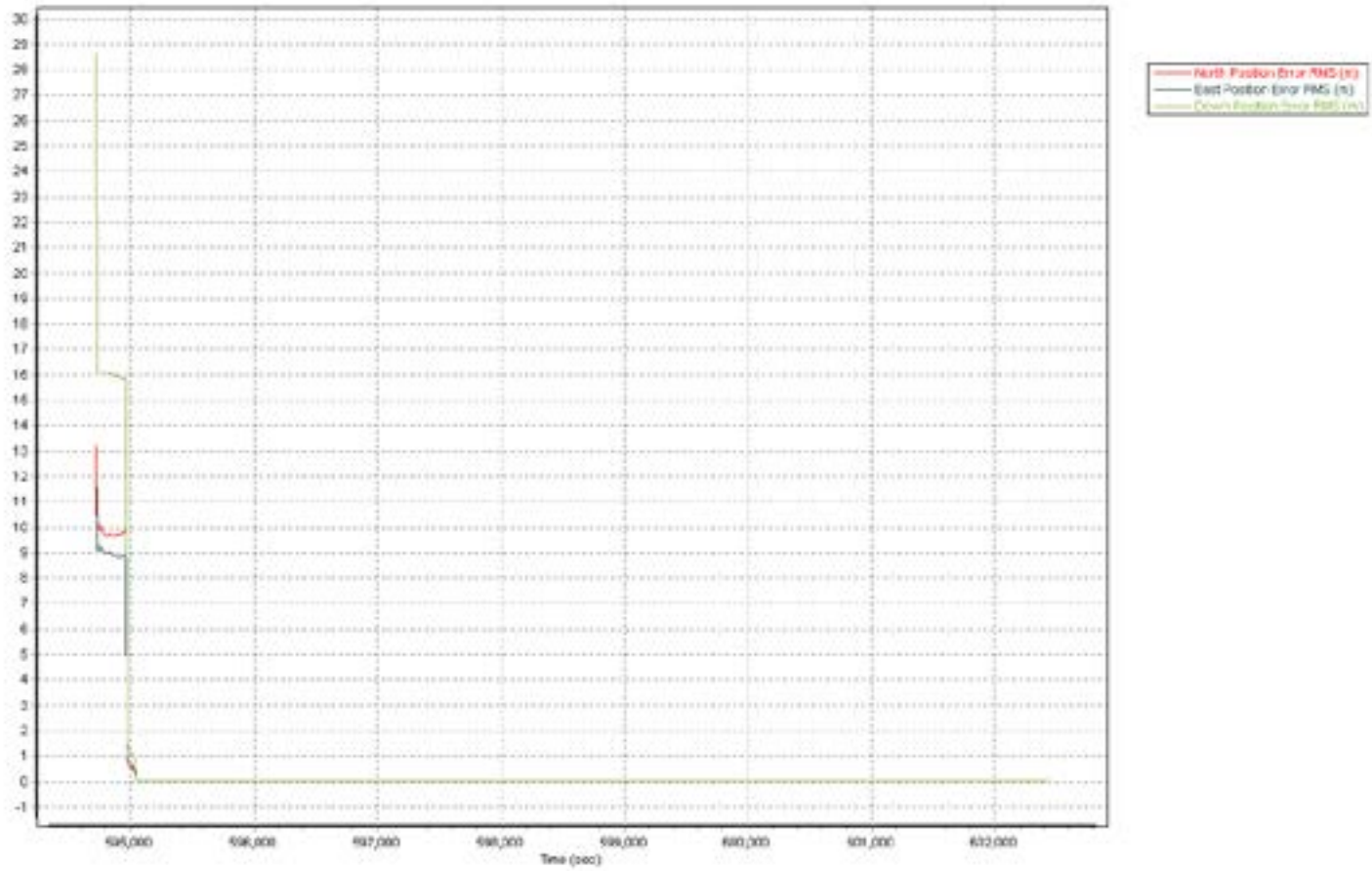
Lift GNSS Reports

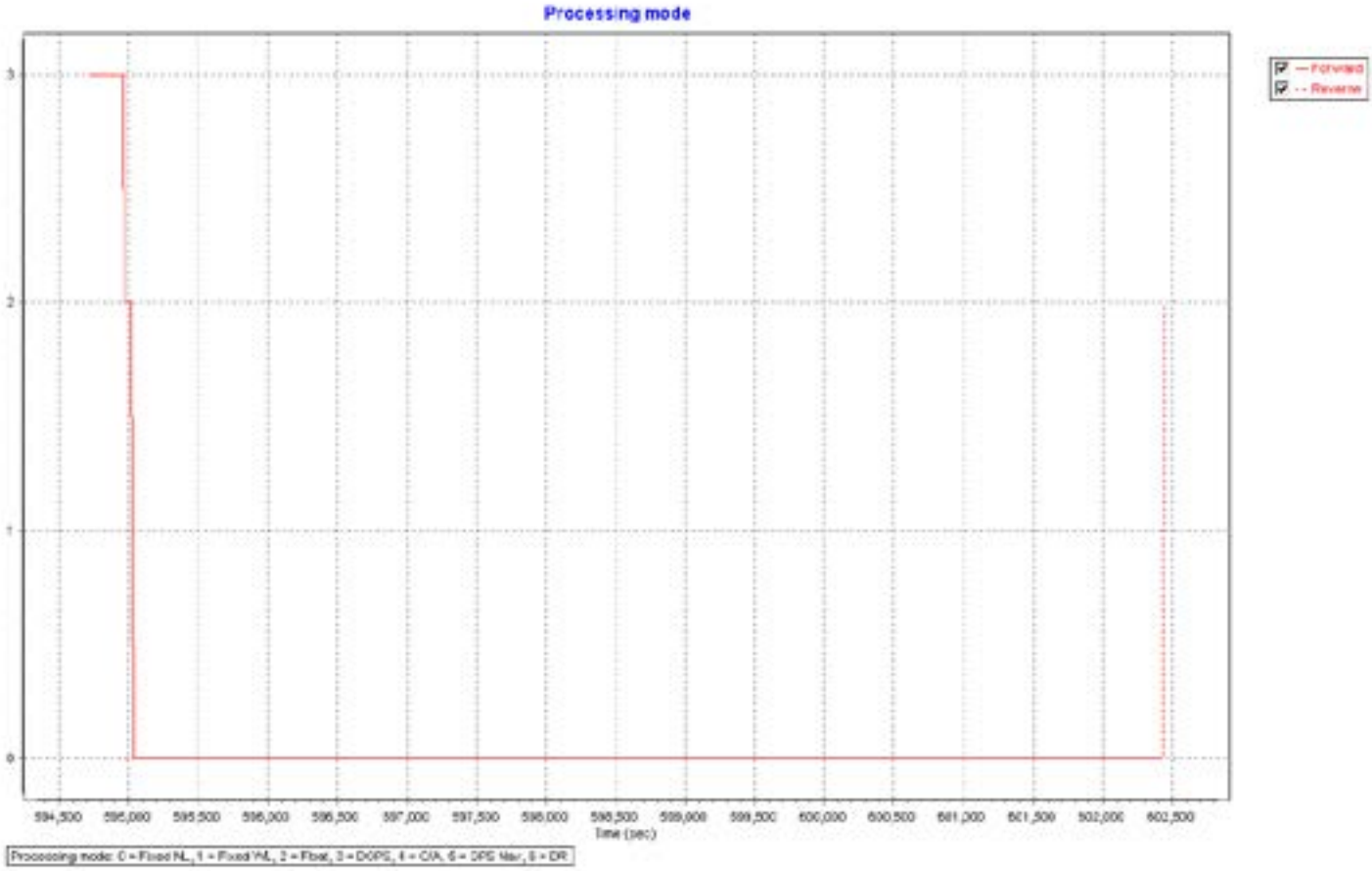
There are fifty-four lifts, each with separate graph reports generated from processing software. The lifts are as follows:

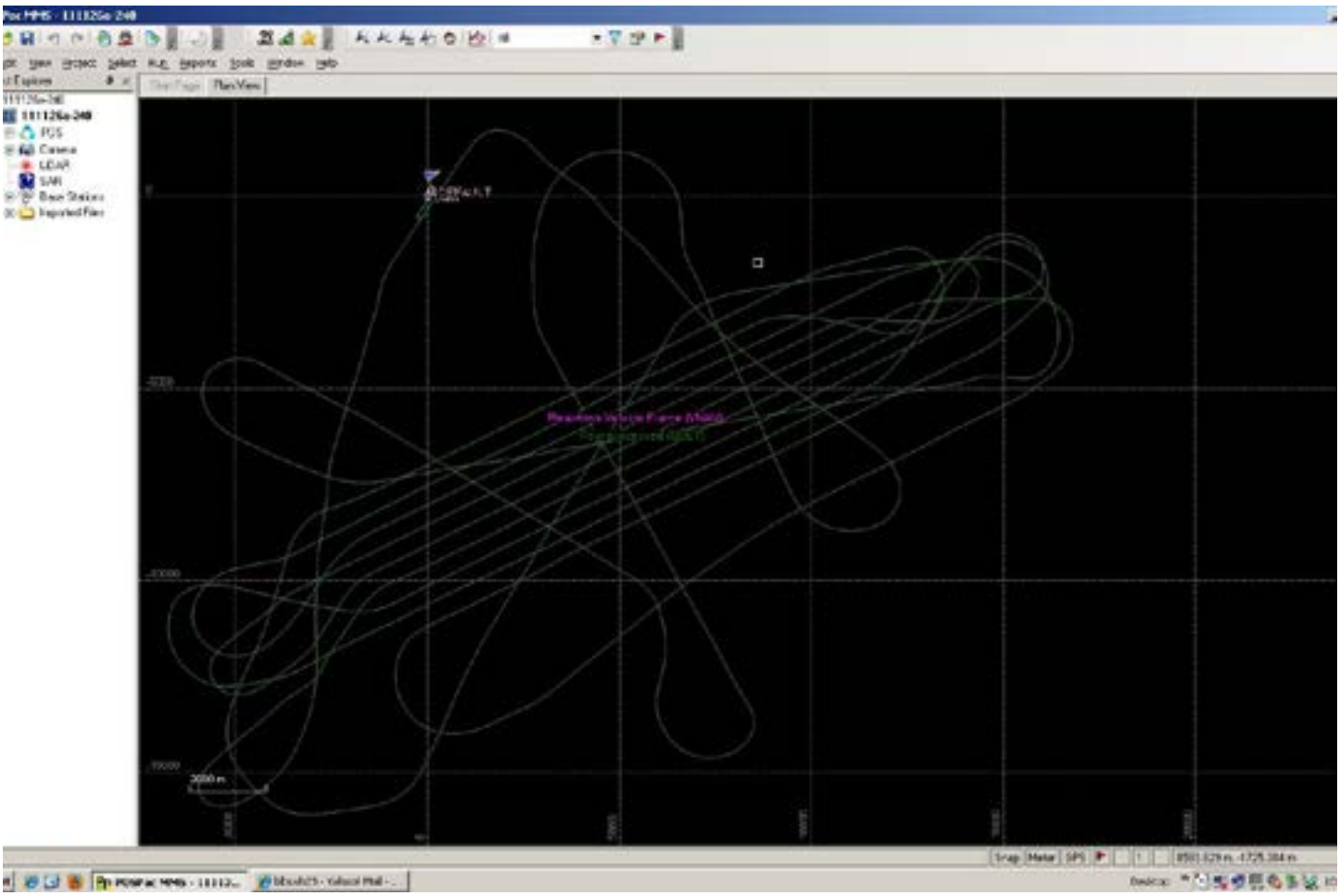
111126a-240
111212a-240
111213a-240
111213b-240
111213c-240
111214a-240
111216a-240
111216b-240
111218b-240
111218c-240
111219a-240
111219b-240
120107a-247
120109a-247
120109b-247
120111a-247
120115a-247
120115b-247
120116a-247
120116b-247
120118a-247
120118b-247
120120a-247
120125a-247
120125b-247
120125c-247
120128a-247
120128b-247
120130a-247
120130b-247
120131a-247
120131b-247
120202a-247
120203a-247
120203b-247
120204a-247
120205a-247
120205b-247
120206a-247
120206b-247
120209a-247
120213b-247
120217a-247
120217b-247
120217c-247
120218a-247
120219a-247
120219b-247
120220a-247
120220c-247
120222a-247
120406a-246
120407a-246
120407c-246

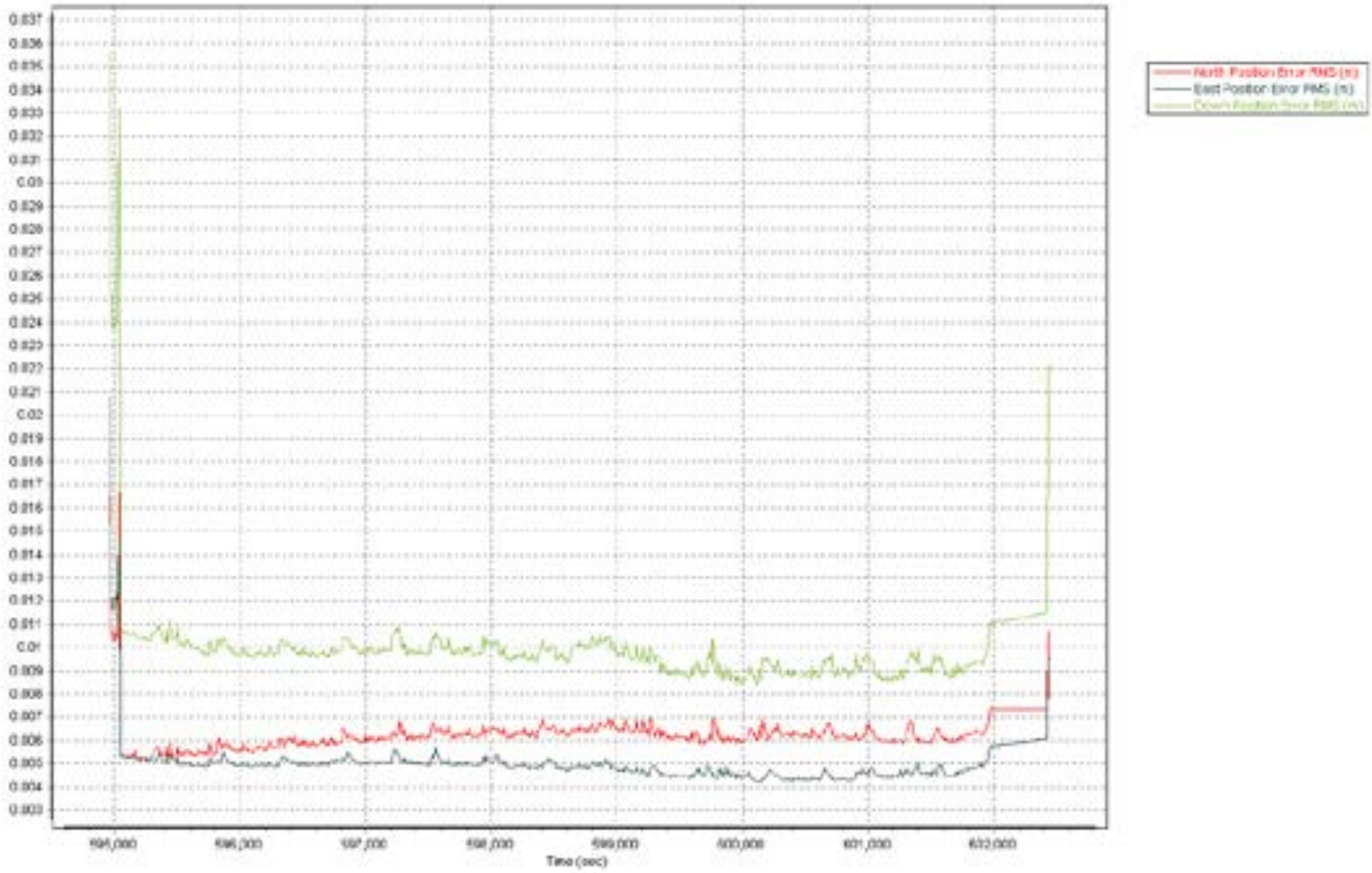
111126a-240

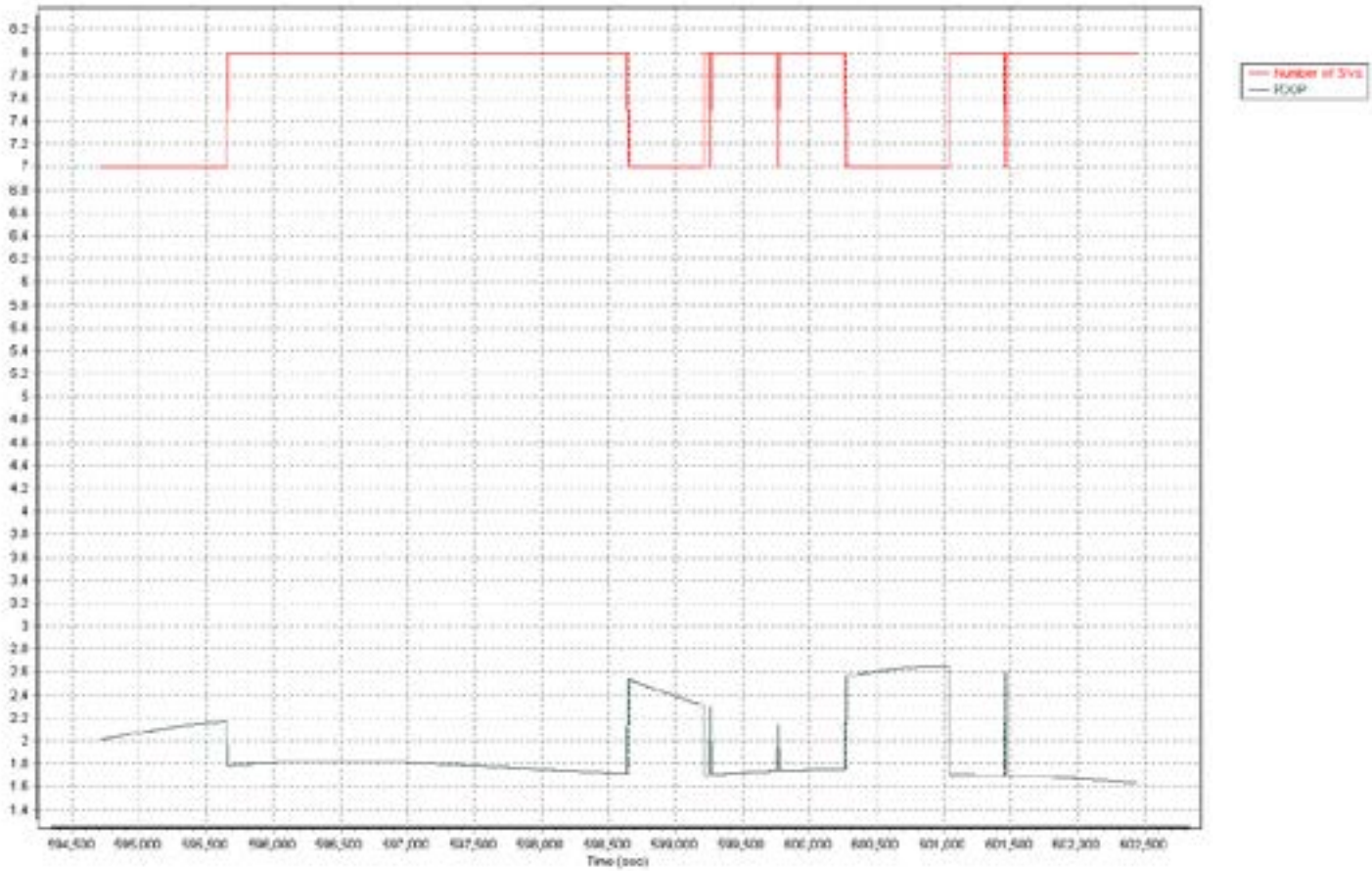

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

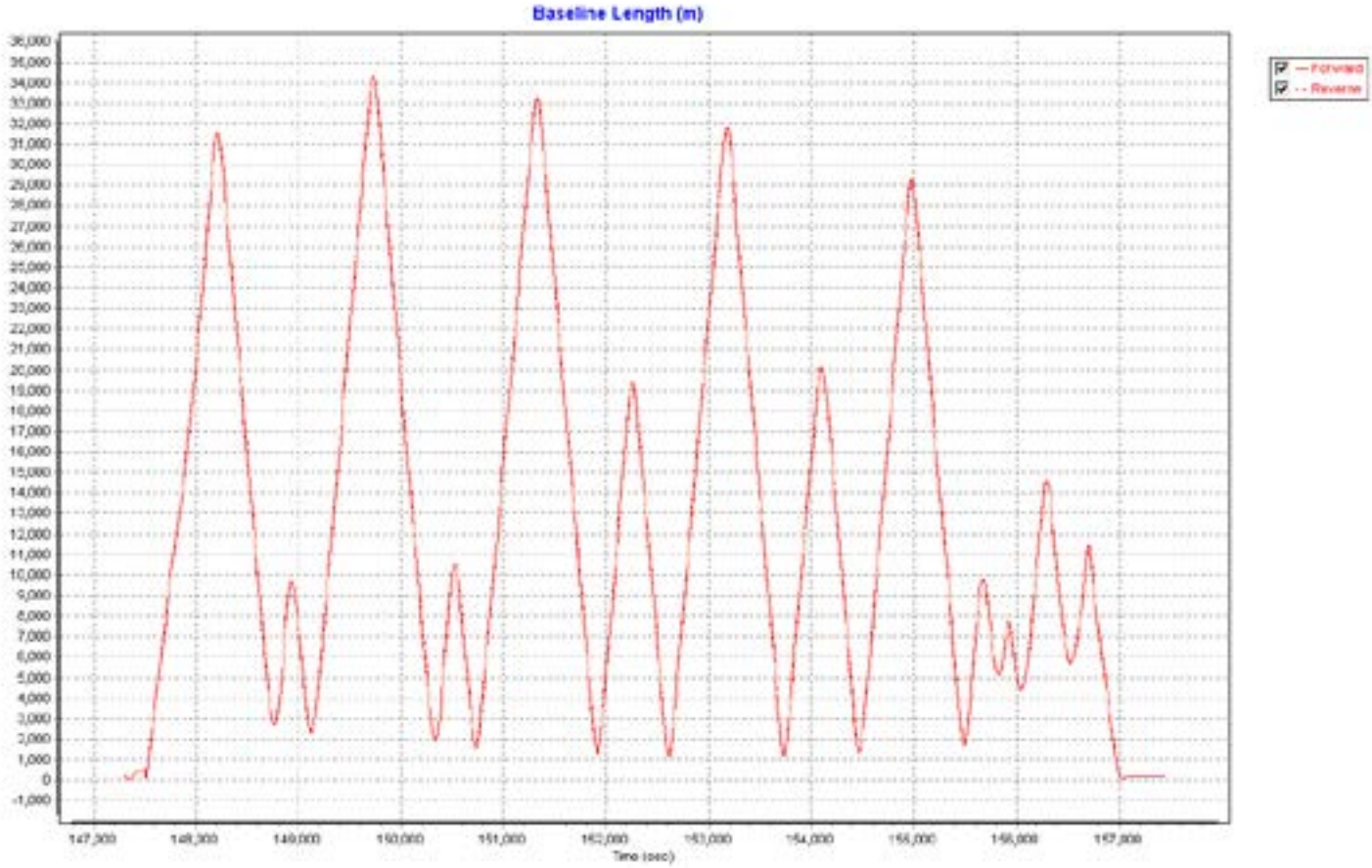

Processing mode
Forward
Reverse
3
2
1
0
594,500
595,000
595,500
596,000
596,500
597,000
597,500
598,000
598,500
599,000
599,500
600,000
600,500
601,000
601,500
602,000
602,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

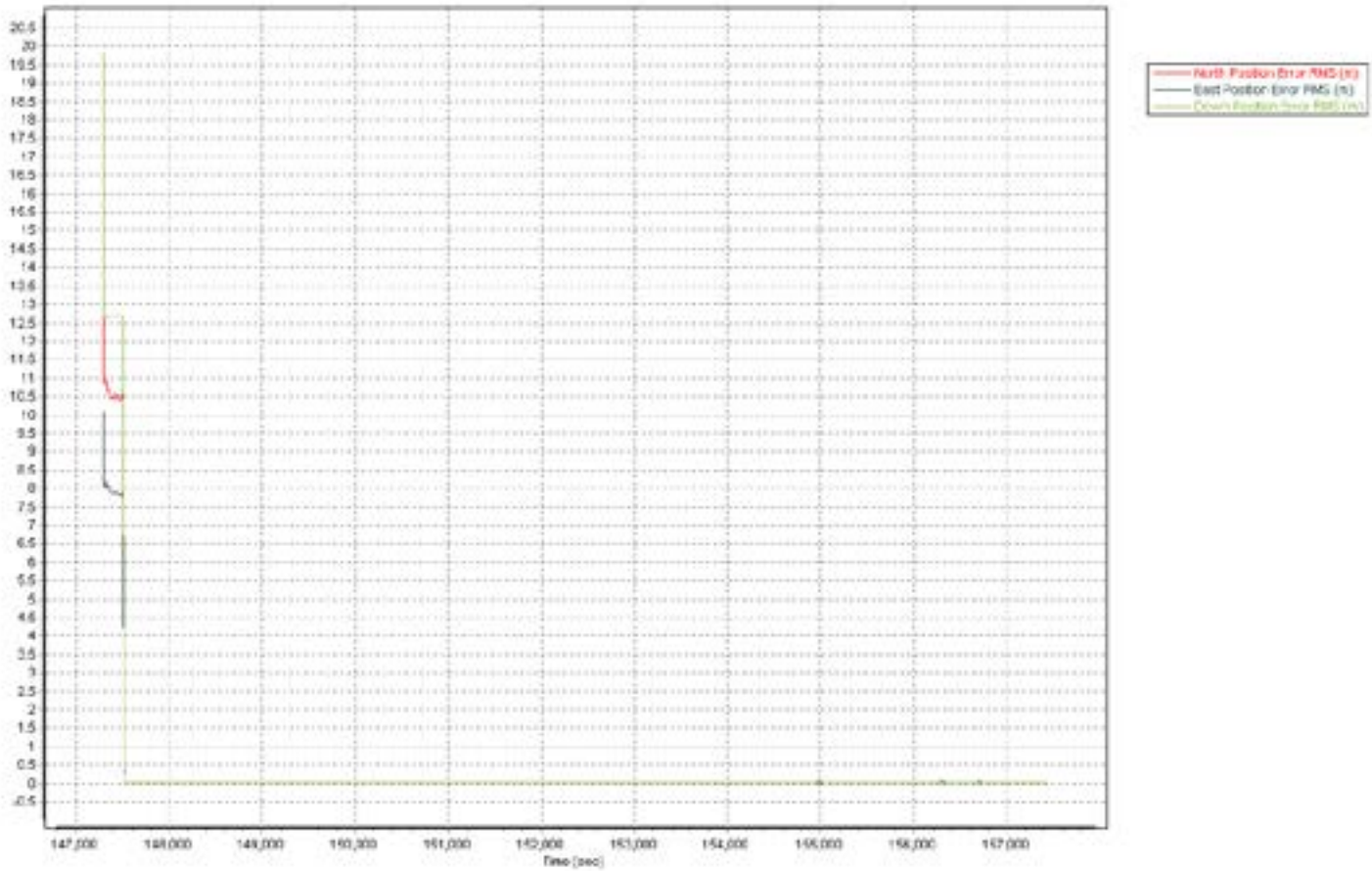


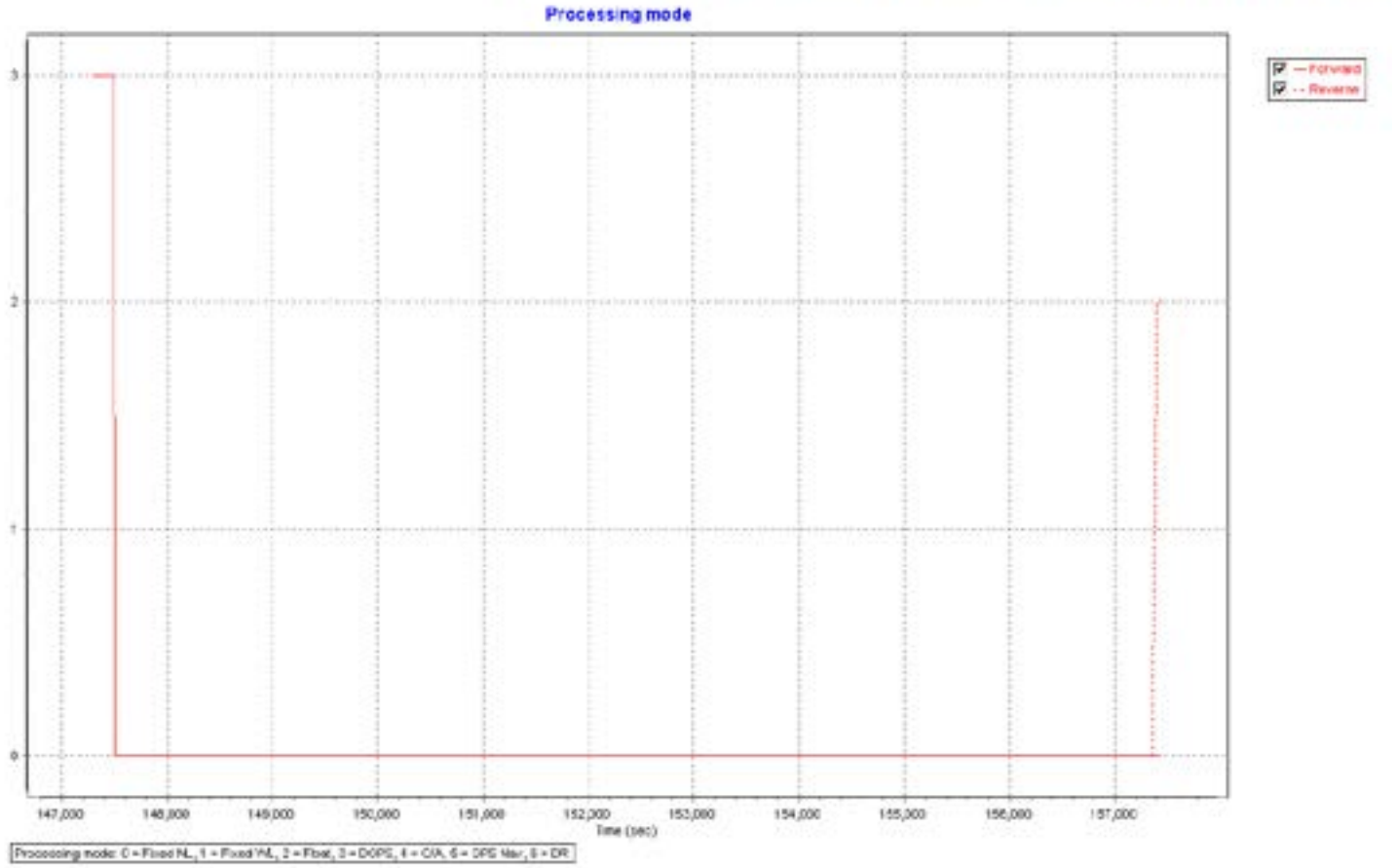

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

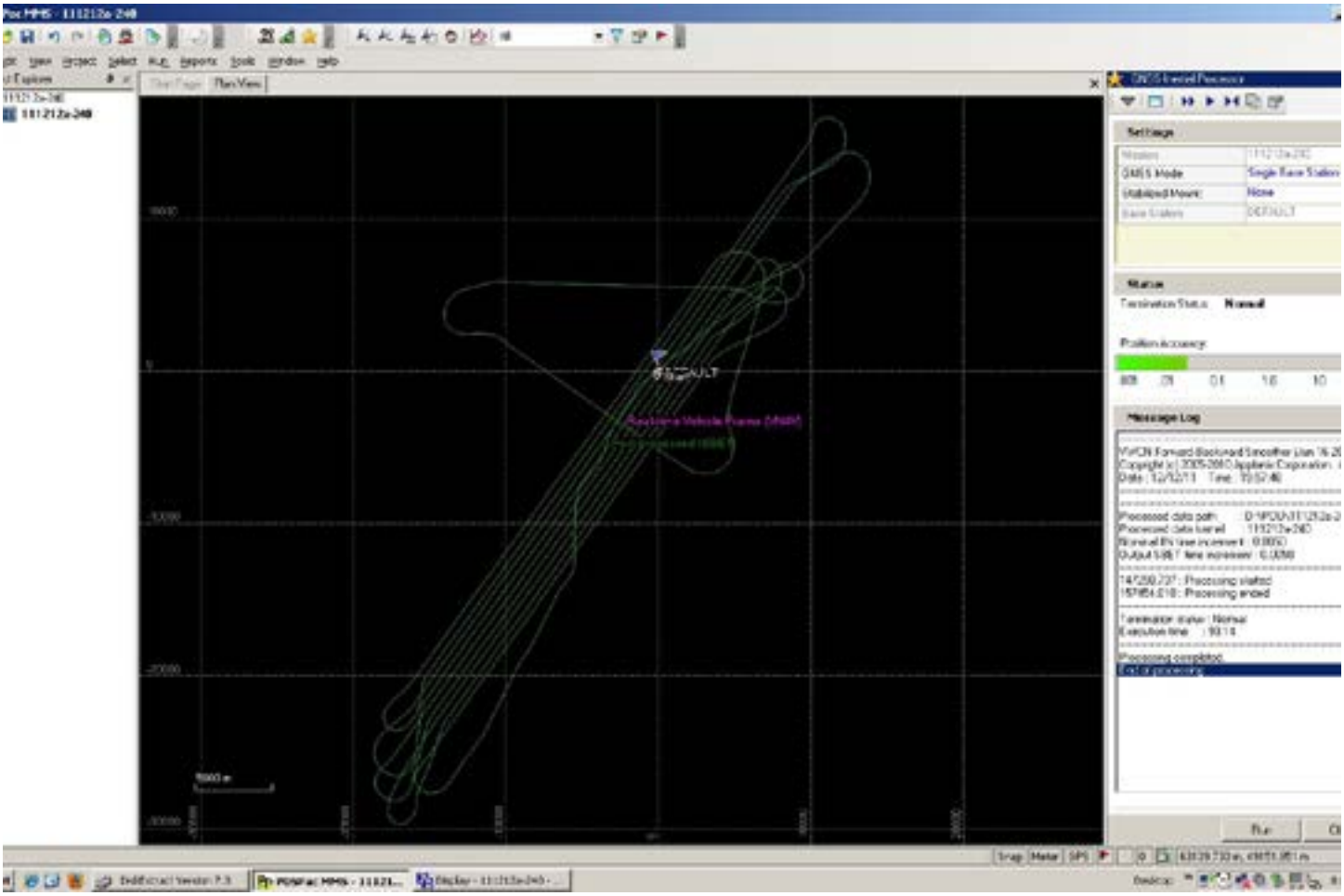

Number of SVs
PDOP
Time (sec)

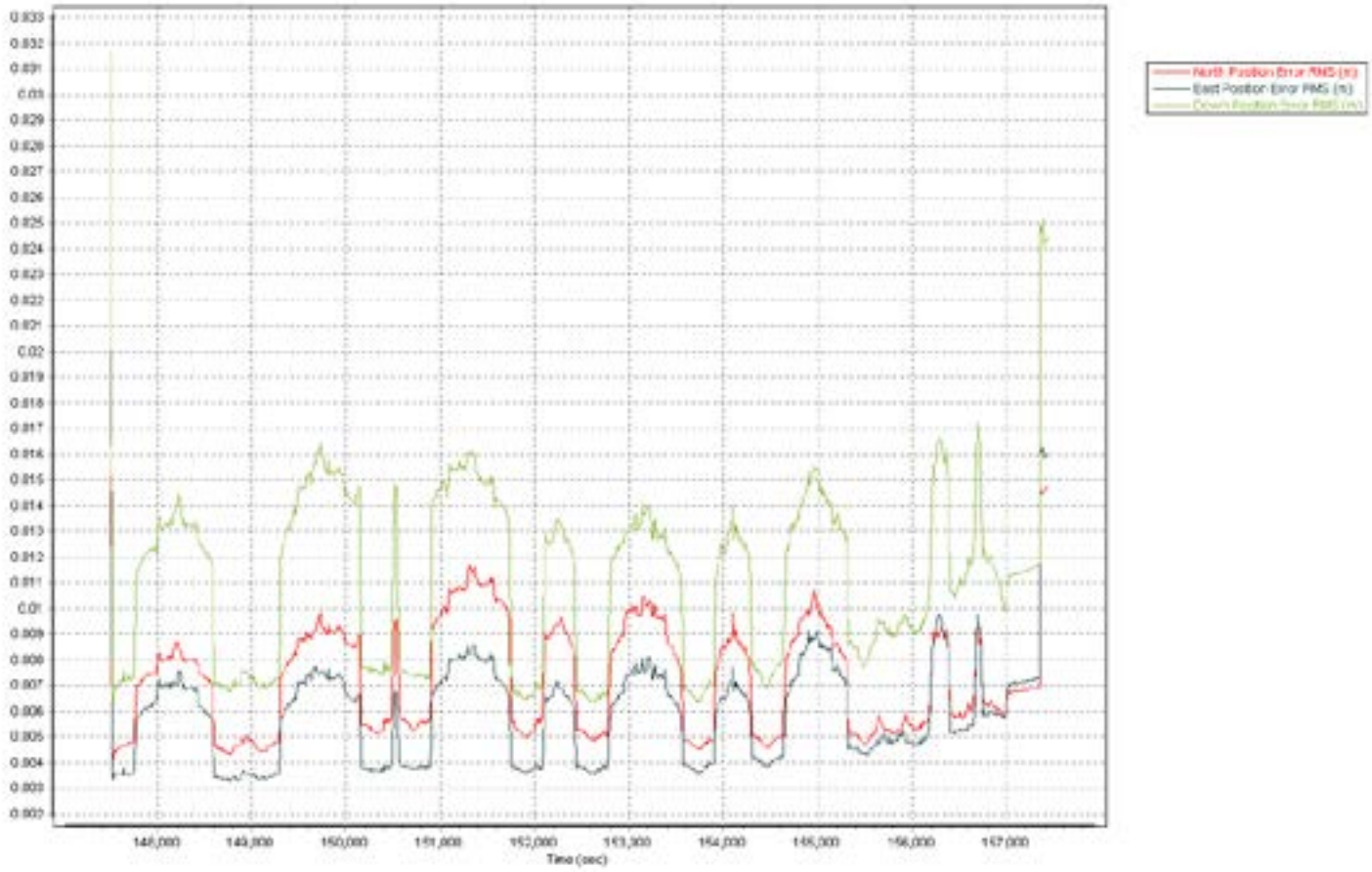
111212a-240

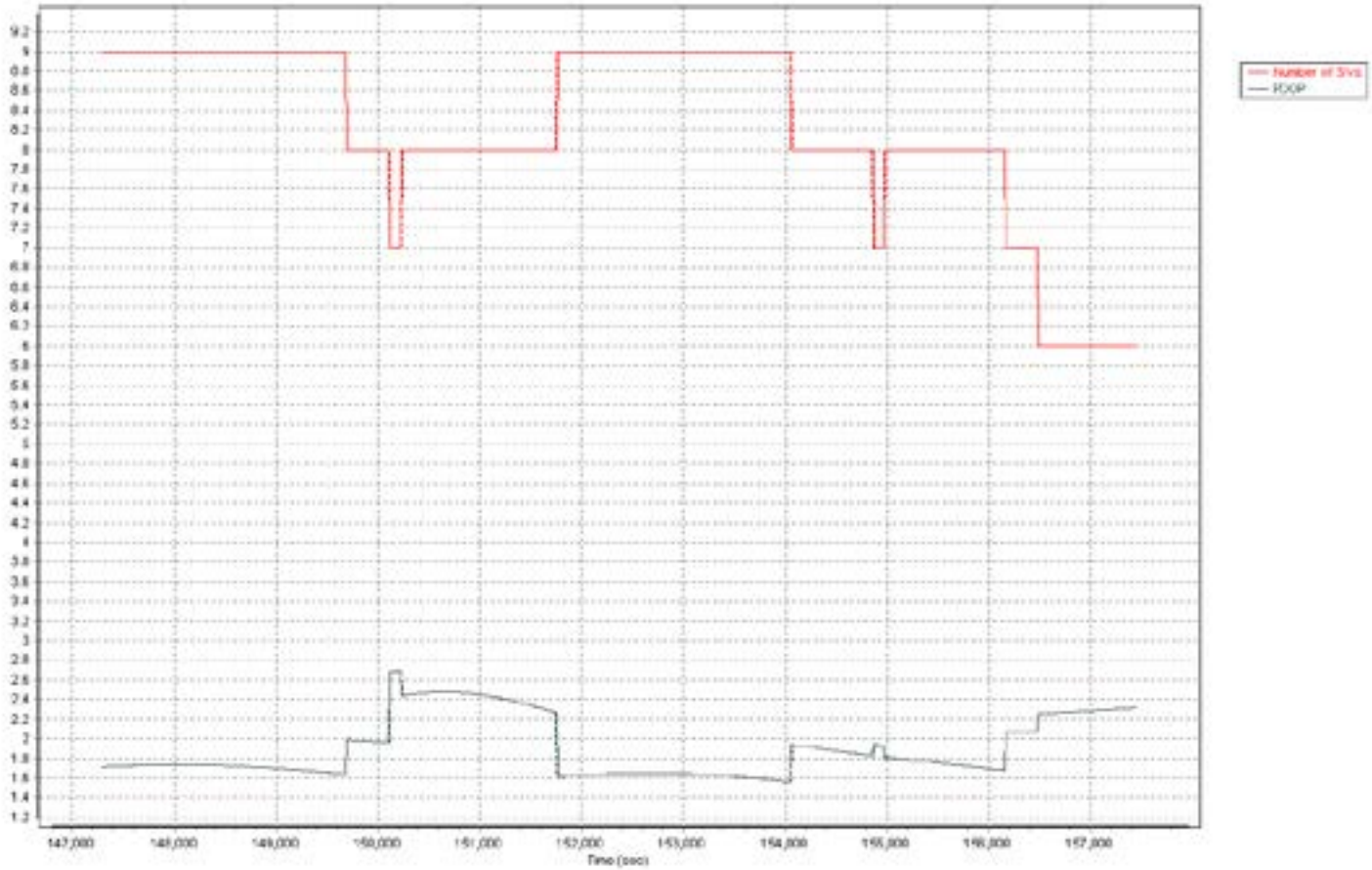

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

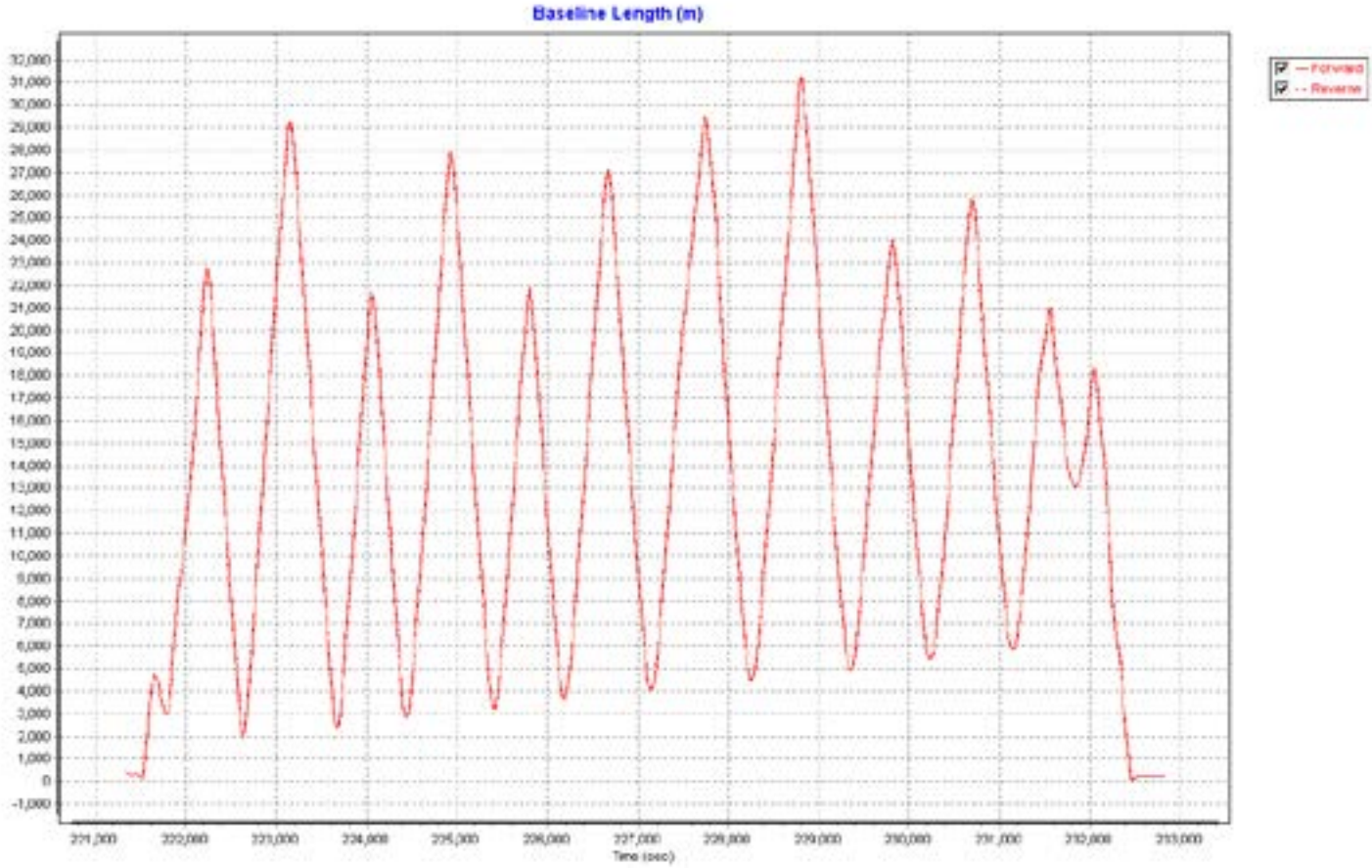

Processing mode
Forward
Reverse
3
2
1
0
147,000
148,000
149,000
150,000
151,000
152,000
153,000
154,000
155,000
156,000
157,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed HL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = GPS Nav, 6 = DR

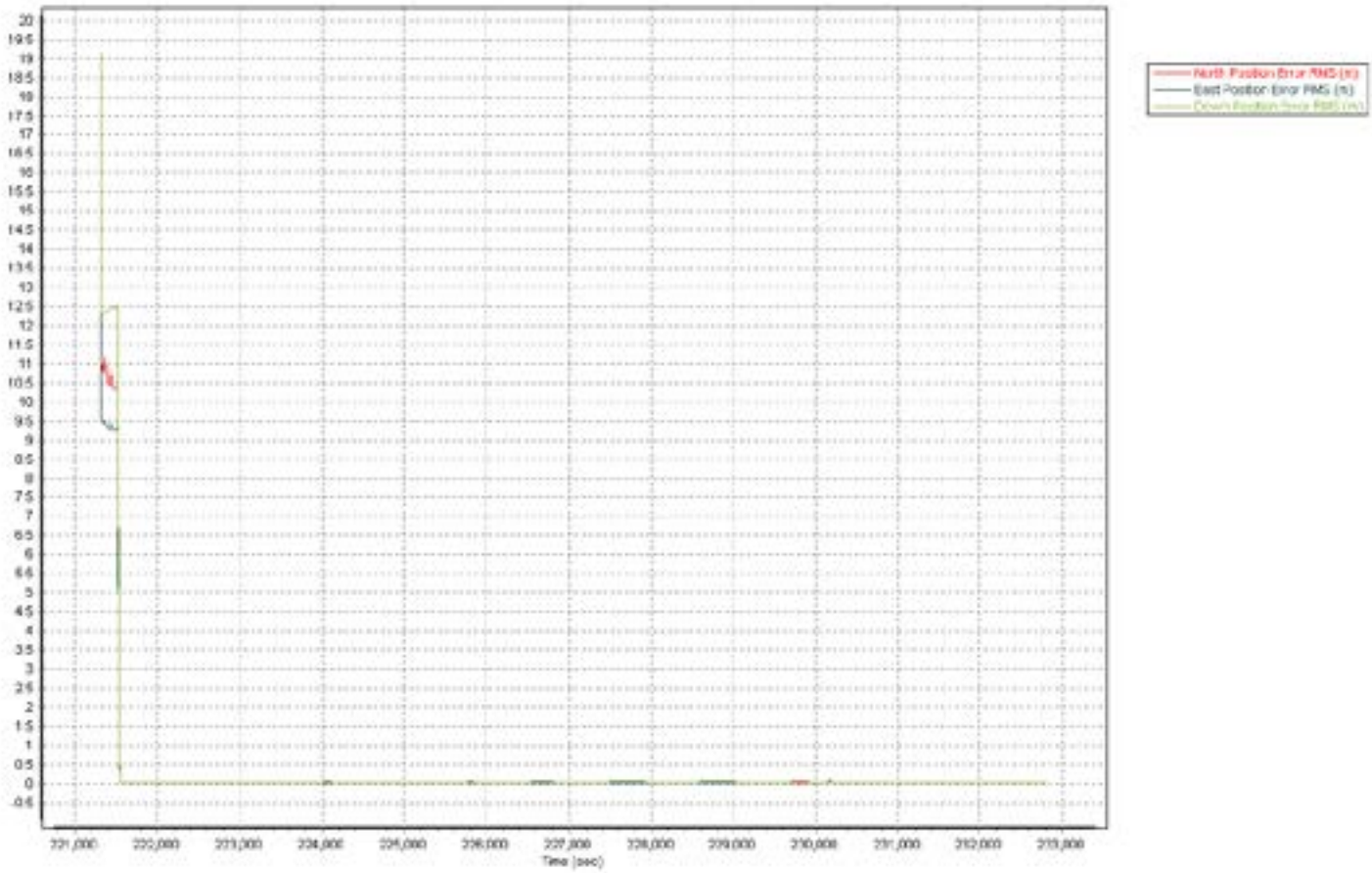

Settings
Status
Message Log

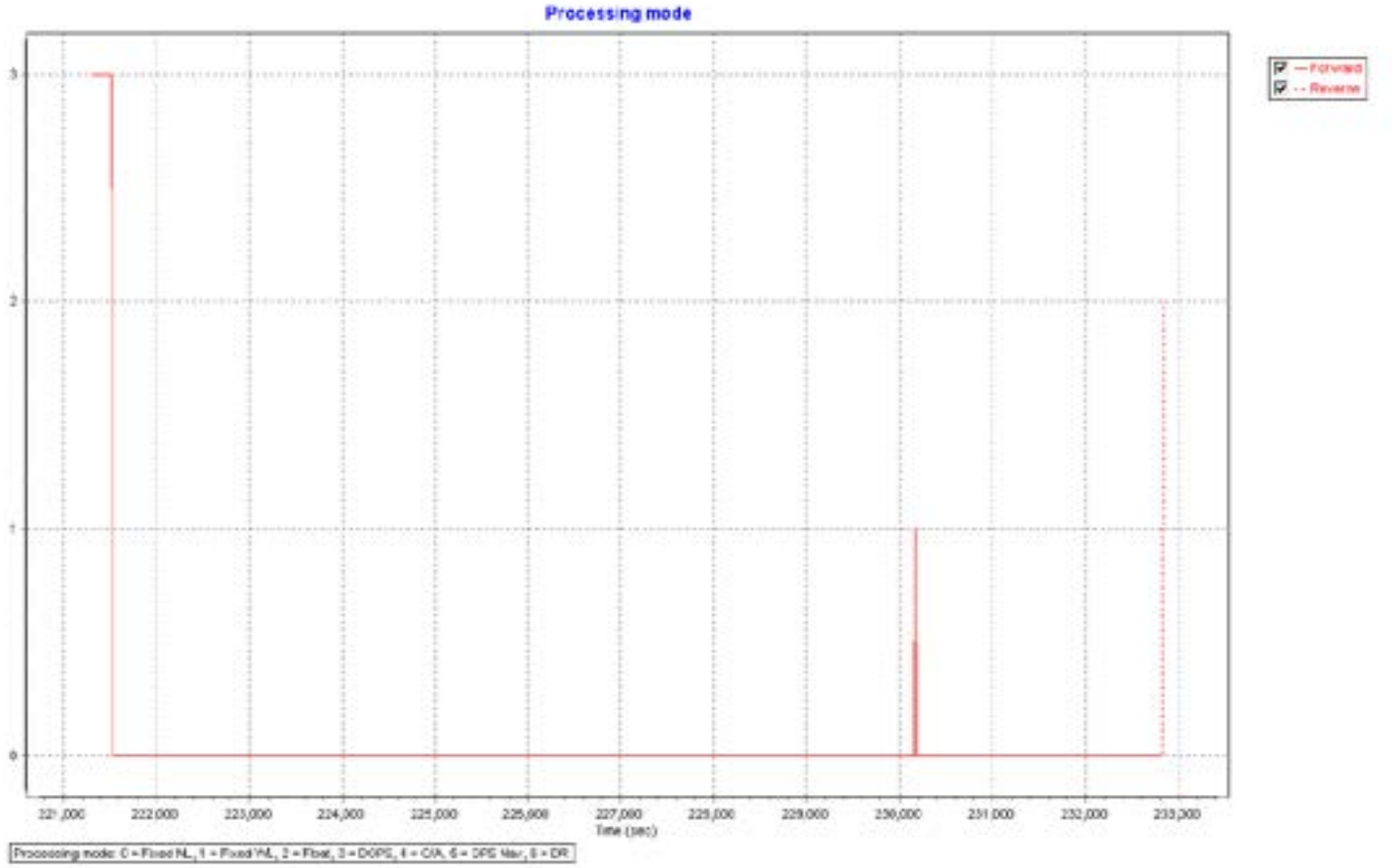

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

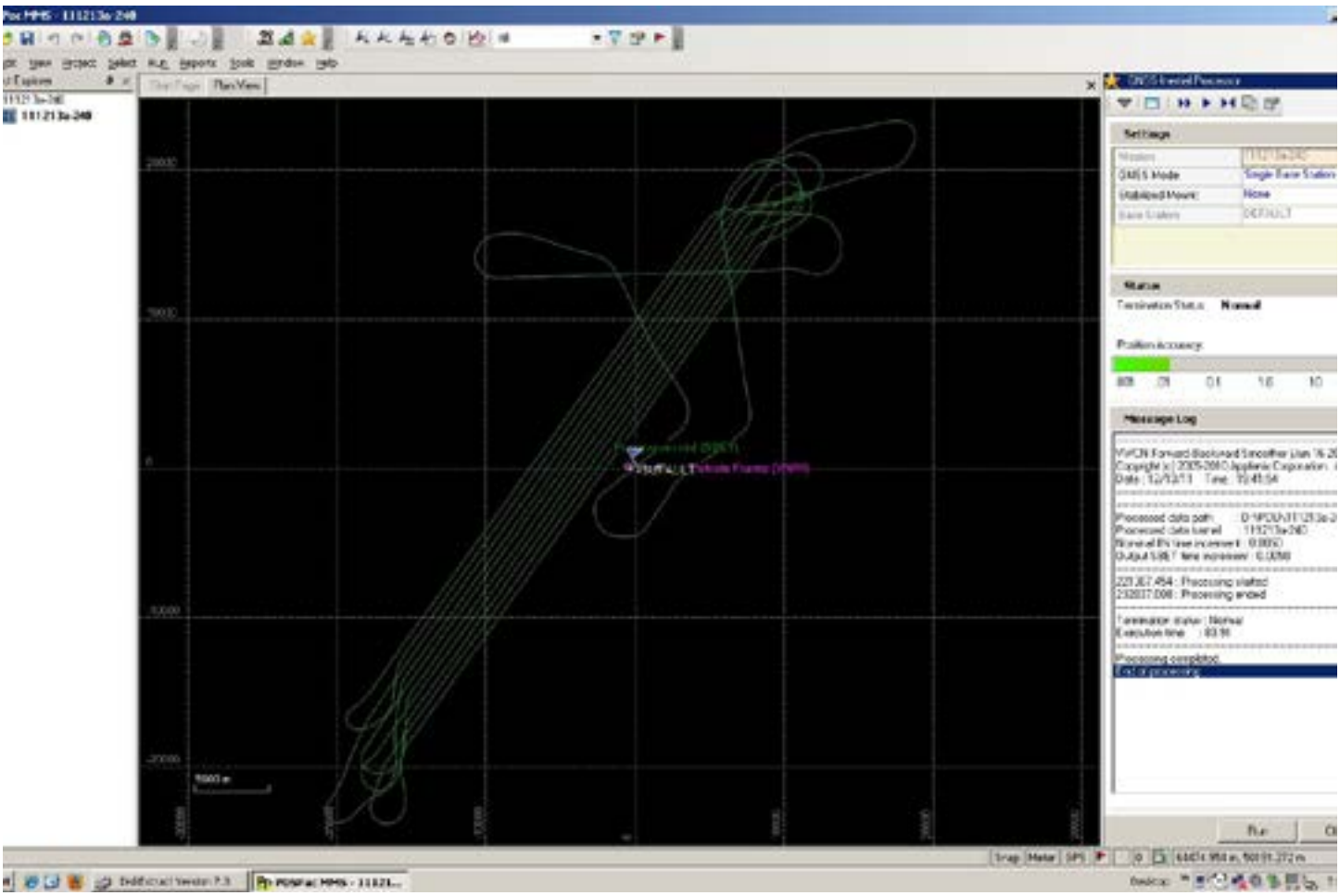

Number of SVs
PDOP
Time (sec)

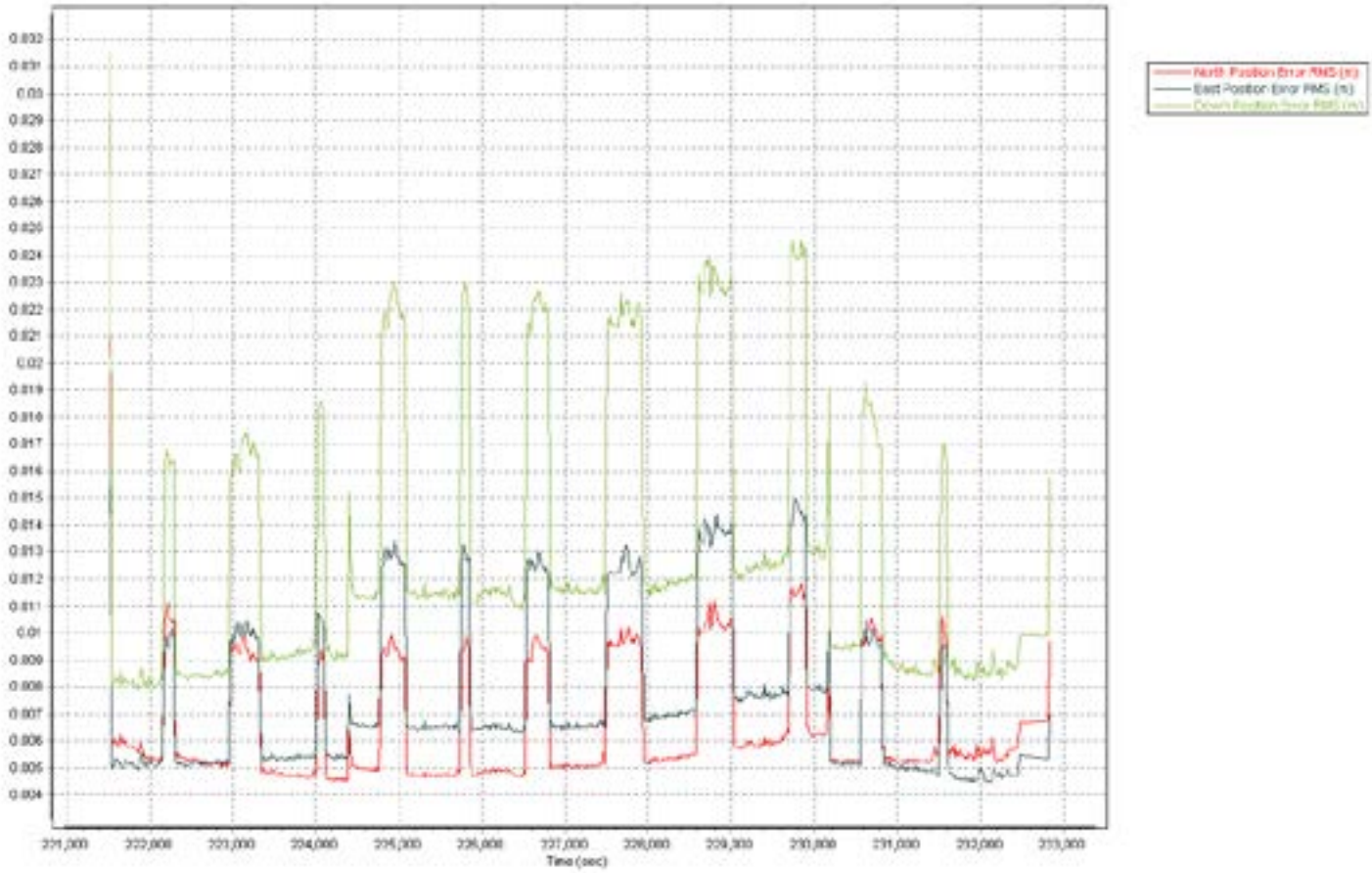
111213a-240

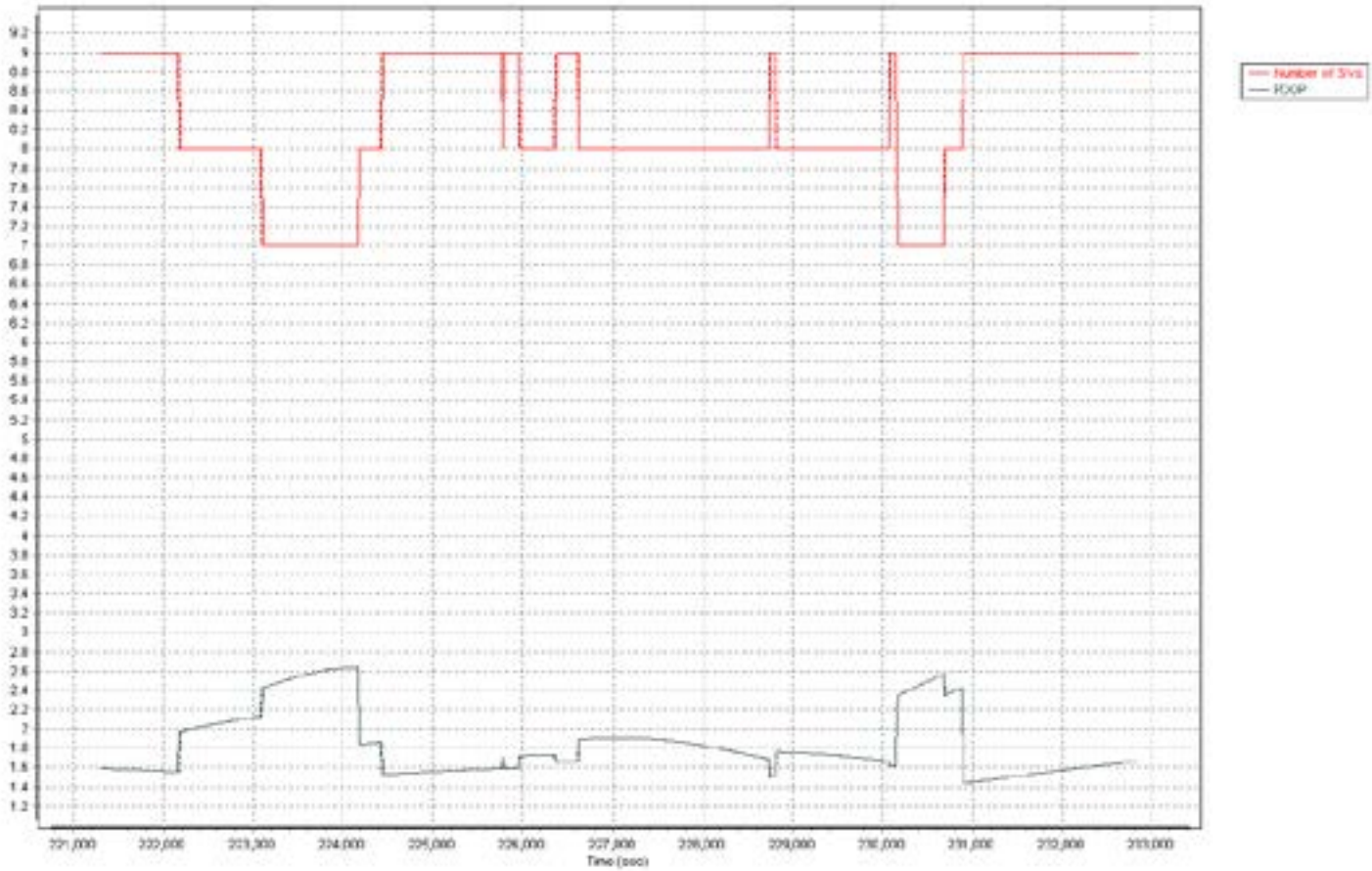

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

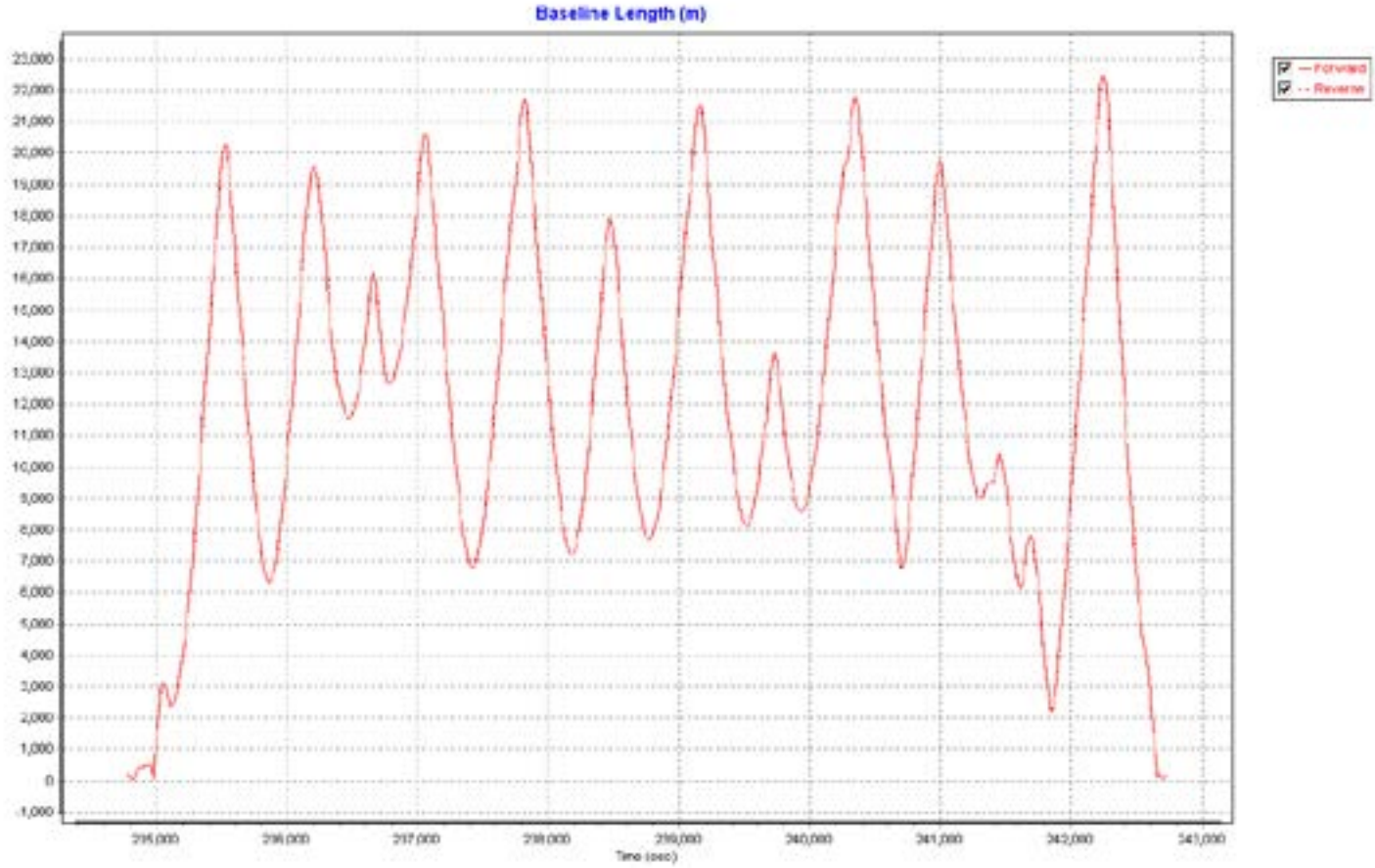

Processing mode
Forward
Reverse
3
2
1
0
221,000
222,000
223,000
224,000
225,000
226,000
227,000
228,000
229,000
230,000
231,000
232,000
233,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

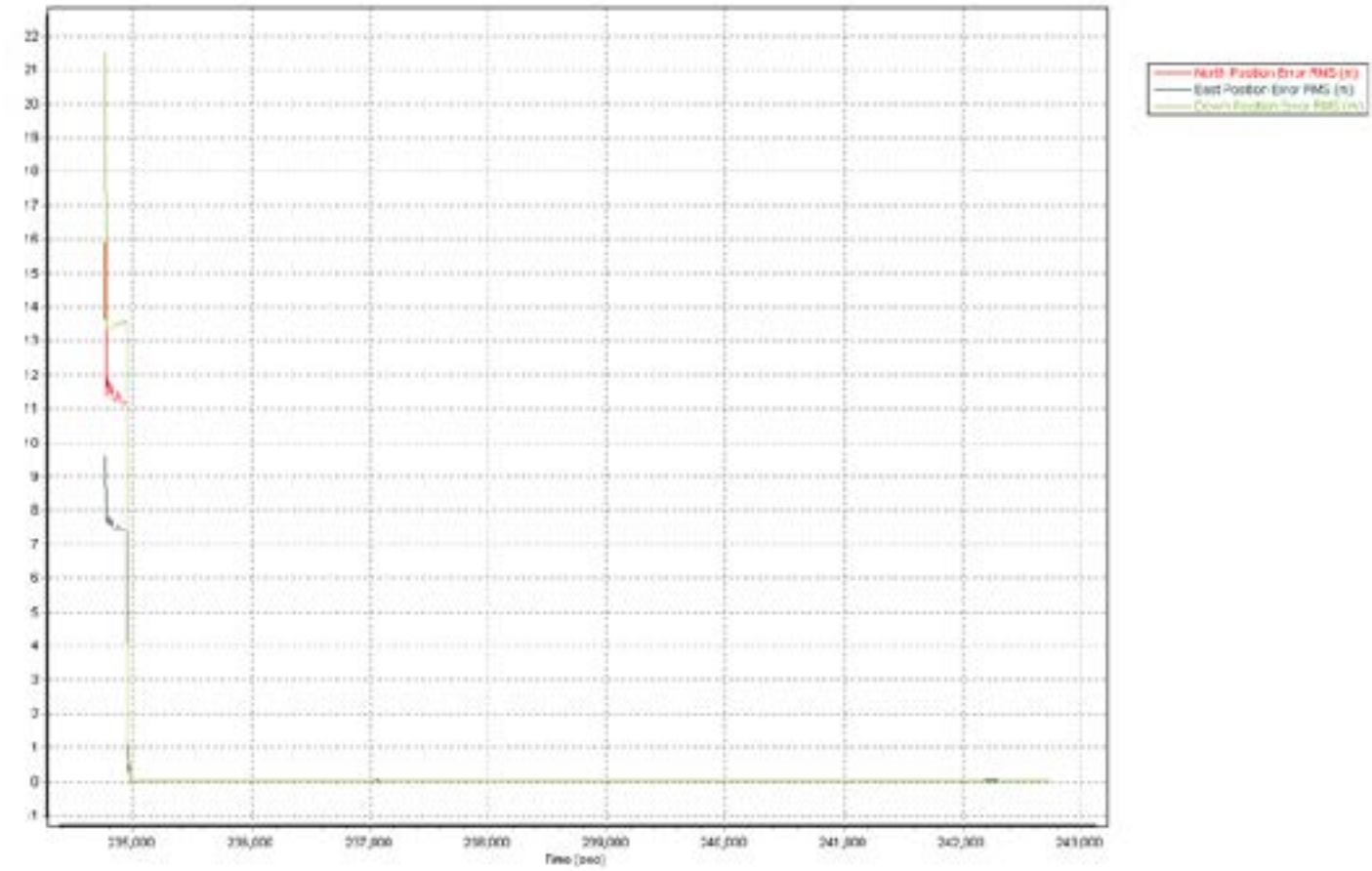

Settings
Status
Termination Status
Normal
Position Accuracy
Message Log
Run

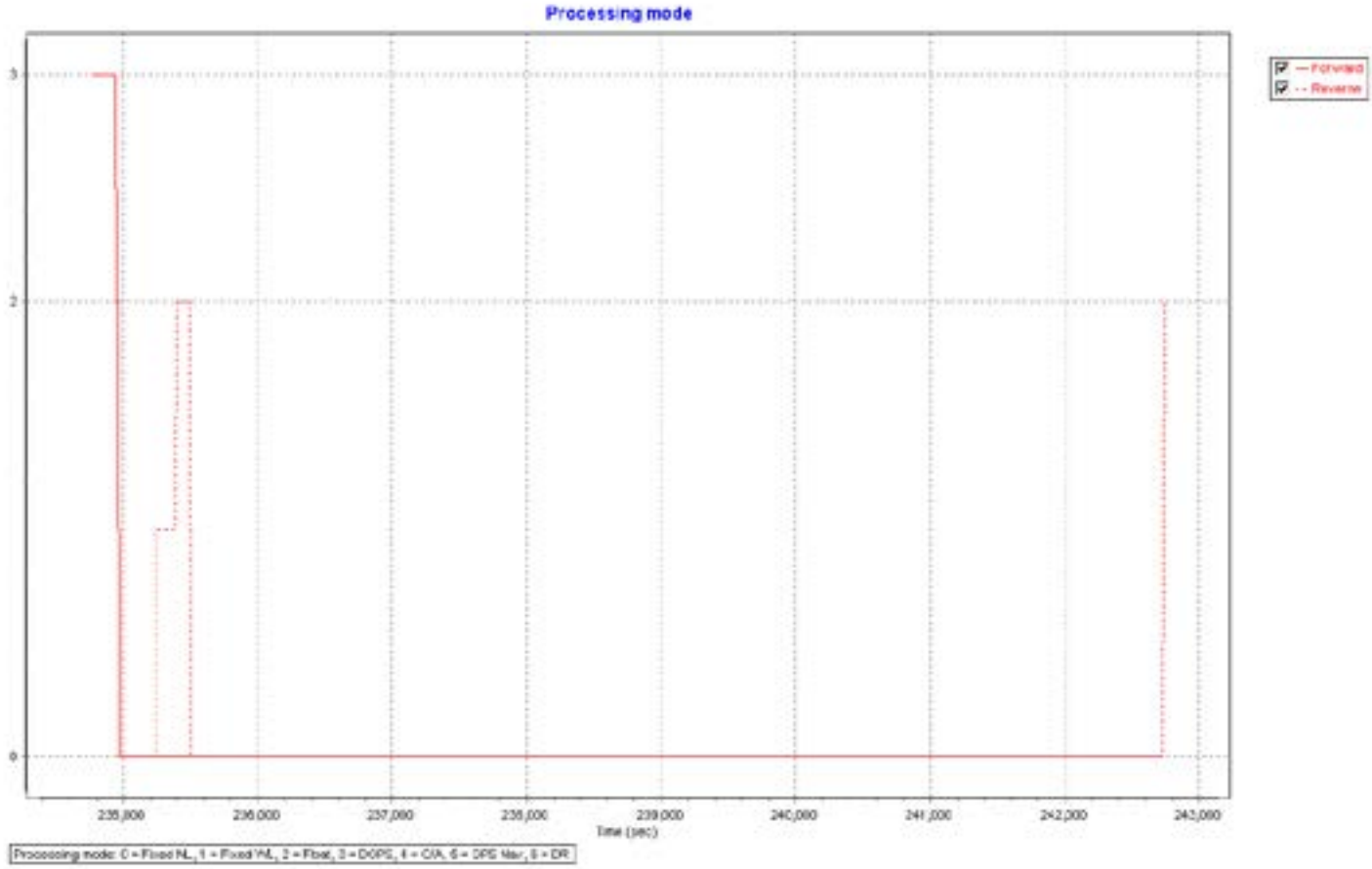

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

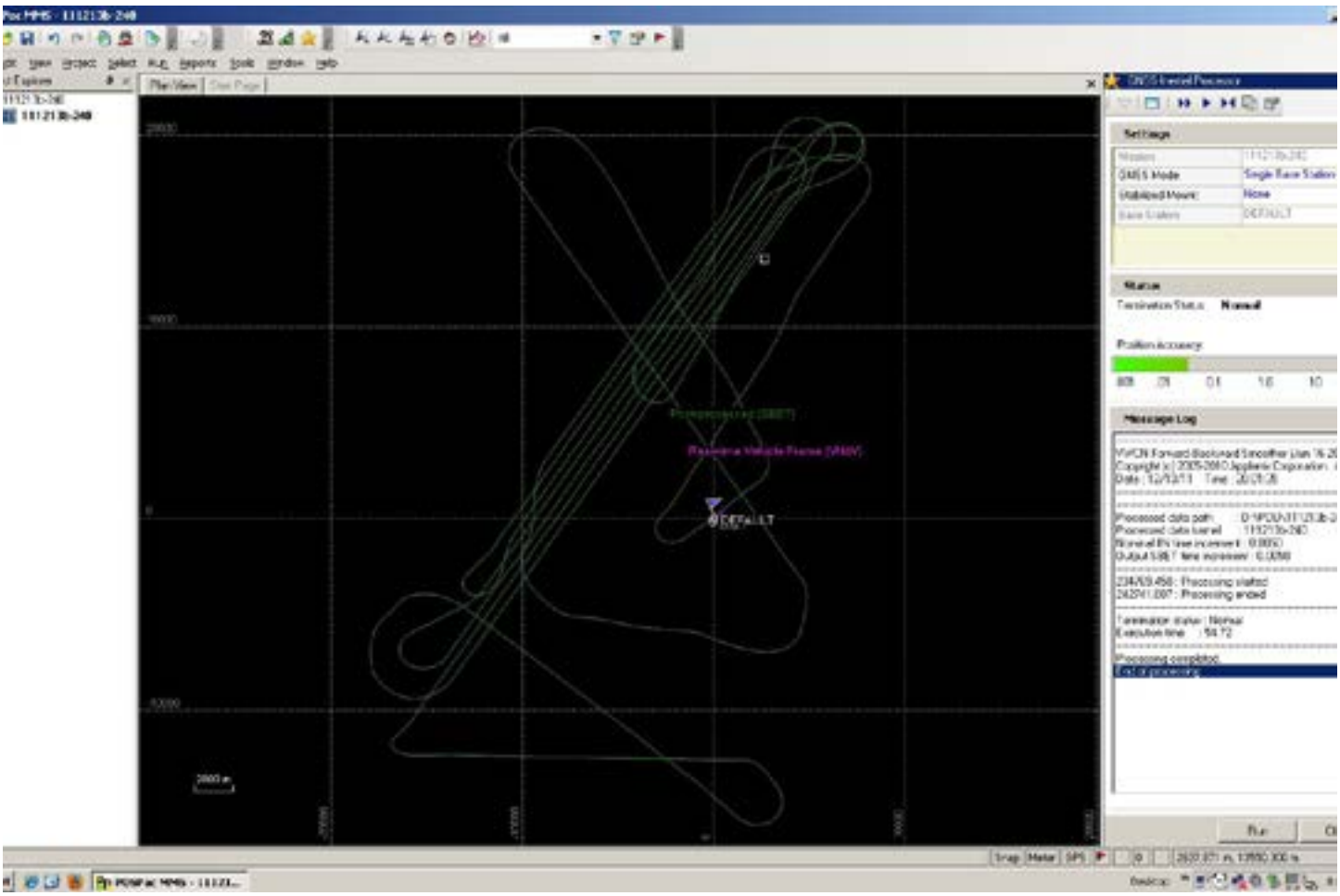

Number of SVs
PDOP
Time (sec)

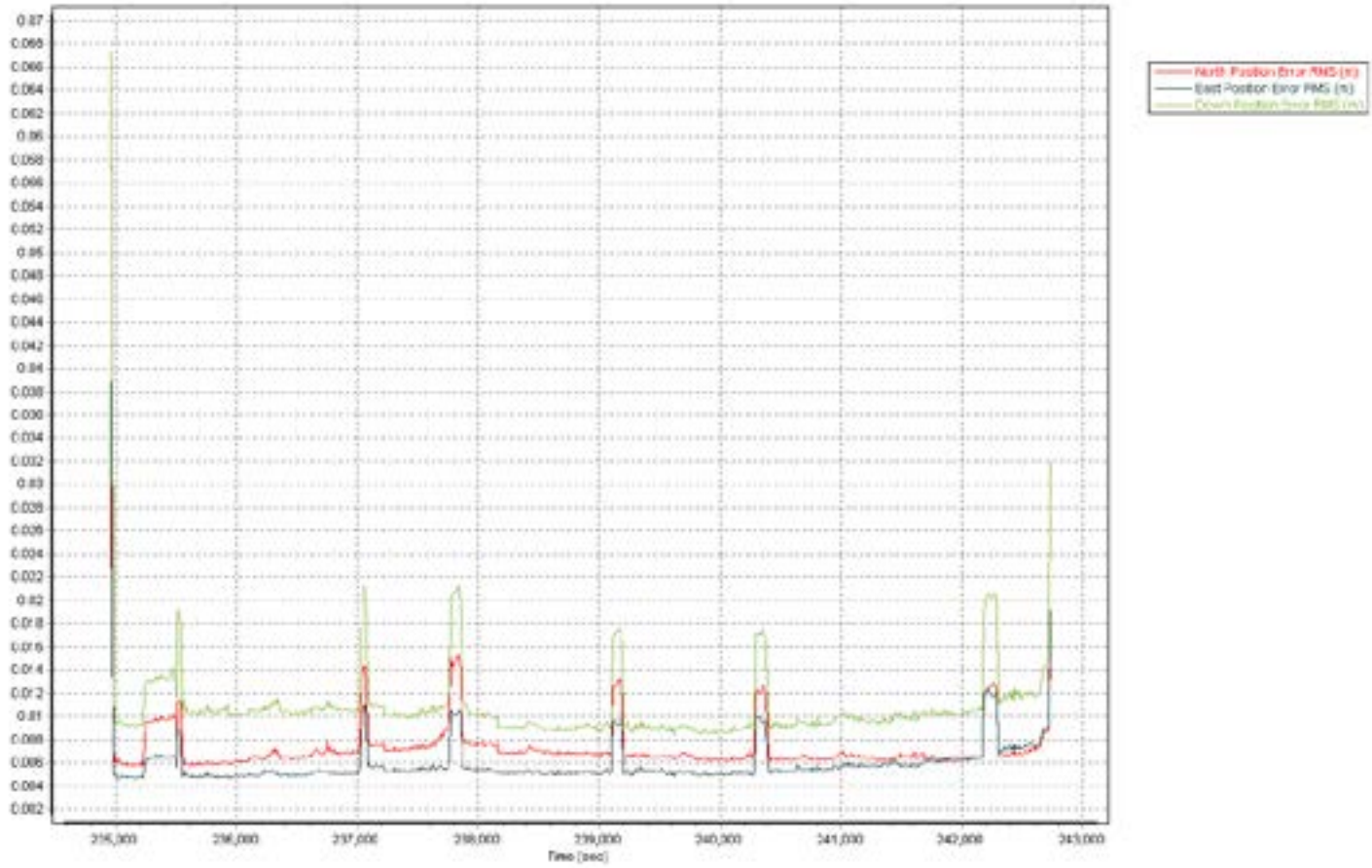
111213b-240

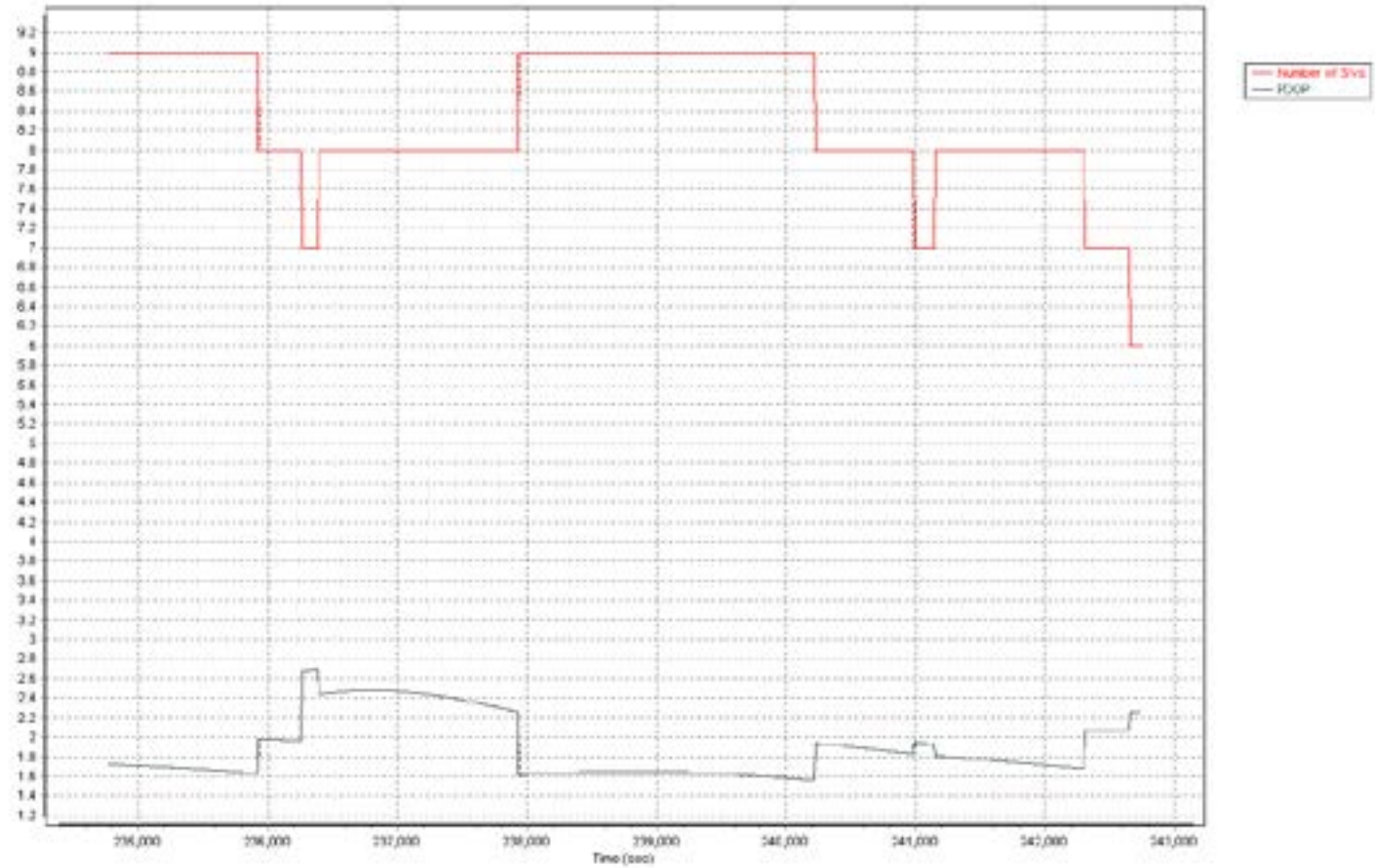

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

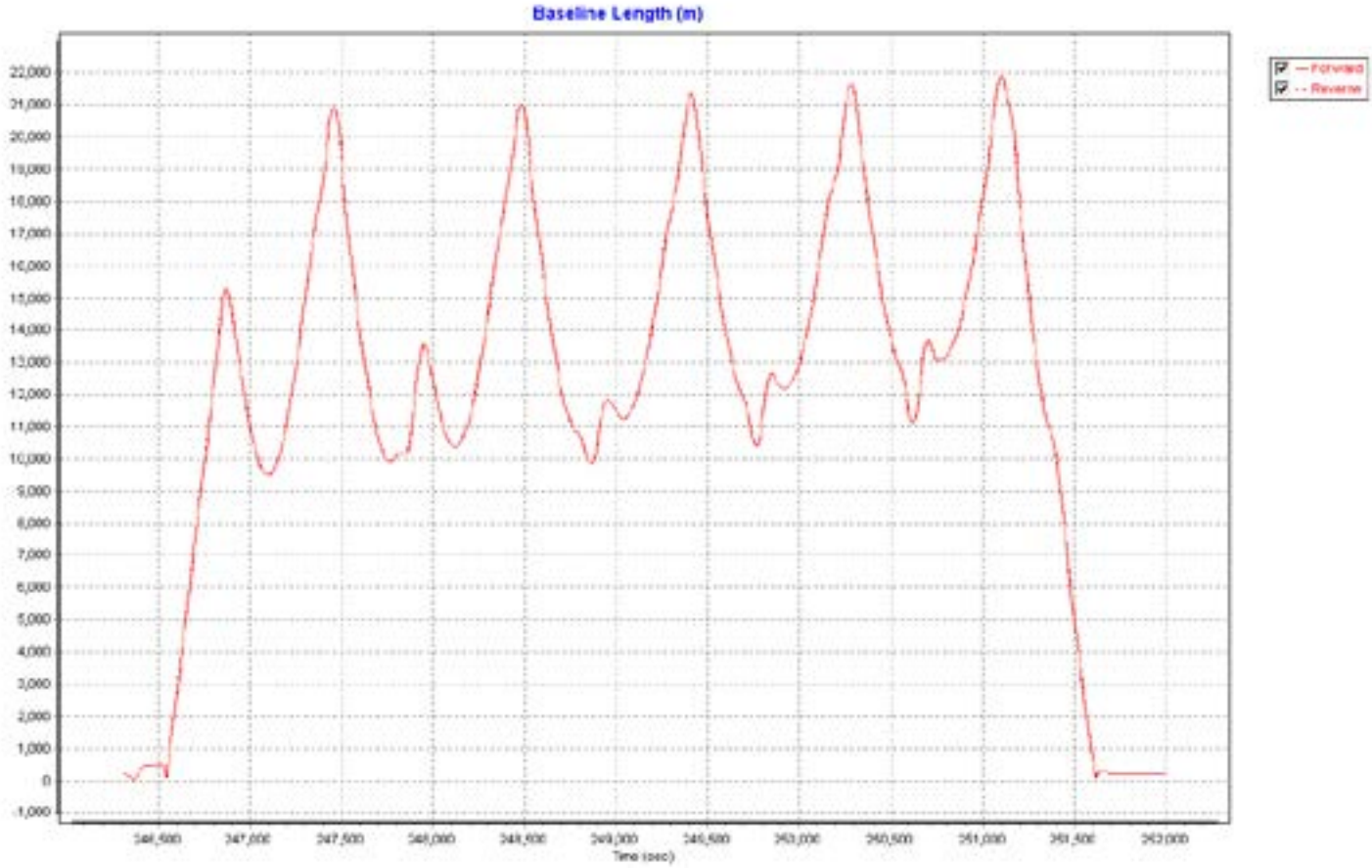

Processing mode
Forward
Reverse
3
2
0
235,000
236,000
237,000
238,000
239,000
240,000
241,000
242,000
243,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

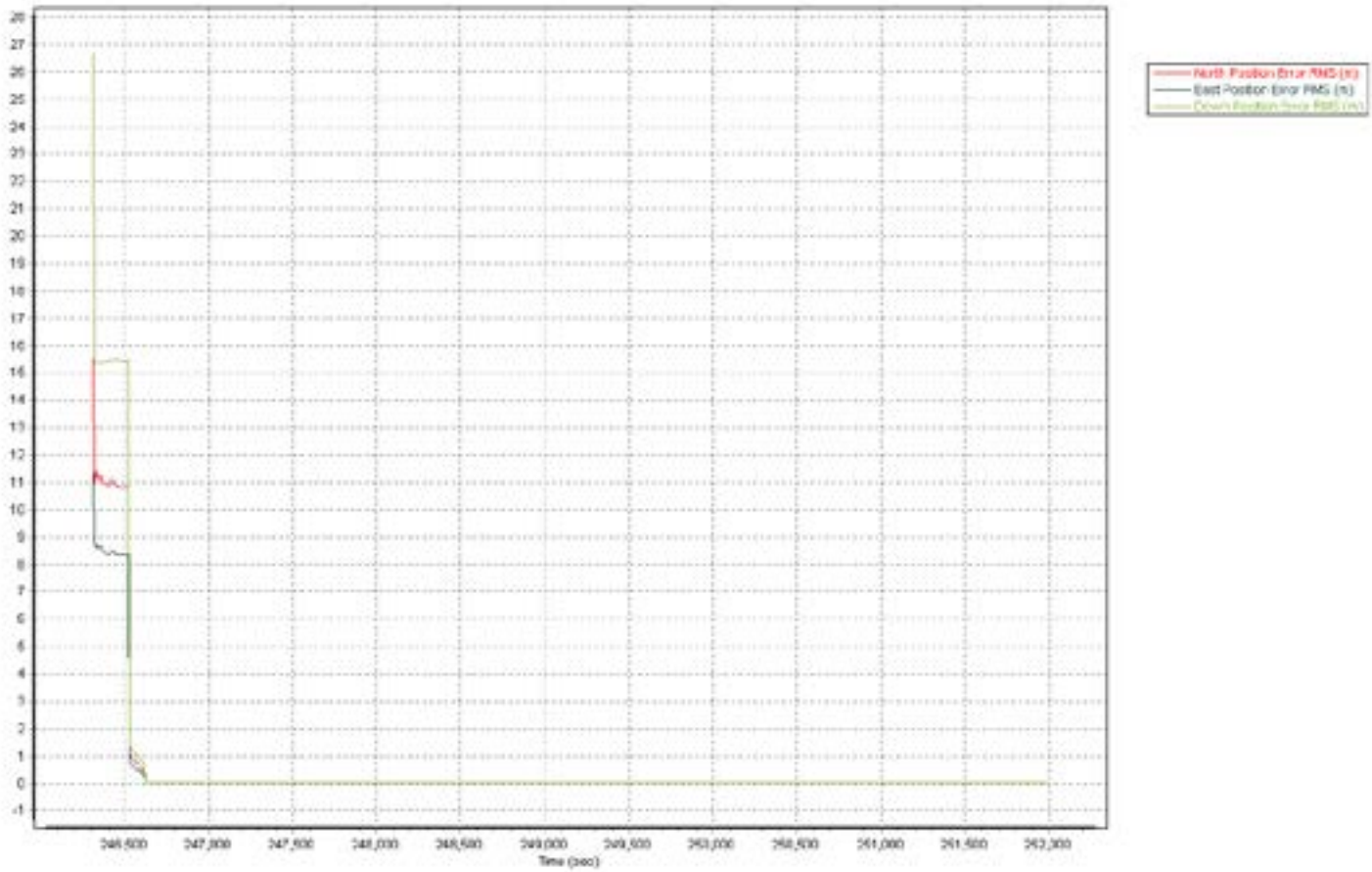

Settings
Status
Message Log
DEFAULT

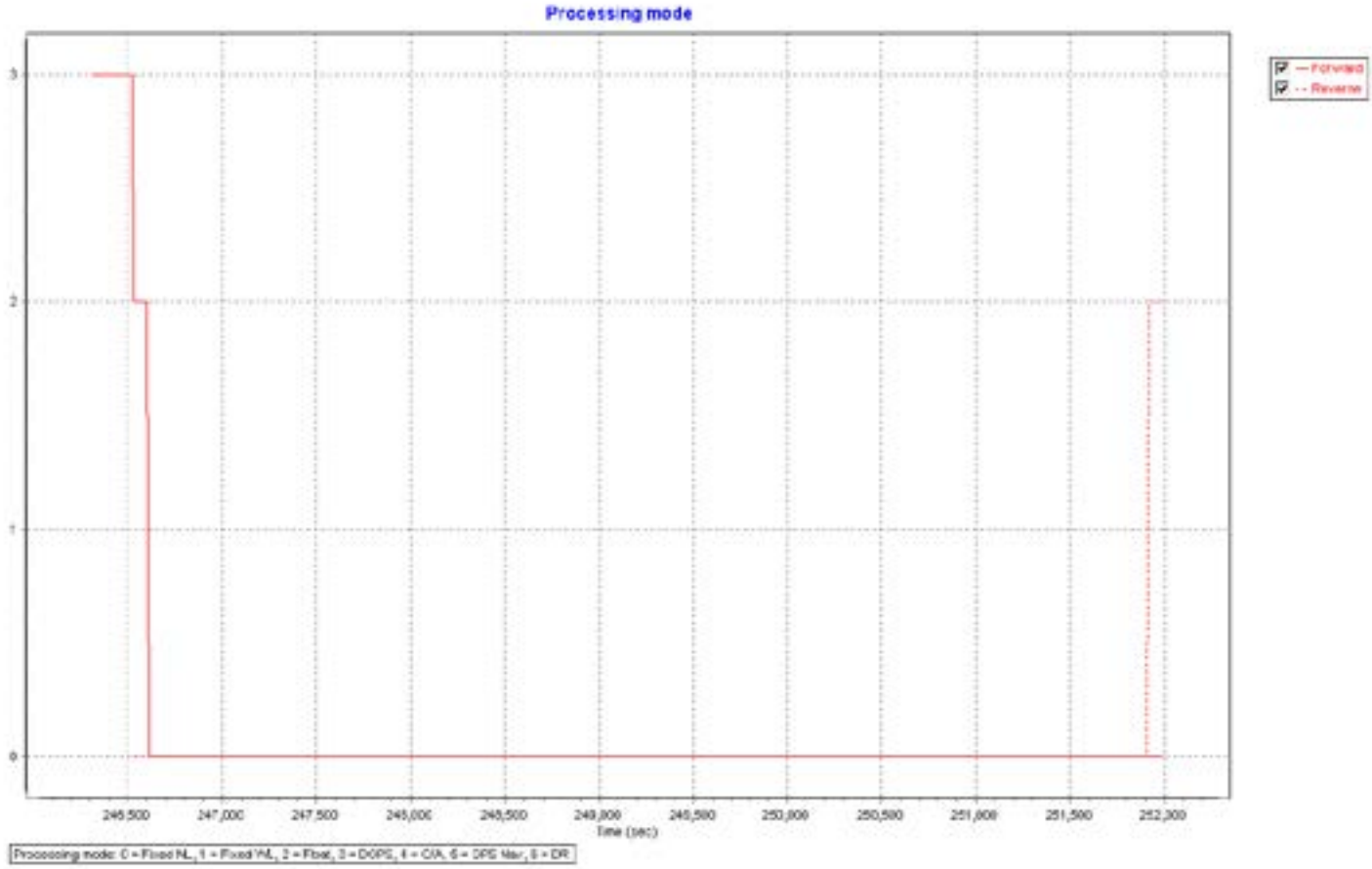

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

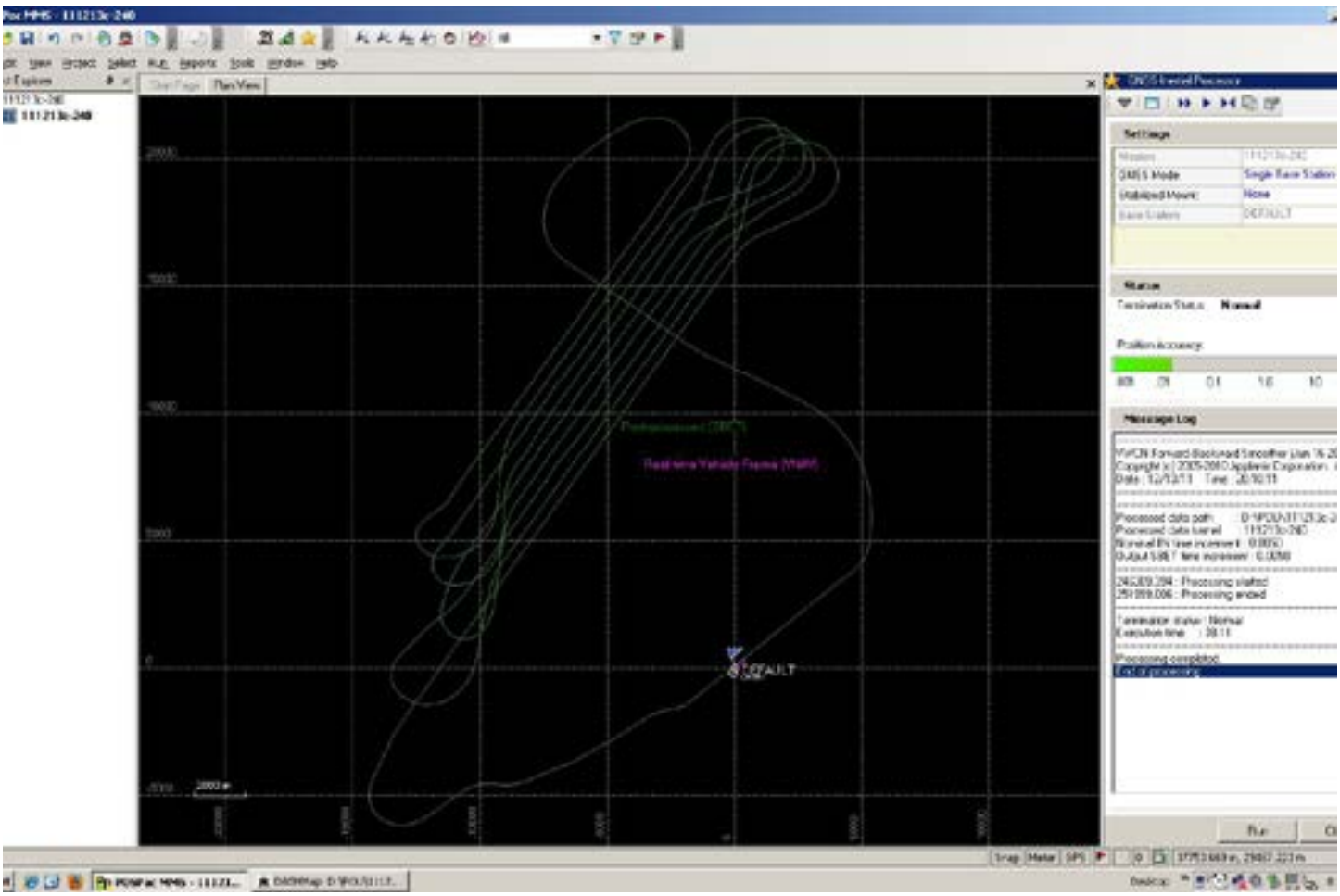

Number of SVs
PDOP
Time (sec)

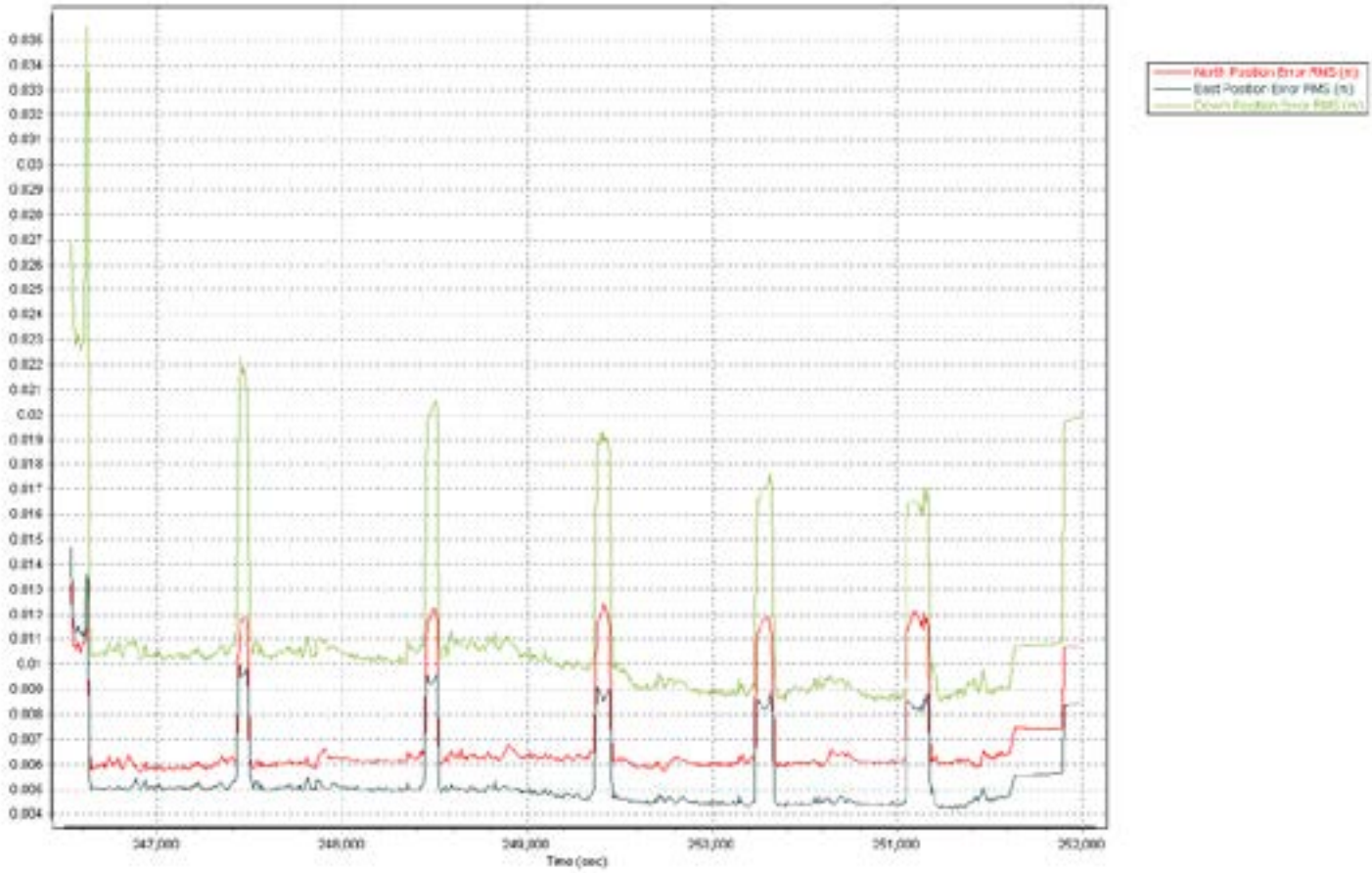
111213c-240

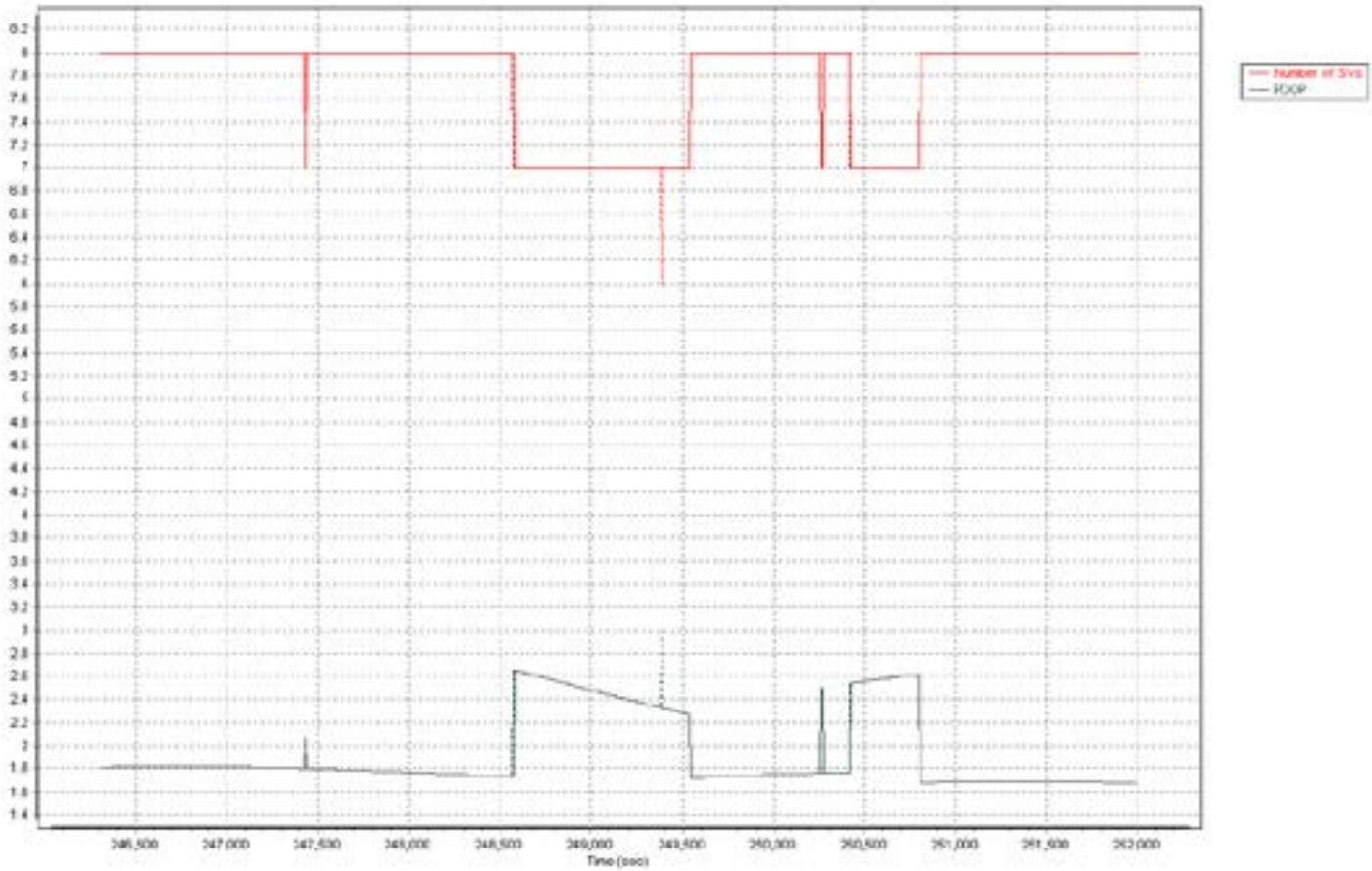

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

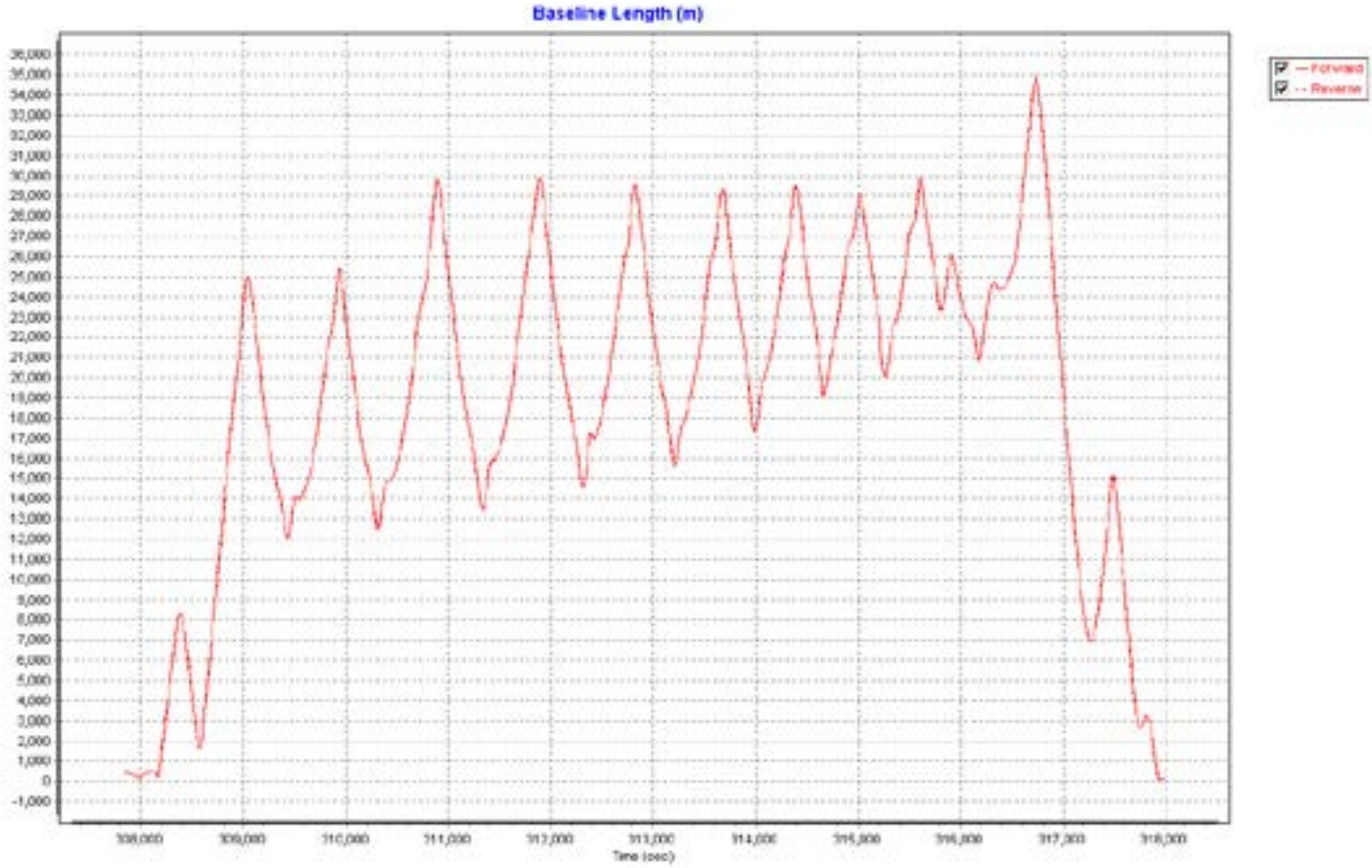

Processing mode
Forward
Reverse
3
2
1
0
246,500
247,000
247,500
248,000
248,500
249,000
249,500
250,000
250,500
251,000
251,500
252,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

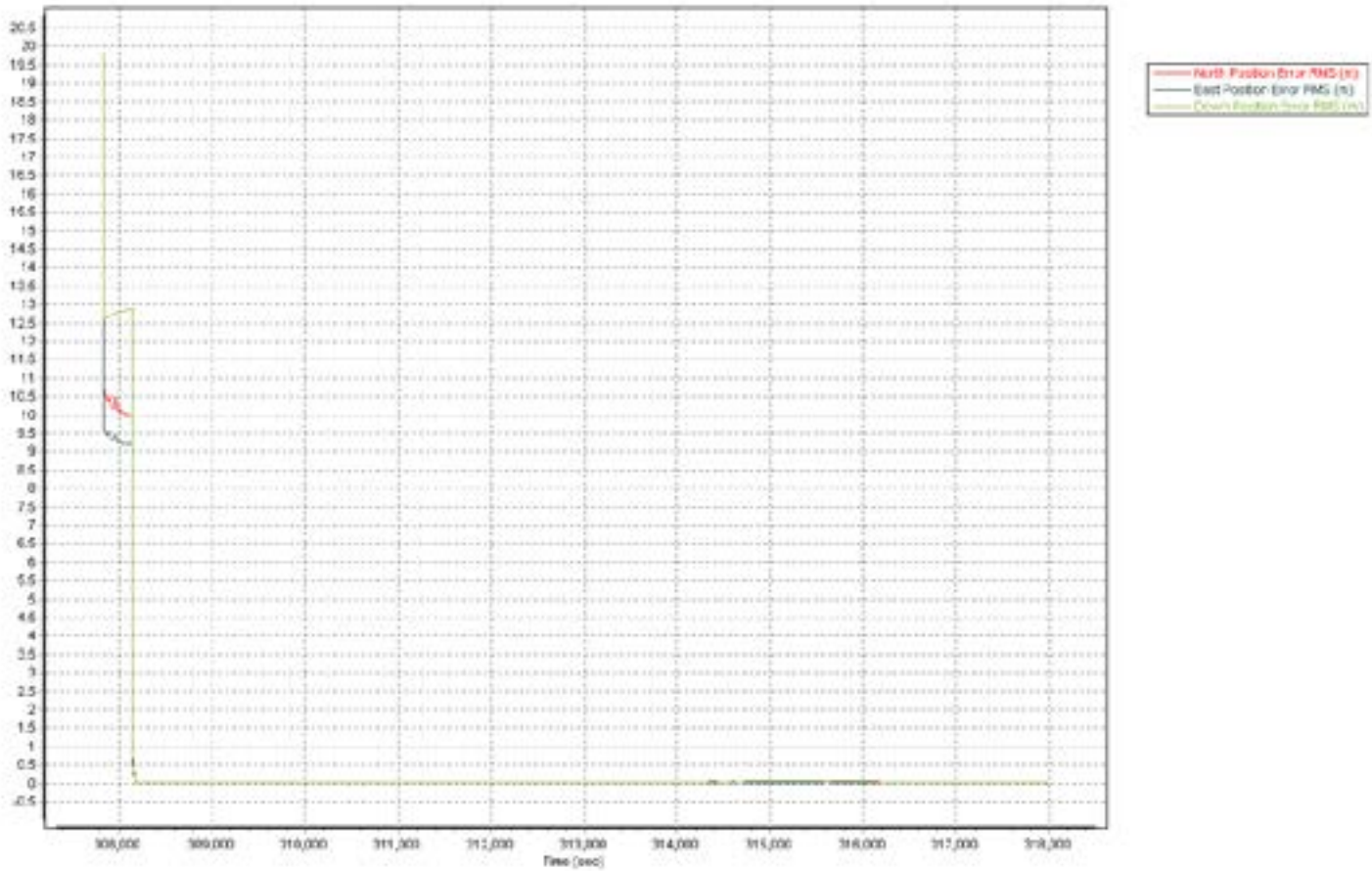

Settings
Status
Message Log
DEFAULT

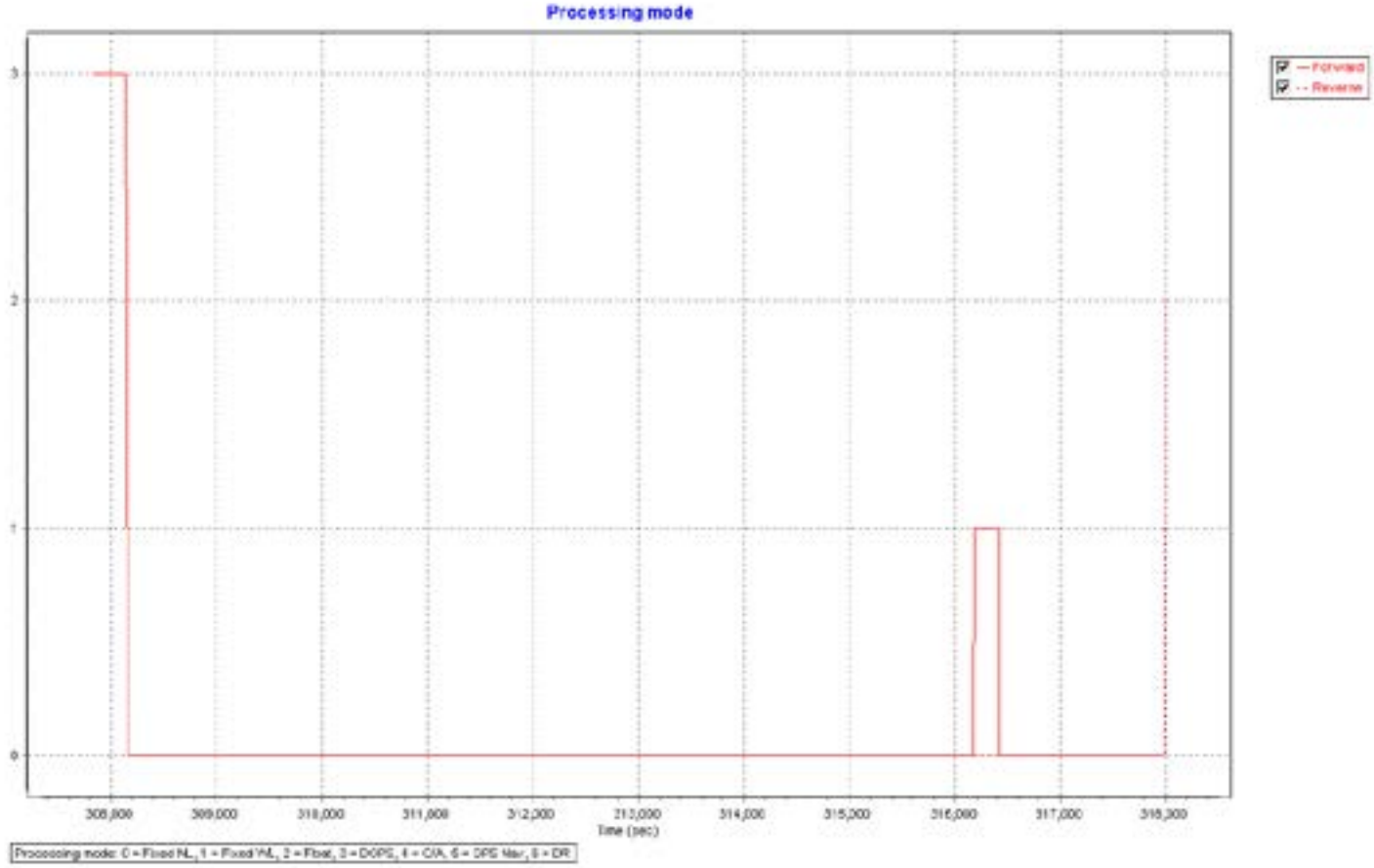

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

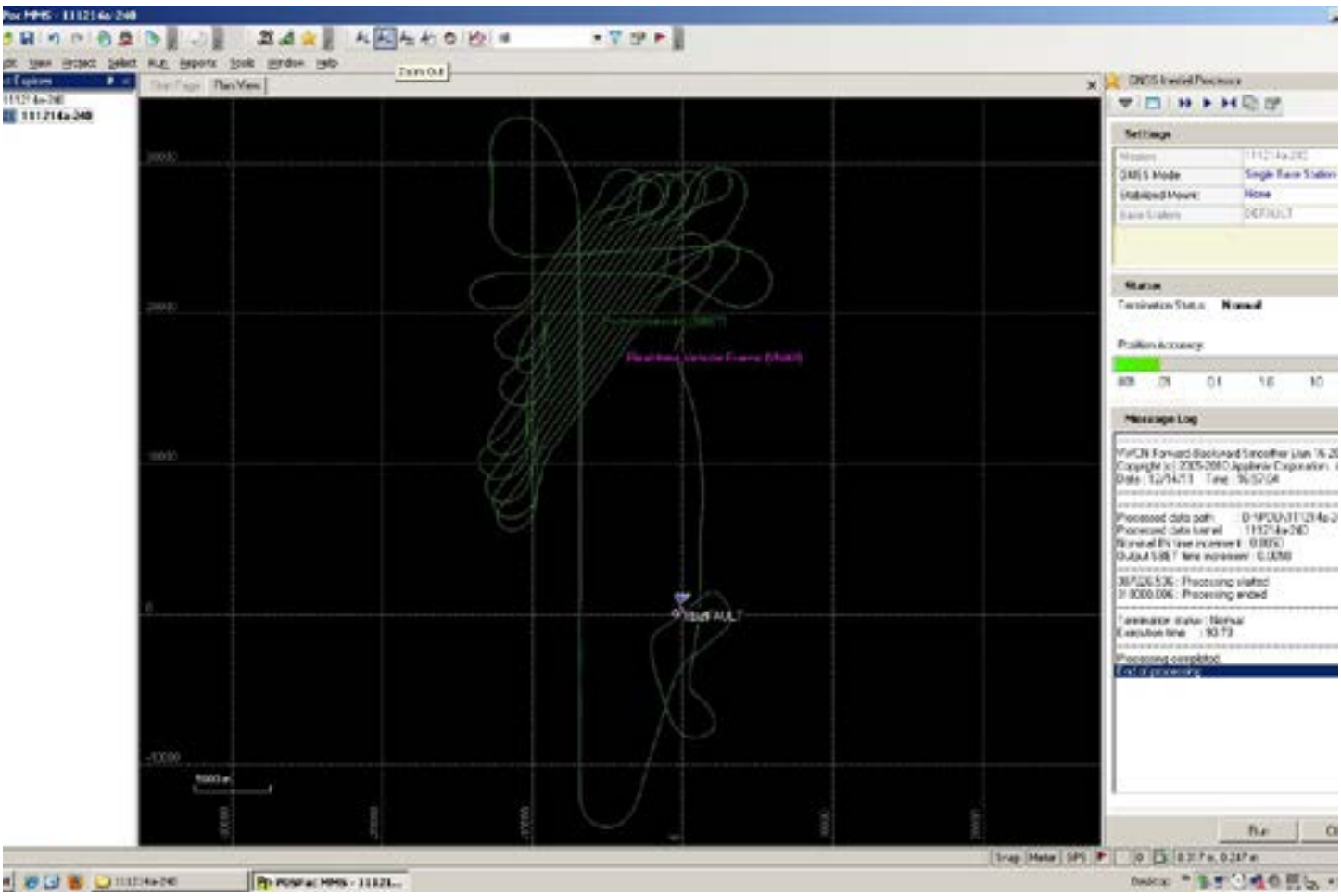

Number of SVs
PDOP
Time (sec)

111214a-240

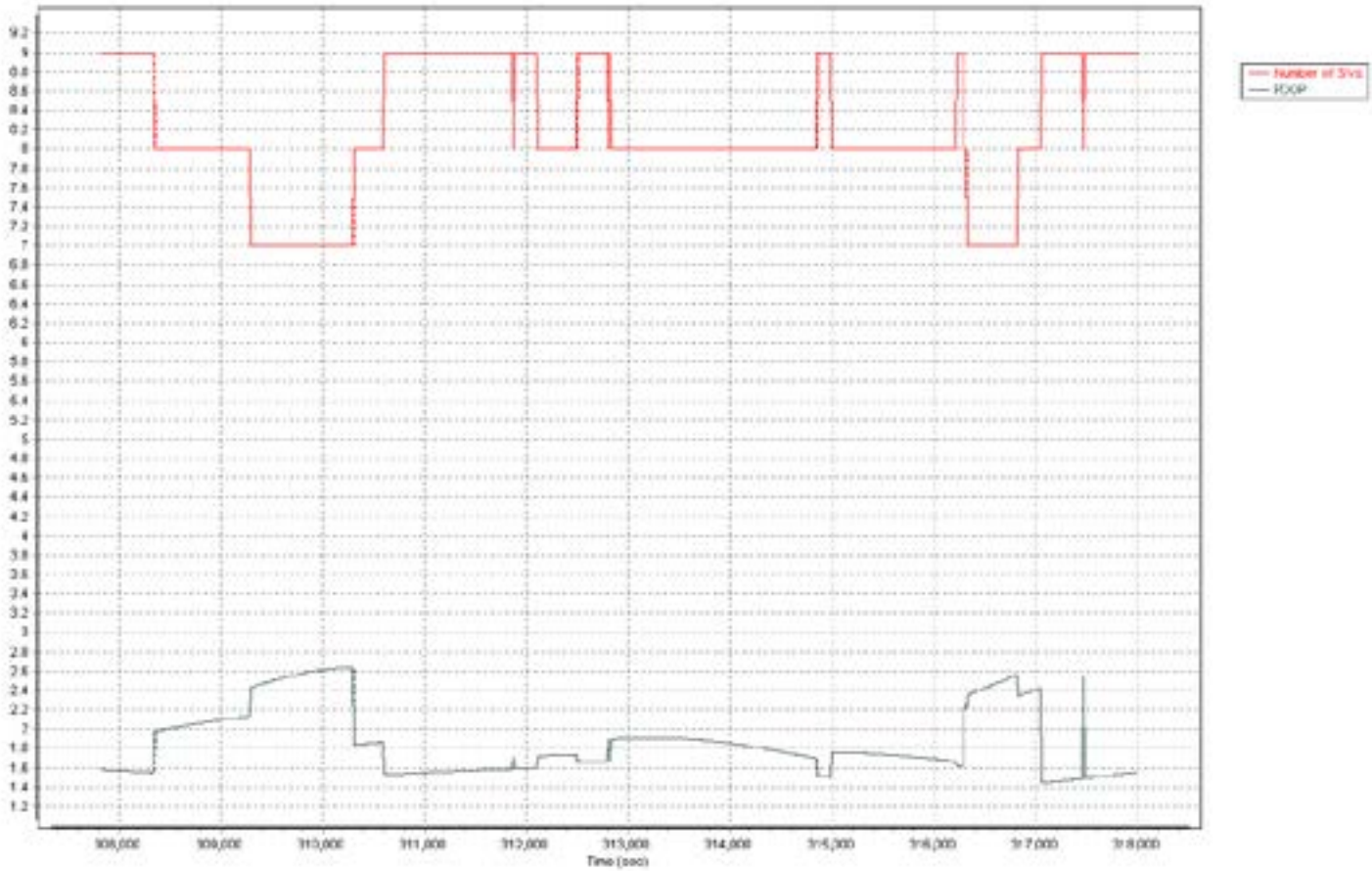

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

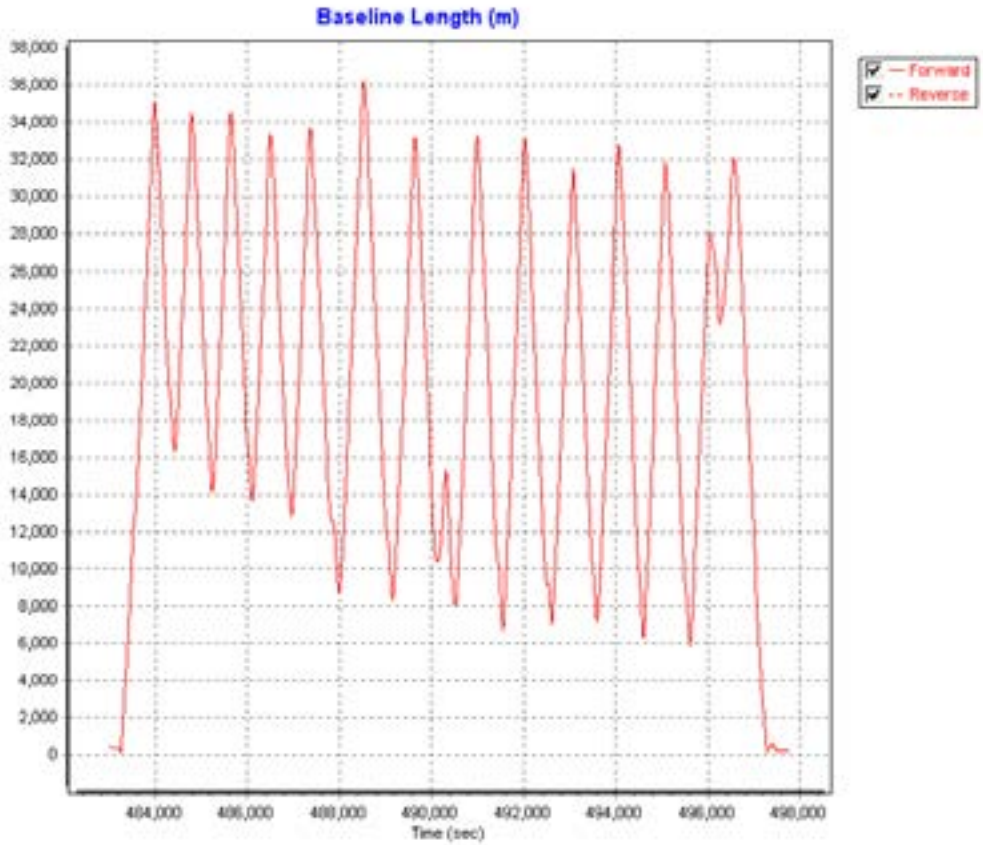

Processing mode
Forward
Reverse
3
2
1
0
308,000
309,000
310,000
311,000
312,000
313,000
314,000
315,000
316,000
317,000
318,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

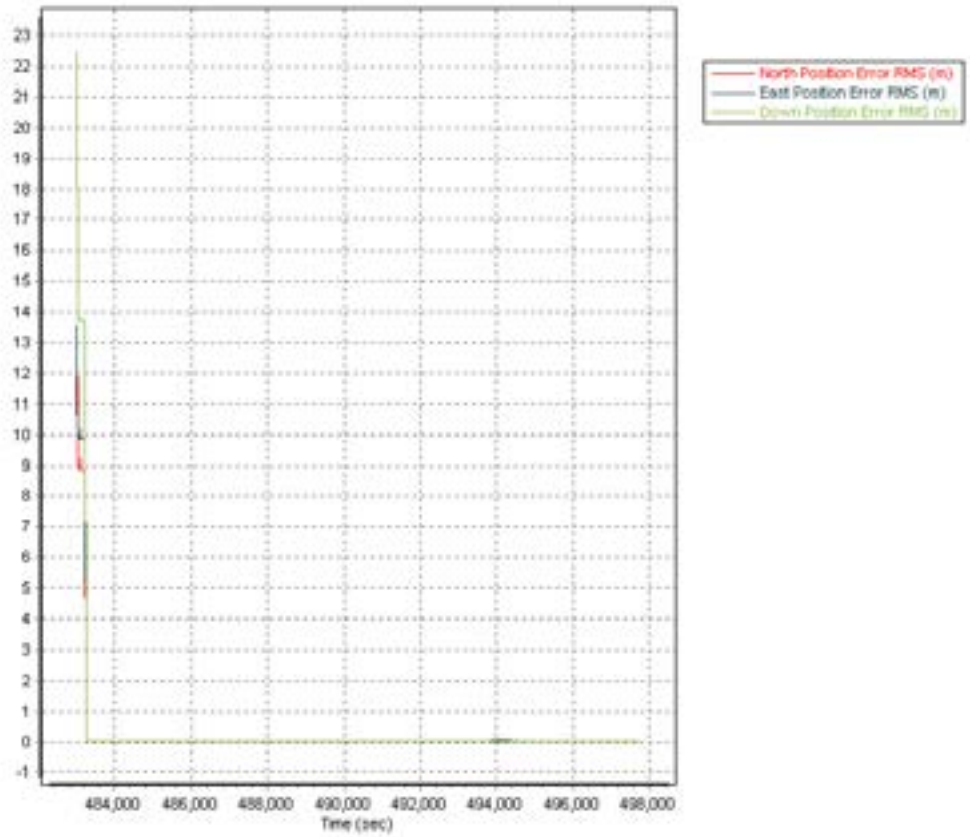


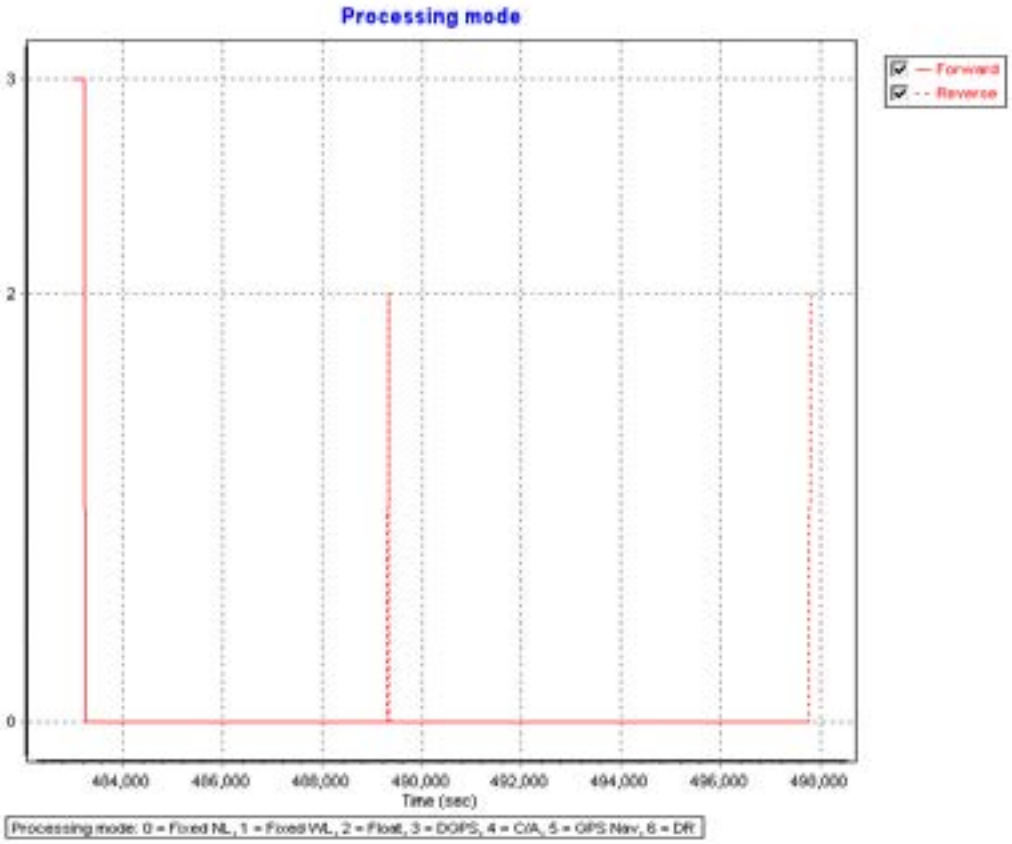
North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

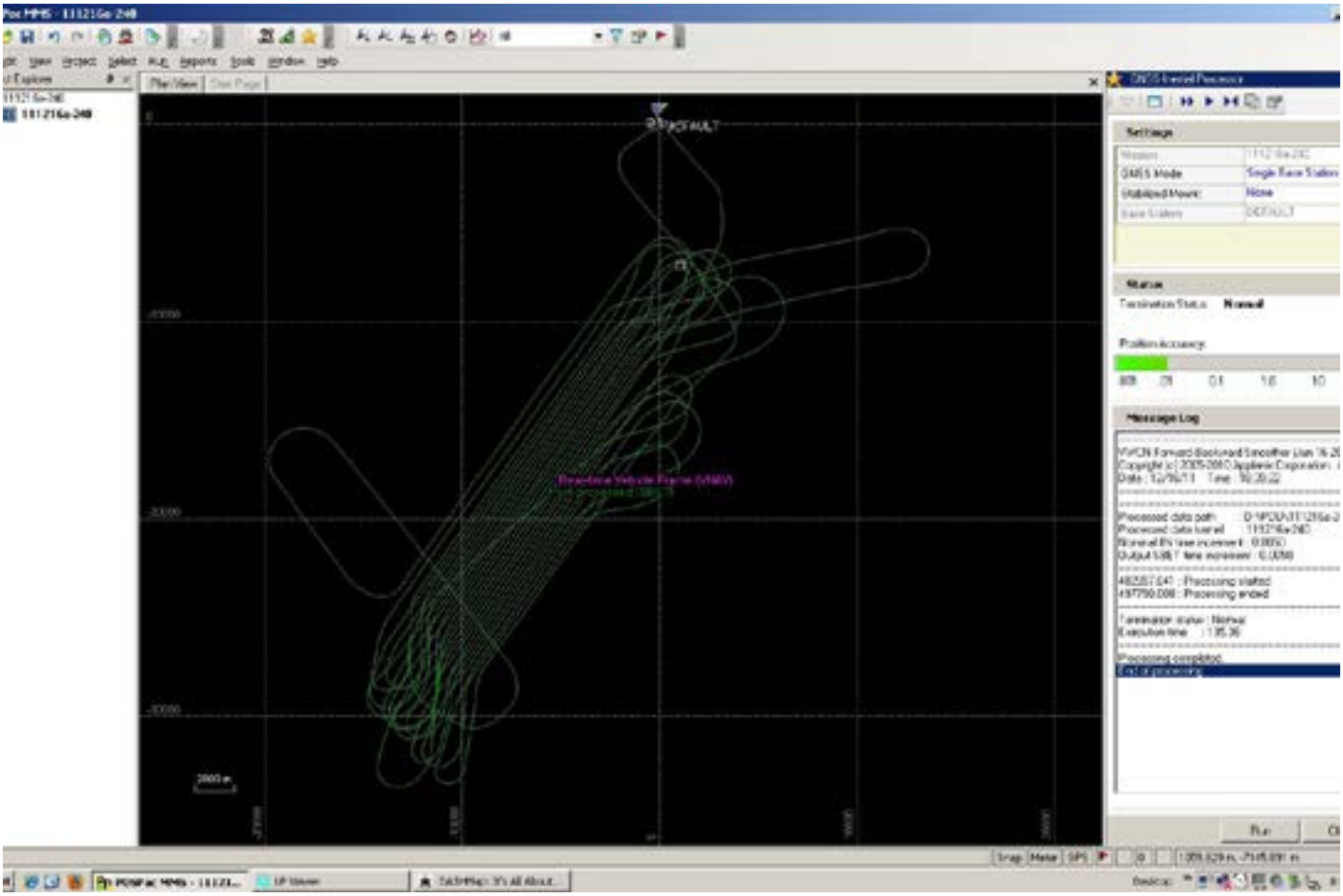

Number of SVs
PDOP
Time (sec)

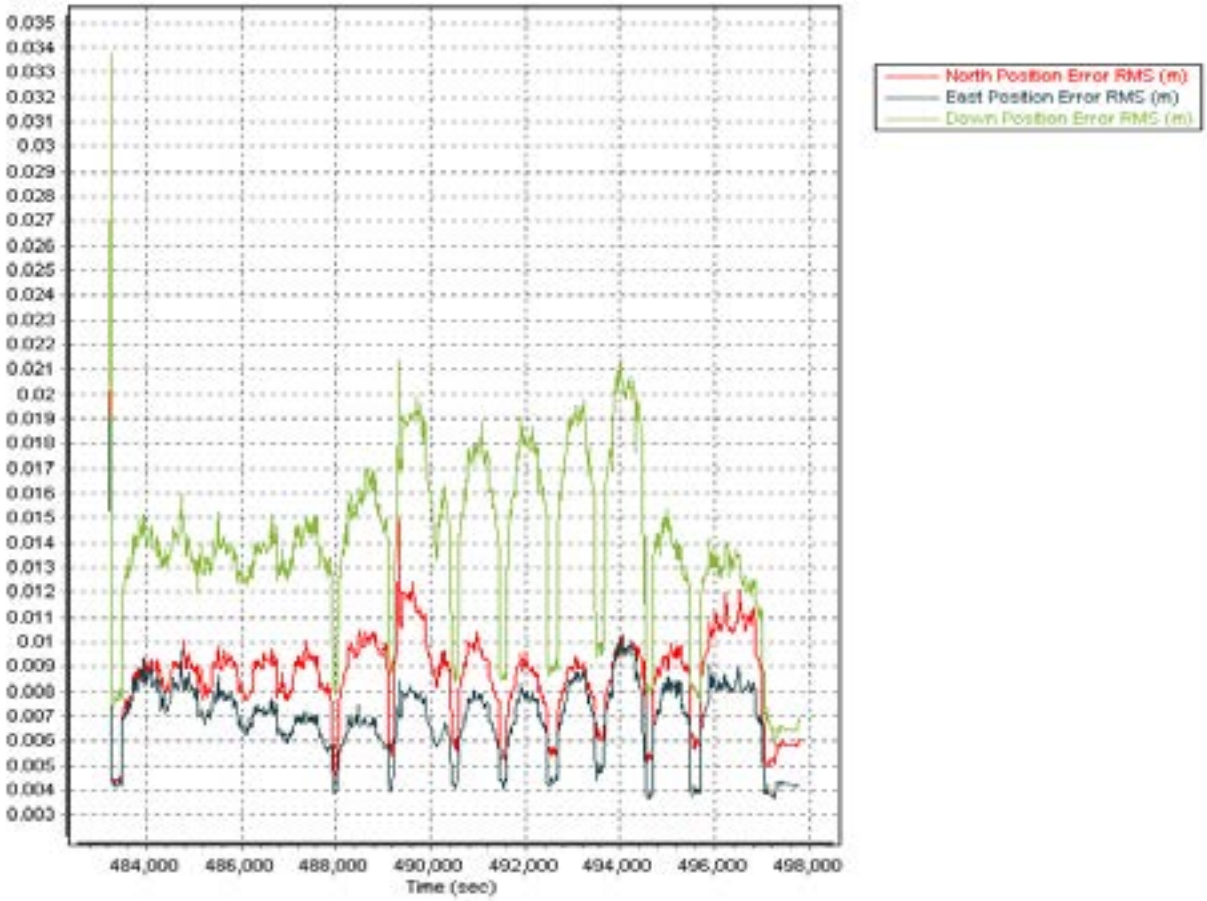
111216a-240

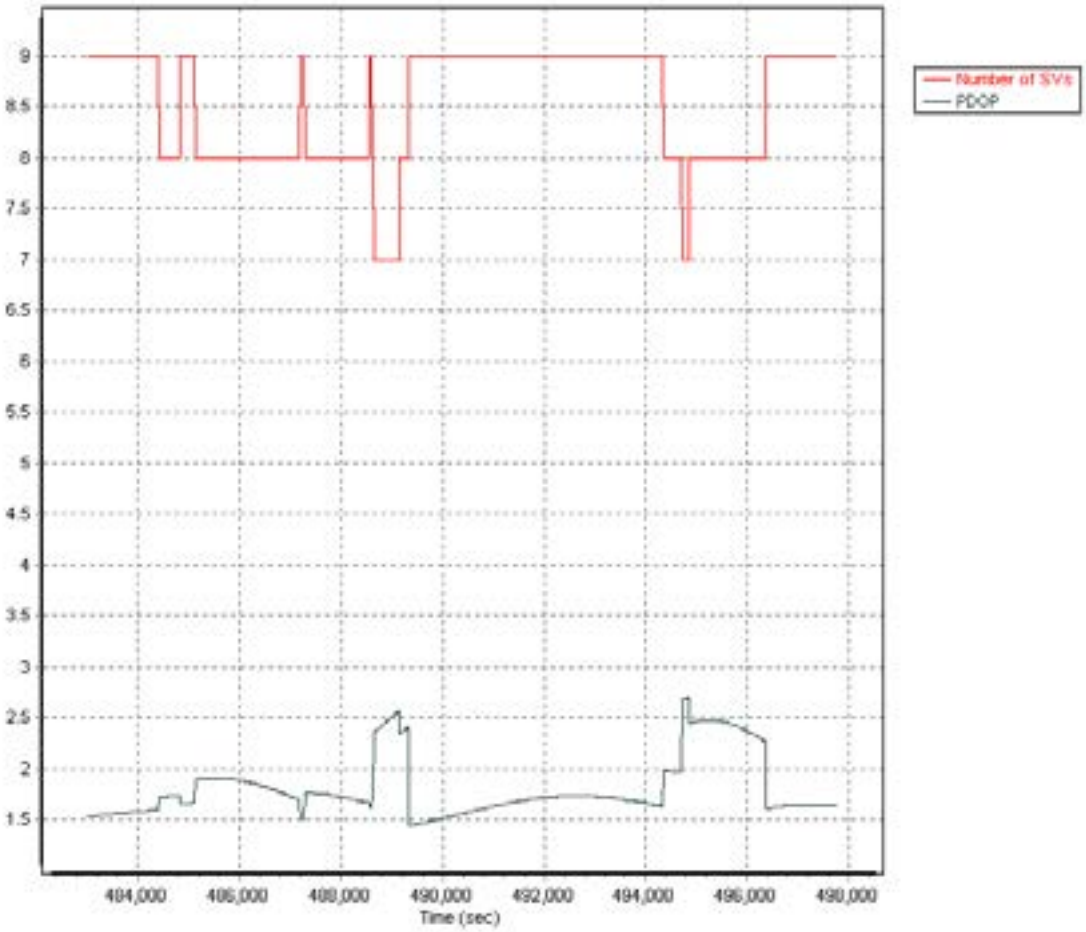

Baseline Length (m)
Forward
Reverse
38,000
36,000
34,000
32,000
30,000
28,000
26,000
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
484,000
486,000
488,000
490,000
492,000
494,000
496,000
498,000
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
484,000
486,000
488,000
490,000
492,000
494,000
496,000
498,000
Time (sec)

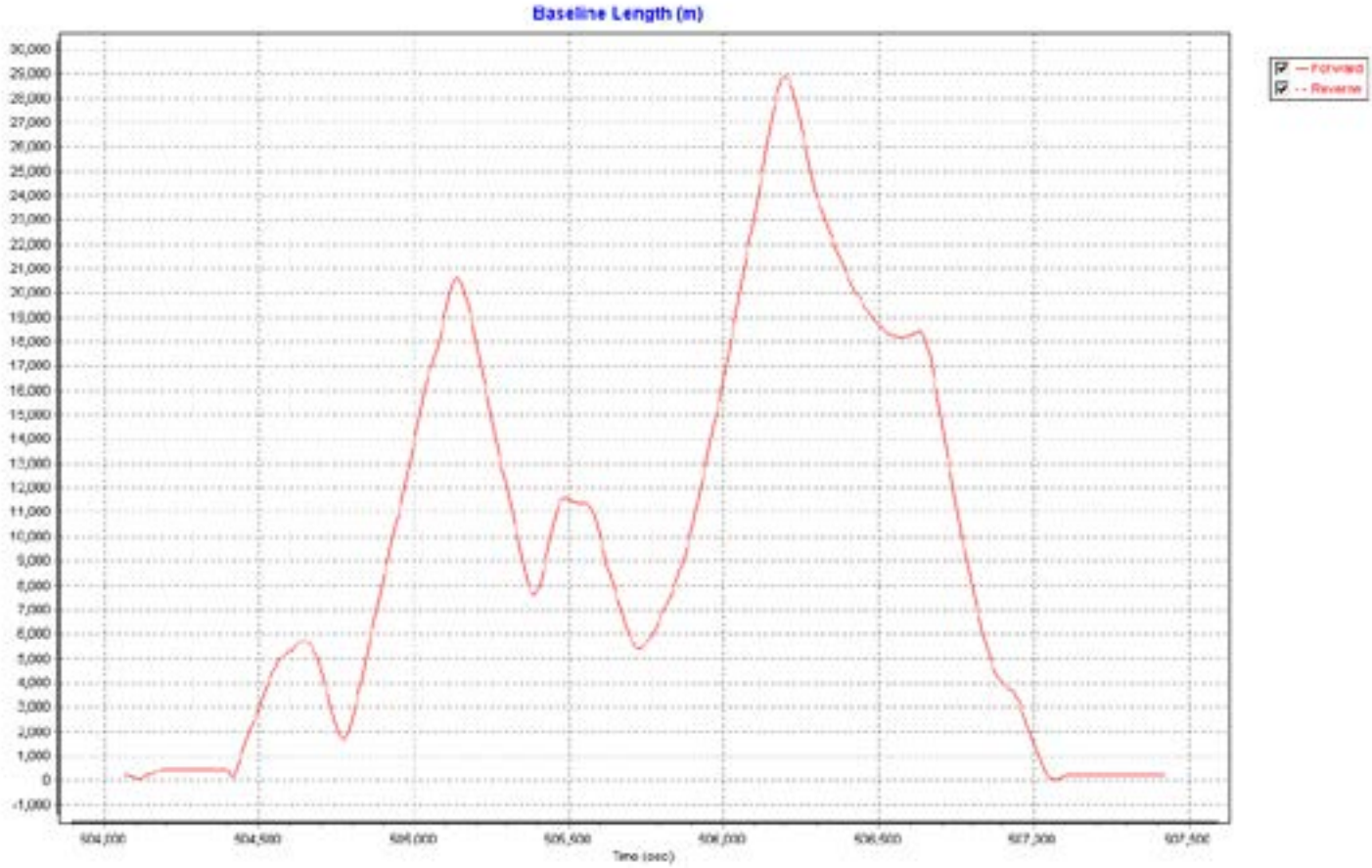

Processing mode
— Forward
- - Reverse
3
2
0
484,000
486,000
488,000
490,000
492,000
494,000
496,000
498,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = GPS Nav, 6 = DR

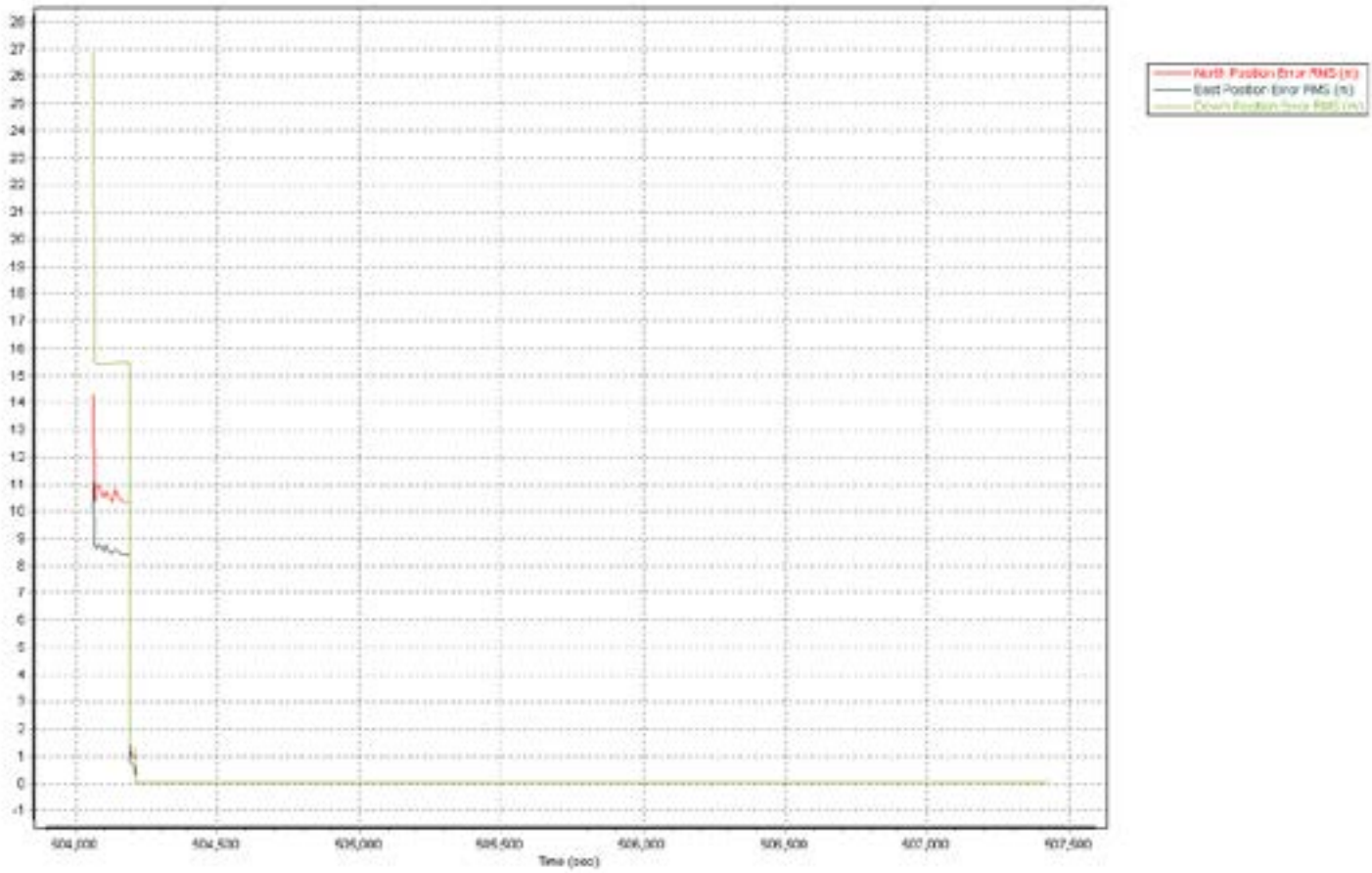


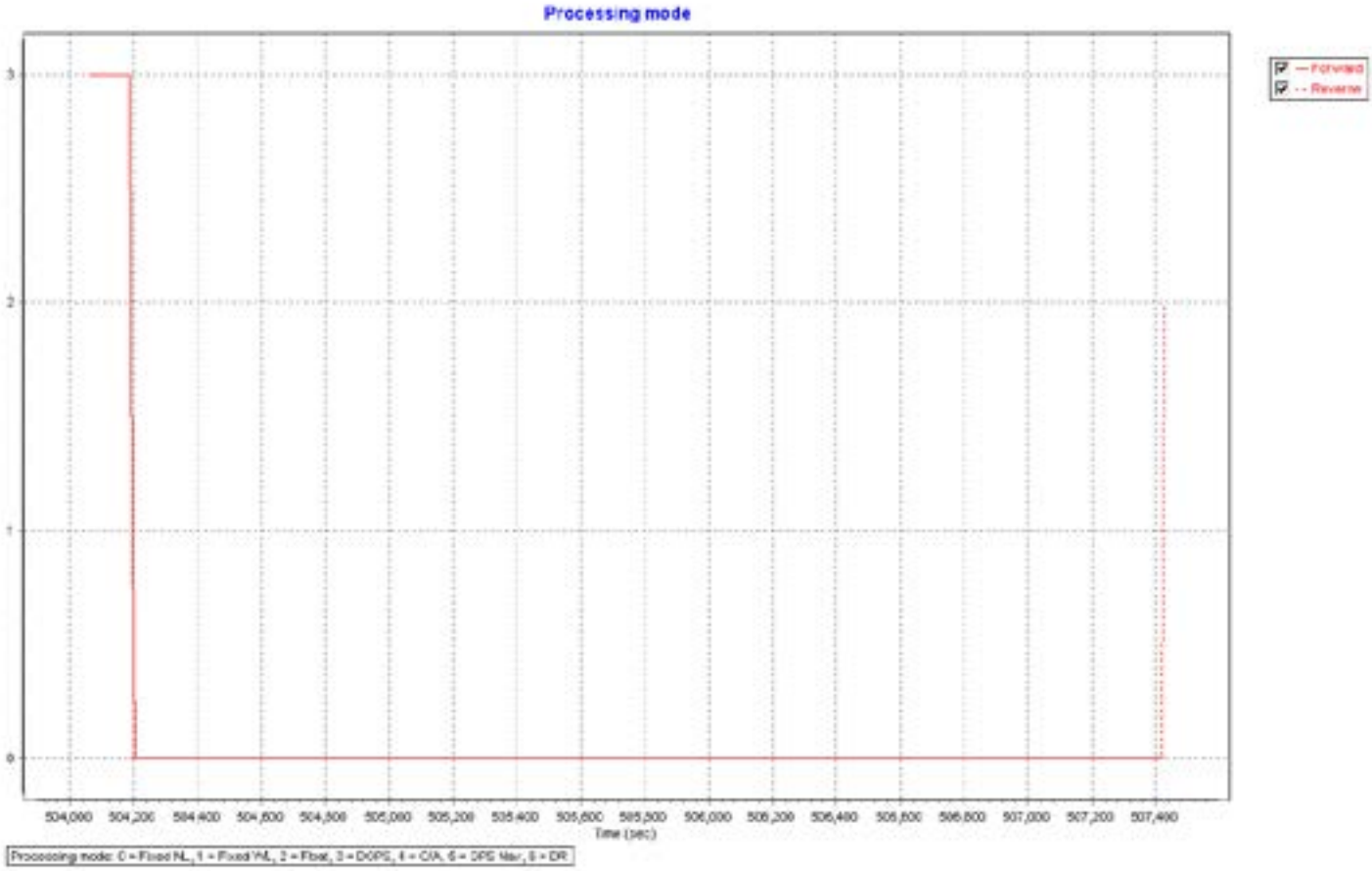

North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
0.035
0.034
0.033
0.032
0.031
0.03
0.029
0.028
0.027
0.026
0.025
0.024
0.023
0.022
0.021
0.02
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.01
0.009
0.008
0.007
0.006
0.005
0.004
0.003
484,000
486,000
488,000
490,000
492,000
494,000
496,000
498,000
Time (sec)

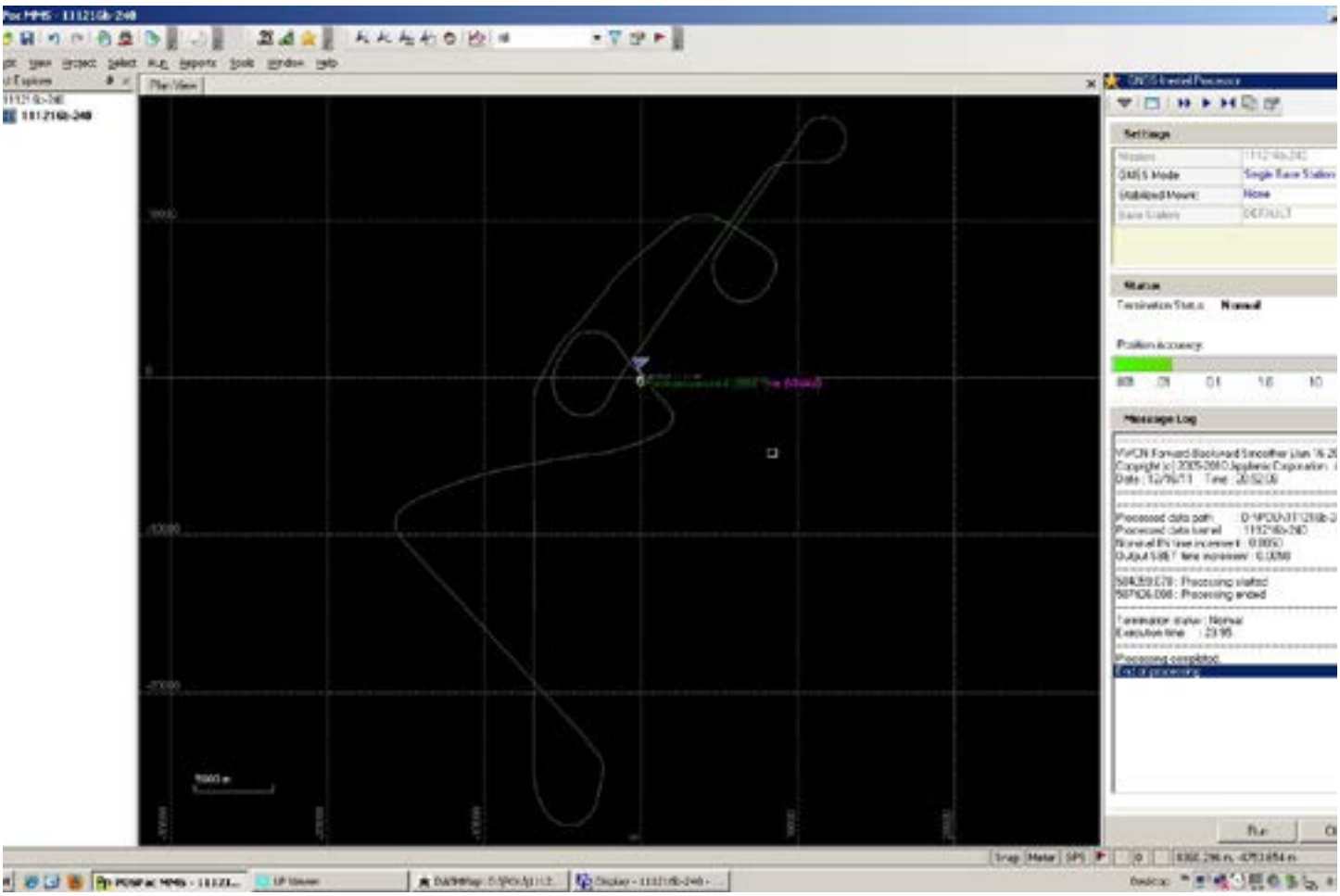

Number of SVs
PDOP
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
484,000
486,000
488,000
490,000
492,000
494,000
496,000
498,000
Time (sec)

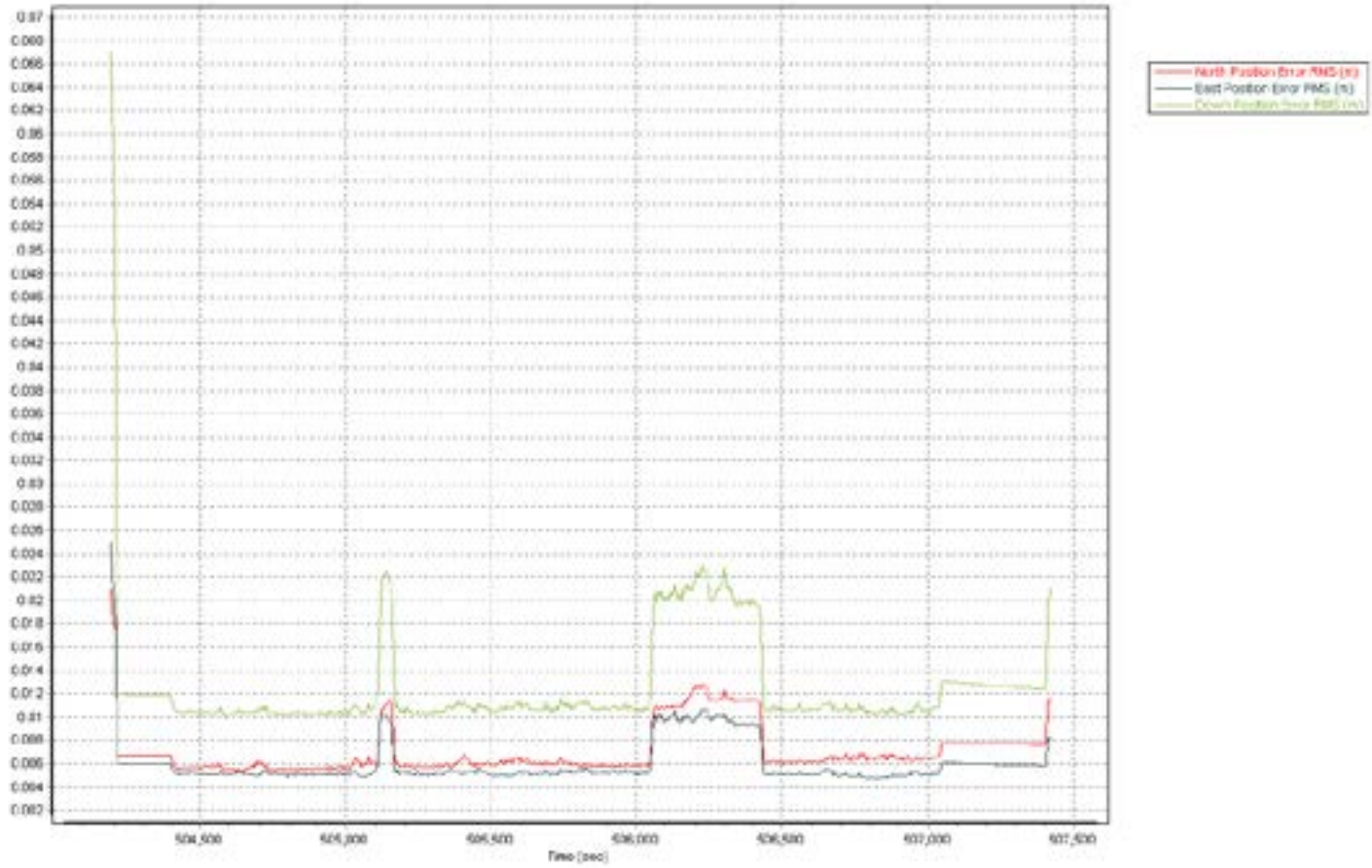
111216b-240

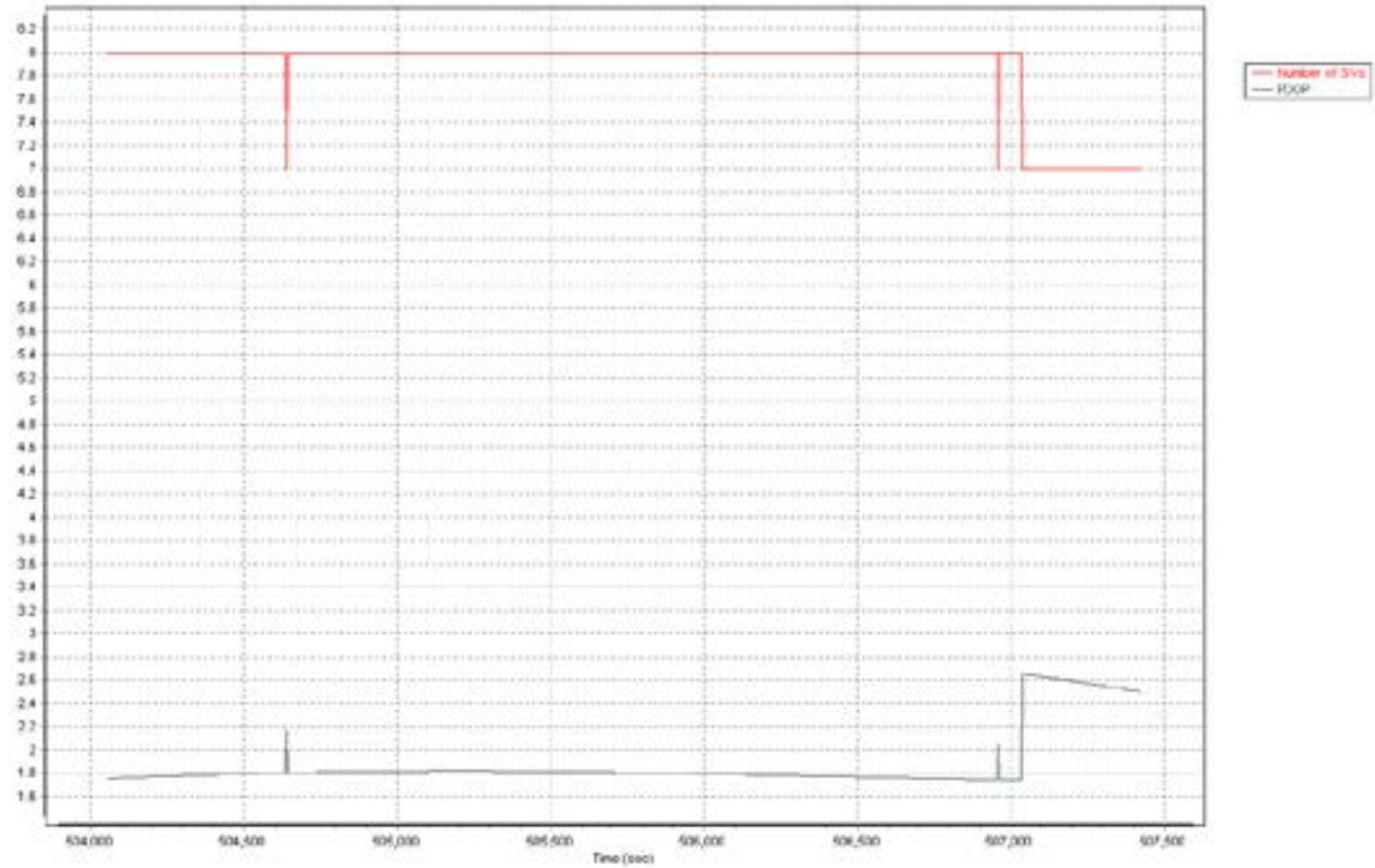

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

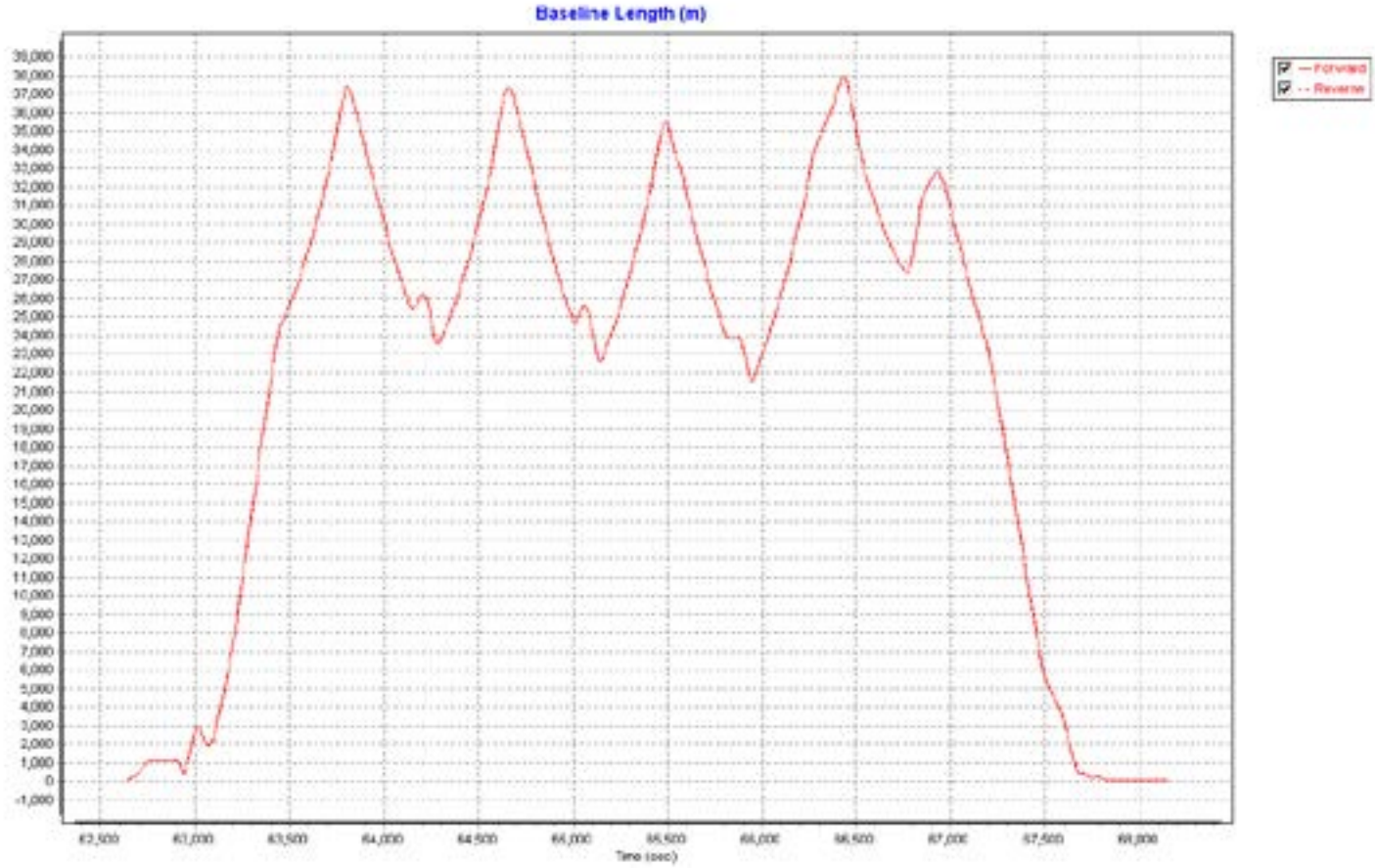

Processing mode
Forward
Reverse
3
2
1
0
504,000
504,200
504,400
504,600
504,800
505,000
505,200
505,400
505,600
505,800
506,000
506,200
506,400
506,600
506,800
507,000
507,200
507,400
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

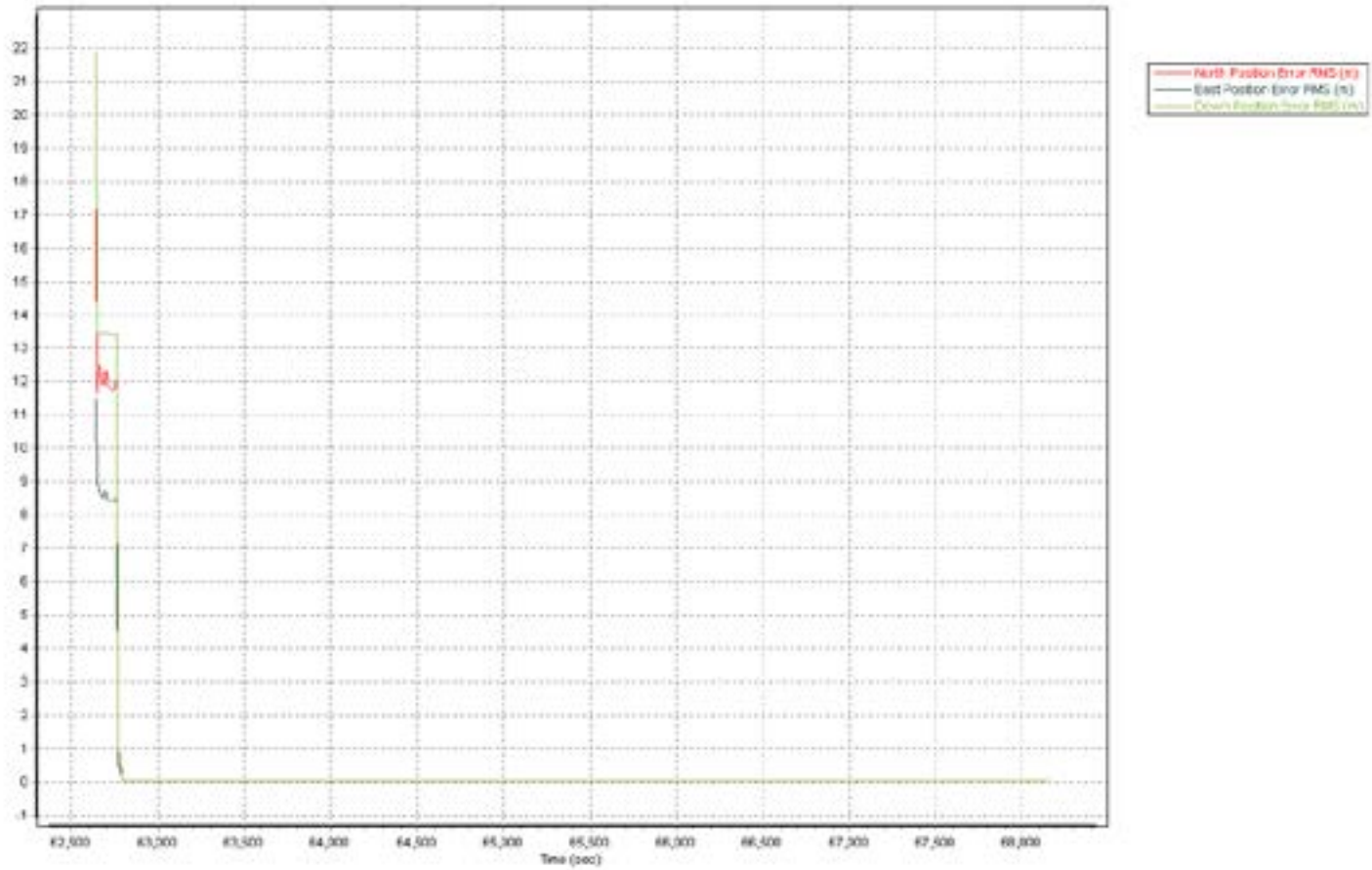


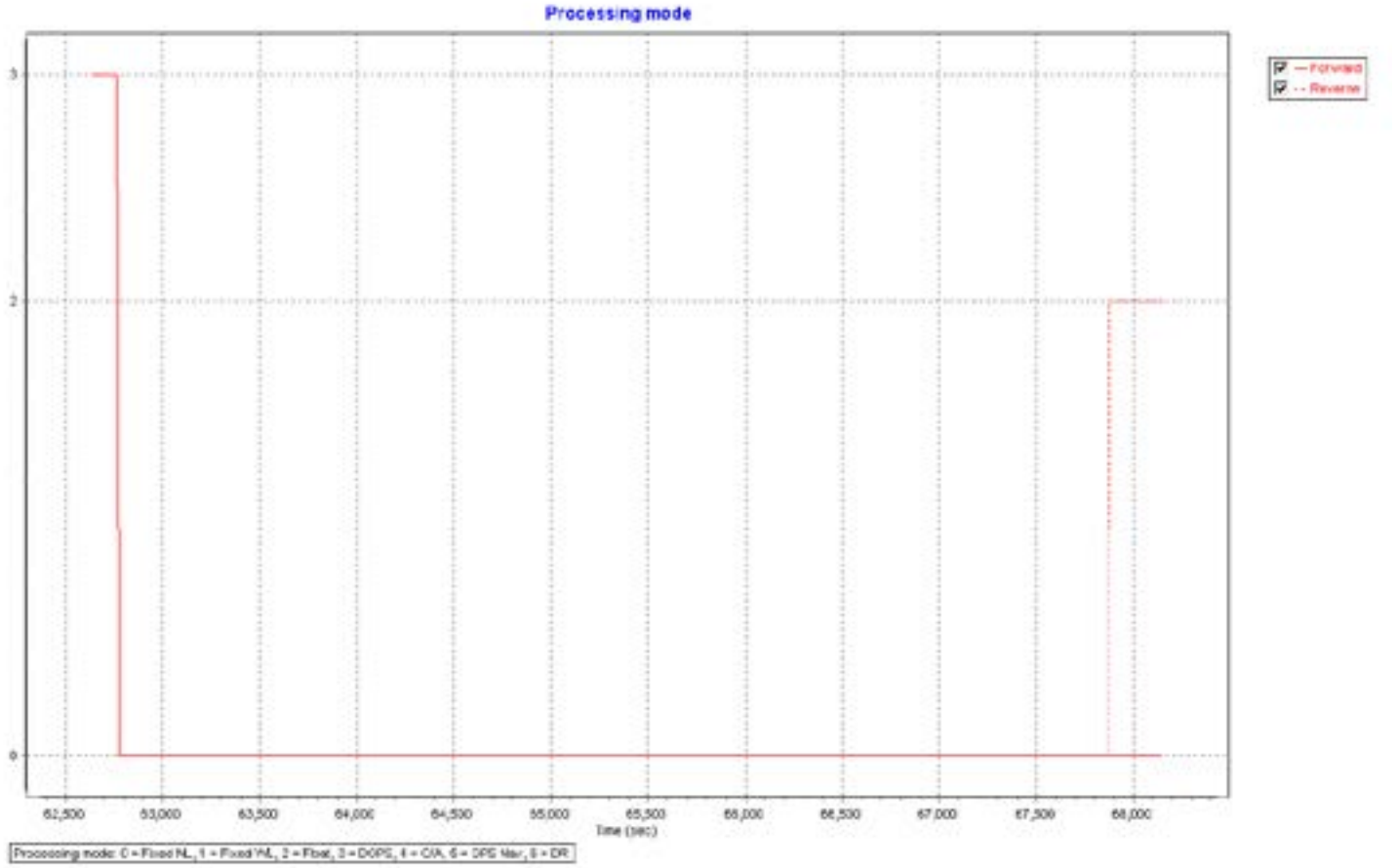

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

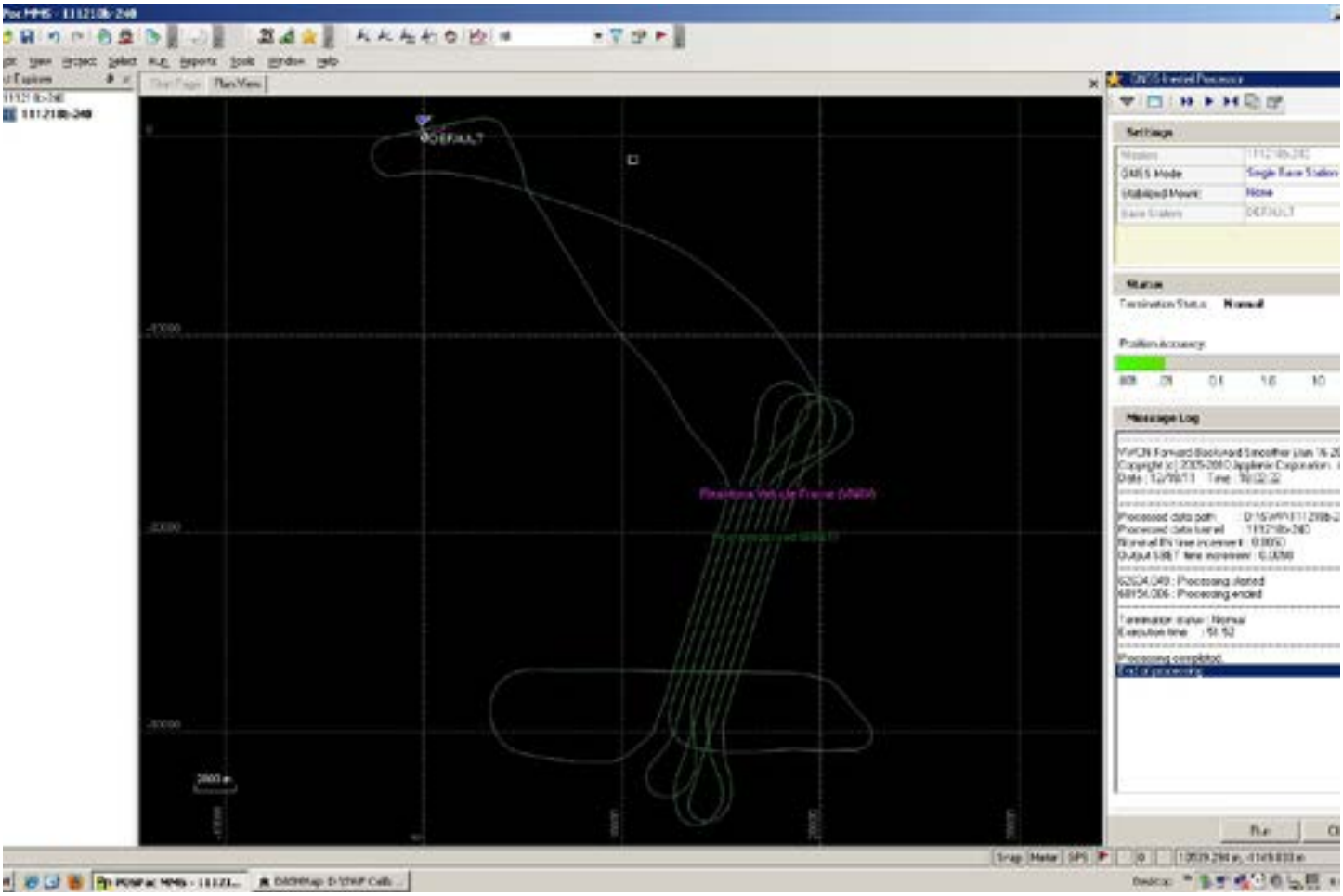

Number of SVs
PDOP
Time (sec)

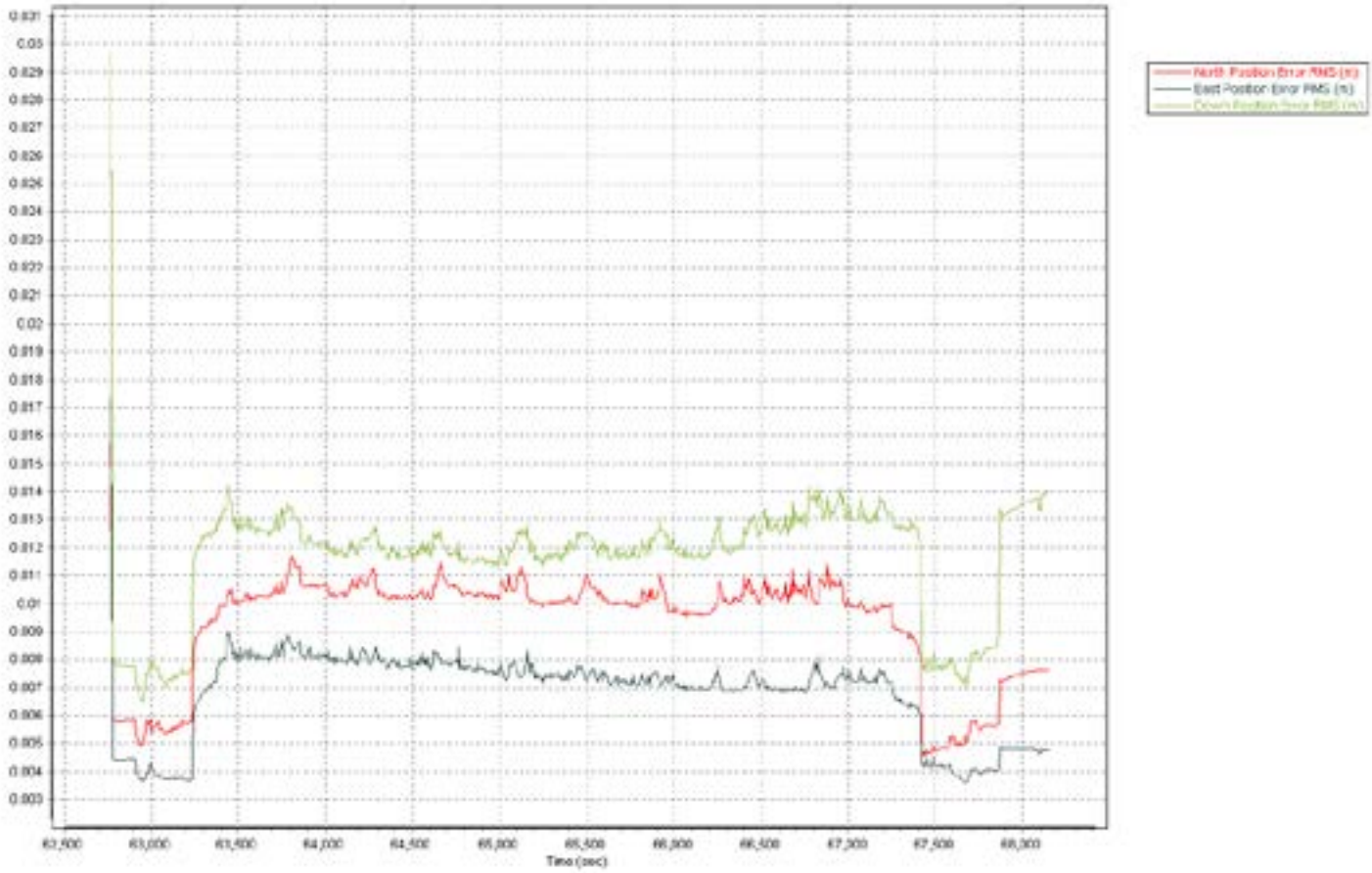
111218b-240


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

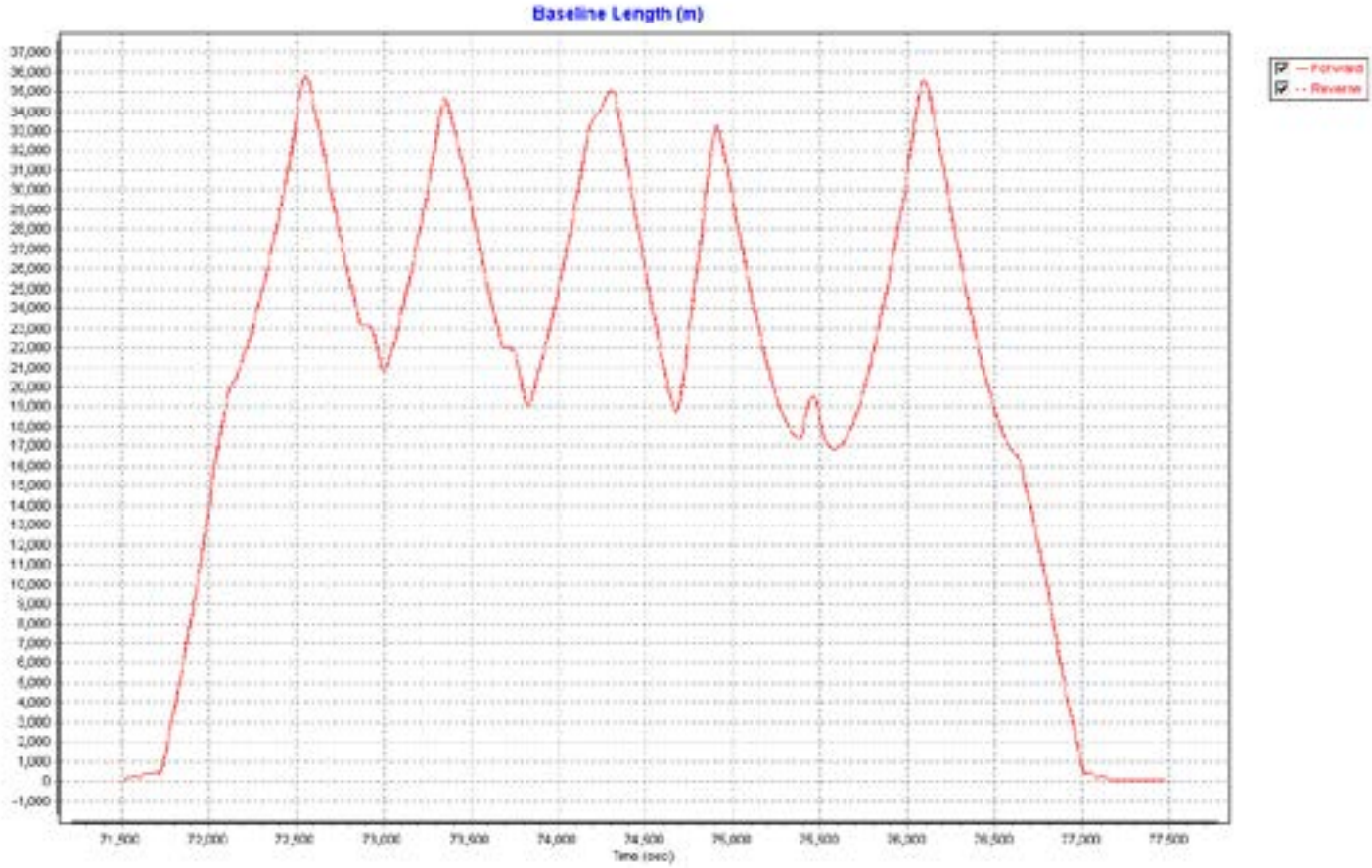

Processing mode
Forward
Reverse
3
2
0
62,500
63,000
63,500
64,000
64,500
65,000
65,500
66,000
66,500
67,000
67,500
68,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

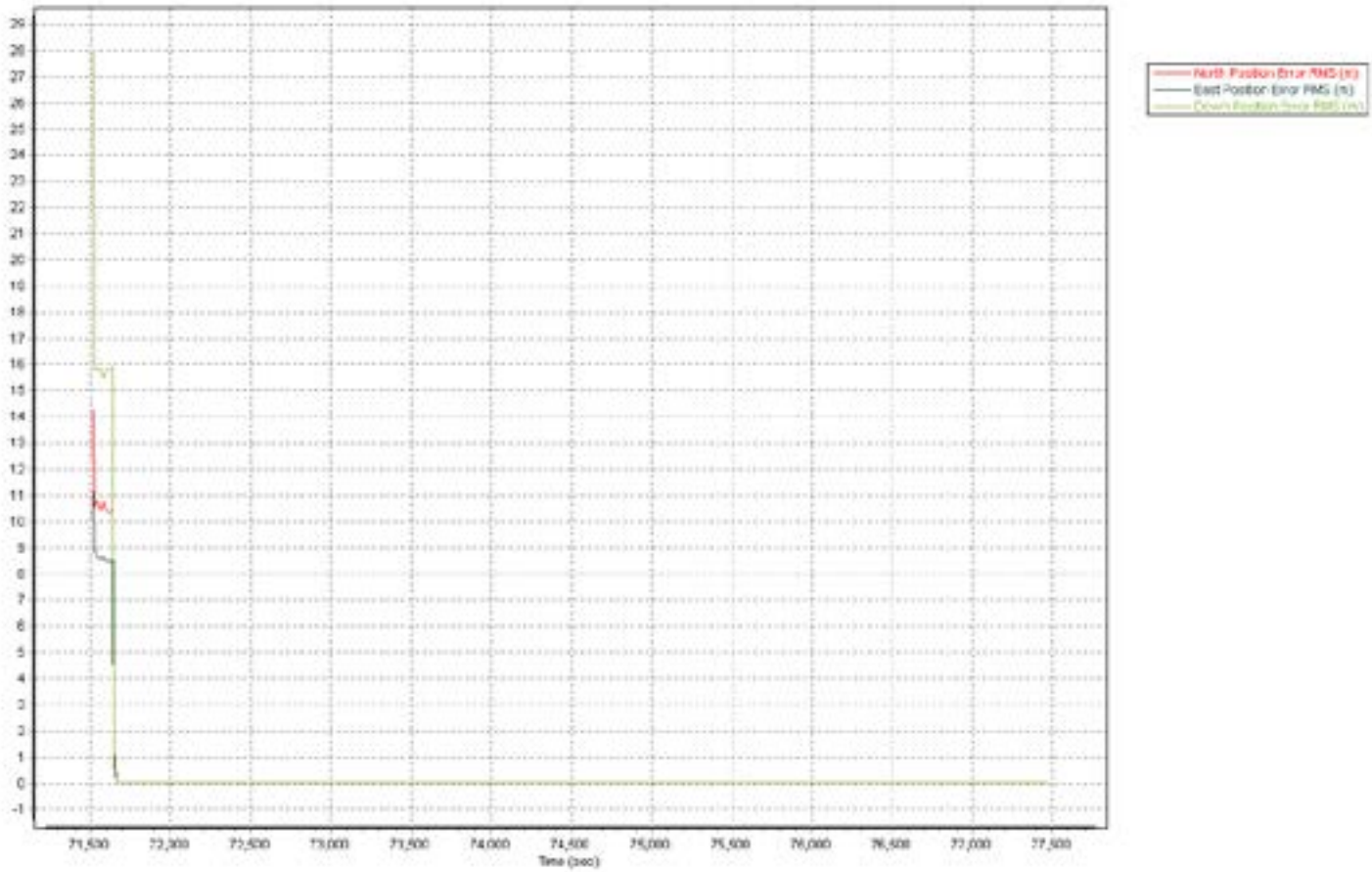

DEFAULT
Settings
Status
Message Log

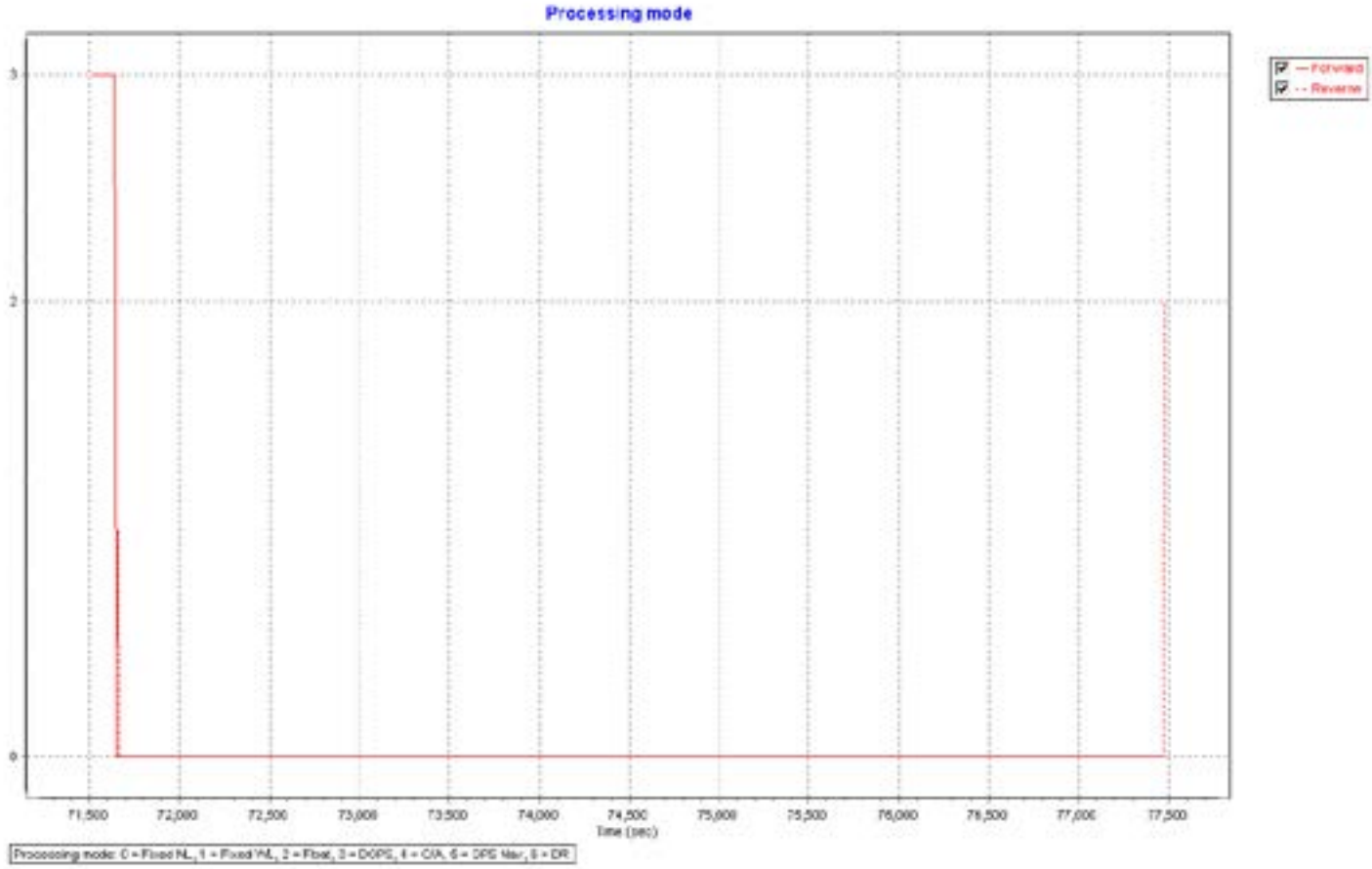

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

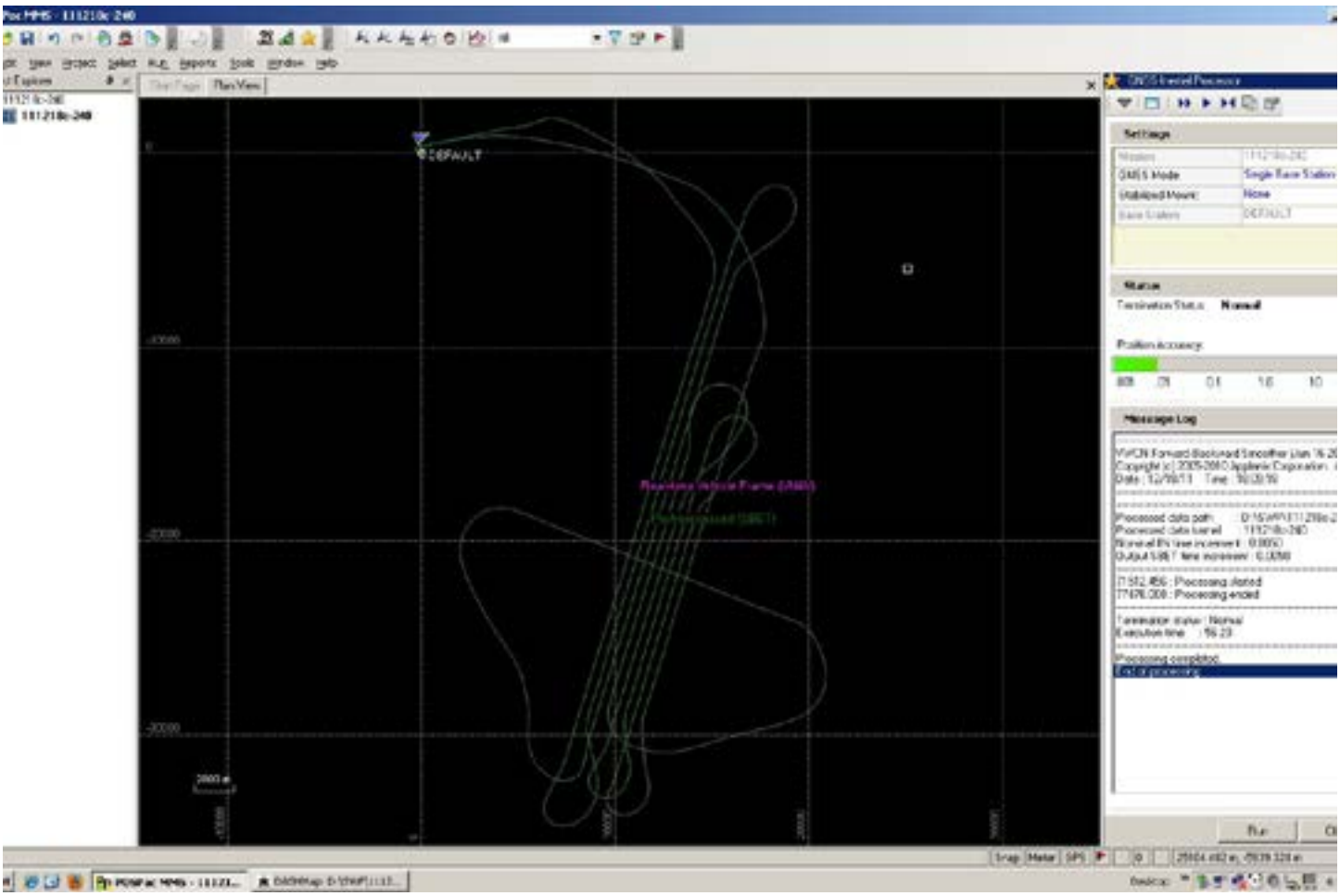
Number of SVs
PDOP
Time (sec)

