



UiO : **Department of Geosciences**
University of Oslo

Workshop

Geophysical Data in Petroleum Geosciences: how to find and load the data?



Topics

- The DISKOS Public Data Portal
- Seismic Data (SEG-Y)
- Well Data
- Demo: Petrel™ on Virtual Infrastructure

What is DISKOS?

- National Data Repository for Petroleum data
- Joined venture between NPD and oil companies
- Seismic, Well and Production data
- Currently operated by CGG, Envy, Kadme
- Public and member access
- Currently containing ~3-4 Pb
- Expected 20-30 Pb by the end of 2020

DISKOS Public Data Portal

<https://portal.diskos.cgg.com/whereoil-data/>

The screenshot displays the DISKOS Public Data Portal interface. At the top, there is a navigation bar with a search icon, a calendar icon, and a map icon. Below this, a sidebar on the left contains a menu with options: Well, Seismic, Production official, and NPD Fact Pages. The main content area is titled "Public Portal" and contains several sections: "Seismic" (with a dropdown arrow), "Well" (with a dropdown arrow), "How to Order Data" (with a dropdown arrow), "Export" (with a dropdown arrow), and "Links". The "Seismic" section includes a paragraph about ordering seismic data and a contact email. The "Well" section includes a paragraph about ordering well data. The "How to Order Data" section includes a paragraph about ordering data and a paragraph about selecting data. The "Export" section includes a paragraph about exporting data. The "Links" section includes a list of links: "DISKOS Members Login (Seismic & Well)", "Public Production Portal", "GeoServer", "DISKOS Website", and "NPD Fact Pages". On the right side of the main content area, there is a "Filters - last modified" section with a dropdown menu showing "All", "Last 24 hours", "Last 7 days", "Last 30 days", and "Custom". Below this, there is a "Queries" section with a search bar and a "Search" button. The "Queries" section also includes a "Queries" section with a search bar and a "Search" button. At the bottom of the page, there is a footer that reads "Powered by Whereoil © Kadme 2016".

Search Calendar Map

DISKOS

All Last 24 hours Last 7 days Last 30 days Custom

Search Advanced search

Well Seismic Production official NPD Fact Pages

Public Portal

The Public Portal displays public data available for non-Diskos members to order.

The Public Portal is open 24/7 and you can order both Seismic data and Well data. All data will be shipped on physical media, and cost for freight and media will be added to your invoice. For more information regarding data availability and general information, please check the links below.

Seismic

When you order Seismic data, you must order from the Survey Level, all public available products will be included. Please contact diskos_seismic@cgg.com if you would like to receive a shape file for all public available data.

Well

When you order Well data, you must order from the Wellbore level, all public available data for the wellbore selected will be included. Wellbores are defined as wellbores with individual drilling permits.

How to Order Data

To Order, right click the desired data using the mouse and select Order within the Context menu. Alternatively, the user can use the Order icon with the vertical menu between the Datasources and Table view.

The user can select a single/multiple Seismic Survey or Wellbore for download. To select multiple, use the mouse and the Shift key or Ctrl to highlight desired selection.

The user will then be prompted to fill in all the relevant information before submitting their order.

Export

Results can be exported as CSV, XML or Excel XLS. As the export is limited to 1000 records, ensure that you constrain your query prior to exporting. Whenever you have a result set that you would like to export, simply click the button and select export format from the dropdown list.

Links

- [DISKOS Members Login \(Seismic & Well\)](#)
- [Public Production Portal](#)
- [GeoServer](#)
- [DISKOS Website](#)
- [NPD Fact Pages](#)

Filters - last modified

On the top of the search bar there are 4 filters that can be applied either before or after a search has been performed. Applying a filter constrains the results to entities that have been modified within the specified time.

- All
- Last 24 hours
- Last 7 days
- Last 30 days

The default mode is All which does not constrain the result.

Tip: When opening the application, simply applying the "last day" filter will give you a quick overview of everything that has happened last 24 hours - across all your datasources!

