

# OPENLOG - OPEN SOURCE DRILLHOLE DATA VISUALIZATION IN QGIS

FOSS4G 2022 - Firenze



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# OUTLINE

- OpenLog presentation



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# OUTLINE

- OpenLog presentation
- Current features



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# OUTLINE

- OpenLog presentation
- Current features
- Future developments



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# OPENLOG



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# GENERAL OVERVIEW

Development of an open source drillhole visualization / edition module for QGIS.

Consortium created in 2021 by Oslandia with partners and sponsors from the mining industry.

- Oslandia governance
- Open contribution
- FOSS day 1

[oslandia.com/openlog](http://oslandia.com/openlog)



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# MOTIVATION

- General move to QGIS in mining industry
- Untapped market
- High demand for industry specific tools
- Promote FOSS



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**Project cross sections**

Establish structural trends easily with the cross section viewer featuring variable projection distance, assay/structural data on trace rendering, and hybrid-driven correlation tools.

**Upscale to 3D**

Render thousands of drillholes for improved spatial awareness, focus on crucial data via clipping and filtering controls, and take it to the field on mobile.

**Manage databases**

Integrate with existing commercial drillhole databases or build your own with PostGIS OGC implementation, import standard CSV tables, and ensure quality through a dedicated QA system.

**Project Features**

Digitize custom cross section traces, build a regularly spaced cross section survey, project drillhole stations, and define local coordinate systems.

**Read maps**

Analyse logs

Inspect geochemical, geophysical, geotechnical assay data, apply selection rules for meaningful presentations, and overlay alteration/mineralization to the geology.

**Link Views**

Operate in real time between cross section, map, 3D, and log views with a unified reload free synchronous data handler.

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# PROJECT STRUCTURE

- **xplordb**: Mineral Exploration Database template/ system for Postgres/PostGIS
  - python module - [gitlab.com/geolandia/openlog/xplordb](https://gitlab.com/geolandia/openlog/xplordb)
- **OpenLog**: drillhole visualization and editing QGIS module.
  - QGIS Plugin - [gitlab.com/geolandia/openlog/openlog-qgis-plugin](https://gitlab.com/geolandia/openlog/openlog-qgis-plugin)
- **QGIS 3D** as a 3D drillhole data viewer

OpenLog 0.5.0 released this week.



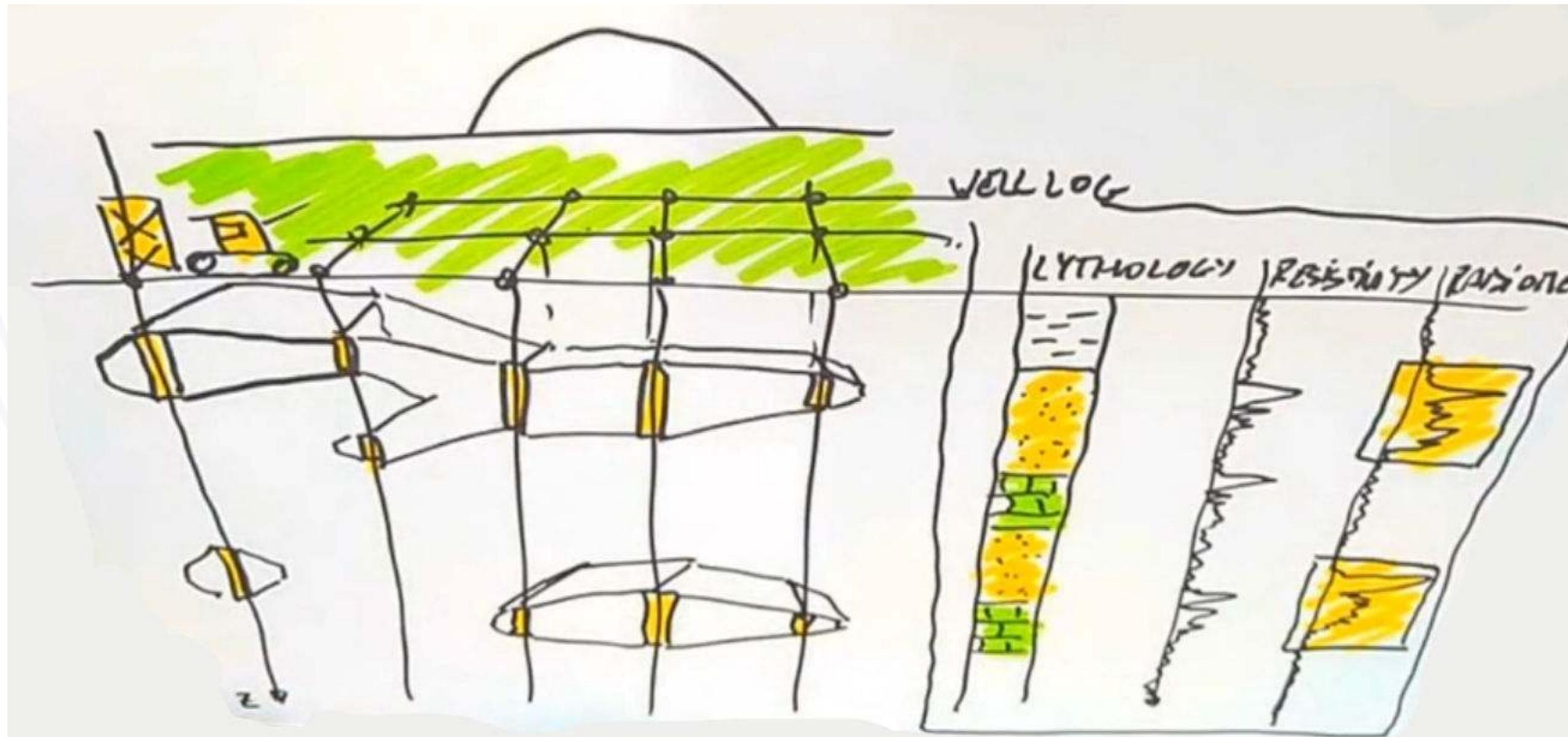
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# CURRENT FEATURES



