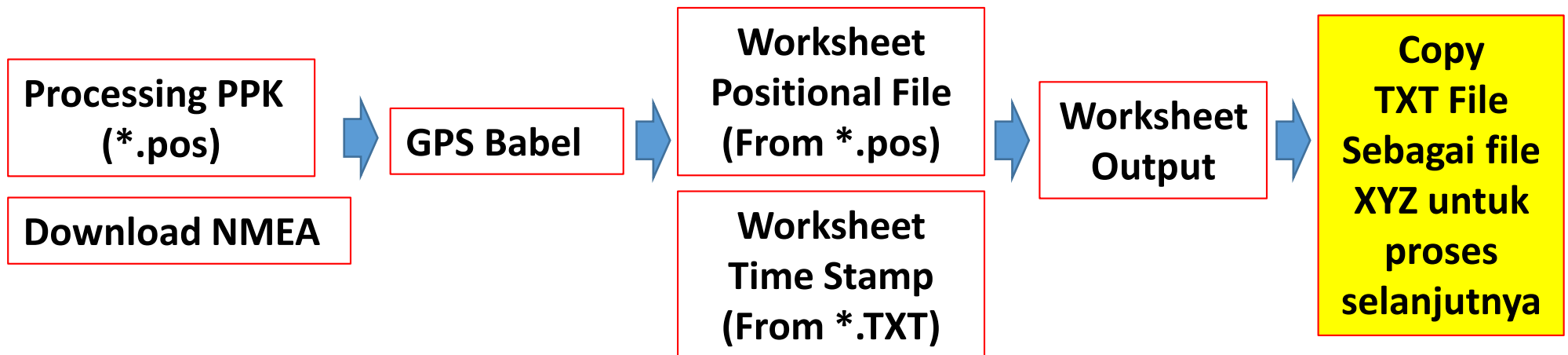


PPK for USV Bathymetry

KONVERSI
File NMEA → CSV

SOFTWARE YANG DIGUNAKAN

- GPSBABEL
- File Excel: NMEA Adjustments_potretudara.xls



Convert with GPSTabel: NMEA File → CVS

The main window of GPSTabel is shown with the following settings:

- Input:** Format: NMEA 0183 sentences (NMEA). File Name(s): F:/cd_workshop/bahan_2019/demo data/GPS/DRONE/r_045801.nmea (Nama File NMEA). Options: gpgga=0,gpvtg=0,gpgsa=0.
- Translation Options:** Waypoints, Routes, Tracks, and Filters are checked.
- Output:** Format: Universal csv with field structure in first line (Universal CSV). File Name: F:/cd_workshop/bahan_2019/demo data/GPS/DRONE/tess.txt. Options: utc=7 (Zona waktu (optional)).

The command line at the bottom shows: `gpsbabel -w -i nmea,gpgga=0,gpvtg=0,gpgsa=0 -f F:/cd_workshop/bahan_2019/demo data/GPS/DRONE/r_045801.nmea -o unicsv,utc=7 -F F:/cd_workshop/bahan_2019/demo data/GPS/DRONE/tess.txt`. The status indicates "Translation successful".

The "Options for nmea" dialog box is shown with the following settings:

- Max length of waypoint name to write: 6.
- Read/write GPRMC sentences.
- Read/write GPGGA sentences.
- Read/write GPVTG sentences.
- Read/write GPGSA sentences.
- Complete date-free tracks with given date (YYYYMMDD): 0.
- Return current position as a waypoint.
- Decimal seconds to pause between groups of strings: 0.
- Append realtime positioning data to the output file instead of truncating.
- Speed in bits per second of serial port (baud=4800): 0.
- Write tracks for Gisteq Phototracker.
- Accept position fixes in gpgga marked invalid.

Buttons: Help, OK, Cancel.

