

Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



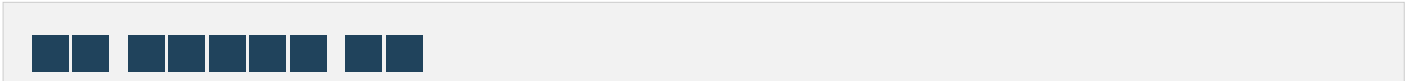
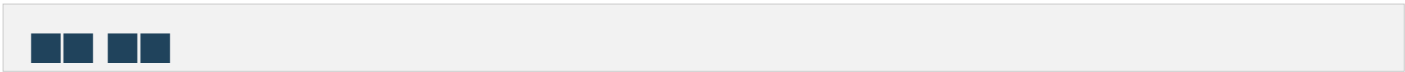
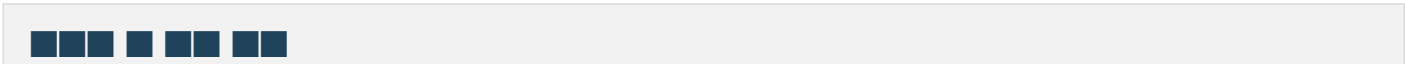
Author

Ujaval Gandhi

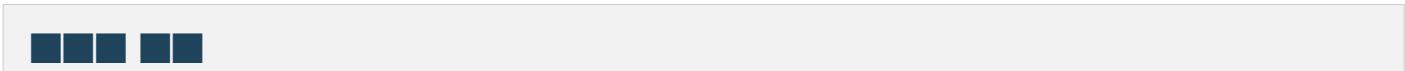
<http://google.com/+UjavalGandhi>

Translations by

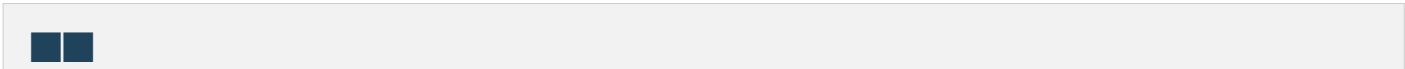
SongHyun Choi

[illegible][illegible]

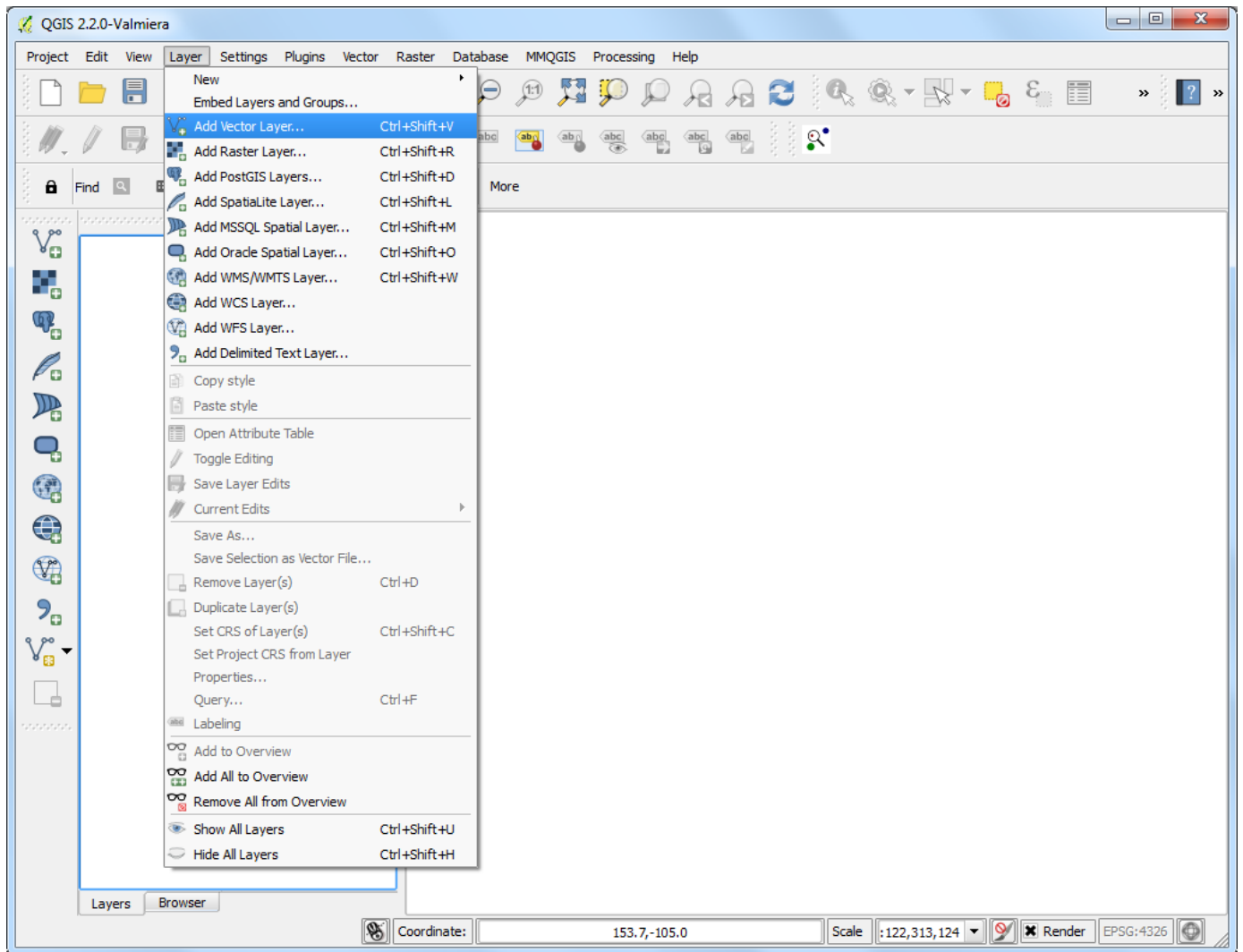
- **■■■■ ■■■■■ ■■■■ ■■**
- **■■■■■■■■ ■■■■ ■■■■**(Projected Coordinate Reference System, CRS)**■ ■■■■ ■ ■■.**
- **■■■■■■■■ ■■■■■ ■■ ■■**



```
`Natural Earth  
<http://www.naturalearthdata.com/downloads/10m-cultural-vectors/railroads/>`_■■■■ ■■■■ ■■■  
■■■■■ ■■■■. ■■■■ `North America supplement <http://www.naturalearthdata.com/http/www.naturalearthdata.com/download/10m/cultural/ne\_10m\_railroads\_north\_america.zip>`_■■■■■ ■■■■  
■■■ ■■ [NATURALEARTH]
```