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# VISUALIZATION OF WELL LOG IN QGIS



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# IMPORT OF DATA

- Handles depth data and time series
- Custom values definition
- each data can then be displayed

Assay import

Assay values import

File name /home/jmkerloch/dev/openlog-qgis-plugin/data/test\_data/csv\_DH/assay.csv

File Format

CSV (comma separated values)

Custom delimiters

Column definition

Column	Hole ID	Depth	value	value 2
Mapping	Hole ID	Depth	Value	Value 2
Unit		m		
Type	NOMINAL	NUMERICAL	NUMERICAL	NUMERICAL

Uncertainty

Sample Data

	Hole ID	Depth	Value	Value 2
1	DDH01	0.0	0.5957814387165052	0.0456971100124486
2	DDH01	0.02000200020002	1.2219009317858427	0.7902957682741693
3	DDH01	0.04000400040004	0.350744105789294	-1.3611927433818336
4	DDH01	0.06000600060006	-0.8772245254132137	0.058814618189669
5	DDH01	0.08000800080008	0.5573270411015222	0.55040013270412100

Imported data

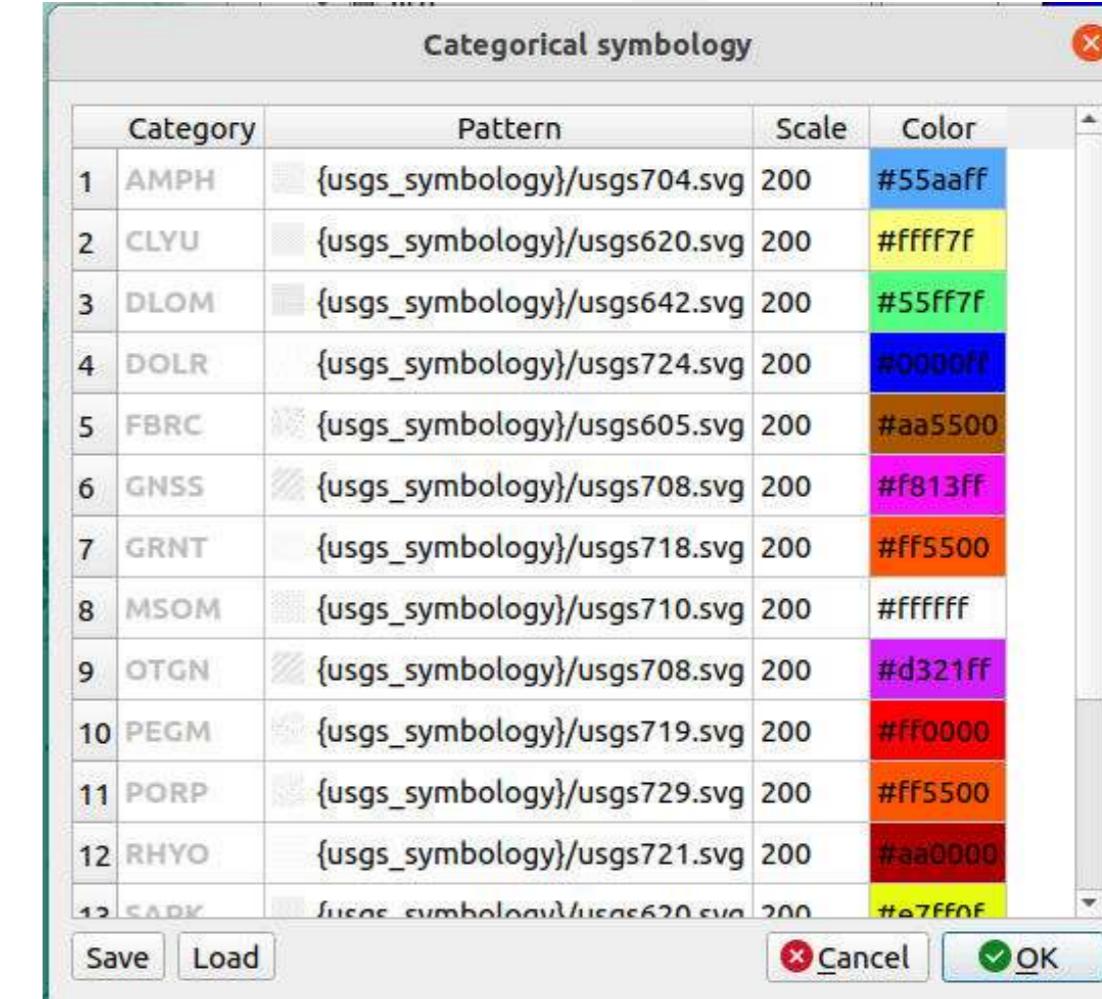
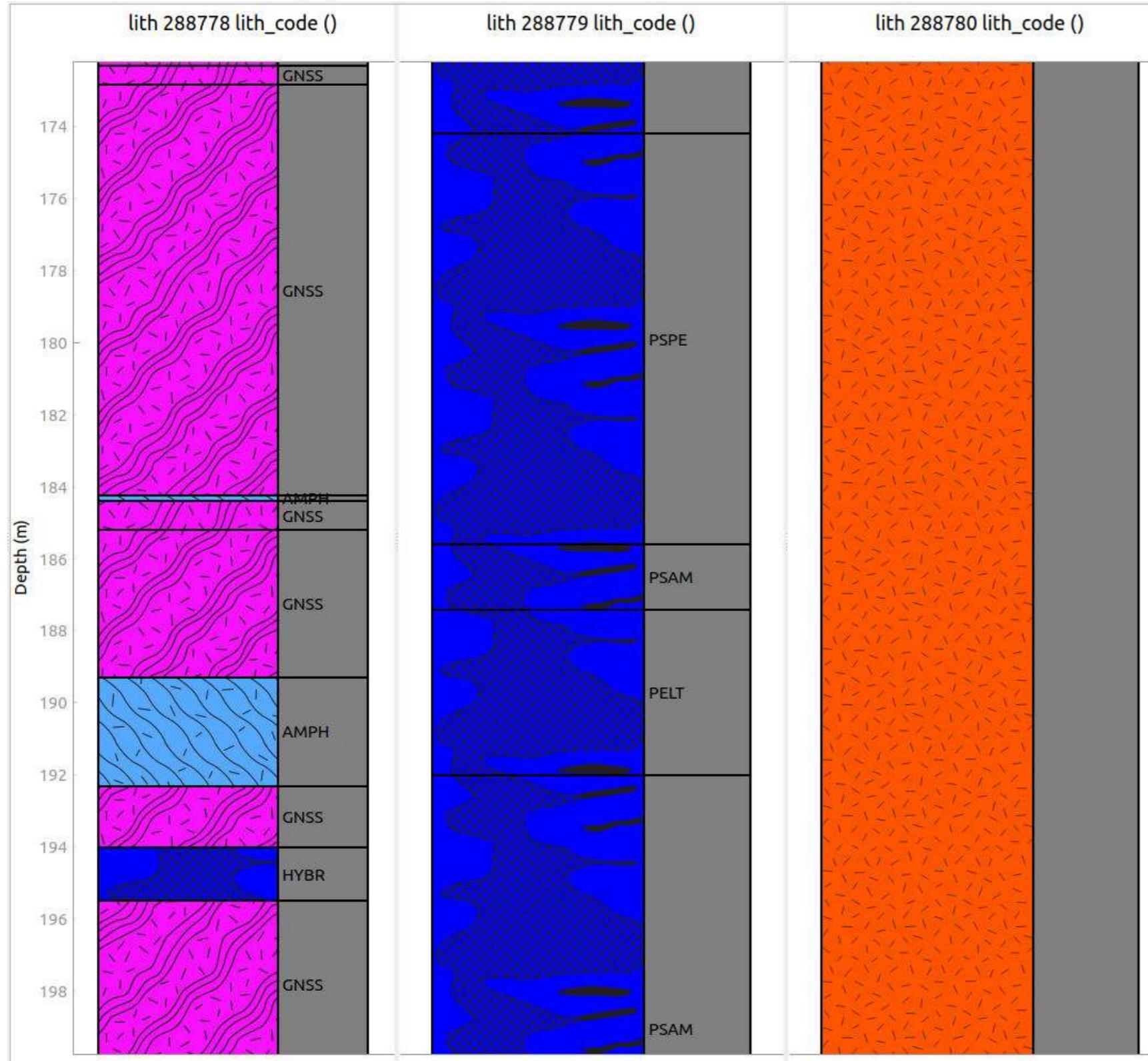
	Hole ID	Depth	value	value 2
1	DDH01	0.0	0....	0....
2	DDH01	0....	1....	0....
3	DDH01	0....	0....	-1.3611927...
4	DDH01	0....	-0.8772245...	0....
5	DDH01	0.	0.	0.5504001...

