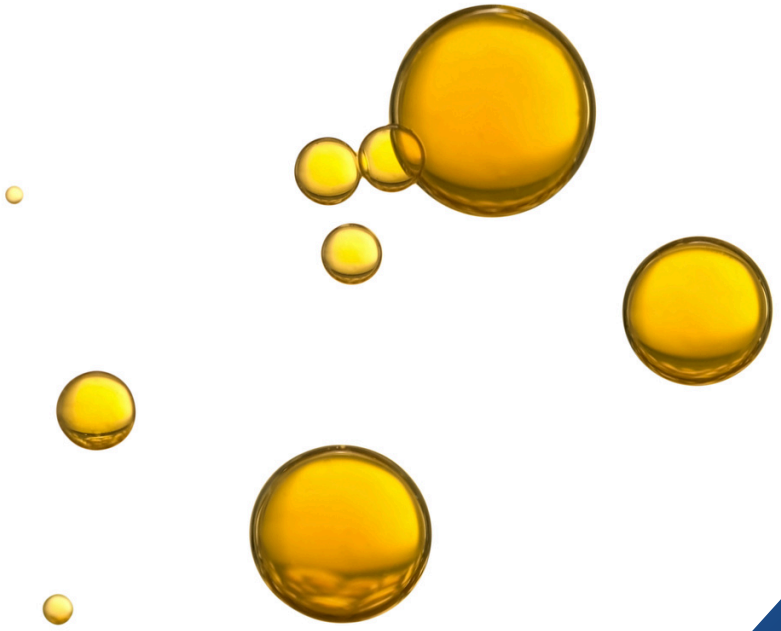
GeoMark

PVT Database of the North Sea, Norwegian Sea and Barents Sea

Delivered by GeoMark Research



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Company Overview

GEOMARK

About Us

GeoMark Research is a full-service Geochemistry and PVT company established in 1991. With a passion for subsurface fluid characterisation, we've successfully served exploration and production companies across the globe, helping them enhance their subsurface knowledge and goals.

Mission

Our mission is to provide quality geochemical & PVT data and knowledge from a source you can trust. **Science, done right.**

Vision

Our vision is to have GeoMark Research data used and valued by all companies with geochemical and PVT needs.

33+

Years of operations

3

Offices worldwide

200+

Happy clients

35+

Employees

Our Services

Laboratory Analyses

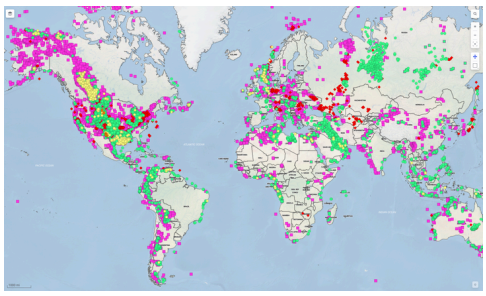
- Source Rock
- Oil & Condensate
- Inorganic
- PVT
- Mud Gas
- TruSat
- CCS applications

Consulting Services

- Time-Lapse Geochemistry & Allocation
- Reservoir Connectivity and Continuity
- Geochemistry & PVT Consulting
- Petroleum Systems Modeling (PSM)
- Petrophysics
- CCS planning
- Training

Data & Studies

- RFDbase - industry's largest geochemistry & PVT subscription database
- Non-exclusive basin studies
- Proprietary data loading and hosting



Research

- Commitment to research for joint industry and academia collaborations

Building the industry's first PVT database for the North Sea, Norwegian Sea and Barents Sea

GeoMark Research is actively building the industry's first PVT database for the North Sea, Norwegian Sea and Barents Sea to provide a platform to store, access, review and interrogate technically reviewed PVT reports and associated data.

Why GeoMark Research?

Over the past 30 years, GeoMark Research has gained significant experience in the collection and storage of laboratory measured subsurface data and has built the industry's largest Rock, Fluid and PVT database (RFDbase). At the time of writing this document, GeoMark Research has digitized, technically reviewed and uploaded over 11,000 PVT reports globally. Many of these reports are licensed by global exploration companies

What's the goal?

The Norwegian Offshore Directorate, formally Norwegian Petroleum Directorate (NDP), houses 100's to 1000's of PVT reports varying in vintage and file type. Figure 1 presents all reported wells across the North Sea and Norwegian that may host full or partial PVT data.

As part of GeoMark Research's global PVT databasing efforts, a small selection of this data is already available in RFDbase.

As exploration and infill development programs continue to increase across this region, GeoMark Research has committed to locating, digitizing, technically reviewing and uploading PVT reports and data to RFDbase.

Access to this data is available via a subscription which provides continuous updates of available PVT data.