Queries

operators

Boolean operators: OR, AND, NOT must be UPPERCASE to be recognized as operators. Default operators (by whitespace) is AND:

- "25/1-1" AND core
- frigg OR heidrun
- frigg heidrun
- ekofisk NOT vest

quotes

To make your search results more precise and relevant, use quotes around any terms containing spaces within your search query:

- "correlation maps"
- "late jurassic"

wildcards

The ? or * wildcards can be used to replace single or multiple characters within the search query. However, wildcards can't be used at the beginning of a query.

- ekof1*
- eko7isk

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0 rows selected

How to order data

- Check the DISKOS Public Data Portal for available Public data
- Dump your selection to xls, csv or xml and send it to drift@geo.uio.no
- We will process your request. We have currently three people that can handle DISKOS download requests

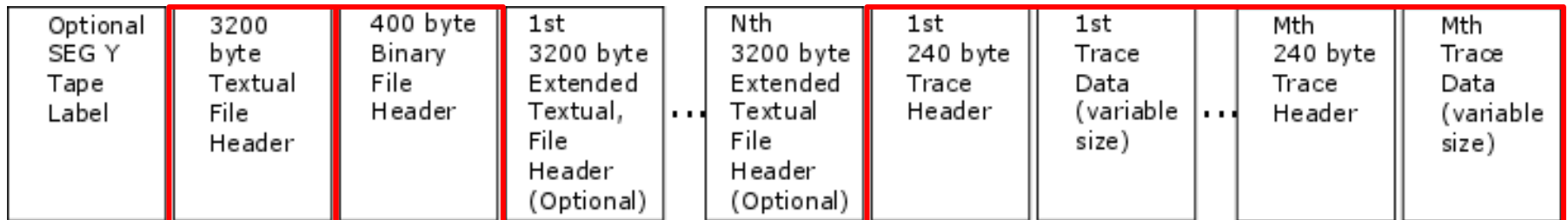
Questions about DISKOS ?

NORWEGIAN PETROLEUM DATA

Seismic data

Data format

- [SEG Y-format](#)
- Open Standard since 1973 (revised in 2002)
- Controlled by the Society of Exploration Geophysicists