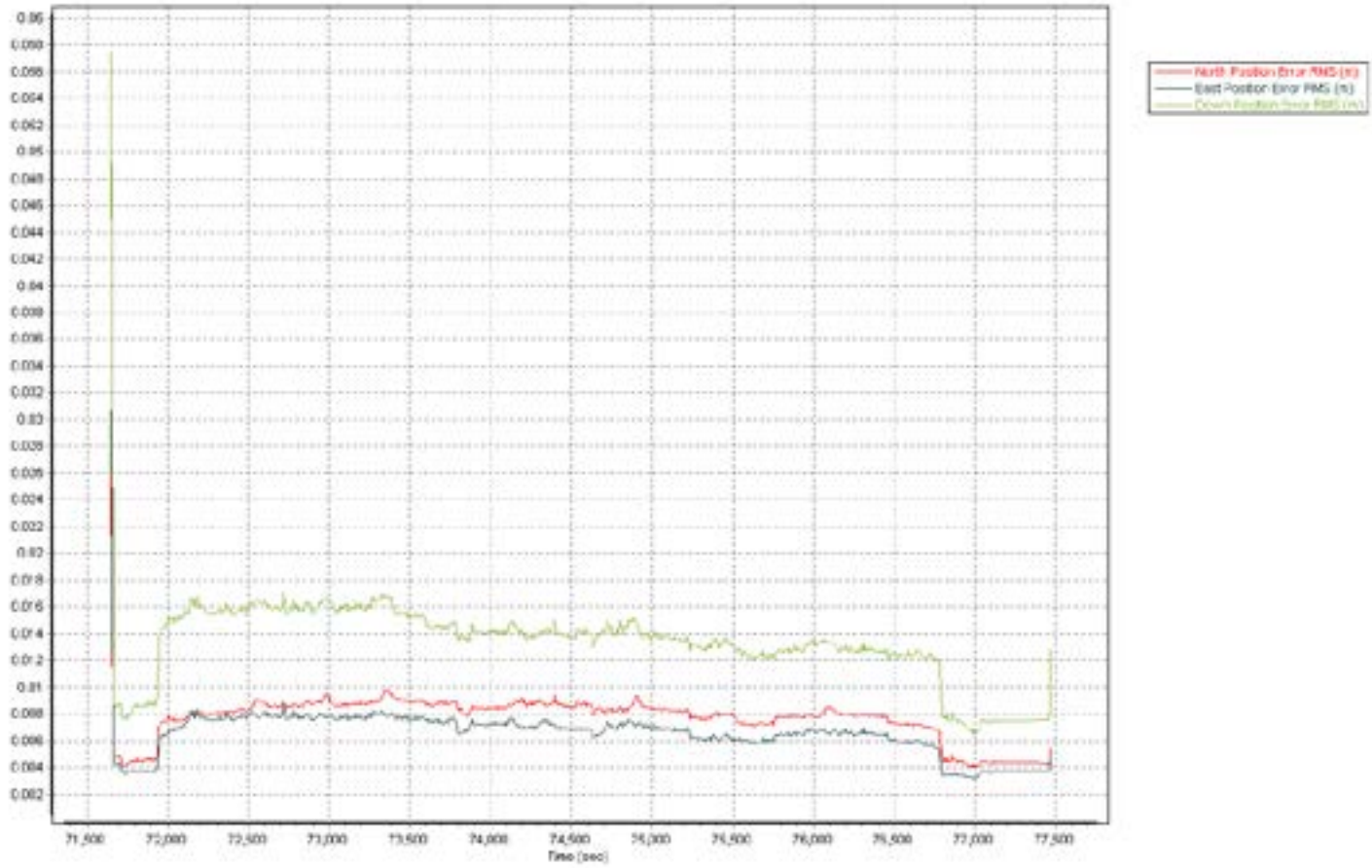
111218c-240

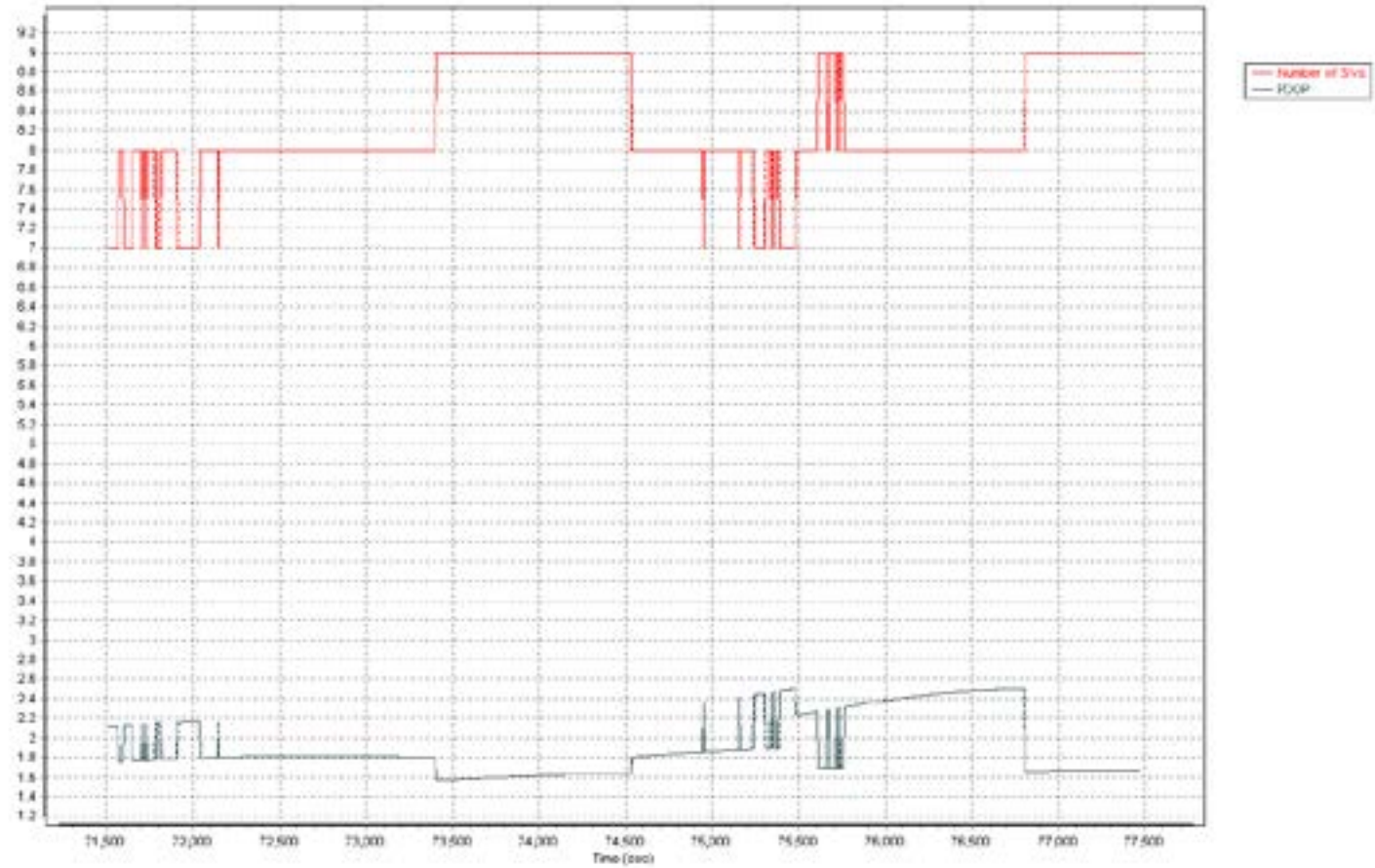

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

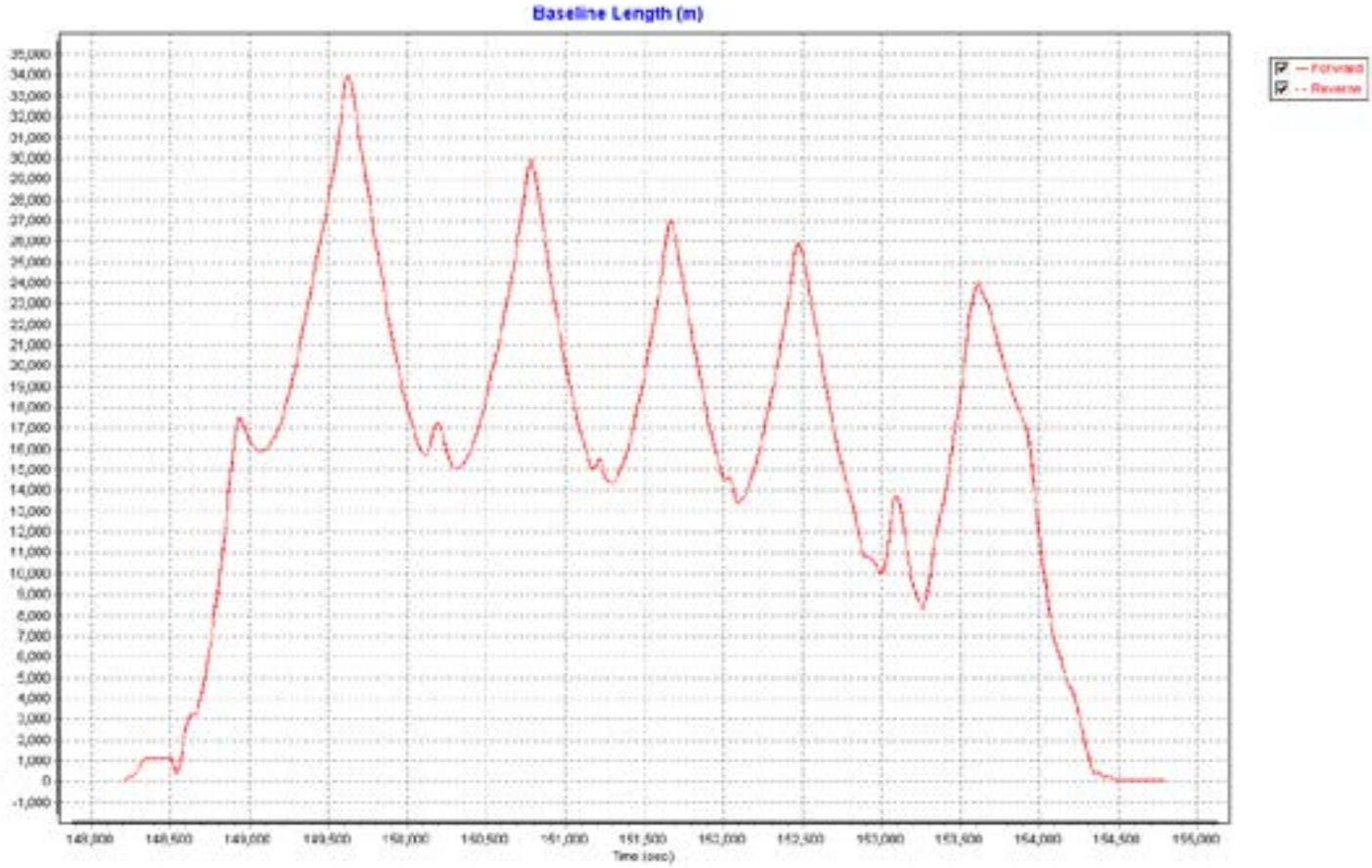

Processing mode
Forward
Reverse
3
2
0
71,500
72,000
72,500
73,000
73,500
74,000
74,500
75,000
75,500
76,000
76,500
77,000
77,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

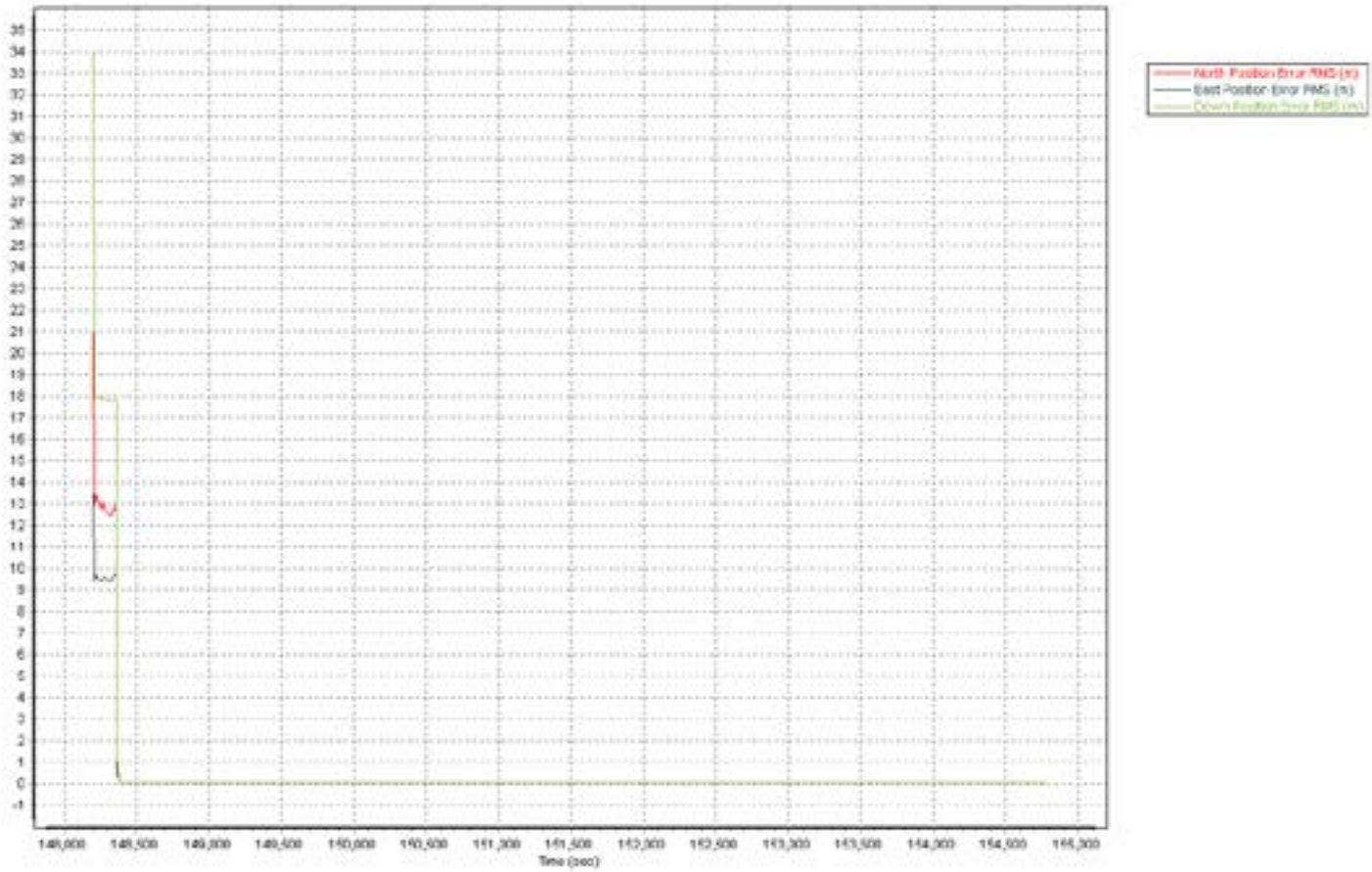

DEFAULT
Settings
Status
Message Log

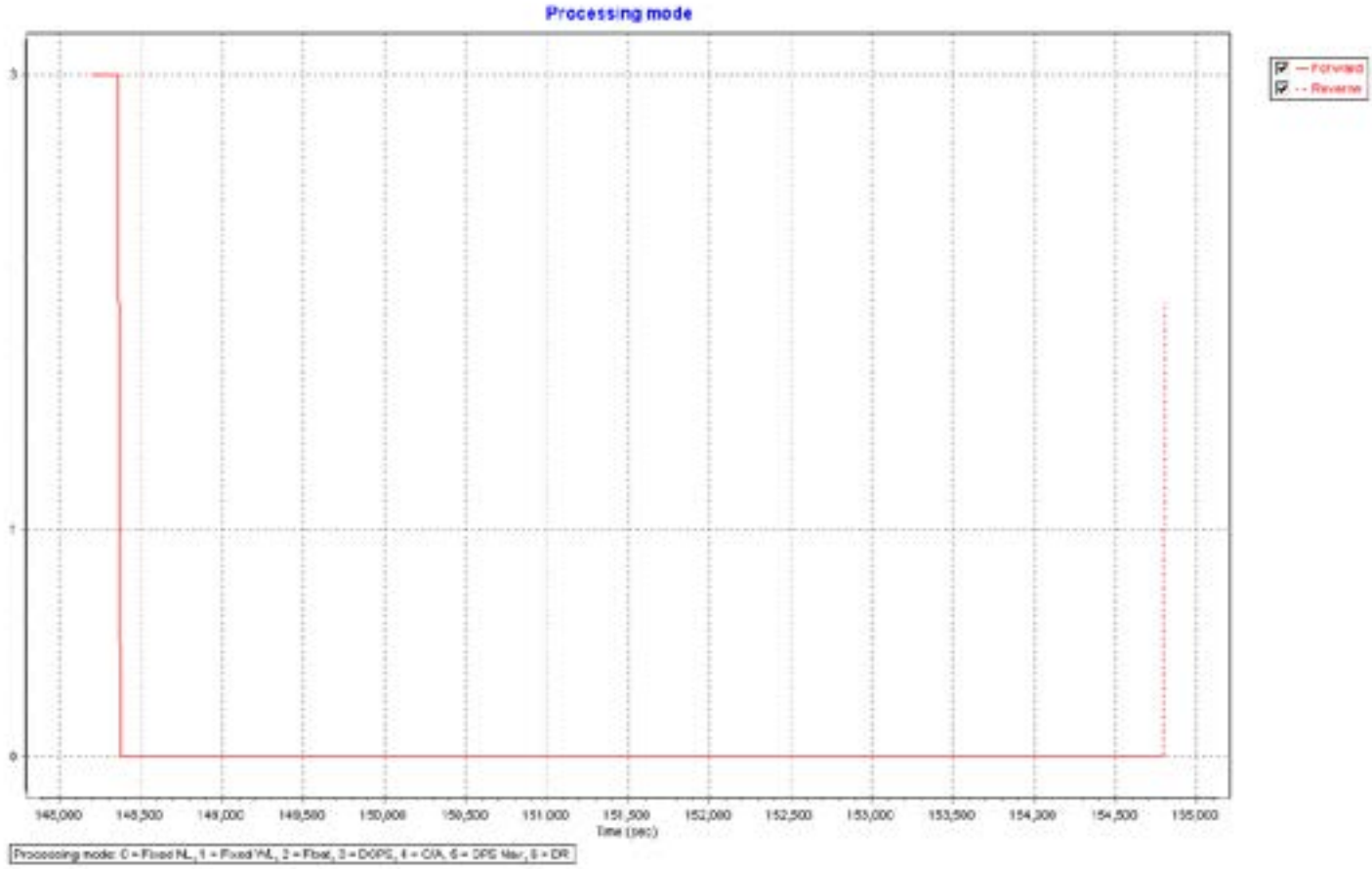

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

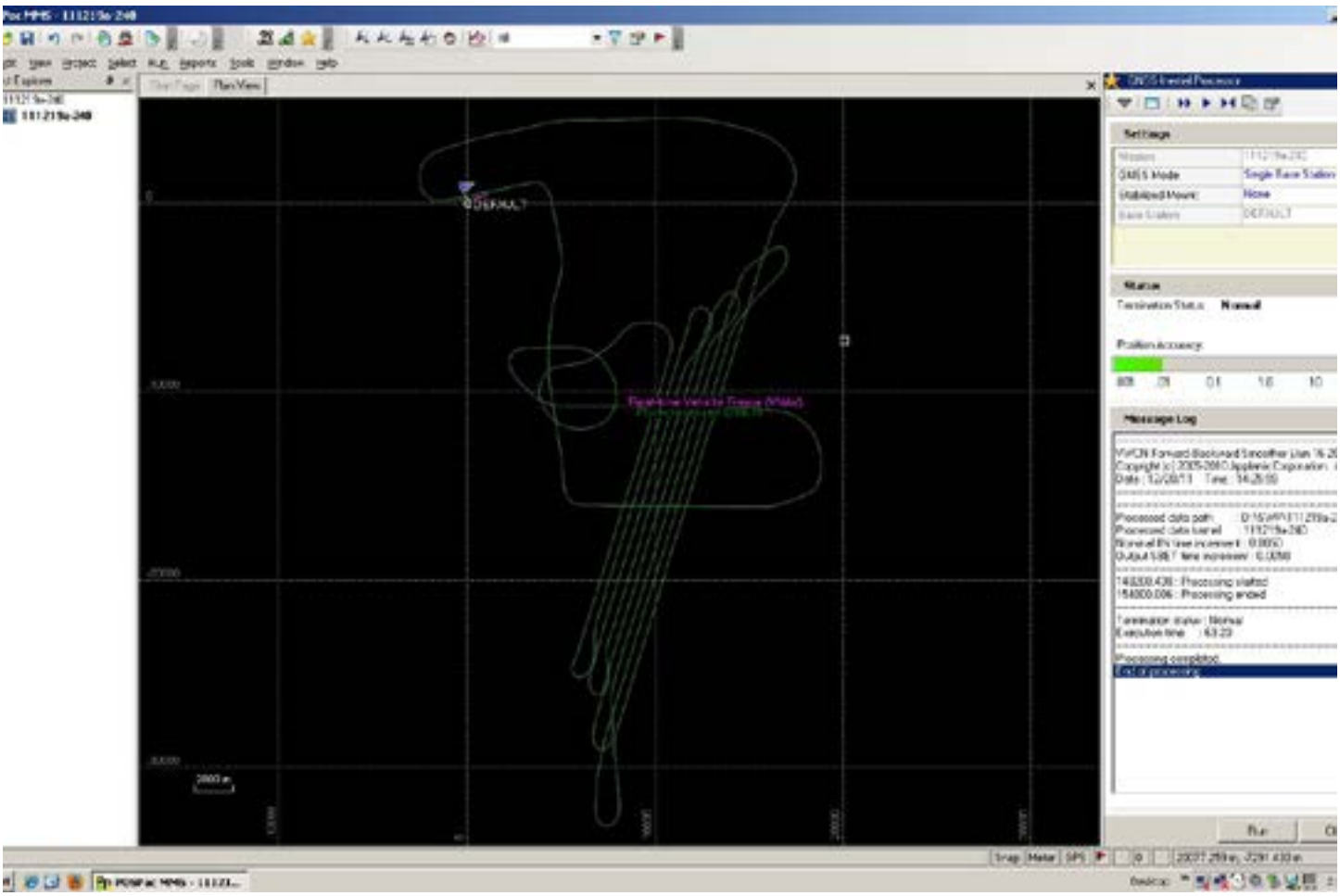

Number of SVs
PDOP
Time (sec)

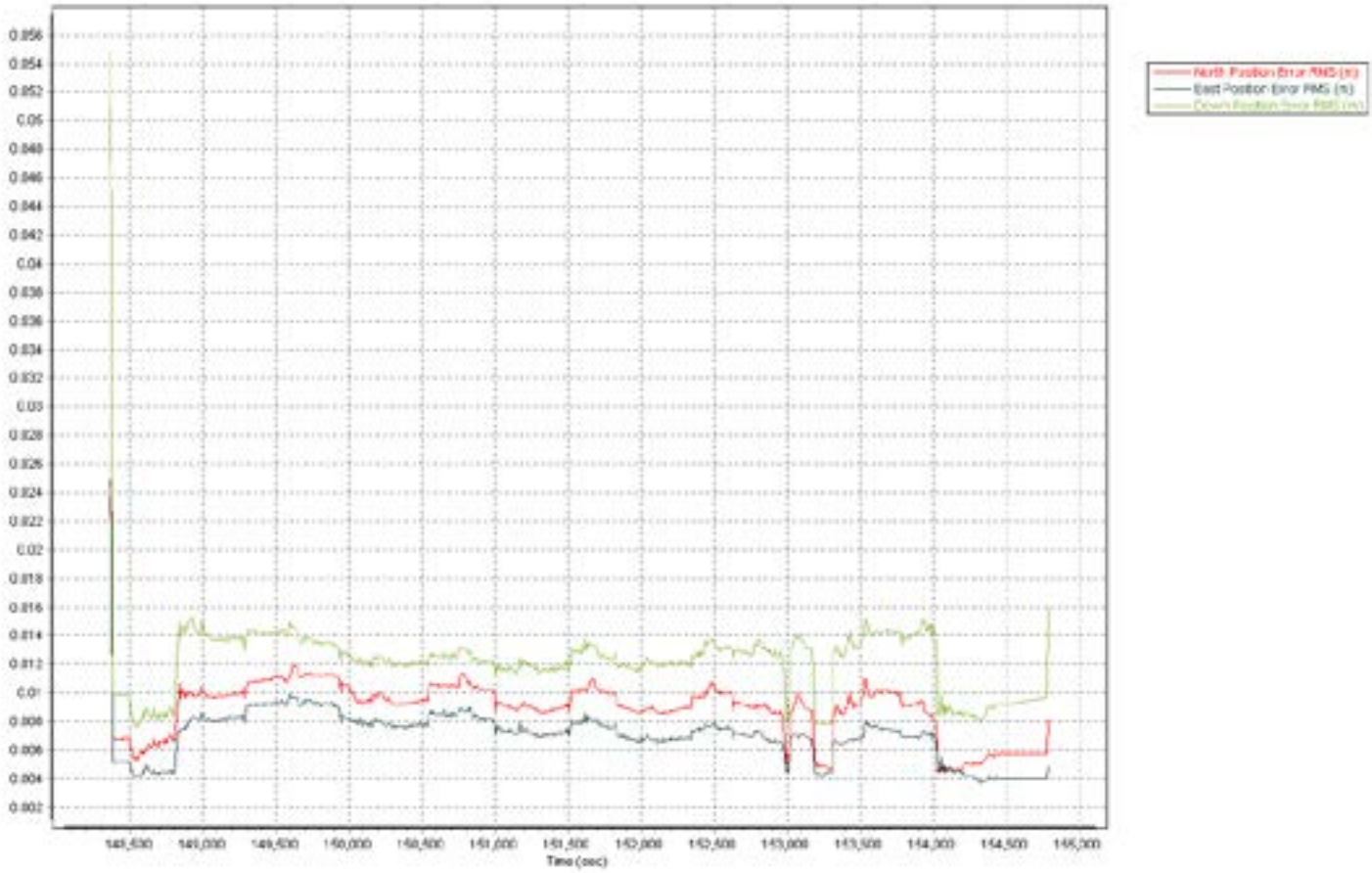
111219a-240

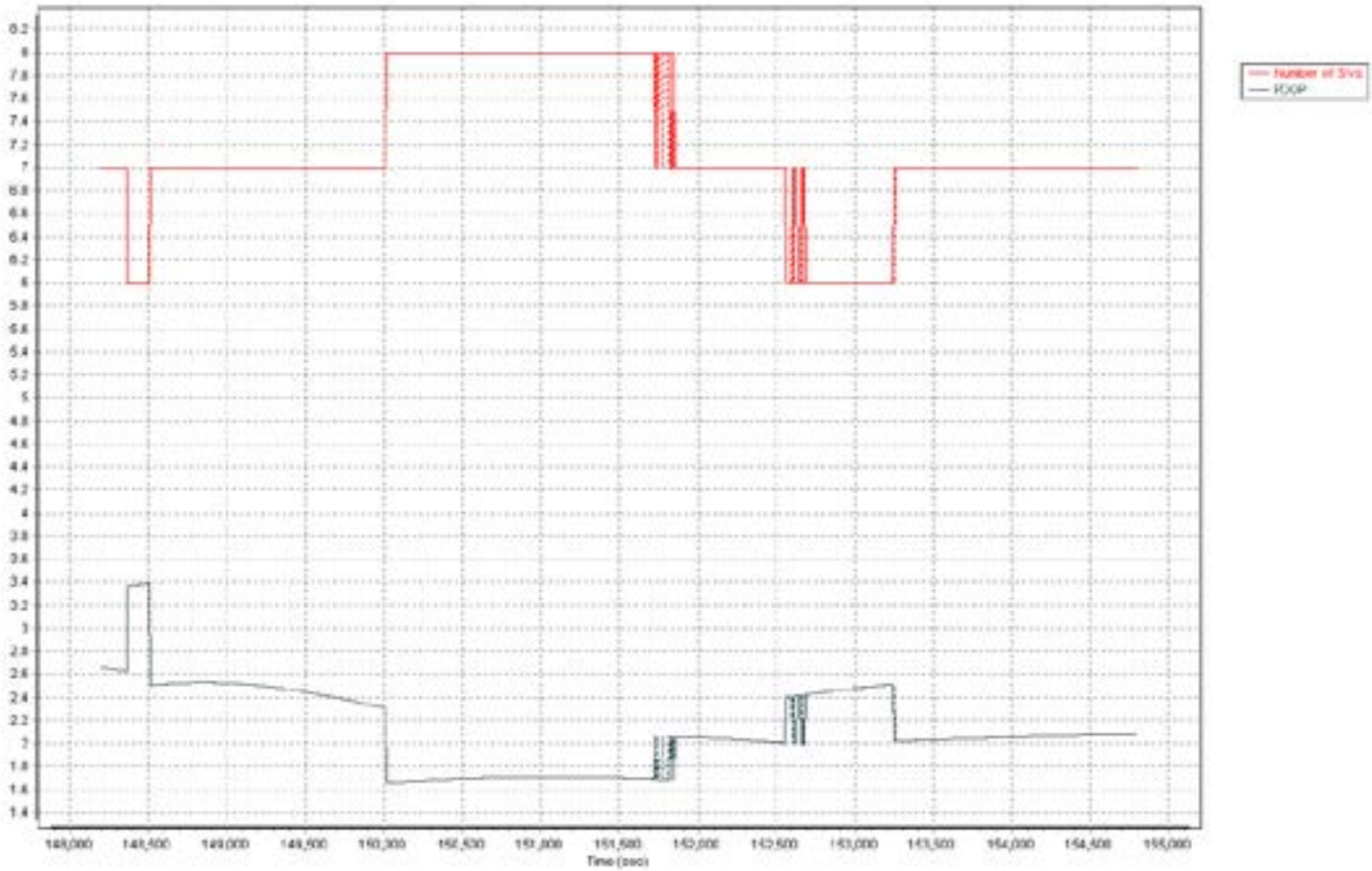

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

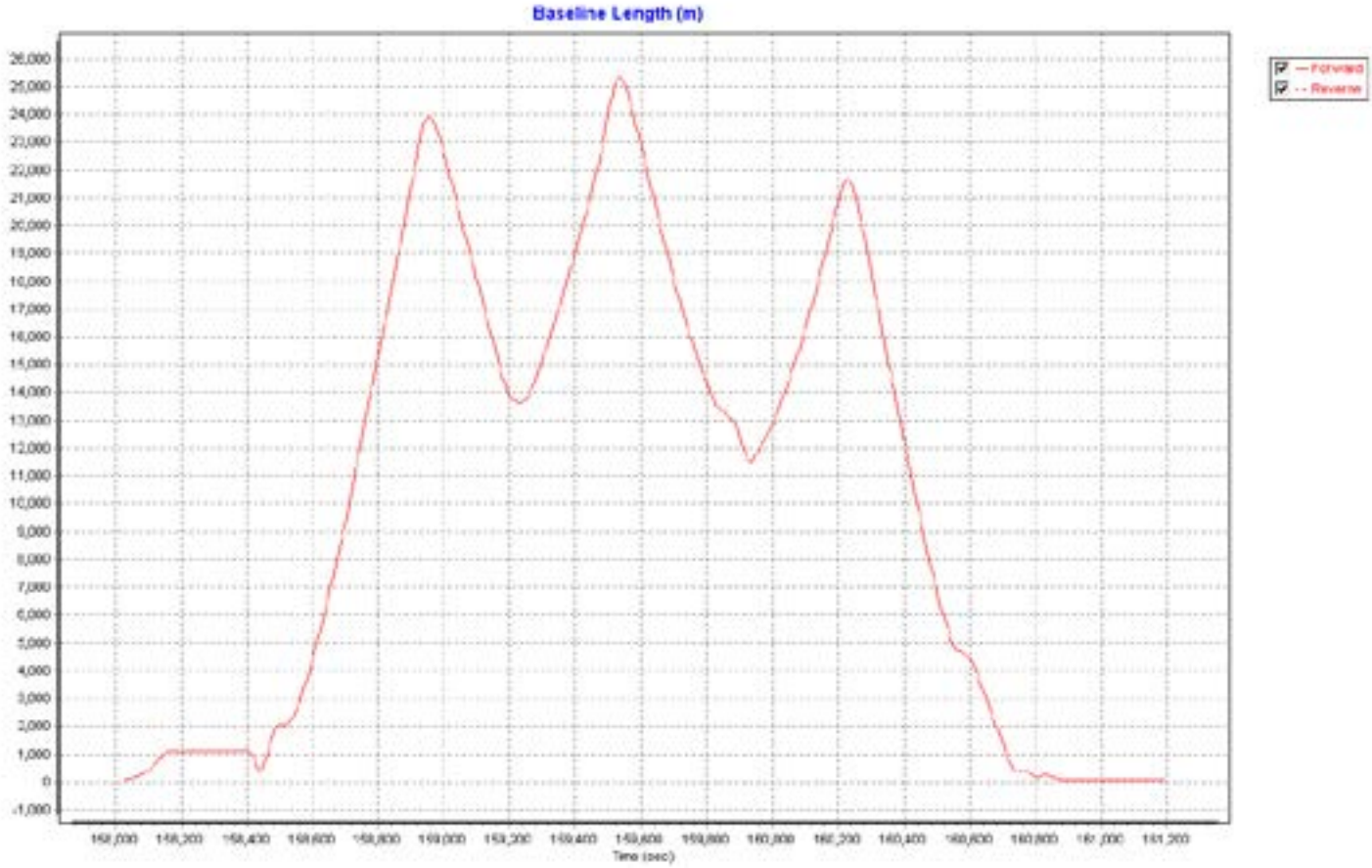

Processing mode
Forward
Reverse
3
1
0
148,000
148,500
149,000
149,500
150,000
150,500
151,000
151,500
152,000
152,500
153,000
153,500
154,000
154,500
155,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

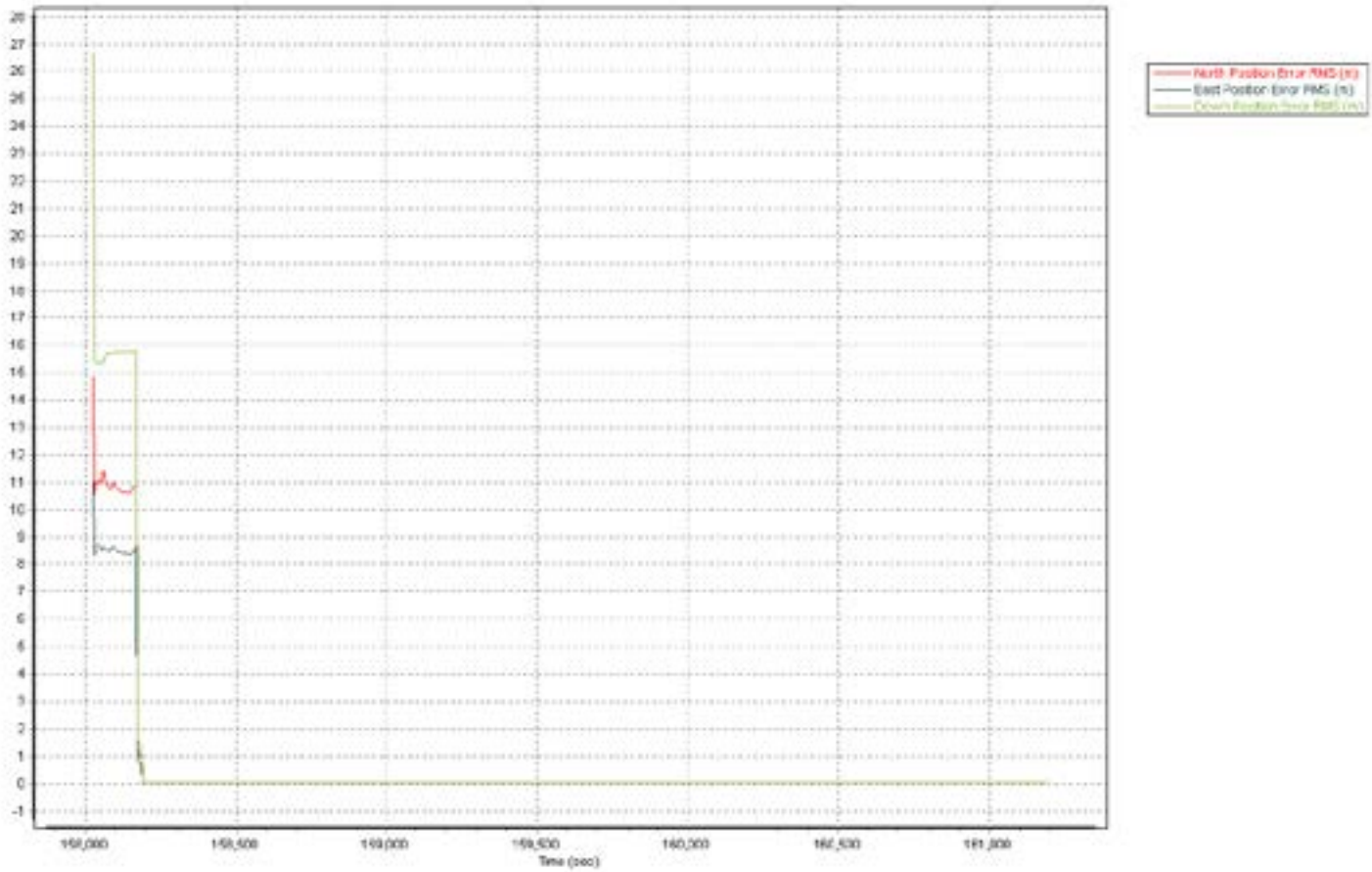

DEFAULT
Settings
Status
Message Log
Run

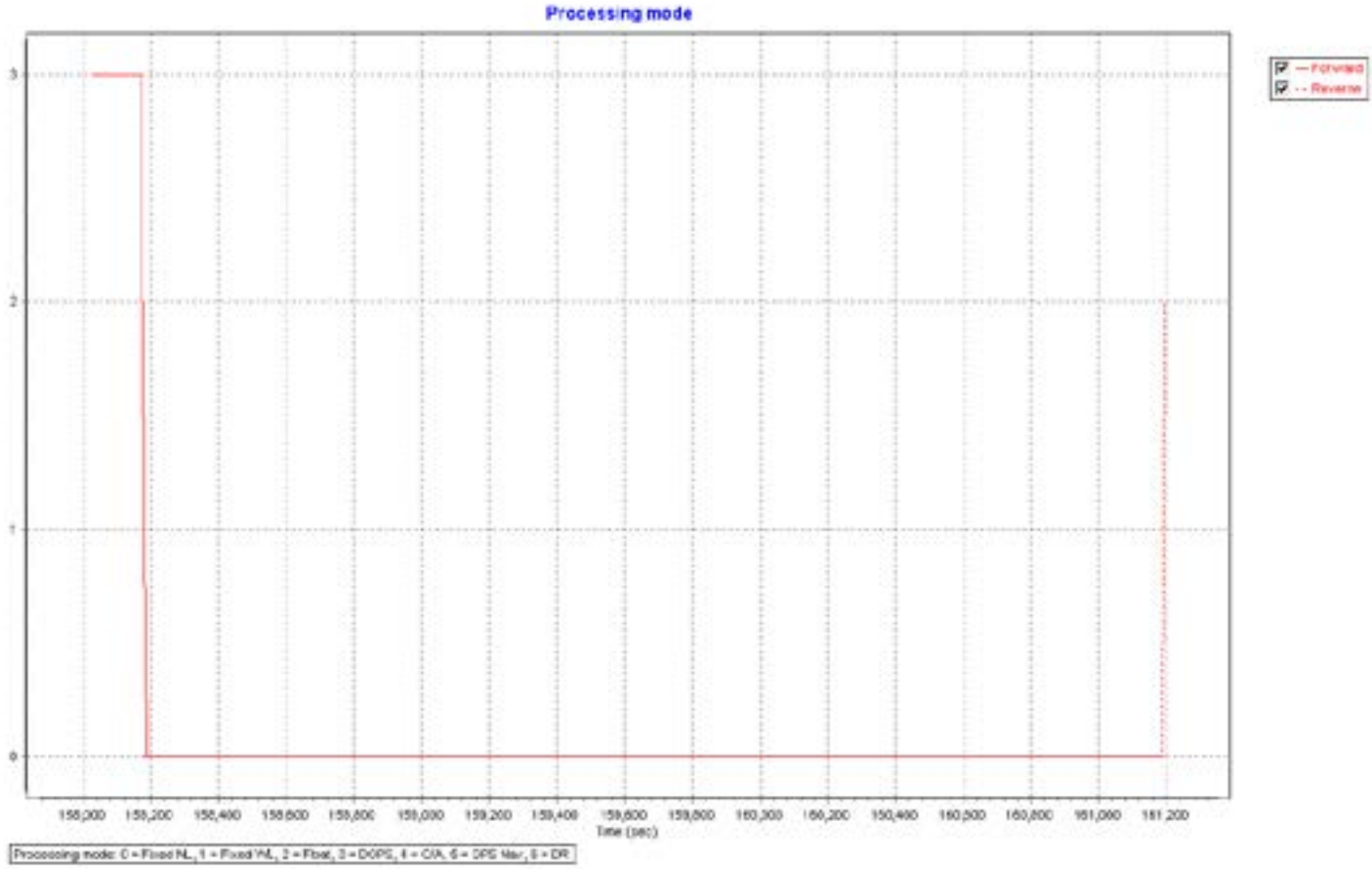

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

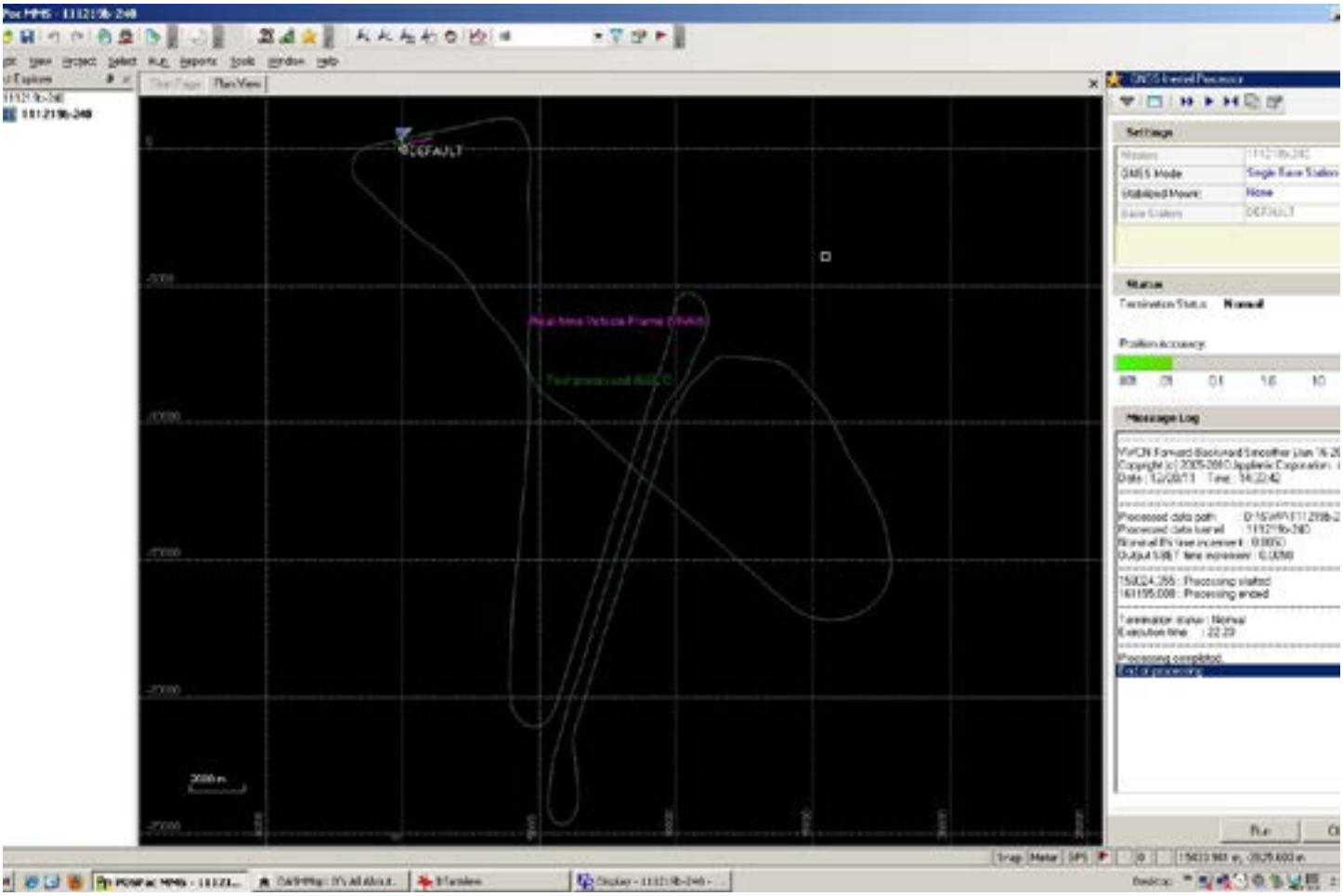

Number of SVs
PDOP
Time (sec)

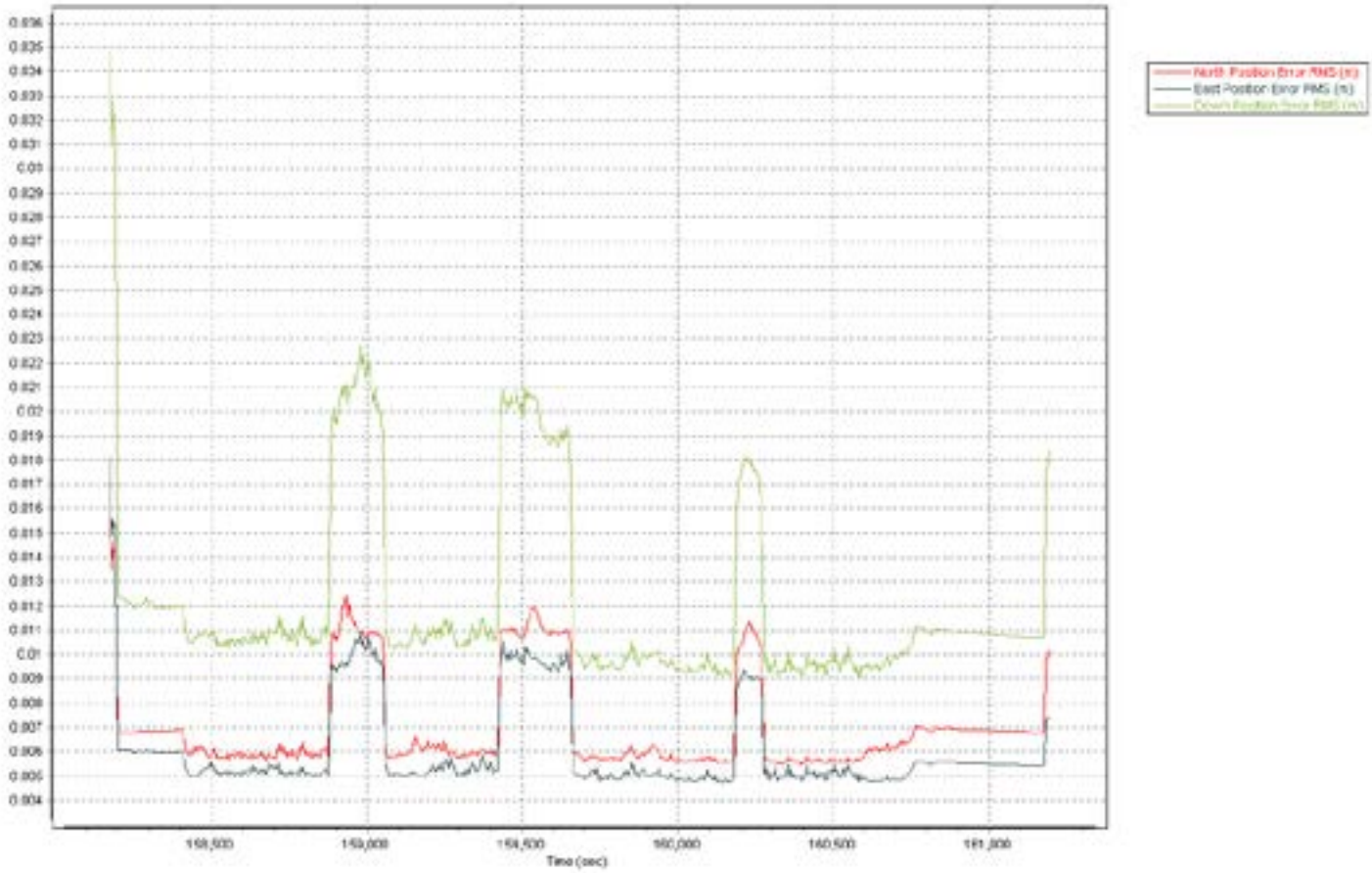
111219b-240

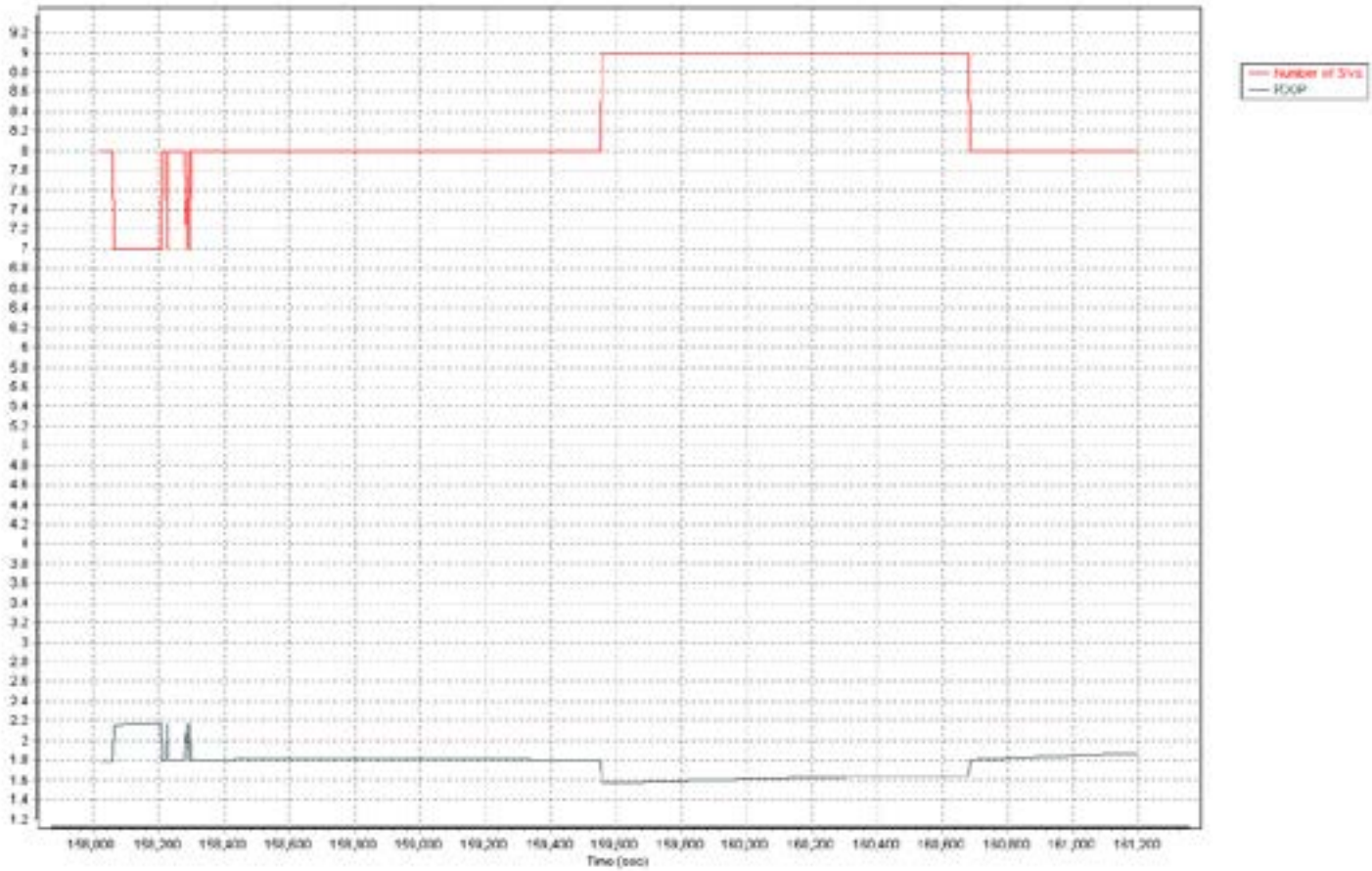

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

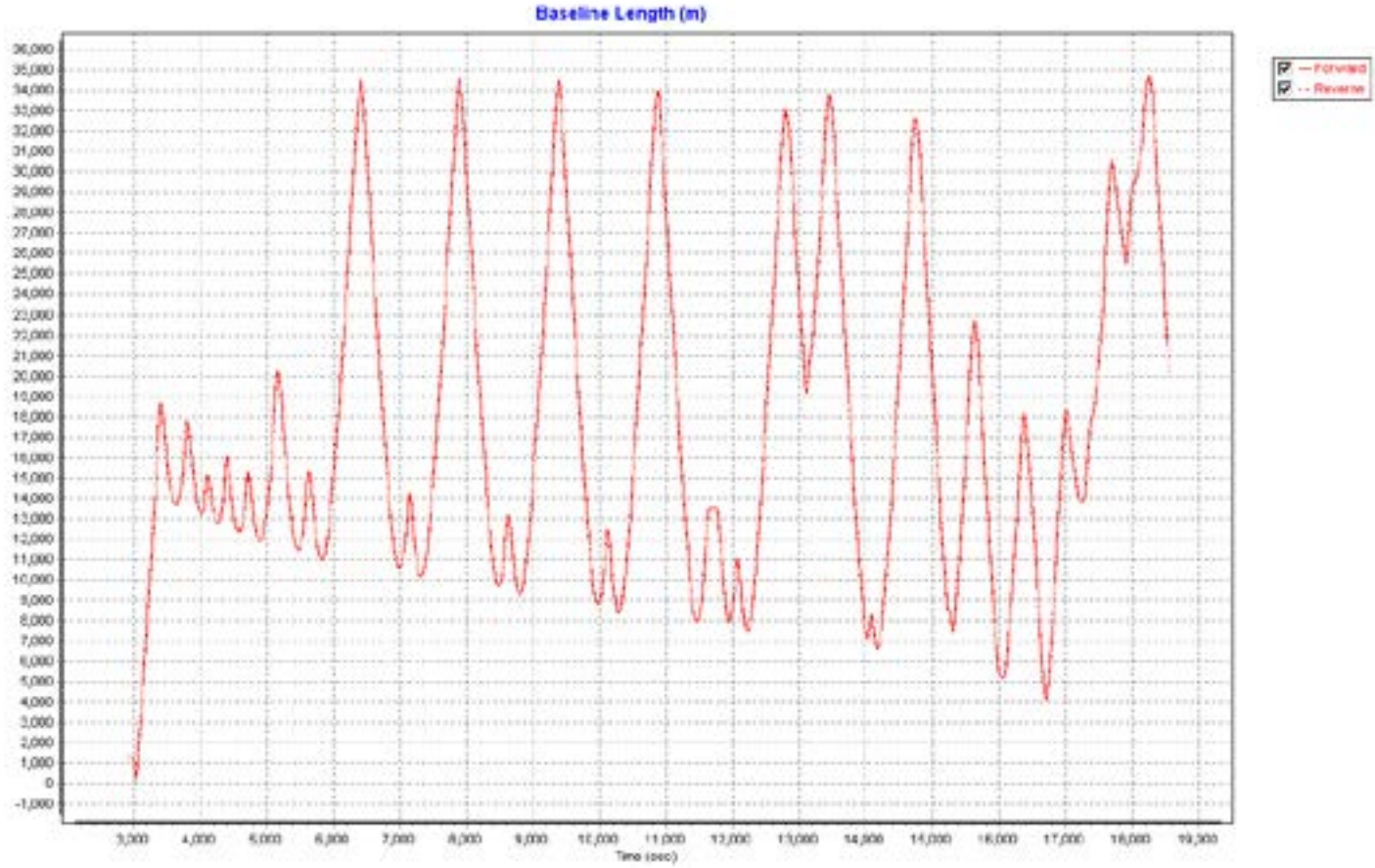

Processing mode
Forward
Reverse
3
2
1
0
158,000
158,200
158,400
158,600
158,800
159,000
159,200
159,400
159,600
159,800
160,000
160,200
160,400
160,600
160,800
161,000
161,200
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = GPS Mar, 6 = DR

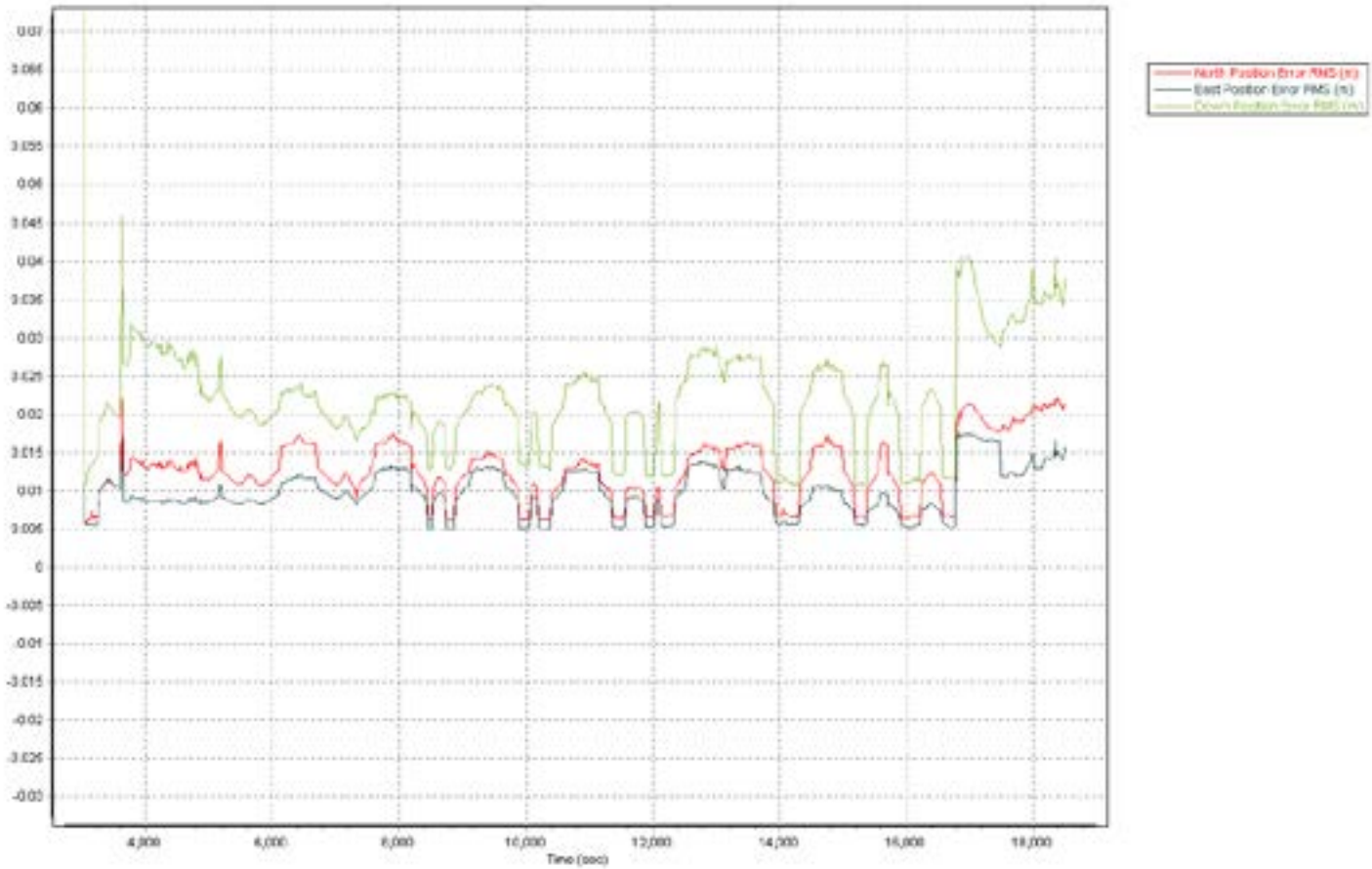

DEFAULT
Settings
Status
Message Log

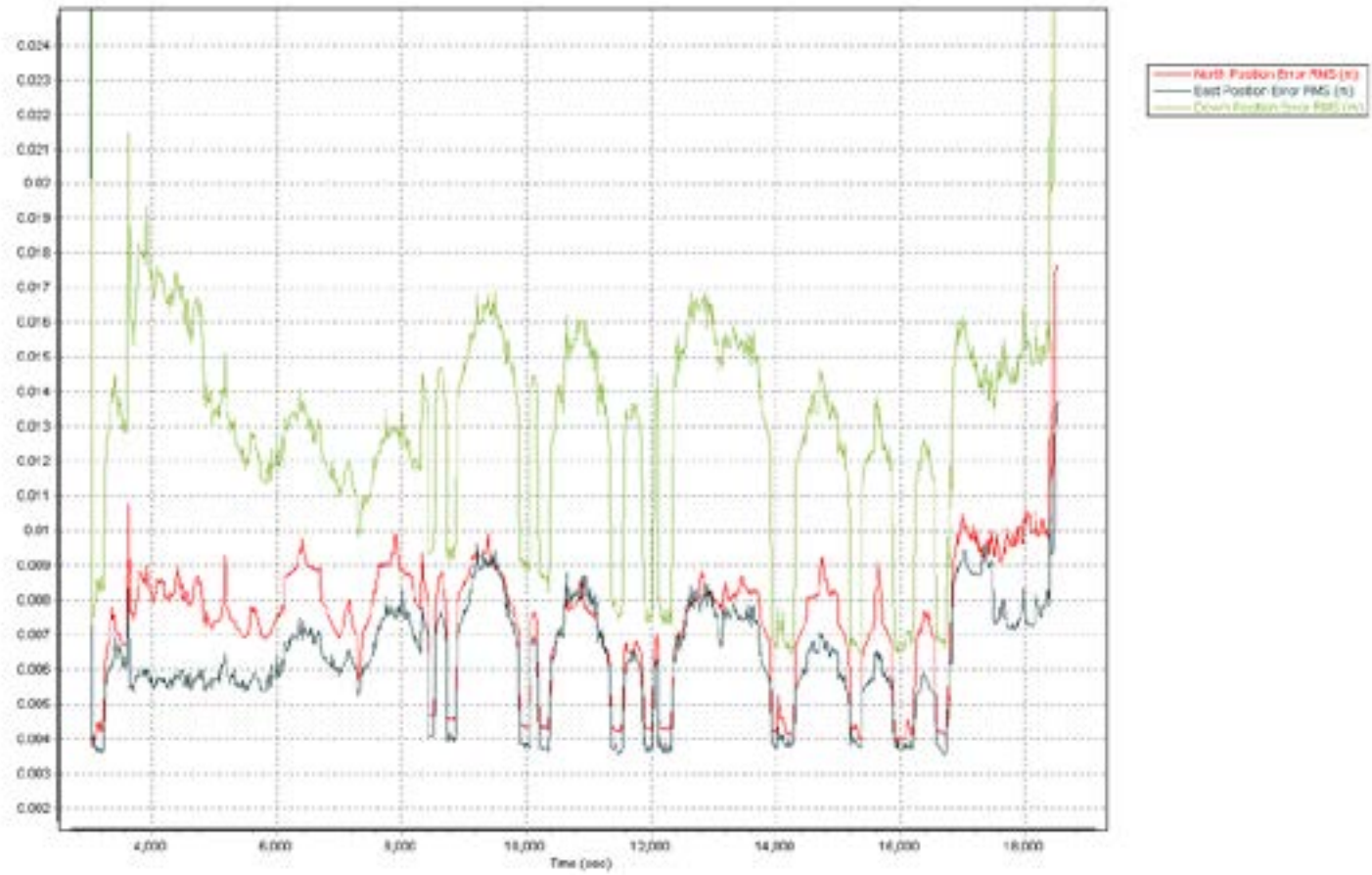

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

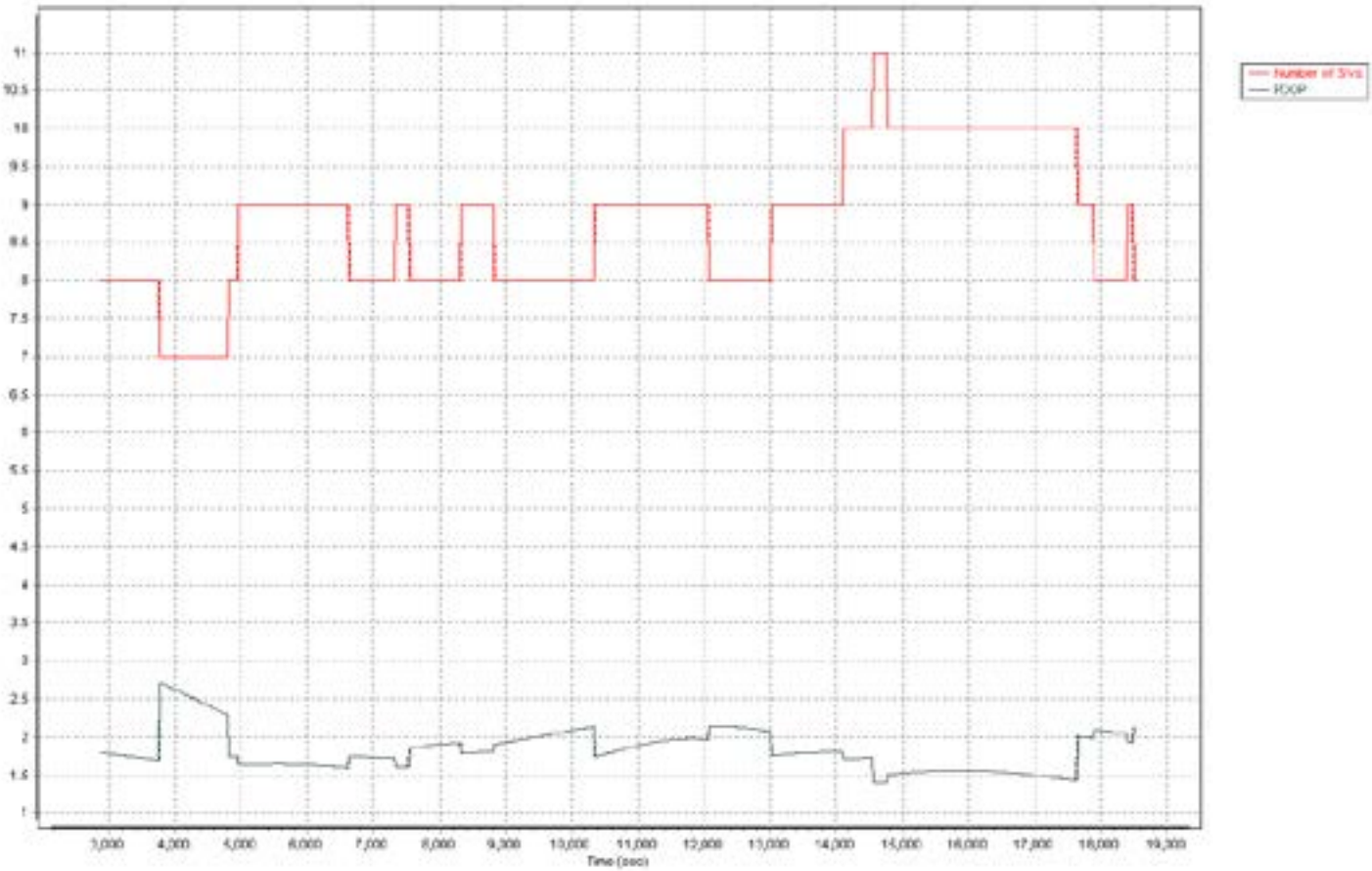

Number of SVs
PDOP
Time (sec)

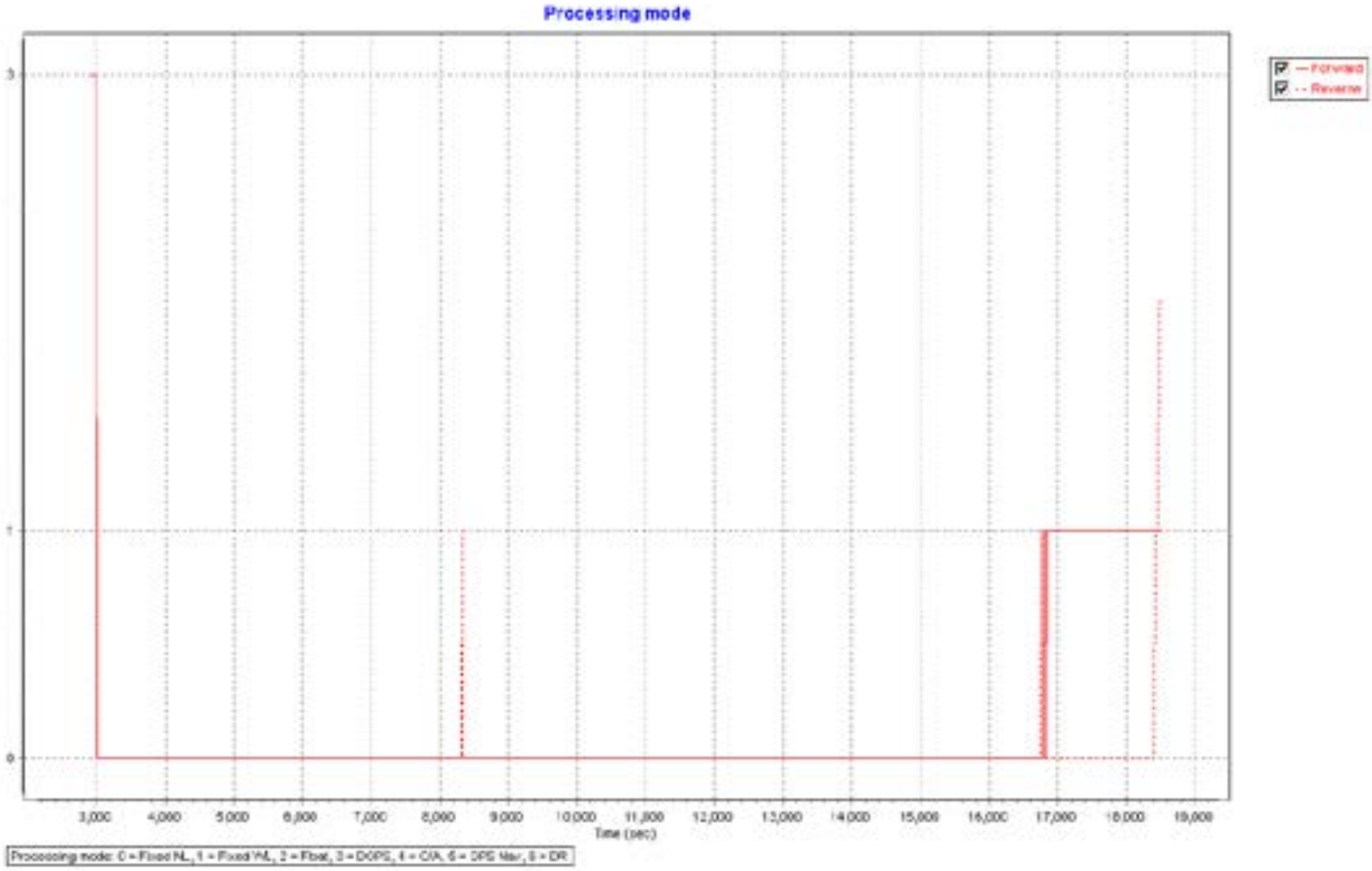
120107a-247

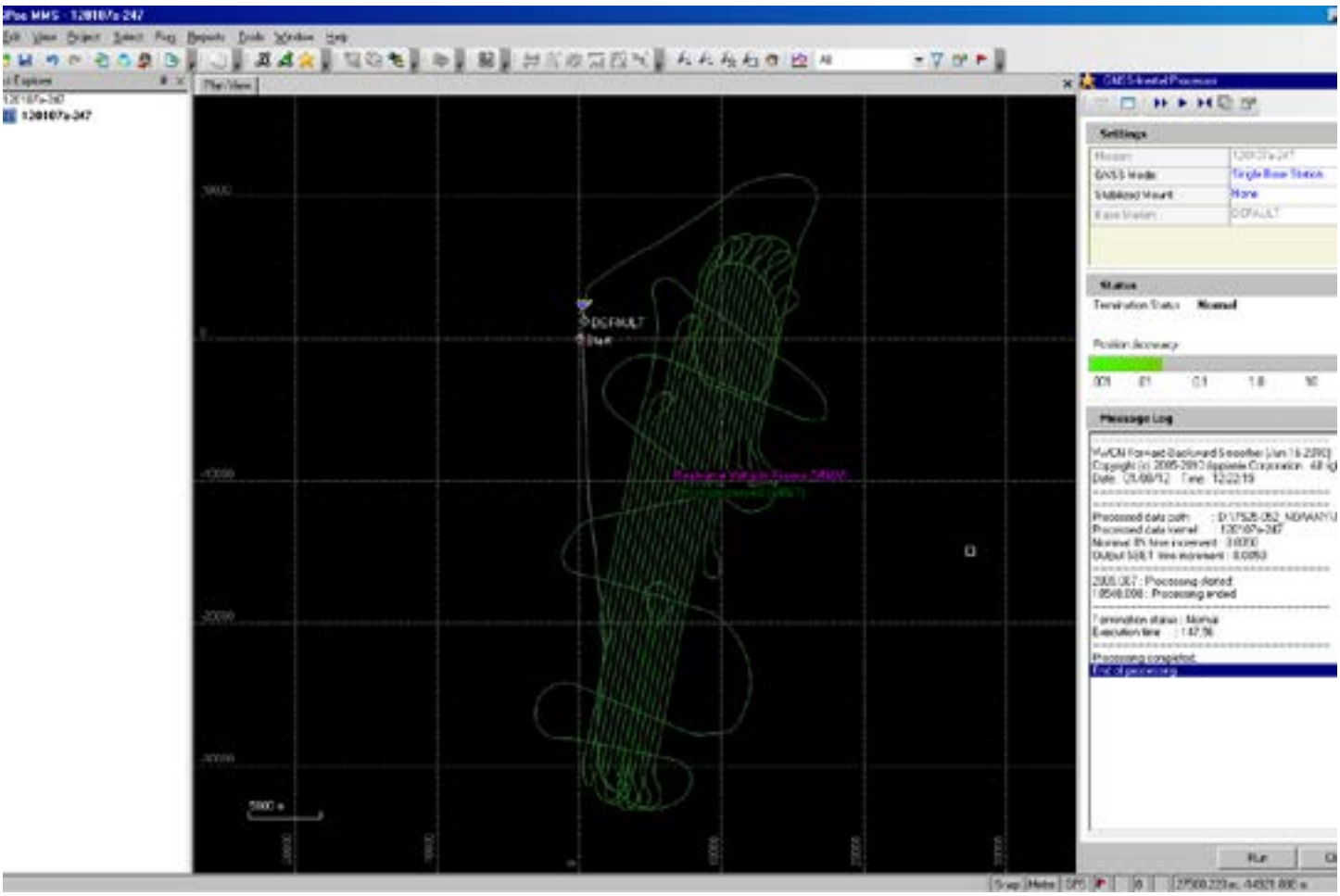

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

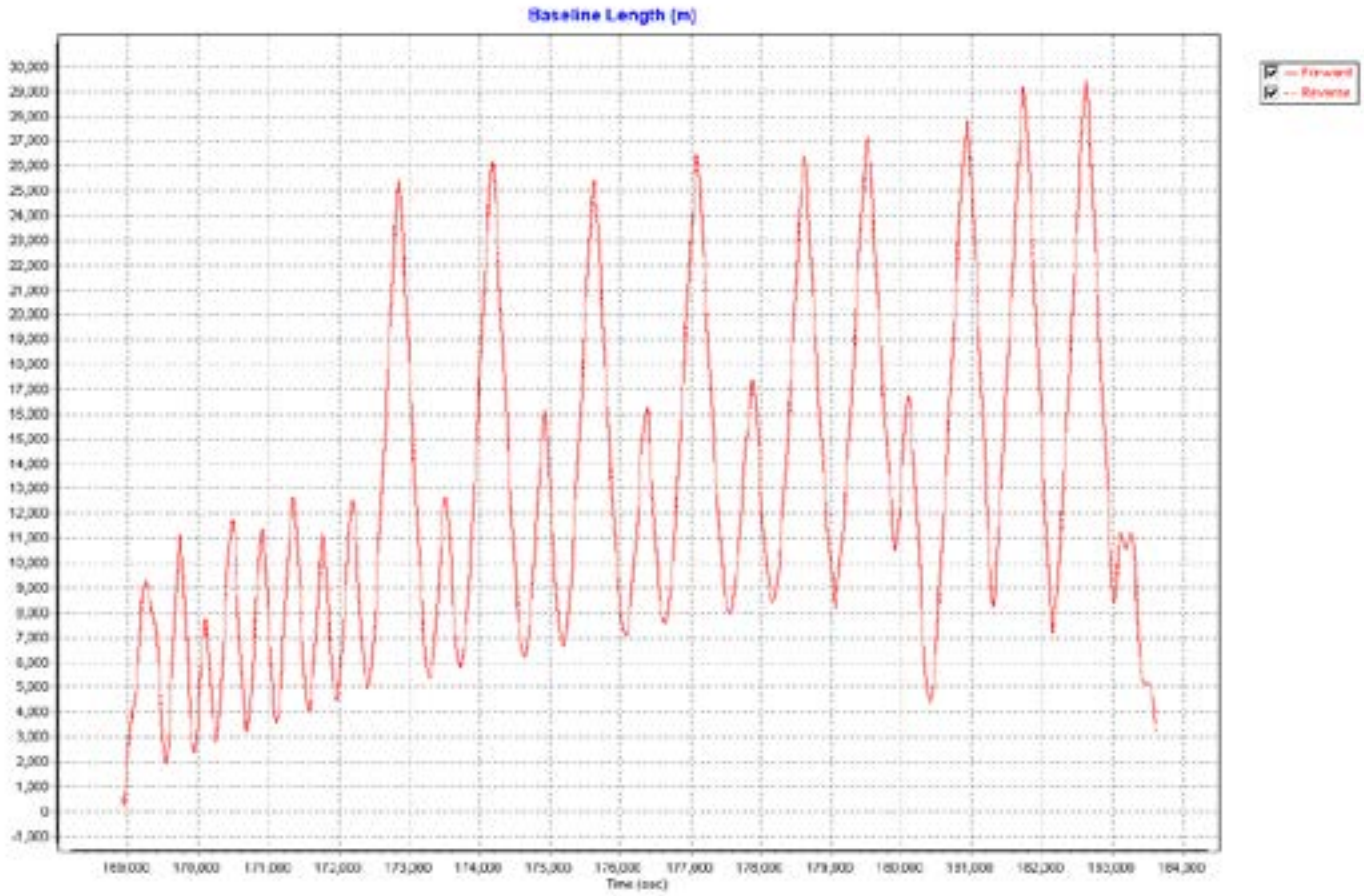

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

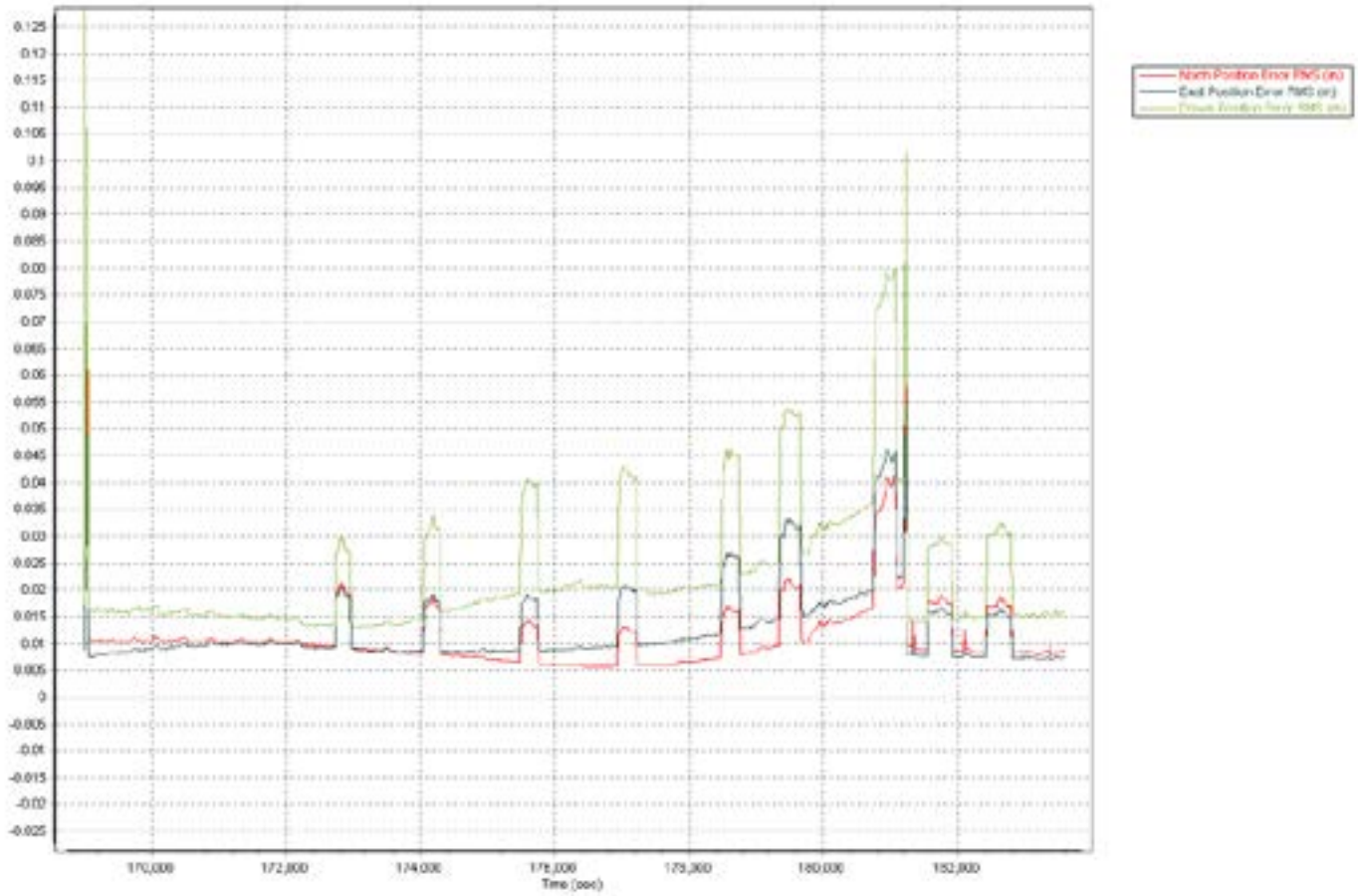

Number of SVs
PDOP
Time (sec)

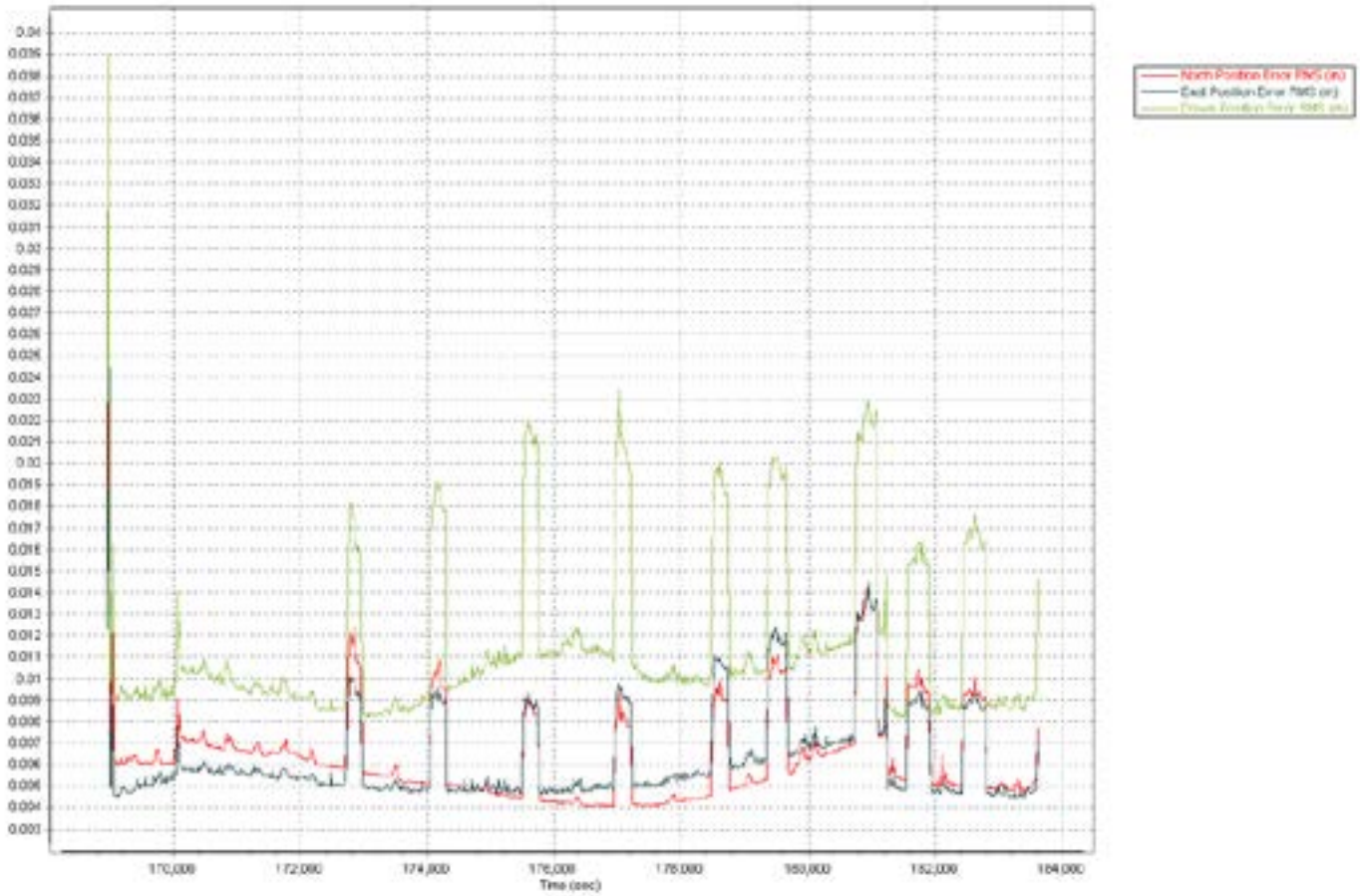

Processing mode
Forward
Reverse
3
1
0
3,000
4,000
5,000
6,000
7,000
8,000
9,000
10,000
11,000
12,000
13,000
14,000
15,000
16,000
17,000
18,000
19,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

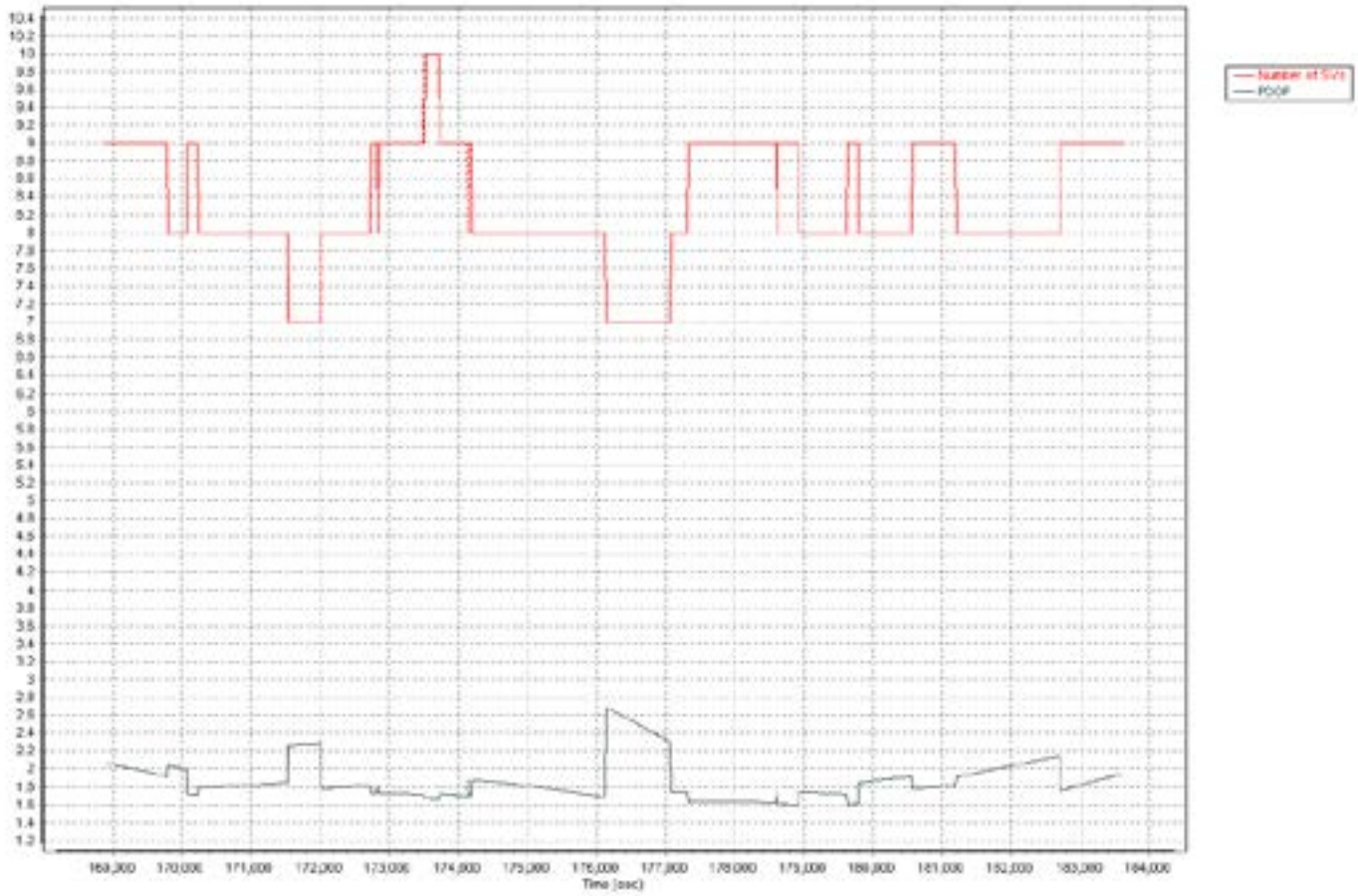

DEFAULT
Settings
Status
Message Log
Run

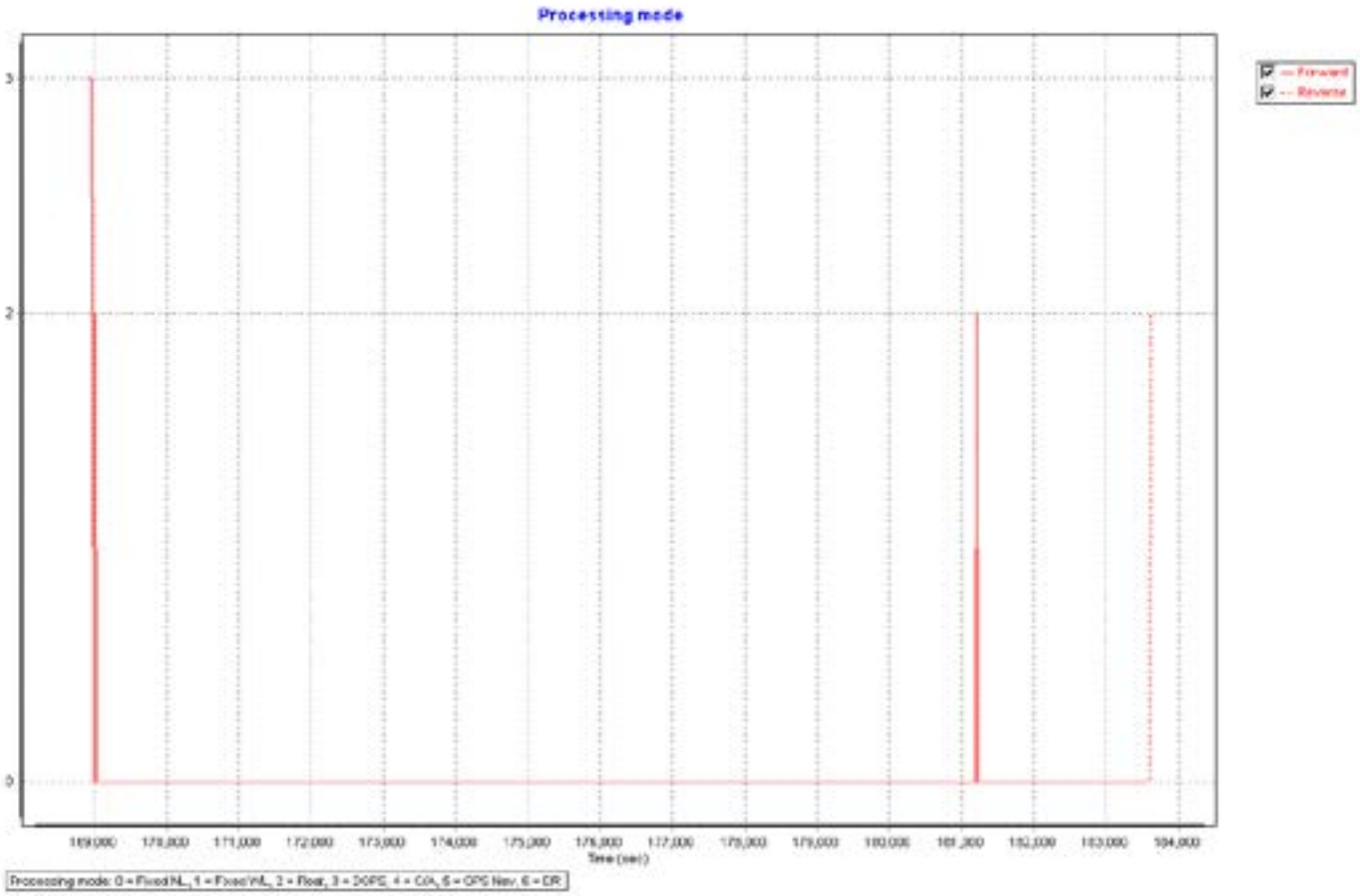
120109a-247

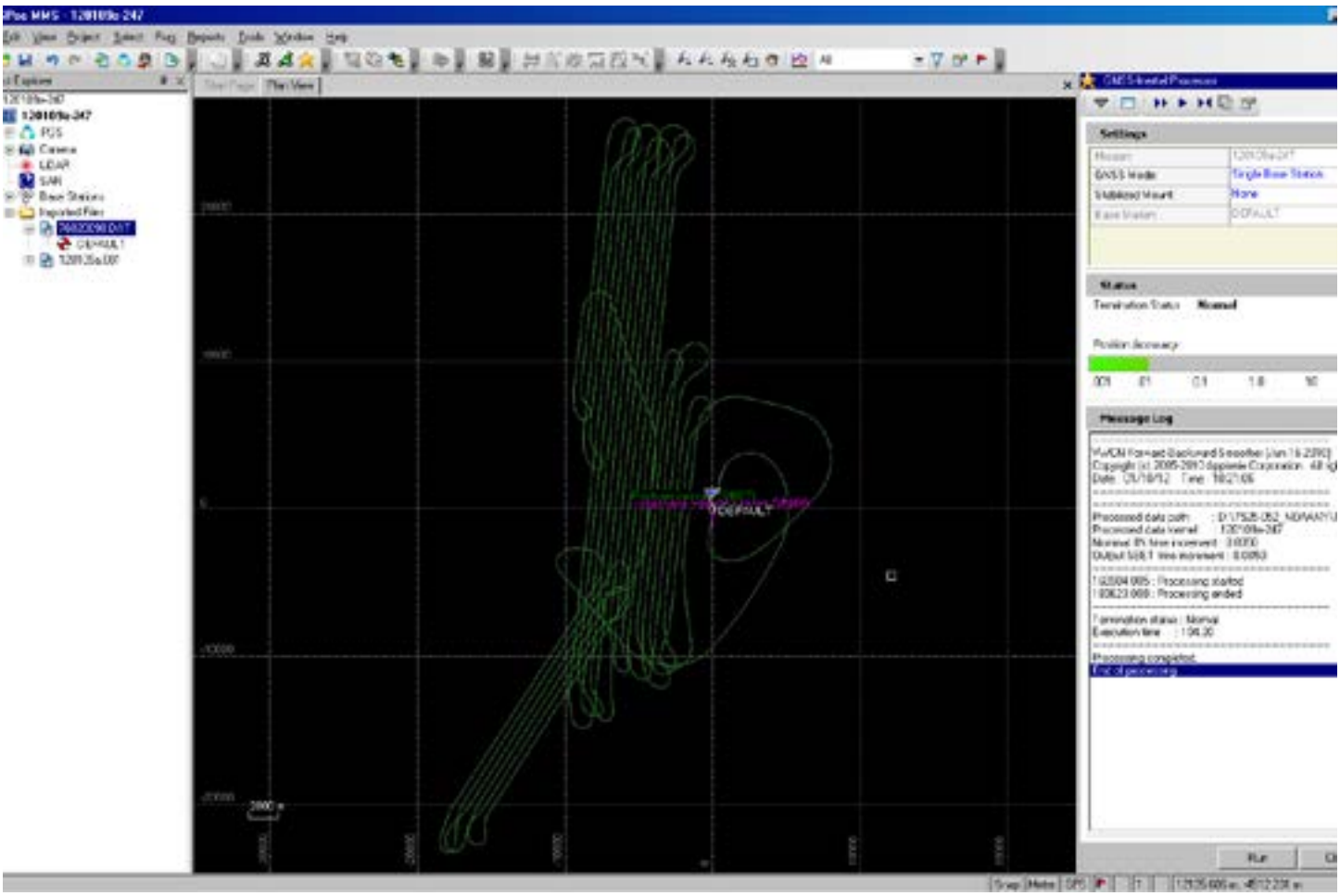

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

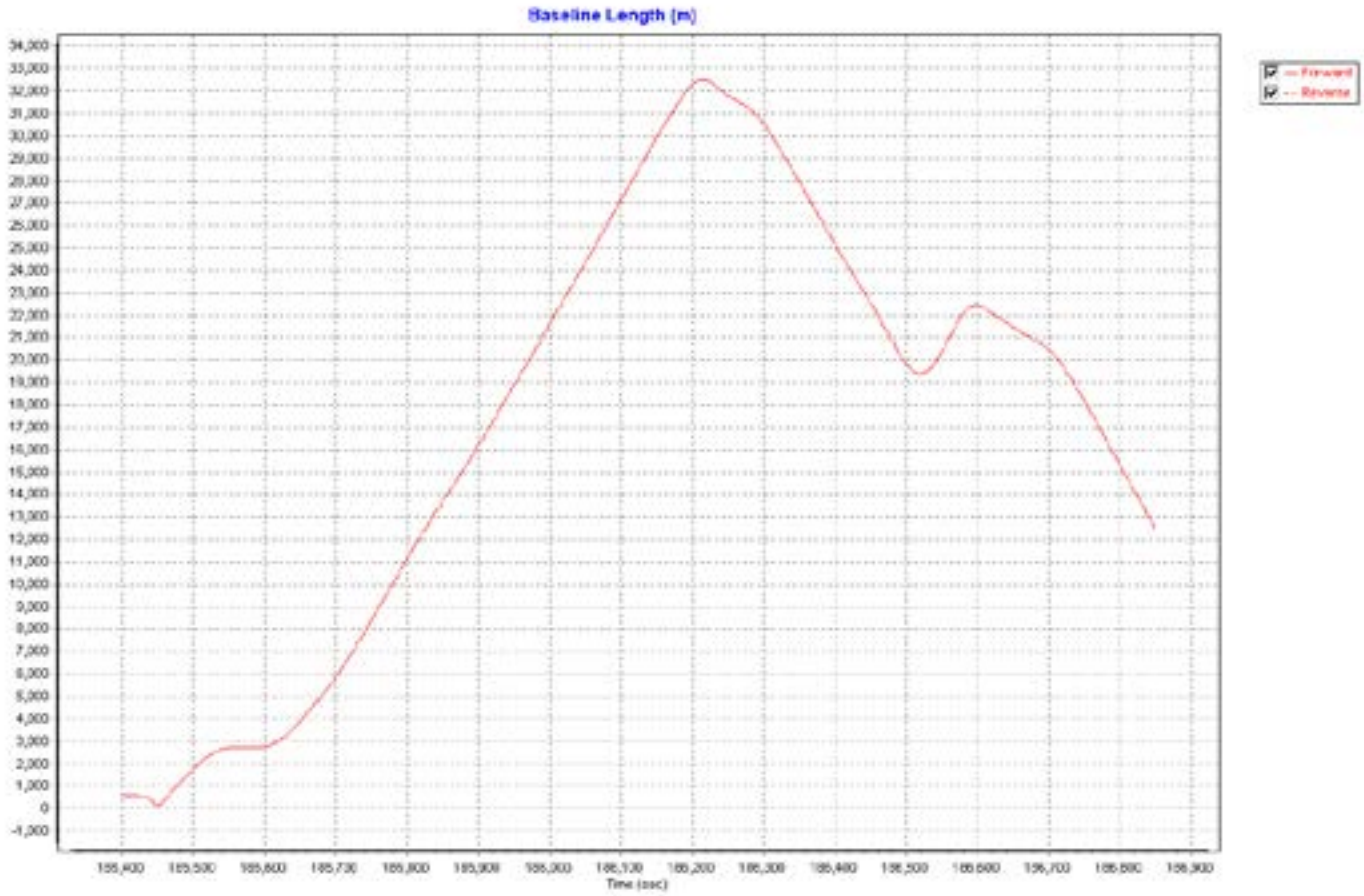

Time (sec)

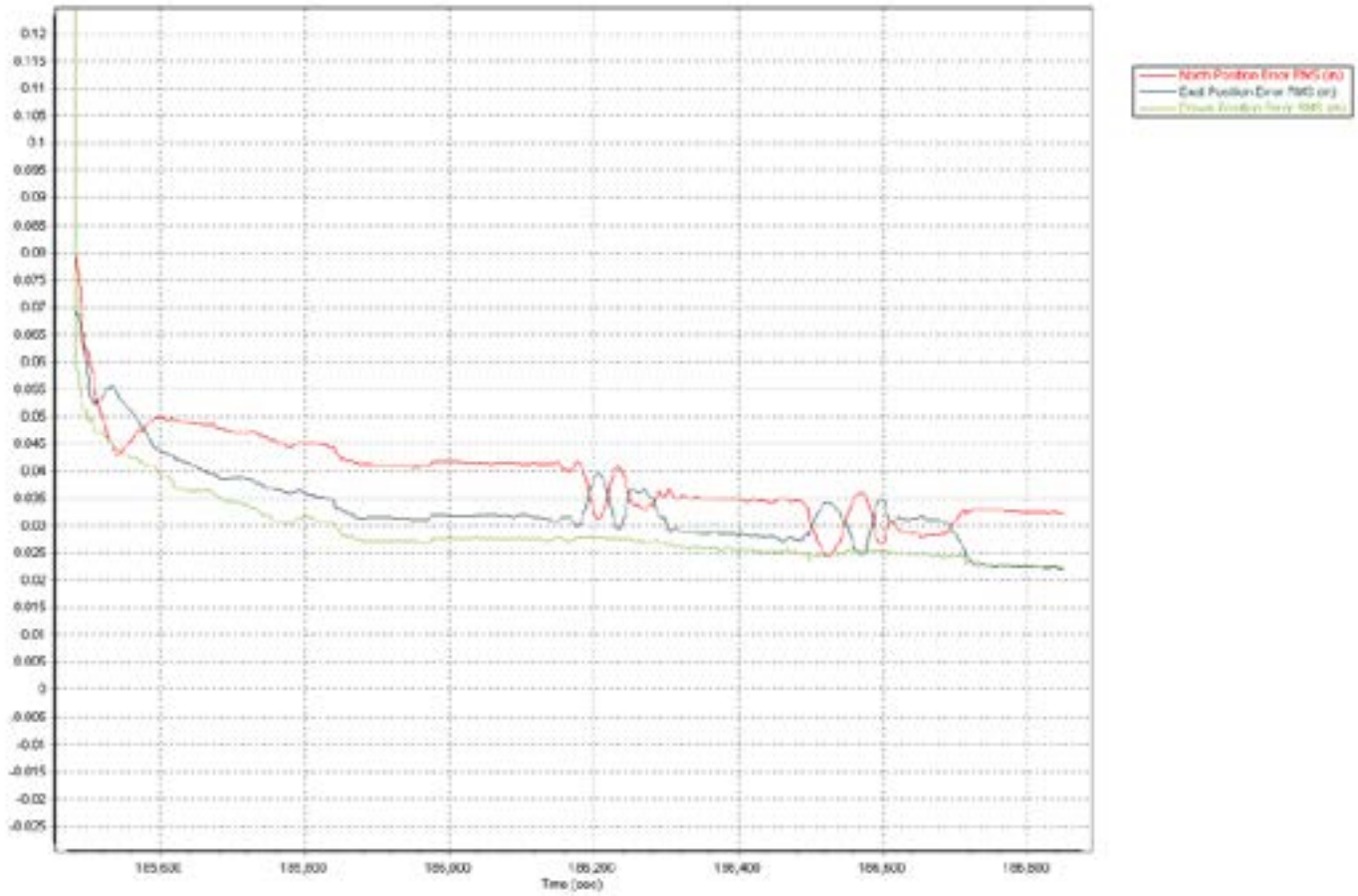

Time (sec)

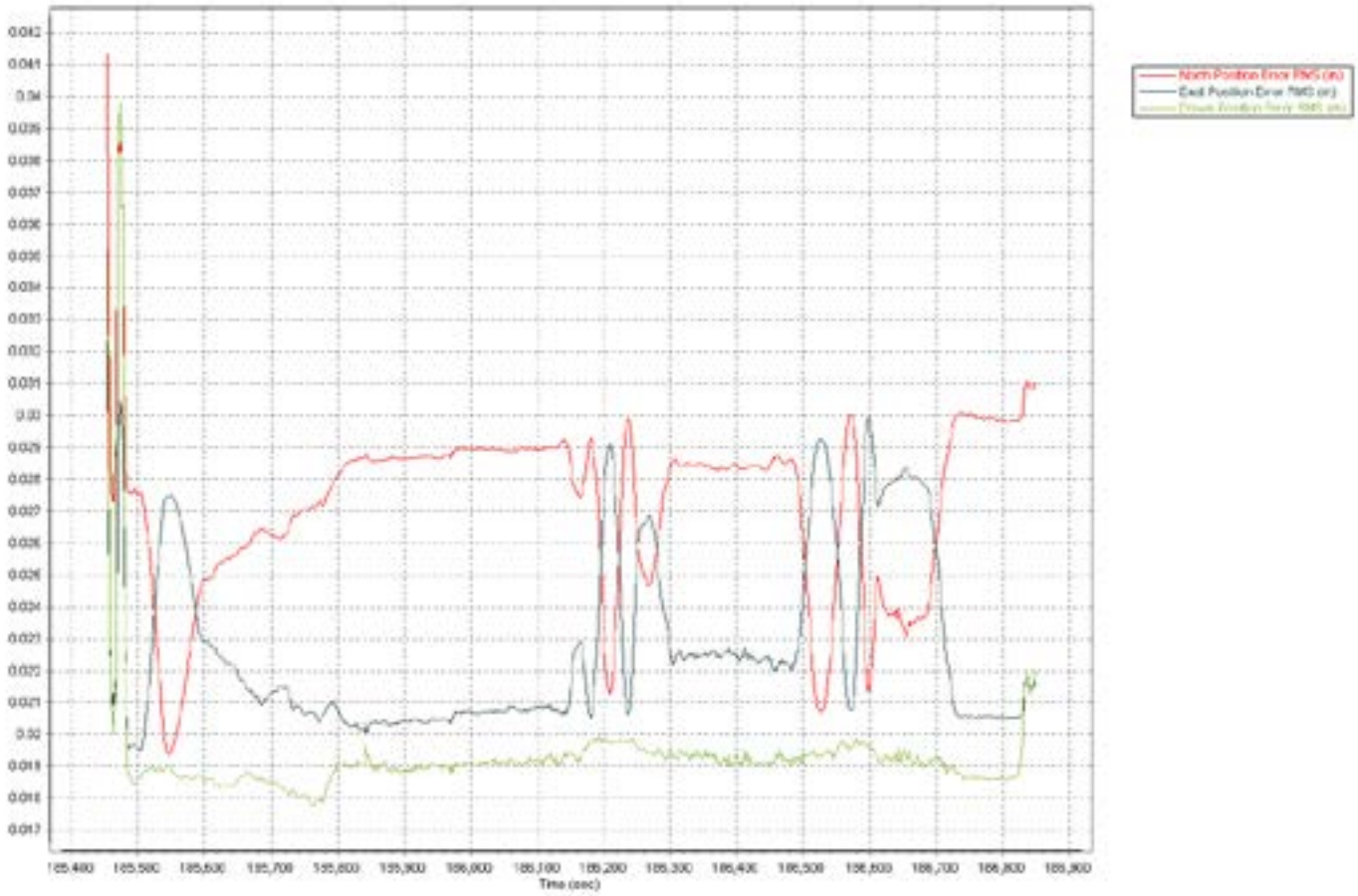

Processing mode
Forward
Reverse
3
2
0
169,000
170,000
171,000
172,000
173,000
174,000
175,000
176,000
177,000
178,000
179,000
180,000
181,000
182,000
183,000
184,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed VL, 2 = Float, 3 = DGPS, 4 = CDA, 5 = GPS Nav, 6 = DR

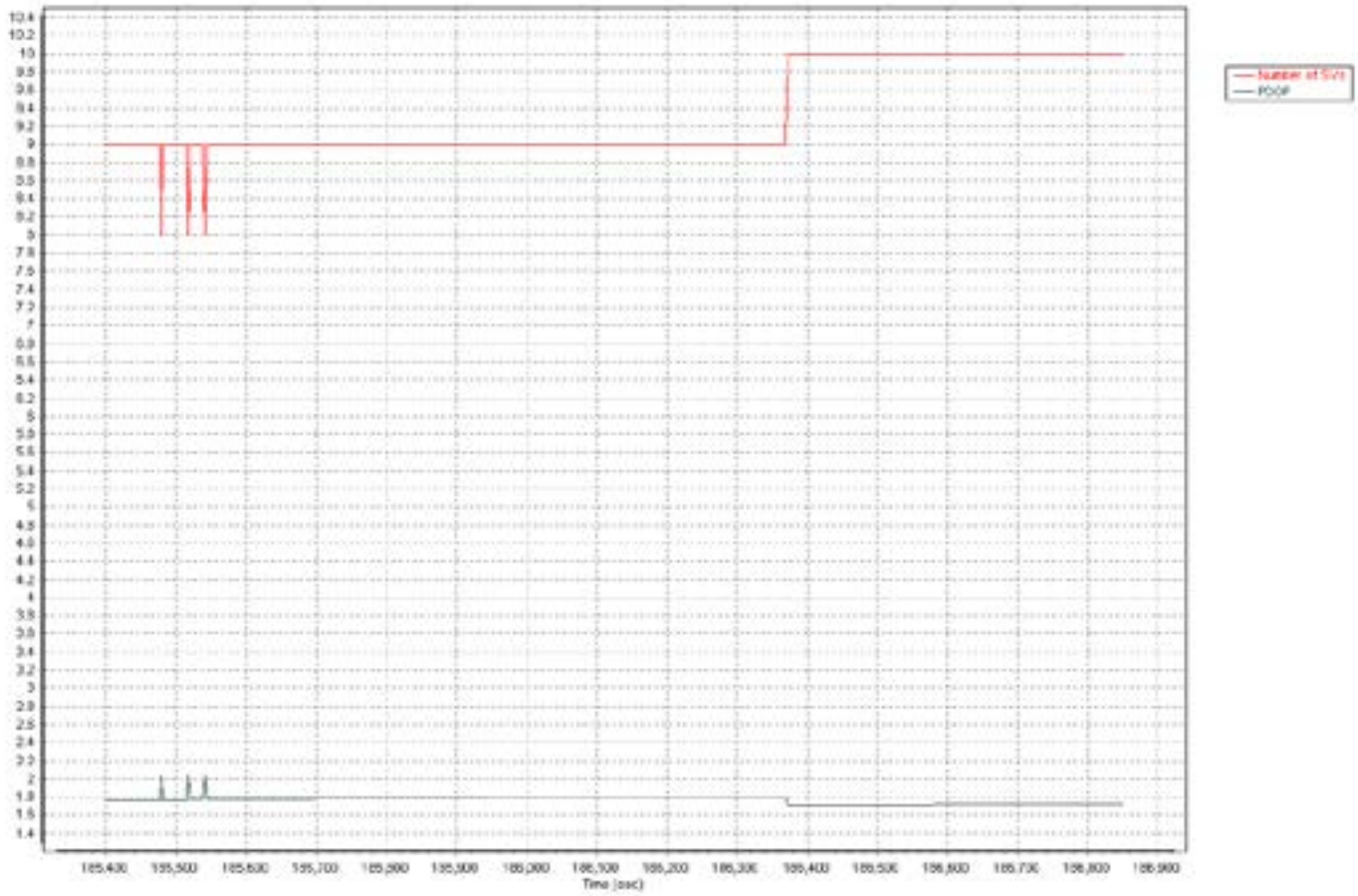

Settings
Status
Message Log
Run

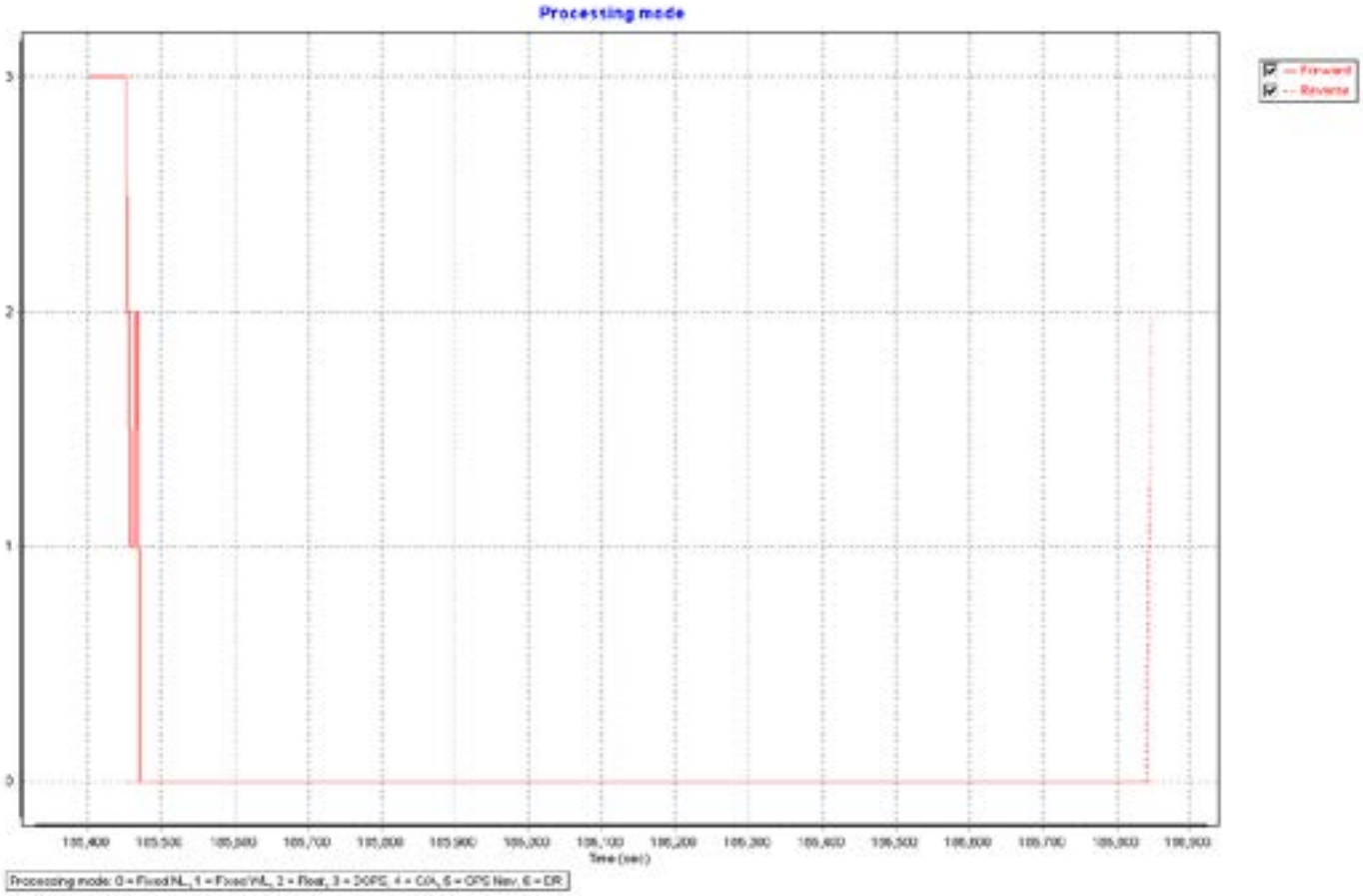
120109b-247


Baseline Length (m)
Forward
Reverse
Time (sec)

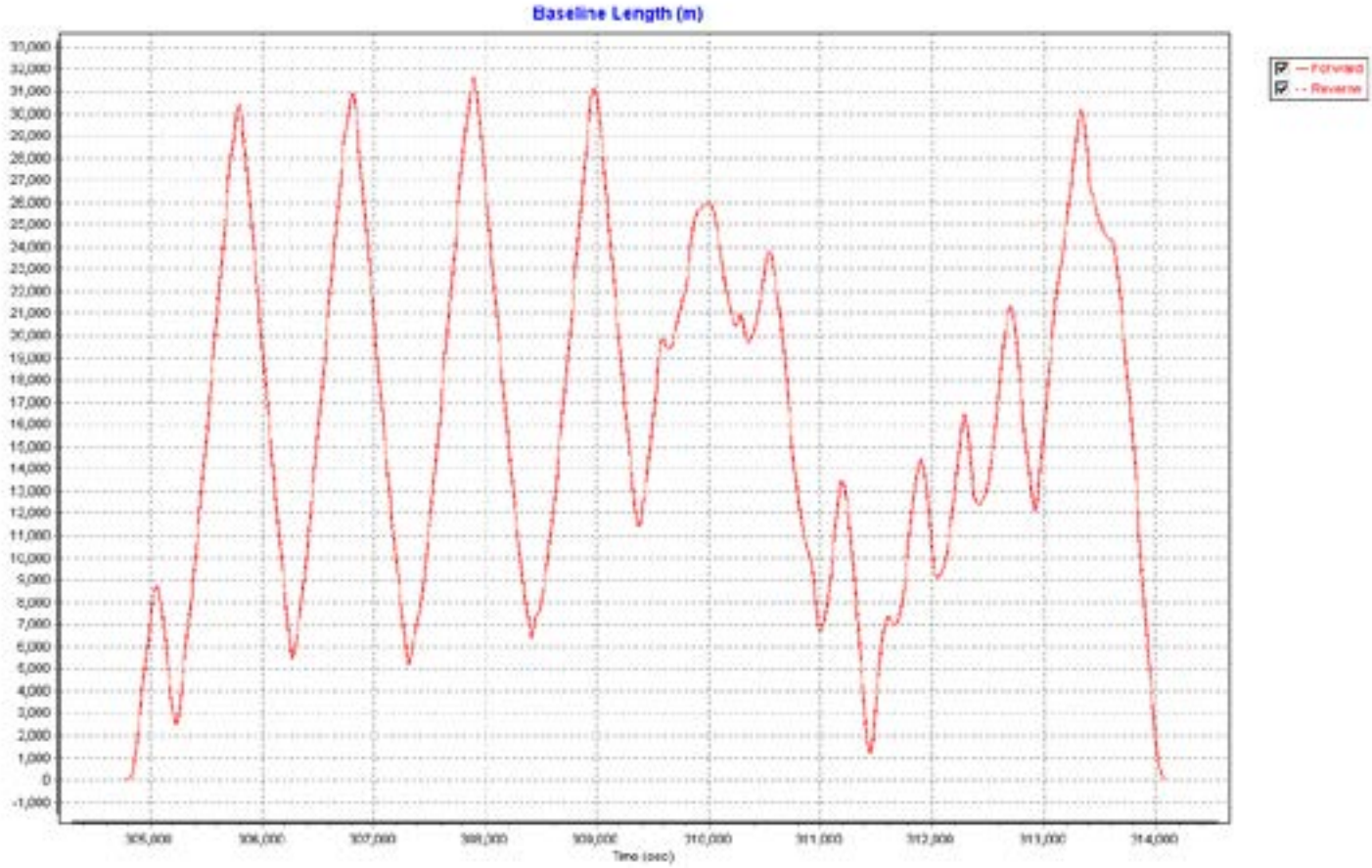

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

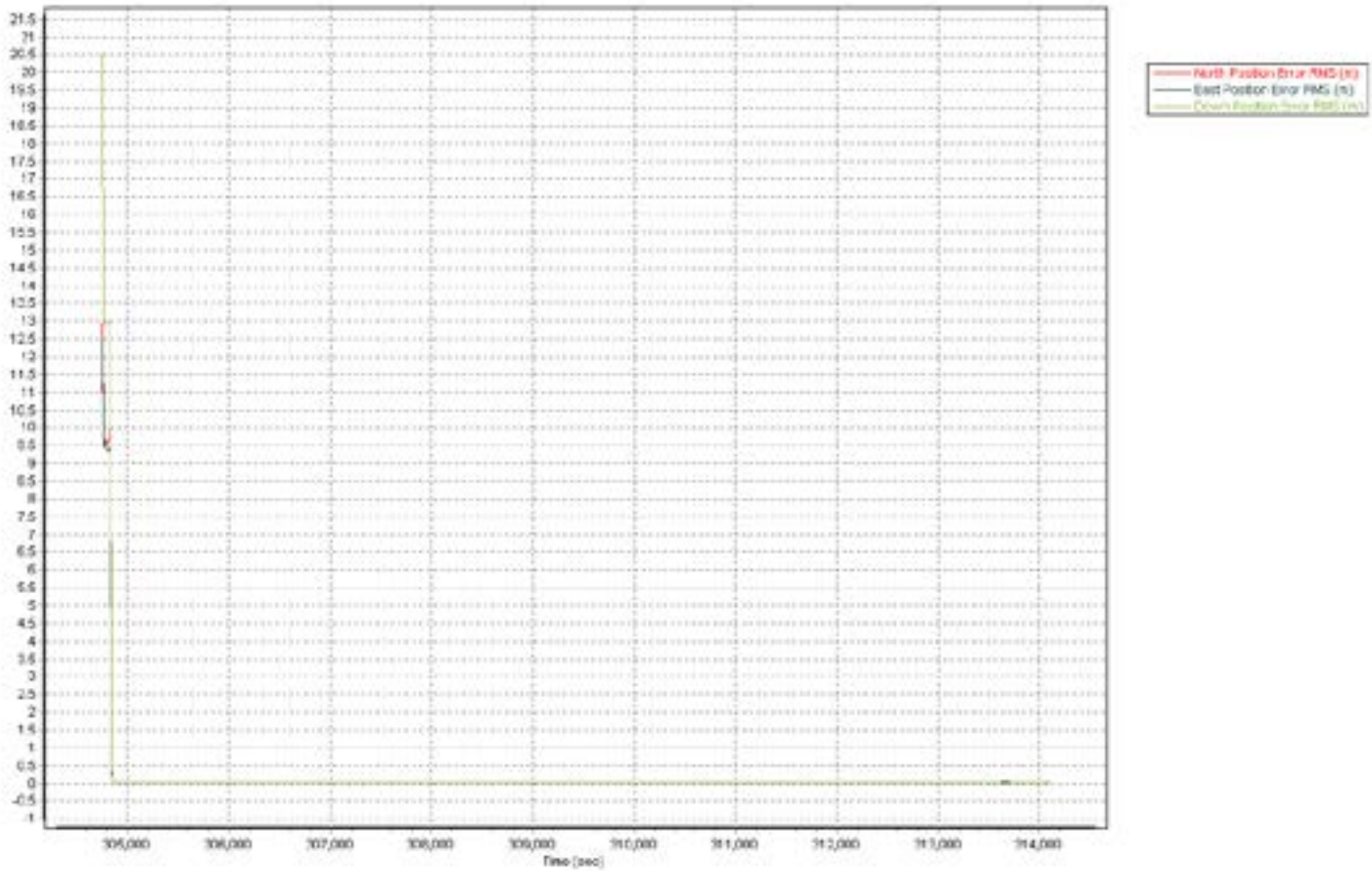

Time (sec)

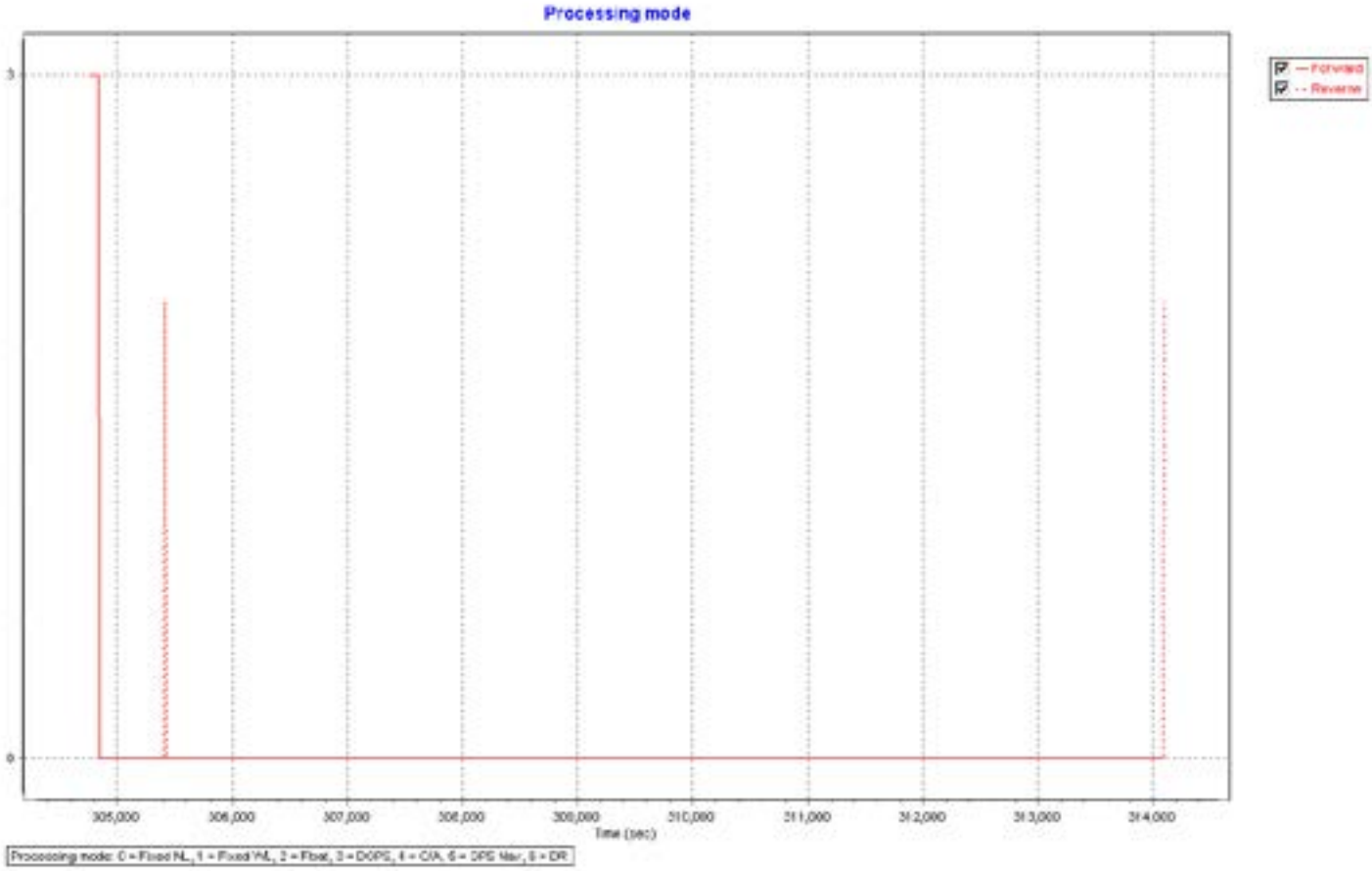

Number of Sats
POOP
Time (sec)

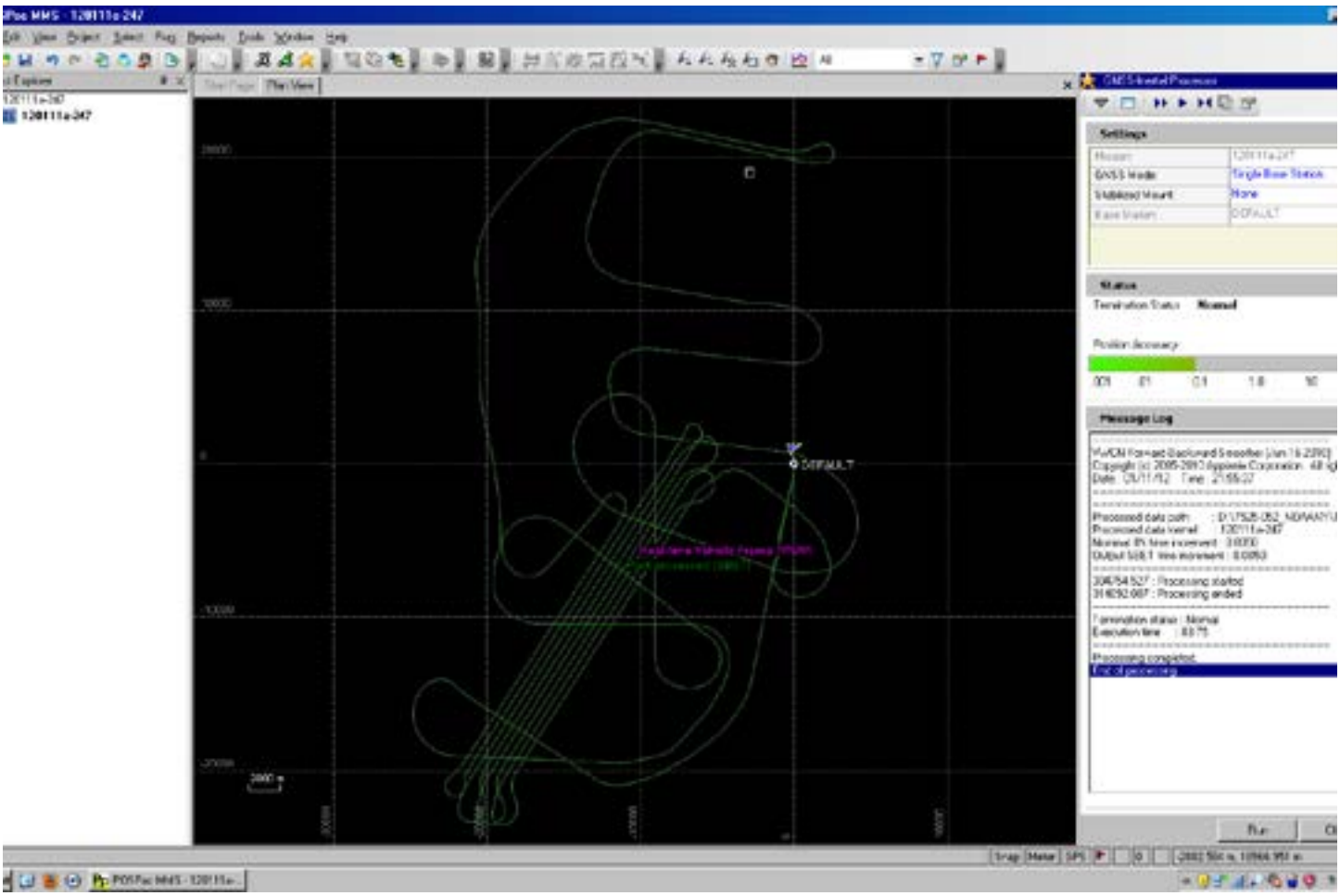

Processing mode
Forward
Reverse
3
2
1
0
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed VL, 2 = Float, 3 = DGPS, 4 = CA, 5 = GPS Nav, 6 = DR

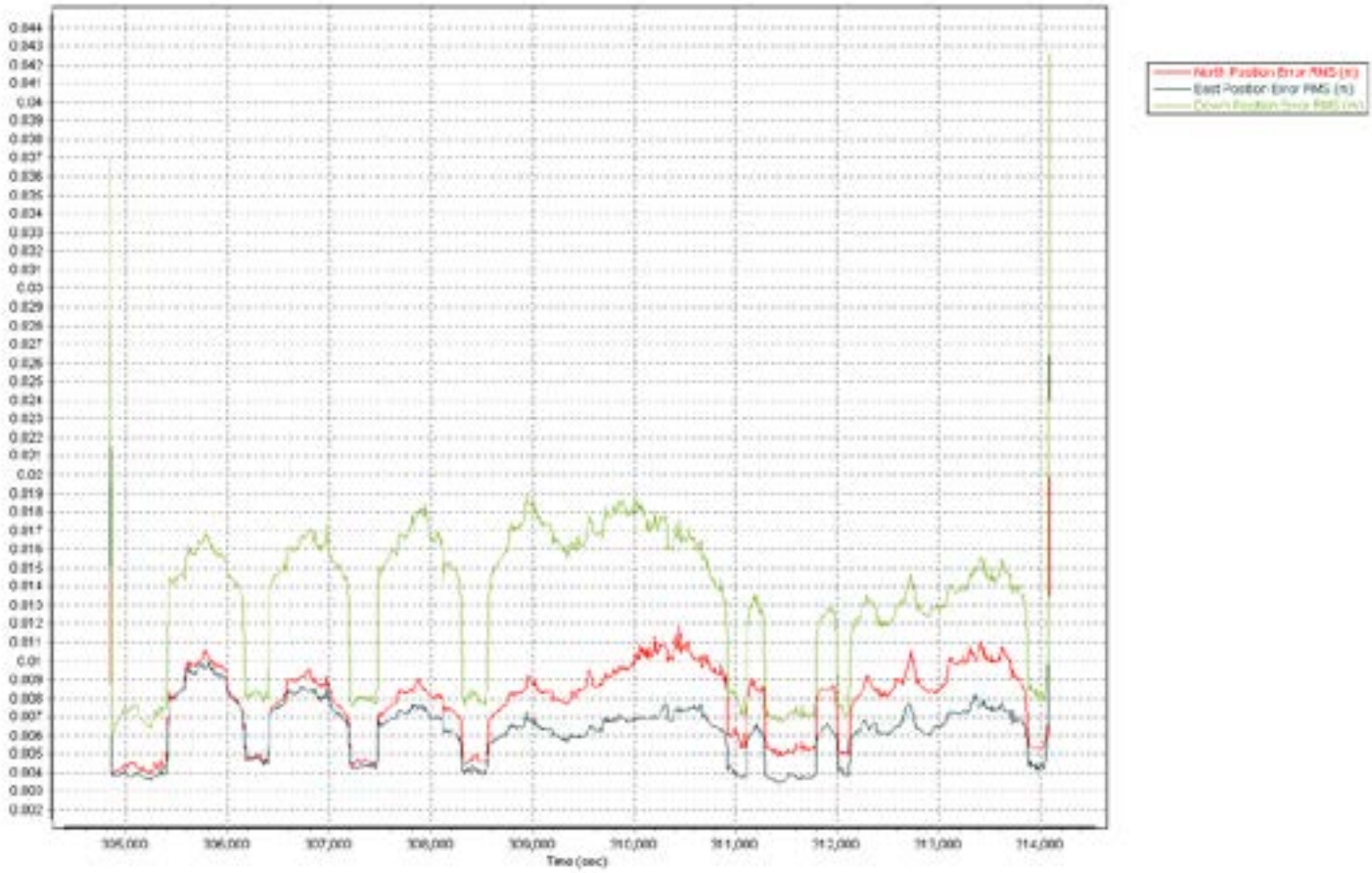
120111a-247

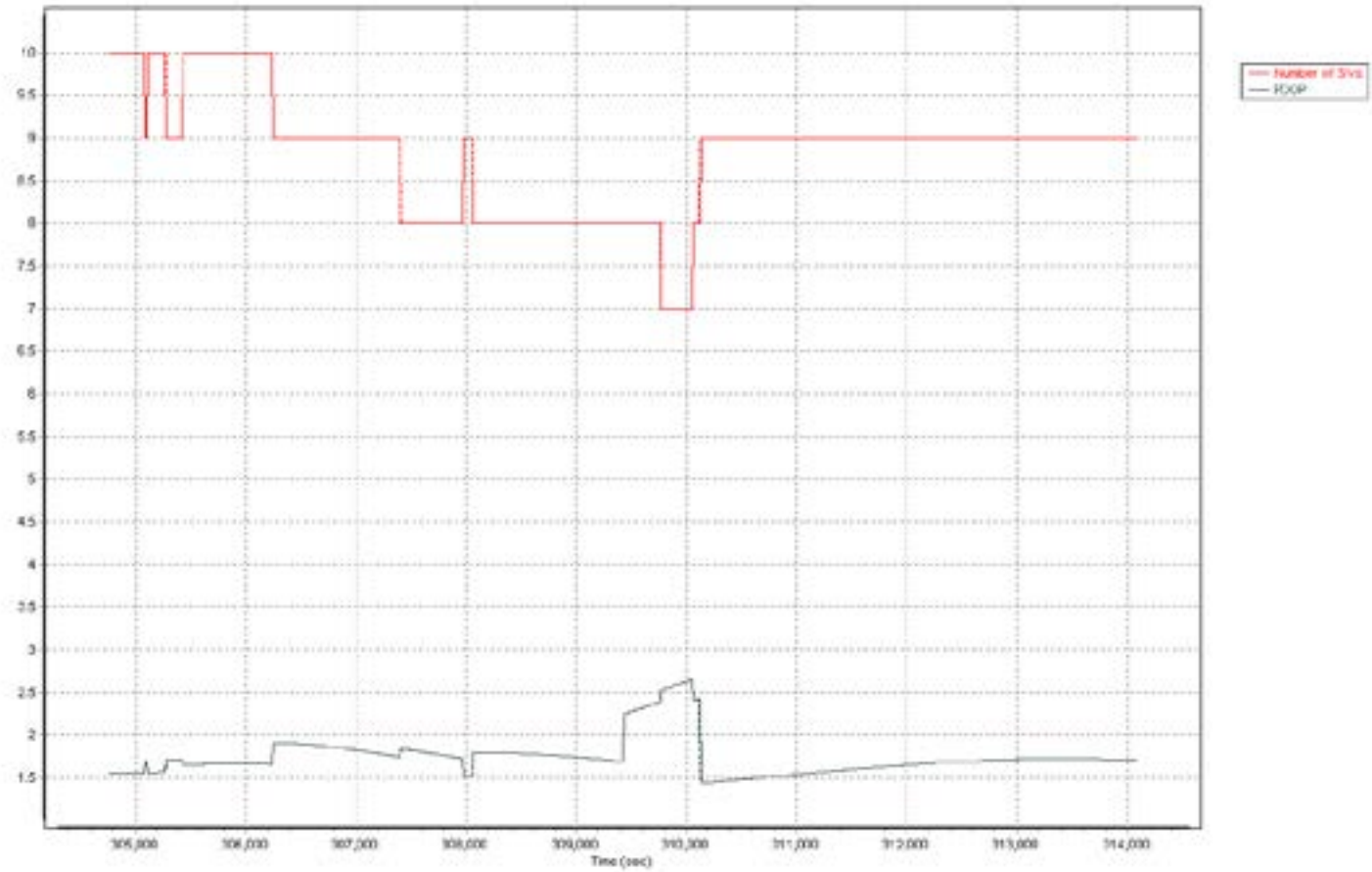

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

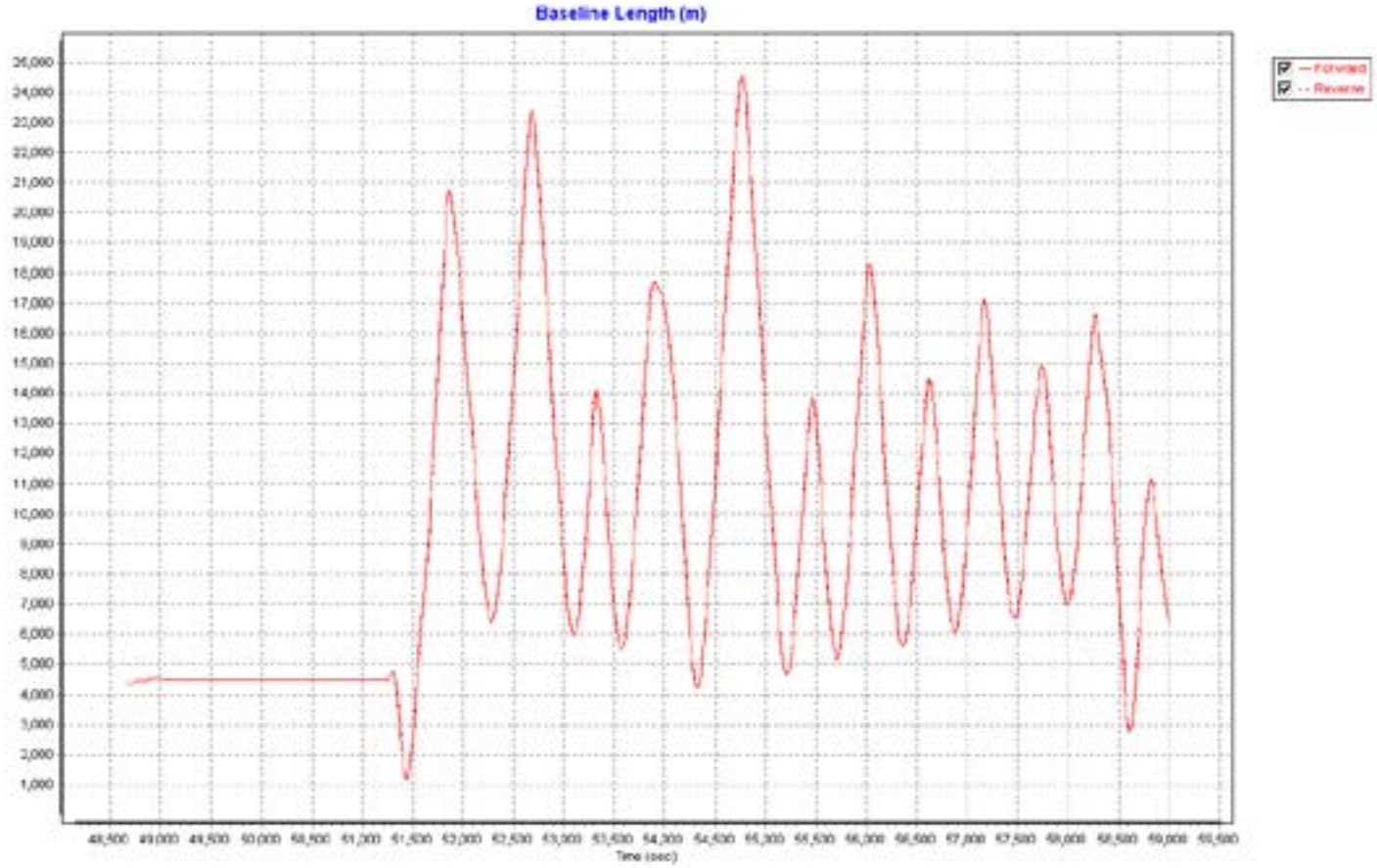

Processing mode
Forward
Reverse
5
0
305,000
306,000
307,000
308,000
309,000
310,000
311,000
312,000
313,000
314,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

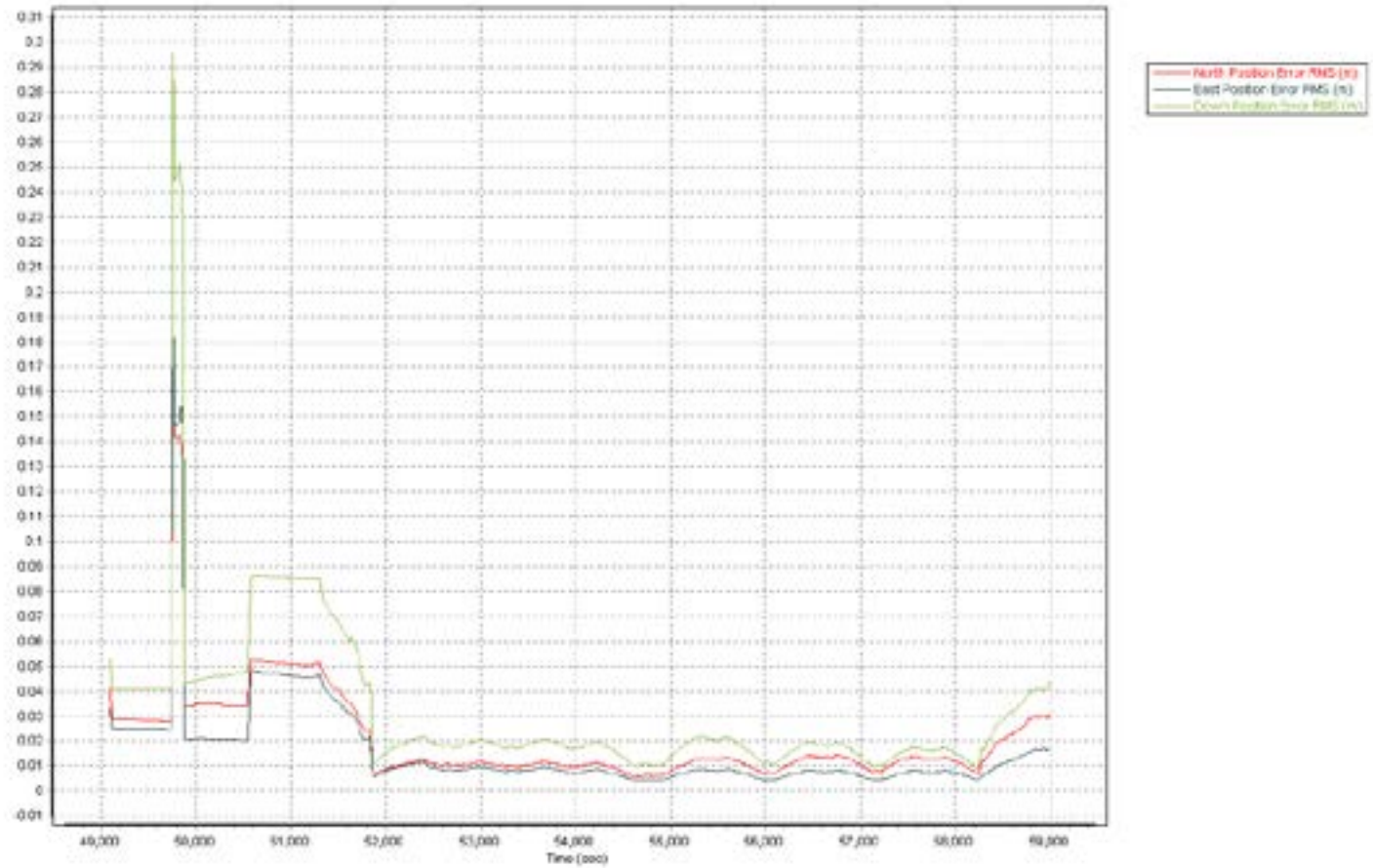

Settings
Status
Message Log
DEFAULT

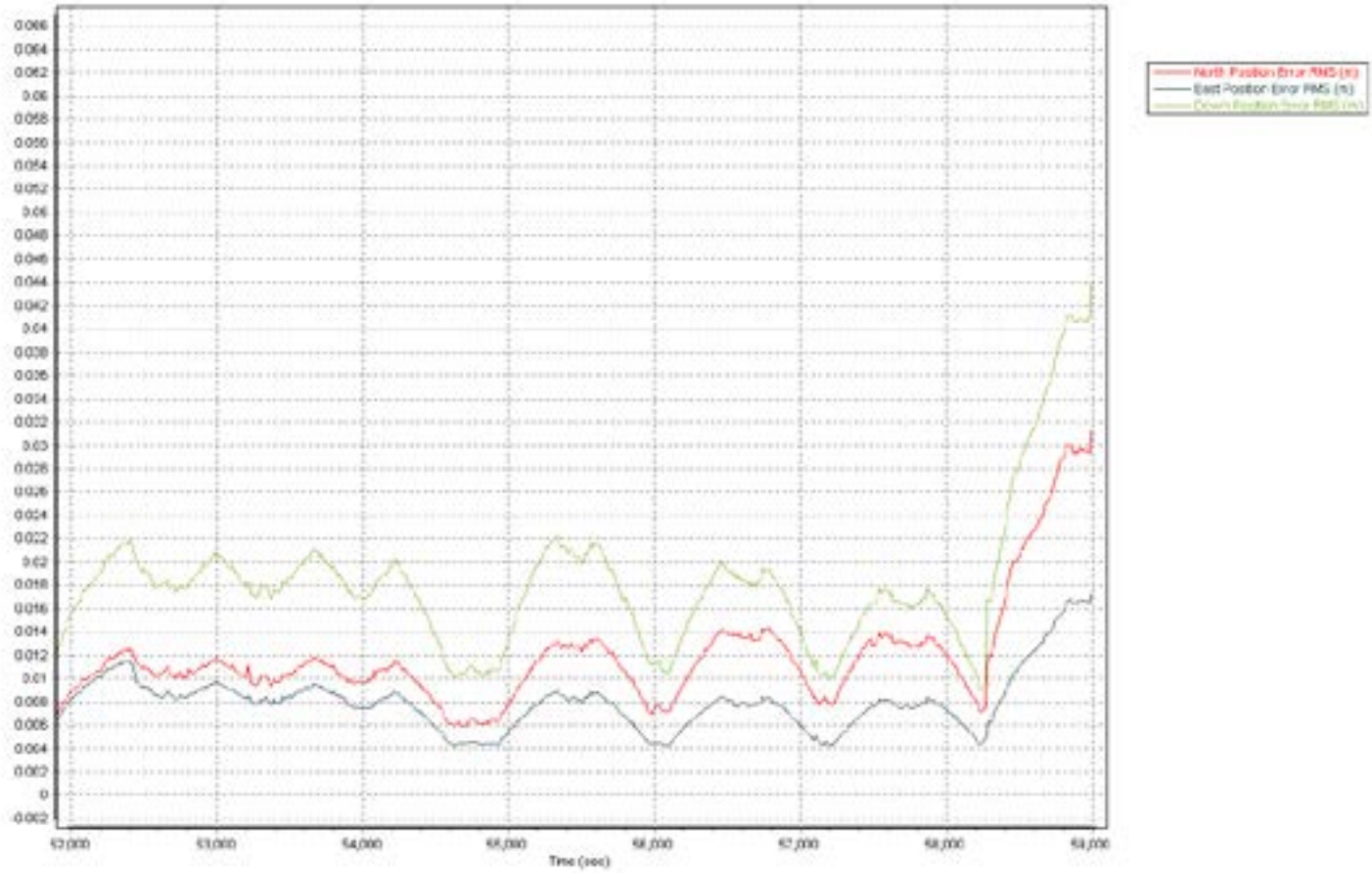

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

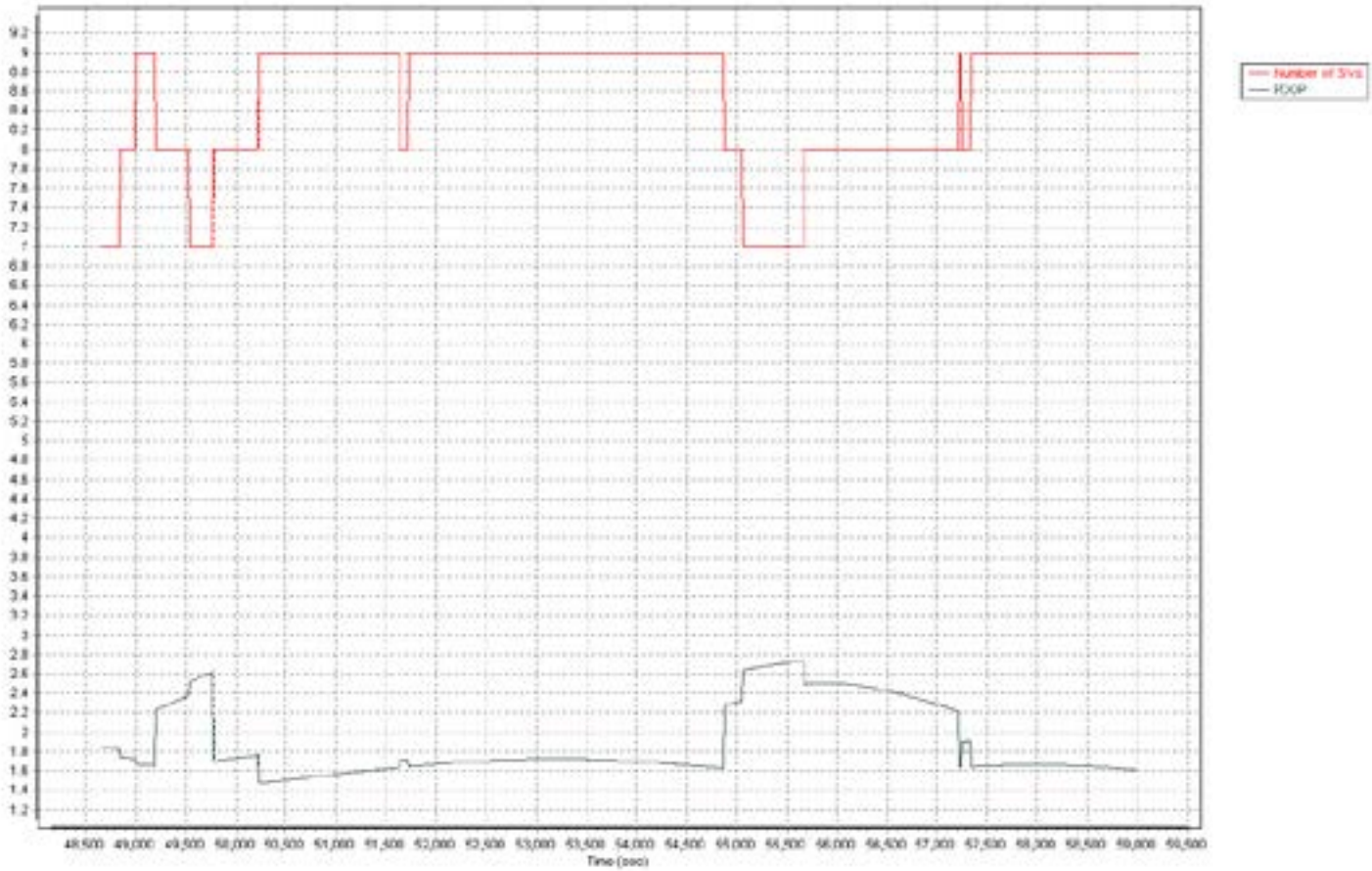

Number of SVs
PDOP
Time (sec)

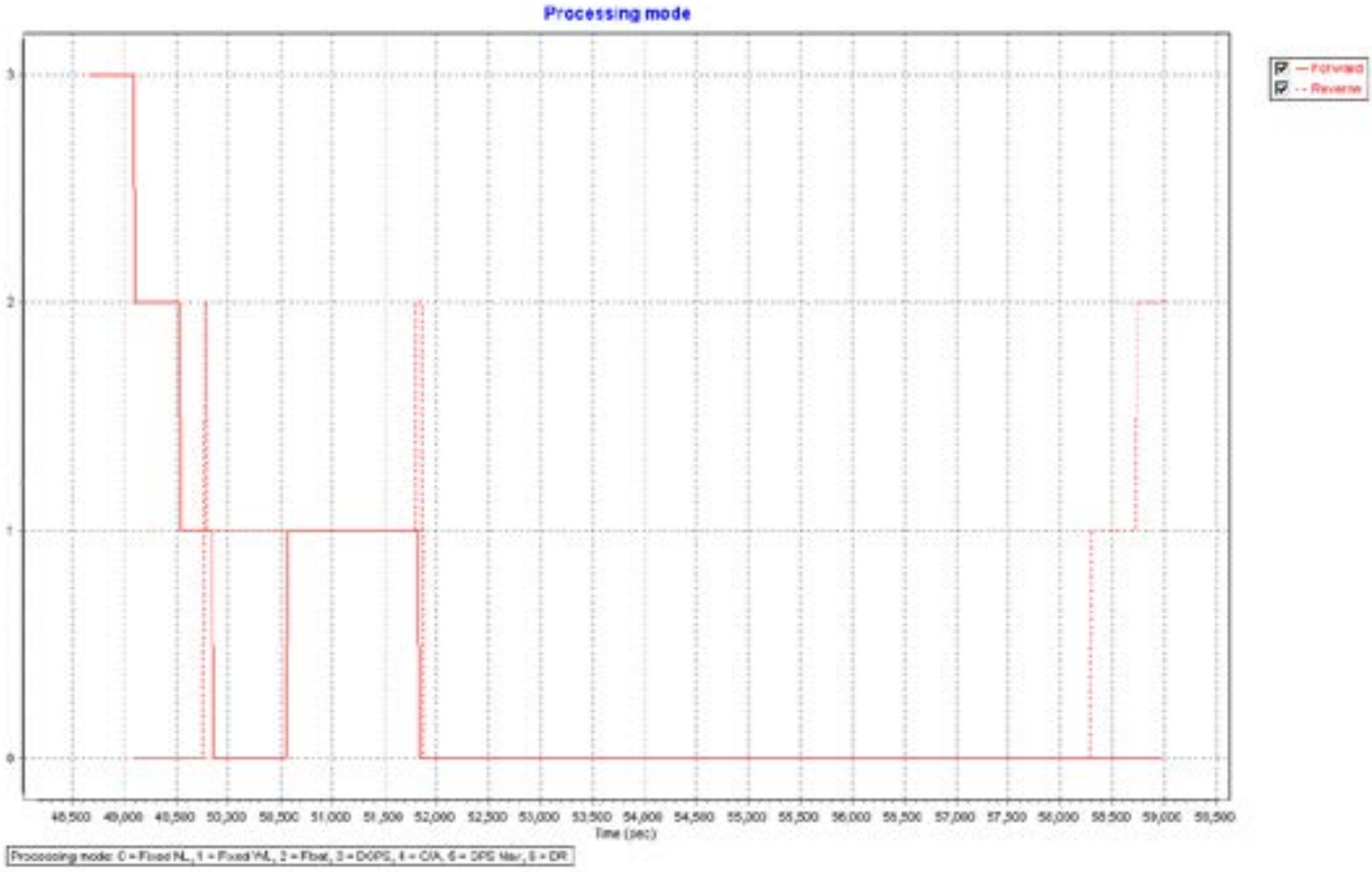
120115a-247

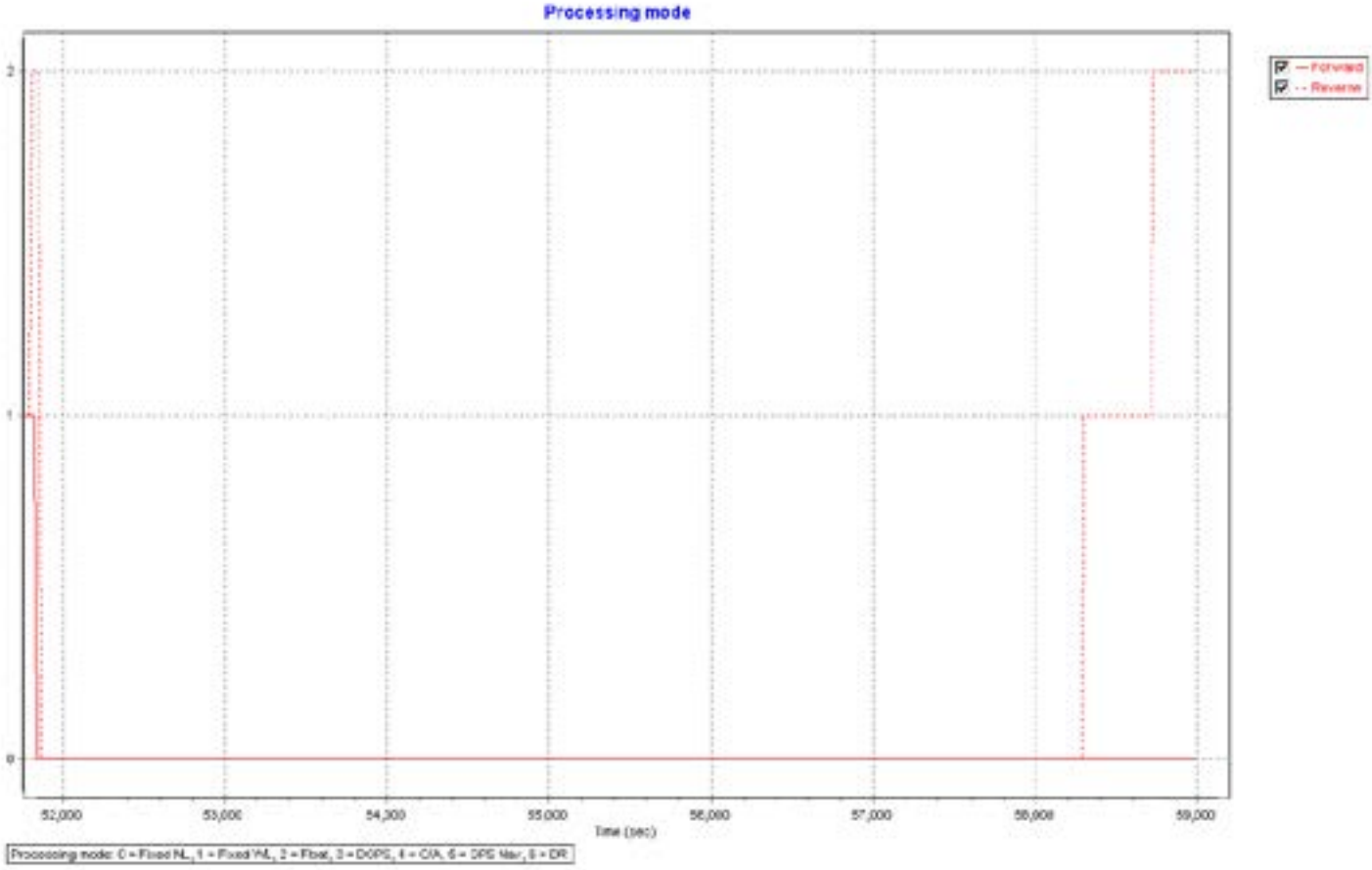

Baseline Length (m)
Forward
Reverse
Time (sec)

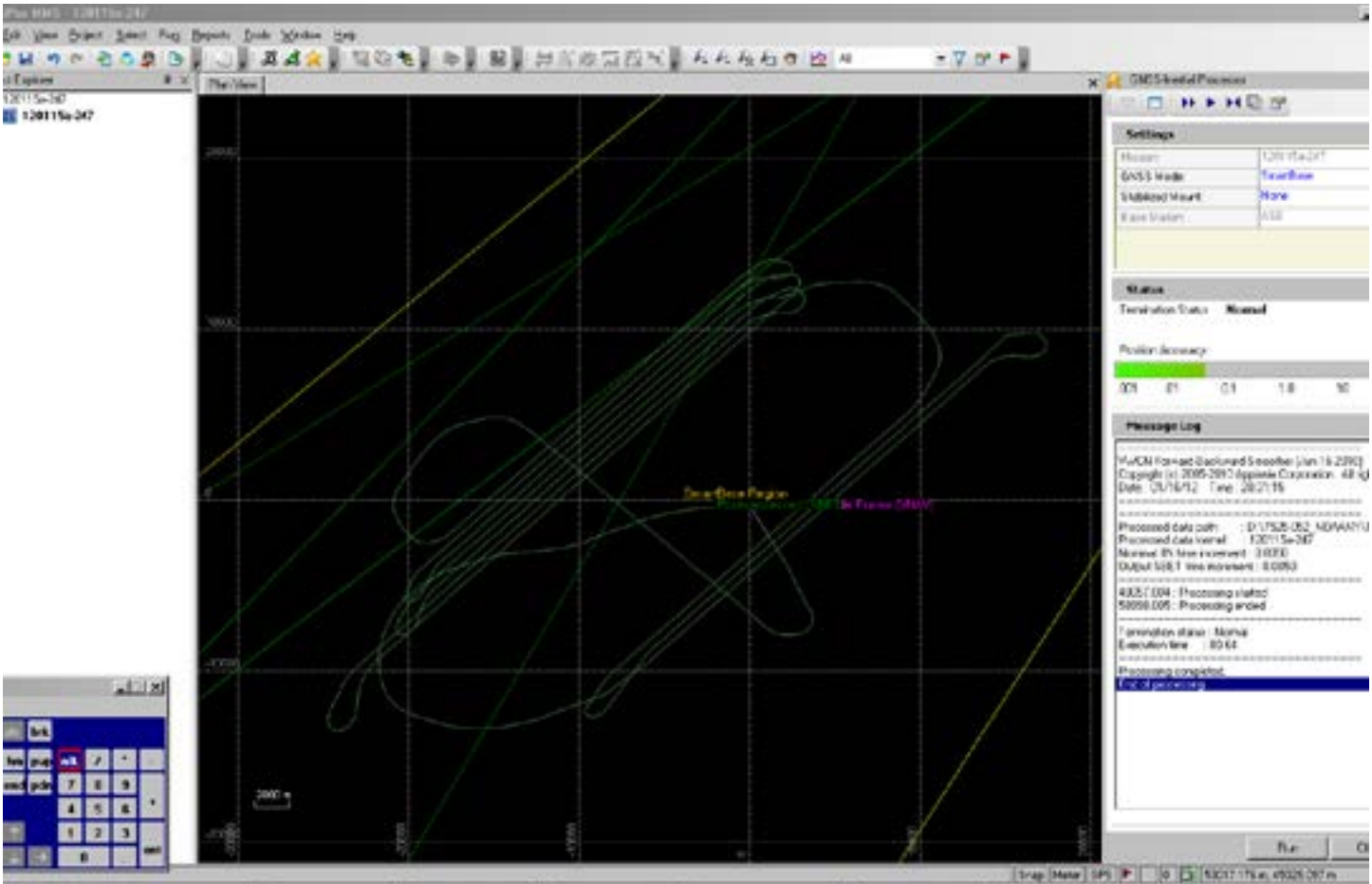

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

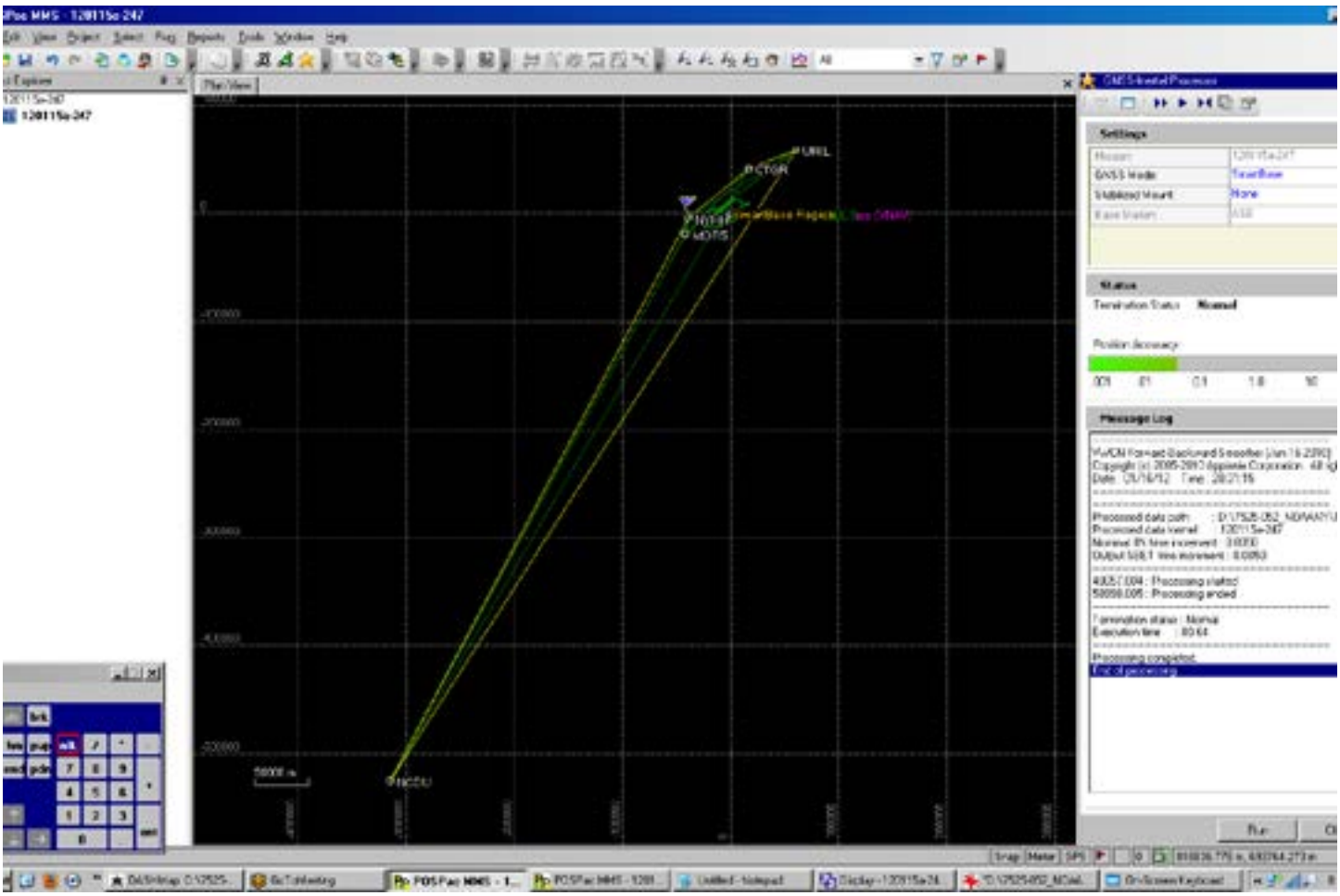

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)

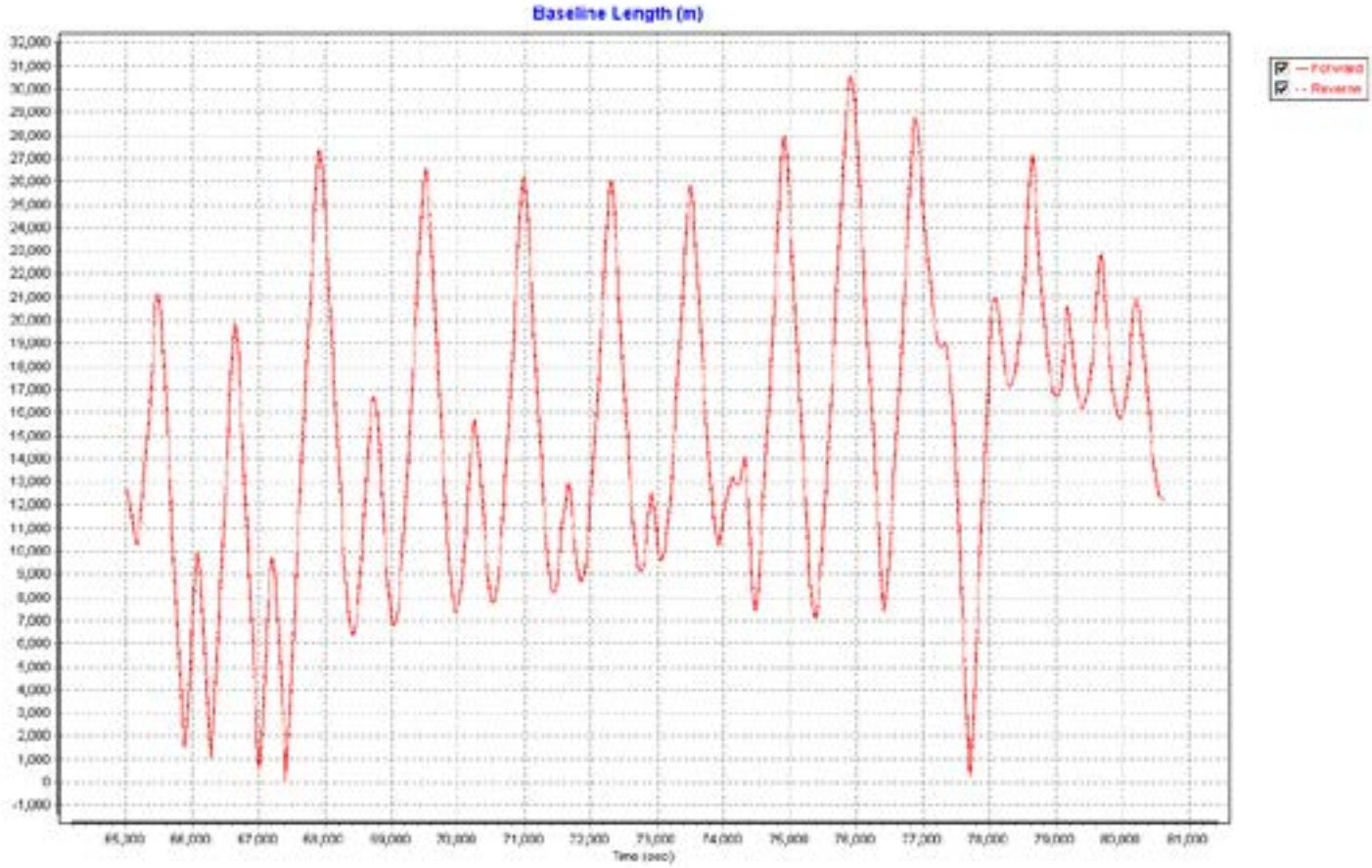

Processing mode
Forward
Reverse
3
2
1
0
48,500 49,000 49,500 50,000 50,500 51,000 51,500 52,000 52,500 53,000 53,500 54,000 54,500 55,000 55,500 56,000 56,500 57,000 57,500 58,000 58,500 59,000 59,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

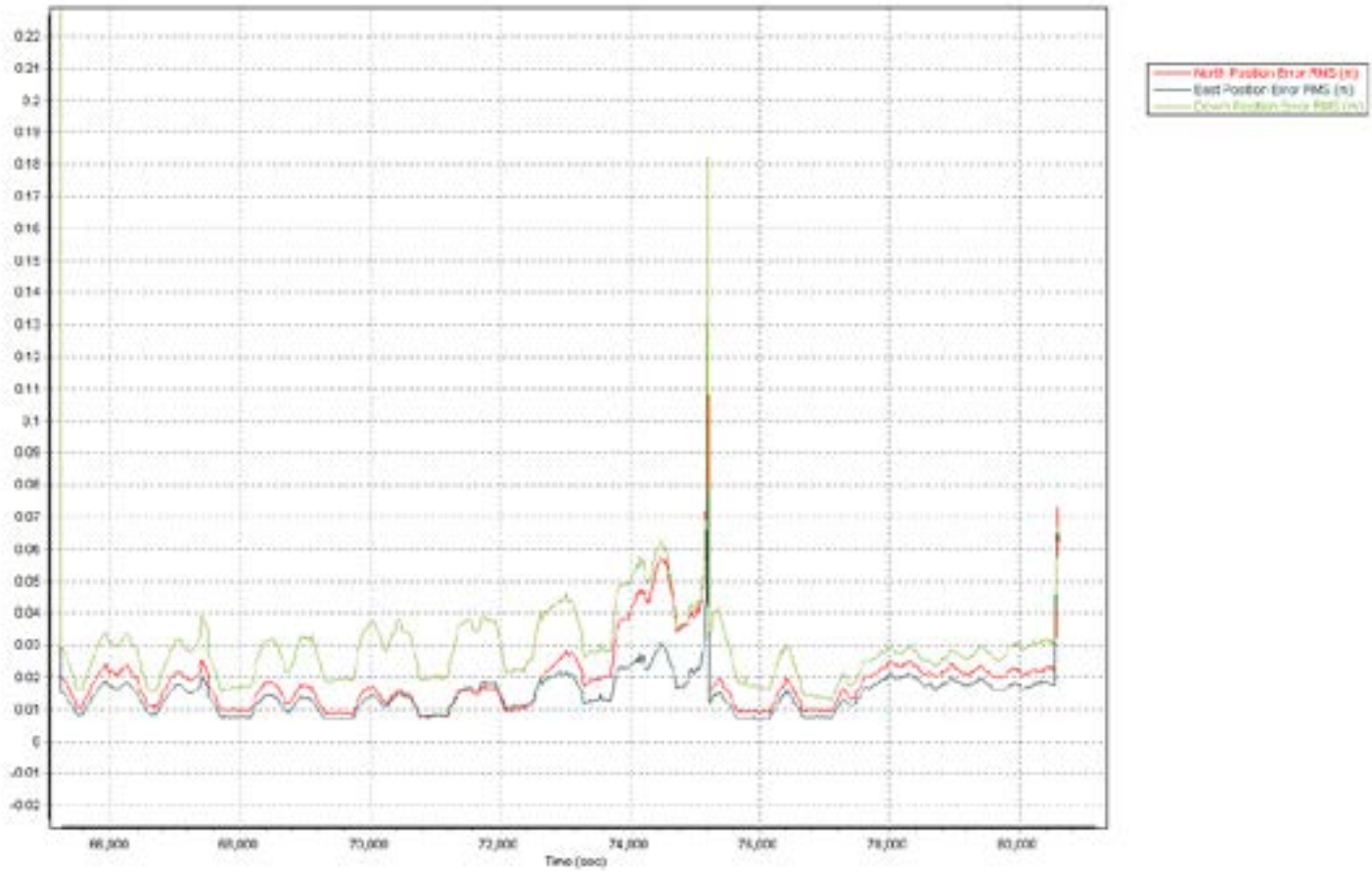

Processing mode
Forward
Reverse
2
1
0
52,000 53,000 54,000 55,000 56,000 57,000 58,000 59,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

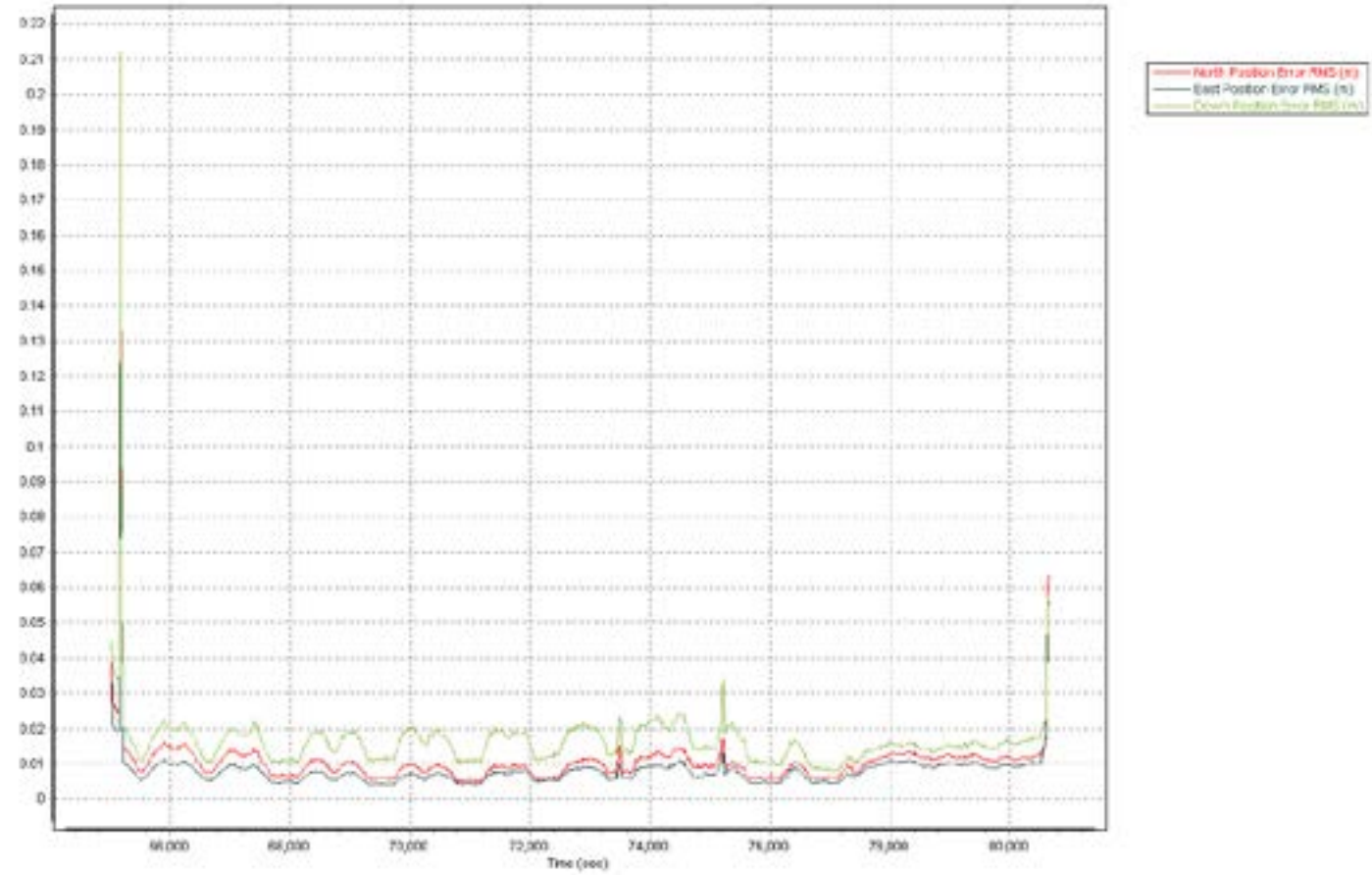

Settings
Status
Message Log

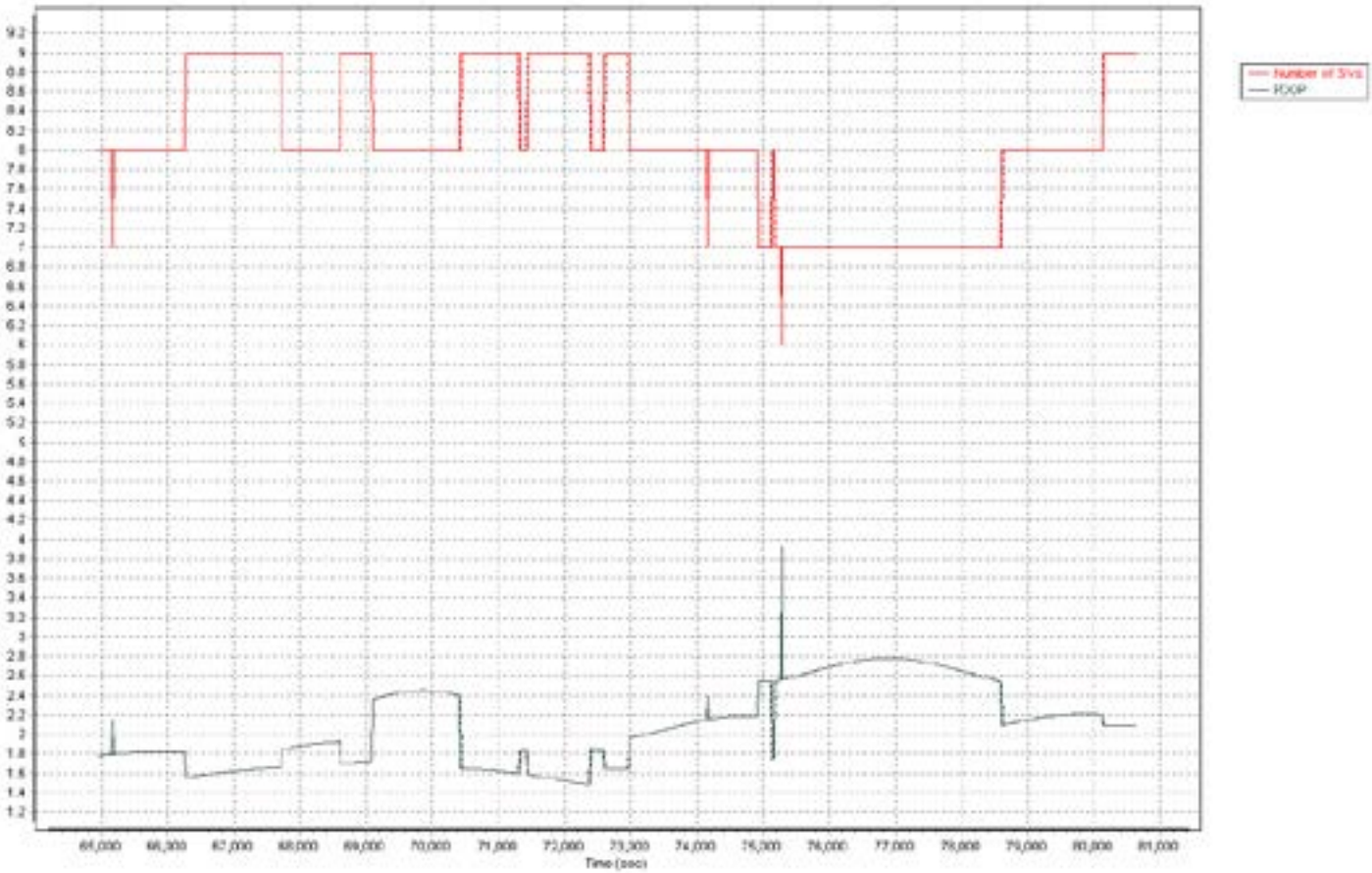

Settings
Status
Message Log

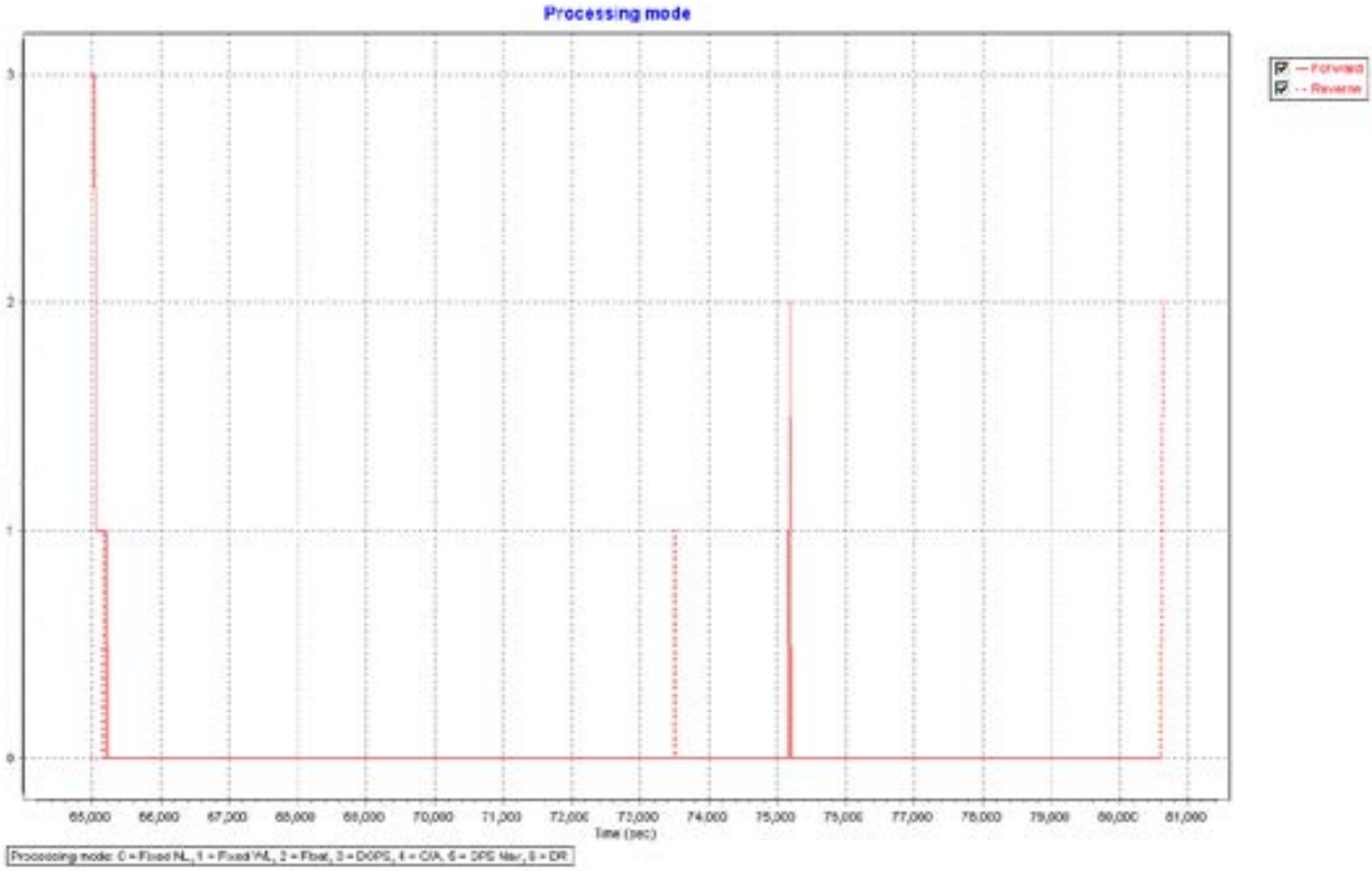
120115b-247

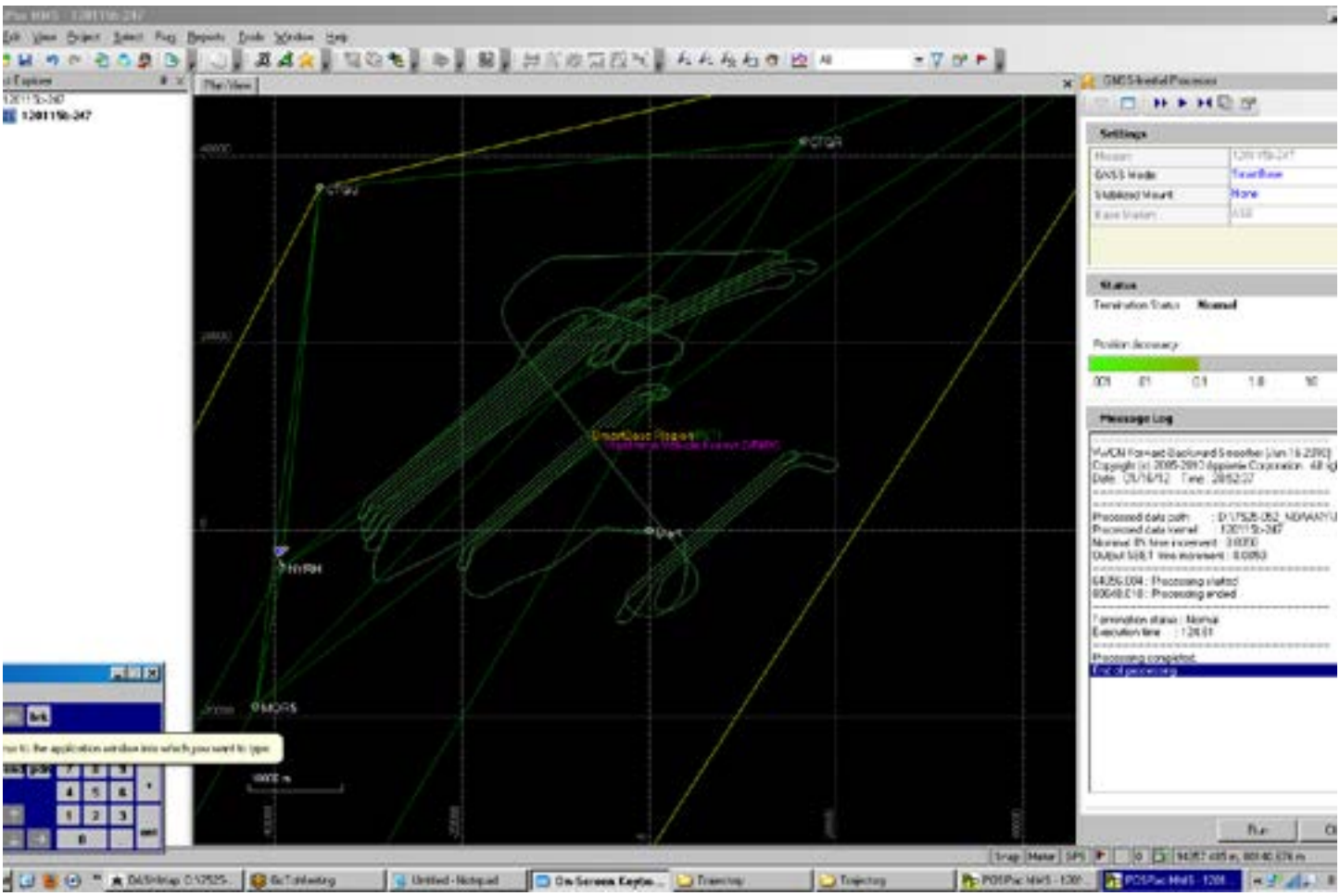

Baseline Length (m)
Forward
Reverse
Time (sec)

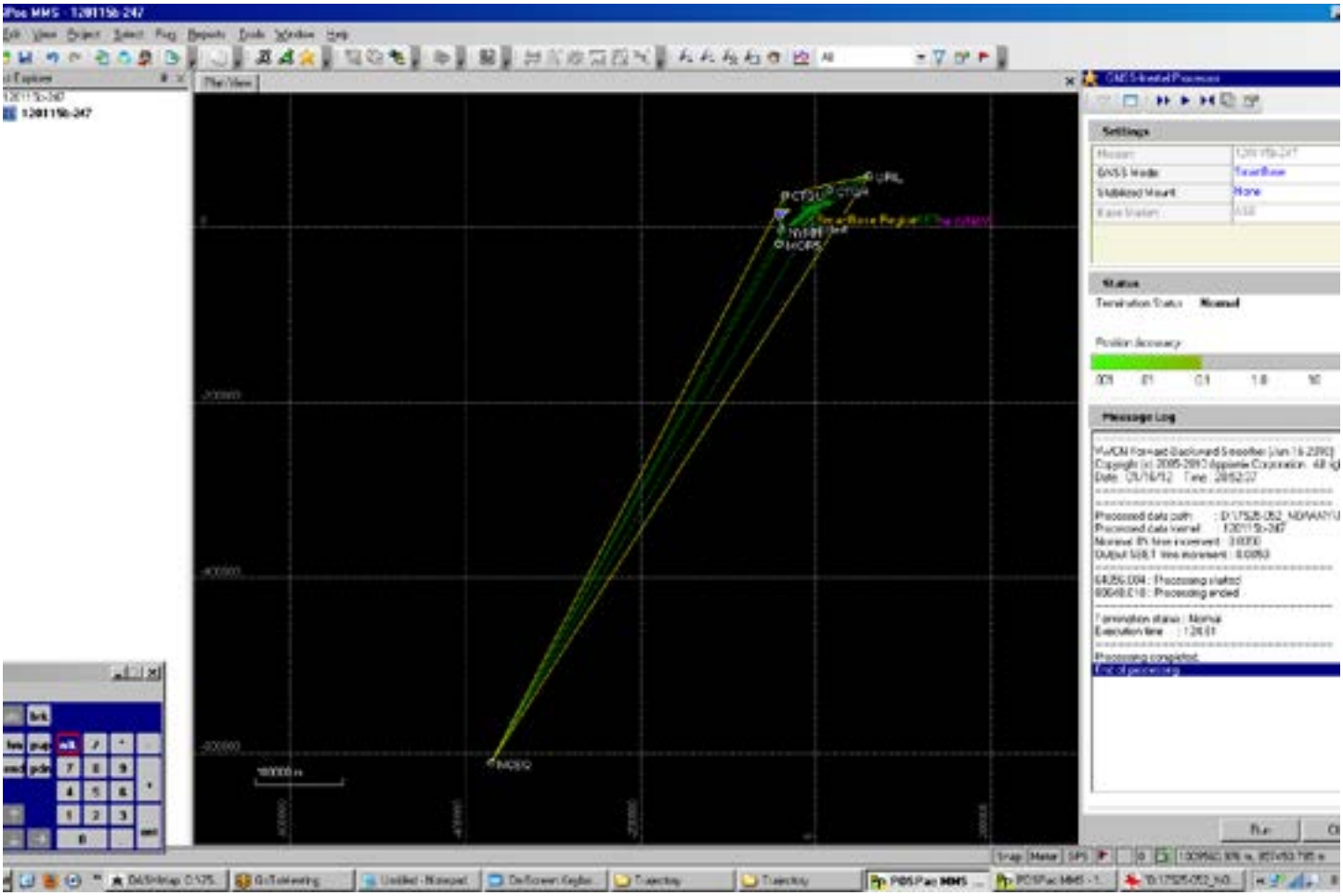

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

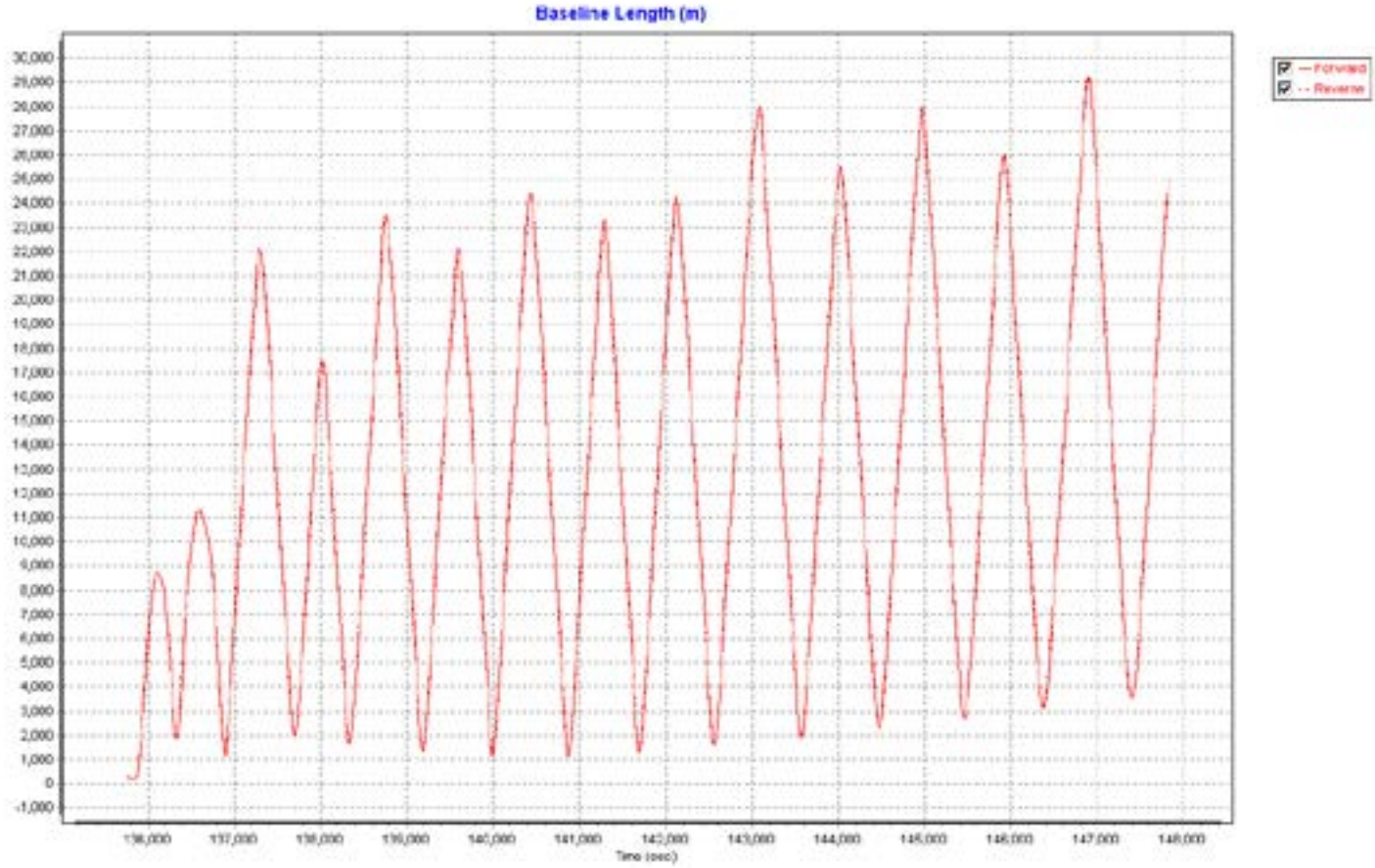

Number of SVs
PDOP
Time (sec)

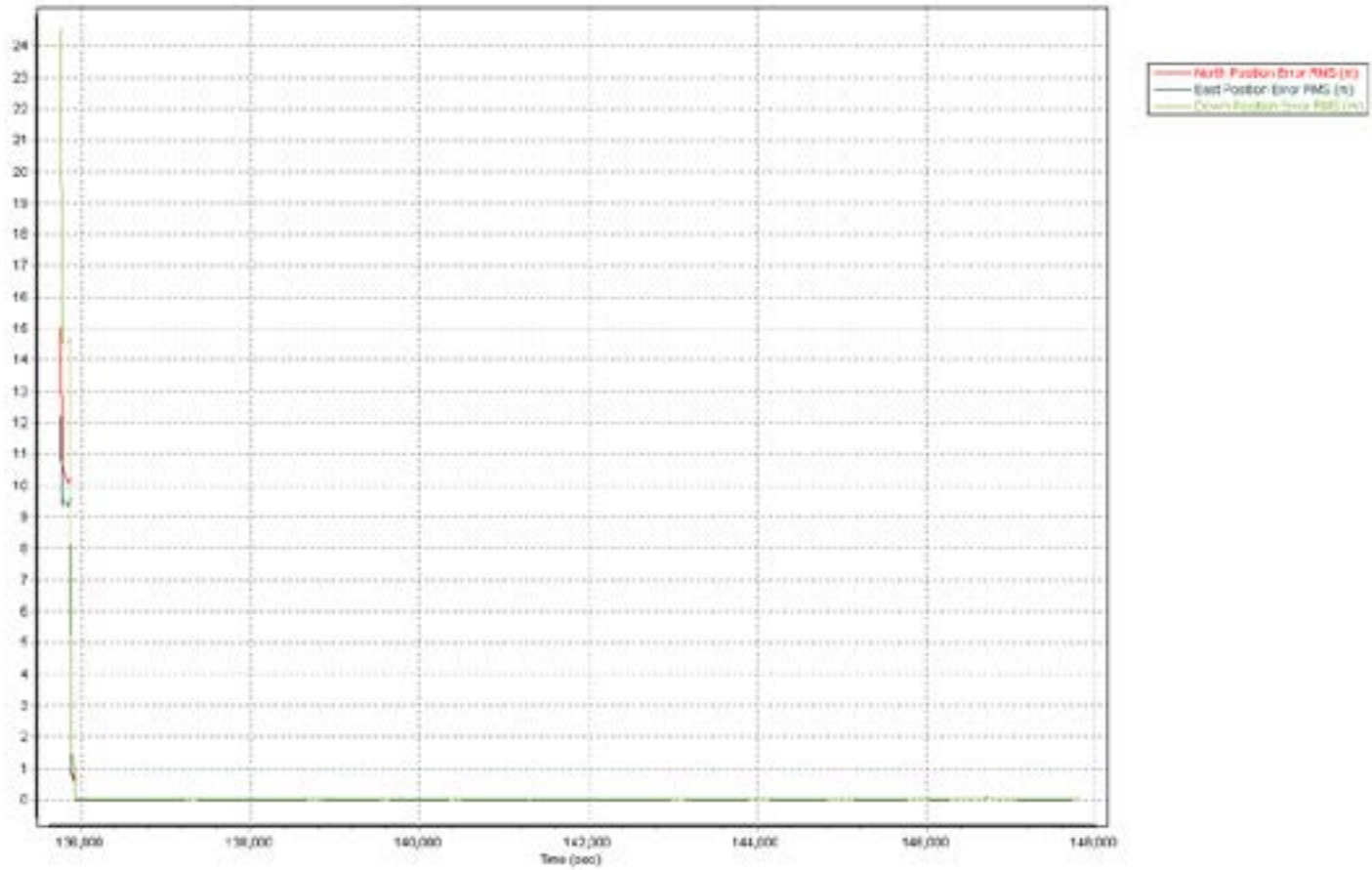

Processing mode
Forward
Reverse
3
2
1
0
65,000
66,000
67,000
68,000
69,000
70,000
71,000
72,000
73,000
74,000
75,000
76,000
77,000
78,000
79,000
80,000
81,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