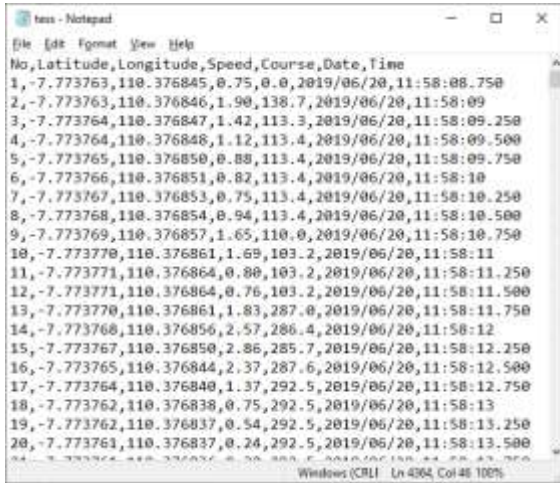
The "Options for unicsv" dialog box is shown with the following settings:

- GPS datum (def. WGS 84): WGS 84.
- Write position using this grid.
- Write timestamps with offset x to UTC time: 7.
- Write name(s) of format(s) from input session(s).
- Write filename(s) from input session(s).

Buttons: Help, OK, Cancel.

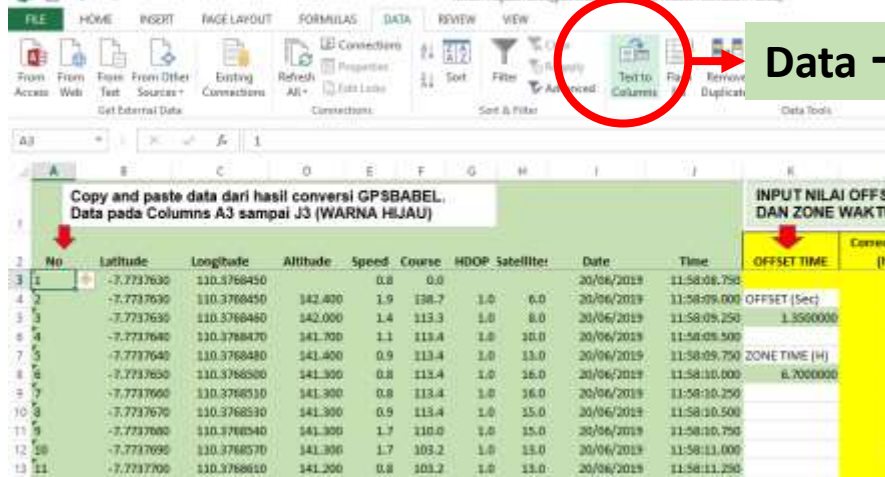
Paste TXT File to Excel Worksheet

Hasil Konversi CSV



```
No, Latitude, Longitude, Speed, Course, Date, Time
1, -7.773763, 110.376845, 0.75, 0.0, 2019/06/20, 11:58:08.750
2, -7.773763, 110.376846, 1.90, 138.7, 2019/06/20, 11:58:09
3, -7.773764, 110.376847, 1.42, 113.3, 2019/06/20, 11:58:09.250
4, -7.773764, 110.376848, 1.12, 113.4, 2019/06/20, 11:58:09.500
5, -7.773765, 110.376850, 0.88, 113.4, 2019/06/20, 11:58:09.750
6, -7.773766, 110.376851, 0.82, 113.4, 2019/06/20, 11:58:10
7, -7.773767, 110.376853, 0.75, 113.4, 2019/06/20, 11:58:10.250
8, -7.773768, 110.376854, 0.94, 113.4, 2019/06/20, 11:58:10.500
9, -7.773769, 110.376857, 1.65, 110.0, 2019/06/20, 11:58:10.750
10, -7.773770, 110.376861, 1.69, 103.2, 2019/06/20, 11:58:11
11, -7.773771, 110.376864, 0.80, 103.2, 2019/06/20, 11:58:11.250
12, -7.773771, 110.376864, 0.76, 103.2, 2019/06/20, 11:58:11.500
13, -7.773770, 110.376861, 1.83, 287.0, 2019/06/20, 11:58:11.750
14, -7.773760, 110.376856, 2.57, 286.4, 2019/06/20, 11:58:12
15, -7.773767, 110.376850, 2.86, 285.7, 2019/06/20, 11:58:12.250
16, -7.773765, 110.376844, 2.37, 287.6, 2019/06/20, 11:58:12.500
17, -7.773764, 110.376849, 1.37, 292.5, 2019/06/20, 11:58:12.750
18, -7.773762, 110.376838, 0.75, 292.5, 2019/06/20, 11:58:13
19, -7.773762, 110.376837, 0.54, 292.5, 2019/06/20, 11:58:13.250
20, -7.773761, 110.376837, 0.24, 292.5, 2019/06/20, 11:58:13.500
```

