

Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



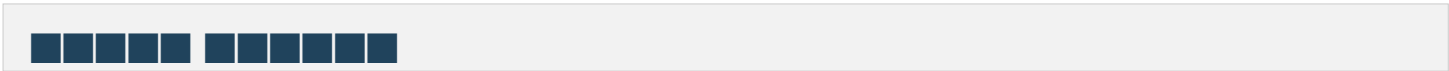
Author

Ujaval Gandhi

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

Translations by

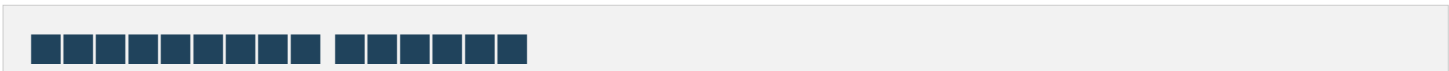
Marina Pavlova Ilya Trofimov Fayçal Fatihi

[illegible]

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY THE MARKINGS.

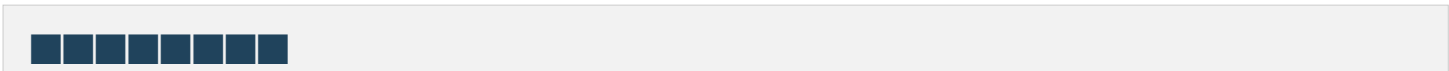


- [illegible]