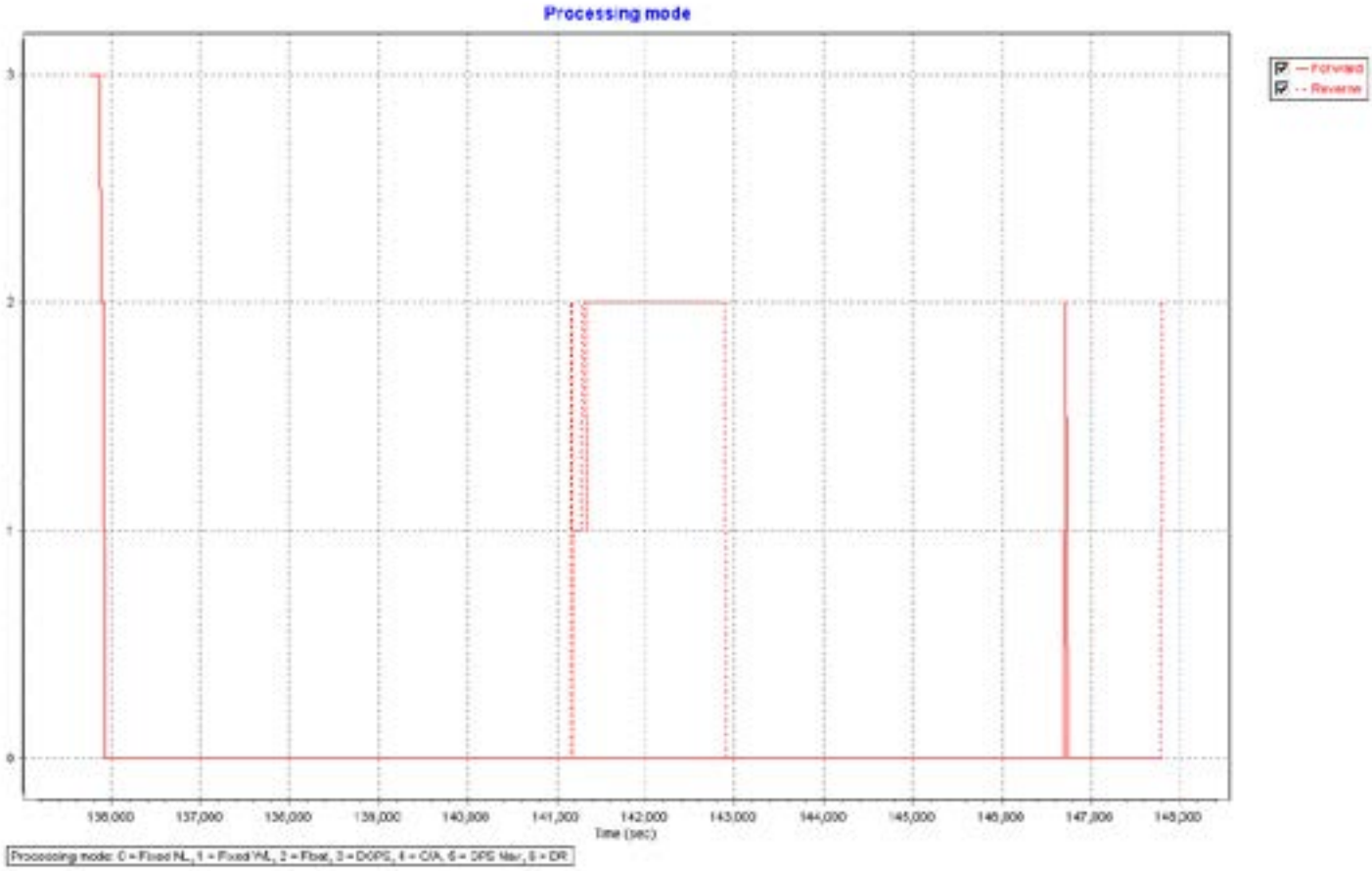

Settings
Status
Message Log

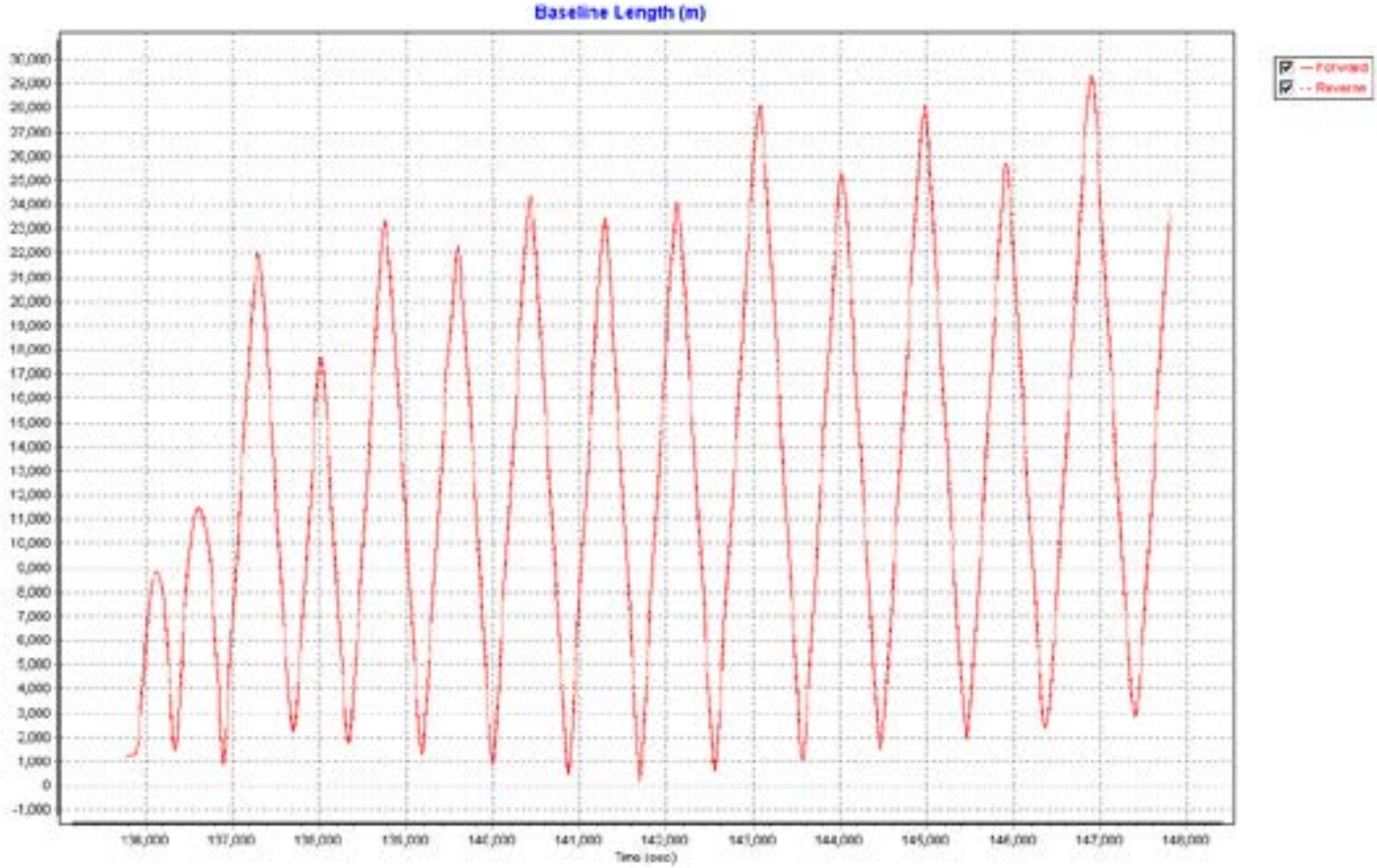

Settings
Status
Termination Status
Normal
Position Accuracy
Message Log

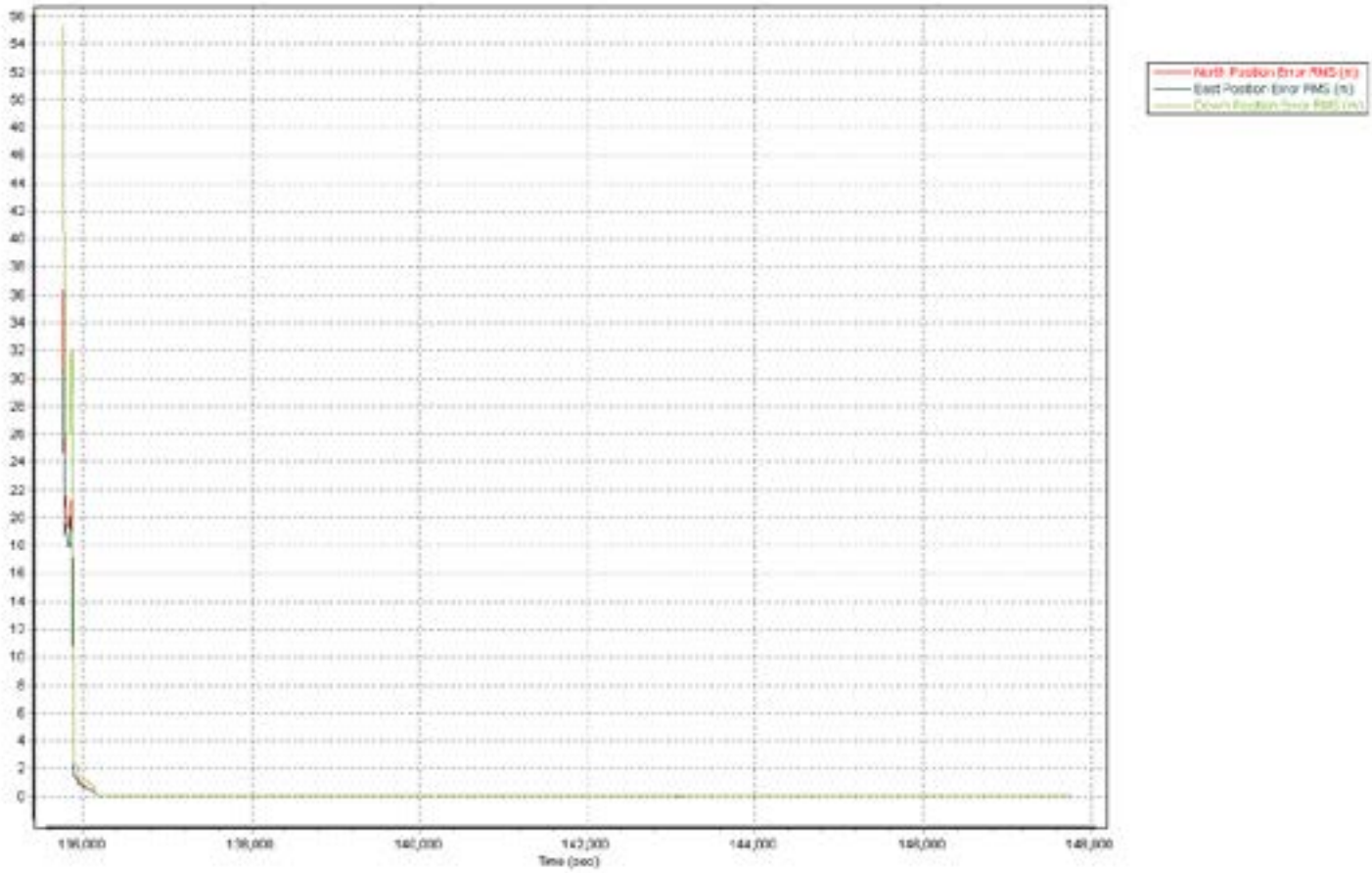
120116a-247

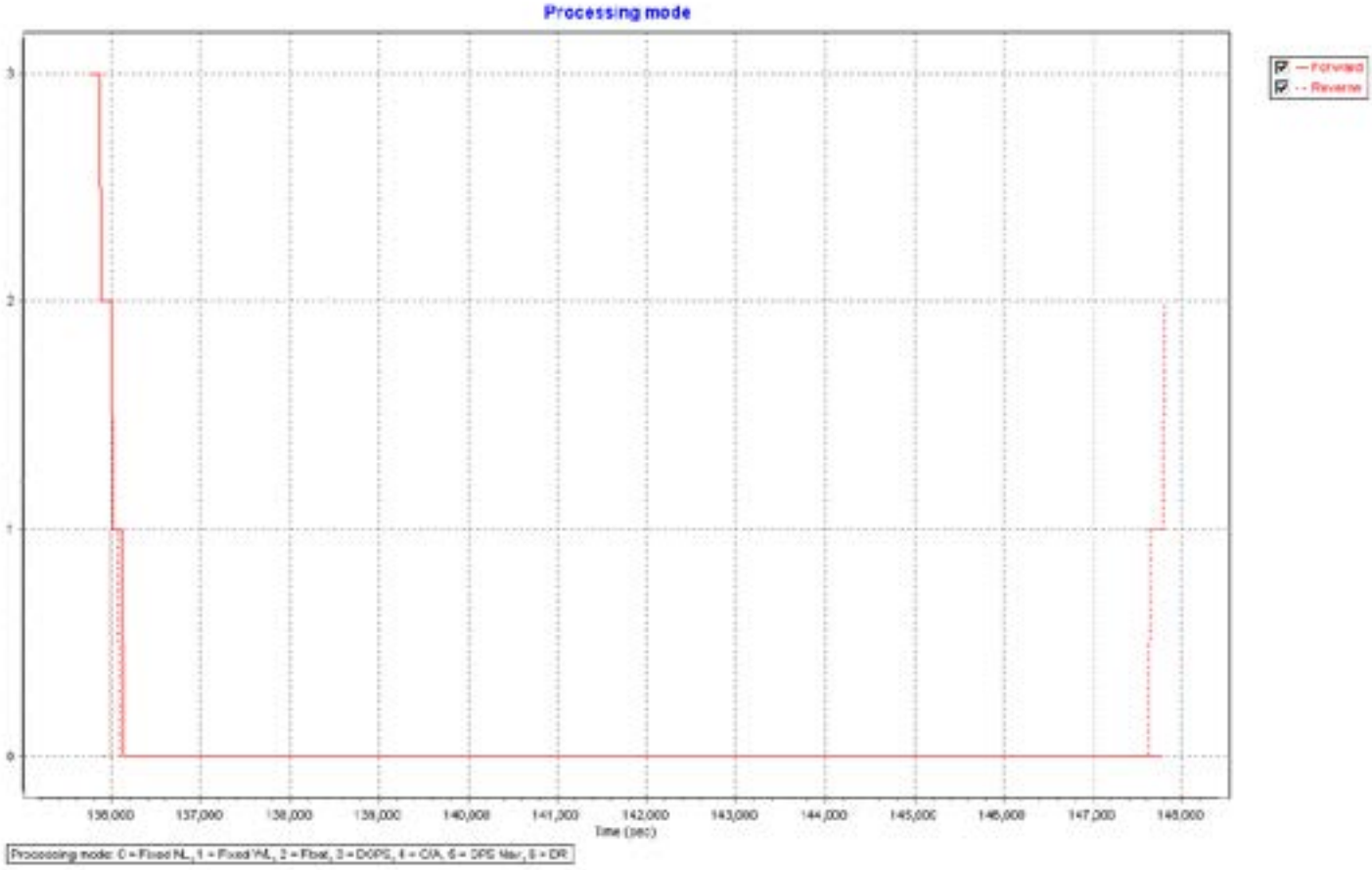

Baseline Length (m)
Forward
Reverse
Time (sec)

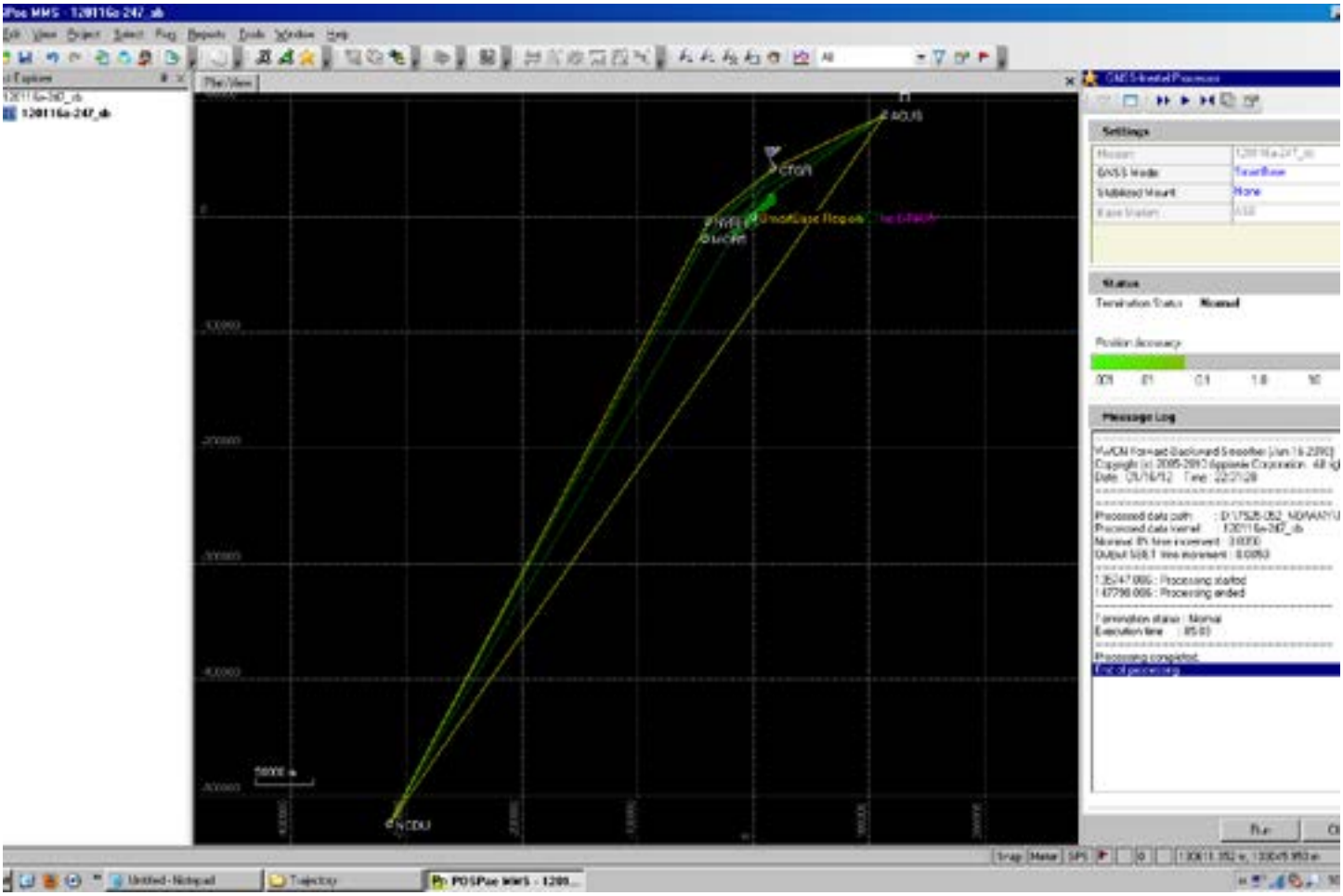

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

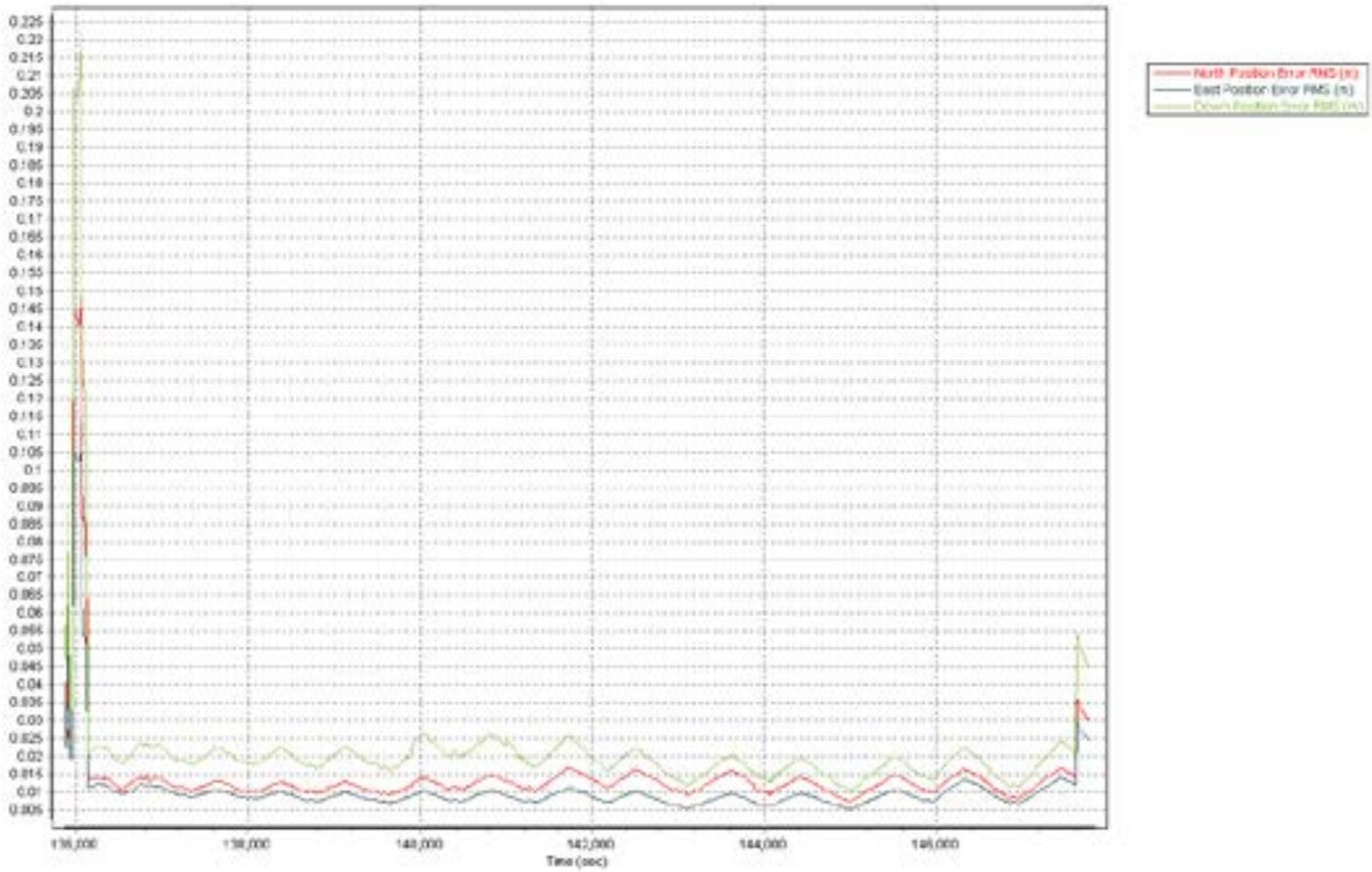

Processing mode
Forward
Reverse
3
2
1
0
136,000
137,000
138,000
139,000
140,000
141,000
142,000
143,000
144,000
145,000
146,000
147,000
148,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

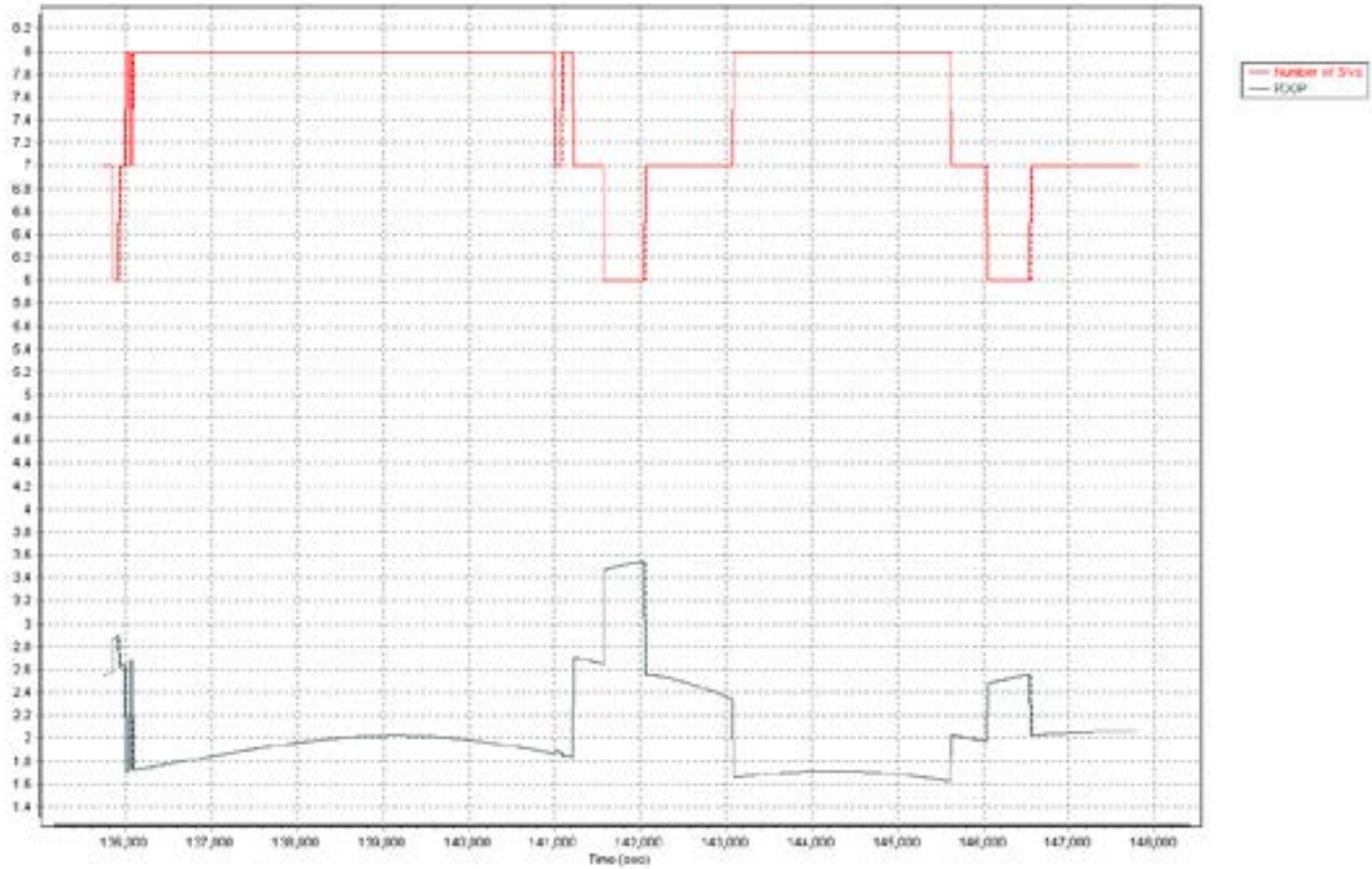

Baseline Length (m)
Forward
Reverse
30,000
29,000
28,000
27,000
26,000
25,000
24,000
23,000
22,000
21,000
20,000
19,000
18,000
17,000
16,000
15,000
14,000
13,000
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
136,000
137,000
138,000
139,000
140,000
141,000
142,000
143,000
144,000
145,000
146,000
147,000
148,000
Time (sec)

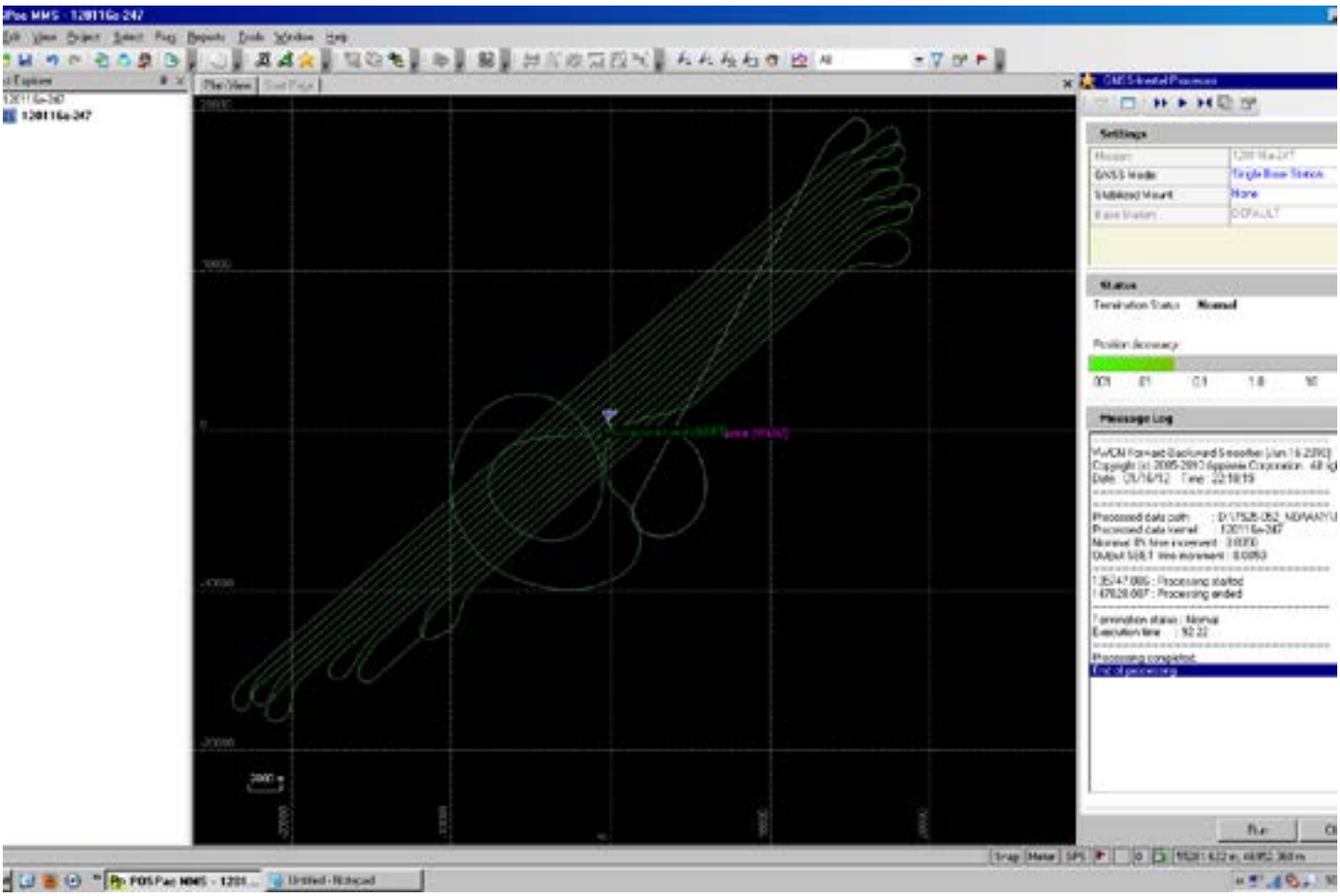

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

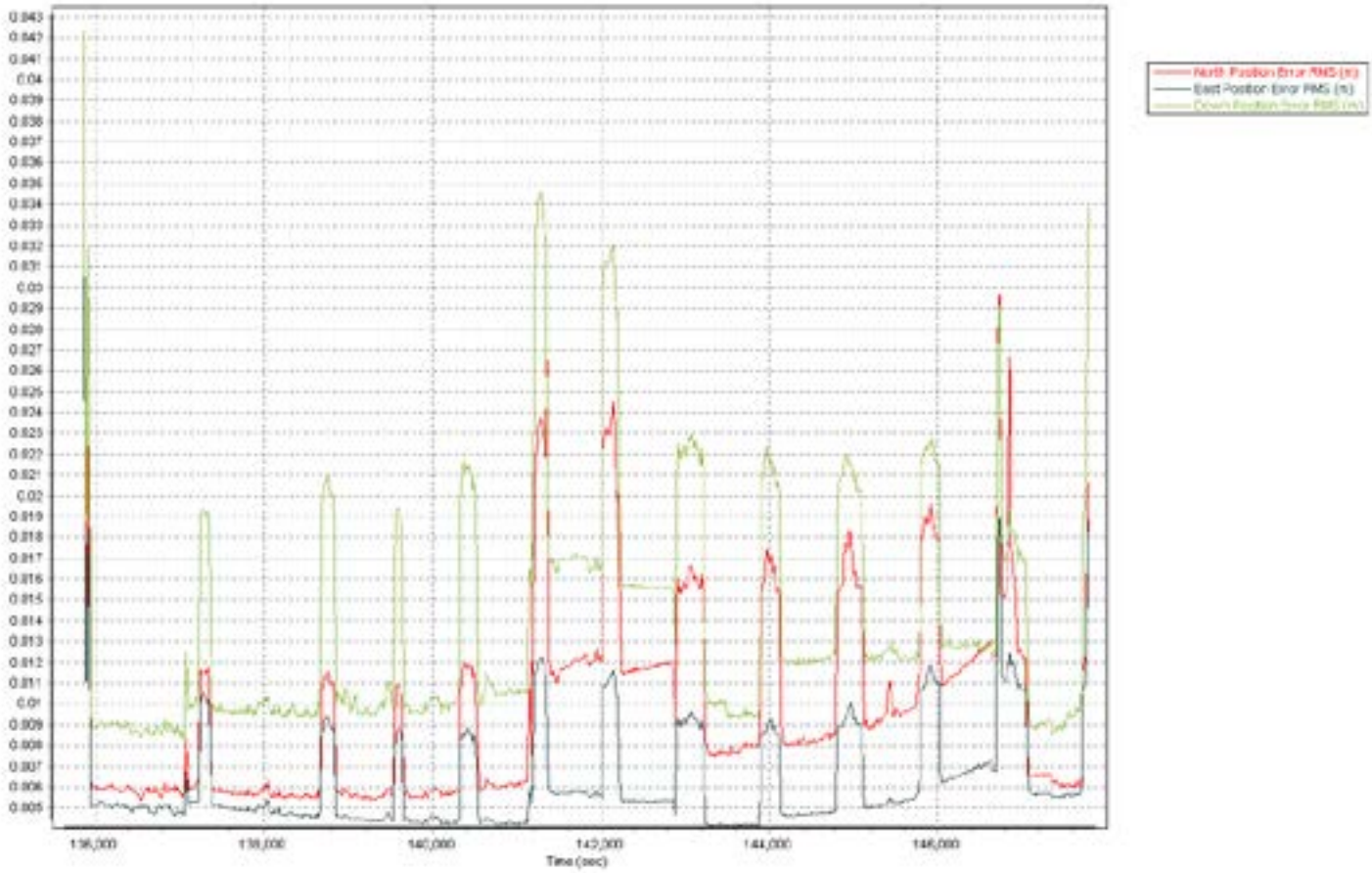

Processing mode
Forward
Reverse
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

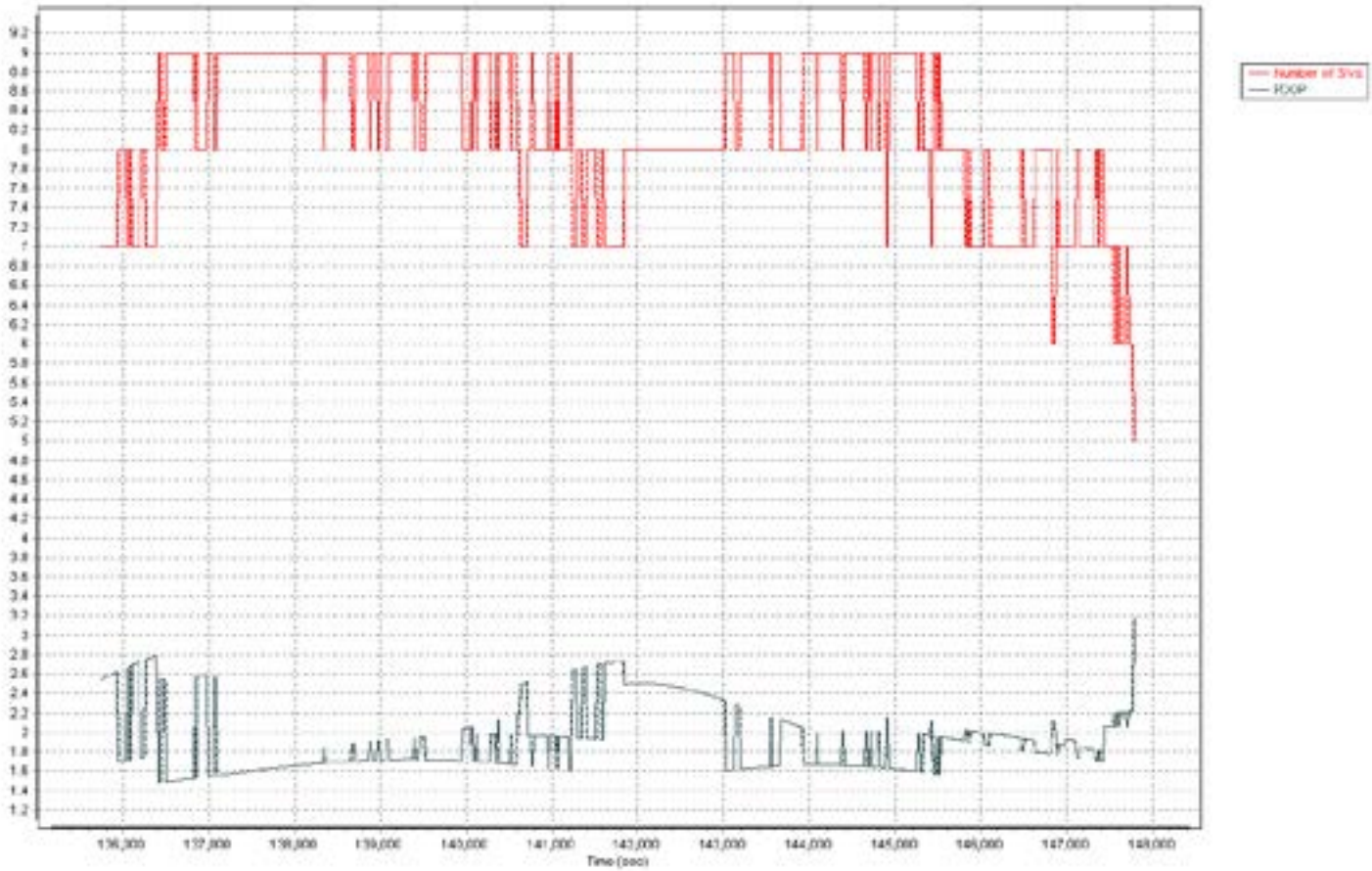



North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

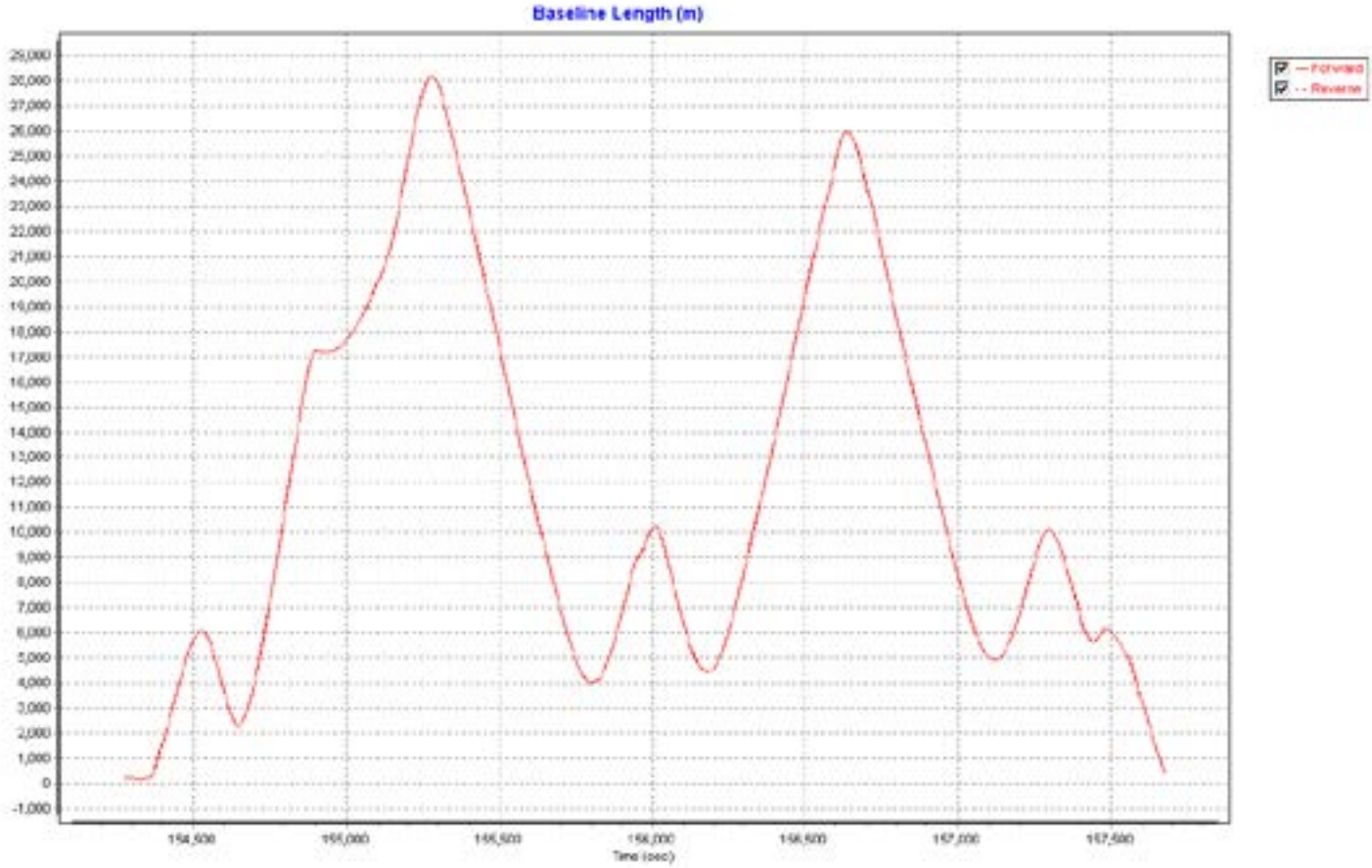

Number of SVs
PDOP
Time (sec)

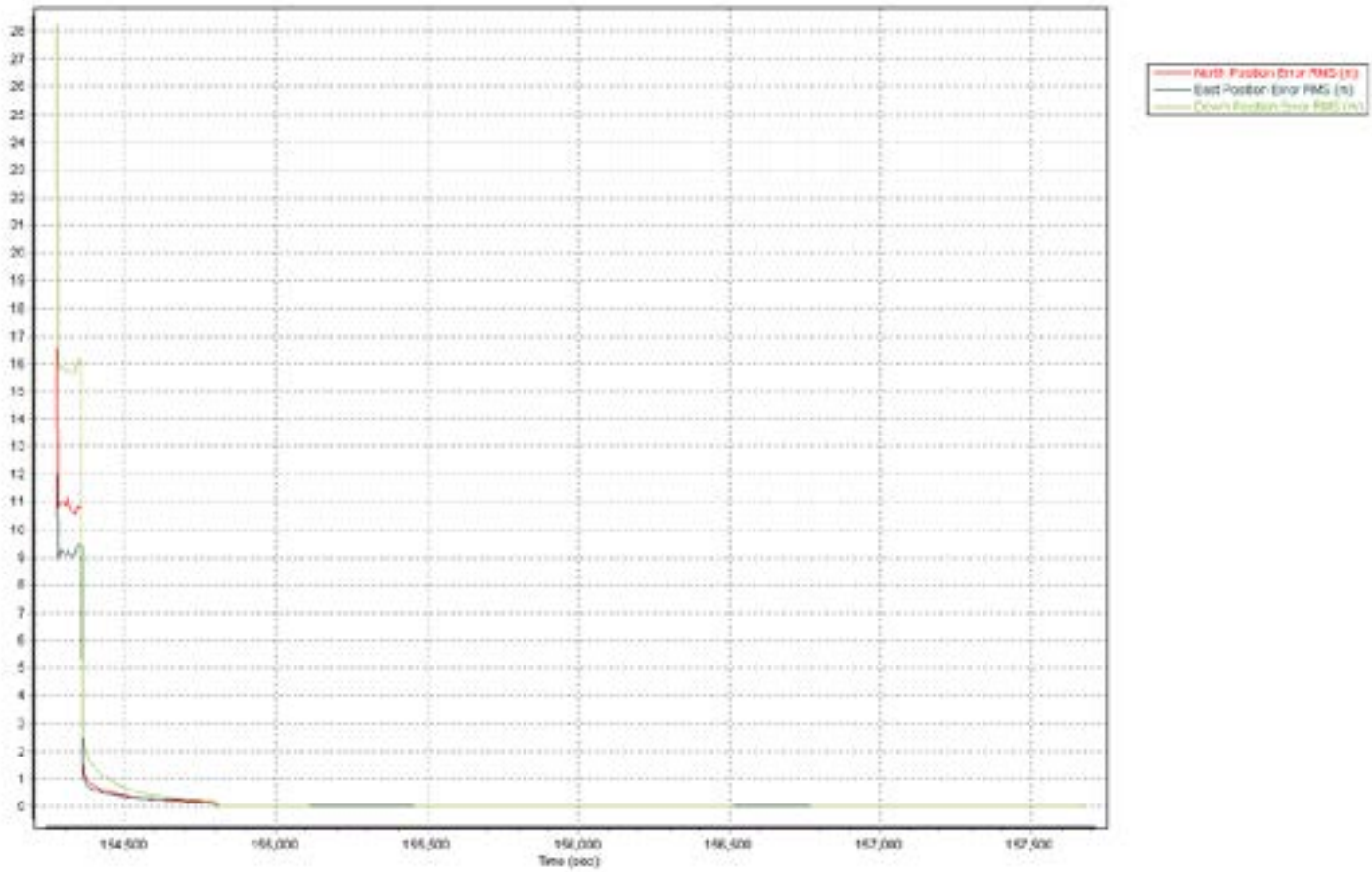


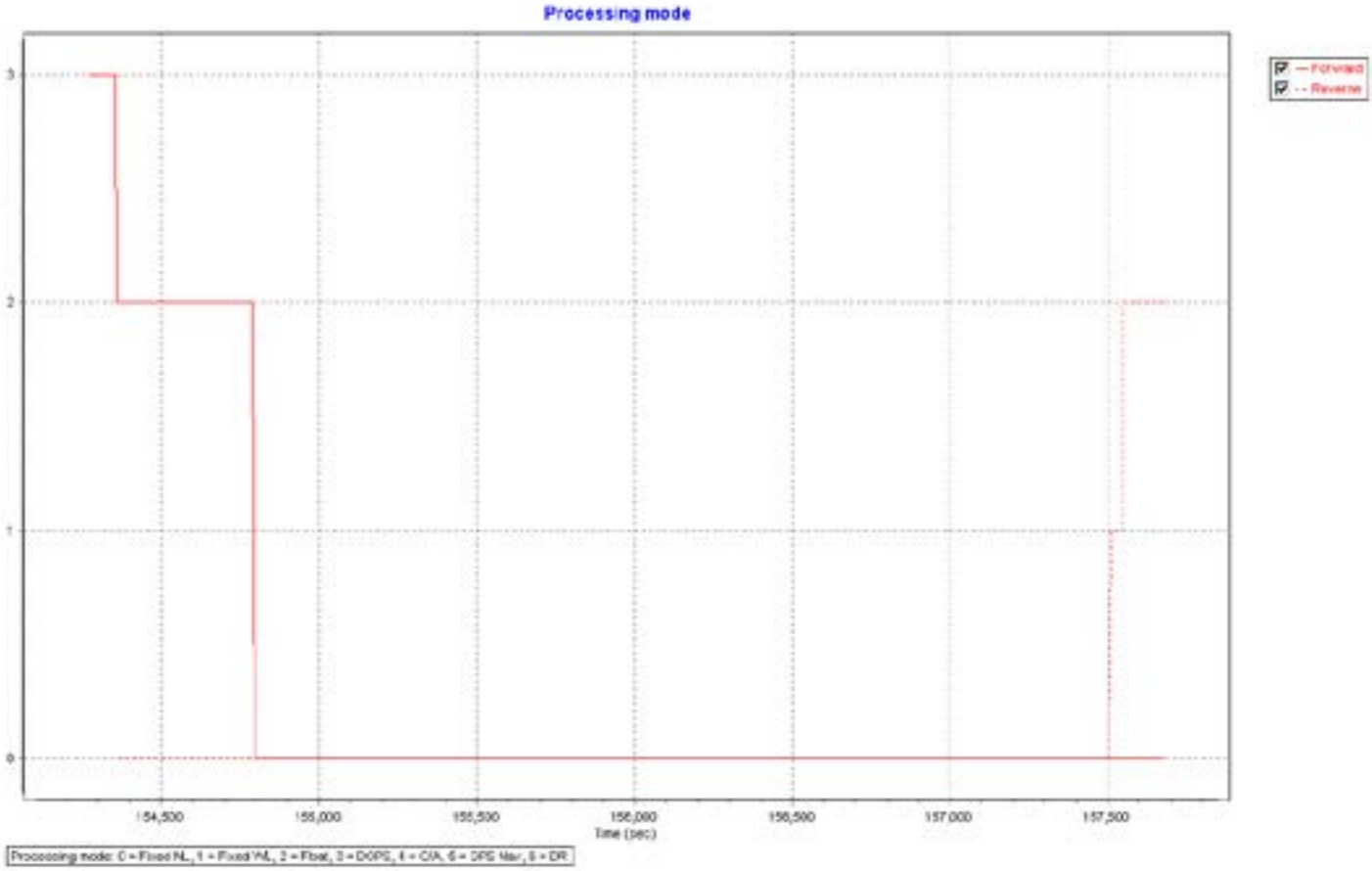

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

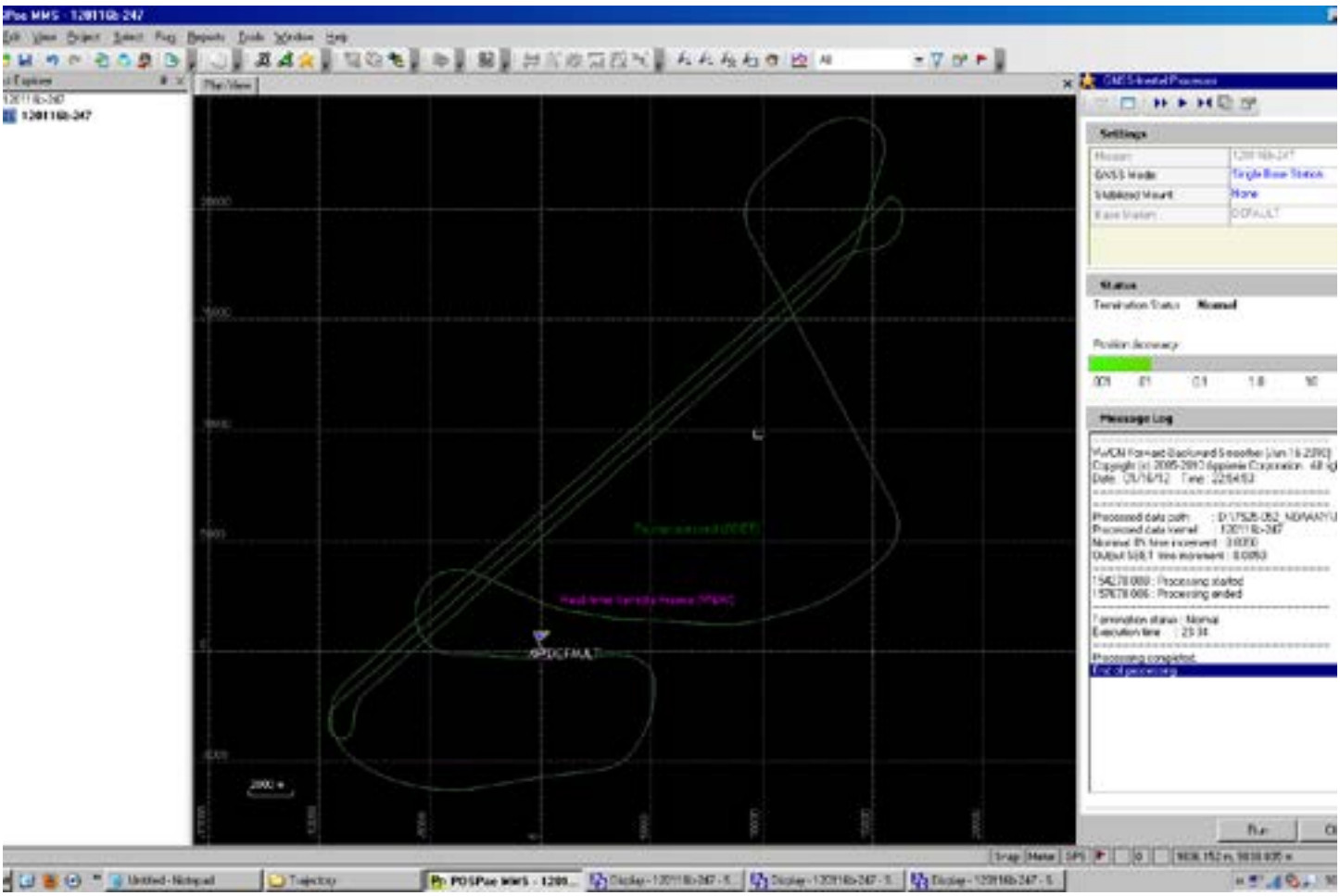

Number of SVs
PDOP
Time (sec)

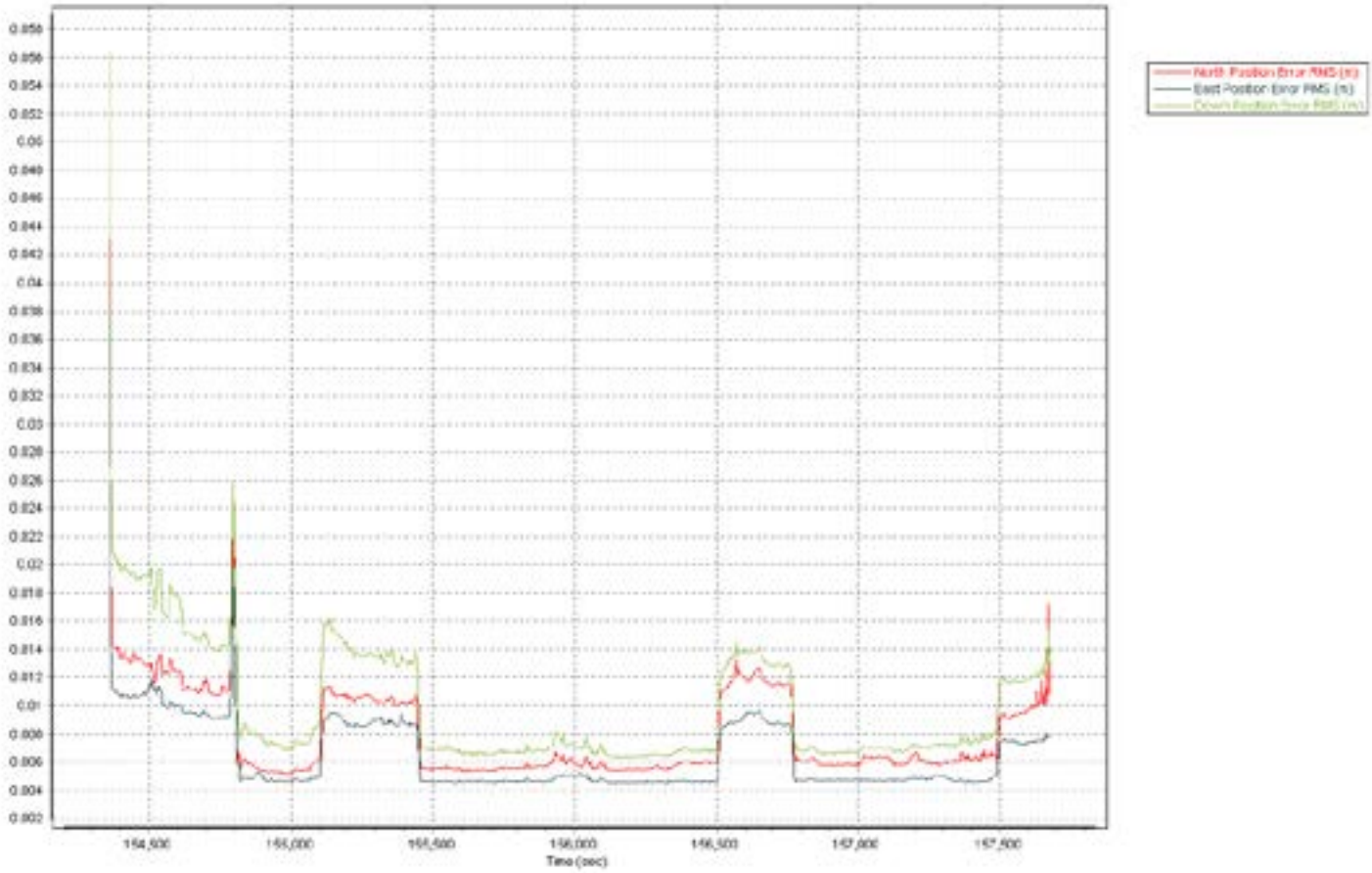
120116b-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

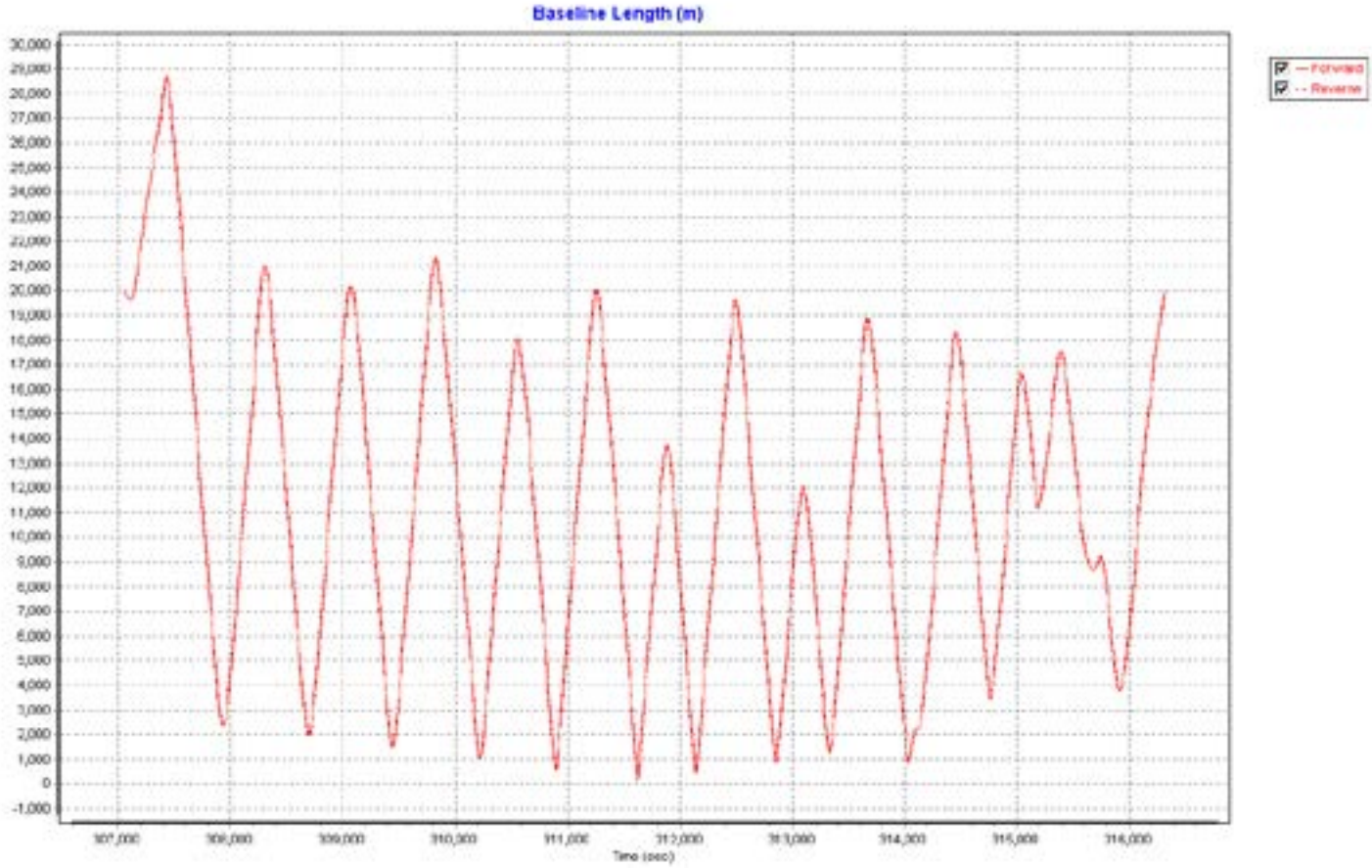

Processing mode
Forward
Reverse
3
2
1
0
154,500
155,000
155,500
156,000
156,500
157,000
157,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

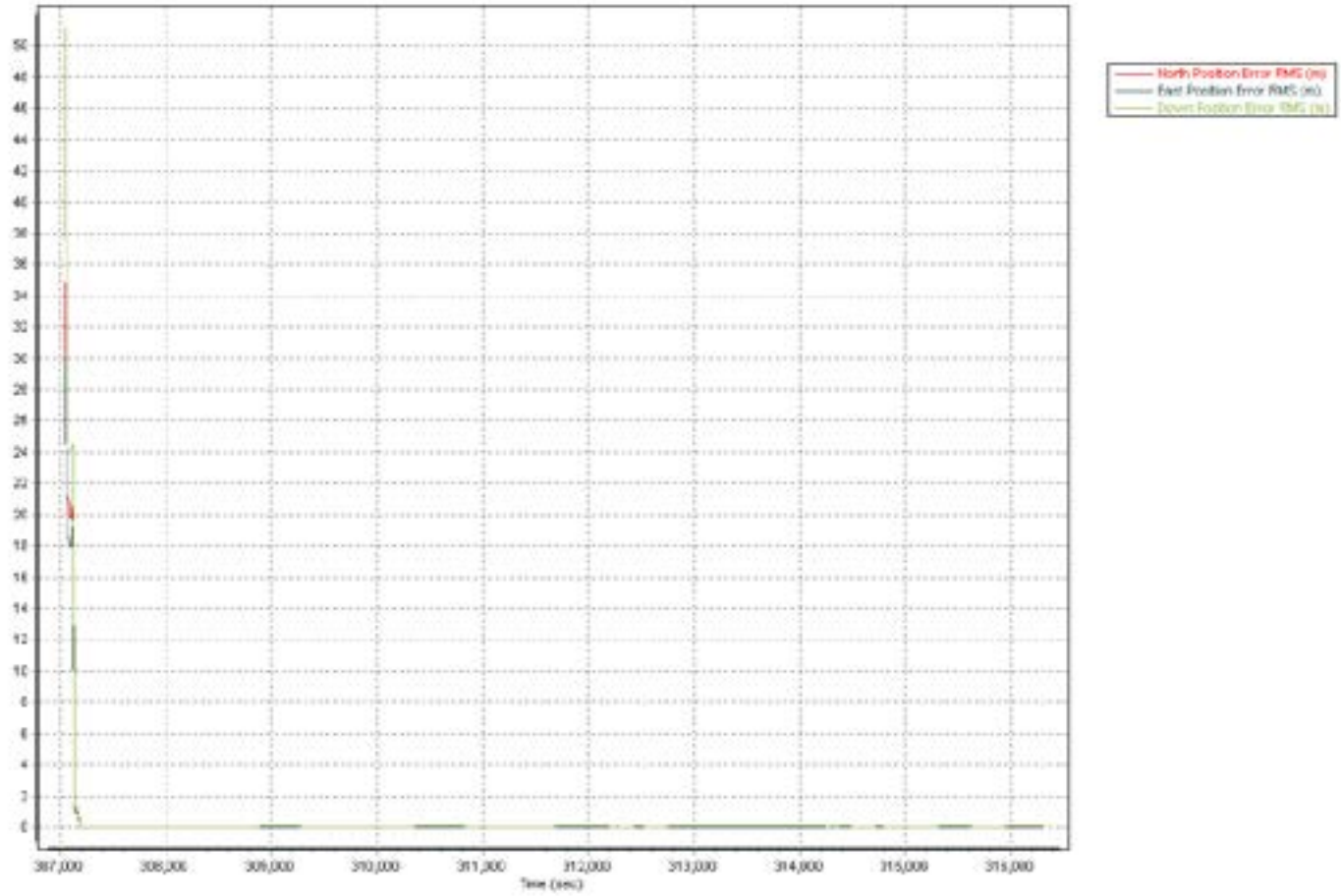

Settings
Status
Message Log

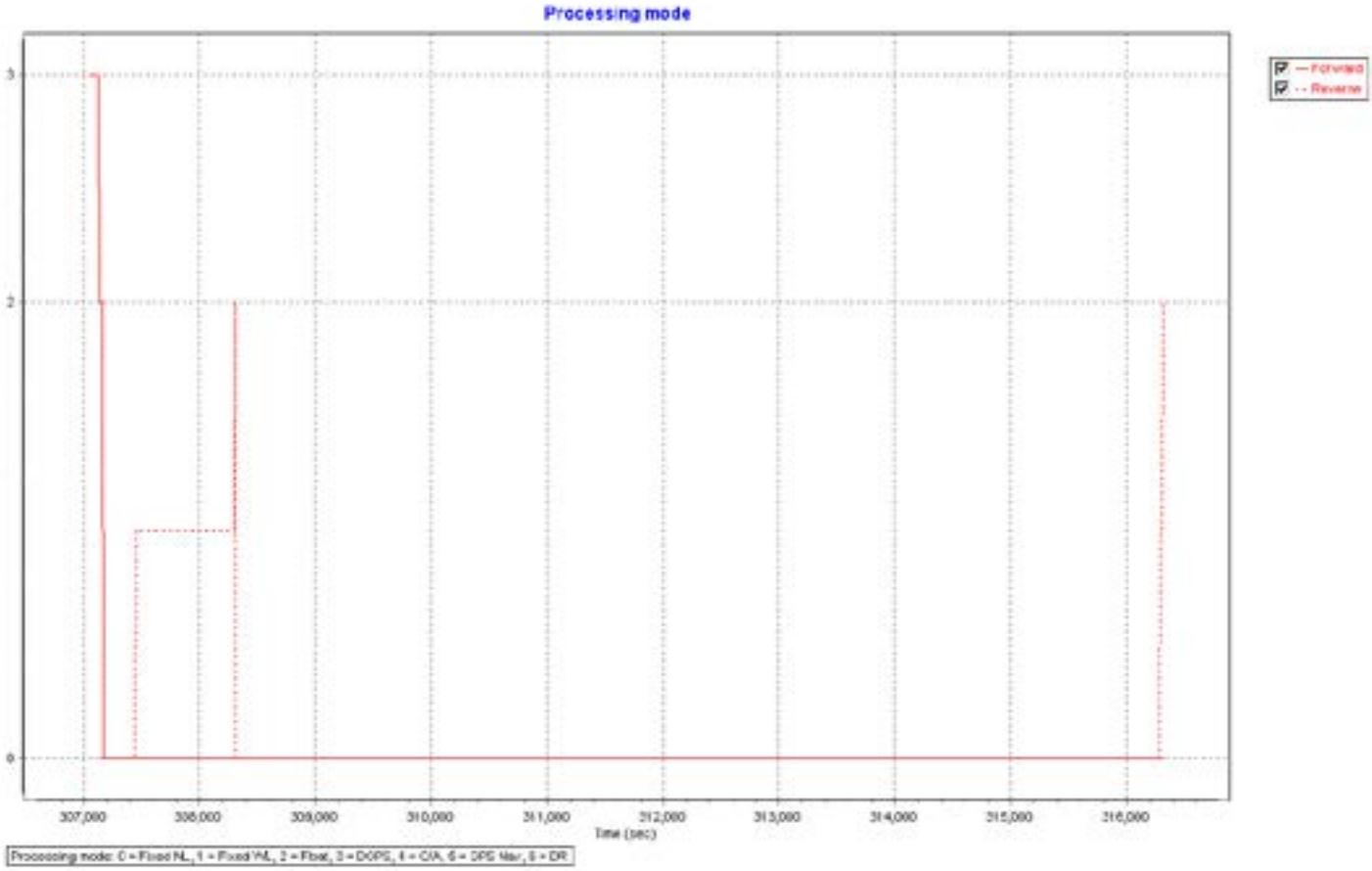

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

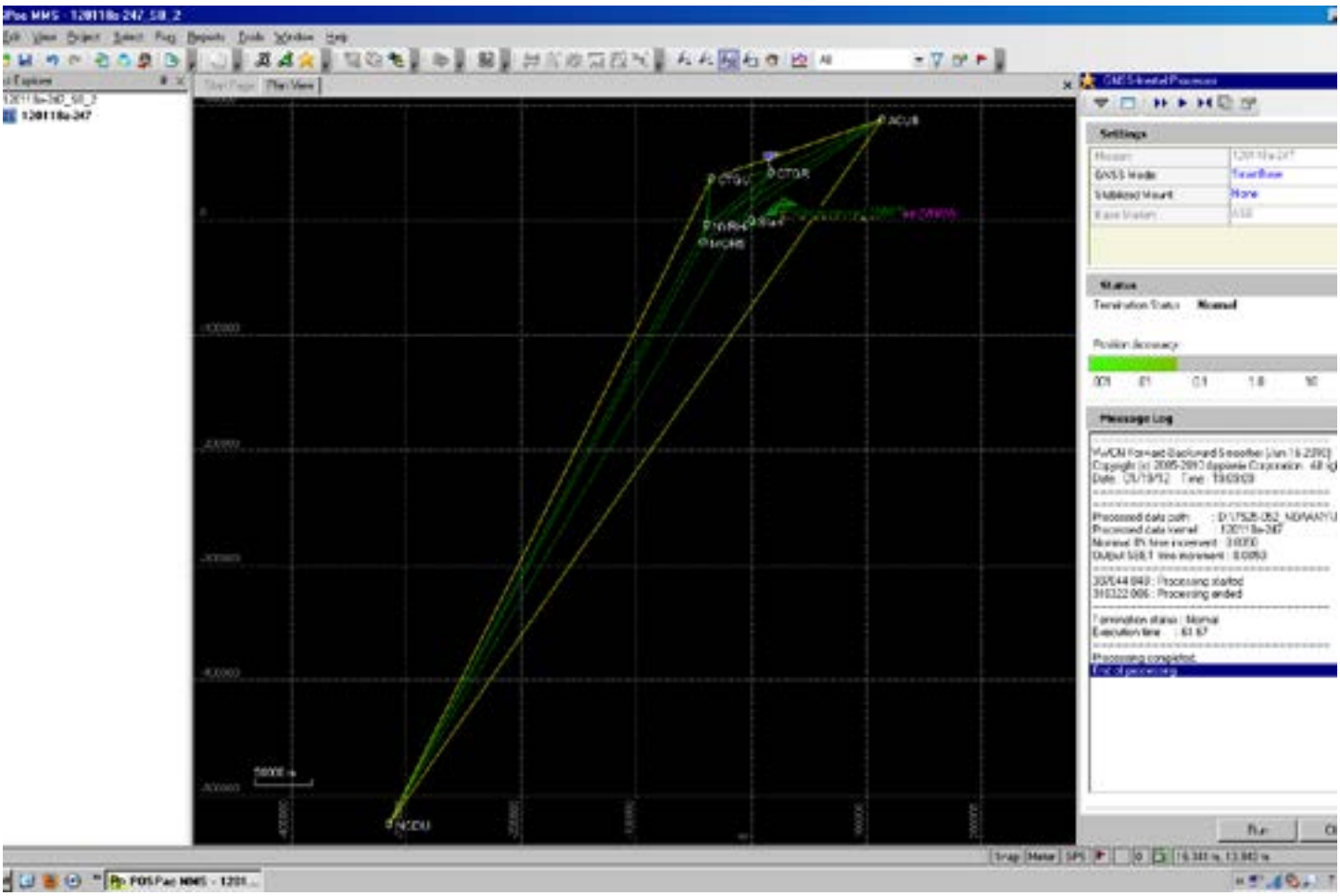
Number of SVs
PDOP
Time (sec)

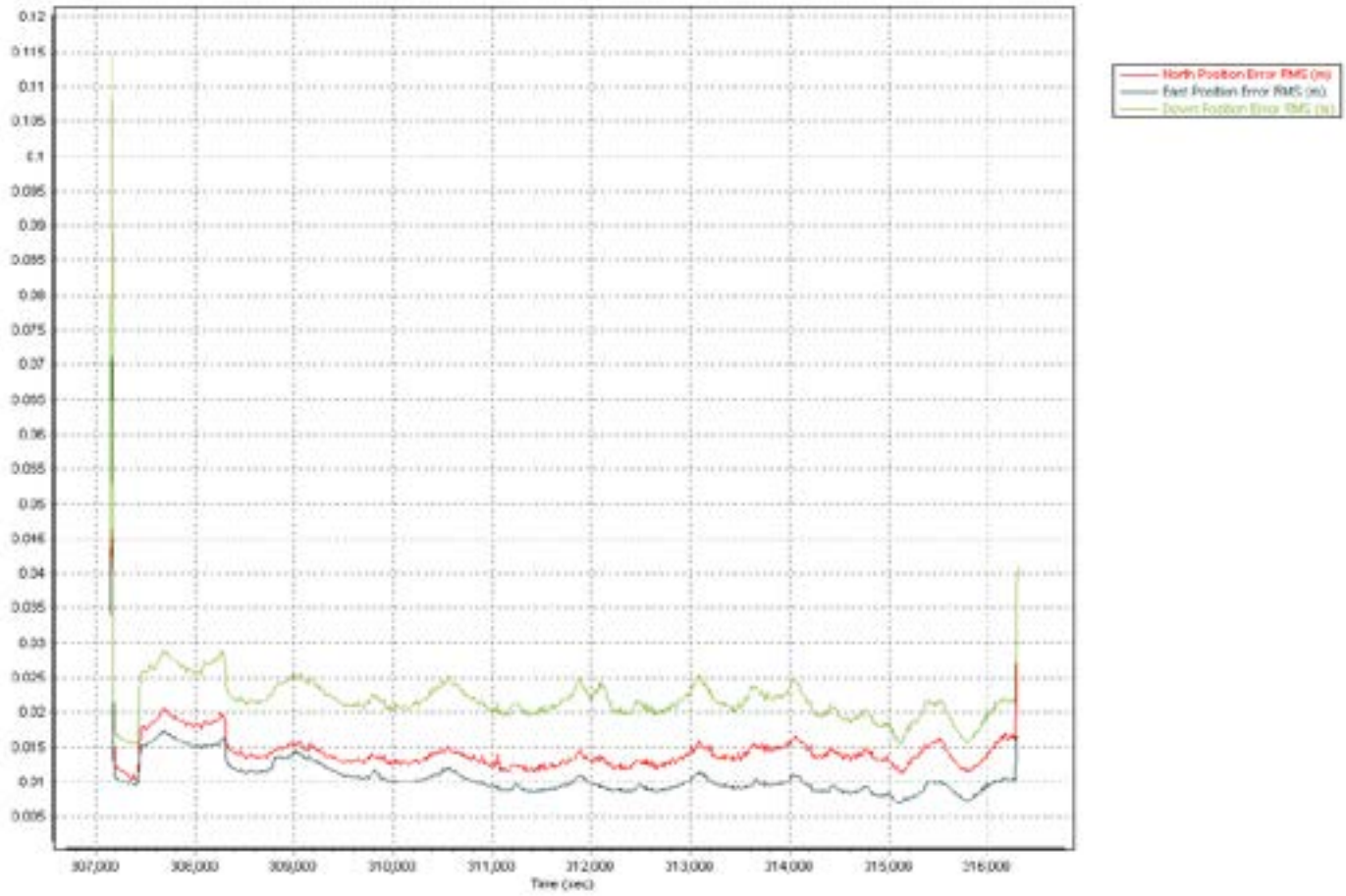
120118a-247

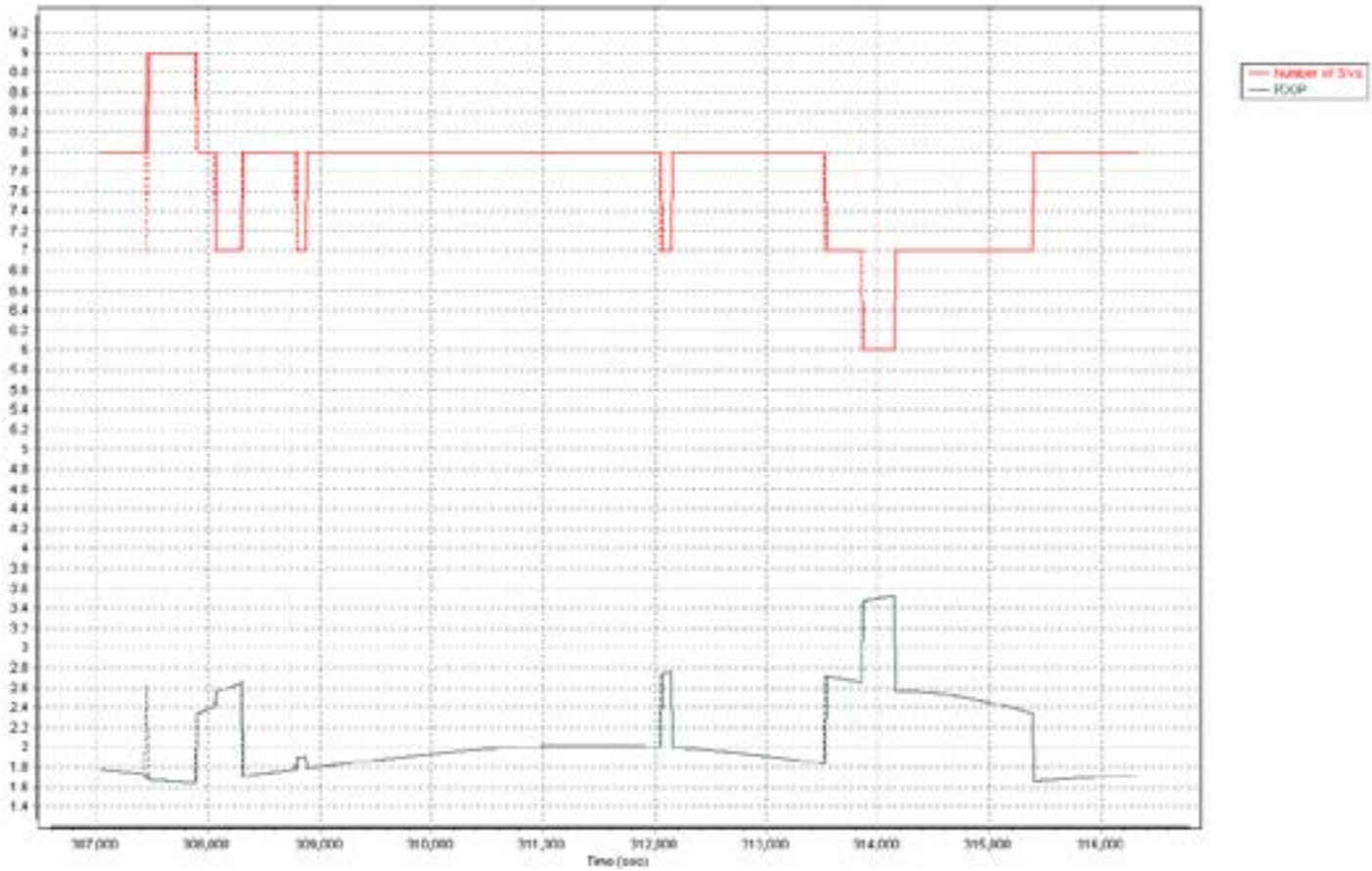

Baseline Length (m)
Forward
Reverse
Time (sec)

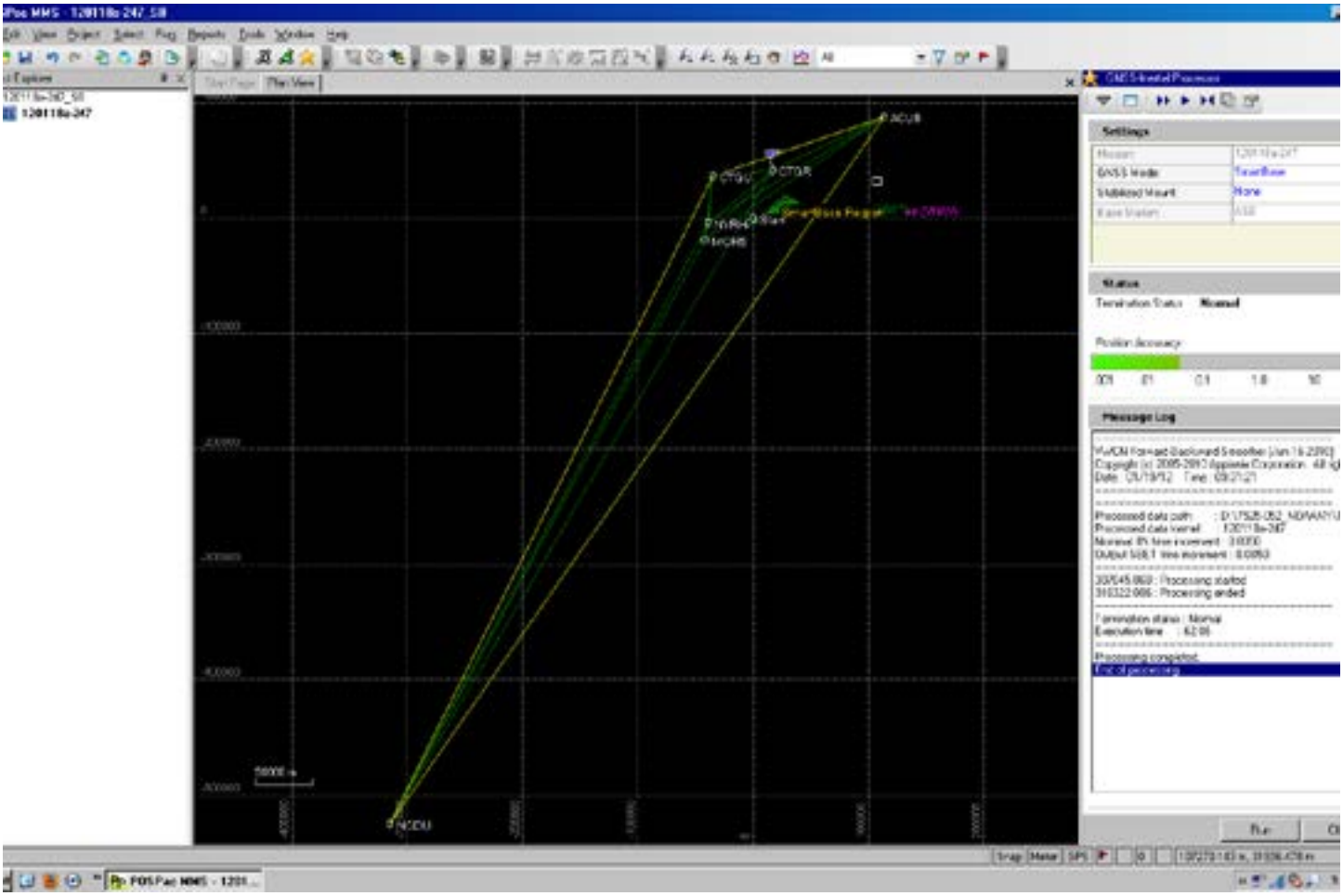

North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)


Processing mode
Forward
Reverse
3
2
0
307,000
308,000
309,000
310,000
311,000
312,000
313,000
314,000
315,000
316,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

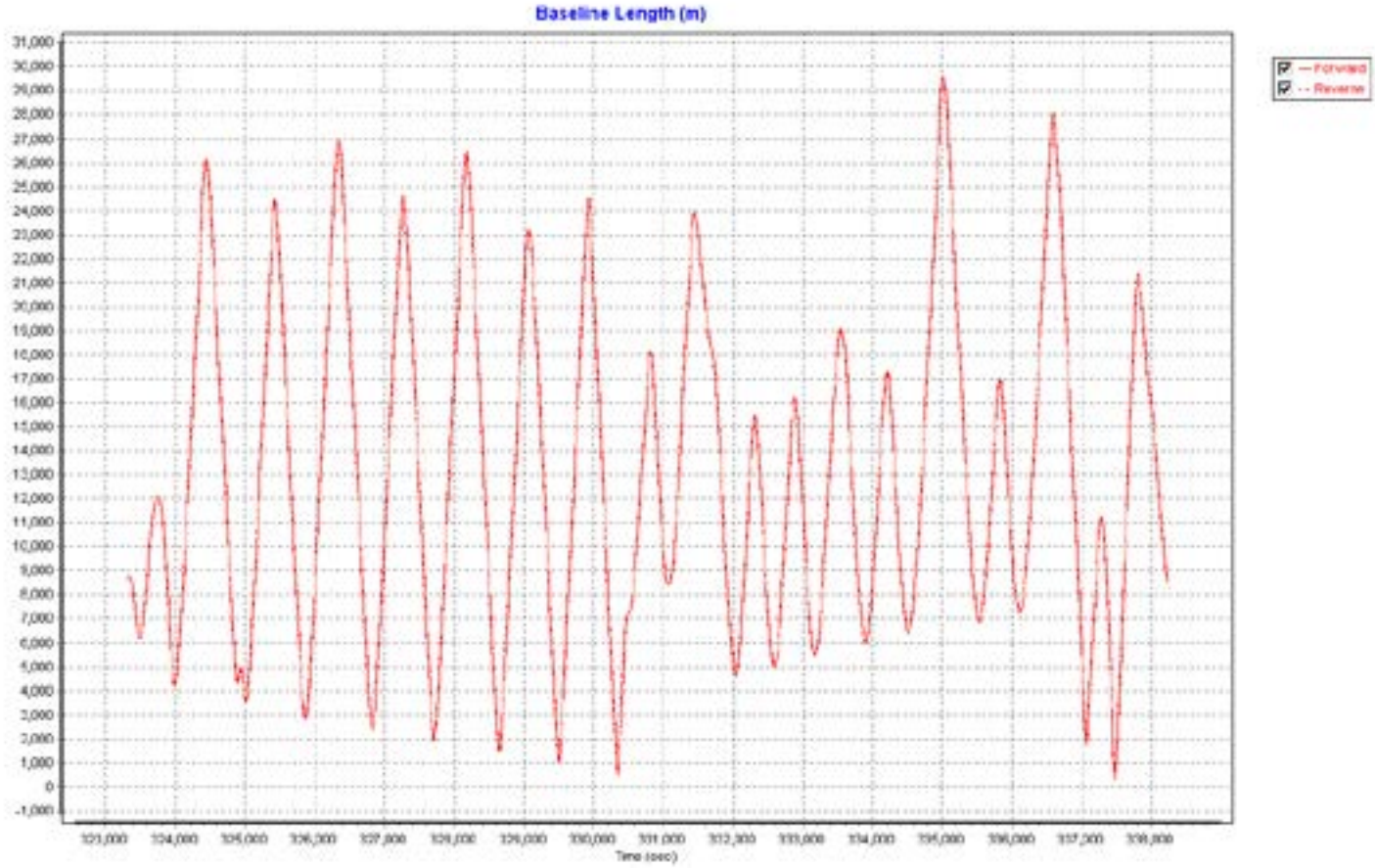

Settings
Status
Message Log

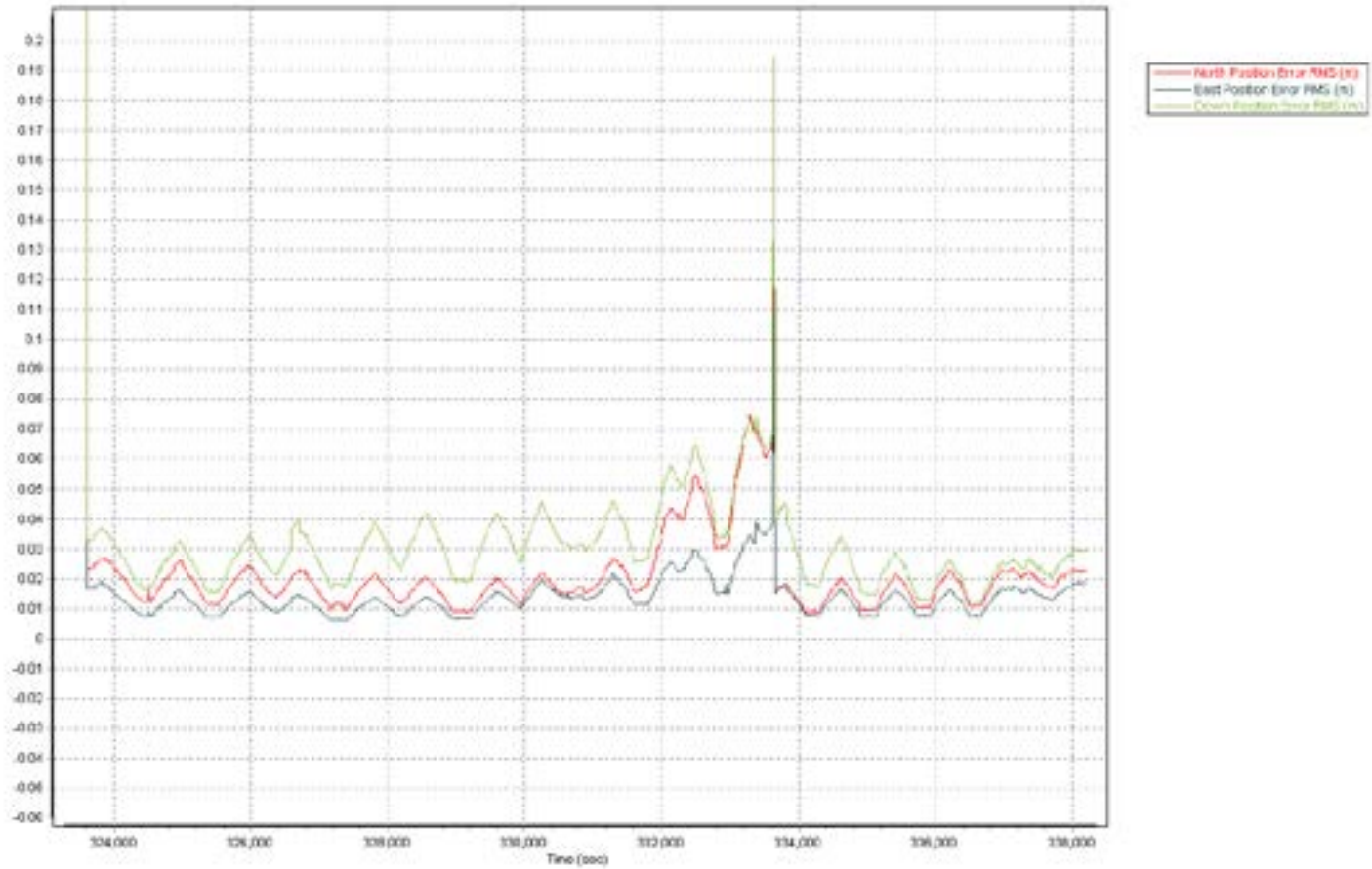

North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)

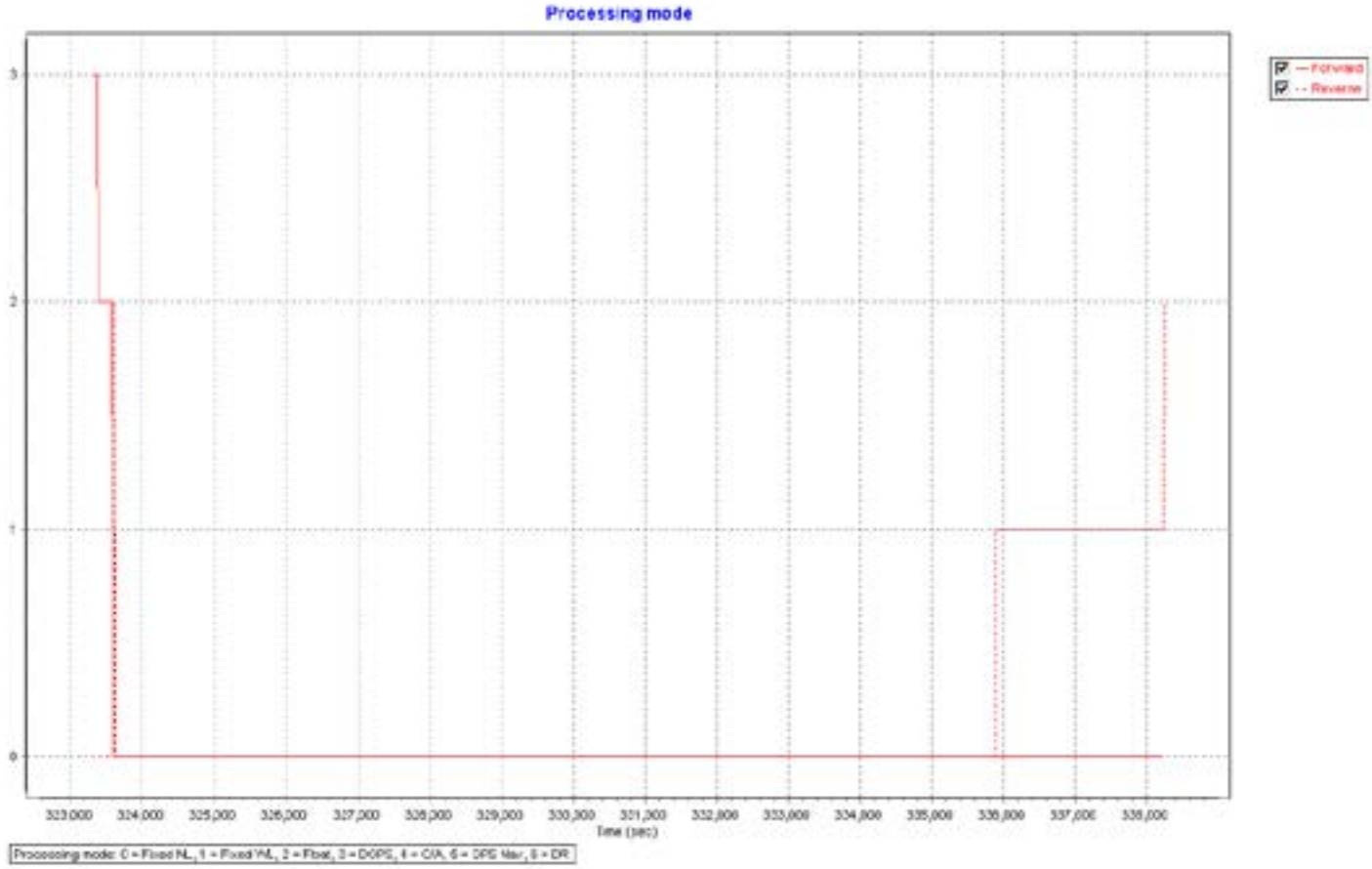

Number of SVs
PDOP
Time (sec)

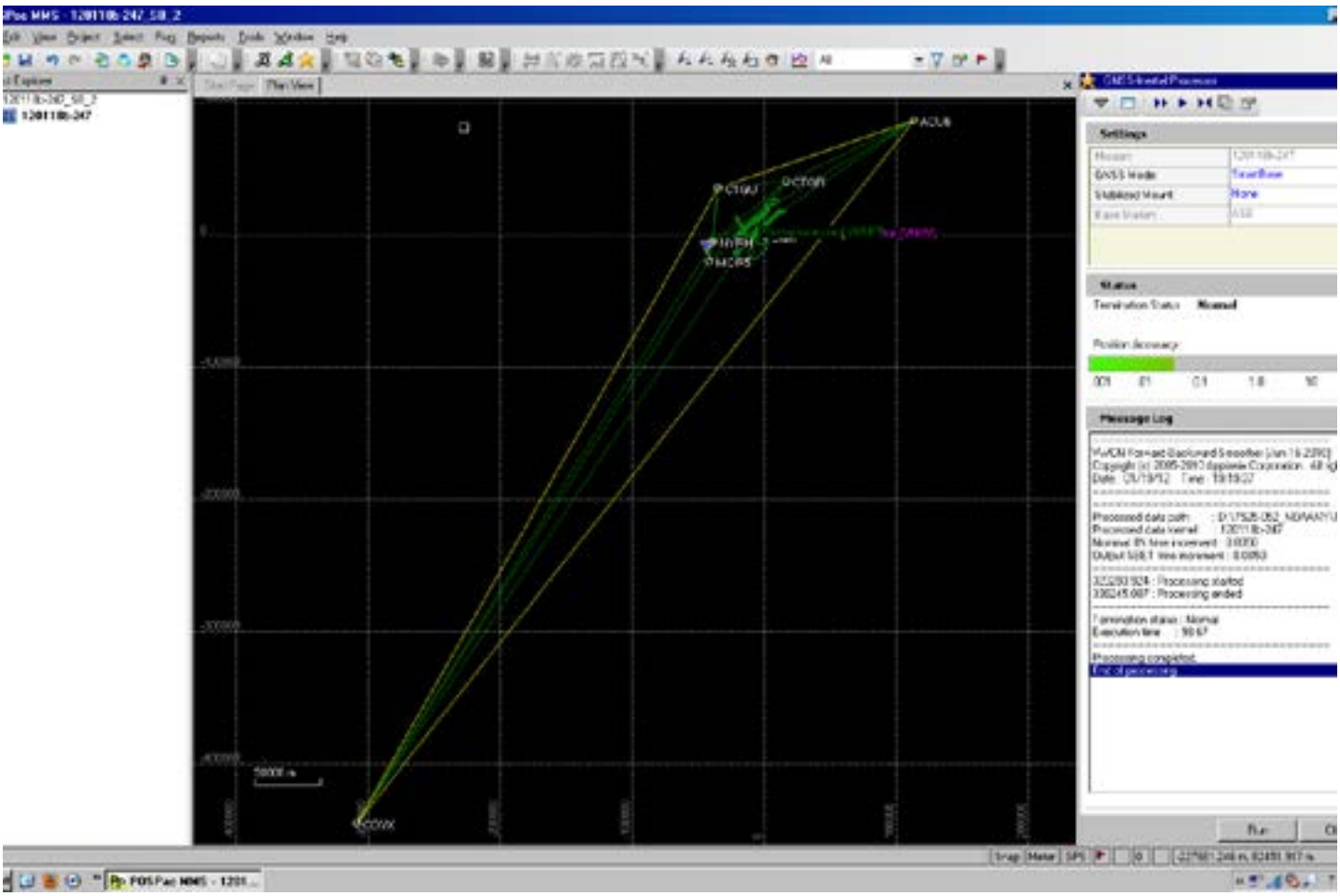

Settings
Status
Termination Status
Normal
Position Accuracy
Message Log
Processing started
Processing ended
Termination status : Normal
Processing completed
End of processing

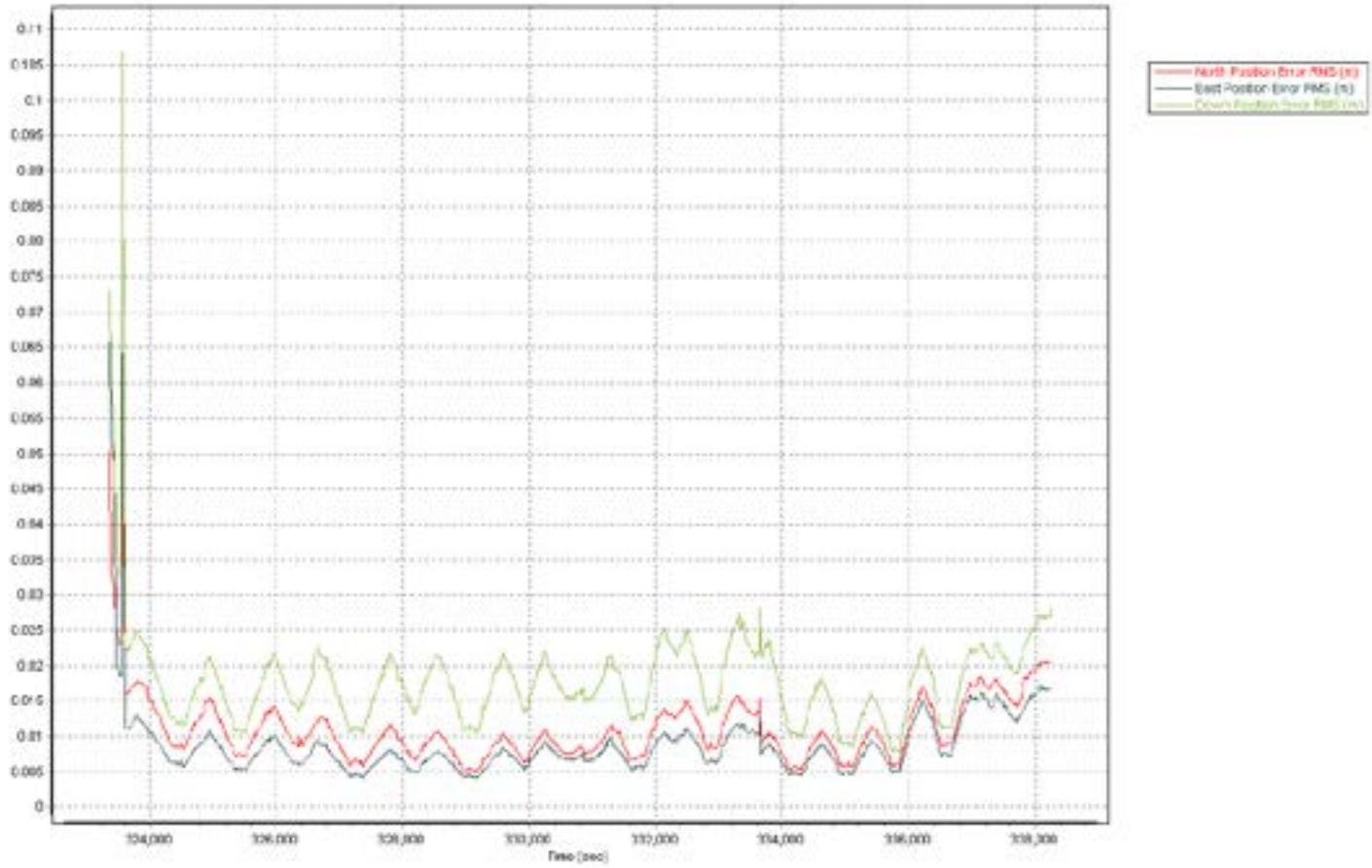
120118b-247

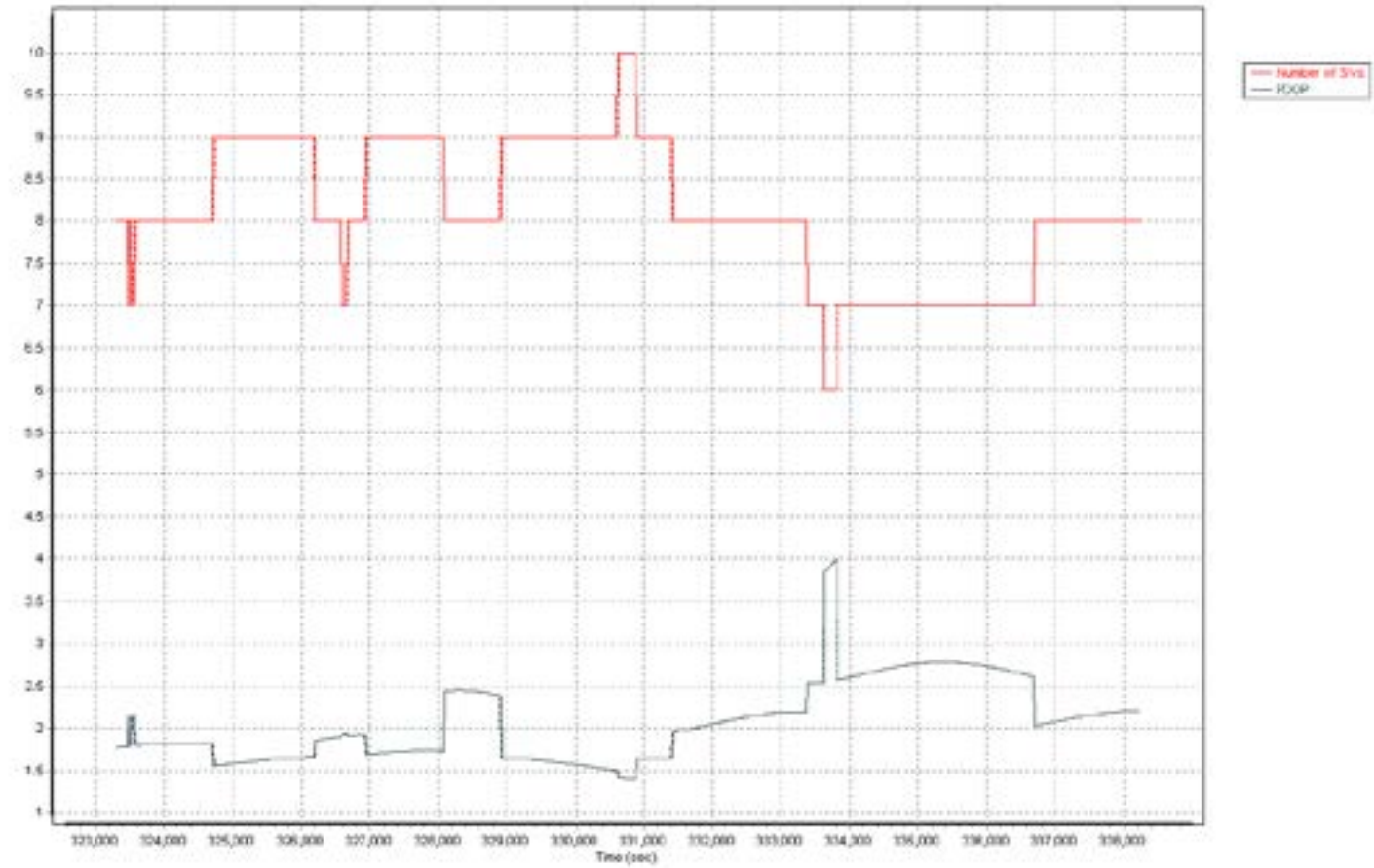

Baseline Length (m)
Forward
Reverse
Time (sec)

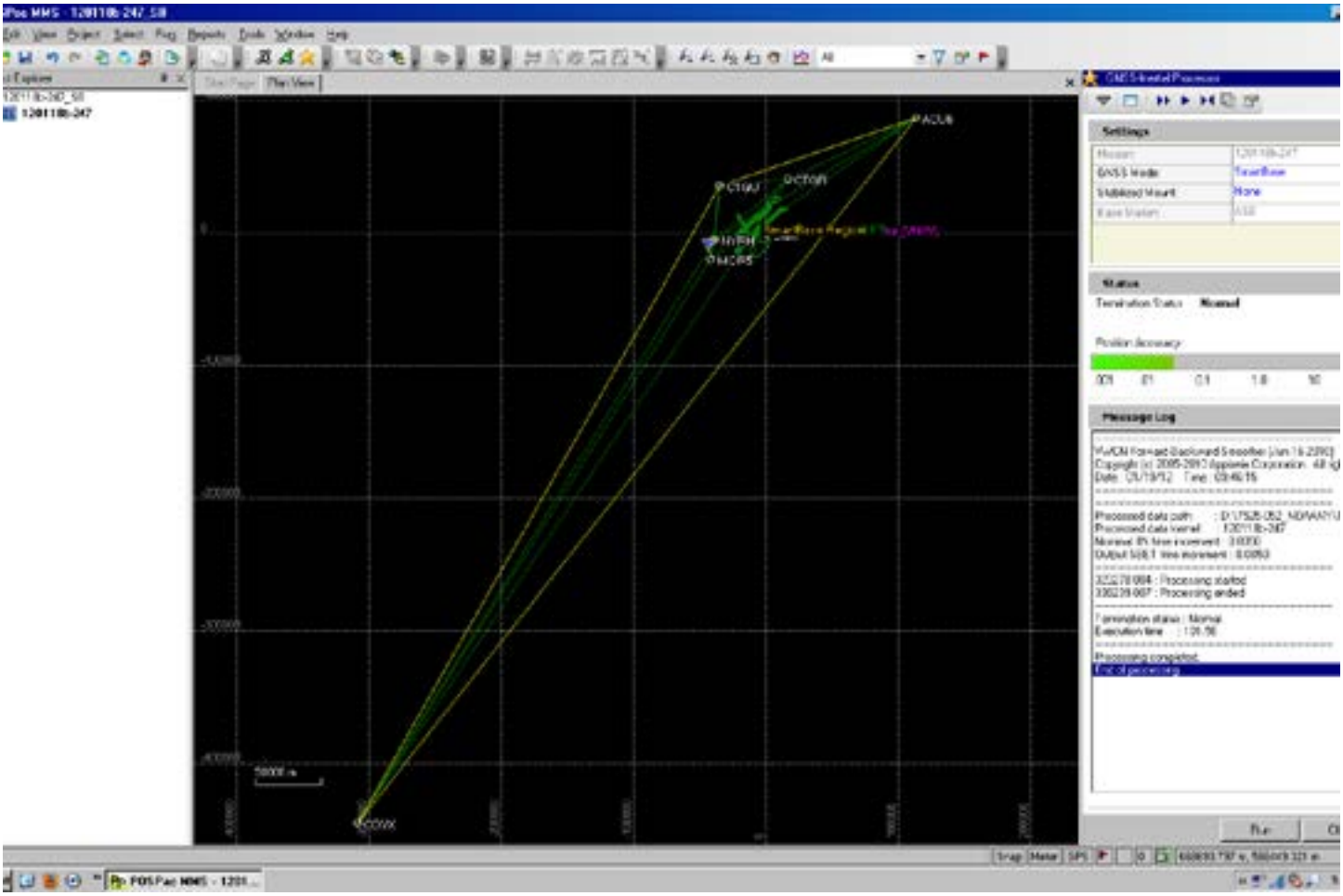

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Processing mode
Forward
Reverse
3
2
1
0
323,000
324,000
325,000
326,000
327,000
328,000
329,000
330,000
331,000
332,000
333,000
334,000
335,000
336,000
337,000
338,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

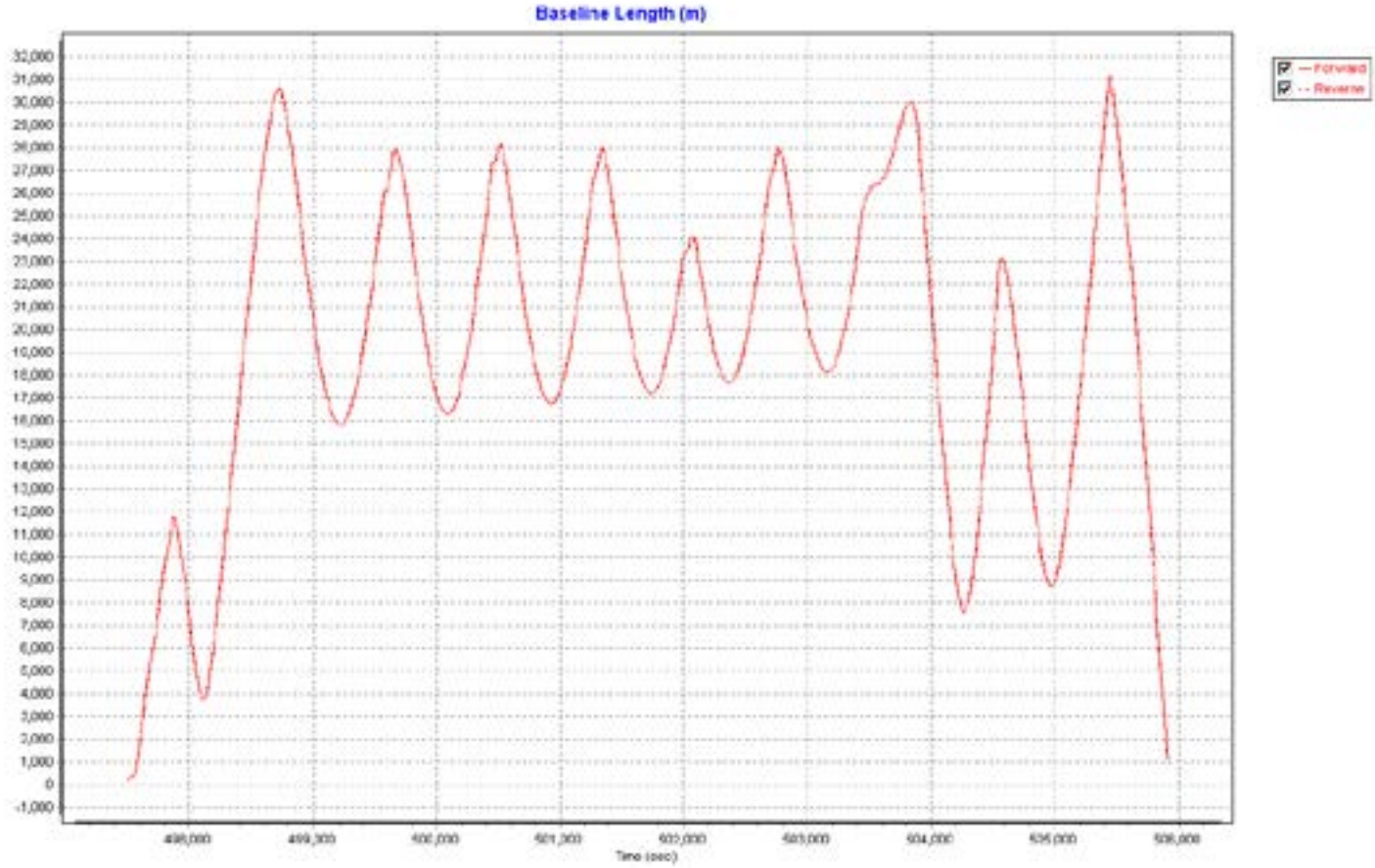

Settings
Status
Termination Status
Normal
Message Log
Processing completed
End of processing

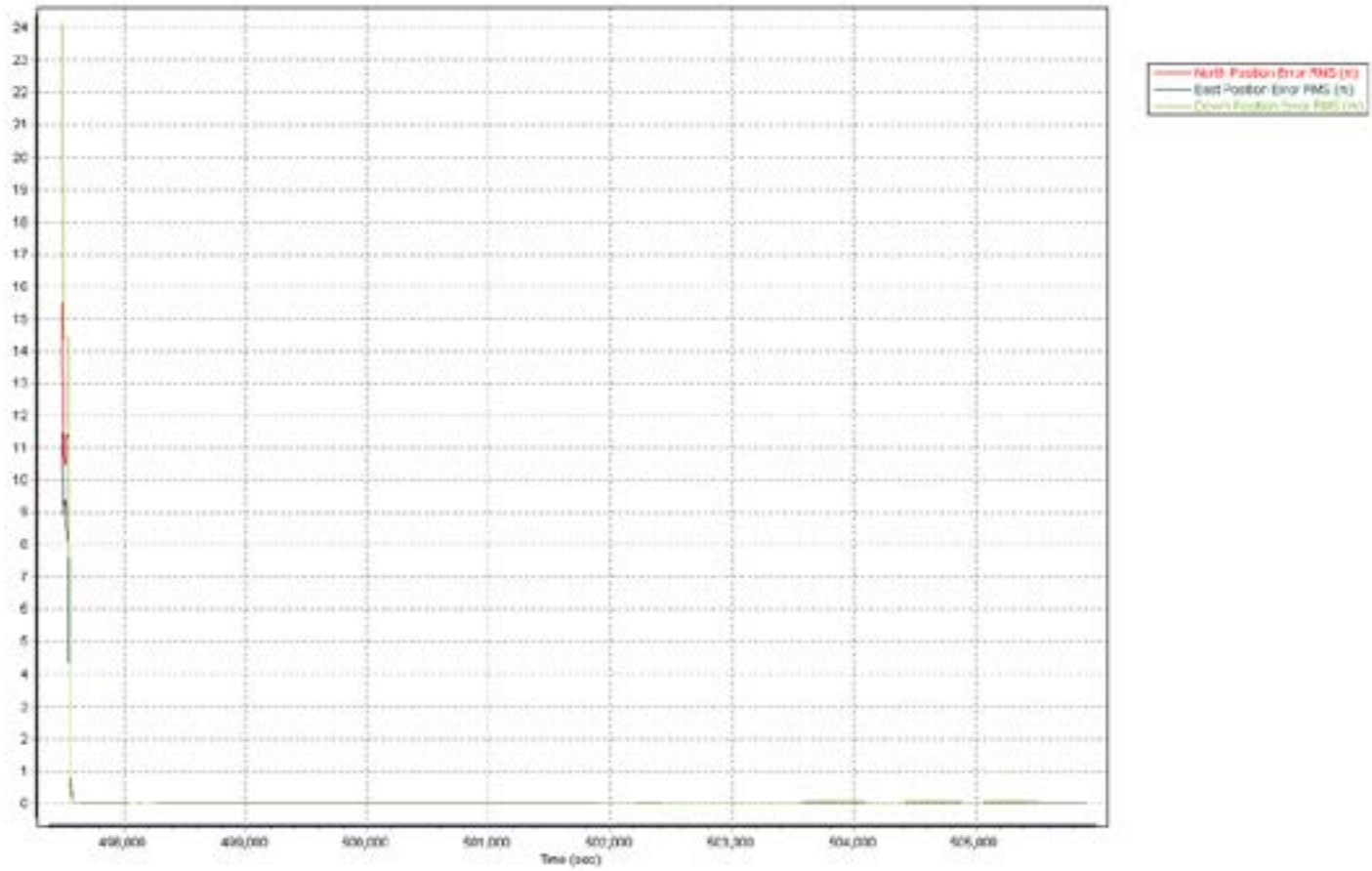

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

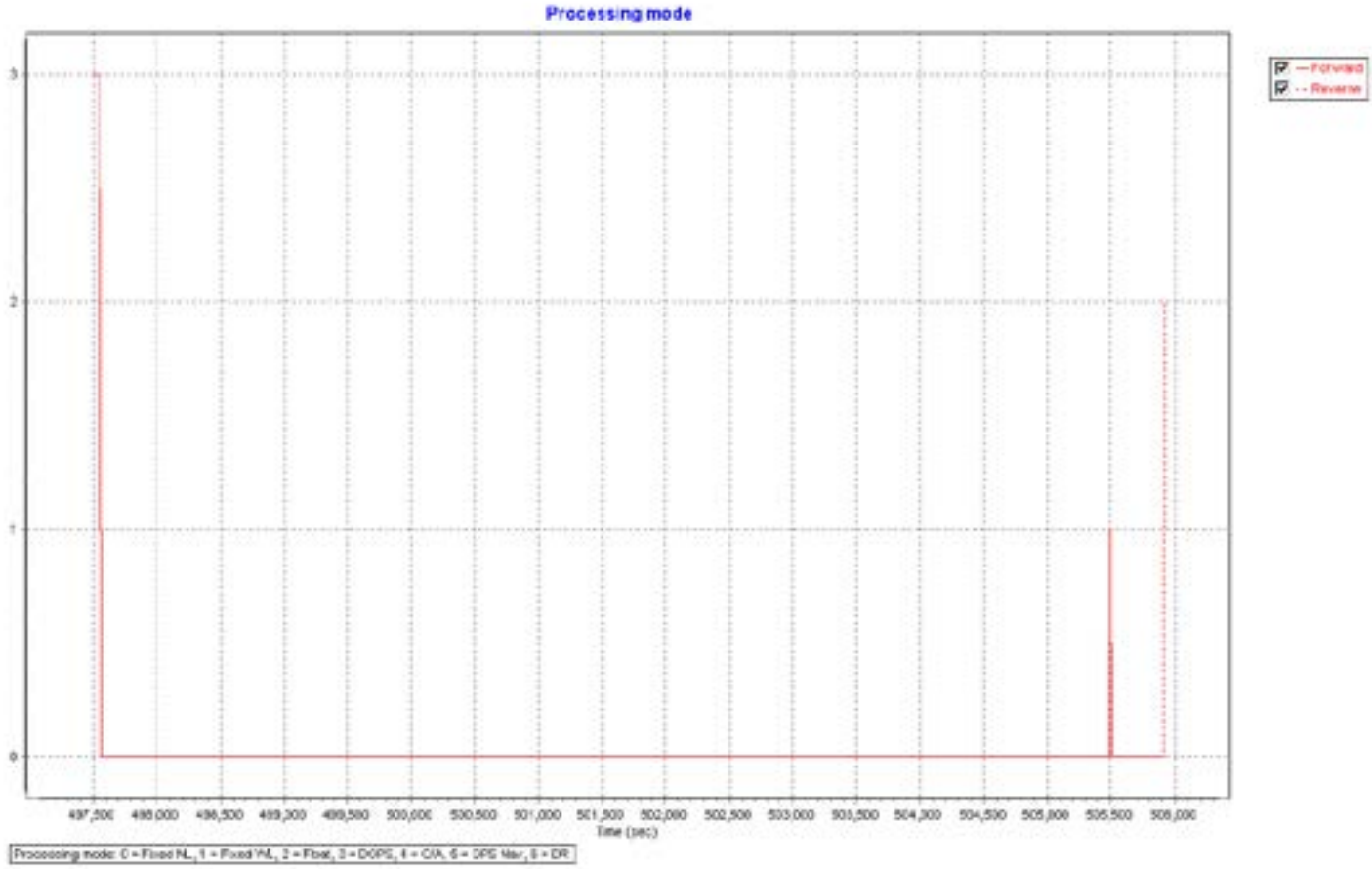

Number of SVs
PDOP
Time (sec)

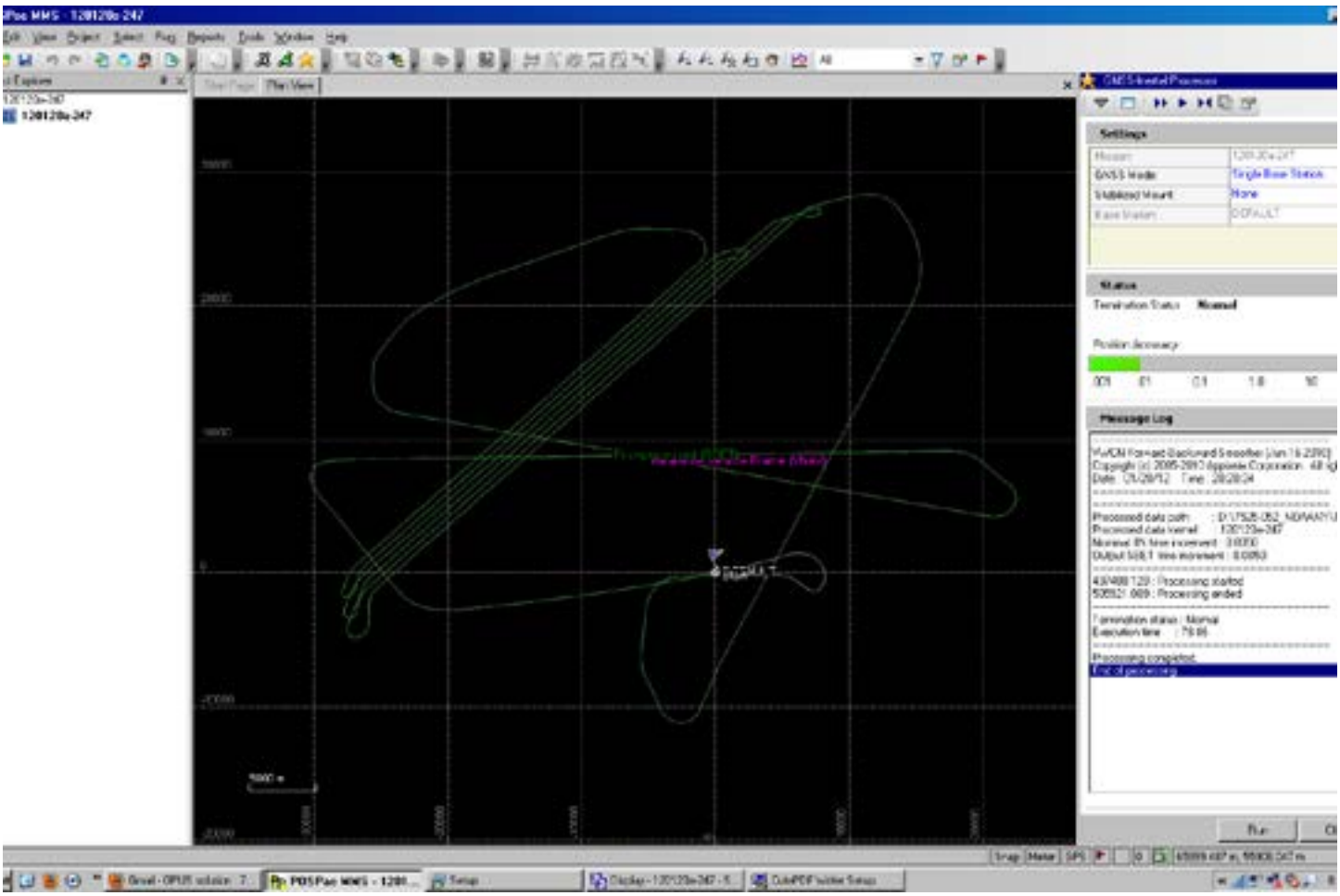

Settings
Status
Termination Status
Normal
Position Accuracy
Message Log
Processing completed
End of processing

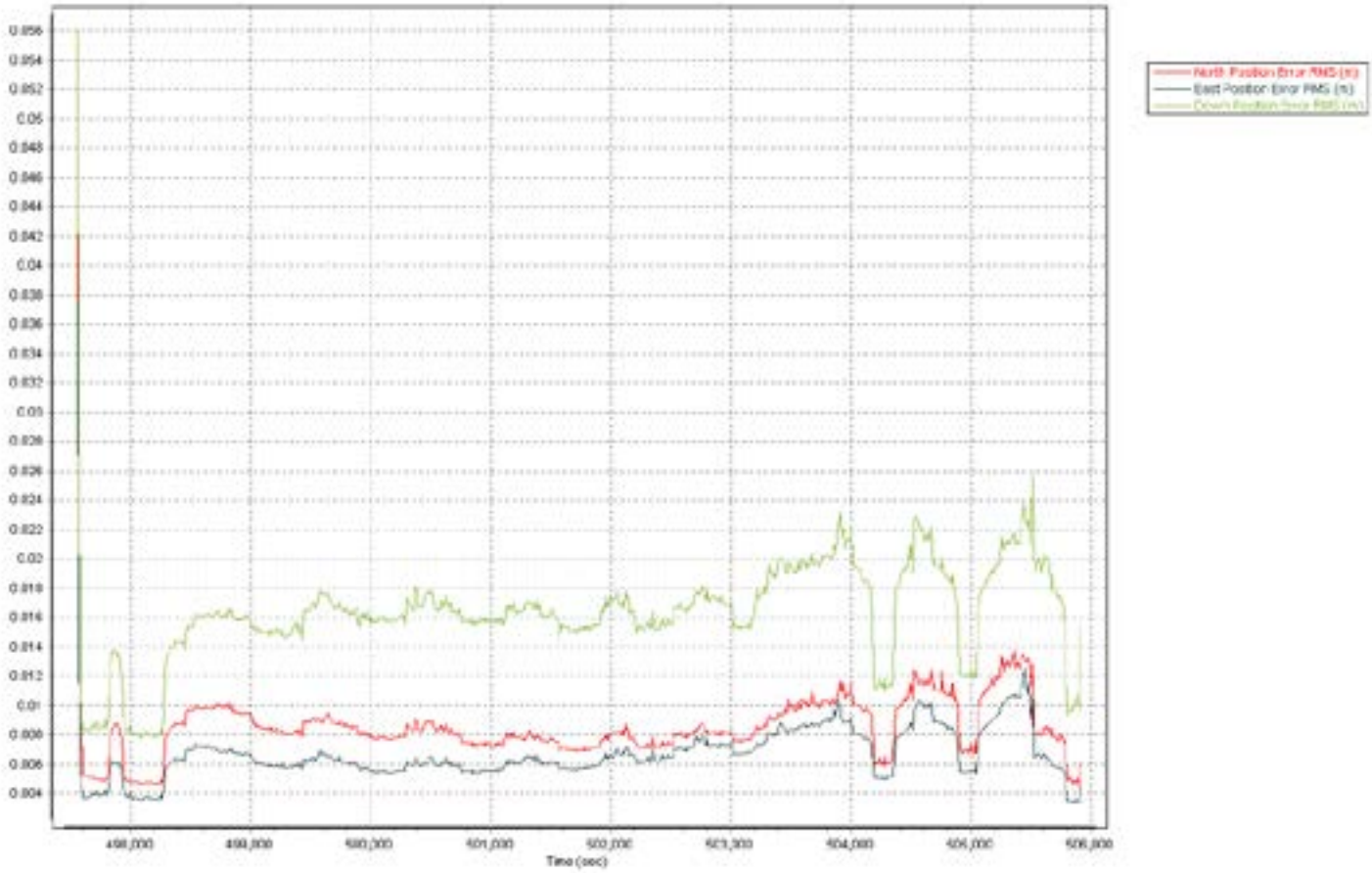
120120a-247

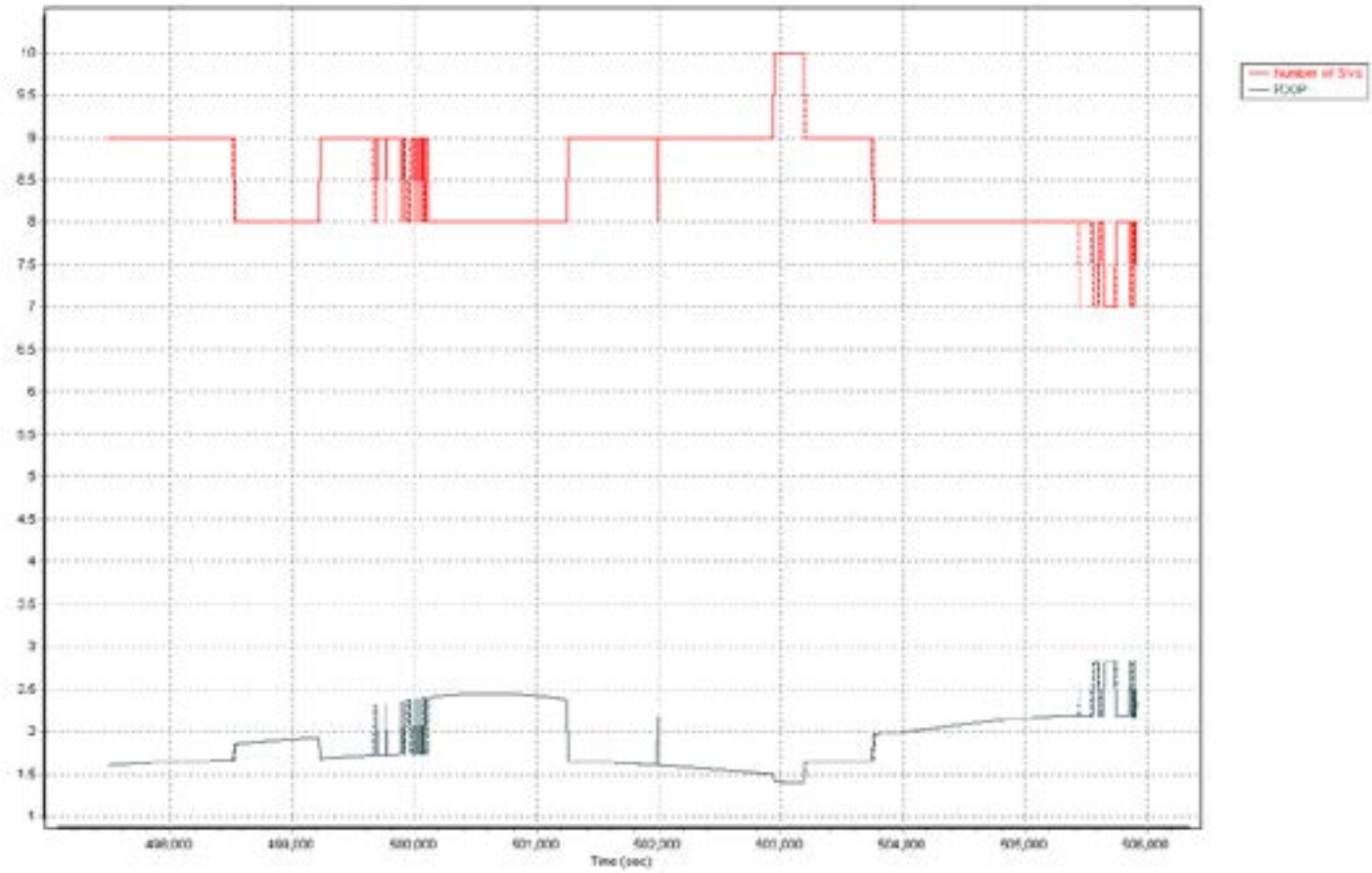

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

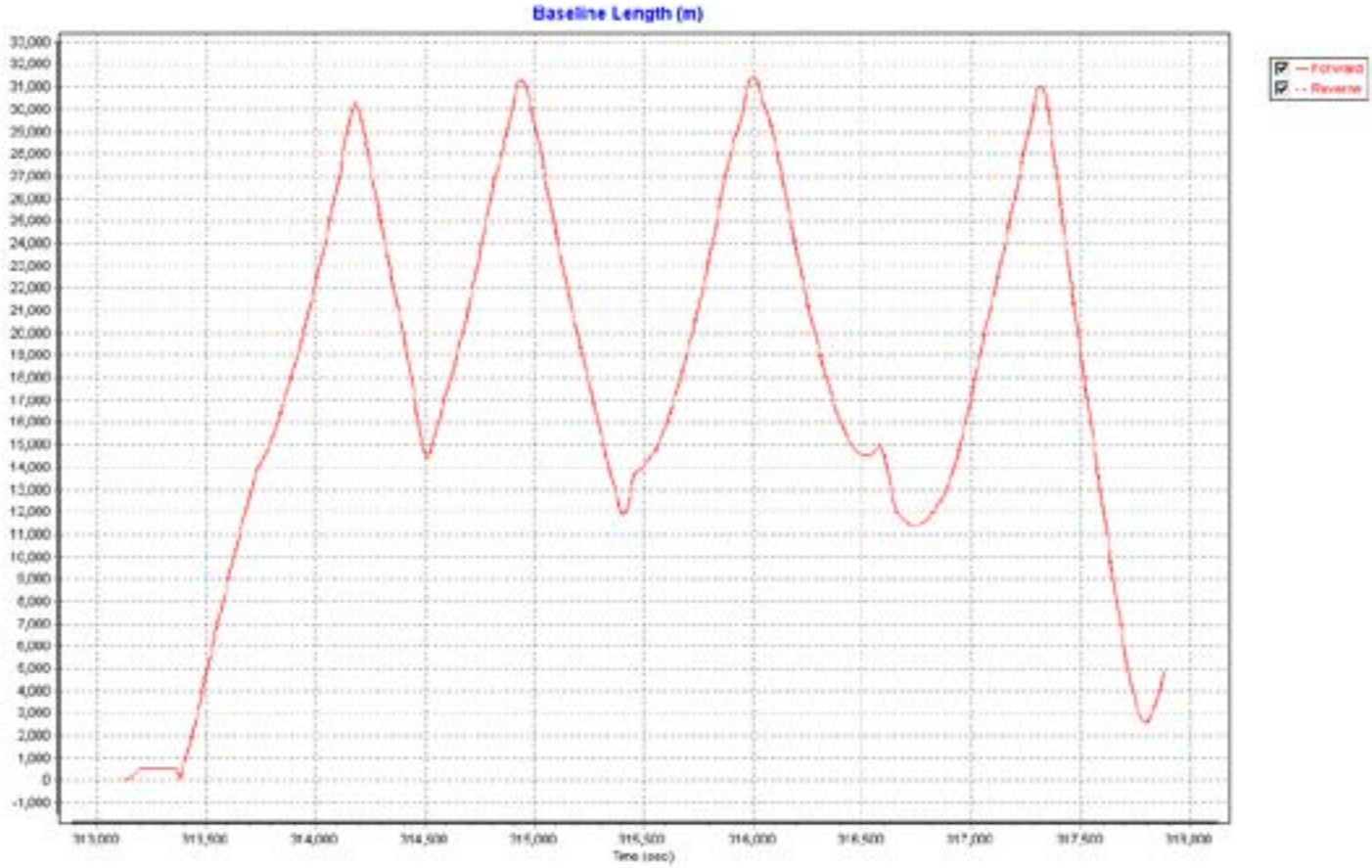

Processing mode
Forward
Reverse
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

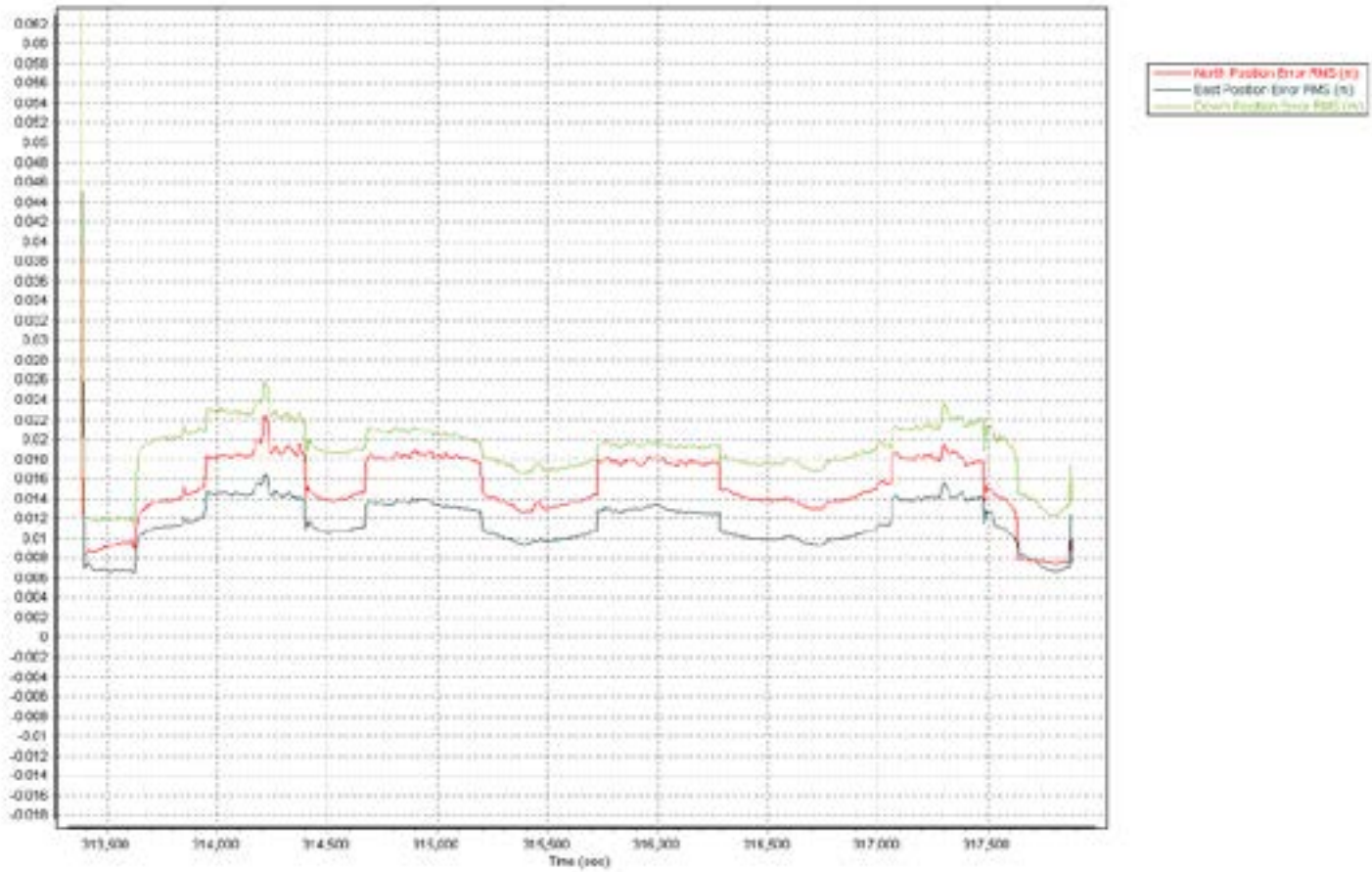

Settings
Status
Message Log

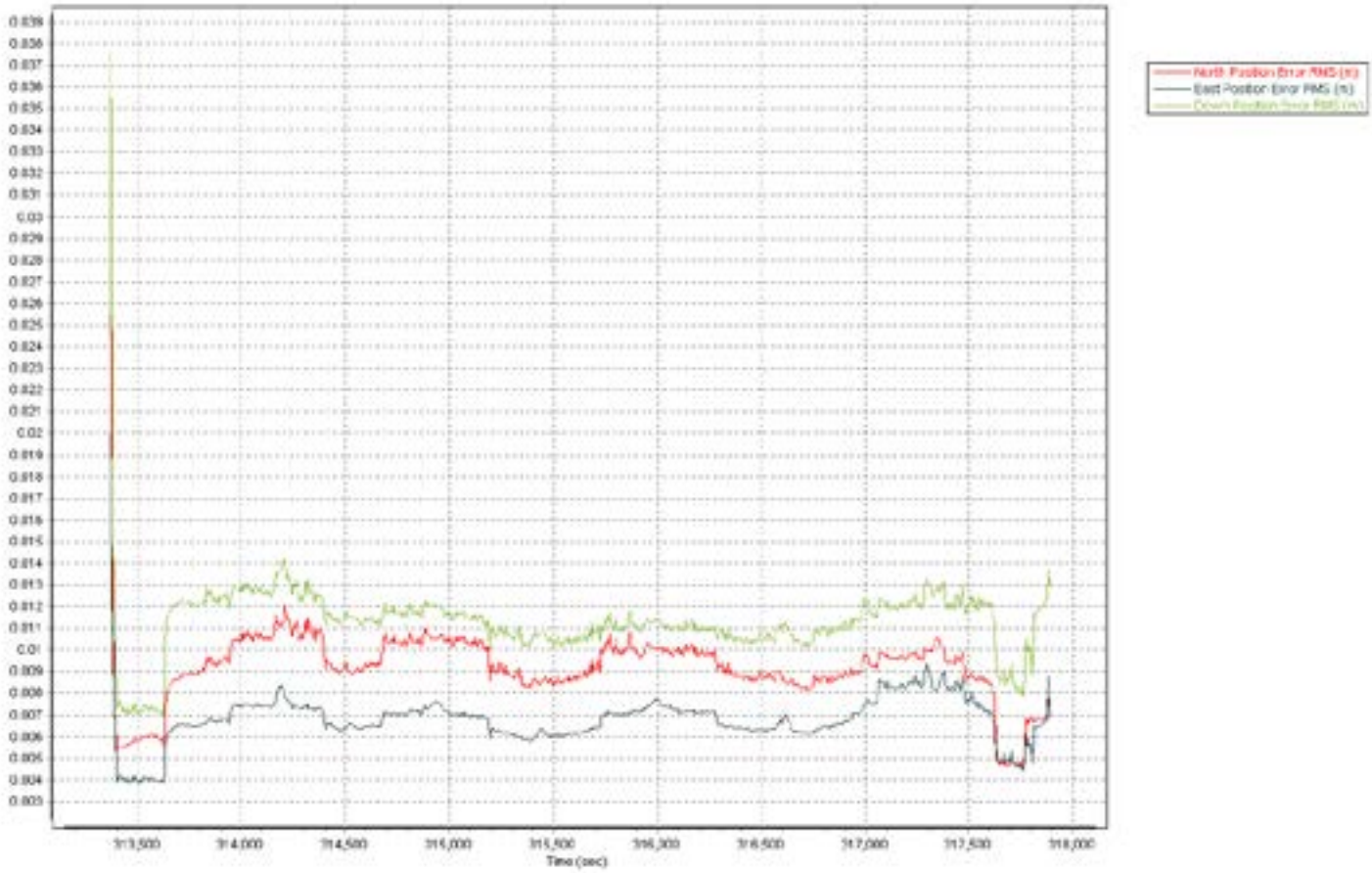

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

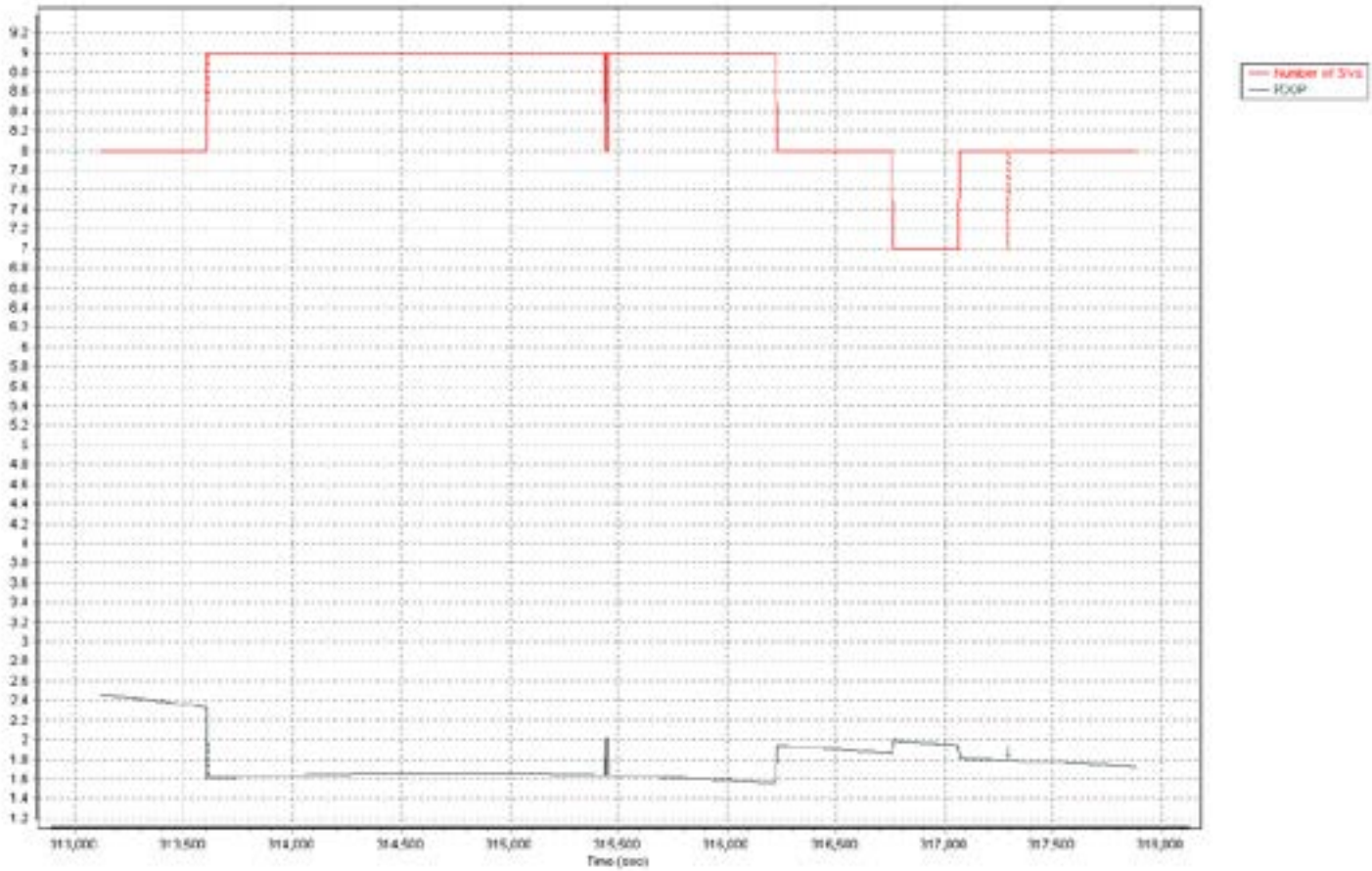

Number of SVs
PDOP
Time (sec)

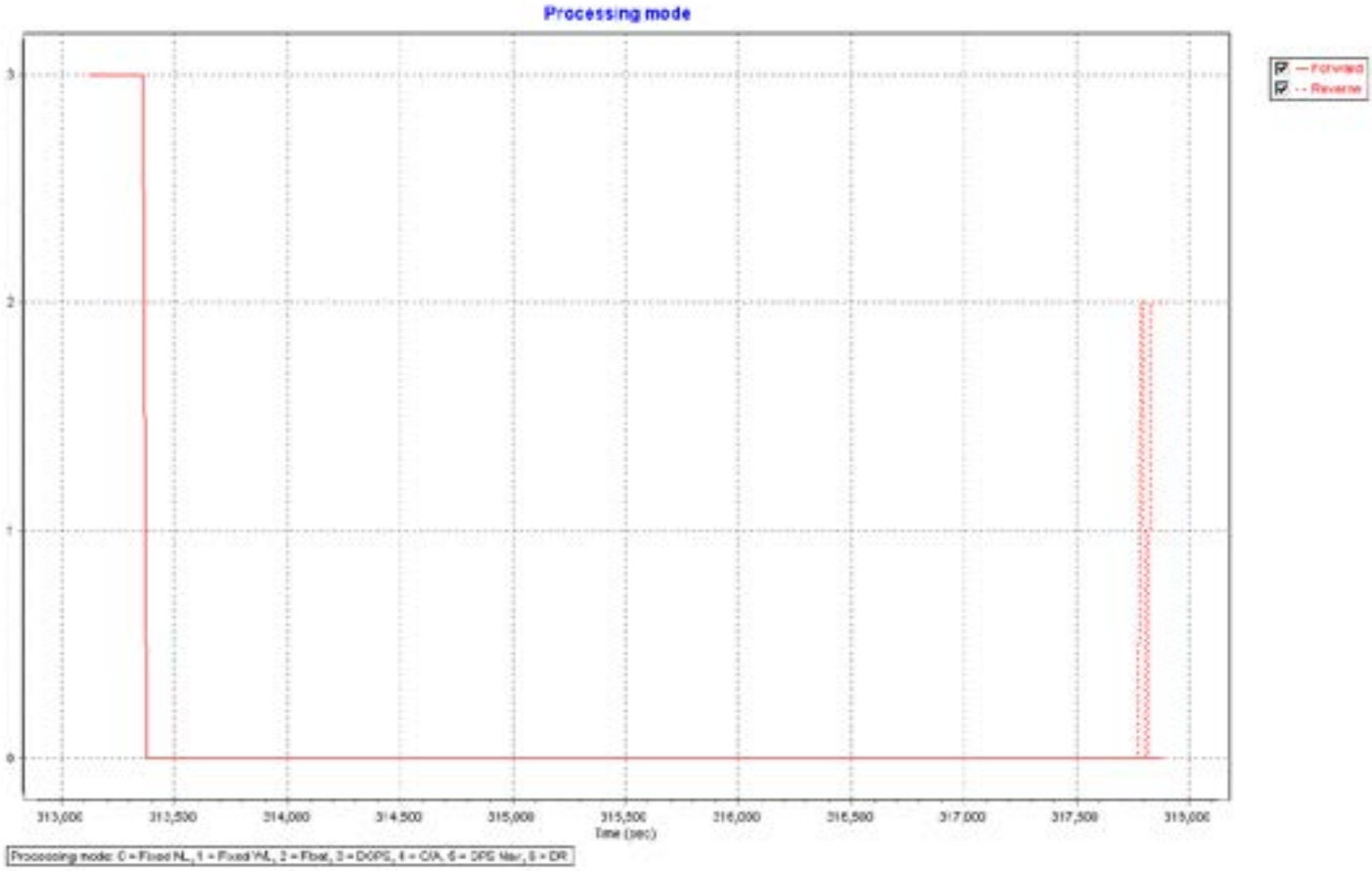
120125a-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)


Processing mode
Forward
Reverse
3
2
1
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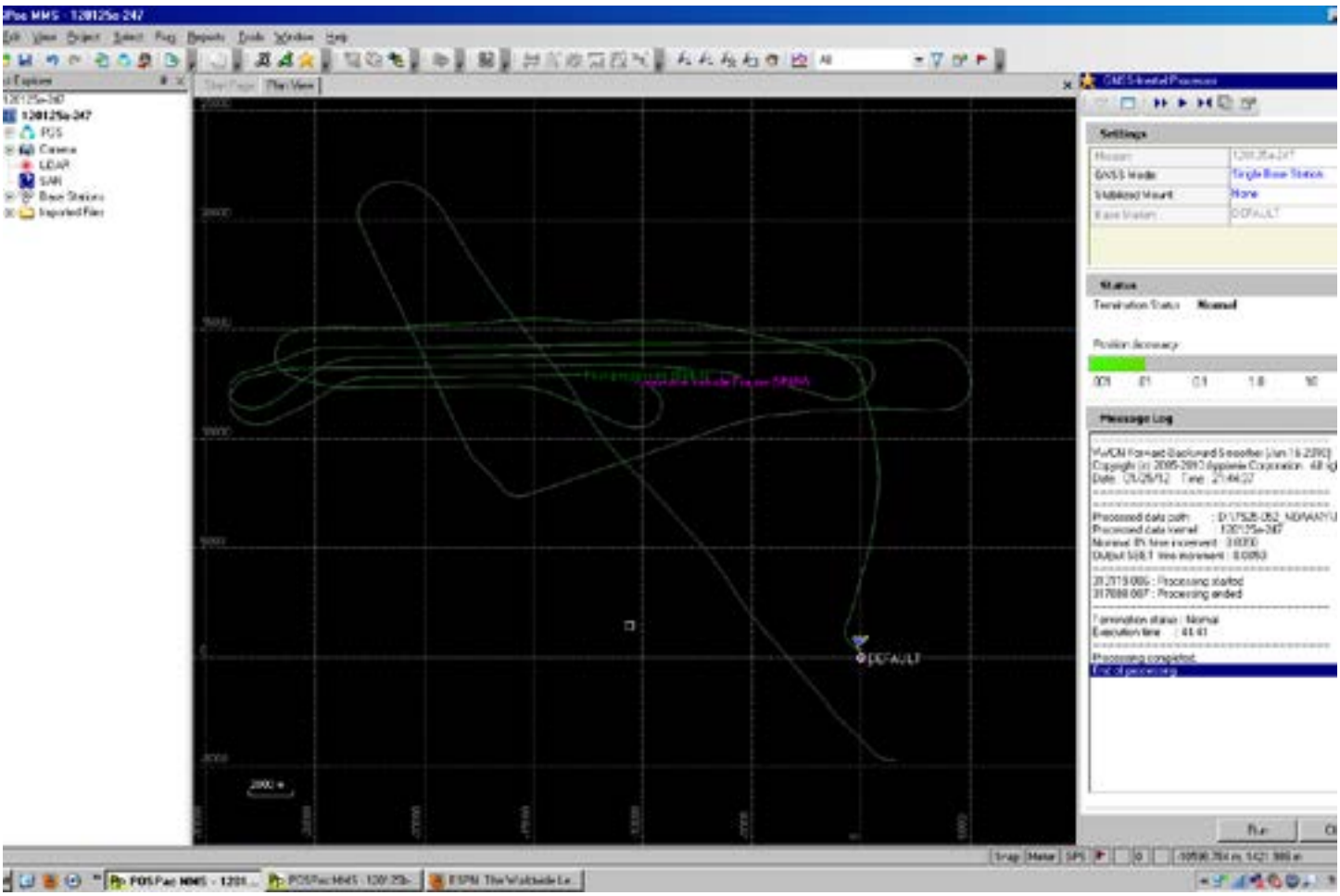
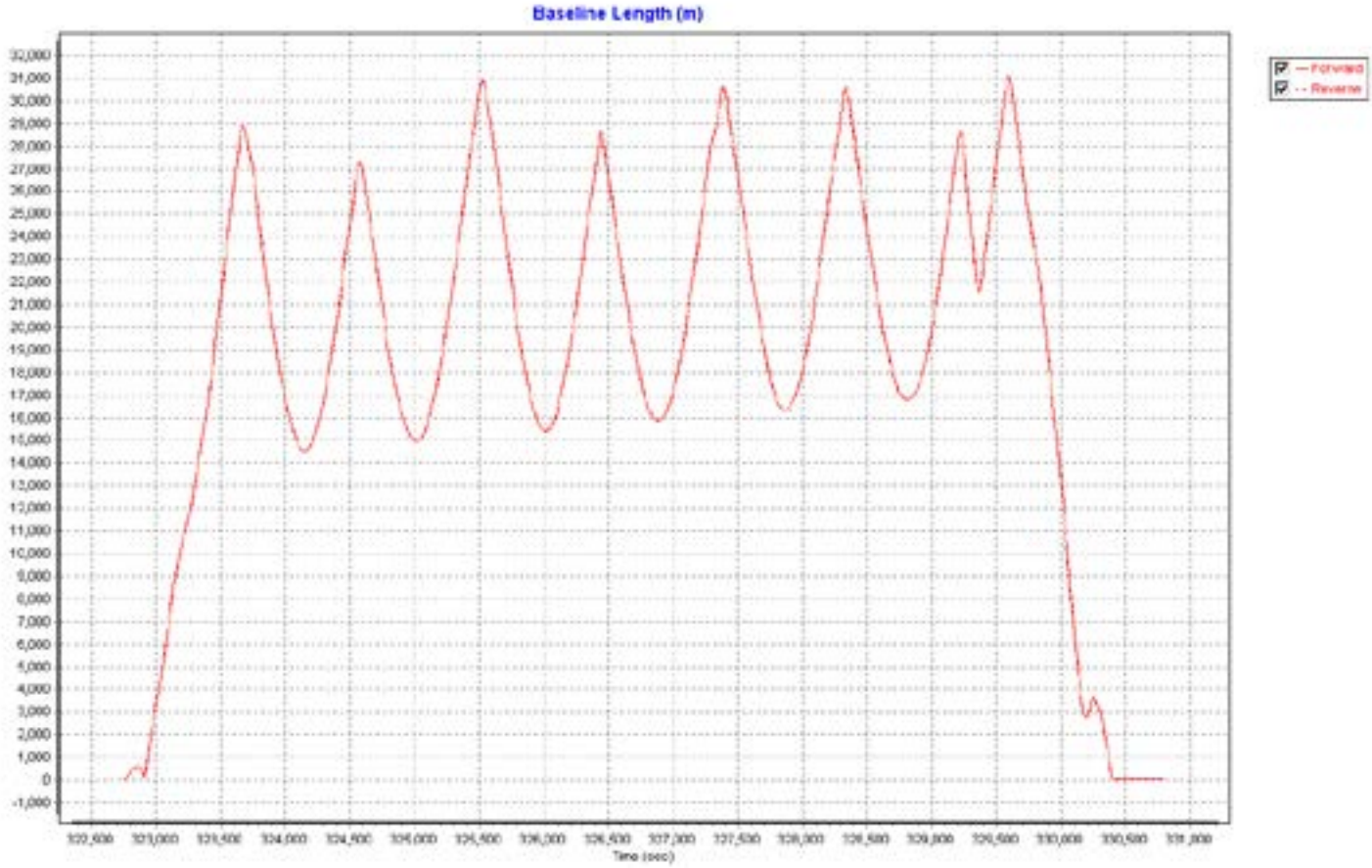
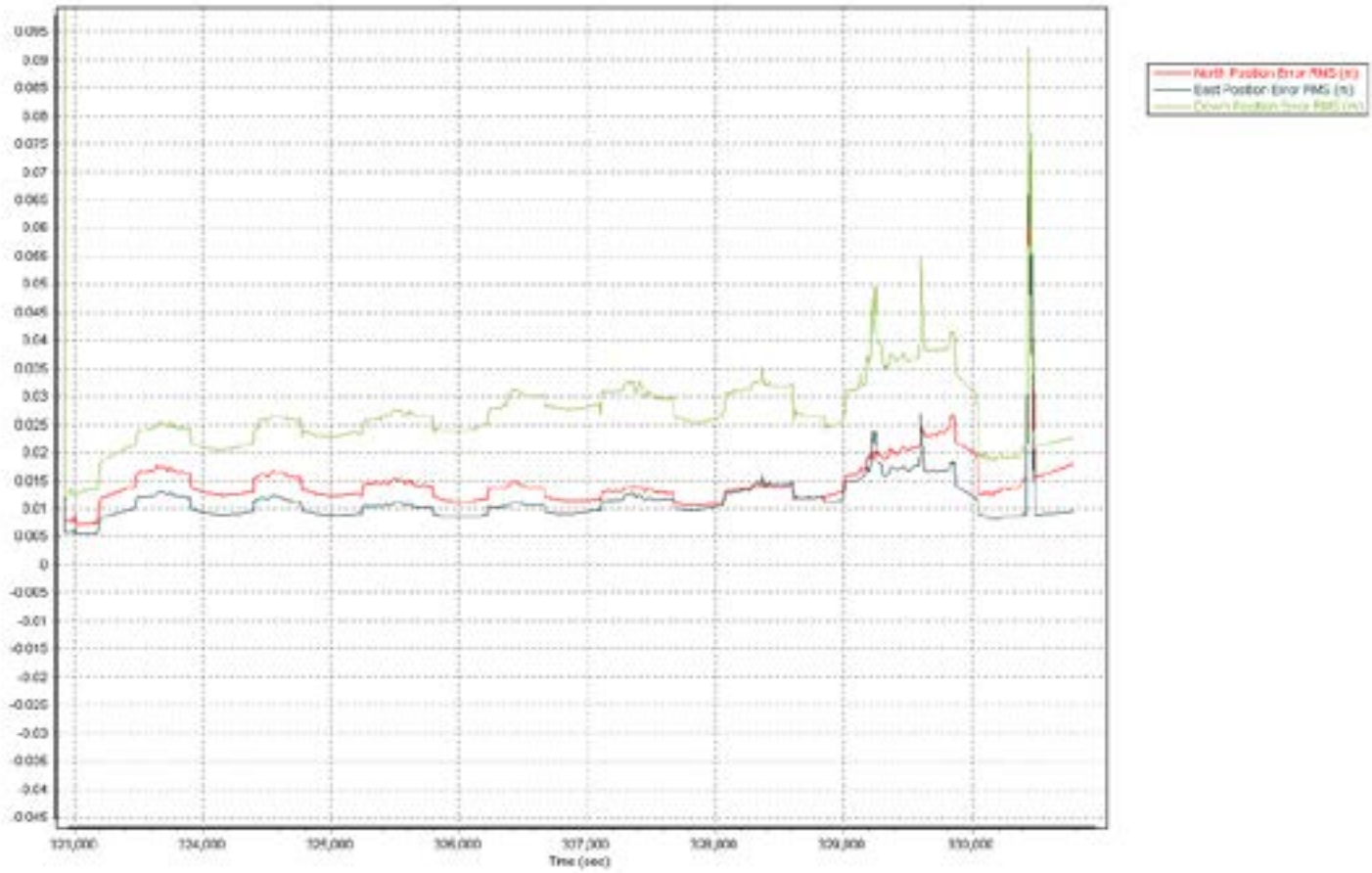
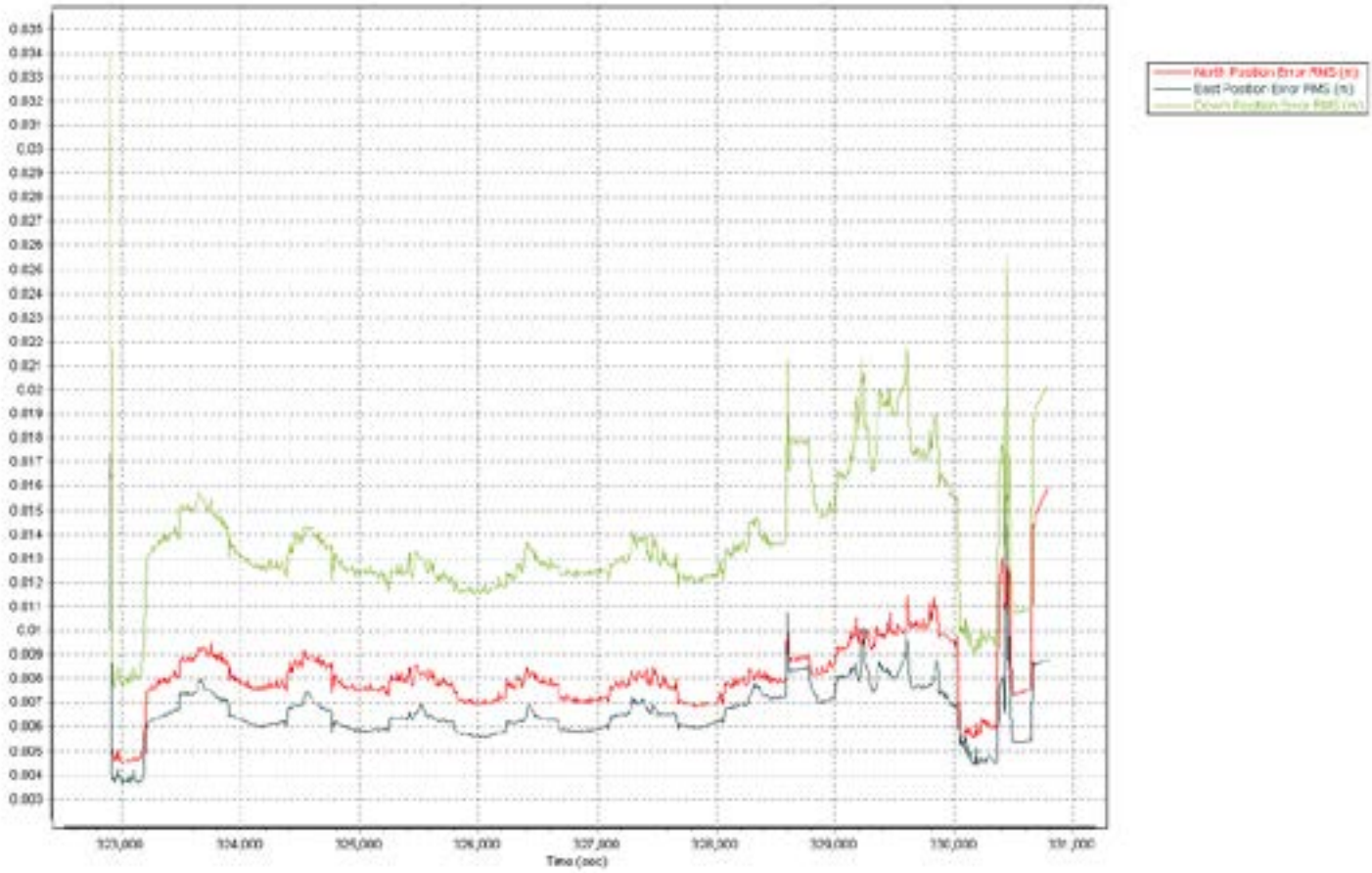
313,000
313,500
314,000
314,500
315,000
315,500
316,000
316,500
317,000
317,500
318,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

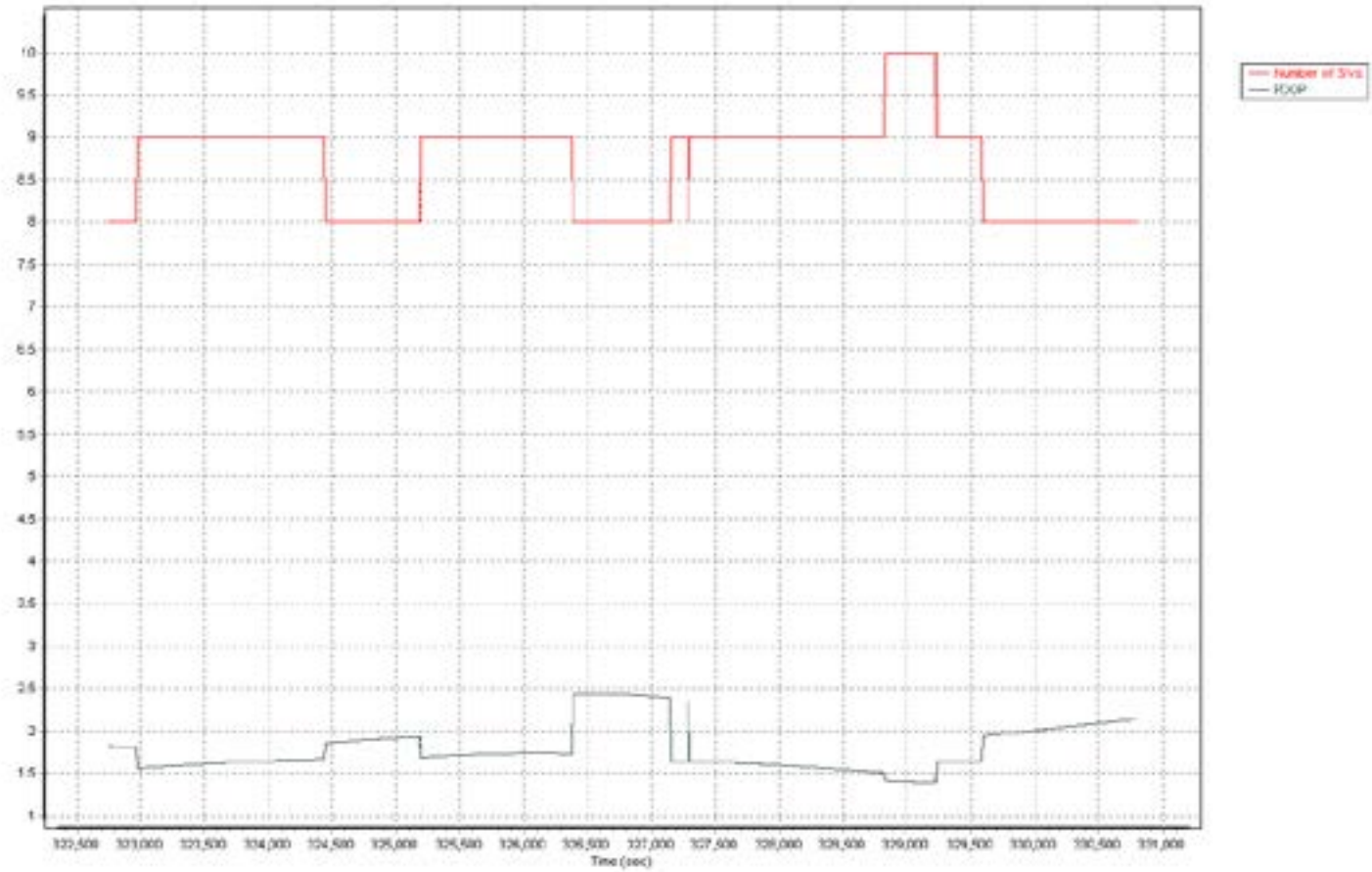

Settings
Status
Message Log
DEFAULT

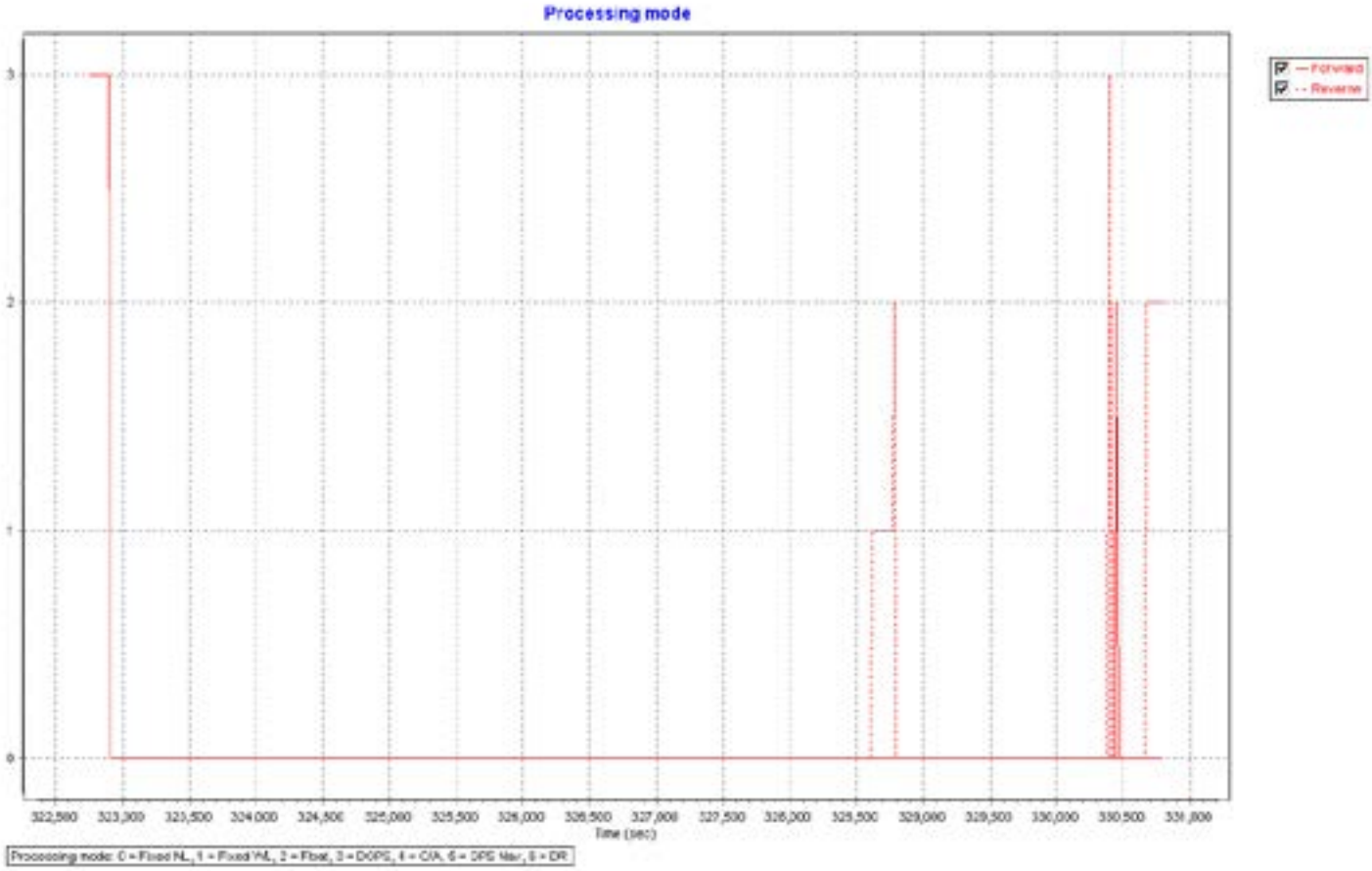
120125b-247

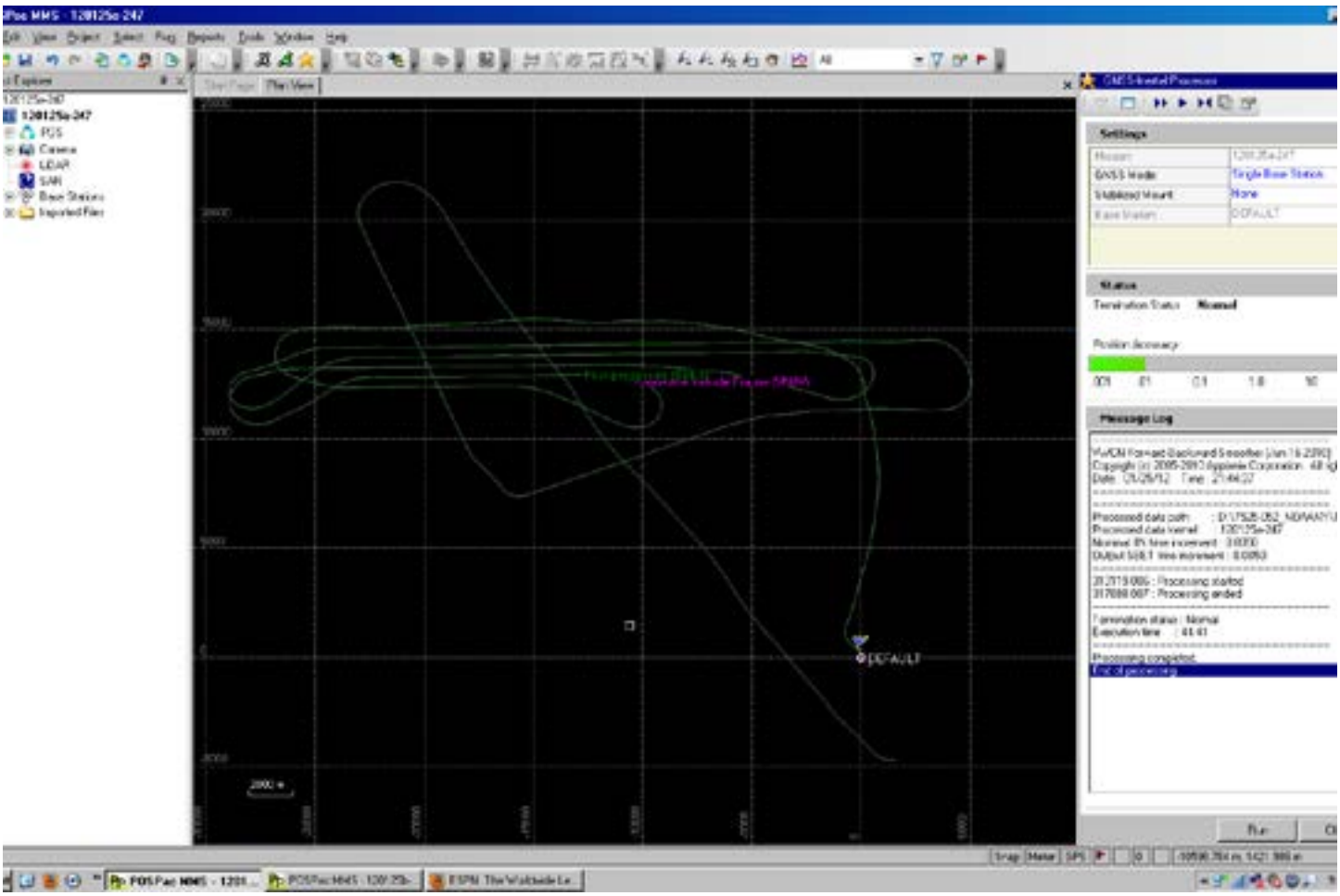

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

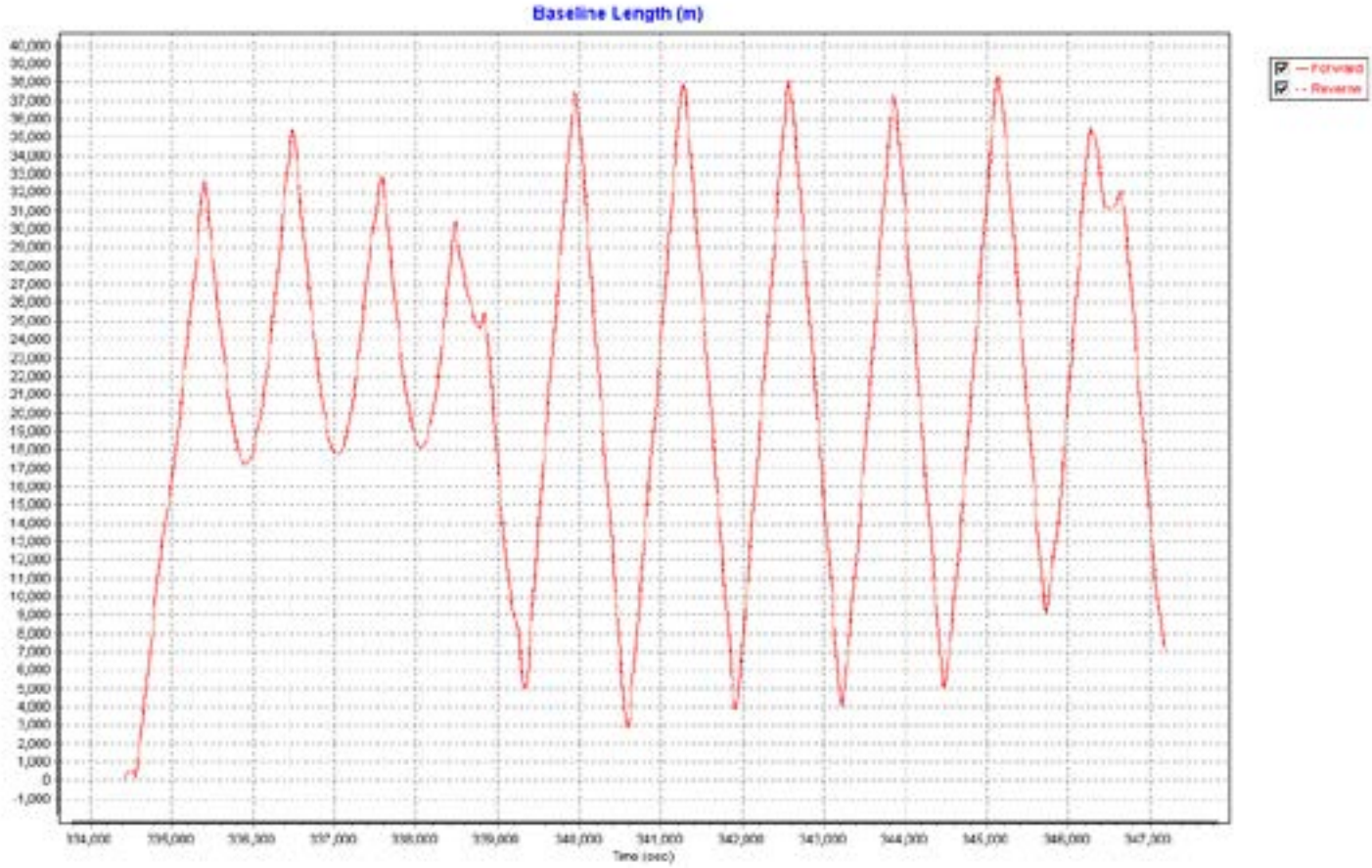

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

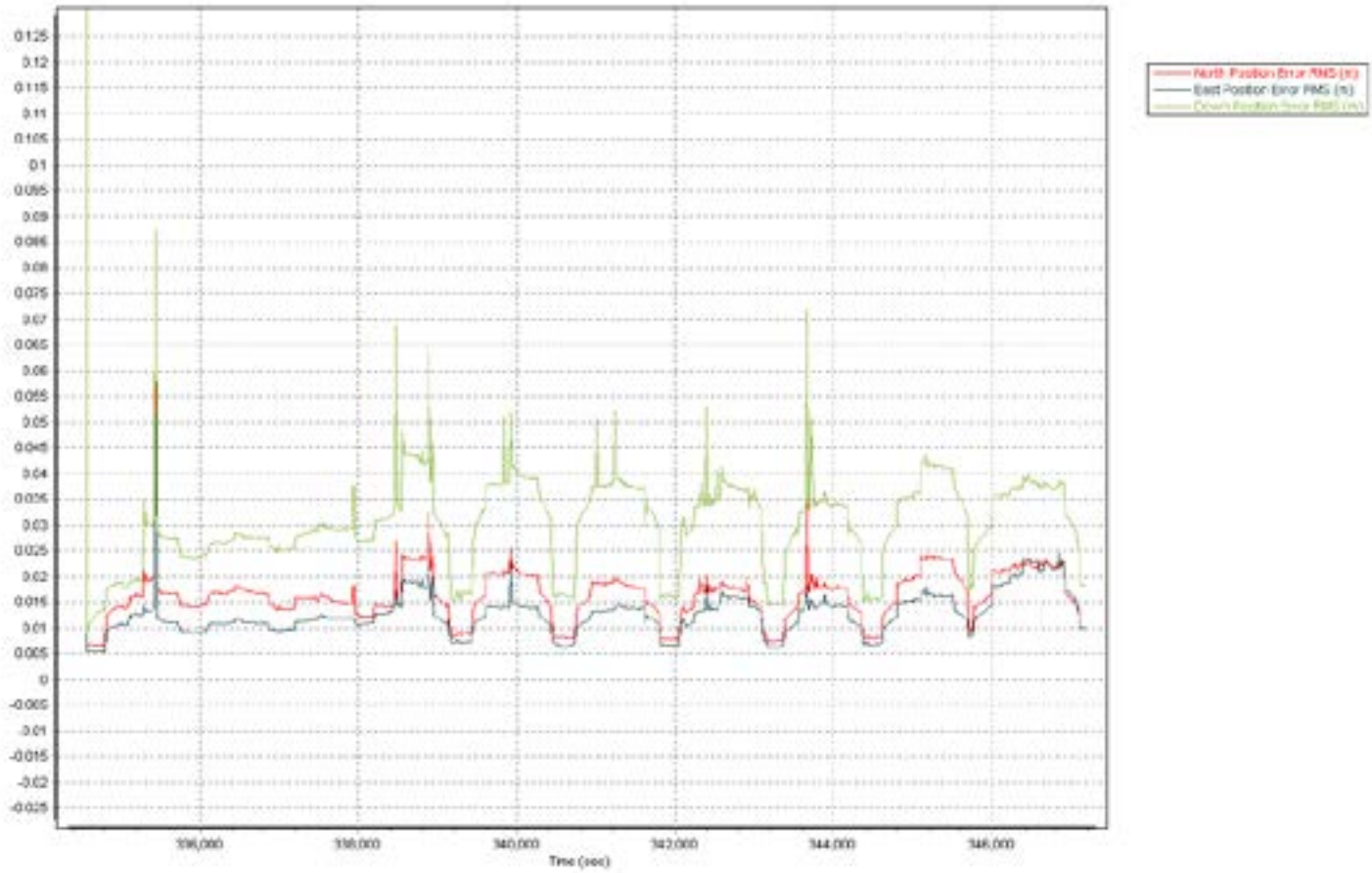

Number of SVs
PDOP
Time (sec)

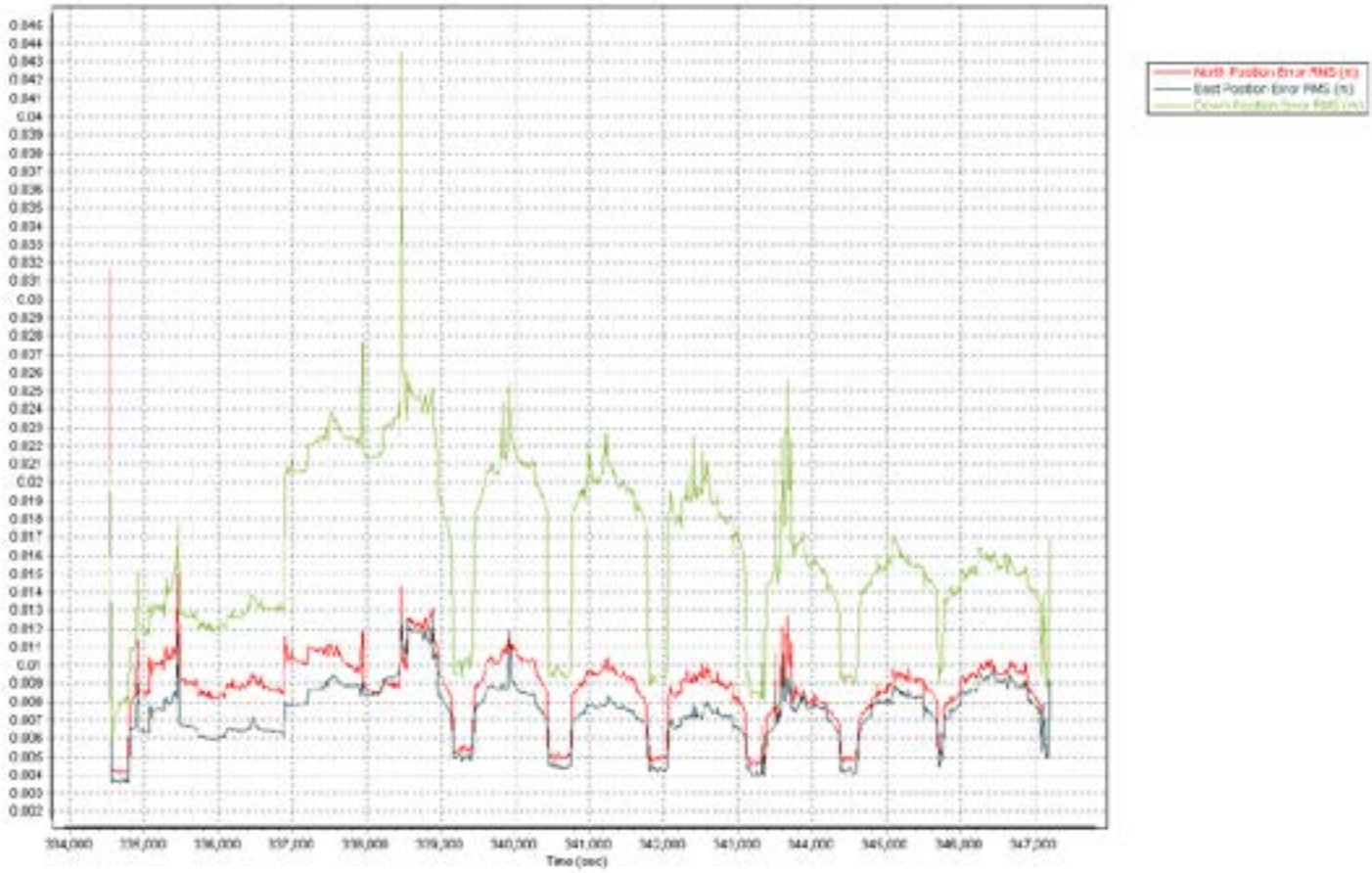

Processing mode
Forward
Reverse
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

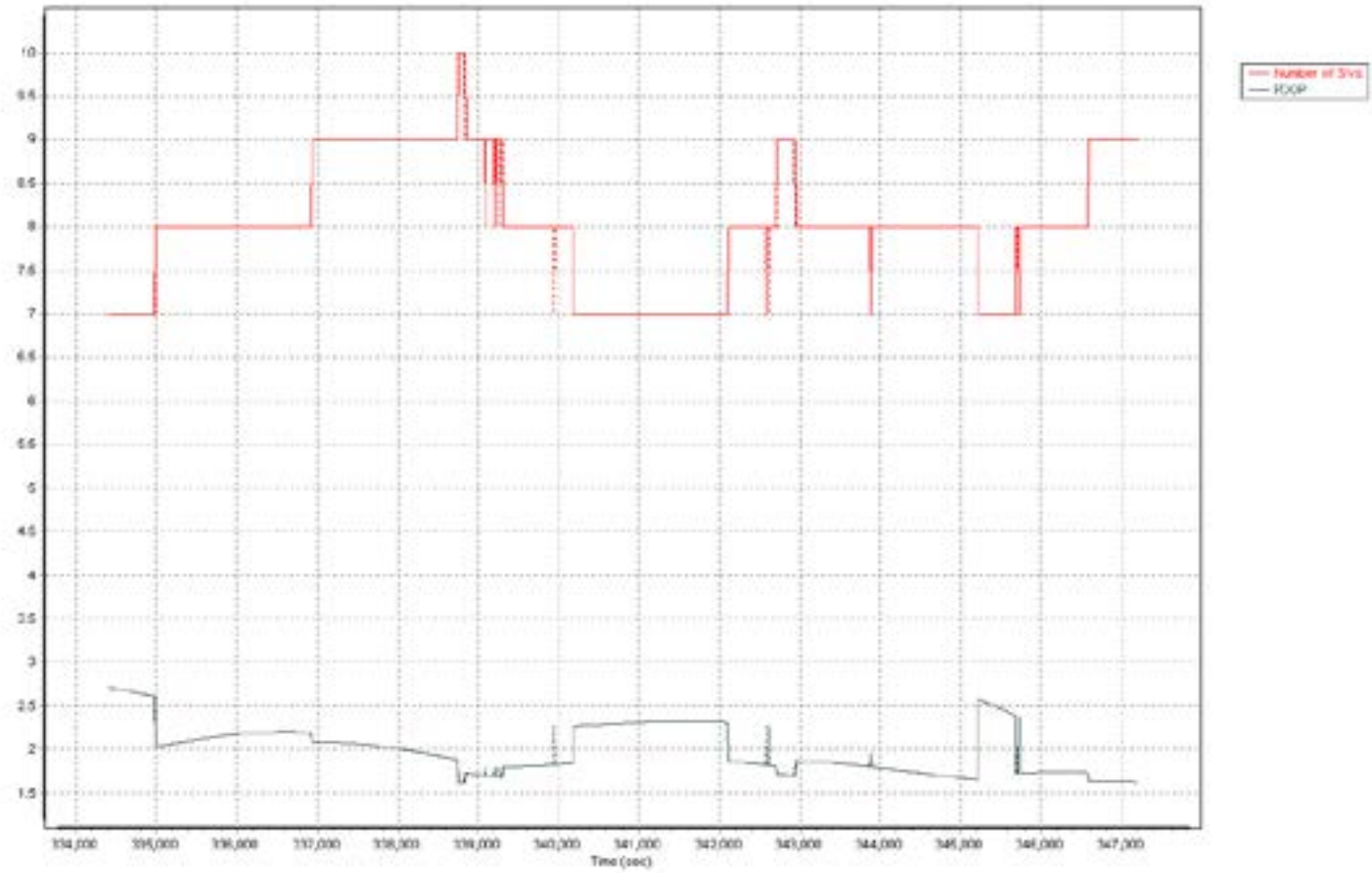

Settings
Status
Message Log
DEFAULT

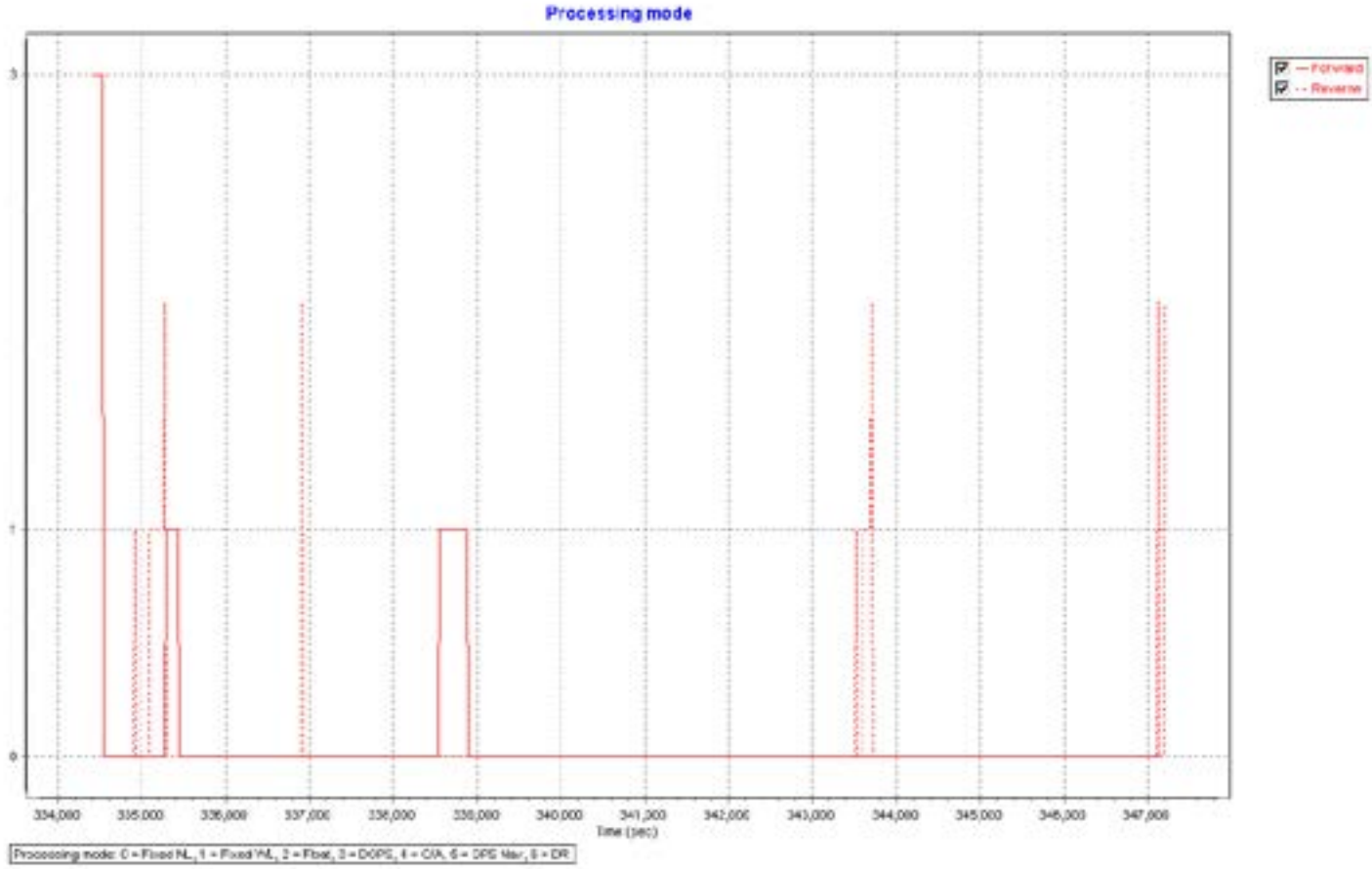
120125c-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)


Processing mode
Forward
Reverse
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335,000
336,000
337,000
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339,000
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341,000
342,000
343,000
344,000
345,000
346,000
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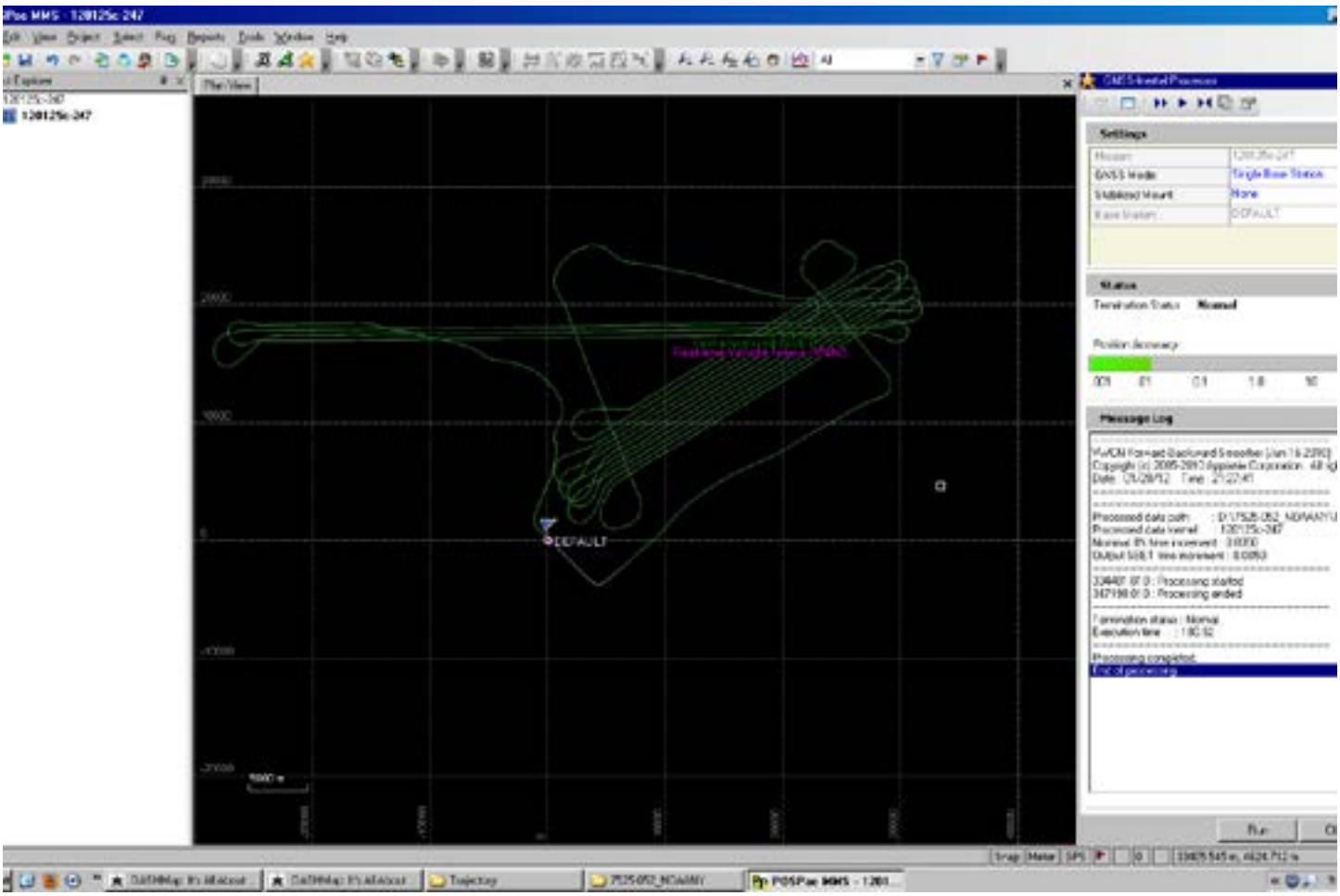
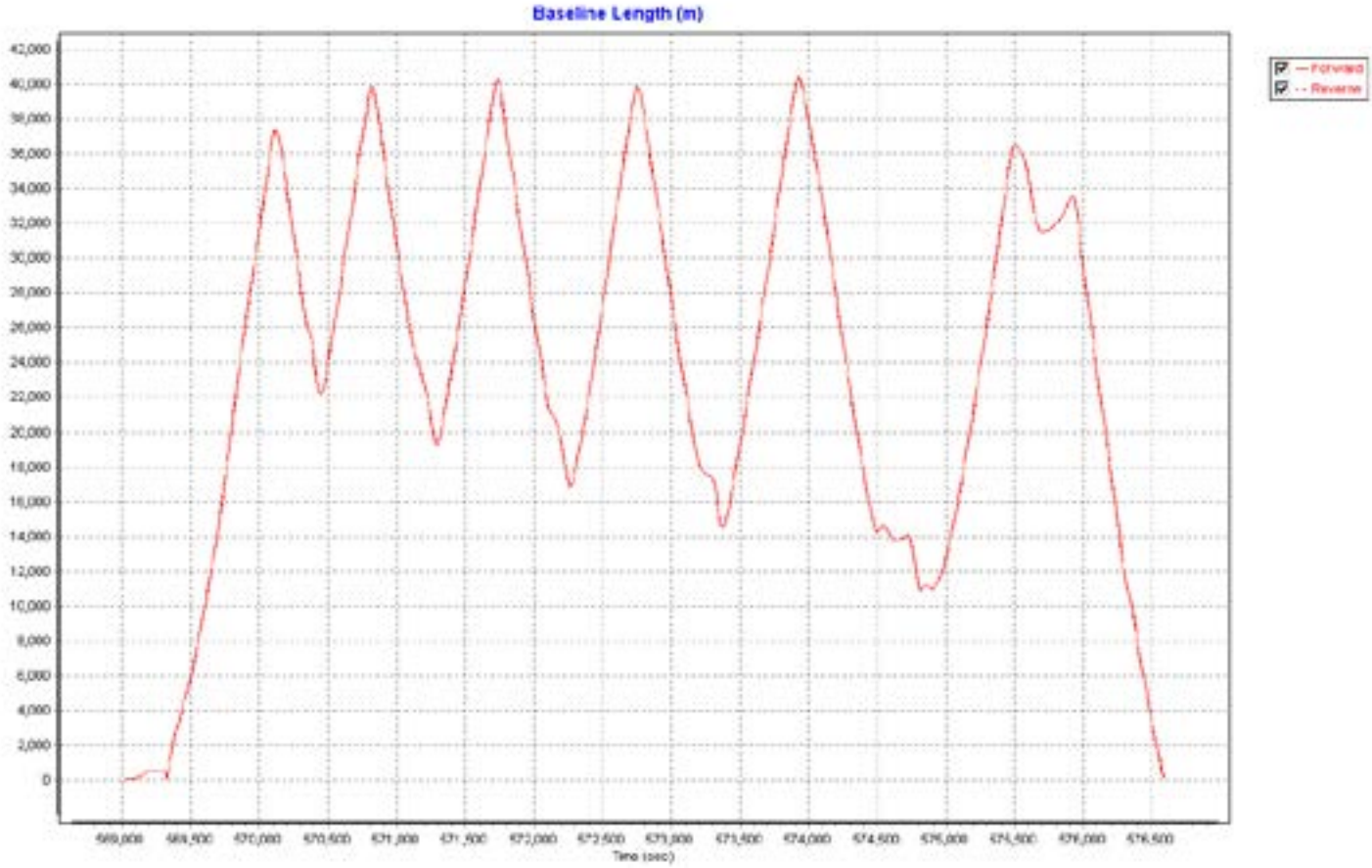
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR


Settings
Status
Message Log
DEFAULT

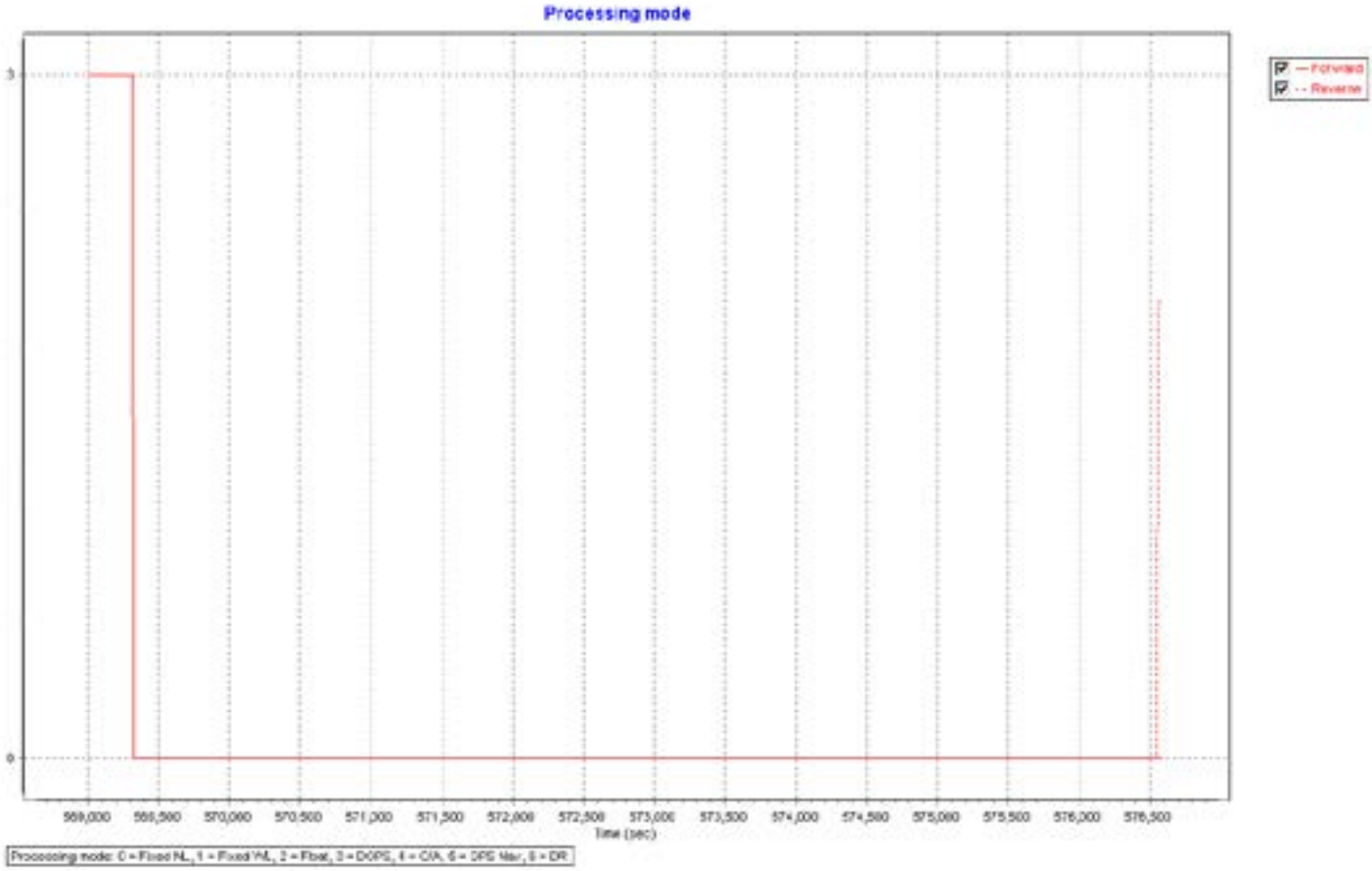
120128a-247


Baseline Length (m)
Forward
Reverse
Time (sec)

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

Number of SVs
PDOP
Time (sec)