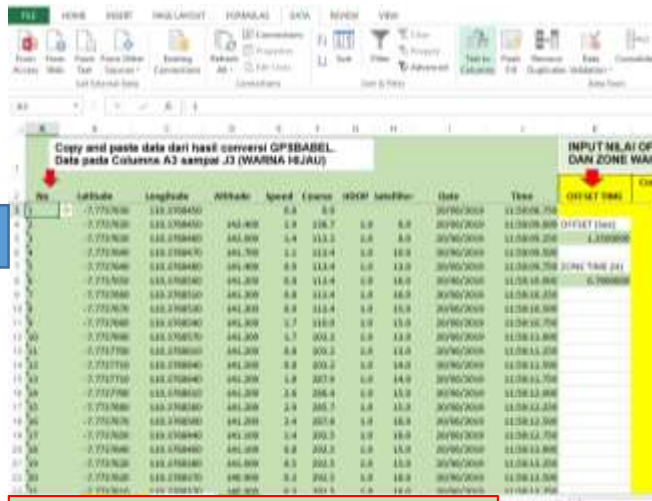
Masuk ke Excel: (10 Kolom) NMEA Adjustments_potretudara.xls



No	Latitude	Longitude	Altitude	Speed	Course	HDOP	Satellite	Date	Time	Offset Time
1	-7.773763	110.376845		0.0	0.0			20/06/2019	11:58:08.750	
2	-7.773763	110.376846	142.400	1.9	138.7	1.0	6.0	20/06/2019	11:58:09.000	OFFSET (Sec)
3	-7.773763	110.376846	142.000	1.4	113.3	1.0	8.0	20/06/2019	11:58:09.250	1.35800000
4	-7.773764	110.376847	141.700	1.1	113.4	1.0	10.0	20/06/2019	11:58:09.500	ZONE TIME (H)
5	-7.773764	110.376848	141.400	0.9	113.4	1.0	13.0	20/06/2019	11:58:09.750	6.70000000
6	-7.773765	110.376850	141.300	0.8	113.4	1.0	16.0	20/06/2019	11:58:10.000	
7	-7.773766	110.376853	141.300	0.8	113.4	1.0	16.0	20/06/2019	11:58:10.250	
8	-7.773767	110.376854	141.300	0.9	113.4	1.0	15.0	20/06/2019	11:58:10.500	
9	-7.773769	110.376857	141.300	1.7	110.0	1.0	15.0	20/06/2019	11:58:10.750	
10	-7.773770	110.376861	141.300	1.7	103.2	1.0	13.0	20/06/2019	11:58:11.000	
11	-7.773770	110.376861	141.200	0.8	103.2	1.0	13.0	20/06/2019	11:58:11.250	