< Back    Next >    Cancel



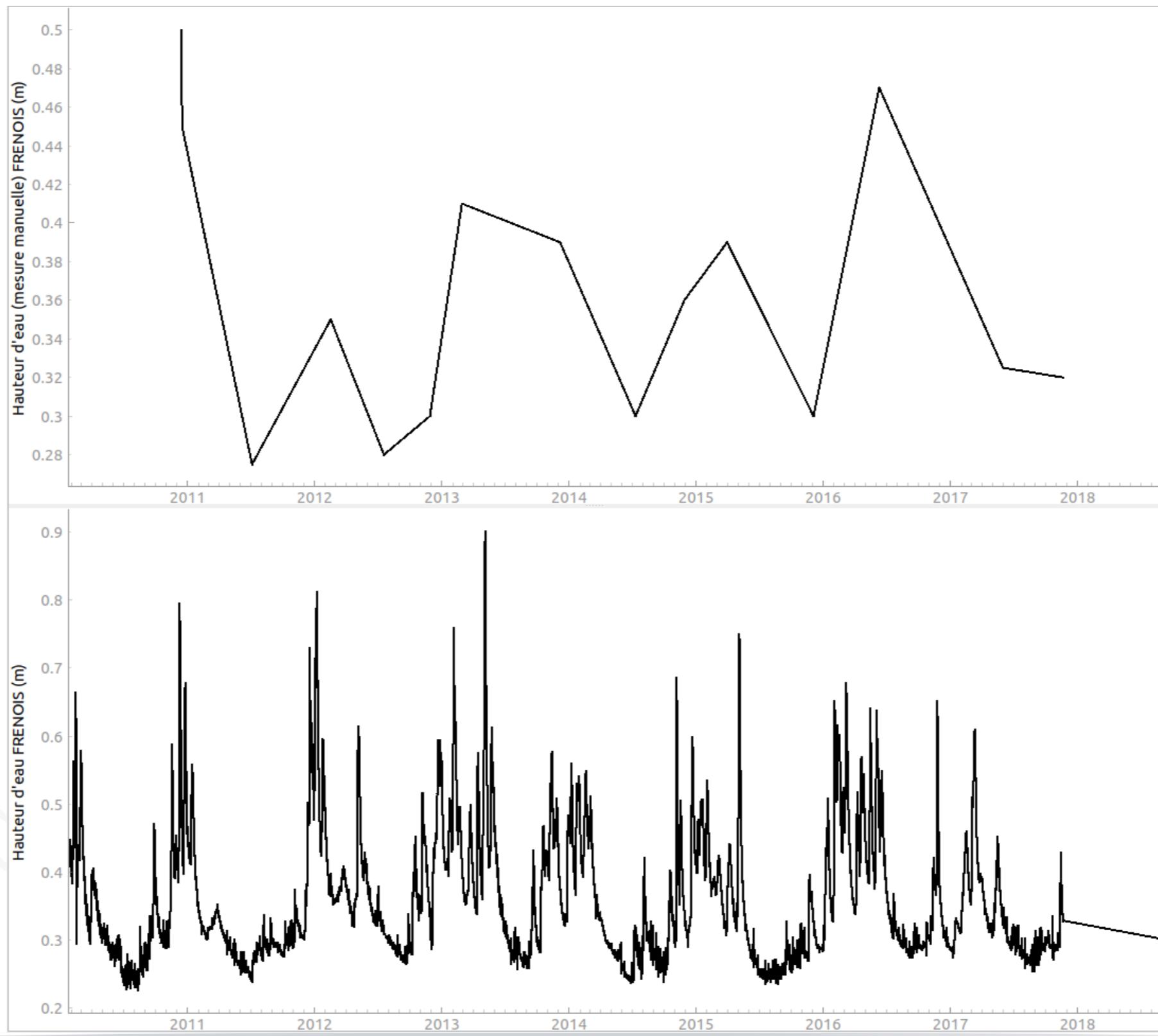
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# STRATIGRAPHY VISUALIZATION