Processing mode
Forward
Reverse
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574,000
574,500
575,000
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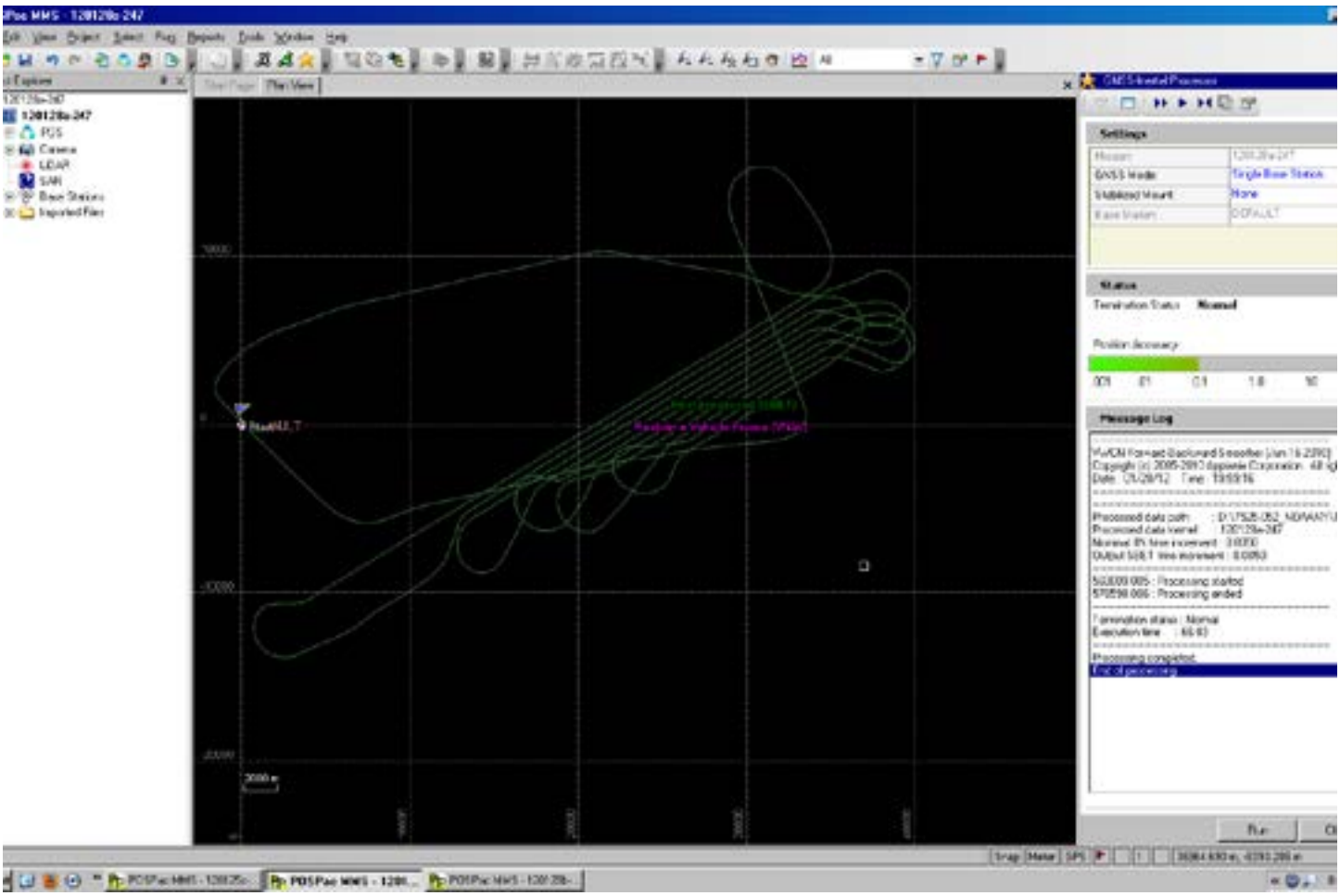
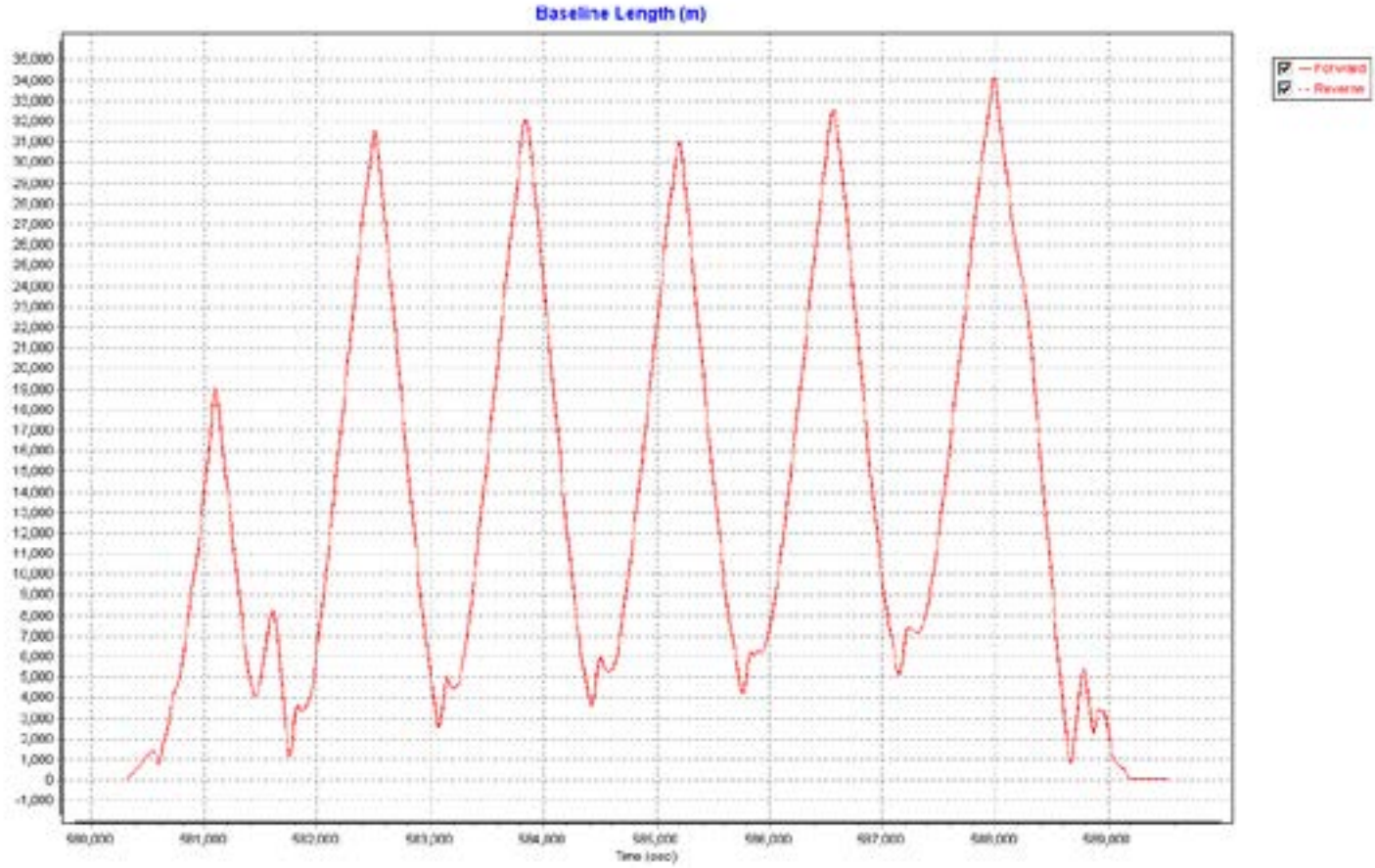
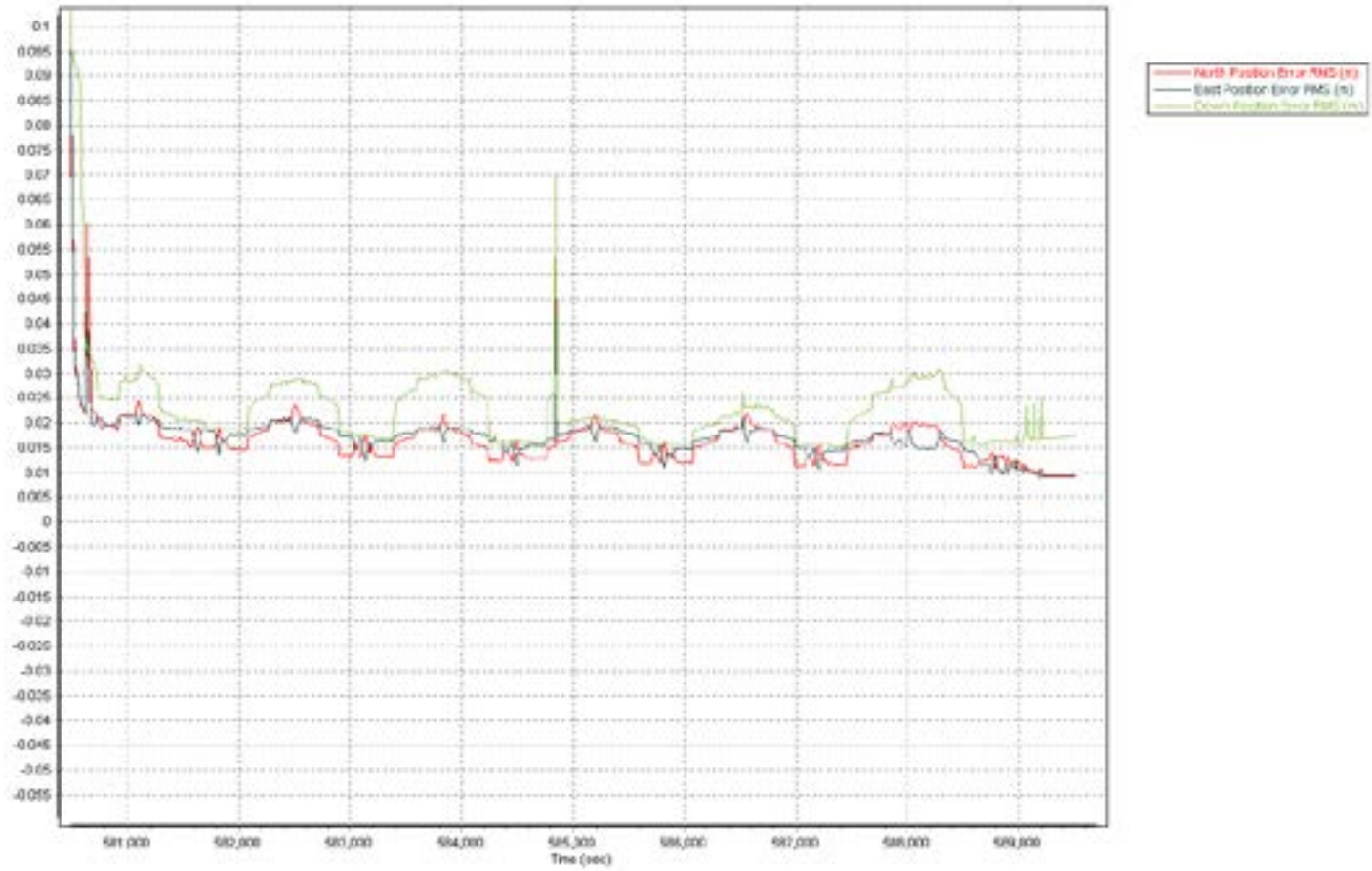
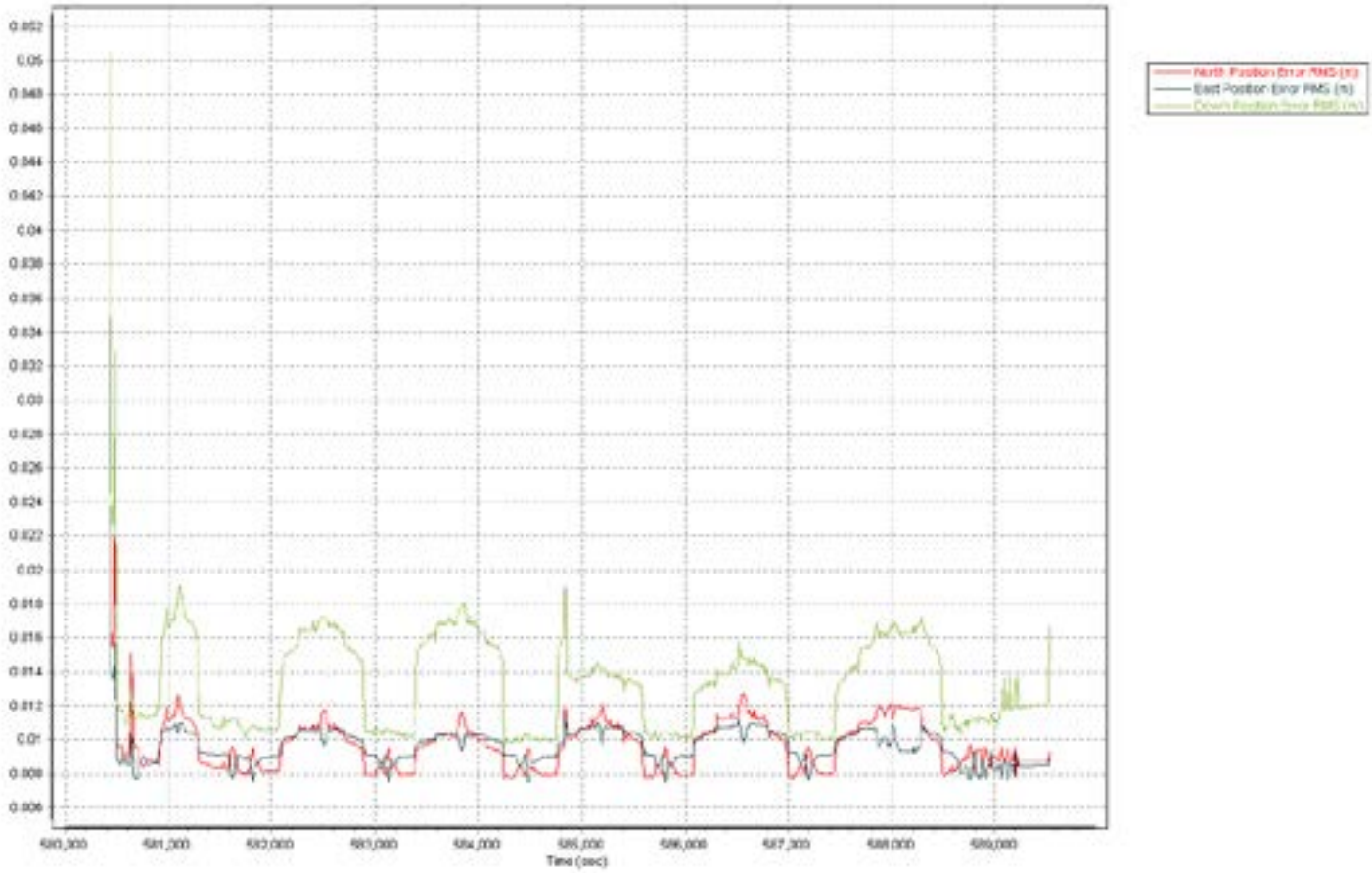
576,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

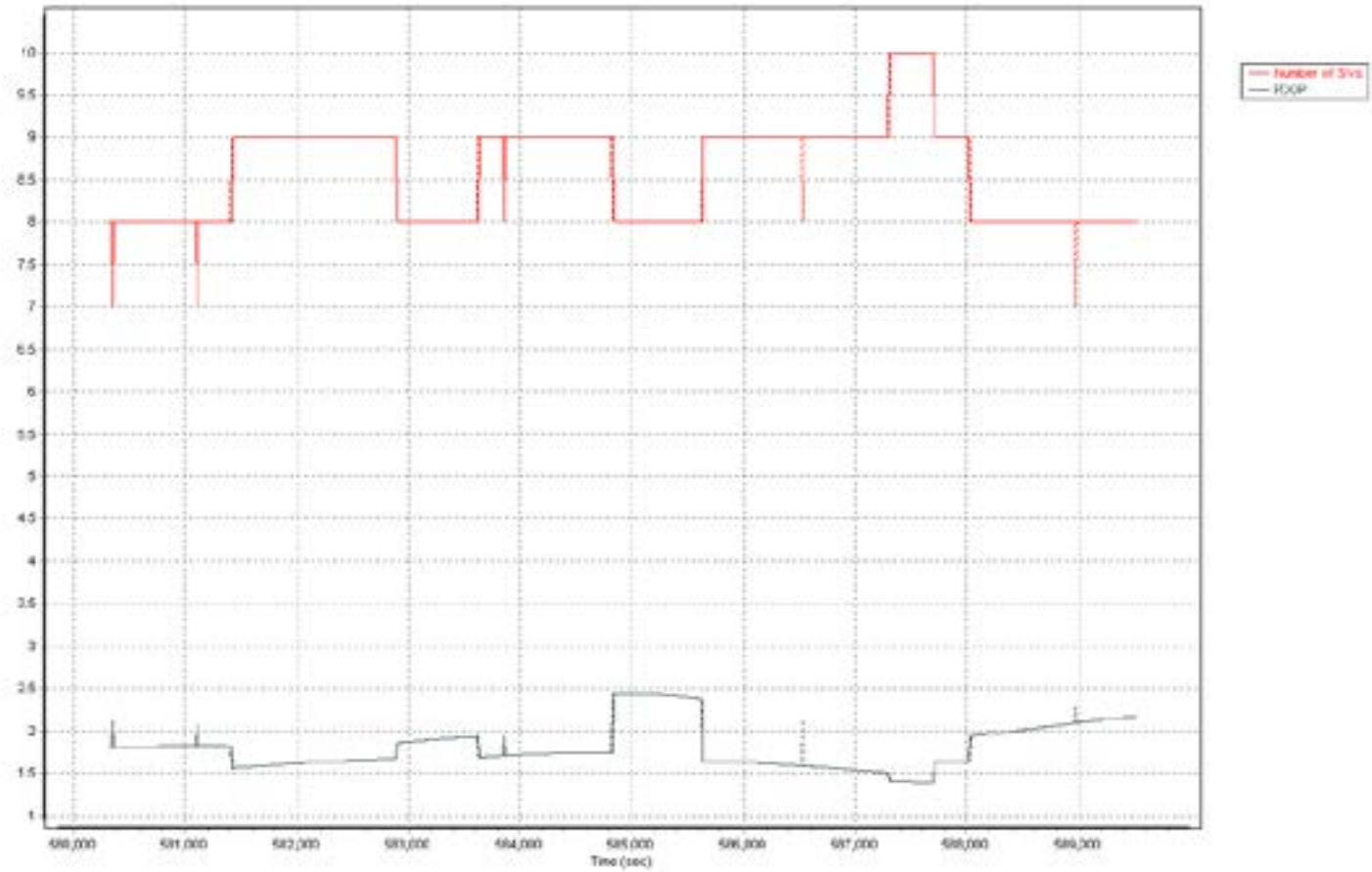

Settings
Status
Message Log

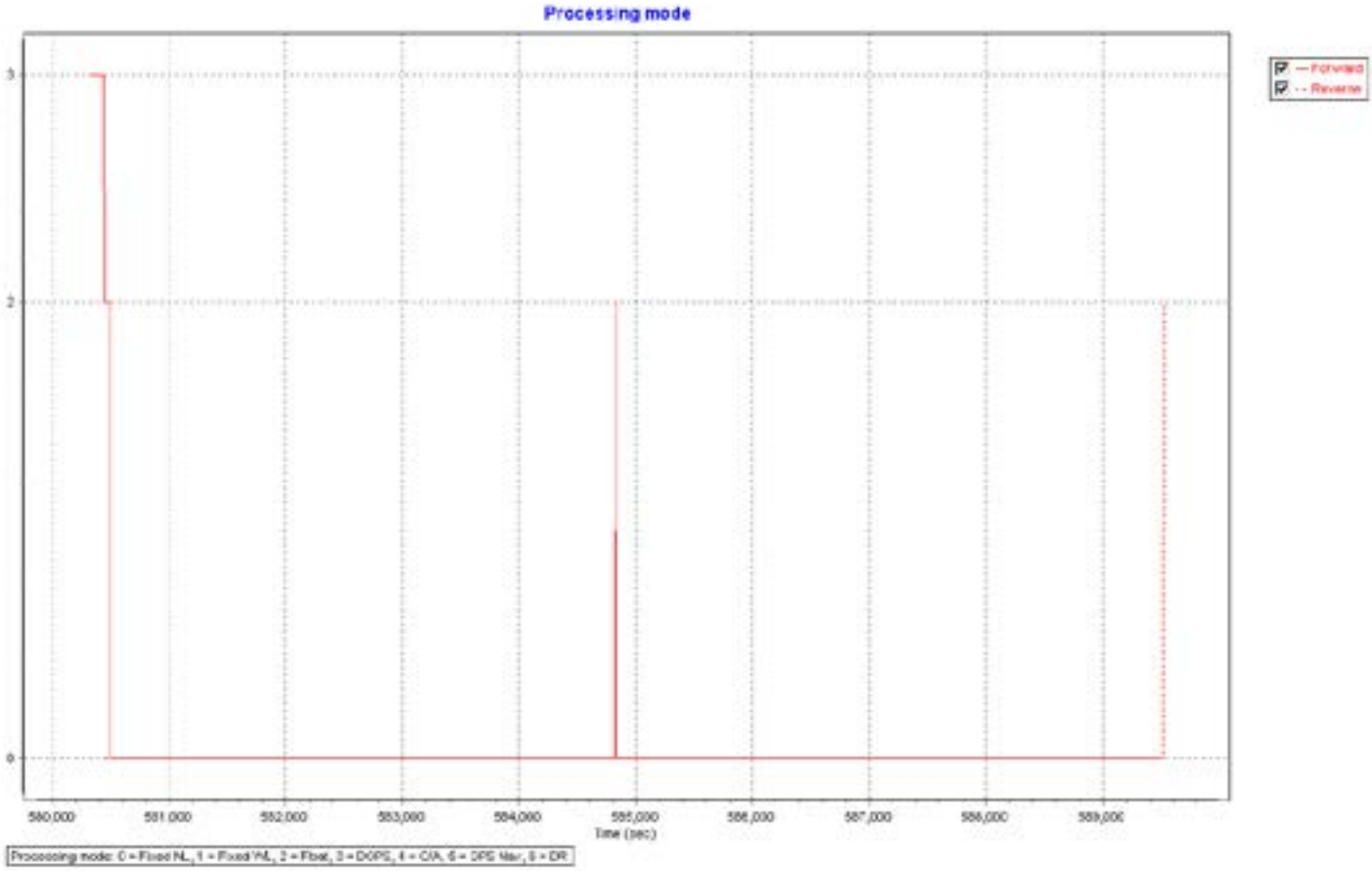
120128b-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)


Processing mode
Forward
Reverse
3
2
0
580,000
581,000
582,000
583,000
584,000
585,000
586,000
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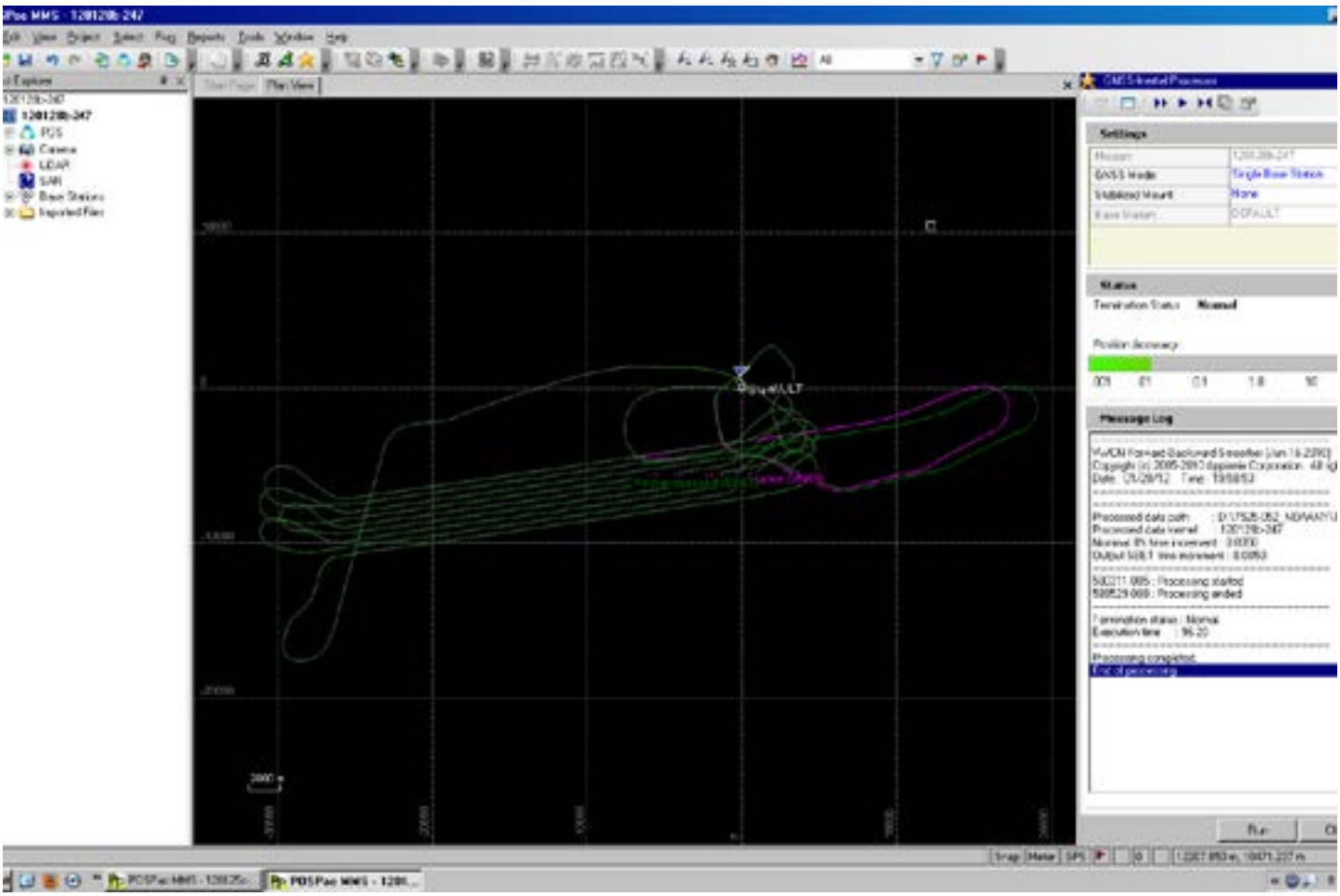
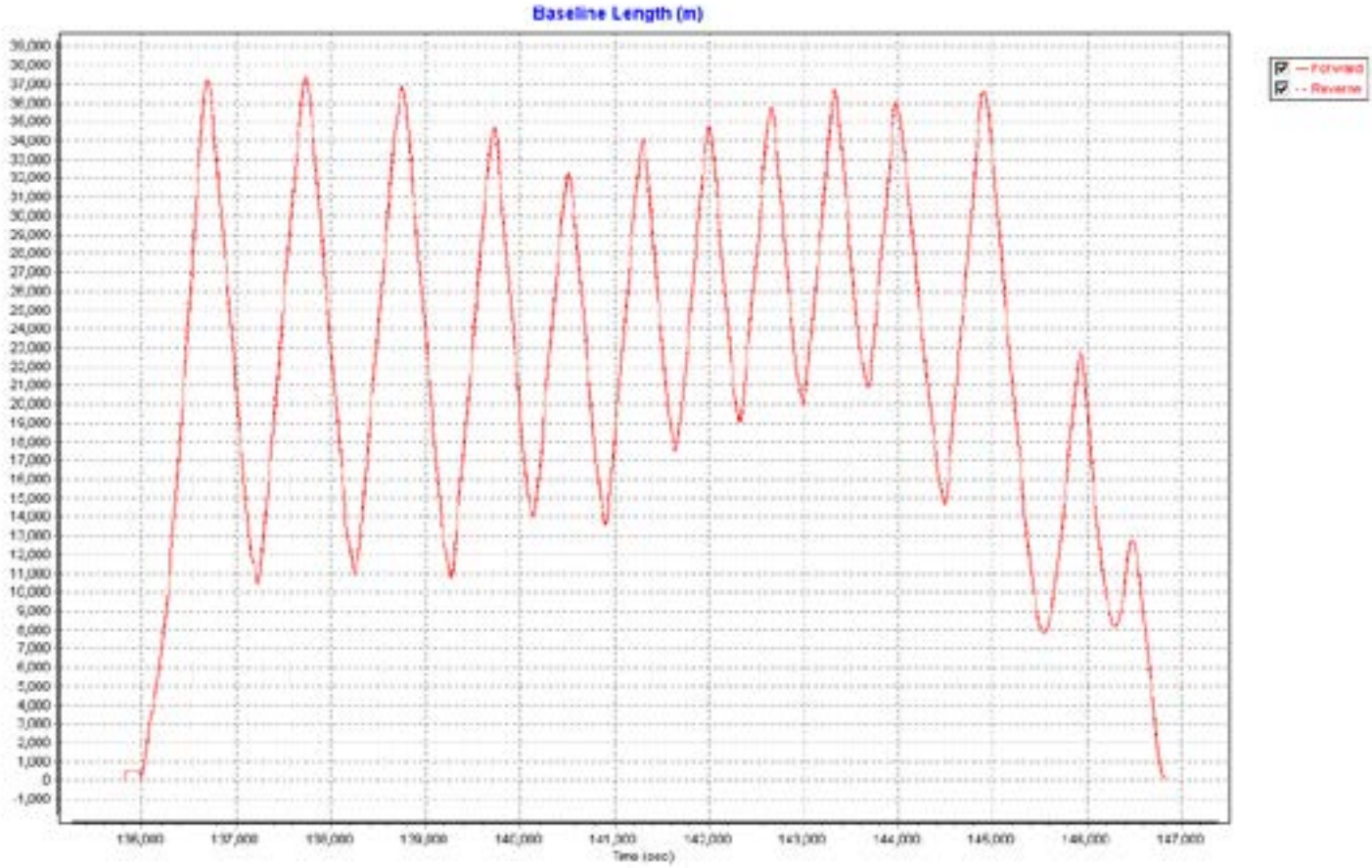
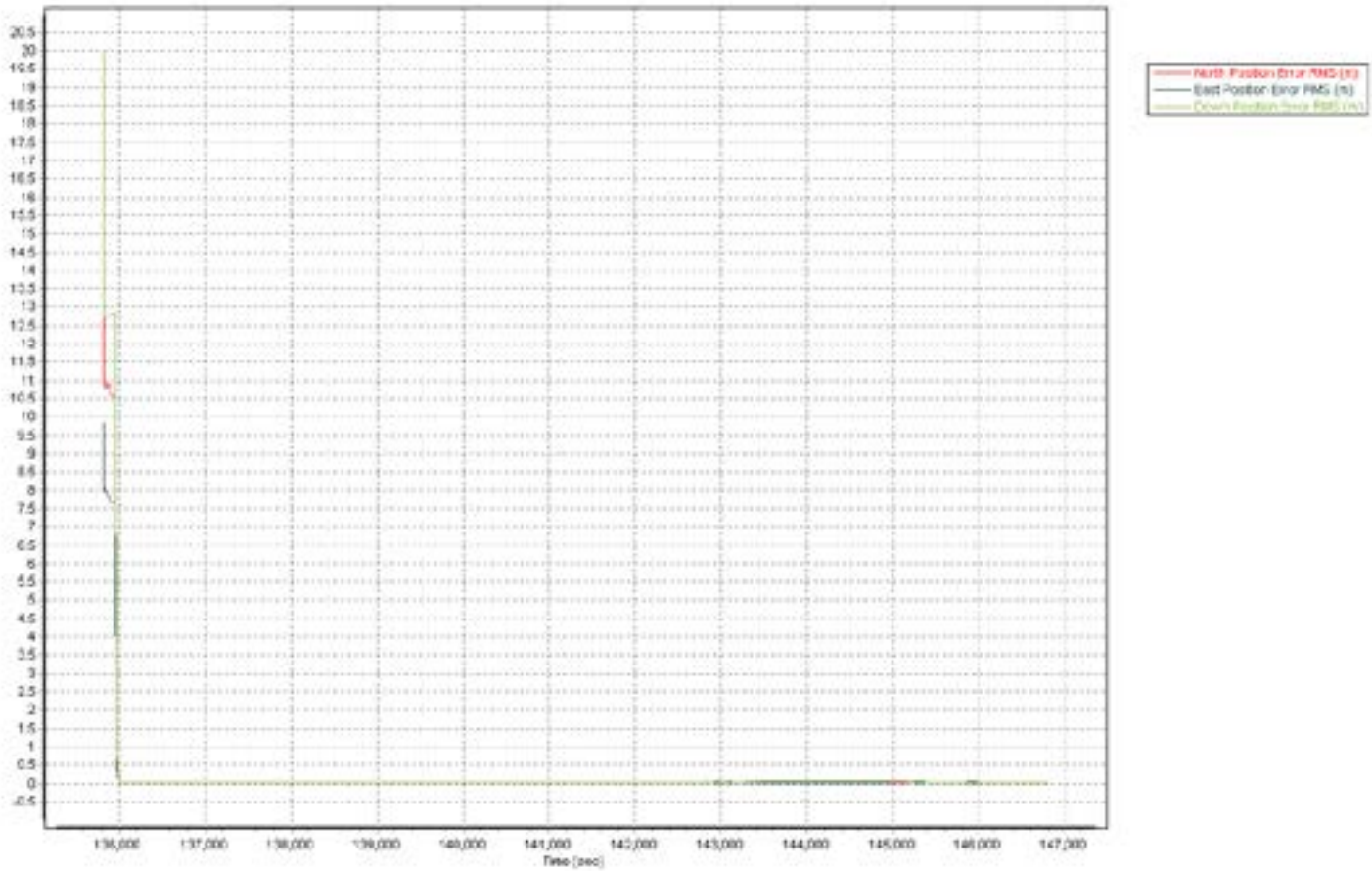
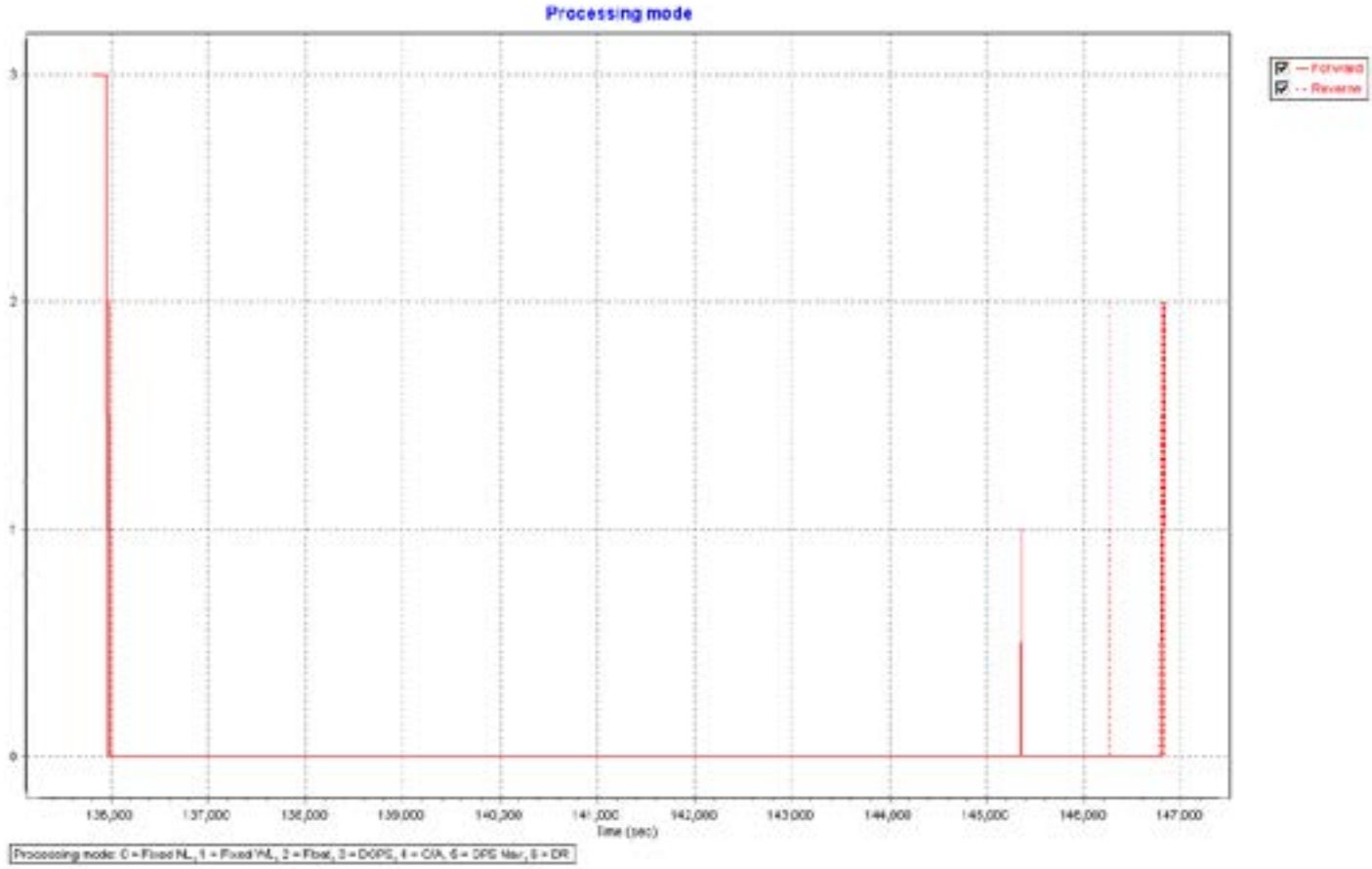
588,000
589,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

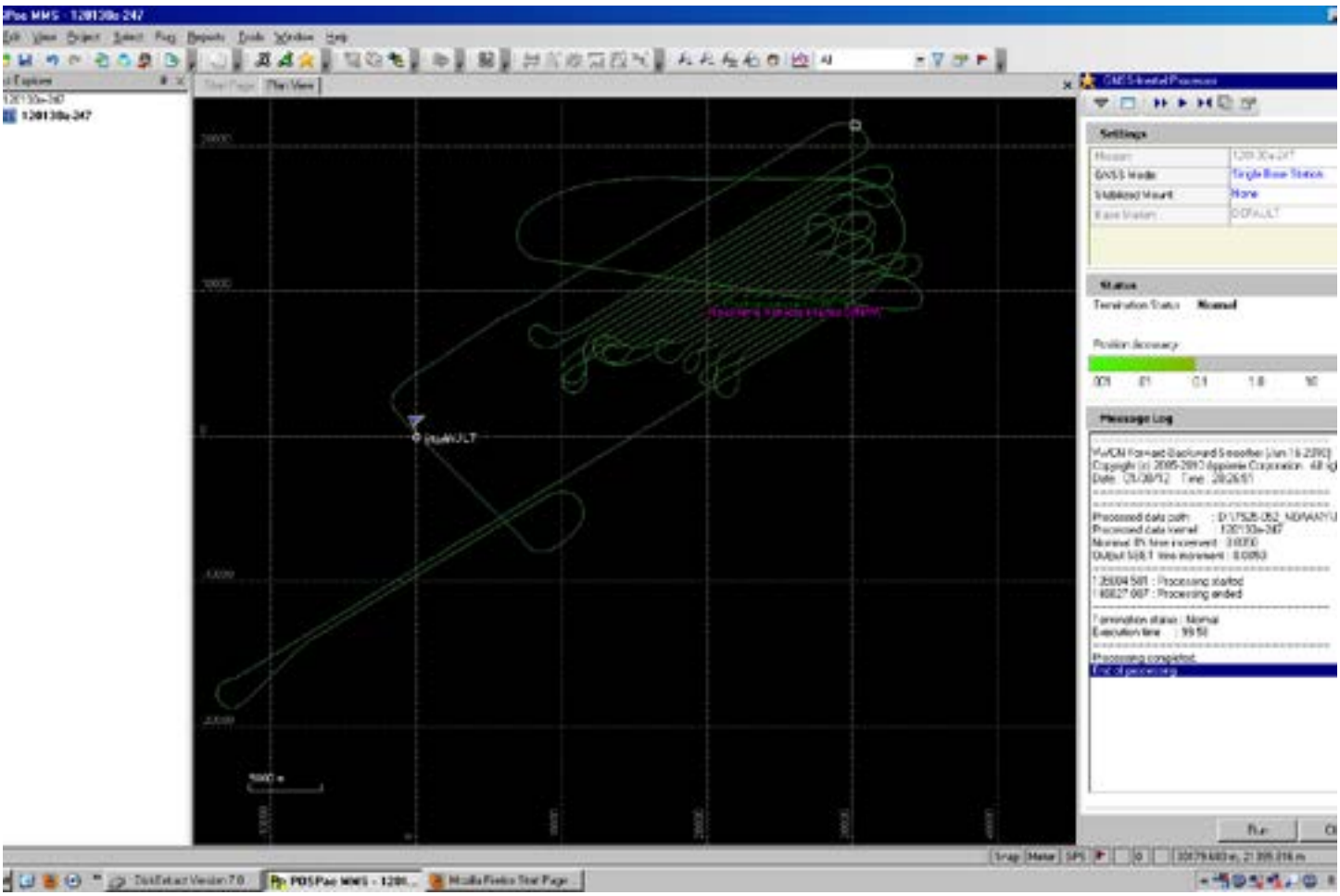

Settings
Status
Message Log

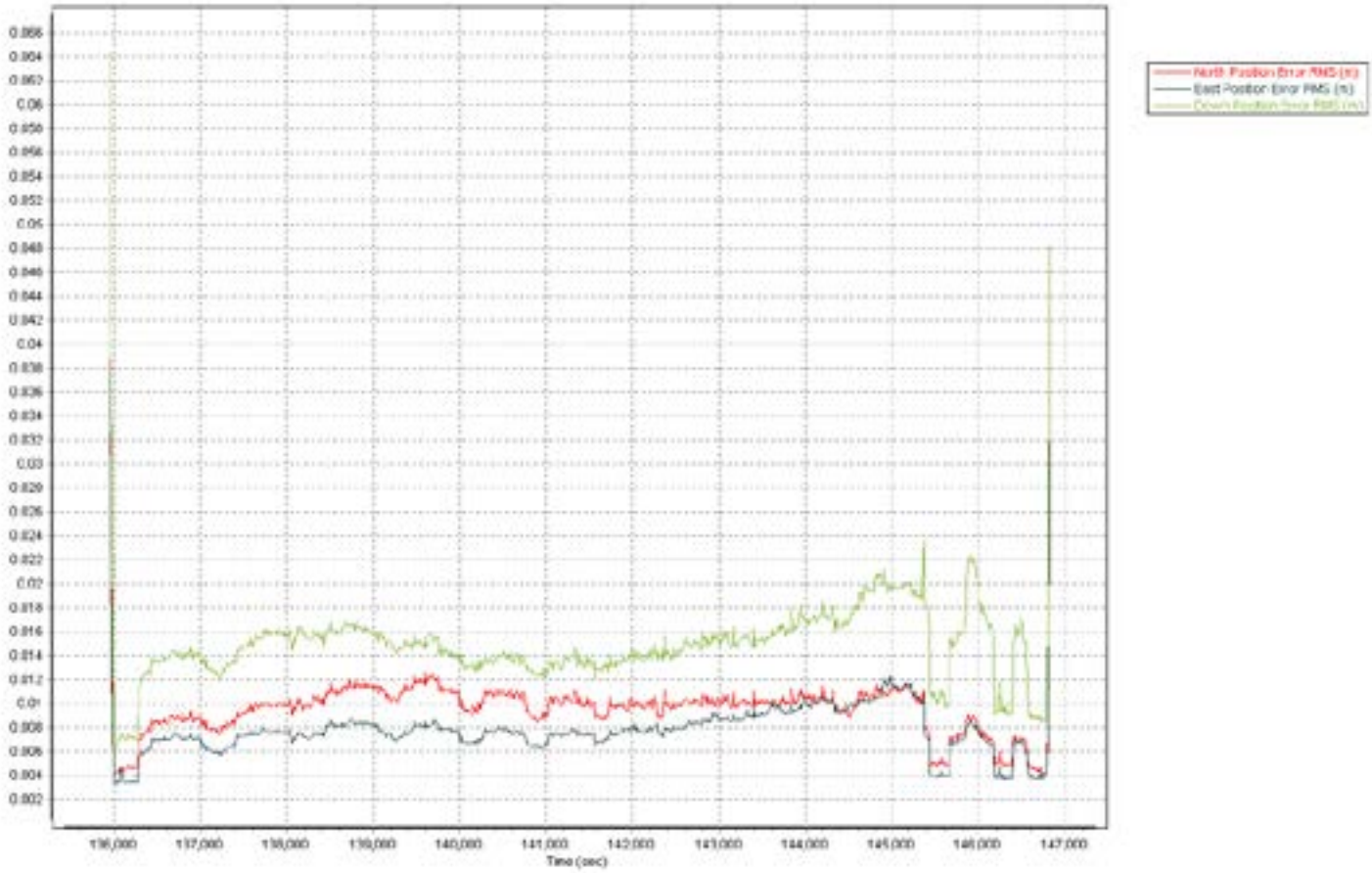
120130a-247

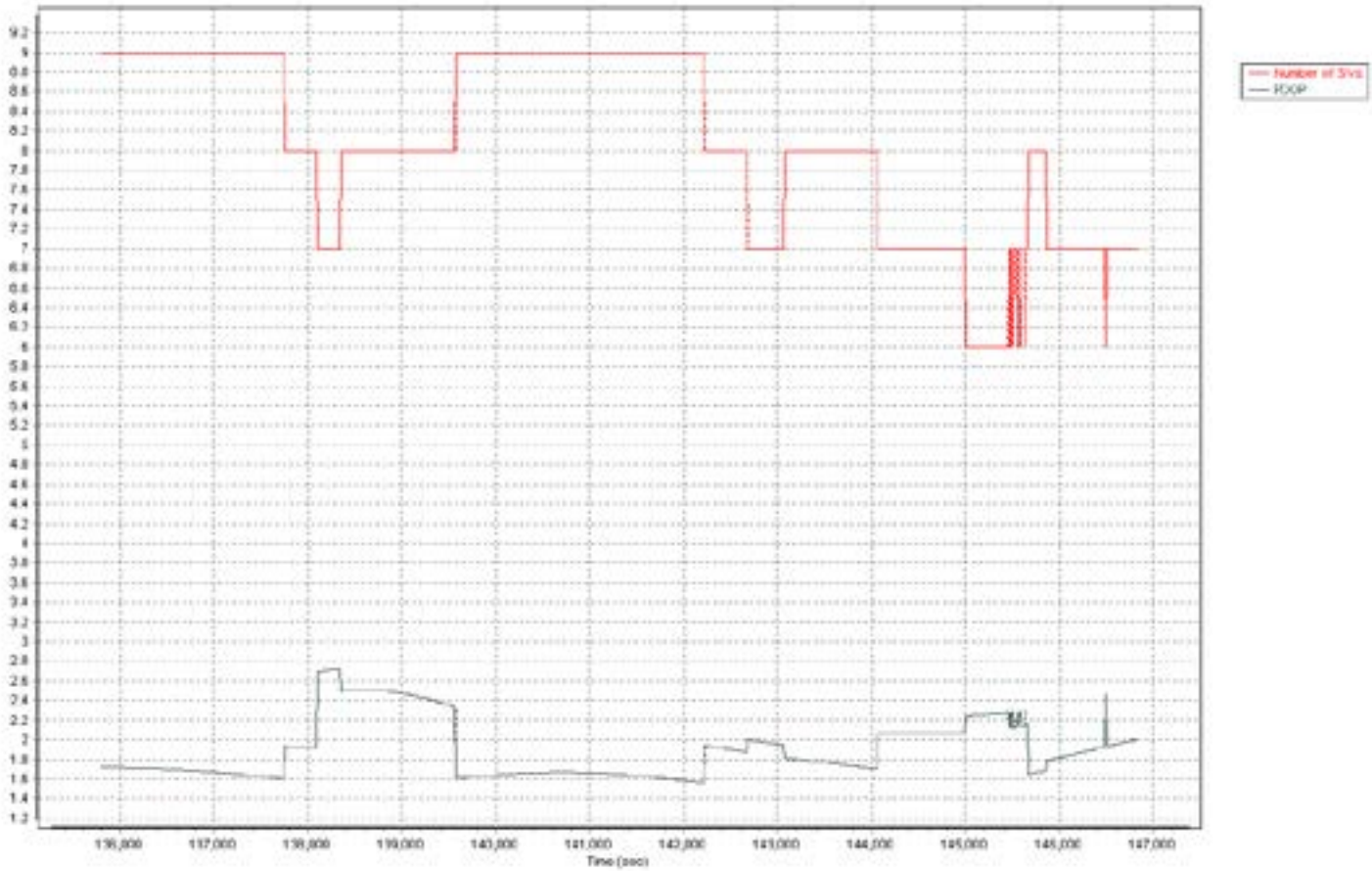

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)

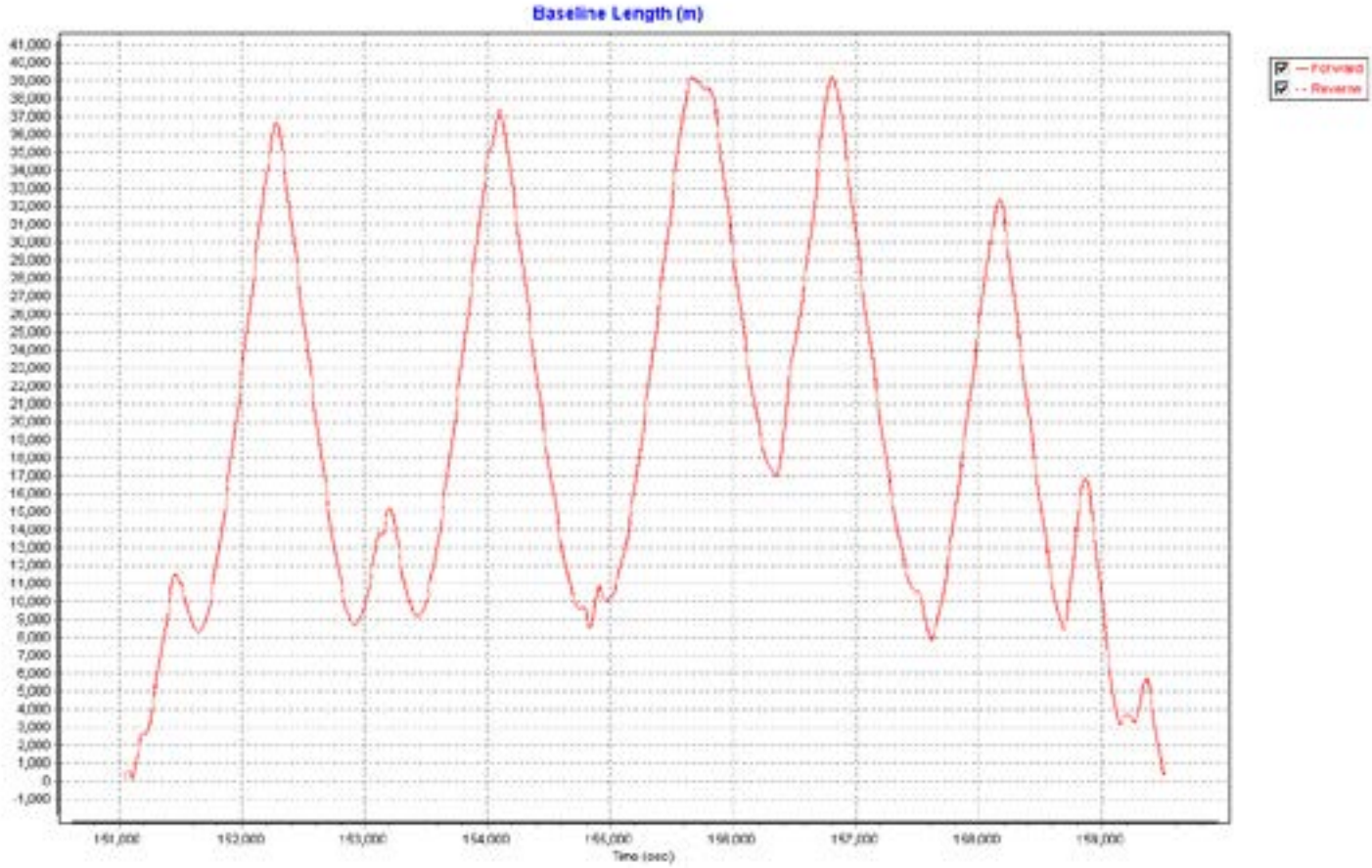

Processing mode
Forward
Reverse
3
2
1
0
136,000
137,000
138,000
139,000
140,000
141,000
142,000
143,000
144,000
145,000
146,000
147,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

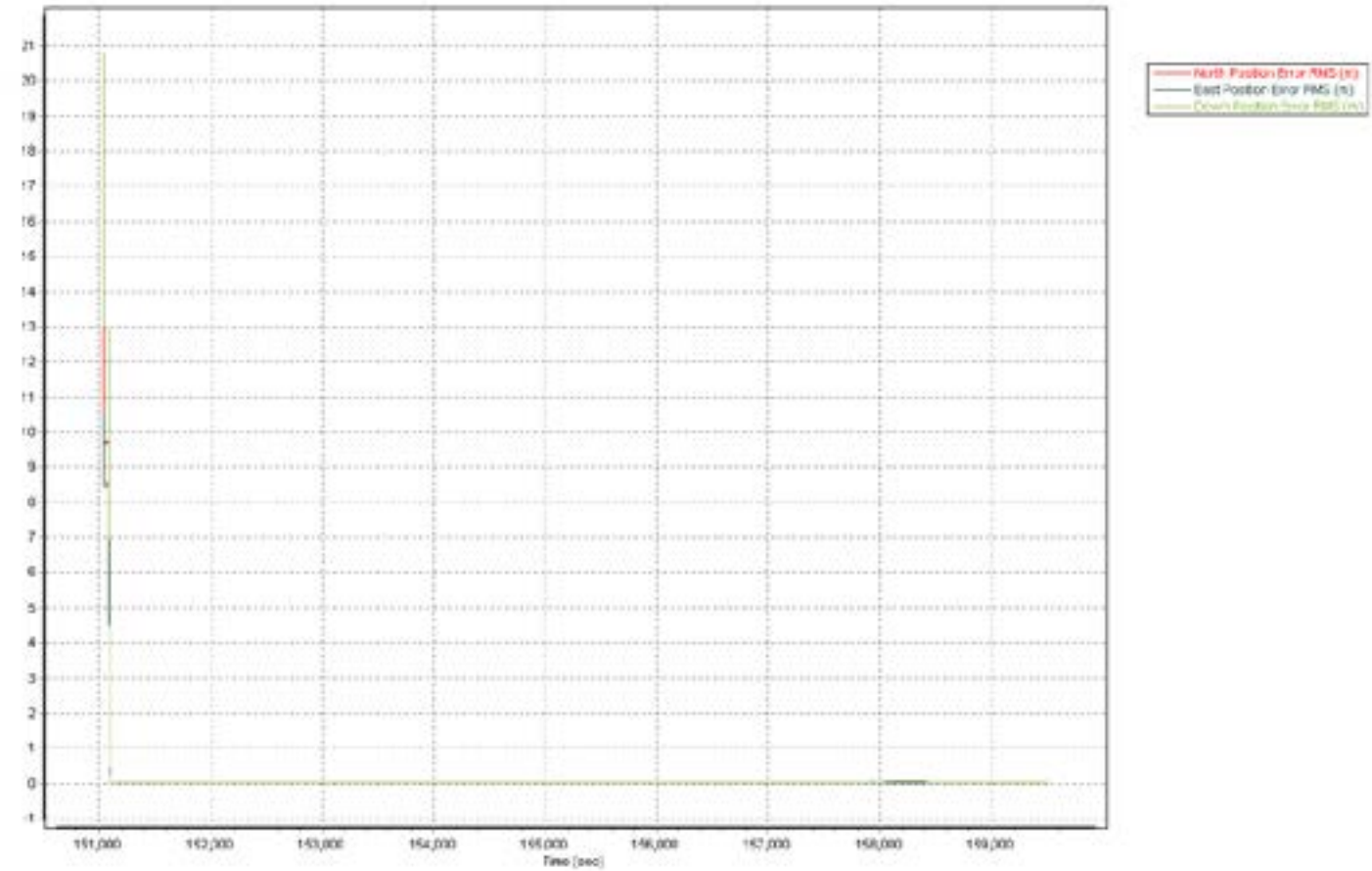

Settings
Status
Message Log

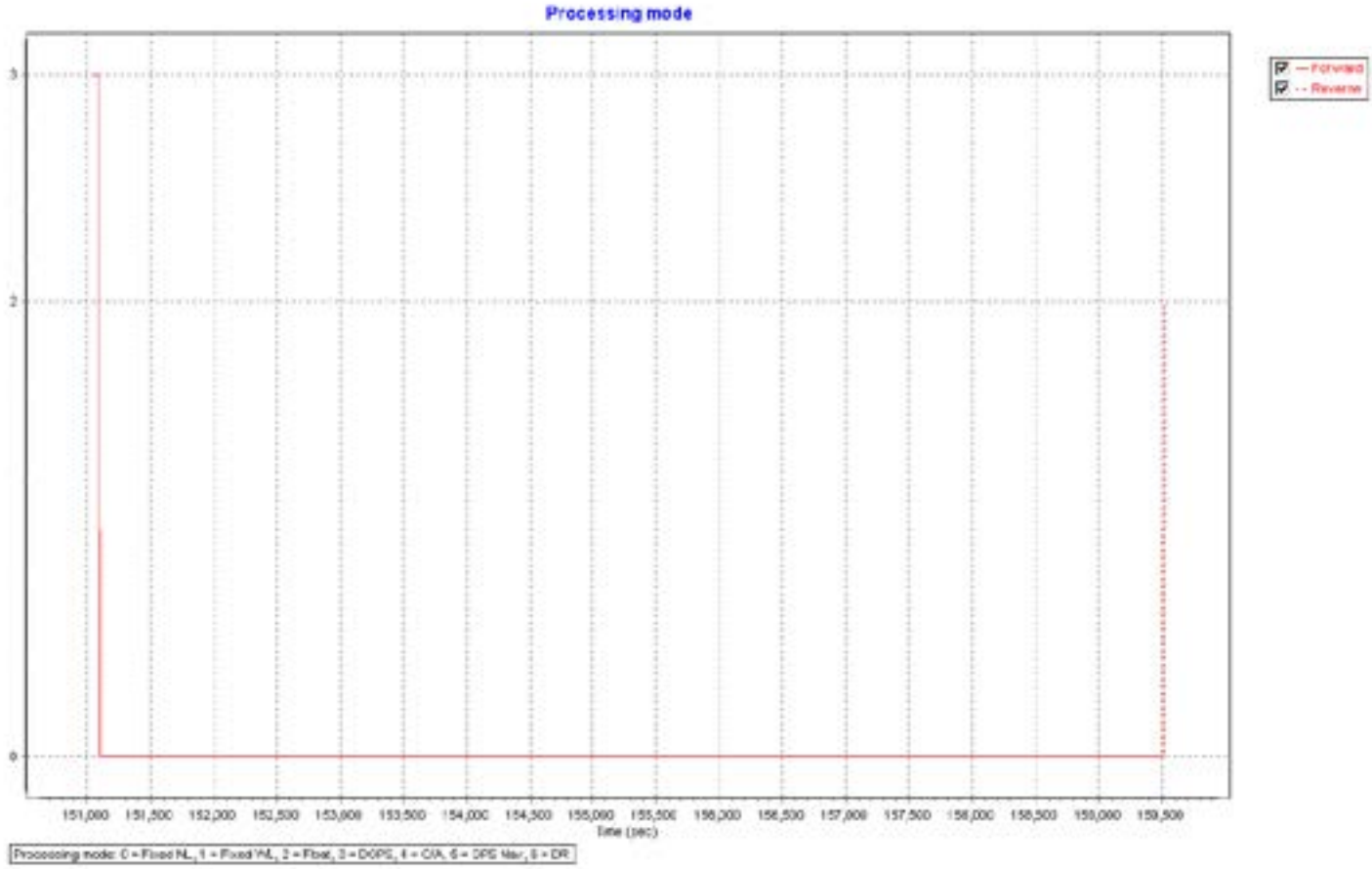

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)

120130b-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Processing mode
Forward
Reverse
3
2
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151,500
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158,000
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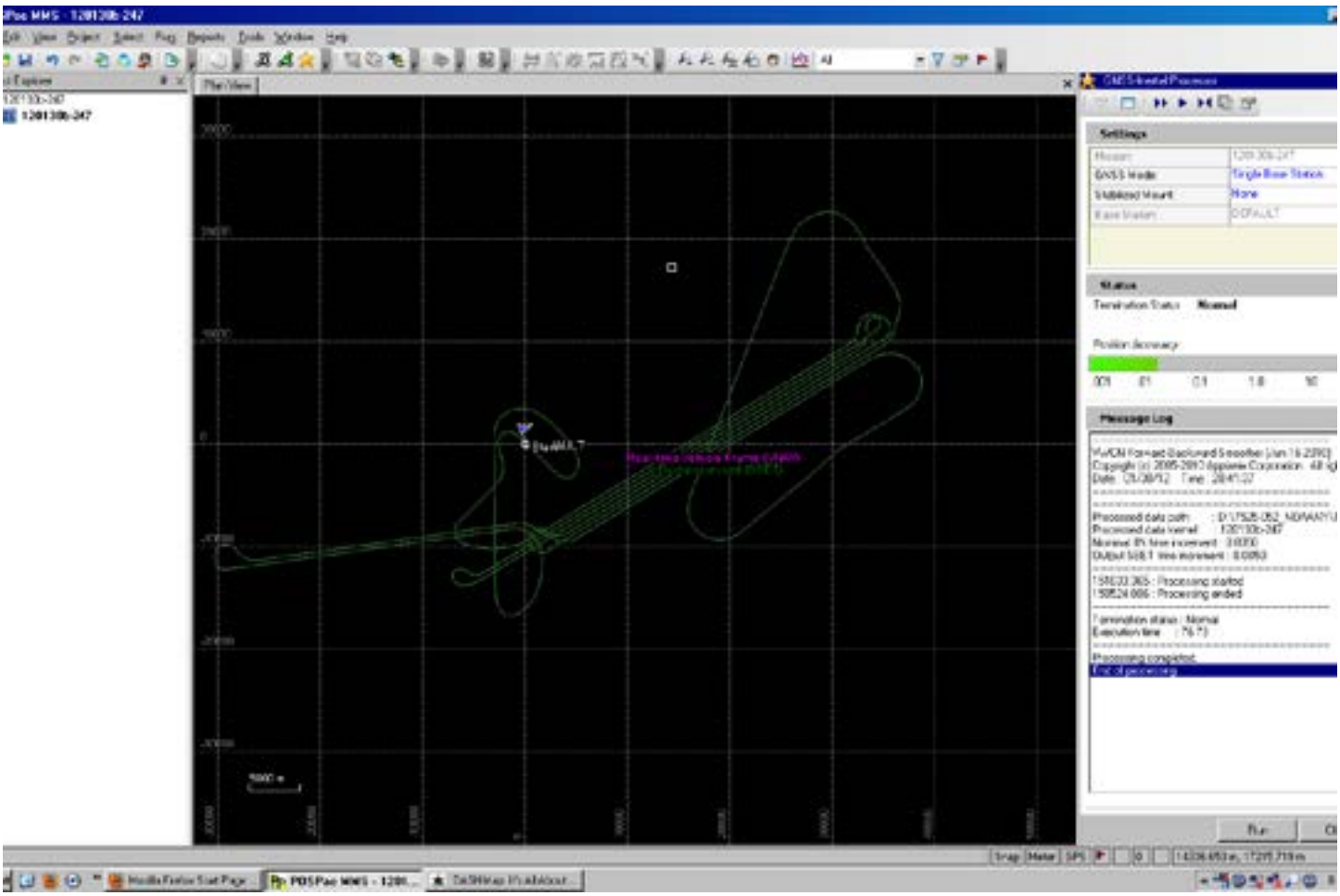
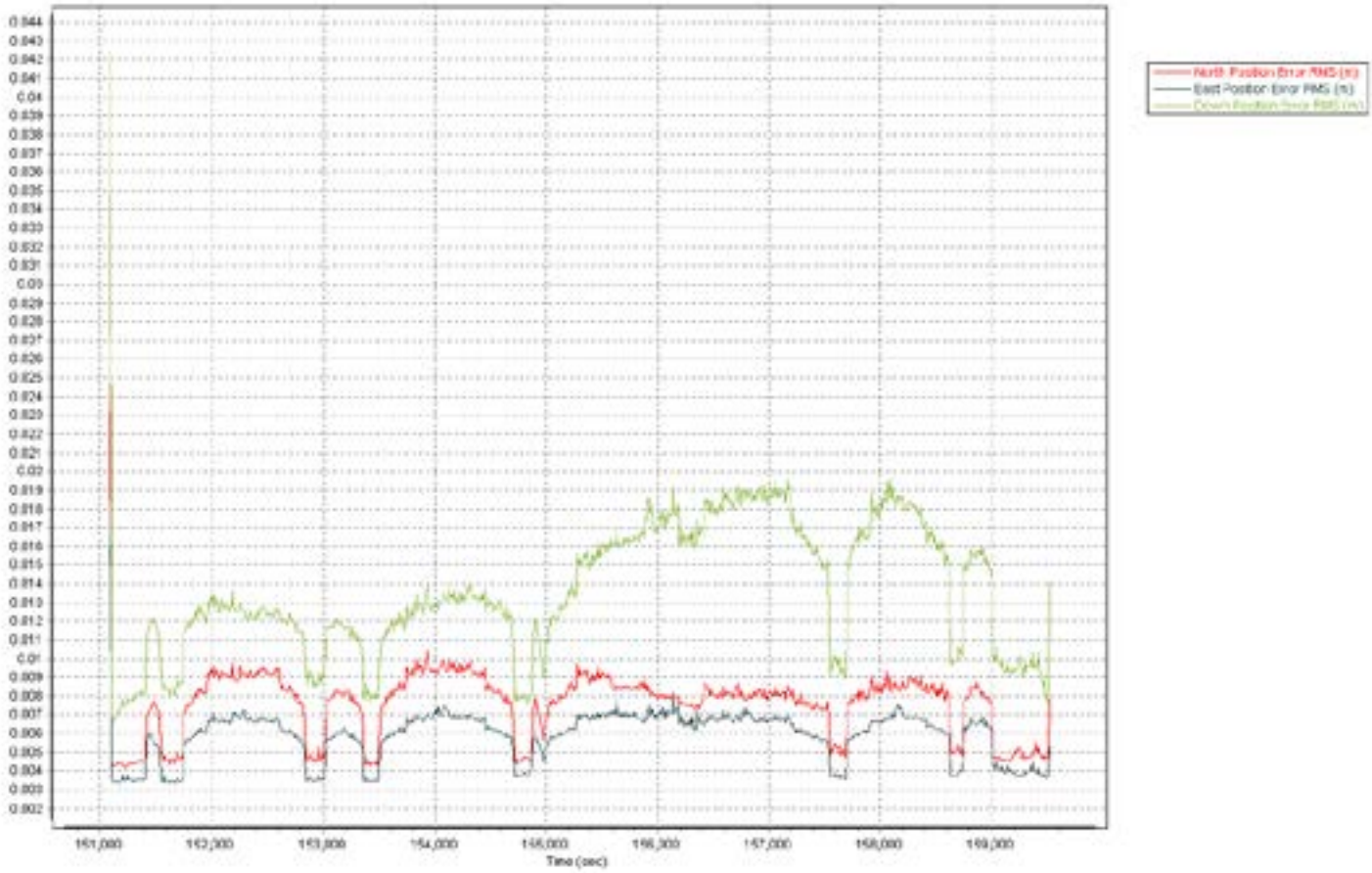
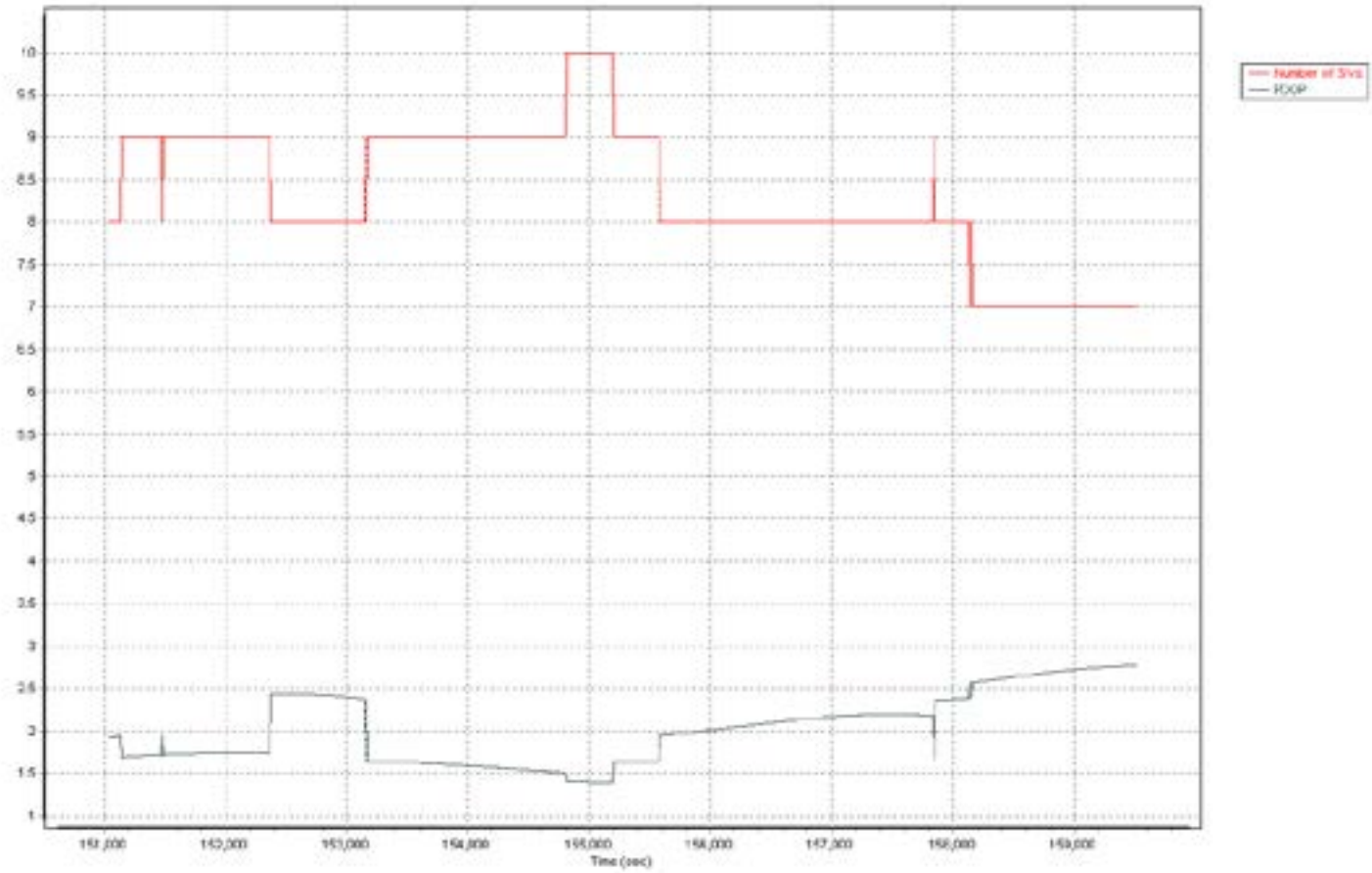
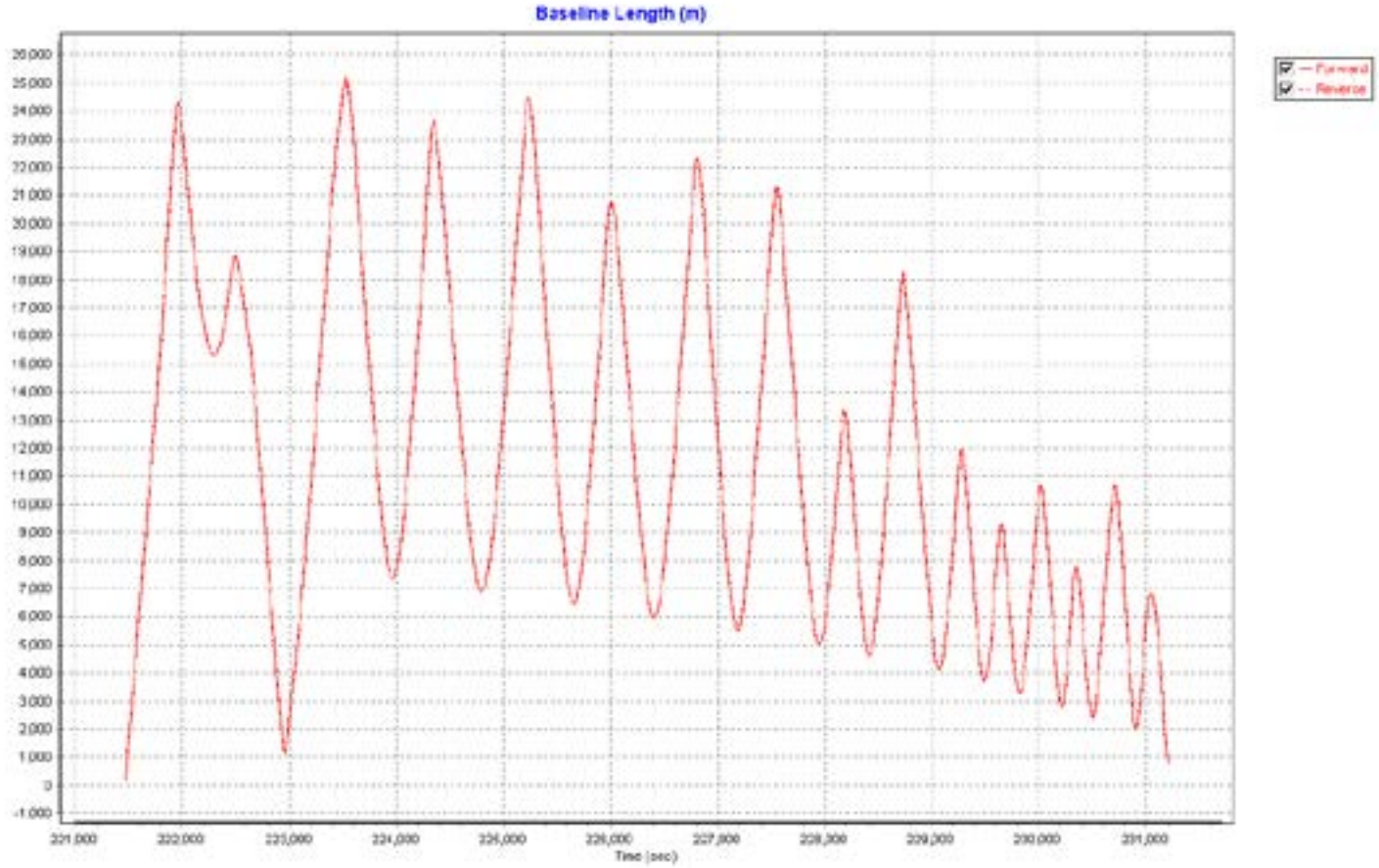
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

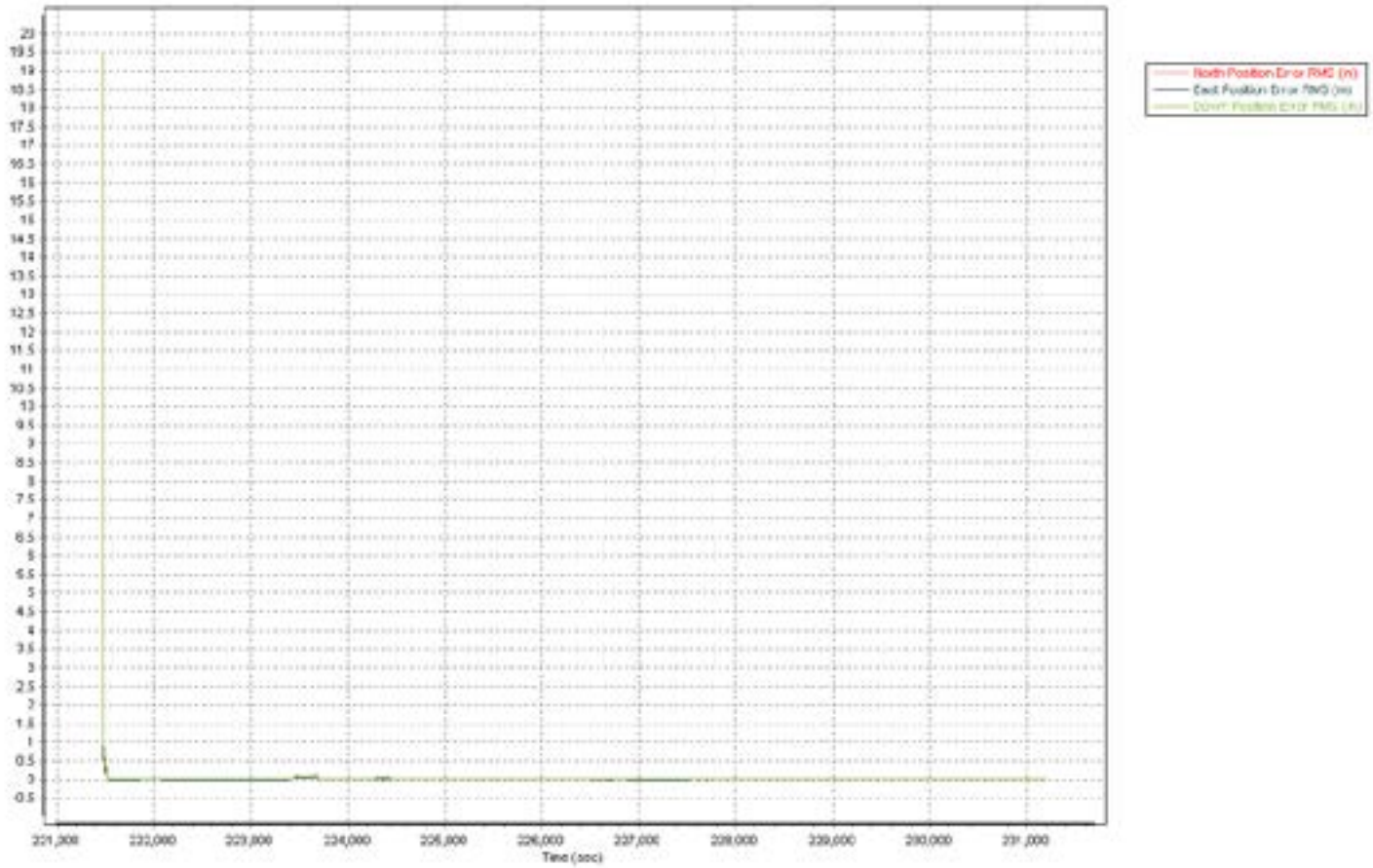

Plan View
Settings
Status
Message Log

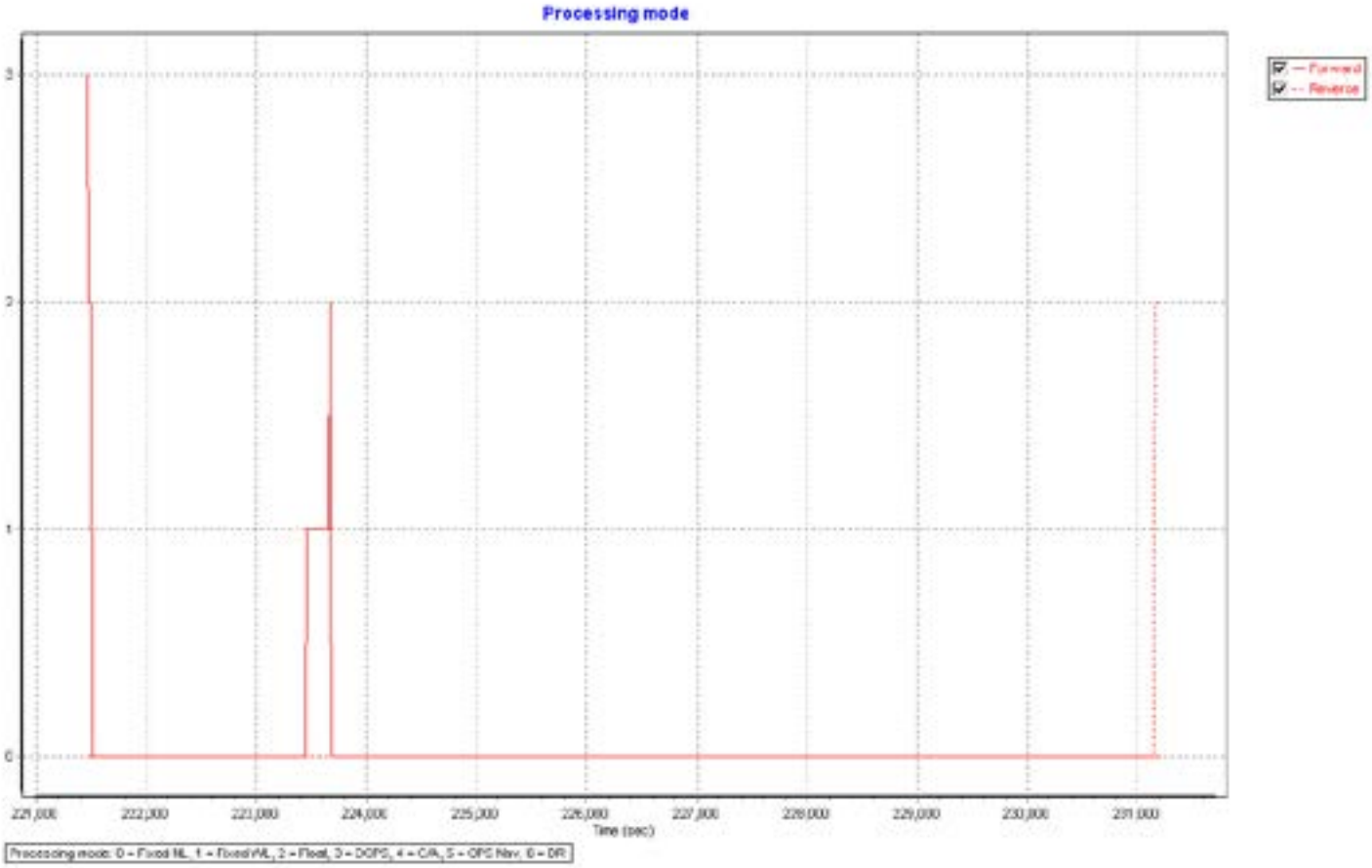

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of SVs
PDOP
Time (sec)

120131a-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)


Processing mode
Forward
Reverse
3
2
1
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219,000
220,000
221,000
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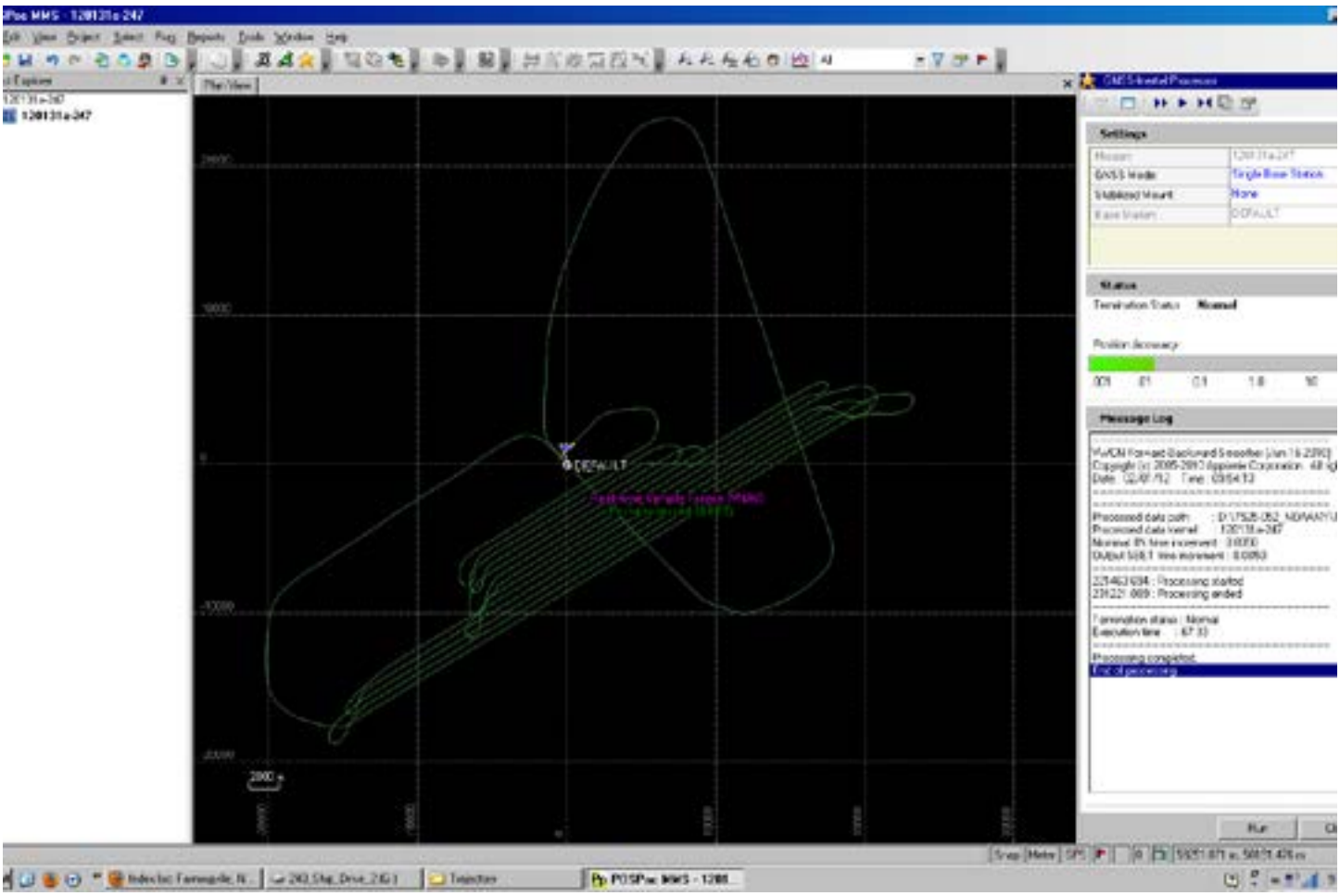
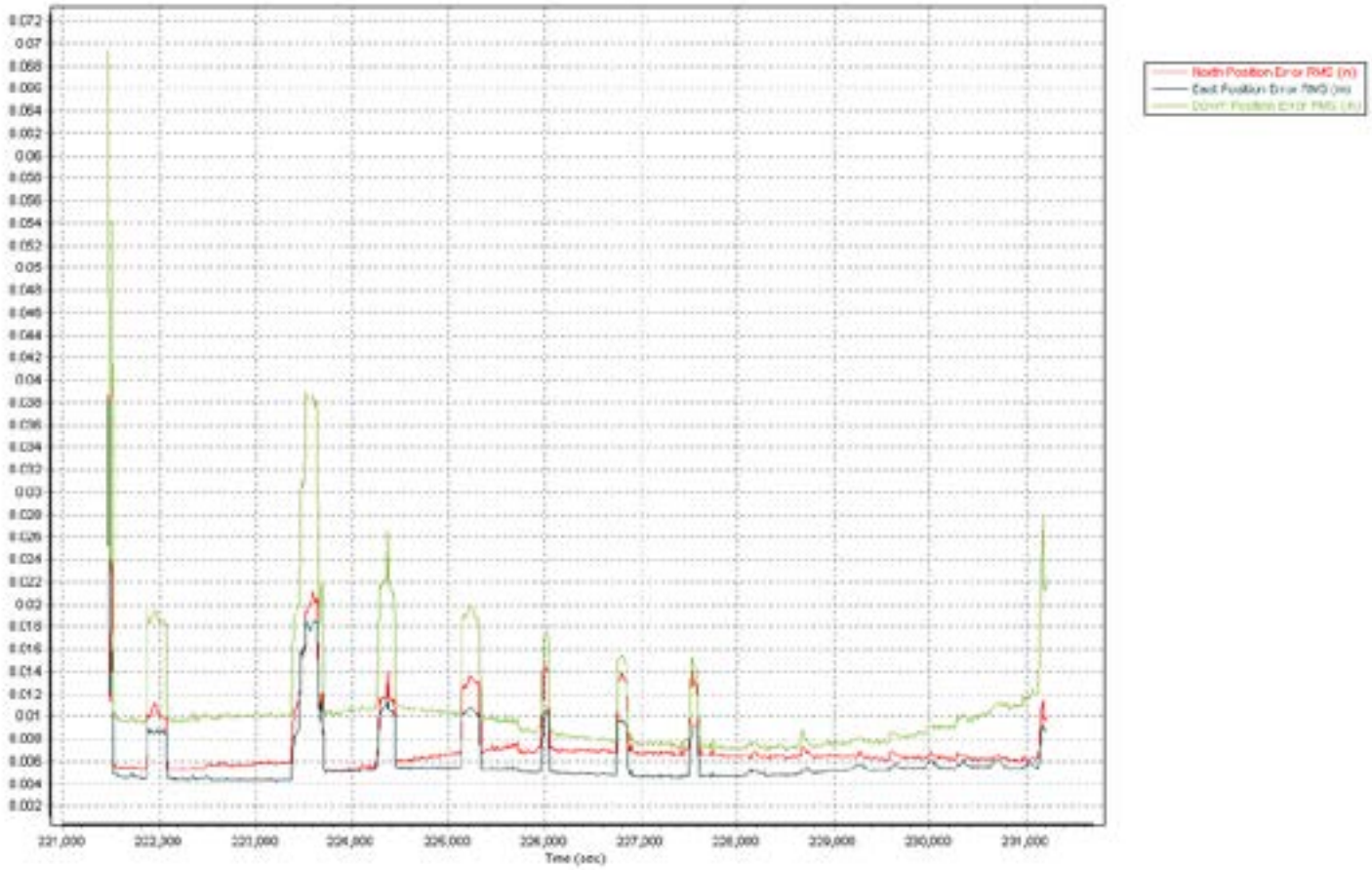
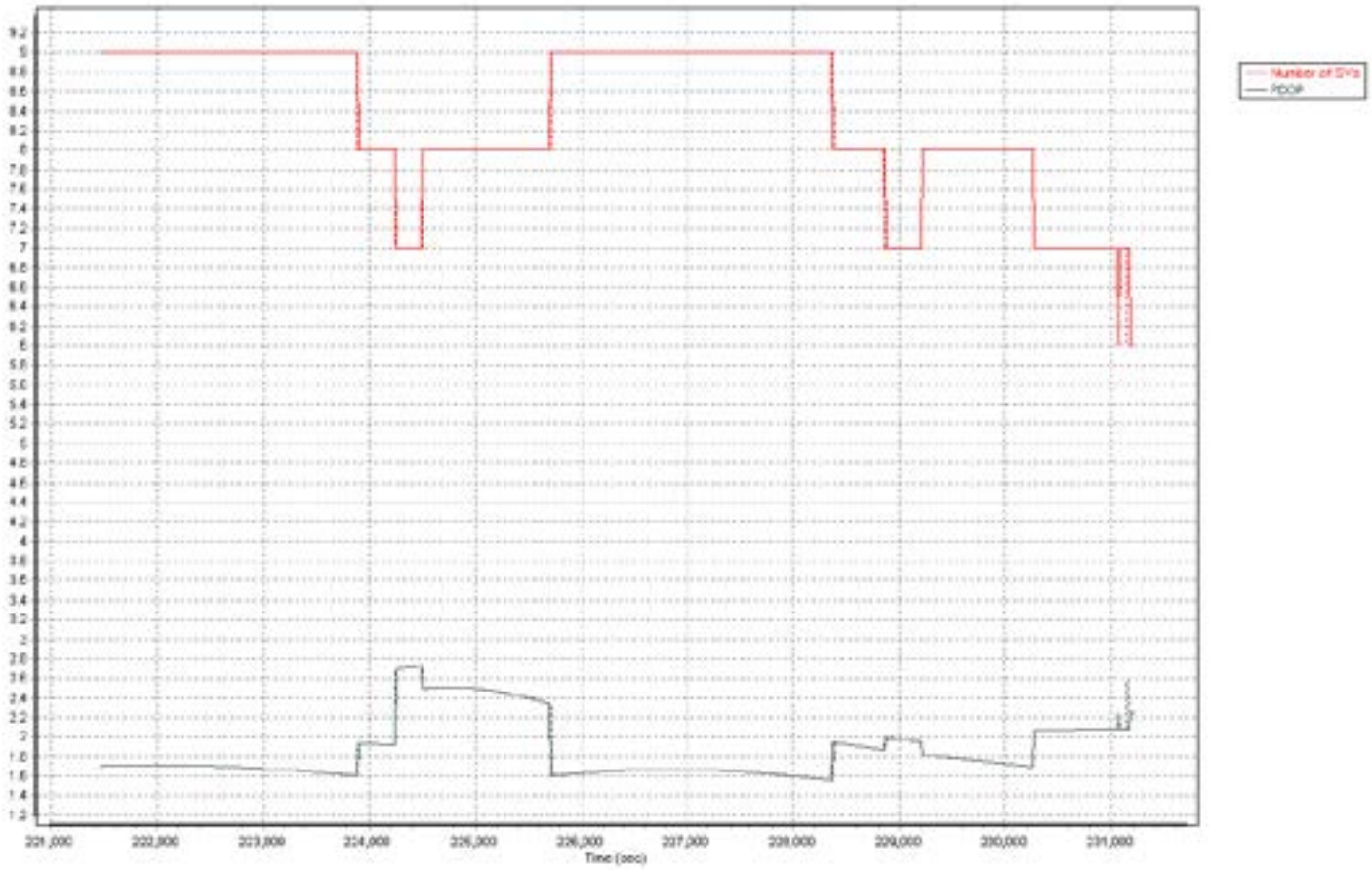
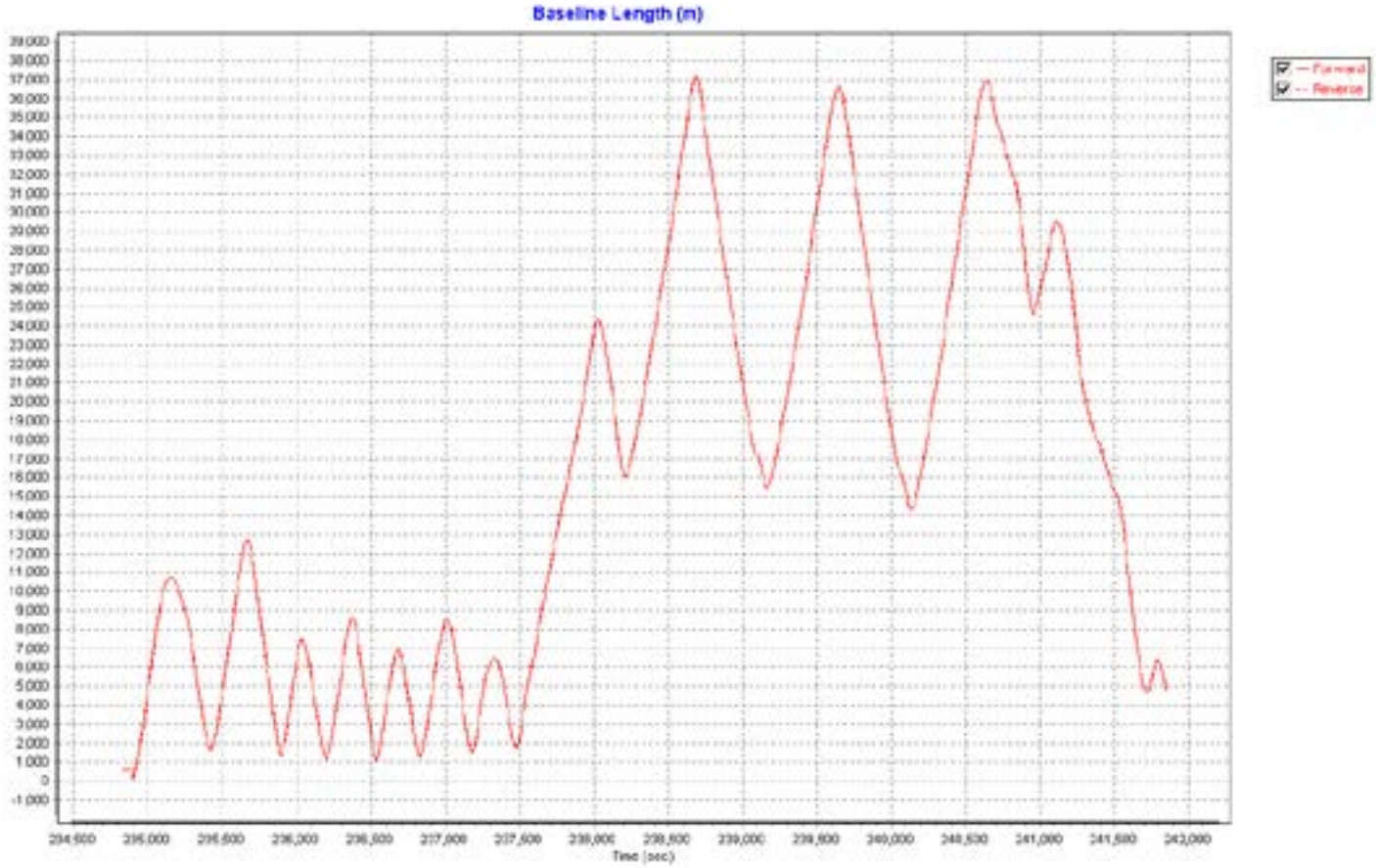
223,000
224,000
225,000
226,000
227,000
228,000
229,000
230,000
231,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = FixedWL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = GPS Nav, 6 = DR

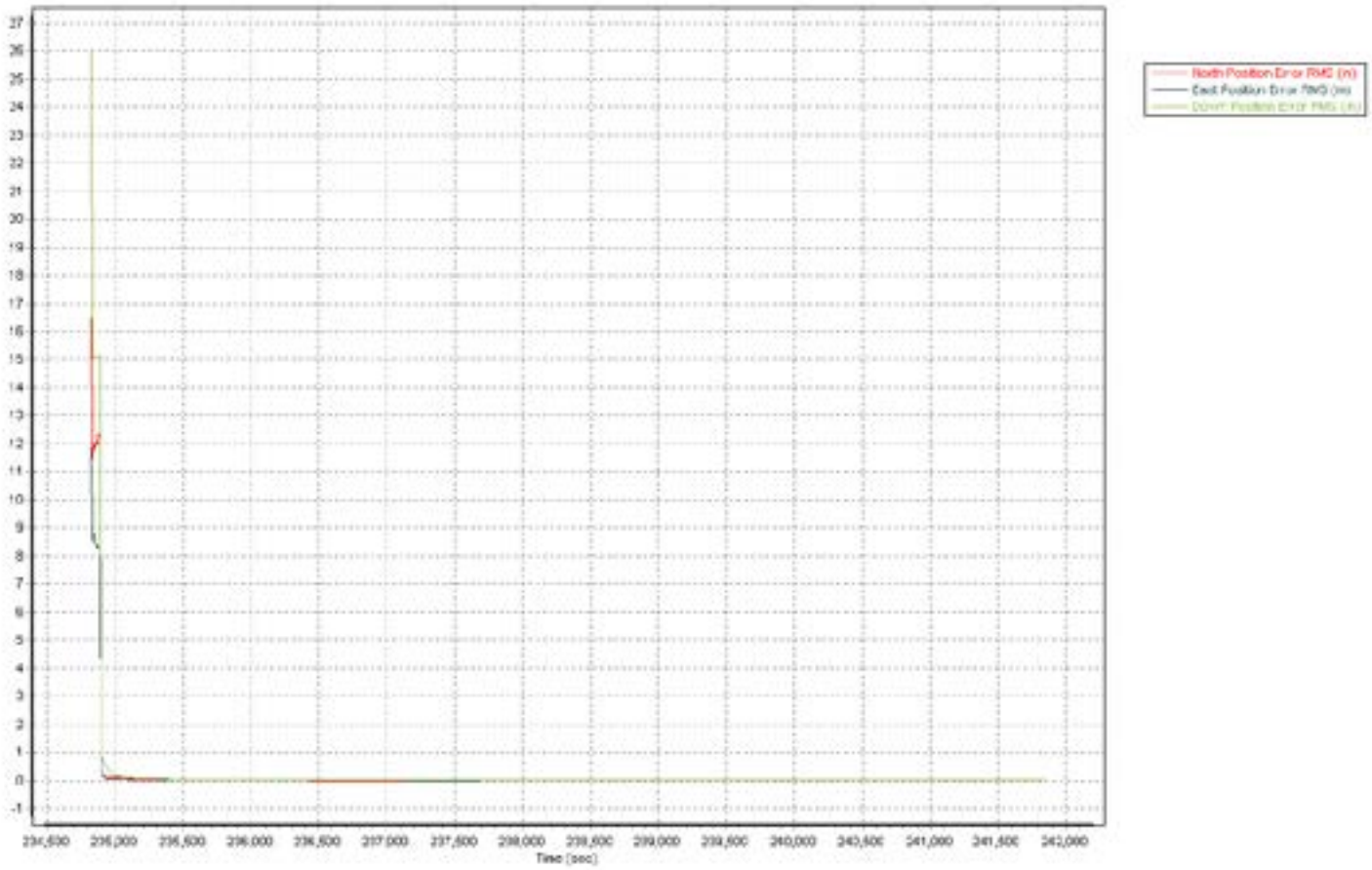

Settings
Status
Message Log
DEFAULT
Processing completed

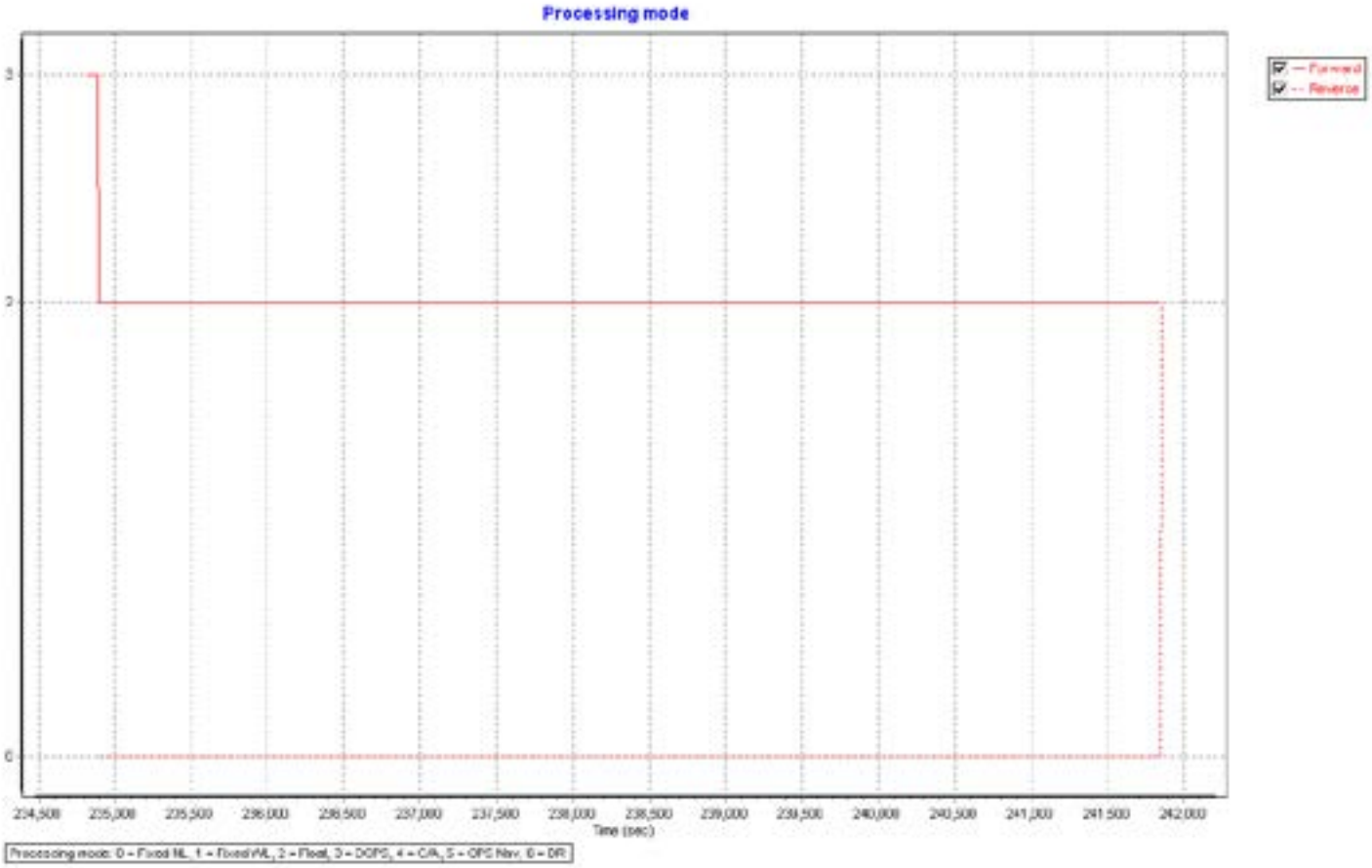

North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)

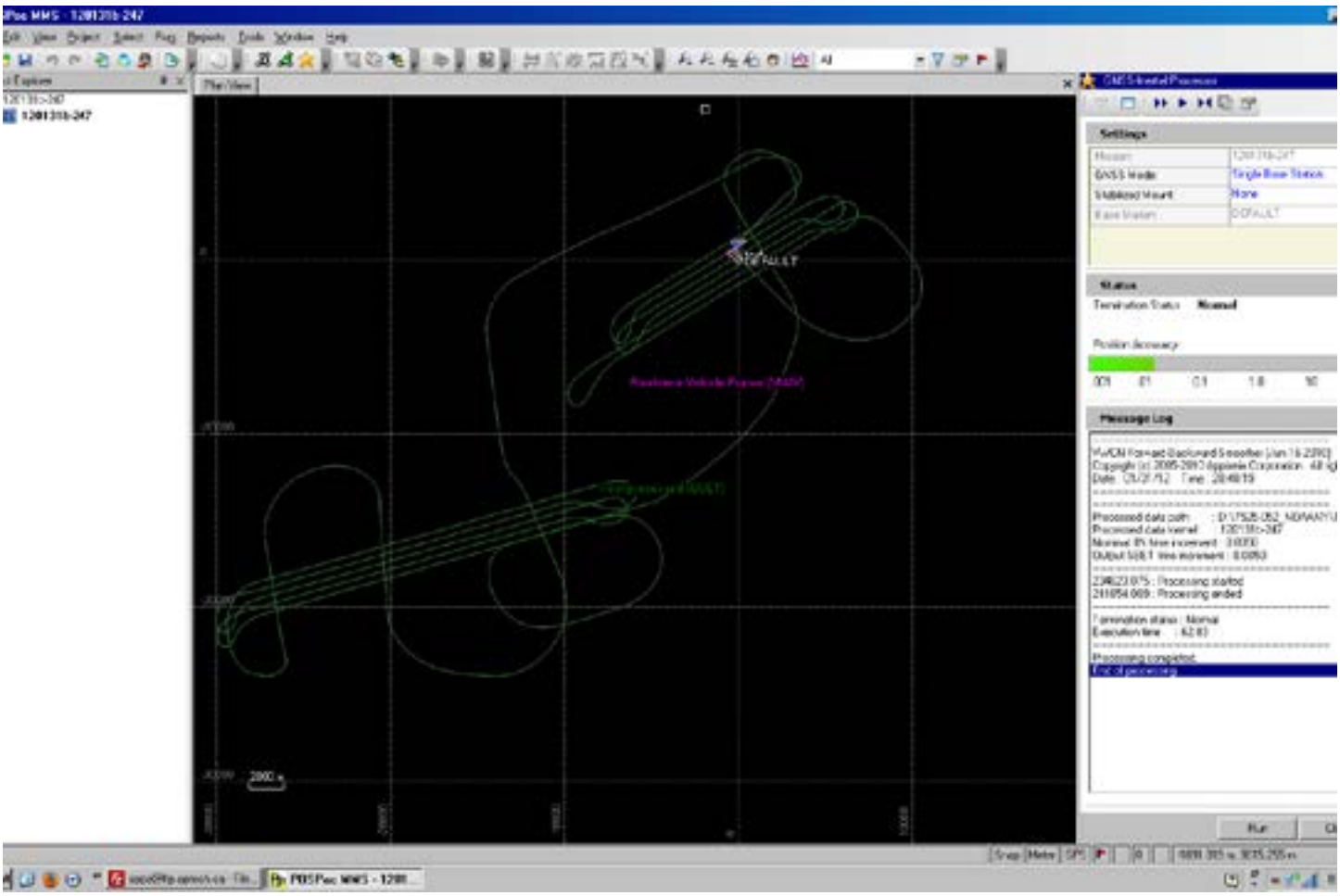

Number of SVs
PDOP
Time (sec)

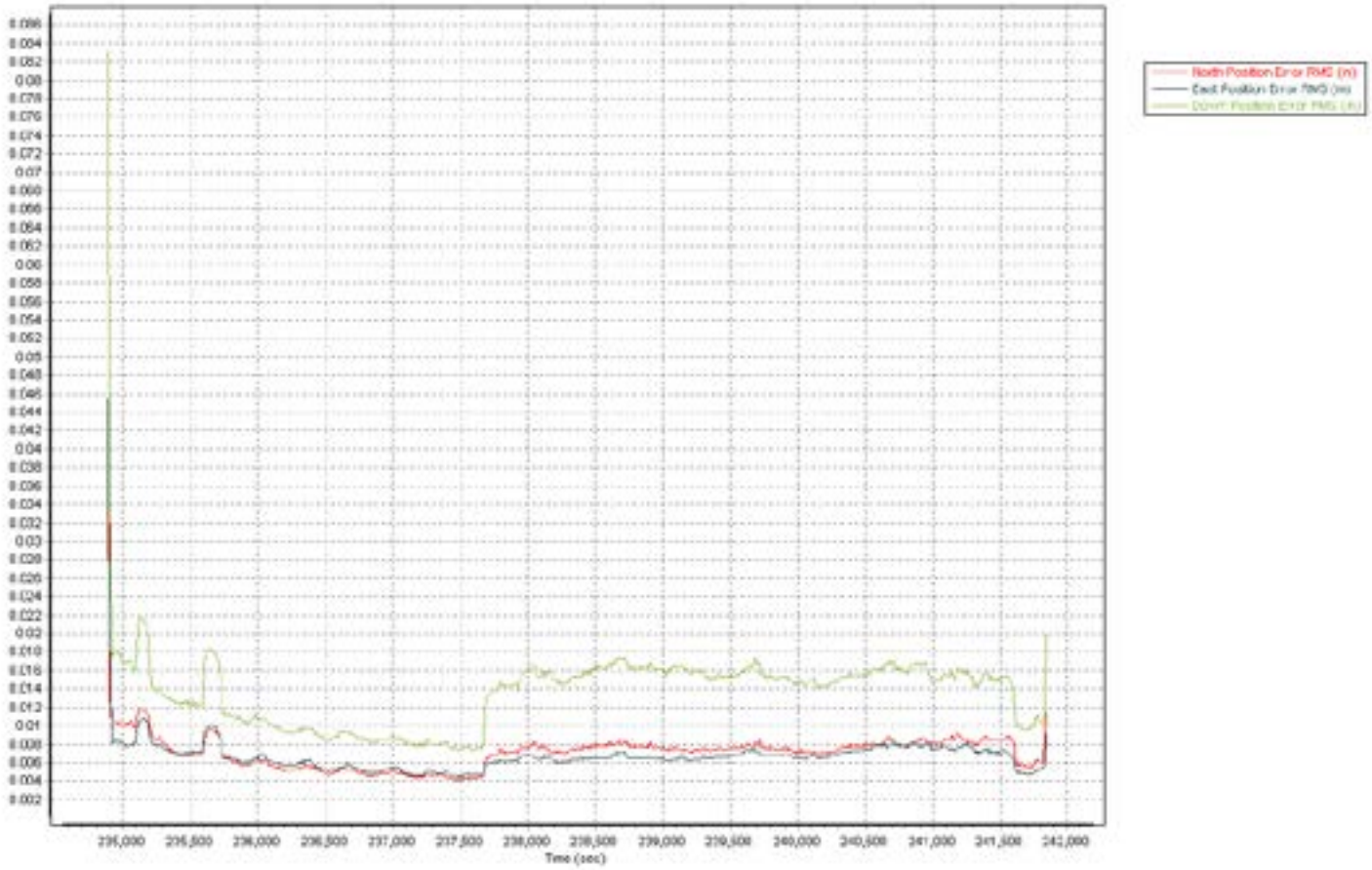
120131b-247

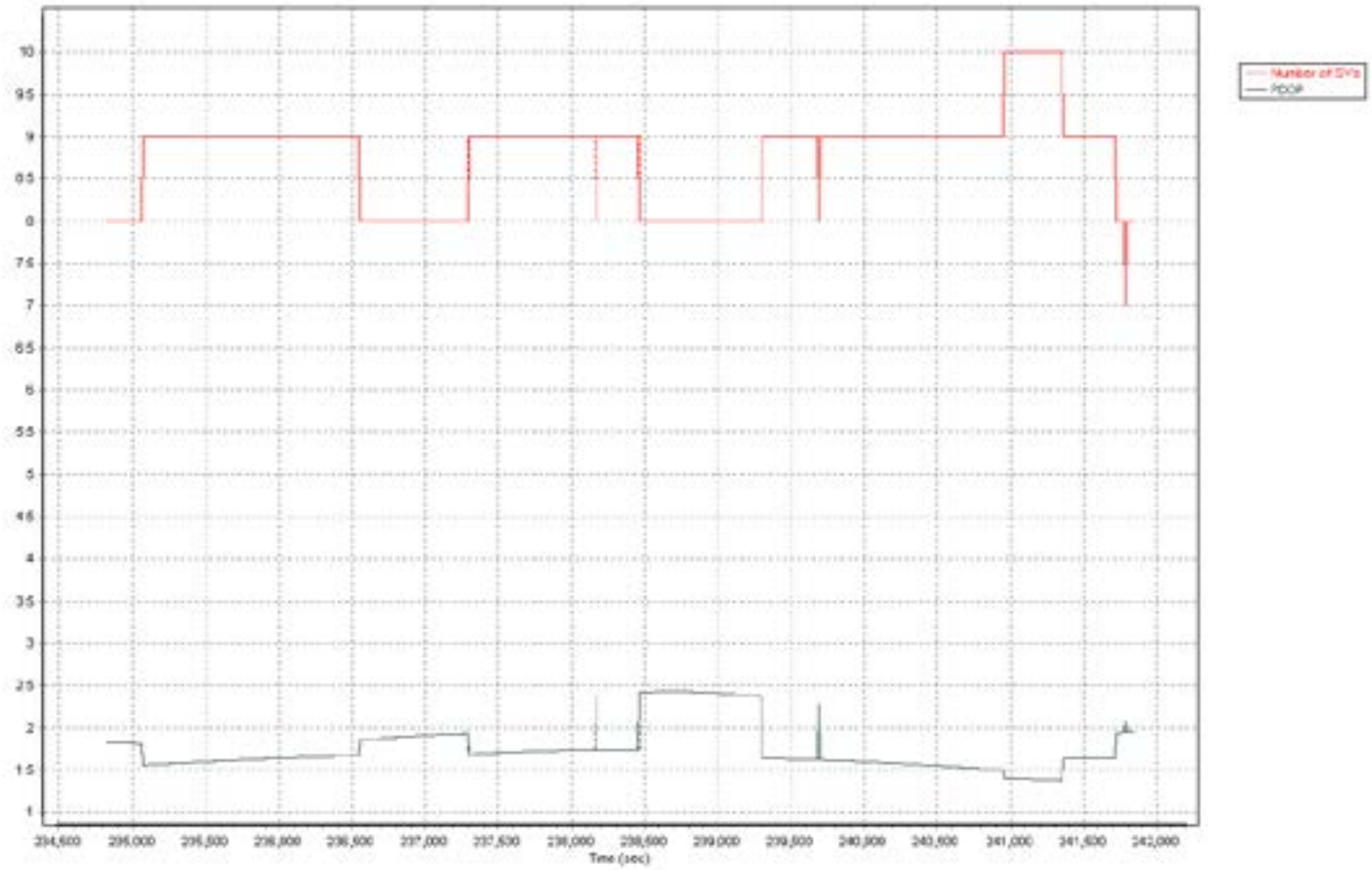

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)

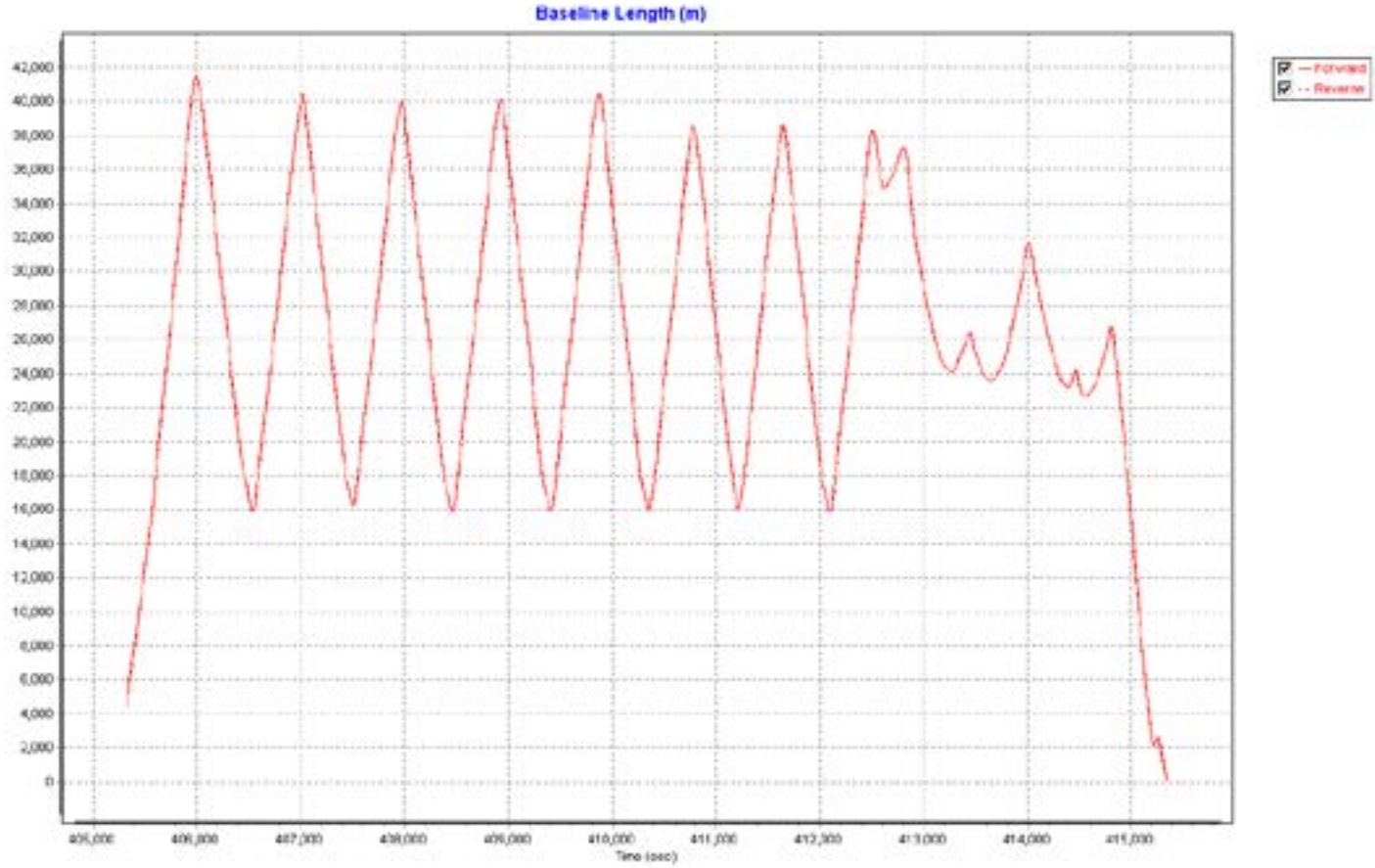

Processing mode
Forward
Reverse
3
2
0
234,500
235,000
235,500
236,000
236,500
237,000
237,500
238,000
238,500
239,000
239,500
240,000
240,500
241,000
241,500
242,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = FixedVAL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = GPS Nav, 6 = DR

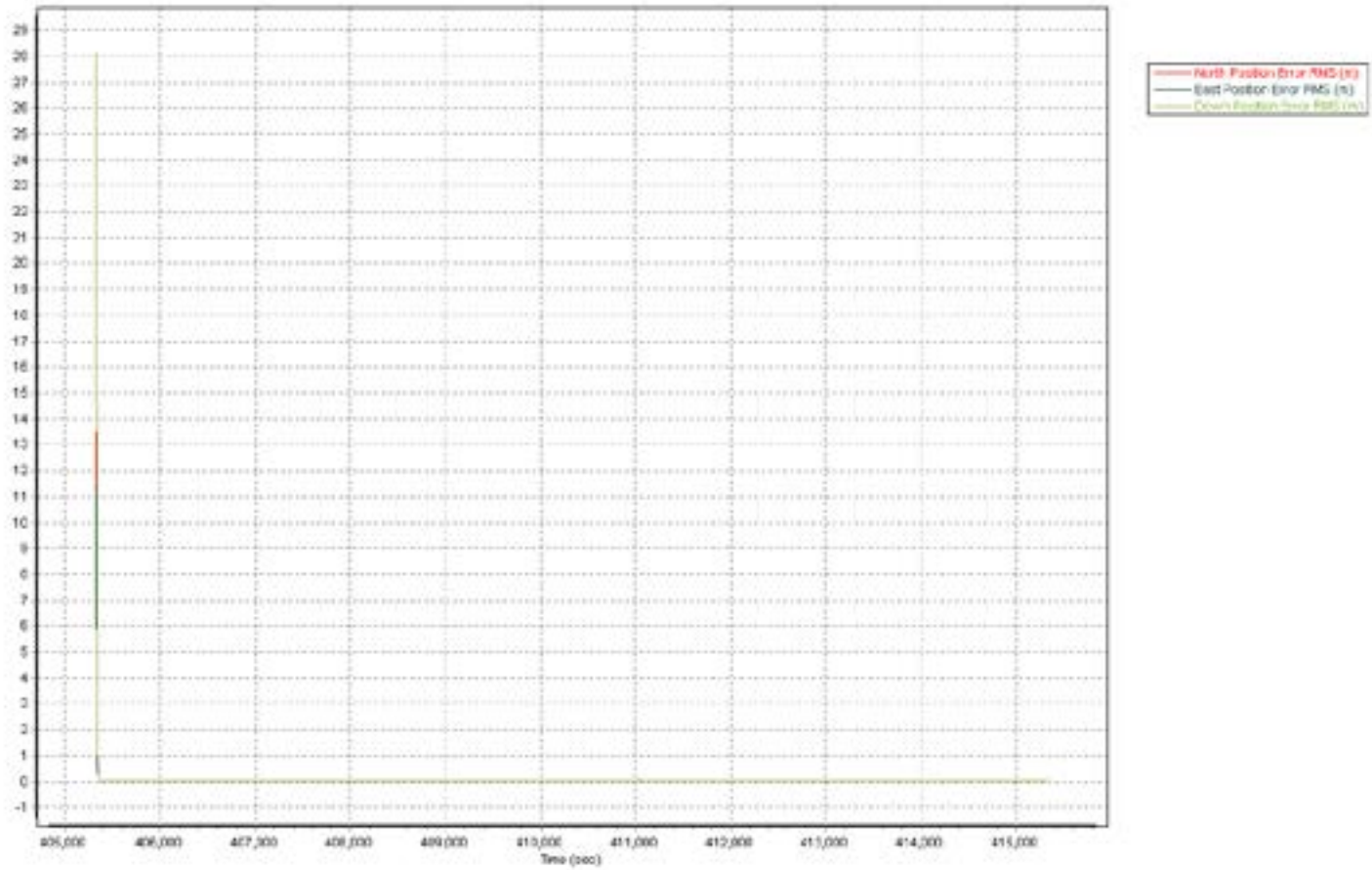

Settings
Status
Message Log
Processing completed
End of processing

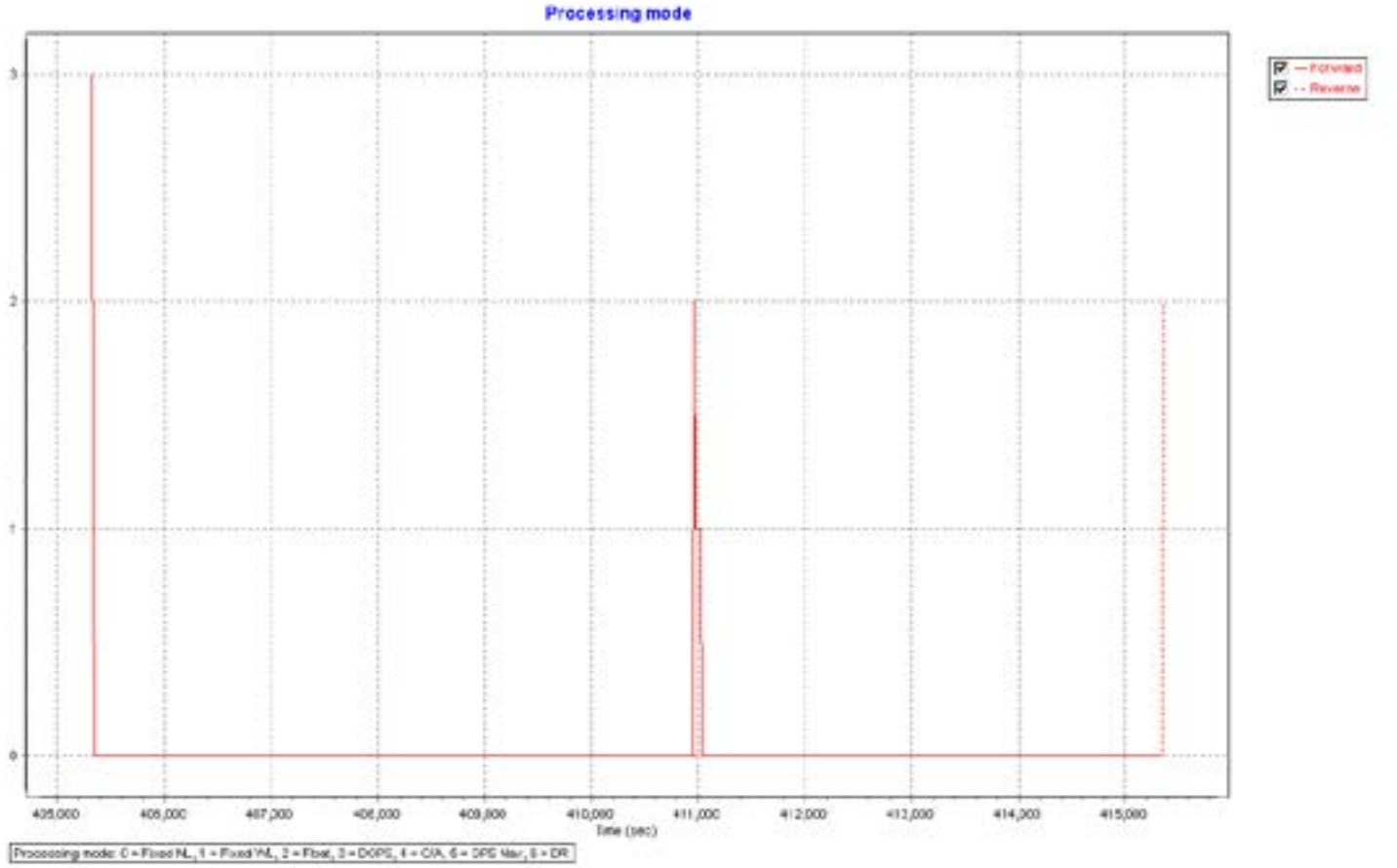

North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
Time (sec)

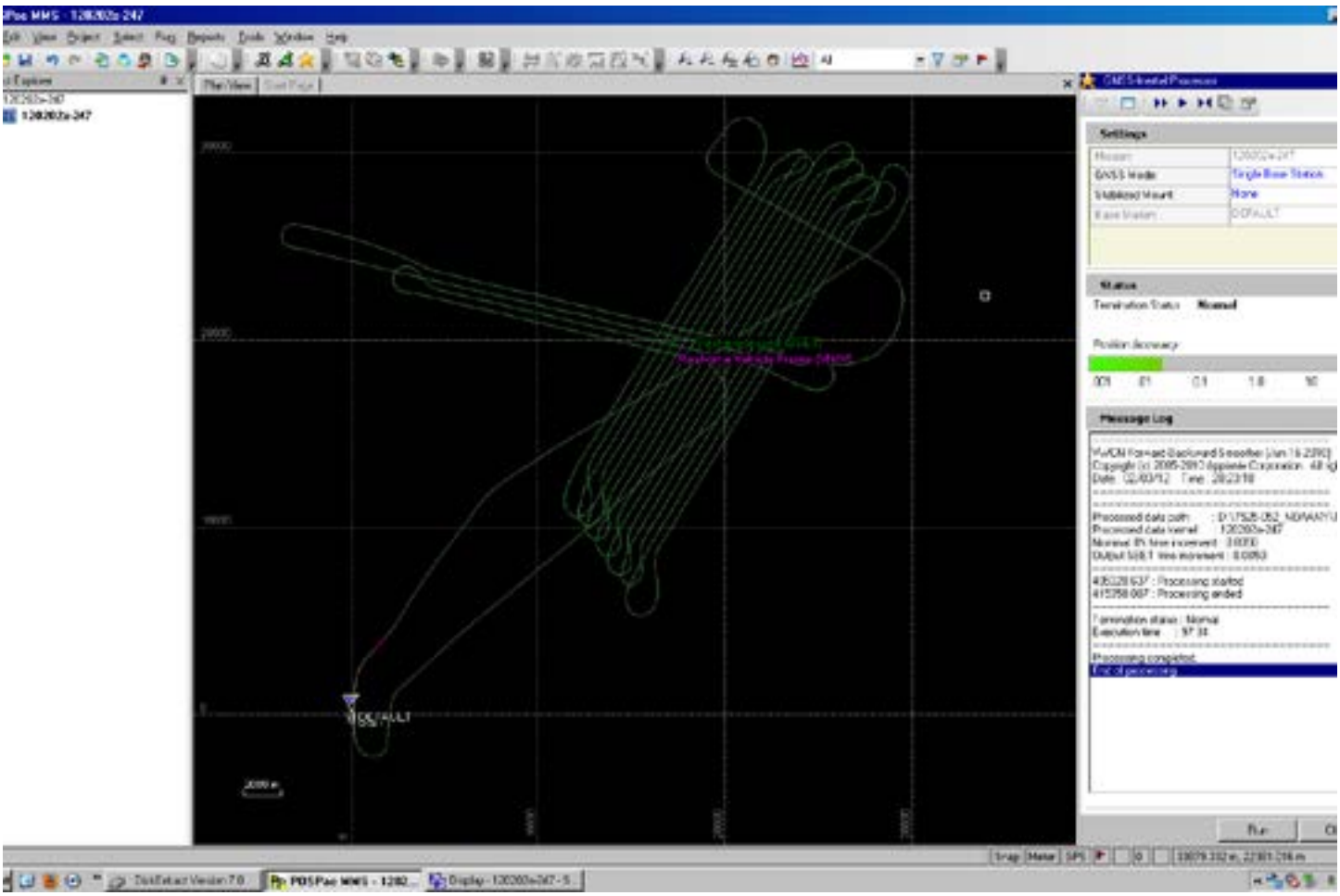

Number of SVs
PDOP
Time (sec)

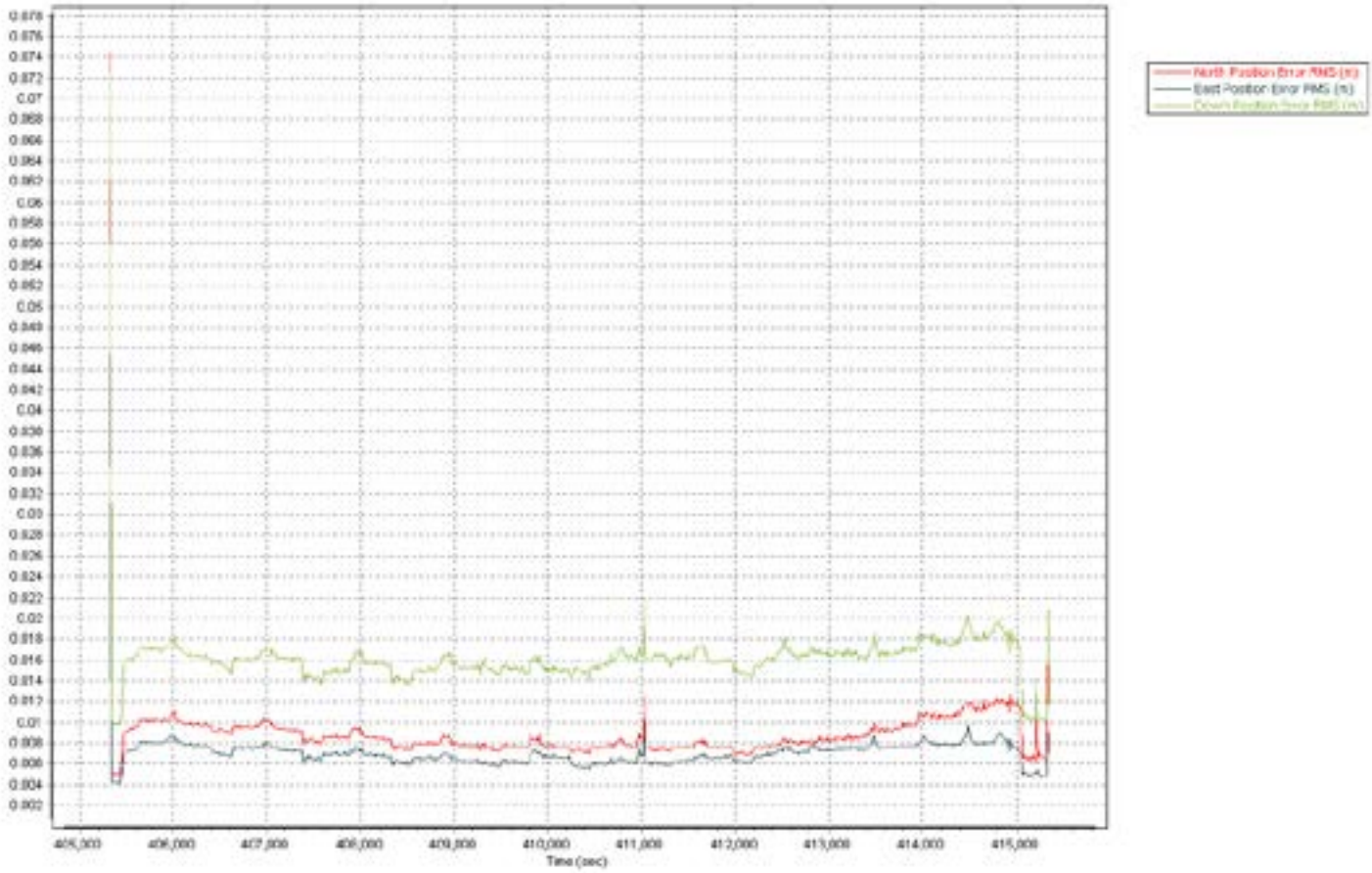
120202a-247

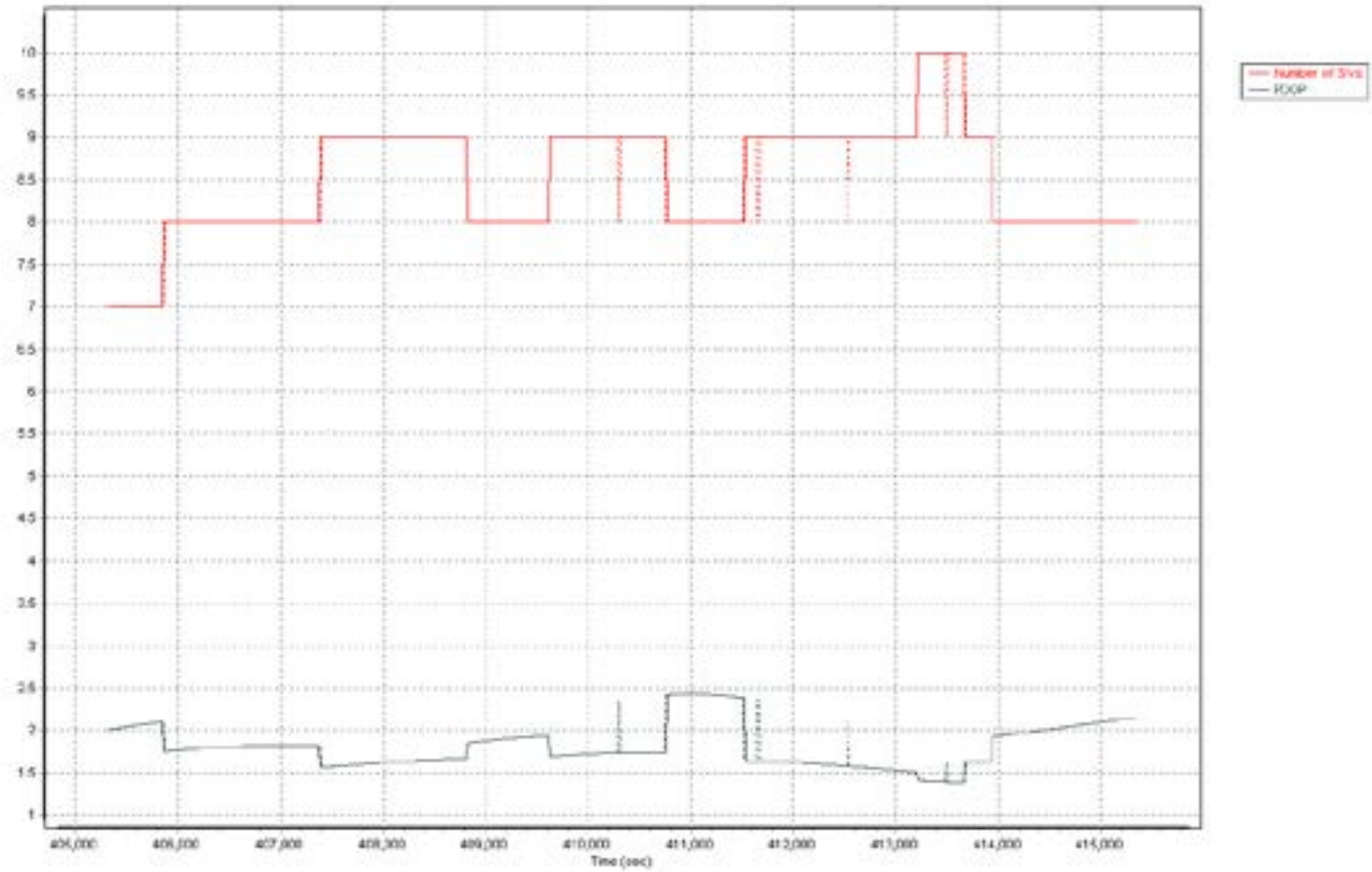

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

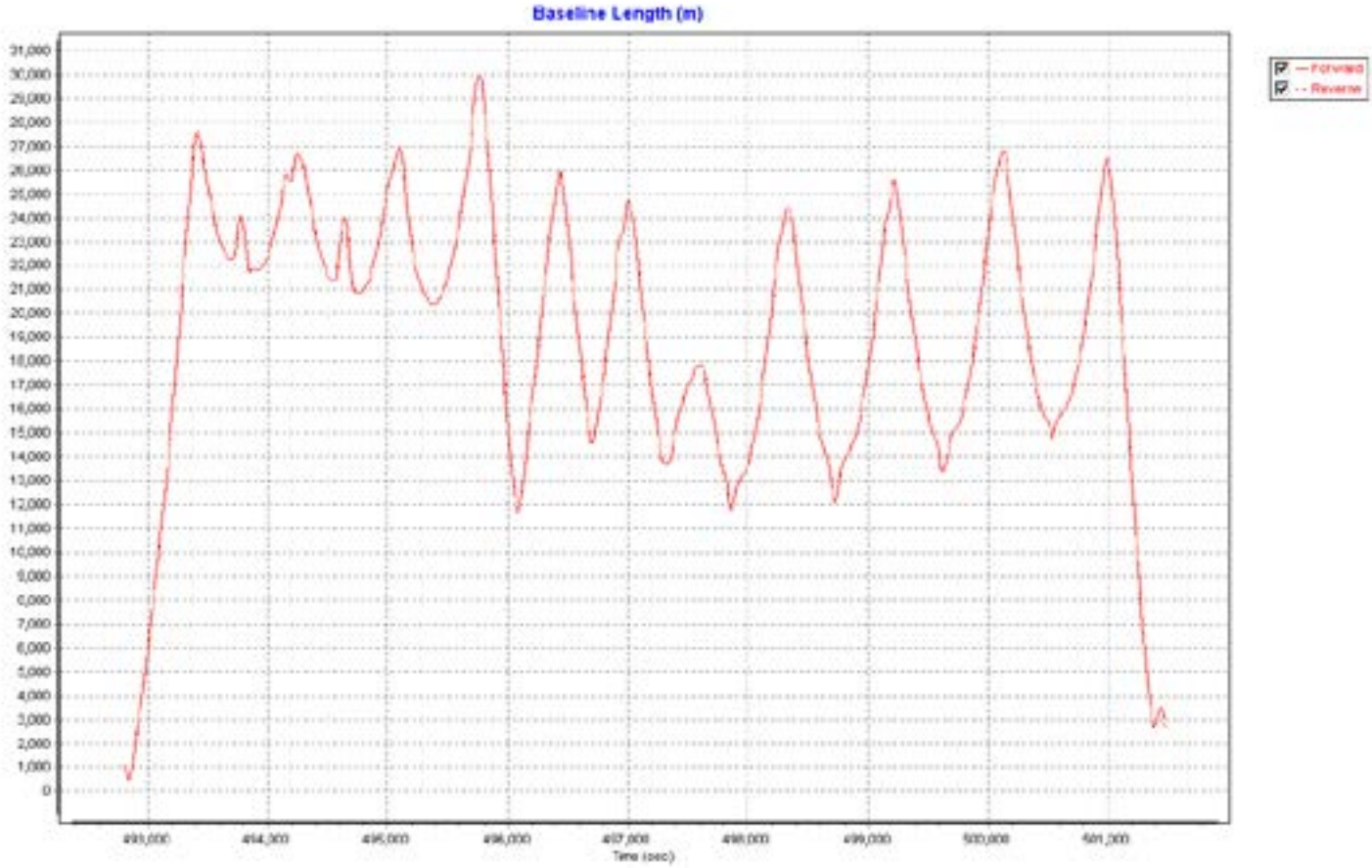

Processing mode
Forward
Reverse
3
2
1
0
405,000
406,000
407,000
408,000
409,000
410,000
411,000
412,000
413,000
414,000
415,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

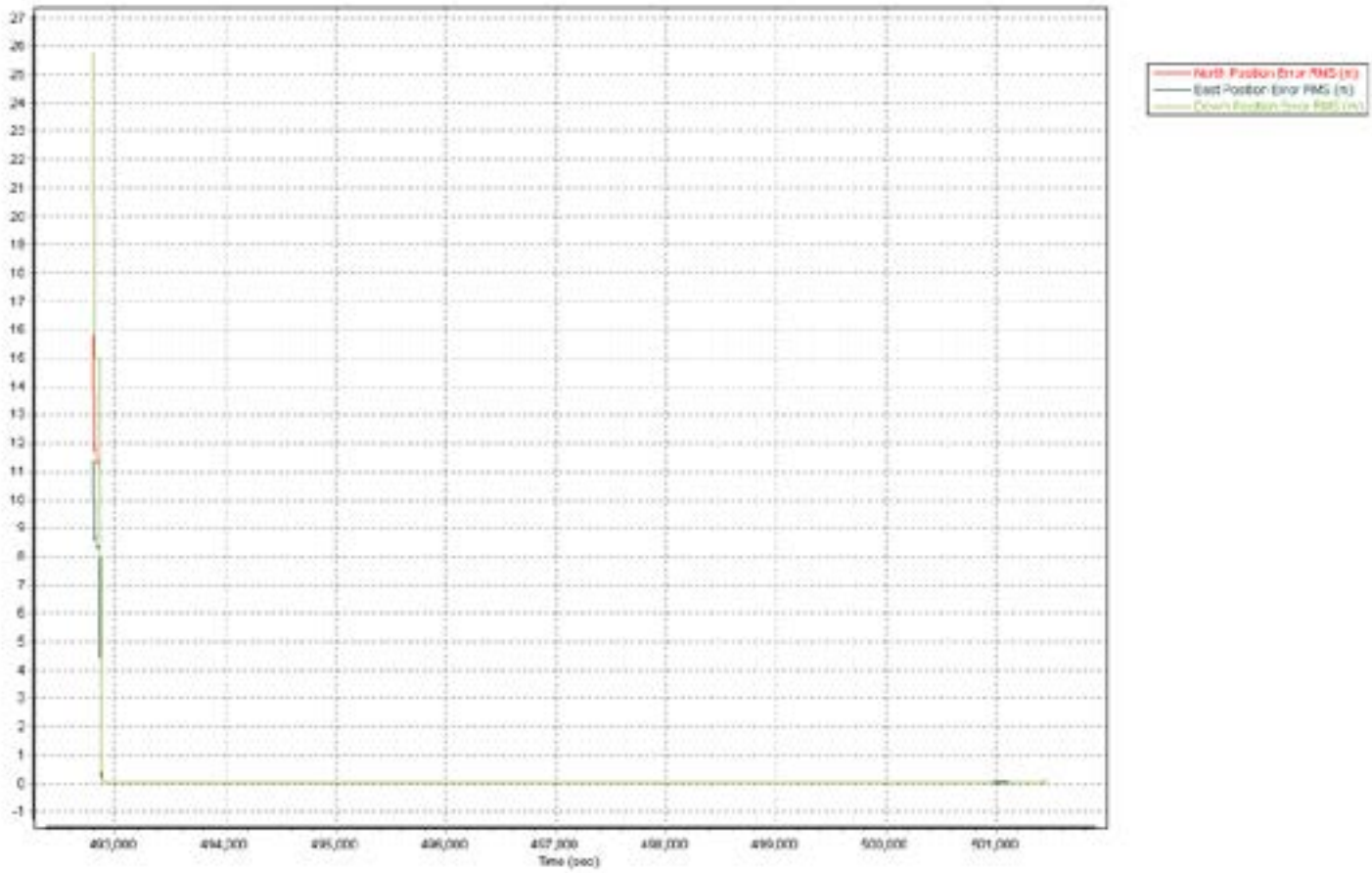

Settings
Status
Message Log

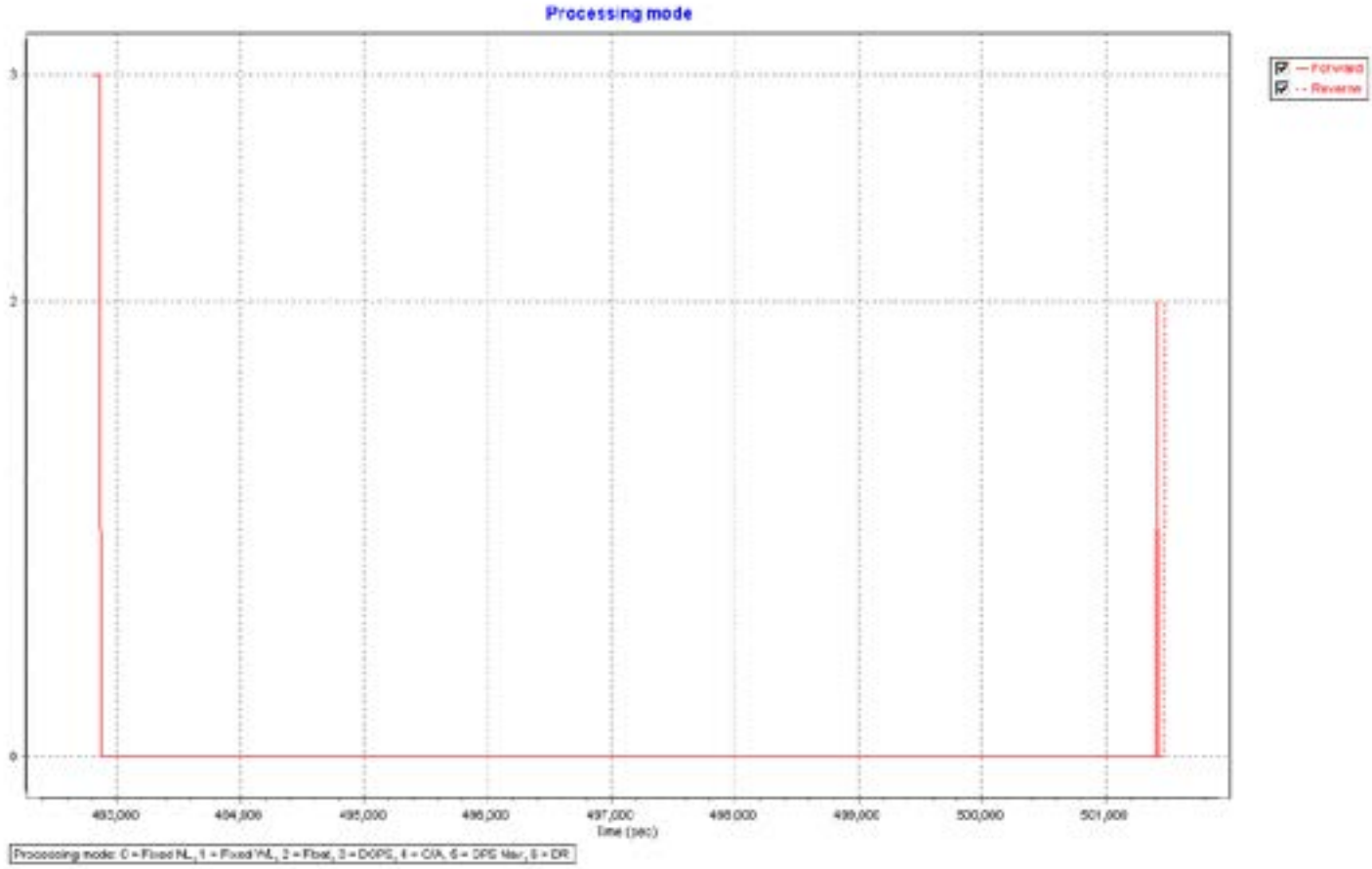

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

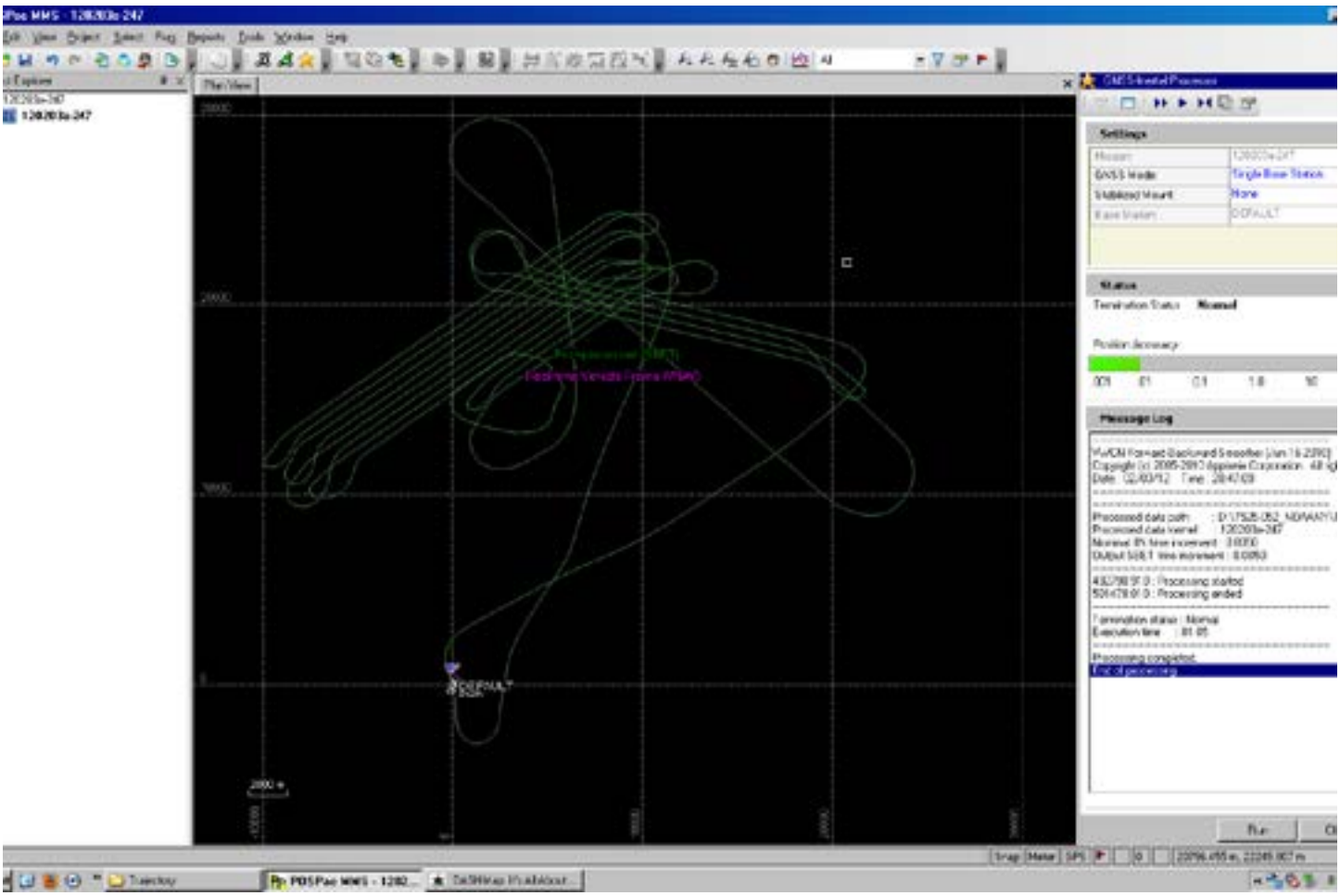

Number of SVs
PDOP
Time (sec)

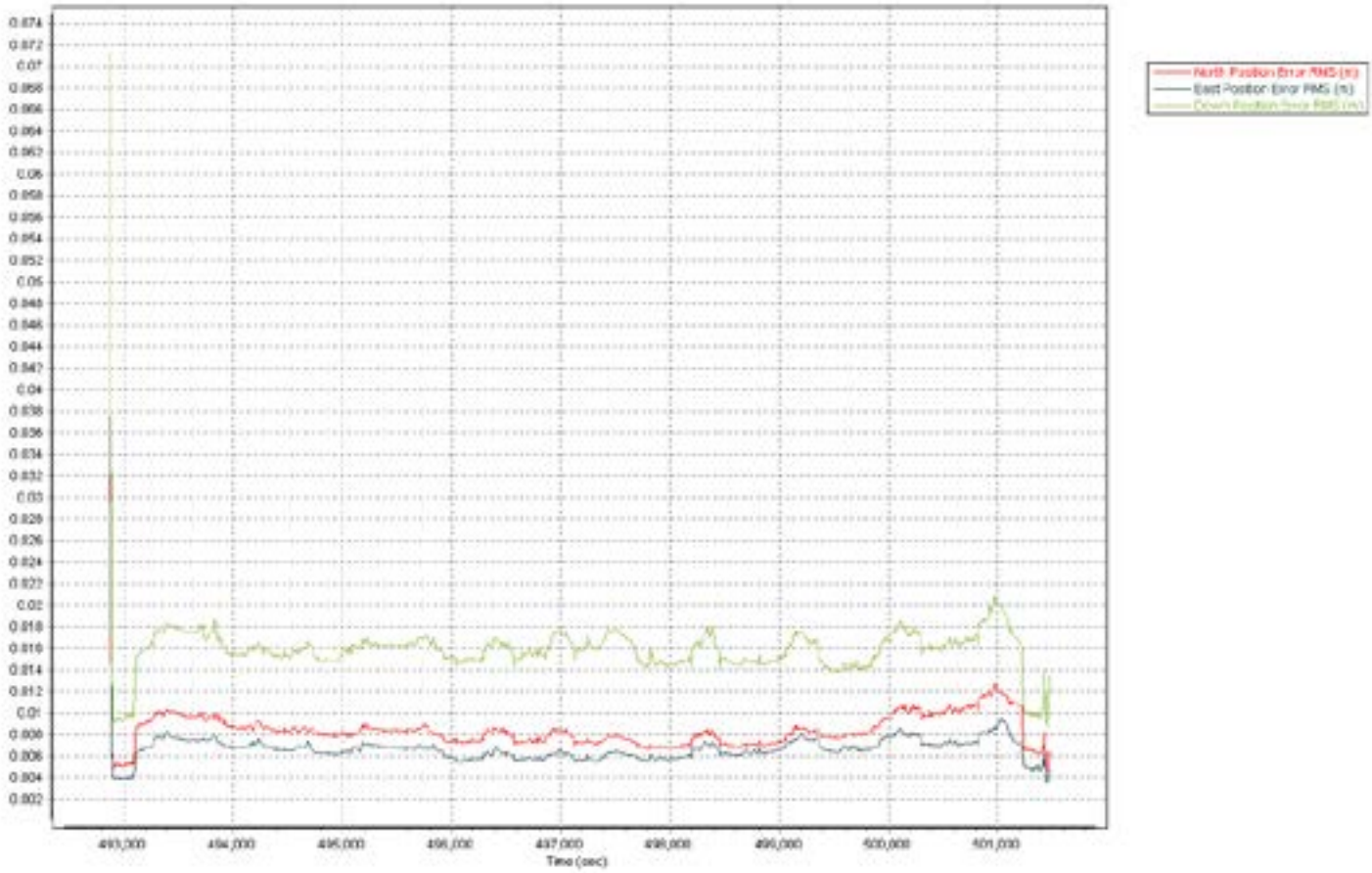
120203a-247

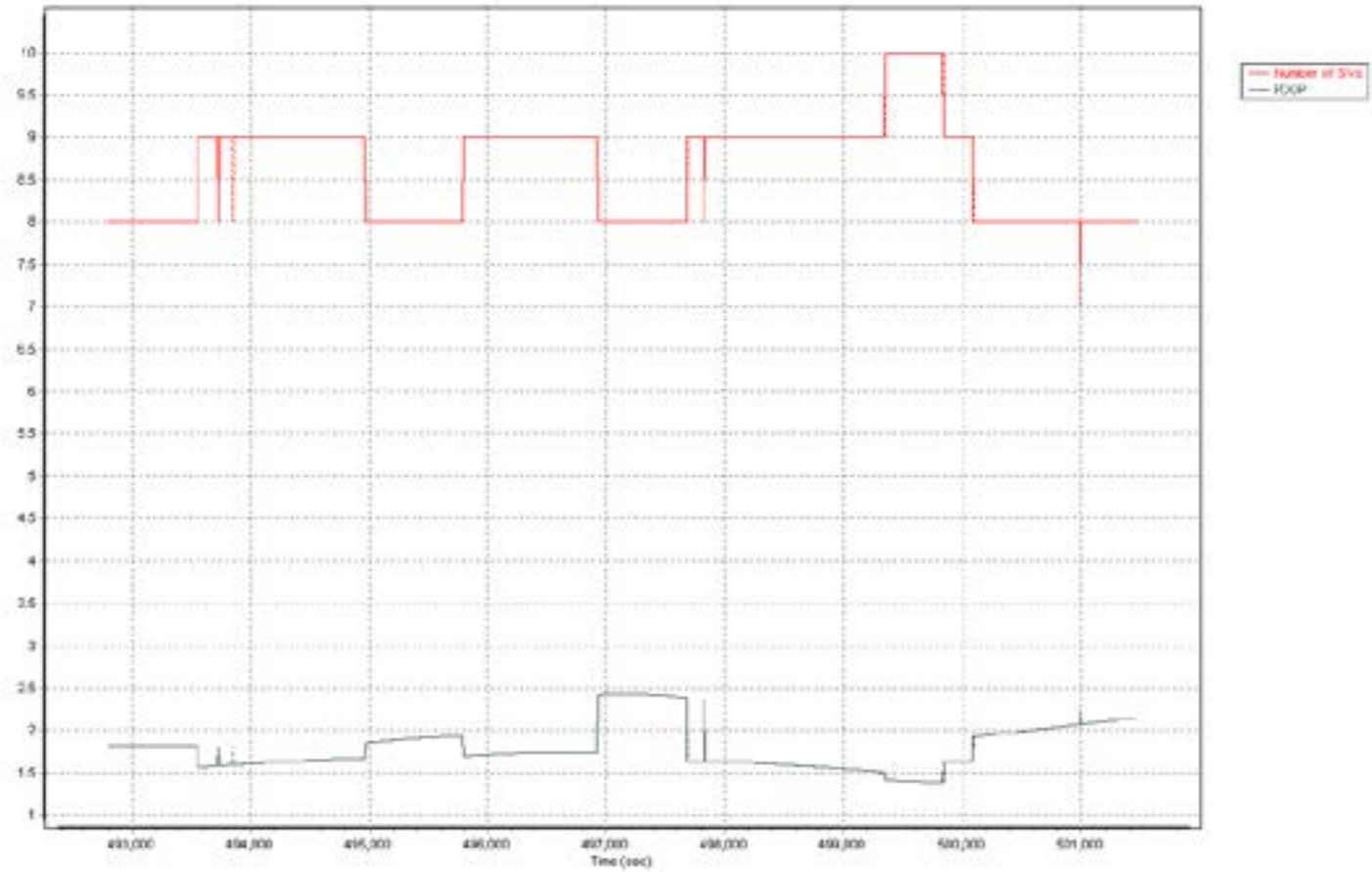

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

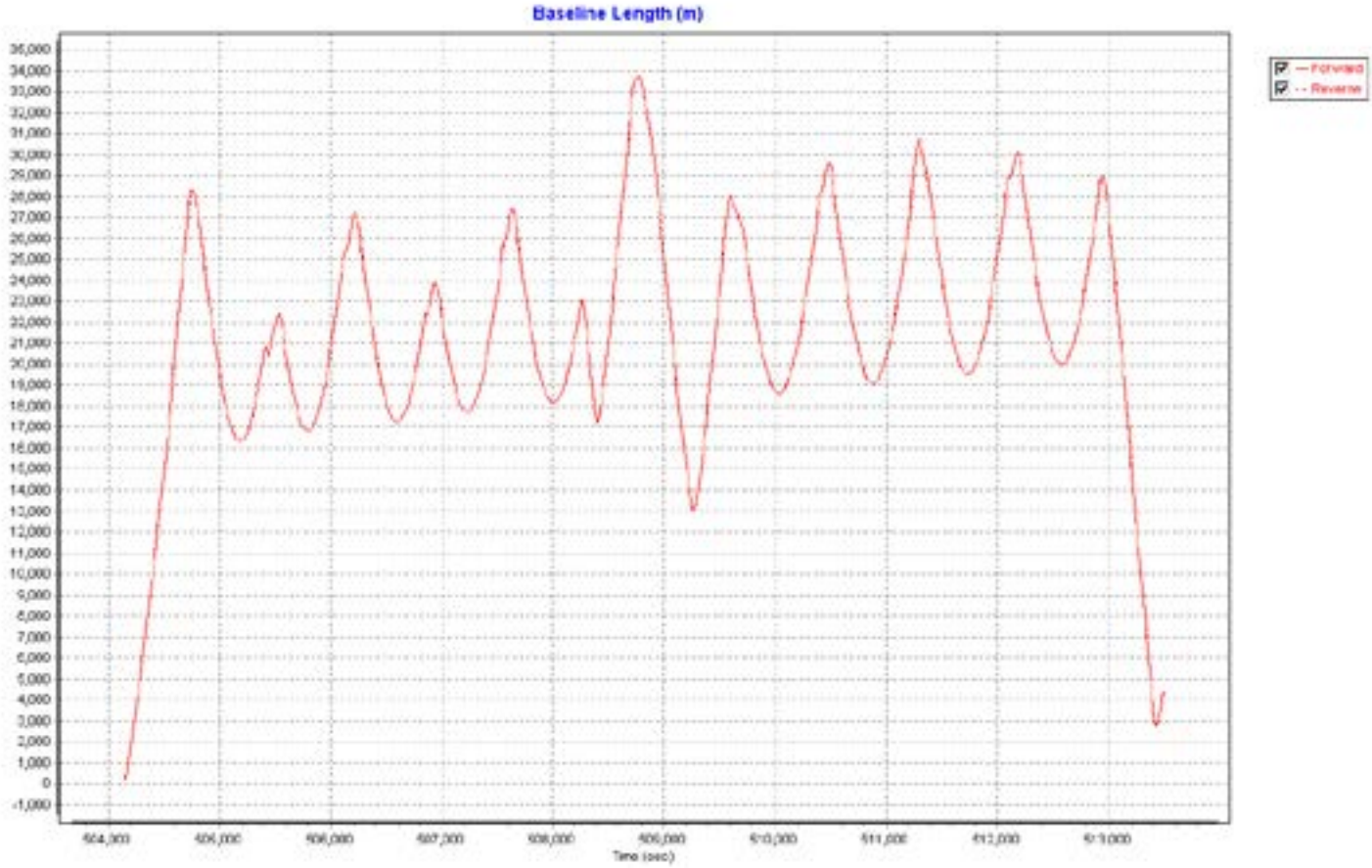

Processing mode
Forward
Reverse
3
2
0
493,000
494,000
495,000
496,000
497,000
498,000
499,000
500,000
501,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

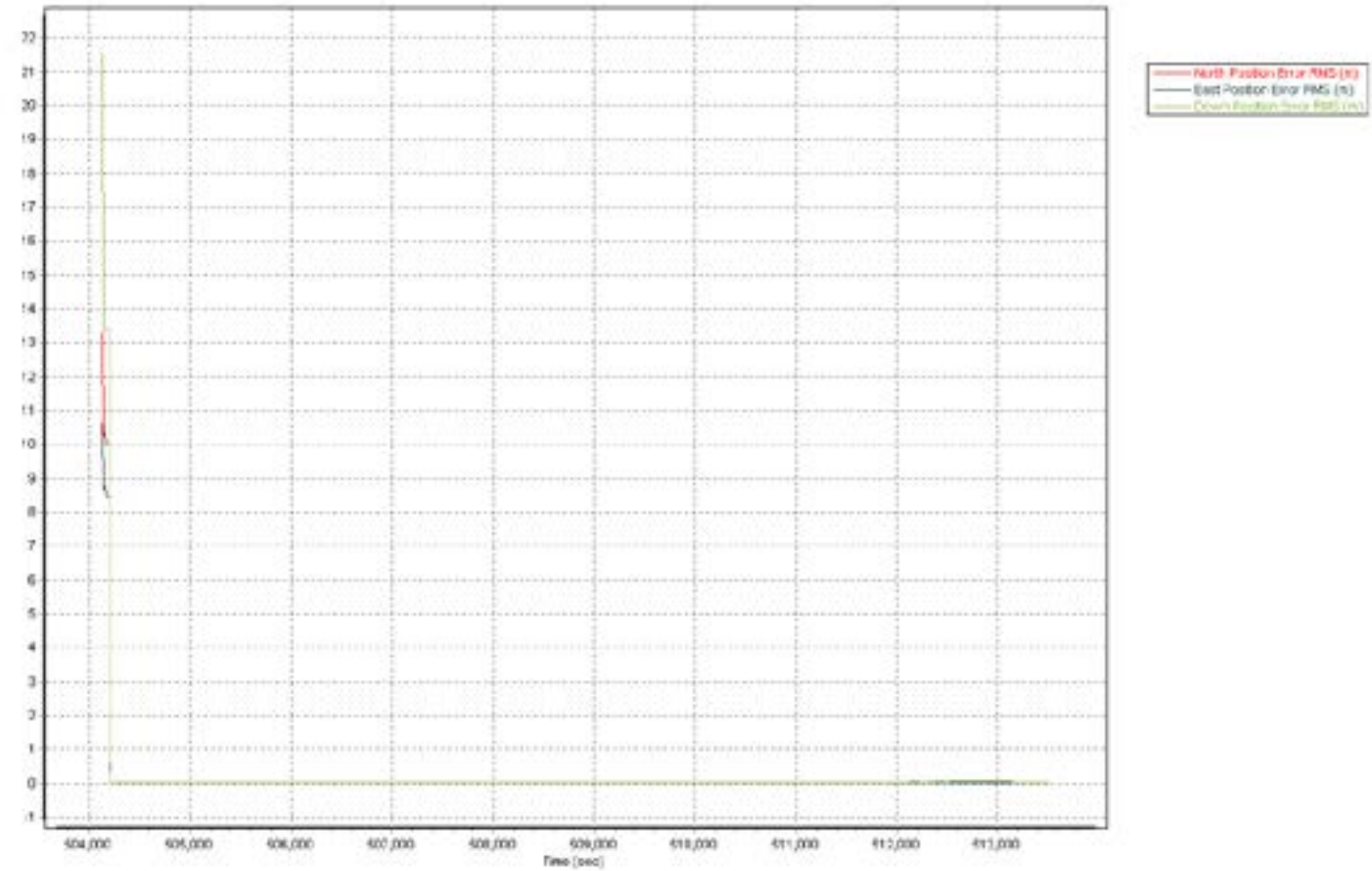

Settings
Status
Message Log

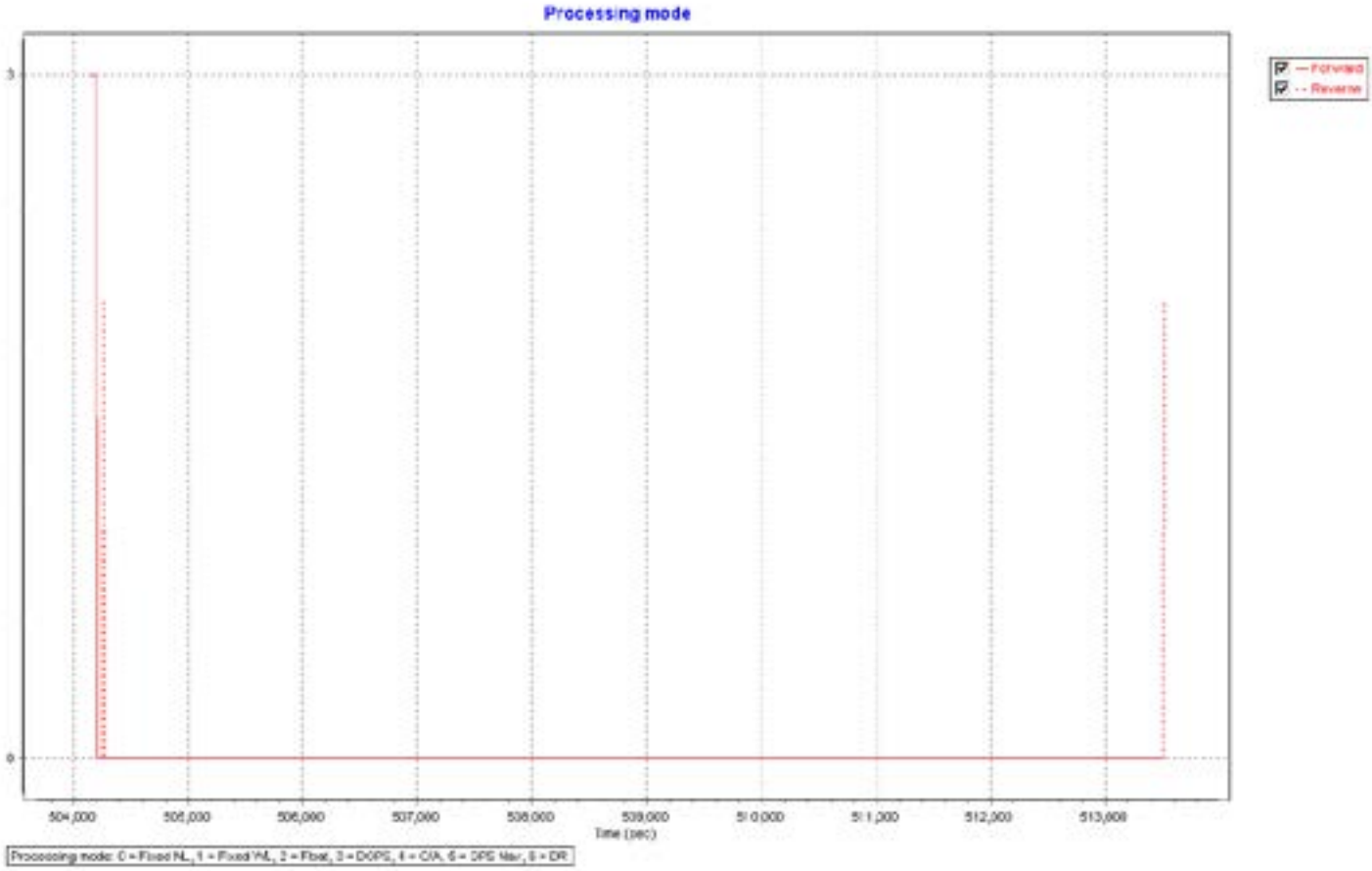

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

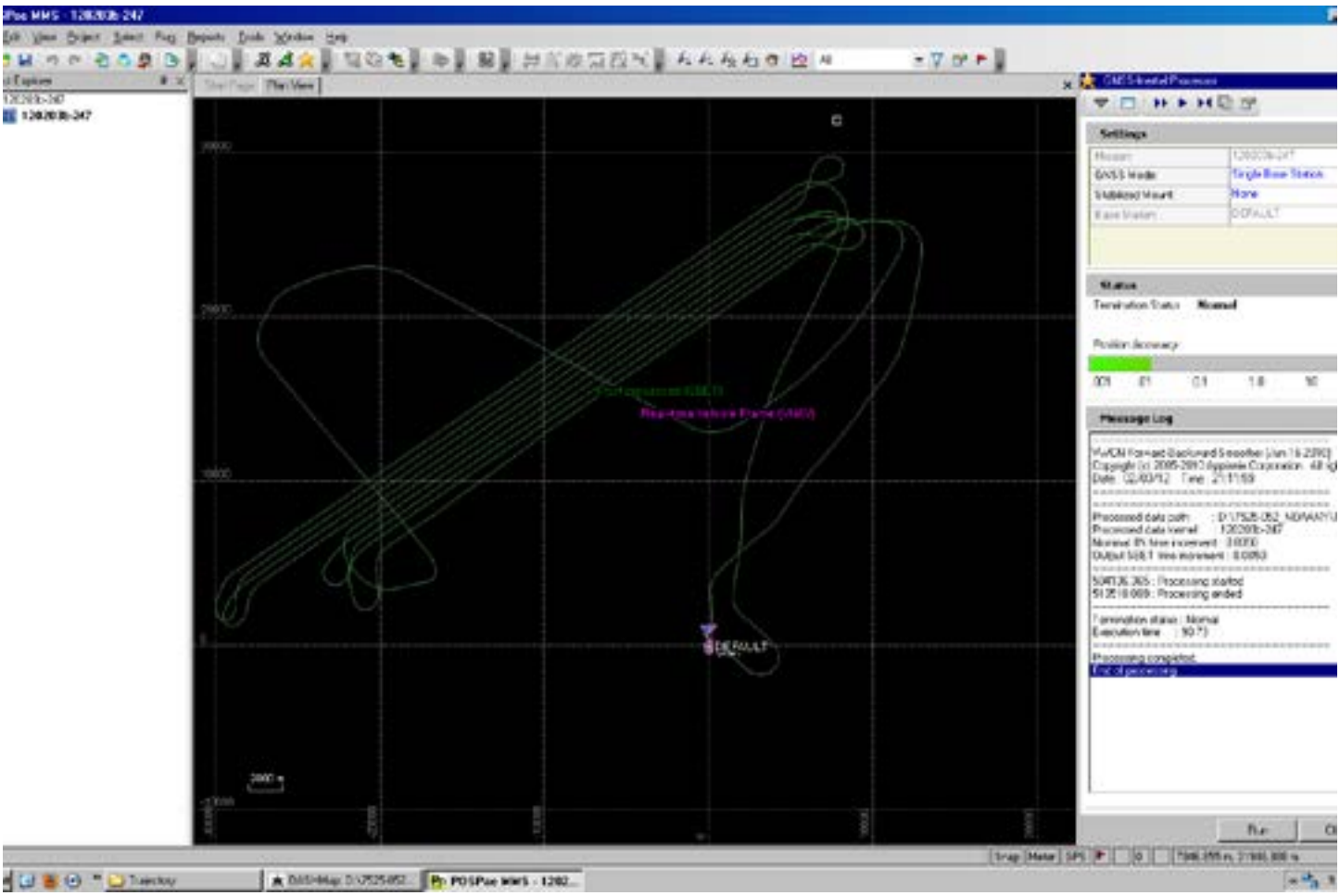

Number of SVs
PDOP
Time (sec)

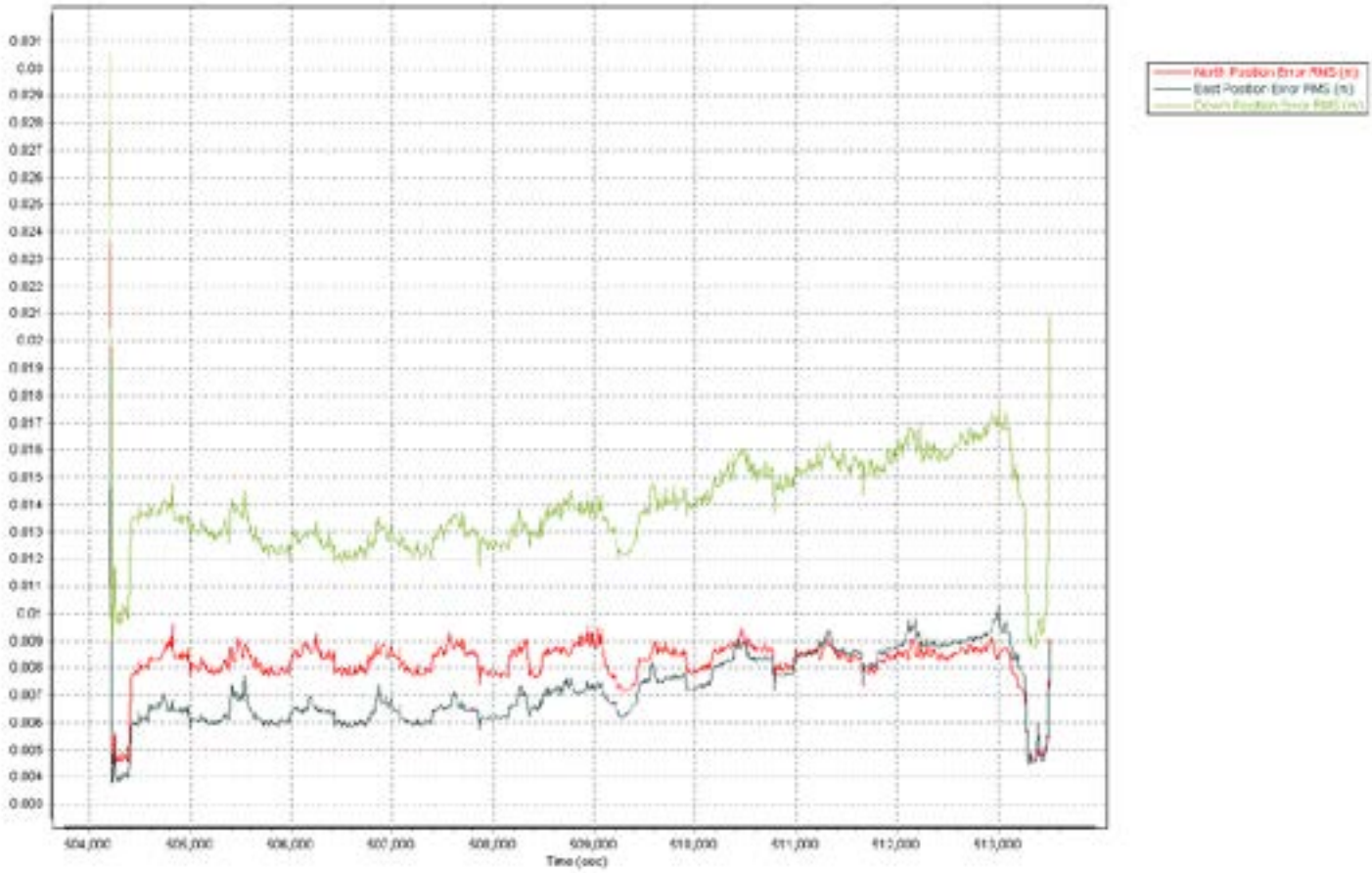
120203b-247

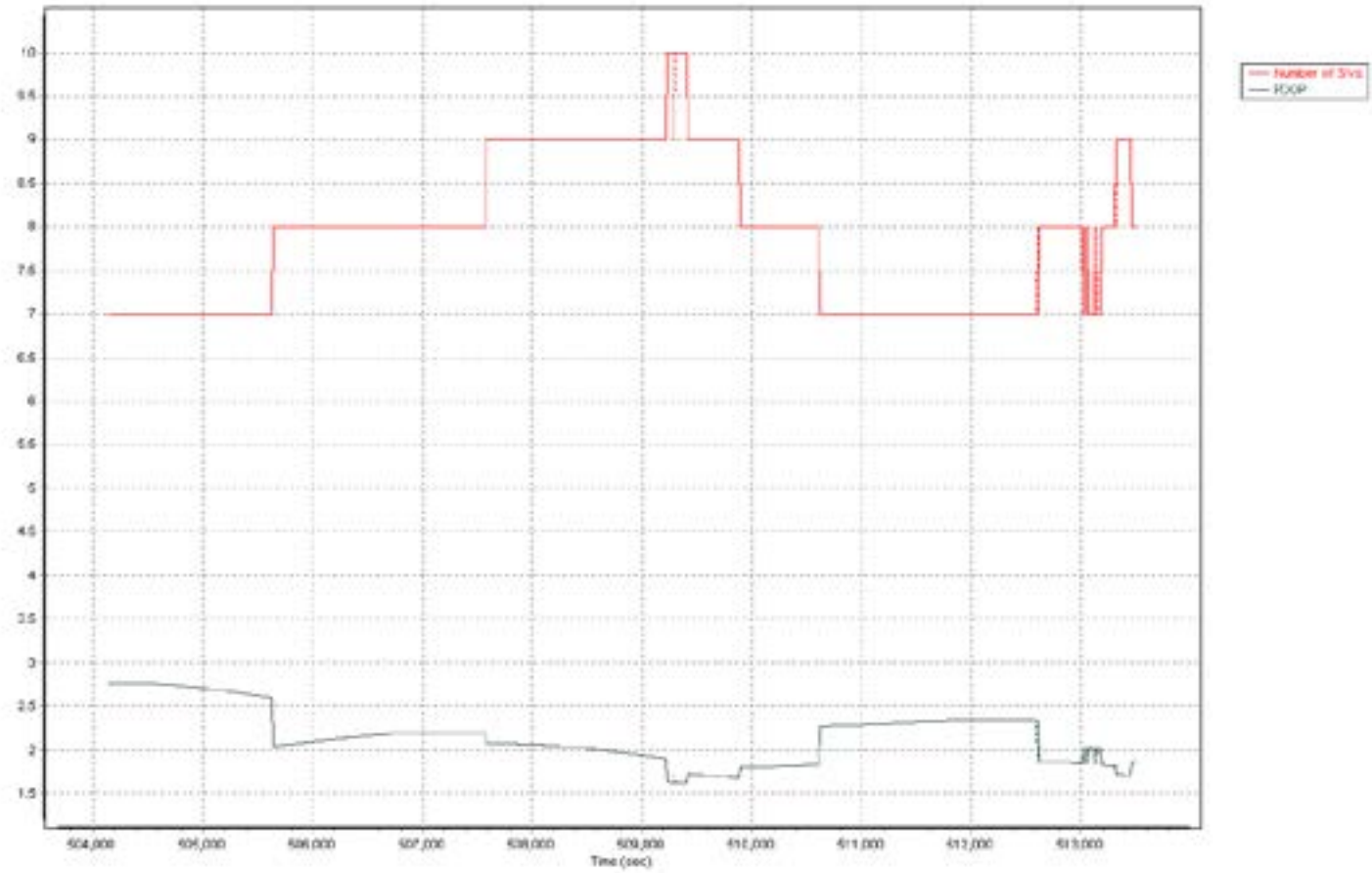

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

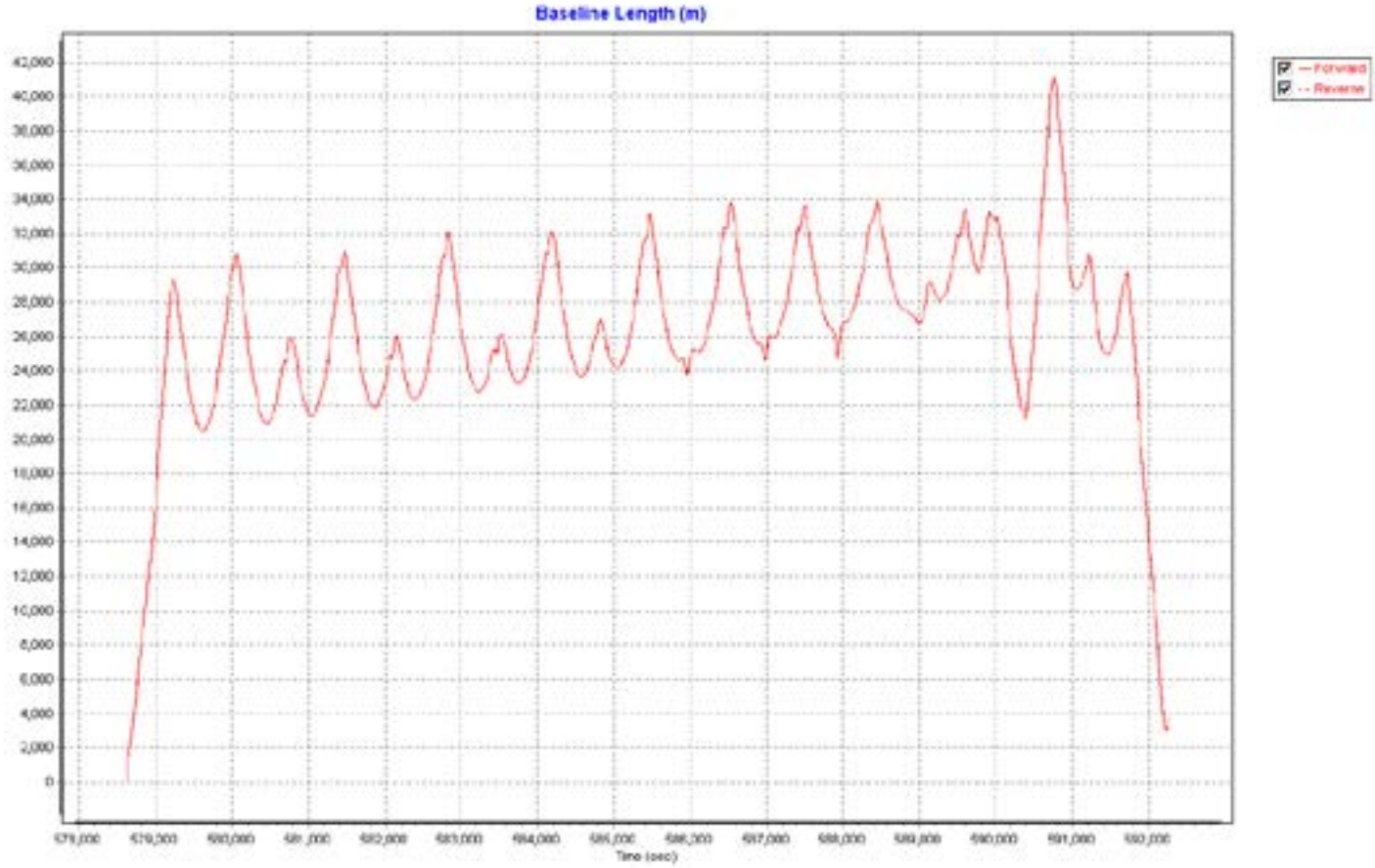

Processing mode
Forward
Reverse
5
0
504,000
505,000
506,000
507,000
508,000
509,000
510,000
511,000
512,000
513,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

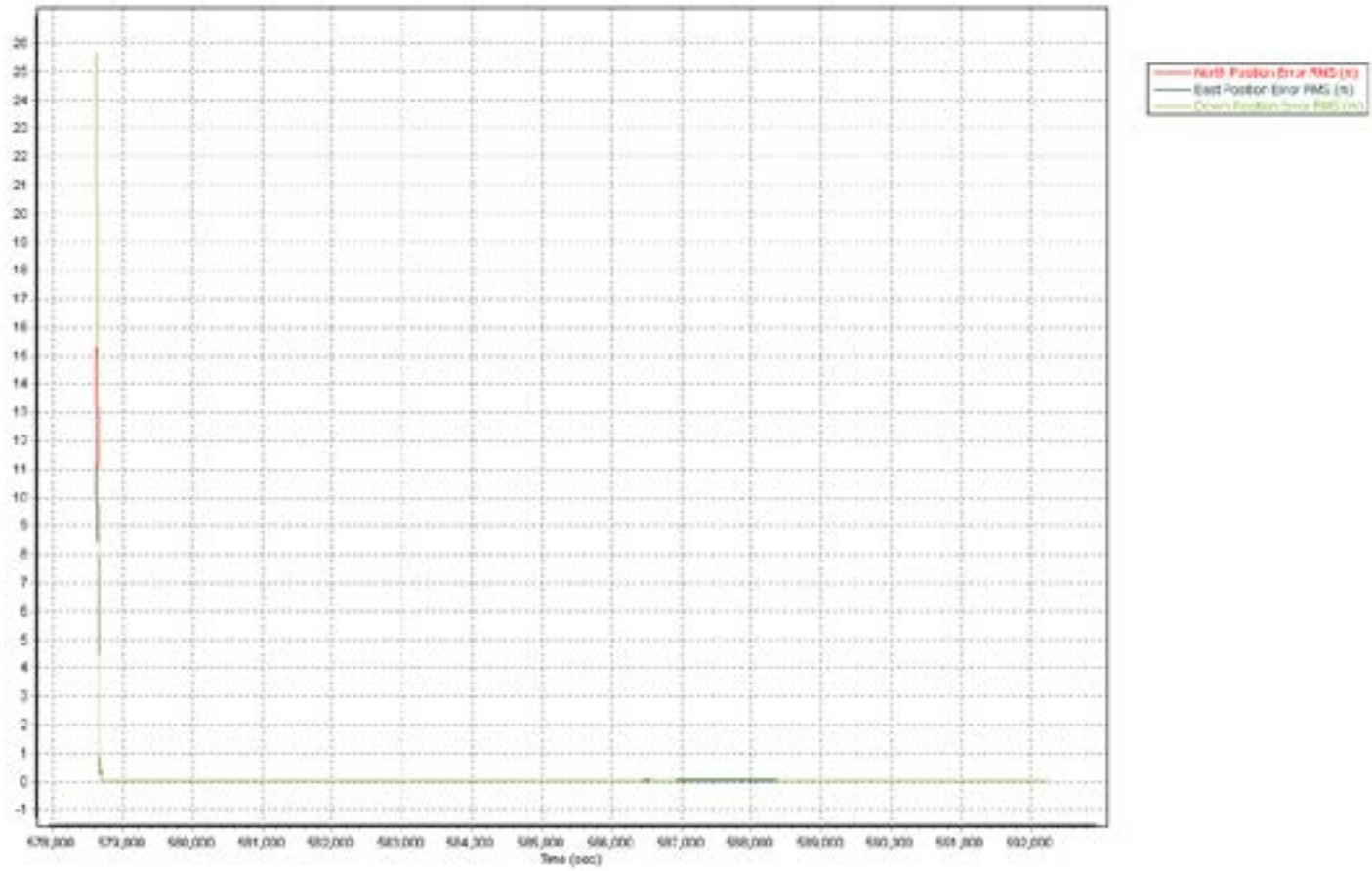

Settings
Status
Message Log
DEFAULT

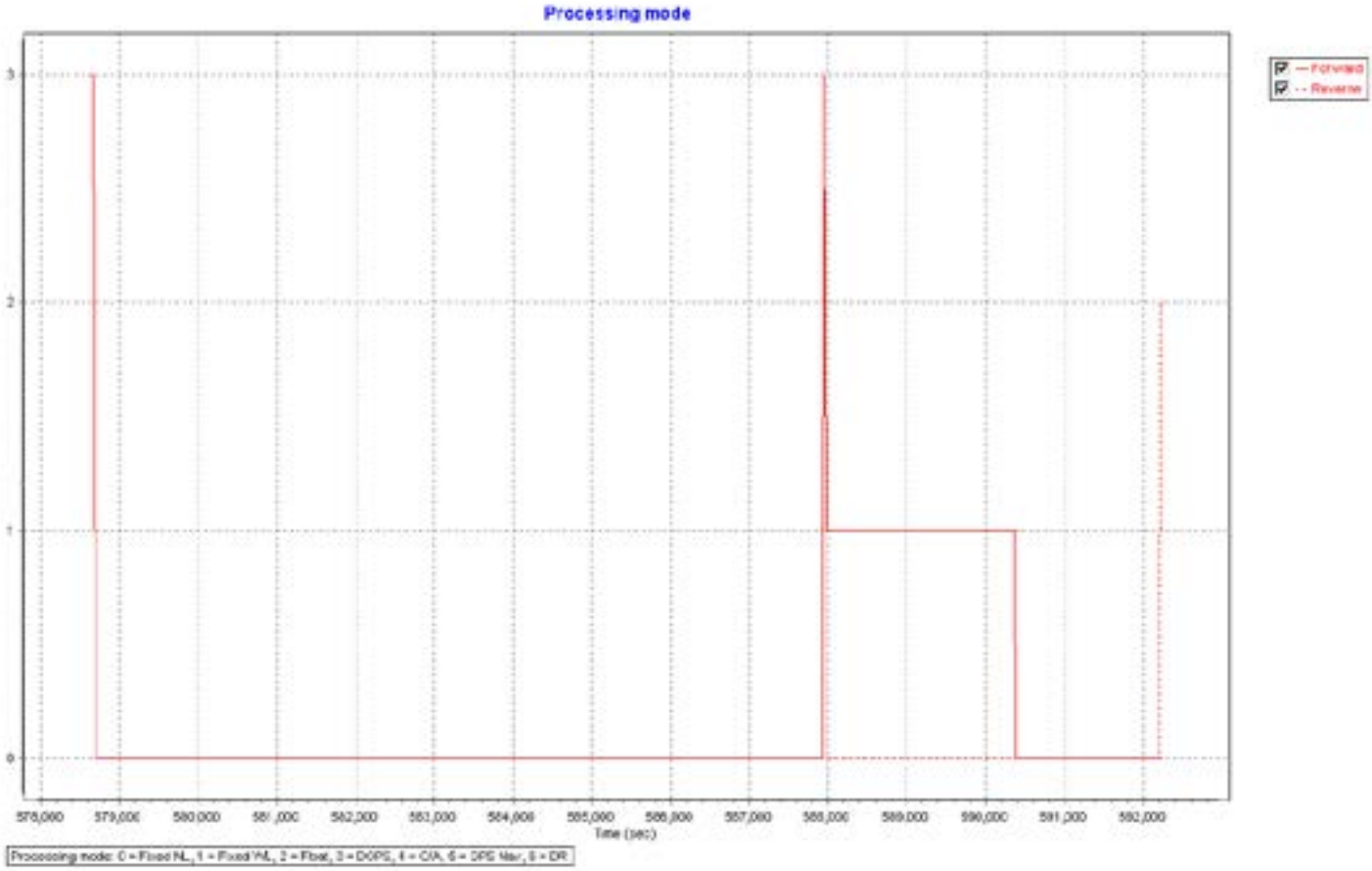

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

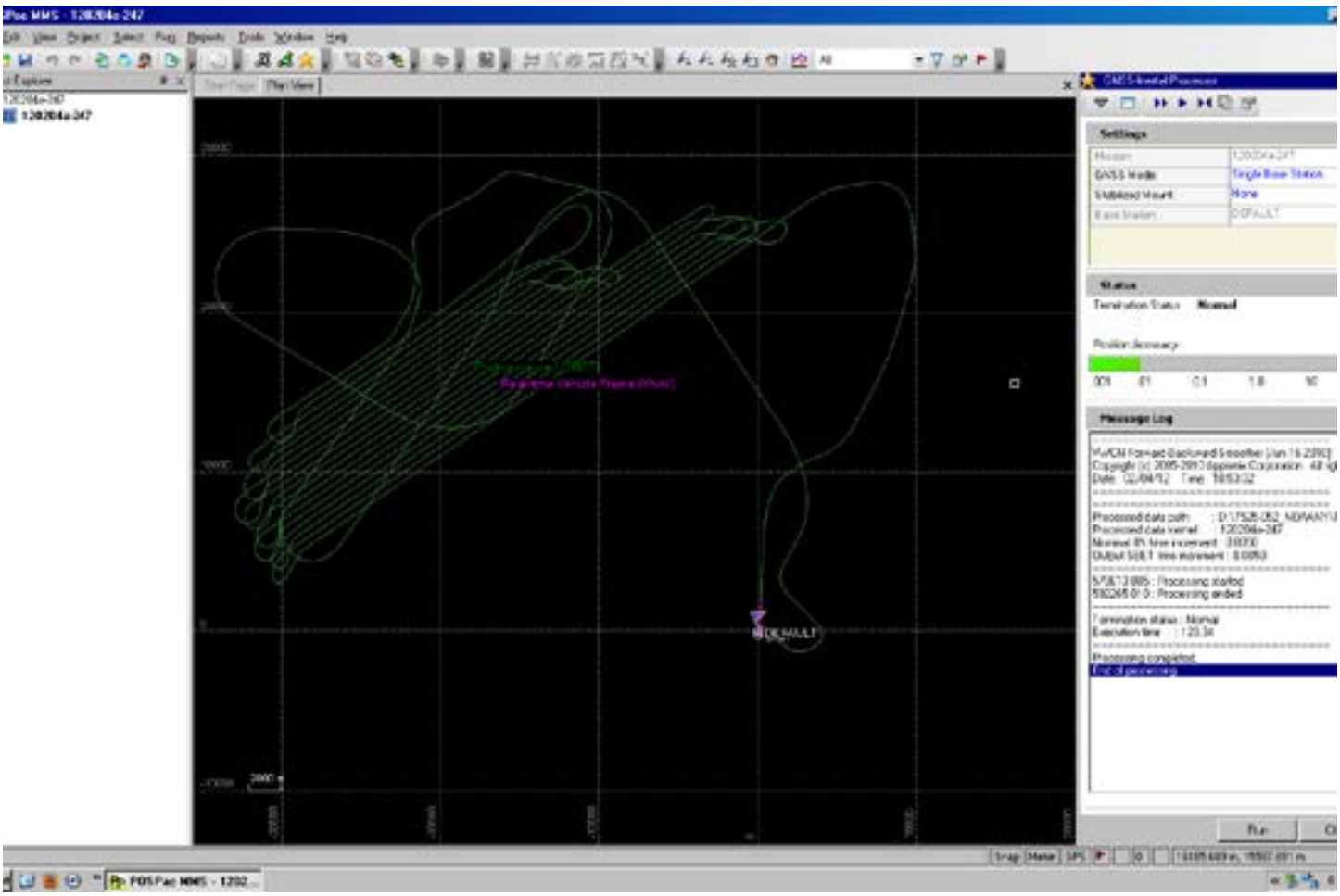

Number of SVs
PDOP
Time (sec)

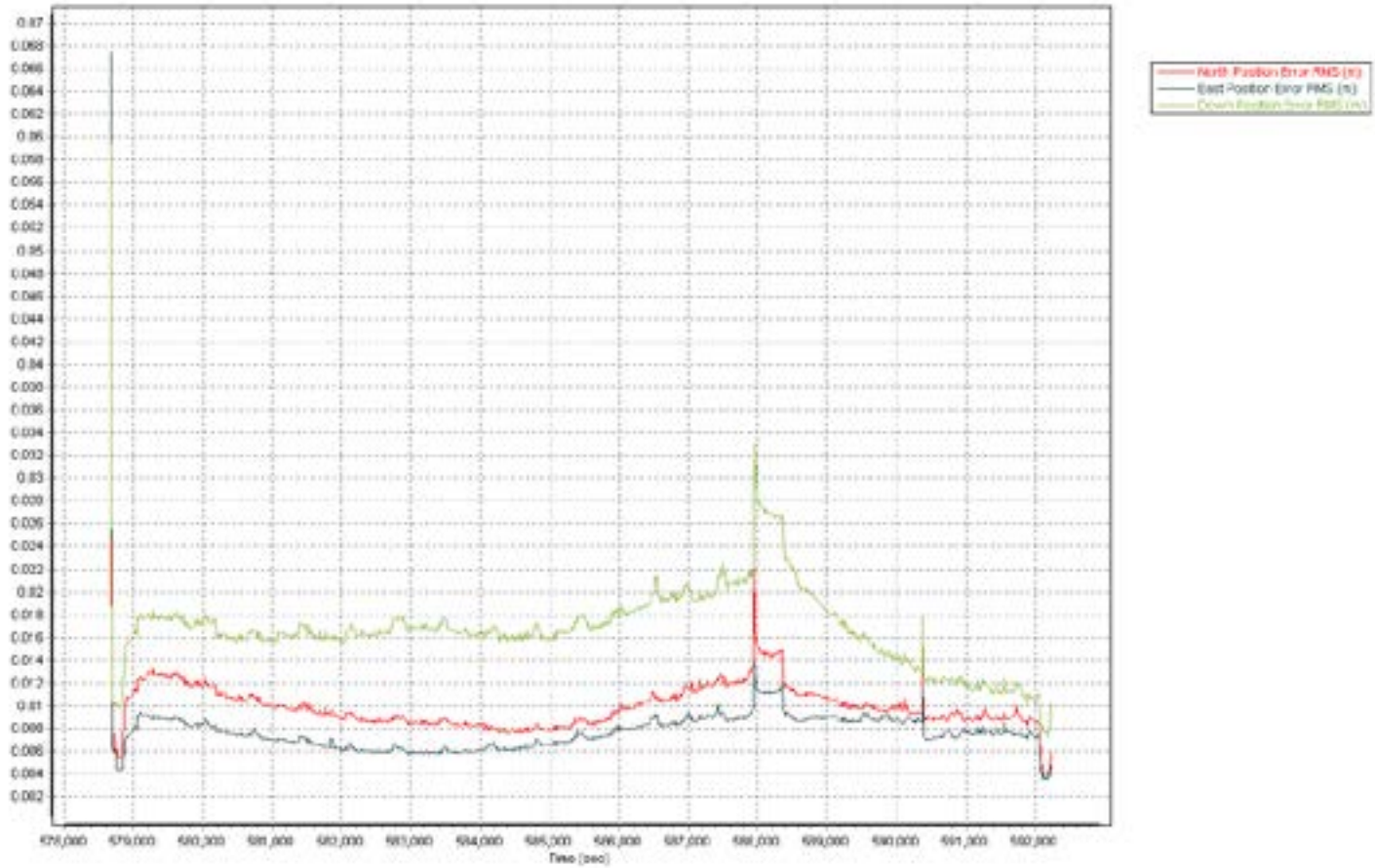
120204a-247

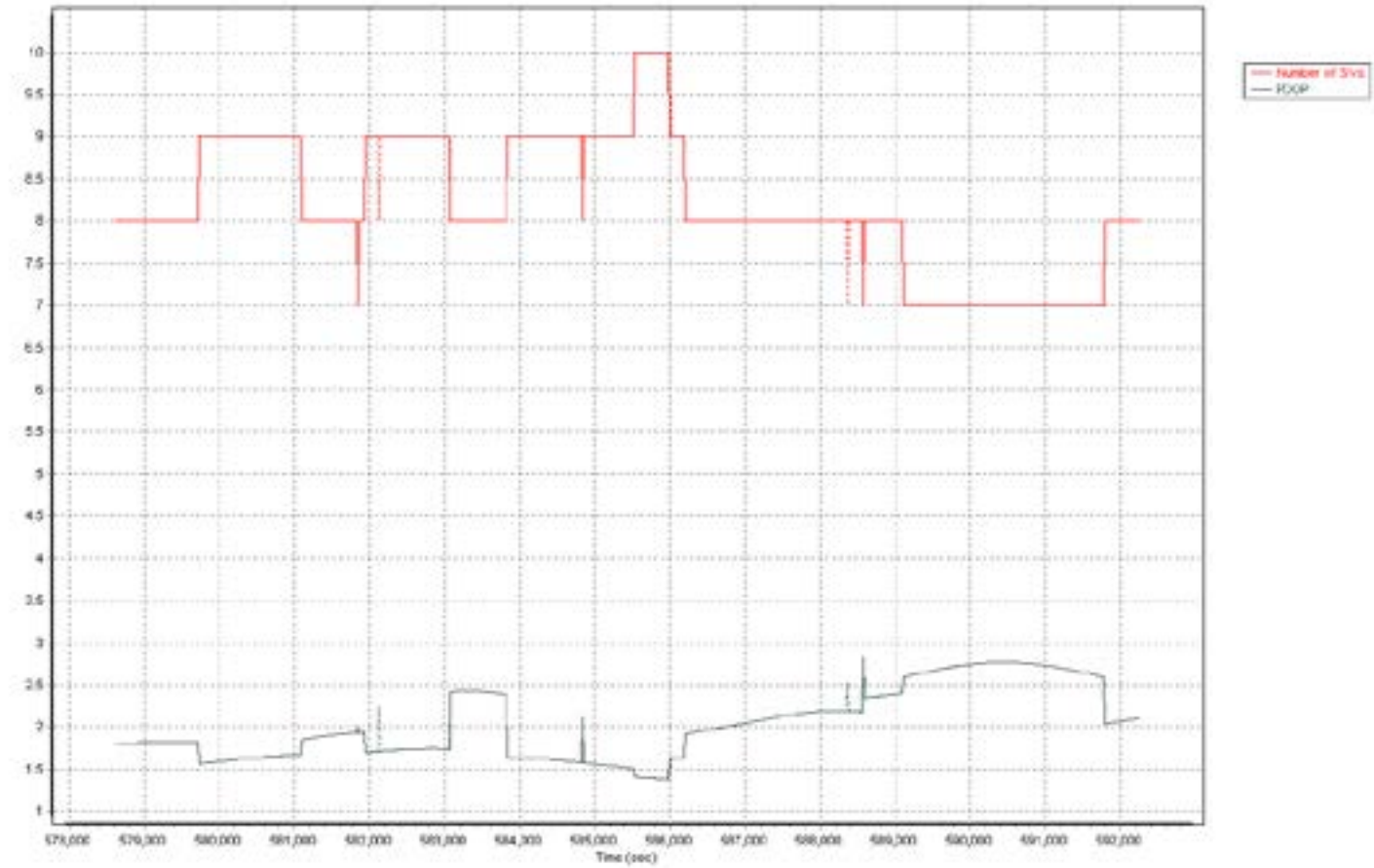

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

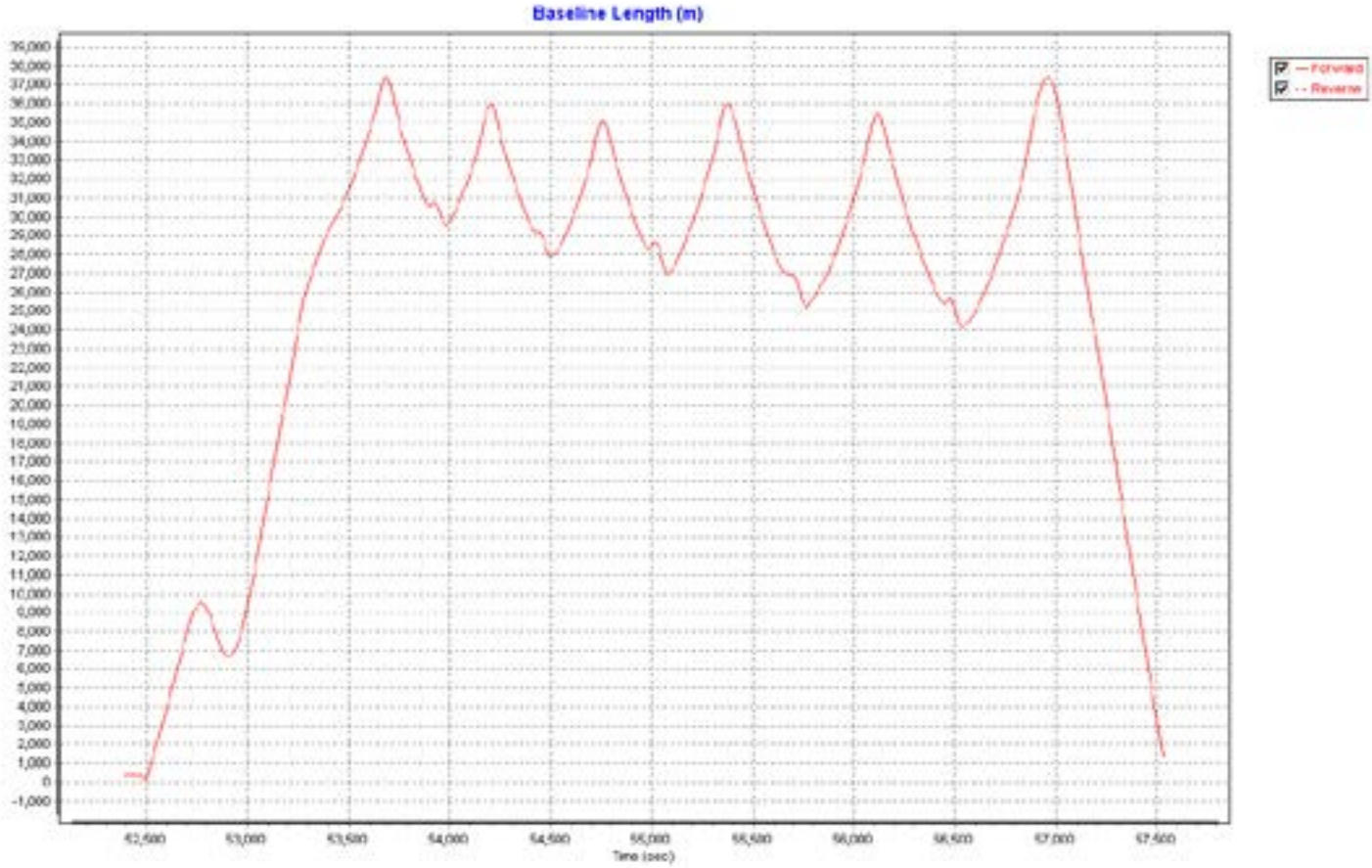

Processing mode
Forward
Reverse
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