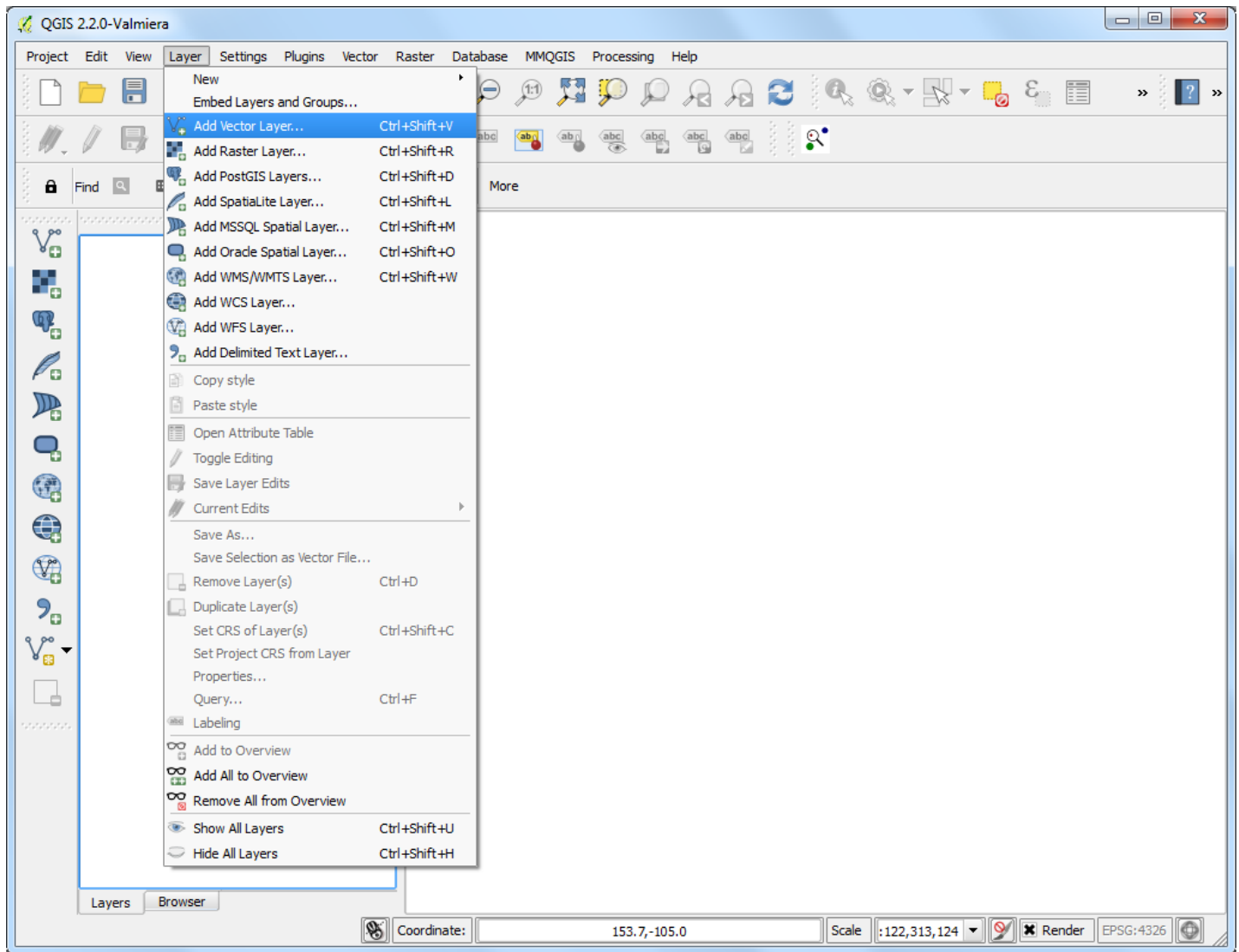


Natural Earth 

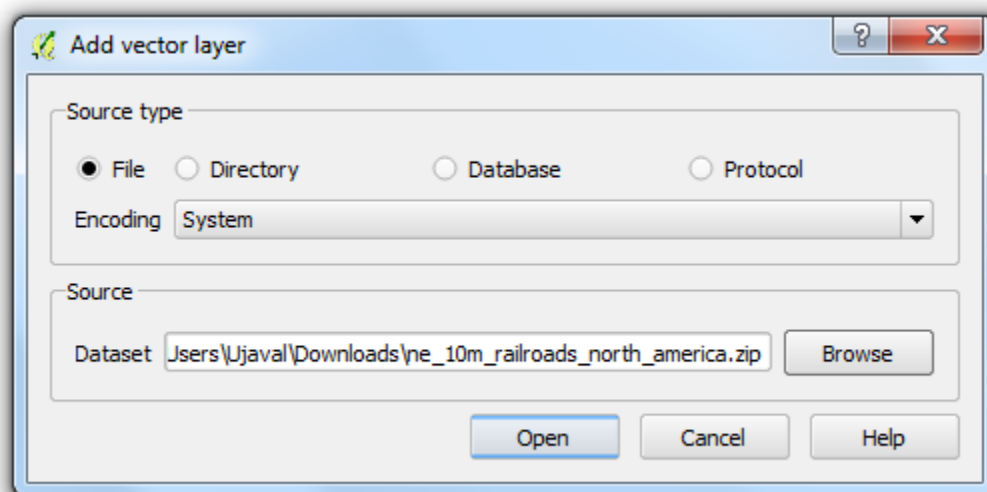
■■■■■■■■■■ ■■■■■■: [NATURALEARTH]



1. ■■■■■■■■■■ ■ ■■■■ ■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■.



2. ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ne_10m_railroads_north_america.zip ■
 ■■■■■■■■ ■■■.

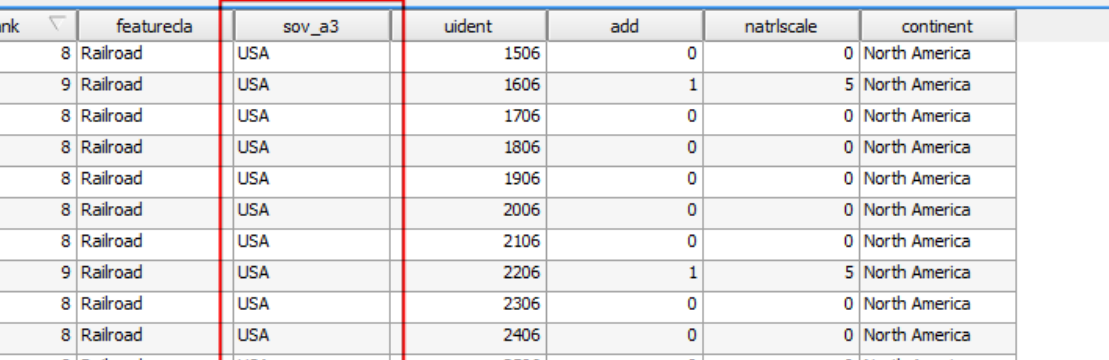


- ```
3. ne_10m_railroads_north_america.shp.
```



4. [REDACTED] [REDACTED], [REDACTED] [REDACTED], [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]. [REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED], [REDACTED] [REDACTED]  
[REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED]. [REDACTED] [REDACTED] [REDACTED] [REDACTED]  
[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED].





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 - ne\_10m\_railroads\_north\_america :: Features total: 1127, filtered: 1127, selected: 0

Select features using an expression

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

Show All Features

7. **Task 7: Filtering features by country.** The goal is to filter the features by country. The country is stored in the attribute 'sov\_a3'. The goal is to filter the features where the country is 'USA'. The goal is to filter the features where the country is 'USA'.