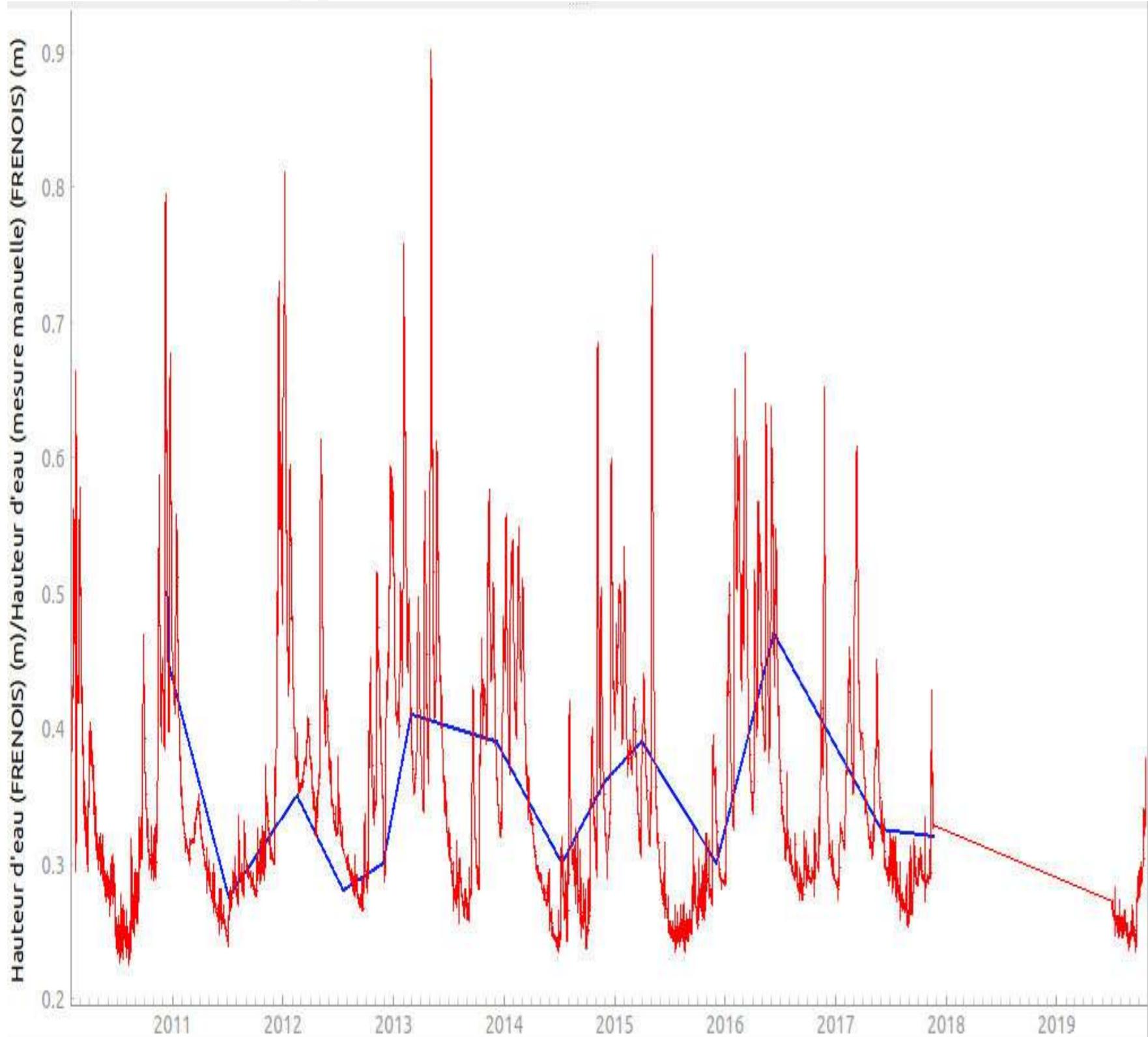
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# TEMPORAL DATA VISUALIZATION