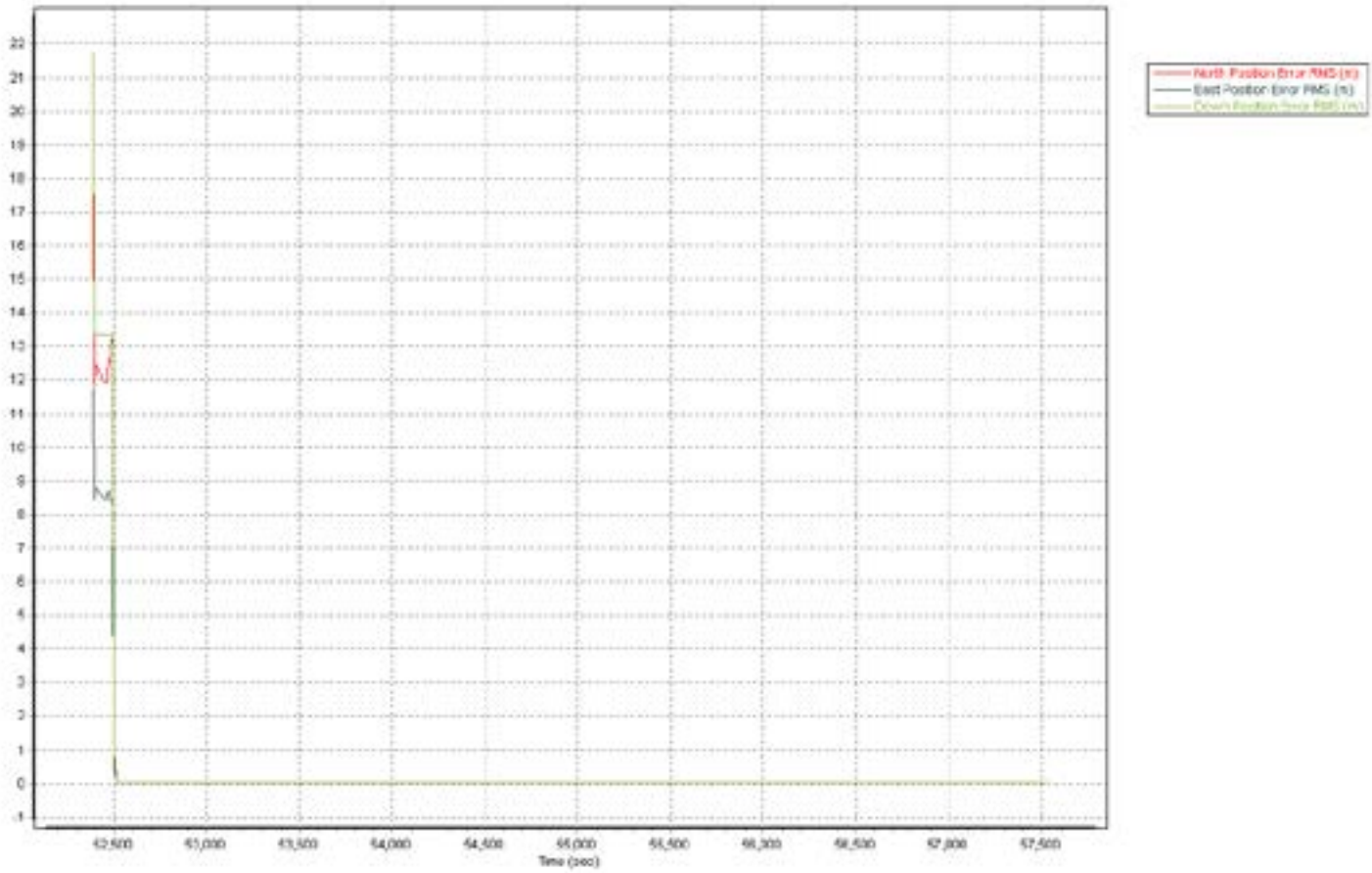

Settings
Status
Message Log

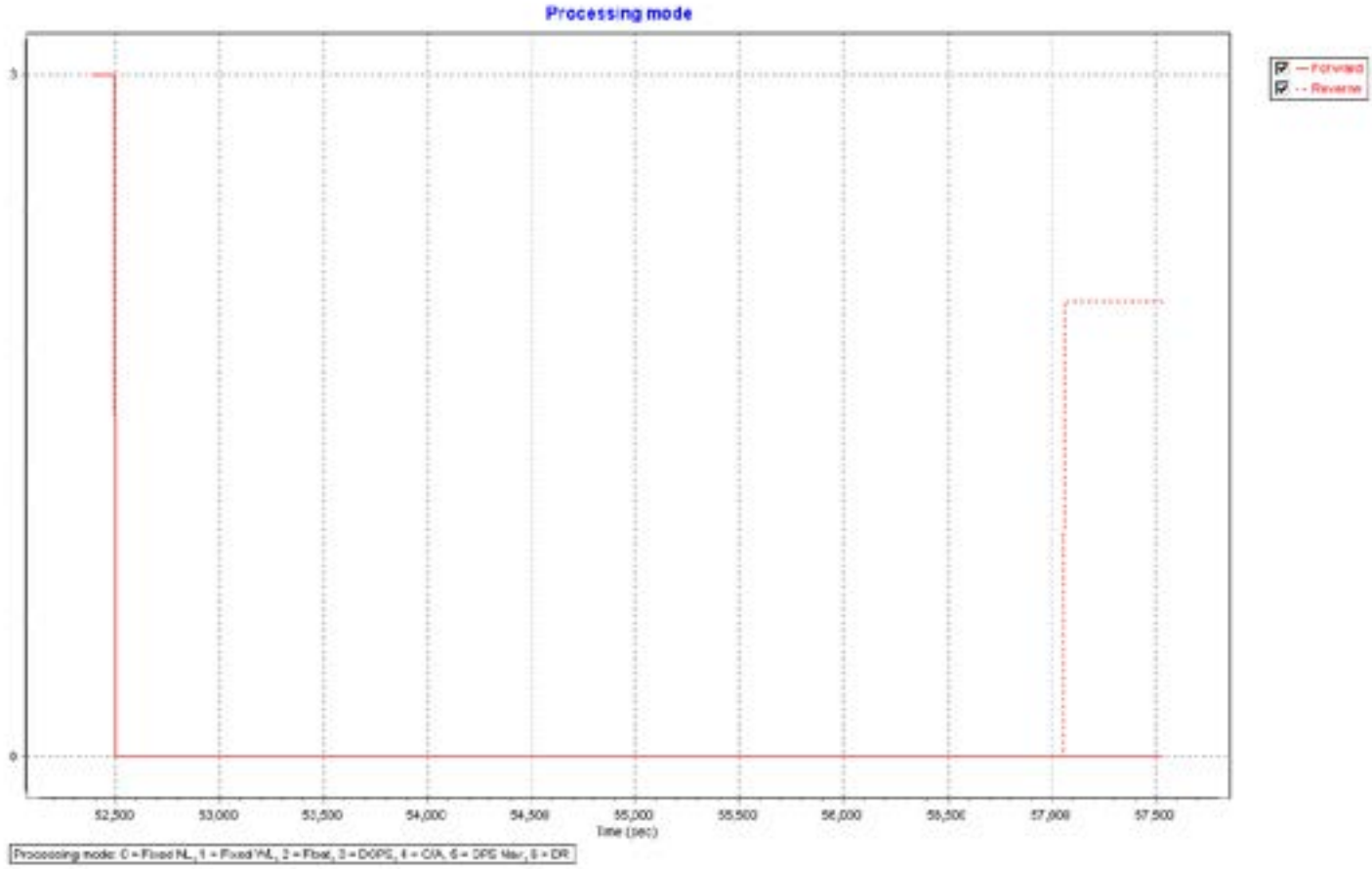

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

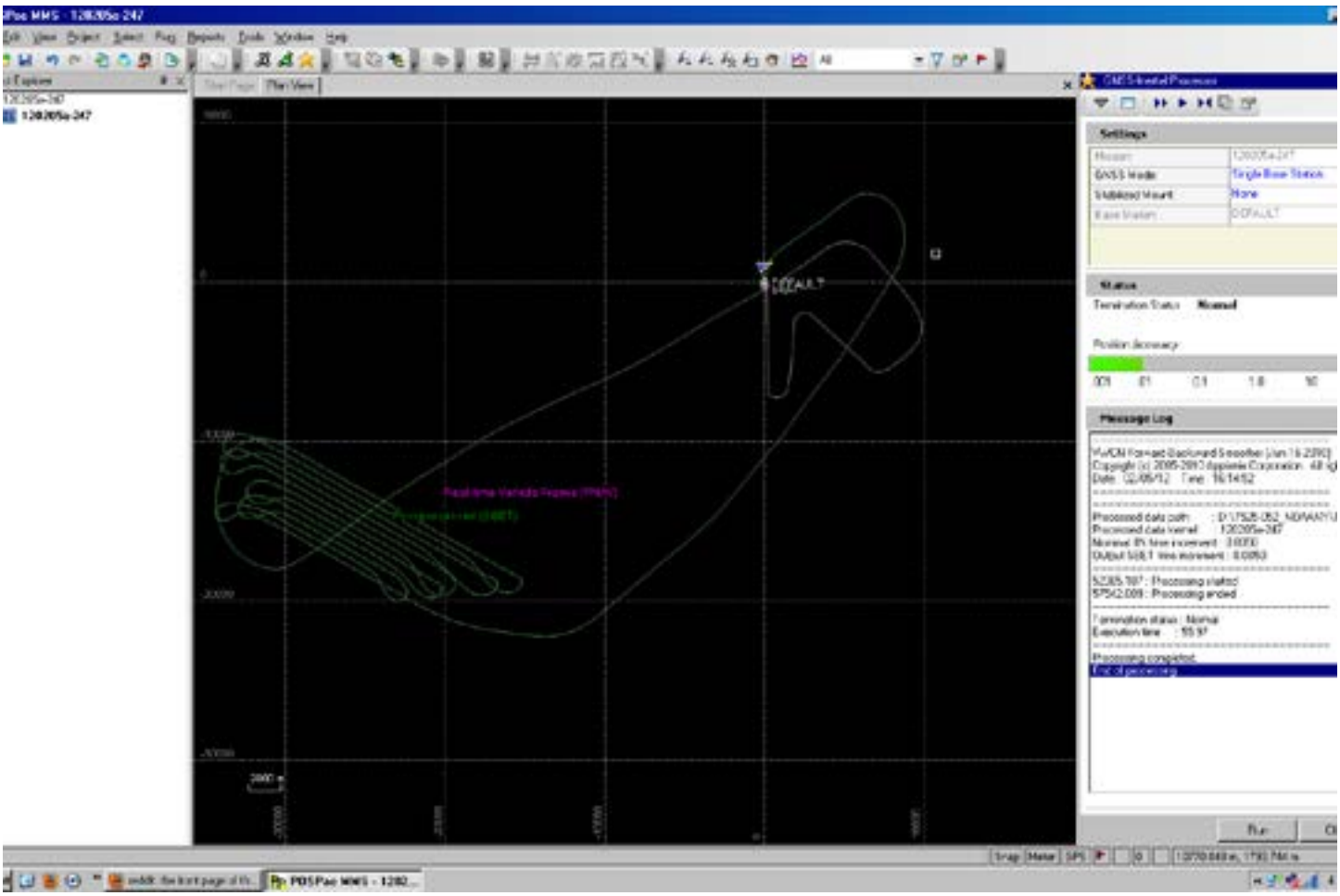

Number of SVs
PDOP
Time (sec)

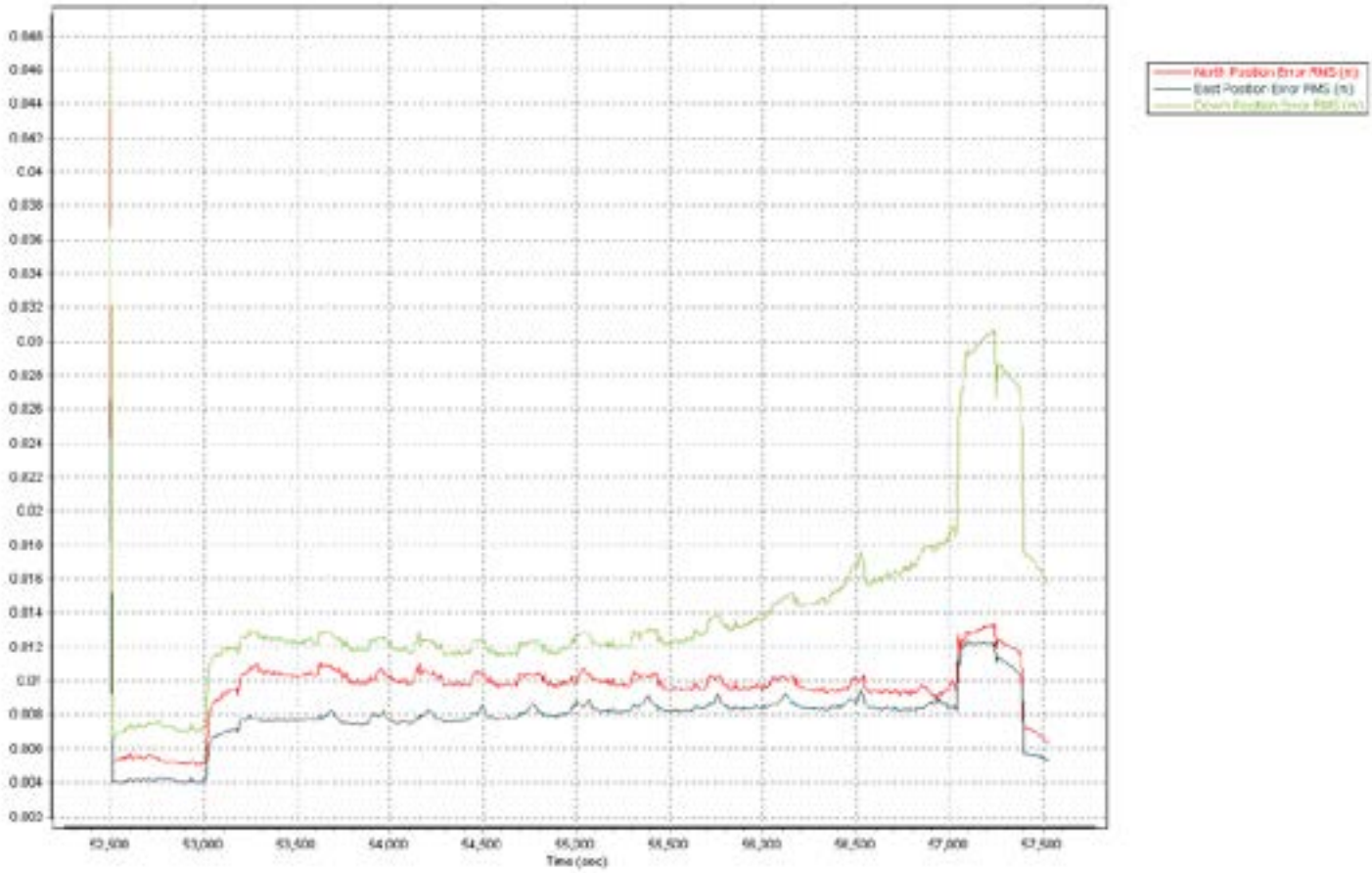
120205a-247


Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

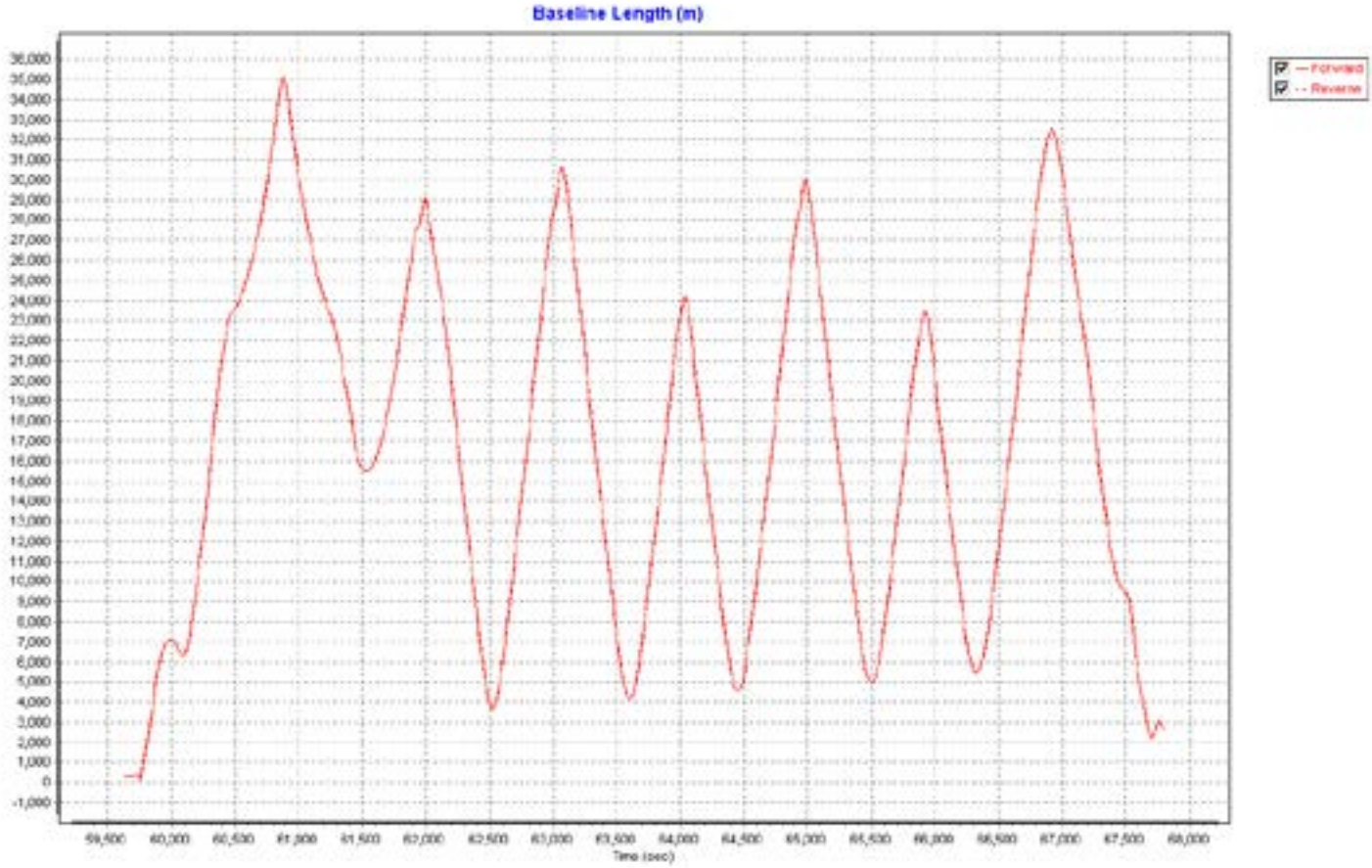

Processing mode
Forward
Reverse
5
0
52,500
53,000
53,500
54,000
54,500
55,000
55,500
56,000
56,500
57,000
57,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

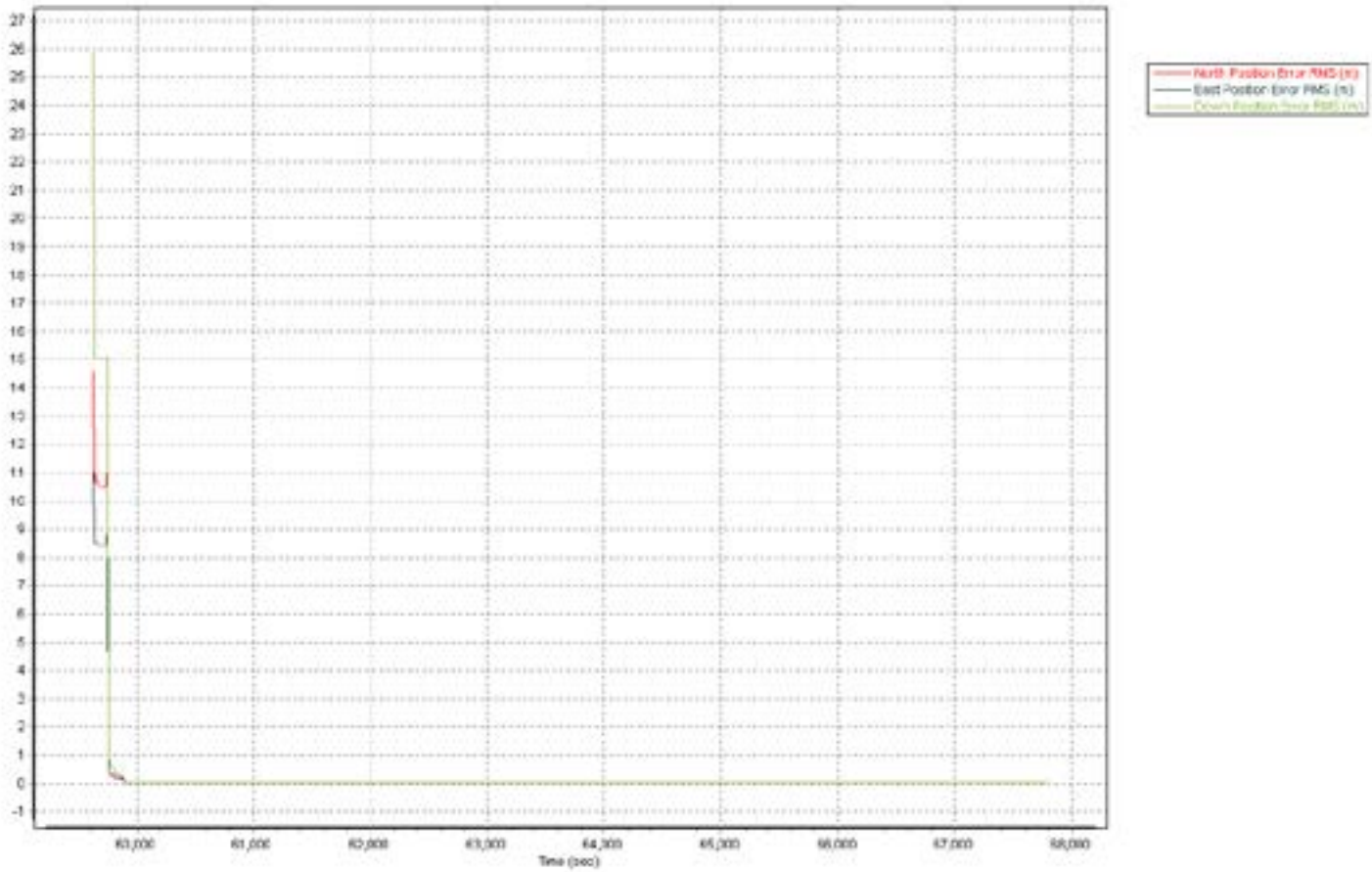

Settings
Status
Message Log
Processing completed
End of processing

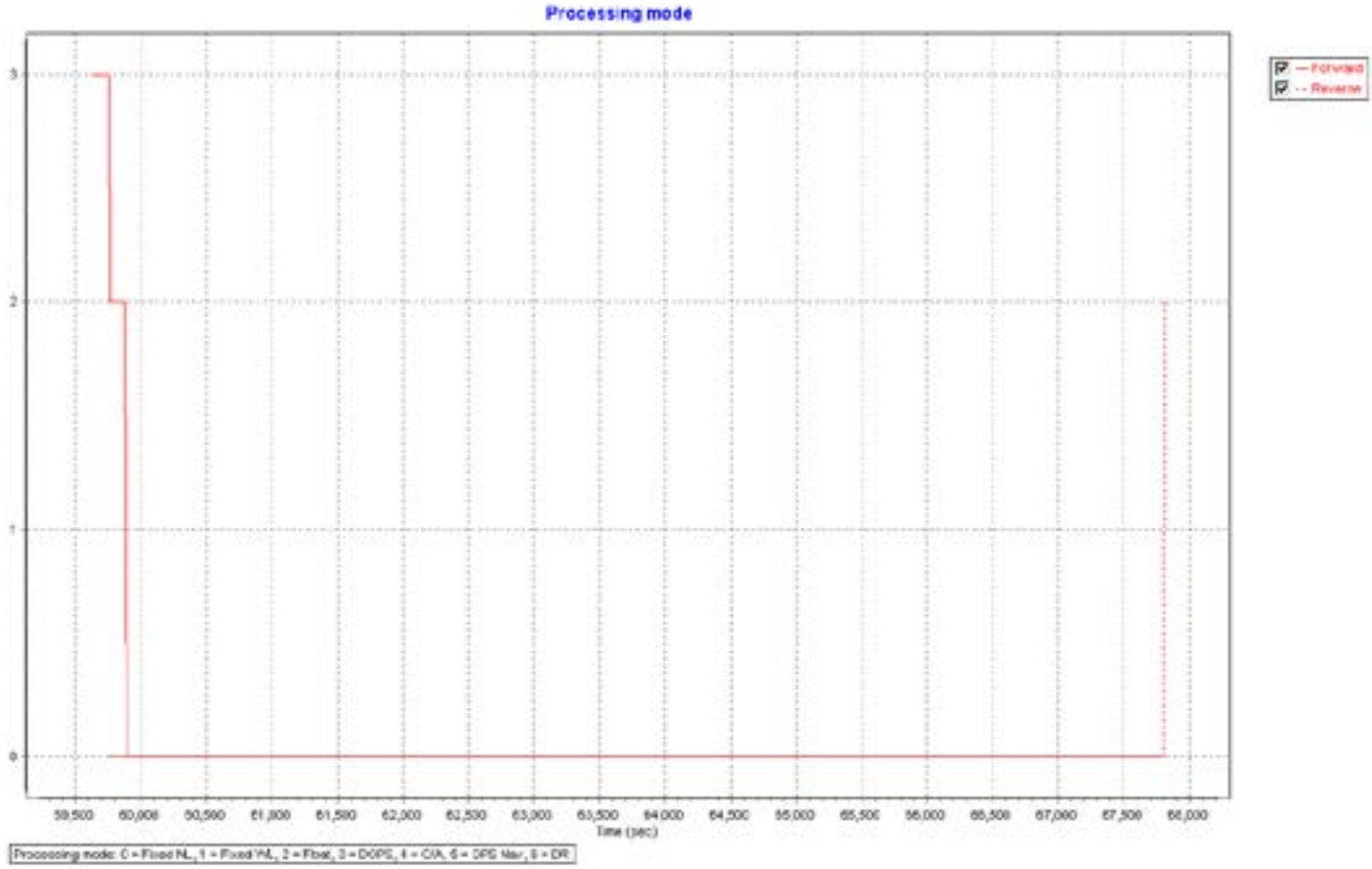

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

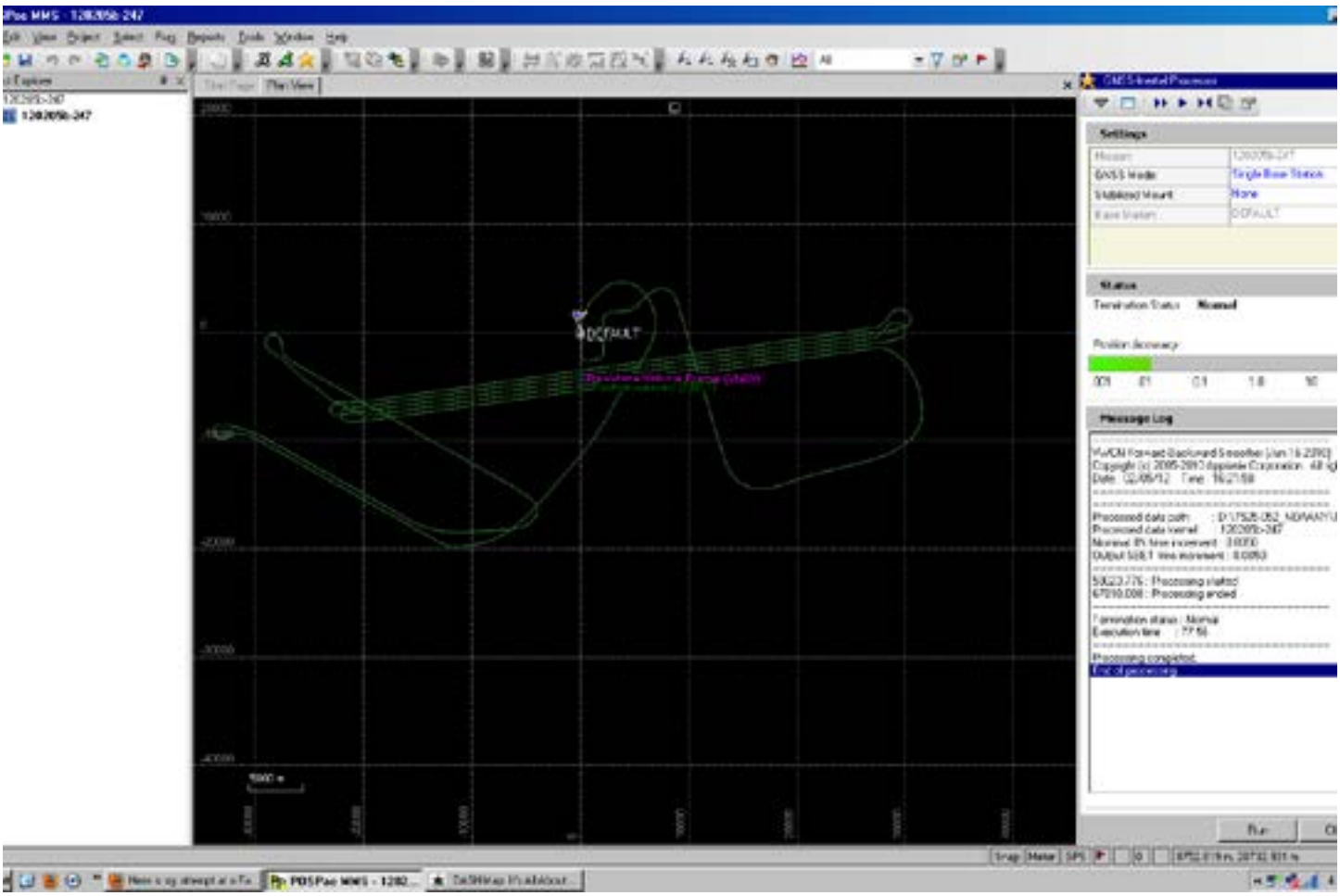
Number of SVs
PDOP
Time (sec)

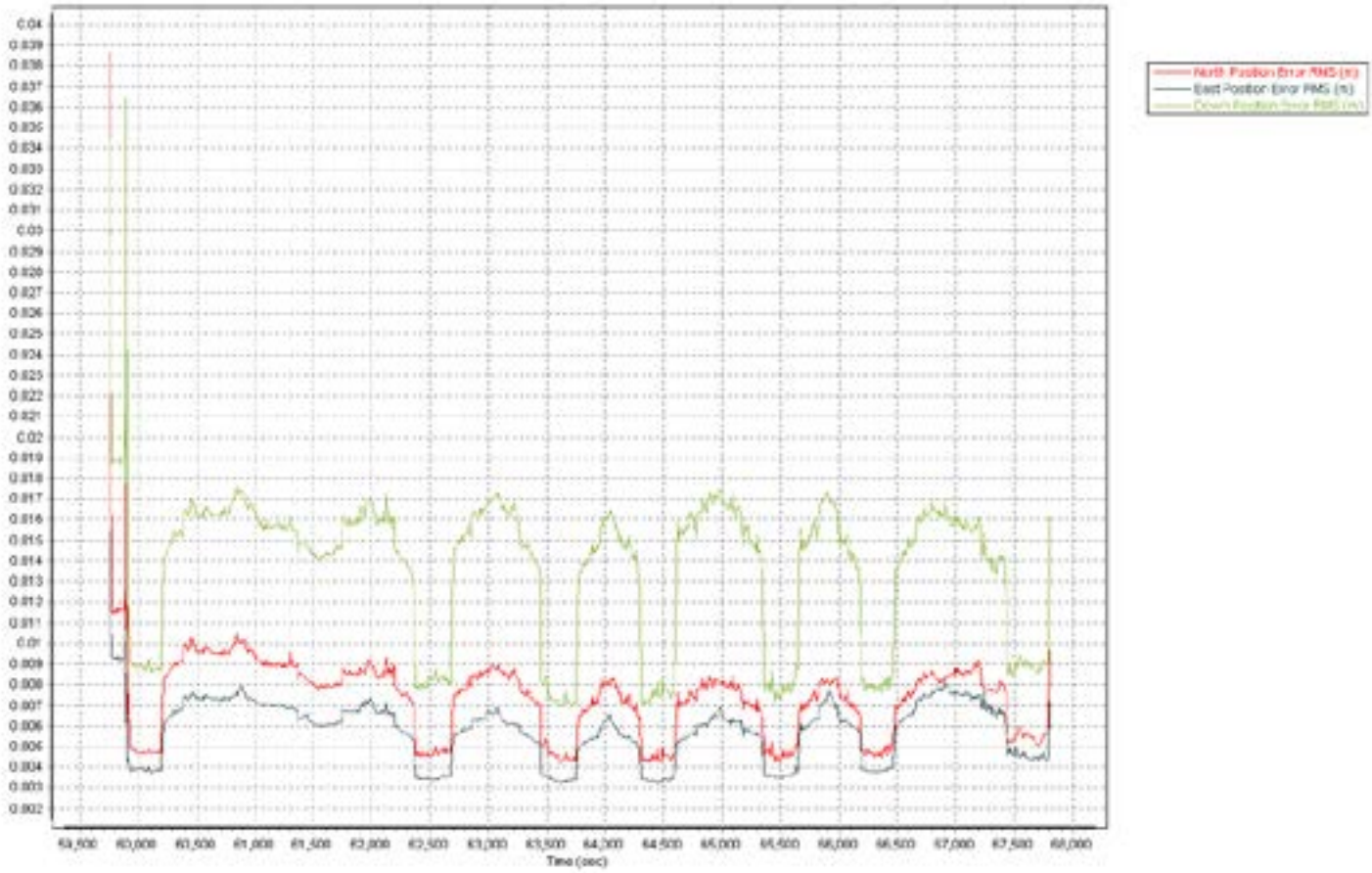
120205b-247

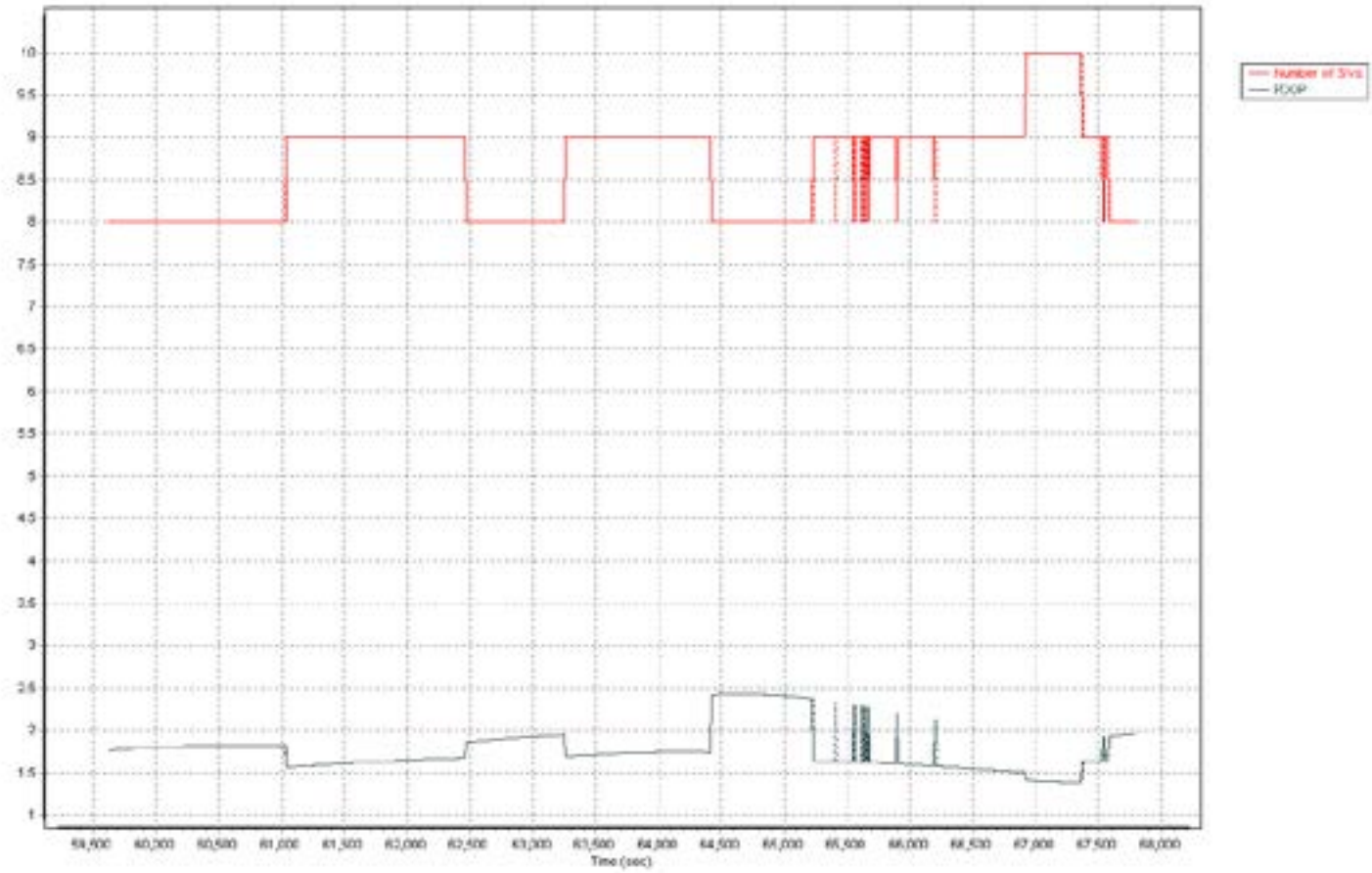

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

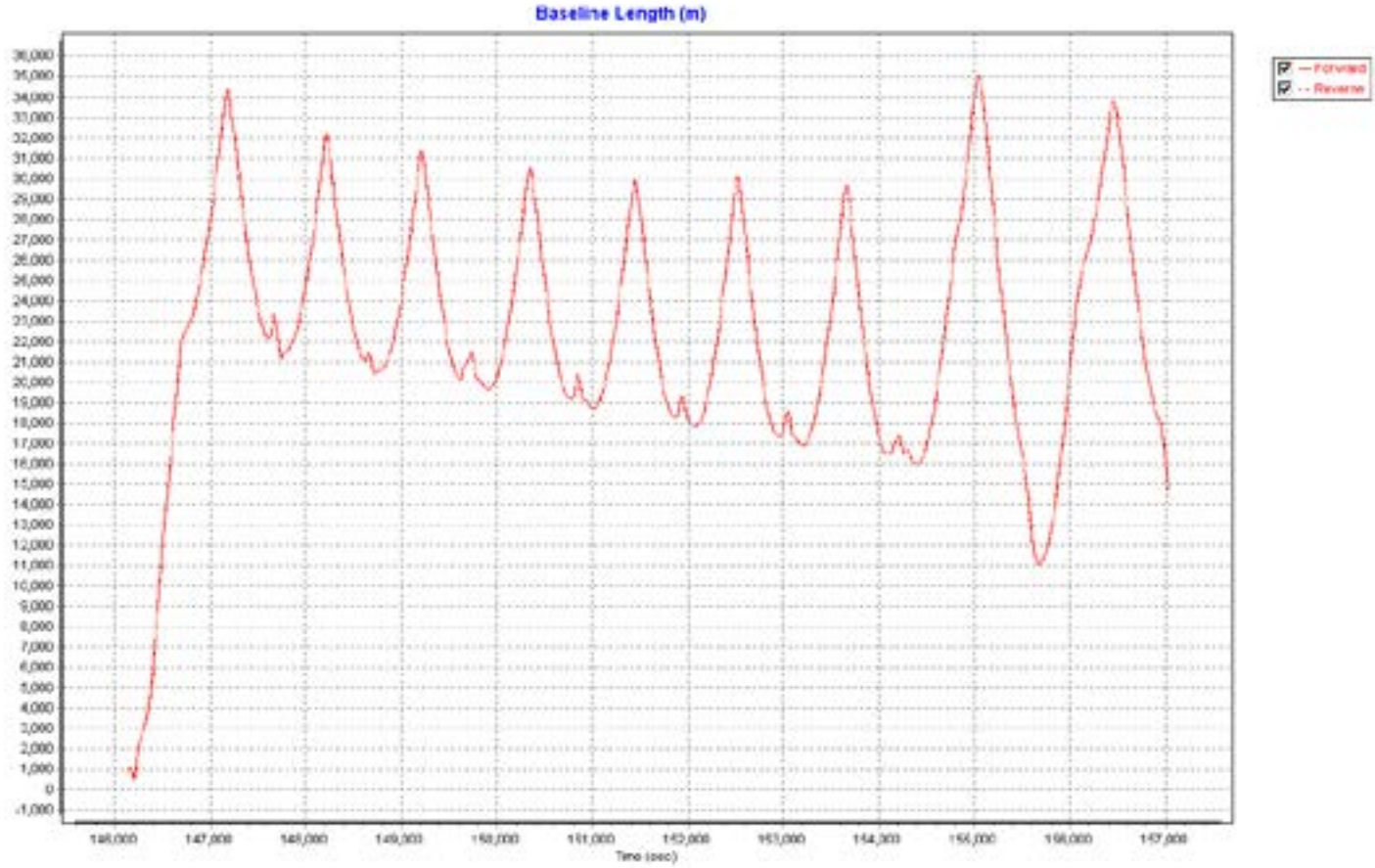

Processing mode
Forward
Reverse
3
2
1
0
59,500
60,000
60,500
61,000
61,500
62,000
62,500
63,000
63,500
64,000
64,500
65,000
65,500
66,000
66,500
67,000
67,500
68,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

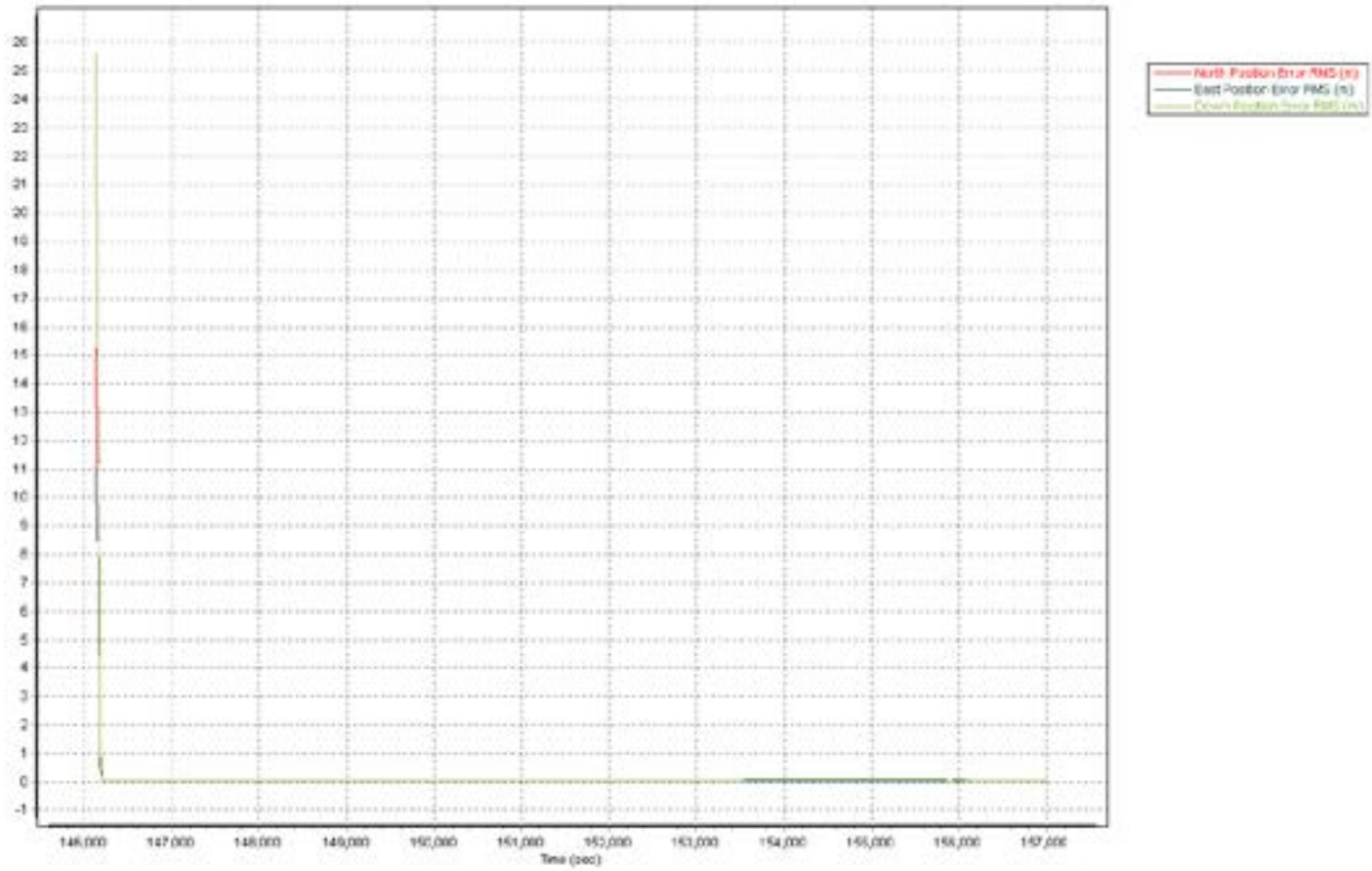

DEFAULT
Settings
Status
Message Log

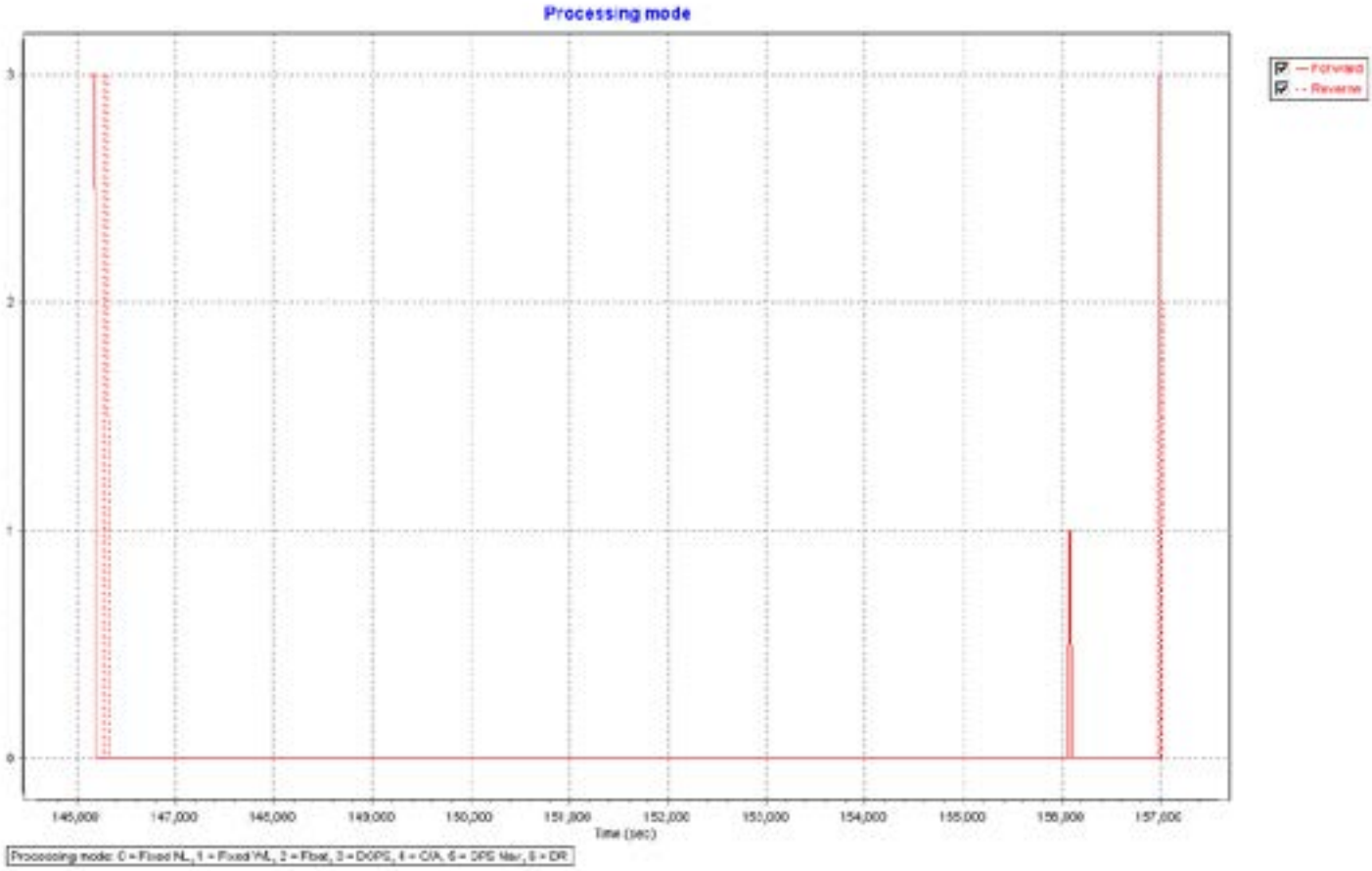

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

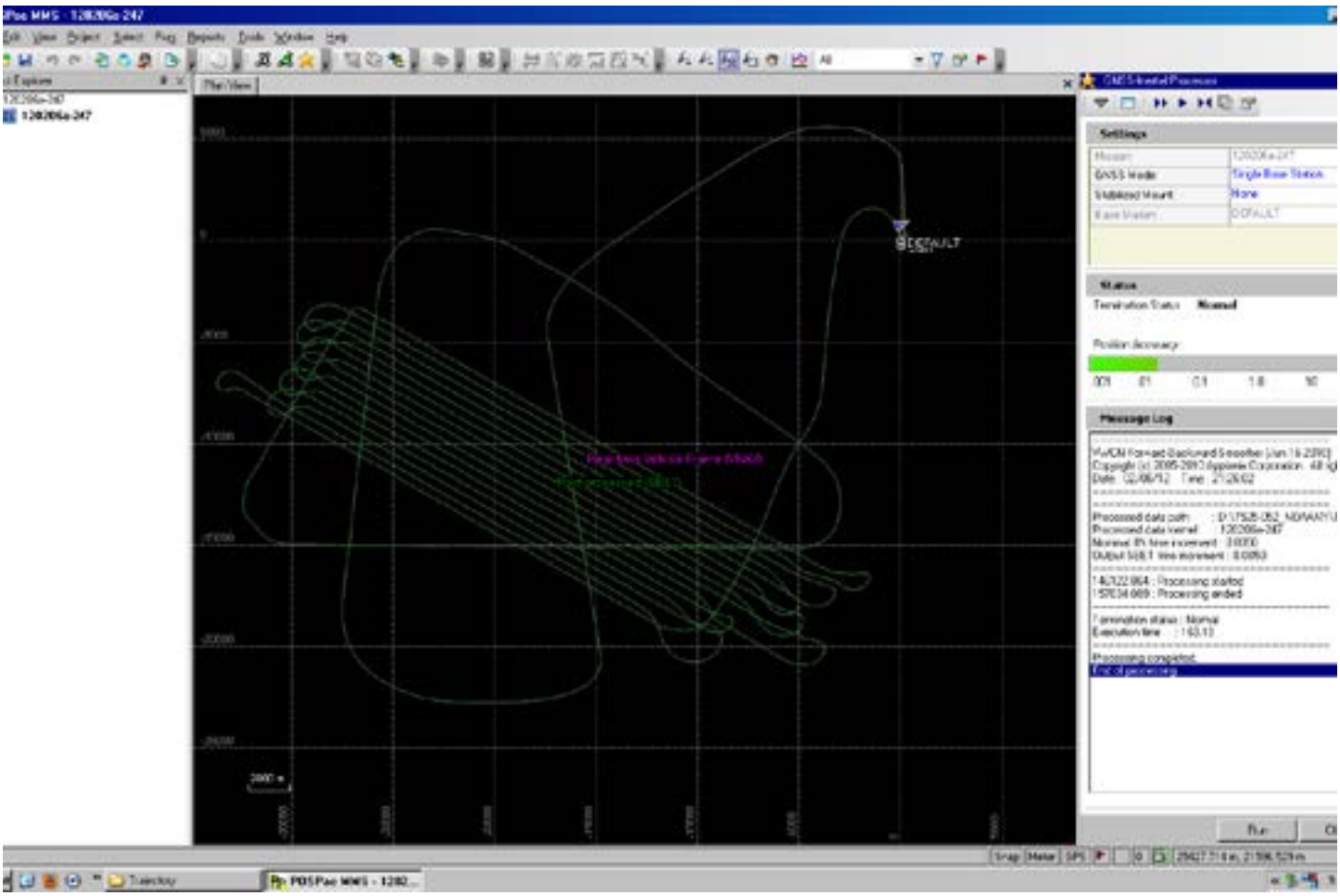

Number of SVs
PDOP
Time (sec)

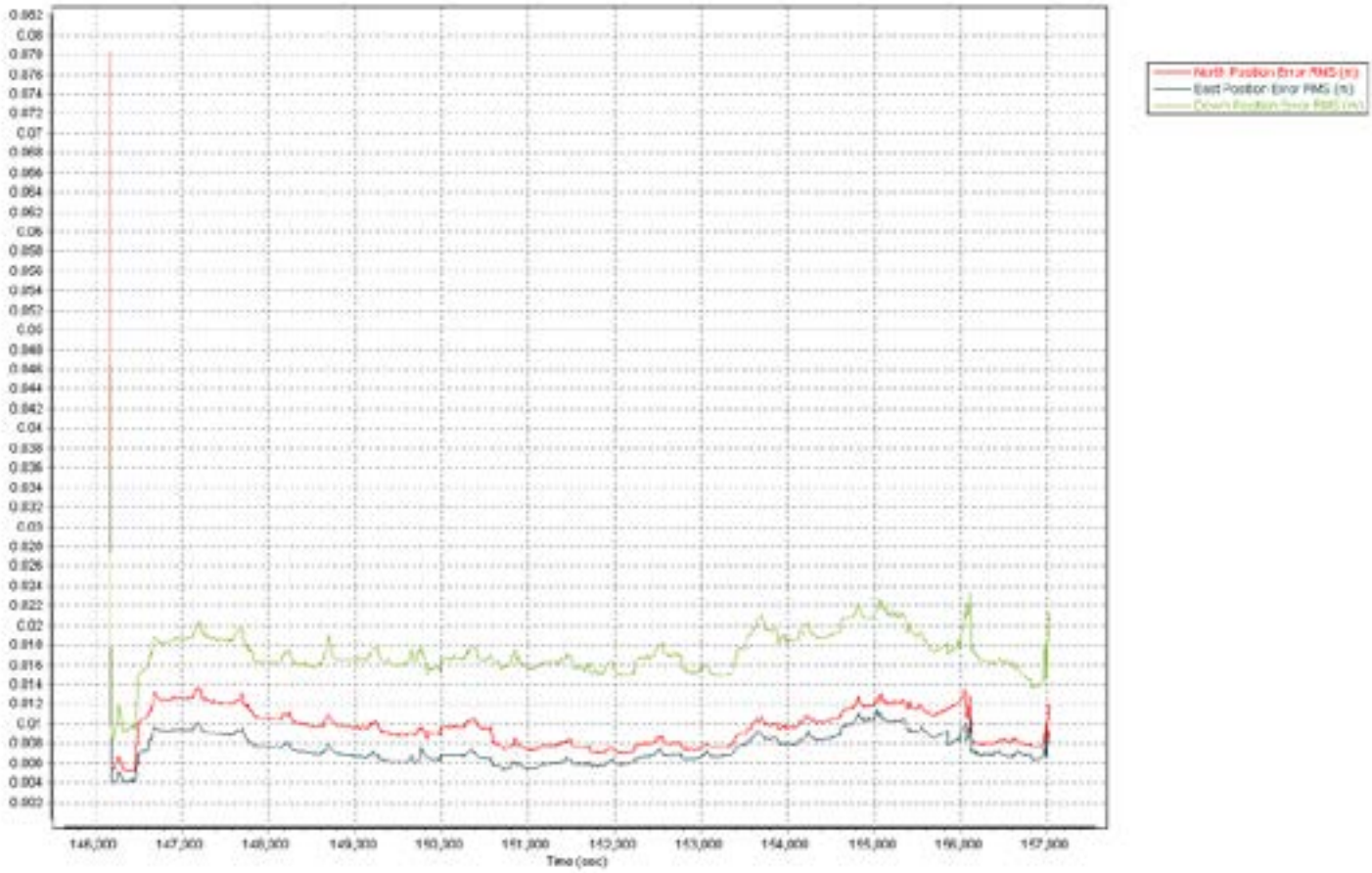
120206a-247

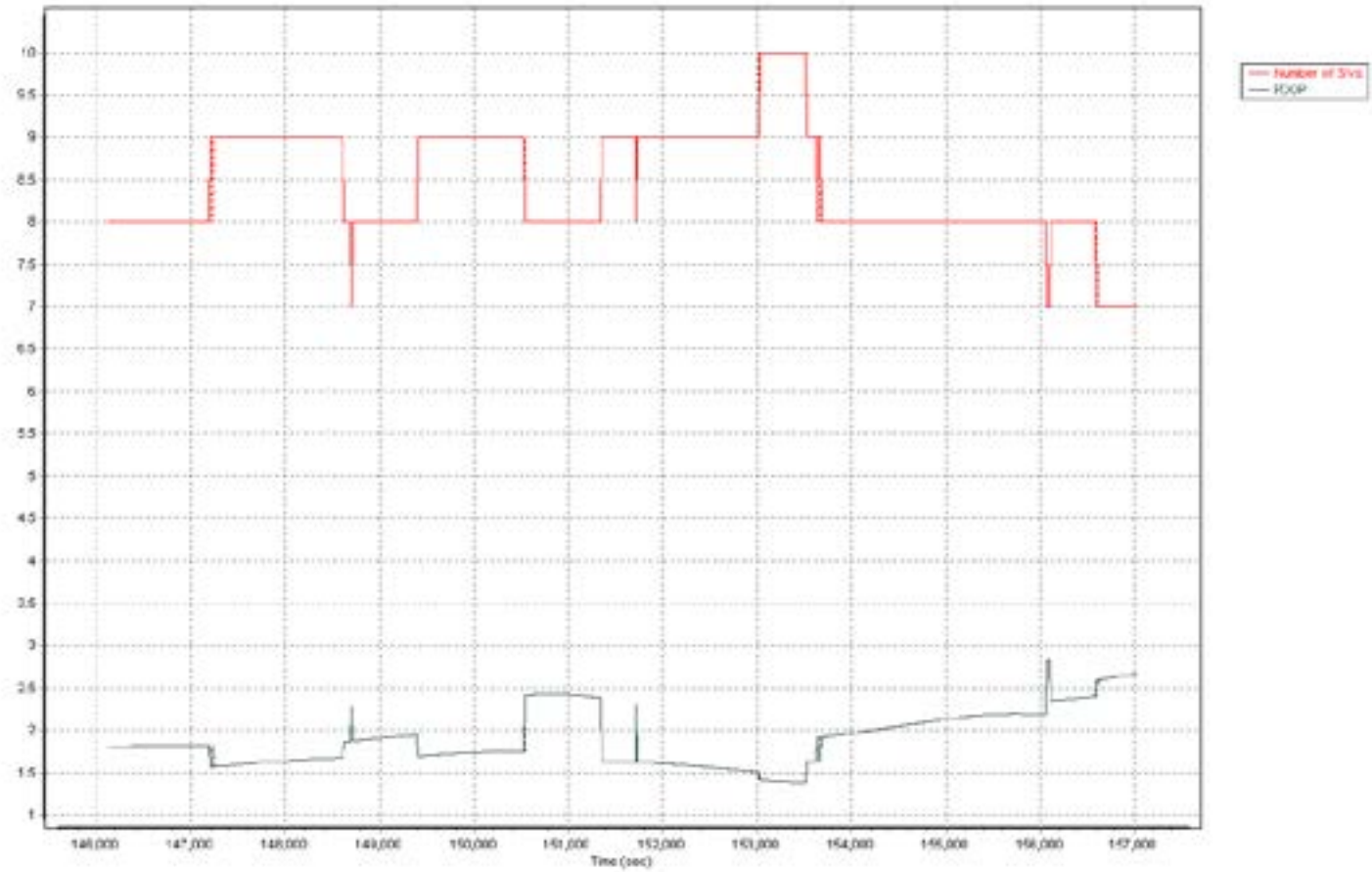

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

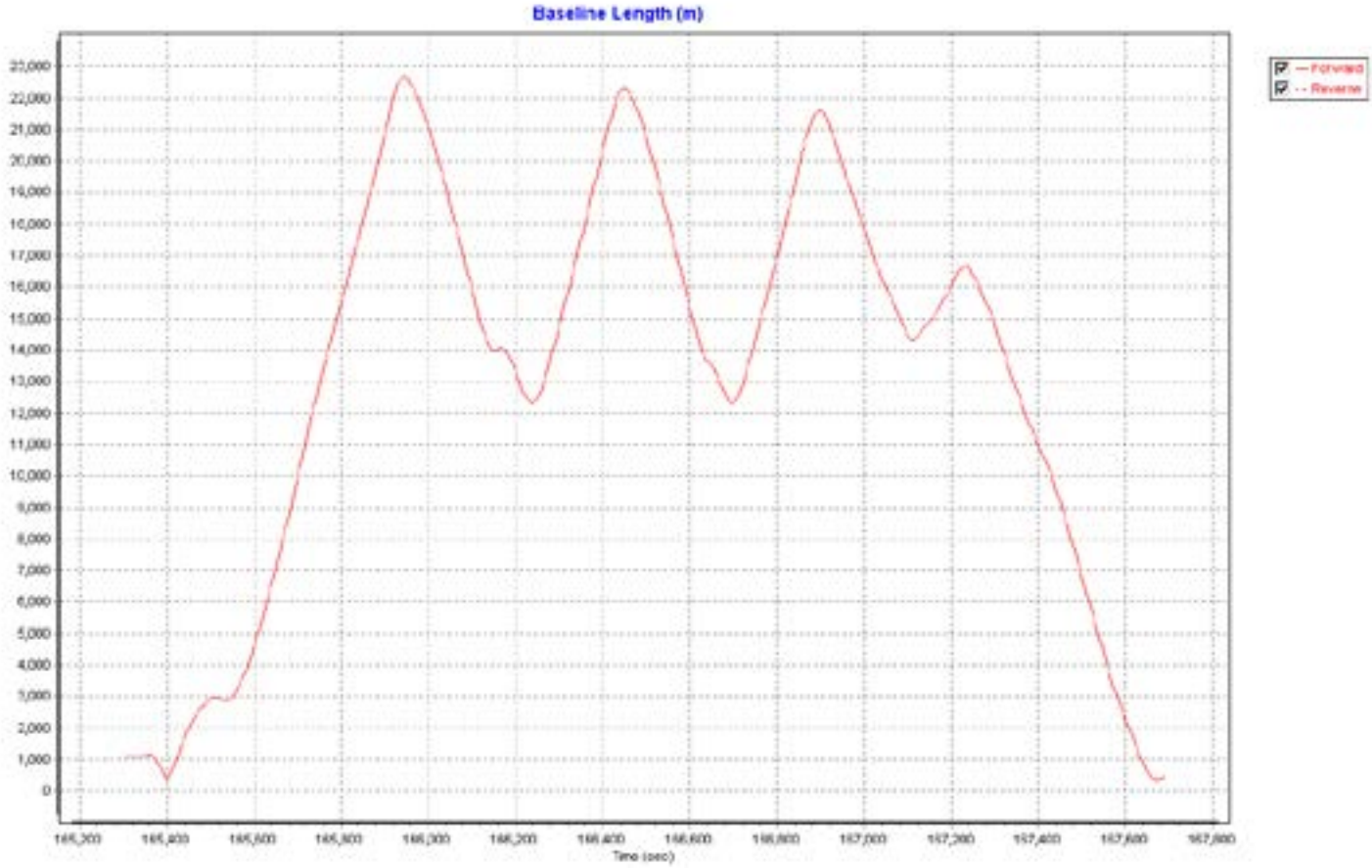

Processing mode
Forward
Reverse
3
2
1
0
145,000
147,000
149,000
151,000
152,000
154,000
156,000
157,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

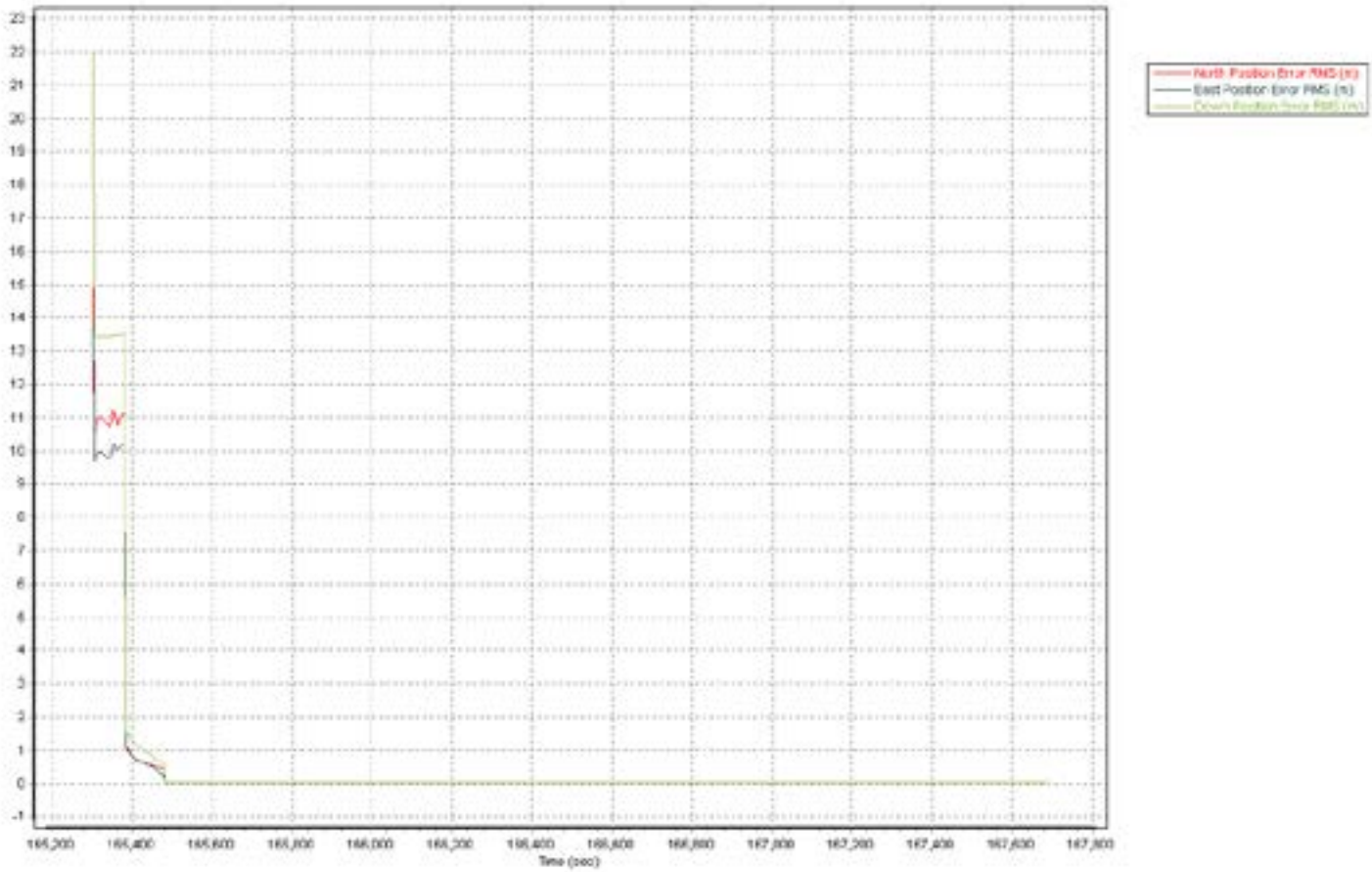

DEFAULT
Settings
Status
Message Log

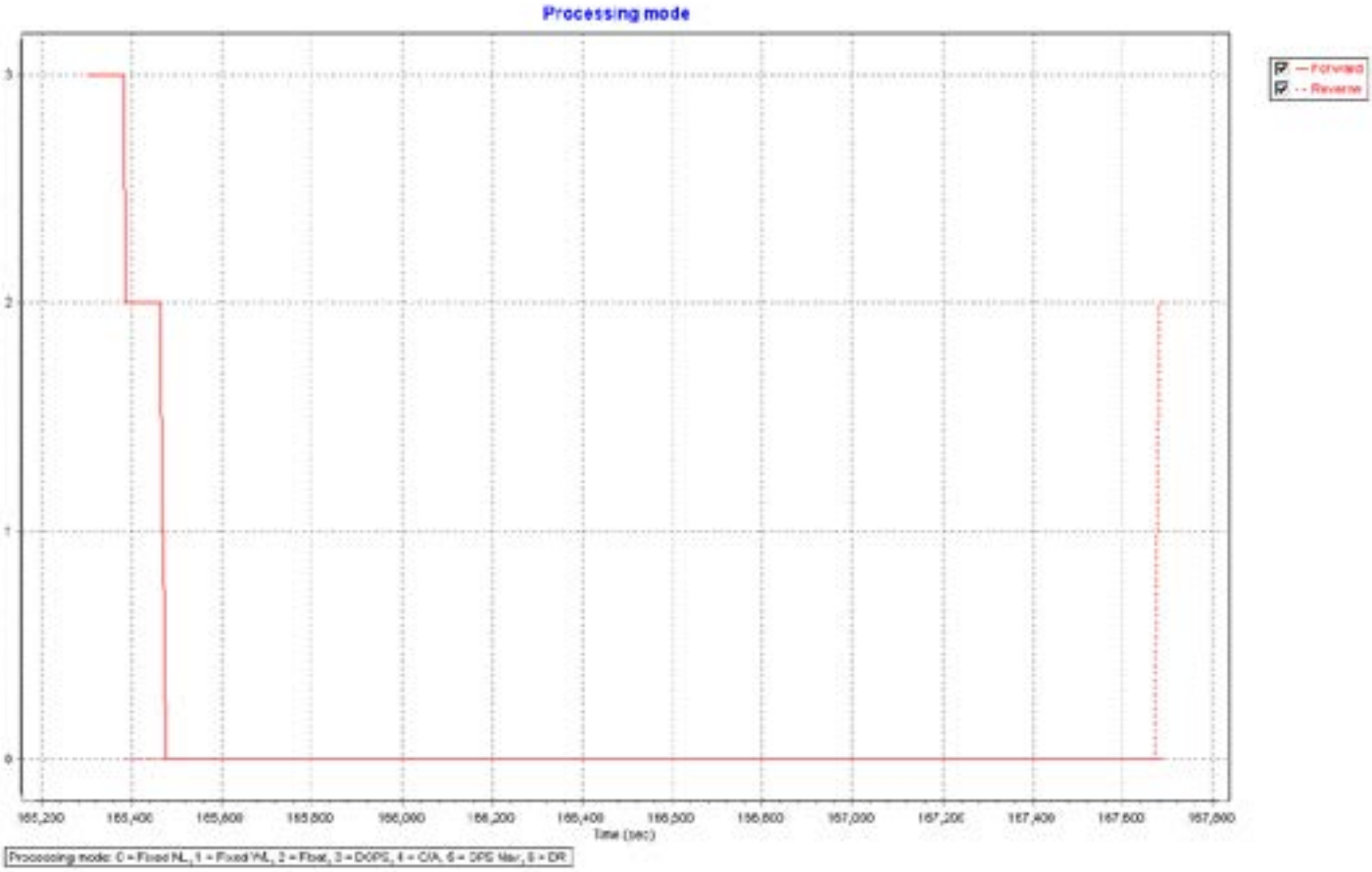

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

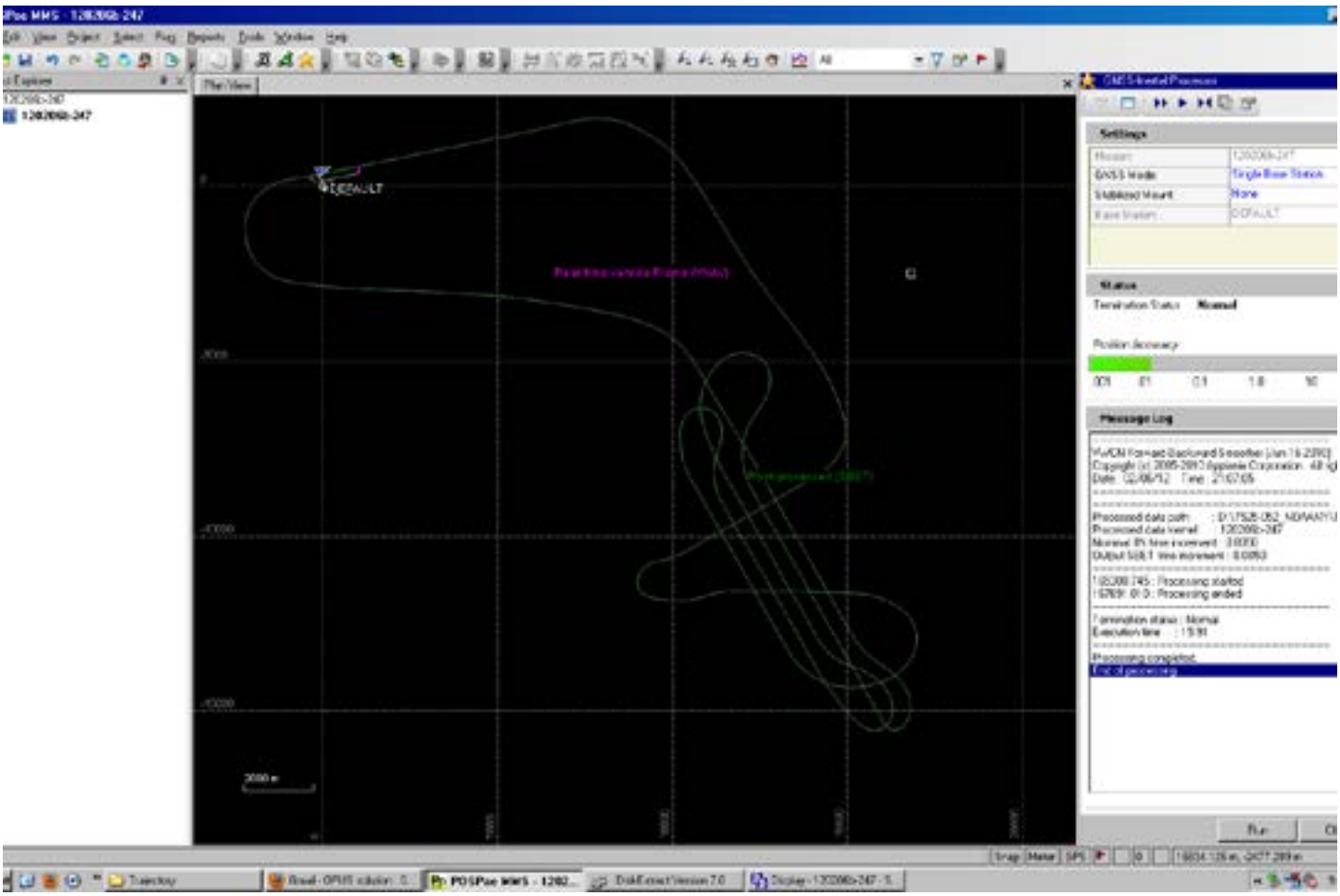

Number of SVs
PDOP
Time (sec)

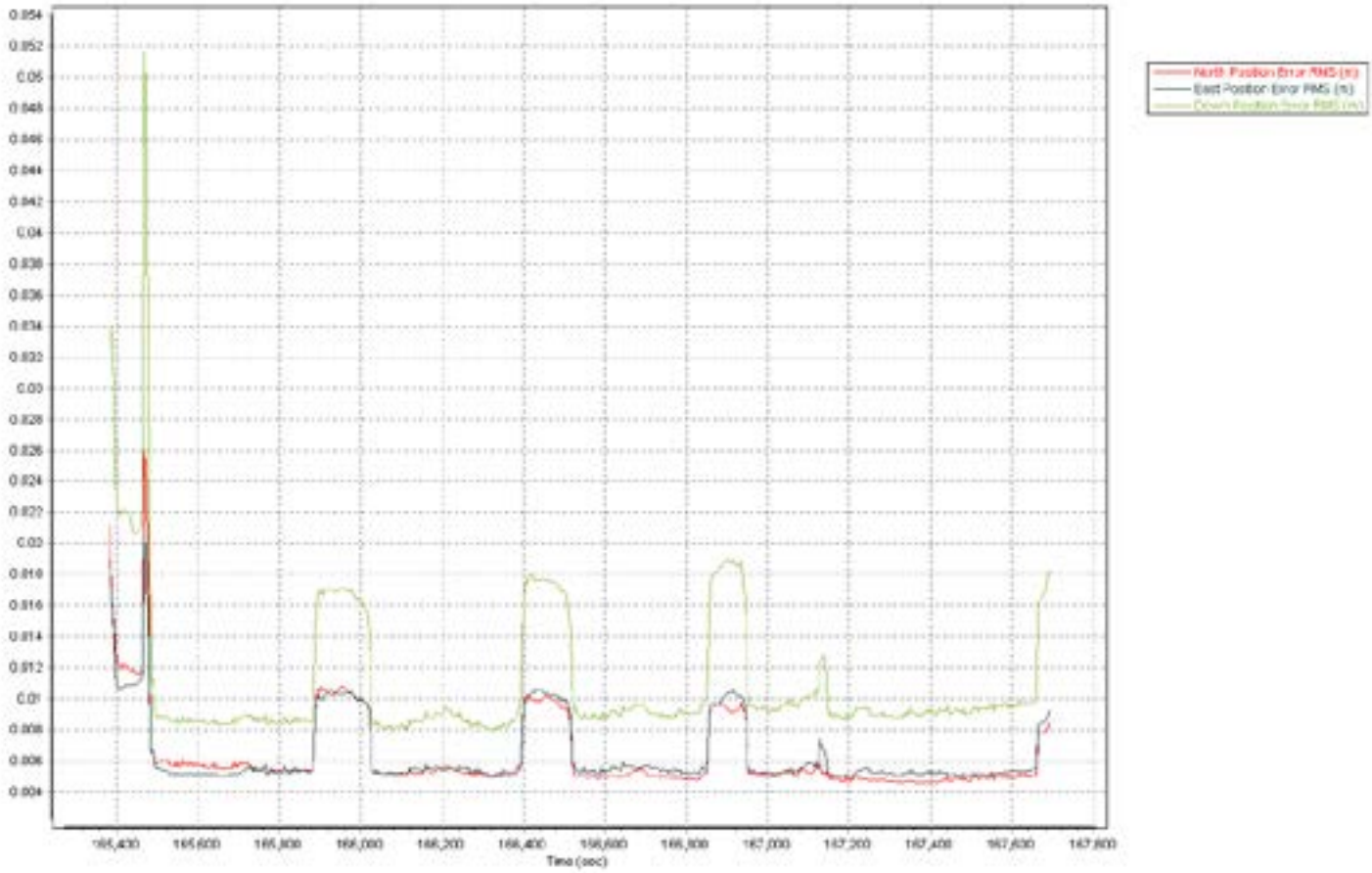
120206b-247

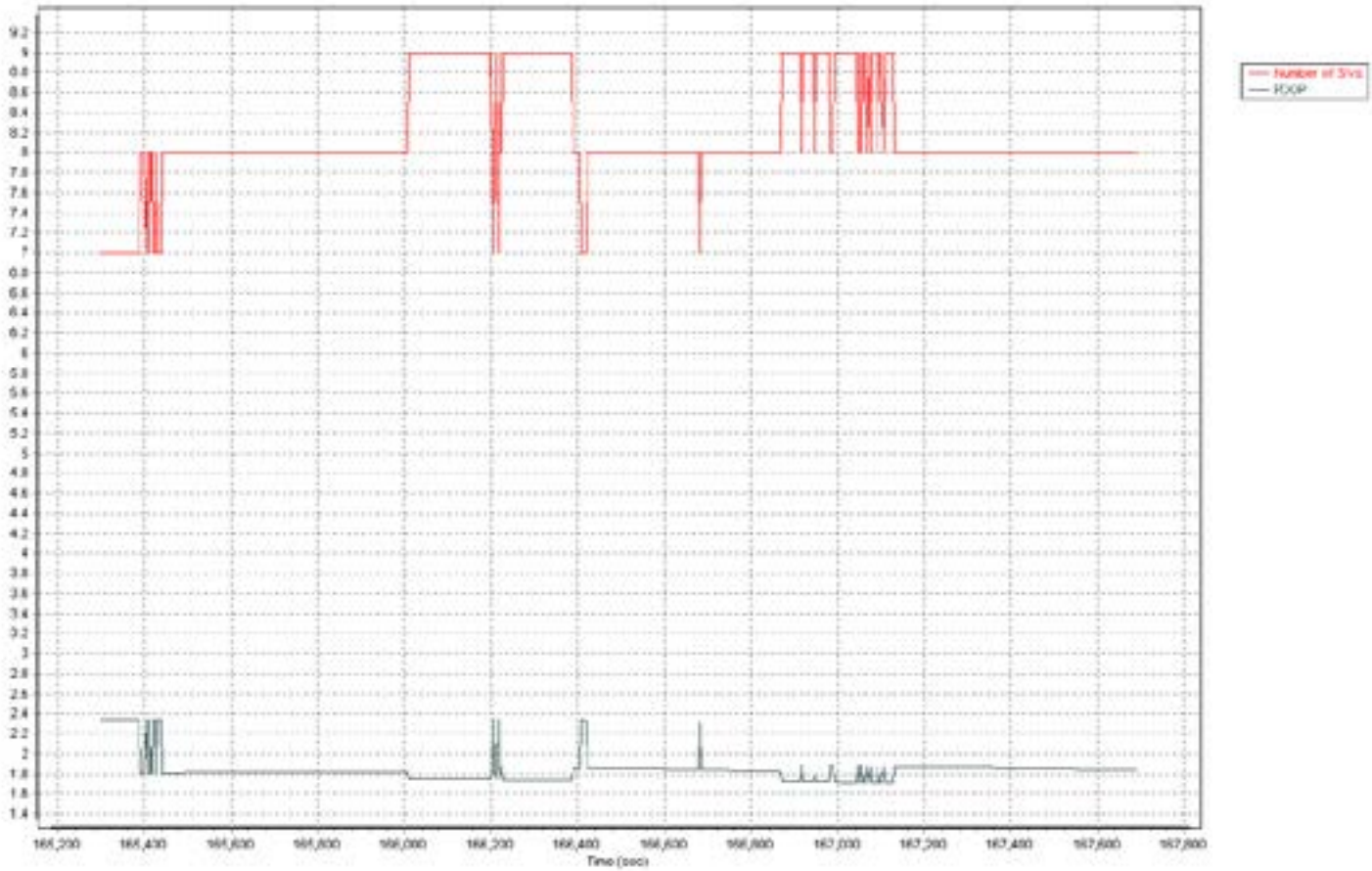

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

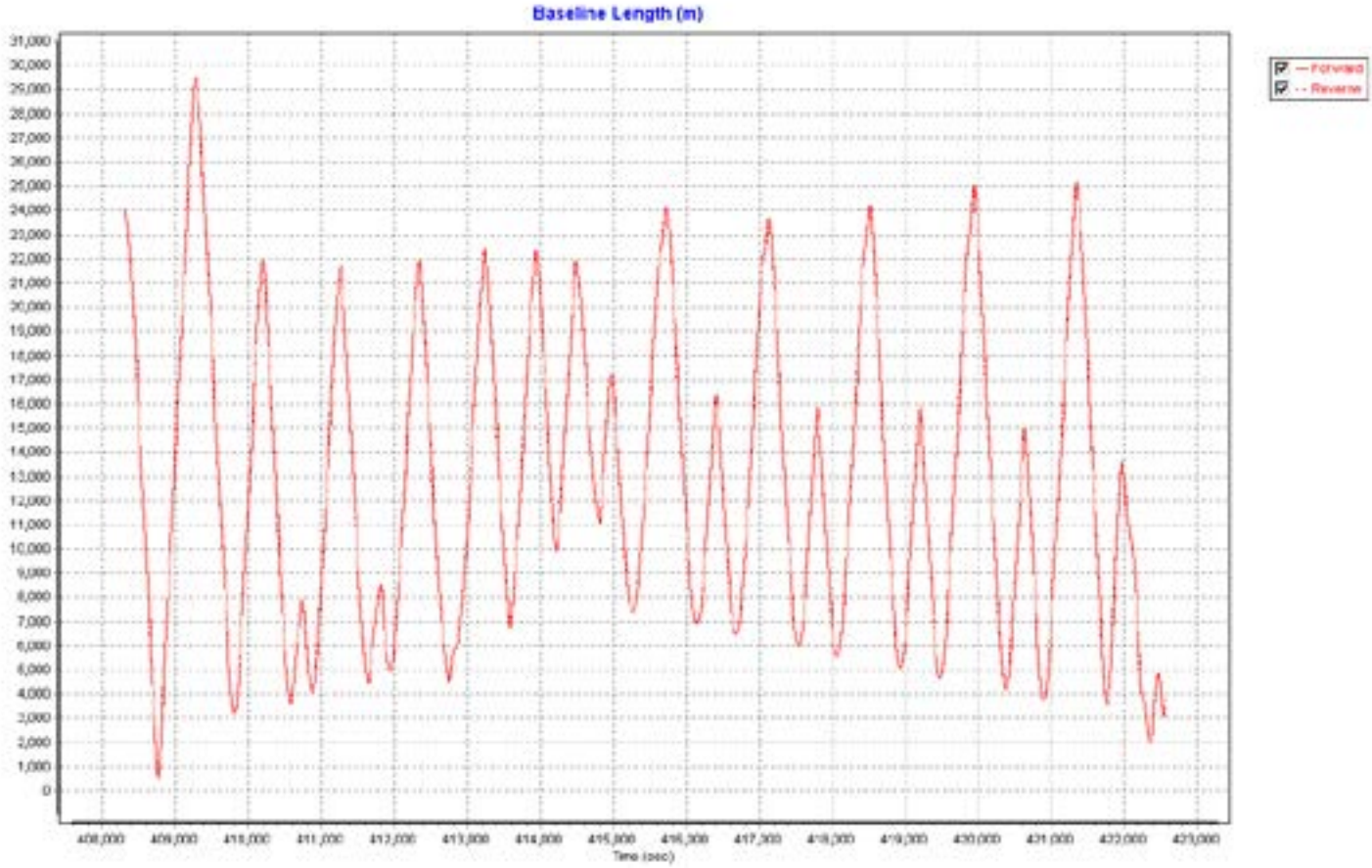

Processing mode
Forward
Reverse
3
2
1
0
165,200
165,400
165,600
165,800
166,000
166,200
166,400
166,600
166,800
167,000
167,200
167,400
167,600
167,800
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

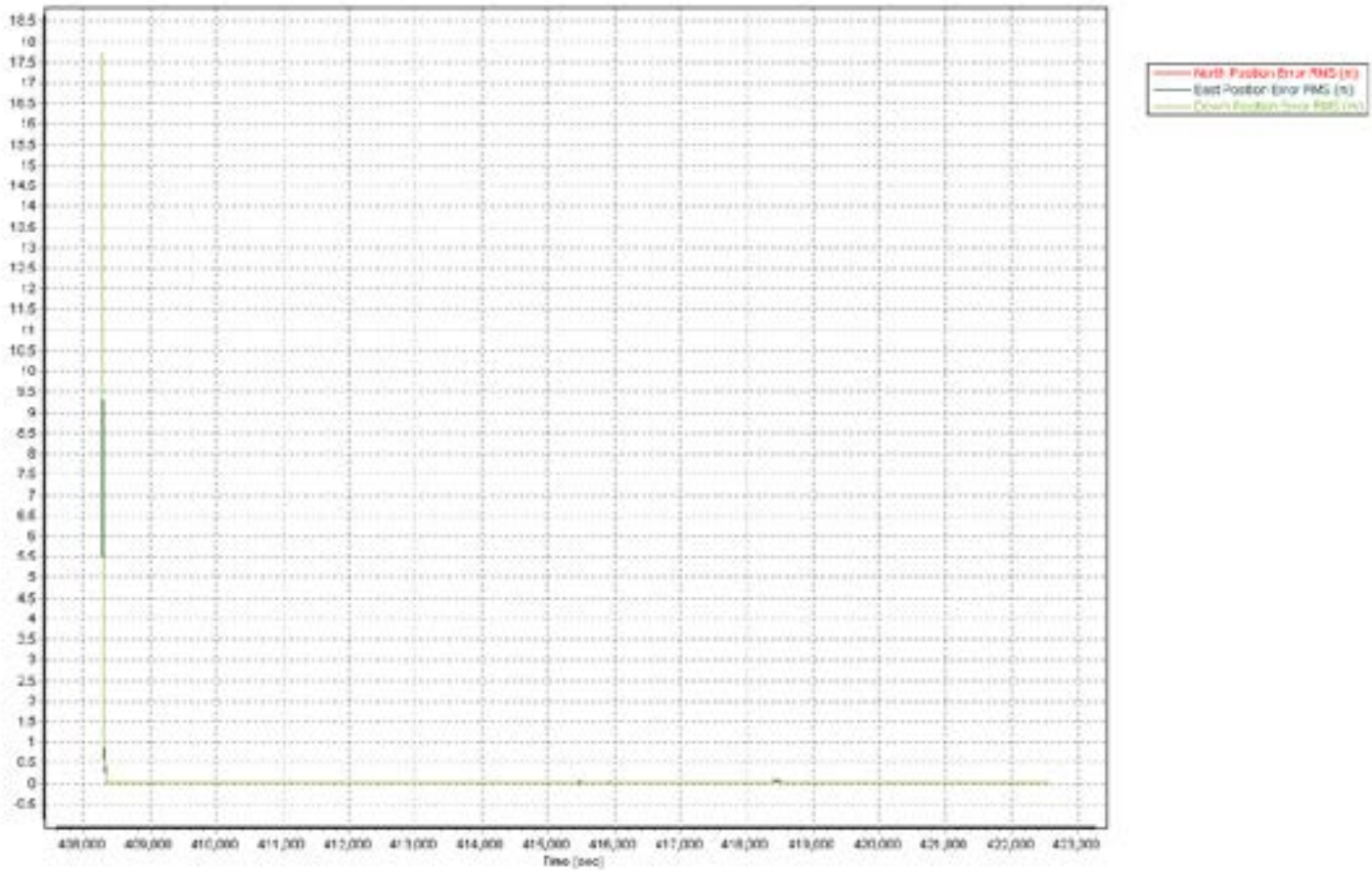

DEFAULT
Settings
Status
Message Log

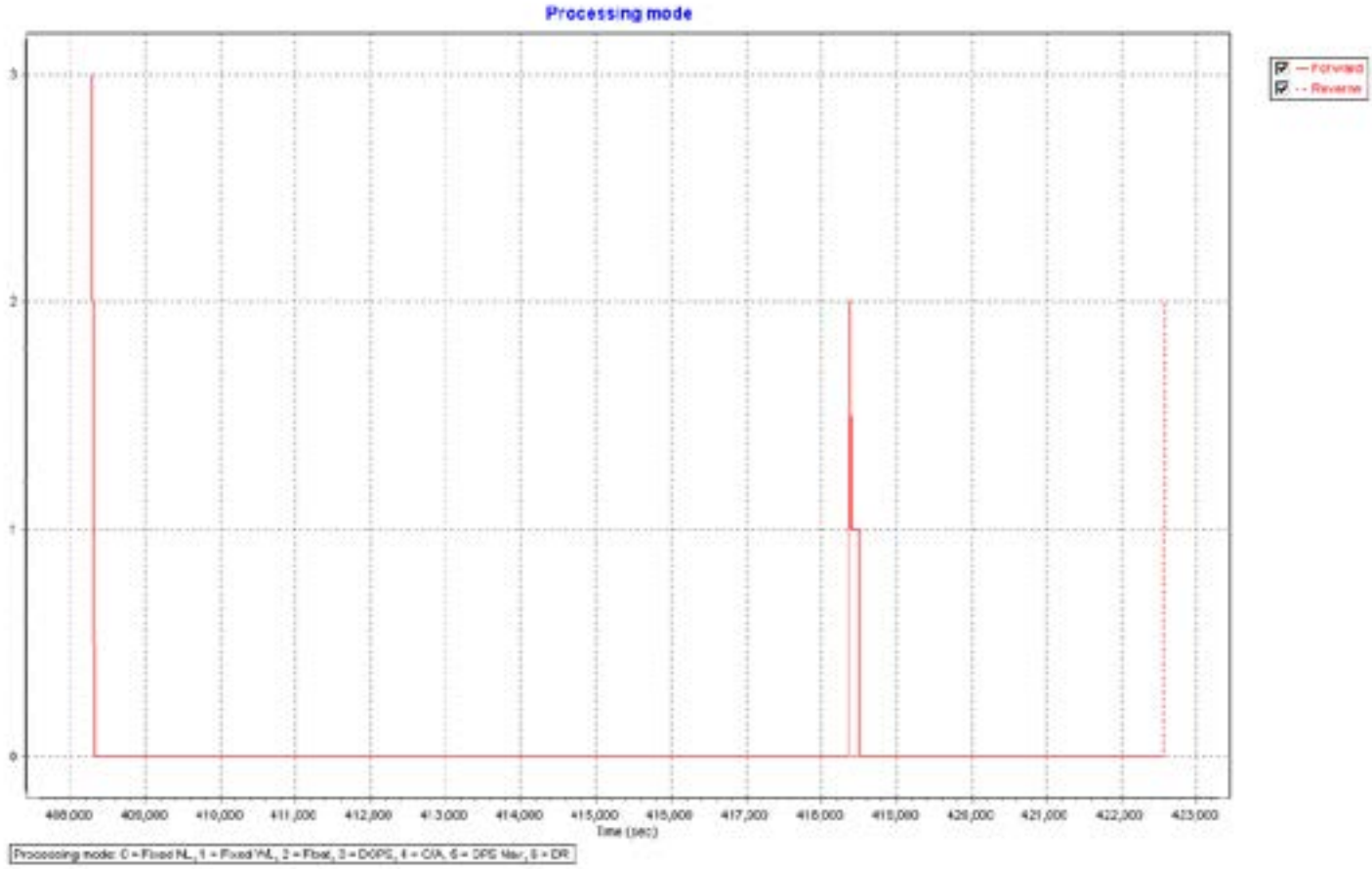

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

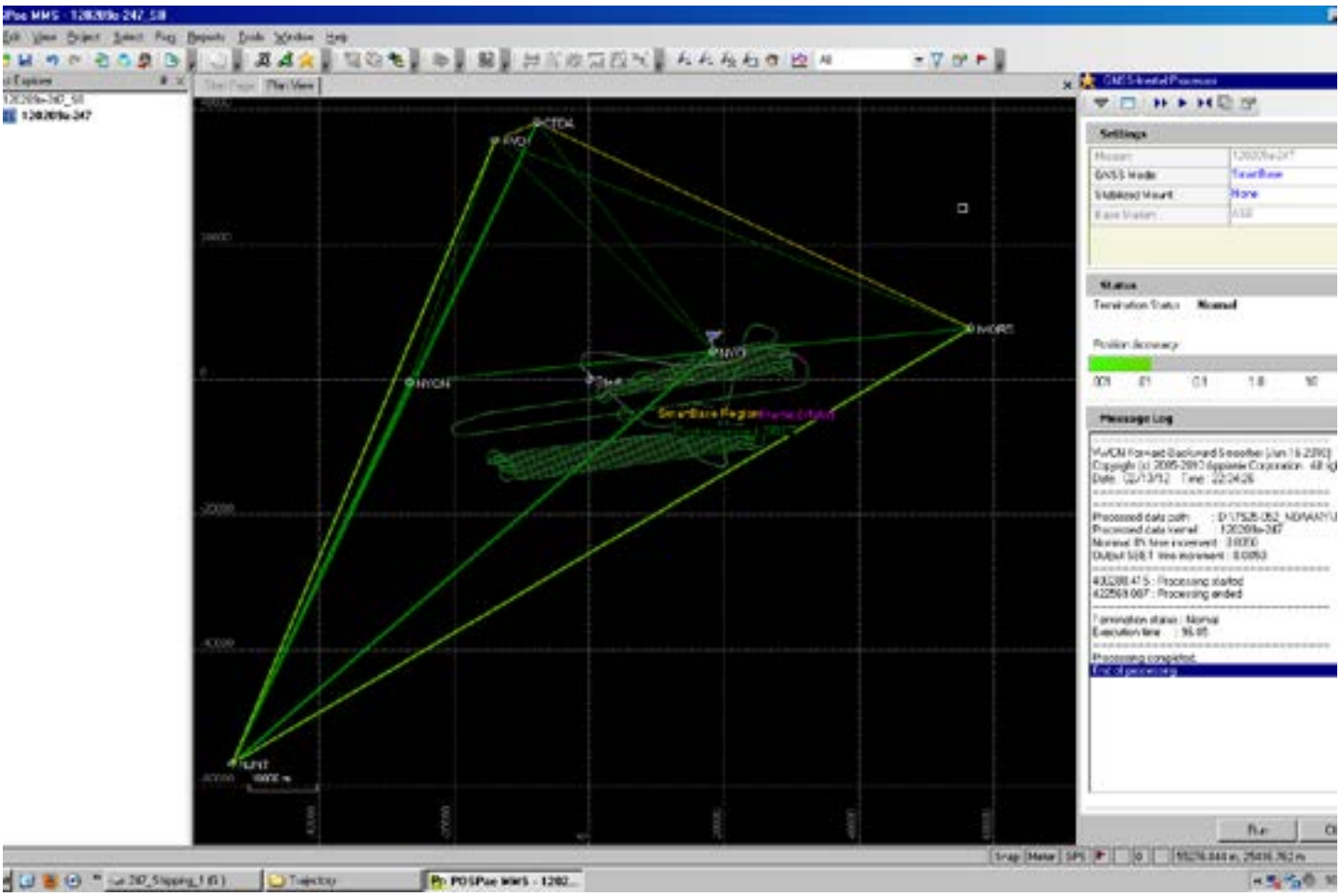

Number of SVs
PDOP
Time (sec)

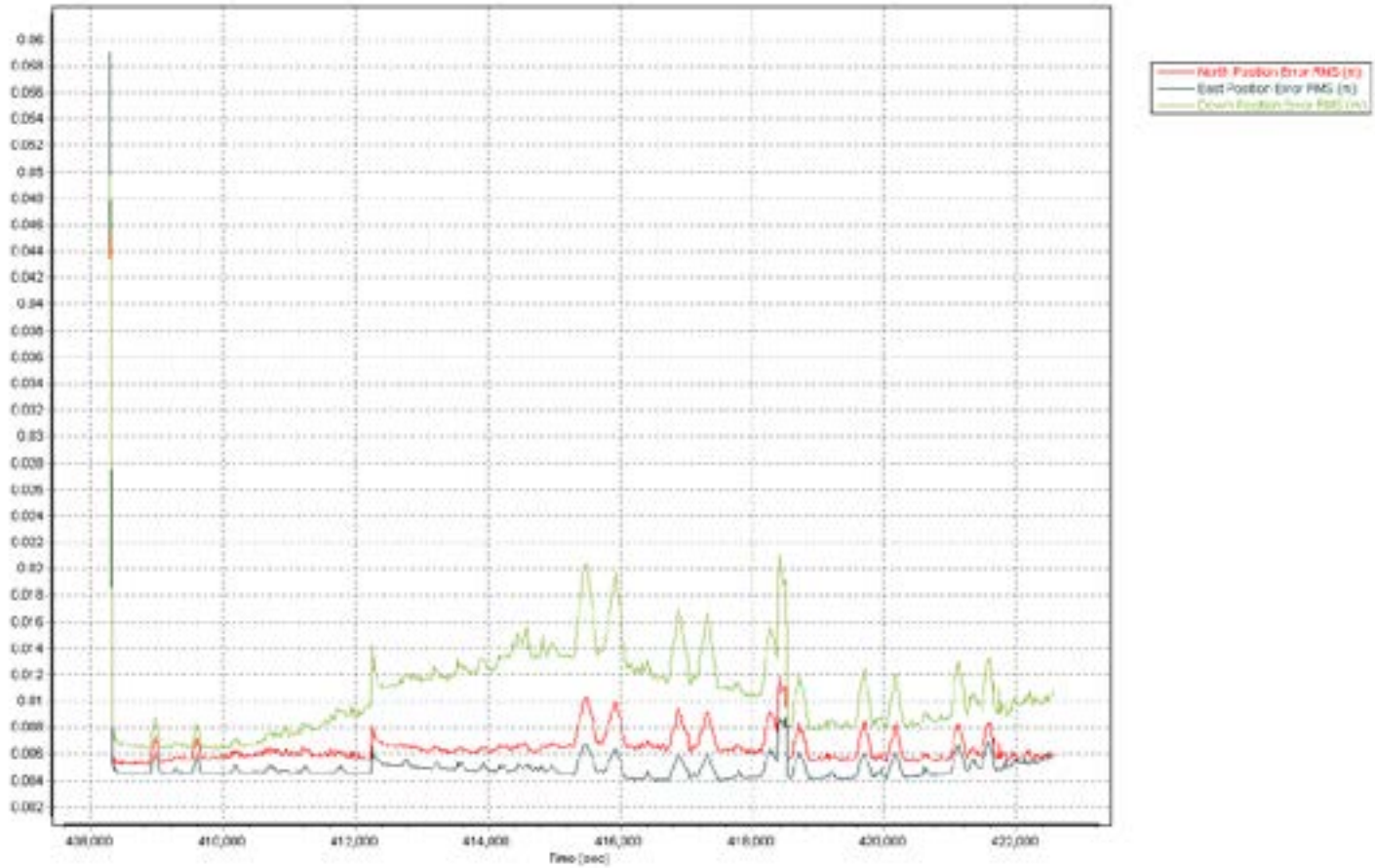
120209a-247

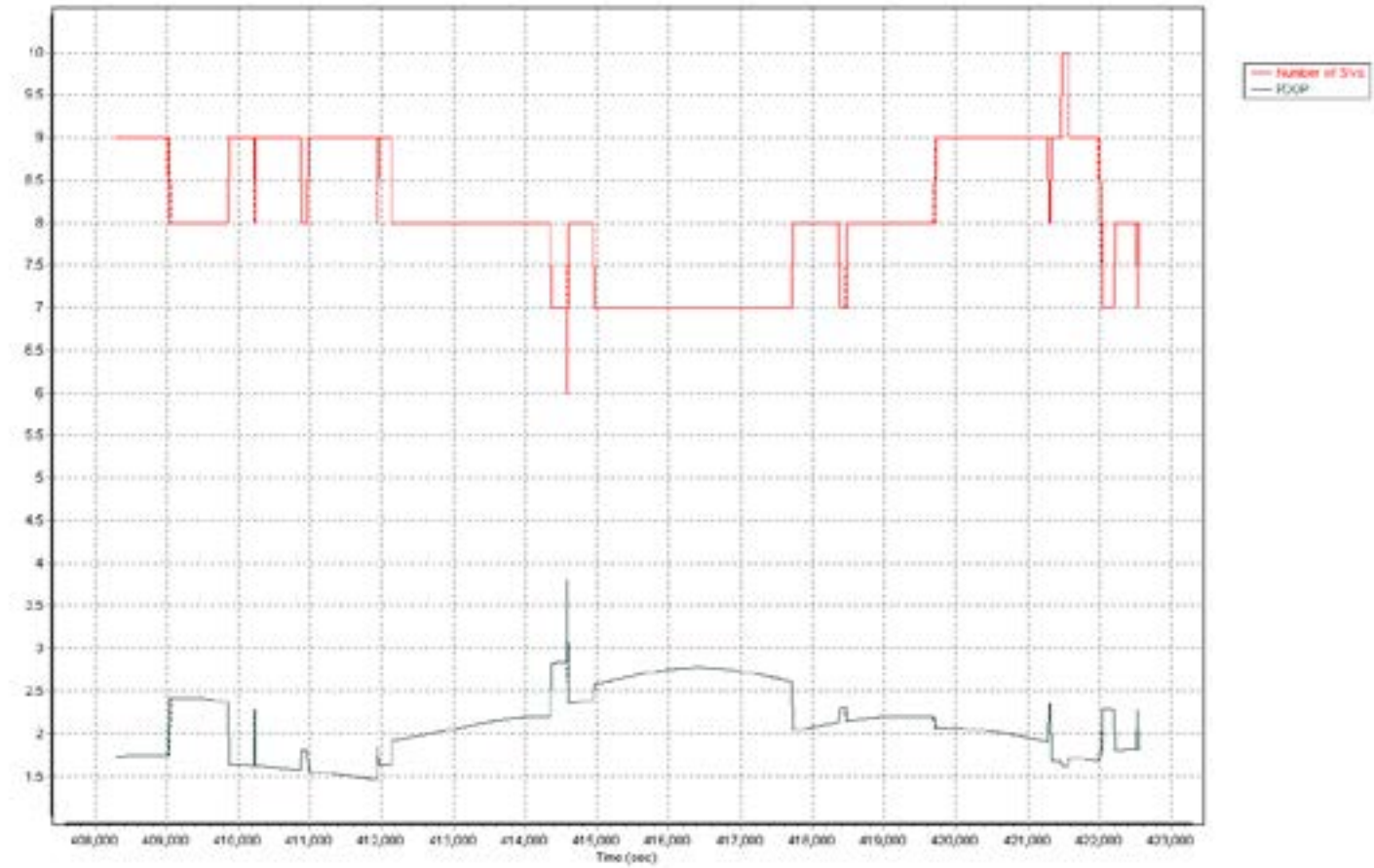

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

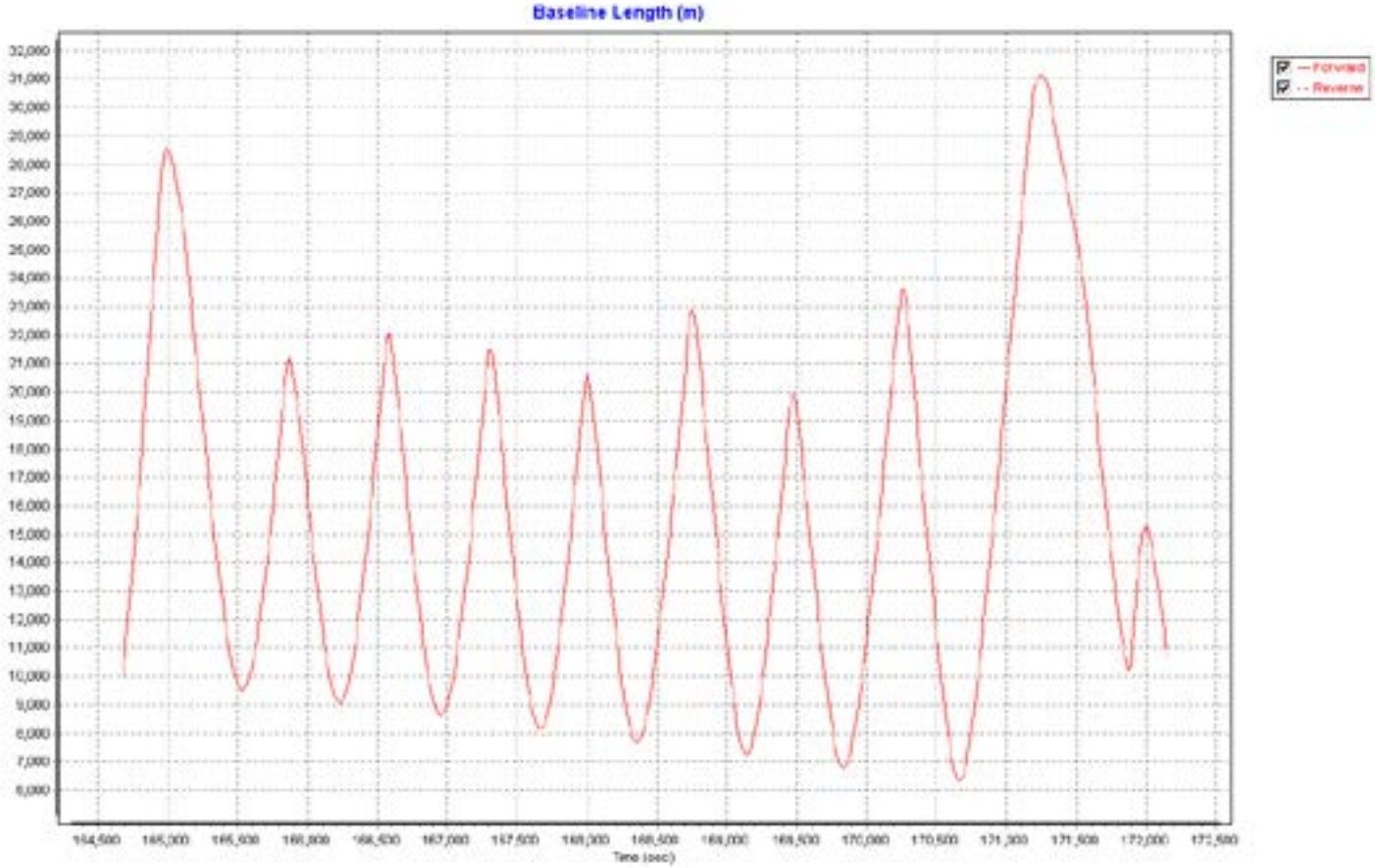

Processing mode
Forward
Reverse
3
2
1
0
408,000
409,000
410,000
411,000
412,000
413,000
414,000
415,000
416,000
417,000
418,000
419,000
420,000
421,000
422,000
423,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

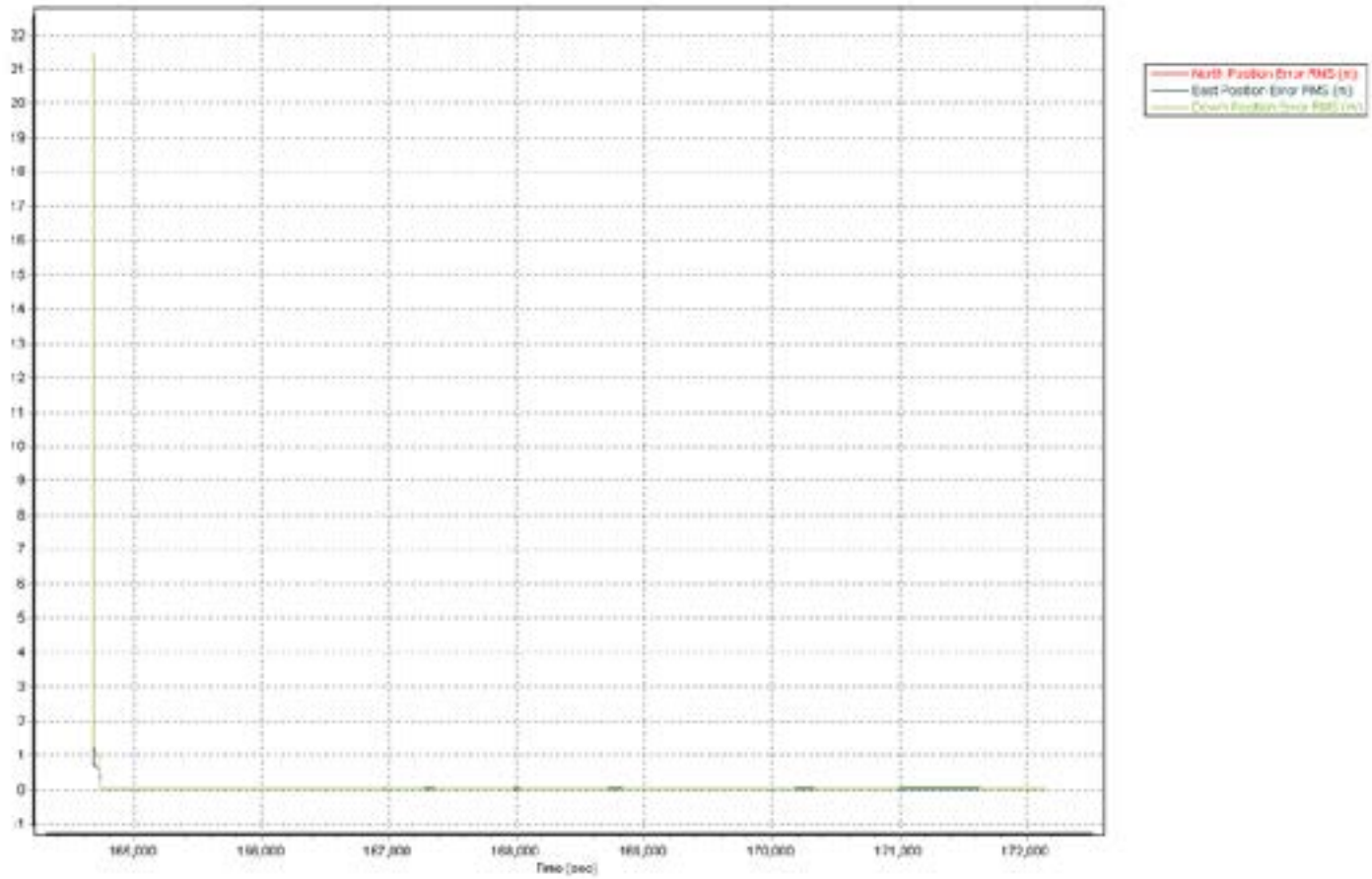

Settings
Status
Message Log

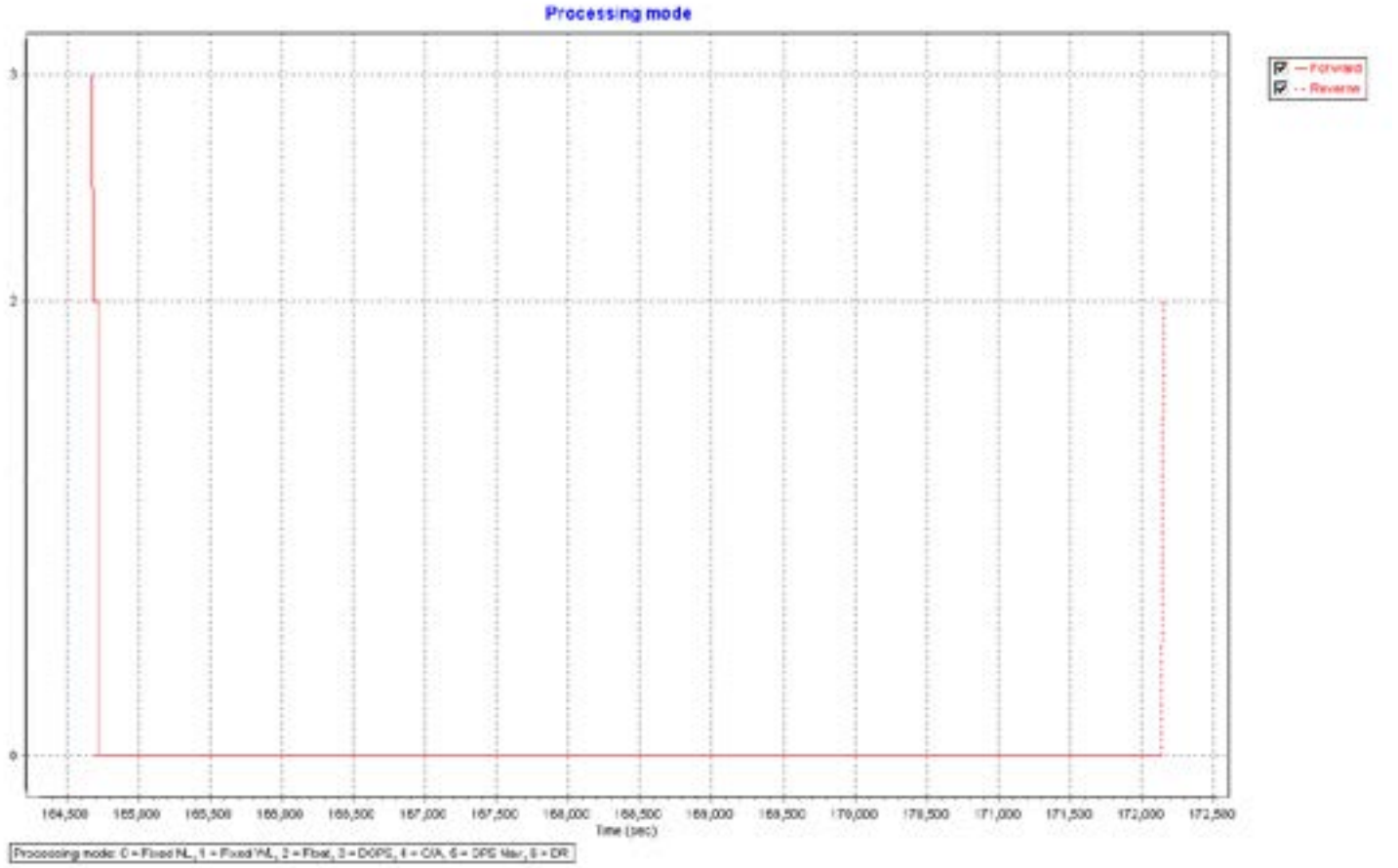

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

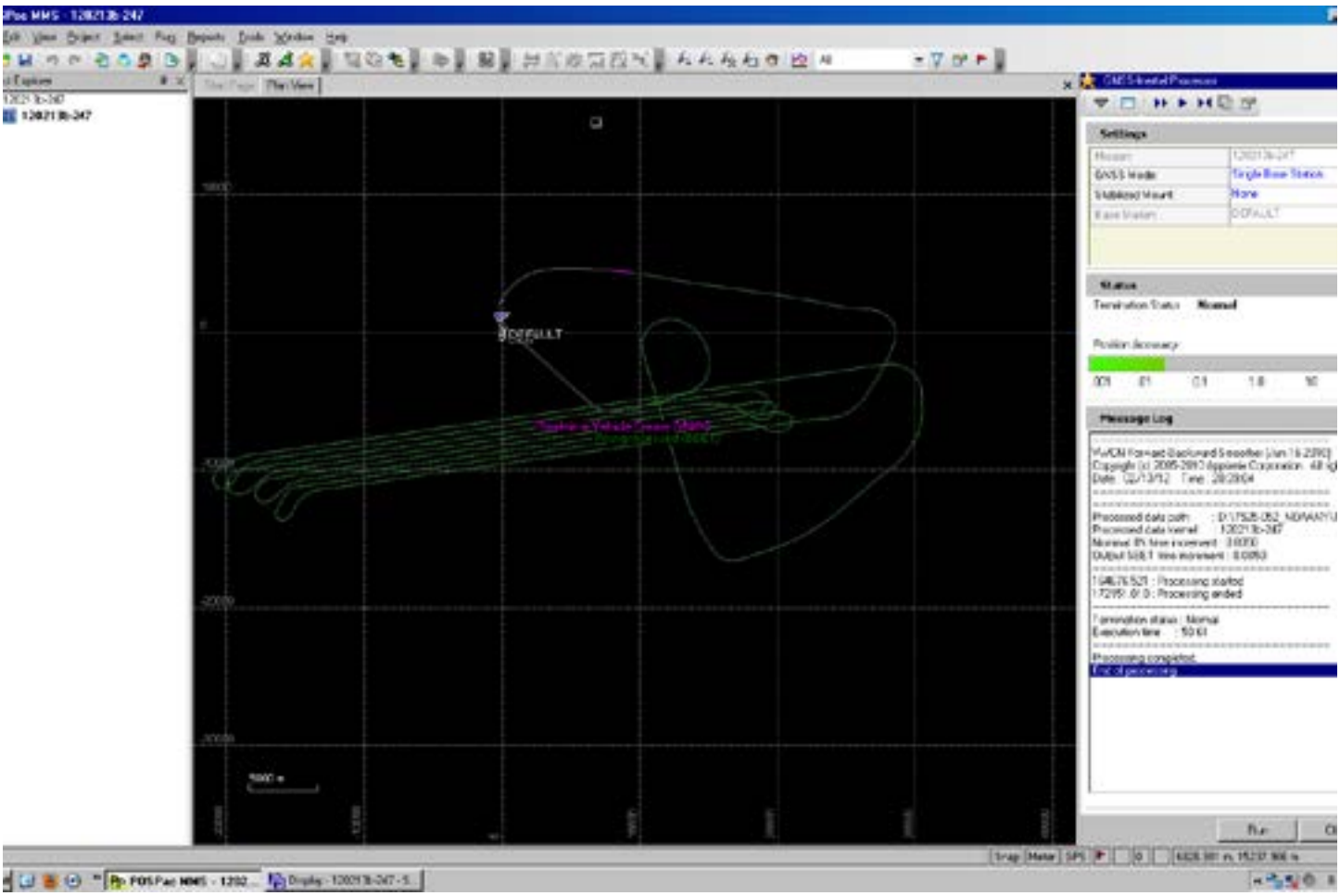

Number of SVs
PDOP
Time (sec)

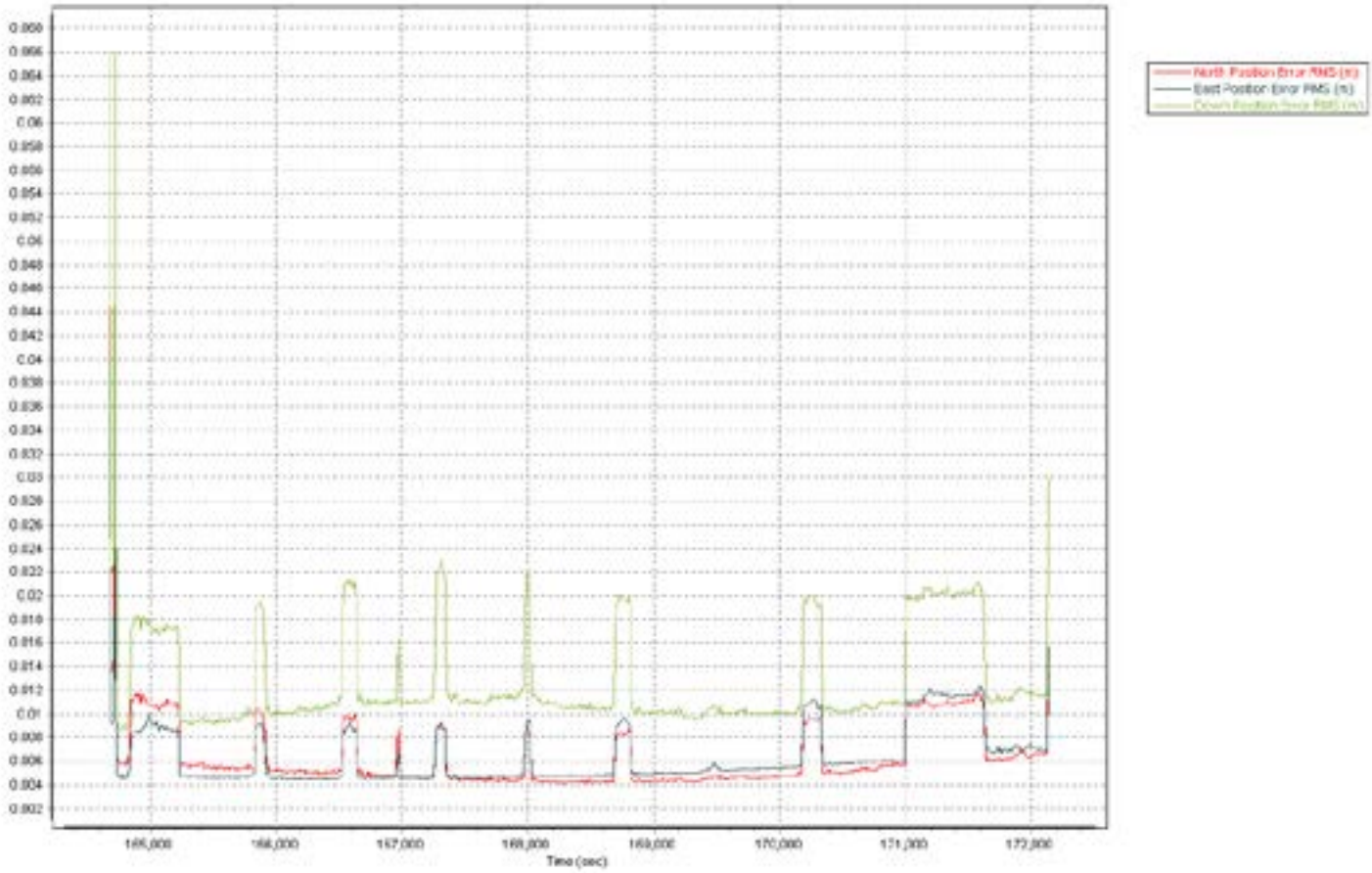
120213b-247

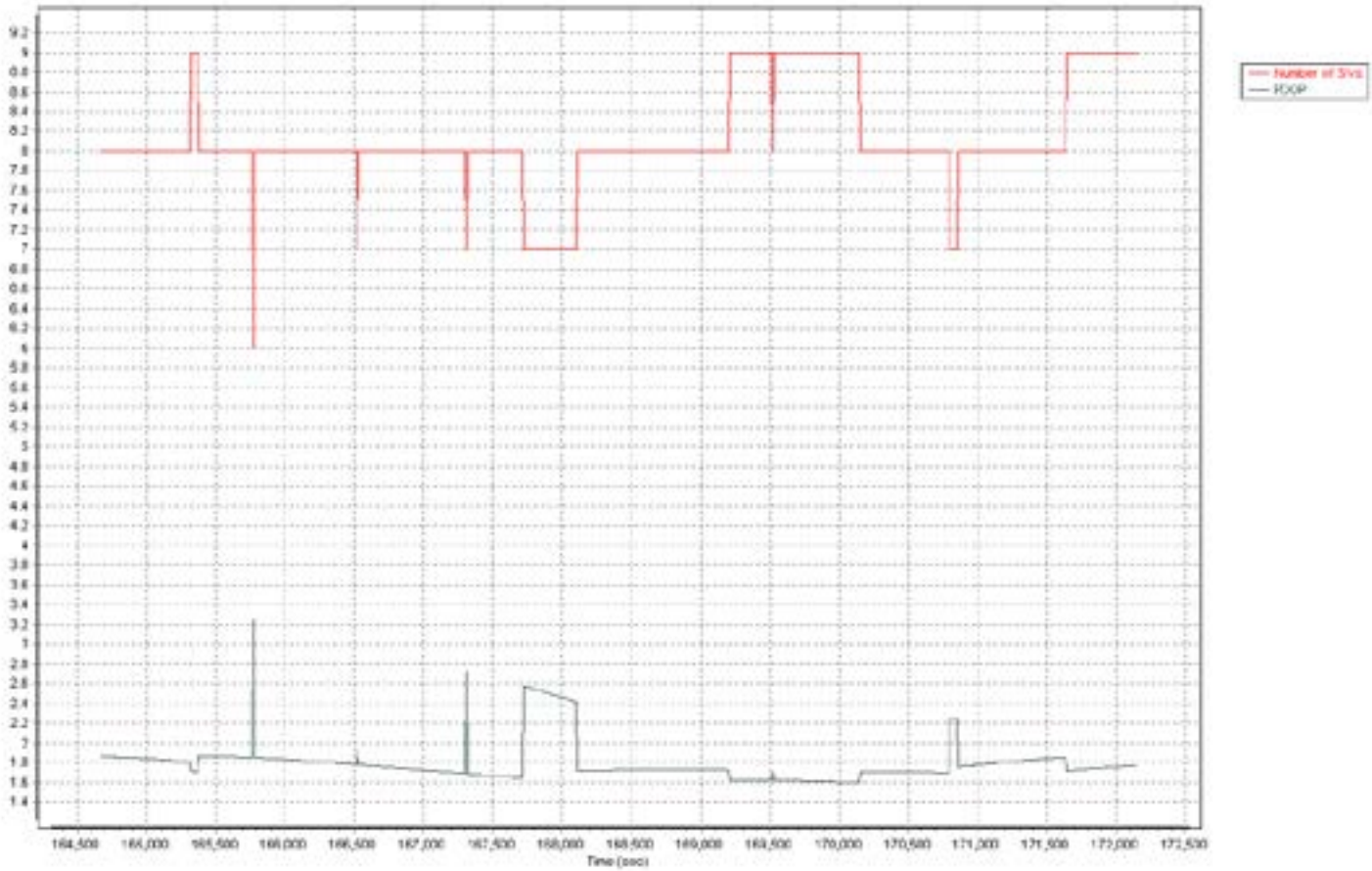

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

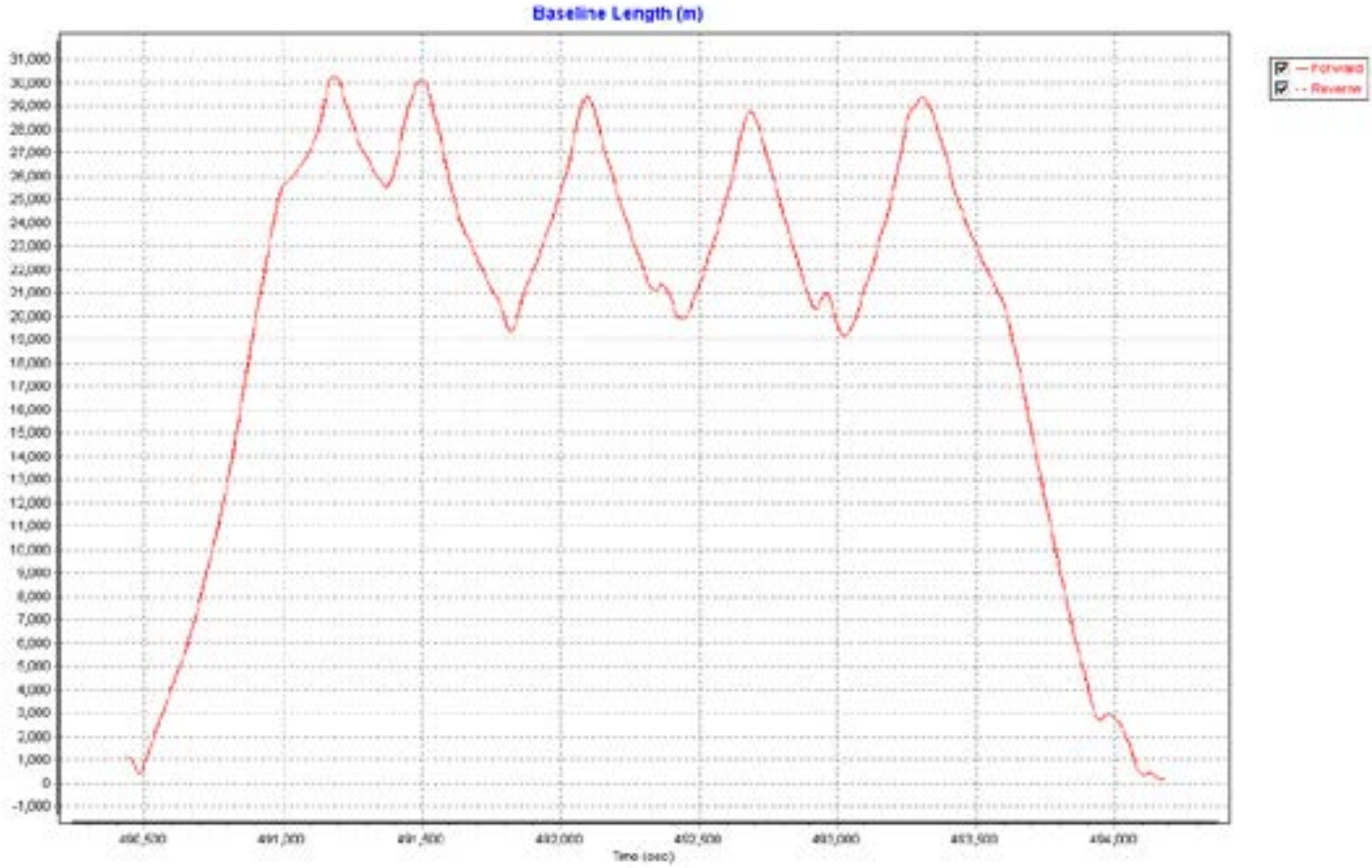

Processing mode
Forward
Reverse
3
2
0
164,500
165,000
165,500
166,000
166,500
167,000
167,500
168,000
168,500
169,000
169,500
170,000
170,500
171,000
171,500
172,000
172,500
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

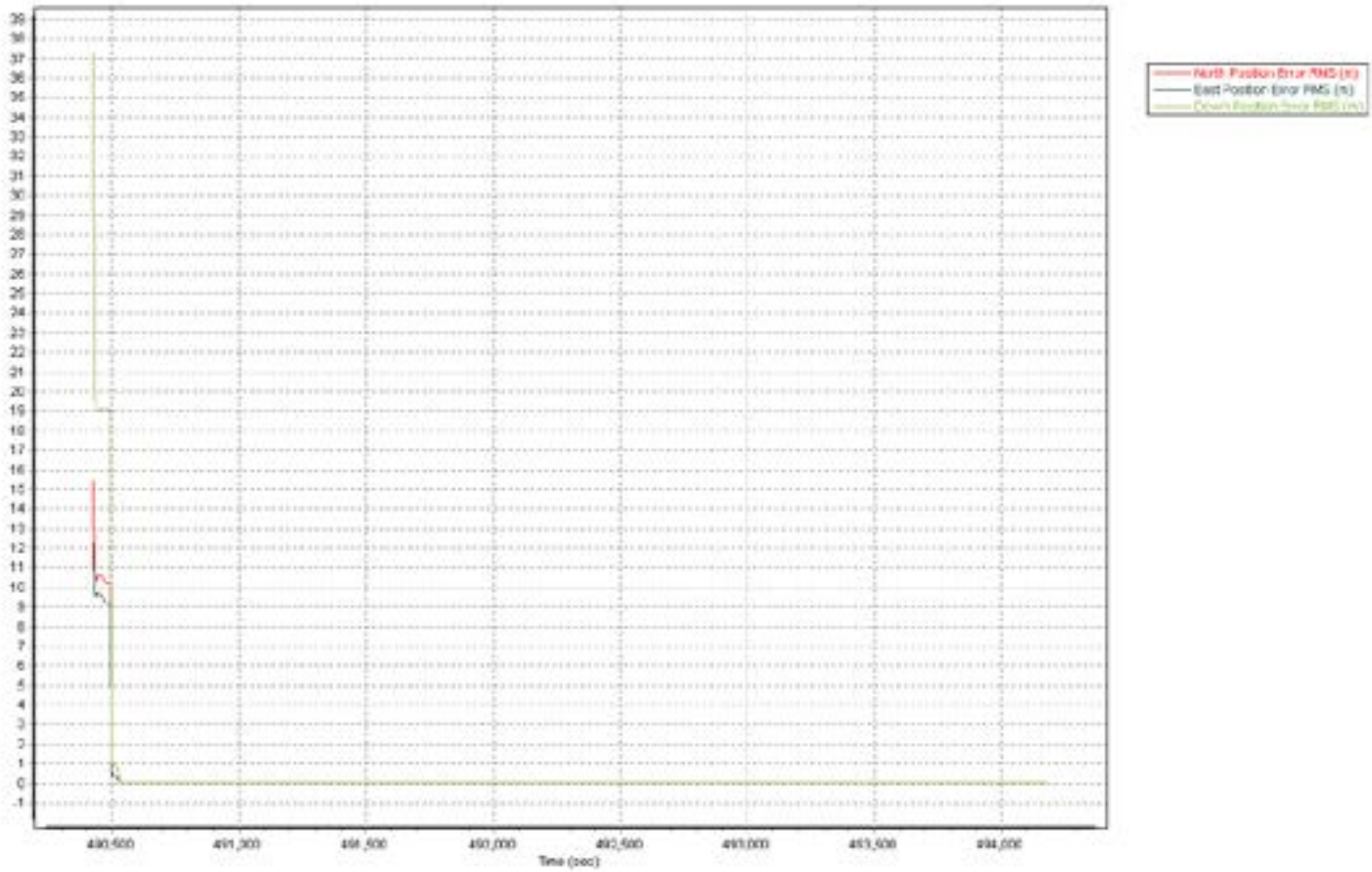

DEFAULT
Settings
Status
Message Log

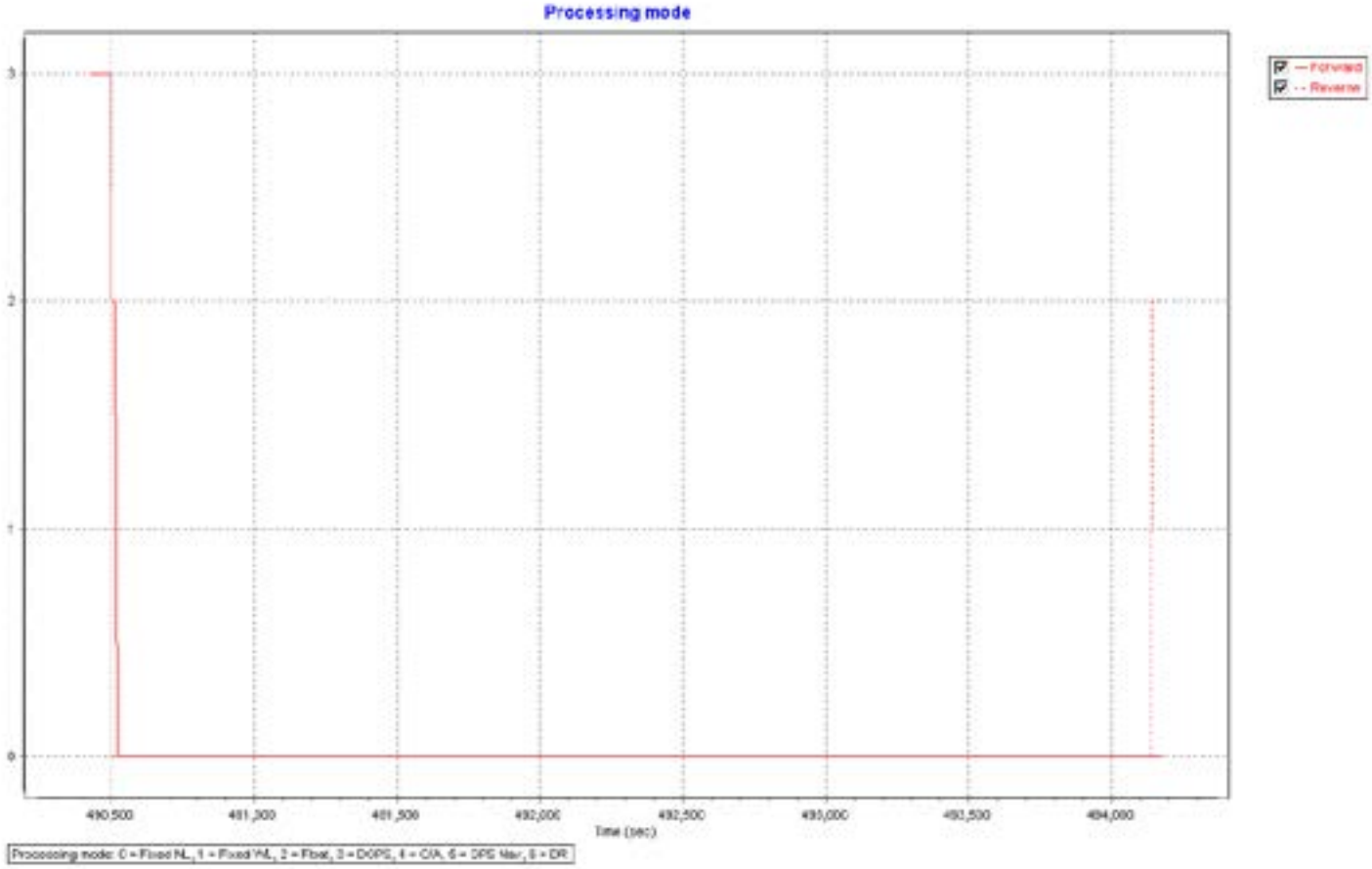

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

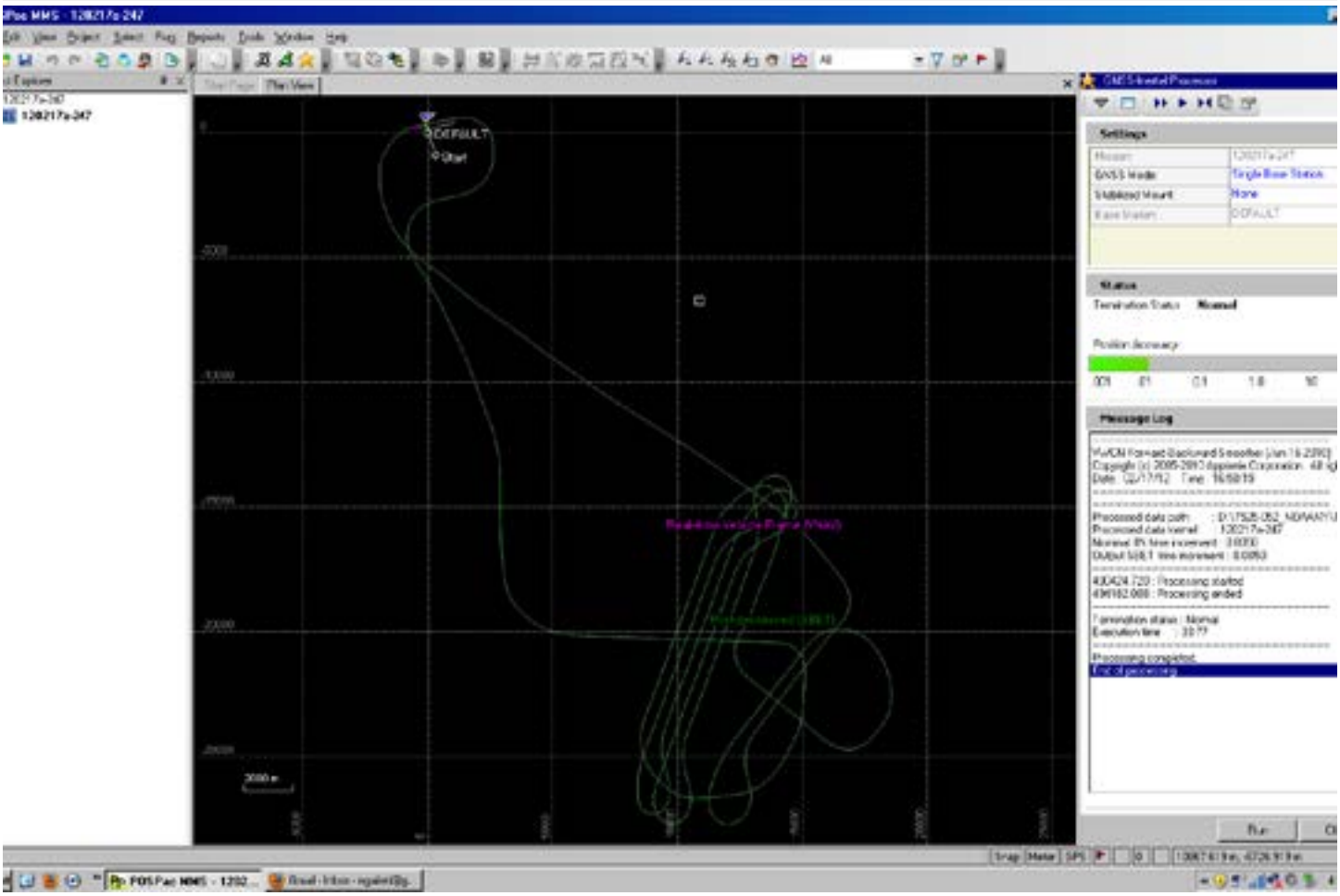

Number of SVs
PDOP
Time (sec)

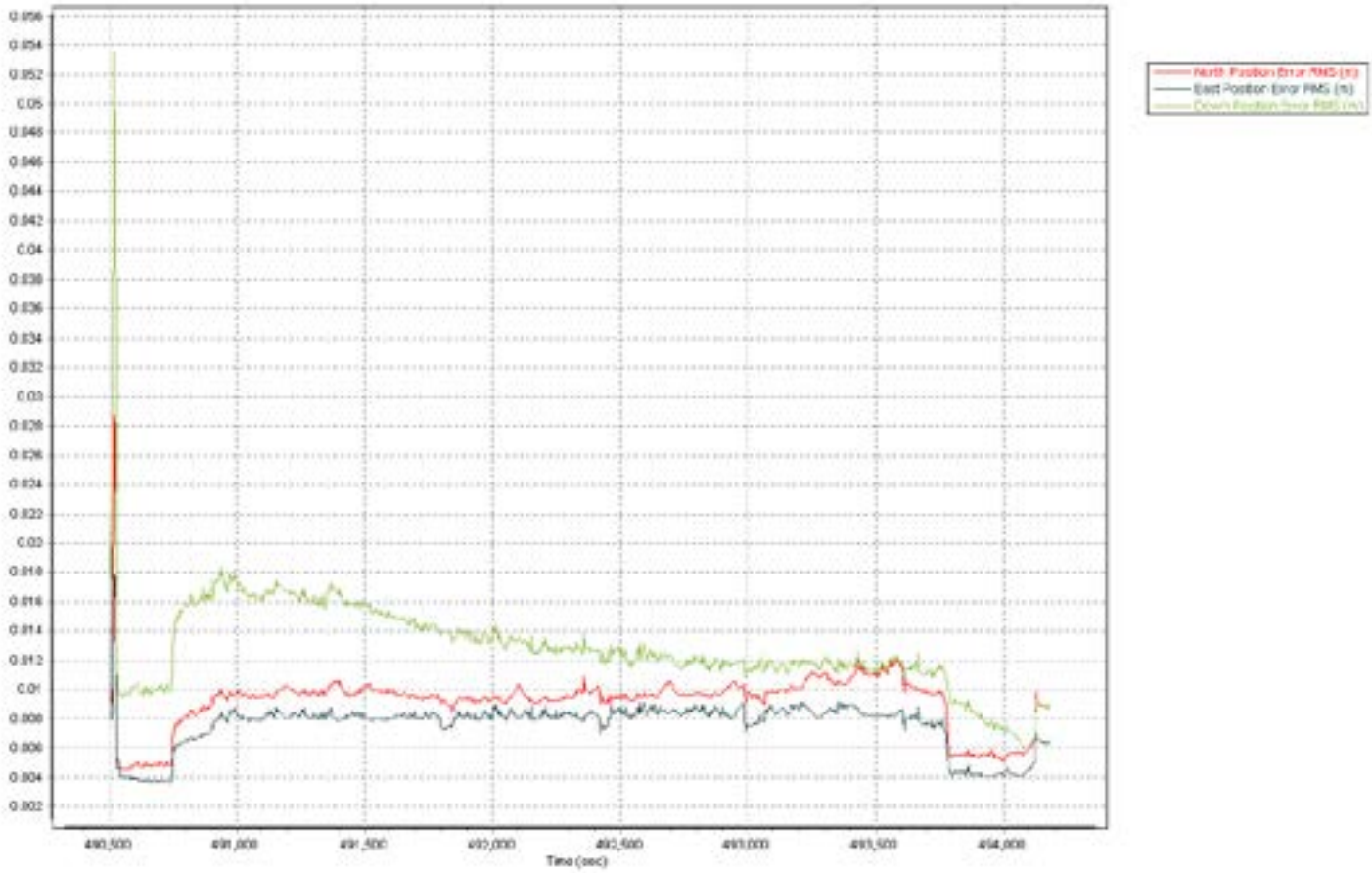
120217a-247

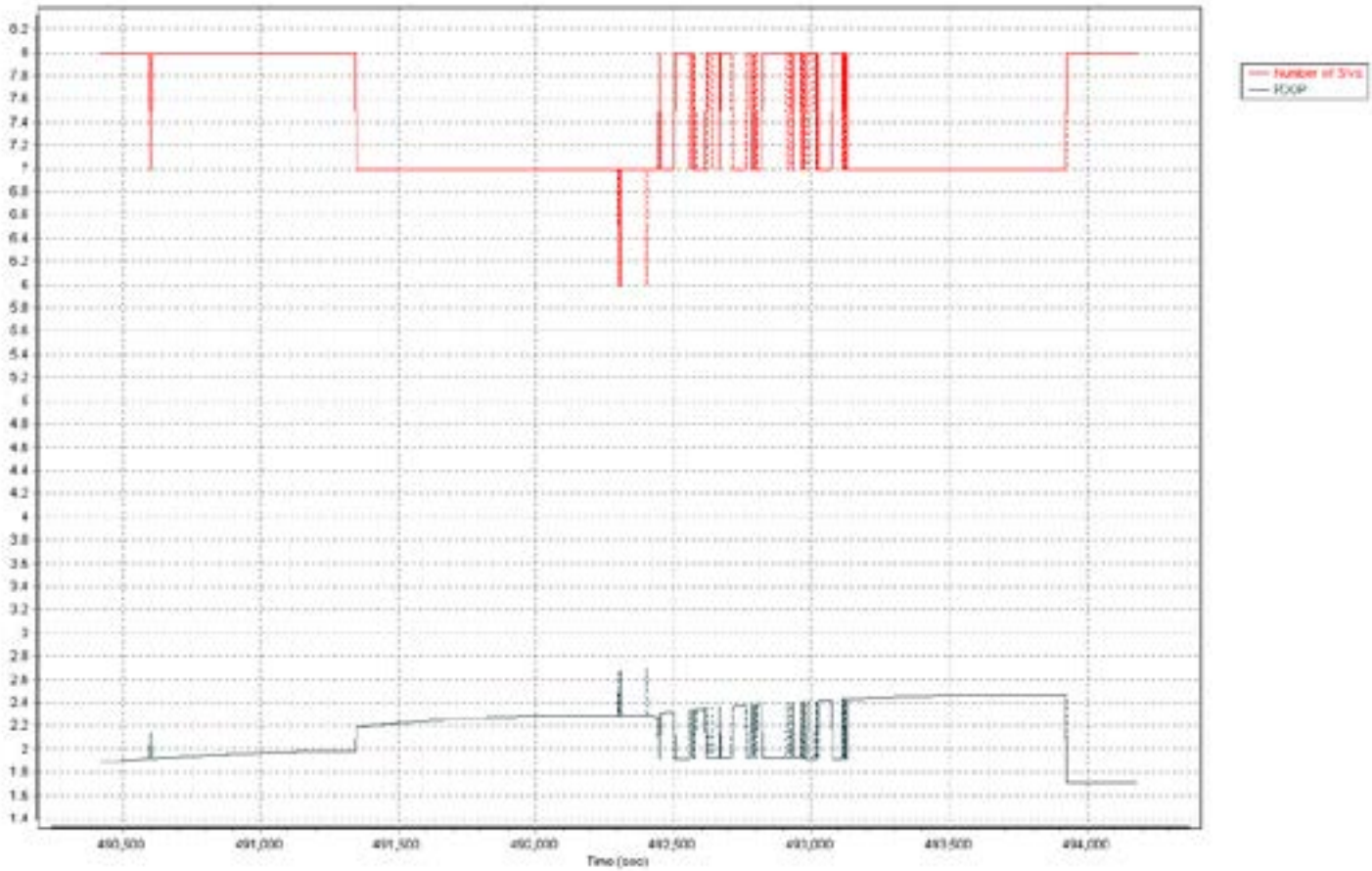

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

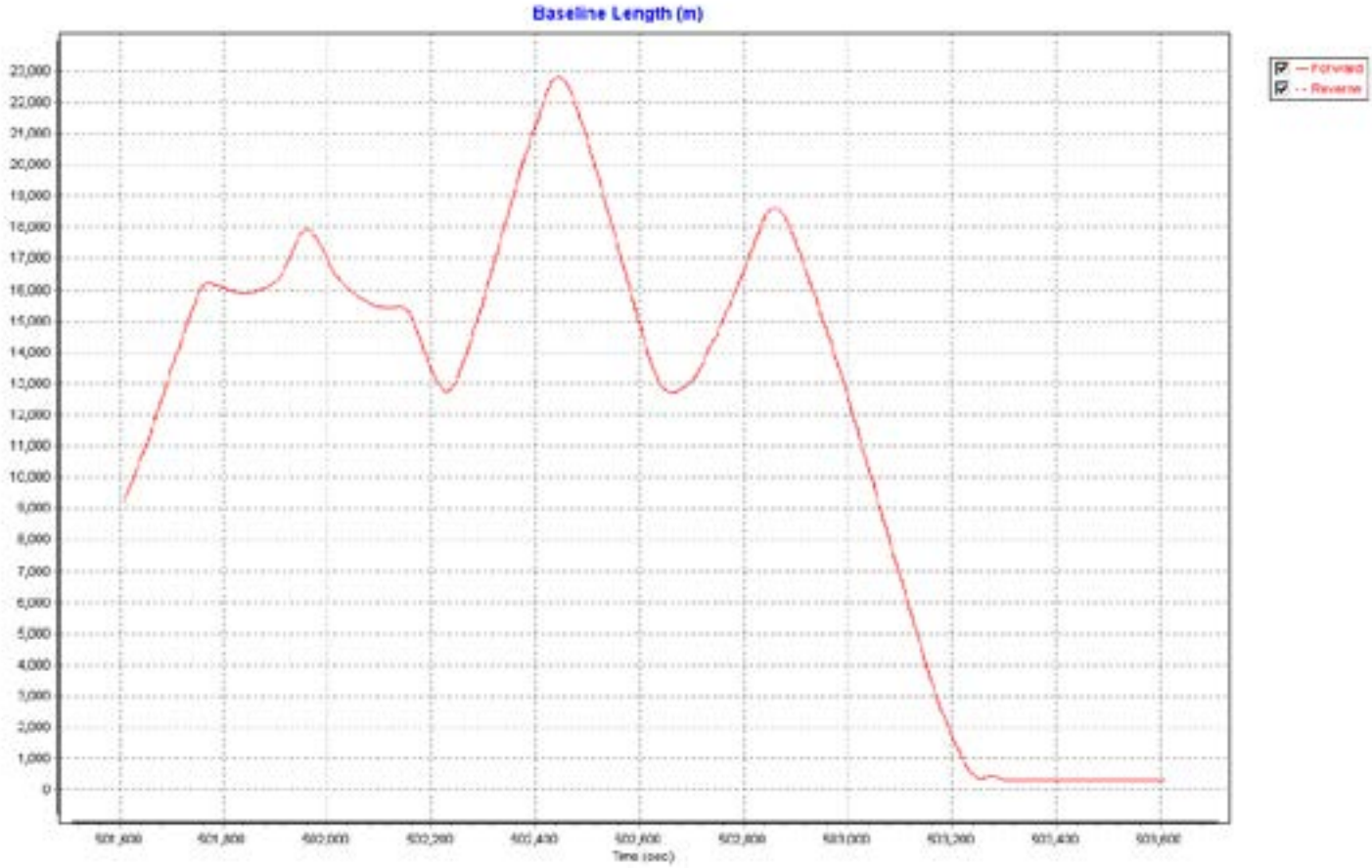

Processing mode
Forward
Reverse
3
2
1
0
490,500
491,000
491,500
492,000
492,500
493,000
493,500
494,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed HL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

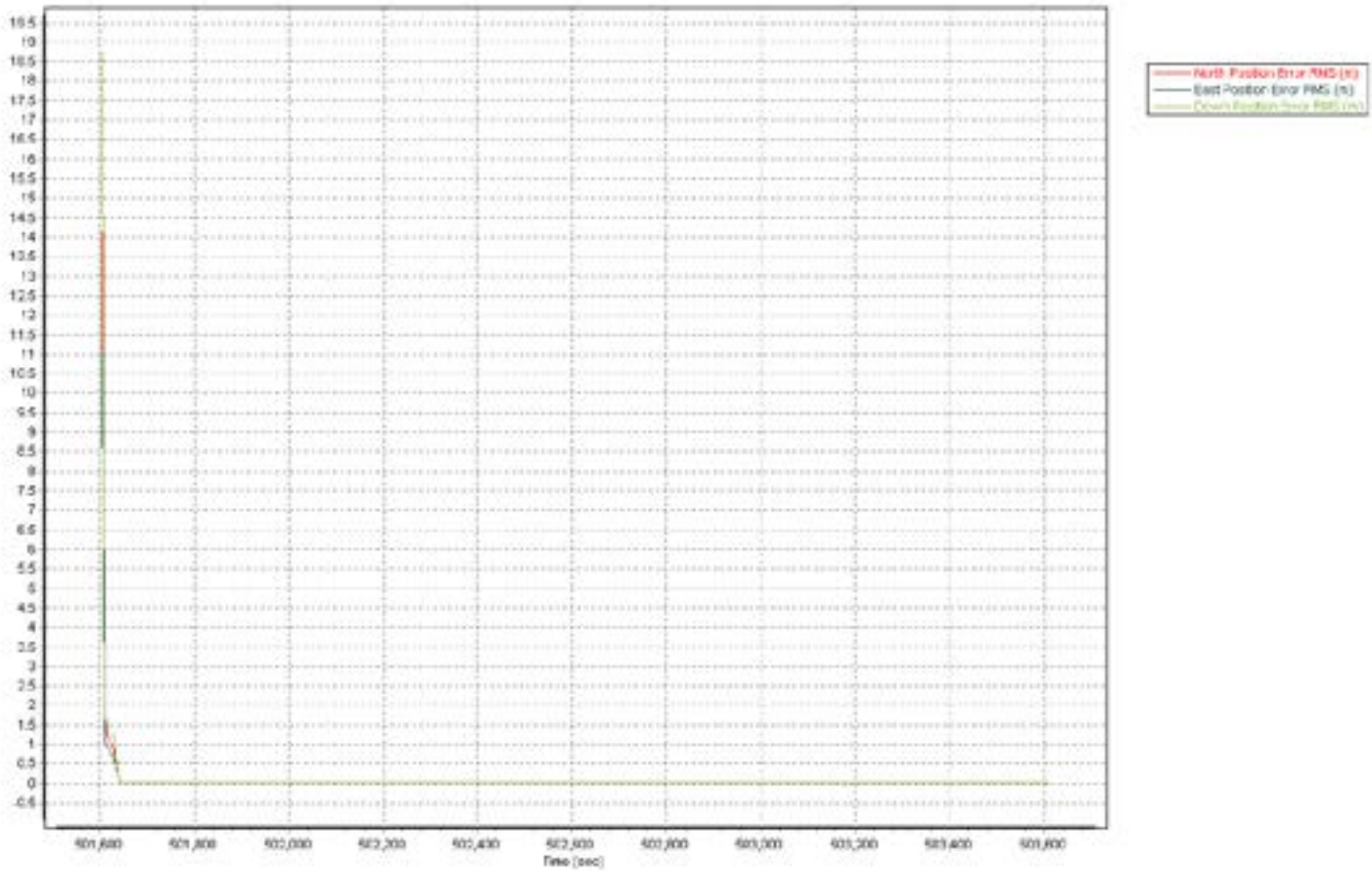

DEFAULT
Start
Settings
Status
Message Log
Processing completed
End of processing

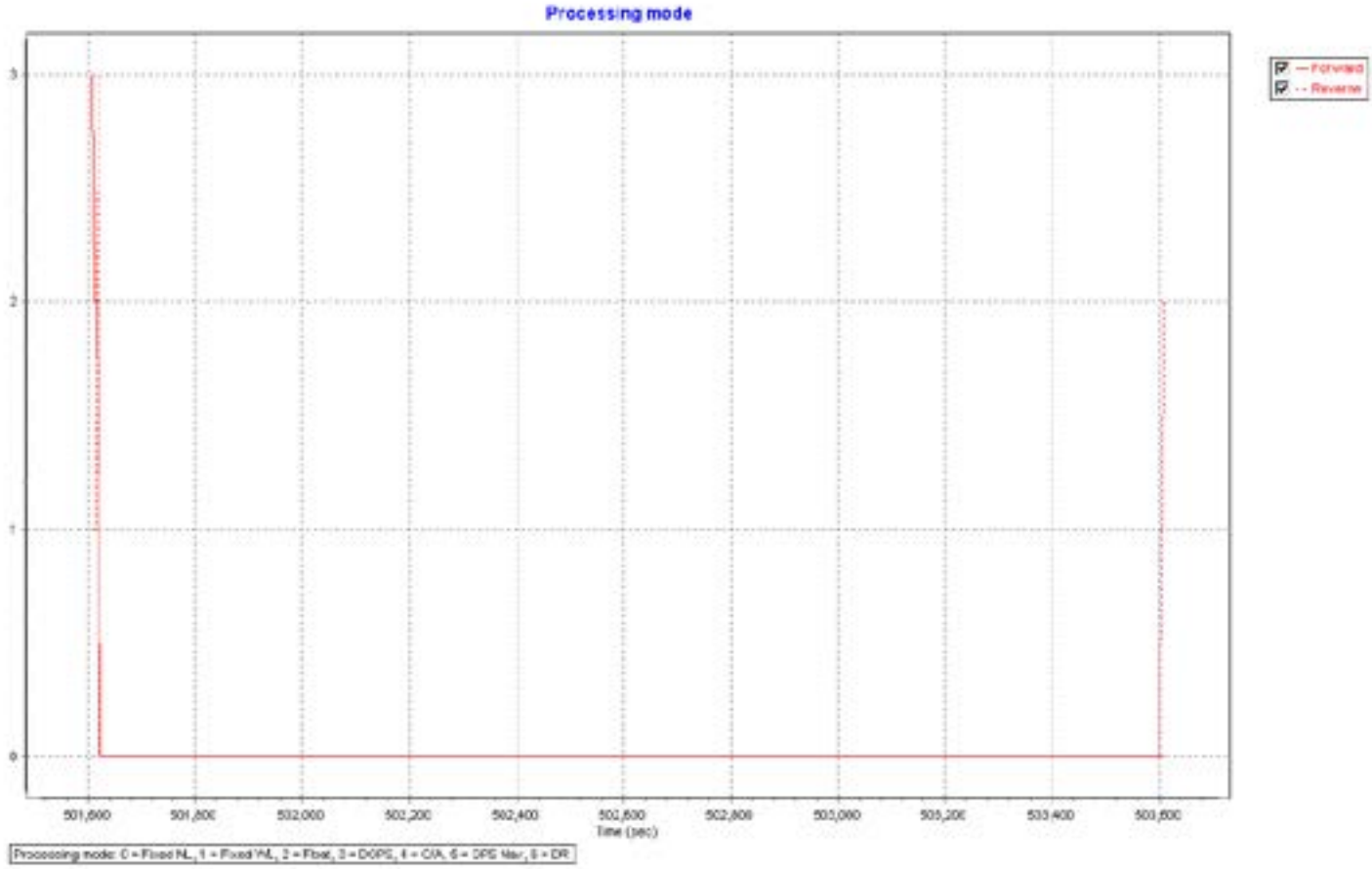

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

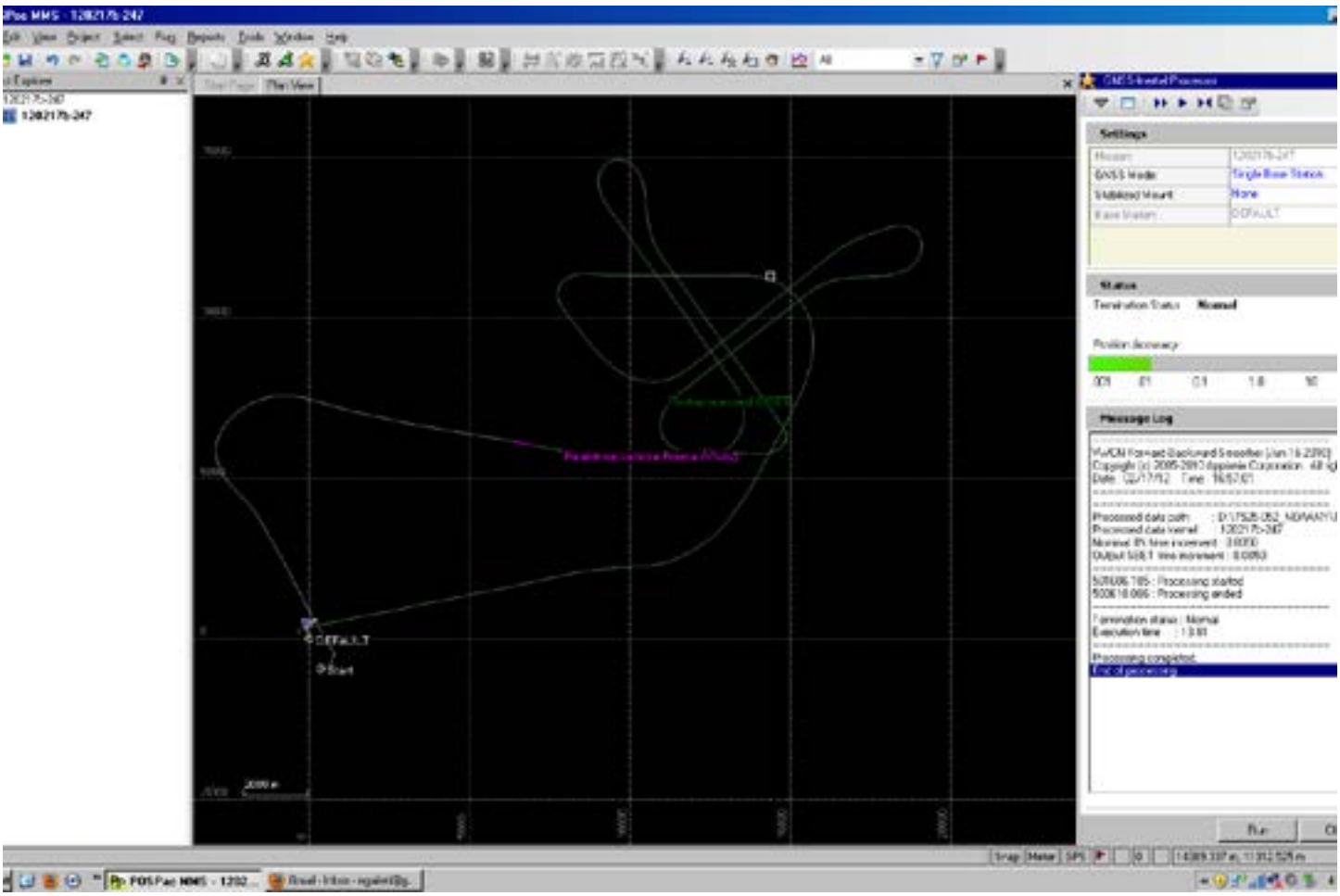

Number of SVs
PDOP
Time (sec)

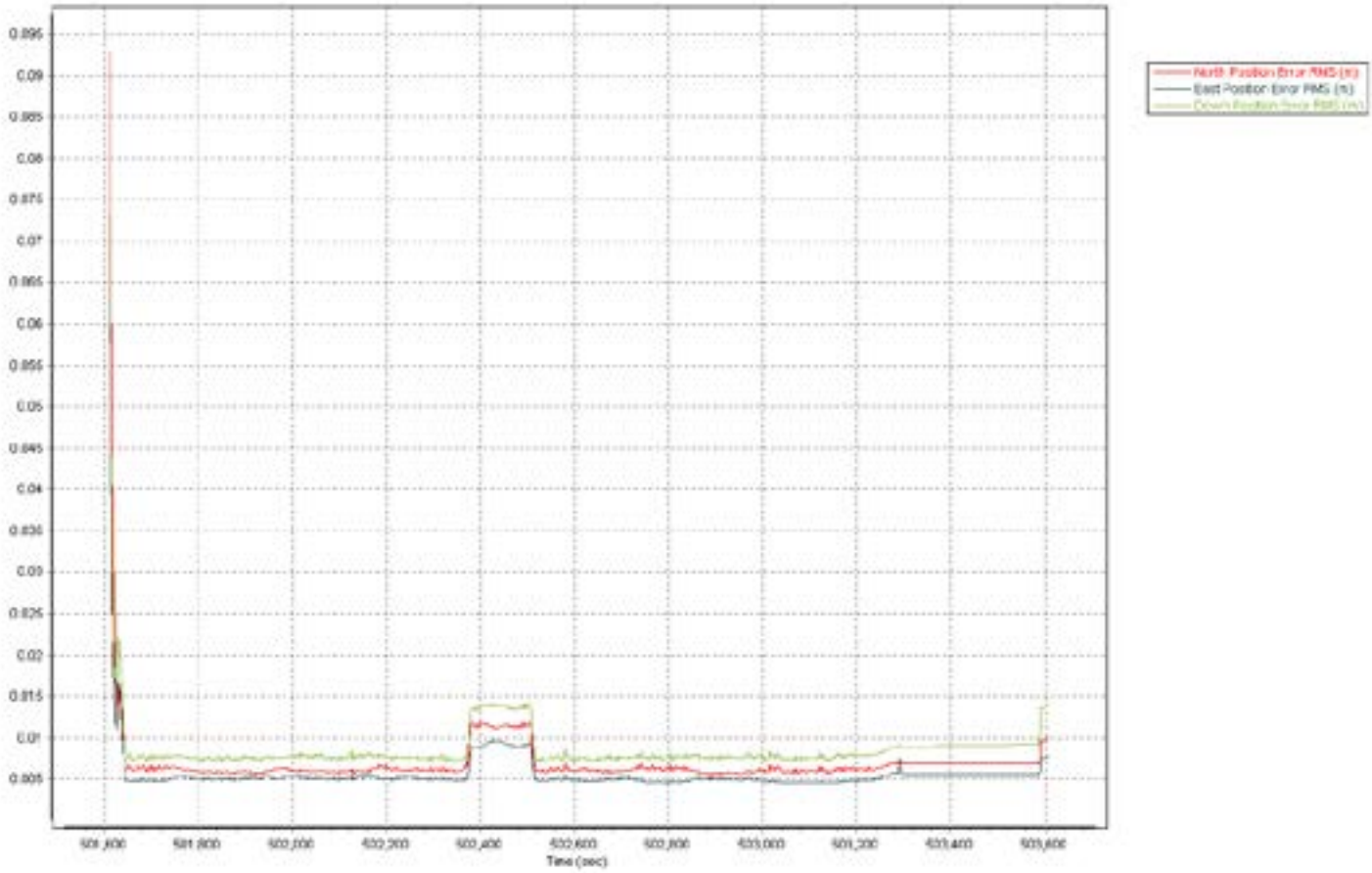
120217b-247

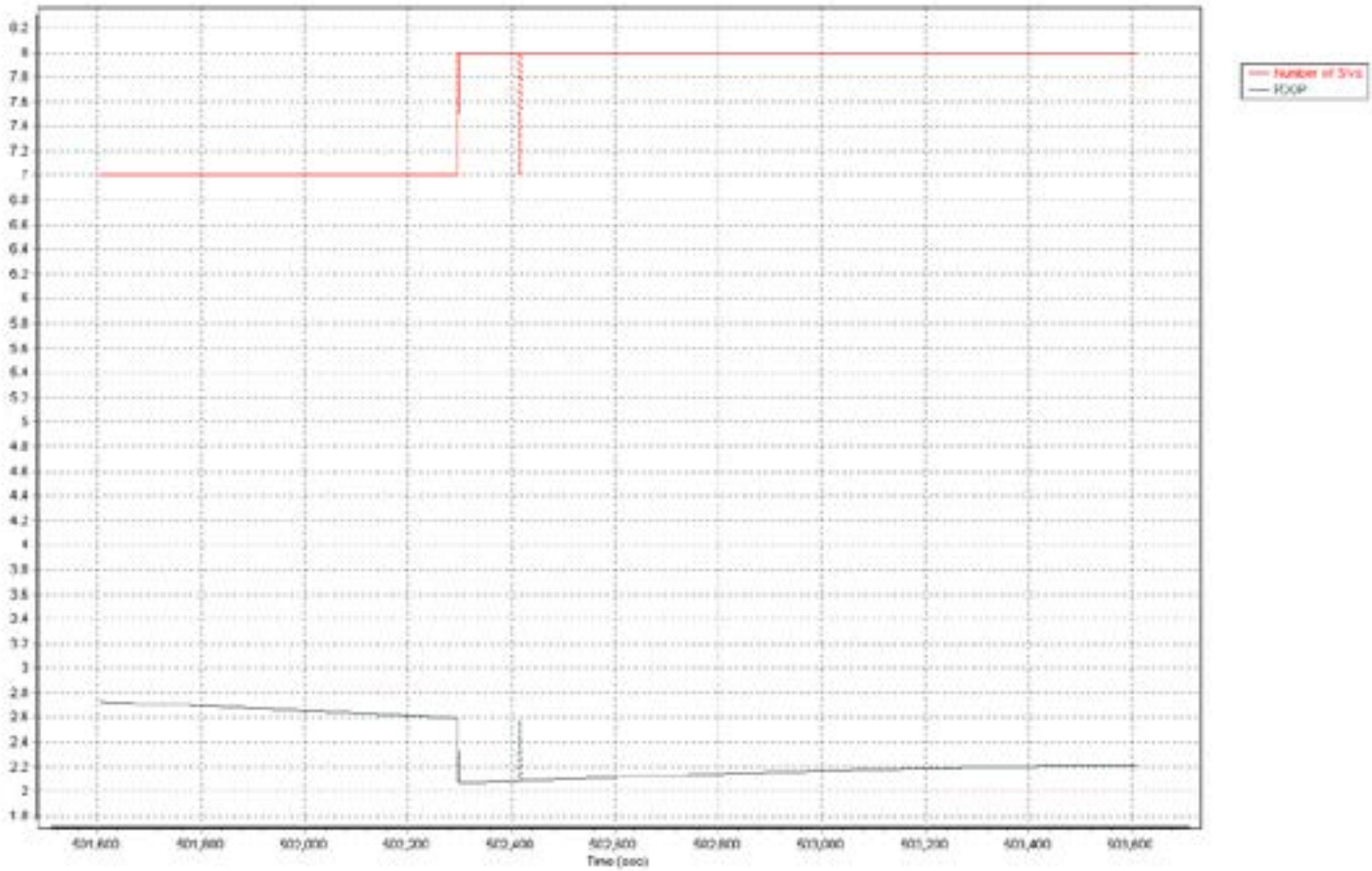

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

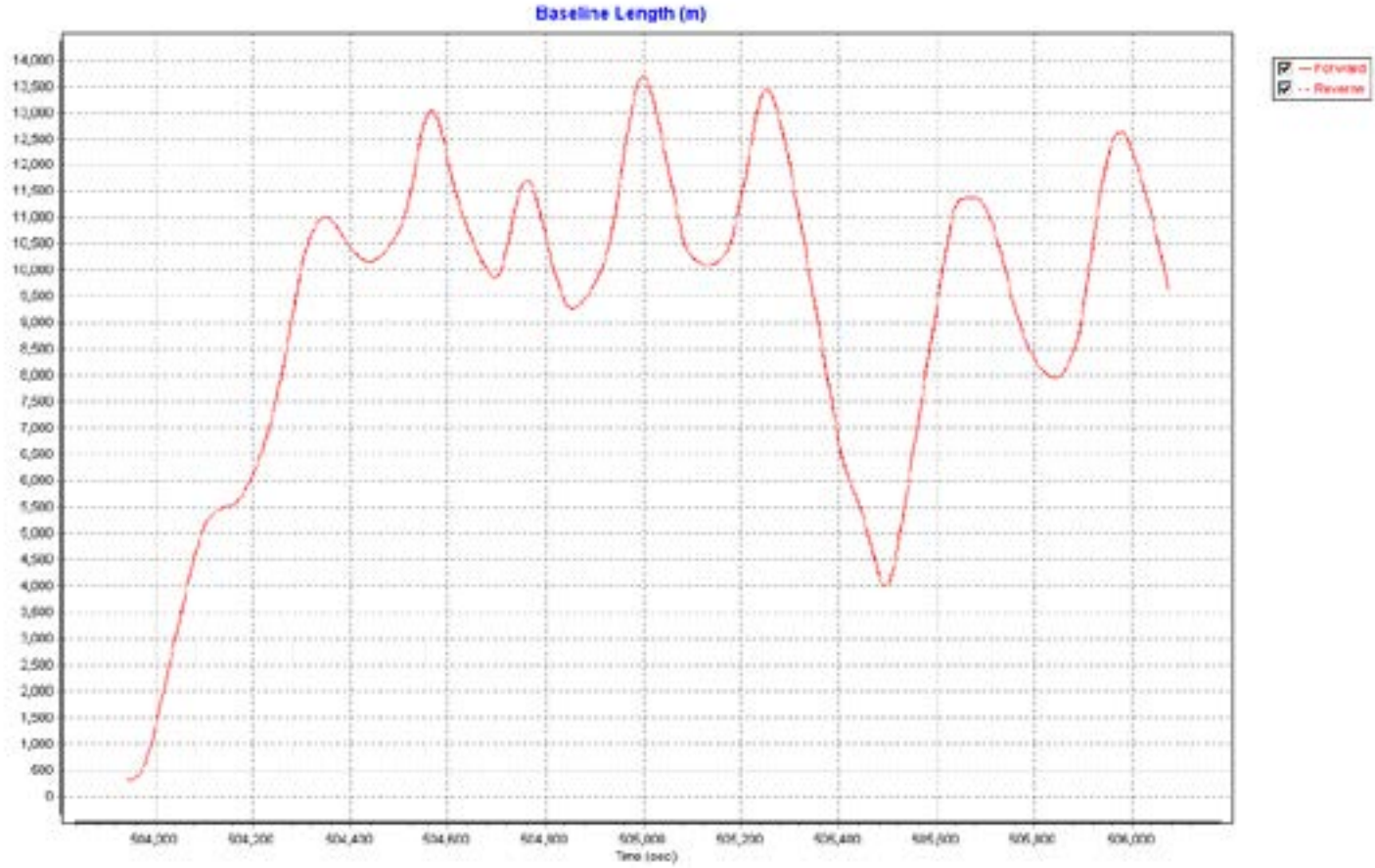

Processing mode
Forward
Reverse
3
2
1
0
501,600
501,800
502,000
502,200
502,400
502,600
502,800
503,000
503,200
503,400
503,600
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

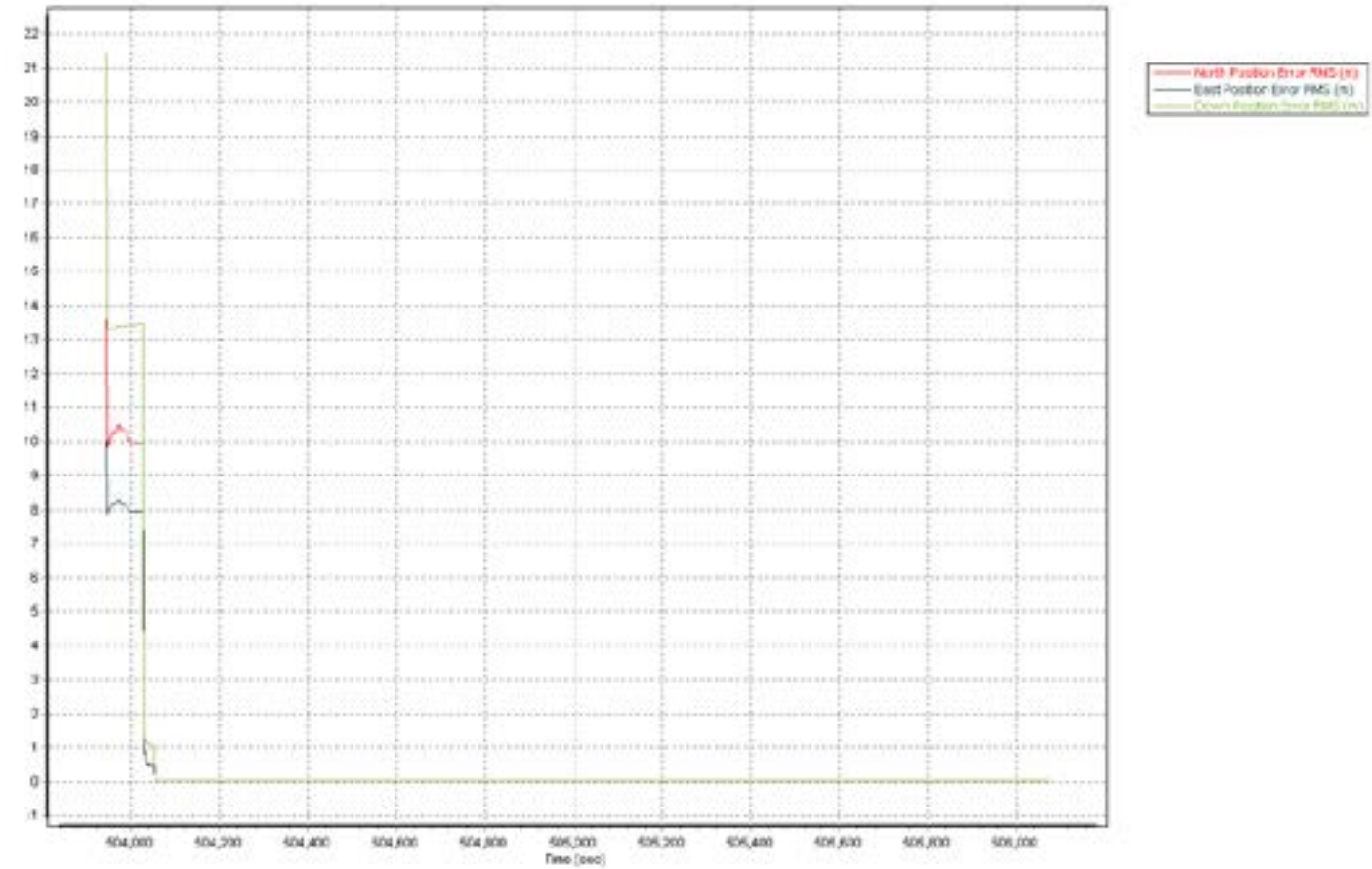

Settings
Status
Message Log
Start

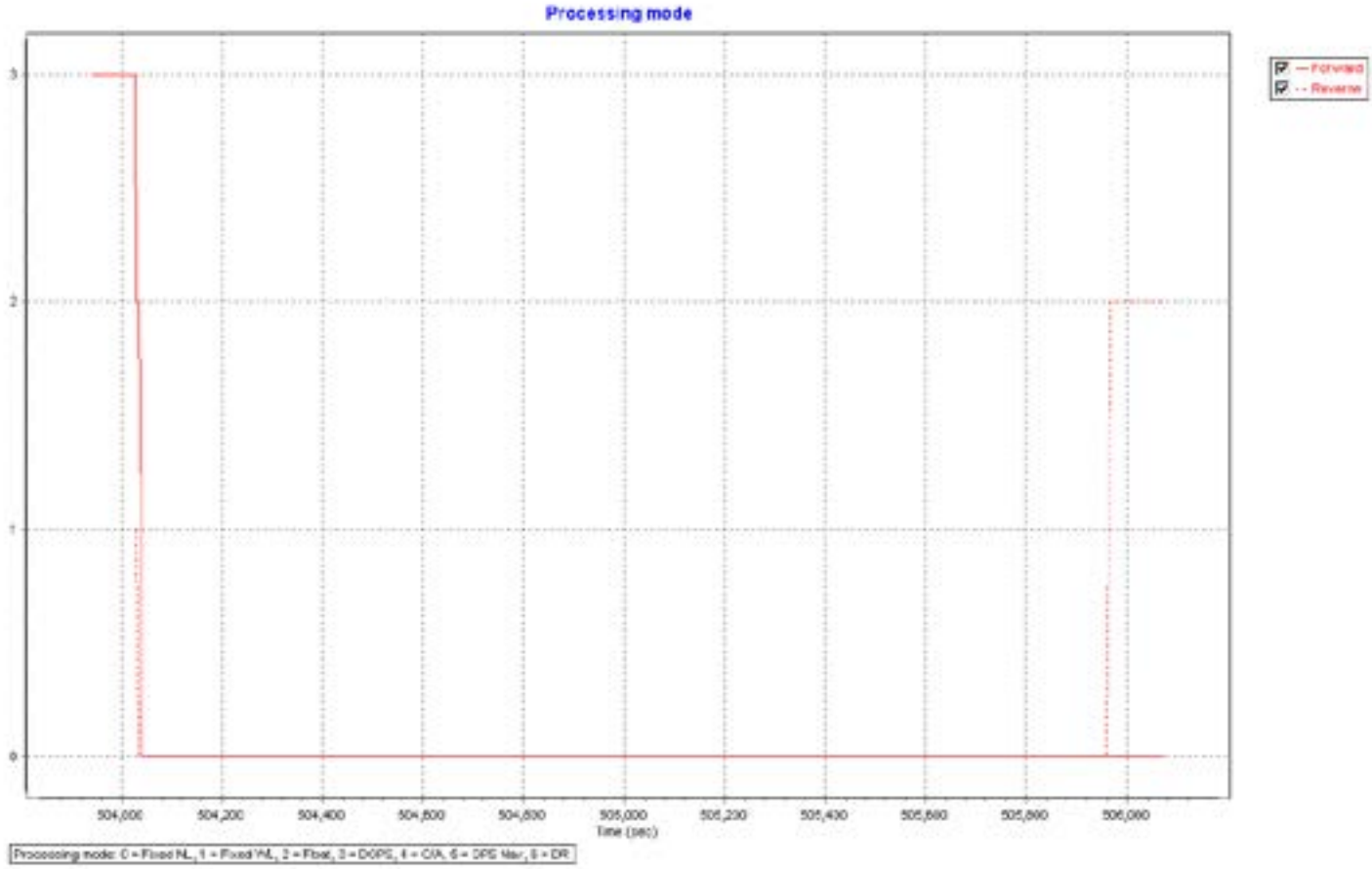

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

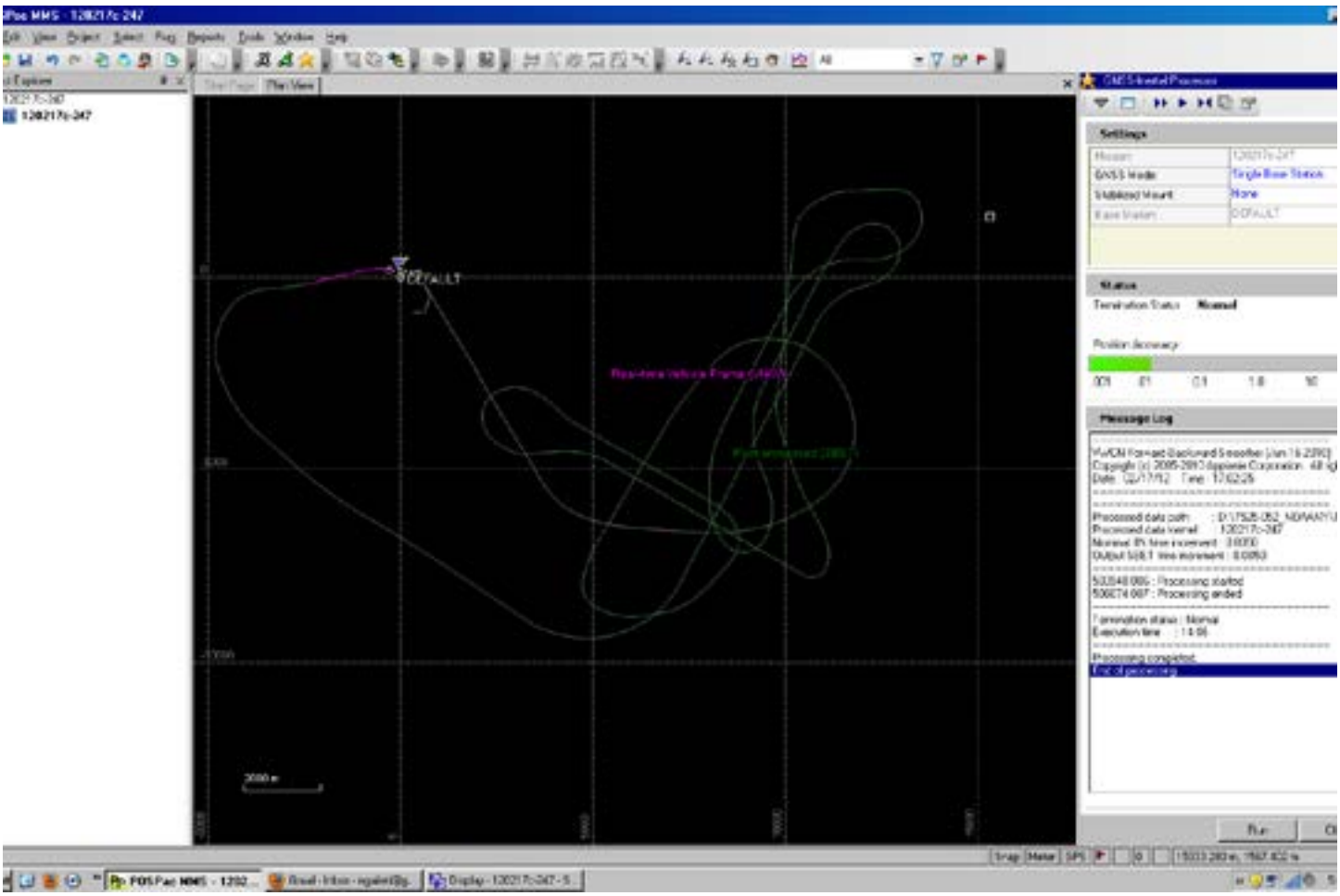

Number of SVs
PDOP
Time (sec)

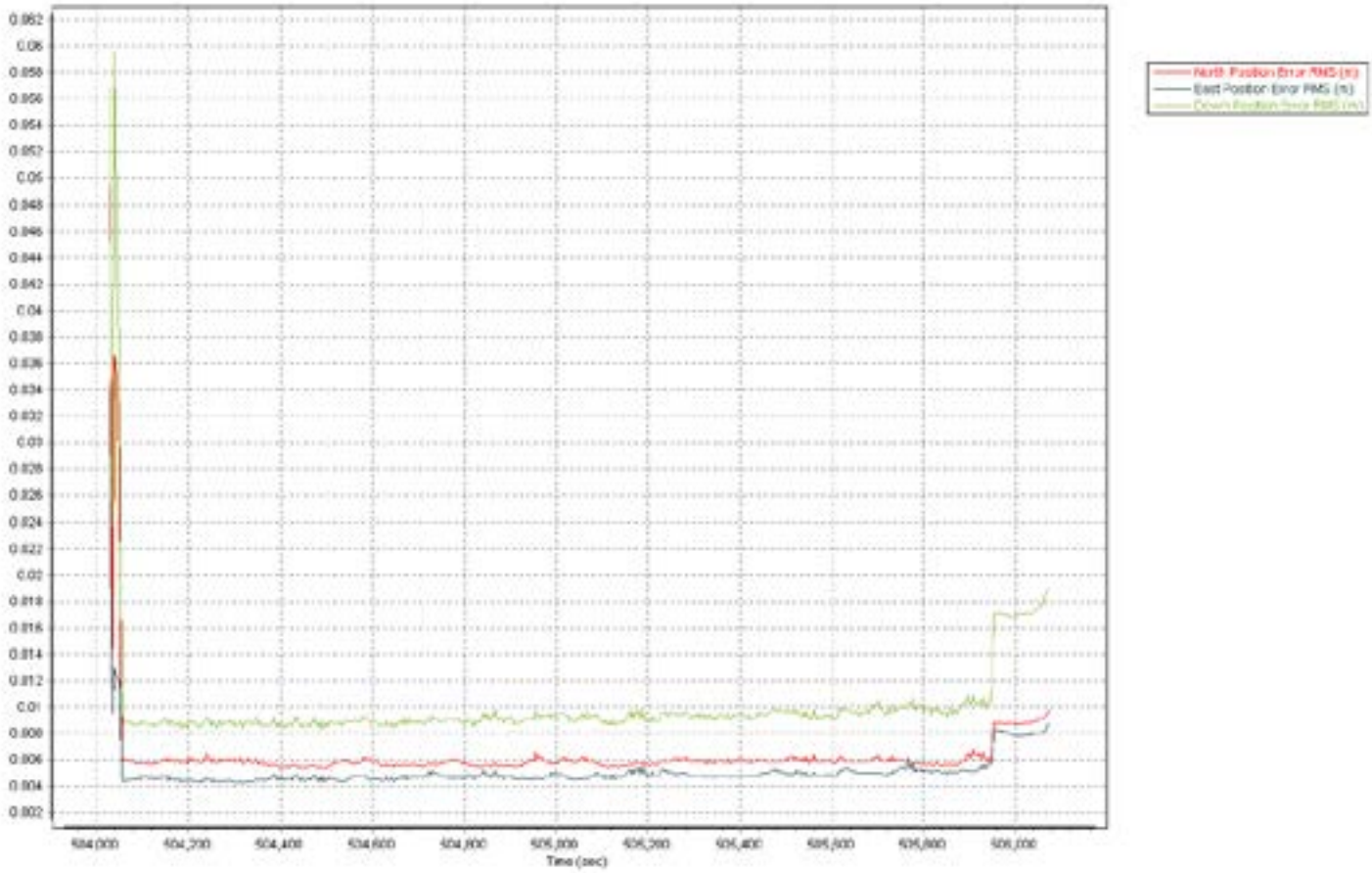
120217c-247

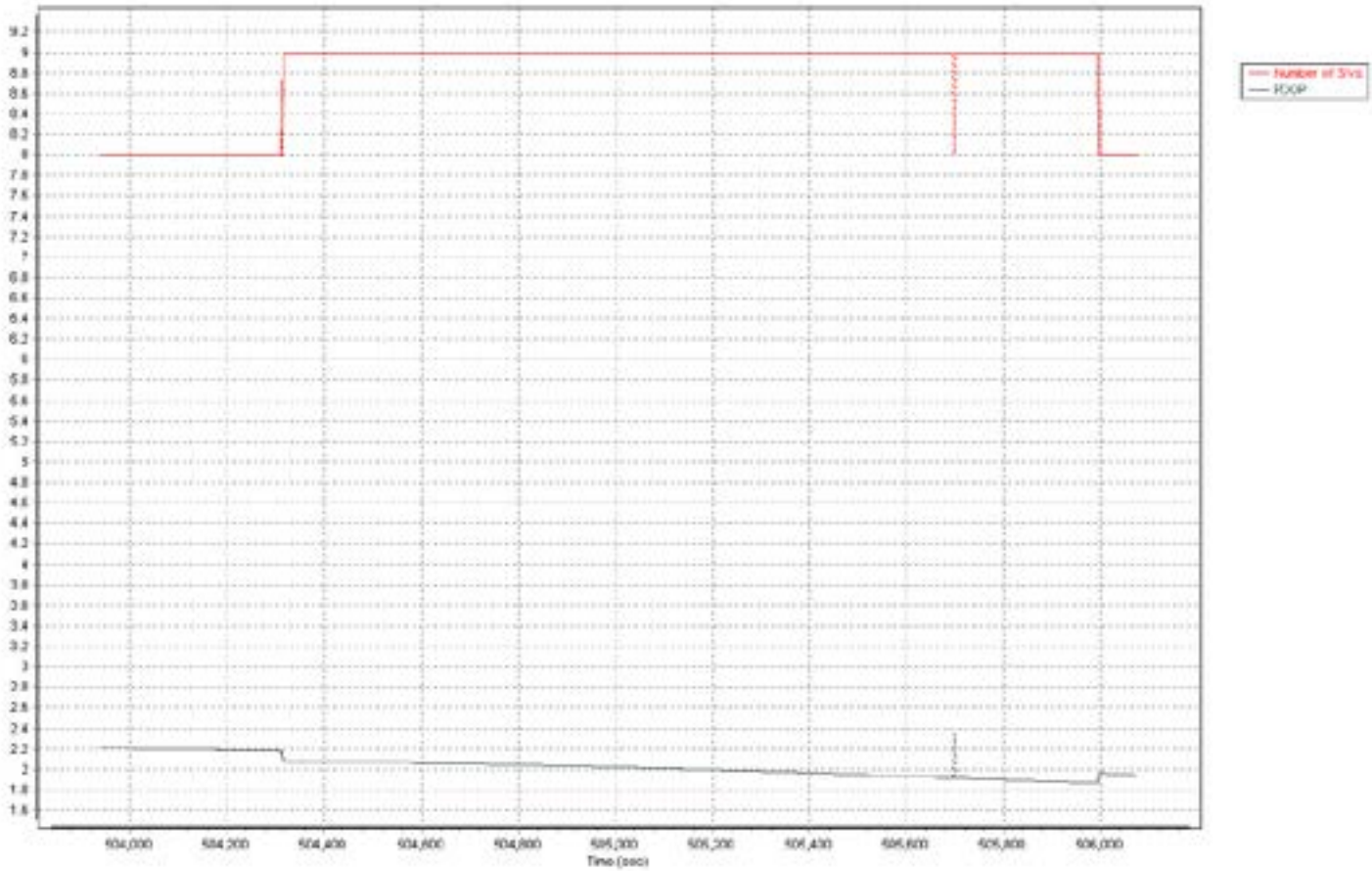

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Processing mode
Forward
Reverse
3
2
1
0
504,000
504,200
504,400
504,600
504,800
505,000
505,200
505,400
505,600
505,800
506,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

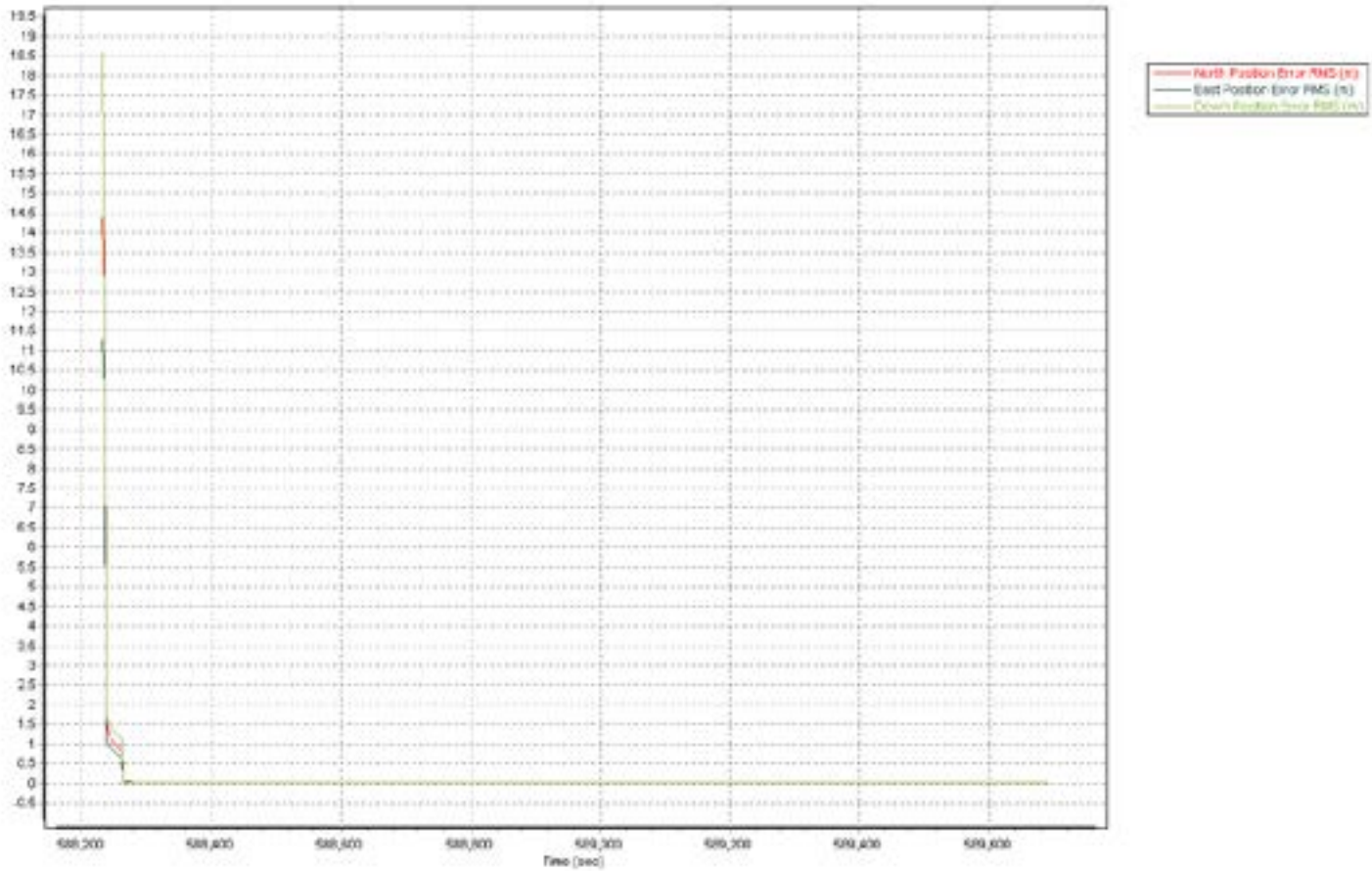

Settings
Status
Message Log
Processing completed
End of processing

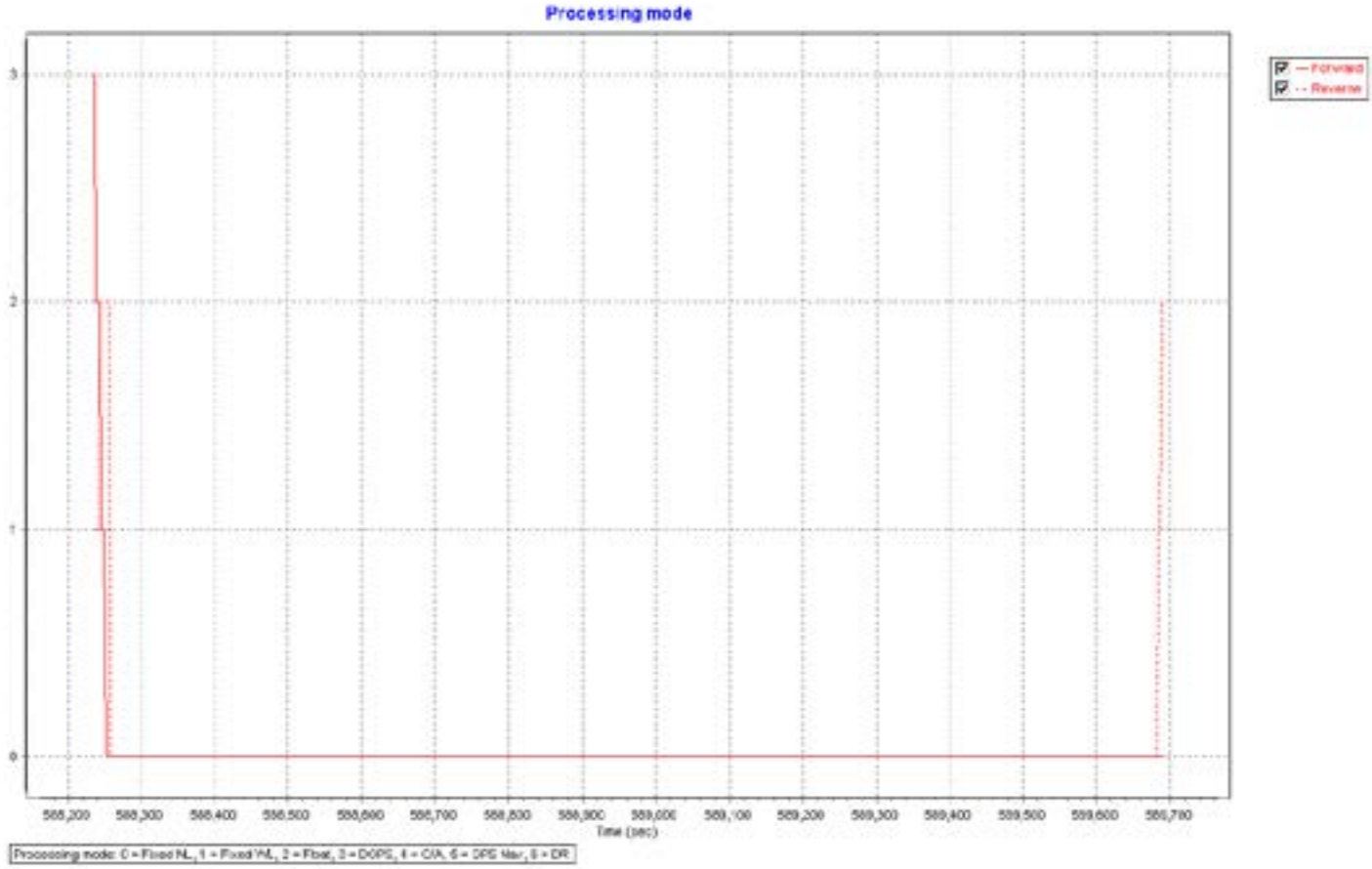

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

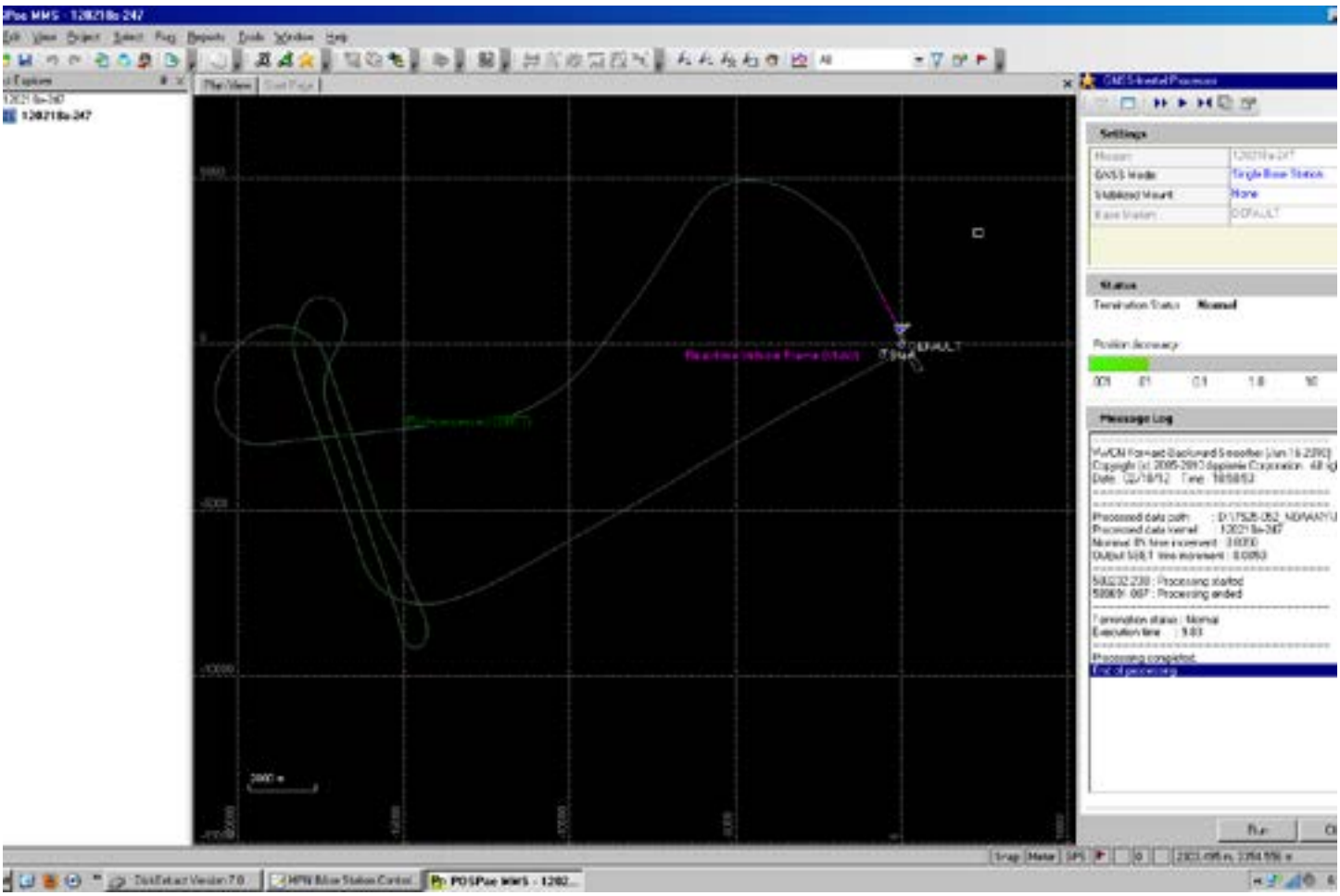

Number of SVs
PDOP
Time (sec)