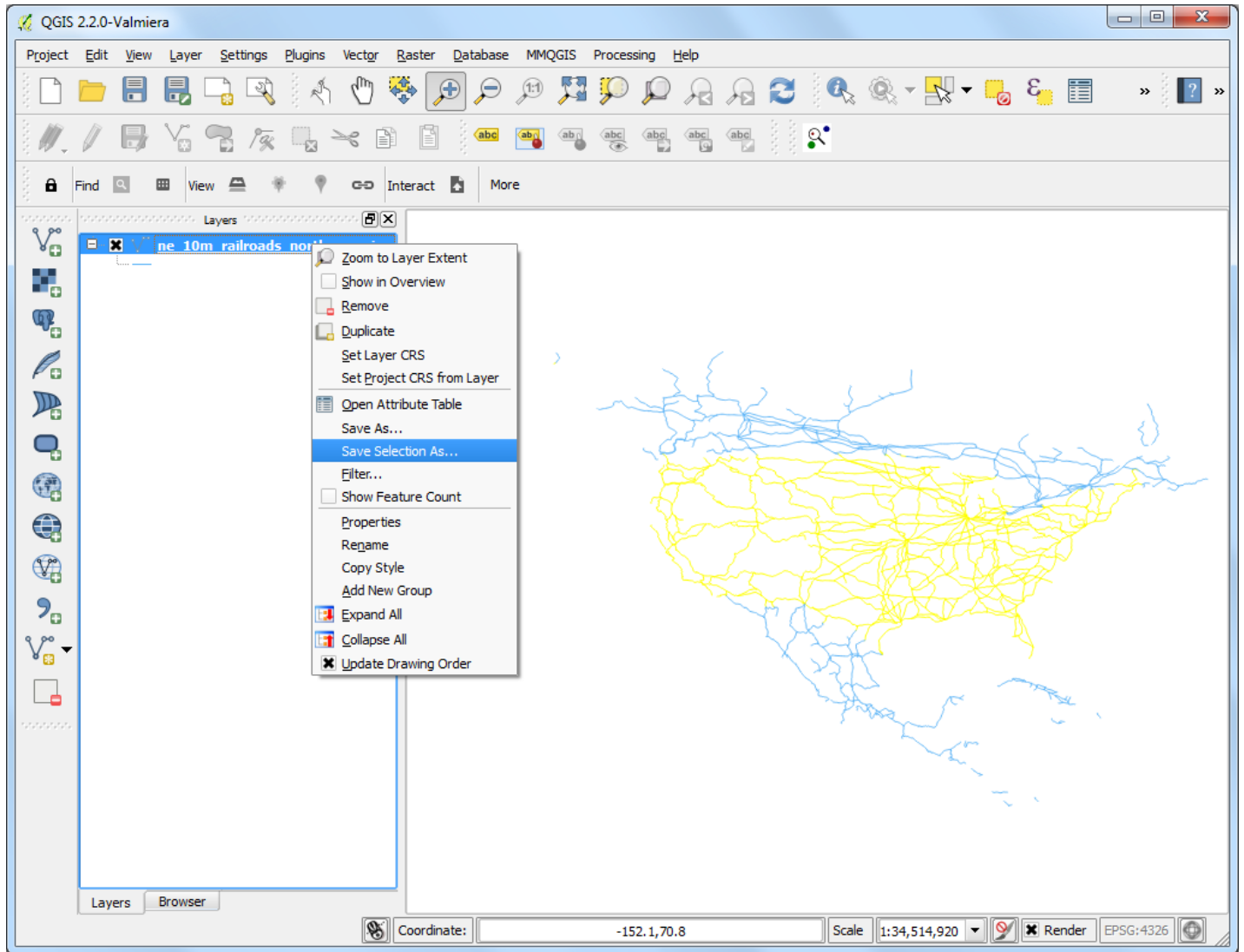


8. ■ ■■■■■■■■ ■■■■ QGIS ■■ ■■■■■■■■, ■■■ ■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■.