1. ■■■■ :menuselection: `Layer --> Add Vector Layer` ■■■■.



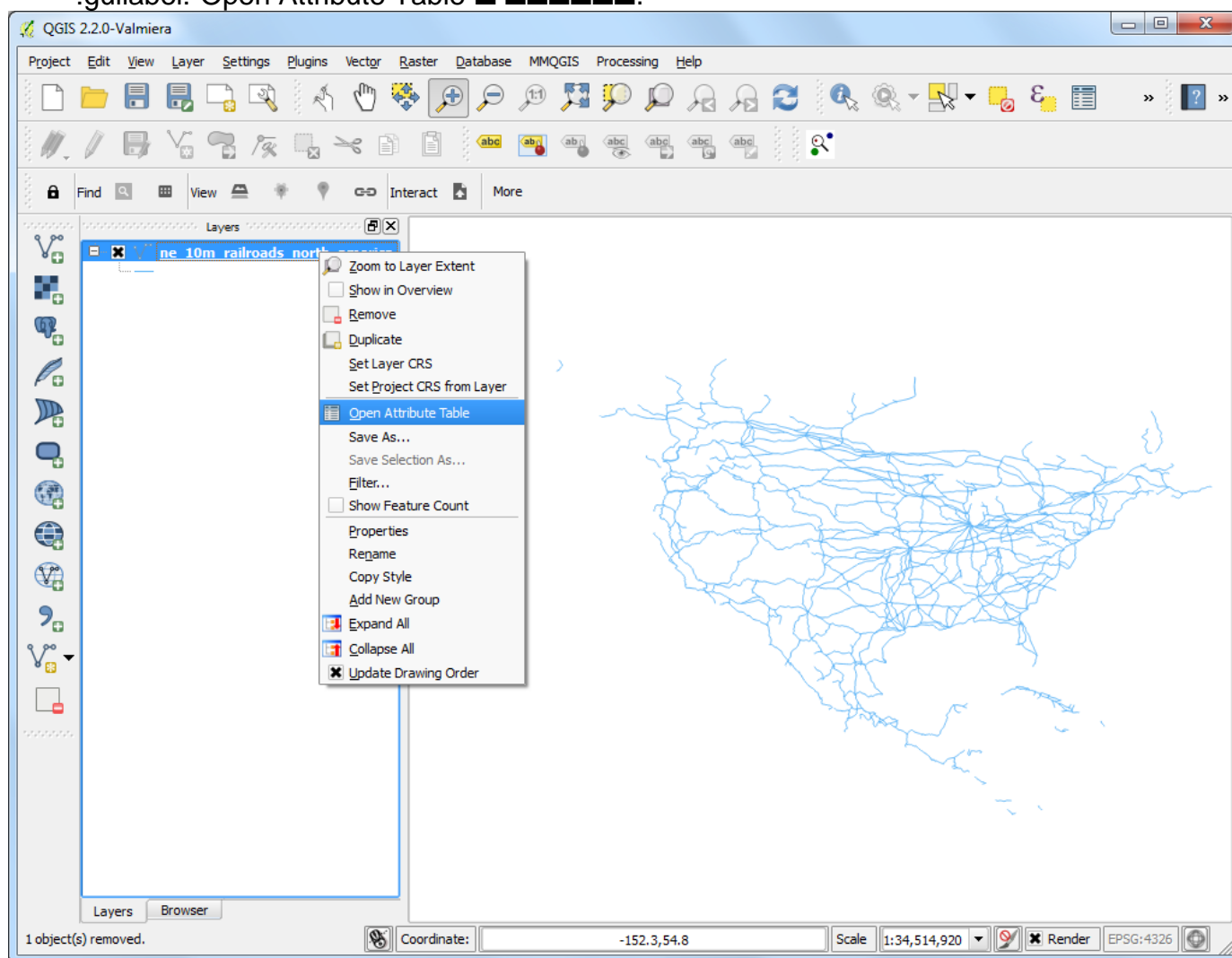
2. ``ne_10m_railroads_north_america.zip`` :guilabel:OK`