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# STACKED CURVES VISUALIZATION



Name	Hauteur d'eau (FRENCOIS) (m)/Hauteur d'eau (mesure manuelle) (FRENCOIS) (m)	Parameter	Value
Hauteur d'eau (mesure manuelle);FRENCOIS (m)		✓	
Pen			C
Color		2	Blue
Width		5	5
Style		SolidLine	5
Cap Style		Square	5
Join Style		Bevel	5
Cosmetic		✓	5
Hauteur d'eau;FRENCOIS (m)		✓	
Pen			C
Color		1	Red
Width		5	5
Style		SolidLine	5
Cap Style		Square	5
Join Style		Bevel	5
Cosmetic		✓	5



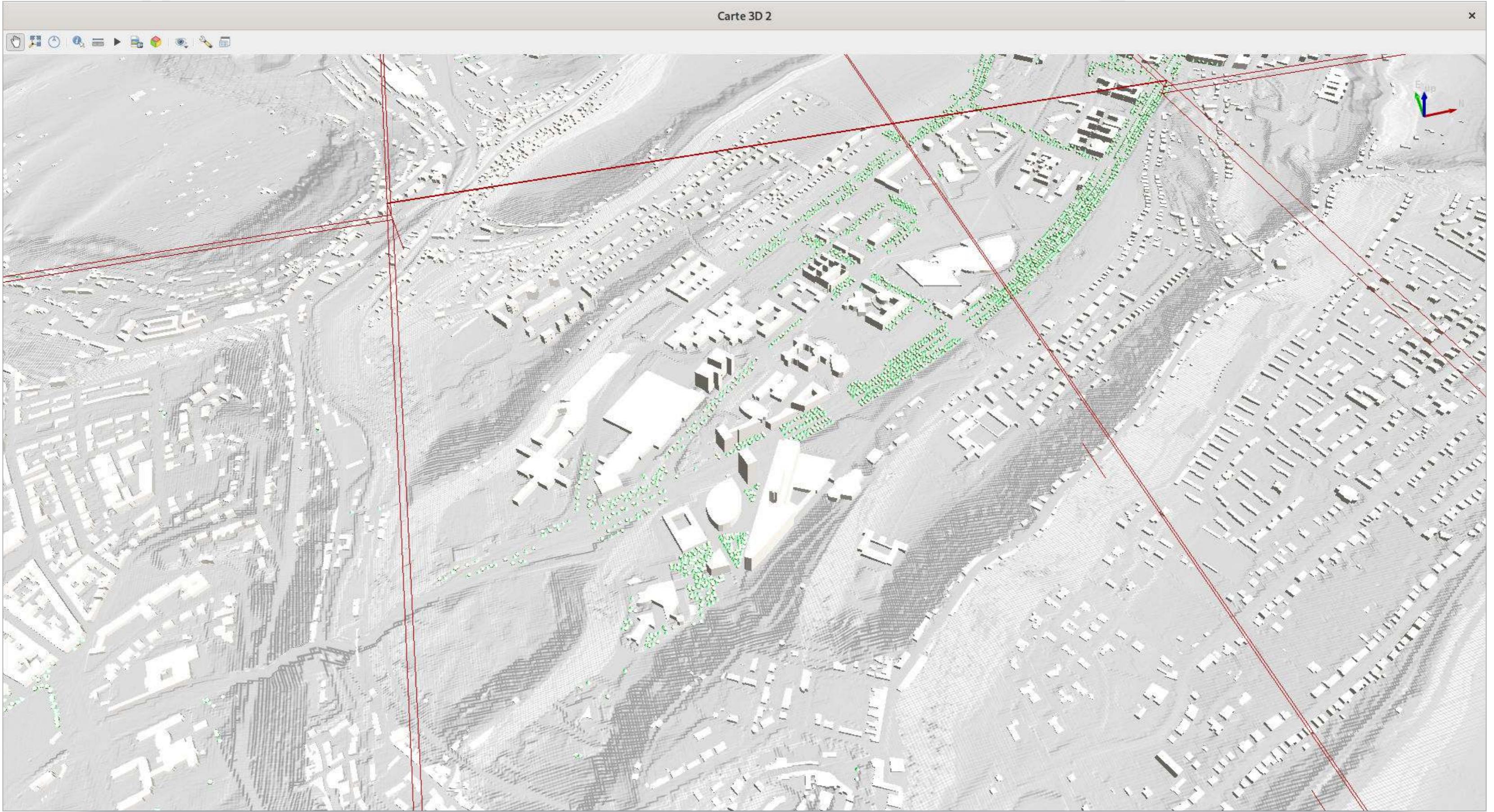
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# 3D VISUALIZATION