Data → Text to Column

Copy
Worksheet
OUTPUT
To
TXT File



No	Latitude	Longitude	Altitude	Speed	Course	HDOP	Satellite	Date	Time	Offset Time
1	-7.773763	110.376845		0.0	0.0			20/06/2019	11:58:08.750	
2	-7.773763	110.376846	142.400	1.9	138.7	1.0	6.0	20/06/2019	11:58:09.000	OFFSET (Sec)
3	-7.773763	110.376846	142.000	1.4	113.3	1.0	8.0	20/06/2019	11:58:09.250	1.35800000
4	-7.773764	110.376847	141.700	1.1	113.4	1.0	10.0	20/06/2019	11:58:09.500	ZONE TIME (H)
5	-7.773764	110.376848	141.400	0.9	113.4	1.0	13.0	20/06/2019	11:58:09.750	6.70000000
6	-7.773765	110.376850	141.300	0.8	113.4	1.0	16.0	20/06/2019	11:58:10.000	
7	-7.773766	110.376853	141.300	0.8	113.4	1.0	16.0	20/06/2019	11:58:10.250	
8	-7.773767	110.376854	141.300	0.9	113.4	1.0	15.0	20/06/2019	11:58:10.500	
9	-7.773769	110.376857	141.300	1.7	110.0	1.0	15.0	20/06/2019	11:58:10.750	
10	-7.773770	110.376861	141.300	1.7	103.2	1.0	13.0	20/06/2019	11:58:11.000	
11	-7.773770	110.376861	141.200	0.8	103.2	1.0	13.0	20/06/2019	11:58:11.250	

TimeStamp worksheet

Convert Text to Columns Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

- Tab
- Semicolon
- Comma
- Space
- Other:

Treat consecutive delimiters as one

Text qualifier:

Data preview

1	-7.773763	110.376845	0.75	0.0	2019/06/20	11:58:08.750
2	-7.773763	110.376846	1.90	138.7	2019/06/20	11:58:09
3	-7.773764	110.376847	1.42	113.3	2019/06/20	11:58:09.250
4	-7.773764	110.376848	1.12	113.4	2019/06/20	11:58:09.500
5	-7.773765	110.376850	0.88	113.4	2019/06/20	11:58:09.750

Cancel < Back Next > Finish

Input File *.pos → Excel worksheet Position file

PPK Adjustments_potretudara - Excel (Product Activation Failed)

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

From Access From Web From Text From Other Sources Existing Connections Refresh All Connections Sort Filter Clear Reapply Advanced Text to Columns Flash Fill Remove Duplicates Data Validation Consolidate What-If Analysis Relationships Group Ungroup Subtotal Outline

B3 : 20/06/2019

Copy and paste data dari *.pos . Data pada Columns B3 sampai P3 (WARNA HIJAU)

Convert Second	Date	GPST	latitude(deg)	longitude(deg)	height(m)	Q	ns	sdn(m)	sde(m)	sdu(m)	sdne(m)	sdeu(m)	sdun(m)	age(s)	ratio	Location ID	
4.9741667	2019/06/20	04:58:26.750	-7.77376266	110.37684500	166.652	2.000	6.000	0.105	0.135	0.154	0.108	-0.099	-0.010	-0.039	0.010	0.000	
4.9741667	2019/06/20	04:58:27.000	-7.77376321	110.37684598	166.325	2.000	8.000	0.044	0.055	0.131	-0.009	-0.010	-0.039	0.010	0.000		
4.9741667	2019/06/20	04:58:27.250	-7.77376371	110.37684700	165.989	2.000	10.000	0.042	0.052	0.130	-0.018	0.014	-0.036	0.010	0.000		
4.9741667	2019/06/20	04:58:27.500	-7.77376419	110.37684829	165.686	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:27.750	-7.77376480	110.37684992	165.583	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:28.000	-7.77376568	110.37685144	165.575	2.000	16.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:28.250	-7.77376677	110.37685282	165.595	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9747222	2019/06/20	04:58:28.500	-7.77376774	110.37685446	165.609	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:28.750	-7.77376893	110.37685715	165.579	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:29.000	-7.77377004	110.37686071	165.538	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:29.250	-7.77377081	110.37686350	165.495	2.000	14.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:29.500	-7.77377078	110.37686359	165.452	2.000	14.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:29.750	-7.77376989	110.37686085	165.461	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:30.000	-7.77376849	110.37685595	165.461	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:30.250	-7.77376673	110.37685004	165.461	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:30.500	-7.77376500	110.37684444	165.402	2.000	16.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:30.750	-7.77376354	110.37684047	165.351	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:31.000	-7.77376248	110.37683832	165.258	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:31.250	-7.77376189	110.37683708	165.191	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9755556	2019/06/20	04:58:31.500	-7.77376141	110.37683652	165.157	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9755556	2019/06/20	04:58:31.750	-7.77376092	110.37683616	165.114	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
		04:58:32.000	-7.77376052	110.37683597	165.037	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		
		04:58:32.250	-7.77376022	110.37683589	164.959	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		
		04:58:32.500	-7.77376002	110.37683593	164.844	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		