3. In the *Select layers to add...* dialog, choose ne_10m_railroads_north_america.shp layer.



4. **Click on the 'Open Attribute Table' button in the layer context menu.**



5. **Click on the 'sov_a3' layer in the 'Layers' panel.**


Attribute table - ne_10m_railroads_north_america :: Features total: 1127, filtered: 1127, selected: 0

	scalerank	featurecla	sov_a3	uident	add	natrscale	continent
0	8	Railroad	USA	1506	0	0	North America
1	9	Railroad	USA	1606	1	5	North America
2	8	Railroad	USA	1706	0	0	North America
3	8	Railroad	USA	1806	0	0	North America
4	8	Railroad	USA	1906	0	0	North America
5	8	Railroad	USA	2006	0	0	North America
6	8	Railroad	USA	2106	0	0	North America
7	9	Railroad	USA	2206	1	5	North America
8	8	Railroad	USA	2306	0	0	North America
9	8	Railroad	USA	2406	0	0	North America
10	8	Railroad	USA	2506	0	0	North America
11	8	Railroad	USA	2606	0	0	North America
12	8	Railroad	USA	2706	0	0	North America
13	8	Railroad	USA	2806	0	0	North America
14	9	Railroad	USA	2906	1	5	North America
15	9	Railroad	USA	3006	1	5	North America
16	8	Railroad	USA	3106	0	0	North America
17	8	Railroad	USA	3206	0	0	North America
18	8	Railroad	USA	3306	0	0	North America
19	8	Railroad	USA	3506	0	0	North America
20	8	Railroad	USA	3606	0	0	North America
21	8	Railroad	USA	3706	0	0	North America
22	8	Railroad	USA	3806	0	0	North America
23	9	Railroad	USA	3906	1	5	North America

Show All Features

6. ■■■ ■■■■ Attribute Table■■■■ ■■■■ ■■■■ ■■■■ :guilabel:'Select features using an expression■■■■ ■■■■ ■■■■.