Seismic data

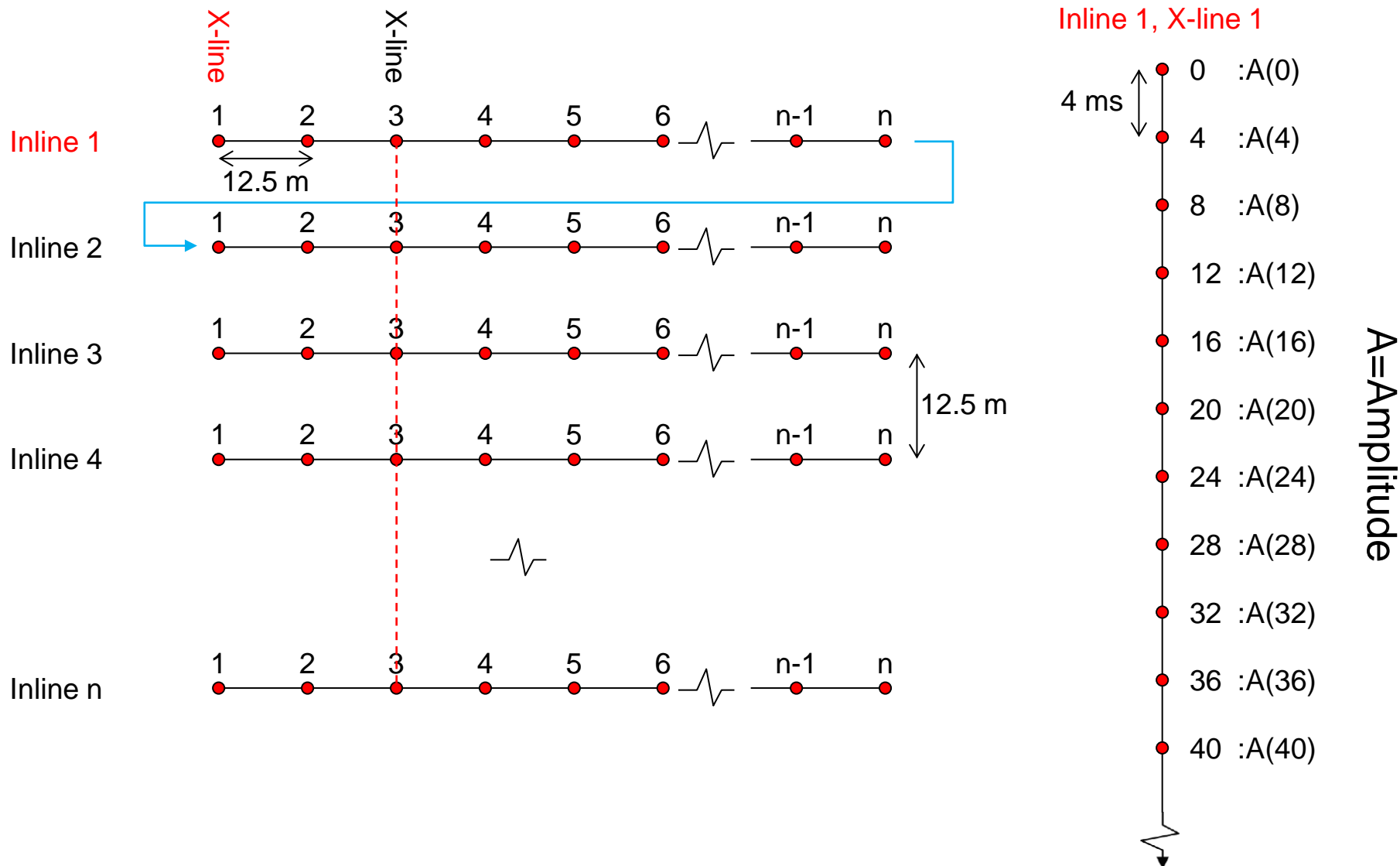
Loading parameters

- For entire data set:
 - CRS (UTM Zone)
 - Line name (for 2D)
 - Sample format
 - Sample rate
 - Number of samples
 - Time/Depth of first sample
- For every trace:
 - Trace number
 - Line/Inline number
 - CDP/Xline number
 - Shotpoint number
 - X, Y coordinate
 - Coordinate scale

Horizontal

3D Data cube

Vertical



Exercise

- SeiSee to examine SEG-Y files
- Using Petrel to load SEG-Y files
- Using OpendTect to load SEG-Y files

Questions about SEG-Y?

Well data

- Important data to load (all ASCII-files)
 - Well headers (primary metadata of the well)
 - Well path
 - Time-depth relations
 - Well logs
 - *Log ASCII Standard (LAS)*: Defined and maintained by the Canadian Well Logging Society
 - Well markers

Well headers

- Obligatory information
 - Well name
 - X-coordinate
 - Y-coordinate
 - Depth reference to sea-level
- Additional information
 - Total measured, drilled depth (=length of borehole)
 - True vertical depth
 - Operator
 - Status of the well
 - Spud date
 - Etc.



Well path

- Describes the trajectory of the borehole
 - Measured Depth, Azimuth, Dip
 - DX, DY, True Vertical Depth
 - X-coordinate, Y-coordinate, True Vertical Depth

DX/DY: The difference between the X/Y-coordinate at depth 'n' and the X/Y-coordinate at depth 'n-sr', where 'sr' is the sampling rate

Time-Depth relations

- Necessary to tie the well (measured in depth) to seismic data (measured in travel time)
 - Checkshots
 - Vertical Seismic Profiles

Well logs

- Different kind of geophysical measurements recorded along the borehole trajectory
 - Formation density, formation resistivity, etc
 - Stored in so called LAS-files

Well markers

- Positions along the wellbore that define a specific geological feature like lithostratigraphic interfaces and faults
 - For Norwegian wells, see npd.no

Questions about wells?

Virtualization

- Working with large data sets and complex visualizations?
 - Need more RAM
 - Need better GPU
- Workstation price 60-80 kNOK

Virtualization

- GEO/USIT VMware solution
- Tailored machine on demand
- Shared resources
- Use and throw

Demo