Position File TimeStamp Output

READY

PPK for Aerial Photo

KONVERSI Exifile Foto → CSV

SOFTWARE YANG DIGUNAKAN

- EXIFextracter
- PPK Adjustments_potretudara.xls

Processing PPK
(* .pos)

Download Photo

Exif extraction

Worksheet
Positional File
(From *.pos)

Worksheet
Time Stamp
(From *.TXT)

Worksheet
Output

Copy
TXT File
Sebagai file
GCP untuk
proses
selanjutnya

Convert with ExifExtractor: Photo File → CVS

EXIF extraction

BR's EXIFExtractor 0.9.16 Beta

Choose files:

Folder to scan: **Photo Location**

Output filename: **Output File**

Select data:

Select data:

- Aperture (F-number)
- ISO
- Was flash used?
- Distance
- Focal length
- User comment
- GPS latitude
- GPS longitude
- GPS altitude
- GPS date/time

- Time**
- GPS Lat**
- GPS Long**
- GPS Alti**

Add column headings

Use full file path in file names

Separator character: **Semi colon**

Hasil Konversi CSV

tess - Notepad

```
File Edit Format View Help
"! "Filename";"Time";"GPS latitude";"GPS longitude";"GPS
ASLI_0007.JPG;"12:11:00";-7.773399;110.376938;284.74
ASLI_0008.JPG;"12:11:06";-7.773477;110.377251;285.14
ASLI_0009.JPG;"12:11:10";-7.773585;110.377678;285.14
ASLI_0010.JPG;"12:11:14";-7.773668;110.378014;285.04
ASLI_0011.JPG;"12:11:17";-7.773777;110.378471;285.04
ASLI_0012.JPG;"12:11:20";-7.773836;110.378716;285.04
ASLI_0013.JPG;"12:11:23";-7.773957;110.379211;284.94
ASLI_0014.JPG;"12:11:26";-7.774045;110.379578;284.84
ASLI_0015.JPG;"12:11:29";-7.774139;110.379967;284.74
ASLI_0016.JPG;"12:11:32";-7.774231;110.380348;284.84
```

Masuk ke Excel: (5 Kolom) PPK Adjustments_potretudara.xls

Data → Text to Column

TimeStamp worksheet

File Name	Time	GPS Latitude	GPS Longitude	GPS Altitude	Offset Time	Converted Time
ASLI_0007.JPG	12:11:00.000	-7.773399	110.376938	284.740000	0:00:00.000	11:58:08.750
ASLI_0008.JPG	12:11:06.000	-7.773477	110.377251	285.140000	0:00:00.000	11:58:09.250
ASLI_0009.JPG	12:11:10.000	-7.773585	110.377678	285.140000	0:00:00.000	11:58:09.500
ASLI_0010.JPG	12:11:14.000	-7.773668	110.378014	285.040000	0:00:00.000	11:58:09.750

Output File TXT digunakan sebagai titik GCP dalam proses selanjutnya

Copy Worksheet OUTPUT To TXT File

3

Copy and paste data dari hasil konversi GPS LABEL - Data pada Column A3 sampai G3 (WARNA HIJAU)

No	Latitude	Longitude	Speed	Course	Date	Time
33	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:45.500
34	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:46.000
35	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:46.500
36	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:47.000
37	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:47.500
38	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:48.000
39	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:48.500
40	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:49.000
41	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:49.500
42	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:50.000
43	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:50.500
44	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:51.000
45	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:51.500
46	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:52.000
47	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:52.500
48	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:53.000
49	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:53.500
50	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:54.000
51	7.773590	110.376940	0.15000	105.900	2019/06/20	12:00:54.500