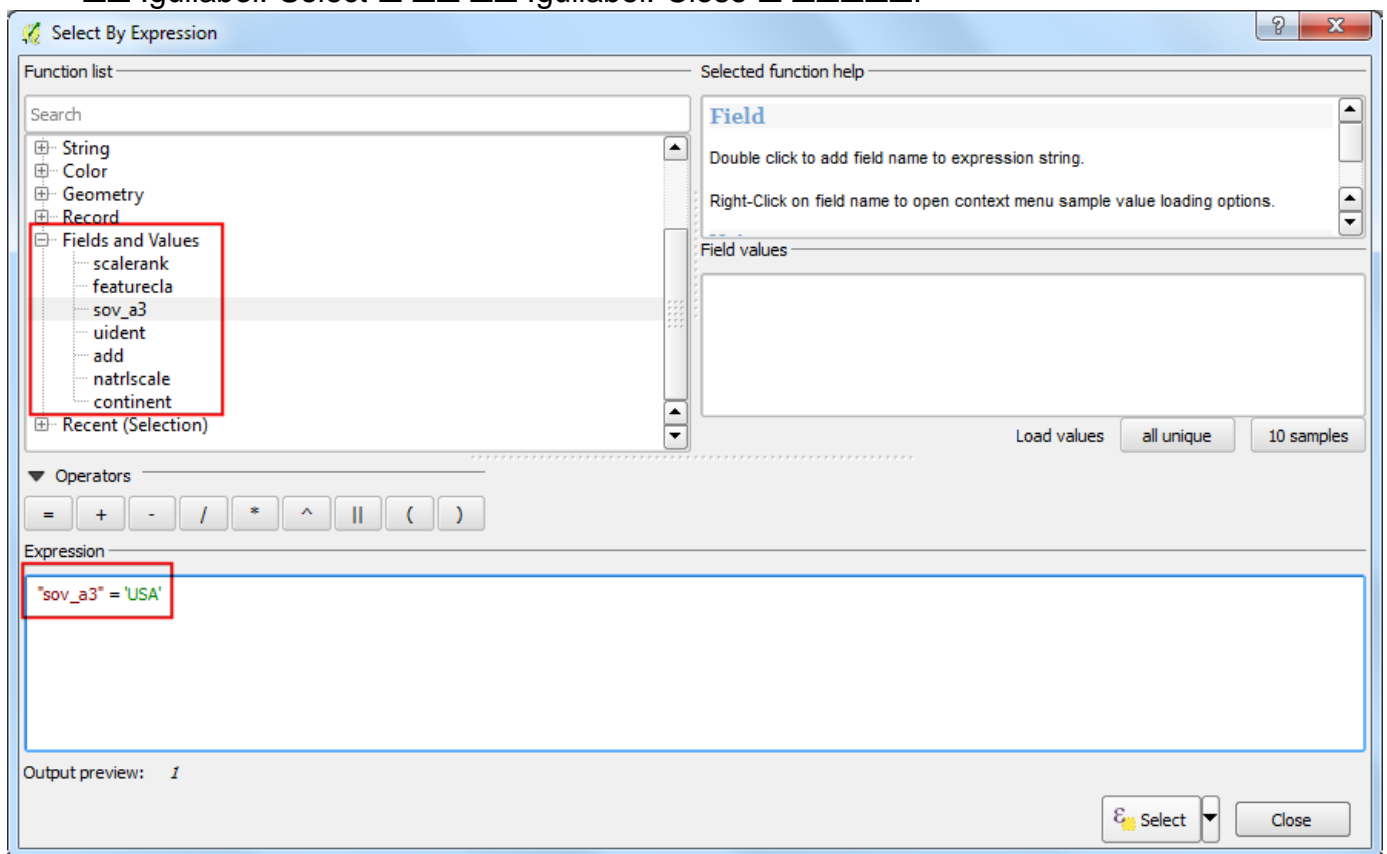
Attribute table - ne_10m_railroads_north_america :: Features total: 1127, filtered: 1127, selected: 0



	scalerank	Select features using an expression	uident	add	natrscale	continent
0	8	Railroad	USA	1506	0	0 North America
1	9	Railroad	USA	1606	1	5 North America
2	8	Railroad	USA	1706	0	0 North America
3	8	Railroad	USA	1806	0	0 North America
4	8	Railroad	USA	1906	0	0 North America
5	8	Railroad	USA	2006	0	0 North America
6	8	Railroad	USA	2106	0	0 North America
7	9	Railroad	USA	2206	1	5 North America
8	8	Railroad	USA	2306	0	0 North America
9	8	Railroad	USA	2406	0	0 North America
10	8	Railroad	USA	2506	0	0 North America
11	8	Railroad	USA	2606	0	0 North America
12	8	Railroad	USA	2706	0	0 North America
13	8	Railroad	USA	2806	0	0 North America
14	9	Railroad	USA	2906	1	5 North America
15	9	Railroad	USA	3006	1	5 North America
16	8	Railroad	USA	3106	0	0 North America
17	8	Railroad	USA	3206	0	0 North America
18	8	Railroad	USA	3306	0	0 North America
19	8	Railroad	USA	3506	0	0 North America
20	8	Railroad	USA	3606	0	0 North America
21	8	Railroad	USA	3706	0	0 North America
22	8	Railroad	USA	3806	0	0 North America
23	9	Railroad	USA	3906	1	5 North America