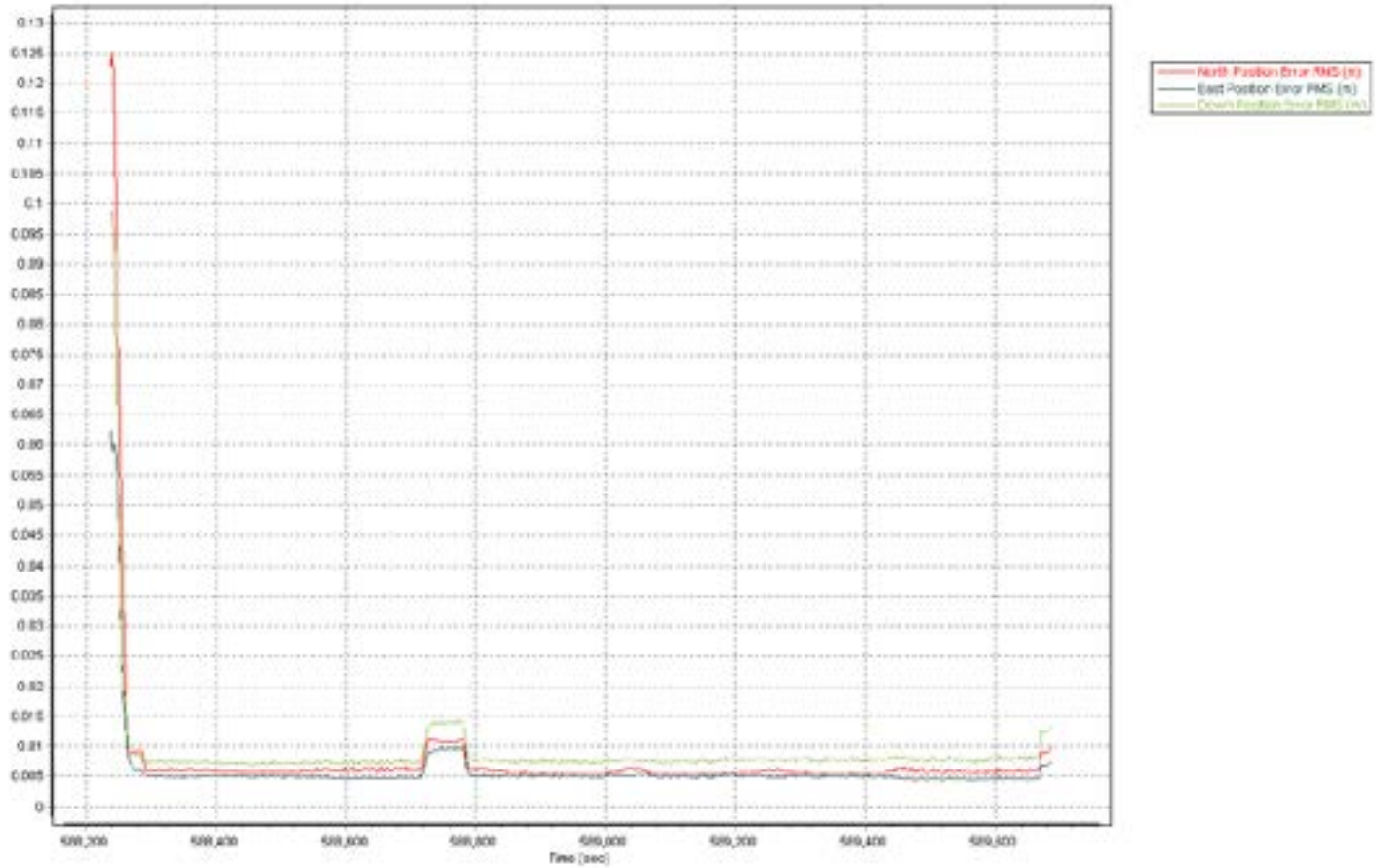
120218a-247

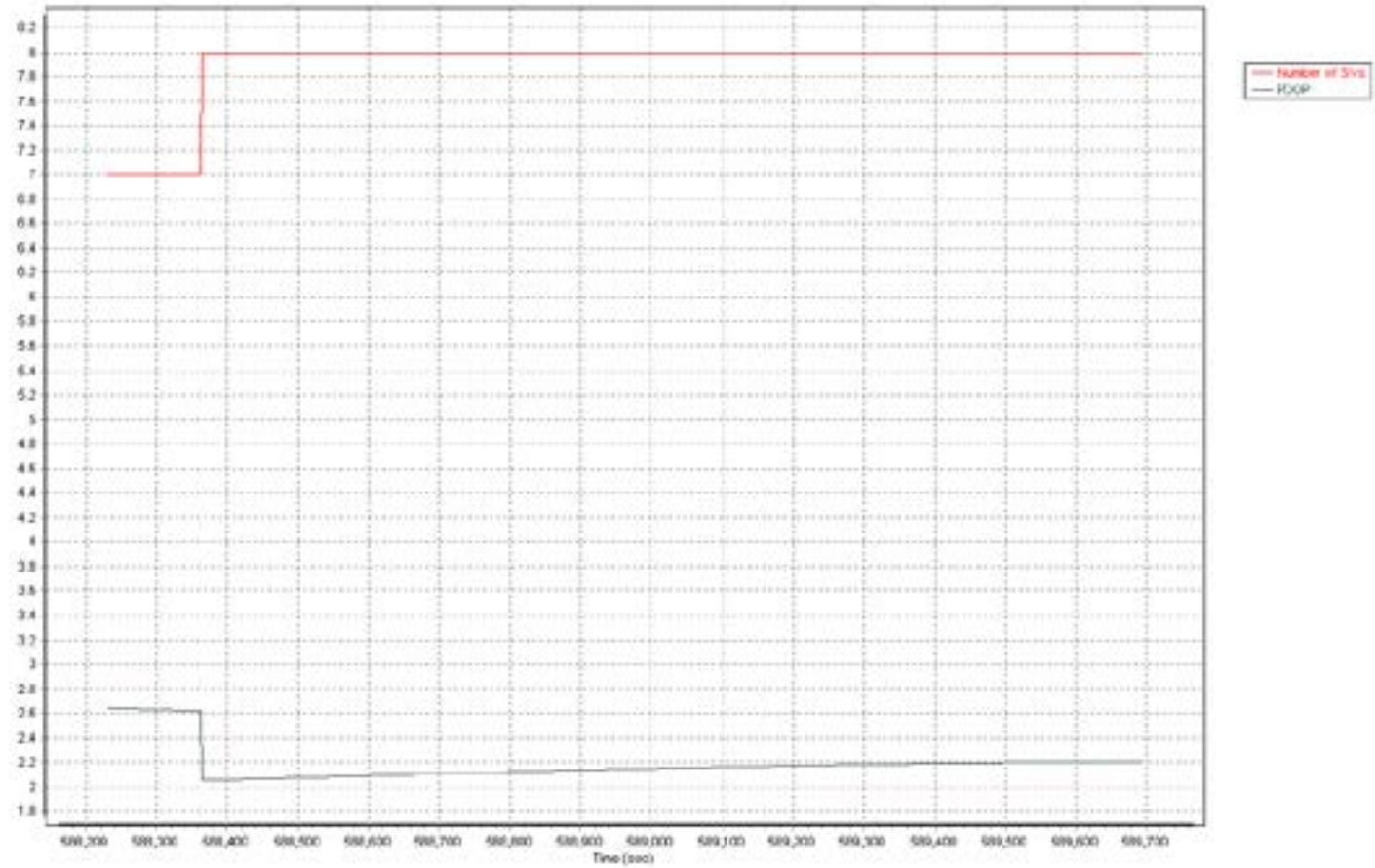
Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

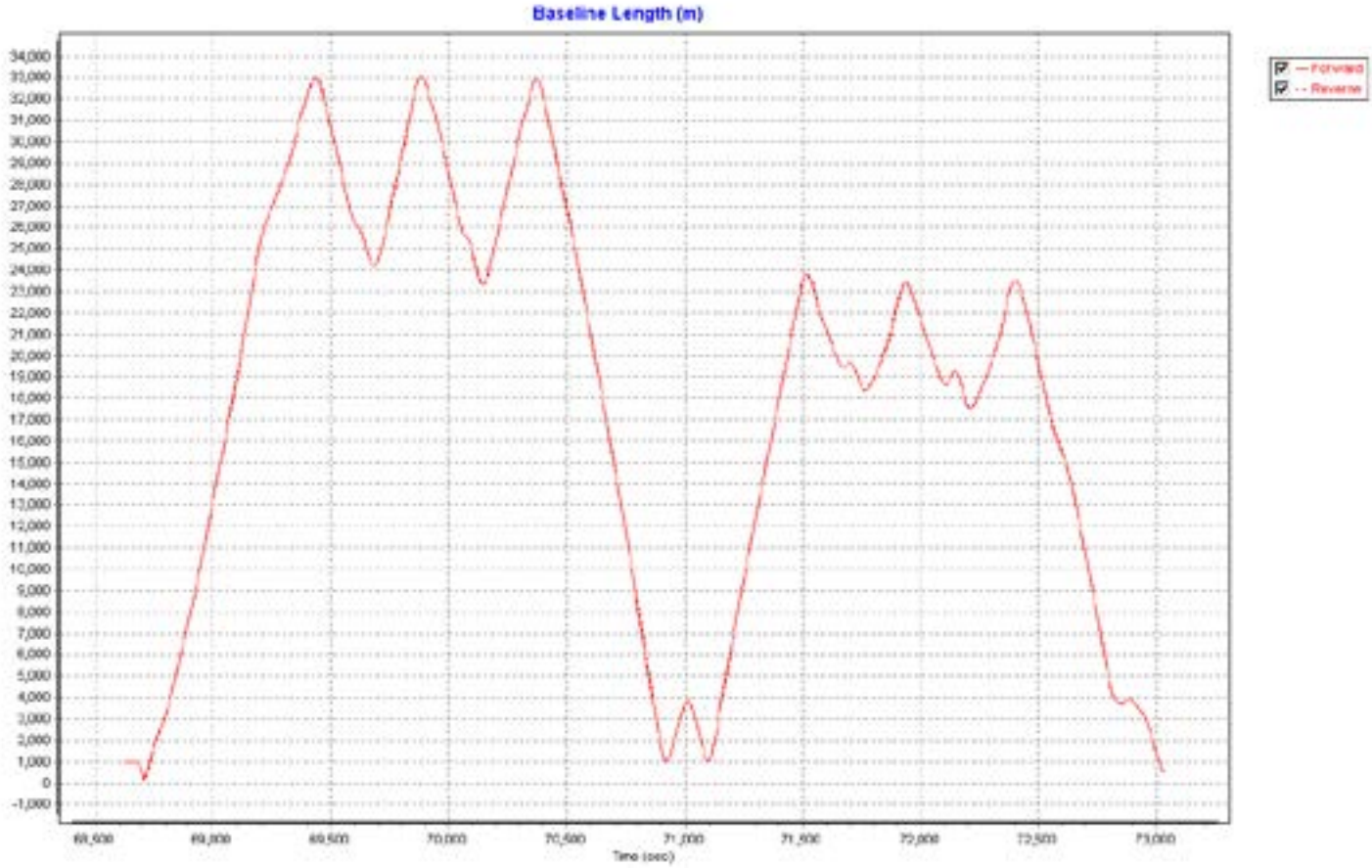

Processing mode
Forward
Reverse
3
2
1
0
568,200
568,300
568,400
568,500
568,600
568,700
568,800
568,900
569,000
569,100
569,200
569,300
569,400
569,500
569,600
569,700
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

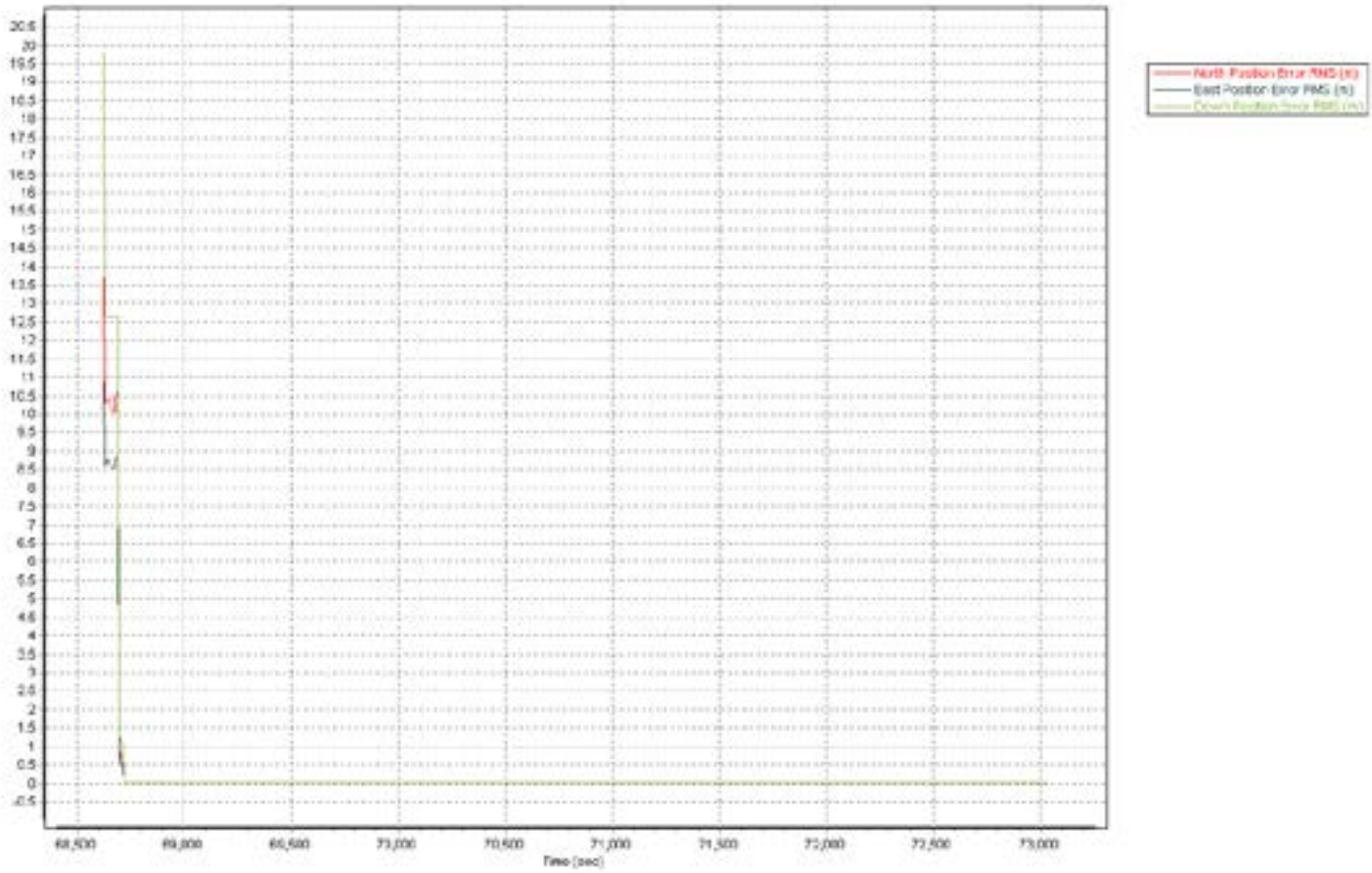

Settings
Status
Message Log
Processing completed
End of processing

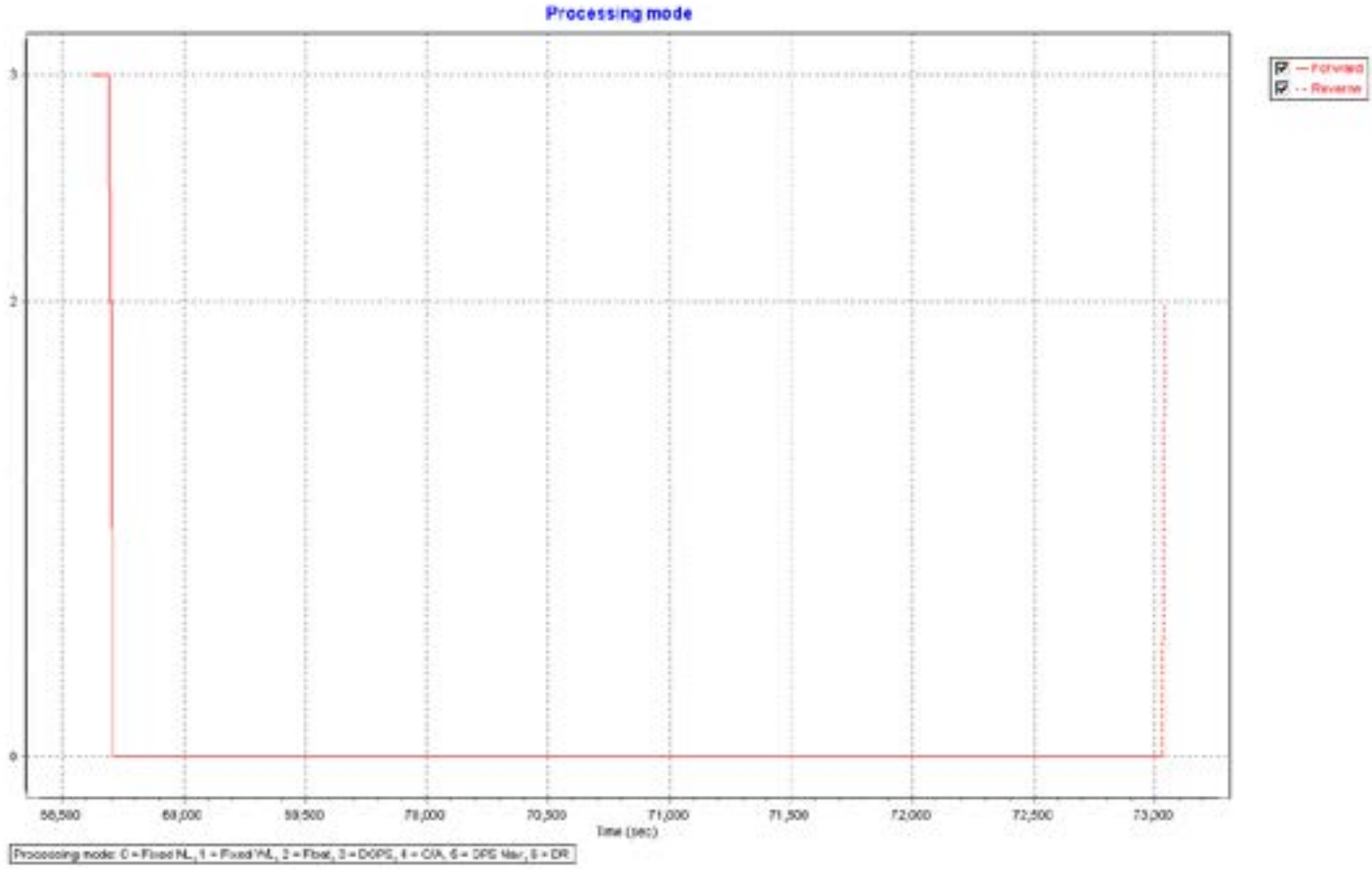

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

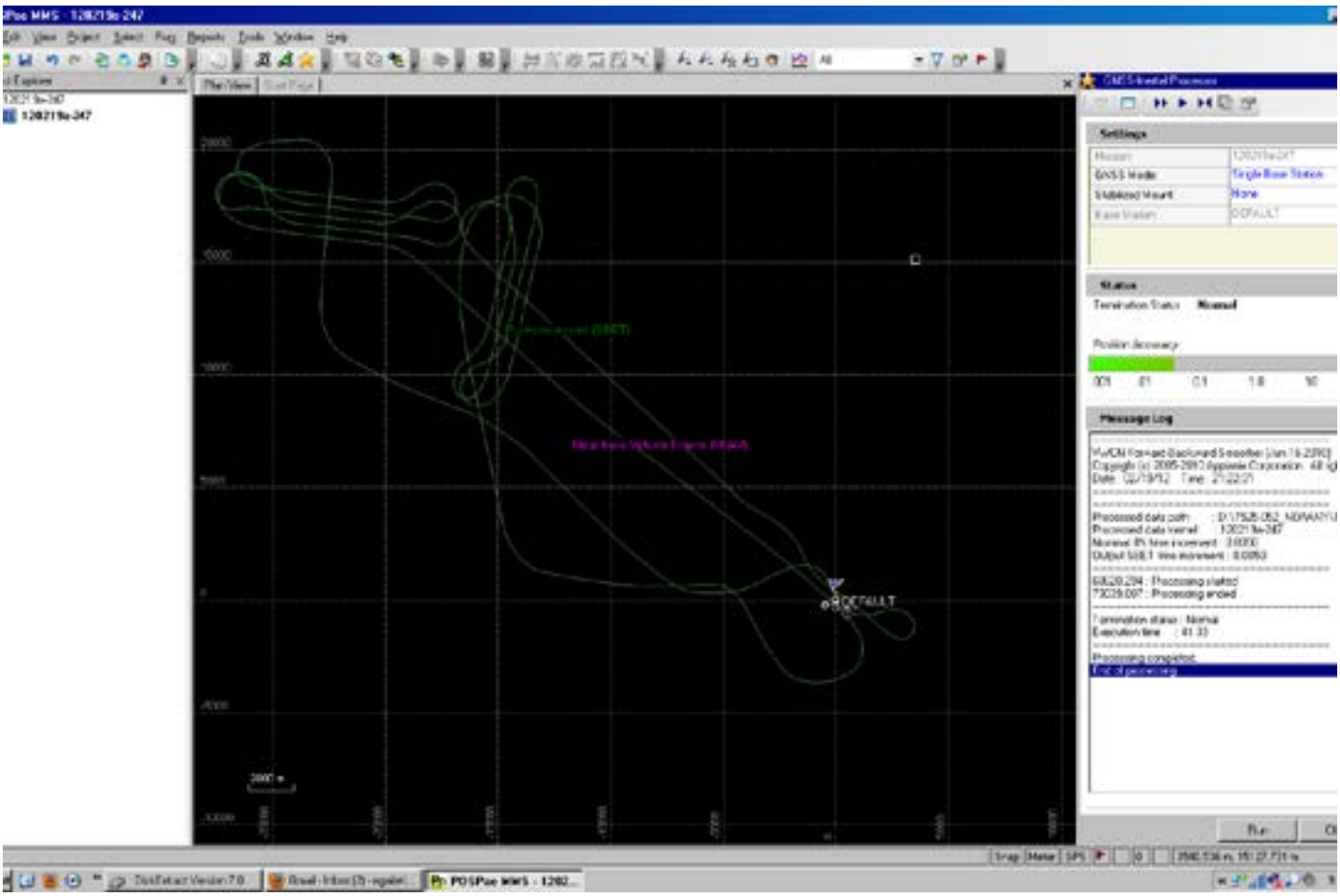

Number of SVs
PDOP
Time (sec)

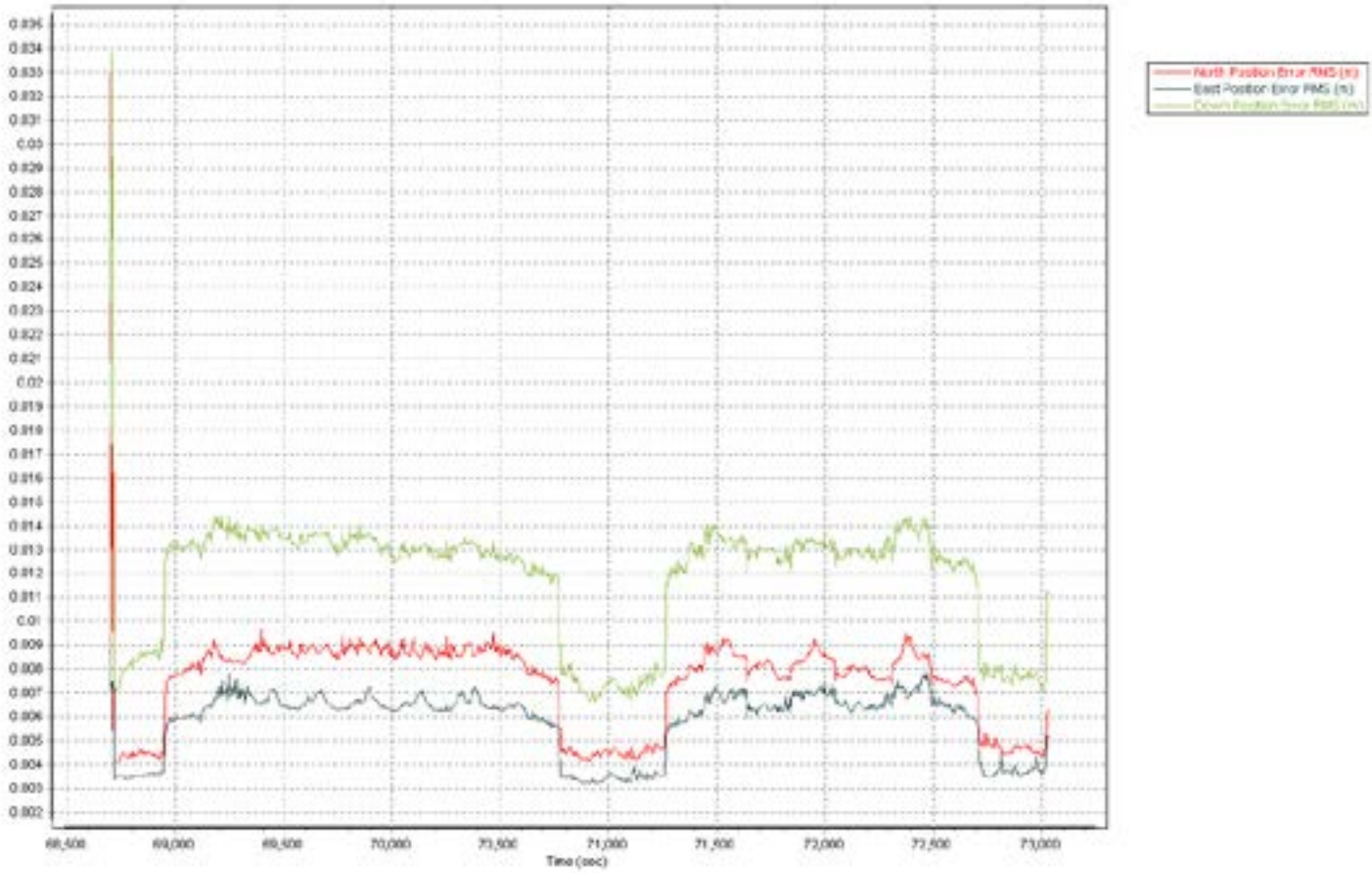
120219a-247

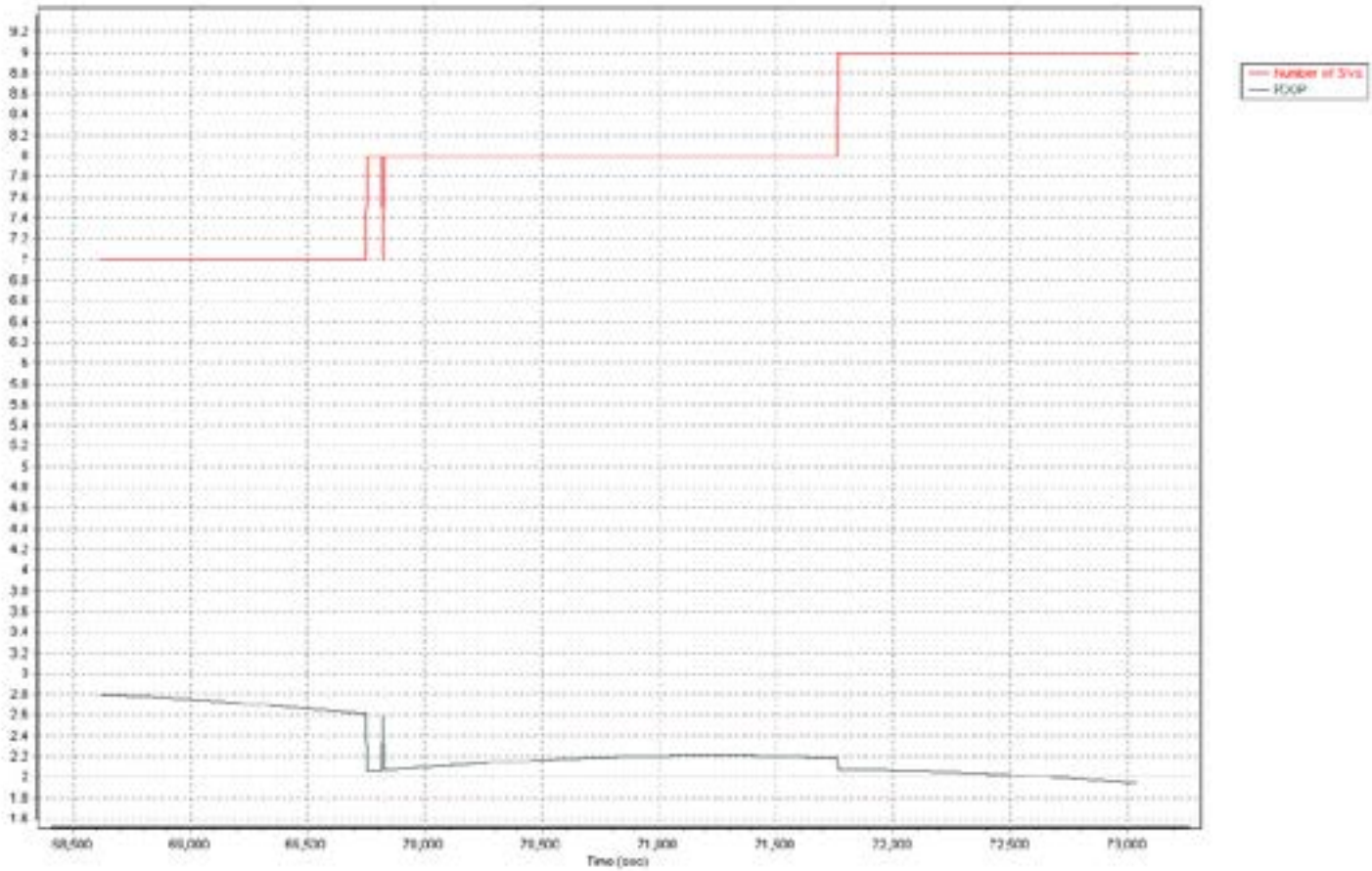

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

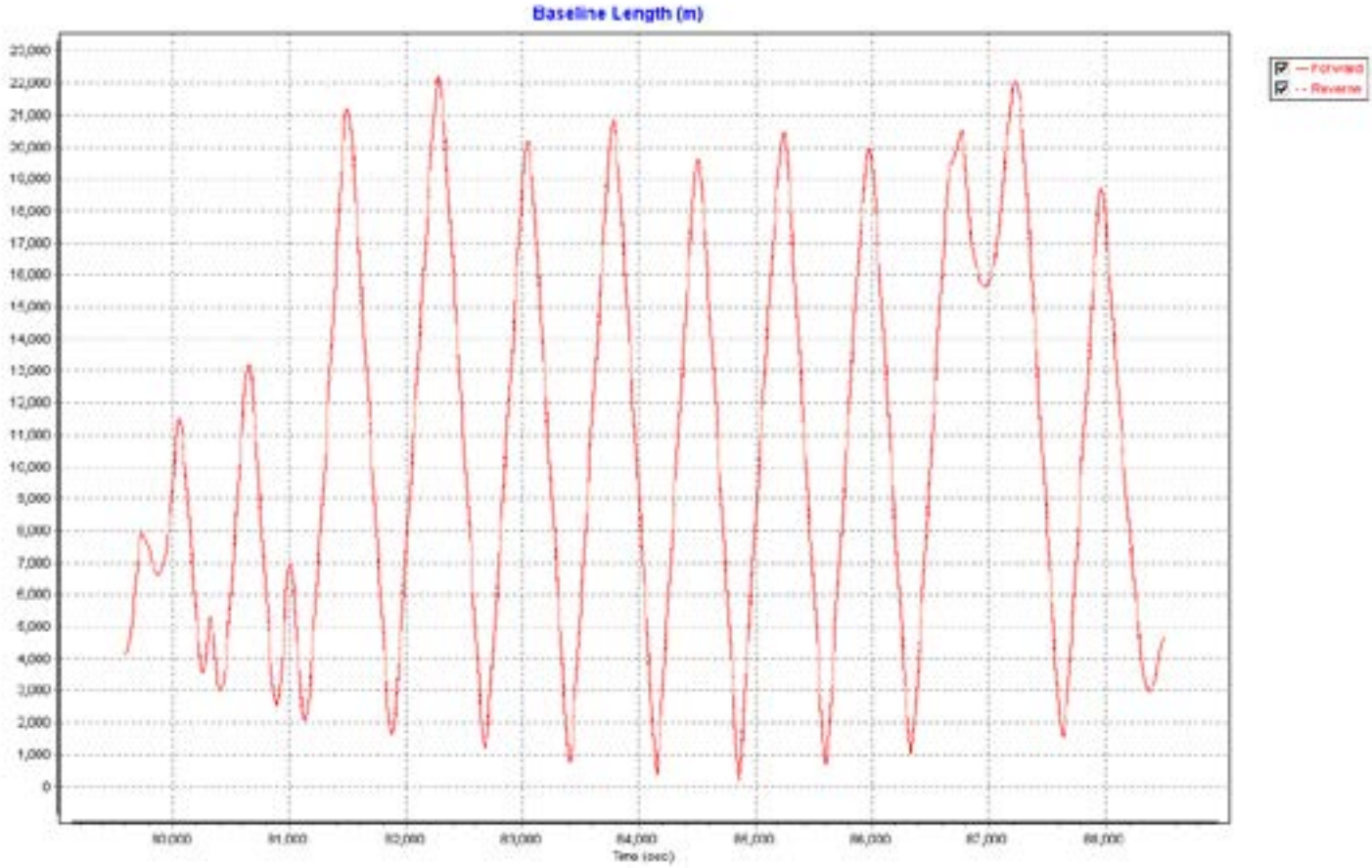

Processing mode
Forward
Reverse
3
2
0
68,500
69,000
69,500
70,000
70,500
71,000
71,500
72,000
72,500
73,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

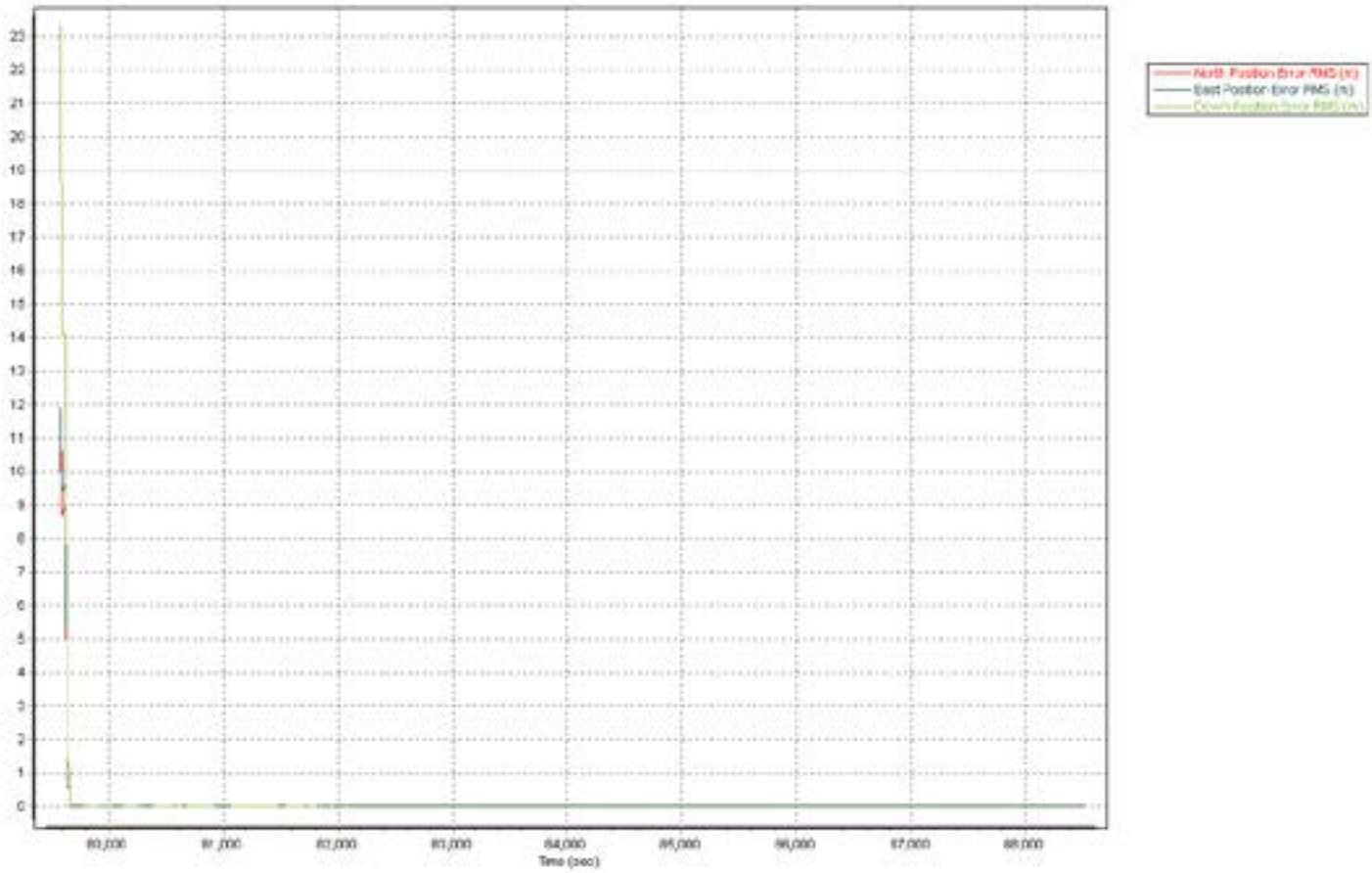

Settings
Status
Message Log

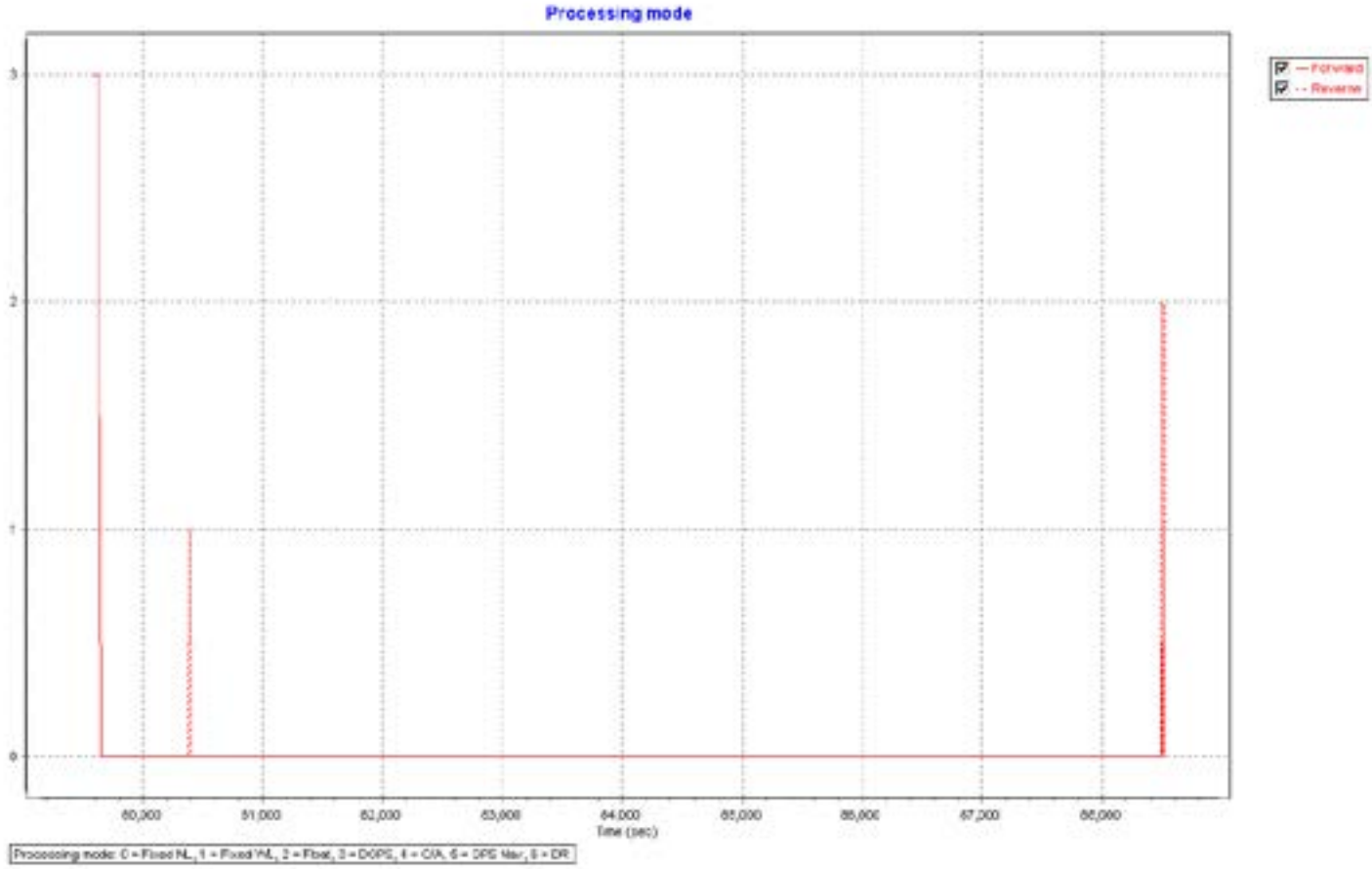

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

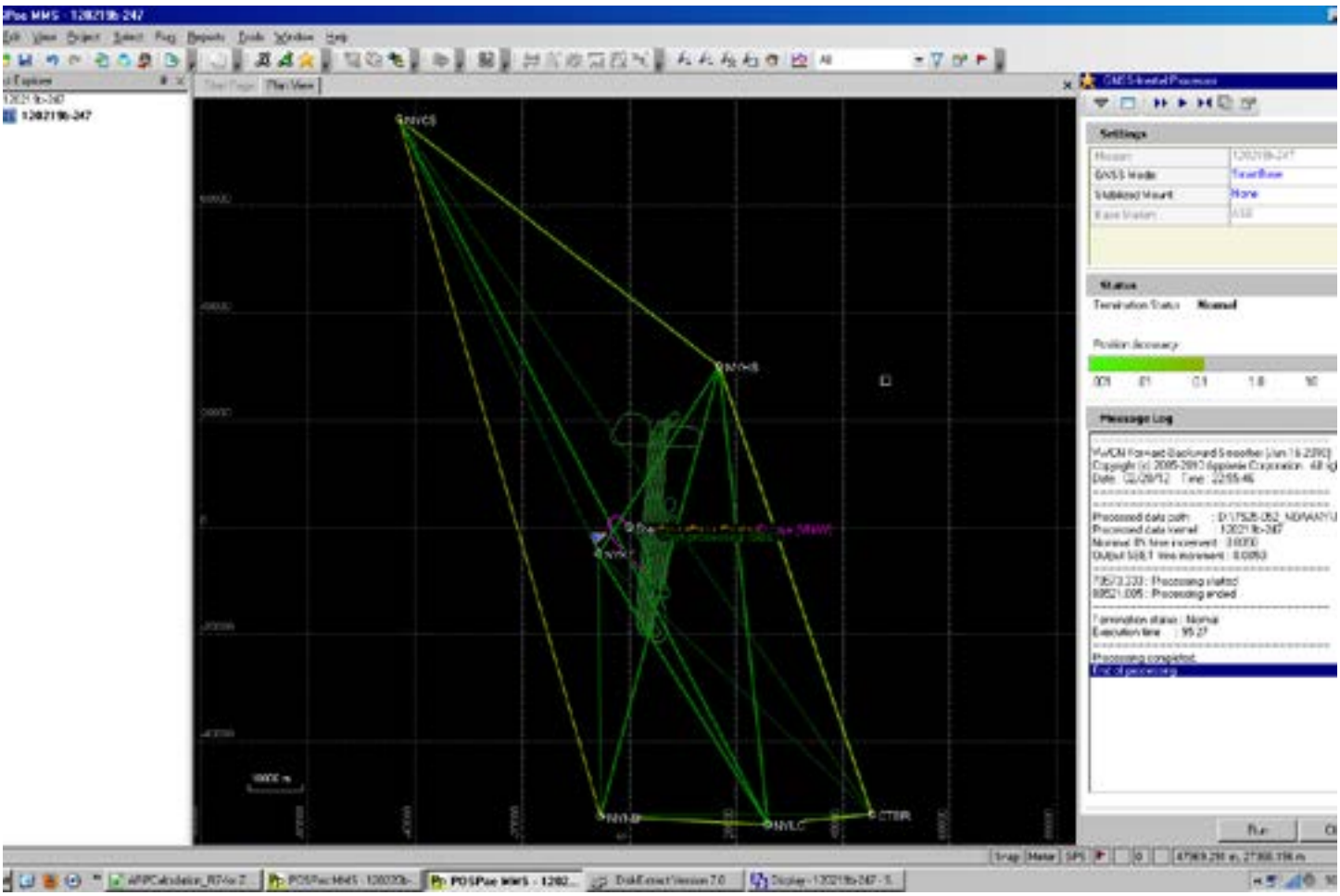

Number of SVs
PDOP
Time (sec)

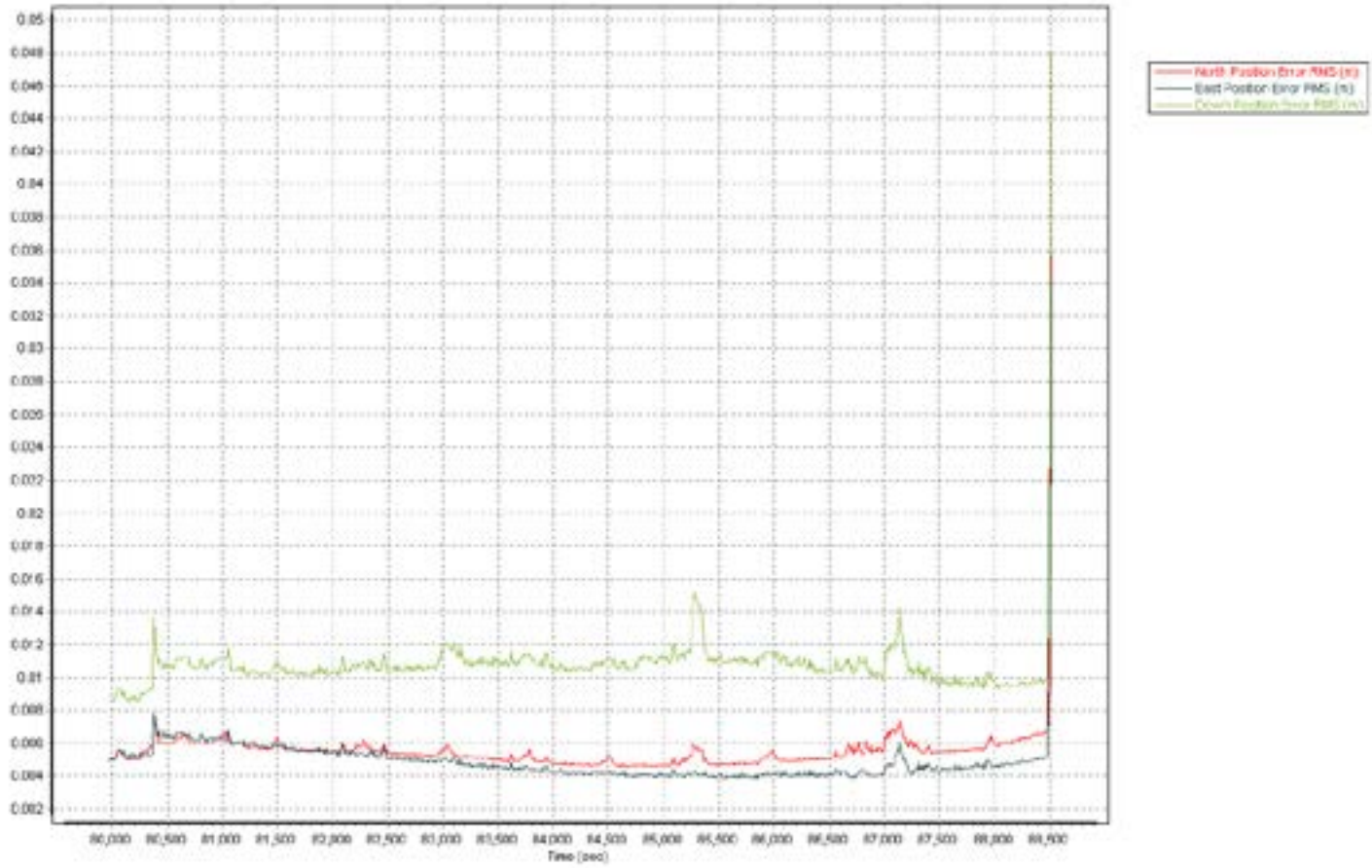
120219b-247

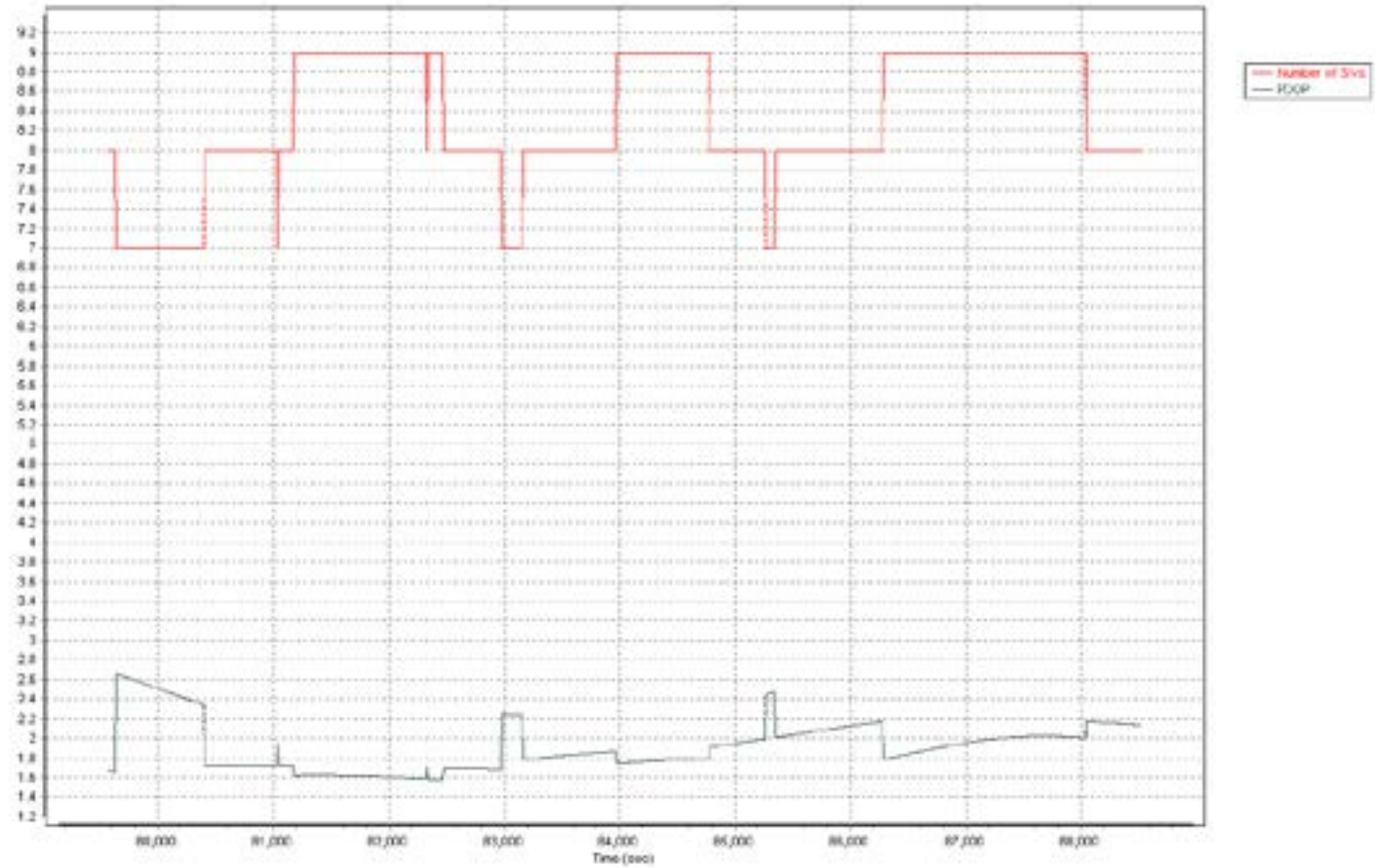

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

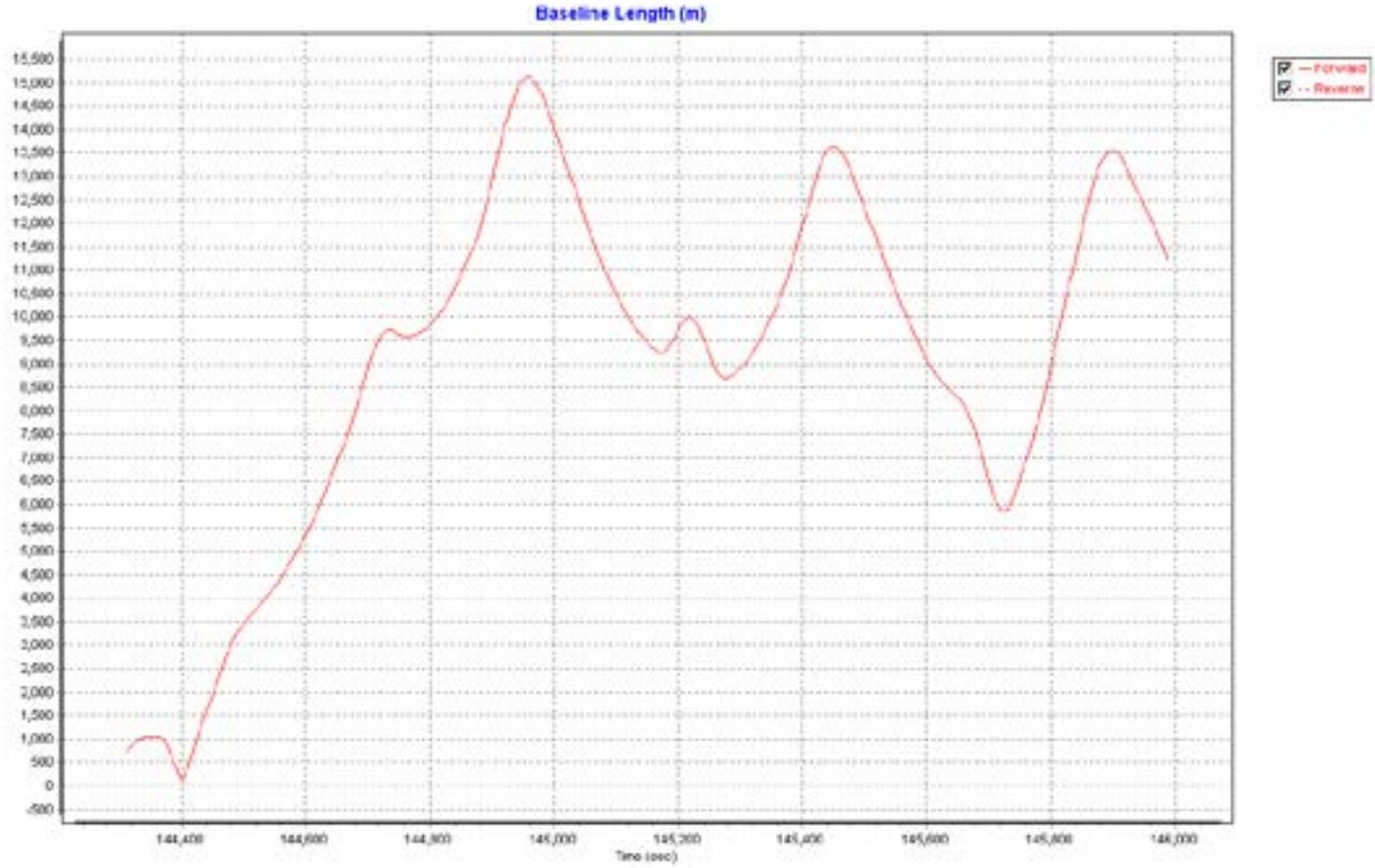

Processing mode
Forward
Reverse
3
2
1
0
50,000
51,000
52,000
53,000
54,000
55,000
56,000
57,000
58,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

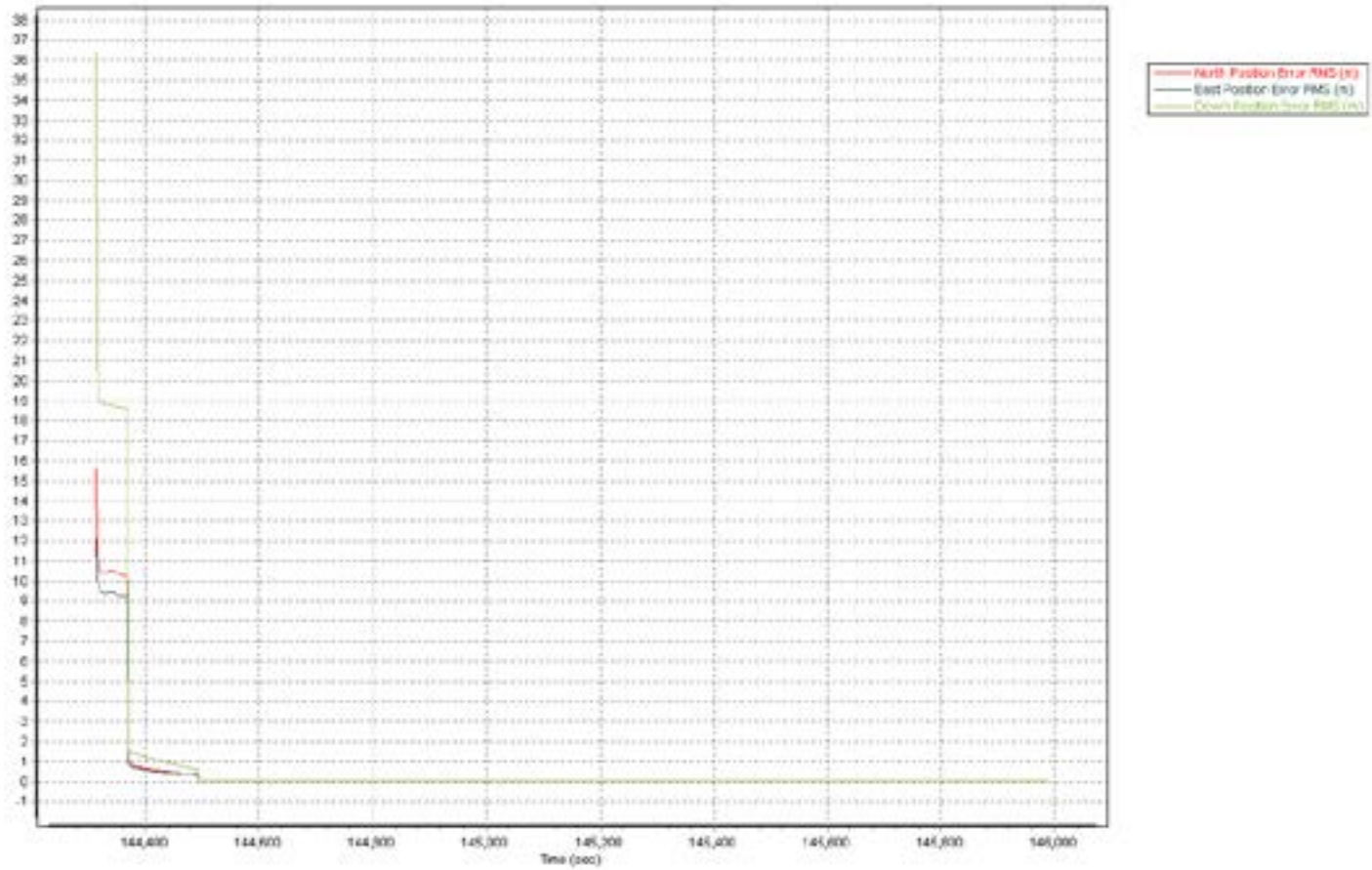

Settings
Status
Message Log

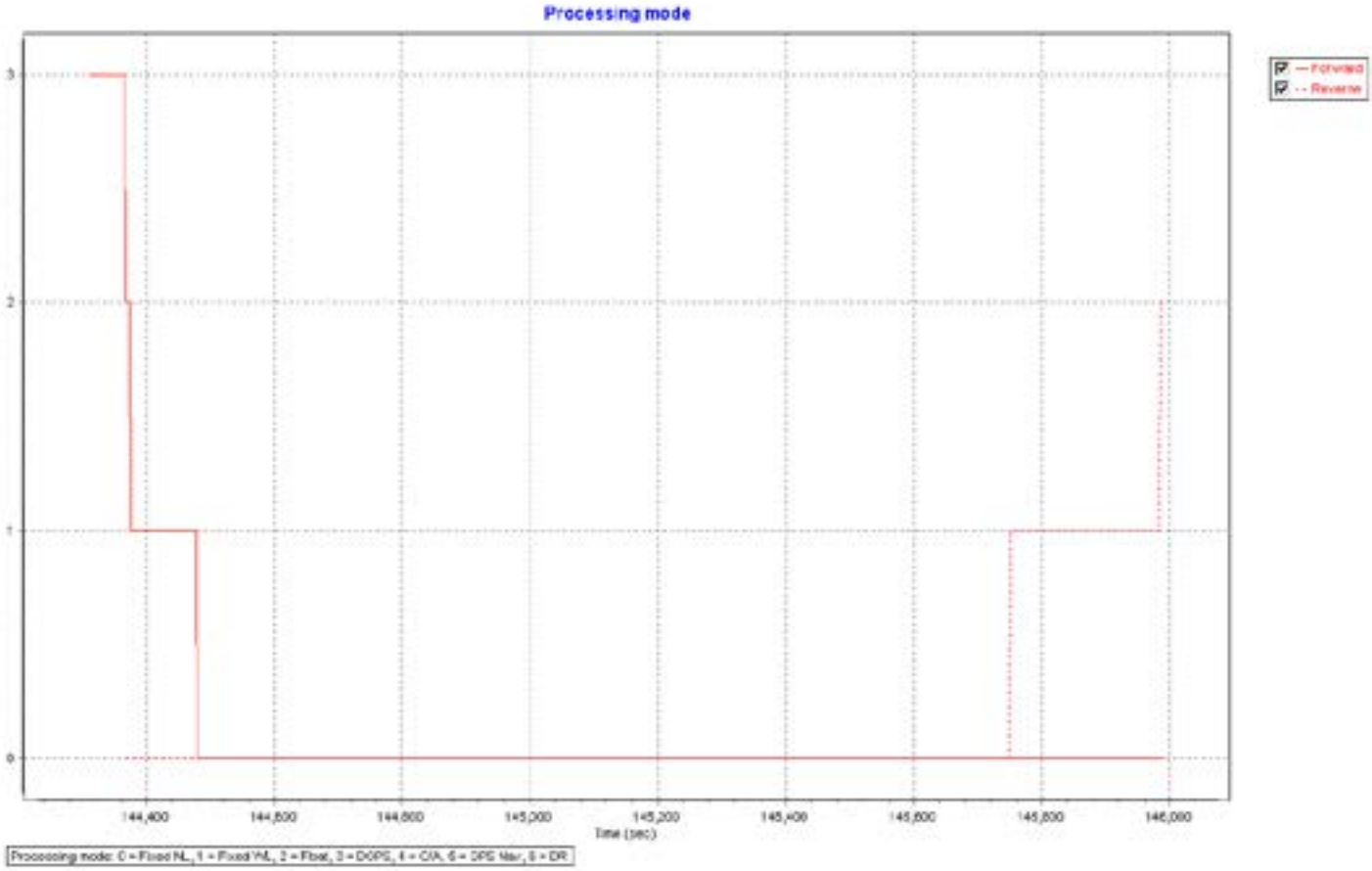

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

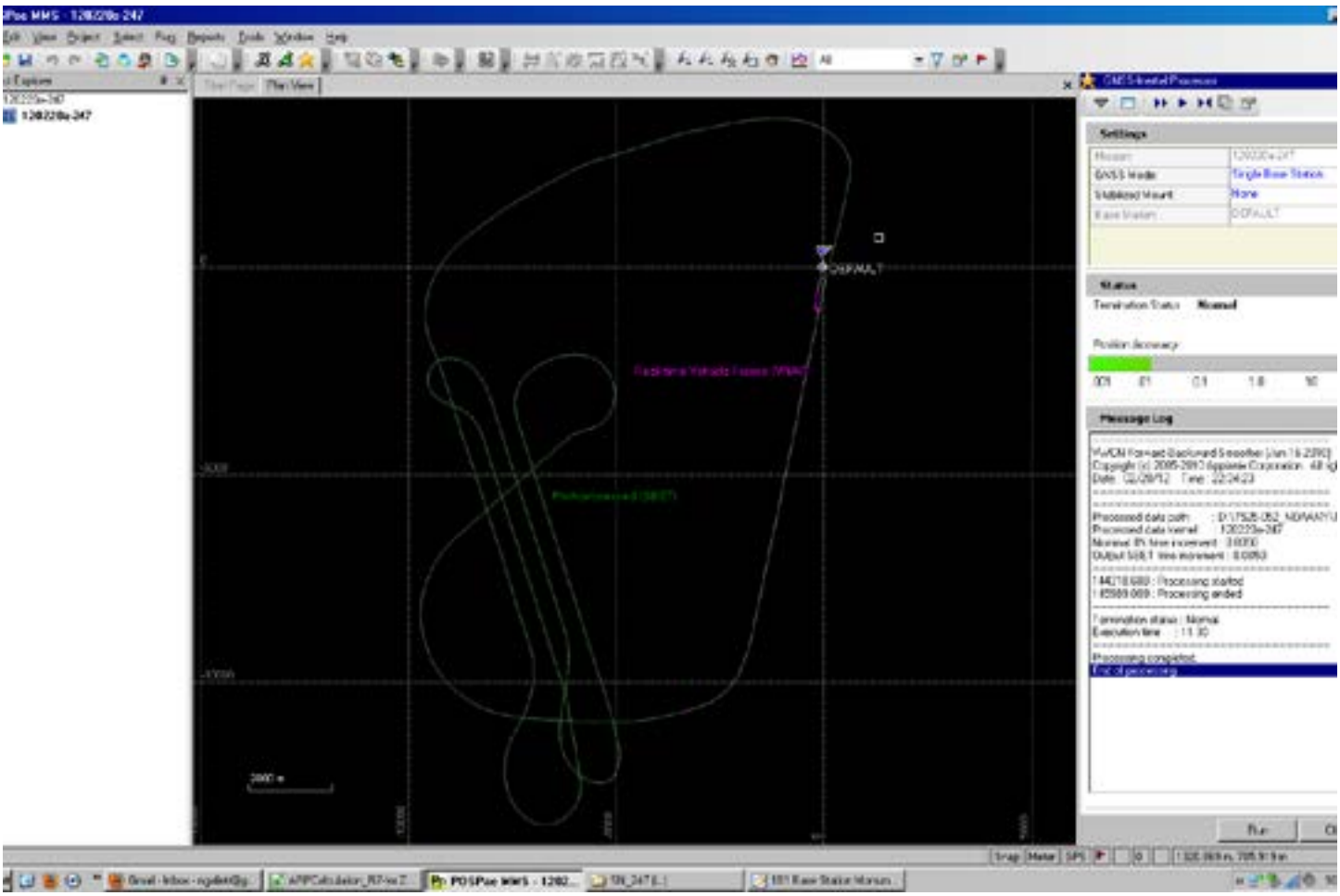

Number of SVs
PDOP
Time (sec)

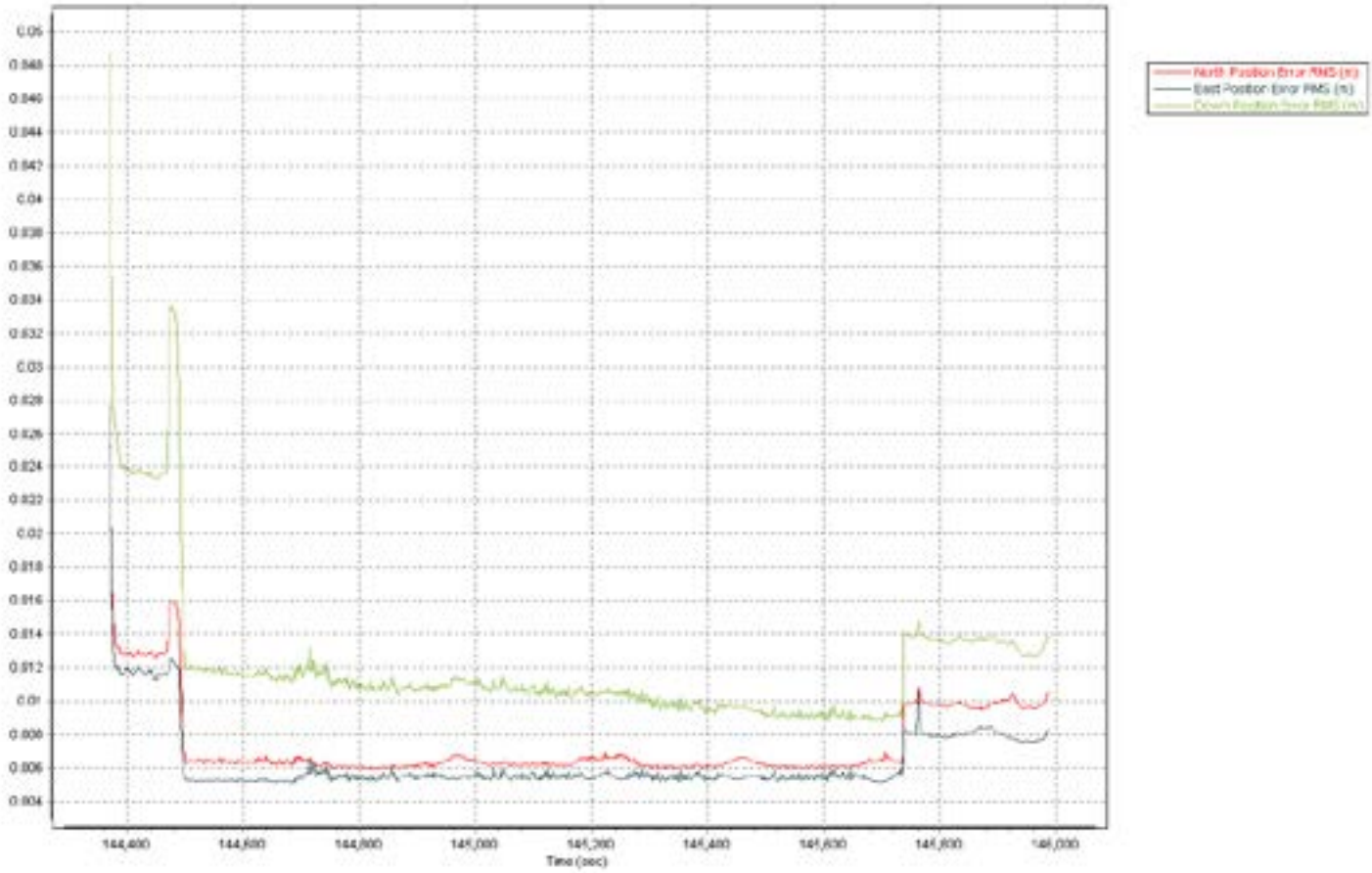
120220a-247

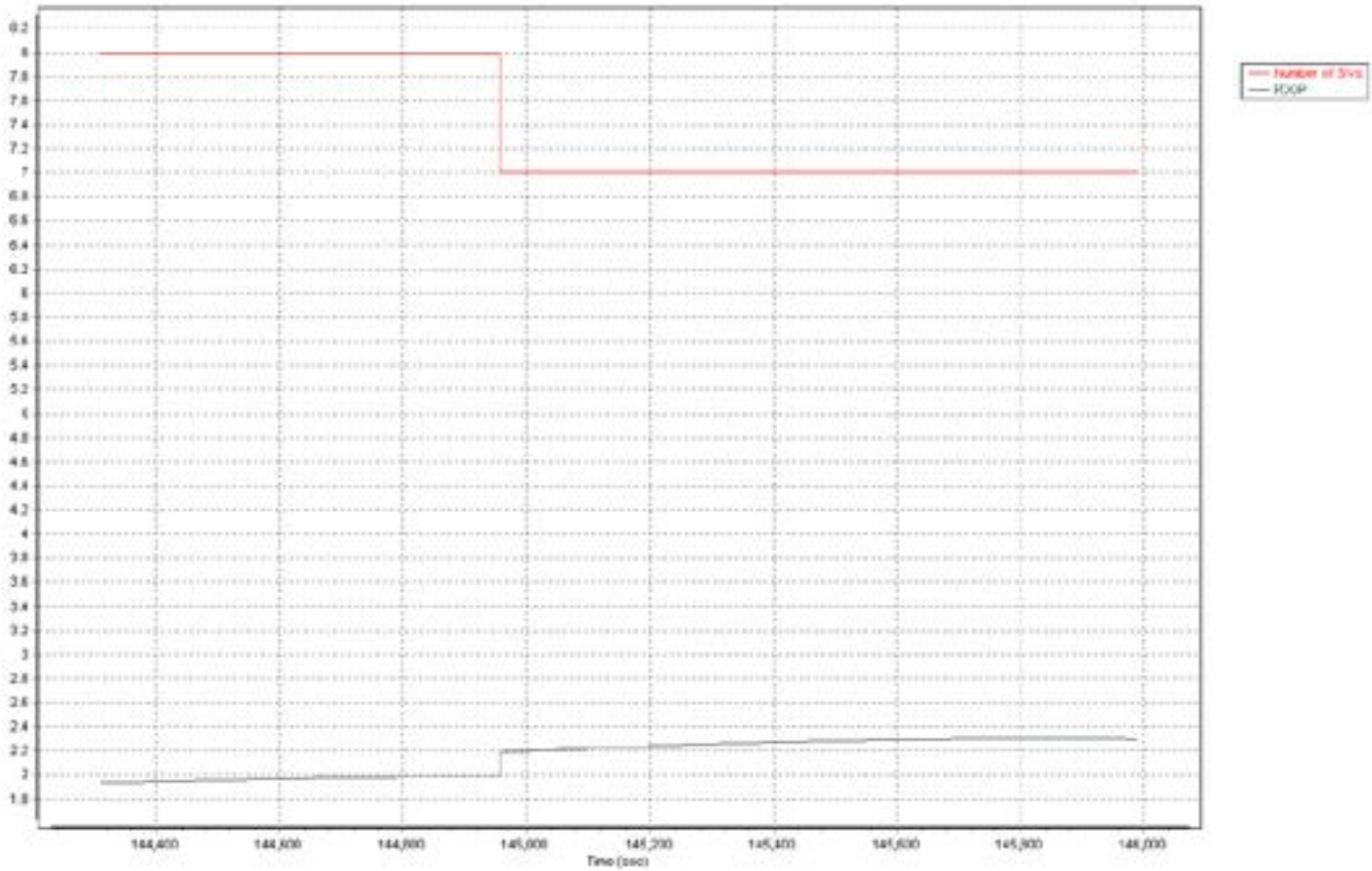

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

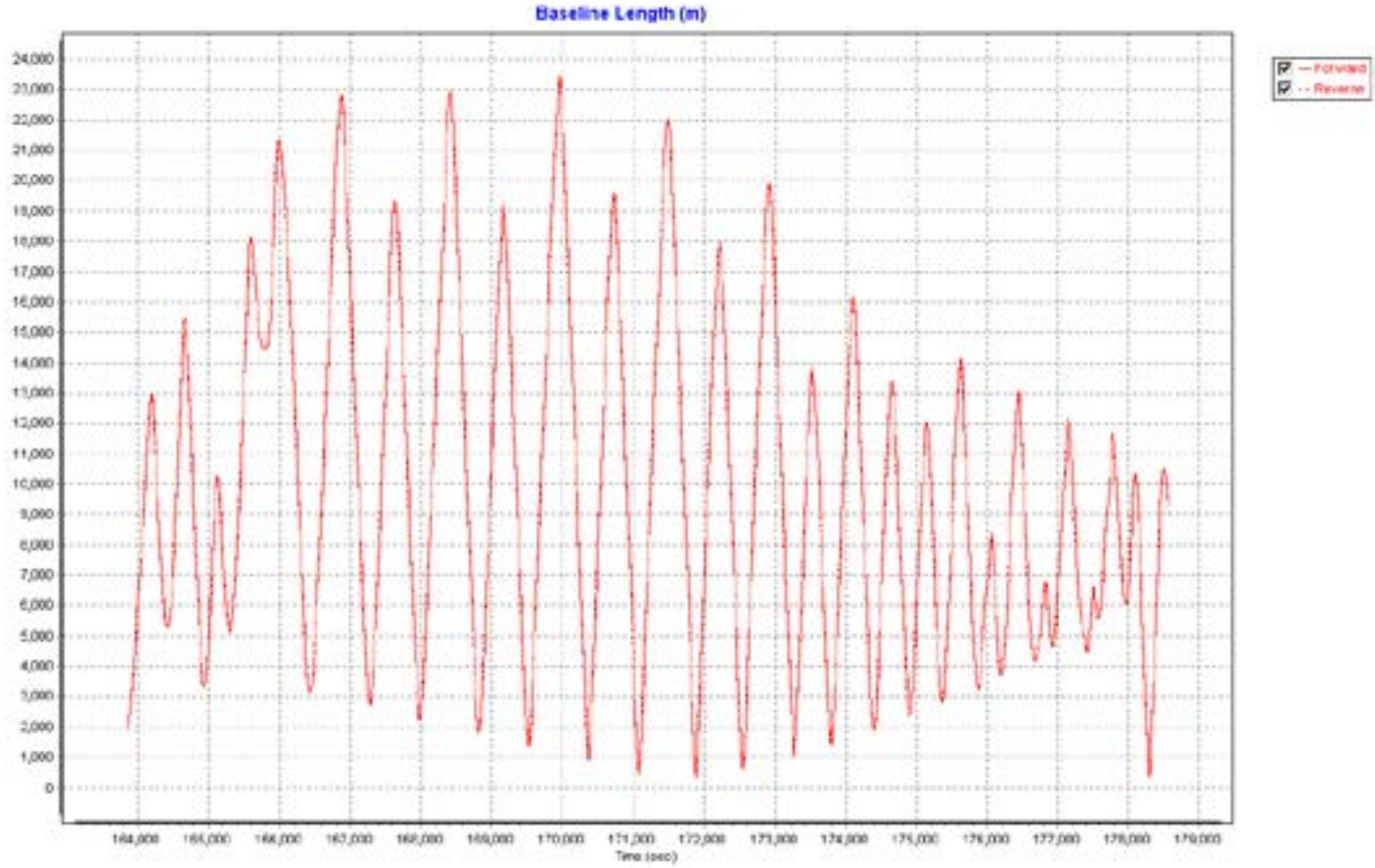

Processing mode
Forward
Reverse
3
2
1
0
144,400
144,600
144,800
145,000
145,200
145,400
145,600
145,800
146,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

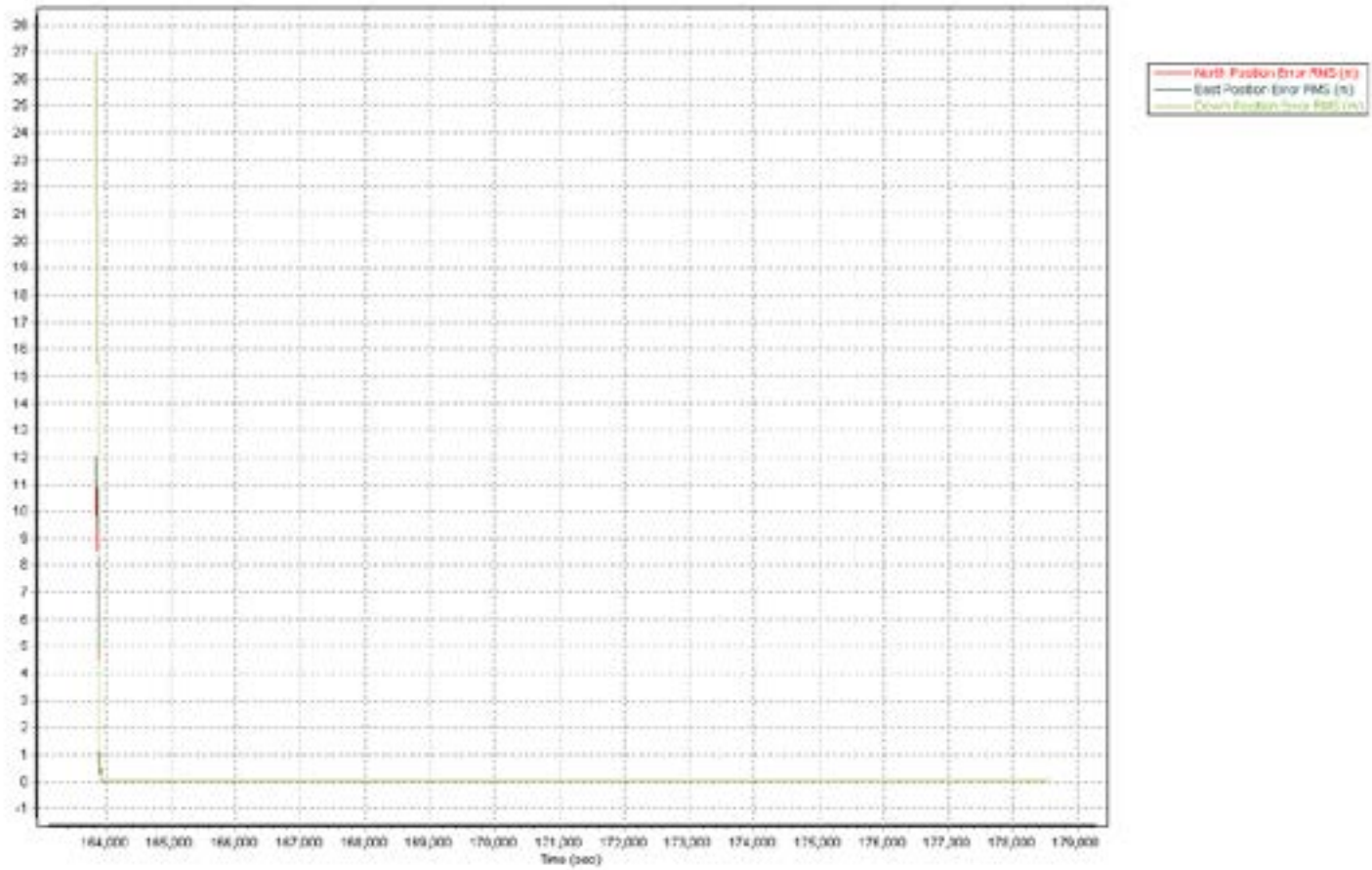

Settings
Status
Message Log

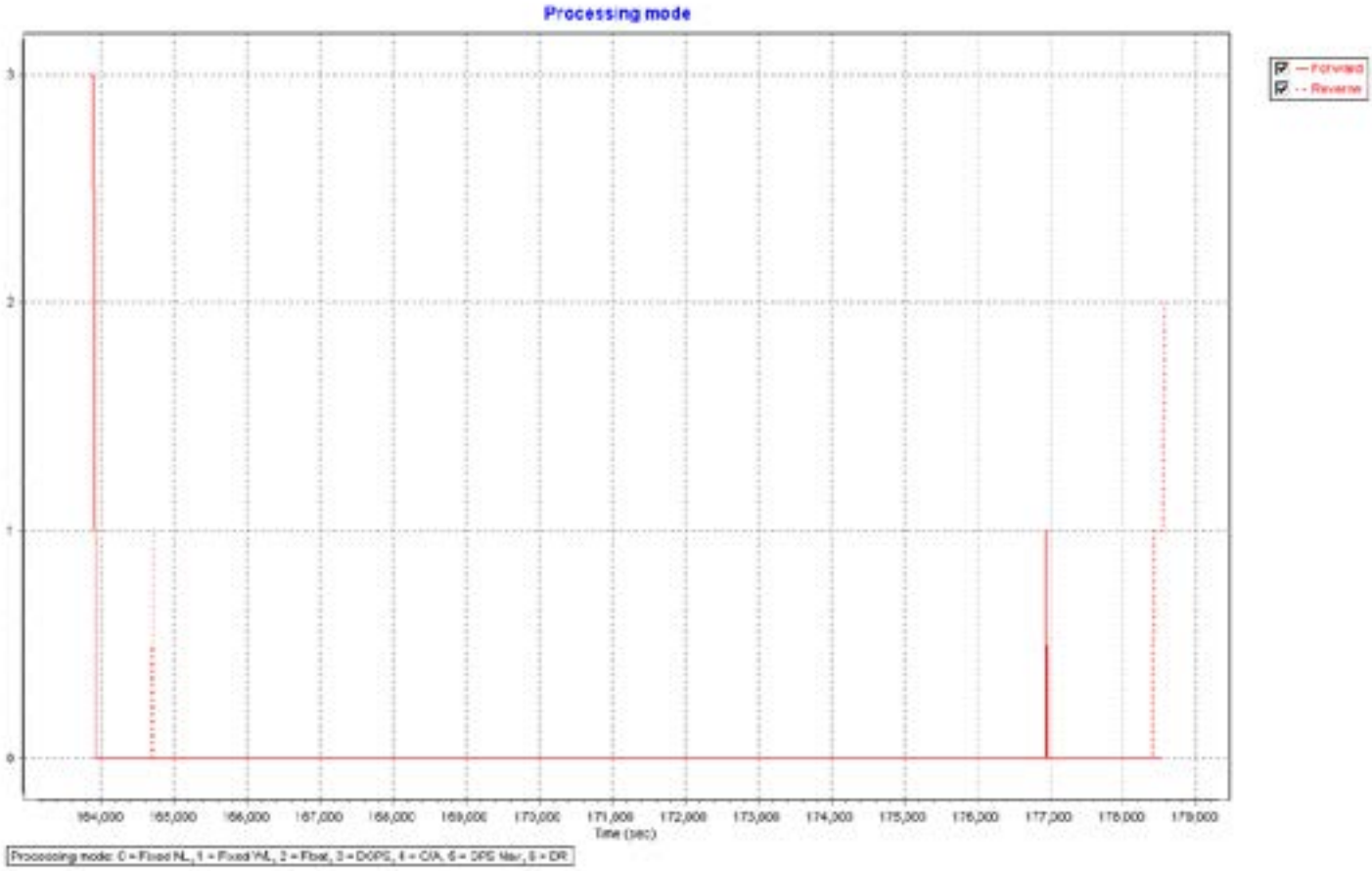

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

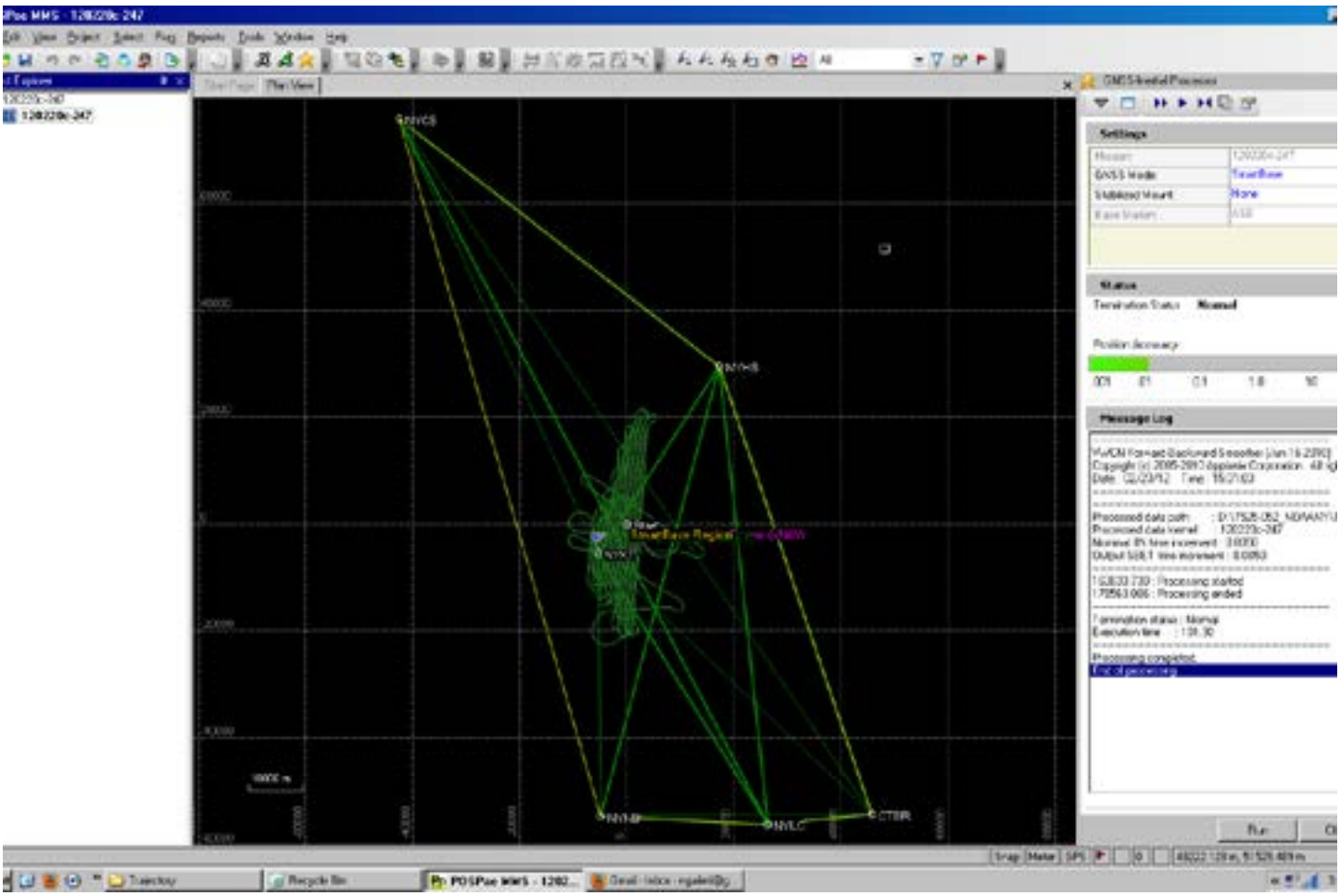

Number of SVs
PDOP
Time (sec)

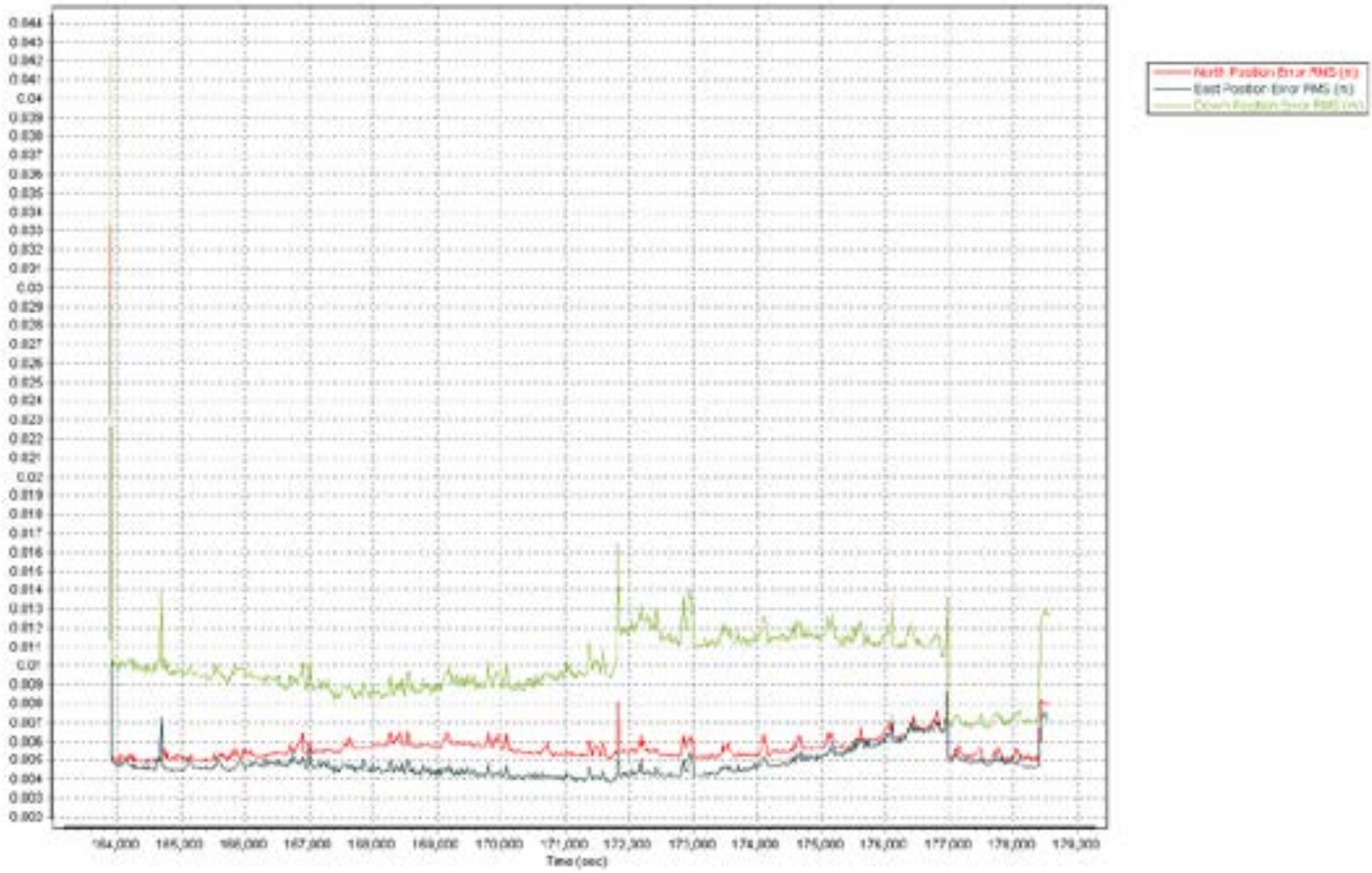
120220c-247

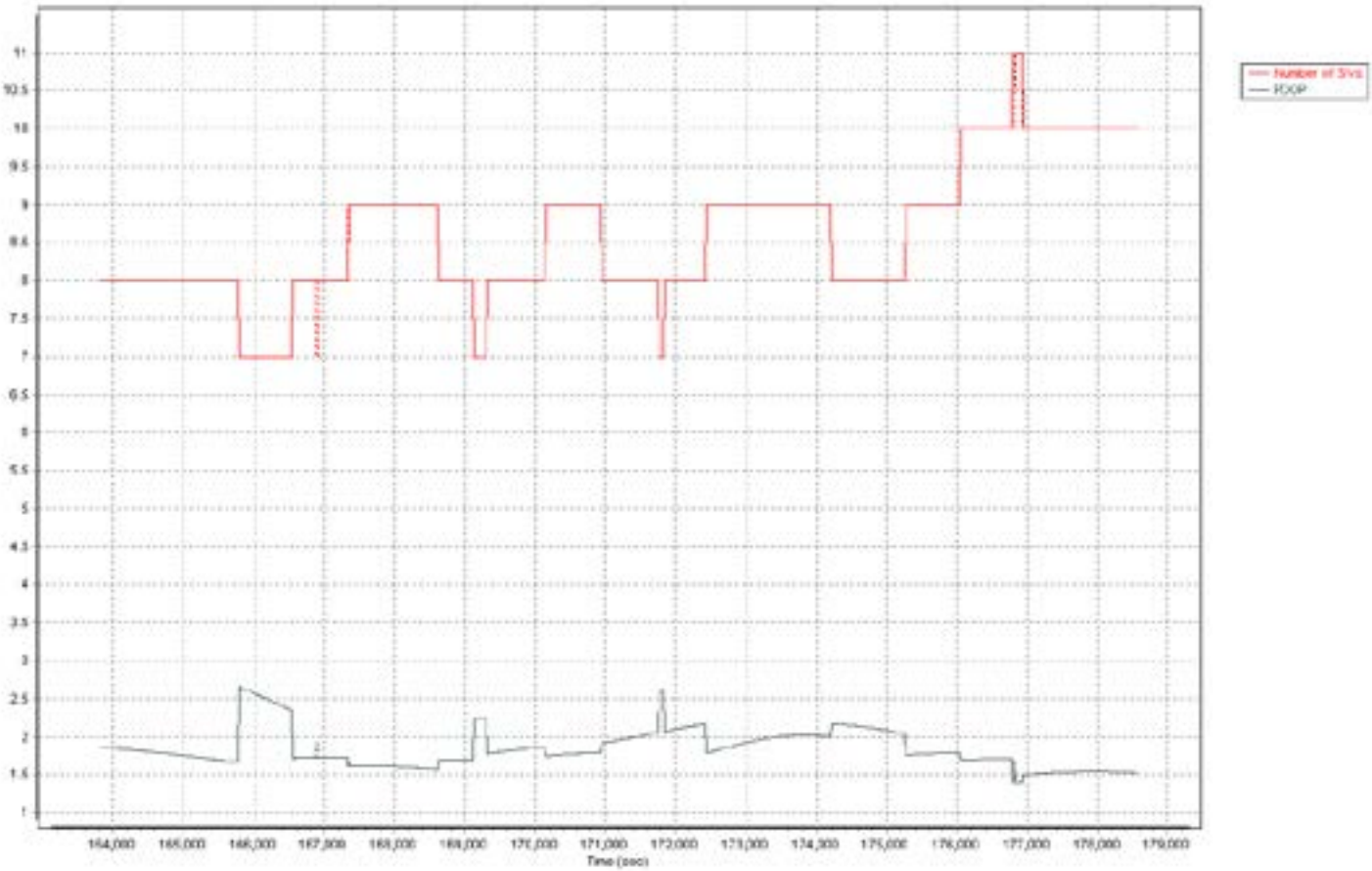

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

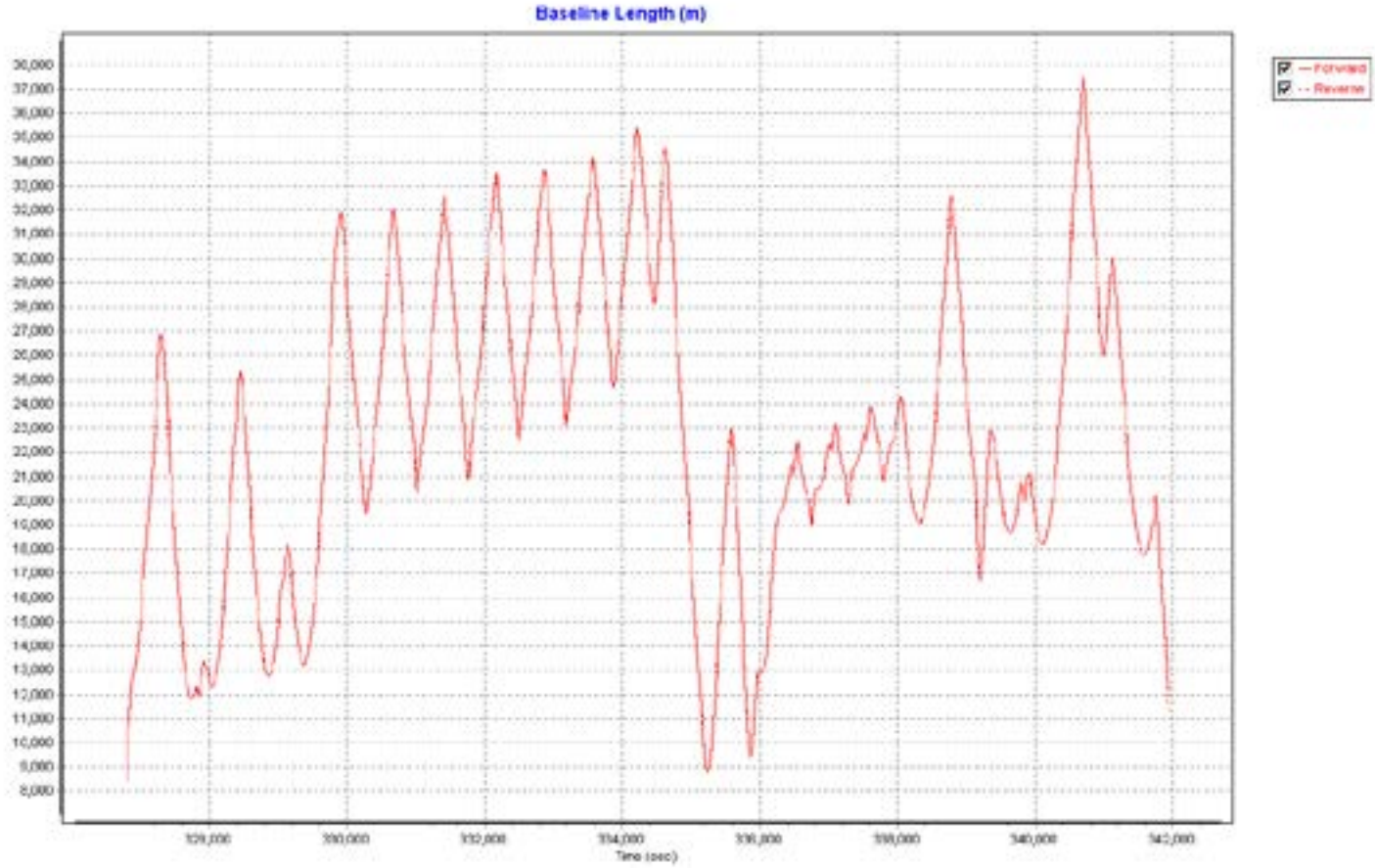

Processing mode
Forward
Reverse
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

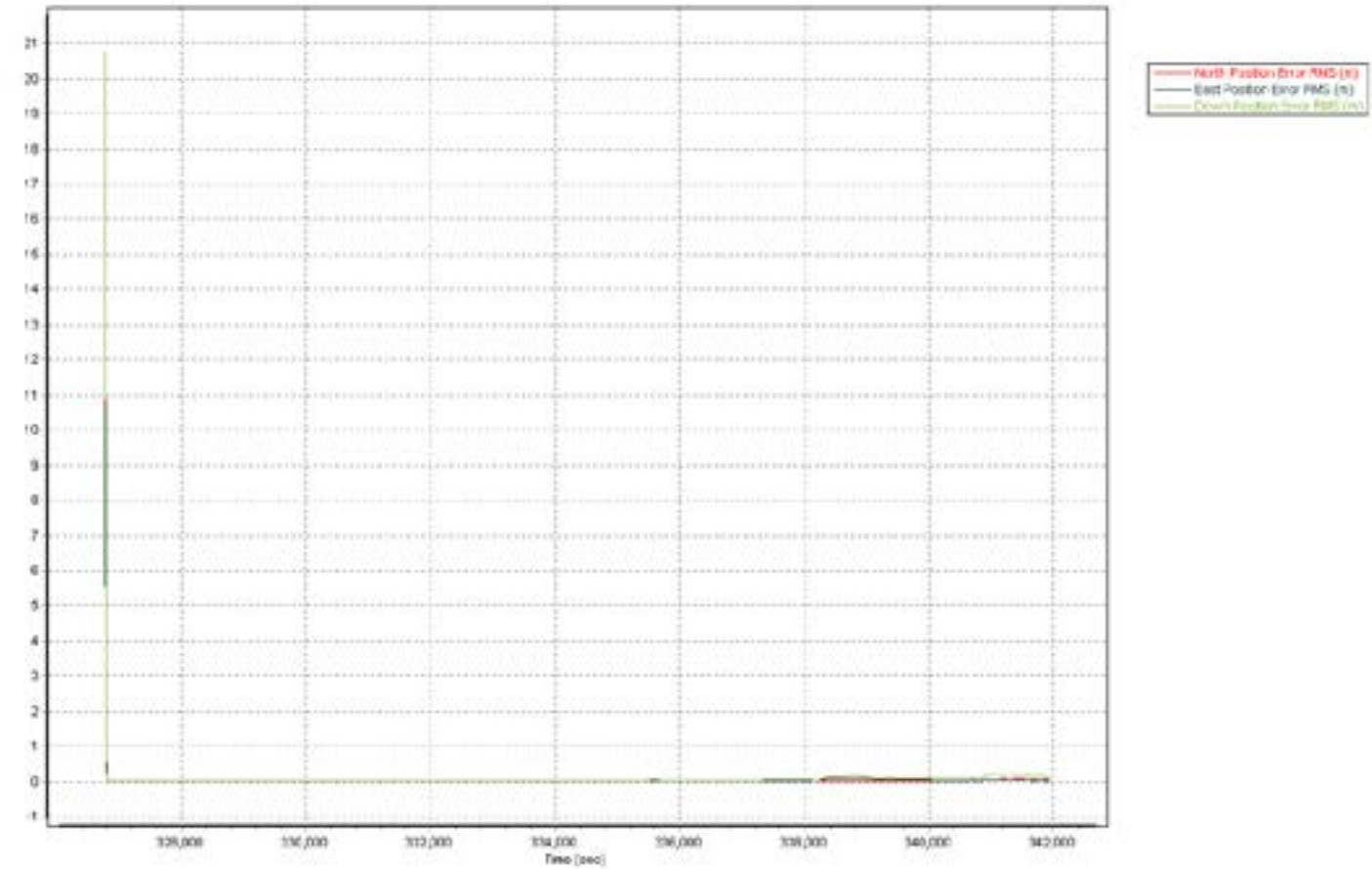

Settings
Status
Message Log

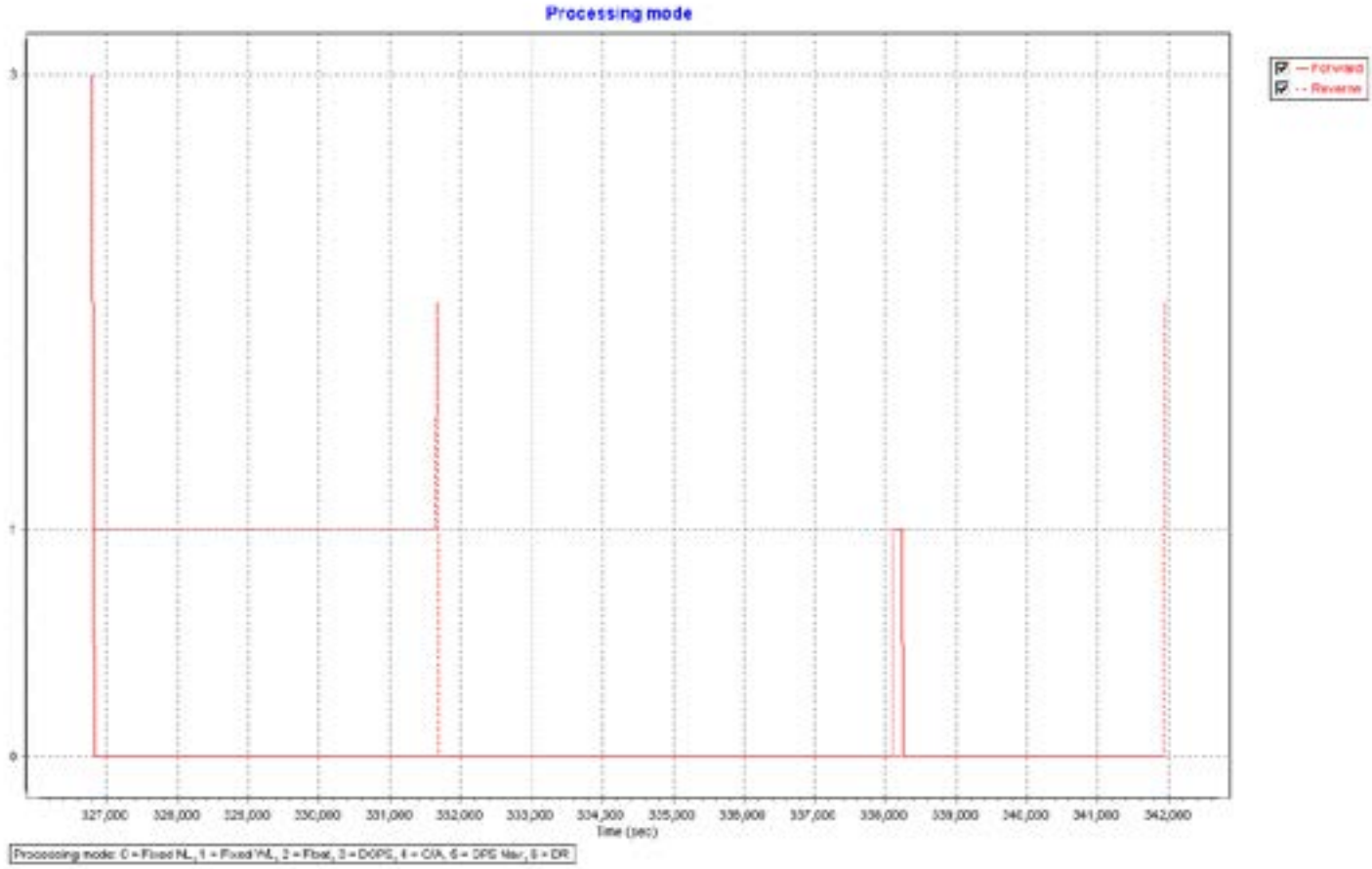

North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

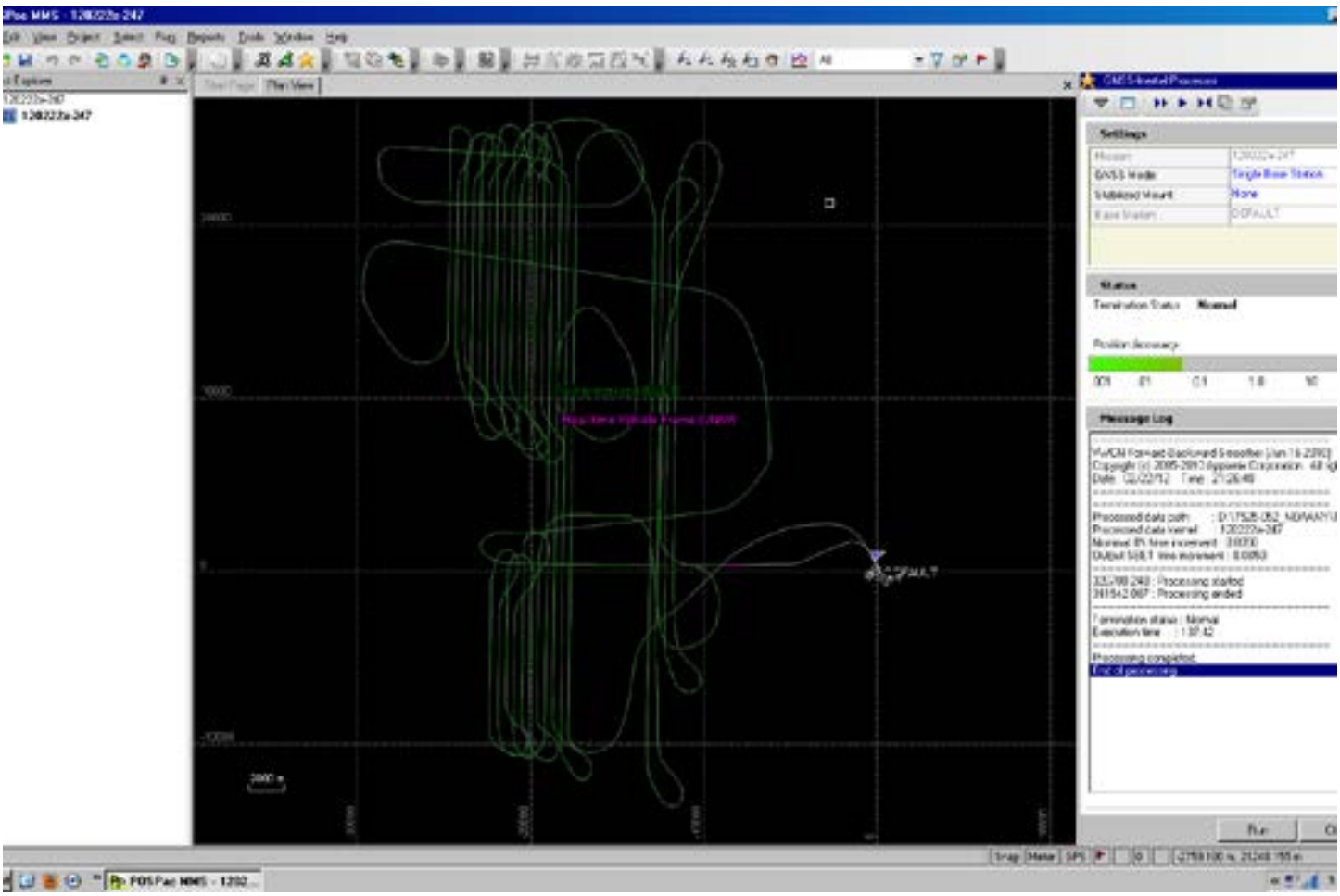

Number of SVs
PDOP
Time (sec)

120222a-247

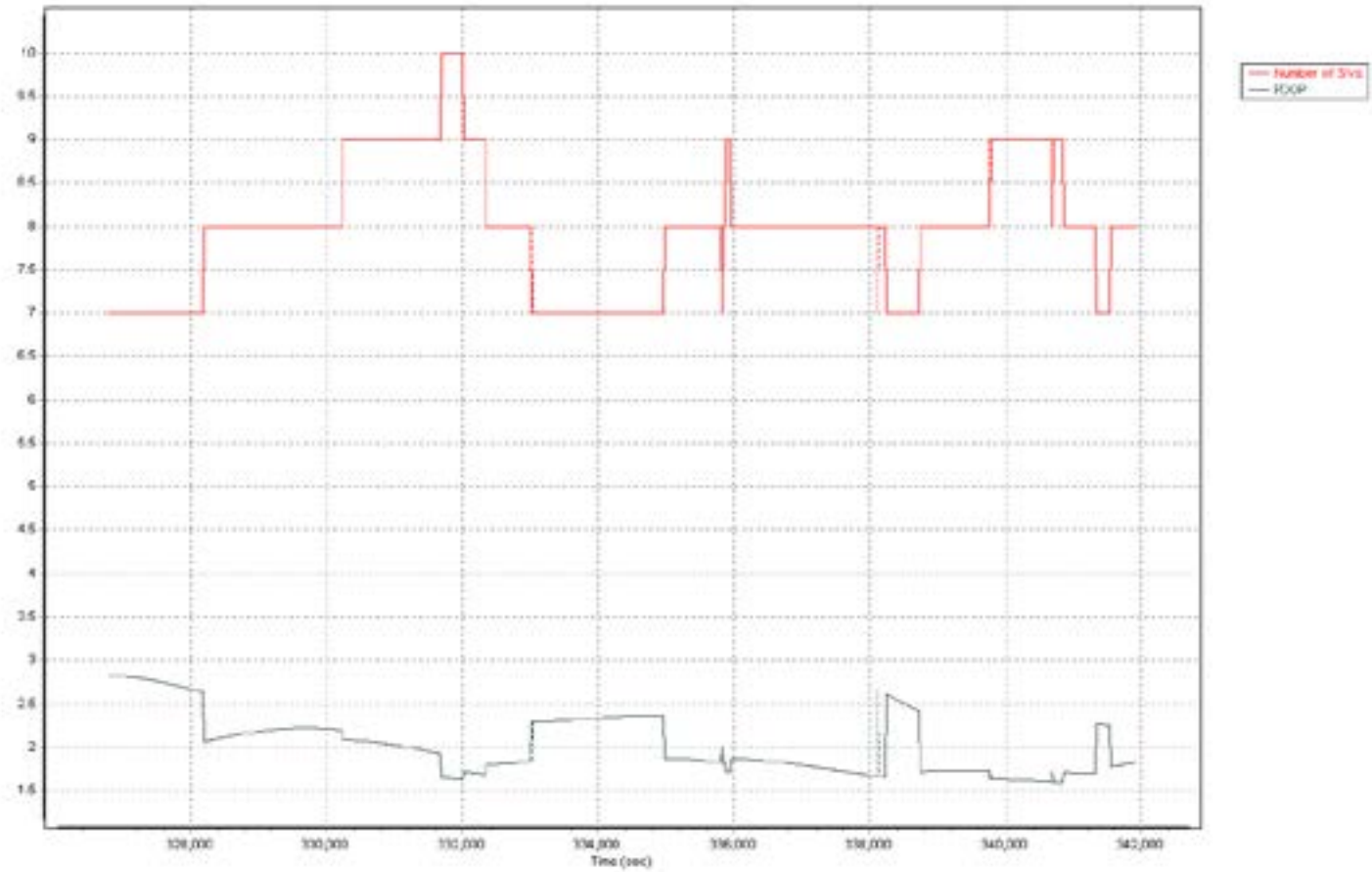

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

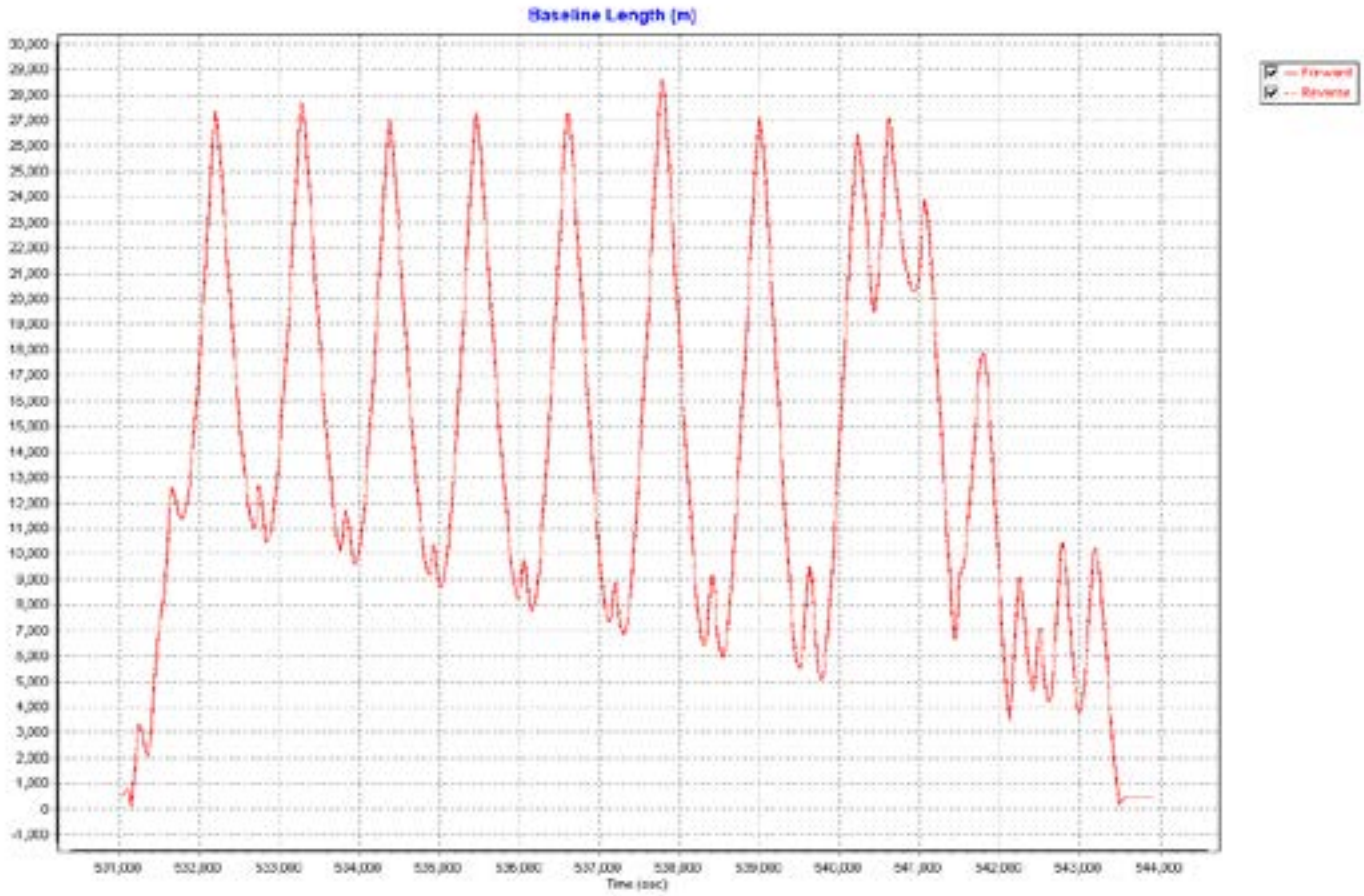

Processing mode
Forward
Reverse
3
1
0
327,000
328,000
329,000
330,000
331,000
332,000
333,000
334,000
335,000
336,000
337,000
338,000
339,000
340,000
341,000
342,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGPS, 4 = C/A, 5 = DPS Mar, 6 = DR

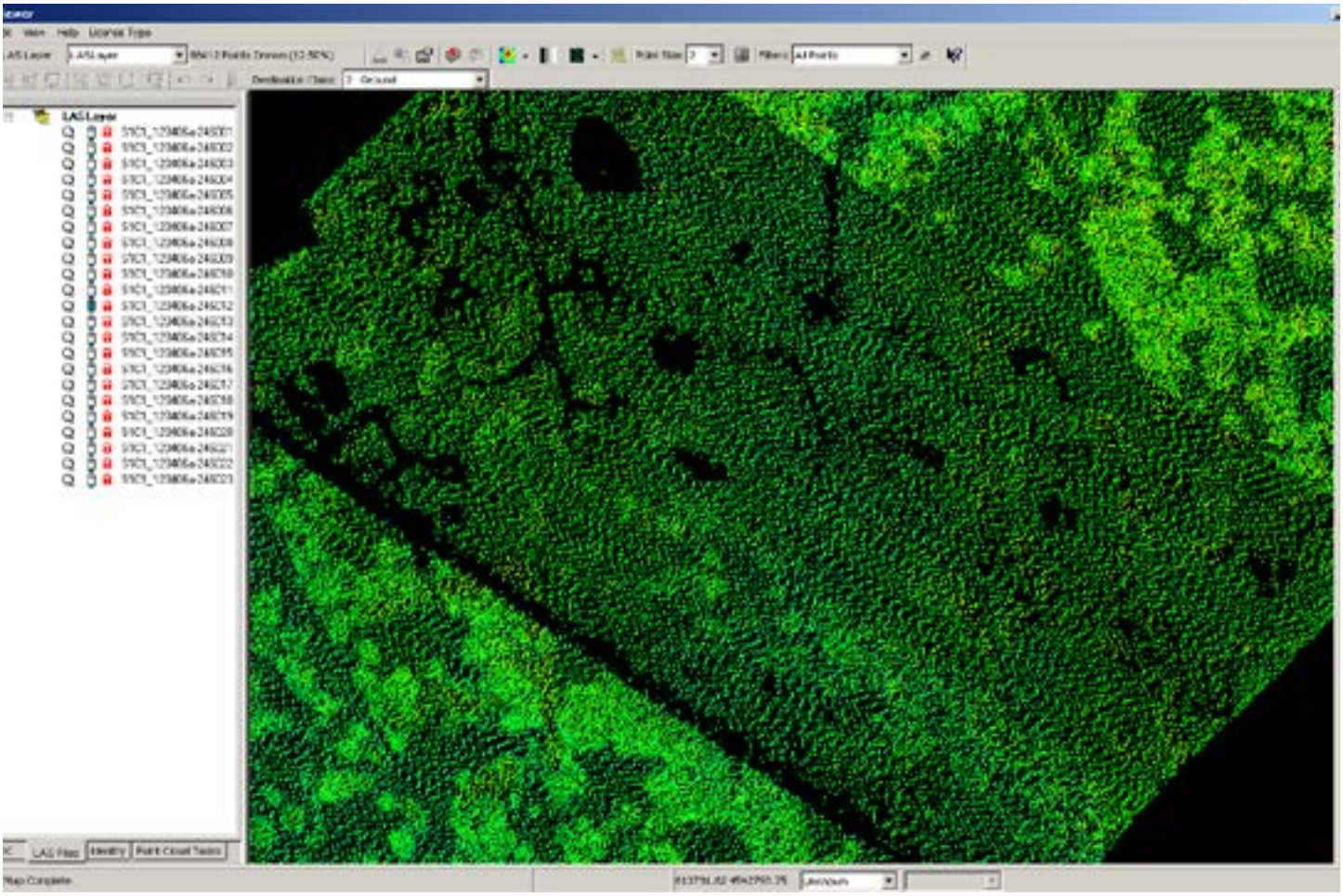

Settings
Status
Message Log

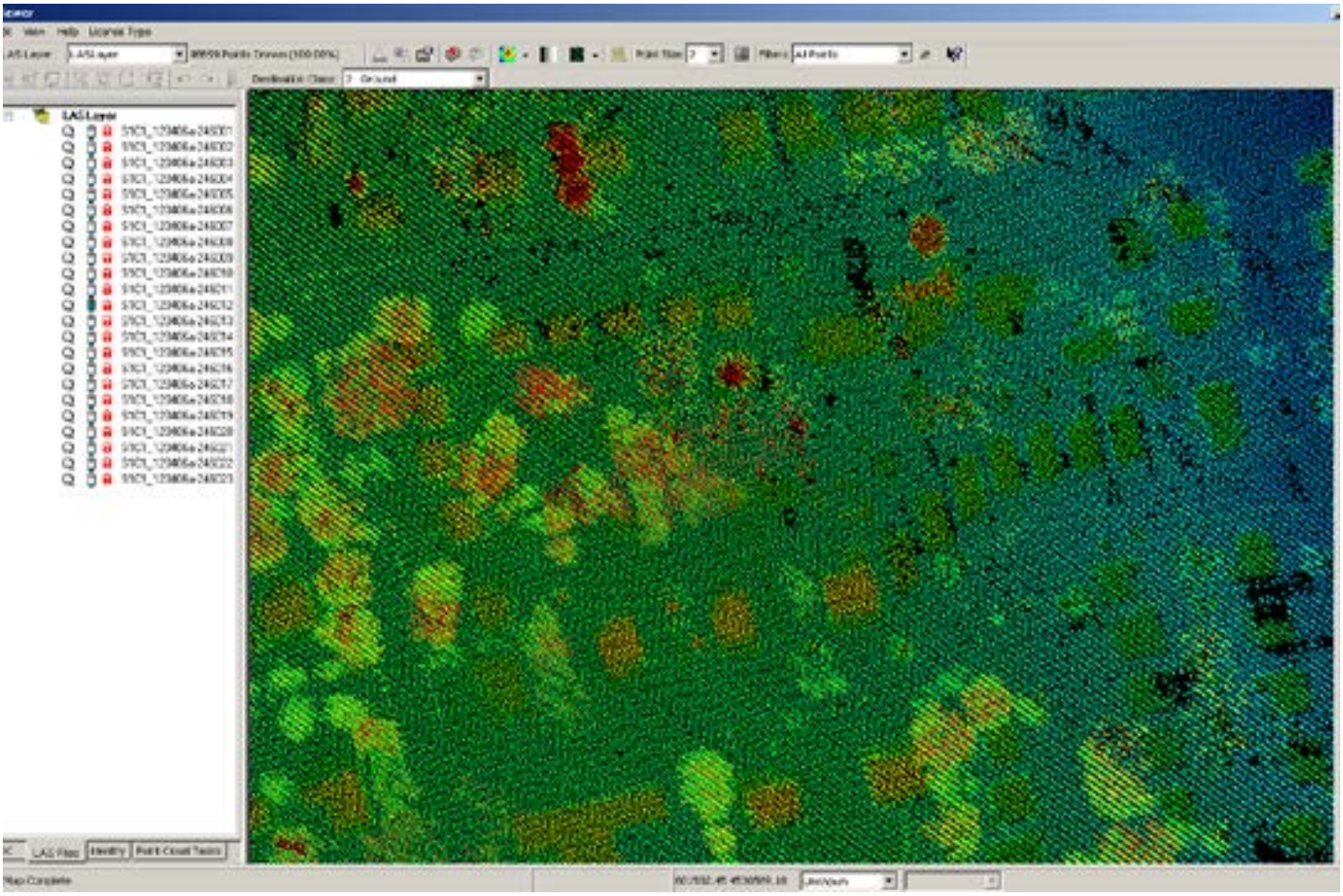
North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

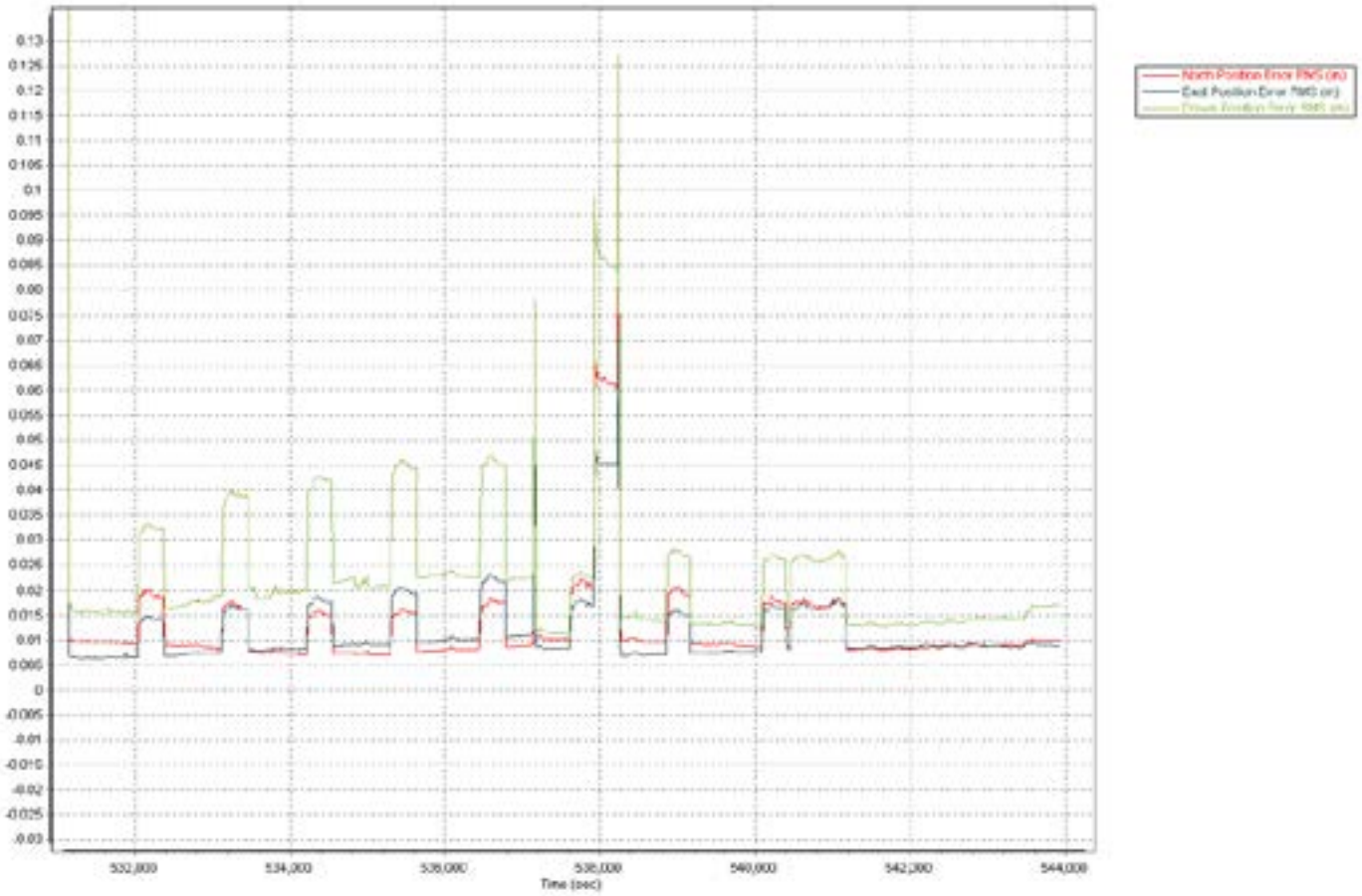

Number of SVs
PDOP
Time (sec)

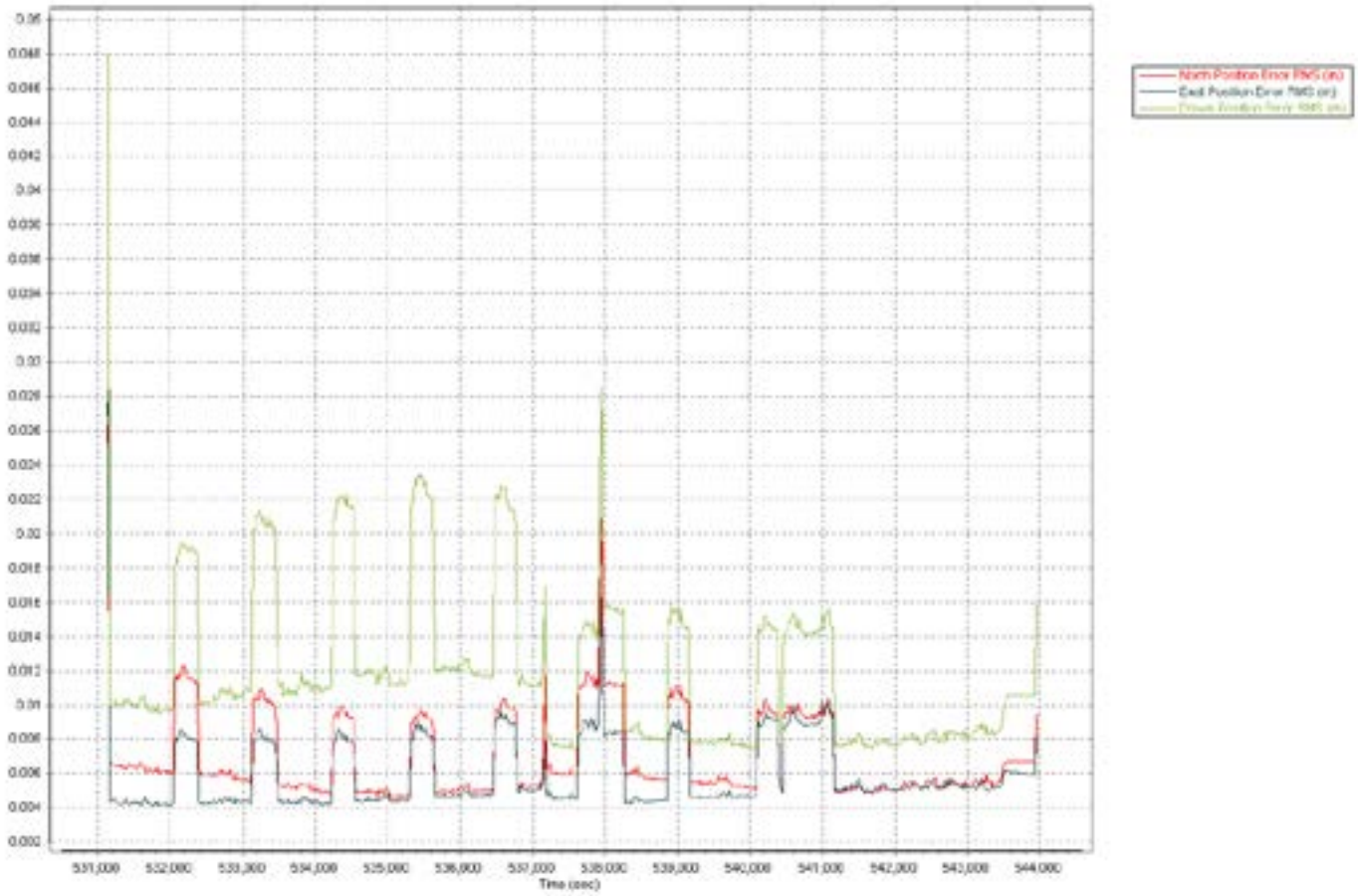
120406a-246

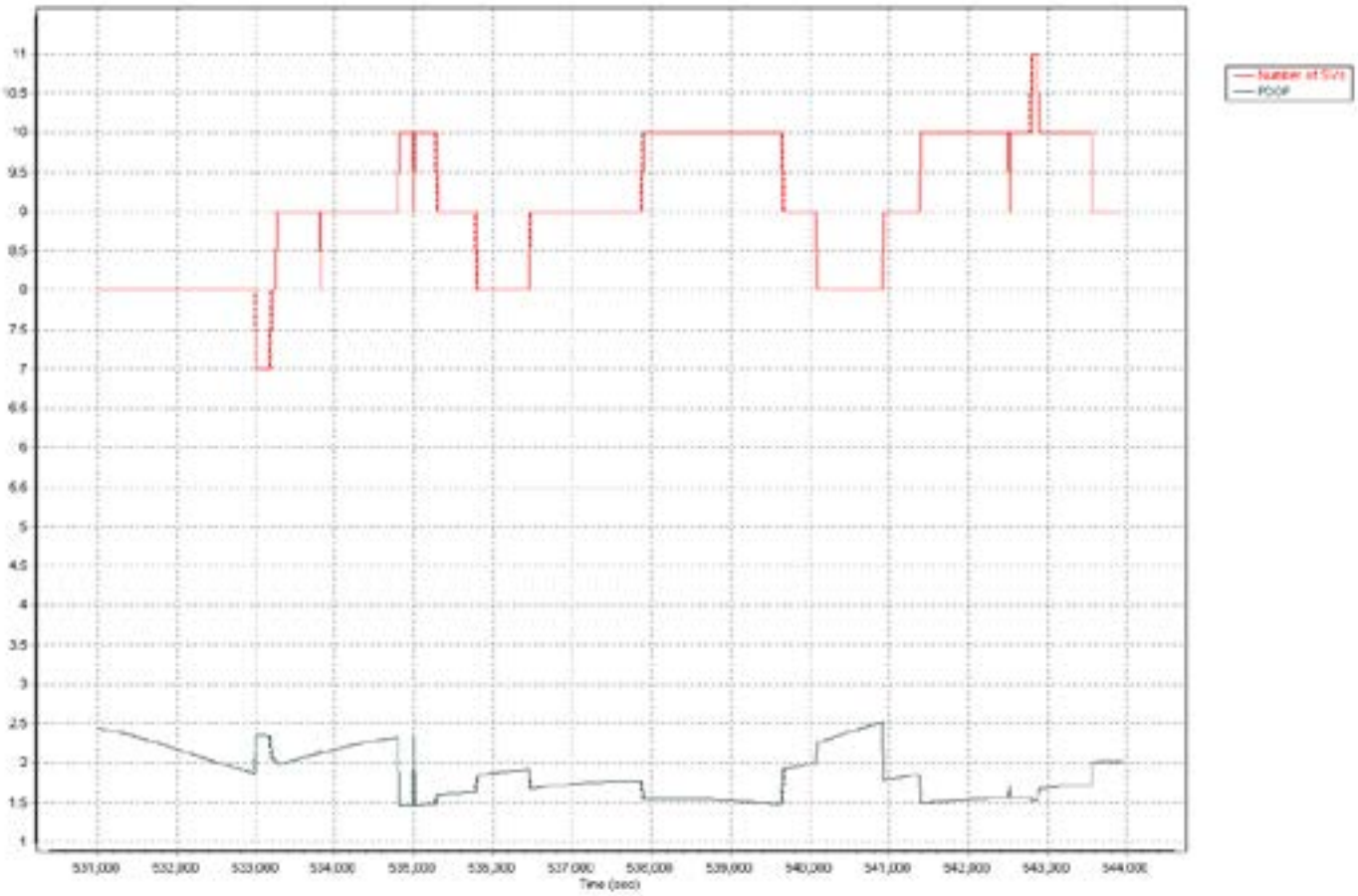

Baseline Length (m)
Forward
Reverse
Time (sec)

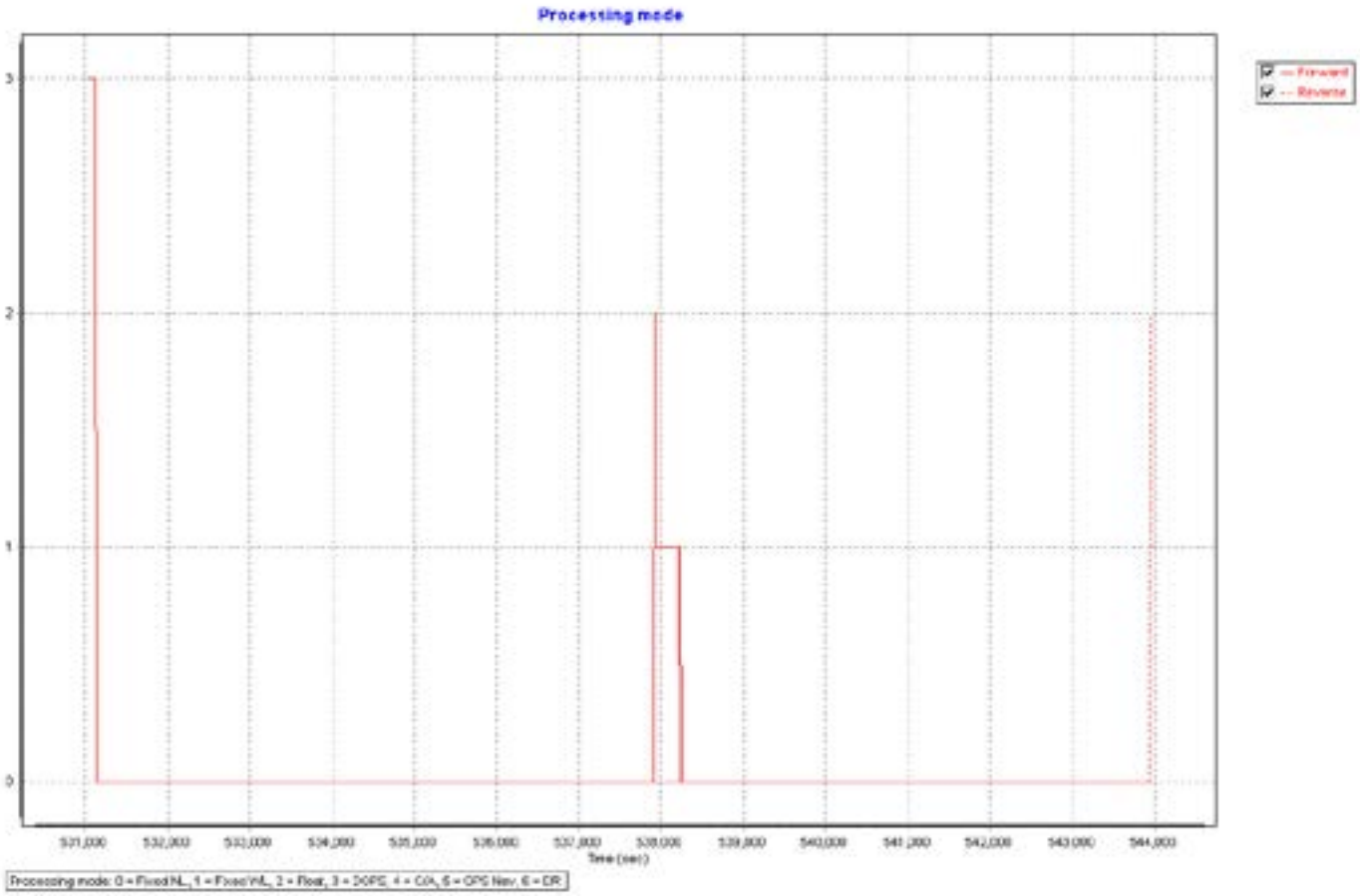

LAS Layer

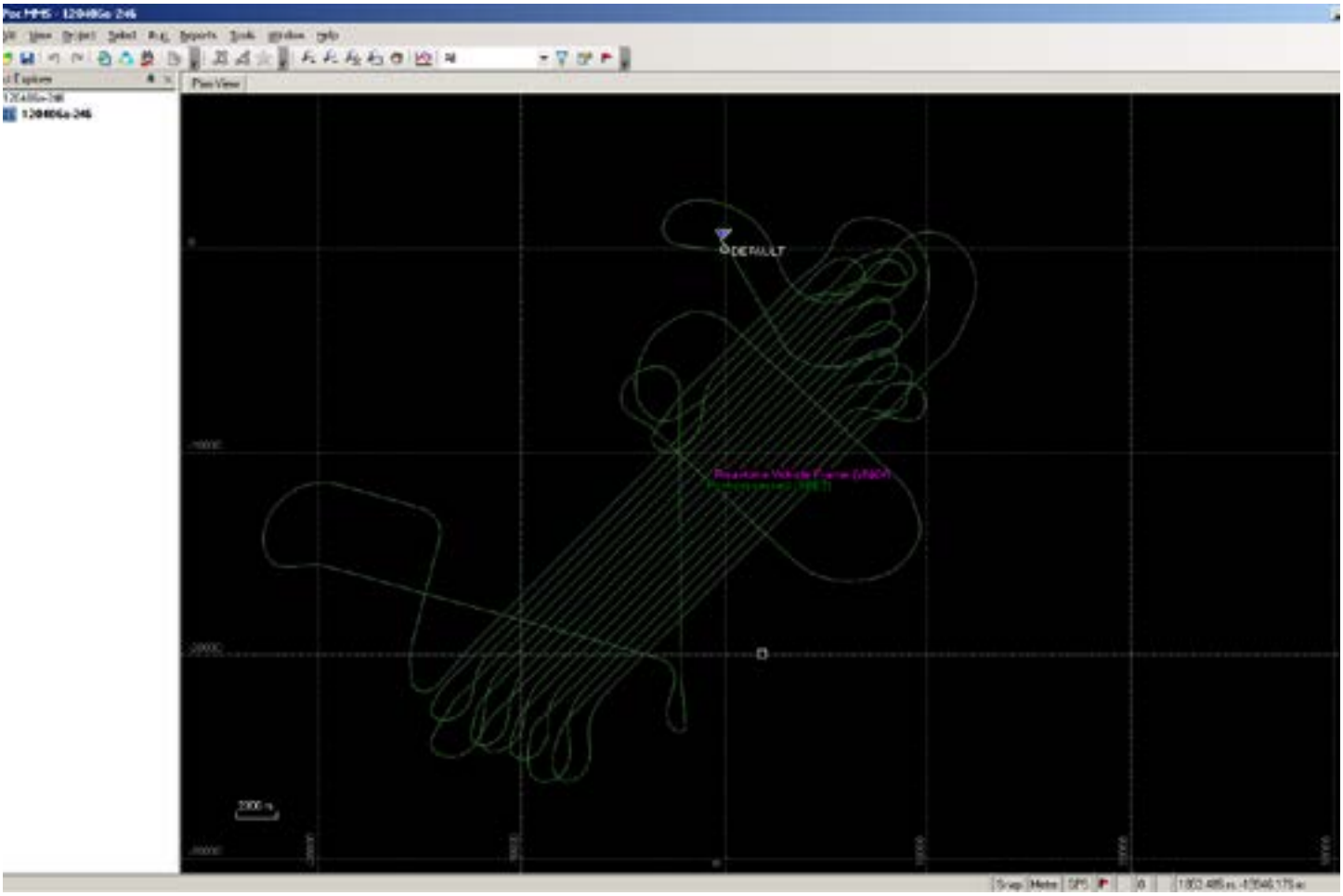



North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

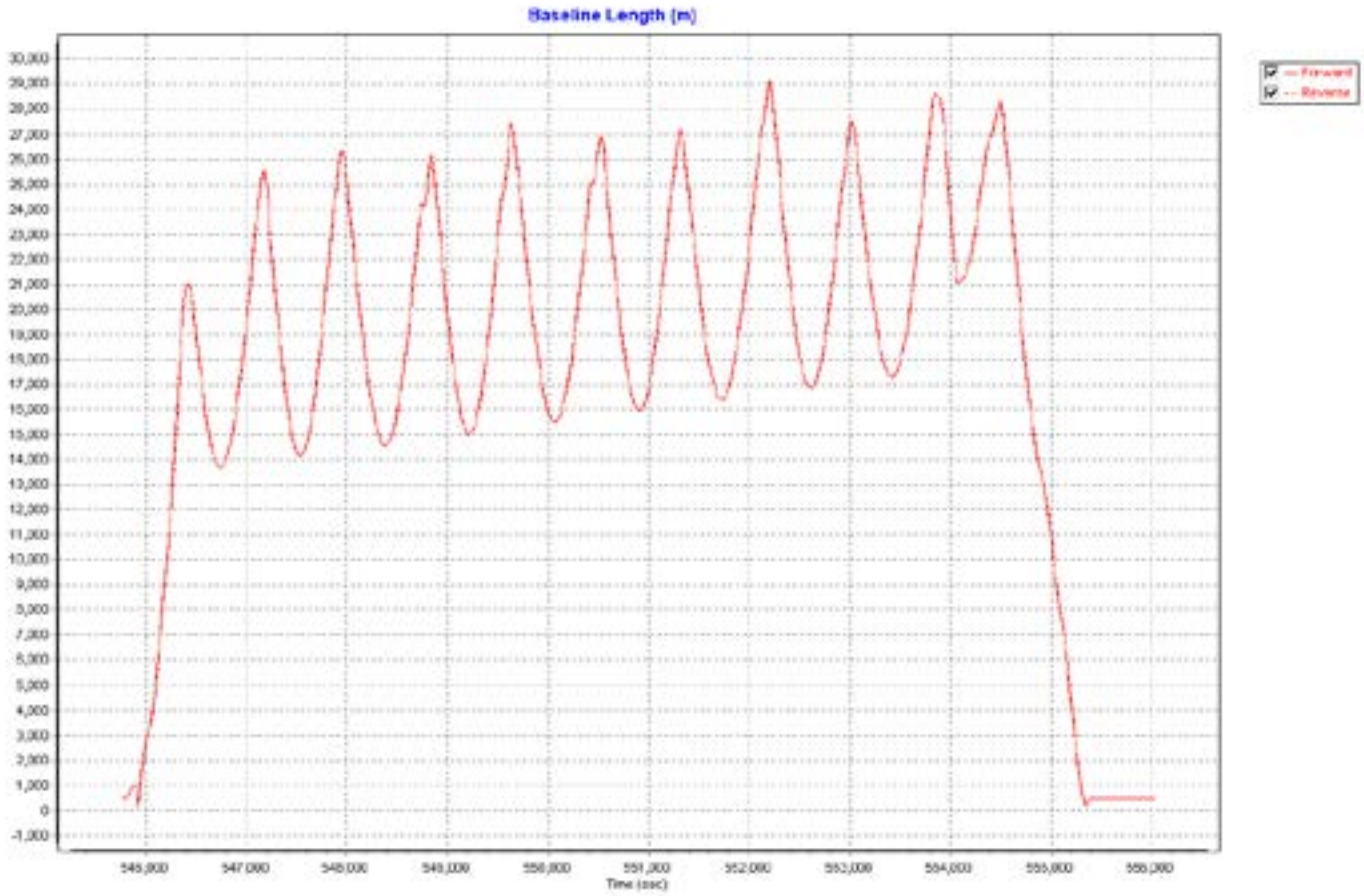

Time (sec)

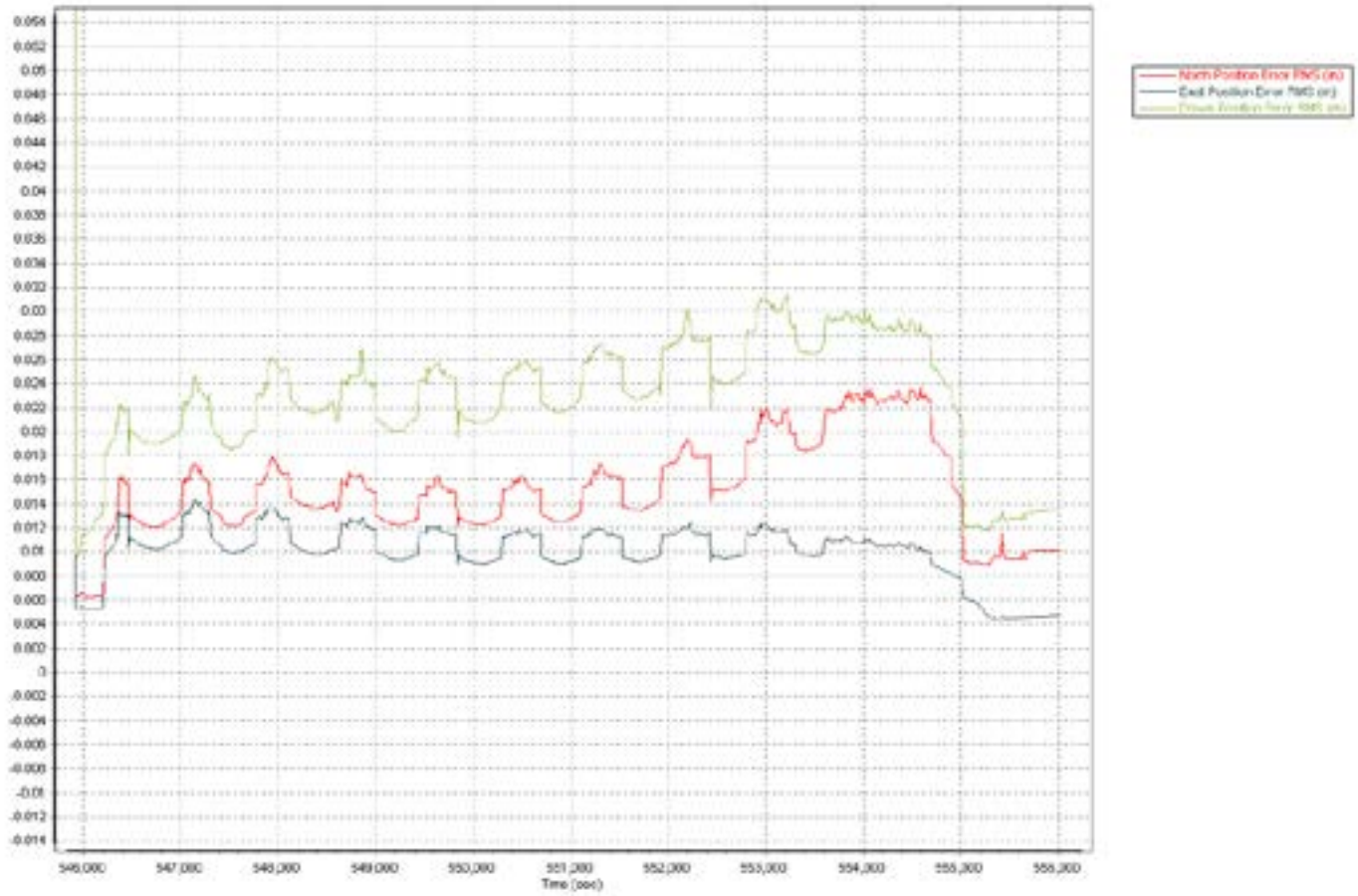

Number of Sats
POOP
Time (sec)

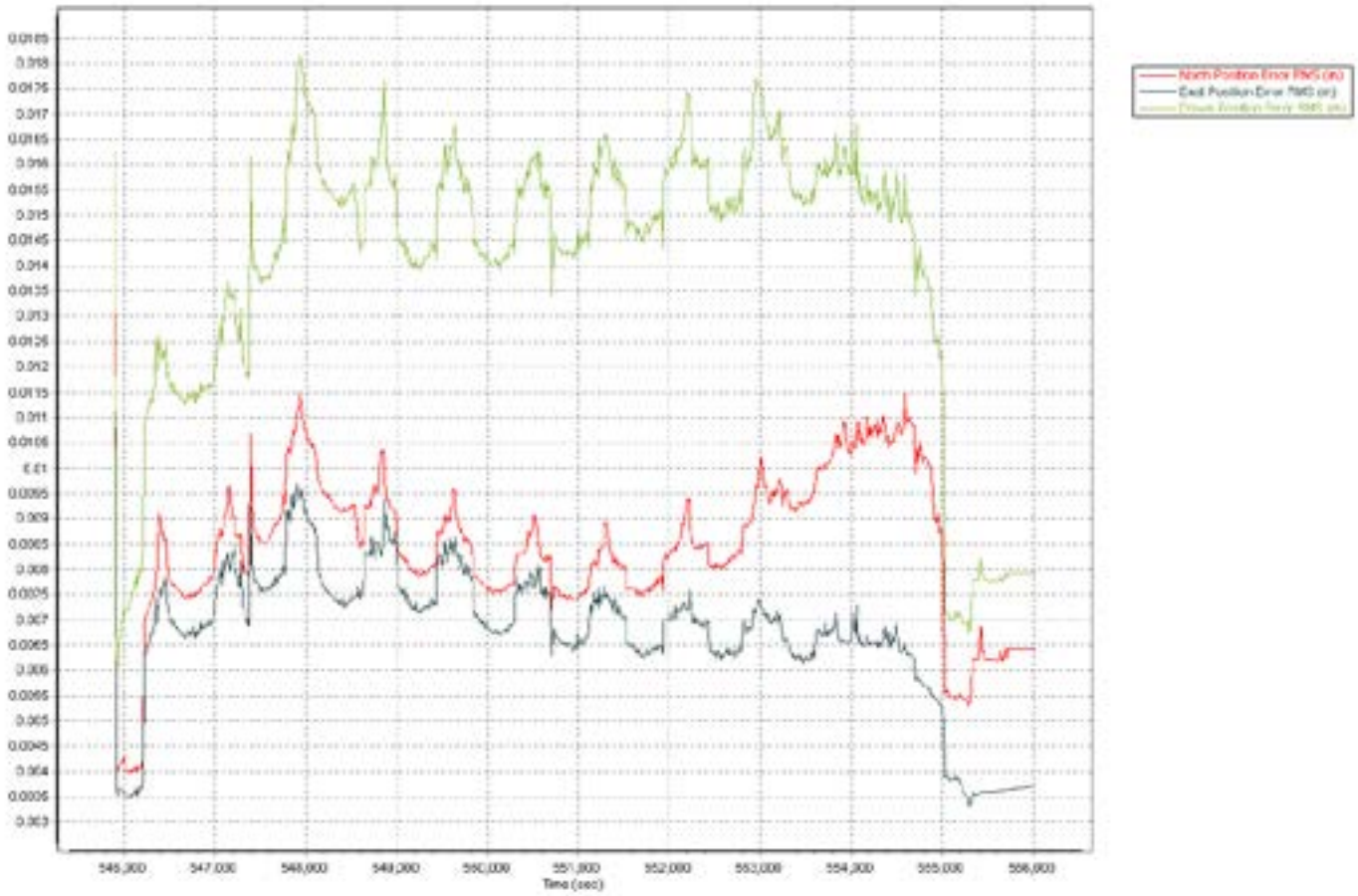

Processing mode
Forward
Reverse
3
2
1
0
531,000
532,000
533,000
534,000
535,000
536,000
537,000
538,000
539,000
540,000
541,000
542,000
543,000
544,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed VL, 2 = Float, 3 = DGPS, 4 = CIA, 5 = GPS Nav, 6 = DR


Plan View
DEFAULT
2000 m

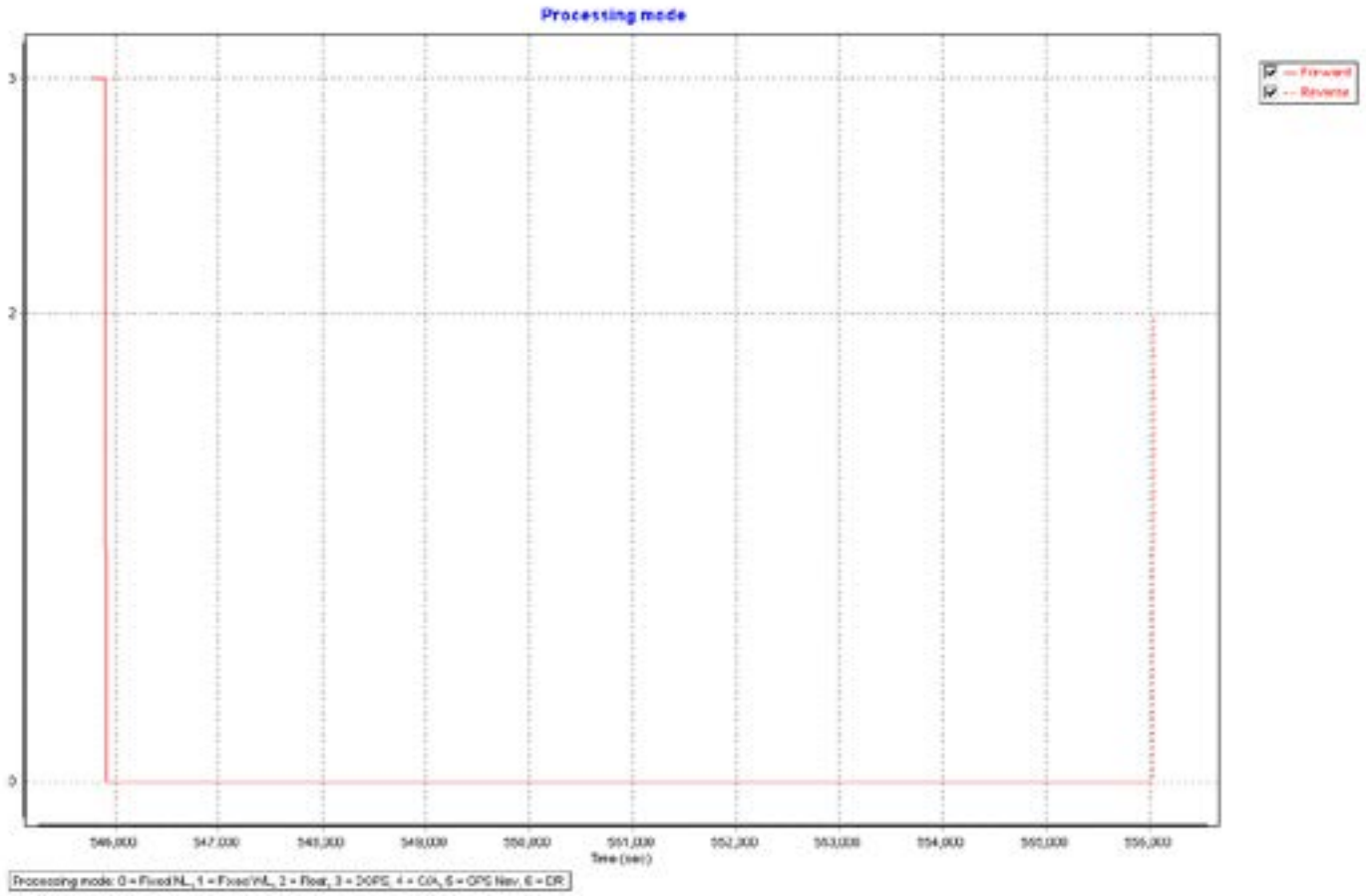
120407a-246

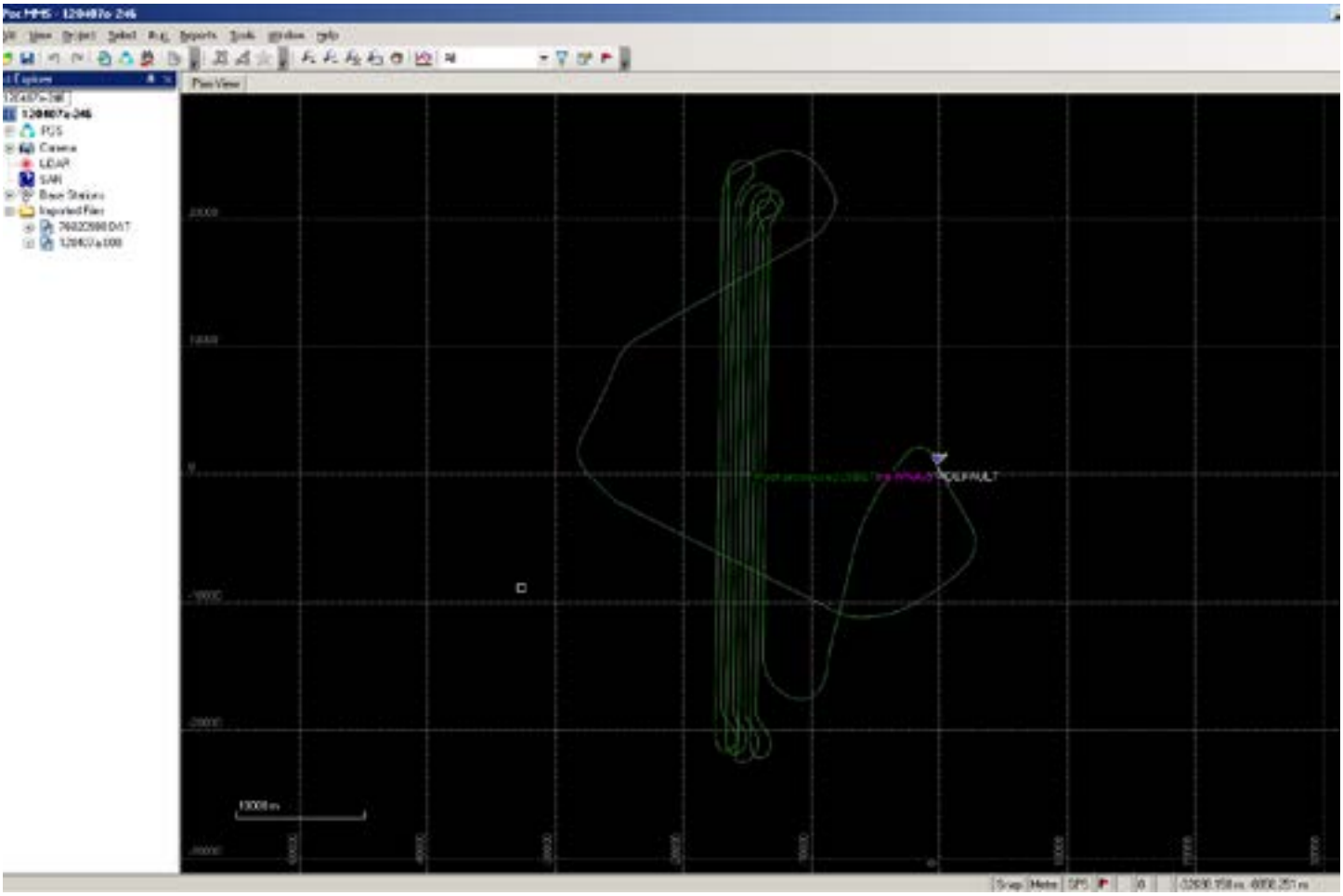

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)

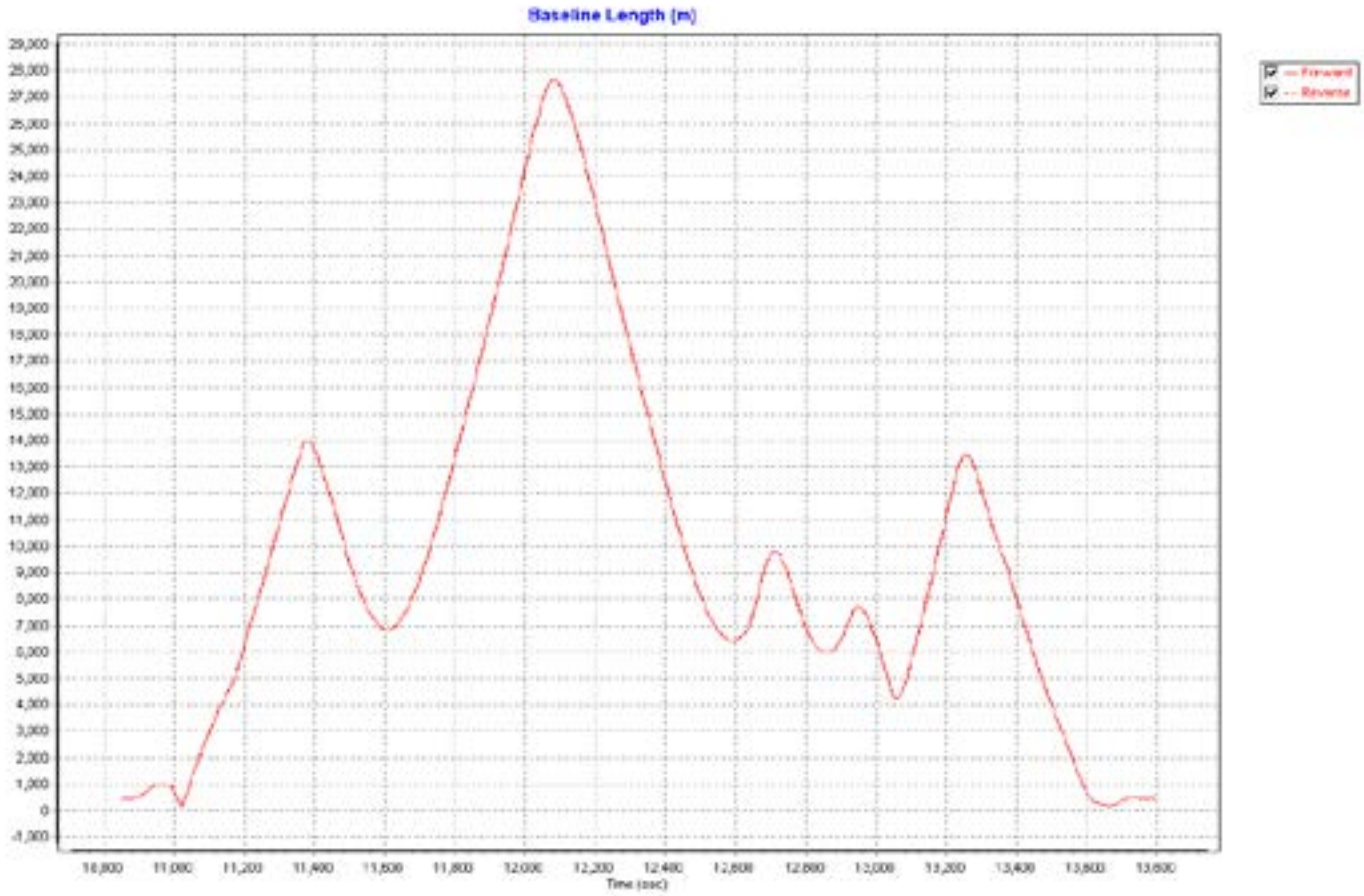

Time (sec)

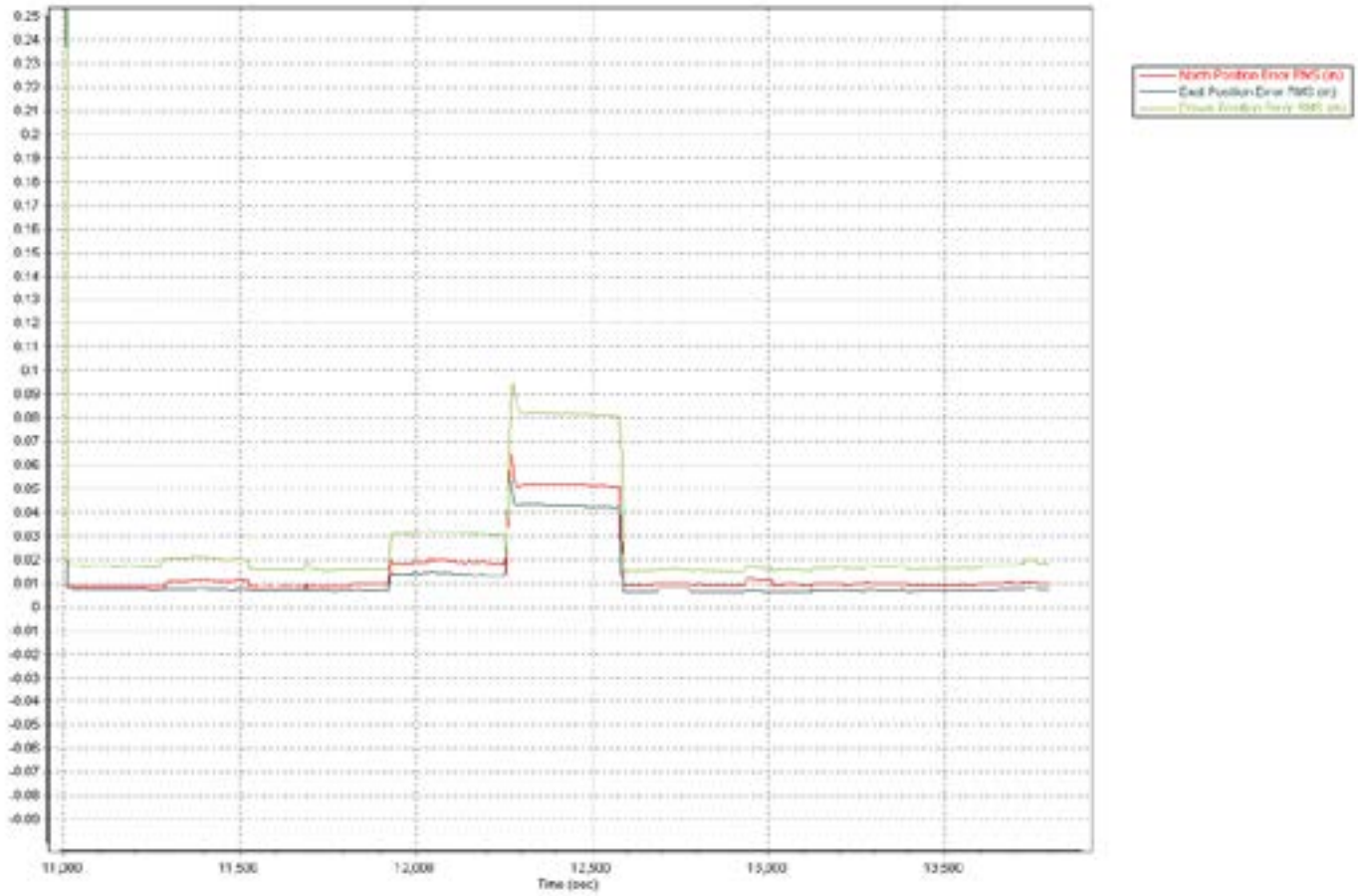
Time (sec)

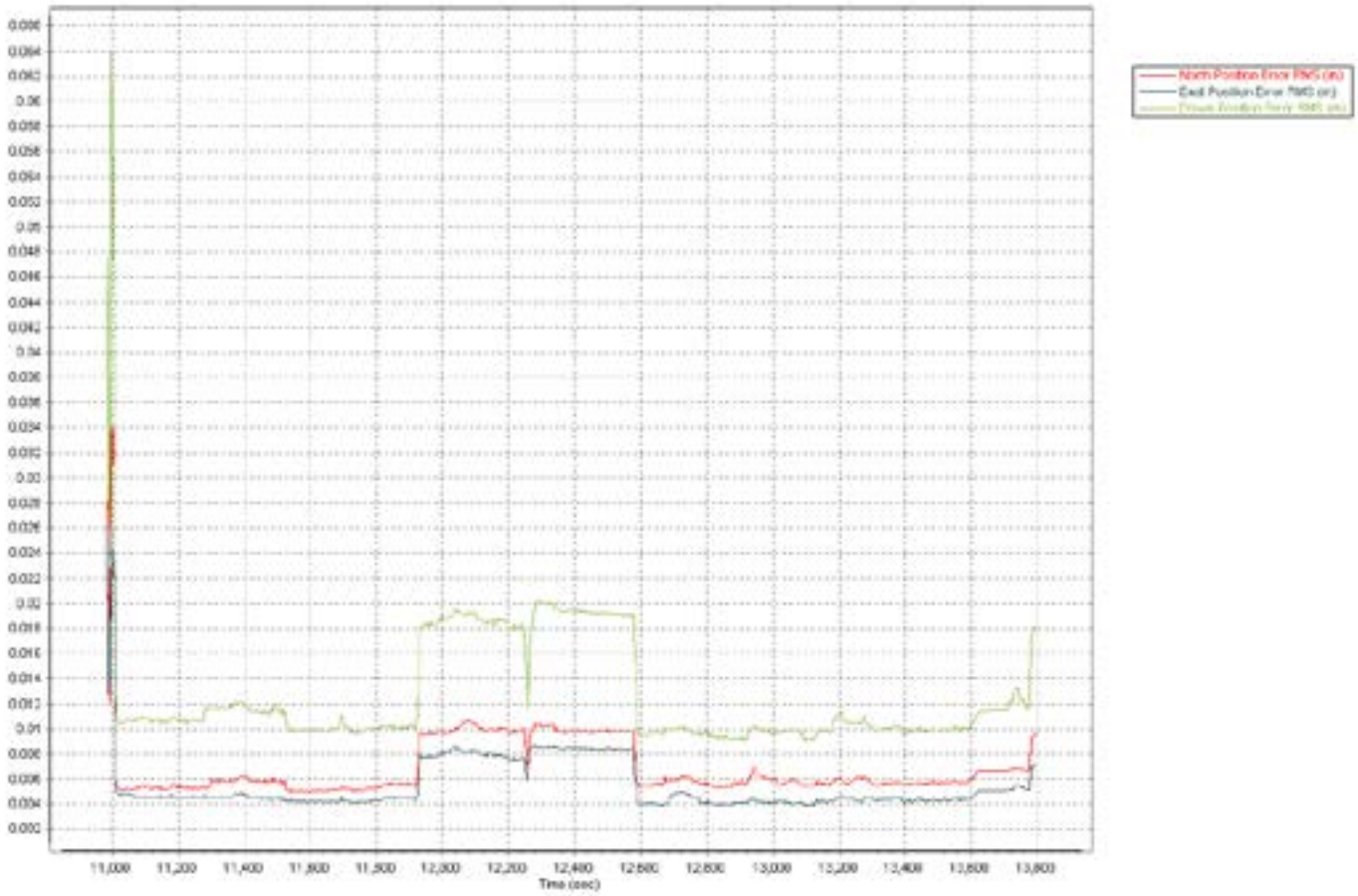

Processing mode
Forward
Reverse
3
2
0
546,000
547,000
548,000
549,000
550,000
551,000
552,000
553,000
554,000
555,000
556,000
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed VL, 2 = Float, 3 = DGPS, 4 = CDA, 5 = GPS Nav, 6 = DR

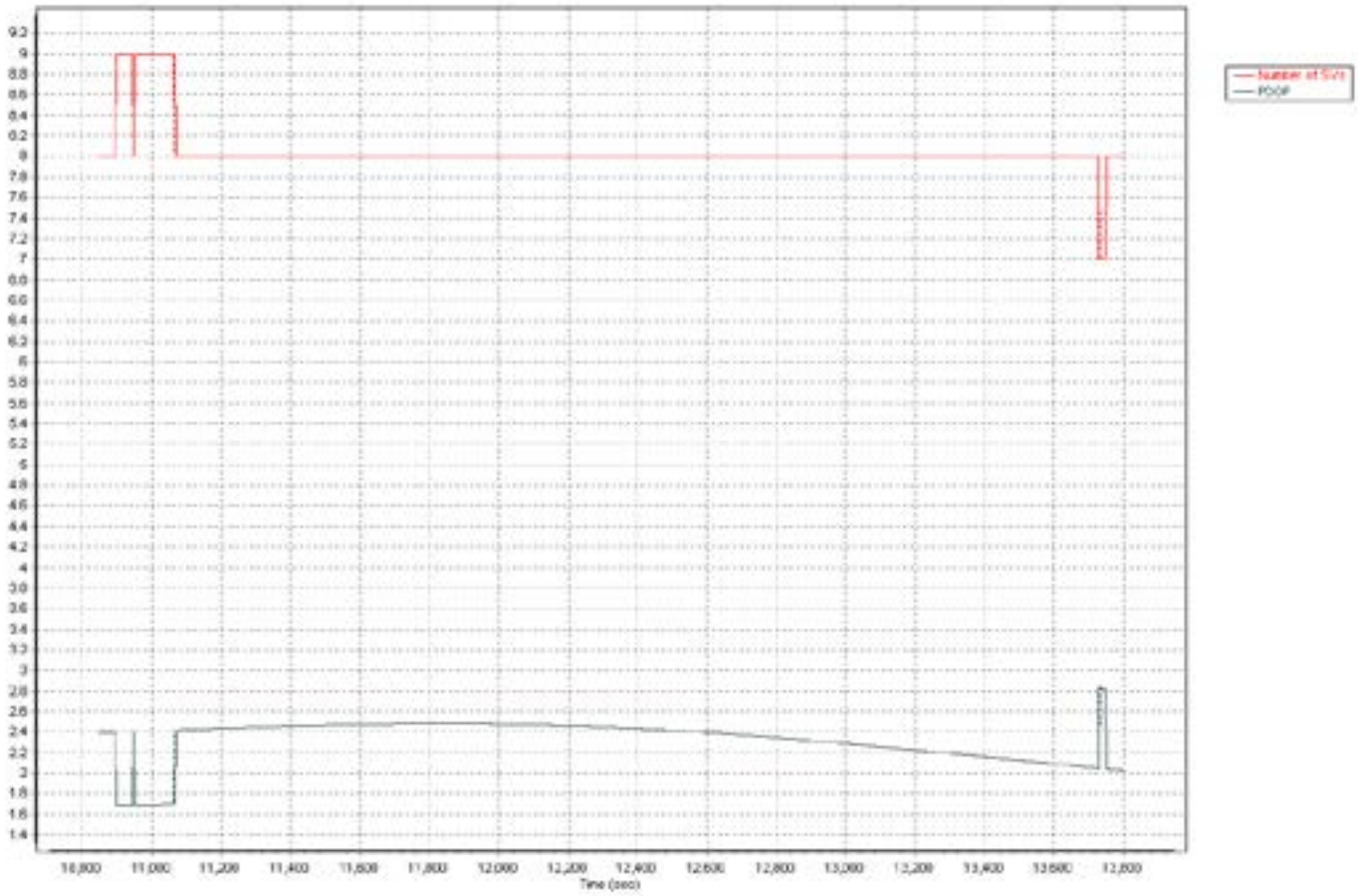

Plan View
POS
Camera
LIDAR
SAR
Base Stations
Imported Files
10000 m

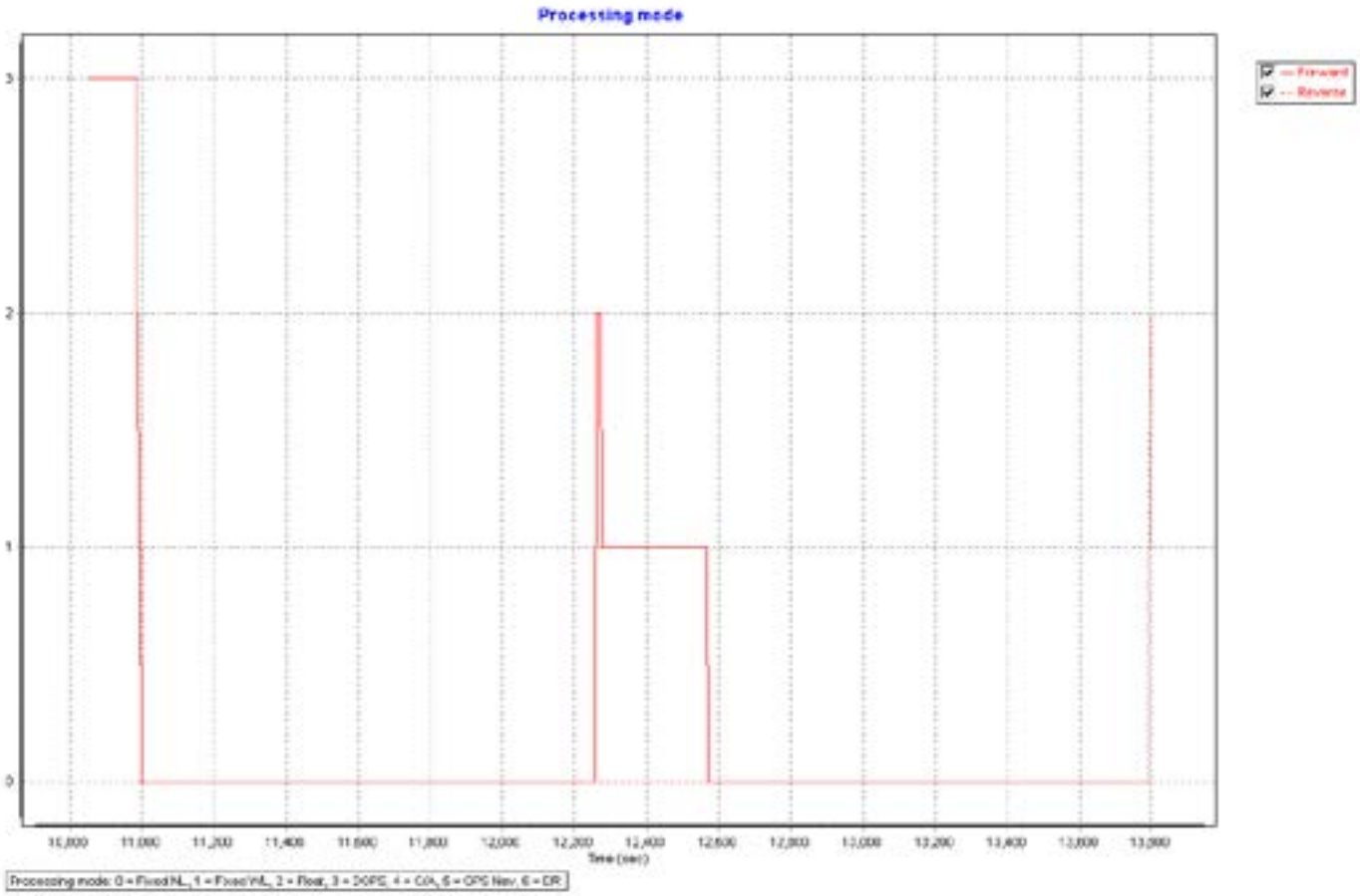
120407c-246

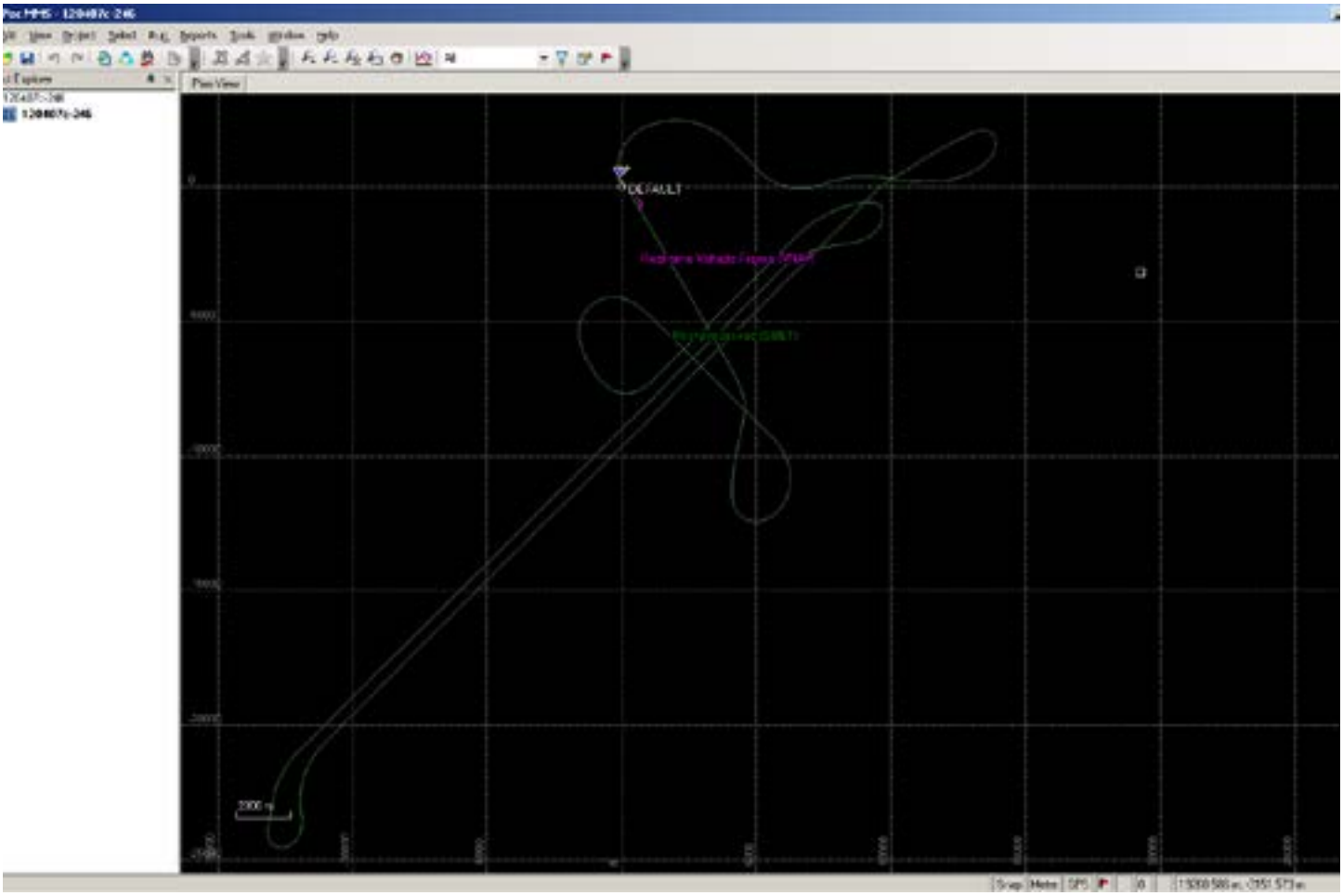

Baseline Length (m)
Forward
Reverse
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Time (sec)


Number of Sats
PDOP
Time (sec)


Processing mode
Forward
Reverse
3
2
1
0
11,000
11,200
11,400
11,600
11,800
12,000
12,200
12,400
12,600
12,800
13,000
13,200
13,400
13,600
13,800
Time (sec)
Processing mode: 0 = Fixed NL, 1 = Fixed VL, 2 = Float, 3 = DGPS, 4 = CA, 5 = GPS Nav, 6 = DR


Plan View
DEFAULT
2000 m

Appendix C
Flight Logs

2145 2200

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY 2012
Project Number	7525-052
Navigation File	1B1_7525052.pln

Pilot	YOUNG
Tech	BERRY
Aircraft	N2448G

Date Flown	January 9, 2012		
Takeoff Time	2255Z/555PM EST	Airport	1B1
Landing Time		Airport	1B1

Project's Scanning Requirements			
FOV (half-degrees):	17.0	Ground Speed (kts):	115
Scan Rate (Hz):	34.0	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 # 1
POS File Name	120109a
from → to	000 →

Weather	Ground	Airport
Begin Temp	4°C	1B1
Begin Dewpoint	-7°C	
Begin Pressure	3009	
End Temp	4	1B1
End Dewpoint	-7	
End Pressure	3001	

GPS Base Location(s)	HUDPORT
PDOP Avoidance	GOOD ON PDOP; Tide window 521-1051
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
11	2304	2306	3650'	S	115	100%	6	Clear and Calm
10	2310	2313	3650'	N	115	100%	-8	" "
9	2316	2319	3640'	S	115	100%	5	" "
8	2322	2326	3630'	N	115	100%	-7	" "
7	2329	2334	3660'	S	115	100%	6	" "
6	2336	2341	3660'	N	115	100%	-7	" "
5	2343	2348	3676'	S	115	100%	5	" "
4	2350	2359	3640'	N	115	100%	-9	" "
3	0001	0010	3620'	S	115	100%	6	" "
2	0012	0021	3600'	N	115	100%	-10	" "
12	0023	0033	3574'	S	115	100%	5	" "
13	0036	0045	3560'	N	115	100%	-7	" "
14	0047	0058	3560'	S	115	100%	5	" "
15	0100	0109	3578'	N	115	100%	-8	" "
16	0112	0122	3600'	S	115	100%	5	" "
17	0126	0135	3650	N	115	100%	-8	" "
18	0137	0143	3645	S	115	100%	6	" "
19	0145	0150	3635	N	115	100%	-8	" "
20	0152	0157	3650'	S	115	100%	6	" "
21	0159	0201	3640'	N	115	100%	-7	" "

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY
Project Number	7525-052
Navigation File	1B1-7525 052.pln

Pilot	YOUNG
Tech	BERRY
Aircraft	N2448G

Date Flown	January 9, 2012		
Takeoff Time	2255Z / 555 PM EST	Airport	1B1
Landing Time	0302 Z / 1002 PM EST	Airport	1B1

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	34.00	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50.00	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 SSD#1
POS File Name	120109a
from → to	000 → 035

Weather	Ground	Airport
Begin Temp	4°C	1B1
Begin Dewpoint	-7°C	
Begin Pressure	30.09	
End Temp	4	1B1
End Dewpoint	-7°C	
End Pressure	30.01	

GPS Base Location(s)	HUDPORT
PDOP Avoidance	GOOD ALL NIGHT; TIDAL: 521-105
Static or Flyover?	Static
→ if flyovers, times:	–

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
32	0209	0214	3715'	SW	115	100%	2	Calm and Clear
31	0216	0220	3700'	NE	115	100%	-2	" "
30	0222	0227	3670'	SW	115	100%	-1	" "
29	0229	0234	3665'	NE	115	100%	-3	" "
28	0236	0242	3635'	SW	115	100%	-2	" "
27	0244	0249	3580'	NE	115	100%	-1	" "
tie	0252	0254	3500'	SW	115	100%	0	" "

MISSION PAGE 2 OF 8

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY 2010
Project Number	7525-052
Navigation File	ALB7525052.pln

Pilot	YOUNG
Tech	BERRY
Aircraft	N2448G

Date Flown	January 9, 2012		
Takeoff Time	0330Z / 1030 PM EST	Airport	1B1
Landing Time	0400Z / 1100 PM EST	Airport	1B1

Project's Scanning Requirements			
FOV (half-degrees):	17.0	Ground Speed (kts):	115
Scan Rate (Hz):	34.0	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 SSD41
POS File Name	120109b
from → to	000 → 005

Weather	Ground	Airport
Begin Temp	4°C	1B1
Begin Dewpoint	-6°C	
Begin Pressure	30.00	
End Temp	4°C	1B1
End Dewpoint	-5°C	
End Pressure	29.99	

GPS Base Location(s)	HUDSON RT
PDOP Avoidance	ROUND ALL NIGHT; TIDE: 854 OPEN
Static or Flyover?	Static
→ if flyovers, times:	–

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	0339	0342	3661	N	115	100%	-10	SEND Last 5 miles
3	0345	0348	3661	S	115	100%	8	SEND Last 5 miles
tie	0350	0351	3650'	E	115	100%	9	tie
5								
10								
15								
20								

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	IB1 7525-052
Project Number	7525-052
Navigation File	IB1_7525-052

Pilot	Young
Tech	Galiesi
Aircraft	N2448G

Date Flown	1/11/2012		
Takeoff Time	7:41 AM	Airport	IB1
Landing Time	10:14 AM	Airport	IB1

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120111A
from → to	000 → 22

Weather	Ground	Airport
Begin Temp	~~-1~~ 1	IB1
Begin Dewpoint	-1	
Begin Pressure	30.08	
End Temp	3	IB1
End Dewpoint	-1	
End Pressure	30.10	

GPS Base Location(s)	IB1
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

29108

020@3

35/36, 38

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
26	1249	1254	3540	SW	115	100	1	
25	1257	1303	3523	NE	115	100	1	
24	1305	1311	3537	SW	115	100	1	
23	1314	1320	3573	NE	115	100	1	
22	1323	1329	3617	SW	115	100	1	
33	1332	1339	3637	NE	115	100	1	
34	1342	1348	3649	SW	115	100	1	
35	1351	1355	3685	NE	115	100	2	
39	1357	1358	3701	SW	115	100	0	
1	1408	1410	3620	E	115	100	2	
46	1413	1415	3630	W	115	100	1	
43	1418	1420	3598	E	115	100	2	
42	1423	1425	3608	W	115	100	2	
37	1428	1430	3597	E	115	100	3	
44	1433	1436	3587	W	115	100	3	
40	1440	1444	3680	S	115	100	2	
45	1446	1449	3618	NW	115	100	2	
41	1452	1454	3647	E	115	100	3	
38	1458	1501	3642	W	115	100	4	
36	1504	1506	3620	SE	115	100	5	

MISSION PAGE _____ OF _____

New York Area 1B1 Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	4.0	3620	HudPort	1B1_7525052.pln	1/11	247	120111a-247	
2	18.4	4090	HudPort	1B1_7525052.pln	1-9-12	247	120109a-247	
3	18.4	3620	HudPort	1B1_7525052.pln				
4	17.8	3640	HudPort	1B1_7525052.pln				
5	8.8	3660	HudPort	1B1_7525052.pln				
6	8.8	3660	HudPort	1B1_7525052.pln				
7	8.8	3660	HudPort	1B1_7525052.pln				
8	8.8	3630	HudPort	1B1_7525052.pln				
9	6.9	3640	HudPort	1B1_7525052.pln				
10	6.3	3650	HudPort	1B1_7525052.pln				
11	2.8	3650	HudPort	1B1_7525052.pln				
12	18.4	3570	HudPort	1B1_7525052.pln				
13	20.3	3560	HudPort	1B1_7525052.pln				
14	20.6	3560	HudPort	1B1_7525052.pln				
15	20.6	3580	HudPort	1B1_7525052.pln				

7525-052 1B1

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Young

AIRCRAFT Tail Number: 24486

Sensor Serial Number: 247

Date: 1-9-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	20.3	3600	HudPort	1B1_7525052.pln	1-9-2012	247	120109a-247	
17	21.5	3650	HudPort	1B1_7525052.pln	↓	↓	↓	
18	10.4	3640	HudPort	1B1_7525052.pln	↓	↓	↓	
19	10.4	3640	HudPort	1B1_7525052.pln	↓	↓	↓	
20	8.5	3650	HudPort	1B1_7525052.pln	↓	↓	↓	
21	3.0	3640	HudPort	1B1_7525052.pln	↓	↓	↓	
22	14.1	3620	HudPort	1B1_7525052.pln	1/11	247	120111a-247	
23	13.4	3570	HudPort	1B1_7525052.pln	↓	↓	↓	
24	12.5	3540	HudPort	1B1_7525052.pln	↓	↓	↓	
25	12.0	3520	HudPort	1B1_7525052.pln	↓	↓	↓	
26	11.2	3550	HudPort	1B1_7525052.pln	↓	↓	↓	
27	10.5	3590	HudPort	1B1_7525052.pln	1-9-12	247	120109a-247	
28	10.1	3630	HudPort	1B1_7525052.pln	↓	↓	↓	
29	9.5	3670	HudPort	1B1_7525052.pln	↓	↓	↓	
30	8.7	3670	HudPort	1B1_7525052.pln	↓	↓	↓	
31	8.6	3690	HudPort	1B1_7525052.pln	↓	↓	↓	

7525-052 **1B1**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Young

AIRCRAFT Tail Number: 24489

Sensor Serial Number: 247

Date: 1-9-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	7.9	3710	HudPort	1B1_7525052.pln	1-9-12	247	120109a-247	
33	14.4	3640	HudPort	1B1_7525052.pln	1/11	247	120111a-247	
34	11.3	3650	HudPort	1B1_7525052.pln	↓	↓	↓	
35	9.1	3690	HudPort	1B1_7525052.pln	↓	↓	↓	
36	4.9	3620	HudPort	1B1_7525052.pln	↓	↓	↓	
37	4.8	3600	HudPort	1B1_7525052.pln	↓	↓	↓	
38	5.3	3640	HudPort	1B1_7525052.pln	↓	↓	↓	
39	1.9	3700	HudPort	1B1_7525052.pln	↓	↓	↓	
40	7.1	3680	HudPort	1B1_7525052.pln	↓	↓	↓	
41	5.5	3650	HudPort	1B1_7525052.pln	↓	↓	↓	
42	4.5	3610	HudPort	1B1_7525052.pln	↓	↓	↓	
43	4.2	3600	HudPort	1B1_7525052.pln	↓	↓	↓	
44	6.0	3590	HudPort	1B1_7525052.pln	↓	↓	↓	
45	5.6	3620	HudPort	1B1_7525052.pln	↓	↓	↓	
46	4.0	3630	HudPort	1B1_7525052.pln	↓	↓	↓	

Total FL Miles: 470.7

7525-052 **1B1**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Young

AIRCRAFT Tail Number: 24486

Sensor Serial Number: 247

Date: 1-9-12

New York Area 1B1-TID-HUD Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	2.8	3500	MZ2692	ON-SOUTH-75250	2/20/12	247	120220a-247	
2	2.8	3500	MZ2692	ON-SOUTH-75250				
3	2.8	3500	MZ2692	ON-SOUTH-75250				
4	2.8	3500	MZ2692	ON-SOUTH-75250				
5	1.5	3500	MZ2692	ON-SOUTH-75250				

Total FL Miles: 12.7

7525-052 1B1-TID-HUD

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date:

66
2-23-12

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	TBD-20N NOAA NY
Project Number	7525-052
Navigation File	20N_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/19/2012 #2 (B)		
Takeoff Time	5:06 PM	Airport	20N
Landing Time	7:36 PM	Airport	20N

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247# 1
POS File Name	120219B
from → to	000 →

3260 12

Weather	Ground	Airport
Begin Temp	5	SWF
Begin Dewpoint	-7 C	~~20N~~
Begin Pressure	29.98	
End Temp	2 C	
End Dewpoint	-7 C	SWF
End Pressure	30.00	

GPS Base Location(s)	Custom 20N
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
36	2214	2217	3867	004	115	100	1	
5	2220	2222	3814	184	115	100	1	
4	2225	2228	3754	004	115	100	1	
3	2231	2234	3712	184	115	100	1	
5 2	2239	2249	3725	004	115	100	3	
1	2252	2302	3713	184	115	100	3	
17	2305	2314	3690	004	115	100	3	
6	2317	2326	3657	184	115	100	3	
8	2329	2338	3635	004	115	100	4	
10 9	2341	2351	3619	184	115	100	3	
12	2354	0003	3599	004	115	100	3	
34	0008	0011	3667	272	115	100	5	
11	0015	0025	3563	184	115	100	3	
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	20N NOAA Calibration
Project Number	7525.052
Navigation File	20n-7525052_cal-site.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/20/2012 #2		
Takeoff Time	3:24 PM	Airport	20N
Landing Time	3:54 PM	Airport	20N

Project Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPIA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120220B
from → to	000 →

Weather	Ground	Airport
Begin Temp	5 C	20N
Begin Dewpoint	-12 C	
Begin Pressure	30.26	
End Temp	5	20N
End Dewpoint	-12	
End Pressure	30.26	

GPS Base Location(s)	Woolpert 1,000 marker 20N
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	2031	2032	3689	099	115	100	7	
2	2035	2036	3685	279	115	100	6	
4	2039	2040	3687	099	115	100	7	
3	2044	2045	3701	180	115	100	5	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	20N NOAA
Project Number	7525-051
Navigation File	20n_7525052.pln

Pilot	Young
Tech	Galleti
Aircraft	N2448G

Date Flown	2/20/2012 #3		
Takeoff Time	4:30	Airport	20N
Landing Time	4:36	Airport	20N

Project's Scanning Requirements			
FOV (half-degrees):	34	Ground Speed (kts):	115
Scan Rate (Hz):	17	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPIA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120220c
from → to	000 →

Weather	Ground	Airport
Begin Temp	6	20N
Begin Dewpoint	-12	
Begin Pressure	30.28	
End Temp	-1	20N
End Dewpoint	-9	
End Pressure	30.28	

GPS Base Location(s)	Woolpert 1000 point 20N
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

3280 18

Last Calibration Mission:	120220a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab
35	2137	2141	3649	124	115	100	7
33	2145	2151	3691	271	115	100	6
37	2153	2158	3650	302	115	100	6
38	2201	2204	3742	266	115	100	7
10	2209	2219	3540	004	115	100	5
13	2222	2232	3535	184	115	100	4
14	2234	2245	3564	004	115	100	3
15	2247	2257	3600	184	115	100	3
16	2300	2311	3616	004	115	100	2
17	2313	2323	3641	184	115	100	2
18	2326	2337	3682	004	115	100	0
19	2339	2348	3705	184	115	100	2
21	2352	0000	3695	004	115	100	0
20	0002	0010	3703	184	115	100	0
22	0013	0020	3682	004	115	100	0
23	0022	0029	3678	184	115	100	0
24	0031	0037	3650	004	115	100	1
25	0039	0045	3684	184	115	100	1
26	0047	0052	3702	004	115	100	1
27	0055	0058	3755	184	115	100	3

F line	Start	NOTES (weather, visibility, winds, ride, etc.)	Alt.	hdg	Speed	R	e
28	0101	0104	3774	004	115	100	2
29	0108	0111	3798	184	115	100	3
30	0113	0115	3772	004	115	100	3
31	0118	0121	3751	184	115	100	2
32	0123	0126	3766	004	115	100	2
39	0129	0133	3727	091	115	100	9

MISSION PAGE _____ OF _____

20N

New York Area TBD Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	20.0	3710		TBD_7525052.pln	2/19/2012	247	120219b-247	
2	20.3	3730		TBD_7525052.pln				
3	6.1	3710		TBD_7525052.pln				
4	6.1	3750		TBD_7525052.pln				
5	4.2	3810		TBD_7525052.pln				
6	19.7	3660		TBD_7525052.pln				
7	19.7	3690		TBD_7525052.pln				
8	19.7	3640		TBD_7525052.pln				
9	19.9	3620		TBD_7525052.pln				
10	21.0	3540		TBD_7525052.pln	2/20/2012	247	120220c-247	X
11	20.8	3560		TBD_7525052.pln	2/19/2012	247	120219b-247	
12	20.2	3600		TBD_7525052.pln				
13	21.1	3540		TBD_7525052.pln	2/20/2012	247	120220c-247	X
14	21.3	3560		TBD_7525052.pln				
15	21.5	3600		TBD_7525052.pln				

7525-052 TBD

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/19/2012

SG 2-23-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	21.6	3620		TBD_7525052.pln	2/20/2012	247	120220c-247	
17	21.6	3640		TBD_7525052.pln				
18	21.6	3680		TBD_7525052.pln				
19	20.3	3710		TBD_7525052.pln				
20	16.5	3700		TBD_7525052.pln				
21	16.5	3700		TBD_7525052.pln				
22	14.1	3680		TBD_7525052.pln				
23	13.2	3680		TBD_7525052.pln				
24	11.2	3650		TBD_7525052.pln				
25	11.3	3680		TBD_7525052.pln				
26	8.6	3700		TBD_7525052.pln				
27	7.4	3760		TBD_7525052.pln				
28	5.8	3770		TBD_7525052.pln				
29	5.8	3800		TBD_7525052.pln				
30	4.0	3770		TBD_7525052.pln				
31	4.0	3750		TBD_7525052.pln				

7525-052 **TBD**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/20/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	4.0	3770		TBD_7525052.pln	2/20/2012	247	120220c-247	
33	10.2	3690		TBD_7525052.pln	↓	↓	↓	
34	6.1	3670		TBD_7525052.pln	2/19/2012	247	120219b-247	
35	8.4	3650		TBD_7525052.pln	2/20/2012	247	120220c-247	-
36	4.2	3870		TBD_7525052.pln	2/19/2012	247	120219b-247	
37	9.7	3650		TBD_7525052.pln	2/20/2012	247	120220c-247	
38	5.5	3740		TBD_7525052.pln	↓	↓	↓	
39	8.8	3730		TBD_7525052.pln	↓	↓	↓	

Total FL Miles: 522.2

7525-052 **TBD**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/19/2012

NY Area **20N CAL SIT** Project No **7525-052**

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	1.5	3688		'525052 CAL SITE	2/20/2012	247	120220b-247	
2	1.5	3685		'525052 CAL SITE				
3	1.0	3701		'525052 CAL SITE				
4	1.5	3687		'525052 CAL SITE				

Total FL Miles: 5.5

7525-052 **20N CAL SITE**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/20/2012

SG 2-23-12

00:50 - 5:15 7:50 12:15

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY 2012
Project Number	7525-025
Navigation File	ALB_7565052.pin

Pilot	Young
Tech	Berry
Aircraft	N2448G

Date Flown	January 7, 2012		
Takeoff Time	0050Z / 7:50 PM EST	Airport	ALB
Landing Time	0152 / 12:15 PM EST	Airport	ALB

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	34.00	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPiA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SM2U 550 42
POS File Name	120107a
from → to	000 → 037

Weather	Ground	Airport
Begin Temp	7°C	ALB
Begin Dewpoint	0°C	
Begin Pressure	29.85	
End Temp	3°C	ALB
End Dewpoint	-3°C	
End Pressure	29.94	

GPS Base Location(s)	ALB F
PDOP Avoidance	Good all night
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	M122la-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
12	0059	0101	3910	S	115	100%	20	Clouds at 5500'; light turbulence
11	0105	0107	3880	N	115	100%	-16	" "
10	0110	0112	3870	S	115	100%	19	" "
9	0114	0117	3875	N	115	100%	-18	" "
5 8	0119	0123	3870'	S	115	100%	19	" "
7	0127	0132	3860'	N	115	100%	-16	" "
6/14	0135	0145	3860'	S	115	100%	18	" "
13/5	0147	0158	3700'	N	115	100%	-7	" "
3	0200	0210	3695'	S	115	100%	16	" "
10 1	0212	0222	3600'	N	115	100%	-9	" "
4	0224	0235	3630	S	115	100%	15	" " Rain on S END
2	0237	0247	3600'	N	115	100%	-9	" "
15	0249	0259	3560'	S	115	100%	16	" "
16	0302	0311	3550'	N	115	100%	-8	" " LOST POS CONNECTION
15 16	0318	0320	3550'	N	115	100%	-17	" " Fly remainder of line
17	0322	0033	3530'	S	115	100%	18	" "
2	0334	0337	3600'	N	115	100%	-12	" " Last 4 miles
4	0340	0342	3625	S	115	100%	17	" " Last 4 miles
29	0345	0353	3560	N	115	100%	-13	" "
20 28	0355	0404	3580	S	115	100%	18	" "

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAAN4 2010
Project Number	7525-025
Navigation File	ALB-7525025.pn

Pilot	Young
Tech	Berry
Aircraft	N2448G

Date Flown	January 7, 2011		
Takeoff Time	0050Z / 750 PM EST	Airport	KALB
Landing Time	0515Z / 1215 PM EST	Airport	KALB

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	34.00	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50.00	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 SSD #2
POS File Name	1201070
from → to	000 → 037

Weather	Ground	Airport
Begin Temp	7°C	ALB
Begin Dewpoint	0°C	
Begin Pressure	29.85	
End Temp	3°C	ALB
End Dewpoint	-3°C	
End Pressure	2994	

GPS Base Location(s)	ALBF
PDOP Avoidance	Good all night
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
21/18	0406	0413	3630'	N	115	100%	-14	
19	0415	0419	3630'	S	115	100%	16	
20	0421	0424	3670'	N	115	100%	-13	
22	0429	0431	3760	E	115	100%	0	Begin He lines
25	0432	0437	3740'	W	115	100%	-1	
26	0439	0442	3780'	E	115	100%	4	
23	0444	0447	3700'	W	115	100%	-1	
27	0449	0452	3650'	E	115	100%	3	
30	0455	0458	3650'	W	115	100%	1	
24	0500	00502	3610'	E	115	100%	-7	
31	0506	0507	3660'	N	115	100%	-8	

MISSION PAGE 2 OF 2

New York Area ALB Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

	FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
14	1	21.1	3660	ALB F	ALB_7525052.pln	1-7-2012	247	120107a-247	Reflown 1201096-247 Need reflight last Smiles on SEND
14	2	21.0	3590	ALB F	ALB_7525052.pln				
14	3	21.0	3700	ALB F	ALB_7525052.pln				Reflown 1201096-247 Need reflight last Smiles on SEND
14	4	21.1	3630	ALB F	ALB_7525052.pln				
14	5	10.5	3750	ALB F	ALB_7525052.pln				
14	6	10.5	3810	ALB F	ALB_7525052.pln				
8	7	10.5	3860	ALB F	ALB_7525052.pln				
8	8	5.7	3870	ALB F	ALB_7525052.pln				
6	9	5.7	3880	ALB F	ALB_7525052.pln				
5	10	3.8	3870	ALB F	ALB_7525052.pln				
5	11	3.8	3890	ALB F	ALB_7525052.pln				
5	12	3.7	3910	ALB F	ALB_7525052.pln				
–	13	7.3	3690	ALB F	ALB_7525052.pln				
–	14	7.3	3700	ALB F	ALB_7525052.pln				
14	15	21.0	3560	ALB F	ALB_7525052.pln				

7525-052 ALB 2hr 19min

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1-7-12

	FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
49 14	16	21.0	3540	ALB F	ALB_7525052.pln	1-7-2012	247	120107a-247	
35 12	17	17.5	3540	ALB F	ALB_7525052.pln				
23 10	18	7.4	3570	ALB F	ALB_7525052.pln				
13 7	19	7.6	3630	ALB F	ALB_7525052.pln				
6	20	5.0	3670	ALB F	ALB_7525052.pln				
-	21	3.1	3630	ALB F	ALB_7525052.pln				
	22	4.7	3760	ALB F	ALB_7525052.pln				
	23	5.3	3700	ALB F	ALB_7525052.pln				
	24	3.8	3630	ALB F	ALB_7525052.pln				
	25	5.3	3750	ALB F	ALB_7525052.pln				
	26	5.1	3730	ALB F	ALB_7525052.pln				
	27	4.8	3630	ALB F	ALB_7525052.pln				
12	28	17.7	3600	ALB F	ALB_7525052.pln				
12	29	17.5	3560	ALB F	ALB_7525052.pln				
	30	4.5	3640	ALB F	ALB_7525052.pln				
	31	2.2	3660	ALB F	ALB_7525052.pln				

7525-052 **ALB** 24+49 = 73 + 19 = 92 1.5 hrs.