TimeStamp worksheet

Convert Text to Columns Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters:

- Tab
- Semicolon
- Comma
- Space
- Other:

Treat consecutive delimiters as one

Text qualifier:

Data preview:

1	-7.773769	110.376945	0.75	0.0	2019/06/20	11:58:08.750
2	-7.773769	110.376946	1.50	138.7	2019/06/20	11:58:09.000
3	-7.773764	110.376947	1.42	113.3	2019/06/20	11:58:09.250
4	-7.773764	110.376948	1.12	113.4	2019/06/20	11:58:09.500
5	-7.773765	110.376950	0.88	113.4	2019/06/20	11:58:09.750

Input File *.pos → Excel worksheet Position file

PPK Adjustments_potretudara - Excel (Product Activation Failed)

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

From Access From Web From Text From Other Sources Existing Connections Refresh All Properties Edit Links Connections Sort Filter Clear Reapply Advanced Sort & Filter Text to Columns Flash Fill Remove Duplicates Data Validation Consolidate What-If Analysis Relationships Group Ungroup Subtotal Outline Data Tools

B3 : 20/06/2019

Copy and paste data dari *.pos . Data pada Columns B3 sampai P3 (WARNA HIJAU)

Convert Second	Date	GPST	latitude(deg)	longitude(deg)	height(m)	Q	ns	sdn(m)	sde(m)	sdu(m)	sdne(m)	sdeu(m)	sdun(m)	age(s)	ratio	Location ID	
4.9741667	2019/06/20	04:58:26.750	-7.77376266	110.37684500	166.652	2.000	6.000	0.105	0.135	0.154	0.108	-0.099	-0.010	-0.039	0.010	0.000	
4.9741667	2019/06/20	04:58:27.000	-7.77376321	110.37684598	166.325	2.000	8.000	0.044	0.055	0.131	-0.009	-0.010	-0.039	0.010	0.000		
4.9741667	2019/06/20	04:58:27.250	-7.77376371	110.37684700	165.989	2.000	10.000	0.042	0.052	0.130	-0.018	0.014	-0.036	0.010	0.000		
4.9741667	2019/06/20	04:58:27.500	-7.77376419	110.37684829	165.686	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:27.750	-7.77376480	110.37684992	165.583	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:28.000	-7.77376568	110.37685144	165.575	2.000	16.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9744444	2019/06/20	04:58:28.250	-7.77376677	110.37685282	165.595	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9747222	2019/06/20	04:58:28.500	-7.77376774	110.37685446	165.609	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:28.750	-7.77376893	110.37685715	165.579	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:29.000	-7.77377004	110.37686071	165.538	2.000	13.000	0.042	0.052	0.129	-0.018	0.013	-0.035	0.010	0.000		
4.9747222	2019/06/20	04:58:29.250	-7.77377081	110.37686350	165.495	2.000	14.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:29.500	-7.77377078	110.37686359	165.452	2.000	14.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:29.750	-7.77376989	110.37686085	165.461	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:30.000	-7.77376849	110.37685595	165.461	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9750000	2019/06/20	04:58:30.250	-7.77376673	110.37685004	165.461	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:30.500	-7.77376500	110.37684444	165.402	2.000	16.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:30.750	-7.77376354	110.37684047	165.351	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:31.000	-7.77376248	110.37683832	165.258	2.000	15.000	0.042	0.052	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9752778	2019/06/20	04:58:31.250	-7.77376189	110.37683708	165.191	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
4.9755556	2019/06/20	04:58:31.500	-7.77376141	110.37683652	165.157	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
		04:58:31.750	-7.77376092	110.37683616	165.114	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.036	0.010	0.000		
		04:58:32.000	-7.77376052	110.37683597	165.037	2.000	16.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		
		04:58:32.250	-7.77376022	110.37683589	164.959	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		
		04:58:32.500	-7.77376002	110.37683593	164.844	2.000	15.000	0.042	0.051	0.129	-0.018	0.013	-0.035	0.010	0.000		

Positional File

Position File TimeStamp Output

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