Show All Features

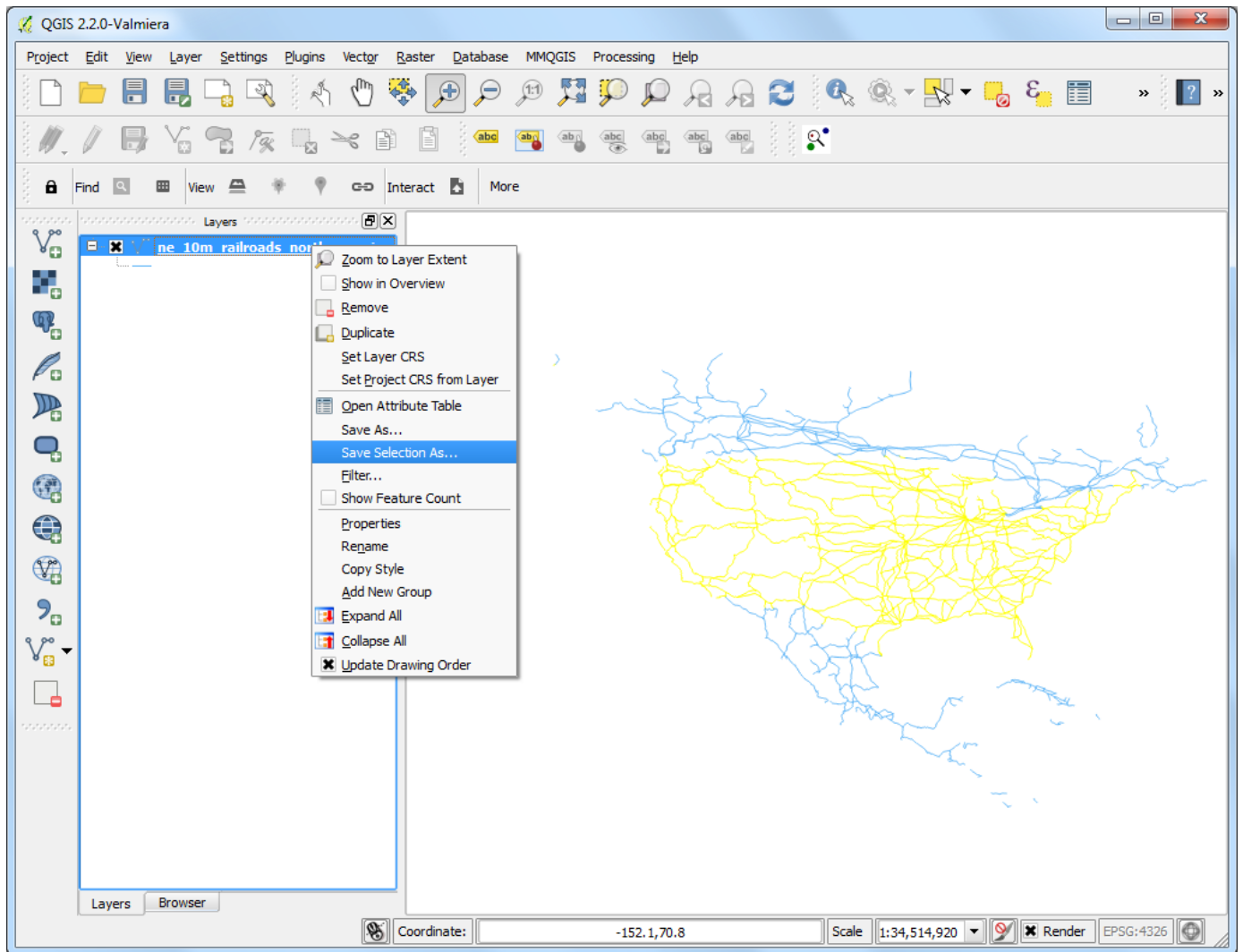
7. ■■■ Select By Expression ■■■■■■■■■■ ■■■■■■■■■■. ■■■■■ Functions list ■■■■■ ■■■■■ ■■■■■ Fields and Values ■■■■■ sov_a3 ■■■■■ ■■■■■. ■■■■■ ■■■■■ ■■■■■ ■■■■■ :guilabel: `Expression` ■■■■■ ■■■■■ ■■■■■. "sov_a3" = 'USA' ■■■■■ ■■■■■. ■■■■■ :guilabel: `Select` ■■■■■ ■■■■■ :guilabel: `Close` ■■■■■ ■■■■■.