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Young

AIRCRAFT Tail Number: 24486

Sensor Serial Number: 247

Date: 1-7-12

New York Area HPN-NOAA Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	4.6	3860	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	
2	4.6	3890	ARP_HPN	HPN_7525052.pln				
3	4.6	3860	ARP_HPN	HPN_7525052.pln				
4	6.3	3680	ARP_HPN	HPN_7525052.pln				
5	6.3	3620	ARP_HPN	HPN_7525052.pln				
6	6.3	3550	ARP_HPN	HPN_7525052.pln				
7	6.3	3570	ARP_HPN	HPN_7525052.pln				
8	6.3	3670	ARP_HPN	HPN_7525052.pln				
9	6.3	3560	ARP_HPN	HPN_7525052.pln				
10	6.3	3600	ARP_HPN	HPN_7525052.pln				
11	7.2	3550	ARP_HPN	HPN_7525052.pln				
12	7.2	3620	ARP_HPN	HPN_7525052.pln				
13	7.2	3600	ARP_HPN	HPN_7525052.pln				
14	18.6	3650	ARP_HPN	HPN_7525052.pln				
15	18.6	3650	ARP_HPN	HPN_7525052.pln				

7525-052 HPN-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/22/2012

56
2-23-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	18.6	3640	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	
17	18.6	3680	ARP_HPN	HPN_7525052.pln	↓	↓	↓	
18	24.3	3620	ARP_HPN	HPN_7525052.pln	4/7/12			
19	24.3	3670	ARP_HPN	HPN_7525052.pln				
20	22.8	3620	ARP_HPN	HPN_7525052.pln				
21	22.8	3560	ARP_HPN	HPN_7525052.pln				
22	22.8	3670	ARP_HPN	HPN_7525052.pln				
23	22.8	3590	ARP_HPN	HPN_7525052.pln				
24	22.8	3730	ARP_HPN	HPN_7525052.pln				
25	22.8	3660	ARP_HPN	HPN_7525052.pln				
26	19.1	3740	ARP_HPN	HPN_7525052.pln				
27	17.8	3720	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	
28	14.0	3770	ARP_HPN	HPN_7525052.pln	↓	↓	↓	
29	13.1	3840	ARP_HPN	HPN_7525052.pln				
30	12.0	3770	ARP_HPN	HPN_7525052.pln				
31	4.3	3670	ARP_HPN	HPN_7525052.pln	↓	↓	↓	

7525-052 **HPN-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/22/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	4.3	3560	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	48 4/7/12
33	4.3	3570	ARP_HPN	HPN_7525052.pln				49-67 4/6/12
34	2.6	3620	ARP_HPN	HPN_7525052.pln				
35	2.6	3640	ARP_HPN	HPN_7525052.pln				
36	2.6	3670	ARP_HPN	HPN_7525052.pln				
37	2.6	3570	ARP_HPN	HPN_7525052.pln				
38	2.4	3610	ARP_HPN	HPN_7525052.pln	4/6/12			
39	7.3	3660	ARP_HPN	HPN_7525052.pln	4/7/12			
40	5.4	3670	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	
41	2.3	3680	ARP_HPN	HPN_7525052.pln				
42	9.0	3690	ARP_HPN	HPN_7525052.pln				
43	8.7	3610	ARP_HPN	HPN_7525052.pln	4/7/12			
44	5.4	3610	ARP_HPN	HPN_7525052.pln	2/22/2012	247	120222a-247	
45	6.0	3720	ARP_HPN	HPN_7525052.pln				
46	9.6	3650	ARP_HPN	HPN_7525052.pln	4/6/12			
47	14.5	3610	ARP_HPN	HPN_7525052.pln	4/6/12			

7525-052 **HPN-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/22/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
48	14.4	3600	ARP_HPN	HPN_7525052.pln				
49	14.0	3570	ARP_HPN	HPN_7525052.pln				
50	13.7	3560	ARP_HPN	HPN_7525052.pln				
51	13.1	3550	ARP_HPN	HPN_7525052.pln				
52	12.8	3540	ARP_HPN	HPN_7525052.pln				
53	12.5	3530	ARP_HPN	HPN_7525052.pln				
54	11.9	3520	ARP_HPN	HPN_7525052.pln				
55	11.6	3510	ARP_HPN	HPN_7525052.pln				
56	14.2	3620	ARP_HPN	HPN_7525052.pln				
57	13.6	3640	ARP_HPN	HPN_7525052.pln				
58	2.9	3710	ARP_HPN	HPN_7525052.pln				
59	2.9	3730	ARP_HPN	HPN_7525052.pln				
60	2.9	3740	ARP_HPN	HPN_7525052.pln				
61	5.4	3590	ARP_HPN	HPN_7525052.pln				
62	11.3	3500	ARP_HPN	HPN_7525052.pln				
63	11.3	3500	ARP_HPN	HPN_7525052.pln				

7525-052 **HPN-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: _____ ***AIRCRAFT Tail Number:*** _____

Pilot: _____ ***Sensor Serial Number:*** _____ **Date:** _____

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
64	10.8	3500	ARP_HPN	HPN_7525052.pln				
65	10.8	3500	ARP_HPN	HPN_7525052.pln				
66	4.8	3550	ARP_HPN	HPN_7525052.pln				
67	6.6	3540	ARP_HPN	HPN_7525052.pln				

Total FL Miles: 710.7

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: _____ *AIRCRAFT Tail Number:* _____

Pilot: _____ *Sensor Serial Number:* _____ **Date:** _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA FRG Area
Project Number	7525-052
Navigation File	Ffg-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/2/2012		
Takeoff Time	11:30 AM	Airport	FRG
Landing Time	2:30 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120201A
from → to	000 →

320 @ 5 020 @ 18

Weather	Ground	Airport
Begin Temp	5 C	FRG
Begin Dewpoint	-2 C	
Begin Pressure	30.04	
End Temp	6 C	FRG
End Dewpoint	-2 C	
End Pressure	30.00	

GPS Base Location(s)	Custom KFRG
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
76	1647	1653	3600	211	115	100	2	
75	1656	1701	3596	031	115	100	3	
74	1704	1710	3588	211	115	100	3	
73	1712	1718	3571	031	115	100	3	
5 71	1720	1726	3547	211	115	100	4	
71	1728	1734	3539	031	115	100	5	
70	1736	1741	3542	211	115	100	6	
69	1744	1749	3544	031	115	100	6	
68	1752	1757	3549	211	115	100	5	
10 77	1759	1805	3557	031	115	100	5	
78	1806	1812	3551	211	115	100	4	
87	1814	1819	3549	031	115	100	3	
86	1821	1826	3543	211	115	100	5	
104	1829	1834	3545	031	115	100	4	
15 105	1836	1839	3508	118	115	100	2	
85	1842	1848	3503	283	115	100	2	
84	1851	1859	3512	103	115	100	4	
83	1902	1906	3511	283	115	100	5	
82	1908	1912	3532	103	115	100	3	
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG NOAA Ny
Project Number	7525-052
Navigation File	frg-7525052 pln

Pilot	Young
Tech	Gillett
Aircraft	N2448G

53

Date Flown	2/3/2012		
Takeoff Time	11:45 AM	Airport	FRG
Landing Time	2:15 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MEA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #Newdrive
POS File Name	120203A
from → to	000 →

3550 @ 24

Weather	Ground	Airport
Begin Temp	2	FRG
Begin Dewpoint	-9	
Begin Pressure	30.44	
End Temp	5	FRG
End Dewpoint	-10	
End Pressure	30.36	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

255

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
81	1704	1708	3550	283	115	100	10	
80	1711	1715	3571	103	115	100	12	
79	1718	1722	3582	283	115	100	12	
103	1725	1729	3594	103	115	100	13	
5 106	1733	1741	3537	311	115	100	9	
102	1744	1745	3588	172	115	100	0	
67	1749	1752	3678	055	115	100	13	
66	1755	1757	3650	235	115	100	15	
65	1759	1801	3618	055	115	100	14	
B 10 64	1804	1807	3649	235	115	100	13	S up to B
64	1814	1816						
63	1819	1824	3645	055	115	100	9	
62	1826	1831	3635	235	115	100	10	
61	1833	1838	3616	055	115	100	10	
15 60	1840	1846	3600	235	115	100	11	
59	1848	1853	3580	055	115	100	10	
58	1856	1901	3570	235	115	100	10	
57	1903	1908	3562	055	115	100	12	
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	frg WOKA Ny
Project Number	7525-052
Navigation File	frg_7515052.pln

Pilot	Young
Tech	Carlieri
Aircraft	N2448G

Date Flown	2/3/2012 #2		
Takeoff Time	3:00 PM	Airport	FRG
Landing Time	5:45 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3508
Pulse Rate Frequency (Hz):	50	MPA or SPIA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # New Drive
POS File Name	120203B
from → to	000 →

Weather	Ground	Airport
Begin Temp		FRG
Begin Dewpoint		
Begin Pressure		
End Temp	5	FRG
End Dewpoint	-1	
End Pressure	30.36	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
56	2014	2019	3568	235	115	100	8	
51	2025	2027	3692	055	115	100	7	
55	2029	2034	3561	055	115	100	10	
54	2037	2043	3558	235	115	100	8	
50	2045	2047	3713	235	115	100	7	
49	2049	2051	3706	055	115	100	7	
53	2053	2058	3552	055	115	100	8	
52	2001	2106	3548	235	115	100	7	
48	2108	2110	~ 3500	235	115	100	7	
98	2113	2118	3594	319	115	100	4	
100	2122	2127	3533	119	115	100	7	
47	2135	2146	3602	235	115	100	6	
46	2148	2159	3586	055	115	100	9	
45	2203	2214	3580	235	115	100	8	
44	2216	2227	3575	055	115	100	8	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	frg NOAA
Project Number	7525-052
Navigation File	frg - 7525052.pln

Pilot	Young
Tech	Galbeti
Aircraft	N2448G

Date Flown	2/4/2012		
Takeoff Time	11:40 AM	Airport	FRG
Landing Time	3:46 pm	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # New Drive
POS File Name	120204A
from → to	000 →

2:30 - 2:40 @10

Weather	Ground	Airport
Begin Temp	7	FRG
Begin Dewpoint	-6	
Begin Pressure	30.25	
End Temp	7	FRG
End Dewpoint	-6	
End Pressure	30.14	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
-3 120	43	1655	1708	3570	235	115	100	7	
-2 115	42	1708	1717	3579	055	115	100	6	
	41	1720	1729	3574	235	115	100	7	
	40	1731	1740	3570	055	115	100	7	
5	39	1743	1752	3569	235	115	100	7	
	26	1754	1803	3555	055	115	100	5	
	27	1805	1814	3543	235	115	100	7	
	28	1817	1825	3542	055	115	100	6	
	29	1829	1836	3549	235	115	100	5	
10	30	1838	1844	3540	055	115	100	4	
	31	1847	1853	3530	235	115	100	5	
	32	1856	1902	3523	055	115	100	5	
	33	1904	1909	3515	235	115	100	5	
	34	1912	1917	3510	055	115	100	6	
15	35	1920	1925	3505	235	115	100	6	
	36	1928	1930	3508	055	115	100	6	
	37	1943	1944	3502	235	115	100	4	
	38	1947	1948	3500	055	115	100	4	
	97	2001	2004	3533	~~245~~ 300	115	100	1	
20	99	2010	2013	3528	214	115	100	2	
	101	2023	2026	3502	146	115	100	1	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	frg NoAA
Project Number	7525-052
Navigation File	frg_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/5/2012		
Takeoff Time	9:30 AM	Airport	FRG
Landing Time	10:30 AM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	56	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # New drive
POS File Name	120205A
from → to	000 →

040@8

Weather	Ground	Airport
Begin Temp	-1	FRG
Begin Dewpoint	-8	
Begin Pressure	30.16	
End Temp	0	FRG
End Dewpoint	-8	
End Pressure	30.18	

GPS Base Location(s)	Customer PS1
PDOP Avoidance	
Static or Flyover?	static / flyover
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
136	1451	1453	3500	299	115	100	5	
135	1456	1458	3502	119	115	100	5	
134	1500	1502	3503	299	115	100	4	
133	1504	1506	3504	119	115	100	6	
132	1509	1511	3503	299	115	100	6	
131	1513	1515	3503	119	115	100	5	
127	1518	1521	3510	299	115	100	3	
126	1524	1527	3511	119	115	100	4	
125	1530	1533	3508	299	115	100	5	
124	1540	1542	3508	119	115	100	5	
123	1542	1547	3508	299	115	100	5	
Crossline	1550	1552	3500	058	115	100	4	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	frq 7525-051 NOAA
Project Number	7525-051
Navigation File	frq-7525051.pln

Pilot	Young
Tech	Colletti
Aircraft	N2448G

Date Flown	2/5/2012 #2		
Takeoff Time	11:35 AM	Airport	FRG
Landing Time	1:50 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # New drive
POS File Name	1202053
from → to	000 →

Weather	Ground	Airport
Begin Temp	1	FRG
Begin Dewpoint	-9	
Begin Pressure	30.19	
End Temp	2	FRG
End Dewpoint	-8	
End Pressure	30.14	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
110	1649	1653	3508	299	115	100	3	
111	1656	1700	3507	119	115	100	2	
130	1705	1711	3539	299	115	100	0	Per JFK instructions
23	1715	1729	3520	081	115	100	4	Per JFK instructions
90	1732	1746	3517	261	115	100	5	
89	1747	1801	3514	081	115	100	4	
19	1803	1817	3511	261	115	100	4	
18	1819	1832	3508	081	115	100	4	
141	1846	1844	3511	343	115	100	2	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG Noaa Farmingdale
Project Number	7525-052
Navigation File	frg-7525052.pln

Pilot	Young
Tech	Calicti
Aircraft	N2448G

Date Flown	2/6/2012		
Takeoff Time	11:30 AM	Airport	FRG
Landing Time	2:45 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # New drive
POS File Name	120206A
from → to	000 →

Weather	Ground	Airport
Begin Temp	6	FRG
Begin Dewpoint	-4	
Begin Pressure	30.13	
End Temp	9	FRG
End Dewpoint	-3	
End Pressure	30.01	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

250@23 kts
265@24 kts

250/11

Last Calibration Mission:	

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
	107	1646	1652	3508	299	115	100	3	
	108	1654	1659	3508	119	115	100	6	
	112	1703	1709	3507	299	115	100	4	
	113	1711	1716	3508	119	115	100	5	
5	114	1719	1725	3510	299	115	100	3	
	115	1727	1733	3511	119	115	100	5	
	116	1738	1744	3513	299	115	100	5	
	117	1746	1753	3514	119	115	100	7	
	118	1756	1803	3516	299	115	100	5	
10	119	1805	1811	3517	119	115	100	6	
	120	1813	1820	3520	299	115	100	5	
	121	1822	1829	3523	119	115	100	7	
	122	1832	1839	3525	299	115	100	5	
	128	1841	1848	3530	119	115	100	5	
15	129	1852	1859	3532	299	115	100	7	
	134	1901	1903	3506	210	115	100	10	
	139	1904	1911	3502	090	115	100	1	
	137	1922	1926	3510	186	115	100	13	
	138	1932	1935	3510	350	115	100	12	
20									

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG NOAA NY
Project Number	7525-052
Navigation File	frg_7525-052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/9/2012		
Takeoff Time	12:15 pm	Airport	FRG
Landing Time	4:25 pm	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LIDAR Unit	Optech Gemini sn247
HD #	247 # New Drive
POS File Name	120209A
from → to	000 →

Weather	Ground	Airport
Begin Temp	4 C	FRG
Begin Dewpoint	-7 C	
Begin Pressure	30.12	
End Temp	7 C	FRG
End Dewpoint	-9 C	
End Pressure	30.08	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

3500 20
3450 24

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
17	1727	1740	3506	261	115	100	9	
20	1748	1755	3512	081	115	100	8	
21	1757	1804	3514	261	115	100	9	
22	1806	1812	3517	081	115	100	9	
24	1815	1821	3521	262	115	100	9	
25	1821	1830	3525	081	115	100	10	
91	1833	1838	3527	261	115	100	9	
92	1840	1845	3530	081	115	100	10	
93	1848	1851	3528	261	115	100	11	
94	1854	1857	3532	081	115	100	10	
95	1859	1902	3536	261	115	100	11	
96	1904	1907	3541	081	115	100	13	
143	1910	1913	3507	194	115	100	8	
15	1917	1926	3500	261	115	100	10	Wake turbulence on line @ 1 point over water
14	1929	1938	3502	081	115	100	11	
13	1941	1950	3503	261	115	100	11	
12	1953	2002	3502	081	115	100	11	
11	2004	2013	3501	261	115	100	10	
10	2016	2025	3501	081	115	100	10	
9	2027	2037	3501	261	115	100	10	

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	frg NOAA NY
Project Number	
Navigation File	

Pilot	Young
Tech	Gallet.
Aircraft	N2448G

Date Flown	2/9/2012		
Takeoff Time	12:15 PM	Airport	FRG
Landing Time	4:25 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):		Ground Speed (kts):	
Scan Rate (Hz):		Altitude AGL (ft):	
Pulse Rate Frequency (Hz):		MPiA or SPiA?:	

Data Information	
LIDAR Unit	Optech Gemini sn247
HD #	247 #ND
POS File Name	120209A
from → to	000 →

Page #1

Weather	Ground	Airport
Begin Temp		FRG
Begin Dewpoint		
Begin Pressure		
End Temp		FRG
End Dewpoint		
End Pressure		

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
8	2039	2049	3501	081	115	100	10	
7	2051	2101	3501	261	115	100	9	
X 6	2103	2104	3501	081	115	100	9	Short Partial @ West end per JFK
142	2112	2115	3501	350	115	100	3	
5								
10								
15								
20								

MISSION PAGE 2 OF 2

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG Calibration NOAA
Project Number	7525-052
Navigation File	frg 7525052 cal site.pln

Pilot	Young
Tech	Collieti
Aircraft	N2448G

Date Flown	2/10/2012		
Takeoff Time	10:11 AM	Airport	FRG
Landing Time	10:35 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LIDAR Unit	Optech Gemini sn247
HD #	248 # 1
POS File Name	120210 A
from → to	000 →

06005

Weather	Ground	Airport
Begin Temp	2 C	FRG
Begin Dewpoint	-4 c	
Begin Pressure	30.15	
End Temp	2	FRG
End Dewpoint	-4	
End Pressure	30.15	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	1517	1519	3630	089	115	100	10	
2	1521	1522	3630	269	115	100	12	
3	1525	1526	3624	090	115	100	8	
4	1529	1530	3633	333	115	100	8	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG Calibration NOAA NY
Project Number	7515-052
Navigation File	frg-7515052_cal_site.pln

Pilot	Young
Tech	Galleti
Aircraft	N2448G

Date Flown	2/13/2012		
Takeoff Time	11:25 AM	Airport	FRG
Landing Time	12:00 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPIA?:	

Data Information	
LIDAR Unit	Optech Gemini sn247
HD #	247 # ND
POS File Name	120213A
from → to	000 →

280@12G23

Weather	Ground	Airport
Begin Temp	1 C	FRG
Begin Dewpoint	-9 C	
Begin Pressure	30.00	
End Temp	2	FRG
End Dewpoint	-7	
End Pressure	30.00	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

V 280@12g23 10 12 2/-9 3000 V32

Very turbulent

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
4	1634	1636	3633	153	100	100	13	
3	1640	1642	3624	270	100	100	5	
2	1644	1645	3630	089	115	100	4	
1	1642	1650	3630	270	90	100	8	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG NOAA Ny
Project Number	7525-052
Navigation File	frg-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/13/2012 #2		
Takeoff Time	4:40 PM	Airport	FRG
Landing Time	6:52 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #ND
POS File Name	120213 B
from → to	000 →

Weather	Ground	Airport
Begin Temp	6 C	FRG
Begin Dewpoint	-11 C	
Begin Pressure	29.95 Hg	
End Temp	4 C	FRG
End Dewpoint	-9 C	
End Pressure	29.88 Hg	

GPS Base Location(s)	~~static~~ Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

300 @ 21 Kts

from jfk

107 - 12.2
140 - 16.5
141 - 22

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
6	2151	2201	3501	261	115	100	5	
5	2205	2215	3500	081	115	100	9	
4	2217	2227	3500	261	115	100	5	
3	2229	2238	3500	081	115	100	10	
88	2241	2251	3501	261	115	100	4	
16	2253	2302	3502	081	115	100	12	
1	2306	2316	3504	261	115	100	5	
2	2318	2332	3504	081	115	100	8	
141	2340	2343	3511	343	115	100	11	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	FRG NOAA NY
Project Number	7525-052
Navigation File	frg-7525-052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/14/2012		
Takeoff Time	3:55 PM	Airport	FRG
Landing Time	4:30 PM	Airport	FRG

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MRiA or SPiA?:	

Data Information	
LIDAR Unit	Optech Gemini sn247
HD #	247 #ND
POS File Name	120214A
from → to	000 →

65BK 1500 7

Weather	Ground	Airport
Begin Temp	6 C	FRG
Begin Dewpoint	-6 C	
Begin Pressure	30.04	
End Temp	6	FRG
End Dewpoint	-3	
End Pressure	30.04	

GPS Base Location(s)	Custom FRG
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
107	2107	2111	3503	005	115	100	7	
140	2114	2118	3508	172	115	100	6	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

New York Area FRG-NOAA Project No 7525-052 Flight Logs

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	19.1	3500	ARP FRG	FRG_7525052.pln	2/13/2012	247	120213b-247	Tidal
2	27.8	3500	ARP FRG	FRG_7525052.pln				Tidal
3	19.2	3500	ARP FRG	FRG_7525052.pln				Tidal
4	18.8	3500	ARP FRG	FRG_7525052.pln				Tidal
5	19.2	3500	ARP FRG	FRG_7525052.pln				Tidal
6	21.3	3500	ARP FRG	FRG_7525052.pln				Tidal
7	20.8	3500	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	Tidal
8	20.1	3500	ARP FRG	FRG_7525052.pln				Tidal
9	19.8	3500	ARP FRG	FRG_7525052.pln				Tidal
10	19.7	3500	ARP FRG	FRG_7525052.pln				Tidal
11	19.5	3500	ARP FRG	FRG_7525052.pln				Tidal
12	19.4	3500	ARP FRG	FRG_7525052.pln				Tidal
13	19.1	3500	ARP FRG	FRG_7525052.pln				Tidal
14	19.1	3500	ARP FRG	FRG_7525052.pln				Tidal
15	19.1	3500	ARP FRG	FRG_7525052.pln				Tidal

7525-052 FRG-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/9/2012

Final Set Loss

SG 2-7-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	18.6	3500	ARP FRG	FRG_7525052.pln	2/13/2012	247	120213b-247	Tidal
17	28.4	3510	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	Tidal
18	28.5	3510	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	
19	28.8	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	
20	14.4	3510	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	
21	13.6	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	
22	13.6	3520	ARP FRG	FRG_7525052.pln	↓	↓	↓	
23	30.1	3520	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	
24	13.6	3520	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	
25	13.6	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	
26	18.7	3560	ARP FRG	FRG_7525052.pln	2/4/2012	247	120204a-247	Tidal
27	18.7	3540	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
28	18.7	3540	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
29	14.1	3550	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
30	13.8	3540	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
31	13.8	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/4/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	12.0	3520	ARP FRG	FRG_7525052.pln	2/4/2012	247	120204a-247	Tidal
33	12.0	3520	ARP FRG	FRG_7525052.pln				Tidal
34	10.7	3510	ARP FRG	FRG_7525052.pln				Tidal
35	10.7	3510	ARP FRG	FRG_7525052.pln				Tidal
36	3.0	3510	ARP FRG	FRG_7525052.pln				Tidal
37	3.0	3500	ARP FRG	FRG_7525052.pln				Tidal
38	3.0	3500	ARP FRG	FRG_7525052.pln				Tidal
39	19.3	3570	ARP FRG	FRG_7525052.pln				Tidal
40	19.4	3570	ARP FRG	FRG_7525052.pln				Tidal
41	19.7	3570	ARP FRG	FRG_7525052.pln				Tidal
42	20.0	3580	ARP FRG	FRG_7525052.pln				Tidal
43	23.0	3570	ARP FRG	FRG_7525052.pln				Tidal
44	23.0	3580	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203b-247	Tidal
45	23.0	3580	ARP FRG	FRG_7525052.pln				Tidal
46	23.4	3590	ARP FRG	FRG_7525052.pln				Tidal
47	23.4	3600	ARP FRG	FRG_7525052.pln				Tidal

7525-052 FRG-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/3/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
48	2.8	3670	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203b-247	Tidal
49	2.8	3710	ARP FRG	FRG_7525052.pln				Tidal
50	2.8	3710	ARP FRG	FRG_7525052.pln				Tidal
51	2.8	3690	ARP FRG	FRG_7525052.pln				Tidal
52	11.3	3550	ARP FRG	FRG_7525052.pln				Tidal
53	11.3	3550	ARP FRG	FRG_7525052.pln				Tidal
54	11.3	3560	ARP FRG	FRG_7525052.pln				Tidal
55	10.7	3560	ARP FRG	FRG_7525052.pln				Tidal
56	10.9	3570	ARP FRG	FRG_7525052.pln				Tidal
57	10.7	3560	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal
58	10.9	3570	ARP FRG	FRG_7525052.pln				Tidal
59	10.7	3580	ARP FRG	FRG_7525052.pln				Tidal
60	9.9	3600	ARP FRG	FRG_7525052.pln				Tidal
61	9.6	3620	ARP FRG	FRG_7525052.pln				Tidal
62	9.5	3640	ARP FRG	FRG_7525052.pln				Tidal
63	9.5	3650	ARP FRG	FRG_7525052.pln				Tidal

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/2/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
64	9.3	3650	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal
65	4.0	3620	ARP FRG	FRG_7525052.pln				Tidal
66	4.2	3650	ARP FRG	FRG_7525052.pln				Tidal
67	4.3	3680	ARP FRG	FRG_7525052.pln				Tidal
68	12.0	3550	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203a-247	Tidal
69	11.9	3540	ARP FRG	FRG_7525052.pln				Tidal
70	12.3	3540	ARP FRG	FRG_7525052.pln				Tidal
71	12.0	3540	ARP FRG	FRG_7525052.pln				Tidal
72	12.3	3550	ARP FRG	FRG_7525052.pln				Tidal
73	11.9	3570	ARP FRG	FRG_7525052.pln				Tidal
74	11.9	3590	ARP FRG	FRG_7525052.pln				Tidal
75	11.7	3600	ARP FRG	FRG_7525052.pln				Tidal
76	11.7	3600	ARP FRG	FRG_7525052.pln				Tidal
77	11.0	3560	ARP FRG	FRG_7525052.pln				Tidal
78	10.5	3550	ARP FRG	FRG_7525052.pln				Tidal
79	7.3	3580	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/2/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
80	7.5	3570	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal
81	7.8	3550	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
82	8.0	3530	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203a-247	Tidal
83	8.3	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
84	15.8	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
85	11.7	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
86	10.4	3540	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
87	10.5	3550	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
88	18.3	3500	ARP FRG	FRG_7525052.pln	2/13/2012	247	120213b-247	Tidal
89	29.1	3510	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	
90	29.6	3520	ARP FRG	FRG_7525052.pln	↓	↓	↓	
91	10.7	3530	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	
92	10.7	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	
93	6.8	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	
94	4.8	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	
95	4.8	3540	ARP FRG	FRG_7525052.pln	↓	↓	↓	

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/2/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
96	4.8	3540	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	
97	7.0	3530	ARP FRG	FRG_7525052.pln	2/4/2012	247	120204a-247	Tidal
98	8.2	3590	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203b-247	Tidal
99	7.1	3530	ARP FRG	FRG_7525052.pln	2/4/2012	247	120204a-247	Tidal
100	10.7	3530	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203b-247	Tidal
101	7.7	3580	ARP FRG	FRG_7525052.pln	2/4/2012	247	120204a-247	Tidal
102	4.3	3590	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal
103	7.3	3590	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
104	10.4	3550	ARP FRG	FRG_7525052.pln	2/3/2012	247	120203a-247	Tidal
105	4.7	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
106	14.4	3540	ARP FRG	FRG_7525052.pln	2/2/2012	247	120202a-247	Tidal
107	8.3	3500	ARP FRG	FRG_7525052.pln	2/14/2012	247	120214a-247	Tidal
108	9.2	3510	ARP FRG	FRG_7525052.pln	2/6/2012	247	120206a-247	Tidal
109	11.5	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
110	8.1	3510	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	Tidal
111	9.3	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/2/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
112	11.3	3510	ARP FRG	FRG_7525052.pln	2/6/2012	247	120206a-247	Tidal
113	11.3	3510	ARP FRG	FRG_7525052.pln				Tidal
114	11.8	3510	ARP FRG	FRG_7525052.pln				Tidal
115	11.8	3510	ARP FRG	FRG_7525052.pln				Tidal
116	11.8	3510	ARP FRG	FRG_7525052.pln				Tidal
117	13.3	3510	ARP FRG	FRG_7525052.pln				Tidal
118	13.3	3520	ARP FRG	FRG_7525052.pln				Tidal
119	13.3	3520	ARP FRG	FRG_7525052.pln				Tidal
120	13.2	3520	ARP FRG	FRG_7525052.pln				Tidal
121	13.8	3520	ARP FRG	FRG_7525052.pln				Tidal
122	14.1	3530	ARP FRG	FRG_7525052.pln				Tidal
123	8.1	3510	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205a-247	Tidal
124	7.6	3510	ARP FRG	FRG_7525052.pln				Tidal
125	7.6	3510	ARP FRG	FRG_7525052.pln				Tidal
126	6.2	3510	ARP FRG	FRG_7525052.pln				Tidal
127	6.2	3510	ARP FRG	FRG_7525052.pln				Tidal

7525-052 FRG-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/5/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
128	14.4	3530	ARP FRG	FRG_7525052.pln	2/6/2012	247	120206a-247	Tidal
129	14.8	3530	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
130	13.2	3540	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	Tidal
131	4.0	3500	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205a-247	Tidal
132	4.0	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
133	3.3	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
134	3.3	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
135	3.2	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
136	2.8	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
137	9.3	3510	ARP FRG	FRG_7525052.pln	2/6/2012	247	120206a-247	Tidal
138	6.8	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
139	15.1	3500	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal
140	7.2	3510	ARP FRG	FRG_7525052.pln	2/14/2012	247	120214a-247	Tidal
141	9.2	3510	ARP FRG	FRG_7525052.pln	2/5/2012	247	120205b-247	Tidal 120213b-247 Partial Cross line for lift
142	3.3	3500	ARP FRG	FRG_7525052.pln	2/9/2012	247	120209a-247	Tidal
143	6.3	3510	ARP FRG	FRG_7525052.pln	↓	↓	↓	Tidal

7525-052 **FRG-NOAA**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/5/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
144	2.5	3510	ARP FRG	FRG_7525052.pln	2/6/2012	247	120206a-247	

Total FL Miles: 1773.6

7525-052 FRG-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/6/2012

NY Area **FRG CAL SIT** Project No **7525-052**

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	1.9	3629	ARP FRG	7525052 CAL SITE	2/13/2012	247	120213a-247	
2	1.9	3629	ARP FRG	7525052 CAL SITE				
3	1.9	3624	ARP FRG	7525052 CAL SITE				
4	1.3	3633	ARP FRG	7525052 CAL SITE				

Total FL Miles: 6.9

7525-052 **FRG CAL SITE**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/13/2012

2-15-12

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	Fisher's Island
Project Number	7525-052
Navigation File	60N_7525052.pfn

Pilot	N. Greenwell
Tech	B. Bush
Aircraft	N9471R

Date Flown	11/26/11		
Takeoff Time	2110 Z	Airport	KGON
Landing Time	2312 Z	Airport	KGON

Projects Scanning Requirements			
FOV (half-degrees):	+/-17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	SN247 SSD#2
POS File Name	111126a
from → to	000 → 017

Weather	Ground	Airport
Begin Temp	12	KGON
Begin Dewpoint	4	
Begin Pressure	3019	
End Temp	11	KGON
End Dewpoint	4	
End Pressure	3019	

GPS Base Location(s)	GON - Custom
PDOP Avoidance	3:50PM-4:05PM, 6:35P-6:45P
Static or Flyover?	Static
→ if flyovers, times:	—

111126a-246

Last Calibration Mission:	111026a-240

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	2126	2130	3500	NE	114	100	-18	Clear weather, smooth, Fair winds
2	2134	2138	3500	SW	109	100	6	" "
3	2142	2146	3500	NE	115	100	-9	" "
4	2150	2155	3500	SW	114	100	7	Getting Dark
5	2201	2205	3500	SW	119	100	5	" "
6	2208	2212	3500	NE	118	100	-10	" "
7	2216	2219	3500	SW	117	100	4	" "
8	2223	2226	3500	NE	117	100	-10	" "
9	2230	2233	3500	SW	116	100	4	" "
14	2238	2240	3500	NE	120	100	-10	" "
13	2245	2249	3500	W	112	100	5	" "
10	2252	2254	3500	SE	110	100	-2	" "
12	2258	2300	3500	NW	112	100	-4	" "
11	2303	2305	3500	S	110	100	2	" "

MISSION PAGE 1 OF 1

New York Area GON Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	8.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
2	8.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
4	7.7	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
5	7.1	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
6	8.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
7	7.7	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
8	6.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
9	6.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
10	6.2	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
11	3.8	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
12	3.0	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
13	3.0	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
14	7.3	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓
15	4.6	3550	GON_Custom	GON_7525052.pln	11/26/11	240	1111260a-240	✓

Total FL Miles: 87.4

7525-052 GON

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with times and other details noted

Operator: B. Bush

Pilot: Greenwell

AIRCRAFT Tail Number: N9471R

Sensor Serial Number: 240

Date: 11/26/11

SG 11-28-11

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY
Project Number	7525-052
Navigation File	HPN-7525052.pn

Pilot	YOUNG
Tech	BERRY
Aircraft	N7266Z

Date Flown	April 6 2012 / April 7 2012		
Takeoff Time	0332 / 1132 PM EDT	Airport	HPN
Landing Time	0700 / 300 PM EDT	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17°	Ground Speed (kts):	115
Scan Rate (Hz):	34°	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPiA

Data Information	
LiDAR Unit	Optech Gemini sn246
HD #	SN246SSD 2
POS File Name	120406A
from → to	000 →

Weather	Ground	Airport
Begin Temp	07°C	HPN
Begin Dewpoint	-07°C	
Begin Pressure	30.01	
End Temp	03°C	HPN
End Dewpoint	-05°C	
End Pressure	3002	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	Good all night/morning
Static or Flyover?	Static
→ if flyovers, times:	-

120406A-246
1/2

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
65	0342	0348	3500	SW	115	100%	13	Clear and Calm
64	0351	0357	3500'	NE	100	100%	-11	" "
63	0400	0406	3500'	SW	115	100%	12	" "
62	0409	0415	3500'	NE	100	100%	-11	" "
55	0418	0424	3510'	SW	115	100%	13	" "
54	0427	0434	3520'	NE	100	100%	-11	" "
53	0436	0442	3530	SW	115	100%	13	" "
52	0445	0453	3570	NE	100	100%	-10	" "
51	0455	0501	3540	SW	115	100%	11	" "
50	0504	0512	3500	NE	100	100%	-10	" "
49	0514	0521	3575	SW	115	100%	11	" "
48	0524	0532	3600'	NE	100	100%	-9	" "
47	0534	0541	3615'	SW	115	100%	11	" "
56	0544	0551	3625	NE	100	100%	-9	" "
57	0555	0602	3650'	SW	115	100%	8	" "
38	0604	0606	3610	N	85	100%	-5	" "
46	0611	0614	3650	E	115	100%	-15	" "
67	0618	0623	3540	N	100	100%	0	" "
66	0625	0628	3550	SE	115	100%	-14	" "
61	0631	0634	3570	NW	100	100%	9	" "

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAANY
Project Number	7525 052
Navigation File	HPN-7525025.pn

Pilot	Young
Tech	Barry
Aircraft	N7266Z

Date Flown	April 6, 2012		
Takeoff Time	0332/1132 PM EDT	Airport	HPN
Landing Time	0700 / 300 AM EDT	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPA

Data Information	
LiDAR Unit	Optech Gemini sn246
HD #	SN246SSD2
POS File Name	120406A
from → to	000 → 009

Weather	Ground	Airport
Begin Temp	07	HPN
Begin Dewpoint	-07	
Begin Pressure	3001	
End Temp	03°C	HPN
End Dewpoint	-05°C	
End Pressure	3002	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	Good all night/morning
Static or Flyover?	Static
→ if flyovers, times:	

120406A-246

2/2

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
50	0638	0640	3700	NE	100	100%	-10	
59	0643	0644	3725	SW	115	100%	10	
66	0648	0650	3760	NE	100	100%	-8	
5								
10								
15								
20								

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY
Project Number	7525-052
Navigation File	HPN_7525052.pn

Pilot	Young
Tech	Barry
Aircraft	N7266Z

Date Flown	April 7, 2012		
Takeoff Time	0730Z / 338AMEDT	Airport	HPN
Landing Time	1015Z / 615AMEDT	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17°	Ground Speed (kts):	115
Scan Rate (Hz):	34°	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn246
HD #	SN246SSD2
POS File Name	120407a
from → to	000 → 023

Weather	Ground	Airport
Begin Temp	03°C	HPN
Begin Dewpoint	-04°C	
Begin Pressure	3001	
End Temp	02°C	HPN
End Dewpoint	-08°C	
End Pressure	2999	

GPS Base Location(s)	HPN ARP
PDOP Avoidance	Good
Static or Flyover?	Static
→ if flyovers, times:	

120407A-246

1/1

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
26	0748	0758	3737	N	110	100	1	
25	0800	0810	3062	S	115	100	-2	
24	0813	0825	3730	N	116	100%	-1	
23	0827	0838	3586	S	115	100%	-2	
22	0841	0853	3470	N	110	100%	0	
21	0855	0906	3620	S	115	100%	-2	
20	0909	0920	3620	N	110	100%	-1	
19	0924	0935	3675	S	115	100%	-3	
18	0937	0950	3620	N	110	100%	-3	
43	0954	0950	3000	SW	115	100%	7	
39	1002	1006	3060	SE	115	100%	-14	

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.cor

Project Name	NOAA NY
Project Number	7525-052
Navigation File	HPN_Calibration_NOAA_7525052.cn

Pilot	Young
Tech	Berry
Aircraft	N7266Z

Date Flown	April 7, 2012		
Takeoff Time	1040Z / 640 AMEDT	Airport	HPN
Landing Time	1110Z / 710 AMEDT	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	34.00	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPiA

Data Information	
LiDAR Unit	Optech Gemini sn246
HD #	GN846 550
POS File Name	120407B
from → to	000 → 005

Weather	Ground	Airport
Begin Temp	02°C	HPN
Begin Dewpoint	-08°C	
Begin Pressure	29.99	
End Temp	2°C	HPN
End Dewpoint	-6°C	
End Pressure	30.04	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	Good
Static or Flyover?	Static
→ if flyovers, times:	

120407B-246
1/1 CALIB

Last Calibration Mission:	this is it

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	1049	1050	3900	SE	115	100%	-8	Calm, Clear
4	1053	1054	3900	NW	115	100%	4	
3	1057	1059	3900	SE	115	100%	-8	
2	1101	1103	3900	NW	115	100%	10	
5								
10								
15								
20								

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.cor

Project Name	NOAANY
Project Number	7525-052
Navigation File	HPN-7525052.pn

Pilot	Young
Tech	Berry
Aircraft	N7266Z

Date Flown	April 7, 2012		
Takeoff Time	0305Z / 1105	Airport	HPN
Landing Time	0346Z / 1146 PMEDT	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn246
HD #	SN246 SSD1
POS File Name	120407C
from → to	000 → 007

Weather	Ground	Airport
Begin Temp	11°C	HPN
Begin Dewpoint	-6°	
Begin Pressure	3001	
End Temp	10	HPN
End Dewpoint	-07	
End Pressure	3001	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	Good
Static or Flyover?	Static
→ if flyovers, times:	—

120407C-246

1/1

Last Calibration Mission:	120407B

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
47	0312	0319	3575	SW	115	100%	11	QA QC purposes
48	0320	0330	3600'	NE	115	100%	-12	Reflight of line in 120406A-246
QAQC	0333	0335	3615'	SW	115	100%	11	
tie	0339	0339	3615	SE	115	100%	-14	
5								
10								
15								
20								

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

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Project Name	HPN NOAA Sites
Project Number	7525-052
Navigation File	hpn_tid_piermont_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/18/2012		
Takeoff Time	2:24 PM	Airport	HPN
Landing Time	3:30 PM	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120218A
from → to	000 →

238Q19

Weather	Ground	Airport
Begin Temp	7C	HPN
Begin Dewpoint	-7C	
Begin Pressure	29.90	
End Temp		HPN
End Dewpoint		
End Pressure		

GPS Base Location(s)	ARP HPN
PDOP Avoidance	
Static or Flyover?	Static, flyover
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
4	1930	1931	3540	263	115	100	-	
3	1934	1935	3498	161	115	100	13	
2	1937	1939	3499	341	115	100	9	
1	1942	1943	3580	161	115	100	9	
5								
								* shares .range file with 120218b-247 this lift
10								is lines 1-4 of range file.
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

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Project Name	HPN NOAA Sites
Project Number	7525-052
Navigation File	hpn-tid-haverstraw-7525052.pln

Pilot	Young
Tech	Galich
Aircraft	N2448G

Date Flown	2/18/2012 #2		
Takeoff Time	2:24 PM #1	Airport	HPN
Landing Time	3:30 PM	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	A

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120218B
from → to	000 →

Weather	Ground	Airport
Begin Temp	7	HPN
Begin Dewpoint	-7	
Begin Pressure	29.90	
End Temp	7	HPN
End Dewpoint	-7	
End Pressure	29.88	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	
Static or Flyover?	Flyover
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	1959	2001	3534	276	115	100	5	
2	2003	2004	3528	096	115	100	4	
3	2006	2008	3527	276	115	100	4	
4	2010	2011	3532	096	115	100	5	
5	2013	2014	3526	276	115	100	3	
6	2017	2018	3560	005	115	100	10	Partial auto shutoff
6	2020	2021	3560	185	115	100	5	SN on crossline observed in flight
								*Shares range file with 120218a-247. this liff is lines 5-11 of range file

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HPN NOAA sites Hudson
Project Number	7525-052
Navigation File	hpn-tiol-haverstraw_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/19/2012 #1 (A)		
Takeoff Time	2:00 PM	Airport	HPN
Landing Time	2:40 PM *	Airport	flyover

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120219A
from → to	000 →

Weather	Ground	Airport
Begin Temp	6 C	HPN
Begin Dewpoint	-7 C	
Begin Pressure	30.02	
End Temp		HPN
End Dewpoint		
End Pressure		

GPS Base Location(s)	ARP HPN
PDOP Avoidance	
Static or Flyover?	static - flyover
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
6	1914	1915	3560	005	115	100	3	
1	1918	1919	3534	096	115	100	3	
2	1922	1923	3528	276	115	100	3	
3	1925	1927	3527	096	115	100	3	
4	1929	1931	3532	276	115	100	3	
5	1933	1935	3526	096	115	100	3	* flyover HPN to finish lift.

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA Small Sites Hudson
Project Number	7525-052
Navigation File	hpn-tid-croton-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	2/19/2012 #1 1/2 (A)		
Takeoff Time	2:00 pm *	Airport	HPN
Landing Time	3:18 pm	Airport	HPN

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120219A
from → to	000 →

330@7

Weather	Ground	Airport
Begin Temp	6 C	HPN
Begin Dewpoint	-7 C	
Begin Pressure	30.02	
End Temp	7 C	HPN
End Dewpoint	-8 C	
End Pressure	29.98	

GPS Base Location(s)	ARP HPN
PDOP Avoidance	
Static or Flyover?	flyover - static
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
6	1949	1951	3589	312	115	100	4	*flyover HPN to start lift.
1	1953	1954	3521	193	115	100	1	
2	1956	1957	3507	013	115	100	2	
3	2000	2001	3507	193	115	100	1	
4	2003	2005	3528	013	115	100	2	

MISSION PAGE _____ OF _____

New York Area HPN-TID-CR Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	1.7	3500	LX7500	ROTON_7525-052	2/19/2012	247	120219a-247	
2	1.7	3500	LX7500	ROTON_7525-052				
3	1.7	3500	LX7500	ROTON_7525-052				
4	1.7	3500	LX7500	ROTON_7525-052				
5	2.0	3500	LX7500	ROTON_7525-052				

Total FL Miles: 8.9

7525-052 **HPN-TID-CROTON**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2-20-12

New York Area HPN-TID-PIE Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	2.5	3500	LX7500	RMONT_7525-052	2/18/2012	247	120218a-247	
2	2.5	3500	LX7500	RMONT_7525-052	↓	↓	↓	
3	2.0	3500	LX7500	RMONT_7525-052	↓	↓	↓	
4	2.0	3500	LX7500	RMONT_7525-052	↓	↓	↓	

Total FL Miles: 9.0

7525-052 HPN-TID-PIERMON

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/18/2012

56
2-20-12

New York Area HPN-TID-HAV Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	1.9	3500	LX7500	RSTRAW_7525-05	2/19/2012	247	120219a-247	
2	1.9	3500	LX7500	RSTRAW_7525-05				
3	1.9	3500	LX7500	RSTRAW_7525-05				
4	1.7	3500	LX7500	RSTRAW_7525-05				
5	1.6	3500	LX7500	RSTRAW_7525-05				
6	1.9	3500	LX7500	RSTRAW_7525-05				

Total FL Miles: 11.0

7525-052 HPN-TID-HAVERST

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/19/2012

2-20-12

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HTO
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Gallich
Aircraft	N2448G

Date Flown	1/15/2012 #1		
Takeoff Time	8:30	Airport	HTO
Landing Time	11:30	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # 1
POS File Name	11015A
from → to	000 →

Weather	Ground	Airport
Begin Temp	-9	HTO
Begin Dewpoint	-20	
Begin Pressure	30.24	
End Temp	-7	HTO
End Dewpoint	-19	
End Pressure	30.34	

GPS Base Location(s)	L372
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

9:15
1:48

340@15G25

Last Calibration Mission:	111221a -247

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
	61	1429	1436	3523	048	115	100	12	
	60	1439	1446	3524	228	115	100	12	
	59	1450	1456	3524	048	115	100	12	left partial line for clouds.
	38	1502	1511	3529	228	115	100	13	
5	37	1514	1522	3520	048	115	100	12	
	36	1525	1532	3514	228	115	100	13	
	35	1535	1542	3506	048	115	100	11	
	34	1544	1551	3505	228	115	100	11	
	33	1553	1600	3506	048	115	100	11	
10	32	1603	1609	3505	228	115	100	12	
	92	1614	1618	3574	048	115	100	8	
15									
20									

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HTO
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/15/2012 # 2		
Takeoff Time	12:45 PM	Airport	Hto
Landing Time	5:15 PM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	12011~~5~~3B
from → to	000 →

340@10

Weather	Ground	Airport
Begin Temp	-7	HTO
Begin Dewpoint	-19	
Begin Pressure	30.34	
End Temp	-6	HTO
End Dewpoint	-21	
End Pressure	30.43	

GPS Base Location(s)	L372
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	111221a-247

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
	31	1813	1819	3504	048	115	100	13	
	30	1822	1829	3504	228	115	100	13	
	29	1831	1838	3505	048	115	100	13	
	28	1841	1848	3505	228	115	100	13	
5	5	1853	1903	3519	048	115	100	15	
	4	1906	1916	3521	228	115	100	17	
	3	1919	1929	3524	048	115	100	16	
	2	1932	1941	3530	228	115	100	17	
	15	1944	1952	3526	048	115	100	16	
10	1	1955	2003	3522	228	115	100	6	
	10	2005	2014	3518	048	115	100	15	
	16	2018	2023	3510	228	115	100	19	
	17	2025	2031	3500	048	115	100	16	
	89	2035	2038	3503	109	115	100	13	
15	79	2042	2045	3501	065	115	100	10	
	21	2049	2053	3502	245	115	100	14	
	14	2058	2103	3504	065	115	100	10	
	20	2106	2111	3506	245	115	100	11	
	22	2115	2120	3505	065	115	100	13	
20	13	2131	2139	3507	245	115	160	6	

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LIDAR MISSION RECORD SHEET

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523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HTO
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/15/2012 #2		
Takeoff Time	12:45	Airport	HTO
Landing Time	5:15	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):		Ground Speed (kts):	
Scan Rate (Hz):		Altitude AGL (ft):	
Pulse Rate Frequency (Hz):		MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120115B3
from → to	000 →

Weather	Ground	Airport
Begin Temp		
Begin Dewpoint		
Begin Pressure		
End Temp		
End Dewpoint		
End Pressure		

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	
→ if flyovers, times:	

Last Calibration Mission:	111221a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
65	2143	2148	3519	048	115	100	13	
64	2152	2157	3522	228	115	100	14	
63	2201	2206	3522	048	115	100	13	
62	2208	2214	3526	228	115	100	12	
5								
10								
15								
20								

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	hto
Project Number	7525-052
Navigation File	hto_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/16/2012 #1		
Takeoff Time	8:45 AM	Airport	HTO
Landing Time	12:15 PM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120116A
from → to	000 →

CLM

250@06

Weather	Ground	Airport
Begin Temp	-6 c	HTO
Begin Dewpoint	-12 c	
Begin Pressure	30.61 Hg	
End Temp	-2 c	HTO
End Dewpoint	-11 c	
End Pressure	30.56 Hg	

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
59	1403	1406	3524	048	115	100	6	picked up partial (line complete)
58	1409	1418	3523	228	115	100	5	
57	1421	1430	3521	048	115	100	5	
56	1433	1443	3522	228	115	100	4	
55	1447	1458	3521	048	115	100	4	
54	1501	1513	3525	228	115	100	3	
53	1515	1527	3529	048	115	100	3	
52	1529	1542	3528	228	115	100	3	
51	1545	1558	3529	048	115	100	2	
50	1601	1614	3527	228	115	100	3	
49	1616	1630	3527	048	115	100	2	
48	1633	1646	3527	228	115	100	2	
47	1649	1702	3529	048	115	100	2	
85	1704	1711	3526	208	115	100	3	GPS spike had to cut line from solution. Reflly this crossline. Check in IBI or HCB

MISSION PAGE 1 OF _____

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HTO
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Galicki
Aircraft	N2448G

Date Flown	1/16/2012 #2		
Takeoff Time	1:55 PM	Airport	HTO
Landing Time	2:45 PM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	P

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 # 1
POS File Name	120116B
from → to	000 →

210e9615

Weather	Ground	Airport
Begin Temp	0 C	HTO
Begin Dewpoint	-8 C	
Begin Pressure	30.46	
End Temp		
End Dewpoint		
End Pressure		

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
86	1901	1905	3500	NW	115	100	3	
46	1910	1918	3500	228	115	100	2	Partial line NE section to #92 cross
45	1920	1928	3539	048	115	100	3	Partial line NE section to #92 cross
44	1932	1940	3546	226	115	100	3	Partial line NE section to #92 cross
5								
10								
15								
20								

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	HTO
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/18/2012 #1		
Takeoff Time	8:20 AM	Airport	HTO
Landing Time	10:50 AM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120118A
from → to	000 →

320@14

W@ 35-40

310@

Weather	Ground	Airport
Begin Temp	4 C	HTO
Begin Dewpoint	-6 C	
Begin Pressure	29.83 Hg	
End Temp	6 C	HTO
End Dewpoint	-8 C	
End Pressure	29.89 Hg	

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
66	1326	1336	3501	066	115	100	16	
67	1339	1349	3513	246	110	100	12	
68	1352	1401	3533	066	115	100	16	
69	1405	1414	3544	246	110	100	13	
70	1417	1426	3544	066	115	100	15	
71	1428	1436	3530	246	115	100	12	
72	1439	1446	3521	066	115	100	12	
73	1449	1456	3517	246	115	100	12	
74	1459	1506	3512	066	115	100	12	
75	1509	1513	3512	246	115	100	12	
76	1516	1519	3511	066	115	100	13	
77	1522	1524	3504	246	115	100	10	
78	1527	1529	3500	066	115	100	10	
88	1533	1535	3500	113	115	100	2	
87	1539	1542	3514	325	115	100	5	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	hto
Project Number	7525-052
Navigation File	hto_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/18/2012 #2		
Takeoff Time	12:50 PM	Airport	HTO
Landing Time	4:55 PM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120118B
from → to	000 →

Weather	Ground	Airport
Begin Temp		HTO
Begin Dewpoint		
Begin Pressure		
End Temp	1 C	HTO
End Dewpoint	-12 C	
End Pressure	30.01 Hg	

340@17G22

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
46	1800	1805	3553	228	115	100	15	Complete
45	1808	1814	3539	048	115	100	14	Complete
44	1817	1822	3546	228	115	100	15	Complete
43	1824	1837	3550	048	115	100	15	
42	1840	1852	3545	228	115	100	15	
41	1855	1908	3540	048	115	100	15	
40	1910	1923	3534	228	115	100	15	
39	1925	1938	3527	048	115	100	15	
38	1942	1946	3529	228	115	100	13	Partial for cloud cover on data
82	1954	2000	3525	156	115	100	3	
81	2004	2008	3506	338	115	100	4	
27	2009	2016	3505	048	115	100	15	
26	2019	2026	3504	228	115	100	15	
25	2029	2036	3504	048	115	100	13	
24	2040	2048	3505	228	115	100	12	
23	2051	2059	3508	048	115	100	12	
12	2104	2115	3508	228	115	100	15	
11	2118	2128	3509	048	115	100	14	
90	2131	2137	3506	203	115	100	15	
91	2142	2148	3558	197	115	100	15	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	hto
Project Number	7525-052
Navigation File	hto-7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/20/2012		
Takeoff Time	1:15 PM	Airport	HTO
Landing Time	3:35 PM	Airport	HTO

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	240 #1
POS File Name	120120A
from → to	000 →

Weather	Ground	Airport
Begin Temp	-1 C	HTO
Begin Dewpoint	-13 C	
Begin Pressure	30.18 Hg	
End Temp	-1 C	HTO
End Dewpoint	-13 C	
End Pressure	30.21 Hg	

330@8G/16

GPS Base Location(s)	HTO Custom
PDOP Avoidance	3:30
Static or Flyover?	static
→ if flyovers, times:	flyover @ end of mission 3:32 ~~3:30~~

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
85	1810	1818	3516	028	115	100	10	
9	1834	1845	3509	228	115	100	12	
18	1849	1900	3508	048	115	100	10	
19	1903	1914	3507	228	115	100	14	
8	1916	1926	3508	048	115	100	10	
7	1928	1938	3511	228	115	100	11	
6	1940	1949	3515	048	115	100	12	
83	1958	2008	3513	099	115	100	10	
84	2011	2022	3512	261	115	100	10	
80	2024	2026	3518	140	115	100	3	

MISSION PAGE _____ OF _____

New York Area HTO Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	17.0	3520	L 372	HTO_7525052.pln	1/15	247	120115b-247	
2	17.3	3530	L 372	HTO_7525052.pln	↓	↓	↓	
3	20.1	3520	L 372	HTO_7525052.pln	↓	↓	↓	
4	20.6	3520	L 372	HTO_7525052.pln	↓	↓	↓	
5	20.6	3520	L 372	HTO_7525052.pln	↓	↓	↓	
6	20.7	3520	L 372	HTO_7525052.pln	1/20	247	120120a-247	Tidal
7	20.7	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
8	21.2	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
9	25.2	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
10	16.9	3520	L 372	HTO_7525052.pln	1/15	247	120115b-247	
11	22.9	3510	L 372	HTO_7525052.pln	1/18	247	120118b-247	Tidal
12	22.9	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
13	17.3	3510	L 372	HTO_7525052.pln	1/15	247	120115b-247	Tidal I missread this crossline it was shot outside of tidal. will Reflly
14	9.5	3500	L 372	HTO_7525052.pln	1/15	247	120115b-247	
15	17.2	3530	L 372	HTO_7525052.pln	↓	↓	↓	

7525-052 HTO

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galiefi

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/15/12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	11.0	3510	L 372	HTO_7525052.pln	1/15	247	120115b-247	
17	11.0	3500	L 372	HTO_7525052.pln	↓	↓	↓	
18	25.0	3510	L 372	HTO_7525052.pln	1/20	247	120120a-247	Tidal
19	21.9	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
20	9.8	3510	L 372	HTO_7525052.pln	1/15	247	120115b-247	
21	9.5	3500	L 372	HTO_7525052.pln	↓	↓	↓	
22	10.1	3510	L 372	HTO_7525052.pln	↓	↓	↓	
23	17.3	3510	L 372	HTO_7525052.pln	1/18	247	120118b-247	Tidal
24	15.6	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
25	15.2	3500	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
26	14.4	3500	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
27	14.3	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
28	13.8	3510	L 372	HTO_7525052.pln	1/15	247	120115b-247	Tidal
29	13.6	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
30	13.6	3500	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
31	13.6	3500	L 372	HTO_7525052.pln	↓	↓	↓	Tidal

7525-052 **HTO**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galiefi

Pilot: Young

AIRCRAFT Tail Number: N24486

Sensor Serial Number: 247

Date: 1/15/12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	13.6	3510	L 372	HTO_7525052.pln	1/15	247	120115a-247	Tidal
33	13.6	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
34	13.5	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
35	14.1	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
36	14.4	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
37	17.3	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
38	17.5	3530	L 372	HTO_7525052.pln	↓	↓	↓	Reflew section for clouds 120118b-247 Tidal
39	26.5	3530	L 372	HTO_7525052.pln	1/18	247	120118b-247	Tidal
40	26.6	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
41	26.8	3540	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
42	27.1	3550	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
43	27.1	3550	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
44	27.1	3550	L 372	HTO_7525052.pln	1/16	247	120116b-247	Partial ~~Reflt~~ Complete 120118b-247 Tidal
45	27.7	3540	L 372	HTO_7525052.pln	↓	↓	↓	Partial ~~Reflt~~ Complete 120118b-247 Tidal
46	27.7	3530	L 372	HTO_7525052.pln	↓	↓	↓	Partial ~~Reflt~~ Complete 120118b-247 Tidal
47	28.1	3530	L 372	HTO_7525052.pln	1/16	247	120116a-247	Tidal

7525-052 **HTO**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448C

Sensor Serial Number: 247

Date: 1/15/12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
48	28.3	3530	L 372	HTO_7525052.pln	1/16	247	120116a-247	Tidal
49	28.6	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
50	28.5	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
51	28.5	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
52	28.3	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
53	24.4	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
54	23.7	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
55	23.7	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
56	20.7	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
57	20.7	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
58	18.7	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
59	17.2	3520	L 372	HTO_7525052.pln	1/15	247	120115a-247	Partial Completed 120116a-247 Tidal
60	15.9	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
61	14.1	3520	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
62	11.8	3530	L 372	HTO_7525052.pln	1/15	247	120115b-247	
63	11.1	3520	L 372	HTO_7525052.pln	↓	↓	↓	

7525-052 **HTO**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/15/12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
64	9.6	3520	L 372	HTO_7525052.pln	1/15	247	120115b-247	
65	9.7	3520	L 372	HTO_7525052.pln	1/15	247	120115b-247	
66	20.6	3500	L 372	HTO_7525052.pln	1/18	247	120118a-247	
67	19.8	3510	L 372	HTO_7525052.pln				
68	18.9	3530	L 372	HTO_7525052.pln				
69	18.9	3540	L 372	HTO_7525052.pln				
70	17.0	3540	L 372	HTO_7525052.pln				
71	16.6	3530	L 372	HTO_7525052.pln				
72	15.3	3520	L 372	HTO_7525052.pln				
73	14.7	3520	L 372	HTO_7525052.pln				
74	14.3	3510	L 372	HTO_7525052.pln				
75	7.6	3510	L 372	HTO_7525052.pln				
76	5.0	3510	L 372	HTO_7525052.pln				
77	5.3	3500	L 372	HTO_7525052.pln				
78	4.5	3500	L 372	HTO_7525052.pln				
79	4.8	3500	L 372	HTO_7525052.pln	1/15	247	120115b-247	

7525-052 **HTO**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/15/12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
80	5.4	3520	L 372	HTO_7525052.pln	1/20	247	120120a-247	Tidal
81	6.5	3510	L 372	HTO_7525052.pln	1/18	247	120118b-247	Tidal
82	16.2	3530	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
83	26.7	3520	L 372	HTO_7525052.pln	1/20	247	120120a-247	Tidal
84	24.9	3510	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
85	14.9	3530	L 372	HTO_7525052.pln	1/16	247	120116a-247	Tidal Removed from GPS solution due to PDOP Refly
86	7.1	3520	L 372	HTO_7525052.pln	1/16	247	120116b-247	
87	5.1	3510	L 372	HTO_7525052.pln	1/18	247	120118a-247	
88	4.5	3500	L 372	HTO_7525052.pln	↓	↓	↓	
89	4.2	3500	L 372	HTO_7525052.pln	1/15	247	120115b-247	
90	11.2	3510	L 372	HTO_7525052.pln	1/18	247	120118b-247	
91	14.2	3560	L 372	HTO_7525052.pln	↓	↓	↓	Tidal
92	8.8	3570	L 372	HTO_7525052.pln	1/15	247	120115a-247	

Total FL Miles: 1564.8

7525-052 **HTO**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/15/12

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	Brookhaven Ny NOAA
Project Number	7525-052
Navigation File	hwv_7525-052

Pilot	Young
Tech	Galiefi
Aircraft	N2448G

Date Flown	1/31/2012		
Takeoff Time	8:20 AM	Airport	HWV
Landing Time	11:15 AM	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	32	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120131A
from → to	000 →

Weather	Ground	Airport
Begin Temp	7 C	HWV
Begin Dewpoint	-2 C	
Begin Pressure	30.12	
End Temp	10	
End Dewpoint	-1	
End Pressure	30.16	

260@16-18

282@ 37 Kts

220@8

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
	92	1340	1347	3555	162	116	100	20	
	105	1351	1356	3529	315	116	100	9	
	62	1407	1417	3508	058	116	100	16	
	63	1421	1432	3508	238	116	100	12	
5	64	1435	1445	3509	058	116	100	12	
	65	1448	1459	3511	238	116	100	11	
	66	1503	1510	3520	058	116	100	12	
	67	1517	1521	3525	238	116	100	11	
	68	1524	1531	3529	058	116	100	11	
10	69	1535	1539	3520	238	116	100	9	
	70	1542	1546	3520	058	116	100	11	
	71	1548	1552	3520	238	116	100	11	
	72	1554	1557	3522	058	116	100	10	
	73	1600	1603	3525	238	116	100	8	
15	74	1606	1609	3525	058	116	100	9	
20									

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	brookhaven NY NOAA
Project Number	7525-052
Navigation File	hwv-7525052.pkn

Pilot	Young
Tech	Galiefi
Aircraft	N2448G

Date Flown	1/31/2012 #2		
Takeoff Time	12:15 PM	Airport	HWV
Landing Time	2:15 PM	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	116
Scan Rate (Hz):	32	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120130B
from → to	000 →

220@9

260@23 Kts

Weather	Ground	Airport
Begin Temp	9	HWV
Begin Dewpoint	-1	
Begin Pressure	30.13	
End Temp	11	HWV
End Dewpoint	1	
End Pressure	30.08	

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
93	1722	1725	3535	238	116	100	5	
94	1728	1732	3540	058	116	100	6	
95	1735	1738	3541	238	116	100	5	
96	1740	1743	3545	058	116	100	5	
97	1745	1748	3550	238	116	100	4	
107	1751	1753	3555	058	114	100	5	
crossline	1757	1758	3580	148	116	100	14	149 14° 168 113
99	1810	1816	3500	253	116	100	2	
100	1818	1824	3503	073	116	100	1	
101	1826	1832	3501	253	116	100	1	
102	1835	1840	3500	073	116	100	2	
103	1842	1849	3500	253	116	100	2	
105	1852	1853	3501	350	116	100	11	
104	1856	1857	3501	175	116	100	11	
110	1901	1902	3501	336	116	100	11	
109	1903	1905	3514	352	116	100	12	

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	Brookhaven NY NOAA
Project Number	7525-052
Navigation File	Hwv_7525052.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/30/2012		
Takeoff Time	8:45 AM	Airport	HWV
Landing Time	11:45 AM	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	32	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120130A
from → to	000 →

Weather	Ground	Airport
Begin Temp	3 C	HWV
Begin Dewpoint	-8 C	
Begin Pressure	30.18	
End Temp	4	HWV
End Dewpoint	-11	
End Pressure	30.24	

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

320@15G23

310@28

Last Calibration Mission:	

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
	29	1359	1405	3533	238	116	100	11	
	80	1408	1413	3531	058	116	100	11	
	79	1416	1422	3532	238	116	100	9	
	30	1425	1430	3538	058	116	100	13	
5	31	1433	1439	3542	238	116	100	12	
	32	1441	1446	3549	058	116	100	11	
	35	1450	1454	3534	238	116	100	10	
	34	1456	1500	3529	058	116	100	10	
	33	1502	1506	3532	238	116	100	10	
10	36	1510	1513	3530	058	116	100	11	
	37	1516	1519	3532	238	116	100	10	
	38	1521	1524	3528	058	116	100	10	
	39	1527	1530	3530	238	116	100	10	
	40	1533	1535	3529	058	116	100	10	
15	41	1538	1541	3546	238	116	100	10	
	42	1544	1546	3556	058	116	100	10	
	43	1550	1552	3552	238	116	100	8	
	44	1555	1558	3553	058	116	100	11	
	88	1600	1607	3541	278	116	100	3	
20	45	1616	1631	3521	238	116	100	9	
	46	1634	1640	3524	058	116	100	10	Partial line

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	Brookhaven NY NOAA
Project Number	7515-051
Navigation File	hwv-7515051.pln

Pilot	Young
Tech	Galieti
Aircraft	N2448G

Date Flown	1/30/2012 #2		
Takeoff Time	12:55 PM	Airport	HWV
Landing Time	3:20 PM	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	116
Scan Rate (Hz):	31	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120130B
from → to	000 →

30012
F6K

Weather	Ground	Airport
Begin Temp		HWV
Begin Dewpoint		
Begin Pressure		
End Temp	4 C	HWV
End Dewpoint	-11 C	
End Pressure	30.24 Hg	

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
46	1806	1816	3514	058	116	100	11	Partial Complete
47	1818	1831	3510	238	116	100	8	
48	1834	1846	3516	058	116	100	14	
49	1849	1859	3517	238	116	100	9	
50	1902	1912	3512	058	116	100	10	
91	1918	1925	3535	201	116	100	6	
51	1935	1945	3588	238	116	100	10	
18	1946	1954	3502	261	116	100	2	
19	1957	2004	3501	081	116	100	2	
98	2008	2012	3509	359	116	100	10	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY 2012
Project Number	75250-052
Navigation File	HWV-75250 52R.ph

Pilot	Greenwell
Tech	Berry
Aircraft	N2448G

Date Flown	January 25, 2012		
Takeoff Time	1502Z / 1002 AM EST	Airport	HWV
Landing Time	1622Z / 1122 AM EST	Airport	

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	32.00	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN 247 550 #1
POS File Name	120125a
from → to	000 →

Weather	Ground	Airport
Begin Temp	5°C	HWV
Begin Dewpoint	-4°C	
Begin Pressure	30.30	
End Temp	06°C	HWV
End Dewpoint	-04°C	
End Pressure	30.27	

GPS Base Location(s)	Brookport
PDOP Avoidance	1130-1210 AM-PM EST
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
10	1517	1519	3650	E	115	100%	-6	Clear and smooth; some bumps over water; clouds to N and S
9	1523	1526	3640'	W	115	100%	9	" " "
8	1530	1533	3625'	E	115	100%	-6	" " "
6	1539	1544	3615'	W	115	100%	9	" " "
5	1548	1556	3660'	E	115	100%	-8	" " " broke line for ATC
81	1604	1607	3600'	NW	115	100%	7	
10								
15								
20								

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY 2012
Project Number	7525052
Navigation File	HWV 7525 052 R.pln

Pilot	Greenwell
Tech	Berry
Aircraft	N2448G

Date Flown	January 25, 2012		
Takeoff Time	1740Z / 12:40 PM EST	Airport	HWV
Landing Time	1947Z / 2:47 PM EST	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	30.00	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPiA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	3D247 SSD #1
POS File Name	1201206
from → to	000 → 018

Weather	Ground	Airport
Begin Temp	6°C	HWV
Begin Dewpoint	-4°C	
Begin Pressure	30.25	
End Temp	07°C	HWV
End Dewpoint	-04°C	
End Pressure	30.21	

GPS Base Location(s)	Brookport
PDOP Avoidance	300-330 PM EST
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
5	1756	1807	3615	E	115	100%	-13	Clear and Smooth
4	1811	1823	3640'	W	115	100%	10	"
3	1827	1838	3600'	E	115	100%	-11	"
2	1841	1854	3590'	W	115	100%	9	"
1	1857	1910	3580	E	115	100%	-12	"
7	1913	1926	3540	W	115	100%	9	" pilot turn too soon; reflying end
7 patch	1930	1931	3540	W	115	100%	9	" reflying end of line above
83	1937	1938	3570	S	115	100%	3	"

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAANY 2012
Project Number	7525-052
Navigation File	HWV 7525052R.pln

Pilot	Greenwell
Tech	Berry
Aircraft	N2448G

Date Flown	January 25, 2012		
Takeoff Time	2055Z / 355PM EST	Airport	HWV
Landing Time	0038Z / 730 PM EST	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	32.00	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	0247 SSP #1
POS File Name	120125c
from → to	000 → 029

Weather	Ground	Airport
Begin Temp	07°C	HWV
Begin Dewpoint	-04°C	
Begin Pressure	30.21	
End Temp	03°C	HWV
End Dewpoint	-04°C	
End Pressure	3025	

GPS Base Location(s)	Brookport
PDOP Avoidance	300-330 PM EST
Static or Flyover?	Static
→ if flyovers, times:	-

0032

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
81	2107	2108	3525	W	115	100%	4	Smooth and clear
11	2111	2126	3525	E	115	100%	-6	
85	2129	2143	3500'	W	115	100%	4	
86	2147	2200	3500'	E	115	100%	-6	
5 84	2203	2213	3500'	SE	115	100%	7	
28	2216	2223	3500	NE	115	100%	5	
27	2227	2234	3560	SW	115	100%	4	
78	2238	2246	3550	NE	115	100%	-6	
76	2249	2256	3550'	SW	115	100%	4	
10 75	2300	2307	3550'	NE	115	100%	-8	pilot drifting off course + high altitude 2mi from start
23	2311	2318	3550'	SW	115	100%	5	
77	2321	2329	3550'	NE	115	100%	-8	
24	2332	2339	3550'	SW	115	100%	6	
26	2342	2350	3500'	NE	115	100%	-7	
15 25	2354	0001	3500'	SW	115	100%	6	
87	0005	0010	3500'	NE	115	100%	-7	
89	0014	0016	3523	SE	115	100%	9	possible cloud below
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	Noranny
Project Number	7525052
Navigation File	HWV-75250528.pln

Pilot	Greenwell
Tech	Berry
Aircraft	N2448G

Date Flown	January 28, 2012		
Takeoff Time	1402 / 9:02 AM EST	Airport	HWV
Landing Time	1609Z / 11:09 AM EST	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	32.00	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 SSD #1
POS File Name	120108a
from → to	000 → 018

Weather	Ground	Airport
Begin Temp	4°C	HWV
Begin Dewpoint	-2°C	
Begin Pressure	30.04"	
End Temp	7°C	HWV
End Dewpoint	-4°C	
End Pressure	30.03"	

GPS Base Location(s)	Brookport
PDOP Avoidance	1120-1150
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
61	1422	1424	3500'	SW	115	100%	-7	Calm and Smooth Clear
60	1429	1431	3500'	NE	115	100%	6	"
59	1435	1438	3500'	SW	115	100%	-7	"
58	1443	1446	3500'	NE	115	100%	6	"
57	1450	1454	3500'	SW	115	100%	-8	"
56	1459	1503	3500'	NE	115	100%	6	"
55	1507	1513	3500'	SW	115	100%	-6	"
54	1516	1523	3500'	NE	115	100%	6	"
53	1527	1534	3500'	SW	115	100%	-8	"
52	1541	1550	3500'	NE	115	100%	9	"
90	1564	1568	3500'	SW	115	100%	0	"

MISSION PAGE 1 OF 1

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA NY
Project Number	7525-052
Navigation File	HWV_7525052 R.pln

Pilot	Greenwell
Tech	Berry
Aircraft	N2448G

Date Flown	January 28, 2012		
Takeoff Time	1716Z / 1216 PM EST	Airport	HWV
Landing Time	1938Z / 238 PM EST	Airport	HWV

Project's Scanning Requirements			
FOV (half-degrees):	17.00	Ground Speed (kts):	115
Scan Rate (Hz):	32.00	Altitude AGL (ft):	3500'
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	MPIA

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	SN247 SSD #1
POS File Name	1201286
from → to	000 → 021

Weather	Ground	Airport
Begin Temp	08°C	HWV
Begin Dewpoint	-03°C	
Begin Pressure	30.01	
End Temp	07°C	HWV
End Dewpoint	-02°C	
End Pressure	29.96	

GPS Base Location(s)	Brookport
PDOP Avoidance	240-320 PM EST
Static or Flyover?	Static
→ if flyovers, times:	-

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
22A	1730	1732	3500'	W	115	100%	-8	Calm and Clear Aborted for POS A/V issue "POS A/V new status"
22	1738	1746	3500'	W	115	100%	-10	"
12	1750	1756	3500'	E	115	100%	12	"
21	1800	1808	3500'	W	115	100%	-9	"
20	1812	1819	3519	E	115	100%	11	"
13	1823	1831	3515'	W	115	100%	-9	"
14	1834	1841	3500'	E	115	100%	11	"
15	1845	1854	3500'	W	115	100%	-8	"
16	1857	1904	3500'	E	115	100%	12	"
17	1909	1917	3500'	W	115	100%	-9	"
106	1926	1933	3500'	N	115	100%	-8	

MISSION PAGE _____ OF _____

New York Area HWV Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	25.7	3570	BrookPort	HWV_7525052.pln	1-25-2012	247	120125B-247	
2	25.4	3590	BrookPort	HWV_7525052.pln				
3	25.0	3600	BrookPort	HWV_7525052.pln				
4	24.6	3610	BrookPort	HWV_7525052.pln				
5	23.9	3610	BrookPort	HWV_7525052.pln				
6	9.7	3630	BrookPort	HWV_7525052.pln			120125A-247	
7	26.0	3540	BrookPort	HWV_7525052.pln			120125B-247	
8	4.7	3620	BrookPort	HWV_7525052.pln				
9	4.7	3640	BrookPort	HWV_7525052.pln				
10	3.6	3640	BrookPort	HWV_7525052.pln				
11	30.5	3530	BrookPort	HWV_7525052.pln	1-25-12	247	120125C-247	
12	14.1	3530	BrookPort	HWV_7525052.pln	1-28-12	247	120128b-247	
13	14.4	3520	BrookPort	HWV_7525052.pln				
14	14.5	3510	BrookPort	HWV_7525052.pln				
15	14.6	3510	BrookPort	HWV_7525052.pln				

7525-052 HWV

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N 24486

Sensor Serial Number: 247

Date: 1-25-12

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	14.5	3510	BrookPort	HWV_7525052.pln	1-28-12	247	120128b-247	
17	14.8	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
18	15.0	3500	BrookPort	HWV_7525052.pln	1/30	247	120130b-247	
19	15.3	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
20	14.4	3520	BrookPort	HWV_7525052.pln	1-28-12	247	120128b-247	
21	14.1	3520	BrookPort	HWV_7525052.pln	↓	↓	↓	
22	14.1	3530	BrookPort	HWV_7525052.pln	↓	↓	↓	
23	14.6	3550	BrookPort	HWV_7525052.pln	1-25-12	247	120125c-247	
24	14.1	3560	BrookPort	HWV_7525052.pln	↓	↓	↓	
25	13.9	3560	BrookPort	HWV_7525052.pln	↓	↓	↓	
26	14.1	3560	BrookPort	HWV_7525052.pln	↓	↓	↓	
27	14.8	3550	BrookPort	HWV_7525052.pln	↓	↓	↓	
28	14.6	3560	BrookPort	HWV_7525052.pln	1-25-12	247	120125c-247	Tidal 2216-22232
29	10.9	3530	BrookPort	HWV_7525052.pln	1/30	247	120130a-247	Tidal
30	11.2	3540	BrookPort	HWV_7525052.pln	↓	↓	↓	Tidal
31	11.2	3540	BrookPort	HWV_7525052.pln	↓	↓	↓	Tidal

7525-052 **HWV**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/25/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	9.6	3550	BrookPort	HWV_7525052.pln	1/30	247	120130a-247	Tidal
33	6.5	3530	BrookPort	HWV_7525052.pln				Tidal
34	6.8	3530	BrookPort	HWV_7525052.pln				Tidal
35	7.3	3530	BrookPort	HWV_7525052.pln				Tidal
36	6.1	3530	BrookPort	HWV_7525052.pln				Tidal
37	5.6	3530	BrookPort	HWV_7525052.pln				Tidal
38	4.8	3530	BrookPort	HWV_7525052.pln				Tidal
39	4.8	3530	BrookPort	HWV_7525052.pln				Tidal
40	4.7	3530	BrookPort	HWV_7525052.pln				Tidal
41	4.7	3550	BrookPort	HWV_7525052.pln				Tidal
42	4.8	3560	BrookPort	HWV_7525052.pln				Tidal
43	4.5	3550	BrookPort	HWV_7525052.pln				Tidal
44	4.7	3550	BrookPort	HWV_7525052.pln				Tidal
45	31.4	3520	BrookPort	HWV_7525052.pln				Tidal
46	25.5	3520	BrookPort	HWV_7525052.pln				Completed 120130b-247 Tidal
47	25.8	3520	BrookPort	HWV_7525052.pln	1/30	247	120130b-247	Tidal

7525-052 HWV

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/30/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
48	25.8	3520	BrookPort	HWV_7525052.pln	1/30	247	120130b-247	Tidal
49	19.9	3520	BrookPort	HWV_7525052.pln	↓	↓	↓	Tidal
50	19.9	3510	BrookPort	HWV_7525052.pln	↓	↓	↓	Tidal
51	19.7	3510	BrookPort	HWV_7525052.pln	↓	↓	↓	
52	19.7	3510	BrookPort	HWV_7525052.pln	1-28-12	247	120128a-247	
53	12.9	3510	BrookPort	HWV_7525052.pln	↓	↓	↓	
54	12.0	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
55	10.2	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
56	8.7	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
57	7.6	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
58	6.4	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
59	4.8	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
60	3.9	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
61	1.9	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
62	22.2	3510	BrookPort	HWV_7525052.pln	1/31	247	120131a-247	
63	21.1	3510	BrookPort	HWV_7525052.pln	↓	↓	↓	

7525-052 **HWV**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/28/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
64	21.3	3510	BrookPort	HWV_7525052.pln	1/31	247	120131a-247	
65	21.1	3510	BrookPort	HWV_7525052.pln				
66	14.6	3520	BrookPort	HWV_7525052.pln				
67	14.8	3530	BrookPort	HWV_7525052.pln				
68	13.9	3530	BrookPort	HWV_7525052.pln				
69	8.2	3520	BrookPort	HWV_7525052.pln				
70	7.8	3520	BrookPort	HWV_7525052.pln				
71	7.1	3520	BrookPort	HWV_7525052.pln				
72	6.7	3520	BrookPort	HWV_7525052.pln				
73	6.7	3530	BrookPort	HWV_7525052.pln				
74	6.7	3530	BrookPort	HWV_7525052.pln				
75	14.6	3540	BrookPort	HWV_7525052.pln	1-25-12	247	120125C-247	
76	14.8	3540	BrookPort	HWV_7525052.pln				
77	14.1	3550	BrookPort	HWV_7525052.pln				
78	14.8	3550	BrookPort	HWV_7525052.pln				
79	11.0	3530	BrookPort	HWV_7525052.pln	1/30	247	120130a-247	

7525-052 **HWV**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/25/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
80	11.0	3530	BrookPort	HWV_7525052.pln	1/30	247	120130a-247	
81	2.2	3530	BrookPort	HWV_7525052.pln	1-25-12	247	120125c-247	
82	5.0	3540	BrookPort	HWV_7525052.pln	1-25-12	247	120125A-247	
83	3.5	3570	BrookPort	HWV_7525052.pln	1-25-12	247	120125B-247	
84	9.2	3570	BrookPort	HWV_7525052.pln	125-12	247	120125C-247	
85	27.4	3520	BrookPort	HWV_7525052.pln	1-25-12	247	120125C-247	
86	27.2	3500	BrookPort	HWV_7525052.pln	1-25-12	247	120125c-247	
87	9.3	3550	BrookPort	HWV_7525052.pln	125-12	247	120125c-247	
88	15.1	3540	BrookPort	HWV_7525052.pln	1/30	247	120130a-247	
89	5.5	3520	BrookPort	HWV_7525052.pln	1-25-12	247	120125c-247	Tidal 0014Z - 0016Z
90	6.1	3510	BrookPort	HWV_7525052.pln	1-28-12	247	120128a-247	Tidal 1554 - 1558Z
91	15.9	3540	BrookPort	HWV_7525052.pln	1/30	247	120130b-247	Tidal
92	15.5	3560	BrookPort	HWV_7525052.pln	1/31	247	120131a-247	
93	6.7	3540	BrookPort	HWV_7525052.pln	1/31	247	120131b-247	
94	7.4	3540	BrookPort	HWV_7525052.pln	↓	↓	↓	
95	5.5	3540	BrookPort	HWV_7525052.pln	↓	↓	↓	

7525-052 **HWV**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/25/2012

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
96	5.5	3550	BrookPort	HWV_7525052.pln	1/31	247	120131b-247	
97	5.5	3550	BrookPort	HWV_7525052.pln	↓	↓	↓	
98	8.1	3510	BrookPort	HWV_7525052.pln	1/30	247	120130b-247	
99	11.1	3500	BrookPort	HWV_7525052.pln	1/31	247	120131b-247	
100	11.1	3500	BrookPort	HWV_7525052.pln				
101	11.1	3500	BrookPort	HWV_7525052.pln				
102	11.1	3500	BrookPort	HWV_7525052.pln				
103	11.5	3500	BrookPort	HWV_7525052.pln				
104	2.2	3500	BrookPort	HWV_7525052.pln				
105	3.3	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	
106	5.5	3510	BrookPort	HWV_7525052.pln	1-28-12	247	120128b-247	
107	5.5	3560	BrookPort	HWV_7525052.pln	1/31	247	120131b-247	
108	8.4	3530	BrookPort	HWV_7525052.pln	1/31	247	120131a-247	
109	3.3	3510	BrookPort	HWV_7525052.pln	1/31	247	120131b-247	
110	2.3	3500	BrookPort	HWV_7525052.pln	↓	↓	↓	

Total FL Miles: 1333.2

7525-052 **HWV**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Berry

Pilot: Greenwell

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 1/28/2012

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pou-7525052.pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/12/2011 #1		
Takeoff Time	12:00 AM	Airport	POU
Landing Time	2:40 PM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	3500
Scan Rate (Hz):	34	Altitude AGL (ft):	115
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #2
POS File Name	111212A
from → to	000 →

Weather	Ground	Airport
Begin Temp	1	POU
Begin Dewpoint	-6	
Begin Pressure	30.56	
End Temp	7	POU
End Dewpoint	-11	
End Pressure	30.44	

210 ec

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
54	1711	1719	3690	035	115	100	4	
53	1724	1732	3676	215	115	100	2	
4	1737	1746	3663	035	115	100	3	
3	1750	1759	3665	215	115	100	2	
1	1803	1813	3649	035	115	100	2	
79	1819	1820	3933	215	115	100	3	
2	1821	1830	3649	215	115	100	2	
5	1834	1843	3655	035	115	100	3	
78	1844	1846	3900	035	115	100	2	
77	1849	1851	3902	215	115	100	1	
6	1852	1901	3639	215	115	100	2	
7	1904	1913	3628	035	115	100	3	
81	1919	1923	3671	305	115	100	8	
71	1925	1930	3744	091	120	100	7	

MISSION PAGE 1 OF

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pou-7525052.pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/12/2011 #2		
Takeoff Time	3:35 PM	Airport	POU
Landing Time	4:30 PM	Airport	

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#2
POS File Name	111212B
from → to	000 →

190ES

Weather	Ground	Airport
Begin Temp	7	POU
Begin Dewpoint	-11	
Begin Pressure	30.48	
End Temp	7	POU
End Dewpoint	-11	
End Pressure	30.48	

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

	Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
GOOD ✓	76	2043	2045	3891	035	115	100	1	
BAD	8	2048	2100	3702	215	115	100	3	
BAD	9			3709	035	115	100	3	DC Buffer Overflow!
									Returned to airport
5									
10									
15									
20									

MISSION PAGE 2 OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POV
Project Number	7525-056
Navigation File	pov. 7525056. pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/13/2011 #1		
Takeoff Time	8:00 AM	Airport	POV
Landing Time	11:45 PM	Airport	POV

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#1
POS File Name	111213A
from → to	000 →

Weather	Ground	Airport
Begin Temp	-7 C	POV
Begin Dewpoint	-9 C	
Begin Pressure	30.38	
End Temp	1 C	POV
End Dewpoint	-4 C	
End Pressure	30.39 Hg	

GPS Base Location(s)	ARP POV
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

CLM
CLM

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
80 .	1339	1342	3820	351	115	100	3	
8 .	1345	1357	3701	215	115	100	7	
9 .	1400	1412	3709	035	115	100	7	
10 .	1415	1426	3705	215	115	100	6	
5 11 .	1430	1441	3703	035	115	100	6	
12 .	1444	1455	3689	215	115	100	6	
13 .	1459	1510	3707	035	115	100	6	
14 .	1519	1530	3741	215	115	100	6	
15 .	1536	1547	3766	035	115	100	6	
10 16 .	1552	1602	3787	215	115	100	6	
18 .	1606	1616	3814	035	115	100	6	
17 .	1621	1626	3761	268	115	100	8	
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pou_7525052.pln

Pilot	Greenwell
Tech	Galicki
Aircraft	N9471R

Date Flown	12/13/11 #2		
Takeoff Time	12:00 PM	Airport	POU
Landing Time	2:30 PM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#1
POS File Name	111213B
from → to	000 →

CLM 280@5

Weather	Ground	Airport
Begin Temp	1	POU
Begin Dewpoint	-4	
Begin Pressure	30.39	
End Temp	7	POU
End Dewpoint	-4	
End Pressure	30.33	

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
19	1726	1735	3832	215	115	100	6	
71	1738	1743	3722	126	115	100	11	
63	1746	1750	3727	270	120	100	10	
20	1752	1801	3825	035	115	100	6	
21	1804	1813	3824	215	115	100	4	
22	1817	1823	3761	035	115	100	6	
23	1827	1833	3783	215	115	100	4	Redo N half off line N70
24	1837	1843	3780	035	115	100	3	
23	1847	1850	3783	215	115	100	3	Redo ✓
25	1857	1902	3754	215	115	100	3	
70	1909	1916	3718	324	115	100	6	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	POU - 7525052.pln

Pilot	Greenwell
Tech	Galleti
Aircraft	N9471R

Date Flown	12/13/2011	#3	
Takeoff Time	3:20PM	Airport	POU
Landing Time	4:55PM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#1
POS File Name	111213C
from → to	000 →

VBR

Weather	Ground	Airport
Begin Temp	7	POU
Begin Dewpoint	-4	
Begin Pressure	30.33	
End Temp	6	POU
End Dewpoint	-3	
End Pressure	30.33	

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
26	2037	2042	3731	035	115	100	5	
35	2045	2049	3731	215	115	100	5	
27	2054	2059	3726	035	115	100	5	
28	2102	2106	3700	215	115	100	5	
29	2110	2114	3707	035	115	100	7	
30	2118	2121	3700	215	115	100	7	
31	2125	2129	3730	035	115	100	6	
32	2132	2135	3752	215	115	100	6	
33	2140	2143	3766	035	115	100	5	
crossline	2146	2148	3730	125	115	100	11	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pou_7525052.pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/14/2011 #1		
Takeoff Time	8:15 AM	Airport	POU
Landing Time	11:30 AM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#1
POS File Name	111214A
from → to	000 →

Weather	Ground	Airport
Begin Temp	-2 C	POU
Begin Dewpoint	-3 C	
Begin Pressure	30.39 Hg	
End Temp	6 C	POU
End Dewpoint	-1 C	
End Pressure	30.41 Hg	

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
34	1352	1355	3769	215	115	100	6	
36	1400	1403	3744	035	115	100	4	
37	1406	1410	3746	215	115	100	4	
38	1414	1418	3758	035	115	100	4	
39	1423	1428	3757	215	115	100	5	
40	1431	1435	3740	035	115	100	4	
41	1439	1443	3710	215	115	100	5	
42	1447	1451	3670	035	115	100	4	
43	1455	1458	3677	215	115	100	4	
44	1502	1505	3673	035	115	100	4	
45	1509	1511	3627	215	115	100	3	
46	1515	1517	3638	035	115	100	4	
47	1521	1523	3669	215	115	100	4	
48	1526	1528	3739	035	115	100	4	
49	1531	1532	3803	215	115	100	4	
50	1536	1538	3870	035	115	100	3	
51	1541	1542	3953	215	115	100	3	
73	1545	1548	3750	090	~~115~~ 120	~~100~~ 106	4	
52	1552	1555	3753	266	~~115~~ 115	~~100~~ 105 100	5	
69	1601	1610	3617	180	115	100	1	Partial line flew N → S stopped @ L72 20mi

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POV
Project Number	7525-052
Navigation File	pov-7525052.pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/16/2011 #1 PAGE 1		
Takeoff Time	9:00 AM	Airport	POV
Landing Time	1:15 PM	Airport	POV

Project's Scanning Requirements			
FOV (half-degrees):		Ground Speed (kts):	115
Scan Rate (Hz):		Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):		MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 # 1
POS File Name	111216A
from → to	000 →

Weather	Ground	Airport
Begin Temp	6 C	POV
Begin Dewpoint	-6 C	
Begin Pressure	30.04	
End Temp	8	POV
End Dewpoint	-4	
End Pressure	30.09	

GPS Base Location(s)	ARP POV
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

280@15 20
320@15

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
82	1421	1424	3779	215	115	100	18	
83	1428	1430	3789	035	110	100	16	
68	1434	1437	3799	215	115	100	17	Got low on line altitude
84	1441	1444	3830	035	110	100	16	
5 67	1448	1451	3960	215	115	100	14	
85	1455	1459	4090	035	110	100	14	
66	1502	1506	4214	215	115	100	14	
86	1509	1513	4273	035	110	100	13	
65	1517	1521	4306	215	115	100	13	
10 87	1524	1528	4297	035	115	100	13	
64	1534	1539	4172	215	115	100	14	
88	1544	1549	4177	035	115	100	14	
62	1553	1558	4246	215	115	100	13	
89	1602	1607	4333	035	115	100	13	
15 61	1616	1621	4419	215	115	100	13	
90	1625	1629	4428	035	115	100	7	
60	1633	1638	4360	215	115	100	7	
91	1642	1647	4281	035	115	100	7	
59	1651	1656	4157	215	115	100	11	
20 92	1659	1704	4065	035	115	100	11	

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pln-7525052.pln

Pilot	Greenwell
Tech	Galicki
Aircraft	N9471R

Date Flown	12/16/2011 #1 PAGE 1		
Takeoff Time	9:00AM	Airport	POU
Landing Time	1:15PM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):		Ground Speed (kts):	
Scan Rate (Hz):		Altitude AGL (ft):	
Pulse Rate Frequency (Hz):		MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111216A
from → to	000 →

Weather	Ground	Airport
Begin Temp		
Begin Dewpoint		
Begin Pressure		
End Temp		
End Dewpoint		
End Pressure		

GPS Base Location(s)	
PDOP Avoidance	
Static or Flyover?	
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
58	1707	1712	3962	215	115	100	11	
93	1716	1721	3889	035	115	100	7	
57	1724	1729	3803	215	115	100	7	
56	1733	1737	3684	035	115	100	8	
55	1741	1746	3643	215	115	100	8	
94	1751	1754	3875	141	115	100	5	
75	1758	1803	4120	047	115	100	14	

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	POU
Project Number	7525-052
Navigation File	pou-7525052.pln

Pilot	Greenwell
Tech	Galiati
Aircraft	N9471R

Date Flown	12/16/11 #2		
Takeoff Time	3:00 PM	Airport	POU
Landing Time	3:50 PM	Airport	POU

Project's Scanning Requirements			
FOV (half-degrees):		Ground Speed (kts):	115
Scan Rate (Hz):		Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):		MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111216B
from → to	000 →

340@6

Weather	Ground	Airport
Begin Temp	8	POU
Begin Dewpoint	-4	
Begin Pressure	30.09	
End Temp	8	POU
End Dewpoint	-4	
End Pressure	30.09	

GPS Base Location(s)	ARP POU
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
76	2014	2016	3900	035	115	100	6	
77	2020	2022	3902	215	115	100	6	
crossline	2025	2025		305			4	
69	2030	2035	3617	180	115	100	2	Southern portion
74	2038	2041	3831	317	115	100	2	

MISSION PAGE _____ OF _____

New York Area POU Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	18.8	3650	ARP *	POU_7525052.pln	12/12	240	111212a-240	
2	18.8	3650	ARP *	POU_7525052.pln				
3	18.4	3660	ARP *	POU_7525052.pln				
4	17.9	3660	ARP *	POU_7525052.pln				
5	19.0	3660	ARP *	POU_7525052.pln				
6	19.2	3640	ARP *	POU_7525052.pln				
7	18.7	3630	ARP *	POU_7525052.pln				
8	24.3	3700	ARP *	POU_7525052.pln	12/13	240	111213a-240	
9	23.9	3710	ARP *	POU_7525052.pln				
10	23.4	3710	ARP *	POU_7525052.pln				
11	22.8	3700	ARP *	POU_7525052.pln				
12	22.1	3690	ARP *	POU_7525052.pln				
13	22.4	3710	ARP *	POU_7525052.pln				
14	22.3	3740	ARP *	POU_7525052.pln				
15	21.9	3770	ARP *	POU_7525052.pln				

7525-052 POU

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N947R

Sensor Serial Number: 240

Date: 12/12/2011

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	20.9	3790	ARP *	POU_7525052.pln	12/13	240	111213a-240	
17	10.2	3760	ARP *	POU_7525052.pln	↓	↓	↓	
18	20.8	3810	ARP *	POU_7525052.pln	↓	↓	↓	
19	18.0	3830	ARP *	POU_7525052.pln	12/13	240	111213b-240	
20	17.4	3830	ARP *	POU_7525052.pln	↓	↓	↓	
21	16.9	3820	ARP *	POU_7525052.pln	↓	↓	↓	
22	12.5	3760	ARP *	POU_7525052.pln	↓	↓	↓	
23	12.1	3780	ARP *	POU_7525052.pln	↓	↓	↓	
24	10.0	3770	ARP *	POU_7525052.pln	↓	↓	↓	
25	9.3	3750	ARP *	POU_7525052.pln	↓	↓	↓	
26	8.7	3730	ARP *	POU_7525052.pln	12/13	240	111213c-240	
27	7.9	3730	ARP *	POU_7525052.pln	↓	↓	↓	
28	6.8	3710	ARP *	POU_7525052.pln	↓	↓	↓	
29	6.5	3710	ARP *	POU_7525052.pln	↓	↓	↓	
30	5.9	3700	ARP *	POU_7525052.pln	↓	↓	↓	
31	6.2	3730	ARP *	POU_7525052.pln	↓	↓	↓	

7525-052 **POU**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N947iR

Sensor Serial Number: 240

Date: 12/13/11

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	6.2	3750	ARP *	POU_7525052.pln	12/13	240	111213c-240	
33	6.2	3770	ARP *	POU_7525052.pln	↓	↓	↓	
34	6.2	3770	ARP *	POU_7525052.pln	12/14	240	111214a-240	
35	8.2	3730	ARP *	POU_7525052.pln	12/13	240	111213c-240	
36	6.0	3740	ARP *	POU_7525052.pln	12/14	240	111214a-240	
37	6.0	3750	ARP *	POU_7525052.pln				
38	6.2	3760	ARP *	POU_7525052.pln				
39	8.2	3760	ARP *	POU_7525052.pln				
40	8.2	3740	ARP *	POU_7525052.pln				
41	7.8	3710	ARP *	POU_7525052.pln				
42	7.3	3690	ARP *	POU_7525052.pln				
43	6.8	3680	ARP *	POU_7525052.pln				
44	6.3	3670	ARP *	POU_7525052.pln				
45	4.5	3630	ARP *	POU_7525052.pln				
46	3.8	3640	ARP *	POU_7525052.pln				
47	3.2	3670	ARP *	POU_7525052.pln	↓	↓	↓	

7525-052 POU

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N9471R

Sensor Serial Number: 240

Date: 12/13/2011

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
48	2.9	3740	ARP *	POU_7525052.pln	12/14	240	111214a-240	
49	2.2	3800	ARP *	POU_7525052.pln	↓	↓	↓	
50	2.5	3870	ARP *	POU_7525052.pln	↓	↓	↓	
51	2.4	3950	ARP *	POU_7525052.pln	↓	↓	↓	
52	6.1	3750	ARP *	POU_7525052.pln	↓	↓	↓	
53	17.5	3680	ARP *	POU_7525052.pln	12/12	240	111212a-240	
54	16.9	3690	ARP *	POU_7525052.pln	↓	↓	↓	
55	9.6	3640	ARP *	POU_7525052.pln	12/16	240	111216a-240	
56	9.4	3680	ARP *	POU_7525052.pln	↓	↓	↓	
57	9.4	3800	ARP *	POU_7525052.pln	↓	↓	↓	
58	9.4	3960	ARP *	POU_7525052.pln	↓	↓	↓	
59	9.4	4160	ARP *	POU_7525052.pln	↓	↓	↓	
60	9.6	4360	ARP *	POU_7525052.pln	↓	↓	↓	
61	9.3	4420	ARP *	POU_7525052.pln	↓	↓	↓	
62	9.4	4250	ARP *	POU_7525052.pln	↓	↓	↓	
63	9.0	3730	ARP *	POU_7525052.pln	12/13	240	111213b-240	

7525-052 **POU**

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted.

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N9471R

Sensor Serial Number: 240

Date: 12/12/11

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
64	9.7	4170	ARP *	POU_7525052.pln	12/16	240	111216a-240	
65	7.6	4310	ARP *	POU_7525052.pln	↓	↓	↓	
66	7.1	4210	ARP *	POU_7525052.pln	↓	↓	↓	
67	6.6	3960	ARP *	POU_7525052.pln	↓	↓	↓	
68	4.5	3800	ARP *	POU_7525052.pln	↓	↓	↓	
69	31.2	3620	ARP *	POU_7525052.pln	12/14	240	111214a-240	flew Southern portion of line left from 12/14 111216b-240
70	13.9	3730	ARP *	POU_7525052.pln	12/13	240	111213b-240	
71	8.1	3740	ARP *	POU_7525052.pln	12/12	240	111212a-240	
72	9.4	3720	ARP *	POU_7525052.pln	12/13	240	111213b-240	
73	4.6	3750	ARP *	POU_7525052.pln	12/14	240	111214a-240	
74	9.7	3830	ARP *	POU_7525052.pln	12/16	240	111216b-240	
75	7.0	4120	ARP *	POU_7525052.pln	12/16	240	111216a-240	
76	3.8	3890	ARP *	POU_7525052.pln	12/12	240	111212b-240	Reflew 111216b-240
77	2.3	3900	ARP *	POU_7525052.pln	12/12	240	111212a-240	Reflew 111216b-240
78	1.9	3900	ARP *	POU_7525052.pln	↓	↓	↓	
79	1.2	3930	ARP *	POU_7525052.pln	↓	↓	↓	

7525-052 POU

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N9471R

Sensor Serial Number: 240

Date: 12/12/11

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
80	4.4	3820	ARP *	POU_7525052.pln	12/13	240	111213a-240	
81	7.3	3670	ARP *	POU_7525052.pln	12/12	240	111212a-240	
82	4.5	3780	ARP *	POU_7525052.pln	12/16	240	111216a-240	
83	4.5	3790	ARP *	POU_7525052.pln				
84	4.5	3830	ARP *	POU_7525052.pln				
85	6.8	4090	ARP *	POU_7525052.pln				
86	7.4	4270	ARP *	POU_7525052.pln				
87	7.9	4300	ARP *	POU_7525052.pln				
88	9.5	4180	ARP *	POU_7525052.pln				
89	9.4	4330	ARP *	POU_7525052.pln				
90	9.4	4430	ARP *	POU_7525052.pln				
91	9.5	4280	ARP *	POU_7525052.pln				
92	9.7	4070	ARP *	POU_7525052.pln				
93	9.5	3890	ARP *	POU_7525052.pln				
94	6.6	3880	ARP *	POU_7525052.pln				

Total FL Miles: 979.7

7525-052 POU

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N947R

Sensor Serial Number: 240

Date: 12/12/11

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF NOAA Sites
Project Number	7525-052
Navigation File	swf-tid-iona-mani-ahrs-7525052.pln

Pilot	Young
Tech	Coketi
Aircraft	N2448G

Date Flown	2/17/2012 #1		
Takeoff Time	11:15 AM	Airport	SWF
Landing Time	12:15 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120217A
from → to	000 →

Weather	Ground	Airport
Begin Temp	7 C	SWF
Begin Dewpoint	0 C	
Begin Pressure	30.00	
End Temp	7 C	SWF
End Dewpoint	-1 C	
End Pressure	29.98	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

3100 23

BKN 040-045

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
7	1623	1625	3561	217	110	100	10	
6	1627	1629	3572	037	110	100	9	
8	1632	1633	3625	309	110	100	0	
5	1637	1640	3906	200	110	100	7	
4	1642	1645	3834	020	115	100	8	
3	1647	1650	3749	200	115	100	9	
2	1652	1654	3616	020	115	100	9	
1	1657	1659	3625	200	115	100	9	
9	1705	1705	3916	272	115	100	8	
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF NOAA Hudson Sites
Project Number	7525-052
Navigation File	swf_tid_marl_warp_7525052.pln

Pilot	Young
Tech	Coulieti
Aircraft	N2448G

Date Flown	2/17/2012 #2		
Takeoff Time	2:15 PM	Airport	SWF
Landing Time	2:50 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247 #1
POS File Name	120217B
from → to	000 →

300@10/20

Weather	Ground	Airport
Begin Temp	7 C	SWF
Begin Dewpoint	-3 C	
Begin Pressure	29.95	
End Temp	8	SWF
End Dewpoint	-5	
End Pressure	29.94	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

U 1925 320@17/25 >20 SCTS
8/-5 2994 V34

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
2	1923	1925	3553	324	115	100	3	
1	1927	1928	3555	144	115	100	4	
4	1931	1932	3567	051	115	100	8	
3	1935	1936	3549	231	115	100	8	
5	1937	1940	3626	090	115	100	5	
								* Shares range file with 120217~~B~~C-247. This
								lift is lines 1-5 of range file

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF NOAA Hudson Sites
Project Number	7515-052
Navigation File	swf_tid_mood_fish_7515052.pln

Pilot	Young
Tech	Culieti
Aircraft	N2448G

Date Flown	2/17/2012 #3		
Takeoff Time	3:00 PM	Airport	SWF
Landing Time	3:36 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247#1
POS File Name	120217c
from → to	000 →

Weather	Ground	Airport
Begin Temp	7 c	SWF
Begin Dewpoint	-3 c	
Begin Pressure	29.95	
End Temp	7	SWF
End Dewpoint	-3	
End Pressure	29.95	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	120213a-247

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
5	2007	2008	3549	027	115	100	7	
4	2010	2011	3503	207	115	100	9	
3	2014	2015	3503	027	115	100	8	
6	2018	2019	3506	186	115	100	9	
2	2021	2023	3514	300	115	100	1	
1	2025	2026	3522	120	115	100	5	
7	2029	2030	3573	030	115	100	10	
								* Shares range file with 120217b-247. This liff is lines 6-12 of range file

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF Calibration
Project Number	7515-052
Navigation File	

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/18/11 #1		
Takeoff Time	10:00 AM	Airport	SWF
Landing Time	10:35 AM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	13.4	Ground Speed (kts):	107
Scan Rate (Hz):	36.8	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111218A
from → to	000 →

Weather	Ground	Airport
Begin Temp	-7 C	SWF
Begin Dewpoint	-12 C	
Begin Pressure	30.27 Hg	
End Temp	-7	SWF
End Dewpoint	-12	
End Pressure	30.27	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	1504	1506	3960	258	110	100	8	
2	1510	1512	3964	078	110	100	6	
3	1515	1516	3961	258	110	100	6	
4	1519	1520	3957	149	110	100	3	
5 6	1523	1523	3851	345	110	100	3	
5	1527	1528	3867	274	110	100	9	
10								
15								
20								

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LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF
Project Number	7525-052
Navigation File	swf-7525052.pln

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/18/2011 #2		
Takeoff Time	12:20 PM	Airport	SWF
Landing Time	1:50 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	1112|8B
from → to	000 →

330@8

Weather	Ground	Airport
Begin Temp	-5 C	SWF
Begin Dewpoint	-12 C	
Begin Pressure	30.26	
End Temp	-4 C	SWF
End Dewpoint	-14 C	
End Pressure	30.24	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
27	1738	1741	3834	197	115	100	4	
26	1745	1748	3784	017	115	100	5	
25	1752	1755	3725	197	115	100	5	
24	1759	1803	3686	017	115	100	3	
23	1806	1810	3654	197	115	100	5	
22	1813	1816	3612	017	115	100	5	
21	1820	1823	3595	197	115	100	5	
32	1829	1832	3758	270	115	100	8	
20	1836	1839	3577	017	115	100	5	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF
Project Number	7525-052
Navigation File	swf-7525052.pln

Pilot	Greenwell
Tech	Gallieti
Aircraft	N9471R

Date Flown	12/18/2011 #3		
Takeoff Time	2:45 PM	Airport	SWF
Landing Time	4:30 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111218C
from → to	000 →

VBR 4
VBR 3

Weather	Ground	Airport
Begin Temp	-3 C	SWF
Begin Dewpoint	-13 C	
Begin Pressure	30.24 Hg	
End Temp	-2	SWF
End Dewpoint	-12	
End Pressure	30.24	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
19	2004	2007	3592	197	115	100	7	
18	2011	2014	3566	017	115	100	6	
17	2017	2020	3619	197	115	108	8	
16	2023	2027	3656	017	115	100	7	
15	2031	2035	3861	197	115	100	5	
28	2040	2044	3881	291	115	100	6	
14	2049	2055	3909	017	115	100	5	
13	2059	2106	3849	197	115	100	5	
8	2110	2116	3790	017	115	100	6	

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF
Project Number	7525-052
Navigation File	swf-7525052.pln

Pilot	Greenwell
Tech	Galiefi
Aircraft	N9471R

Date Flown	12/19/2011 #1		
Takeoff Time	12:10 Am	Airport	SWF
Landing Time	2:00 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#2
POS File Name	111219A
from → to	000 →

Weather	Ground	Airport
Begin Temp	5	SWF
Begin Dewpoint	-4	
Begin Pressure	30.06	
End Temp	6 C	SWF
End Dewpoint	-3 C	
End Pressure	30.05	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

75

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
7	1724	1732	3706	197	100	100	19	
6	1735	1741	3694	017	115	100	24	
5	1745	1751	3754	197	100	100	22	
4	1754	1759	3862	017	115	100	25	
3	1801	1806	3974	197	100	100	20	
2	1808	1813	4133	017	115	100	27	
1	1815	1820	4225	197	100	100	20	
9	1822	1826	4253	017	115	100	25	
30	1835	1838	4069	090	115	100	4	
31	1841	1845	4123	270	1	100	5	

MISSION PAGE 1 OF

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	SWF
Project Number	7525-052
Navigation File	SWF_7525052.pln

Pilot	Greenwell
Tech	Galicki
Aircraft	N9471R

Date Flown	12/19/2011 #2		
Takeoff Time	2:50 PM	Airport	SWF
Landing Time	3:45 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPiA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn240
HD #	240#1
POS File Name	111219B
from → to	000 →

250@10G19

Weather	Ground	Airport
Begin Temp	06	SWF
Begin Dewpoint	-3	
Begin Pressure	29.98	
End Temp	6	SWF
End Dewpoint	-3	
End Pressure	29.98	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
29	2005	2008	3843	131	115	100	18	
10	2014	2017	4301	197	115	100	20	
11	2020	2023	4373	017	115	100	22	
12	2026	2029	4416	197	115	100	21	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

Project Name	SWF Calibration
Project Number	7515-050
Flight Date(s)	

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Pilot	Greenwell
Tech	Galleti
Aircraft	N9471R

Date Flown	12/18/11 #1		
Takeoff Time	10:00 AM	Airport	SWF
Landing Time	10:35 AM	Airport	SWF

Project Scanning Parameters			
FOV (half-degrees):	13.4	Ground Speed (kts):	107
Scan Rate (Hz):	36.8	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPG or SPIA?:	

Calibration	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111218A
from → to	000 →

Weather	Begin	End
Begin Temp	-7 C	
Begin Dewpoint	-12 C	SWF
Begin Pressure	30.27 Hg	
End Temp	-7	
End Dewpoint	-12	SWF
End Pressure	30.27	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ If flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	AFL (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
1	1504	1506	3960	258	110	100	8	
2	1510	1512	3964	078	110	100	6	
3	1515	1516	3961	258	110	100	6	
4	1519	1520	3957	149	110	100	3	
6	1523	1523	3851	345	110	100	3	
5	1527	1528	3867	274	110	100	9	
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

[redacted]	SWF
[redacted]	7525-052
[redacted]	swf-7525052.pln

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Pilot	Greenwell
Tech	Galieti
Aircraft	N9471R

Date Flown	12/18/2011	#2	
Takeoff Time	12:20 PM	Airport	SWF
Landing Time	1:50 PM	Airport	SWF

[redacted]			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPB or SPIA?:	

[redacted]	
LiDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111218B
from → to	000 →

33068

[redacted]		
Begin Temp	-5 C	SWF
Begin Dewpoint	-12 C	
Begin Pressure	30.26	
End Temp	-4 C	SWF
End Dewpoint	-14 C	
End Pressure	30.24	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
27	1738	1741	3834	197	115	100	4	
26	1745	1748	3784	017	115	100	5	
25	1752	1755	3725	197	115	100	5	
24	1759	1803	3686	017	115	100	3	
23	1806	1810	3654	197	115	100	5	
22	1813	1816	3612	017	115	100	5	
21	1820	1823	3595	197	115	100	5	
32	1829	1832	3758	270	115	100	8	
20	1836	1839	3577	017	115	100	5	
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

Project Name	SWF
Project Number	7525-052
Mission File	swf-7525052.pln

Project Scanning Parameters			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIX or SPIA?:	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	static
→ if flyovers, times:	

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Pilot	Greenwell
Tech	Gatlieb
Aircraft	N9471R

Flight Information	
LIDAR Unit	Optech Gemini sn240
HD #	240 #1
POS File Name	111218C
from → to	000 →

VBR 4
VBR 3

Date Flown	12/18/2011 #3		
Takeoff Time	2:45 PM	Airport	SWF
Landing Time	4:30 PM	Airport	SWF

Weather	Ground	Airport
Begin Temp	-3 C	SWF
Begin Dewpoint	-13 C	
Begin Pressure	30.24 Hg	
End Temp	-2	SWF
End Dewpoint	-12	
End Pressure	30.24	

Last Calibration Mission:	

	FIL Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab
	19	2004	2007	3592	197	115	100	7
	18	2011	2014	3566	017	115	100	6
	17	2017	2020	3619	197	115	108	8
	16	2023	2027	3656	017	115	100	7
5	15	2031	2035	3861	197	115	100	5
	28	2040	2044	3881	291	115	100	6
	14	2049	2055	3909	017	115	100	5
	13	2059	2106	3849	197	115	100	5
	8	2110	2116	3790	017	115	100	6
10								
15								
20								

NOTES (weather, visibility, winds, ride, etc.)

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

Project Name	SWF
Project Number	7525-052
Mission File	swf-7525052.pln

Planned Scanning Parameters			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPIA?:	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Pilot	Greenwell
Tech	Collett
Aircraft	N9471R

Date Flown	12/19/2011 #1		
Takeoff Time	12:10 AM	Airport	SWF
Landing Time	2:00 PM	Airport	SWF

Weather	Begin	Airport
Begin Temp	5	SWF
Begin Dewpoint	-4	
Begin Pressure	30.06	
End Temp	6 C	SWF
End Dewpoint	-3 C	
End Pressure	30.05	

LIDAR Unit	Optech Gemini sn240
HD #	240# 2
POS File Name	111219A
from → to	030 →

Last Calibration Mission:	

75

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
7	1724	1732	3706	197	100	100	19	
6	1735	1741	3694	017	115	100	24	
5	1745	1751	3754	197	100	100	22	
4	1754	1759	3862	017	115	100	25	
3	1801	1806	3974	197	100	100	20	
2	1808	1813	4133	017	115	100	27	
1	1815	1820	4225	197	100	100	20	
9	1822	1826	4153	017	115	100	25	
30	1835	1838	4069	090	115	100	4	
31	1841	1845	4123	270	1	100	5	

MISSION PAGE 1 OF

LIDAR MISSION RECORD SHEET

Project Name	SWF
Project Number	7525-052
Mission Plan File	SWF_7525052.pln

Project Specifications			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPIA or SPIA?:	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.5700 - www.photoscience.com

Pilot	Greenwell
Tech	Galleti
Aircraft	N9471R

Data Information	
LIDAR Unit	Optech Gemini sn240
HD#	240#1
POS File Name	111219B
from → to	000 →

Date Flown	12/19/2011	#2	
Takeoff Time	2:50 PM	Airport	SWF
Landing Time	3:45 PM	Airport	SWF

Weather	Data	Source
Begin Temp	06	SWF
Begin Dewpoint	-3	
Begin Pressure	29.98	
End Temp	6	SWF
End Dewpoint	-3	
End Pressure	29.98	

250@10G19

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
29	2005	2008	3843	131	115	100	18	
10	2014	2017	4301	197	115	100	20	
11	2020	2023	4373	017	115	100	22	
12	2026	2029	4416	197	115	100	21	
5								
10								
15								
20								

MISSION PAGE _____ OF _____

LIDAR MISSION RECORD SHEET

PHOTO SCIENCE Geospatial Solutions

523 Wellington Way - Lexington KY - 40503 - 859.277.8700 - www.photoscience.com

Project Name	NOAA TID SWF
Project Number	7525-052
Navigation File	suf_tin_cons_7525052.pln

Pilot	Young
Tech	Calieti
Aircraft	N2448G

Date Flown	2/6/2012 #2		
Takeoff Time	4:55 PM	Airport	SWF
Landing Time	5:35 PM	Airport	SWF

Project's Scanning Requirements			
FOV (half-degrees):	17	Ground Speed (kts):	115
Scan Rate (Hz):	34	Altitude AGL (ft):	3500
Pulse Rate Frequency (Hz):	50	MPA or SPiA?:	

Data Information	
LiDAR Unit	Optech Gemini sn247
HD #	247# New Drive 262@18
POS File Name	120263
from → to	000 →

Weather	Ground	Airport
Begin Temp	12	SWF
Begin Dewpoint	-4	
Begin Pressure	29.93	
End Temp	11	SWF
End Dewpoint	-4	
End Pressure	29.93	

GPS Base Location(s)	Custom SWF
PDOP Avoidance	
Static or Flyover?	Static
→ if flyovers, times:	

Last Calibration Mission:	

Flt. Line #	Start	Stop	Alt. (AMSL)	Heading	Speed	Returns	Crab	NOTES (weather, visibility, winds, ride, etc.)
5	2202	2204	3732	150	115	100	1	95 3
4	2206	2208	3628	330	115	100	7	
3	2211	2212	3559	150	115	100	7	
2	2215	2216	3535	330	115	100	7	
1	2218	2220	3529	150	115	100	9	
6	2222	2223	3612	270	115	100	2	
7	2225	2226	3575	060	115	100	7	

MISSION PAGE _____ OF _____

New York Area SWF-NOAA Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	8.0	7730	SWF APR	SWF_7525052.pln	12/19	240	111219a-240	
2	8.0	7630	SWF APR	SWF_7525052.pln	↓	↓	↓	
3	9.2	3970	SWF APR	SWF_7525052.pln	↓	↓	↓	
4	10.4	3860	SWF APR	SWF_7525052.pln	↓	↓	↓	
5	11.6	3750	SWF APR	SWF_7525052.pln	↓	↓	↓	
6	13.1	3690	SWF APR	SWF_7525052.pln	↓	↓	↓	
7	13.3	3710	SWF APR	SWF_7525052.pln	↓	↓	↓	
8	13.1	3790	SWF APR	SWF_7525052.pln	12/18	240	111218c-240	
9	7.7	4250	SWF APR	SWF_7525052.pln	12/19	240	111219a-240	
10	7.1	4300	SWF APR	SWF_7525052.pln	12/19	240	111219b-240	
11	6.6	4370	SWF APR	SWF_7525052.pln	↓	↓	↓	
12	6.4	4420	SWF APR	SWF_7525052.pln	↓	↓	↓	
13	13.1	3850	SWF APR	SWF_7525052.pln	12/18	240	111218c-240	
14	13.0	3910	SWF APR	SWF_7525052.pln	↓	↓	↓	
15	6.9	3860	SWF APR	SWF_7525052.pln	↓	↓	↓	

7525-052 SWF-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N947R

Sensor Serial Number: 240

Date: 12/18/2011

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
16	5.8	3700	SWF APR	SWF_7525052.pln	12/18	240	111218c-240	
17	5.8	3620	SWF APR	SWF_7525052.pln	↓	↓	↓	
18	5.8	3570	SWF APR	SWF_7525052.pln	↓	↓	↓	
19	6.0	3590	SWF APR	SWF_7525052.pln	↓	↓	↓	
20	6.0	3580	SWF APR	SWF_7525052.pln	12/18	240	111218b-240	
21	6.6	3600	SWF APR	SWF_7525052.pln	↓	↓	↓	
22	6.3	3610	SWF APR	SWF_7525052.pln	↓	↓	↓	
23	6.4	3650	SWF APR	SWF_7525052.pln	↓	↓	↓	
24	6.4	3690	SWF APR	SWF_7525052.pln	↓	↓	↓	
25	6.4	3730	SWF APR	SWF_7525052.pln	↓	↓	↓	
26	6.4	3780	SWF APR	SWF_7525052.pln	↓	↓	↓	
27	6.4	3830	SWF APR	SWF_7525052.pln	↓	↓	↓	
28	8.4	3880	SWF APR	SWF_7525052.pln	12/18	240	111218c-240	
29	5.7	3840	SWF APR	SWF_7525052.pln	12/19	240	111219b-240	
30	5.0	4070	SWF APR	SWF_7525052.pln	12/19	240	111219a-240	
31	5.0	4120	SWF APR	SWF_7525052.pln	↓	↓	↓	

7525-052 SWF-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galiéti

Pilot: Greenwell

AIRCRAFT Tail Number: N947R

Sensor Serial Number: 240

Date: 12/18/2011

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
32	6.4	3760	SWF APR	SWF_7525052.pln	12/18	240	111218b-240	

Total FL Miles: 252.5

7525-052 SWF-NOAA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Greenwell

AIRCRAFT Tail Number: N947IR

Sensor Serial Number: 240

Date: 12/18/2011

New York Area SWF-TID-ION Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	3.9	3500	AE2326	MANI_ANNS_752	2/17/2012	247	120217a-247	
2	3.9	3500	AE2326	MANI_ANNS_752				
3	3.9	3500	AE2326	MANI_ANNS_752				
4	3.9	3500	AE2326	MANI_ANNS_752				
5	3.9	3500	AE2326	MANI_ANNS_752				
6	2.0	3500	AE2326	MANI_ANNS_752				
7	2.0	3500	AE2326	MANI_ANNS_752				
8	1.2	3500	AE2326	MANI_ANNS_752				
9	2.2	3500	AE2326	MANI_ANNS_752				

Total FL Miles: 27.0

7525-052 SWF-TID-IONA-MA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/17/2012

56
2-20-12

New York Area SWF-TID-MA Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	2.7	3500	AE2326	_WAPP_7525-052	2/17/2012	247	120217b-247	
2	2.7	3500	AE2326	_WAPP_7525-052				
3	2.1	3500	AE2326	_WAPP_7525-052				
4	2.1	3500	AE2326	_WAPP_7525-052				
5	0.9	3500	AE2326	_WAPP_7525-052				

Total FL Miles: 10.5

7525-052 SWF-TID-MARL-WA

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/17/2012

56
2-20-12

New York Area SWF-TID-MO Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	1.5	3500	AE2326	D_FISH_7525-052	2/17/2012	247	120217c-247	
2	1.5	3500	AE2326	D_FISH_7525-052				
3	1.0	3500	AE2326	D_FISH_7525-052				
4	1.0	3500	AE2326	D_FISH_7525-052				
5	1.0	3500	AE2326	D_FISH_7525-052				
6	1.3	3501	AE2327	D_FISH_7525-052				
7	0.9	3502	AE2328	D_FISH_7525-052				

Total FL Miles: 8.2

7525-052 SWF-TID-MOOD-FI

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/17/2012

56
2-30-12

New York Area SWF-TID-CO Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	2.6	3500	AE2326	_CONS_7525-052	2/6/2012	247	120206b-247	
2	2.6	3500	AE2326	_CONS_7525-053				
3	2.6	3500	AE2326	_CONS_7525-054				
4	2.6	3500	AE2326	_CONS_7525-055				
5	2.6	3500	AE2326	_CONS_7525-056				
6	1.7	3501	AE2327	_CONS_7525-057				
7	1.6	3502	AE2328	_CONS_7525-058				

Total FL Miles: 16.3

7525-052 SWF-TID-CONS

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/6/2012

SG 2-7-12

New York Area SWF-TID-CO Project No 7525-052

Contact: Photo Science; F Godby at 859 277-8700 or Cell: 859 421-5258

Flight Logs

FLIGHT LINE	FL MILES	ALTITUDE	BASE STATION	FLIGHT FILES	DATE FLOWN	S/N	Lift Name (110630a_240)	Comments
1	2.6	3500	AE2326	_CONS_7525-052	2/6/2012	247	120206b-247	
2	2.6	3500	AE2326	_CONS_7525-053				
3	2.6	3500	AE2326	_CONS_7525-054				
4	2.6	3500	AE2326	_CONS_7525-055				
5	2.6	3500	AE2326	_CONS_7525-056				
6	1.7	3501	AE2327	_CONS_7525-057				
7	1.6	3502	AE2328	_CONS_7525-058				

Total FL Miles: 16.3

7525-052 SWF-TID-CONS

Flight Logs should be FAXED to 859-277-8901 immediately after each days flights with lines and other details noted

Operator: Galieti

Pilot: Young

AIRCRAFT Tail Number: N2448G

Sensor Serial Number: 247

Date: 2/6/2012

Appendix D
Ground Control Survey Report

December 7, 2011

Survey Report of LiDAR Ground Control Points

For

NOAA Coastal Services Center
234 South Hobson Ave
Charleston, SC 29405

TO #011 – Coastal New York LiDAR

PSI Project: 7525-052

presented by

PHOTO SCIENCE
Geospatial Solutions

1410 Indian Trail Road
Norcross, GA 30093

Survey Certification

This survey report and the field work represented herein of LiDAR Ground Control Points in TO #011 – Coastal New York LiDAR for NOAA Coastal Services Center was prepared under my supervision and was performed in compliance with NOAA Technical Memorandum NOS NGS-58, "Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2 cm and 5 cm)," dated November 1997.

Signature

December 7, 2011

Date

STATE OF NEW YORK
NICKOLAS R. FUSCO
No. 49593
LICENSED LAND SURVEYOR

Contents of Report

Section 1: Project Procedure Summary
GPS Project Summary

Section 2: Coordinate Summary

Section 3: Network Adjustment Reports

Section 4: Field Data Log Sheets

Section 5: NGS Survey Mark Datasheets

Section 1 – Project Procedure Summary

Survey Report of LiDAR Ground Control Points for
NOAA Coastal Services Center
TO #011 – Coastal New York LiDAR

Photo Science, Inc. was contracted by National Oceanic and Atmospheric Administration (NOAA) to locate eighty-one (81) new LiDAR ground control points for TO #011 – Coastal New York LiDAR mapping project. The control points were taken on relatively flat terrain on surfaces that consisted of grass, gravel, pavement, or bare earth and were in well-defined discrete locations.

Field work was conducted by three staff surveyors during November 2011 with Trimble R8-3 GNSS receivers. Real Time Kinematic (RTK) survey methodology was typically performed utilizing the New York State Spatial Reference Network (NYSNet), a CORS/Real Time GPS Network. Optimally, vectors from two different CORS stations within the NYSNet were surveyed. When it was not possible to utilize two different CORS stations due to distance restrictions, separate RTK vectors were surveyed from a single CORS station at differing time intervals. In areas that were outside of the coverage of the NYSNet, a RTK survey was performed with vectors surveyed from two separate NGS Survey Marks as base stations. For Point ID 8 and Point ID 32, NYSNet coverage was not satisfactory and NGS Survey Marks did not exist within an appropriate radial area. For these two points, separate static sessions lasting thirty (30) minutes were conducted. Field data log sheets which include photographs of the control point, equipment used, and coordinates derived were prepared for each point and are included as Section 4 of this report.

The horizontal coordinates are Universal Transverse Mercator (UTM) system Zone 18 north, North American Datum of 1983 (NAD 83), and are reported in meters. The vertical elevations are North American Vertical Datum of 1988 (NAVD 88) utilizing the GEOID09 model and are reported in meters. The GPS data was post processed and adjusted utilizing Trimble Business Center Version 2.4 software. Network Adjustment Reports are included as Section 3 of this report.

GPS Project Summary

Project	TO #011 - Coastal New York LiDAR
Photo Science Project Number	7525-052
Date	December 7, 2011
Person Responsible for Calculations	David Simmons
Coordinate Projection	UTM Zone 18 North
Horizontal Datum	NAD 83(CORS) / NAD 83(2007)
Vertical Datum	NAVD 88
Geoid Model Utilized	GEOID09
Units	Meters
GPS Hardware Used	Trimble R8-3 GNSS
Crew Size for GPS Operations	1-2 person
Observation Methodology	RTK & Static

Control Points Utilized	**Horizontal Order**	**Vertical Order**
NYAB (PID DI0440)	Special (CORS)	
NYCI (PID DI0446)	Special (CORS)	Second Class II
NYHS (PID DI0466)	Special (CORS)	Second Class II
NYKT (PID DI0468)	Special (CORS)	Second Class II
NYLC (PID DI0470)	Special (CORS)	
NYNB (PID DK7181)	Special (CORS)	Second Class II
NYQN (PID DI0616)	Special (CORS)	
NYRH (PID DI1874)	Special (CORS)	
NYST (PID DI0622)	Special (CORS)	Second Class II
NYVH (PID DI0624)	Special (CORS)	Second Class I
FISHPORT (PID LX7498)	Third	
THREE POINT (PID LX0319)	CBN*	Second Class 0
U 325 (PID LX0248)	CBN*	Second Class 0
WESTAIR 3 (PID LW1756)	B	Second Class II

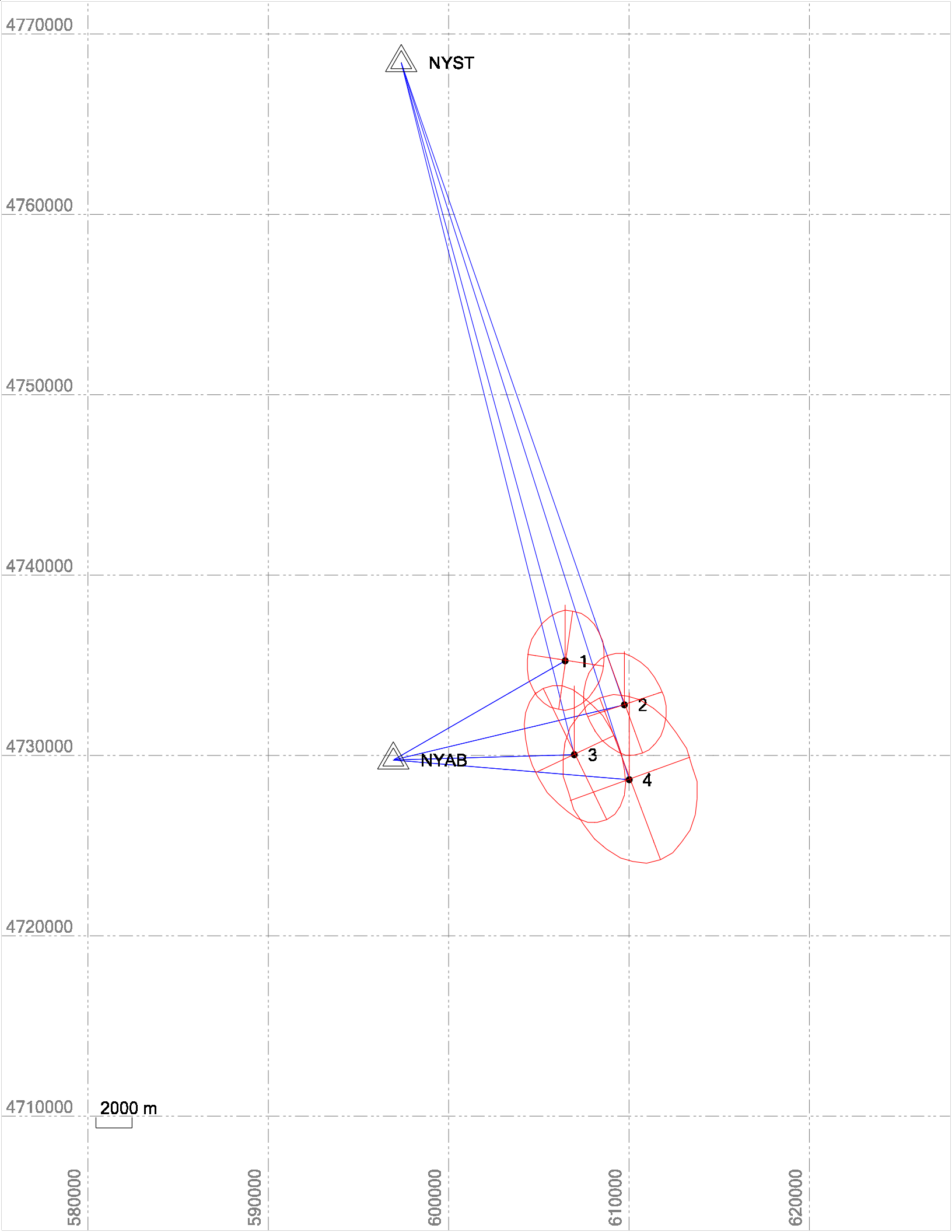
*Cooperative Base Network Control Station

Section 2 - Coordinate Summary

Point ID	NAD83 UTM 18 North		NAVD88	Geoid09
	Northing (m)	Easting (m)	Elevation (m)	Ellipsoid
1	4735184.555	606458.411	11.702	-19.618
2	4732743.561	609741.076	121.794	90.518
3	4729979.714	606964.239	8.531	-22.792
4	4728596.500	610014.021	99.788	68.517
5	4720972.068	602709.736	4.521	-26.865
6	4715048.778	601236.006	12.105	-19.333
7	4714518.223	603587.755	4.967	-26.461
8	4704601.734	600249.546	4.410	-27.079
8 ALT	4705885.753	600576.185	5.115	-26.370
9	4694870.621	598534.258	39.525	8.025
10	4693716.166	601345.426	49.123	17.603
11	4684589.286	599277.898	45.843	14.300
12	4684171.524	603082.748	45.201	13.668
13	4679033.352	597394.268	4.081	-27.473
14	4677325.460	602038.335	51.552	20.019
15	4672603.127	591024.693	46.001	14.493
16	4672735.467	597386.958	68.377	36.818
17	4663361.837	586286.654	46.960	15.504
18	4663649.521	591676.254	62.690	31.127
19	4654493.325	583621.225	57.623	26.116
20	4650396.895	589601.972	45.019	13.408
21	4643929.546	580514.876	47.771	16.176
22	4643734.017	592421.456	88.513	56.912
23	4637819.111	590396.812	41.214	9.572
24	4631559.754	585912.221	54.386	22.682
25	4621620.716	586174.944	93.905	62.208
26	4622070.438	597679.857	61.355	29.909
27	4614539.384	589201.223	53.276	21.631
28	4611350.064	593481.250	51.291	19.766
29	4608388.517	586295.523	89.524	57.861
30	4596363.316	587741.434	51.310	19.724
31	4596429.912	579872.599	71.863	40.095
32	4586824.436	584691.048	62.821	31.254
33	4583428.546	587237.027	1.613	-29.828
34	4578866.495	586137.231	51.084	19.645
35	4572676.289	590051.067	82.578	51.291
36	4565028.295	584231.602	34.147	2.640
37	4563992.803	591185.636	41.581	10.327
38	4562848.869	593969.144	43.550	12.425
39	4549891.744	595164.291	17.336	-13.799
40	4541695.246	588947.312	17.633	-13.777
41	4530363.417	592494.217	14.719	-16.608

Point ID	NAD83 UTM 18 North		NAVD88	Geoid09
	Northing (m)	Easting (m)	Elevation (m)	Ellipsoid
42	4528763.021	598538.898	39.818	8.659
43	4527457.393	602664.684	2.310	-28.784
44	4523596.964	608736.080	23.723	-7.378
45	4535888.909	607421.638	18.919	-11.950
46	4533771.040	610186.904	4.888	-25.981
47	4539985.103	612381.723	4.871	-25.833
48	4518547.540	613355.812	13.058	-18.146
49	4532522.212	627926.498	32.663	2.060
50	4525601.665	632851.275	28.188	-2.484
51	4521276.648	650411.263	22.652	-8.117
52	4535517.363	658662.911	2.096	-28.406
53	4536933.912	672075.847	10.348	-20.338
54	4536577.884	682364.904	48.642	17.732
55	4532576.282	691895.282	15.835	-15.380
56	4531423.449	701659.693	1.888	-29.508
57	4545939.505	711616.444	12.976	-18.174
58	4553719.382	719946.168	5.043	-25.978
59	4546590.324	725659.172	1.472	-29.755
60	4559575.527	731141.465	1.922	-29.018
61	4572531.735	749454.042	1.885	-28.907
62	4571686.861	751055.145	4.342	-26.465
63	4573881.019	752271.503	16.727	-14.049
64	4574757.014	756314.940	2.858	-27.902
65	4551499.904	763886.482	12.898	-18.078
66	4549240.814	757854.720	4.924	-26.141
67	4543272.118	749576.195	1.745	-29.536
68	4545023.368	739061.890	2.302	-29.008
69	4537382.042	735276.308	10.962	-20.479
70	4530744.417	721334.105	6.817	-24.707
71	4518140.912	697062.234	1.088	-30.599
72	4519174.525	677022.174	9.063	-22.302
73	4505695.632	668587.374	0.519	-31.135
74	4512371.814	655860.943	2.890	-28.260
75	4507965.281	644036.460	6.504	-24.637
76	4504336.666	633533.980	6.006	-25.242
77	4502596.398	625869.684	3.514	-27.896
78	4502322.589	607819.763	3.735	-28.070
79	4498493.304	647048.931	6.619	-24.874
80	4494859.208	625180.788	4.119	-27.512
81	4493998.571	606818.298	2.529	-29.536

Section 3 – Network Adjustment Reports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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_1-4.vce	Name:	UTM
Size:	289 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:38:12 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment: 2
Network Reference Factor: 0.97
Chi Square Test (95%): Passed
Precision Confidence Level: 95%
Degrees of Freedom: 22

RTK Vector Statistics

Reference Factor: 0.97
Redundancy Number: 22.00
A Priori Scalar: 1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYST	?	?	-0.002	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYAB	Local	Fixed	Fixed	Fixed	
NYST	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
1	606458.411	0.009	4735184.555	0.012	11.702	0.019	
2	609741.076	0.010	4732743.561	0.012	121.794	0.019	
3	606964.239	0.012	4729979.714	0.016	8.531	0.023	
4	610014.021	0.016	4728596.500	0.020	99.788	0.030	
NYAB	596932.984	?	4729687.981	?	121.451	?	LLh
NYST	597373.243	?	4768348.511	?	100.280	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
1	N42°45'42.48532"	W73°41'56.10918"	-19.618	0.019	
2	N42°44'21.70467"	W73°39'33.42427"	90.518	0.019	
3	N42°42'53.53589"	W73°41'37.40260"	-22.792	0.023	
4	N42°42'07.15367"	W73°39'24.32368"	68.517	0.030	
NYAB	N42°42'48.87345"	W73°48'58.50195"	90.076	?	LLh
NYST	N43°03'41.73540"	W73°48'15.01044"	69.623	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
1	1316396.445	0.010	-4501409.560	0.016	4308098.212	0.016	0.024	
2	1320008.826	0.010	-4502199.196	0.016	4306342.529	0.015	0.024	
3	1317797.415	0.013	-4504683.658	0.018	4304267.044	0.020	0.030	
4	1320995.539	0.018	-4504828.423	0.026	4303277.275	0.024	0.039	
NYAB	1308211.413	?	-4507664.848	?	4304237.897	?	?	LLh
NYST	1301818.742	?	-4482106.937	?	4332551.141	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
1	0.015	0.011	9°
2	0.015	0.012	160°
3	0.021	0.012	154°
4	0.025	0.019	159°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.073 sec **(95%)** 0.052 sec

Scale Factor: 1.00000000 **(95%)** 0.00000036

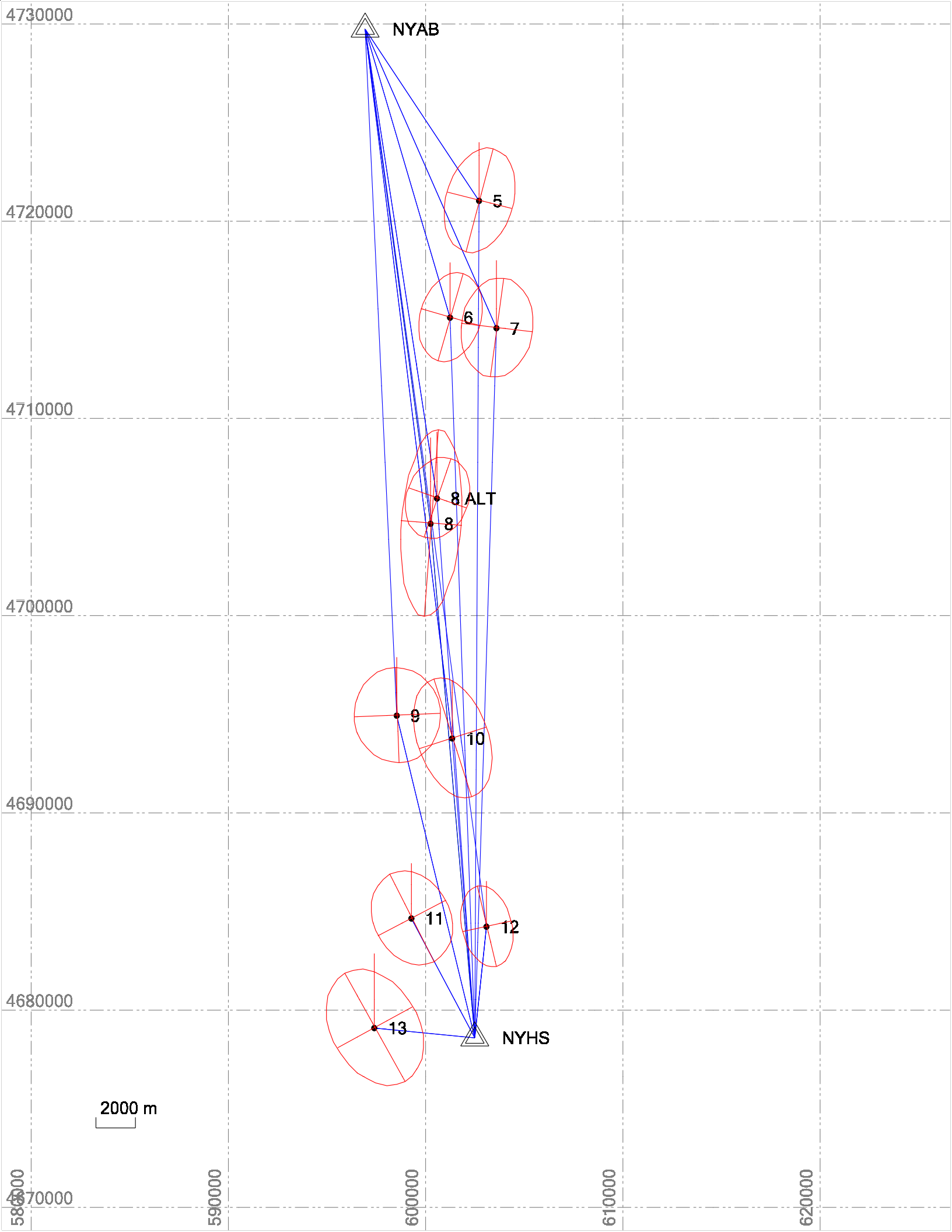
Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYST-4 (V1709)	**Az.**	163°10'25"	0.077 sec	-0.017 sec	-0.321
	ΔHt.	-1.106 m	0.030 m	0.025 m	0.745
	Ellip Dist.	41724.611 m	0.023 m	-0.073 m	-3.406
NYAB-4 (V1708)	**Az.**	95°34'22"	0.301 sec	0.377 sec	2.476
	ΔHt.	-21.559 m	0.030 m	-0.009 m	-0.816
	Ellip Dist.	13130.015 m	0.015 m	0.010 m	1.845
NYAB-2 (V1546)	**Az.**	77°23'07"	0.192 sec	-0.223 sec	-1.526
	ΔHt.	0.442 m	0.019 m	0.043 m	1.687
	Ellip Dist.	13171.064 m	0.009 m	-0.011 m	-1.204
NYAB-2 (V1704)	**Az.**	77°23'07"	0.192 sec	0.016 sec	0.134
	ΔHt.	0.442 m	0.019 m	-0.014 m	-1.251
	Ellip Dist.	13171.064 m	0.009 m	0.003 m	0.621
NYAB-3 (V1706)	**Az.**	89°08'14"	0.320 sec	0.197 sec	0.734
	ΔHt.	-112.868 m	0.023 m	-0.018 m	-1.151
	Ellip Dist.	10038.227 m	0.011 m	0.003 m	0.424
NYST-1 (V1703)	**Az.**	165°29'39"	0.064 sec	0.009 sec	0.253
	ΔHt.	-89.241 m	0.019 m	-0.002 m	-0.156
	Ellip Dist.	34395.233 m	0.015 m	0.008 m	1.082
NYST-3 (V1707)	**Az.**	166°46'45"	0.055 sec	0.008 sec	0.333
	ΔHt.	-92.415 m	0.023 m	0.013 m	1.043
	Ellip Dist.	39560.099 m	0.018 m	-0.005 m	-0.465

NYST-2 (V1705)	**Az.**	161°39'31"	0.050 sec	-0.001 sec	-0.063
	ΔHt.	20.895 m	0.019 m	0.007 m	0.613
	Ellip Dist.	37701.954 m	0.015 m	0.006 m	0.994
NYAB-1 (V1545)	**Az.**	60°49'00"	0.207 sec	-0.127 sec	-0.829
	ΔHt.	-109.694 m	0.019 m	0.014 m	0.581
	Ellip Dist.	11000.548 m	0.010 m	-0.003 m	-0.401
NYAB-1 (V1702)	**Az.**	60°49'00"	0.207 sec	-0.033 sec	-0.279
	ΔHt.	-109.694 m	0.019 m	-0.001 m	-0.056
	Ellip Dist.	11000.548 m	0.010 m	0.004 m	0.791
NYAB-4 (V1548)	**Az.**	95°34'22"	0.301 sec	0.068 sec	0.260
	ΔHt.	-21.559 m	0.030 m	0.030 m	0.580
	Ellip Dist.	13130.015 m	0.015 m	0.006 m	0.128
NYAB-3 (V1547)	**Az.**	89°08'14"	0.320 sec	-0.076 sec	-0.371
	ΔHt.	-112.868 m	0.023 m	-0.005 m	-0.171
	Ellip Dist.	10038.227 m	0.011 m	0.003 m	0.377

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
1	NYAB	**Az.**	240°53'47"	0.203 sec	1 : 1072113	1 : 1075355
		ΔHt.	109.694 m	0.019 m		
		ΔElev.	109.749 m	0.019 m		
		Ellip Dist.	11000.548 m	0.010 m		
1	NYST	**Az.**	345°33'57"	0.058 sec	1 : 3013891	1 : 3006162
		ΔHt.	89.241 m	0.019 m		
		ΔElev.	88.577 m	0.019 m		
		Ellip Dist.	34395.233 m	0.011 m		

2	NYAB	**Az.**	257°29'30"	0.193 sec	1 : 1404760	1 : 1402876
		ΔHt.	-0.442 m	0.019 m		
		ΔElev.	-0.344 m	0.019 m		
		Ellip Dist.	13171.064 m	0.009 m		
2	NYST	**Az.**	341°45'26"	0.051 sec	1 : 3053324	1 : 3053588
		ΔHt.	-20.895 m	0.019 m		
		ΔElev.	-21.515 m	0.019 m		
		Ellip Dist.	37701.954 m	0.012 m		
3	NYAB	**Az.**	269°13'13"	0.323 sec	1 : 879120	1 : 869496
		ΔHt.	112.868 m	0.023 m		
		ΔElev.	112.920 m	0.023 m		
		Ellip Dist.	10038.227 m	0.011 m		
3	NYST	**Az.**	346°51'16"	0.054 sec	1 : 2406280	1 : 2410689
		ΔHt.	92.415 m	0.023 m		
		ΔElev.	91.749 m	0.023 m		
		Ellip Dist.	39560.099 m	0.016 m		
4	NYAB	**Az.**	275°40'51"	0.306 sec	1 : 811222	1 : 807709
		ΔHt.	21.559 m	0.030 m		
		ΔElev.	21.663 m	0.030 m		
		Ellip Dist.	13130.015 m	0.016 m		
4	NYST	**Az.**	343°16'26"	0.075 sec	1 : 2053136	1 : 2054124
		ΔHt.	1.106 m	0.030 m		
		ΔElev.	0.492 m	0.030 m		
		Ellip Dist.	41724.611 m	0.020 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_5-13.vce	Name:	UTM
Size:	639 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 2:22:55 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	0.99
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	52

Post Processed Vector Statistics

Reference Factor:	0.95
Redundancy Number:	2.66
A Priori Scalar:	1.00

RTK Vector Statistics

Reference Factor:	0.99
Redundancy Number:	49.34
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYHS	?	?	-0.024	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYAB	Local	Fixed	Fixed	Fixed	
NYHS	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
10	601345.426	0.010	4693716.166	0.015	49.123	0.020	
11	599277.898	0.011	4684589.286	0.013	45.843	0.021	

12	603082.748	0.007	4684171.524	0.010	45.201	0.016	
13	597394.268	0.013	4679033.352	0.016	4.081	0.029	
5	602709.736	0.009	4720972.068	0.013	4.521	0.021	
6	601236.006	0.008	4715048.778	0.012	12.105	0.020	
7	603587.755	0.010	4714518.223	0.013	4.967	0.025	
8	600249.546	0.007	4704601.734	0.020	4.410	0.026	
8 ALT	600576.185	0.009	4705885.753	0.012	5.115	0.026	
9	598534.258	0.012	4694870.621	0.013	39.525	0.023	
NYAB	596932.984	?	4729687.981	?	121.451	?	LLh
NYHS	602490.484	?	4678539.141	?	53.602	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
10	N42°23'20.85658"	W73°46'07.53905"	17.603	0.020	
11	N42°18'25.97139"	W73°47'43.59797"	14.300	0.021	
12	N42°18'10.65084"	W73°44'57.71006"	13.668	0.016	
13	N42°15'26.72898"	W73°49'09.22128"	-27.473	0.029	
5	N42°38'03.66707"	W73°44'50.27241"	-26.865	0.021	
6	N42°34'52.37780"	W73°45'58.75627"	-19.333	0.020	
7	N42°34'34.05734"	W73°44'15.95556"	-26.461	0.025	
8	N42°29'14.21513"	W73°46'48.61879"	-27.079	0.026	
8 ALT	N42°29'55.68253"	W73°46'33.50204"	-26.370	0.026	
9	N42°23'59.57989"	W73°48'09.75098"	8.025	0.023	
NYAB	N42°42'48.87345"	W73°48'58.50195"	90.076	?	LLh
NYHS	N42°15'08.35963"	W73°45'27.16055"	22.070	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
10	1318744.836	0.011	-4529929.253	0.016	4277638.241	0.018	0.027	
11	1318344.884	0.013	-4536426.368	0.018	4270911.357	0.016	0.027	
12	1322081.774	0.008	-4535669.643	0.014	4270561.320	0.012	0.020	
13	1317489.917	0.016	-4540517.037	0.024	4266791.533	0.021	0.035	
5	1315280.709	0.010	-4511731.653	0.017	4297688.121	0.017	0.026	
6	1314901.284	0.009	-4516010.015	0.016	4293348.886	0.016	0.025	

7	1317257.504	0.011	-4515716.265	0.023	4292927.799	0.017	0.030	
8	1315778.309	0.009	-4523095.540	0.030	4285654.742	0.012	0.034	
8 ALT	1315868.455	0.011	-4522169.698	0.023	4286598.693	0.016	0.030	
9	1315833.929	0.013	-4529929.398	0.020	4278514.198	0.017	0.029	
NYAB	1308211.413	?	-4507664.848	?	4304237.897	?	?	LLh
NYHS	1322494.244	?	-4539497.140	?	4266405.333	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
10	0.019	0.011	162°
11	0.017	0.013	152°
12	0.013	0.008	166°
13	0.021	0.015	151°
5	0.017	0.011	15°
6	0.015	0.010	17°
7	0.017	0.012	8°
8	0.025	0.008	5°
8 ALT	0.015	0.011	19°
9	0.017	0.015	177°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.004 sec **(95%)** 0.027 sec

Scale Factor: 1.00000027 **(95%)** 0.00000018

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYAB-7 (V1550)	**Az.**	157°06'56"	0.138 sec	0.092 sec	1.019
	ΔHt.	-116.537 m	0.025 m	0.068 m	2.293
	Ellip Dist.	16569.824 m	0.013 m	-0.005 m	-0.218

NYHS-5 (V1701)	**Az.**	1°08'05"	0.047 sec	-0.054 sec	-2.032
	ΔHt.	-48.935 m	0.021 m	-0.004 m	-0.290
	Ellip Dist.	42444.962 m	0.014 m	-0.009 m	-1.214
NYAB-10 (V1553)	**Az.**	173°48'26"	0.050 sec	-0.009 sec	-0.236
	ΔHt.	-72.473 m	0.020 m	0.029 m	1.827
	Ellip Dist.	36251.535 m	0.014 m	0.003 m	0.338
NYHS-7 (V1711)	**Az.**	2°35'06"	0.060 sec	0.057 sec	1.747
	ΔHt.	-48.531 m	0.025 m	-0.015 m	-1.081
	Ellip Dist.	36005.499 m	0.014 m	0.006 m	0.872
NYHS-12 (V1509)	**Az.**	6°50'19"	0.254 sec	-0.243 sec	-1.353
	ΔHt.	-8.402 m	0.016 m	-0.019 m	-1.677
	Ellip Dist.	5664.965 m	0.010 m	0.002 m	0.300
NYAB-8 ALT (V1552)	**Az.**	172°05'57"	0.085 sec	0.005 sec	0.053
	ΔHt.	-116.446 m	0.026 m	0.036 m	1.669
	Ellip Dist.	24086.168 m	0.012 m	0.002 m	0.177
NYHS-10 (V1512)	**Az.**	356°31'19"	0.136 sec	0.009 sec	0.082
	ΔHt.	-4.467 m	0.020 m	-0.033 m	-1.664
	Ellip Dist.	15224.298 m	0.016 m	0.010 m	0.655
NYAB-6 (V1551)	**Az.**	164°25'19"	0.130 sec	-0.028 sec	-0.266
	ΔHt.	-109.409 m	0.020 m	0.027 m	1.612
	Ellip Dist.	15262.771 m	0.011 m	-0.013 m	-1.157
NYHS-8 ALT (V1713)	**Az.**	356°50'00"	0.076 sec	0.035 sec	0.861
	ΔHt.	-48.440 m	0.026 m	-0.036 m	-1.554
	Ellip Dist.	27421.014 m	0.013 m	0.007 m	0.852

NYHS-6 (V1699)	**Az.**	358°52'13"	0.053 sec	-0.044 sec	-1.515
	ΔHt.	-41.403 m	0.020 m	-0.016 m	-1.162
	Ellip Dist.	36541.125 m	0.013 m	-0.005 m	-0.724
NYHS-11 (V1558)	**Az.**	332°52'05"	0.317 sec	-0.375 sec	-1.457
	ΔHt.	-7.770 m	0.021 m	0.022 m	1.456
	Ellip Dist.	6852.061 m	0.013 m	-0.011 m	-1.158
NYAB --> 8 (PV1)	**Az.**	173°16'12"	0.068 sec	-0.040 sec	-0.985
	ΔHt.	-117.155 m	0.026 m	-0.023 m	-1.038
	Ellip Dist.	25311.623 m	0.021 m	-0.035 m	-1.410
NYHS-11 (V1695)	**Az.**	332°52'05"	0.317 sec	0.117 sec	1.052
	ΔHt.	-7.770 m	0.021 m	-0.011 m	-1.352
	Ellip Dist.	6852.061 m	0.013 m	0.003 m	0.651
NYAB-12 (V1510)	**Az.**	173°06'19"	0.039 sec	-0.123 sec	-0.908
	ΔHt.	-76.408 m	0.016 m	0.080 m	1.278
	Ellip Dist.	45942.737 m	0.013 m	-0.020 m	-0.608
NYHS-13 (V1557)	**Az.**	276°22'28"	0.622 sec	-0.116 sec	-0.293
	ΔHt.	-49.543 m	0.029 m	0.014 m	1.258
	Ellip Dist.	5121.541 m	0.014 m	0.006 m	1.024
NYAB-6 (V1698)	**Az.**	164°25'19"	0.130 sec	-0.106 sec	-1.163
	ΔHt.	-109.409 m	0.020 m	-0.015 m	-0.975
	Ellip Dist.	15262.771 m	0.011 m	0.006 m	0.834
NYAB-5 (V1700)	**Az.**	147°16'00"	0.232 sec	-0.148 sec	-1.134
	ΔHt.	-116.941 m	0.021 m	0.000 m	-0.008
	Ellip Dist.	10459.380 m	0.011 m	0.001 m	0.145

NYAB-7 (V1710)	**Az.**	157°06'56"	0.138 sec	-0.030 sec	-0.253
	ΔHt.	-116.537 m	0.025 m	-0.019 m	-1.098
	Ellip Dist.	16569.824 m	0.013 m	-0.006 m	-0.743
NYHS-9 (V1696)	**Az.**	347°13'10"	0.151 sec	0.026 sec	0.460
	ΔHt.	-14.045 m	0.023 m	-0.009 m	-0.973
	Ellip Dist.	16808.467 m	0.013 m	0.003 m	0.517
NYHS-12 (V1554)	**Az.**	6°50'19"	0.254 sec	0.156 sec	0.751
	ΔHt.	-8.402 m	0.016 m	0.013 m	0.948
	Ellip Dist.	5664.965 m	0.010 m	0.002 m	0.226
NYHS-13 (V1694)	**Az.**	276°22'28"	0.622 sec	0.045 sec	0.166
	ΔHt.	-49.543 m	0.029 m	-0.019 m	-0.906
	Ellip Dist.	5121.541 m	0.014 m	-0.005 m	-0.543
8 --> NYHS (PV3)	**Az.**	175°54'28"	0.062 sec	0.004 sec	0.171
	ΔHt.	49.149 m	0.026 m	0.003 m	0.252
	Ellip Dist.	26165.908 m	0.020 m	-0.004 m	-0.891
NYAB-8 ALT (V1712)	**Az.**	172°05'57"	0.085 sec	0.035 sec	0.733
	ΔHt.	-116.446 m	0.026 m	-0.004 m	-0.248
	Ellip Dist.	24086.168 m	0.012 m	-0.004 m	-0.552
NYAB-5 (V1549)	**Az.**	147°16'00"	0.232 sec	-0.179 sec	-0.729
	ΔHt.	-116.941 m	0.021 m	0.022 m	0.361
	Ellip Dist.	10459.380 m	0.011 m	-0.002 m	-0.051
NYAB-10 (V1513)	**Az.**	173°48'26"	0.050 sec	0.003 sec	0.116
	ΔHt.	-72.473 m	0.020 m	-0.003 m	-0.229
	Ellip Dist.	36251.535 m	0.014 m	0.006 m	0.593

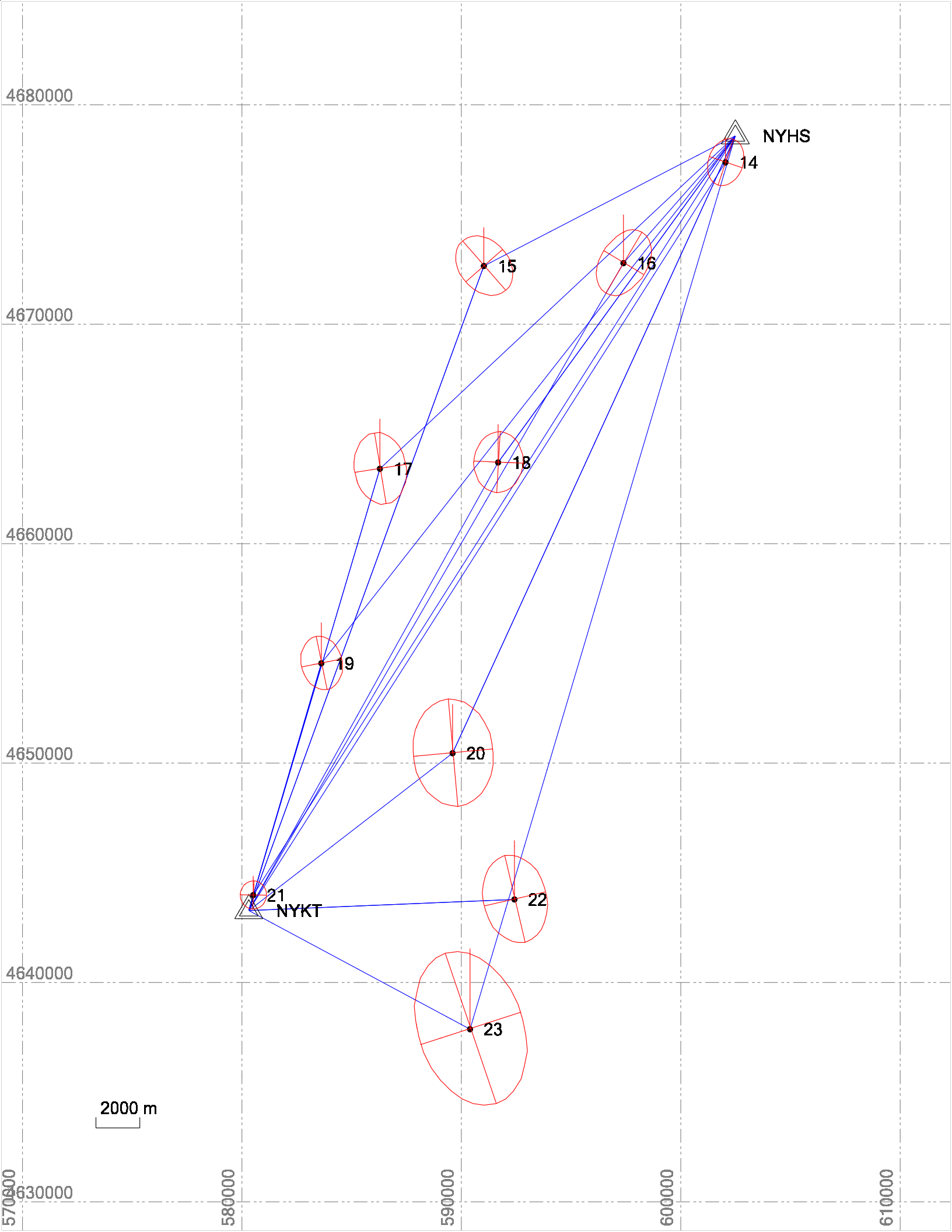
NYHS-9 (V1559)	**Az.**	347°13'10"	0.151 sec	0.012 sec	0.060
	ΔHt.	-14.045 m	0.023 m	0.019 m	0.508
	Ellip Dist.	16808.467 m	0.013 m	-0.002 m	-0.071
NYHS-12 (V1511)	**Az.**	6°50'19"	0.254 sec	0.118 sec	0.477
	ΔHt.	-8.402 m	0.016 m	-0.007 m	-0.503
	Ellip Dist.	5664.965 m	0.010 m	0.003 m	0.311
NYAB-9 (V1697)	**Az.**	178°10'03"	0.080 sec	0.045 sec	0.416
	ΔHt.	-82.051 m	0.023 m	0.008 m	0.339
	Ellip Dist.	34864.001 m	0.015 m	0.008 m	0.499

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
10	NYAB	**Az.**	353°50'22"	0.051 sec	1 : 2414941	1 : 2419054
		ΔHt.	72.473 m	0.020 m		
		ΔElev.	72.328 m	0.020 m		
		Ellip Dist.	36251.545 m	0.015 m		
10	NYHS	**Az.**	176°30'52"	0.124 sec	1 : 1021206	1 : 1023737
		ΔHt.	4.467 m	0.020 m		
		ΔElev.	4.479 m	0.020 m		
		Ellip Dist.	15224.302 m	0.015 m		
11	NYHS	**Az.**	152°50'33"	0.318 sec	1 : 507793	1 : 507661
		ΔHt.	7.770 m	0.021 m		
		ΔElev.	7.759 m	0.021 m		
		Ellip Dist.	6852.062 m	0.013 m		
12	NYAB	**Az.**	353°09'01"	0.028 sec	1 : 4466423	1 : 4472668
		ΔHt.	76.408 m	0.016 m		
		ΔElev.	76.250 m	0.016 m		
		Ellip Dist.	45942.749 m	0.010 m		

12	NYHS	**Az.**	186°50'39"	0.250 sec	1 : 569684	1 : 571343
		ΔHt.	8.402 m	0.016 m		
		ΔElev.	8.402 m	0.016 m		
		Ellip Dist.	5664.966 m	0.010 m		
13	NYHS	**Az.**	96°19'59"	0.626 sec	1 : 371216	1 : 368178
		ΔHt.	49.543 m	0.029 m		
		ΔElev.	49.521 m	0.029 m		
		Ellip Dist.	5121.543 m	0.014 m		
5	NYAB	**Az.**	327°18'48"	0.230 sec	1 : 952311	1 : 946264
		ΔHt.	116.941 m	0.021 m		
		ΔElev.	116.930 m	0.021 m		
		Ellip Dist.	10459.383 m	0.011 m		
5	NYHS	**Az.**	181°08'29"	0.044 sec	1 : 3204471	1 : 3197297
		ΔHt.	48.935 m	0.021 m		
		ΔElev.	49.081 m	0.021 m		
		Ellip Dist.	42444.974 m	0.013 m		
6	NYAB	**Az.**	344°27'21"	0.126 sec	1 : 1404875	1 : 1398184
		ΔHt.	109.409 m	0.020 m		
		ΔElev.	109.346 m	0.020 m		
		Ellip Dist.	15262.775 m	0.011 m		
6	NYHS	**Az.**	178°51'51"	0.048 sec	1 : 3166269	1 : 3158601
		ΔHt.	41.403 m	0.020 m		
		ΔElev.	41.497 m	0.020 m		
		Ellip Dist.	36541.134 m	0.012 m		
7	NYAB	**Az.**	337°10'07"	0.135 sec	1 : 1325390	1 : 1326948
		ΔHt.	116.537 m	0.025 m		
		ΔElev.	116.484 m	0.025 m		
		Ellip Dist.	16569.829 m	0.013 m		
7	NYHS	**Az.**	182°35'54"	0.056 sec	1 : 2692801	1 : 2688652
		ΔHt.	48.531 m	0.025 m		
		ΔElev.	48.635 m	0.025 m		
		Ellip Dist.	36005.508 m	0.013 m		

8 ALT	NYAB	**Az.**	352°07'35"	0.081 sec	1 : 2146752	1 : 2150184
		ΔHt.	116.446 m	0.026 m		
		ΔElev.	116.336 m	0.026 m		
		Ellip Dist.	24086.175 m	0.011 m		
8 ALT	NYHS	**Az.**	176°49'15"	0.070 sec	1 : 2406404	1 : 2396598
		ΔHt.	48.440 m	0.026 m		
		ΔElev.	48.487 m	0.026 m		
		Ellip Dist.	27421.022 m	0.011 m		
9	NYAB	**Az.**	358°10'36"	0.073 sec	1 : 2604942	1 : 2606765
		ΔHt.	82.051 m	0.023 m		
		ΔElev.	81.926 m	0.023 m		
		Ellip Dist.	34864.010 m	0.013 m		
9	NYHS	**Az.**	167°11'20"	0.151 sec	1 : 1259430	1 : 1258638
		ΔHt.	14.045 m	0.023 m		
		ΔElev.	14.077 m	0.023 m		
		Ellip Dist.	16808.471 m	0.013 m		
NYAB	8	**Az.**	173°16'12"	0.063 sec	1 : 1277186	1 : 1279756
		ΔHt.	-117.155 m	0.026 m		
		ΔElev.	-117.041 m	0.026 m		
		Ellip Dist.	25311.630 m	0.020 m		
NYHS	8	**Az.**	355°55'23"	0.058 sec	1 : 1310158	1 : 1305030
		ΔHt.	-49.149 m	0.026 m		
		ΔElev.	-49.192 m	0.026 m		
		Ellip Dist.	26165.915 m	0.020 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_14-23.vce	Name:	UTM
Size:	402 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:39:10 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.07
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	49

RTK Vector Statistics

Reference Factor:	1.07
Redundancy Number:	49.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYHS	?	?	-0.024	?
NYKT	?	?	0.059	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYHS	Local	Fixed	Fixed	Fixed	
NYKT	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
14	602038.335	0.007	4677325.460	0.009	51.552	0.014	
15	591024.693	0.013	4672603.127	0.013	46.001	0.024	
16	597386.958	0.012	4672735.467	0.014	68.377	0.030	
17	586286.654	0.011	4663361.837	0.015	46.960	0.029	

18	591676.254	0.010	4663649.521	0.013	62.690	0.023	
19	583621.225	0.009	4654493.325	0.011	57.623	0.025	
20	589601.972	0.016	4650396.895	0.021	45.019	0.028	
21	580514.876	0.006	4643929.546	0.006	47.771	0.012	
22	592421.456	0.013	4643734.017	0.018	88.513	0.035	
23	590396.812	0.022	4637819.111	0.030	41.214	0.044	
NYHS	602490.484	?	4678539.141	?	53.602	?	LLh
NYKT	580315.638	?	4643228.239	?	61.957	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
14	N42°14'29.23136"	W73°45'47.65719"	20.019	0.014	
15	N42°12'01.05070"	W73°53'50.79960"	14.493	0.024	
16	N42°12'02.58121"	W73°49'13.34354"	36.818	0.030	
17	N42°07'03.40324"	W73°57'22.29836"	15.504	0.029	
18	N42°07'10.52757"	W73°53'27.46508"	31.127	0.023	
19	N42°02'16.93888"	W73°59'22.92104"	26.116	0.025	
20	N42°00'01.76898"	W73°55'05.08567"	13.408	0.028	
21	N41°56'35.63481"	W74°01'43.22245"	16.176	0.012	
22	N41°56'24.59848"	W73°53'06.31617"	56.912	0.035	
23	N41°53'13.68981"	W73°54'37.48999"	9.572	0.044	
NYHS	N42°15'08.35963"	W73°45'27.16055"	22.070	?	LLh
NYKT	N41°56'12.97178"	W74°01'52.21841"	30.355	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
14	1322269.680	0.007	-4540406.407	0.012	4265510.239	0.012	0.019	
15	1312481.906	0.016	-4546439.095	0.018	4262120.605	0.019	0.030	
16	1318592.106	0.011	-4544654.923	0.026	4262170.585	0.021	0.035	
17	1309523.197	0.014	-4553707.196	0.024	4255313.466	0.020	0.034	
18	1314669.071	0.011	-4552082.846	0.020	4255486.996	0.016	0.028	
19	1308495.815	0.011	-4560173.161	0.021	4248760.234	0.016	0.029	
20	1314965.811	0.017	-4561207.295	0.023	4245653.368	0.025	0.038	

21	1307330.125	0.006	-4567828.107	0.010	4240926.741	0.009	0.015	
22	1318844.714	0.017	-4564785.311	0.028	4240700.689	0.025	0.041	
23	1317907.543	0.027	-4569114.550	0.036	4236285.874	0.036	0.058	
NYHS	1322494.244	?	-4539497.140	?	4266405.333	?	?	LLh
NYKT	1307262.376	?	-4568344.561	?	4240416.097	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
14	0.012	0.009	19°
15	0.018	0.014	139°
16	0.019	0.013	32°
17	0.018	0.013	170°
18	0.016	0.013	4°
19	0.014	0.011	167°
20	0.026	0.020	174°
21	0.008	0.007	2°
22	0.023	0.016	166°
23	0.038	0.025	161°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: 0.001 sec **(95%)** 0.037 sec

Scale Factor: 1.00000016 **(95%)** 0.00000019

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYHS-14 (V1507)	**Az.**	201°16'05"	1.113 sec	0.353 sec	1.029
	ΔHt.	-2.051 m	0.014 m	-0.005 m	-1.219
	Ellip Dist.	1295.520 m	0.010 m	0.009 m	2.950
NYKT-14 (V1508)	**Az.**	33°09'00"	0.045 sec	-0.009 sec	-0.360
	ΔHt.	-10.336 m	0.014 m	0.007 m	0.429
	Ellip Dist.	40440.914 m	0.011 m	0.024 m	2.829

NYHS-18 (V1565)	**Az.**	216°49'30"	0.130 sec	-0.106 sec	-0.603
	ΔHt.	9.057 m	0.023 m	0.058 m	2.036
	Ellip Dist.	18407.624 m	0.012 m	-0.006 m	-0.586
NYHS-21 (V1687)	**Az.**	213°14'49"	0.043 sec	0.024 sec	0.728
	ΔHt.	-5.894 m	0.012 m	0.014 m	0.746
	Ellip Dist.	41009.121 m	0.009 m	-0.012 m	-1.902
NYHS-19 (V1689)	**Az.**	218°57'21"	0.079 sec	0.002 sec	0.040
	ΔHt.	4.046 m	0.025 m	-0.035 m	-1.875
	Ellip Dist.	30574.463 m	0.011 m	-0.005 m	-0.709
NYKT-19 (V1561)	**Az.**	17°00'06"	0.172 sec	-0.135 sec	-0.933
	ΔHt.	-4.239 m	0.025 m	0.050 m	1.771
	Ellip Dist.	11743.787 m	0.011 m	-0.007 m	-0.608
NYKT-19 (V1688)	**Az.**	17°00'06"	0.172 sec	-0.136 sec	-1.093
	ΔHt.	-4.239 m	0.025 m	-0.005 m	-0.269
	Ellip Dist.	11743.787 m	0.011 m	0.013 m	1.573
NYKT-21 (V1686)	**Az.**	16°30'26"	1.624 sec	0.874 sec	1.038
	ΔHt.	-14.179 m	0.012 m	-0.008 m	-1.454
	Ellip Dist.	729.292 m	0.006 m	-0.001 m	-0.214
NYKT-18 (V1504)	**Az.**	29°44'11"	0.100 sec	0.063 sec	1.328
	ΔHt.	0.772 m	0.023 m	-0.018 m	-1.385
	Ellip Dist.	23375.835 m	0.013 m	0.001 m	0.080
NYKT-17 (V1690)	**Az.**	17°10'03"	0.113 sec	-0.121 sec	-1.185
	ΔHt.	-14.851 m	0.029 m	-0.012 m	-0.507
	Ellip Dist.	21006.957 m	0.014 m	0.015 m	1.305

NYHS-20 (V1502)	**Az.**	205°26'25"	0.115 sec	0.261 sec	1.304
	ΔHt.	-8.662 m	0.028 m	0.040 m	0.990
	Ellip Dist.	30962.047 m	0.020 m	-0.039 m	-1.241
NYKT-21 (V1560)	**Az.**	16°30'26"	1.624 sec	-1.349 sec	-1.244
	ΔHt.	-14.179 m	0.012 m	0.003 m	0.325
	Ellip Dist.	729.292 m	0.006 m	-0.006 m	-1.280
NYHS-17 (V1691)	**Az.**	227°42'29"	0.138 sec	0.027 sec	0.167
	ΔHt.	-6.566 m	0.029 m	-0.036 m	-1.185
	Ellip Dist.	22208.121 m	0.013 m	-0.002 m	-0.256
NYKT-22 (V1568)	**Az.**	88°15'18"	0.304 sec	-0.196 sec	-1.079
	ΔHt.	26.557 m	0.035 m	0.010 m	0.519
	Ellip Dist.	12120.111 m	0.013 m	0.005 m	0.626
NYKT-17 (V1562)	**Az.**	17°10'03"	0.113 sec	-0.032 sec	-0.394
	ΔHt.	-14.851 m	0.029 m	0.028 m	1.065
	Ellip Dist.	21006.957 m	0.014 m	-0.006 m	-0.564
NYKT-16 (V1506)	**Az.**	30°42'03"	0.064 sec	0.029 sec	0.897
	ΔHt.	6.463 m	0.030 m	-0.021 m	-0.796
	Ellip Dist.	34099.994 m	0.016 m	0.011 m	0.981
NYHS-18 (V1503)	**Az.**	216°49'30"	0.130 sec	0.071 sec	0.782
	ΔHt.	9.057 m	0.023 m	-0.008 m	-0.490
	Ellip Dist.	18407.624 m	0.012 m	0.008 m	0.913
NYHS-16 (V1505)	**Az.**	222°09'44"	0.286 sec	0.058 sec	0.485
	ΔHt.	14.748 m	0.030 m	0.005 m	0.508
	Ellip Dist.	7730.570 m	0.015 m	0.005 m	0.872

NYHS-14 (V1556)	**Az.**	201°16'05"	1.113 sec	-1.013 sec	-0.370
	ΔHt.	-2.051 m	0.014 m	0.022 m	0.837
	Ellip Dist.	1295.520 m	0.010 m	-0.007 m	-0.379
NYKT-15 (V1563)	**Az.**	20°40'46"	0.091 sec	-0.115 sec	-0.412
	ΔHt.	-15.862 m	0.024 m	0.039 m	0.789
	Ellip Dist.	31275.759 m	0.012 m	-0.009 m	-0.469
NYHS-20 (V1566)	**Az.**	205°26'25"	0.115 sec	-0.027 sec	-0.410
	ΔHt.	-8.662 m	0.028 m	0.002 m	0.141
	Ellip Dist.	30962.047 m	0.020 m	0.017 m	0.711
NYKT-15 (V1693)	**Az.**	20°40'46"	0.091 sec	0.012 sec	0.260
	ΔHt.	-15.862 m	0.024 m	-0.008 m	-0.579
	Ellip Dist.	31275.759 m	0.012 m	-0.004 m	-0.598
NYKT-22 (V1500)	**Az.**	88°15'18"	0.304 sec	0.142 sec	0.470
	ΔHt.	26.557 m	0.035 m	-0.002 m	-0.059
	Ellip Dist.	12120.111 m	0.013 m	0.001 m	0.062
NYHS-23 (V1499)	**Az.**	197°22'26"	0.122 sec	-0.061 sec	-0.386
	ΔHt.	-12.498 m	0.044 m	0.000 m	0.006
	Ellip Dist.	42490.088 m	0.028 m	-0.006 m	-0.208
NYKT-20 (V1501)	**Az.**	52°58'53"	0.353 sec	-0.071 sec	-0.312
	ΔHt.	-16.947 m	0.028 m	-0.006 m	-0.289
	Ellip Dist.	11735.044 m	0.018 m	0.002 m	0.276
NYKT-23 (V1498)	**Az.**	118°51'48"	0.460 sec	0.035 sec	0.291
	ΔHt.	-20.783 m	0.044 m	-0.003 m	-0.242
	Ellip Dist.	11444.210 m	0.026 m	-0.001 m	-0.243

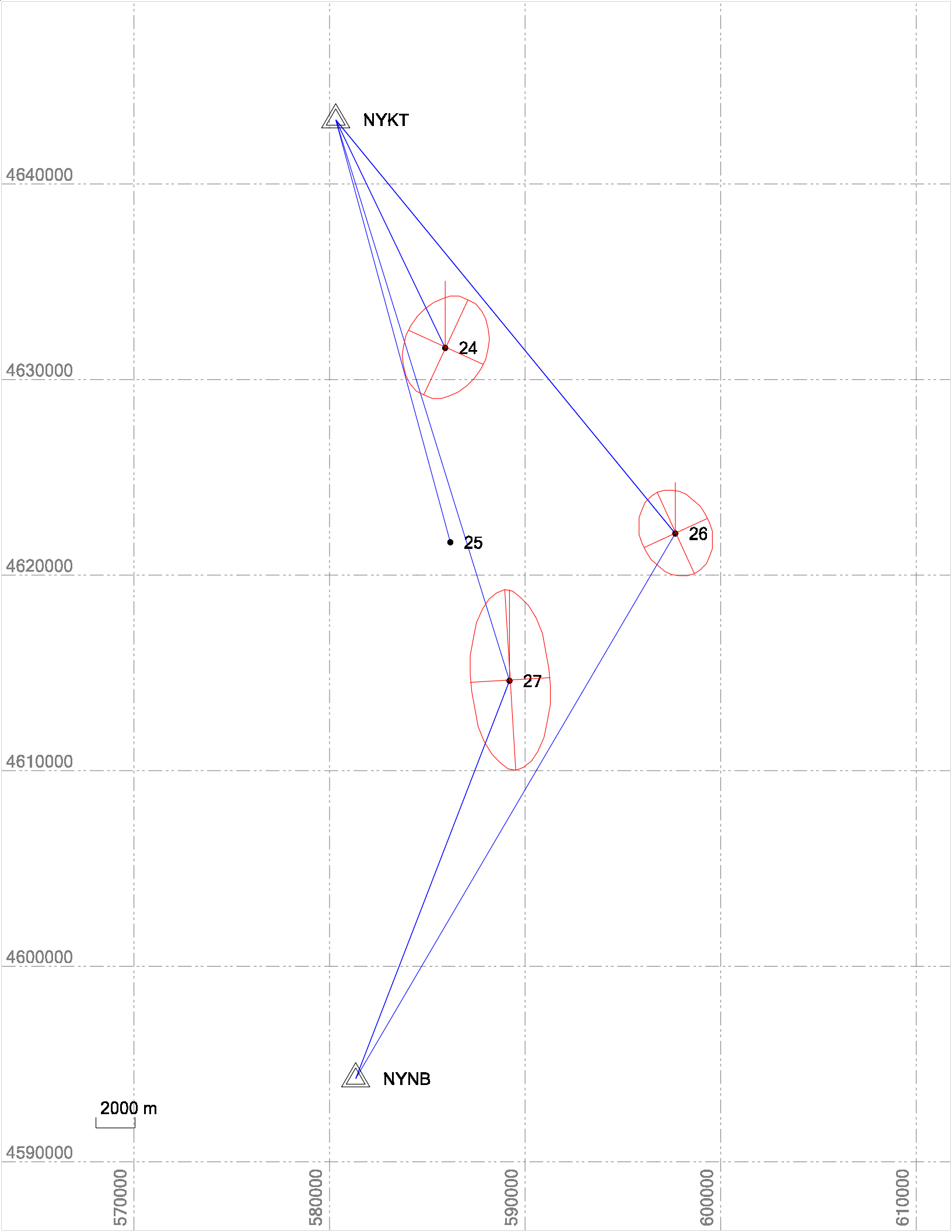
NYHS-15 (V1692)	**Az.**	243°27'50"	0.235 sec	0.035 sec	0.257
	ΔHt.	-7.577 m	0.024 m	-0.003 m	-0.202
	Ellip Dist.	12914.935 m	0.012 m	-0.001 m	-0.259

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
14	NYHS	**Az.**	21°15'51"	1.102 sec	1 : 134876	1 : 134895
		ΔHt.	2.051 m	0.014 m		
		ΔElev.	2.050 m	0.014 m		
		Ellip Dist.	1295.520 m	0.010 m		
14	NYKT	**Az.**	213°19'47"	0.036 sec	1 : 4263095	1 : 4270053
		ΔHt.	10.336 m	0.014 m		
		ΔElev.	10.405 m	0.014 m		
		Ellip Dist.	40440.920 m	0.009 m		
15	NYHS	**Az.**	63°22'11"	0.228 sec	1 : 1159010	1 : 1155778
		ΔHt.	7.577 m	0.024 m		
		ΔElev.	7.601 m	0.024 m		
		Ellip Dist.	12914.937 m	0.011 m		
15	NYKT	**Az.**	200°46'08"	0.090 sec	1 : 2649469	1 : 2659047
		ΔHt.	15.862 m	0.024 m		
		ΔElev.	15.956 m	0.024 m		
		Ellip Dist.	31275.764 m	0.012 m		
16	NYHS	**Az.**	42°07'12"	0.275 sec	1 : 512727	1 : 512895
		ΔHt.	-14.748 m	0.030 m		
		ΔElev.	-14.775 m	0.030 m		
		Ellip Dist.	7730.571 m	0.015 m		
16	NYKT	**Az.**	210°50'31"	0.061 sec	1 : 2244447	1 : 2244283
		ΔHt.	-6.463 m	0.030 m		
		ΔElev.	-6.420 m	0.030 m		
		Ellip Dist.	34100.000 m	0.015 m		

17	NYHS	**Az.**	47°34'29"	0.127 sec	1 : 1844789	1 : 1852411
		ΔHt.	6.566 m	0.029 m		
		ΔElev.	6.642 m	0.029 m		
		Ellip Dist.	22208.125 m	0.012 m		
17	NYKT	**Az.**	197°13'04"	0.114 sec	1 : 1493247	1 : 1496754
		ΔHt.	14.851 m	0.029 m		
		ΔElev.	14.997 m	0.029 m		
		Ellip Dist.	21006.960 m	0.014 m		
18	NYHS	**Az.**	36°44'08"	0.122 sec	1 : 1539601	1 : 1542833
		ΔHt.	-9.057 m	0.023 m		
		ΔElev.	-9.087 m	0.023 m		
		Ellip Dist.	18407.627 m	0.012 m		
18	NYKT	**Az.**	209°49'49"	0.094 sec	1 : 1917764	1 : 1921425
		ΔHt.	-0.772 m	0.023 m		
		ΔElev.	-0.733 m	0.023 m		
		Ellip Dist.	23375.839 m	0.012 m		
19	NYHS	**Az.**	38°48'00"	0.071 sec	1 : 3071533	1 : 3080911
		ΔHt.	-4.046 m	0.025 m		
		ΔElev.	-4.021 m	0.025 m		
		Ellip Dist.	30574.468 m	0.010 m		
19	NYKT	**Az.**	197°01'46"	0.167 sec	1 : 1078215	1 : 1080363
		ΔHt.	4.239 m	0.025 m		
		ΔElev.	4.334 m	0.025 m		
		Ellip Dist.	11743.789 m	0.011 m		
20	NYHS	**Az.**	25°19'57"	0.115 sec	1 : 1569811	1 : 1573978
		ΔHt.	8.662 m	0.028 m		
		ΔElev.	8.583 m	0.028 m		
		Ellip Dist.	30962.052 m	0.020 m		
20	NYKT	**Az.**	233°03'25"	0.345 sec	1 : 675790	1 : 678418
		ΔHt.	16.947 m	0.028 m		
		ΔElev.	16.938 m	0.028 m		
		Ellip Dist.	11735.045 m	0.017 m		

21	NYHS	**Az.**	33°03'55"	0.029 sec	1 : 6804006	1 : 6809101
		ΔHt.	5.894 m	0.012 m		
		ΔElev.	5.832 m	0.012 m		
		Ellip Dist.	41009.127 m	0.006 m		
21	NYKT	**Az.**	196°30'32"	1.615 sec	1 : 119269	1 : 119204
		ΔHt.	14.179 m	0.012 m		
		ΔElev.	14.186 m	0.012 m		
		Ellip Dist.	729.292 m	0.006 m		
22	NYKT	**Az.**	268°21'10"	0.307 sec	1 : 908195	1 : 904537
		ΔHt.	-26.557 m	0.035 m		
		ΔElev.	-26.556 m	0.035 m		
		Ellip Dist.	12120.113 m	0.013 m		
23	NYHS	**Az.**	17°16'17"	0.118 sec	1 : 1532598	1 : 1538993
		ΔHt.	12.498 m	0.044 m		
		ΔElev.	12.389 m	0.044 m		
		Ellip Dist.	42490.095 m	0.028 m		
23	NYKT	**Az.**	298°56'38"	0.464 sec	1 : 433841	1 : 432178
		ΔHt.	20.783 m	0.044 m		
		ΔElev.	20.743 m	0.044 m		
		Ellip Dist.	11444.212 m	0.026 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_24-27.vce	Name:	UTM
Size:	299 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:39:51 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	0.92
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	16

RTK Vector Statistics

Reference Factor:	0.92
Redundancy Number:	16.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYKT	?	?	0.059	?
NYNB	?	?	-0.003	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYKT	Local	Fixed	Fixed	Fixed	
NYNB	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
24	585912.221	0.013	4631559.754	0.015	54.386	0.027	
26	597679.857	0.011	4622070.438	0.013	61.355	0.021	
27	589201.223	0.010	4614539.384	0.021	53.276	0.030	
NYKT	580315.638	?	4643228.239	?	61.957	?	LLh
NYNB	581336.904	?	4594192.275	?	54.926	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
24	N41°49'52.56499"	W73°57'55.32718"	22.682	0.027	
26	N41°44'40.02720"	W73°49'30.86630"	29.909	0.021	
27	N41°40'39.46086"	W73°55'41.94900"	21.631	0.030	
NYKT	N41°56'12.97178"	W74°01'52.21841"	30.355	?	LLh
NYNB	N41°29'42.80606"	W74°01'31.97372"	23.188	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
24	1314670.975	0.013	-4574365.609	0.025	4231672.992	0.018	0.033	
26	1327646.005	0.013	-4577313.074	0.018	4224488.100	0.013	0.026	
27	1320774.441	0.012	-4584433.646	0.027	4218941.985	0.024	0.038	
NYKT	1307262.376	?	-4568344.561	?	4240416.097	?	?	LLh
NYNB	1316693.896	?	-4599596.996	?	4203790.323	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
24	0.019	0.015	25°
26	0.016	0.013	155°
27	0.027	0.012	176°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.098 sec **(95%)** 0.050 sec

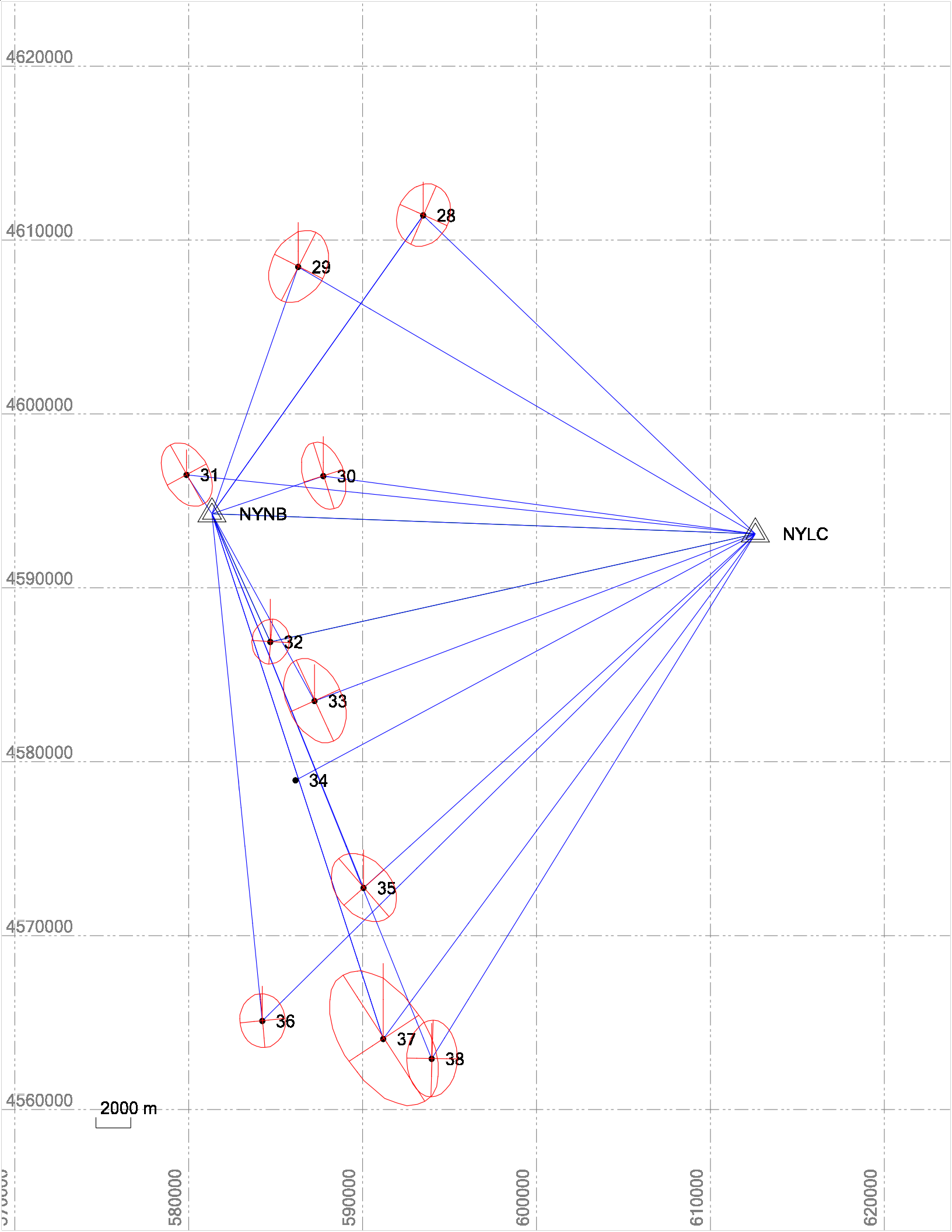
Scale Factor: 1.00000025 **(95%)** 0.00000041

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYKT-26 (V1570)	**Az.**	141°16'14"	0.075 sec	-0.014 sec	-0.204

	ΔHt.	-0.446 m	0.021 m	0.037 m	2.385
	Ellip Dist.	27379.213 m	0.014 m	0.014 m	1.854
NYNB-26 (V1497)	**Az.**	31°01'39"	0.095 sec	-0.097 sec	-2.244
	ΔHt.	6.721 m	0.021 m	-0.034 m	-2.094
	Ellip Dist.	32325.111 m	0.014 m	0.005 m	1.341
NYKT-26 (V1495)	**Az.**	141°16'14"	0.075 sec	-0.039 sec	-0.620
	ΔHt.	-0.446 m	0.021 m	-0.018 m	-0.709
	Ellip Dist.	27379.213 m	0.014 m	-0.019 m	-1.215
NYKT-26 (V1496)	**Az.**	141°16'14"	0.075 sec	-0.011 sec	-0.221
	ΔHt.	-0.446 m	0.021 m	-0.025 m	-1.118
	Ellip Dist.	27379.213 m	0.014 m	-0.013 m	-0.951
NYKT-24 (V1684)	**Az.**	155°01'23"	0.222 sec	0.077 sec	1.104
	ΔHt.	-7.673 m	0.027 m	-0.004 m	-0.536
	Ellip Dist.	12945.299 m	0.013 m	-0.001 m	-0.212
NYNB-27 (V1571)	**Az.**	21°46'44"	0.128 sec	0.123 sec	1.058
	ΔHt.	-1.557 m	0.030 m	0.006 m	0.242
	Ellip Dist.	21820.810 m	0.021 m	-0.010 m	-0.904
NYKT-27 (V1494)	**Az.**	163°26'13"	0.086 sec	0.037 sec	0.920
	ΔHt.	-8.724 m	0.030 m	0.012 m	0.633
	Ellip Dist.	30042.733 m	0.024 m	0.001 m	0.068
NYNB-27 (V1493)	**Az.**	21°46'44"	0.128 sec	-0.015 sec	-0.157
	ΔHt.	-1.557 m	0.030 m	-0.022 m	-0.858
	Ellip Dist.	21820.810 m	0.021 m	0.012 m	0.607
NYKT-24 (V1574)	**Az.**	155°01'23"	0.222 sec	-0.165 sec	-0.701
	ΔHt.	-7.673 m	0.027 m	0.001 m	0.032
	Ellip Dist.	12945.299 m	0.013 m	-0.002 m	-0.156

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
24	NYKT	**Az.**	335°04'01"	0.228 sec	1 : 950008	1 : 947401
		ΔHt.	7.673 m	0.027 m		
		ΔElev.	7.571 m	0.027 m		
		Ellip Dist.	12945.302 m	0.014 m		
26	NYKT	**Az.**	321°24'28"	0.079 sec	1 : 2127369	1 : 2124750
		ΔHt.	0.446 m	0.021 m		
		ΔElev.	0.601 m	0.021 m		
		Ellip Dist.	27379.220 m	0.013 m		
26	NYNB	**Az.**	211°09'38"	0.078 sec	1 : 2876123	1 : 2885622
		ΔHt.	-6.721 m	0.021 m		
		ΔElev.	-6.430 m	0.021 m		
		Ellip Dist.	32325.119 m	0.011 m		
27	NYKT	**Az.**	343°30'20"	0.073 sec	1 : 1434532	1 : 1431333
		ΔHt.	8.724 m	0.030 m		
		ΔElev.	8.681 m	0.030 m		
		Ellip Dist.	30042.741 m	0.021 m		
27	NYNB	**Az.**	201°50'36"	0.119 sec	1 : 1100587	1 : 1105512
		ΔHt.	1.557 m	0.030 m		
		ΔElev.	1.650 m	0.030 m		
		Ellip Dist.	21820.815 m	0.020 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_28-38.vce	Name:	UTM
Size:	549 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 2:48:23 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.05
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	37

Post Processed Vector Statistics

Reference Factor:	1.80
Redundancy Number:	4.49
A Priori Scalar:	1.00

RTK Vector Statistics

Reference Factor:	0.89
Redundancy Number:	32.51
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYNB	?	?	-0.003	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYLC	Local	Fixed	Fixed	Fixed	
NYNB	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
28	593481.250	0.015	4611350.064	0.018	51.291	0.033	
29	586295.523	0.017	4608388.517	0.020	89.524	0.043	
30	587741.434	0.012	4596363.316	0.018	51.310	0.036	

31	579872.599	0.014	4596429.912	0.017	71.863	0.024	
32	584691.048	0.011	4586824.436	0.014	62.821	0.045	
33	587237.027	0.016	4583428.546	0.022	1.613	0.034	
35	590051.067	0.019	4572676.289	0.020	82.578	0.039	
36	584231.602	0.013	4565028.295	0.015	34.147	0.035	
37	591185.636	0.030	4563992.803	0.037	41.581	0.074	
38	593969.144	0.013	4562848.869	0.019	43.550	0.032	
NYLC	612584.314	?	4593041.035	?	232.514	?	LLh
NYNB	581336.904	?	4594192.275	?	54.926	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
28	N41°38'54.29676"	W73°52'38.66305"	19.766	0.033	
29	N41°37'21.19830"	W73°57'50.79992"	57.861	0.043	
30	N41°30'50.76193"	W73°56'54.65341"	19.724	0.036	
31	N41°30'55.88552"	W74°02'34.05162"	40.095	0.024	
32	N41°25'42.67545"	W73°59'11.05423"	31.254	0.045	
33	N41°23'51.59325"	W73°57'23.13969"	-29.828	0.034	
35	N41°18'01.86733"	W73°55'27.71597"	51.291	0.039	
36	N41°13'56.15788"	W73°59'41.72531"	2.640	0.035	
37	N41°13'19.86986"	W73°54'43.61221"	10.327	0.074	
38	N41°12'41.63441"	W73°52'44.71648"	12.425	0.032	
NYLC	N41°28'51.87619"	W73°39'05.36911"	202.110	?	LLh
NYNB	N41°29'42.80606"	W74°01'31.97372"	23.188	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
28	1325446.164	0.013	-4585328.826	0.029	4216516.870	0.025	0.041	
29	1319040.766	0.018	-4589190.761	0.040	4214395.486	0.026	0.051	
30	1322491.936	0.017	-4596484.913	0.033	4205358.112	0.019	0.042	
31	1314902.258	0.015	-4598568.714	0.020	4205489.973	0.021	0.033	
32	1321190.852	0.009	-4603416.994	0.032	4198243.947	0.035	0.049	
33	1324212.937	0.022	-4604859.689	0.030	4195633.471	0.023	0.044	
35	1328780.152	0.024	-4611025.532	0.027	4187587.683	0.032	0.048	

36	1324469.200	0.014	-4617428.985	0.026	4181858.001	0.027	0.040	
37	1331347.402	0.038	-4616224.361	0.064	4181021.112	0.047	0.088	
38	1334224.322	0.014	-4616204.345	0.029	4180135.215	0.022	0.039	
NYLC	1347024.920	?	-4592030.399	?	4202731.832	?	?	LLh
NYNB	1316693.896	?	-4599596.996	?	4203790.323	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
28	0.023	0.018	24°
29	0.027	0.019	27°
30	0.023	0.013	162°
31	0.023	0.015	151°
32	0.017	0.014	5°
33	0.029	0.018	155°
35	0.028	0.020	139°
36	0.019	0.016	174°
37	0.052	0.029	146°
38	0.024	0.016	2°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.020 sec **(95%)** 0.034 sec

Scale Factor: 1.00000061 **(95%)** 0.00000016

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYLC --> NYNB (PV2)	**Az.**	273°00'12"	0.034 sec	-0.007 sec	-0.689
	ΔHt.	-178.922 m	0.000 m	-0.009 m	-2.163
	Ellip Dist.	31277.452 m	0.005 m	-0.005 m	-2.545
NYNB --> 32 (PV3)	**Az.**	156°10'06"	0.303 sec	-0.069 sec	-1.220
	ΔHt.	8.066 m	0.045 m	-0.006 m	-0.392
	Ellip Dist.	8097.937 m	0.013 m	0.009 m	2.168

NYLC-29 (V1469)	**Az.**	301°10'15"	0.142 sec	-0.015 sec	-0.273
	ΔHt.	-144.249 m	0.043 m	-0.033 m	-1.628
	Ellip Dist.	30449.290 m	0.015 m	0.009 m	1.453
NYNB-30 (V1473)	**Az.**	71°55'12"	0.556 sec	-0.081 sec	-0.388
	ΔHt.	-3.464 m	0.036 m	-0.004 m	-0.308
	Ellip Dist.	6764.608 m	0.011 m	0.007 m	1.571
NYNB-37 (V1479)	**Az.**	162°34'54"	0.164 sec	-0.209 sec	-1.212
	ΔHt.	-12.861 m	0.074 m	0.058 m	1.562
	Ellip Dist.	31774.627 m	0.040 m	0.004 m	0.131
NYNB-29 (V1468)	**Az.**	19°54'01"	0.209 sec	0.170 sec	1.312
	ΔHt.	34.673 m	0.043 m	0.036 m	1.496
	Ellip Dist.	15042.033 m	0.021 m	0.004 m	0.316
NYLC-33 (V1476)	**Az.**	250°07'27"	0.176 sec	0.065 sec	0.973
	ΔHt.	-231.938 m	0.034 m	0.020 m	1.472
	Ellip Dist.	27116.242 m	0.014 m	-0.009 m	-1.426
NYNB-33 (V1475)	**Az.**	151°54'57"	0.244 sec	0.221 sec	1.457
	ΔHt.	-53.016 m	0.034 m	-0.024 m	-1.040
	Ellip Dist.	12278.573 m	0.023 m	0.016 m	1.033
NYNB-31 (V1465)	**Az.**	327°26'42"	0.938 sec	-0.139 sec	-0.440
	ΔHt.	16.907 m	0.024 m	0.011 m	1.379
	Ellip Dist.	2675.028 m	0.018 m	0.008 m	1.442
NYLC --> 32 (PV1)	**Az.**	258°19'43"	0.101 sec	0.165 sec	1.382
	ΔHt.	-170.856 m	0.045 m	0.013 m	0.351
	Ellip Dist.	28585.592 m	0.012 m	-0.002 m	-0.111
NYNB-28 (V1491)	**Az.**	35°56'16"	0.144 sec	0.133 sec	1.227
	ΔHt.	-3.422 m	0.033 m	-0.012 m	-0.384
	Ellip Dist.	21027.238 m	0.018 m	-0.001 m	-0.129

NYNB-28 (V1572)	**Az.**	35°56'16"	0.144 sec	-0.104 sec	-0.850
	ΔHt.	-3.422 m	0.033 m	0.015 m	1.098
	Ellip Dist.	21027.238 m	0.018 m	0.008 m	0.578
NYLC-31 (V1466)	**Az.**	276°48'29"	0.106 sec	-0.078 sec	-0.880
	ΔHt.	-162.015 m	0.024 m	-0.018 m	-0.851
	Ellip Dist.	32896.141 m	0.015 m	-0.015 m	-1.079
NYNB-37 (V1481)	**Az.**	162°34'54"	0.164 sec	0.169 sec	0.631
	ΔHt.	-12.861 m	0.074 m	-0.079 m	-0.989
	Ellip Dist.	31774.627 m	0.040 m	-0.022 m	-0.598
NYLC-30 (V1474)	**Az.**	278°30'38"	0.142 sec	-0.073 sec	-0.788
	ΔHt.	-182.385 m	0.036 m	0.008 m	0.304
	Ellip Dist.	25070.945 m	0.013 m	0.007 m	0.901
NYLC-28 (V1492)	**Az.**	314°40'44"	0.139 sec	0.032 sec	0.179
	ΔHt.	-182.344 m	0.033 m	-0.048 m	-0.860
	Ellip Dist.	26467.406 m	0.015 m	-0.002 m	-0.159
NYLC-36 (V1516)	**Az.**	226°14'13"	0.072 sec	0.034 sec	0.826
	ΔHt.	-199.469 m	0.035 m	0.003 m	0.142
	Ellip Dist.	39868.257 m	0.013 m	0.002 m	0.272
NYNB-36 (V1515)	**Az.**	174°58'32"	0.086 sec	-0.030 sec	-0.810
	ΔHt.	-20.548 m	0.035 m	-0.002 m	-0.145
	Ellip Dist.	29316.523 m	0.015 m	0.003 m	0.421
NYLC-37 (V1480)	**Az.**	217°16'07"	0.228 sec	0.028 sec	0.206
	ΔHt.	-191.783 m	0.074 m	-0.028 m	-0.421
	Ellip Dist.	36088.910 m	0.026 m	-0.002 m	-0.098
NYLC-38 (V1483)	**Az.**	212°32'50"	0.081 sec	-0.008 sec	-0.229
	ΔHt.	-189.685 m	0.032 m	-0.004 m	-0.314
	Ellip Dist.	35479.085 m	0.017 m	0.002 m	0.321

NYLC-35 (V1478)	**Az.**	228°47'08"	0.152 sec	0.001 sec	0.021
	ΔHt.	-150.819 m	0.040 m	-0.002 m	-0.104
	Ellip Dist.	30380.473 m	0.015 m	-0.002 m	-0.266
NYNB-38 (V1482)	**Az.**	158°41'35"	0.082 sec	-0.005 sec	-0.115
	ΔHt.	-10.763 m	0.032 m	0.006 m	0.248
	Ellip Dist.	33803.532 m	0.018 m	-0.003 m	-0.255
NYNB-35 (V1477)	**Az.**	158°35'46"	0.147 sec	0.018 sec	0.211
	ΔHt.	28.103 m	0.039 m	0.001 m	0.032
	Ellip Dist.	23220.840 m	0.022 m	0.001 m	0.040

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
28	NYLC	**Az.**	134°31'44"	0.138 sec	1 : 1763174	1 : 1766287
		ΔHt.	182.344 m	0.033 m		
		ΔElev.	181.223 m	0.033 m		
		Ellip Dist.	26467.422 m	0.015 m		
28	NYNB	**Az.**	216°02'10"	0.144 sec	1 : 1173495	1 : 1174479
		ΔHt.	3.422 m	0.033 m		
		ΔElev.	3.635 m	0.033 m		
		Ellip Dist.	21027.251 m	0.018 m		
29	NYLC	**Az.**	120°57'49"	0.144 sec	1 : 2012606	1 : 2005083
		ΔHt.	144.249 m	0.043 m		
		ΔElev.	142.990 m	0.043 m		
		Ellip Dist.	30449.309 m	0.015 m		
29	NYNB	**Az.**	199°56'28"	0.209 sec	1 : 711350	1 : 712244
		ΔHt.	-34.673 m	0.043 m		
		ΔElev.	-34.598 m	0.043 m		
		Ellip Dist.	15042.042 m	0.021 m		