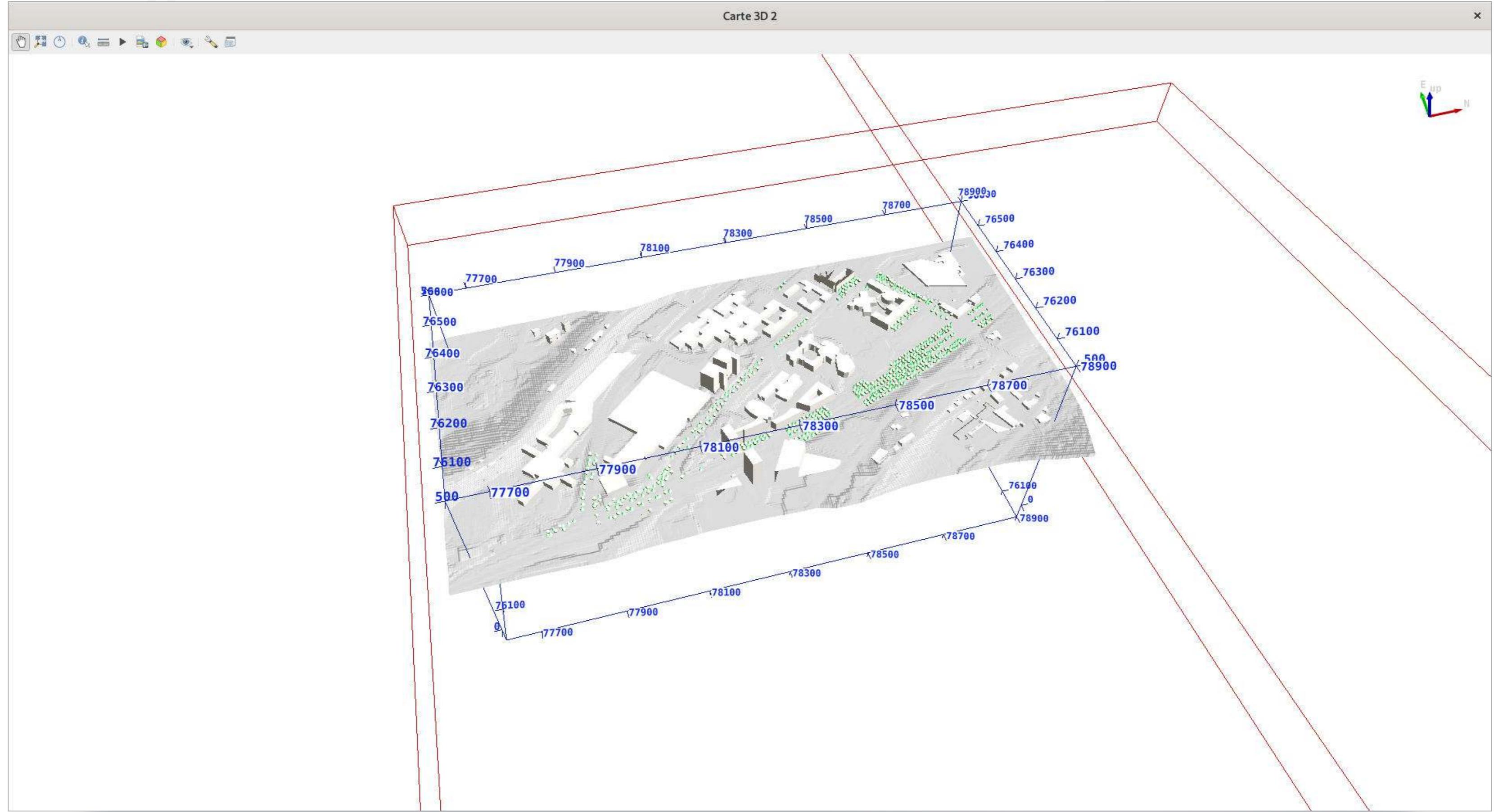
- cartesian axes support (QGIS 3.26)
- Bounding box definition