8. Back in the main QGIS window, you will see that all lines that fall in USA are selected and appear in yellow.



9. `ne_10m_railroads_north_america`. ``ne_10m_railroads_north_america``
:guilabel: Save Selection As...



10. `guiabel: Browse`` `usa_railroads.shp``. `CRS`` `guiabel: CRS`` `guiabel: Browse``.

Note

`CRS`` `EPSG:4326`` `(CRS)`` `**degrees**`. `**degrees*` `square degrees**` `**meters` `**feet**`.



```
11. ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■. ■■■ :guilabel:`Filter` ■■■ ■■■■ :guilabel:`north`  
america equ` ■■■■ ■■■■. ■■■■ ■■■■ CRS ■■■  
:guilabel:`North_America_Equidistant_Conic` EPSG:102010` ■■■■ :guilabel:`OK` ■■■  
■■■■.
```




13. ■■■ ■■■■ ■■■■ ■■■■ ■■■■
 usa_railroads` `■■■■ QGIS ■■■■. ■■■■ ``ne_10m_railroads_north_america
 ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■



14. ``usa_railroads`` ■■■■ ■■■■ ■■■■ ■■■■ ■■ ■■■■ ■■ :guilabel: Open Attribute Table`■
■■■■■.



15. ■■■ ■ ■■■■ ■■ ■■ ■■■■ ■■■■■. ■■■■■■ :guilabel: 'Toggle editing' ■■■■ ■■■■
 ■■■■ ■■■■■ ■■■■. ■■ ■■■■■■ ■■■■■■■■ :guilabel: 'Open field calculator' ■■■■
 ■■■■■■.

Attribute table - usa_railroads :: Features total: 752, filtered: 752, selected: 0

	scalerank	featuredata	sov_a3	uident		continent
0	8	Railroad	USA	1506	0	North America
1	9	Railroad	USA	1606	1	North America
2	8	Railroad	USA	1706	0	North America
3	8	Railroad	USA	1806	0	North America
4	8	Railroad	USA	1906	0	North America
5	8	Railroad	USA	2006	0	North America
6	8	Railroad	USA	2106	0	North America
7	9	Railroad	USA	2206	1	North America
8	8	Railroad	USA	2306	0	North America
9	8	Railroad	USA	2406	0	North America
10	8	Railroad	USA	2506	0	North America
11	8	Railroad	USA	2606	0	North America
12	8	Railroad	USA	2706	0	North America
13	8	Railroad	USA	2806	0	North America
14	9	Railroad	USA	2906	1	North America
15	9	Railroad	USA	3006	1	North America
16	8	Railroad	USA	3106	0	North America
17	8	Railroad	USA	3206	0	North America
18	8	Railroad	USA	3306	0	North America
19	8	Railroad	USA	3506	0	North America
20	8	Railroad	USA	3606	0	North America
21	8	Railroad	USA	3706	0	North America
22	8	Railroad	USA	3806	0	North America
23	9	Railroad	USA	3906	1	North America

Show All Features

16. **Field Calculator** **Create a new field**. **Output field name** **length_km**. **Output field type** **Decimal number (real)**. **Precision** **2**. **Function list**, **Geometry** **\$length**. **Expression** **length / 1000**. **CRS** **meters** **km** **length / 1000**. **OK**.



17. ■■■■■ Attribute Table` ■■■■■ ■■■■ ■■■ :guilabel:`length_km` ■■■■ ■■■■.
 ■■■■■■ :guilabel:`Toggle editing` ■■■■ ■■■■ ■■■■ ■■■■ ■■■■■■.



19. `guiabel:Input Vector layer`` ```usa_railroads``` `guiabel:Target field`` ```length_km``` `guiabel:OK`` `guiabel:Sum``

Note

Basics statistics

Input Vector Layer
usa_railroads

☐ Use only selected features

Target field
length_km

Statistics output

Parameter	Value
Mean	127.751569149
StdDev	125.80562595
Sum	96069.18
Min	0.01
Max	936.6
N	752.0
CV	0.984767755...
Number of unique values	743

Press Ctrl+C to copy results to the clipboard

0% OK Close