30	NYLC	**Az.**	98°18'50"	0.140 sec	1 : 2010145	1 : 1981106
		ΔHt.	182.386 m	0.036 m		
		ΔElev.	181.204 m	0.036 m		
		Ellip Dist.	25070.960 m	0.012 m		
30	NYNB	**Az.**	251°58'15"	0.554 sec	1 : 631184	1 : 631193
		ΔHt.	3.464 m	0.036 m		
		ΔElev.	3.615 m	0.036 m		
		Ellip Dist.	6764.612 m	0.011 m		
31	NYLC	**Az.**	96°32'56"	0.104 sec	1 : 2267243	1 : 2259100
		ΔHt.	162.015 m	0.024 m		
		ΔElev.	160.651 m	0.024 m		
		Ellip Dist.	32896.161 m	0.015 m		
31	NYNB	**Az.**	147°26'01"	0.942 sec	1 : 145473	1 : 145317
		ΔHt.	-16.907 m	0.024 m		
		ΔElev.	-16.937 m	0.024 m		
		Ellip Dist.	2675.030 m	0.018 m		
33	NYLC	**Az.**	69°55'21"	0.178 sec	1 : 1880403	1 : 1868226
		ΔHt.	231.938 m	0.034 m		
		ΔElev.	230.901 m	0.034 m		
		Ellip Dist.	27116.258 m	0.014 m		
33	NYNB	**Az.**	331°57'41"	0.242 sec	1 : 525417	1 : 526547
		ΔHt.	53.016 m	0.034 m		
		ΔElev.	53.313 m	0.034 m		
		Ellip Dist.	12278.581 m	0.023 m		
35	NYLC	**Az.**	48°36'19"	0.154 sec	1 : 1922046	1 : 1910723
		ΔHt.	150.819 m	0.039 m		
		ΔElev.	149.936 m	0.039 m		
		Ellip Dist.	30380.491 m	0.016 m		
35	NYNB	**Az.**	338°39'47"	0.148 sec	1 : 1055923	1 : 1058252
		ΔHt.	-28.103 m	0.039 m		
		ΔElev.	-27.652 m	0.039 m		
		Ellip Dist.	23220.854 m	0.022 m		

36	NYLC	**Az.**	46°00'36"	0.075 sec	1 : 2860518	1 : 2864540
		ΔHt.	199.470 m	0.035 m		
		ΔElev.	198.367 m	0.035 m		
		Ellip Dist.	39868.281 m	0.014 m		
36	NYNB	**Az.**	354°59'45"	0.091 sec	1 : 1904337	1 : 1903825
		ΔHt.	20.548 m	0.035 m		
		ΔElev.	20.778 m	0.035 m		
		Ellip Dist.	29316.541 m	0.015 m		
37	NYLC	**Az.**	37°05'48"	0.228 sec	1 : 1374752	1 : 1390913
		ΔHt.	191.783 m	0.074 m		
		ΔElev.	190.933 m	0.074 m		
		Ellip Dist.	36088.932 m	0.026 m		
37	NYNB	**Az.**	342°39'23"	0.164 sec	1 : 784555	1 : 786605
		ΔHt.	12.861 m	0.074 m		
		ΔElev.	13.345 m	0.074 m		
		Ellip Dist.	31774.646 m	0.041 m		
38	NYLC	**Az.**	32°23'49"	0.085 sec	1 : 1982810	1 : 1994826
		ΔHt.	189.685 m	0.032 m		
		ΔElev.	188.964 m	0.032 m		
		Ellip Dist.	35479.106 m	0.018 m		
38	NYNB	**Az.**	338°47'23"	0.086 sec	1 : 1838406	1 : 1833343
		ΔHt.	10.763 m	0.032 m		
		ΔElev.	11.376 m	0.032 m		
		Ellip Dist.	33803.553 m	0.018 m		
NYLC	32	**Az.**	258°19'43"	0.097 sec	1 : 2458445	1 : 2489714
		ΔHt.	-170.856 m	0.045 m		
		ΔElev.	-169.693 m	0.045 m		
		Ellip Dist.	28585.609 m	0.012 m		
NYLC	NYNB	**Az.**	273°00'12"	0.000 sec	1 : 0	1 : 0
		ΔHt.	-178.922 m	0.000 m		
		ΔElev.	-177.588 m	0.000 m		
		Ellip Dist.	31277.471 m	0.000 m		

NYNB	32	**Az.**	156°10'06"	0.305 sec	1 : 618447	1 : 618771
		ΔHt.	8.066 m	0.045 m		
		ΔElev.	7.895 m	0.045 m		
		Ellip Dist.	8097.942 m	0.013 m		

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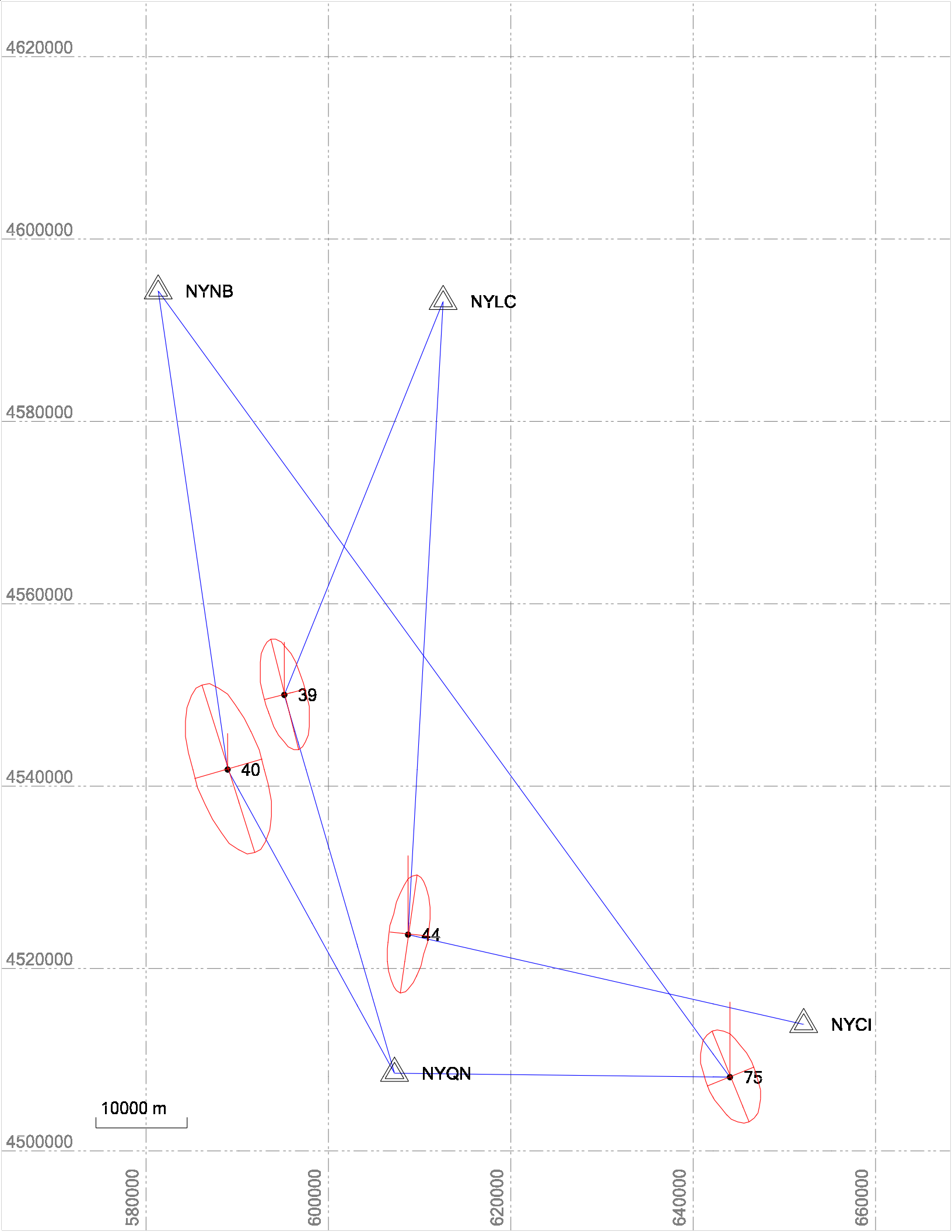
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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_39-40, 44, 75.vce	Name:	UTM
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Modified:	12/5/2011 12:40:52 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.02
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	8

RTK Vector Statistics

Reference Factor:	1.02
Redundancy Number:	8.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYCI	?	?	0.031	?
NYNB	?	?	-0.003	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYCI	Local	Fixed	Fixed	Fixed	
NYLC	Local	Fixed	Fixed	Fixed	
NYNB	Local	Fixed	Fixed	Fixed	
NYQN	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
39	595164.291	0.019	4549891.744	0.042	17.336	0.100	
40	588947.312	0.033	4541695.246	0.065	17.633	0.071	
44	608736.080	0.018	4523596.964	0.048	23.723	0.163	

75	644036.460	0.028	4507965.281	0.042	6.504	0.173	
NYCI	652125.422	?	4513746.734	?	17.188	?	LLh
NYLC	612584.314	?	4593041.035	?	232.514	?	LLh
NYNB	581336.904	?	4594192.275	?	54.926	?	LLh
NYQN	607255.500	?	4508397.046	?	31.186	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
39	N41°05'41.03022"	W73°52'00.64453"	-13.799	0.100	
40	N41°01'17.80393"	W73°56'31.36044"	-13.777	0.071	
44	N40°51'22.38429"	W73°42'35.64371"	-7.378	0.163	
75	N40°42'36.06493"	W73°17'41.42364"	-24.637	0.173	
NYCI	N40°45'38.23706"	W73°11'51.78749"	-13.852	?	LLh
NYLC	N41°28'51.87619"	W73°39'05.36911"	202.110	?	LLh
NYNB	N41°29'42.80606"	W74°01'31.97372"	23.188	?	LLh
NYQN	N40°43'10.26190"	W73°43'48.26710"	-0.382	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
39	1337577.784	0.034	-4624102.614	0.088	4170348.186	0.056	0.110	
40	1332982.955	0.044	-4630979.590	0.055	4164225.258	0.074	0.102	
44	1355112.441	0.032	-4637097.604	0.126	4150354.517	0.111	0.171	
75	1391713.171	0.036	-4637304.179	0.120	4138049.997	0.129	0.180	
NYCI	1398514.117	?	-4631435.780	?	4142315.055	?	?	LLh
NYLC	1347024.920	?	-4592030.399	?	4202731.832	?	?	LLh
NYNB	1316693.896	?	-4599596.996	?	4203790.323	?	?	LLh
NYQN	1356259.511	?	-4647099.238	?	4138865.370	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
39	0.053	0.020	166°
40	0.085	0.034	163°
44	0.060	0.020	8°
75	0.056	0.029	157°

Adjusted GPS Observations

Transformation Parameters

Deflection in Latitude:	0.038 sec **(95%)**	0.854 sec
Deflection in Longitude:	-0.188 sec **(95%)**	0.242 sec
Azimuth Rotation:	-0.017 sec **(95%)**	0.045 sec
Scale Factor:	1.00000017 **(95%)**	0.00000040

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYQN-39 (V1485)	**Az.**	344°35'09"	0.094 sec	0.075 sec	2.178
	ΔHt.	-13.414 m	0.100 m	0.003 m	0.138
	Ellip Dist.	43232.278 m	0.044 m	-0.011 m	-0.711
NYNB-75 (V1620)	**Az.**	144°37'01"	0.042 sec	-0.027 sec	-1.904
	ΔHt.	-47.865 m	0.063 m	0.038 m	1.178
	Ellip Dist.	106638.528 m	0.045 m	0.029 m	0.906
NYQN-75 (V1621)	**Az.**	91°30'04"	0.222 sec	0.065 sec	0.711
	ΔHt.	-24.288 m	0.055 m	-0.015 m	-0.709
	Ellip Dist.	36791.005 m	0.023 m	-0.012 m	-1.708
NYLC-39 (V1484)	**Az.**	202°52'29"	0.132 sec	0.080 sec	1.179
	ΔHt.	-215.884 m	0.108 m	-0.027 m	-0.610
	Ellip Dist.	46545.398 m	0.041 m	-0.009 m	-0.452

NYQN-40 (V1486)	**Az.**	332°01'40"	0.178 sec	-0.144 sec	-0.770
	ΔHt.	-13.385 m	0.082 m	-0.072 m	-0.870
	Ellip Dist.	38010.154 m	0.072 m	0.017 m	0.223
NYNB-40 (V1488)	**Az.**	172°23'38"	0.111 sec	-0.016 sec	-0.712
	ΔHt.	-36.961 m	0.060 m	0.008 m	0.742
	Ellip Dist.	53062.274 m	0.065 m	0.001 m	0.108
NYCI-44 (V1529)	**Az.**	283°58'06"	0.212 sec	-0.022 sec	-0.442
	ΔHt.	6.512 m	0.040 m	-0.002 m	-0.271
	Ellip Dist.	44501.782 m	0.017 m	-0.002 m	-0.559
NYLC-44 (V1528)	**Az.**	184°03'35"	0.064 sec	0.001 sec	0.019
	ΔHt.	-209.471 m	0.099 m	-0.013 m	-0.250
	Ellip Dist.	69567.943 m	0.045 m	-0.008 m	-0.124

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
39	NYLC	**Az.**	22°43'57"	0.126 sec	1 : 1300369	1 : 1319792
		ΔHt.	215.909 m	0.100 m		
		ΔElev.	215.178 m	0.100 m		
		Ellip Dist.	46545.406 m	0.036 m		
39	NYQN	**Az.**	164°29'47"	0.078 sec	1 : 1012690	1 : 1011999
		ΔHt.	13.417 m	0.100 m		
		ΔElev.	13.850 m	0.100 m		
		Ellip Dist.	43232.285 m	0.043 m		
40	NYNB	**Az.**	352°26'56"	0.113 sec	1 : 790769	1 : 792014
		ΔHt.	36.965 m	0.071 m		
		ΔElev.	37.293 m	0.071 m		
		Ellip Dist.	53062.283 m	0.067 m		
40	NYQN	**Az.**	151°53'21"	0.163 sec	1 : 569887	1 : 568789
		ΔHt.	13.395 m	0.071 m		
		ΔElev.	13.553 m	0.071 m		

		Ellip Dist.	38010.161 m	0.067 m		
44	NYCI	**Az.**	103°38'01"	0.223 sec	1 : 2681698	1 : 2655921
		ΔHt.	-6.474 m	0.163 m		
		ΔElev.	-6.535 m	0.163 m		
		Ellip Dist.	44501.789 m	0.017 m		
44	NYLC	**Az.**	4°01'16"	0.050 sec	1 : 1447041	1 : 1446200
		ΔHt.	209.488 m	0.163 m		
		ΔElev.	208.791 m	0.163 m		
		Ellip Dist.	69567.955 m	0.048 m		
75	NYNB	**Az.**	325°05'50"	0.048 sec	1 : 2419925	1 : 2410470
		ΔHt.	47.825 m	0.173 m		
		ΔElev.	48.421 m	0.173 m		
		Ellip Dist.	106638.546 m	0.044 m		
75	NYQN	**Az.**	271°47'06"	0.236 sec	1 : 1315169	1 : 1295260
		ΔHt.	24.255 m	0.173 m		
		ΔElev.	24.682 m	0.173 m		
		Ellip Dist.	36791.011 m	0.028 m		

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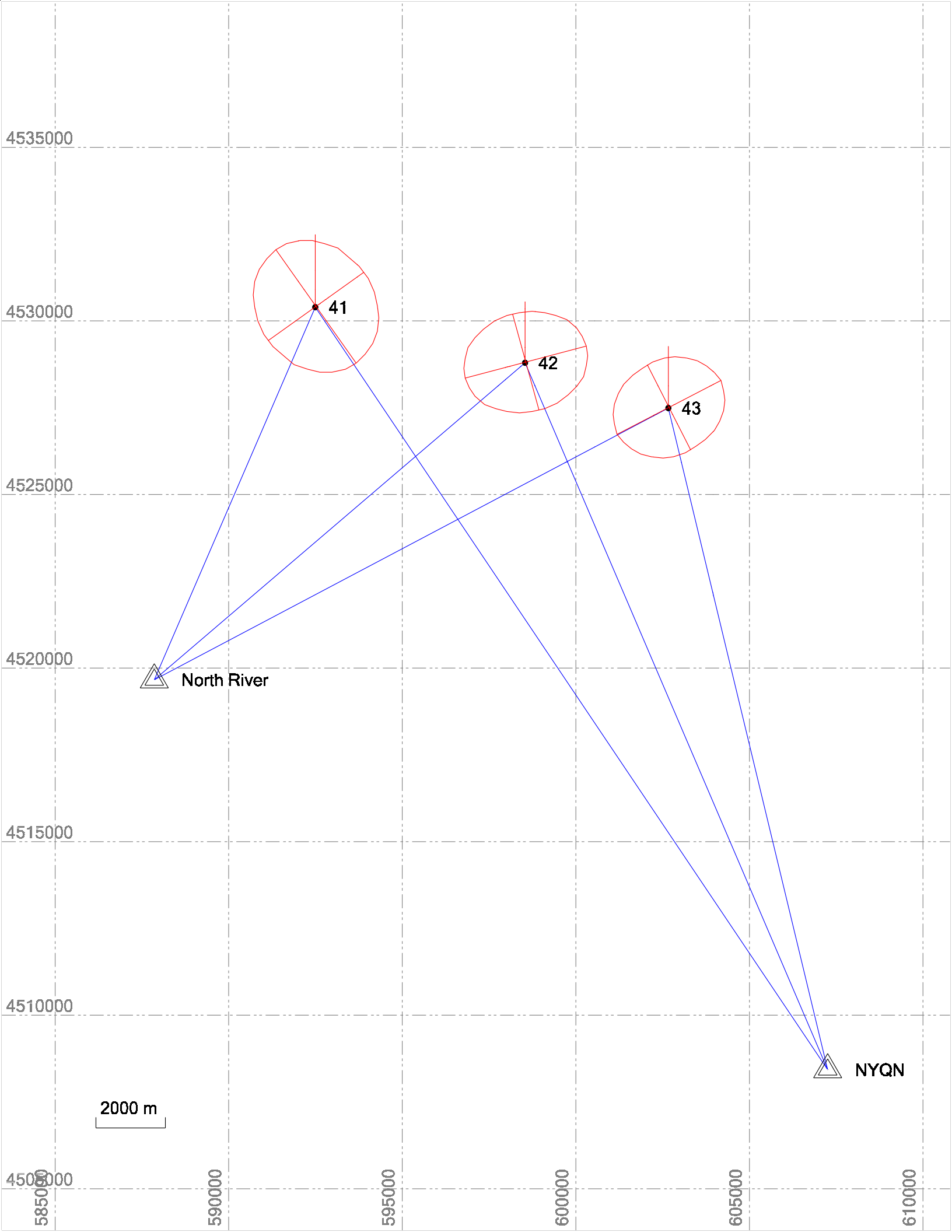
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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_41-43.vce	Name:	UTM
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Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	0.65
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	7

RTK Vector Statistics

Reference Factor:	0.65
Redundancy Number:	7.00
A Priori Scalar:	1.00

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
North River	Global	Fixed	Fixed	Fixed	
NYQN	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
41	592494.217	0.012	4530363.417	0.013	14.719	0.018	
42	598538.898	0.013	4528763.021	0.011	39.818	0.018	
43	602664.684	0.012	4527457.393	0.010	2.310	0.017	
North River	587856.811	?	4519628.898	?	28.623	?	LLh
NYQN	607255.500	?	4508397.046	?	31.186	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
41	N40°55'08.96072"	W73°54'05.61044"	-16.608	0.018	
42	N40°54'14.52865"	W73°49'48.14797"	8.659	0.018	
43	N40°53'30.37013"	W73°46'52.61376"	-28.784	0.017	

North River	N40°49'22.73494"	W73°57'29.30105"	-2.957	?	LLh
NYQN	N40°43'10.26190"	W73°43'48.26710"	-0.382	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
41	1338322.999	0.013	-4637202.198	0.015	4155632.382	0.015	0.025	
42	1344421.726	0.013	-4636602.550	0.017	4154379.990	0.013	0.025	
43	1348608.243	0.012	-4636285.924	0.013	4153325.828	0.014	0.023	
North River	1335677.125	?	-4645248.039	?	4147565.102	?	?	LLh
NYQN	1356259.511	?	-4647099.238	?	4138865.370	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
41	0.017	0.014	145°
42	0.017	0.013	75°
43	0.015	0.012	62°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: 0.115 sec **(95%)** 0.105 sec

Scale Factor: 1.00000081 **(95%)** 0.00000046

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
North River-42 (V1539)	**Az.**	50°08'54"	0.153 sec	0.029 sec	0.501
	ΔHt.	11.616 m	0.018 m	0.027 m	1.322
	Ellip Dist.	14058.972 m	0.013 m	-0.030 m	-2.181

NYQN-42 (V1524)	**Az.**	337°39'33"	0.085 sec	0.026 sec	1.522
	ΔHt.	9.041 m	0.018 m	0.000 m	-0.023
	Ellip Dist.	22158.881 m	0.010 m	0.003 m	0.806
NYQN-43 (V1522)	**Az.**	347°17'16"	0.098 sec	-0.020 sec	-0.612
	ΔHt.	-28.402 m	0.017 m	-0.008 m	-1.093
	Ellip Dist.	19610.587 m	0.010 m	-0.002 m	-0.710
North River-43 (V1540)	**Az.**	62°49'03"	0.127 sec	-0.059 sec	-1.080
	ΔHt.	-25.827 m	0.017 m	0.011 m	1.027
	Ellip Dist.	16754.692 m	0.011 m	0.005 m	1.058
NYQN-41 (V1526)	**Az.**	326°55'45"	0.084 sec	-0.026 sec	-0.817
	ΔHt.	-16.226 m	0.018 m	0.000 m	0.019
	Ellip Dist.	26472.703 m	0.010 m	-0.001 m	-0.379
North River-41 (V1538)	**Az.**	24°02'48"	0.195 sec	0.015 sec	0.166
	ΔHt.	-13.652 m	0.018 m	0.002 m	0.181
	Ellip Dist.	11696.891 m	0.010 m	0.002 m	0.736

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
41	NYQN	**Az.**	146°49'02"	0.089 sec	1 : 1990576	1 : 1990645
		ΔHt.	16.226 m	0.018 m		
		ΔElev.	16.467 m	0.018 m		
		Ellip Dist.	26472.724 m	0.013 m		
42	NYQN	**Az.**	157°35'38"	0.127 sec	1 : 2040609	1 : 2042850
		ΔHt.	-9.041 m	0.018 m		
		ΔElev.	-8.632 m	0.018 m		
		Ellip Dist.	22158.899 m	0.011 m		

43	NYQN	**Az.**	167°15'16"	0.125 sec	1 : 1951899	1 : 1949504
		ΔHt.	28.402 m	0.017 m		
		ΔElev.	28.876 m	0.017 m		
		Ellip Dist.	19610.603 m	0.010 m		
North River	41	**Az.**	24°02'48"	0.226 sec	1 : 980839	1 : 982577
		ΔHt.	-13.652 m	0.018 m		
		ΔElev.	-13.904 m	0.018 m		
		Ellip Dist.	11696.901 m	0.012 m		
North River	42	**Az.**	50°08'54"	0.167 sec	1 : 1063655	1 : 1061995
		ΔHt.	11.616 m	0.018 m		
		ΔElev.	11.195 m	0.018 m		
		Ellip Dist.	14058.983 m	0.013 m		
North River	43	**Az.**	62°49'03"	0.122 sec	1 : 1399189	1 : 1399516
		ΔHt.	-25.827 m	0.017 m		
		ΔElev.	-26.313 m	0.017 m		
		Ellip Dist.	16754.706 m	0.012 m		

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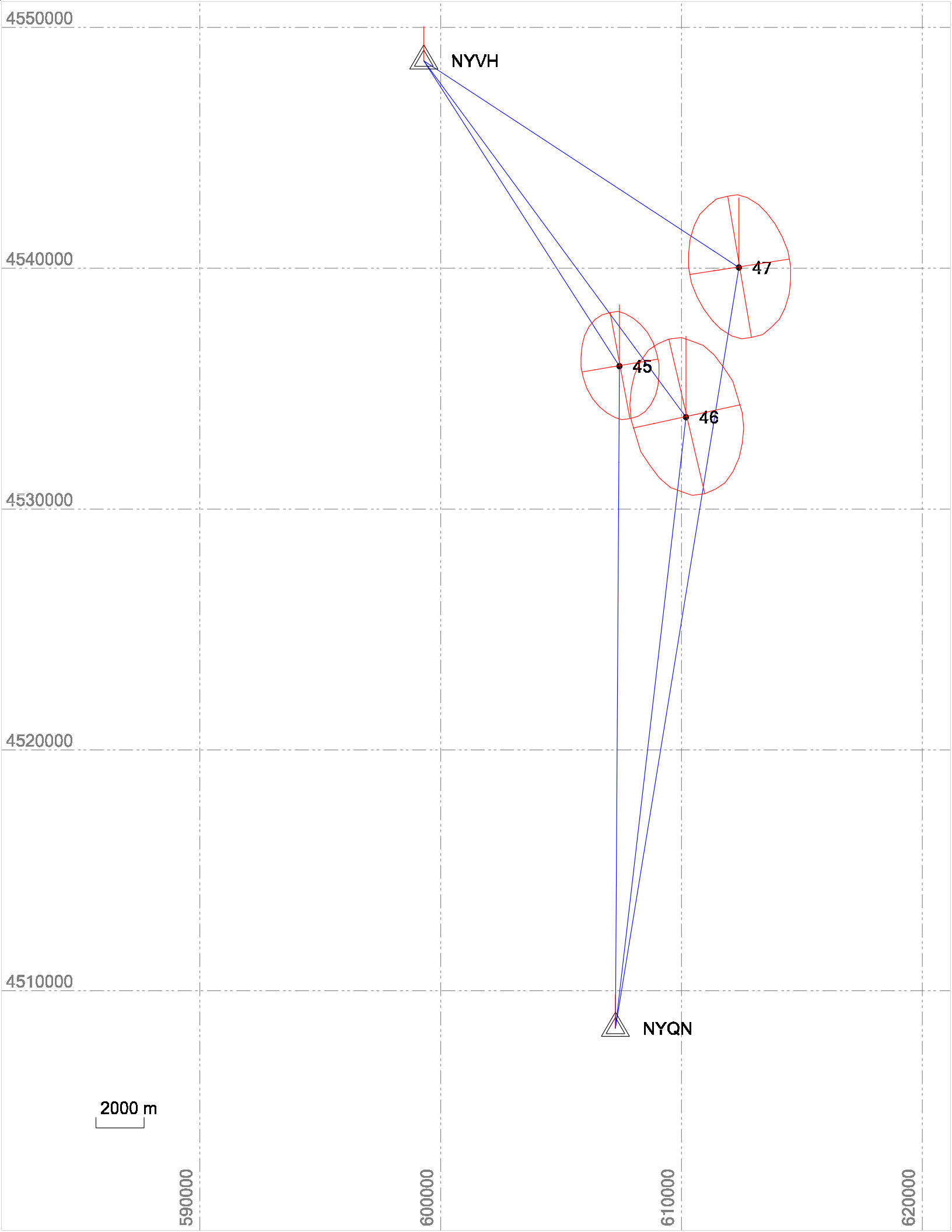
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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_45-47.vce	Name:	UTM
Size:	278 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:41:44 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.41
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	7

RTK Vector Statistics

Reference Factor:	1.39
Redundancy Number:	6.24
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYQN	?	?	?	0.019
NYVH	?	?	-0.027	-0.021

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYQN	Local	Fixed	Fixed	0.020	
NYVH	Local	Fixed	Fixed	0.021	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
45	607421.638	0.015	4535888.909	0.021	18.919	0.052	
46	610186.904	0.022	4533771.040	0.030	4.888	0.065	
47	612381.723	0.020	4539985.103	0.027	4.871	0.056	
NYQN	607255.500	?	4508397.046	?	31.167	?	LLh
NYVH	599300.982	?	4548564.648	?	94.288	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
45	N40°58'01.53906"	W73°43'24.11255"	-11.950	0.052	
46	N40°56'51.54799"	W73°41'27.19049"	-25.981	0.065	
47	N41°00'11.93759"	W73°39'49.27543"	-25.833	0.056	
NYQN	N40°43'10.26190"	W73°43'48.26710"	-0.401	?	LLh
NYVH	N41°04'56.22113"	W73°49'04.12598"	63.334	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
45	1351761.725	0.020	-4629672.043	0.040	4159656.736	0.037	0.058	
46	1354780.318	0.024	-4630253.202	0.052	4158017.004	0.048	0.075	
47	1355838.050	0.025	-4625719.800	0.046	4162684.169	0.039	0.065	
NYQN	1356259.507	?	-4647099.224	?	4138865.358	?	?	LLh
NYVH	1341803.927	?	-4623884.566	?	4169357.038	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
45	0.027	0.019	169°
46	0.038	0.026	167°
47	0.034	0.024	170°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.046 sec **(95%)** 0.098 sec

Scale Factor: 1.00000075 **(95%)** 0.00000070

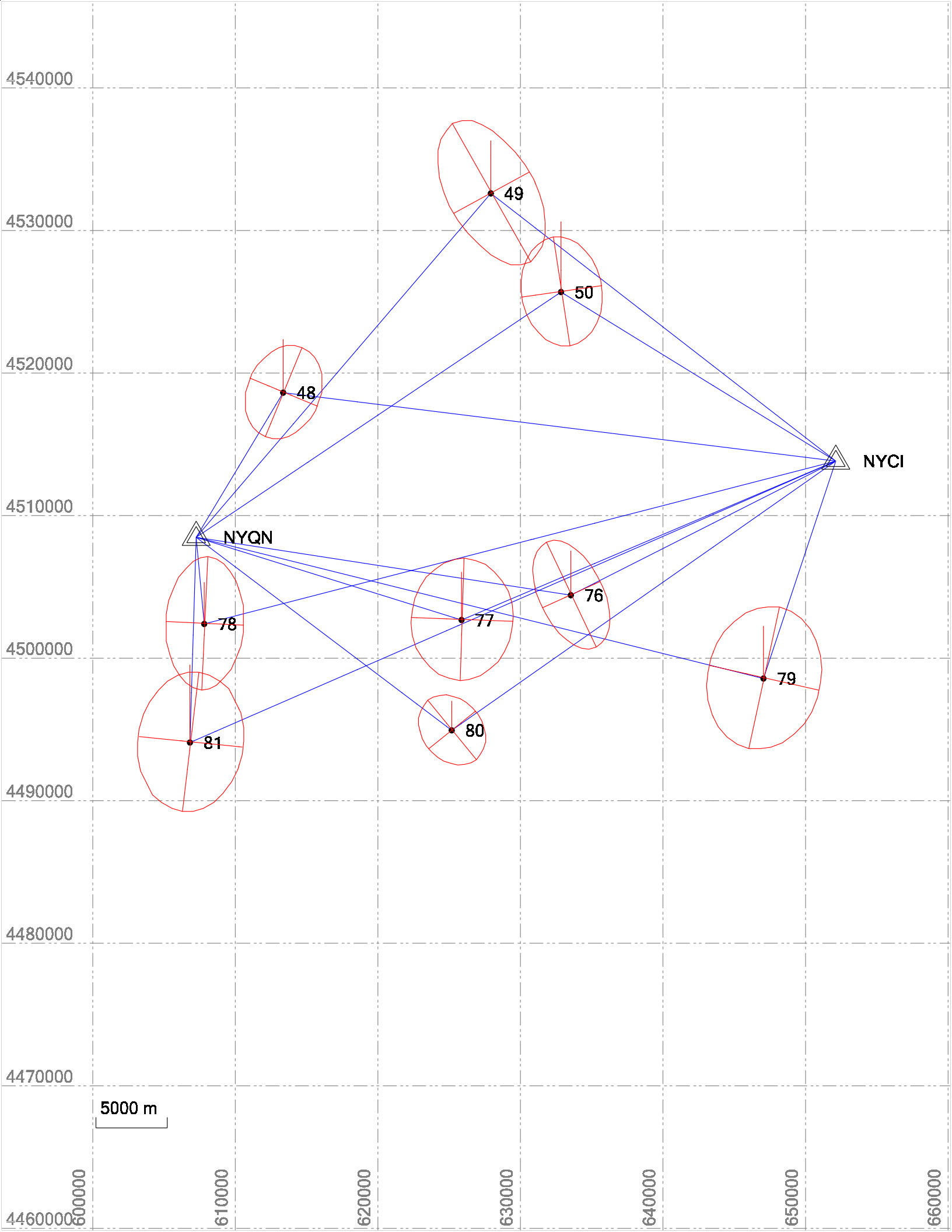
Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual

NYQN-46 (V1521)	**Az.**	7°25'14"	0.202 sec	0.122 sec	1.328
	ΔHt.	-25.580 m	0.055 m	-0.047 m	-1.742
	Ellip Dist.	25549.246 m	0.028 m	-0.001 m	-0.182
NYVH-47 (V1544)	**Az.**	124°02'13"	0.332 sec	0.243 sec	1.545
	ΔHt.	-89.167 m	0.044 m	-0.003 m	-0.155
	Ellip Dist.	15647.436 m	0.027 m	0.011 m	0.976
NYVH-46 (V1543)	**Az.**	144°25'42"	0.263 sec	0.042 sec	0.364
	ΔHt.	-89.314 m	0.055 m	0.034 m	1.538
	Ellip Dist.	18372.054 m	0.035 m	-0.013 m	-0.579
NYVH-45 (V1542)	**Az.**	148°07'50"	0.251 sec	-0.129 sec	-1.483
	ΔHt.	-75.283 m	0.040 m	0.000 m	0.008
	Ellip Dist.	15057.914 m	0.025 m	-0.006 m	-0.802
NYQN-47 (V1518)	**Az.**	10°02'55"	0.132 sec	-0.013 sec	-0.255
	ΔHt.	-25.432 m	0.044 m	-0.003 m	-0.170
	Ellip Dist.	32009.332 m	0.025 m	0.011 m	1.277
NYQN-45 (V1519)	**Az.**	1°10'37"	0.138 sec	-0.036 sec	-0.757
	ΔHt.	-11.549 m	0.036 m	-0.006 m	-0.468
	Ellip Dist.	27499.444 m	0.023 m	-0.006 m	-0.966

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
45	NYQN	**Az.**	181°10'52"	0.116 sec	1 : 1301284	1 : 1303168
		ΔHt.	11.549 m	0.036 m		
		ΔElev.	12.248 m	0.036 m		
		Ellip Dist.	27499.465 m	0.021 m		

45	NYVH	**Az.**	328°11'33"	0.222 sec	1 : 730111	1 : 729104
		ΔHt.	75.283 m	0.040 m		
		ΔElev.	75.369 m	0.040 m		
		Ellip Dist.	15057.925 m	0.021 m		
46	NYQN	**Az.**	187°26'46"	0.182 sec	1 : 862053	1 : 864387
		ΔHt.	25.580 m	0.055 m		
		ΔElev.	26.280 m	0.055 m		
		Ellip Dist.	25549.265 m	0.030 m		
46	NYVH	**Az.**	324°30'42"	0.257 sec	1 : 626218	1 : 624099
		ΔHt.	89.314 m	0.055 m		
		ΔElev.	89.400 m	0.055 m		
		Ellip Dist.	18372.068 m	0.029 m		
47	NYQN	**Az.**	190°05'32"	0.131 sec	1 : 1199641	1 : 1202533
		ΔHt.	25.432 m	0.044 m		
		ΔElev.	26.296 m	0.044 m		
		Ellip Dist.	32009.356 m	0.027 m		
47	NYVH	**Az.**	304°08'17"	0.315 sec	1 : 666094	1 : 664086
		ΔHt.	89.167 m	0.044 m		
		ΔElev.	89.417 m	0.044 m		
		Ellip Dist.	15647.447 m	0.023 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_48-50 & 76-81.vce	Name:	UTM
Size:	369 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:42:28 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.16
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	25

RTK Vector Statistics

Reference Factor:	1.16
Redundancy Number:	25.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYCI	?	?	0.031	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYCI	Local	Fixed	Fixed	Fixed	
NYQN	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
48	613355.812	0.014	4518547.540	0.017	13.058	0.044	
49	627926.498	0.018	4532522.212	0.024	32.663	0.041	
50	632851.275	0.014	4525601.665	0.019	28.188	0.057	
76	633533.980	0.013	4504336.666	0.018	6.006	0.034	
77	625869.684	0.018	4502596.398	0.022	3.514	0.039	
78	607819.763	0.012	4502322.589	0.021	3.735	0.030	

79	647048.931	0.020	4498493.304	0.025	6.619	0.042	
80	625180.788	0.013	4494859.208	0.013	4.119	0.025	
81	606818.298	0.018	4493998.571	0.024	2.529	0.062	
NYCI	652125.422	?	4513746.734	?	17.188	?	LLh
NYQN	607255.500	?	4508397.046	?	31.186	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
48	N40°48'36.42019"	W73°39'21.68315"	-18.146	0.044	
49	N40°56'01.75617"	W73°28'49.61467"	2.060	0.041	
50	N40°52'14.57837"	W73°25'24.42754"	-2.484	0.057	
76	N40°40'44.79861"	W73°25'11.63264"	-25.242	0.034	
77	N40°39'52.71772"	W73°30'39.26873"	-27.896	0.039	
78	N40°39'53.04246"	W73°43'27.97927"	-28.070	0.030	
79	N40°37'27.10011"	W73°15'41.07460"	-24.874	0.042	
80	N40°35'42.24835"	W73°31'14.13910"	-27.512	0.025	
81	N40°35'23.61458"	W73°44'15.70688"	-29.536	0.062	
NYCI	N40°45'38.23706"	W73°11'51.78749"	-13.852	?	LLh
NYQN	N40°43'10.26190"	W73°43'48.26710"	-0.382	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
48	1360412.018	0.016	-4639025.651	0.030	4146473.937	0.036	0.049	
49	1372069.491	0.026	-4626231.356	0.038	4156875.122	0.022	0.051	
50	1377978.998	0.021	-4629258.758	0.048	4151575.359	0.032	0.062	
76	1382226.595	0.019	-4642475.175	0.031	4135447.336	0.018	0.041	
77	1375147.235	0.023	-4645666.894	0.025	4134227.142	0.034	0.048	
78	1357822.323	0.013	-4650753.146	0.027	4134234.627	0.025	0.039	
79	1396207.303	0.022	-4642438.688	0.035	4130820.913	0.033	0.052	
80	1375789.053	0.015	-4650723.876	0.018	4128363.864	0.021	0.031	
81	1358261.241	0.017	-4656261.098	0.047	4127926.087	0.048	0.069	
NYCI	1398514.117	?	-4631435.780	?	4142315.055	?	?	LLh
NYQN	1356259.511	?	-4647099.238	?	4138865.370	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
48	0.022	0.016	23°
49	0.033	0.018	150°
50	0.024	0.018	171°
76	0.024	0.013	155°
77	0.027	0.023	3°
78	0.026	0.015	3°
79	0.031	0.025	13°
80	0.018	0.014	141°
81	0.030	0.023	7°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: 0.010 sec **(95%)** 0.057 sec

Scale Factor: 1.00000036 **(95%)** 0.00000021

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYCI-77 (V1659)	**Az.**	248°09'57"	0.155 sec	0.162 sec	2.249
	ΔHt.	-14.044 m	0.039 m	0.091 m	3.633
	Ellip Dist.	28529.914 m	0.019 m	-0.042 m	-3.385
NYQN-77 (V1658)	**Az.**	108°08'11"	0.232 sec	0.158 sec	1.556
	ΔHt.	-27.514 m	0.039 m	-0.052 m	-2.834
	Ellip Dist.	19501.586 m	0.019 m	-0.012 m	-1.121
NYCI-80 (V1661)	**Az.**	236°08'44"	0.096 sec	-0.004 sec	-0.096
	ΔHt.	-13.660 m	0.025 m	-0.010 m	-0.726
	Ellip Dist.	32910.536 m	0.012 m	0.009 m	1.731

NYCI-78 (V1669)	**Az.**	256°43'02"	0.104 sec	0.334 sec	1.443
	ΔHt.	-14.218 m	0.030 m	0.031 m	0.652
	Ellip Dist.	45763.490 m	0.014 m	-0.021 m	-1.664
NYQN-80 (V1660)	**Az.**	127°53'20"	0.108 sec	-0.064 sec	-1.653
	ΔHt.	-27.130 m	0.025 m	0.009 m	0.779
	Ellip Dist.	22468.295 m	0.015 m	0.002 m	0.405
NYQN-81 (V1664)	**Az.**	182°34'00"	0.260 sec	0.088 sec	1.458
	ΔHt.	-29.154 m	0.062 m	0.013 m	0.886
	Ellip Dist.	14408.838 m	0.024 m	0.008 m	1.070
NYQN-78 (V1668)	**Az.**	175°31'16"	0.415 sec	0.094 sec	0.622
	ΔHt.	-27.688 m	0.030 m	0.004 m	0.543
	Ellip Dist.	6102.178 m	0.021 m	0.005 m	1.296
NYCI-81 (V1665)	**Az.**	247°37'26"	0.104 sec	-0.051 sec	-0.275
	ΔHt.	-15.684 m	0.062 m	-0.053 m	-0.739
	Ellip Dist.	49433.387 m	0.021 m	-0.025 m	-1.046
NYQN-76 (V1655)	**Az.**	99°36'42"	0.138 sec	-0.061 sec	-1.030
	ΔHt.	-24.860 m	0.034 m	-0.011 m	-0.700
	Ellip Dist.	26596.186 m	0.015 m	-0.001 m	-0.111
NYCI-48 (V1675)	**Az.**	278°14'11"	0.097 sec	0.070 sec	1.024
	ΔHt.	-4.294 m	0.044 m	0.032 m	0.747
	Ellip Dist.	39072.800 m	0.015 m	-0.008 m	-0.903
NYQN-48 (V1674)	**Az.**	31°50'05"	0.238 sec	-0.021 sec	-0.253
	ΔHt.	-17.764 m	0.044 m	-0.005 m	-0.440
	Ellip Dist.	11845.524 m	0.017 m	-0.006 m	-1.015
NYCI-76 (V1654)	**Az.**	244°19'47"	0.200 sec	-0.078 sec	-0.809
	ΔHt.	-11.390 m	0.034 m	0.014 m	0.750
	Ellip Dist.	20840.340 m	0.012 m	0.004 m	0.883

NYCI-79 (V1622)	**Az.**	199°35'00"	0.257 sec	-0.050 sec	-0.634
	ΔHt.	-11.022 m	0.042 m	0.010 m	0.799
	Ellip Dist.	16078.000 m	0.025 m	-0.006 m	-0.517
NYQN-50 (V1625)	**Az.**	56°55'20"	0.136 sec	-0.021 sec	-0.212
	ΔHt.	-2.102 m	0.057 m	-0.009 m	-0.205
	Ellip Dist.	30847.435 m	0.016 m	0.006 m	0.753
NYCI-50 (V1624)	**Az.**	302°46'21"	0.158 sec	-0.042 sec	-0.732
	ΔHt.	11.368 m	0.057 m	0.005 m	0.298
	Ellip Dist.	22631.507 m	0.017 m	0.000 m	0.073
NYQN-79 (V1623)	**Az.**	104°48'12"	0.127 sec	0.038 sec	0.224
	ΔHt.	-24.492 m	0.042 m	-0.008 m	-0.096
	Ellip Dist.	41015.494 m	0.021 m	-0.015 m	-0.667
NYCI-49 (V1680)	**Az.**	308°59'10"	0.124 sec	-0.080 sec	-0.387
	ΔHt.	15.912 m	0.041 m	0.056 m	0.434
	Ellip Dist.	30633.355 m	0.026 m	-0.032 m	-0.394
NYQN-49 (V1681)	**Az.**	41°25'16"	0.159 sec	-0.003 sec	-0.229
	ΔHt.	2.442 m	0.041 m	-0.002 m	-0.350
	Ellip Dist.	31776.976 m	0.015 m	0.000 m	0.132

Covariance Terms

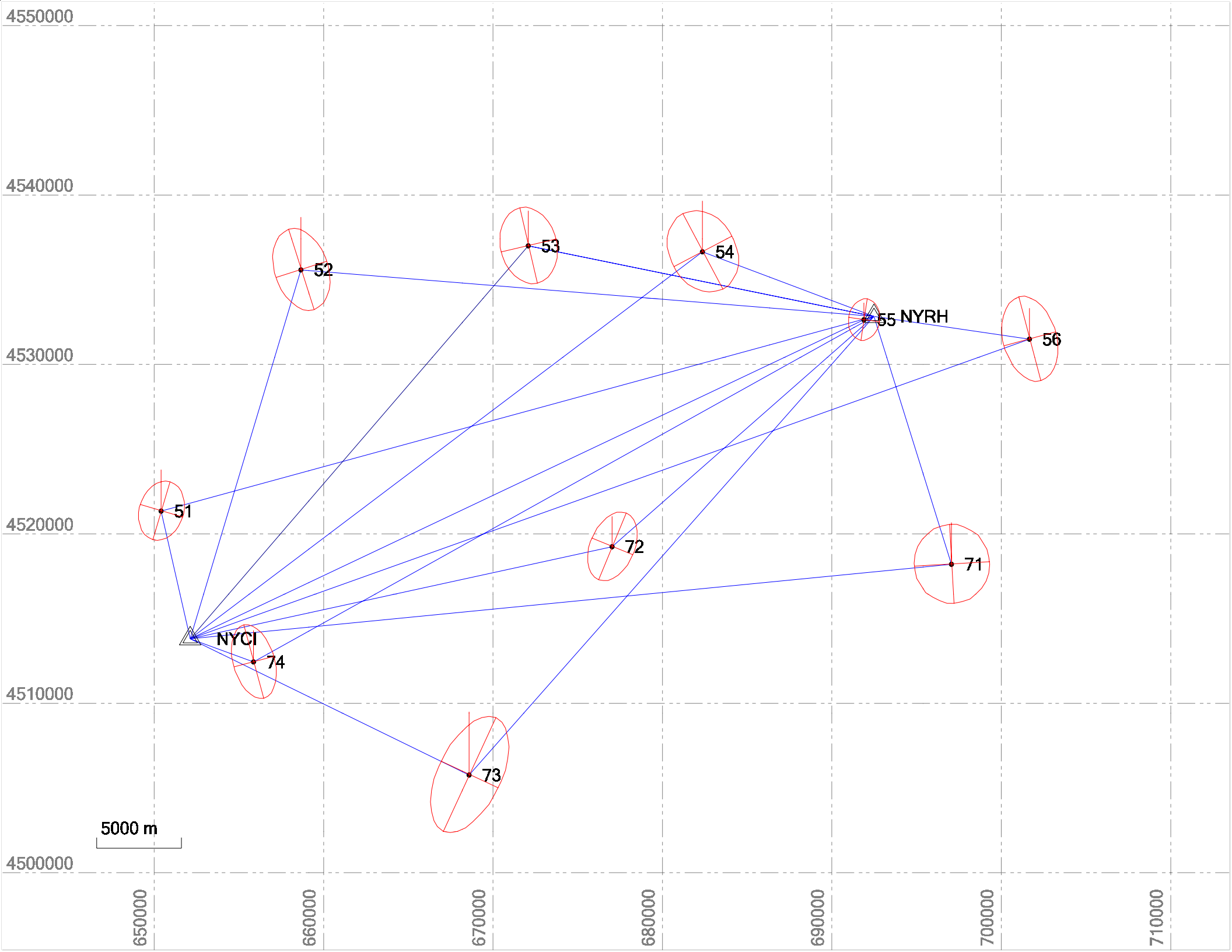
From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
48	NYCI	**Az.**	97°56'13"	0.090 sec	1 : 2891832	1 : 2899629
		ΔHt.	4.294 m	0.044 m		
		ΔElev.	4.129 m	0.044 m		
		Ellip Dist.	39072.814 m	0.014 m		

48	NYQN	**Az.**	211°52'59"	0.231 sec	1 : 688705	1 : 690323
		ΔHt.	17.764 m	0.044 m		
		ΔElev.	18.128 m	0.044 m		
		Ellip Dist.	11845.528 m	0.017 m		
49	NYCI	**Az.**	128°48'04"	0.115 sec	1 : 1208445	1 : 1203463
		ΔHt.	-15.912 m	0.041 m		
		ΔElev.	-15.475 m	0.041 m		
		Ellip Dist.	30633.366 m	0.025 m		
49	NYQN	**Az.**	221°35'04"	0.167 sec	1 : 1913430	1 : 1932535
		ΔHt.	-2.442 m	0.041 m		
		ΔElev.	-1.477 m	0.041 m		
		Ellip Dist.	31776.988 m	0.017 m		
50	NYCI	**Az.**	122°37'30"	0.159 sec	1 : 1363939	1 : 1357214
		ΔHt.	-11.368 m	0.057 m		
		ΔElev.	-11.001 m	0.057 m		
		Ellip Dist.	22631.515 m	0.017 m		
50	NYQN	**Az.**	237°07'21"	0.124 sec	1 : 2019416	1 : 2029736
		ΔHt.	2.102 m	0.057 m		
		ΔElev.	2.998 m	0.057 m		
		Ellip Dist.	30847.446 m	0.015 m		
76	NYCI	**Az.**	64°11'05"	0.191 sec	1 : 1943880	1 : 1945083
		ΔHt.	11.390 m	0.034 m		
		ΔElev.	11.181 m	0.034 m		
		Ellip Dist.	20840.348 m	0.011 m		
76	NYQN	**Az.**	279°48'50"	0.133 sec	1 : 1904799	1 : 1886549
		ΔHt.	24.860 m	0.034 m		
		ΔElev.	25.180 m	0.034 m		
		Ellip Dist.	26596.196 m	0.014 m		
77	NYCI	**Az.**	67°57'41"	0.151 sec	1 : 1515114	1 : 1517932
		ΔHt.	14.044 m	0.039 m		
		ΔElev.	13.674 m	0.039 m		
		Ellip Dist.	28529.925 m	0.019 m		

77	NYQN	**Az.**	288°16'45"	0.226 sec	1 : 1060828	1 : 1060271
		ΔHt.	27.514 m	0.039 m		
		ΔElev.	27.672 m	0.039 m		
		Ellip Dist.	19501.593 m	0.018 m		
78	NYCI	**Az.**	76°22'25"	0.091 sec	1 : 3434555	1 : 3457927
		ΔHt.	14.218 m	0.030 m		
		ΔElev.	13.453 m	0.030 m		
		Ellip Dist.	45763.506 m	0.013 m		
78	NYQN	**Az.**	355°31'29"	0.424 sec	1 : 294294	1 : 293977
		ΔHt.	27.688 m	0.030 m		
		ΔElev.	27.451 m	0.030 m		
		Ellip Dist.	6102.181 m	0.021 m		
79	NYCI	**Az.**	19°32'30"	0.255 sec	1 : 641381	1 : 641858
		ΔHt.	11.022 m	0.042 m		
		ΔElev.	10.568 m	0.042 m		
		Ellip Dist.	16078.005 m	0.025 m		
79	NYQN	**Az.**	285°06'32"	0.126 sec	1 : 2066416	1 : 2065940
		ΔHt.	24.492 m	0.042 m		
		ΔElev.	24.567 m	0.042 m		
		Ellip Dist.	41015.509 m	0.020 m		
80	NYCI	**Az.**	55°56'06"	0.089 sec	1 : 2906484	1 : 2903188
		ΔHt.	13.660 m	0.025 m		
		ΔElev.	13.068 m	0.025 m		
		Ellip Dist.	32910.547 m	0.011 m		
80	NYQN	**Az.**	308°01'31"	0.105 sec	1 : 1590104	1 : 1587956
		ΔHt.	27.130 m	0.025 m		
		ΔElev.	27.067 m	0.025 m		
		Ellip Dist.	22468.303 m	0.014 m		
81	NYCI	**Az.**	67°16'19"	0.096 sec	1 : 2469482	1 : 2480008
		ΔHt.	15.684 m	0.062 m		
		ΔElev.	14.659 m	0.062 m		
		Ellip Dist.	49433.405 m	0.020 m		

81	NYQN	**Az.**	2°33'42"	0.262 sec	1 : 593182	1 : 592259
		ΔHt.	29.154 m	0.062 m		
		ΔElev.	28.658 m	0.062 m		
		Ellip Dist.	14408.843 m	0.024 m		

Date: 12/5/2011 4:48:01 PM	Project: P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_48-50 & 76-81.vce	Trimble Business Center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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_51-56 & 71-74.vce	Name:	UTM
Size:	309 KB	Datum:	NAD 1983 (Conus)
Modified:	12/6/2011 6:02:48 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:		Vertical datum:	NAVD 88
Description:			

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment: 2
Network Reference Factor: 1.07
Chi Square Test (95%): Passed
Precision Confidence Level: 95%
Degrees of Freedom: 28

RTK Vector Statistics

Reference Factor: 1.07
Redundancy Number: 28.00
A Priori Scalar: 1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
NYCI	?	?	0.032	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYCI	Local	Fixed	Fixed	Fixed	
NYRH	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
51	650411.263	0.011	4521276.648	0.015	22.652	0.035	
52	658662.911	0.013	4535517.363	0.019	2.096	0.043	
53	672075.847	0.013	4536933.912	0.018	10.348	0.028	
54	682364.904	0.018	4536577.884	0.020	48.642	0.044	
55	691895.282	0.007	4532576.282	0.010	15.835	0.014	

56	701659.693	0.013	4531423.449	0.019	1.888	0.024	
71	697062.234	0.019	4518140.912	0.020	1.088	0.037	
72	677022.174	0.011	4519174.525	0.016	9.063	0.024	
73	668587.374	0.018	4505695.632	0.026	0.519	0.049	
74	655860.943	0.010	4512371.814	0.016	2.890	0.024	
NYCI	652125.422	?	4513746.734	?	17.187	?	LLh
NYRH	692482.208	?	4532765.093	?	23.274	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
51	N40°49'43.45497"	W73°12'58.33148"	-8.117	0.035	
52	N40°57'19.43982"	W73°06'53.11783"	-28.406	0.043	
53	N40°57'55.57349"	W72°57'18.29080"	-20.339	0.028	
54	N40°57'35.99695"	W72°49'58.77639"	17.732	0.044	
55	N40°55'18.46719"	W72°43'15.84583"	-15.380	0.014	
56	N40°54'32.65598"	W72°36'20.07327"	-29.508	0.024	
71	N40°47'26.28866"	W72°39'51.56862"	-30.599	0.037	
72	N40°48'16.21265"	W72°54'05.02360"	-22.302	0.024	
73	N40°41'05.73376"	W73°00'17.86321"	-31.135	0.049	
74	N40°44'51.15202"	W73°09'13.77711"	-28.260	0.024	
NYCI	N40°45'38.23706"	W73°11'51.78749"	-13.852	?	LLh
NYRH	N40°55'24.08893"	W72°42'50.56092"	-7.945	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
51	1395594.038	0.013	-4627159.284	0.023	4148045.379	0.030	0.040	
52	1401105.707	0.019	-4615855.139	0.038	4158665.247	0.023	0.049	
53	1413751.503	0.017	-4611239.788	0.022	4159512.278	0.022	0.036	
54	1423699.373	0.020	-4608622.590	0.032	4159081.210	0.034	0.051	
55	1433517.730	0.008	-4608463.346	0.012	4155854.774	0.011	0.018	
56	1443077.693	0.014	-4606437.447	0.022	4154777.619	0.020	0.033	
71	1440916.764	0.019	-4616125.783	0.032	4144828.159	0.027	0.046	

72	1421510.494	0.011	-4621092.538	0.021	4145999.403	0.020	0.031	
73	1415686.507	0.013	-4631936.593	0.046	4135933.211	0.034	0.058	
74	1402333.263	0.012	-4631260.110	0.021	4141205.410	0.017	0.030	
NYCI	1398514.117	?	-4631435.780	?	4142315.055	?	?	LLh
NYRH	1434050.562	?	-4608184.483	?	4155990.679	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
51	0.019	0.014	18°
52	0.025	0.016	162°
53	0.022	0.016	167°
54	0.027	0.021	152°
55	0.012	0.009	9°
56	0.024	0.015	165°
71	0.025	0.024	176°
72	0.021	0.013	23°
73	0.035	0.018	25°
74	0.020	0.011	164°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.024 sec **(95%)** 0.050 sec

Scale Factor: 1.00000026 **(95%)** 0.00000019

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
NYCI-74 (V1825)	**Az.**	111°23'02"	0.729 sec	0.049 sec	1.333
	ΔHt.	-14.408 m	0.024 m	-0.009 m	-2.587
	Ellip Dist.	3980.947 m	0.012 m	0.007 m	2.598

NYRH-56 (V1835)	**Az.**	99°48'53"	0.388 sec	0.045 sec	0.267
	ΔHt.	-21.563 m	0.024 m	0.022 m	1.564
	Ellip Dist.	9274.306 m	0.013 m	0.011 m	2.178
NYCI-56 (V1836)	**Az.**	71°32'23"	0.076 sec	-0.055 sec	-1.153
	ΔHt.	-15.656 m	0.024 m	-0.015 m	-1.332
	Ellip Dist.	52594.459 m	0.010 m	-0.008 m	-1.939
NYRH-51 (V1812)	**Az.**	256°13'22"	0.067 sec	0.015 sec	0.414
	ΔHt.	-0.172 m	0.035 m	0.046 m	1.385
	Ellip Dist.	43612.914 m	0.012 m	-0.009 m	-1.335
NYCI-71 (V1822)	**Az.**	85°35'33"	0.100 sec	-0.037 sec	-0.254
	ΔHt.	-16.747 m	0.037 m	0.078 m	1.334
	Ellip Dist.	45152.159 m	0.020 m	-0.047 m	-1.122
NYCI-52 (V1813)	**Az.**	17°53'38"	0.140 sec	-0.080 sec	-1.261
	ΔHt.	-14.554 m	0.043 m	-0.012 m	-0.564
	Ellip Dist.	22733.345 m	0.018 m	0.009 m	1.138
NYRH-52 (V1814)	**Az.**	276°09'03"	0.118 sec	-0.070 sec	-1.253
	ΔHt.	-20.462 m	0.043 m	0.013 m	0.574
	Ellip Dist.	33931.755 m	0.014 m	-0.007 m	-1.116
NYRH-73 (V1858)	**Az.**	222°55'48"	0.095 sec	0.037 sec	0.657
	ΔHt.	-23.190 m	0.049 m	0.029 m	0.778
	Ellip Dist.	36106.973 m	0.028 m	-0.023 m	-1.143
NYCI-72 (V1824)	**Az.**	78°52'44"	0.119 sec	0.019 sec	0.610
	ΔHt.	-8.450 m	0.024 m	0.006 m	1.107
	Ellip Dist.	25483.221 m	0.012 m	0.003 m	1.089

NYRH-71 (V1821)	**Az.**	164°06'23"	0.253 sec	-0.068 sec	-0.969
	ΔHt.	-22.654 m	0.037 m	-0.009 m	-0.866
	Ellip Dist.	15323.568 m	0.020 m	-0.005 m	-1.045
NYRH-55 (V1833)	**Az.**	253°39'55"	3.109 sec	-0.139 sec	-0.204
	ΔHt.	-7.435 m	0.014 m	-0.002 m	-0.730
	Ellip Dist.	616.515 m	0.008 m	0.002 m	0.953
NYCI-51 (V1811)	**Az.**	348°21'11"	0.317 sec	-0.090 sec	-0.664
	ΔHt.	5.735 m	0.035 m	-0.010 m	-0.948
	Ellip Dist.	7723.473 m	0.014 m	0.002 m	0.321
NYRH-53 (V1815)	**Az.**	283°02'40"	0.161 sec	-0.087 sec	-0.924
	ΔHt.	-12.394 m	0.028 m	0.006 m	0.310
	Ellip Dist.	20827.632 m	0.014 m	0.000 m	0.012
NYCI-55 (V1834)	**Az.**	65°50'36"	0.058 sec	-0.015 sec	-0.365
	ΔHt.	-1.528 m	0.014 m	0.012 m	0.708
	Ellip Dist.	44003.695 m	0.010 m	0.005 m	0.892
NYRH-53 (V1816)	**Az.**	283°02'40"	0.161 sec	0.075 sec	0.888
	ΔHt.	-12.394 m	0.028 m	0.002 m	0.171
	Ellip Dist.	20827.632 m	0.014 m	-0.001 m	-0.181
NYRH-74 (V1826)	**Az.**	242°22'59"	0.093 sec	0.313 sec	0.864
	ΔHt.	-20.315 m	0.024 m	0.051 m	0.791
	Ellip Dist.	41917.666 m	0.012 m	-0.027 m	-0.674
NYCI-54 (V1819)	**Az.**	54°07'35"	0.124 sec	-0.016 sec	-0.144
	ΔHt.	31.584 m	0.044 m	0.041 m	0.516
	Ellip Dist.	37892.536 m	0.018 m	-0.021 m	-0.849

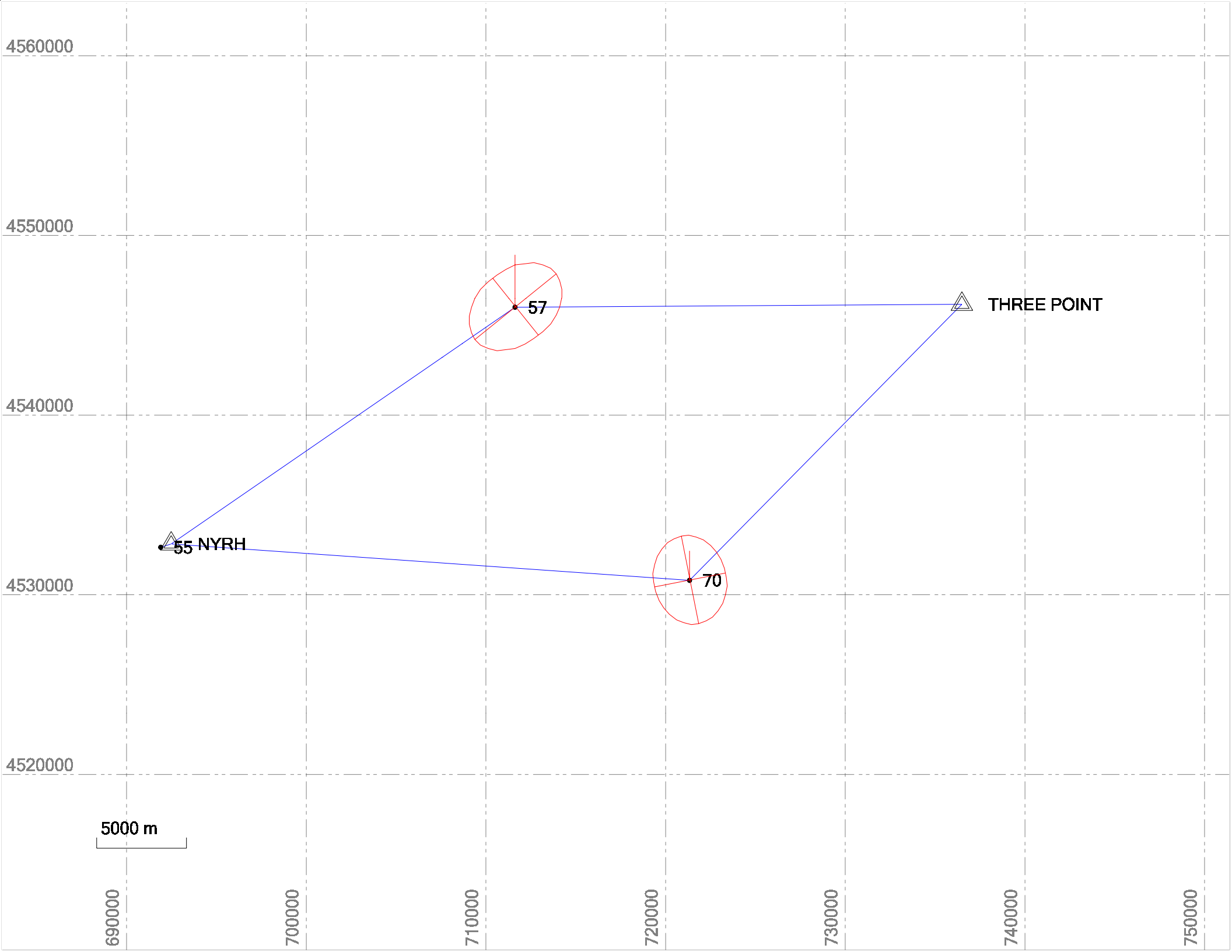
NYRH-72 (V1823)	**Az.**	230°10'41"	0.135 sec	0.052 sec	0.581
	ΔHt.	-14.357 m	0.024 m	-0.022 m	-0.792
	Ellip Dist.	20583.943 m	0.017 m	0.007 m	0.414
NYCI-73 (V1857)	**Az.**	117°14'17"	0.316 sec	0.090 sec	0.727
	ΔHt.	-17.283 m	0.049 m	0.001 m	0.037
	Ellip Dist.	18326.807 m	0.014 m	-0.001 m	-0.090
NYRH-54 (V1818)	**Az.**	292°08'52"	0.357 sec	0.028 sec	0.341
	ΔHt.	25.677 m	0.044 m	0.001 m	0.133
	Ellip Dist.	10811.548 m	0.020 m	-0.003 m	-0.570

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
51	NYCI	**Az.**	168°20'28"	0.322 sec	1 : 552226	1 : 549264
		ΔHt.	-5.735 m	0.035 m		
		ΔElev.	-5.465 m	0.035 m		
		Ellip Dist.	7723.475 m	0.014 m		
51	NYRH	**Az.**	75°53'39"	0.065 sec	1 : 3568220	1 : 3590923
		ΔHt.	0.172 m	0.035 m		
		ΔElev.	0.622 m	0.035 m		
		Ellip Dist.	43612.925 m	0.012 m		
52	NYCI	**Az.**	197°56'53"	0.139 sec	1 : 1274079	1 : 1282782
		ΔHt.	14.554 m	0.043 m		
		ΔElev.	15.091 m	0.043 m		
		Ellip Dist.	22733.351 m	0.018 m		
52	NYRH	**Az.**	95°53'18"	0.115 sec	1 : 2446449	1 : 2421966
		ΔHt.	20.461 m	0.043 m		
		ΔElev.	21.178 m	0.043 m		
		Ellip Dist.	33931.764 m	0.014 m		

53	NYRH	**Az.**	102°53'12"	0.170 sec	1 : 1475568	1 : 1465149
		ΔHt.	12.394 m	0.028 m		
		ΔElev.	12.927 m	0.028 m		
		Ellip Dist.	20827.638 m	0.014 m		
54	NYCI	**Az.**	234°21'54"	0.115 sec	1 : 2254311	1 : 2258741
		ΔHt.	-31.584 m	0.044 m		
		ΔElev.	-31.455 m	0.044 m		
		Ellip Dist.	37892.546 m	0.017 m		
54	NYRH	**Az.**	112°04'11"	0.359 sec	1 : 556679	1 : 553397
		ΔHt.	-25.677 m	0.044 m		
		ΔElev.	-25.368 m	0.044 m		
		Ellip Dist.	10811.550 m	0.019 m		
56	NYCI	**Az.**	251°55'37"	0.075 sec	1 : 4391097	1 : 4403652
		ΔHt.	15.656 m	0.024 m		
		ΔElev.	15.300 m	0.024 m		
		Ellip Dist.	52594.473 m	0.012 m		
56	NYRH	**Az.**	279°53'09"	0.407 sec	1 : 695643	1 : 686611
		ΔHt.	21.563 m	0.024 m		
		ΔElev.	21.386 m	0.024 m		
		Ellip Dist.	9274.309 m	0.013 m		
71	NYCI	**Az.**	265°56'27"	0.092 sec	1 : 2336266	1 : 2335927
		ΔHt.	16.747 m	0.037 m		
		ΔElev.	16.099 m	0.037 m		
		Ellip Dist.	45152.171 m	0.019 m		
71	NYRH	**Az.**	344°08'20"	0.261 sec	1 : 759380	1 : 759165
		ΔHt.	22.654 m	0.037 m		
		ΔElev.	22.186 m	0.037 m		
		Ellip Dist.	15323.572 m	0.020 m		
72	NYCI	**Az.**	259°04'21"	0.119 sec	1 : 2020891	1 : 2045009
		ΔHt.	8.450 m	0.024 m		
		ΔElev.	8.125 m	0.024 m		
		Ellip Dist.	25483.228 m	0.013 m		

72	NYRH	**Az.**	50°03'20"	0.116 sec	1 : 1331612	1 : 1340625
		ΔHt.	14.357 m	0.024 m		
		ΔElev.	14.211 m	0.024 m		
		Ellip Dist.	20583.949 m	0.015 m		
73	NYCI	**Az.**	297°21'50"	0.316 sec	1 : 1266270	1 : 1262478
		ΔHt.	17.283 m	0.049 m		
		ΔElev.	16.668 m	0.049 m		
		Ellip Dist.	18326.811 m	0.014 m		
73	NYRH	**Az.**	42°44'23"	0.091 sec	1 : 1323430	1 : 1330621
		ΔHt.	23.190 m	0.049 m		
		ΔElev.	22.755 m	0.049 m		
		Ellip Dist.	36106.983 m	0.027 m		
74	NYCI	**Az.**	291°24'45"	0.739 sec	1 : 332429	1 : 328532
		ΔHt.	14.408 m	0.024 m		
		ΔElev.	14.297 m	0.024 m		
		Ellip Dist.	3980.948 m	0.012 m		
74	NYRH	**Az.**	62°05'44"	0.079 sec	1 : 4425070	1 : 4468953
		ΔHt.	20.315 m	0.024 m		
		ΔElev.	20.384 m	0.024 m		
		Ellip Dist.	41917.677 m	0.009 m		
NYCI	55	**Az.**	65°50'36"	0.042 sec	1 : 5450709	1 : 5483389
		ΔHt.	-1.528 m	0.014 m		
		ΔElev.	-1.353 m	0.014 m		
		Ellip Dist.	44003.706 m	0.008 m		
NYRH	55	**Az.**	253°39'55"	3.086 sec	1 : 79412	1 : 80054
		ΔHt.	-7.435 m	0.014 m		
		ΔElev.	-7.440 m	0.014 m		
		Ellip Dist.	616.515 m	0.008 m		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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_57 & 70.vce	Name:	UTM
Size:	255 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:44:03 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	0.68
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	4

RTK Vector Statistics

Reference Factor:	0.68
Redundancy Number:	4.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
THREE POINT	?	?	-0.001	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
NYRH	Local	Fixed	Fixed	Fixed	
THREE POINT	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
57	711616.444	0.010	4545939.505	0.010	12.976	0.026	
70	721334.105	0.007	4530744.417	0.009	6.817	0.013	
NYRH	692482.208	?	4532765.093	?	23.274	?	LLh
THREE POINT	736486.894	?	4546105.334	?	2.195	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
57	N41°02'13.90286"	W72°28'56.98334"	-18.174	0.026	
70	N40°53'52.35240"	W72°22'20.76969"	-24.707	0.013	
NYRH	N40°55'24.08893"	W72°42'50.56092"	-7.945	?	LLh
THREE POINT	N41°01'54.65194"	W72°11'12.77587"	-29.087	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
57	1450164.074	0.010	-4594437.945	0.023	4165527.860	0.014	0.029	
70	1462057.183	0.008	-4601306.671	0.011	4153841.081	0.010	0.017	
NYRH	1434050.562	?	-4608184.483	?	4155990.679	?	?	LLh
THREE POINT	1473966.068	?	-4587258.165	?	4165072.739	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
57	0.014	0.010	51°
70	0.011	0.009	168°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: 0.078 sec **(95%)** 0.051 sec

Scale Factor: 0.99999959 **(95%)** 0.00000024

Observation ID		Observation	A-posteriori Error	Residual	Standardized

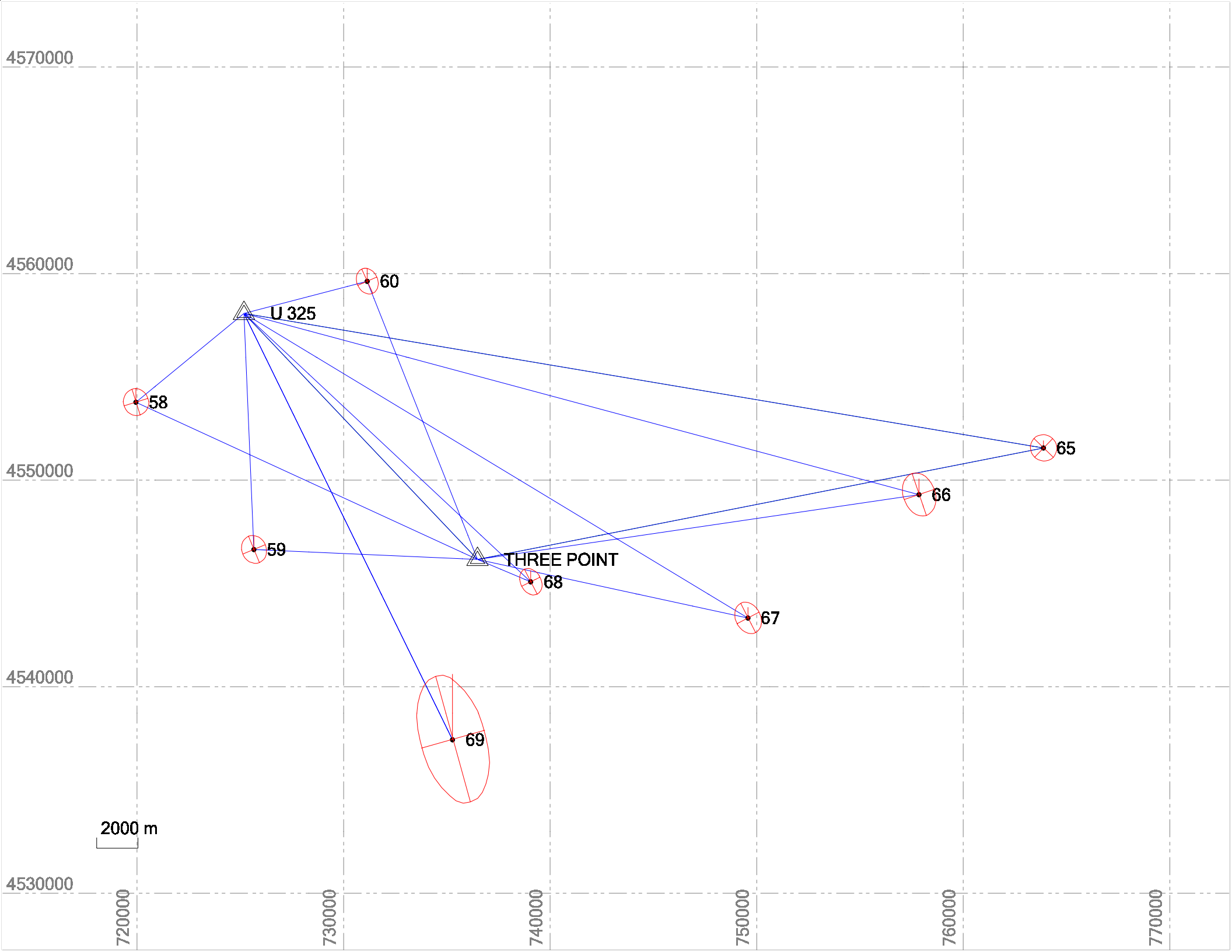
					Residual
NYRH-70 (V1630)	**Az.**	95°30'14"	0.078 sec	0.056 sec	1.936
	ΔHt.	-16.762 m	0.013 m	-0.001 m	-0.171
	Ellip Dist.	28918.887 m	0.009 m	0.001 m	0.613
THREE POINT-70 (V1631)	**Az.**	226°27'16"	0.084 sec	0.033 sec	1.552
	ΔHt.	4.380 m	0.013 m	0.001 m	0.212
	Ellip Dist.	21571.669 m	0.009 m	-0.003 m	-1.704
NYRH-57 (V1633)	**Az.**	56°57'05"	0.093 sec	-0.038 sec	-1.246
	ΔHt.	-10.229 m	0.026 m	0.004 m	0.257
	Ellip Dist.	23228.722 m	0.013 m	0.004 m	0.881
THREE POINT-57 (V1632)	**Az.**	271°27'56"	0.086 sec	-0.033 sec	-1.135
	ΔHt.	10.913 m	0.025 m	-0.002 m	-0.145
	Ellip Dist.	24865.580 m	0.011 m	0.001 m	0.311

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
57	NYRH	**Az.**	237°06'11"	0.073 sec	1 : 2037806	1 : 2039519
		ΔHt.	10.229 m	0.026 m		
		ΔElev.	10.299 m	0.026 m		
		Ellip Dist.	23228.713 m	0.011 m		
57	THREE POINT	**Az.**	91°16'17"	0.079 sec	1 : 2419766	1 : 2440052
		ΔHt.	-10.913 m	0.026 m		
		ΔElev.	-10.780 m	0.026 m		
		Ellip Dist.	24865.569 m	0.010 m		

70	NYRH	**Az.**	275°43'39"	0.061 sec	1 : 3983286	1 : 3967746
		ΔHt.	16.762 m	0.013 m		
		ΔElev.	16.458 m	0.013 m		
		Ellip Dist.	28918.875 m	0.007 m		
70	THREE POINT	**Az.**	46°19'58"	0.079 sec	1 : 2819492	1 : 2836172
		ΔHt.	-4.380 m	0.013 m		
		ΔElev.	-4.621 m	0.013 m		
		Ellip Dist.	21571.661 m	0.008 m		

Date: 12/5/2011 5:11:08 PM	Project: P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_57 & 70.vce	Trimble Business Center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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_58-60 & 65-69.vce	Name:	UTM
Size:	365 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:45:31 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	1.00
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	25

Post Processed Vector Statistics

Reference Factor:	1.06
Redundancy Number:	4.65
A Priori Scalar:	1.00

RTK Vector Statistics

Reference Factor:	0.98
Redundancy Number:	20.35
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
THREE POINT	?	?	-0.001	?
U 325	?	?	0.008	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
THREE POINT	Local	Fixed	Fixed	Fixed	
U 325	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
58	719946.168	0.010	4553719.382	0.011	5.043	0.024	
59	725659.172	0.010	4546590.324	0.011	1.472	0.022	

60	731141.465	0.008	4559575.527	0.010	1.922	0.021	
65	763886.482	0.011	4551499.904	0.011	12.898	0.013	
66	757854.720	0.012	4549240.814	0.016	4.924	0.025	
67	749576.195	0.010	4543272.118	0.012	1.745	0.017	
68	739061.890	0.008	4545023.368	0.010	2.302	0.018	
69	735276.308	0.025	4537382.042	0.043	10.962	0.095	
THREE POINT	736486.894	?	4546105.334	?	2.195	?	LLh
U 325	725176.938	?	4558021.634	?	2.226	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
58	N41°06'17.99162"	W72°22'50.58647"	-25.978	0.024	
59	N41°02'21.41773"	W72°18'55.32142"	-29.755	0.022	
60	N41°09'16.49588"	W72°14'43.20818"	-29.018	0.021	
65	N41°04'19.05070"	W71°51'32.70941"	-18.078	0.013	
66	N41°03'12.85668"	W71°55'54.21017"	-26.141	0.025	
67	N41°00'08.84199"	W72°01'57.06662"	-29.536	0.017	
68	N41°01'16.90251"	W72°09'24.14297"	-29.008	0.018	
69	N40°57'13.35761"	W72°12'16.50984"	-20.479	0.095	
THREE POINT	N41°01'54.65194"	W72°11'12.77587"	-29.087	?	LLh
U 325	N41°08'32.19916"	W72°19'00.88922"	-28.720	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
58	1456823.873	0.012	-4587134.138	0.020	4171199.405	0.016	0.028	
59	1463510.691	0.011	-4590035.029	0.019	4165695.113	0.015	0.026	
60	1466553.401	0.010	-4580227.281	0.016	4175345.136	0.017	0.025	
65	1499277.806	0.011	-4575978.252	0.014	4168439.159	0.010	0.020	
66	1493889.351	0.016	-4579144.773	0.023	4166894.223	0.015	0.032	
67	1486980.185	0.012	-4585307.787	0.015	4162609.673	0.013	0.023	
68	1476616.061	0.010	-4587208.920	0.014	4164194.281	0.015	0.022	
69	1474290.166	0.019	-4593139.299	0.063	4158528.744	0.084	0.107	
THREE POINT	1473966.068	?	-4587258.165	?	4165072.739	?	?	LLh
U 325	1461103.499	?	-4582912.739	?	4174316.341	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
58	0.013	0.013	162°
59	0.014	0.012	157°
60	0.013	0.010	156°
65	0.014	0.013	134°
66	0.020	0.015	161°
67	0.016	0.012	153°
68	0.013	0.010	153°
69	0.055	0.028	164°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.073 sec **(95%)** 0.053 sec

Scale Factor: 1.00000021 **(95%)** 0.00000028

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
THREE POINT --> U 325 (PV2)	**Az.**	318°20'42"	0.053 sec	-0.021 sec	-0.751
	ΔHt.	0.367 m	0.000 m	-0.001 m	-0.170
	Ellip Dist.	16424.831 m	0.005 m	0.007 m	3.027
U 325-58 (V1635)	**Az.**	232°19'42"	0.319 sec	0.360 sec	2.496
	ΔHt.	2.742 m	0.024 m	-0.003 m	-0.313
	Ellip Dist.	6771.342 m	0.010 m	0.001 m	0.251
THREE POINT-58 (V1634)	**Az.**	296°33'59"	0.118 sec	-0.058 sec	-0.836
	ΔHt.	3.109 m	0.024 m	0.003 m	0.180
	Ellip Dist.	18204.648 m	0.010 m	-0.013 m	-2.366

THREE POINT-68 (V1643)	**Az.**	114°38'19"	0.644 sec	0.165 sec	0.731
	ΔHt.	0.079 m	0.018 m	0.002 m	0.236
	Ellip Dist.	2792.247 m	0.009 m	0.007 m	2.102
U 325-68 (V1642)	**Az.**	134°52'29"	0.089 sec	0.002 sec	0.037
	ΔHt.	-0.288 m	0.018 m	-0.006 m	-0.426
	Ellip Dist.	19014.631 m	0.010 m	-0.015 m	-2.064
THREE POINT-67 (V1641)	**Az.**	104°03'38"	0.153 sec	0.134 sec	1.523
	ΔHt.	-0.449 m	0.017 m	-0.003 m	-0.302
	Ellip Dist.	13388.037 m	0.009 m	0.005 m	1.039
U 325-69 (V1644)	**Az.**	155°41'21"	0.199 sec	0.187 sec	1.202
	ΔHt.	8.241 m	0.095 m	-0.049 m	-0.612
	Ellip Dist.	22972.228 m	0.043 m	0.048 m	1.354
U 325-67 (V1640)	**Az.**	122°55'01"	0.063 sec	-0.032 sec	-1.282
	ΔHt.	-0.816 m	0.017 m	0.001 m	0.112
	Ellip Dist.	28502.519 m	0.010 m	-0.006 m	-1.295
U 325-66 (V1638)	**Az.**	106°48'19"	0.083 sec	0.062 sec	1.151
	ΔHt.	2.579 m	0.025 m	0.017 m	1.168
	Ellip Dist.	33826.166 m	0.011 m	-0.003 m	-0.413
THREE POINT-66 (V1639)	**Az.**	83°30'01"	0.139 sec	-0.038 sec	-0.683
	ΔHt.	2.946 m	0.025 m	-0.012 m	-1.035
	Ellip Dist.	21589.035 m	0.010 m	0.005 m	1.103

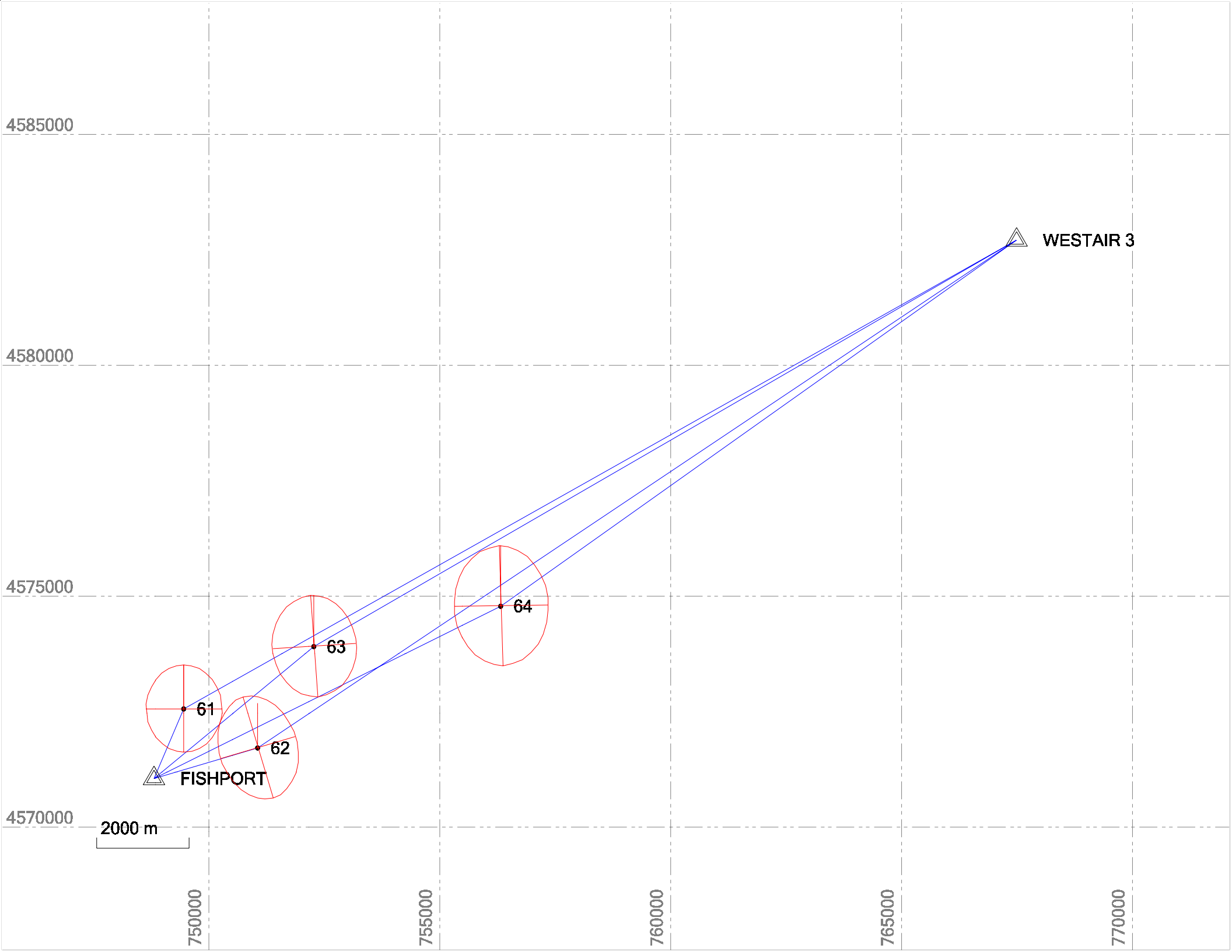
THREE POINT --> 65 (PV3)	**Az.**	80°42'37"	0.050 sec	0.008 sec	0.352
	ΔHt.	11.009 m	0.013 m	0.005 m	0.730
	Ellip Dist.	27915.226 m	0.006 m	-0.001 m	-0.203
U 325 --> 65 (PV1)	**Az.**	101°19'42"	0.035 sec	-0.005 sec	-0.366
	ΔHt.	10.642 m	0.013 m	-0.005 m	-0.730
	Ellip Dist.	39241.832 m	0.006 m	0.000 m	-0.101
U 325-60 (V1636)	**Az.**	77°09'50"	0.336 sec	-0.019 sec	-0.146
	ΔHt.	-0.298 m	0.021 m	-0.007 m	-0.627
	Ellip Dist.	6162.131 m	0.008 m	0.000 m	-0.102
THREE POINT-60 (V1637)	**Az.**	340°12'18"	0.116 sec	-0.002 sec	-0.037
	ΔHt.	0.069 m	0.021 m	0.007 m	0.607
	Ellip Dist.	14488.099 m	0.010 m	0.000 m	-0.081
U 325-69 (V1645)	**Az.**	155°41'21"	0.199 sec	-0.072 sec	-0.594
	ΔHt.	8.241 m	0.095 m	0.015 m	0.514
	Ellip Dist.	22972.228 m	0.043 m	-0.013 m	-0.538
U 325-59 (V1646)	**Az.**	179°20'55"	0.176 sec	0.040 sec	0.427
	ΔHt.	-1.035 m	0.022 m	-0.004 m	-0.326
	Ellip Dist.	11438.896 m	0.011 m	0.002 m	0.321
THREE POINT-59 (V1647)	**Az.**	274°24'44"	0.205 sec	0.037 sec	0.366
	ΔHt.	-0.668 m	0.022 m	0.002 m	0.205
	Ellip Dist.	10835.787 m	0.010 m	-0.001 m	-0.311

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
58	THREE POINT	**Az.**	116°26'21"	0.118 sec	1 : 1753120	1 : 1749788
		ΔHt.	-3.109 m	0.024 m		
		ΔElev.	-2.848 m	0.024 m		
		Ellip Dist.	18204.652 m	0.010 m		
58	U 325	**Az.**	52°17'11"	0.324 sec	1 : 666861	1 : 667681
		ΔHt.	-2.742 m	0.024 m		
		ΔElev.	-2.817 m	0.024 m		
		Ellip Dist.	6771.344 m	0.010 m		
59	THREE POINT	**Az.**	94°19'41"	0.205 sec	1 : 1110329	1 : 1105729
		ΔHt.	0.668 m	0.022 m		
		ΔElev.	0.724 m	0.022 m		
		Ellip Dist.	10835.789 m	0.010 m		
59	U 325	**Az.**	359°20'59"	0.174 sec	1 : 1053086	1 : 1056164
		ΔHt.	1.035 m	0.022 m		
		ΔElev.	0.755 m	0.022 m		
		Ellip Dist.	11438.899 m	0.011 m		
60	THREE POINT	**Az.**	160°10'00"	0.114 sec	1 : 1434034	1 : 1435139
		ΔHt.	-0.069 m	0.021 m		
		ΔElev.	0.273 m	0.021 m		
		Ellip Dist.	14488.102 m	0.010 m		
60	U 325	**Az.**	257°12'40"	0.336 sec	1 : 764717	1 : 762112
		ΔHt.	0.298 m	0.021 m		
		ΔElev.	0.304 m	0.021 m		
		Ellip Dist.	6162.133 m	0.008 m		

66	THREE POINT	**Az.**	263°40'04"	0.153 sec	1 : 1812505	1 : 1801314
		ΔHt.	-2.946 m	0.025 m		
		ΔElev.	-2.729 m	0.025 m		
		Ellip Dist.	21589.039 m	0.012 m		
66	U 325	**Az.**	287°03'30"	0.091 sec	1 : 2546764	1 : 2517779
		ΔHt.	-2.579 m	0.025 m		
		ΔElev.	-2.698 m	0.025 m		
		Ellip Dist.	33826.173 m	0.013 m		
67	THREE POINT	**Az.**	284°09'43"	0.175 sec	1 : 1241651	1 : 1229985
		ΔHt.	0.449 m	0.017 m		
		ΔElev.	0.450 m	0.017 m		
		Ellip Dist.	13388.040 m	0.011 m		
67	U 325	**Az.**	303°06'13"	0.075 sec	1 : 2430745	1 : 2413565
		ΔHt.	0.816 m	0.017 m		
		ΔElev.	0.481 m	0.017 m		
		Ellip Dist.	28502.525 m	0.012 m		
68	THREE POINT	**Az.**	294°39'31"	0.662 sec	1 : 295371	1 : 292761
		ΔHt.	-0.079 m	0.018 m		
		ΔElev.	-0.107 m	0.018 m		
		Ellip Dist.	2792.247 m	0.009 m		
68	U 325	**Az.**	314°58'48"	0.088 sec	1 : 1861200	1 : 1852430
		ΔHt.	0.288 m	0.018 m		
		ΔElev.	-0.076 m	0.018 m		
		Ellip Dist.	19014.636 m	0.010 m		

69	U 325	**Az.**	335°45'47"	0.208 sec	1 : 529028	1 : 527318
		ΔHt.	-8.241 m	0.095 m		
		ΔElev.	-8.735 m	0.095 m		
		Ellip Dist.	22972.233 m	0.043 m		
THREE POINT	65	**Az.**	80°42'37"	0.080 sec	1 : 2594404	1 : 2591831
		ΔHt.	11.009 m	0.013 m		
		ΔElev.	10.703 m	0.013 m		
		Ellip Dist.	27915.232 m	0.011 m		
THREE POINT	U 325	**Az.**	318°20'42"	0.000 sec	1 : 0	1 : 0
		ΔHt.	0.367 m	0.000 m		
		ΔElev.	0.031 m	0.000 m		
		Ellip Dist.	16424.834 m	0.000 m		
U 325	65	**Az.**	101°19'42"	0.057 sec	1 : 3609692	1 : 3606220
		ΔHt.	10.642 m	0.013 m		
		ΔElev.	10.672 m	0.013 m		
		Ellip Dist.	39241.840 m	0.011 m		


4585000
4580000
4575000
4570000
750000
755000
760000
765000
770000
WESTAIR 3
FISHPORT
61
62
63
64
2000 m

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Norcross, GA 30093

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Fax: 770-279-9568
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Project Information		Coordinate System	
Name:	P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_61 thru 64.vce	Name:	UTM
Size:	205 KB	Datum:	NAD 1983 (Conus)
Modified:	12/5/2011 12:46:07 PM (UTC:-5)	Zone:	18 North (75W)
Time zone:	Eastern Standard Time	Geoid:	GEOID09 (Conus)
Reference number:	7525-052	Vertical datum:	NAVD 88
Description:	TO #011 - Coastal NY LiDAR		

Network Adjustment Report

Adjustment Settings

Set-Up Errors

GNSS

Error in Height of Antenna: 0.002 m

Centering Error: 0.002 m

Covariance Display

Horizontal:

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Three-Dimensional

Propagated Linear Error [E]: U.S.

Constant Term [C]: 0.000 m

Scale on Linear Error [S]: 1.960

Adjustment Statistics

Number of Iterations for Successful Adjustment:	2
Network Reference Factor:	0.99
Chi Square Test (95%):	Passed
Precision Confidence Level:	95%
Degrees of Freedom:	10

RTK Vector Statistics

Reference Factor:	0.99
Redundancy Number:	10.00
A Priori Scalar:	1.00

Control Coordinate Comparisons

Values shown are control coordinates minus adjusted coordinates.

Point ID	ΔEasting (Meter)	ΔNorthing (Meter)	ΔElevation (Meter)	ΔHeight (Meter)
WESTAIR 3	?	?	0.014	?

Control Point Constraints

Point ID	Type	North σ (Meter)	East σ (Meter)	Height σ (Meter)	Elevation σ (Meter)
FISHPORT	Local	Fixed	Fixed	Fixed	
WESTAIR 3	Local	Fixed	Fixed	Fixed	
Fixed = 0.000001(Meter)					

Adjusted Grid Coordinates

Point ID	Easting (Meter)	Easting Error (Meter)	Northing (Meter)	Northing Error (Meter)	Elevation (Meter)	Elevation Error (Meter)	Constraint
61	749454.042	0.007	4572531.735	0.008	1.885	0.013	
62	751055.145	0.007	4571686.861	0.009	4.342	0.013	
63	752271.503	0.008	4573881.019	0.009	16.727	0.015	
64	756314.940	0.008	4574757.014	0.011	2.858	0.017	
FISHPORT	748808.899	?	4571025.237	?	1.535	?	LLh
WESTAIR 3	767487.518	?	4582685.009	?	21.713	?	LLh

Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
61	N41°15'56.55486"	W72°01'19.48416"	-28.907	0.013	
62	N41°15'27.40994"	W72°00'12.01708"	-26.465	0.013	
63	N41°16'37.10086"	W71°59'16.55056"	-14.049	0.015	
64	N41°17'00.88551"	W71°56'21.65979"	-27.902	0.017	
FISHPORT	N41°15'08.48351"	W72°01'49.38610"	-29.278	?	LLh
WESTAIR 3	N41°21'04.53260"	W71°48'09.52897"	-8.882	?	LLh

Adjusted ECEF Coordinates

Point ID	X (Meter)	X Error (Meter)	Y (Meter)	Y Error (Meter)	Z (Meter)	Z Error (Meter)	3D Error (Meter)	Constraint
61	1481879.796	0.008	-4566744.187	0.011	4184629.725	0.010	0.017	
62	1483557.221	0.008	-4566824.931	0.011	4183955.470	0.011	0.017	
63	1484349.631	0.008	-4565086.153	0.013	4185579.642	0.011	0.019	
64	1488066.502	0.009	-4563355.809	0.015	4186121.909	0.013	0.022	
FISHPORT	1481519.376	?	-4567888.967	?	4183514.671	?	?	LLh
WESTAIR 3	1497404.728	?	-4555091.573	?	4191779.831	?	?	LLh

Error Ellipse Components

Point ID	Semi-major axis (Meter)	Semi-minor axis (Meter)	Azimuth
61	0.010	0.009	180°
62	0.012	0.009	163°
63	0.012	0.010	176°
64	0.013	0.011	178°

Adjusted GPS Observations

Transformation Parameters

Azimuth Rotation: -0.762 sec **(95%)** 0.093 sec

Scale Factor: 0.99999809 **(95%)** 0.00000036

Observation ID		Observation	A-posteriori Error	Residual	Standardized Residual
WESTAIR 3-61 (V959)	**Az.**	242°43'52"	0.112 sec	-0.046 sec	-0.636
	ΔHt.	-20.025 m	0.013 m	-0.004 m	-0.357
	Ellip Dist.	20686.592 m	0.009 m	-0.010 m	-2.323
FISHPORT-61 (V963)	**Az.**	25°08'30"	0.928 sec	-0.502 sec	-2.237
	ΔHt.	0.371 m	0.013 m	0.000 m	0.067
	Ellip Dist.	1638.232 m	0.008 m	-0.004 m	-1.726
WESTAIR 3-63 (V957)	**Az.**	242°03'29"	0.129 sec	-0.061 sec	-0.970
	ΔHt.	-5.167 m	0.015 m	0.010 m	0.894
	Ellip Dist.	17571.909 m	0.009 m	0.006 m	1.455
FISHPORT-63 (V962)	**Az.**	52°26'43"	0.429 sec	-0.062 sec	-0.481
	ΔHt.	15.229 m	0.015 m	-0.003 m	-0.658
	Ellip Dist.	4486.669 m	0.009 m	0.004 m	1.318
FISHPORT-64 (V961)	**Az.**	65°31'28"	0.284 sec	0.115 sec	0.995
	ΔHt.	1.376 m	0.017 m	-0.004 m	-0.570
	Ellip Dist.	8379.319 m	0.009 m	0.005 m	1.294
WESTAIR 3-64 (V956)	**Az.**	236°45'10"	0.167 sec	0.054 sec	0.818
	ΔHt.	-19.020 m	0.017 m	0.006 m	0.569
	Ellip Dist.	13693.562 m	0.010 m	0.005 m	1.003
FISHPORT-62 (V960)	**Az.**	75°32'49"	0.843 sec	0.089 sec	0.406
	ΔHt.	2.813 m	0.013 m	-0.003 m	-0.939
	Ellip Dist.	2340.801 m	0.007 m	0.001 m	0.407

WESTAIR 3-62 (V958)	**Az.**	238°19'02"	0.121 sec	0.013 sec	0.175
	ΔHt.	-17.583 m	0.013 m	0.012 m	0.844
	Ellip Dist.	19764.854 m	0.009 m	0.001 m	0.270

Covariance Terms

From Point	To Point		Components	A-posteriori Error	Horiz. Precision (Ratio)	3D Precision (Ratio)
61	FISHPORT	**Az.**	205°08'51"	0.911 sec	1 : 206381	1 : 207057
		ΔHt.	-0.371 m	0.013 m		
		ΔElev.	-0.349 m	0.013 m		
		Ellip Dist.	1638.229 m	0.008 m		
61	WESTAIR 3	**Az.**	62°35'11"	0.078 sec	1 : 2827291	1 : 2839389
		ΔHt.	20.025 m	0.013 m		
		ΔElev.	19.829 m	0.013 m		
		Ellip Dist.	20686.553 m	0.007 m		
62	FISHPORT	**Az.**	255°33'54"	0.823 sec	1 : 338307	1 : 338157
		ΔHt.	-2.813 m	0.013 m		
		ΔElev.	-2.807 m	0.013 m		
		Ellip Dist.	2340.796 m	0.007 m		
62	WESTAIR 3	**Az.**	58°11'05"	0.096 sec	1 : 2759373	1 : 2779429
		ΔHt.	17.583 m	0.013 m		
		ΔElev.	17.371 m	0.013 m		
		Ellip Dist.	19764.816 m	0.007 m		
63	FISHPORT	**Az.**	232°28'25"	0.402 sec	1 : 546525	1 : 550454
		ΔHt.	-15.229 m	0.015 m		
		ΔElev.	-15.191 m	0.015 m		
		Ellip Dist.	4486.660 m	0.008 m		

63	WESTAIR 3	**Az.**	61°56'10"	0.105 sec	1 : 2205389	1 : 2218064
		ΔHt.	5.167 m	0.015 m		
		ΔElev.	4.987 m	0.015 m		
		Ellip Dist.	17571.876 m	0.008 m		
64	FISHPORT	**Az.**	245°35'05"	0.255 sec	1 : 942269	1 : 948858
		ΔHt.	-1.376 m	0.017 m		
		ΔElev.	-1.323 m	0.017 m		
		Ellip Dist.	8379.303 m	0.009 m		
64	WESTAIR 3	**Az.**	56°39'46"	0.152 sec	1 : 1488377	1 : 1500862
		ΔHt.	19.020 m	0.017 m		
		ΔElev.	18.856 m	0.017 m		
		Ellip Dist.	13693.536 m	0.009 m		

Date: 12/5/2011 5:21:22 PM	Project: P:\7525-052_TO#11_Coastal_NY_LiDAR\Survey\Trimble Business Center\Coastal NY LiDAR_61 thru 64.vce	Trimble Business Center

Section 4 - Field Data Log Sheets

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Albany
Quad	Troy North

Point ID	1

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4735184.555	Elevation (m)	Ellipsoid (m)
Easting (m)	606458.411	11.702	-19.618

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	18:56:37
End Time (UTC)	18:59:40

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYST
Date	11/12/11
Start Time (UTC)	19:03:03
End Time (UTC)	19:06:15

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Troy South

Point ID	2

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4732743.561	Elevation (m)	Ellipsoid (m)
Easting (m)	609741.076	121.794	90.518

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYST
Date	11/12/11
Start Time (UTC)	19:25:28
End Time (UTC)	19:28:30

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYST
Date	11/12/11
Start Time (UTC)	19:33:33
End Time (UTC)	19:36:34

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Troy South

Point ID	3

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4729979.714	Elevation (m)	Ellipsoid (m)
Easting (m)	606964.239	8.531	-22.792

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	20:07:21
End Time (UTC)	20:10:25

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYST
Date	11/12/11
Start Time (UTC)	20:12:31
End Time (UTC)	20:15:34

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Troy South

Point ID	4

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4728596.500	Elevation (m)	Ellipsoid (m)
Easting (m)	610014.021	99.788	68.517

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	20:33:16
End Time (UTC)	20:36:19

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYST
Date	11/12/11
Start Time (UTC)	20:42:45
End Time (UTC)	20:45:46

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Troy South

Point ID	5

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4720972.068	Elevation (m)	Ellipsoid (m)
Easting (m)	602709.736	4.521	-26.865

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	18:27:20
End Time (UTC)	18:30:22

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	18:32:05
End Time (UTC)	18:35:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Albany
Quad	Delmar

Point ID	6

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4715048.778	Elevation (m)	Ellipsoid (m)
Easting (m)	601236.006	12.105	-19.333

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	18:04:17
End Time (UTC)	18:07:51

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	18:10:31
End Time (UTC)	18:13:32

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	East Greenbush

Point ID	7

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4714518.223	Elevation (m)	Ellipsoid (m)
Easting (m)	603587.755	4.967	-26.461

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	21:18:59
End Time (UTC)	21:22:00

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	21:24:29
End Time (UTC)	21:27:32

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Ravena

Point ID	8

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4704601.734	Elevation (m)	Ellipsoid (m)
Easting (m)	600249.546	4.410	-27.079

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYAB
Date	11/08/11
Start Time (UTC)	17:44:34
End Time (UTC)	18:16:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/08/11
Start Time (UTC)	17:44:34
End Time (UTC)	18:16:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rensselaer
Quad	Ravena

Point ID	**8 ALT**

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4705885.753	Elevation (m)	Ellipsoid (m)
Easting (m)	600576.185	5.115	-26.370

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	21:45:38
End Time (UTC)	21:50:44

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	21:52:59
End Time (UTC)	21:56:27

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Greene
Quad	Ravena

Point ID	9

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4694870.621	Elevation (m)	Ellipsoid (m)
Easting (m)	598534.258	39.525	8.025

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	17:20:18
End Time (UTC)	17:23:20

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	17:25:04
End Time (UTC)	17:28:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Columbia
Quad	Ravena

Point ID	10

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4693716.166	Elevation (m)	Ellipsoid (m)
Easting (m)	601345.426	49.123	17.603

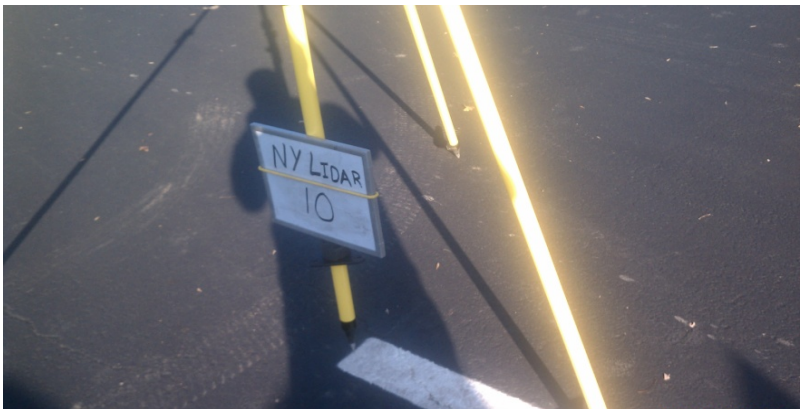
Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	20:01:20
End Time (UTC)	20:04:24

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	20:06:08
End Time (UTC)	20:12:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

PHOTOS:



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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Greene
Quad	Hudson North

Point ID	11

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4684589.286	Elevation (m)	Ellipsoid (m)
Easting (m)	599277.898	45.843	14.300

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/08/11
Start Time (UTC)	21:11:20
End Time (UTC)	21:12:13

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	16:51:14
End Time (UTC)	16:54:19

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Columbia
Quad	Stottville

Point ID	12

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4684171.524	Elevation (m)	Ellipsoid (m)
Easting (m)	603082.748	45.201	13.668

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	19:27:02
End Time (UTC)	19:31:03

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYAB
Date	11/12/11
Start Time (UTC)	19:35:43
End Time (UTC)	19:38:52

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Greene
Quad	Hudson North

Point ID	13

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4679033.352	Elevation (m)	Ellipsoid (m)
Easting (m)	597394.268	4.081	-27.473

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/08/11
Start Time (UTC)	20:59:04
End Time (UTC)	20:59:37

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	16:25:32
End Time (UTC)	16:28:51

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Columbia
Quad	Hudson South

Point ID	14

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4677325.460	Elevation (m)	Ellipsoid (m)
Easting (m)	602038.335	51.552	20.019

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	18:18:30
End Time (UTC)	18:22:11

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	18:25:42
End Time (UTC)	18:28:45

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Greene
Quad	Cementon

Point ID	15

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4672603.127	Elevation (m)	Ellipsoid (m)
Easting (m)	591024.693	46.001	14.493

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	15:46:17
End Time (UTC)	15:49:20

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	15:52:32
End Time (UTC)	15:54:34

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Columbia
Quad	Hudson South

Point ID	16

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4672735.467	Elevation (m)	Ellipsoid (m)
Easting (m)	597386.958	68.377	36.818

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	17:55:03
End Time (UTC)	18:00:04

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	18:01:15
End Time (UTC)	18:04:17

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Saugerties

Point ID	17

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4663361.837	Elevation (m)	Ellipsoid (m)
Easting (m)	586286.654	46.960	15.504

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	14:48:18
End Time (UTC)	14:51:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	14:53:06
End Time (UTC)	14:56:06

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Columbia
Quad	Saugerties

Point ID	18

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4663649.521	Elevation (m)	Ellipsoid (m)
Easting (m)	591676.254	62.690	31.127

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	17:35:15
End Time (UTC)	17:38:17

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	17:40:05
End Time (UTC)	17:43:06

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Saugerties

Point ID	19

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4654493.325	Elevation (m)	Ellipsoid (m)
Easting (m)	583621.225	57.623	26.116

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	14:26:30
End Time (UTC)	14:29:33

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	14:31:09
End Time (UTC)	14:34:11

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Saugerties

Point ID	20

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4650396.895	Elevation (m)	Ellipsoid (m)
Easting (m)	589601.972	45.019	13.408

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	16:59:57
End Time (UTC)	17:02:59

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	17:13:37
End Time (UTC)	17:16:39

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Kingston West

Point ID	21

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4643929.546	Elevation (m)	Ellipsoid (m)
Easting (m)	580514.876	47.771	16.176

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	14:00:46
End Time (UTC)	14:03:48

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	14:05:28
End Time (UTC)	14:08:31

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Kingston East

Point ID	22

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4643734.017	Elevation (m)	Ellipsoid (m)
Easting (m)	592421.456	88.513	56.912

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/09/11
Start Time (UTC)	18:16:56
End Time (UTC)	18:17:56

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	16:00:42
End Time (UTC)	16:04:29

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Kingston East

Point ID	23

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4637819.111	Elevation (m)	Ellipsoid (m)
Easting (m)	590396.812	41.214	9.572

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	15:25:36
End Time (UTC)	15:28:38

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYHS
Date	11/12/11
Start Time (UTC)	15:33:21
End Time (UTC)	15:36:38

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Norcross, GA 30093
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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Hyde Park

Point ID	24

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4631559.754	Elevation (m)	Ellipsoid (m)
Easting (m)	585912.221	54.386	22.682

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/09/11
Start Time (UTC)	21:32:42
End Time (UTC)	21:33:32

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/11/11
Start Time (UTC)	17:38:28
End Time (UTC)	17:40:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Poughkeepsie

Point ID	25

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4621620.716	Elevation (m)	Ellipsoid (m)
Easting (m)	586174.944	93.905	62.208

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461067
RTK Base	NYKT
Date	11/11/11
Start Time (UTC)	17:05:45
End Time (UTC)	17:06:47

Operator	
Receiver Model	
Receiver S/N	
RTK Base	
Date	
Start Time (UTC)	
End Time (UTC)	

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
	Measured		Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Pleasant Valley

Point ID	26

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4622070.438	Elevation (m)	Ellipsoid (m)
Easting (m)	597679.857	61.355	29.909

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	14:51:24
End Time (UTC)	14:54:51

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/12/11
Start Time (UTC)	14:56:03
End Time (UTC)	15:00:54

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Poughkeepsie

Point ID	27

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4614539.384	Elevation (m)	Ellipsoid (m)
Easting (m)	589201.223	53.276	21.631

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/12/11
Start Time (UTC)	14:17:39
End Time (UTC)	14:20:43

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYKT
Date	11/12/11
Start Time (UTC)	14:22:18
End Time (UTC)	14:25:21

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Norcross, GA 30093
Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Poughkeepsie

Point ID	28

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4611350.064	Elevation (m)	Ellipsoid (m)
Easting (m)	593481.250	51.291	19.766

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/12/11
Start Time (UTC)	13:36:22
End Time (UTC)	13:37:02

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/12/11
Start Time (UTC)	13:38:24
End Time (UTC)	13:38:55

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Ulster
Quad	Wappingers Falls

Point ID	29

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4608388.517	Elevation (m)	Ellipsoid (m)
Easting (m)	586295.523	89.524	57.861

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/10/11
Start Time (UTC)	21:31:17
End Time (UTC)	21:31:53

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/10/11
Start Time (UTC)	21:42:18
End Time (UTC)	21:42:56

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Dutchess
Quad	Wappingers Falls

Point ID	30

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4596363.316	Elevation (m)	Ellipsoid (m)
Easting (m)	587741.434	51.310	19.724

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	14:34:55
End Time (UTC)	14:35:42

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	14:37:09
End Time (UTC)	14:37:39

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Orange
Quad	Newburgh

Point ID	31

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4596429.912	Elevation (m)	Ellipsoid (m)
Easting (m)	579872.599	71.863	40.095

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/10/11
Start Time (UTC)	20:45:33
End Time (UTC)	20:46:06

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/10/11
Start Time (UTC)	20:51:46
End Time (UTC)	20:52:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Orange
Quad	West Point

Point ID	32

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4586824.436	Elevation (m)	Ellipsoid (m)
Easting (m)	584691.048	62.821	31.254

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/10/11
Start Time (UTC)	17:40:29
End Time (UTC)	20:15:29

Antenna Height (ARP)	
2.000 meters	
Measured	X Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/10/11
Start Time (UTC)	17:40:29
End Time (UTC)	20:15:29

Antenna Height (ARP)	
2.000 meters	
Measured	X Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Putnam
Quad	West Point

Point ID	33

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4583428.546	Elevation (m)	Ellipsoid (m)
Easting (m)	587237.027	1.613	-29.828

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	15:29:19
End Time (UTC)	15:30:17

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	15:32:33
End Time (UTC)	15:33:03

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Orange
Quad	Peekskill

Point ID	34

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4578866.495	Elevation (m)	Ellipsoid (m)
Easting (m)	586137.231	51.084	19.645

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/10/11
Start Time (UTC)	16:39:14
End Time (UTC)	16:39:55

Operator	
Receiver Model	
Receiver S/N	
RTK Base	
Date	
Start Time (UTC)	
End Time (UTC)	

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
	Measured		Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Peekskill

Point ID	35

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4572676.289	Elevation (m)	Ellipsoid (m)
Easting (m)	590051.067	82.578	51.291

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	16:09:36
End Time (UTC)	16:10:25

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	16:12:08
End Time (UTC)	16:12:40

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rockland
Quad	Haverstraw

Point ID	36

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4565028.295	Elevation (m)	Ellipsoid (m)
Easting (m)	584231.602	34.147	2.640

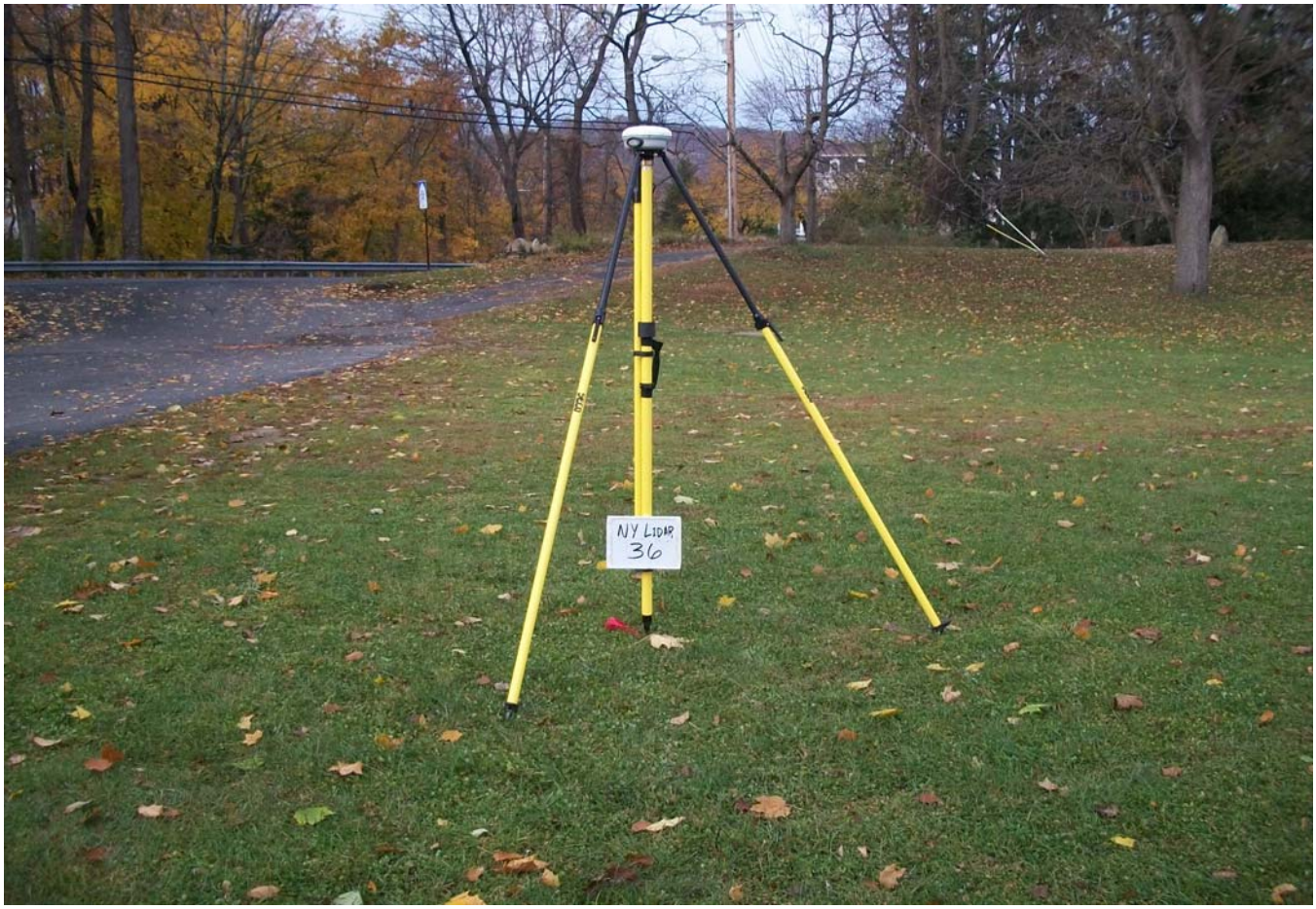
Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/13/11
Start Time (UTC)	13:29:56
End Time (UTC)	13:33:14

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/13/11
Start Time (UTC)	13:35:53
End Time (UTC)	13:38:57

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

PHOTOS:



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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Haverstraw

Point ID	37

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4563992.803	Elevation (m)	Ellipsoid (m)
Easting (m)	591185.636	41.581	10.327

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	16:49:16
End Time (UTC)	16:49:48

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	16:54:15
End Time (UTC)	16:54:46

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Haverstraw

Point ID	38

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4562848.869	Elevation (m)	Ellipsoid (m)
Easting (m)	593969.144	43.550	12.425

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	19:06:25
End Time (UTC)	19:06:55

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	19:08:05
End Time (UTC)	19:08:35

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	White Plains

Point ID	39

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4549891.744	Elevation (m)	Ellipsoid (m)
Easting (m)	595164.291	17.336	-13.799

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/11/11
Start Time (UTC)	19:39:03
End Time (UTC)	19:39:35

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/11/11
Start Time (UTC)	19:41:00
End Time (UTC)	19:41:30

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Rockland
Quad	Nyack

Point ID	40

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4541695.246	Elevation (m)	Ellipsoid (m)
Easting (m)	588947.312	17.633	-13.777

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/11/11
Start Time (UTC)	20:16:01
End Time (UTC)	20:16:36

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/11/11
Start Time (UTC)	20:40:05
End Time (UTC)	20:40:36

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Yonkers

Point ID	41

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4530363.417	Elevation (m)	Ellipsoid (m)
Easting (m)	592494.217	14.719	-16.608

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	North River
Date	11/05/11
Start Time (UTC)	18:08:03
End Time (UTC)	18:08:34

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	17:40:14
End Time (UTC)	17:43:16

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Mount Vernon

Point ID	42

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4528763.021	Elevation (m)	Ellipsoid (m)
Easting (m)	598538.898	39.818	8.659

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	North River
Date	11/05/11
Start Time (UTC)	18:47:19
End Time (UTC)	18:47:50

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	17:07:09
End Time (UTC)	17:10:10

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Mount Vernon

Point ID	43

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4527457.393	Elevation (m)	Ellipsoid (m)
Easting (m)	602664.684	2.310	-28.784

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	North River
Date	11/05/11
Start Time (UTC)	17:06:10
End Time (UTC)	17:06:44

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	16:33:10
End Time (UTC)	16:36:41

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Sea Cliff

Point ID	44

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4523596.964	Elevation (m)	Ellipsoid (m)
Easting (m)	608736.080	23.723	-7.378

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYLC
Date	11/13/11
Start Time (UTC)	19:00:19
End Time (UTC)	19:03:23

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/13/11
Start Time (UTC)	19:05:00
End Time (UTC)	19:08:06

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Mamaroneck

Point ID	45

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4535888.909	Elevation (m)	Ellipsoid (m)
Easting (m)	607421.638	18.919	-11.950

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYVH
Date	11/05/11
Start Time (UTC)	19:47:38
End Time (UTC)	19:48:27

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	15:39:06
End Time (UTC)	15:42:17

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Mamaroneck

Point ID	46

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4533771.040	Elevation (m)	Ellipsoid (m)
Easting (m)	610186.904	4.888	-25.981

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYVH
Date	11/05/11
Start Time (UTC)	20:20:36
End Time (UTC)	20:21:12

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	16:05:03
End Time (UTC)	16:08:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Westchester
Quad	Glenville

Point ID	47

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4539985.103	Elevation (m)	Ellipsoid (m)
Easting (m)	612381.723	4.871	-25.833

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYVH
Date	11/05/11
Start Time (UTC)	21:09:19
End Time (UTC)	21:09:49

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/13/11
Start Time (UTC)	14:58:13
End Time (UTC)	15:01:17

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Sea Cliff

Point ID	48

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4518547.540	Elevation (m)	Ellipsoid (m)
Easting (m)	613355.812	13.058	-18.146

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/19/11
Start Time (UTC)	12:39:17
End Time (UTC)	12:42:18

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/19/11
Start Time (UTC)	12:44:36
End Time (UTC)	12:47:37

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Lloyd Harbor

Point ID	49

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4532522.212	Elevation (m)	Ellipsoid (m)
Easting (m)	627926.498	32.663	2.060

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/19/11
Start Time (UTC)	14:28:05
End Time (UTC)	14:32:46

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/19/11
Start Time (UTC)	14:34:03
End Time (UTC)	14:37:04

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	North Port

Point ID	50

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4525601.665	Elevation (m)	Ellipsoid (m)
Easting (m)	632851.275	28.188	-2.484

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	21:37:53
End Time (UTC)	21:40:55

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	21:54:03
End Time (UTC)	21:54:33

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Central Islip

Point ID	51

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4521276.648	Elevation (m)	Ellipsoid (m)
Easting (m)	650411.263	22.652	-8.117

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	12:48:19
End Time (UTC)	12:51:22

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	12:52:13
End Time (UTC)	12:55:16

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Port Jefferson

Point ID	52

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4535517.363	Elevation (m)	Ellipsoid (m)
Easting (m)	658662.911	2.096	-28.406

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	14:05:08
End Time (UTC)	14:08:11

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	14:10:40
End Time (UTC)	14:13:44

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Middle Island

Point ID	53

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4536933.912	Elevation (m)	Ellipsoid (m)
Easting (m)	672075.847	10.348	-20.338

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	14:53:02
End Time (UTC)	14:56:08

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	15:08:42
End Time (UTC)	15:12:00

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Wading River

Point ID	54

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4536577.884	Elevation (m)	Ellipsoid (m)
Easting (m)	682364.904	48.642	17.732

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	15:51:10
End Time (UTC)	15:54:11

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	16:03:19
End Time (UTC)	16:06:22

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Riverhead

Point ID	55

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4532576.282	Elevation (m)	Ellipsoid (m)
Easting (m)	691895.282	15.835	-15.380

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/19/11
Start Time (UTC)	18:20:46
End Time (UTC)	18:23:48

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/19/11
Start Time (UTC)	18:25:09
End Time (UTC)	18:28:18

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Mattituck

Point ID	56

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4531423.449	Elevation (m)	Ellipsoid (m)
Easting (m)	701659.693	1.888	-29.508

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/19/11
Start Time (UTC)	18:48:59
End Time (UTC)	18:52:01

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/19/11
Start Time (UTC)	19:45:50
End Time (UTC)	19:48:57

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Southold

Point ID	57

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4545939.505	Elevation (m)	Ellipsoid (m)
Easting (m)	711616.444	12.976	-18.174

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/19/11
Start Time (UTC)	21:09:50
End Time (UTC)	21:13:10

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/19/11
Start Time (UTC)	21:14:48
End Time (UTC)	21:17:49

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Southold

Point ID	58

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4553719.382	Elevation (m)	Ellipsoid (m)
Easting (m)	719946.168	5.043	-25.978

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/19/11
Start Time (UTC)	21:36:11
End Time (UTC)	21:39:18

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/19/11
Start Time (UTC)	21:42:39
End Time (UTC)	21:45:41

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Greenport

Point ID	59

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4546590.324	Elevation (m)	Ellipsoid (m)
Easting (m)	725659.172	1.472	-29.755

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	16:21:07
End Time (UTC)	16:24:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/20/11
Start Time (UTC)	16:25:22
End Time (UTC)	16:28:31

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Plum Island

Point ID	60

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4559575.527	Elevation (m)	Ellipsoid (m)
Easting (m)	731141.465	1.922	-29.018

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/19/11
Start Time (UTC)	22:03:19
End Time (UTC)	22:07:04

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/19/11
Start Time (UTC)	22:08:04
End Time (UTC)	22:11:05

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	New London

Point ID	61

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4572531.735	Elevation (m)	Ellipsoid (m)
Easting (m)	749454.042	1.885	-28.907

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	WESTAIR 3
Date	11/16/11
Start Time (UTC)	19:30:47
End Time (UTC)	19:33:50

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	FISHPORT
Date	11/16/11
Start Time (UTC)	20:40:25
End Time (UTC)	20:43:31

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	New London

Point ID	62

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4571686.861	Elevation (m)	Ellipsoid (m)
Easting (m)	751055.145	4.342	-26.465

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	WESTAIR 3
Date	11/16/11
Start Time (UTC)	19:19:26
End Time (UTC)	19:22:29

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	FISHPORT
Date	11/16/11
Start Time (UTC)	19:59:20
End Time (UTC)	20:02:35

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Mystic

Point ID	63

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4573881.019	Elevation (m)	Ellipsoid (m)
Easting (m)	752271.503	16.727	-14.049

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	WESTAIR 3
Date	11/16/11
Start Time (UTC)	19:05:16
End Time (UTC)	19:08:44

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	FISHPORT
Date	11/16/11
Start Time (UTC)	20:25:27
End Time (UTC)	20:28:28

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Mystic

Point ID	64

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4574757.014	Elevation (m)	Ellipsoid (m)
Easting (m)	756314.940	2.858	-27.902

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	WESTAIR 3
Date	11/16/11
Start Time (UTC)	18:47:57
End Time (UTC)	18:51:01

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	FISHPORT
Date	11/16/11
Start Time (UTC)	20:13:40
End Time (UTC)	20:16:44

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Norcross, GA 30093
Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Montauk Point OE E

Point ID	65

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4551499.904	Elevation (m)	Ellipsoid (m)
Easting (m)	763886.482	12.898	-18.078

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/20/11
Start Time (UTC)	13:45:04
End Time (UTC)	14:15:48

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	13:45:04
End Time (UTC)	14:15:48

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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1410 Indian Trail Road
Norcross, GA 30093
Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Montauk Point

Point ID	66

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4549240.814	Elevation (m)	Ellipsoid (m)
Easting (m)	757854.720	4.924	-26.141

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	14:31:21
End Time (UTC)	14:34:31

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/20/11
Start Time (UTC)	14:35:14
End Time (UTC)	14:38:14

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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Phone: 770-564-9843

GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Gardeners Island East

Point ID	67

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4543272.118	Elevation (m)	Ellipsoid (m)
Easting (m)	749576.195	1.745	-29.536

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	14:56:33
End Time (UTC)	15:02:34

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/20/11
Start Time (UTC)	15:03:14
End Time (UTC)	15:06:18

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Gardeners Island West

Point ID	68

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4545023.368	Elevation (m)	Ellipsoid (m)
Easting (m)	739061.890	2.302	-29.008

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	15:24:15
End Time (UTC)	15:27:34

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/20/11
Start Time (UTC)	15:28:21
End Time (UTC)	15:31:23

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	East Hampton

Point ID	69

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4537382.042	Elevation (m)	Ellipsoid (m)
Easting (m)	735276.308	10.962	-20.479

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	15:51:53
End Time (UTC)	15:55:01

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	U 325
Date	11/20/11
Start Time (UTC)	15:56:04
End Time (UTC)	15:59:06

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Sag Harbor

Point ID	70

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4530744.417	Elevation (m)	Ellipsoid (m)
Easting (m)	721334.105	6.817	-24.707

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/19/11
Start Time (UTC)	20:13:36
End Time (UTC)	20:16:38

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	THREE POINT
Date	11/19/11
Start Time (UTC)	20:17:36
End Time (UTC)	20:20:37

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	East Port

Point ID	71

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4518140.912	Elevation (m)	Ellipsoid (m)
Easting (m)	697062.234	1.088	-30.599

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	17:15:03
End Time (UTC)	17:18:12

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	17:20:36
End Time (UTC)	17:23:47

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Bellport

Point ID	72

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4519174.525	Elevation (m)	Ellipsoid (m)
Easting (m)	677022.174	9.063	-22.302

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	18:08:13
End Time (UTC)	18:11:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	18:13:08
End Time (UTC)	18:17:26

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Sayville

Point ID	73

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4505695.632	Elevation (m)	Ellipsoid (m)
Easting (m)	668587.374	0.519	-31.135

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/21/11
Start Time (UTC)	18:02:37
End Time (UTC)	18:05:40

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/21/11
Start Time (UTC)	18:07:10
End Time (UTC)	18:10:11

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Bay Shore East

Point ID	74

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4512371.814	Elevation (m)	Ellipsoid (m)
Easting (m)	655860.943	2.890	-28.260

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	19:16:16
End Time (UTC)	19:19:22

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYRH
Date	11/18/11
Start Time (UTC)	19:20:15
End Time (UTC)	19:23:16

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Bay Shore West

Point ID	75

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4507965.281	Elevation (m)	Ellipsoid (m)
Easting (m)	644036.460	6.504	-24.637

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYNB
Date	11/18/11
Start Time (UTC)	19:48:05
End Time (UTC)	19:51:07

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	19:52:07
End Time (UTC)	19:55:08

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Amityville

Point ID	76

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4504336.666	Elevation (m)	Ellipsoid (m)
Easting (m)	633533.980	6.006	-25.242

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	14:28:18
End Time (UTC)	14:31:20

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	14:33:05
End Time (UTC)	14:36:14

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Freeport

Point ID	77

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4502596.398	Elevation (m)	Ellipsoid (m)
Easting (m)	625869.684	3.514	-27.896

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	15:15:05
End Time (UTC)	15:18:24

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	15:20:24
End Time (UTC)	15:24:46

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Lynbrook

Point ID	78

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4502322.589	Elevation (m)	Ellipsoid (m)
Easting (m)	607819.763	3.735	-28.070

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	18:38:03
End Time (UTC)	18:41:04

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	18:42:05
End Time (UTC)	18:45:08

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Suffolk
Quad	Bay Shore West

Point ID	79

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4498493.304	Elevation (m)	Ellipsoid (m)
Easting (m)	647048.931	6.619	-24.874

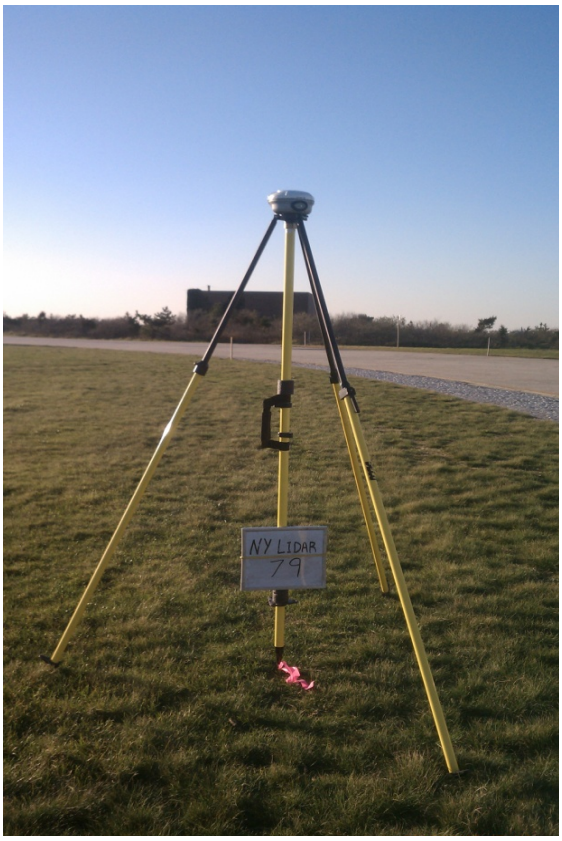
Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	20:23:54
End Time (UTC)	20:27:40

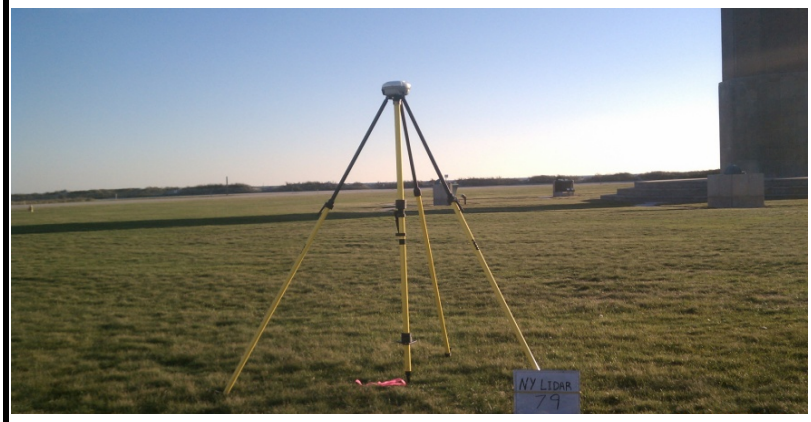
Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Gedenk
Receiver Model	Trimble R8-3
Receiver S/N	5046455718
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	20:31:43
End Time (UTC)	20:34:54

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

PHOTOS:





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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Jones Inlet

Point ID	80

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4494859.208	Elevation (m)	Ellipsoid (m)
Easting (m)	625180.788	4.119	-27.512

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	15:45:17
End Time (UTC)	15:51:13

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	15:53:14
End Time (UTC)	15:56:21

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

PHOTOS:

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GPS CONTROL SURVEY
FIELD DATA LOG SHEET

Proj. No.	7525-052
Proj. Name	TO #011 - Coastal NY LiDAR
State	New York
County	Nassau
Quad	Lawrence

Point ID	81

	Aerial Target
X	LiDAR Ground Control
	New Control
	Photo ID
	Published Bench Mark
	Published Control

	NAD83 UTM 18 North	NAVD88	GEOID 09
Northing (m)	4493998.571	Elevation (m)	Ellipsoid (m)
Easting (m)	606818.298	2.529	-29.536

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYQN
Date	11/18/11
Start Time (UTC)	17:28:20
End Time (UTC)	17:31:21

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

Operator	D. Simmons
Receiver Model	Trimble R8-3
Receiver S/N	5106461066
RTK Base	NYCI
Date	11/18/11
Start Time (UTC)	17:33:04
End Time (UTC)	17:36:05

Antenna Height (ARP)			
2.000 meters			
	Measured	X	Fixed Hgt.

PHOTOS:

Section 5 – NGS Survey Mark Datasheets

```
DI0622 ***********************************************************************
DI0622  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0622  DESIGNATION -  SARATOGA CORS ARP
DI0622  CORS_ID     -  NYST
DI0622  PID         -  DI0622
DI0622  STATE/COUNTY-  NY/SARATOGA
DI0622  USGS QUAD   -  SARATOGA SPRINGS (1967)
DI0622
DI0622                        *CURRENT SURVEY CONTROL
DI0622  ___________________________________________________________________
DI0622* NAD 83(CORS)-  43 03 41.73540(N)    073 48 15.01044(W)     ADJUSTED
DI0622* NAVD 88     -       100.278  (meters)     329.00   (feet)  ADJUSTED
DI0622  ___________________________________________________________________
DI0622  EPOCH DATE  -        2002.00
DI0622  X           -   1,301,818.742 (meters)                     COMP
DI0622  Y           -  -4,482,106.937 (meters)                     COMP
DI0622  Z           -   4,332,551.141 (meters)                     COMP
DI0622  ELLIP HEIGHT-          69.623 (meters)          (07/??/06) ADJUSTED
DI0622  GEOID HEIGHT-         -30.66  (meters)                     GEOID09
DI0622  HORZ ORDER  -  SPECIAL (CORS)
DI0622  VERT ORDER  -  SECOND    CLASS II
DI0622  ELLP ORDER  -  SPECIAL (CORS)
DI0622
DI0622.ITRF positions are available for this station.
DI0622.The coordinates were established by GPS observations
DI0622.and adjusted by the National Geodetic Survey in July 2006.
DI0622.The coordinates are valid at the epoch date displayed above.
DI0622.The epoch date for horizontal control is a decimal equivalence
DI0622.of Year/Month/Day.
DI0622
DI0622.The orthometric height was determined by differential leveling and
DI0622.adjusted in December 2008.
DI0622
DI0622.The PID for the CORS L1 Phase Center is DI0623.
DI0622
DI0622.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0622
DI0622.The ellipsoidal height was determined by GPS observations
DI0622.and is referenced to NAD 83.
DI0622
DI0622.The geoid height was determined by GEOID09.
DI0622
DI0622;                    North         East     Units Scale Factor Converg.
DI0622;SPC NY E     -   469,748.838   206,676.409   MT  0.99993950   +0 28 30.4
DI0622;SPC NY E     - 1,541,167.65    678,070.85   sFT  0.99993950   +0 28 30.4
DI0622
DI0622!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0622!SPC NY E     -   0.99998908  x   0.99993950  =   0.99992858
DI0622
DI0622                          SUPERSEDED SURVEY CONTROL
DI0622
DI0622.No superseded survey control is available for this station.
DI0622
DI0622_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TWN9737368348(NAD 83)
DI0622_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0622_MAGNETIC: N = NO MAGNETIC MATERIAL
DI0622
DI0622                          STATION DESCRIPTION
DI0622
DI0622'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0622'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0622'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0622'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0622'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0622'   http://geodesy.noaa.gov/CORS
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DI0440 ***********************************************************************
DI0440  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0440  DESIGNATION -  ALBANY CORS ARP
DI0440  CORS_ID     -  NYAB
DI0440  PID         -  DI0440
DI0440  STATE/COUNTY-  NY/ALBANY
DI0440  USGS QUAD   -  ALBANY (1980)
DI0440
DI0440                        *CURRENT SURVEY CONTROL
DI0440  ___________________________________________________________________
DI0440* NAD 83(CORS)-  42 42 48.87345(N)    073 48 58.50195(W)     ADJUSTED
DI0440* NAVD 88     -              **(meters)            **(feet)
DI0440  ___________________________________________________________________
DI0440  EPOCH DATE  -        2002.00
DI0440  X           -   1,308,211.413 (meters)                     COMP
DI0440  Y           -  -4,507,664.849 (meters)                     COMP
DI0440  Z           -   4,304,237.898 (meters)                     COMP
DI0440  ELLIP HEIGHT-          90.076 (meters)          (06/??/06) ADJUSTED
DI0440  GEOID HEIGHT-         -31.38  (meters)                     GEOID09
DI0440  HORZ ORDER  -  SPECIAL (CORS)
DI0440  ELLP ORDER  -  SPECIAL (CORS)
DI0440
DI0440.ITRF positions are available for this station.
DI0440.The coordinates were established by GPS observations
DI0440.and adjusted by the National Geodetic Survey in June 2006.
DI0440.The coordinates are valid at the epoch date displayed above.
DI0440.The epoch date for horizontal control is a decimal equivalence
DI0440.of Year/Month/Day.
DI0440
DI0440
DI0440.The PID for the CORS L1 Phase Center is DI0441.
DI0440
DI0440.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0440
DI0440.The ellipsoidal height was determined by GPS observations
DI0440.and is referenced to NAD 83.
DI0440
DI0440.The geoid height was determined by GEOID09.
DI0440
DI0440;                    North         East     Units Scale Factor Converg.
DI0440;SPC NY E     -   431,082.985   206,006.370   MT  0.99993858   +0 27 49.8
DI0440;SPC NY E     - 1,414,311.43    675,872.57   sFT  0.99993858   +0 27 49.8
DI0440
DI0440!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0440!SPC NY E     -   0.99998587  x   0.99993858  =   0.99992445
DI0440
DI0440                          SUPERSEDED SURVEY CONTROL
DI0440
DI0440.No superseded survey control is available for this station.
DI0440
DI0440_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TWN9693229687(NAD 83)
DI0440_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0440
DI0440                          STATION DESCRIPTION
DI0440
DI0440'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0440'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0440'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0440'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0440'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0440'   http://geodesy.noaa.gov/CORS
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DI0466 ***********************************************************************
DI0466  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0466  DESIGNATION -  HUDSON CORS ARP
DI0466  CORS_ID     -  NYHS
DI0466  PID         -  DI0466
DI0466  STATE/COUNTY-  NY/COLUMBIA
DI0466  USGS QUAD   -  HUDSON NORTH (1980)
DI0466
DI0466                        *CURRENT SURVEY CONTROL
DI0466  ___________________________________________________________________
DI0466* NAD 83(CORS)-  42 15 08.35963(N)    073 45 27.16055(W)     ADJUSTED
DI0466* NAVD 88     -        53.578  (meters)     175.78   (feet)  ADJUSTED
DI0466  ___________________________________________________________________
DI0466  EPOCH DATE  -        2002.00
DI0466  X           -   1,322,494.244 (meters)                     COMP
DI0466  Y           -  -4,539,497.141 (meters)                     COMP
DI0466  Z           -   4,266,405.334 (meters)                     COMP
DI0466  ELLIP HEIGHT-          22.070 (meters)          (06/??/06) ADJUSTED
DI0466  GEOID HEIGHT-         -31.53  (meters)                     GEOID09
DI0466  HORZ ORDER  -  SPECIAL (CORS)
DI0466  VERT ORDER  -  SECOND    CLASS II
DI0466  ELLP ORDER  -  SPECIAL (CORS)
DI0466
DI0466.ITRF positions are available for this station.
DI0466.The coordinates were established by GPS observations
DI0466.and adjusted by the National Geodetic Survey in June 2006.
DI0466.The coordinates are valid at the epoch date displayed above.
DI0466.The epoch date for horizontal control is a decimal equivalence
DI0466.of Year/Month/Day.
DI0466
DI0466.The orthometric height was determined by differential leveling and
DI0466.adjusted in May 2010.
DI0466
DI0466.The PID for the CORS L1 Phase Center is DI0467.
DI0466
DI0466.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0466
DI0466.The ellipsoidal height was determined by GPS observations
DI0466.and is referenced to NAD 83.
DI0466
DI0466.The geoid height was determined by GEOID09.
DI0466
DI0466;                    North         East     Units Scale Factor Converg.
DI0466;SPC NY E     -   379,891.014   211,263.428   MT  0.99994617   +0 29 57.3
DI0466;SPC NY E     - 1,246,359.10    693,120.10   sFT  0.99994617   +0 29 57.3
DI0466
DI0466!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0466!SPC NY E     -   0.99999654  x   0.99994617  =   0.99994271
DI0466
DI0466                          SUPERSEDED SURVEY CONTROL
DI0466
DI0466.No superseded survey control is available for this station.
DI0466
DI0466_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXM0249078539(NAD 83)
DI0466_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0466_MAGNETIC: N = NO MAGNETIC MATERIAL
DI0466
DI0466                          STATION DESCRIPTION
DI0466
DI0466'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0466'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0466'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0466'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0466'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0466'   http://geodesy.noaa.gov/CORS
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DI0468 ***********************************************************************
DI0468  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0468  DESIGNATION -  KINGSTON NY CORS ARP
DI0468  CORS_ID     -  NYKT
DI0468  PID         -  DI0468
DI0468  STATE/COUNTY-  NY/ULSTER
DI0468  USGS QUAD   -  KINGSTON WEST (1980)
DI0468
DI0468                        *CURRENT SURVEY CONTROL
DI0468  ___________________________________________________________________
DI0468* NAD 83(CORS)-  41 56 12.97178(N)    074 01 52.21841(W)     ADJUSTED
DI0468* NAVD 88     -        62.016  (meters)     203.46   (feet)  ADJUSTED
DI0468  ___________________________________________________________________
DI0468  EPOCH DATE  -        2002.00
DI0468  X           -   1,307,262.376 (meters)                     COMP
DI0468  Y           -  -4,568,344.561 (meters)                     COMP
DI0468  Z           -   4,240,416.097 (meters)                     COMP
DI0468  ELLIP HEIGHT-          30.355 (meters)          (06/??/06) ADJUSTED
DI0468  GEOID HEIGHT-         -31.60  (meters)                     GEOID09
DI0468  HORZ ORDER  -  SPECIAL (CORS)
DI0468  VERT ORDER  -  SECOND    CLASS II
DI0468  ELLP ORDER  -  SPECIAL (CORS)
DI0468
DI0468.ITRF positions are available for this station.
DI0468.The coordinates were established by GPS observations
DI0468.and adjusted by the National Geodetic Survey in June 2006.
DI0468.The coordinates are valid at the epoch date displayed above.
DI0468.The epoch date for horizontal control is a decimal equivalence
DI0468.of Year/Month/Day.
DI0468
DI0468.The orthometric height was determined by differential leveling and
DI0468.adjusted in March 2009.
DI0468
DI0468.The PID for the CORS L1 Phase Center is DI0469.
DI0468
DI0468.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0468
DI0468.The ellipsoidal height was determined by GPS observations
DI0468.and is referenced to NAD 83.
DI0468
DI0468.The geoid height was determined by GEOID09.
DI0468
DI0468;                    North         East     Units Scale Factor Converg.
DI0468;SPC NY E     -   344,702.429   188,877.263   MT  0.99991859   +0 18 48.0
DI0468;SPC NY E     - 1,130,911.22    619,674.82   sFT  0.99991859   +0 18 48.0
DI0468
DI0468!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0468!SPC NY E     -   0.99999524  x   0.99991859  =   0.99991383
DI0468
DI0468                          SUPERSEDED SURVEY CONTROL
DI0468
DI0468.No superseded survey control is available for this station.
DI0468
DI0468_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TWM8031543228(NAD 83)
DI0468_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0468_MAGNETIC: N = NO MAGNETIC MATERIAL
DI0468
DI0468                          STATION DESCRIPTION
DI0468
DI0468'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0468'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0468'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0468'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0468'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0468'   http://geodesy.noaa.gov/CORS
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DK7181 ***********************************************************************
DK7181  CORS        -  This is a GPS Continuously Operating Reference Station.
DK7181  DESIGNATION -  NEWBURGH CORS ARP
DK7181  CORS_ID     -  NYNB
DK7181  PID         -  DK7181
DK7181  STATE/COUNTY-  NY/ORANGE
DK7181  USGS QUAD   -  CORNWALL (1981)
DK7181
DK7181                        *CURRENT SURVEY CONTROL
DK7181  ___________________________________________________________________
DK7181* NAD 83(CORS)-  41 29 42.80606(N)    074 01 31.97372(W)     ADJUSTED
DK7181* NAVD 88     -        54.923  (meters)     180.19   (feet)  ADJUSTED
DK7181  ___________________________________________________________________
DK7181  EPOCH DATE  -        2002.00
DK7181  X           -   1,316,693.896 (meters)                     COMP
DK7181  Y           -  -4,599,596.996 (meters)                     COMP
DK7181  Z           -   4,203,790.324 (meters)                     COMP
DK7181  ELLIP HEIGHT-          23.188 (meters)          (10/??/08) ADJUSTED
DK7181  GEOID HEIGHT-         -31.74  (meters)                     GEOID09
DK7181  HORZ ORDER  -  SPECIAL (CORS)
DK7181  VERT ORDER  -  SECOND    CLASS II
DK7181  ELLP ORDER  -  SPECIAL (CORS)
DK7181
DK7181.ITRF positions are available for this station.
DK7181.The coordinates were established by GPS observations
DK7181.and adjusted by the National Geodetic Survey in October 2008.
DK7181.The coordinates are valid at the epoch date displayed above.
DK7181.The epoch date for horizontal control is a decimal equivalence
DK7181.of Year/Month/Day.
DK7181
DK7181.The orthometric height was determined by differential leveling and
DK7181.adjusted in May 2010.
DK7181.No vertical observational check was made to the station.
DK7181
DK7181.The PID for the CORS L1 Phase Center is DK7182.
DK7181
DK7181.The XYZ, and position/ellipsoidal ht. are equivalent.
DK7181
DK7181.The ellipsoidal height was determined by GPS observations
DK7181.and is referenced to NAD 83.
DK7181
DK7181.The geoid height was determined by GEOID09.
DK7181
DK7181;                    North         East     Units Scale Factor Converg.
DK7181;SPC NY E     -   295,649.658   189,613.908   MT  0.99991931   +0 18 51.7
DK7181;SPC NY E     -   969,977.25    622,091.63   sFT  0.99991931   +0 18 51.7
DK7181
DK7181!             -  Elev Factor  x  Scale Factor =   Combined Factor
DK7181!SPC NY E     -   0.99999636  x   0.99991931  =   0.99991567
DK7181
DK7181                          SUPERSEDED SURVEY CONTROL
DK7181
DK7181.No superseded survey control is available for this station.
DK7181
DK7181_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TWL8133694192(NAD 83)
DK7181_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DK7181_MAGNETIC: N = NO MAGNETIC MATERIAL
DK7181
DK7181                          STATION DESCRIPTION
DK7181
DK7181'DESCRIBED BY NATIONAL GEODETIC SURVEY 2008
DK7181'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DK7181'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DK7181'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DK7181'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DK7181'   http://geodesy.noaa.gov/CORS
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DI0470 ***********************************************************************
DI0470  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0470  DESIGNATION -  LAKE CARMEL CORS ARP
DI0470  CORS_ID     -  NYLC
DI0470  PID         -  DI0470
DI0470  STATE/COUNTY-  NY/PUTNAM
DI0470  USGS QUAD   -  LAKE CARMEL (1981)
DI0470
DI0470                        *CURRENT SURVEY CONTROL
DI0470  ___________________________________________________________________
DI0470* NAD 83(CORS)-  41 28 51.87619(N)    073 39 05.36911(W)     ADJUSTED
DI0470* NAVD 88     -              **(meters)            **(feet)
DI0470  ___________________________________________________________________
DI0470  EPOCH DATE  -        2002.00
DI0470  X           -   1,347,024.920 (meters)                     COMP
DI0470  Y           -  -4,592,030.399 (meters)                     COMP
DI0470  Z           -   4,202,731.832 (meters)                     COMP
DI0470  ELLIP HEIGHT-         202.110 (meters)          (06/??/06) ADJUSTED
DI0470  GEOID HEIGHT-         -30.40  (meters)                     GEOID09
DI0470  HORZ ORDER  -  SPECIAL (CORS)
DI0470  ELLP ORDER  -  SPECIAL (CORS)
DI0470
DI0470.ITRF positions are available for this station.
DI0470.The coordinates were established by GPS observations
DI0470.and adjusted by the National Geodetic Survey in June 2006.
DI0470.The coordinates are valid at the epoch date displayed above.
DI0470.The epoch date for horizontal control is a decimal equivalence
DI0470.of Year/Month/Day.
DI0470
DI0470
DI0470.The PID for the CORS L1 Phase Center is DI0471.
DI0470
DI0470.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0470
DI0470.The ellipsoidal height was determined by GPS observations
DI0470.and is referenced to NAD 83.
DI0470
DI0470.The geoid height was determined by GEOID09.
DI0470
DI0470;                    North         East     Units Scale Factor Converg.
DI0470;SPC NY E     -   294,317.471   220,861.071   MT  0.99996177   +0 33 43.4
DI0470;SPC NY E     -   965,606.57    724,608.36   sFT  0.99996177   +0 33 43.4
DI0470
DI0470!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0470!SPC NY E     -   0.99996830  x   0.99996177  =   0.99993007
DI0470
DI0470                          SUPERSEDED SURVEY CONTROL
DI0470
DI0470.No superseded survey control is available for this station.
DI0470
DI0470_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXL1258493041(NAD 83)
DI0470_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0470
DI0470                          STATION DESCRIPTION
DI0470
DI0470'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0470'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0470'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0470'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0470'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0470'   http://geodesy.noaa.gov/CORS
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DI0624 ***********************************************************************
DI0624  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0624  DESIGNATION -  VALHALLA CORS ARP
DI0624  CORS_ID     -  NYVH
DI0624  PID         -  DI0624
DI0624  STATE/COUNTY-  NY/WESTCHESTER
DI0624  USGS QUAD   -  WHITE PLAINS (1967)
DI0624
DI0624                        *CURRENT SURVEY CONTROL
DI0624  ___________________________________________________________________
DI0624* NAD 83(CORS)-  41 04 56.22113(N)    073 49 04.12598(W)     ADJUSTED
DI0624* NAVD 88     -        94.261  (meters)     309.25   (feet)  ADJUSTED
DI0624  ___________________________________________________________________
DI0624  EPOCH DATE  -        2002.00
DI0624  X           -   1,341,803.923 (meters)                     COMP
DI0624  Y           -  -4,623,884.551 (meters)                     COMP
DI0624  Z           -   4,169,357.025 (meters)                     COMP
DI0624  ELLIP HEIGHT-          63.313 (meters)          (07/??/06) ADJUSTED
DI0624  GEOID HEIGHT-         -30.95  (meters)                     GEOID09
DI0624  HORZ ORDER  -  SPECIAL (CORS)
DI0624  VERT ORDER  -  SECOND    CLASS I
DI0624  ELLP ORDER  -  SPECIAL (CORS)
DI0624
DI0624.ITRF positions are available for this station.
DI0624.The coordinates were established by GPS observations
DI0624.and adjusted by the National Geodetic Survey in July 2006.
DI0624.The coordinates are valid at the epoch date displayed above.
DI0624.The epoch date for horizontal control is a decimal equivalence
DI0624.of Year/Month/Day.
DI0624
DI0624.The orthometric height was determined by differential leveling and
DI0624.adjusted in April 2010.
DI0624.No vertical observational check was made to the station.
DI0624
DI0624.The PID for the CORS L1 Phase Center is DI0625.
DI0624
DI0624.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0624
DI0624.The ellipsoidal height was determined by GPS observations
DI0624.and is referenced to NAD 83.
DI0624
DI0624.The geoid height was determined by GEOID09.
DI0624
DI0624;                    North         East     Units Scale Factor Converg.
DI0624;SPC NY E     -   249,908.880   207,318.965   MT  0.99994042   +0 26 53.9
DI0624;SPC NY E     -   819,909.38    680,178.97   sFT  0.99994042   +0 26 53.9
DI0624
DI0624!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0624!SPC NY E     -   0.99999007  x   0.99994042  =   0.99993049
DI0624
DI0624                          SUPERSEDED SURVEY CONTROL
DI0624
DI0624.No superseded survey control is available for this station.
DI0624
DI0624_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TWL9930048564(NAD 83)
DI0624_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0624_MAGNETIC: N = NO MAGNETIC MATERIAL
DI0624
DI0624                          STATION DESCRIPTION
DI0624
DI0624'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0624'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0624'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0624'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0624'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0624'   http://geodesy.noaa.gov/CORS
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DI0616 ***********************************************************************
DI0616  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0616  DESIGNATION -  QUEENS CORS ARP
DI0616  CORS_ID     -  NYQN
DI0616  PID         -  DI0616
DI0616  STATE/COUNTY-  NY/QUEENS
DI0616  USGS QUAD   -  LYNBROOK (1969)
DI0616
DI0616                        *CURRENT SURVEY CONTROL
DI0616  ___________________________________________________________________
DI0616* NAD 83(CORS)-  40 43 10.26190(N)    073 43 48.26710(W)     ADJUSTED
DI0616* NAVD 88     -              **(meters)            **(feet)
DI0616  ___________________________________________________________________
DI0616  EPOCH DATE  -        2002.00
DI0616  X           -   1,356,259.511 (meters)                     COMP
DI0616  Y           -  -4,647,099.238 (meters)                     COMP
DI0616  Z           -   4,138,865.370 (meters)                     COMP
DI0616  ELLIP HEIGHT-          -0.382 (meters)          (07/??/06) ADJUSTED
DI0616  GEOID HEIGHT-         -31.57  (meters)                     GEOID09
DI0616  HORZ ORDER  -  SPECIAL (CORS)
DI0616  ELLP ORDER  -  SPECIAL (CORS)
DI0616
DI0616.ITRF positions are available for this station.
DI0616.The coordinates were established by GPS observations
DI0616.and adjusted by the National Geodetic Survey in July 2006.
DI0616.The coordinates are valid at the epoch date displayed above.
DI0616.The epoch date for horizontal control is a decimal equivalence
DI0616.of Year/Month/Day.
DI0616
DI0616
DI0616.The PID for the CORS L1 Phase Center is DI0617.
DI0616
DI0616.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0616
DI0616.The ellipsoidal height was determined by GPS observations
DI0616.and is referenced to NAD 83.
DI0616
DI0616.The geoid height was determined by GEOID09.
DI0616
DI0616;                    North         East     Units Scale Factor Converg.
DI0616;SPC NY L     -    61,426.870   322,806.163   MT  0.99999749   +0 10 35.6
DI0616;SPC NY L     -   201,531.32  1,059,073.22   sFT  0.99999749   +0 10 35.6
DI0616
DI0616!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0616!SPC NY L     -   1.00000006  x   0.99999749  =   0.99999755
DI0616
DI0616                          SUPERSEDED SURVEY CONTROL
DI0616
DI0616.No superseded survey control is available for this station.
DI0616
DI0616_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXL0725508397(NAD 83)
DI0616_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0616
DI0616                          STATION DESCRIPTION
DI0616
DI0616'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0616'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0616'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0616'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0616'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0616'   http://geodesy.noaa.gov/CORS
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DI0446 ***********************************************************************
DI0446  CORS        -  This is a GPS Continuously Operating Reference Station.
DI0446  DESIGNATION -  CENTRAL ISLIP CORS ARP
DI0446  CORS_ID     -  NYCI
DI0446  PID         -  DI0446
DI0446  STATE/COUNTY-  NY/SUFFOLK
DI0446  USGS QUAD   -  CENTRAL ISLIP (1967)
DI0446
DI0446                        *CURRENT SURVEY CONTROL
DI0446  ___________________________________________________________________
DI0446* NAD 83(CORS)-  40 45 38.23706(N)    073 11 51.78749(W)     ADJUSTED
DI0446* NAVD 88     -        17.219  (meters)      56.49   (feet)  ADJUSTED
DI0446  ___________________________________________________________________
DI0446  EPOCH DATE  -        2002.00
DI0446  X           -   1,398,514.117 (meters)                     COMP
DI0446  Y           -  -4,631,435.780 (meters)                     COMP
DI0446  Z           -   4,142,315.056 (meters)                     COMP
DI0446  ELLIP HEIGHT-         -13.852 (meters)          (06/??/06) ADJUSTED
DI0446  GEOID HEIGHT-         -31.04  (meters)                     GEOID09
DI0446  HORZ ORDER  -  SPECIAL (CORS)
DI0446  VERT ORDER  -  SECOND    CLASS II
DI0446  ELLP ORDER  -  SPECIAL (CORS)
DI0446
DI0446.ITRF positions are available for this station.
DI0446.The coordinates were established by GPS observations
DI0446.and adjusted by the National Geodetic Survey in June 2006.
DI0446.The coordinates are valid at the epoch date displayed above.
DI0446.The epoch date for horizontal control is a decimal equivalence
DI0446.of Year/Month/Day.
DI0446
DI0446.The orthometric height was determined by differential leveling and
DI0446.adjusted in January 2010.
DI0446.No vertical observational check was made to the station.
DI0446
DI0446.The PID for the CORS L1 Phase Center is DI0447.
DI0446
DI0446.The XYZ, and position/ellipsoidal ht. are equivalent.
DI0446
DI0446.The ellipsoidal height was determined by GPS observations
DI0446.and is referenced to NAD 83.
DI0446
DI0446.The geoid height was determined by GEOID09.
DI0446
DI0446;                    North         East     Units Scale Factor Converg.
DI0446;SPC NY L     -    66,266.515   367,742.490   MT  0.99999611   +0 31 29.1
DI0446;SPC NY L     -   217,409.39  1,206,501.82   sFT  0.99999611   +0 31 29.1
DI0446
DI0446!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI0446!SPC NY L     -   1.00000217  x   0.99999611  =   0.99999828
DI0446
DI0446                          SUPERSEDED SURVEY CONTROL
DI0446
DI0446.No superseded survey control is available for this station.
DI0446
DI0446_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXL5212513746(NAD 83)
DI0446_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI0446_MAGNETIC: N = NO MAGNETIC MATERIAL
DI0446
DI0446                          STATION DESCRIPTION
DI0446
DI0446'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI0446'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI0446'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI0446'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI0446'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI0446'   http://geodesy.noaa.gov/CORS
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DI1874 ***********************************************************************
DI1874  CORS        -  This is a GPS Continuously Operating Reference Station.
DI1874  DESIGNATION -  RIVERHEAD CORS ARP
DI1874  CORS_ID     -  NYRH
DI1874  PID         -  DI1874
DI1874  STATE/COUNTY-  NY/SUFFOLK
DI1874  USGS QUAD   -  RIVERHEAD (1956)
DI1874
DI1874                        *CURRENT SURVEY CONTROL
DI1874  ______________________________________________________________________
DI1874* NAD 83(CORS)-  40 55 24.08893(N)    072 42 50.56092(W)     ADJUSTED
DI1874* NAVD 88     -              **(meters)            **(feet)
DI1874  ______________________________________________________________________
DI1874  EPOCH DATE  -        2002.00
DI1874  X           -   1,434,050.562 (meters)                     COMP
DI1874  Y           -  -4,608,184.483 (meters)                     COMP
DI1874  Z           -   4,155,990.679 (meters)                     COMP
DI1874  ELLIP HEIGHT-          -7.945 (meters)          (10/??/06) ADJUSTED
DI1874  GEOID HEIGHT-         -31.22  (meters)                     GEOID09
DI1874  HORZ ORDER  -  SPECIAL (CORS)
DI1874  ELLP ORDER  -  SPECIAL (CORS)
DI1874
DI1874.ITRF positions are available for this station.
DI1874.The coordinates were established by GPS observations
DI1874.and adjusted by the National Geodetic Survey in October 2006.
DI1874.The coordinates are valid at the epoch date displayed above.
DI1874.The epoch date for horizontal control is a decimal equivalence
DI1874.of Year/Month/Day.
DI1874
DI1874
DI1874.The PID for the CORS L1 Phase Center is DI1875.
DI1874
DI1874.The XYZ, and position/ellipsoidal ht. are equivalent.
DI1874
DI1874.The ellipsoidal height was determined by GPS observations
DI1874.and is referenced to NAD 83.
DI1874
DI1874.The geoid height was determined by GEOID09.
DI1874
DI1874;                    North         East     Units Scale Factor Converg.
DI1874;SPC NY L     -    84,823.314   408,314.963   MT  0.99999572   +0 50 28.0
DI1874;SPC NY L     -   278,291.16  1,339,613.34   sFT  0.99999572   +0 50 28.0
DI1874
DI1874!             -  Elev Factor  x  Scale Factor =   Combined Factor
DI1874!SPC NY L     -   1.00000125  x   0.99999572  =   0.99999697
DI1874
DI1874                          SUPERSEDED SURVEY CONTROL
DI1874
DI1874.No superseded survey control is available for this station.
DI1874
DI1874_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXL9248232765(NAD 83)
DI1874_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DI1874
DI1874                          STATION DESCRIPTION
DI1874
DI1874'DESCRIBED BY NATIONAL GEODETIC SURVEY 2006
DI1874'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DI1874'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DI1874'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DI1874'   ftp cors.ngs.noaa.gov: cors/coord  and  cors/station_log
DI1874'   http://geodesy.noaa.gov/CORS
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LX0248 ***********************************************************************
LX0248  CBN         -  This is a Cooperative Base Network Control Station.
LX0248  DESIGNATION -  U 325
LX0248  PID         -  LX0248
LX0248  STATE/COUNTY-  NY/SUFFOLK
LX0248  USGS QUAD   -  ORIENT (1976)
LX0248
LX0248                        *CURRENT SURVEY CONTROL
LX0248  ___________________________________________________________________
LX0248* NAD 83(2007)-  41 08 32.19916(N)    072 19 00.88922(W)     ADJUSTED
LX0248* NAVD 88     -         2.234  (meters)       7.33   (feet)  ADJUSTED
LX0248  ___________________________________________________________________
LX0248  EPOCH DATE  -        2002.00
LX0248  X           -   1,461,103.499 (meters)                     COMP
LX0248  Y           -  -4,582,912.739 (meters)                     COMP
LX0248  Z           -   4,174,316.341 (meters)                     COMP
LX0248  LAPLACE CORR-          -0.83  (seconds)                    DEFLEC09
LX0248  ELLIP HEIGHT-         -28.720 (meters)          (02/10/07) ADJUSTED
LX0248  GEOID HEIGHT-         -30.95  (meters)                     GEOID09
LX0248  DYNAMIC HT  -           2.233 (meters)       7.33  (feet)  COMP
LX0248
LX0248  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
LX0248  Type    PID    Designation                      North   East  Ellip
LX0248  ------------------------------------------------------------------
LX0248  NETWORK LX0248 U 325                              1.39   0.94   2.57
LX0248  ------------------------------------------------------------------
LX0248  MODELED GRAV-     980,263.3   (mgal)                      NAVD 88
LX0248
LX0248  VERT ORDER  -  SECOND    CLASS 0
LX0248
LX0248.The horizontal coordinates were established by GPS observations
LX0248.and adjusted by the National Geodetic Survey in February 2007.
LX0248
LX0248.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
LX0248.See National Readjustment for more information.
LX0248.The horizontal coordinates are valid at the epoch date displayed above.
LX0248.The epoch date for horizontal control is a decimal equivalence
LX0248.of Year/Month/Day.
LX0248
LX0248.The orthometric height was determined by differential leveling and
LX0248.adjusted in June 1991.
LX0248
LX0248.Photographs are available for this station.
LX0248
LX0248.The X, Y, and Z were computed from the position and the ellipsoidal ht.
LX0248
LX0248.The Laplace correction was computed from DEFLEC09 derived deflections.
LX0248
LX0248.The ellipsoidal height was determined by GPS observations
LX0248.and is referenced to NAD 83.
LX0248
LX0248.The geoid height was determined by GEOID09.
LX0248
LX0248.The dynamic height is computed by dividing the NAVD 88
LX0248.geopotential number by the normal gravity value computed on the
LX0248.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
LX0248.degrees latitude (g = 980.6199 gals.).
LX0248
LX0248.The modeled gravity was interpolated from observed gravity values.
LX0248
LX0248;                    North         East     Units Scale Factor Converg.
LX0248;SPC NY L     -   109,697.721   441,294.253   MT  1.00000787   +1 06 03.2
LX0248;SPC NY L     -   359,899.94  1,447,812.90   sFT  1.00000787   +1 06 03.2
LX0248;UTM  18      - 4,558,021.634   725,176.938   MT  1.00022408   +1 45 57.7
LX0248
LX0248!             -  Elev Factor  x  Scale Factor =   Combined Factor
LX0248!SPC NY L     -   1.00000450  x   1.00000787  =   1.00001238
LX0248!UTM  18      -   1.00000450  x   1.00022408  =   1.00022859
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LX0248
LX0248                          SUPERSEDED SURVEY CONTROL
LX0248
LX0248  NAD 83(1996)-  41 08 32.19931(N)    072 19 00.88944(W) AD(       ) A
LX0248  ELLIP H (09/18/02)  -28.717  (m)                       GP(       ) 4 2
LX0248  NAD 83(1996)-  41 08 32.19942(N)    072 19 00.88831(W) AD(       ) 2
LX0248  ELLIP H (01/11/99)  -28.621  (m)                       GP(       ) 4 1
LX0248  NAD 83(1996)-  41 08 32.19945(N)    072 19 00.88835(W) AD(       ) 2
LX0248  NAD 83(1992)-  41 08 32.19808(N)    072 19 00.88758(W) AD(       ) 2
LX0248  NAD 83(1986)-  41 08 32.19982(N)    072 19 00.89318(W) AD(       ) 2
LX0248  NAD 27      -  41 08 31.84716(N)    072 19 02.58808(W) AD(       ) 2
LX0248  NAVD 88 (09/18/02)    2.23   (m)            7.3    (f) LEVELING    3
LX0248  NGVD 29 (??/??/92)    2.523  (m)            8.28   (f) ADJ UNCH    2 0
LX0248
LX0248.Superseded values are not recommended for survey control.
LX0248.NGS no longer
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LX0319 ***********************************************************************
LX0319  CBN         -  This is a Cooperative Base Network Control Station.
LX0319  DESIGNATION -  THREE POINT
LX0319  PID         -  LX0319
LX0319  STATE/COUNTY-  NY/SUFFOLK
LX0319  USGS QUAD   -  GARDINERS ISLAND WEST (1956)
LX0319
LX0319                        *CURRENT SURVEY CONTROL
LX0319  ___________________________________________________________________
LX0319* NAD 83(2007)-  41 01 54.65194(N)    072 11 12.77587(W)     ADJUSTED
LX0319* NAVD 88     -         2.194  (meters)       7.20   (feet)  ADJUSTED
LX0319  ___________________________________________________________________
LX0319  EPOCH DATE  -        2002.00
LX0319  X           -   1,473,966.068 (meters)                     COMP
LX0319  Y           -  -4,587,258.165 (meters)                     COMP
LX0319  Z           -   4,165,072.739 (meters)                     COMP
LX0319  LAPLACE CORR-          -0.42  (seconds)                    DEFLEC09
LX0319  ELLIP HEIGHT-         -29.087 (meters)          (02/10/07) ADJUSTED
LX0319  GEOID HEIGHT-         -31.28  (meters)                     GEOID09
LX0319  DYNAMIC HT  -           2.193 (meters)       7.19  (feet)  COMP
LX0319
LX0319  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
LX0319  Type    PID    Designation                      North   East  Ellip
LX0319  ------------------------------------------------------------------
LX0319  NETWORK LX0319 THREE POINT                       1.25   0.88   2.37
LX0319  ------------------------------------------------------------------
LX0319  MODELED GRAV-     980,244.9   (mgal)                      NAVD 88
LX0319
LX0319  VERT ORDER  -  SECOND    CLASS 0
LX0319
LX0319.The horizontal coordinates were established by GPS observations
LX0319.and adjusted by the National Geodetic Survey in February 2007.
LX0319
LX0319.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
LX0319.See National Readjustment for more information.
LX0319.The horizontal coordinates are valid at the epoch date displayed above.
LX0319.The epoch date for horizontal control is a decimal equivalence
LX0319.of Year/Month/Day.
LX0319
LX0319.The orthometric height was determined by differential leveling and
LX0319.adjusted in June 1991.
LX0319
LX0319.The X, Y, and Z were computed from the position and the ellipsoidal ht.
LX0319
LX0319.The Laplace correction was computed from DEFLEC09 derived deflections.
LX0319
LX0319.The ellipsoidal height was determined by GPS observations
LX0319.and is referenced to NAD 83.
LX0319
LX0319.The geoid height was determined by GEOID09.
LX0319
LX0319.The dynamic height is computed by dividing the NAVD 88
LX0319.geopotential number by the normal gravity value computed on the
LX0319.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
LX0319.degrees latitude (g = 980.6199 gals.).
LX0319
LX0319.The modeled gravity was interpolated from observed gravity values.
LX0319
LX0319;                    North         East     Units Scale Factor Converg.
LX0319;SPC NY L     -    97,654.300   452,462.652   MT  0.99999992   +1 11 09.3
LX0319;SPC NY L     -   320,387.48  1,484,454.55   sFT  0.99999992   +1 11 09.3
LX0319;SPC CT       -   174,600.996   352,156.490   MT  1.00002125   +0 22 24.2
LX0319;SPC CT       -   572,836.77  1,155,366.75   sFT  1.00002125   +0 22 24.2
LX0319;UTM  18      - 4,546,105.334   736,486.894   MT  1.00028837   +1 50 51.4
LX0319
LX0319!             -  Elev Factor  x  Scale Factor =   Combined Factor
LX0319!SPC NY L     -   1.00000456  x   0.99999992  =   1.00000448
LX0319!SPC CT       -   1.00000456  x   1.00002125  =   1.00002581
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LX0319!UTM  18      -   1.00000456  x   1.00028837  =   1.00029293
LX0319
LX0319                          SUPERSEDED SURVEY CONTROL
LX0319
LX0319  NAD 83(1996)-  41 01 54.65210(N)    072 11 12.77608(W) AD(       ) A
LX0319  ELLIP H (09/18/02)  -29.084  (m)                       GP(       ) 4 2
LX0319  NAD 83(1996)-  41 01 54.65277(N)    072 11 12.76666(W) AD(       ) 3
LX0319  NAD 83(1996)-  41 01 54.65281(N)    072 11 12.76682(W) AD(       ) 3
LX0319  NAD 83(1992)-  41 01 54.65122(N)    072 11 12.76607(W) AD(       ) 3
LX0319  NAD 83(1986)-  41 01 54.65325(N)    072 11 12.77264(W) AD(       ) 3
LX0319  NAD 27      -  41 01 54.28500(N)    072 11 14.49600(W) AD(       ) 3
LX0319  NAVD 88 (09/18/02)    2.2    (m)            7.     (f) GPS OBS
LX0319  NGVD 29 (??/??/92)    2.48   (m)            8.1    (f) COMPUTED    2 0
LX0319
LX0319.Superseded values are not recommended for survey control.
LX0319.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
LX0319.See file dsdata.txt to determine how the superseded data were derived.
LX0319
LX0319_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TYL3648646105(NAD 83)
LX0319_MARKER: DD = SURVEY DISK
LX0319_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
LX0319_SP_SET: TOP OF SQUARE CONCRETE MONUMENT
LX0319_MARK LOGO: USE
LX0319_MAGNETIC: N = NO MAGNETIC MATERIAL
LX0319_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
LX0319+STABILITY: SURFACE MOTION
LX0319_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LX0319+SATELLITE: SATELLITE OBSERVATIONS - December 08, 2003
LX0319
LX0319  HISTORY     - Date     Condition        Report By
LX0319  HISTORY     - 1933     MONUMENTED       USE
LX0319  HISTORY     - 1934     GOOD             CGS
LX0319  HISTORY     - 1956     GOOD             CGS
LX0319  HISTORY     - 1965     GOOD             CGS
LX0319  HISTORY     - 20010716 GOOD             NYDT
LX0319  HISTORY     - 20020417 MARK NOT FOUND   USPSQD
LX0319  HISTORY     - 20031208 GOOD             NGS
LX0319
LX0319                          STATION DESCRIPTION
LX0319
LX0319'DESCRIBED BY US ENGINEERS 1933 (LCW)
LX0319'THE STATION CONSISTS OF A BRASS DISK EMBEDDED IN A 10- BY
LX0319'10-INCH CONCRETE MONUMENT.  THE DISK IS A TRIANGULATION MARKER
LX0319'USED BY THE U.S. ENGINEER DEPARTMENT.
LX0319'
LX0319'REFERENCE MARKS ARE STANDARD BRONZE DISKS SET IN CONRETE.
LX0319'
LX0319'IT IS LOCATED ON THE W SIDE OF THE ENTRANCE TO THREE MILE
LX0319'HARBOR AND IS APPROXIMATELY IN LINE WITH THE OLD WOODEN
LX0319'BREAKWATER 183 PACES S FROM THE SHORE ON GARDINERS BAY AND 26
LX0319'PACES W OF THE INLET NEAR THE TOP OF A 5-FOOT BLUFF.  TWO
LX0319'REFERENCE MARKS WERE ESTABLISHED.
LX0319'
LX0319'REFERENCE MARK NO. 1 IS W OF THE STATION.
LX0319'
LX0319'REFERENCE MARK NO. 2 IS EASTWARD OF THE STATION.
LX0319'
LX0319'HEIGHT OF LIGHT ABOVE STATION MARK 5 METERS.
LX0319
LX0319                          STATION RECOVERY (1934)
LX0319
LX0319'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1934 (WDP)
LX0319'STATION AND REFERENCE MARKS WERE RECOVERED IN GOOD CONDITION.  THE
LX0319'STATION CONSISTS OF A BRASS DISK EMBEDDED IN A 10- BY 10-INCH
LX0319'CONCRETE MONUMENT.  THE DISK IS A TRIANGULATION MARKER USED
LX0319'BY THE U.S. ENGINEER DEPARTMENT.
LX0319'
LX0319'IT IS LOCATED ON THE W SIDE OF THE ENTRANCE TO THREE MILE
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LX0319'HARBOR AND IS APPROXIMATELY IN LINE WITH THE OLD WOODEN
LX0319'BREAKWATER, 183 PACES S FROM THE SHORE OF GARDINERS BAY, AND
LX0319'26 PACES W OF THE INLET NEAR THE TOP OF A 5-FOOT BLUFF.
LX0319'
LX0319'REFERENCE MARK NO. 1 IS W OF THE STATION. REFERENCE MARK
LX0319'NO. 2 IS EASTWARD OF THE STATION. REFERENCE MARKS ARE MARKED
LX0319'WITH STANDARD C. AND G.S. REFERENCE DISKS.
LX0319
LX0319 STATION RECOVERY (1956)
LX0319
LX0319'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1956
LX0319'6.3 MI NW FROM EAST HAMPTON.
LX0319'5.35 MILES NORTH ALONG THREE MILE HARBOR ROAD FROM THE POST
LX0319'OFFICE AT EAST HAMPTON, THENCE 0.95 MILE NORTHWEST ALONG ROAD
LX0319'LEADING TO THREE MILE HARBOR FISHING STATION, ON THE WEST SIDE
LX0319'OF THREE MILE HARBOR ENTRANCE, 104 FEET SOUTHEAST OF BENCH
LX0319'MARK 3, 89 FEET SOUTHWEST OF SEAWALL ON THE SOUTHWEST SIDE OF
LX0319'ENTRANCE, SET IN TOP OF A CONCRETE POST, PROJECTING 2 INCHES.
LX0319
LX0319 STATION RECOVERY (1965)
LX0319
LX0319'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1965 (JKW)
LX0319'THE STATION AND REFERENCE MARKS 1 AND 2 WERE RECOVERED IN GOOD
LX0319'CONDITION.
LX0319'
LX0319'RECOVERY NOTE BY J.C.C. IN 1953 IS ADEQUATE AND COMPLETE.
LX0319
LX0319 STATION RECOVERY (2001)
LX0319
LX0319'RECOVERY NOTE BY NY DEPT OF TRANSP 2001 (DH)
LX0319'RECOVERED AS DESCRIBED.
LX0319'
LX0319
LX0319 STATION RECOVERY (2002)
LX0319
LX0319'RECOVERY NOTE BY US POWER SQUADRON 2002 (JK)
LX0319'MARK NOT FOUND.
LX0319
LX0319 STATION RECOVERY (2003)
LX0319
LX0319'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (JRO)
LX0319'THIS MARK IS ON LAND ADMINISTERED BY TOWN OF EAST HAMPTON, NATURE
LX0319'PRESERVES, CURRENT PHONE NUMBER 631-324-4017. NO ADVANCE PERMISSION
LX0319'IS PRESENTLY NEEDED FOR ACCESS. NAD83 RAPID STATIC GPS POSITION N 41
LX0319'01 54.652, W 72 11 12.776.
LX0319'
LX0319'TO REACH THE GENERAL AREA FROM THE HISTORIC WINDMILL IN EAST HAMPTON,
LX0319'PROCEED 0.5 MILE NORTH ON N. MAIN ST. (UNDER THE RR BRIDGE) , THEN
LX0319'BEAR LEFT ON THREE MILE HARBOR ROAD AT A FORK WITH SPRINGS FIREPLACE
LX0319'RD AND GO 1.3 MILES NORTH TO A FORK LEFT ON SPRINGY BANKS RD. TAKE
LX0319'THIS NORTHWESTERLY 2 MILES TO THE Y-INTERSECTION WITH HANDS CREEK RD
LX0319'(THE GENERAL AREA OF BENCH MARK C 372, WHICH APPEARS TO BE GONE).
LX0319'BEAR RIGHT AND CONTINUE 0.3 MILE NORTHERLY ON HANDS CREEK RD TO LEFT
LX0319'TURN ON ALEWIVE BROOK RD. PROCEED NW AND NORTH 0.8 MILE TO CROSSROADS
LX0319'(X 371 HERE ON LEFT) AND CONTINUE 0.75 MILE NE, NOW ON OLD HOUSE
LX0319'LANDING RD, TO RIGHT TURN ON SAMMYS BEACH RD. PROCEED EASTERLY UP AND
LX0319'THEN DOWNHILL, THEN NORTH AND LEVEL 0.25 MILE TO HARD RIGHT TURN
LX0319'FOLLOWING ASPHALT RD (W 371 ON LEFT JUST BEFORE TURN), THEN 0.4 MILE
LX0319'EAST TO END OF ASPHALT RD, THEN WIND AROUND SNOW FENCE AND CONTINUE
LX0319'0.6 MILE EASTERLY ON SAND-GRAVEL RD TO TOP OF SLOPE BEYOND WHICH IT
LX0319'IS PREFERABLE TO WALK OR USE FOUR-WHEEL DRIVE. THREE CEDAR TREES ARE
LX0319'NEARBY ON THE LEFT, AND TIDAL MARK 1171 C SHOULD BE OBVIOUS NEAR
LX0319'THEM. THIS CORPS OF ENG MARK IS 90.8 M TO THE NW ON TRUE AZIMUTH
LX0319'335-00 FROM 1171 C (AND 0.6 M BELOW IT), 3.6 M NE OF THE EXTENDED
LX0319'LINE OF THE WWESTERLY BULKHEAD.
LX0319'
LX0319'THE MARK IS IN AN AREA OF SCRUB BRUSH WITNESSED BY TWO WHITE ONE-INCH
LX0319'PVC PIPES WITH NO GOOD DEFINITE OBJECTS NEARBY TO TIE TO. IT IS 10.35

LX0319'M WESTERLY FROM RM 2 (BEARING N 82-02W) AND ABOUT LEVEL WITH IT. IT
LX0319'IS 31.78 M SE OF RM 1 (BRG. S 64 18 E) AND ABOUT LEVEL WITH IT.
LX0319'NOTE--NO STAMPING ON DISK.

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LX7498 ***********************************************************************
LX7498  DESIGNATION -  FISHPORT
LX7498  PID         -  LX7498
LX7498  STATE/COUNTY-  NY/SUFFOLK
LX7498  USGS QUAD   -  NEW LONDON (1984)
LX7498
LX7498                        *CURRENT SURVEY CONTROL
LX7498  ___________________________________________________________________
LX7498* NAD 83(1996)-  41 15 08.48351(N)    072 01 49.38610(W)     ADJUSTED
LX7498* NAVD 88     -         1.6    (meters)       5.     (feet)  VERTCON
LX7498  ___________________________________________________________________
LX7498  X           -   1,481,519.376 (meters)                     COMP
LX7498  Y           -  -4,567,888.967 (meters)                     COMP
LX7498  Z           -   4,183,514.671 (meters)                     COMP
LX7498  LAPLACE CORR-          -0.51  (seconds)                    DEFLEC09
LX7498  ELLIP HEIGHT-         -29.278 (meters)          (01/11/99) ADJUSTED
LX7498  GEOID HEIGHT-         -30.81  (meters)                     GEOID09
LX7498  HORZ ORDER  -  THIRD
LX7498  ELLP ORDER  -  FOURTH    CLASS I
LX7498
LX7498.This mark is at Elizabeth Field Airport (0B8)
LX7498
LX7498.The horizontal coordinates were established by GPS observations
LX7498.and adjusted by the National Geodetic Survey in January 1999.
LX7498
LX7498.The NAVD 88 height was computed by applying the VERTCON shift value to
LX7498.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
LX7498
LX7498.The X, Y, and Z were computed from the position and the ellipsoidal ht.
LX7498
LX7498.The Laplace correction was computed from DEFLEC09 derived deflections.
LX7498
LX7498.The ellipsoidal height was determined by GPS observations
LX7498.and is referenced to NAD 83.
LX7498
LX7498.The geoid height was determined by GEOID09.
LX7498
LX7498;                     North         East     Units Scale Factor Converg.
LX7498;SPC NY L     -   122,421.420   465,069.569   MT  1.00001950   +1 17 17.8
LX7498;SPC NY L     -   401,644.28  1,525,815.74   sFT  1.00001950   +1 17 17.8
LX7498;SPC CT       -   199,186.966   365,113.044   MT  0.99999513   +0 28 37.7
LX7498;SPC CT       -   653,499.24  1,197,875.05   sFT  0.99999513   +0 28 37.7
LX7498;UTM  18      - 4,571,025.237   748,808.899   MT  1.00036195   +1 57 32.8
LX7498;UTM  19      - 4,571,201.207   246,098.869   MT  1.00039346   -1 59 57.2
LX7498
LX7498!             -  Elev Factor  x  Scale Factor =   Combined Factor
LX7498!SPC NY L     -   1.00000459  x   1.00001950  =   1.00002409
LX7498!SPC CT       -   1.00000459  x   0.99999513  =   0.99999972
LX7498!UTM  18      -   1.00000459  x   1.00036195  =   1.00036654
LX7498!UTM  19      -   1.00000459  x   1.00039346  =   1.00039805
LX7498
LX7498                          SUPERSEDED SURVEY CONTROL
LX7498
LX7498  NAD 83(1996)-  41 15 08.48352(N)    072 01 49.38612(W) AD(       ) 3
LX7498  NAD 83(1992)-  41 15 08.48225(N)    072 01 49.38543(W) AD(       ) 3
LX7498  NAD 83(1986)-  41 15 08.48244(N)    072 01 49.38963(W) AD(       ) 3
LX7498  NAD 27      -  41 15 08.12441(N)    072 01 51.12267(W) AD(       ) 3
LX7498  NGVD 29 (03/22/89)    1.9    (m)            6.     (f) GPS OBS
LX7498
LX7498.Superseded values are not recommended for survey control.
LX7498.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
LX7498.See file dsdata.txt to determine how the superseded data were derived.
LX7498
LX7498_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TYL4880871025(NAD 83)
LX7498_MARKER: I = METAL ROD
LX7498_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
LX7498_SP_SET: STAINLESS STEEL ROD IN SLEEVE
LX7498_STAMPING: FISHPORT 1988
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LX7498_MARK LOGO: NGS
LX7498_PROJECTION: FLUSH
LX7498_MAGNETIC: I = MARKER IS A STEEL ROD
LX7498_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
LX7498+STABILITY: POSITION/ELEVATION WELL
LX7498_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LX7498+SATELLITE: SATELLITE OBSERVATIONS - December 12, 2001
LX7498_ROD/PIPE-DEPTH: 8.5  meters
LX7498_SLEEVE-DEPTH  : 1.0 meters
LX7498
LX7498  HISTORY     - Date     Condition        Report By
LX7498  HISTORY     - 1988     MONUMENTED       NGS
LX7498  HISTORY     - 20011212 GOOD             USPSQD
LX7498
LX7498                          STATION DESCRIPTION
LX7498
LX7498'DESCRIBED BY NATIONAL GEODETIC SURVEY 1988
LX7498'THE STATION IS LOCATED NEAR THE MOST SOUTHWESTERN POINT OF FISHERS
LX7498'ISLAND, AT THE ELIZABETH FIELD AIRPORT, JUST EAST OF THE INTERSECTION
LX7498'OF RUNWAYS AND NEAR THE WIND SOCK.
LX7498'OWNERSHIP--TOWN OF SOUTHOLD, C/O PHIL KNAUFF MANAGER OF FISHERS ISLAND
LX7498'FERRY DISTRICT, P.O. BOX H, FISHERS ISLAND NY 06390.  PHONE 516
LX7498'788-7463.  AIRPORT MANAGER IS A. RICHARD GREBE. PHONE 516 788-7249.
LX7498'TO REACH THE STATION FORM THE FERRY LANDING AT FISHERS ISLAND, GO
LX7498'SOUTH FOR 0.2 KM (0.10 MI) ON THE PAVED ROAD ALONG THE HARBOR TO A
LX7498'T-JUNCTION OF A PAVED ROAD.  TURN RIGHT AND GO WEST FOR 0.1 KM
LX7498'(0.05 MI) ON THE PAVED ROAD TO A PAVED ROAD ON THE LEFT.  TURN LEFT
LX7498'AND GO SOUTH FOR 0.2 KM (0.10 MI) ON TH PAVED ROAD TO THE AIRPORT
LX7498'TERMINAL BUILDING.  CONTINUE STRAIGHT AHEAD AND GO AROUND THE TERMINAL
LX7498'BUILDING THEN ANGLE TO THE SOUTHWEST FOR 0.2 KM (0.10 MI) ON THE PAVED
LX7498'PARKING RAMP AND ACROSS THE RUNWAY TO THE STATION IN THE EAST ANGLE OF
LX7498'THE GRASS AREA AT THE INTERSECTION OF THE RUNWAYS AND NEAR THE
LX7498'WINDSOCK.
LX7498'THE STATION IS THE TIP CENTER OF A STAINLESS STEEL ROAD RECESSED 7 CM
LX7498'BELOW GROUND DRIVEN TO SLOW TIME MET AT A DEPTH OF 8.5 METERS IN A
LX7498'GREASE FILLED SLEEVE EXTENDING TO A DEPTH OF 1.0 METERS ENCASED IN A
LX7498'PVC PIPE COVERED BY A STANDARD NGS LOGO CAP.  LOCATED 45.1 M
LX7498'(148.0 FT) EAST FROM THE EAST EDGE OF THE ASPHALT AT THE INTERSECTION
LX7498'OF THE RUNWAYS, 33.2 M (108.9 FT) NORTHEAST FROM THE NORTHEAST DEGE OF
LX7498'RUNWAY 12-30, 24.8 M (81.4 FT) SOUTH-SOUTHEAST FROM THE SOUTHEAST EDGE
LX7498'OF RUNWAY 7-25, 17.9 M (58.7 FT) EAST-NORTHEAST FROM THE WIND SOCK,
LX7498'AND 17.5 M (57.4 FT) EAST-NORTHEAST FROM A FIBERGLASS WITNESS POST.
LX7498'DESCRIBED BY C.L. SMITH, TYPED BY R.L. ZURFLUH.
LX7498
LX7498                          STATION RECOVERY (2001)
LX7498
LX7498'RECOVERY NOTE BY US POWER SQUADRON 2001 (RMS)
LX7498'STATION IS 57 FEET NE OF A WITNESS POST, 148 FEET W OF A WIND SOCK,
LX7498'135 FEET S OF THE SECOND  LIGHT ON RIGHT OF RUNWAY10-30 TO THE
LX7498'NORTHEAST AT ELIZABETH FIELD, BENEATH A NGS LOGO CAP.
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LW1756 ***********************************************************************
LW1756  PACS        -  This is a Primary Airport Control Station.
LW1756  DESIGNATION -  WESTAIR 3
LW1756  PID         -  LW1756
LW1756  STATE/COUNTY-  RI/WASHINGTON
LW1756  USGS QUAD   -  WATCH HILL (1984)
LW1756
LW1756                        *CURRENT SURVEY CONTROL
LW1756  ___________________________________________________________________
LW1756* NAD 83(2007)-  41 21 04.53260(N)    071 48 09.52897(W)     ADJUSTED
LW1756* NAVD 88     -        21.727  (meters)      71.28   (feet)  ADJUSTED
LW1756  ___________________________________________________________________
LW1756  EPOCH DATE  -        2002.00
LW1756  X           -   1,497,404.728 (meters)                     COMP
LW1756  Y           -  -4,555,091.573 (meters)                     COMP
LW1756  Z           -   4,191,779.831 (meters)                     COMP
LW1756  LAPLACE CORR-           0.87  (seconds)                   DEFLEC09
LW1756  ELLIP HEIGHT-          -8.882 (meters)          (11/06/07) ADJUSTED
LW1756  GEOID HEIGHT-         -30.59  (meters)                     GEOID09
LW1756  DYNAMIC HT  -          21.720 (meters)      71.26  (feet)  COMP
LW1756  MODELED GRAV-     980,276.4   (mgal)                       NAVD 88
LW1756
LW1756  HORZ ORDER  -  B
LW1756  VERT ORDER  -  SECOND    CLASS II
LW1756  ELLP ORDER  -  FOURTH    CLASS I
LW1756
LW1756.This mark is at Westerly State Airport (WST)
LW1756
LW1756.The horizontal coordinates were established by GPS observations
LW1756.and adjusted by the National Geodetic Survey in November 2007.
LW1756
LW1756.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
LW1756.See National Readjustment for more information.
LW1756.The horizontal coordinates are valid at the epoch date displayed above.
LW1756.The epoch date for horizontal control is a decimal equivalence
LW1756.of Year/Month/Day.
LW1756
LW1756.The orthometric height was determined by differential leveling and
LW1756.adjusted in June 1991.
LW1756
LW1756.Photographs are available for this station.
LW1756
LW1756.The X, Y, and Z were computed from the position and the ellipsoidal ht.
LW1756
LW1756.The Laplace correction was computed from DEFLEC09 derived deflections.
LW1756
LW1756.The ellipsoidal height was determined by GPS observations
LW1756.and is referenced to NAD 83.
LW1756
LW1756.The geoid height was determined by GEOID09.
LW1756
LW1756.The dynamic height is computed by dividing the NAVD 88
LW1756.geopotential number by the normal gravity value computed on the
LW1756.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
LW1756.degrees latitude (g = 980.6199 gals.).
LW1756
LW1756.The modeled gravity was interpolated from observed gravity values.
LW1756
LW1756;                    North         East     Units Scale Factor Converg.
LW1756;SPC RI       -    29,799.333    74,672.549   MT  1.00000164   -0 11 59.8
LW1756;SPC RI       -    97,766.65    244,988.19   sFT  1.00000164   -0 11 59.8
LW1756;SPC CT       -   210,354.407   384,079.158   MT  0.99998818   +0 37 41.3
LW1756;SPC CT       -   690,137.75  1,260,099.70   sFT  0.99998818   +0 37 41.3
LW1756;UTM  19      - 4,581,541.548   265,536.842   MT  1.00027659   -1 51 08.9
LW1756
LW1756!             -  Elev Factor  x  Scale Factor =   Combined Factor
LW1756!SPC RI       -   1.00000139  x   1.00000164  =   1.00000303
LW1756!SPC CT       -   1.00000139  x   0.99998818  =   0.99998957
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LW1756!UTM  19      -   1.00000139  x   1.00027659  =   1.00027798
LW1756
LW1756|-------------------------------------------------------------------|
LW1756| PID    Reference Object                    Distance      Geod. Az  |
LW1756|                                                          dddmmss.s |
LW1756| LW3349 WESTAIR 2                          270.811 METERS 18556     |
LW1756| LW1755 WESTAIR 3 RM 5                      14.795 METERS 22219     |
LW1756| LW1754 WESTAIR 3 RM 6                      20.625 METERS 31057     |
LW1756|-------------------------------------------------------------------|
LW1756
LW1756                          SUPERSEDED SURVEY CONTROL
LW1756
LW1756  NAD 83(2007)-  41 21 04.53288(N)    071 48 09.52959(W) AD(       ) 0
LW1756  ELLIP H (02/10/07)   -8.851  (m)                       GP(       )
LW1756  ELLIP H (06/04/02)   -8.878  (m)                       GP(       ) 4 1
LW1756  NAD 83(1996)-  41 21 04.53289(N)    071 48 09.53013(W) AD(       ) B
LW1756  ELLIP H (05/22/00)   -8.881  (m)                       GP(       ) 4 1
LW1756  NAD 83(1996)-  41 21 04.53345(N)    071 48 09.52923(W) AD(       ) 2
LW1756  NAD 83(1992)-  41 21 04.53210(N)    071 48 09.52841(W) AD(       ) 2
LW1756  NAD 83(1986)-  41 21 04.53115(N)    071 48 09.53012(W) AD(       ) 2
LW1756  NAD 27      -  41 21 04.17226(N)    071 48 11.28626(W) AD(       ) 2
LW1756  NAVD 88 (05/22/00)   21.73   (m)           71.3    (f) LEVELING    3
LW1756  NGVD 29 (07/20/87)   22.0    (m)           72.     (f) VERT ANG
LW1756
LW1756.Superseded values are not recommended for survey control.
LW1756.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
LW1756.See file dsdata.txt to determine how the superseded data were derived.
LW1756
LW1756_U.S. NATIONAL GRID SPATIAL ADDRESS: 19TBF6553681541(NAD 83)
LW1756_MARKER: DH = HORIZONTAL CONTROL DISK
LW1756_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
LW1756_SP_SET: CONCRETE POST
LW1756_STAMPING: WESTAIR 3 1985
LW1756_MARK LOGO: NGS
LW1756_MAGNETIC: N = NO MAGNETIC MATERIAL
LW1756_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
LW1756+STABILITY: SURFACE MOTION
LW1756_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LW1756+SATELLITE: SATELLITE OBSERVATIONS - April 10, 2005
LW1756
LW1756  HISTORY     - Date     Condition        Report By
LW1756  HISTORY     - 1985     MONUMENTED       NGS
LW1756  HISTORY     - 1985     GOOD             NGS
LW1756  HISTORY     - 19851231 GOOD             NGS
LW1756  HISTORY     - 1986     GOOD             RIGS
LW1756  HISTORY     - 19941001 GOOD             USPSQD
LW1756  HISTORY     - 19990925 GOOD             WOOLPT
LW1756  HISTORY     - 20050410 GOOD             CTGS
LW1756
LW1756                          STATION DESCRIPTION
LW1756
LW1756'DESCRIBED BY NATIONAL GEODETIC SURVEY 1985 (VDN)
LW1756'THE STATION IS LOCATED ABOUT 3.2 KM (2.0 MI)
LW1756'SOUTHEAST OF WESTERLY, 2.4 KM (1.5 MI) EAST OF THE RHODE ISLAND AND
LW1756'CONNECTICUT STATE LINE AND AT THE WESTERLY STATE AIRPORT, ON THE
LW1756'NORTHEAST SIDE OF RUNWAYS 32 AND 14.
LW1756'OWNERSHIP--STATE OF RHODE ISLAND, MR JAMES F BEAUREGARD, AIRPORT
LW1756'MANAGER, AIRPORT ROAD, WESTERLY RHODE ISLAND 02891, PHONE
LW1756'401-596-2357.
LW1756'NOTE-CONTACT AIRPORT MANAGER BEFORE ENTERING AIRPORT.
LW1756'
LW1756'TO REACH THE STATION FROM WESTERLY STATE AIRPORT, AT THE OPERATIONS
LW1756'BUILDING. FROM THE BUILDING GO NORTHEAST ON THE TAXISTRIP FOR 0.3
LW1756'KM (0.2 MI) TO THE STATION ACROSS  RUNWAYS 32 AND 14.
LW1756'
LW1756'THE STATION IS A STANDARD NGS DISK
LW1756'STAMPED---WESTAIR 3 1985---,
LW1756'SET INTO THE TOP OF A ROUND CONCRETE MONUMENT
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LW1756'30 CM IN DIAMETER FLUSH WITH GROUND. LOCATED
LW1756'83.8 METERS (275 FT) NORTHWEST FROM THE NORTH EDGE OF RUNWAY 25,
LW1756'25.1 METERS (82.5 FT) EAST FROM THE RUNWAY LIGHT NUMBER 24 AND
LW1756'20.8 METERS (68.4 FT) EAST-NORTHEAST FROM THE EAST EDGE OF RUNWAY.
LW1756'
LW1756'THE UNDERGROUND MARK IS A STANDARD NGS DISK
LW1756'STAMPED---WESTAIR 3 1985---,
LW1756'SET INTO AN IRREGULAR MASS OF CONCRETE 1.1 METERS BELOW THE SURFACE.
LW1756'
LW1756'REFERENCE MARK NO. 5 IS A STANDARD NGS DISK
LW1756'STAMPED---WESTAIR 3 NO 5 1985---,
LW1756'SET INTO THE TOP OF A ROUND CONCRETE MONUMENT
LW1756'35 CM IN DIAMETER RECESSED 3 CM BELOW GROUND. LOCATED
LW1756'15.4 METERS (50.6 FT) EAST-SOUTHEAST FROM THE RUNWAY LIGHT NUMBER
LW1756'24 AND
LW1756'6.0 METERS (19.6 FT) EAST-NORTHEAST FROM THE EAST EDGE OF RUNWAY
LW1756'NUMBER 14.
LW1756'MARK IS LEVEL WITH THE STATION.
LW1756'
LW1756'REFERENCE MARK NO. 6 IS A STANDARD NGS DISK
LW1756'STAMPED---WESTAIR NO 6 1985---,
LW1756'SET INTO THE TOP OF A ROUND CONCRETE MONUMENT
LW1756'40 CM IN DIAMETER RECESSED 4 CM BELOW GROUND. LOCATED
LW1756'21.2 METERS (69.5 FT) NORTHEAST FROM THE RUNWAY LIGHT NUMBER 24 AND
LW1756'21.1 METERS (69.2 FT) EAST-NORTHEAST FROM THE EAST EDGE OF RUNWAY
LW1756'NUMBER 14.
LW1756'MARK IS LEVEL WITH THE STATION.
LW1756'
LW1756'THE AZIMUTH MARK FOR WESTERLY 1969 WILL SEE IF NEEDED.
LW1756
LW1756 STATION RECOVERY (1985)
LW1756
LW1756'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985
LW1756'3.2 KM (2.0 MI) SE FROM WESTERLY.
LW1756'THE STATION IS LOCATED ABOUT 3.2 KM (2.0 MI) SOUTHEAST OF WESTERLY,
LW1756'2.4 KM (1.5 MI) EAST OF THE RHODE ISLAND AND CONNECTICUT STATE LINE
LW1756'AND AT THE WESTERLY STATE AIRPORT, ON THE NORTHEAST SIDE OF RUNWAYS 32
LW1756'AND 14. OWNERSHIP--STATE OF RHODE ISLAND, MR JAMES F BEAUREGARD,
LW1756'AIRPORT MANAGER, AIRPORT ROAD, WESTERLY RHODE ISLAND 02891, PHONE
LW1756'401-596-2357. NOTE-CONTACT AIRPORT MANAGER BEFORE ENTERING AIRPORT.
LW1756'TO REACH THE STATION FROM WESTERLY STATE AIRPORT, AT THE OPERATIONS
LW1756'BUILDING. FROM THE BUILDING GO NORTHEAST ON THE TAXISTRIP FOR 0.3 KM
LW1756'(0.2 MI) TO THE STATION ACROSS RUNWAYS 32 AND 14. SET INTO THE TOP
LW1756'OF A ROUND CONCRETE MONUMENT 30 CM IN DIAMETER FLUSH WITH GROUND.
LW1756'LOCATED 83.8 METERS (275 FT) NORTHWEST FROM THE NORTH EDGE OF RUNWAY
LW1756'25, 25.1 METERS (82.5 FT) EAST FROM THE RUNWAY LIGHT NUMBER 24 AND
LW1756'20.8 METERS (68.4 FT) EAST-NORTHEAST FROM THE EAST EDGE OF RUNWAY.
LW1756
LW1756 STATION RECOVERY (1985)
LW1756
LW1756'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985
LW1756'THE STATION IS LOCATED ON THE AIRPORT NW OF THE INTERSECTION OF THE
LW1756'RUNWAYS. THE STATION IS 82.4 FEET (25.1 M) EAST OF THE SECOND RUNWAY
LW1756'LIGHT NW OF THE RUNWAYS INTERSECTION 1T 24, 68.2 FEET (20.8 M) NE OF
LW1756'THE EDGE OF RUNWAY 14-32, AND 277 FEET (84.4 M) NW OF THE RUNWAY
LW1756'SHOULDER EDGE FOR RUNWAY 7-25. THE STATION IS A STANDARD NGS
LW1756'HORIZONTAL CONTROL DISK SET IN A CONCRETE POST FLUSH WITH THE GROUND
LW1756'AND STAMPED WESTAIR 3 1985.
LW1756
LW1756 STATION RECOVERY (1986)
LW1756
LW1756'RECOVERY NOTE BY RHODE ISLAND GEODETIC SURVEY 1986 (GEC)
LW1756'THE STATION WAS RECOVERED AT THIS DATE.
LW1756'
LW1756'DESCRIBED BY RHODE ISLAND GEODETIC SURVEY.
LW1756
LW1756 STATION RECOVERY (1994)
LW1756

LW1756'RECOVERY NOTE BY US POWER SQUADRON 1994
LW1756'RECOVERED IN GOOD CONDITION.
LW1756
LW1756 STATION RECOVERY (1999)
LW1756
LW1756'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1999 (ARL)
LW1756'RECOVERED AS DESCRIBED. THIS STATION IS DESIGNATED AS THE PRIMARY
LW1756'AIRPORT CONTROL STATION.
LW1756'THE STATION IS LOCATED APPROXIMATELY 6.5 MI (10.5 KM) EAST-NORTHEAST
LW1756'OF STONINGTON, CT, 2.9 MI (4.7 KM) SOUTHEAST OF WESTERLY, RI, 2.35 MI
LW1756'(3.78 KM) NORTHEAST OF AVONDALE, CT, AT THE WESTERLY STATE AIRPORT.
LW1756'OWNERSHIP-- WESTERLY STATE AIRPORT, C/O TRACEY SMITH (AIRPORT MANAGER)
LW1756', 56 AIRPORT ROAD, WESTERLY, RI, 02891. PHONE NUMBER (401) 596-2357,
LW1756'FAX NUMBER (401) 596-7586. THIS STATION REQUIRES 24 HOUR NOTICE TO
LW1756'ACCESS.
LW1756'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND
LW1756'STATE HIGHWAY 91 IN WESTERLY, RI, PROCEED SOUTHEASTERLY ON U.S. 1 FOR
LW1756'1.55 MI (2.49 KM) TO A PAVED SIDE ROAD ON THE RIGHT AND A SIGN FOR THE
LW1756'WESTERLY STATE AIRPORT. TURN RIGHT AND PROCEED SOUTHWEST FOR 0.6 MI
LW1756'(1.0 KM) TO A ROAD ON THE LEFT LEADING TO THE AIRPORT. TURN LEFT AND
LW1756'GO EAST AND NORTH EAST FOR 0.25 MI (0.40 KM) TO THE TERMINAL BUILDING
LW1756'ON THE RIGHT AND THE PARKING LOT STRAIGHT AHEAD. FROM THE TERMINAL
LW1756'PROCEED EASTERLY TO THE JUNCTION OF THE TWO RUNWAYS, AND THE STATION
LW1756'TO THE NORTHWEST.
LW1756'THE STATION IS A STANDARD NGS HORIZONTAL DISK SET IN CONCRETE FLUSH
LW1756'WITH THE GROUND AND IS STAMPED--WESTAIR 3 1935--. THE STATION IS
LW1756'LOCATED 76.6 M (251.3 FT) FROM THE EDGE OF RUNWAY 25 AT A MAGNETIC
LW1756'COMPASS AZIMUTH OF 312 DEGREES, 36.07 M (118.34 FT) FROM THE NORTH
LW1756'CORNER OF THE BASE FOR RUNWAY SIGN 25.7 AT A MAGNETIC COMPASS AZIMUTH
LW1756'OF 348 DEGREES, 18.57 M (60.93 FT) FROM THE EDGE OF RUNWAY 14 AT A
LW1756'MAGNETIC COMPASS AZIMUTH OF 44 DEGREES, AND 14.28 M (46.85 FT) FROM
LW1756'REFERENCE MARK 5 AT A MAGNETIC COMPASS AZIMUTH OF 44 DEGREES. THIS
LW1756'STATION IS DESIGNATED AS THE PRIMARY AIRPORT CONTROL STATION.
LW1756
LW1756 STATION RECOVERY (2005)
LW1756
LW1756'RECOVERY NOTE BY CONNECTICUT GEODETIC SURVEY 2005
LW1756'RECOVERED AS DESCRIBED IN NGS DATABASE