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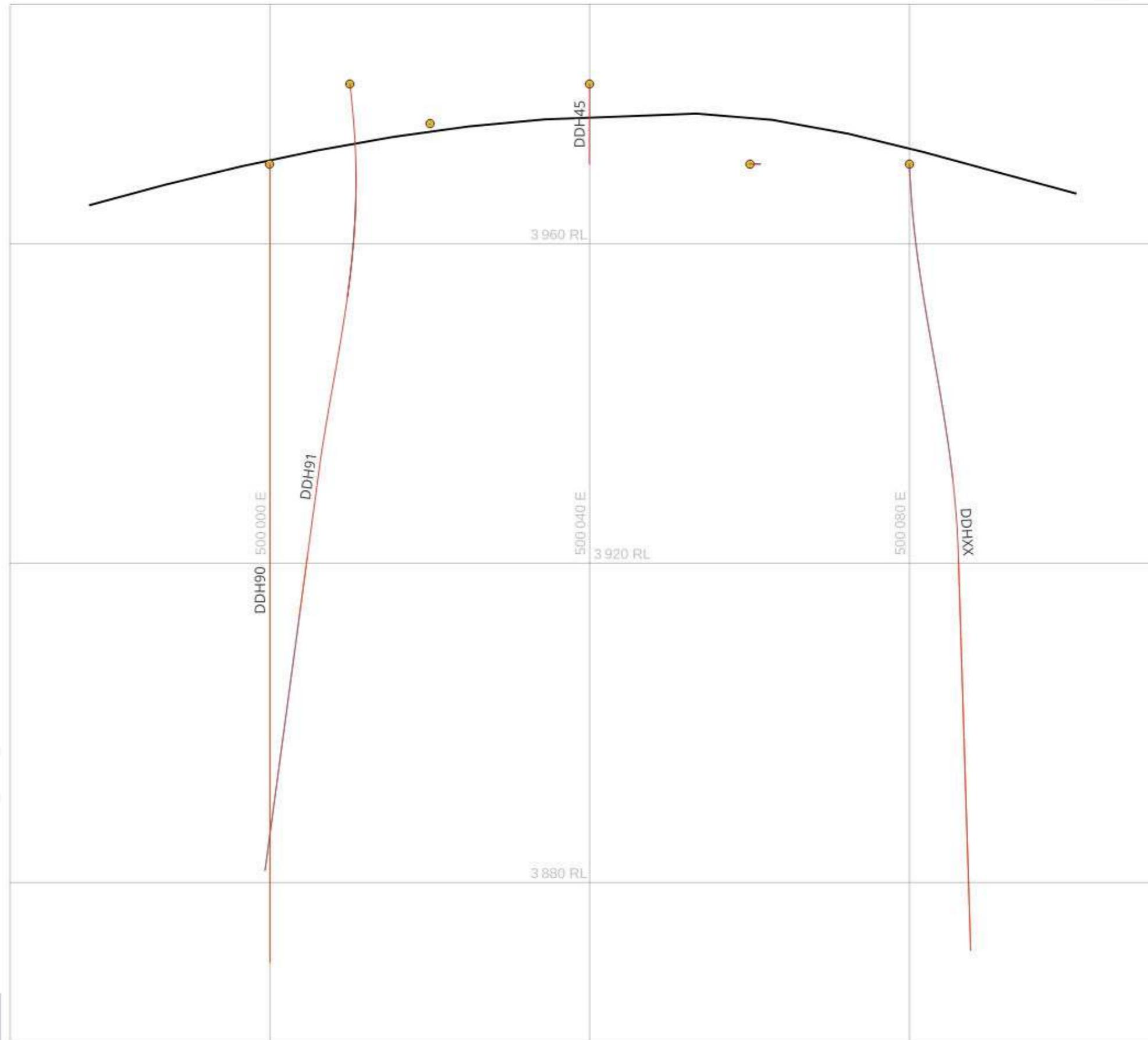


# FUTURE DEVELOPMENTS



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# SECTION VIEWER



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# THIRD PARTY DATABASE INTEGRATION

- Geotic
- Datashed
- Acquire



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# 3D VISUALIZATION

QGIS Enhancement Proposal #252