9. `ne_10m_railroads_north_america`



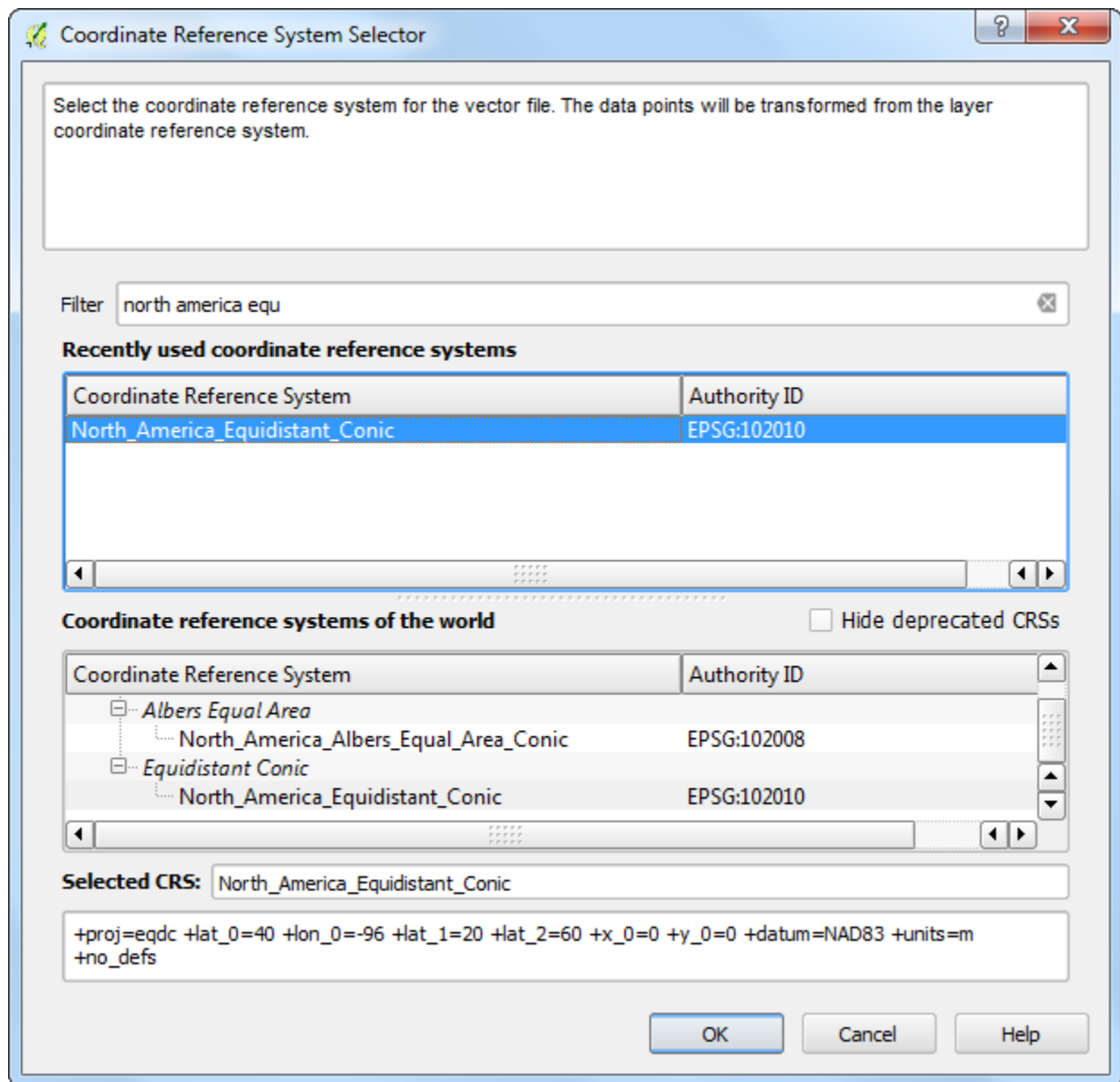
10. Save the selection as a new shapefile named `usa_railroads.shp`. This will create a new shapefile containing only the selected features from the original dataset.

## Note

The `usa_railroads.shp` file is a shapefile containing the selected features from the original dataset. It is important to note that the shapefile is created in the same coordinate system as the original dataset, which is `EPSG:4326` (WGS 1984). If you need to work with the data in a different coordinate system, you will need to reproject it. The `usa_railroads.shp` file is a vector dataset, which means it contains geometric information about the features (lines and points) but not any attribute information. If you need to work with the data in a different format, you will need to export it to a different format.



11. **Save the layer as a shapefile, using the following settings:**  
 Format: ESRI Shapefile  
 Save as: C:/Users/Ujaval/Downloads/usa\_railroads.shp  
 Encoding: System  
 CRS: Layer CRS  
 Symbology export: No symbology  
 Scale: 1:50000  
 Skip attribute creation: ☐  
 Add saved file to map: ☐  
 More Options >>



12. ■ Save ■■■■■■■■■■ ■■■■, ■■■... ■■■■■■, ■■■■■■■■■■ Add ■■■■■■■■■■  
■■■■, ■■■■■ ■■■■■■■■ ■■ ■■■■■ ■ ■■■■■■■■ OK.



13. The `usa_railroads` layer is saved as `usa_railroads.shp` in the `C:/Users/Ujaval/Downloads/` directory. The `usa_railroads` layer is added to the map. The `ne_10m_railroads_north_america` layer is added to the map. The `usa_railroads` layer is selected in the Layers Panel. The `usa_railroads` layer is visible on the map.



14. ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■ usa\_railroads ■ ■■■■■■■■■■ Open  
■■■■■■■■■■ ■■■■■■■■■■.













19. **Input** `usa_railroads`. **Target** `length_km` **OK**. **Sum** `length_km` - **Sum** `length_km`.

## Note

The `Basic statistics` tool is used to calculate the sum of the values for each attribute in the input layer. In this case, the `length_km` attribute is selected. The output is a table with the sum of the values for each attribute.

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