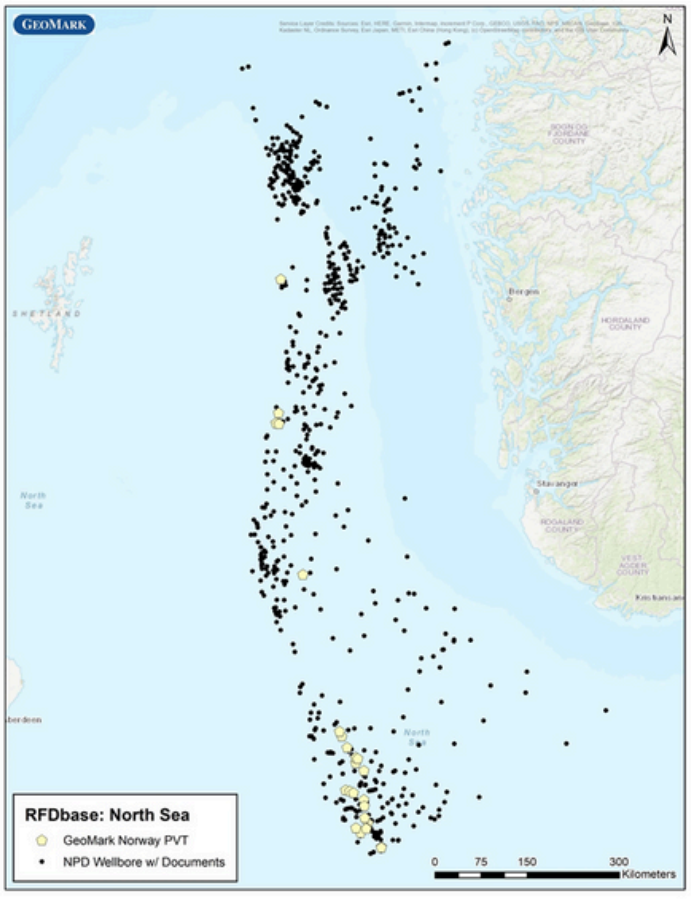


Figure 1. Map highlighting uploaded PVT data and potential PVT data sites within the NOD

Applications of a PVT database for the North Sea, Norwegian Sea and Barents Sea

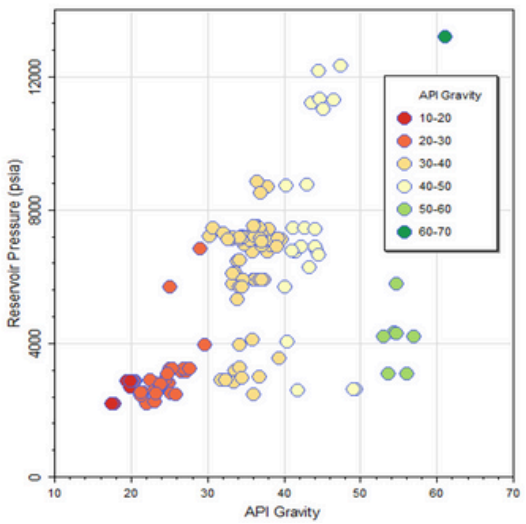
Accurate Fluid Characterisation: Providing information about the pressure, volume and temperature behavior of reservoir fluids, including oil, gas and water. Essential for reservoir engineers and geoscientists to understand fluid properties, behavior and phase behavior under different conditions.

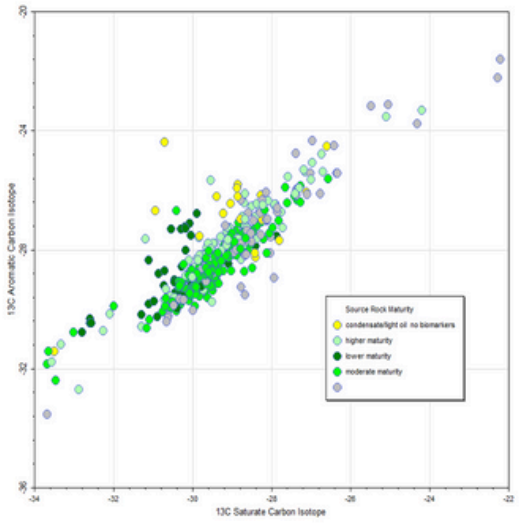
Reservoir Simulation and Modeling: Serves as a valuable input for reservoir simulation and modeling. Accurate PVT data helps in developing reliable reservoir models, optimizing production strategies, estimating recoverable reserves and predicting reservoir performance. It enhances the accuracy of reservoir simulation, leading to better decision-making and improved field development plans.

Production Optimization: By incorporating PVT data into reservoir simulation models, operators can optimize production strategies. The database enables the identification of optimal well completion techniques, production rates and pressure management strategies. It aids in designing production facilities and determining the most efficient and cost-effective production methods for maximising hydrocarbon recovery.

Improved Field Economics: Accurate PVT data enables operators to estimate reserves more accurately, optimise production rates and design efficient production facilities.

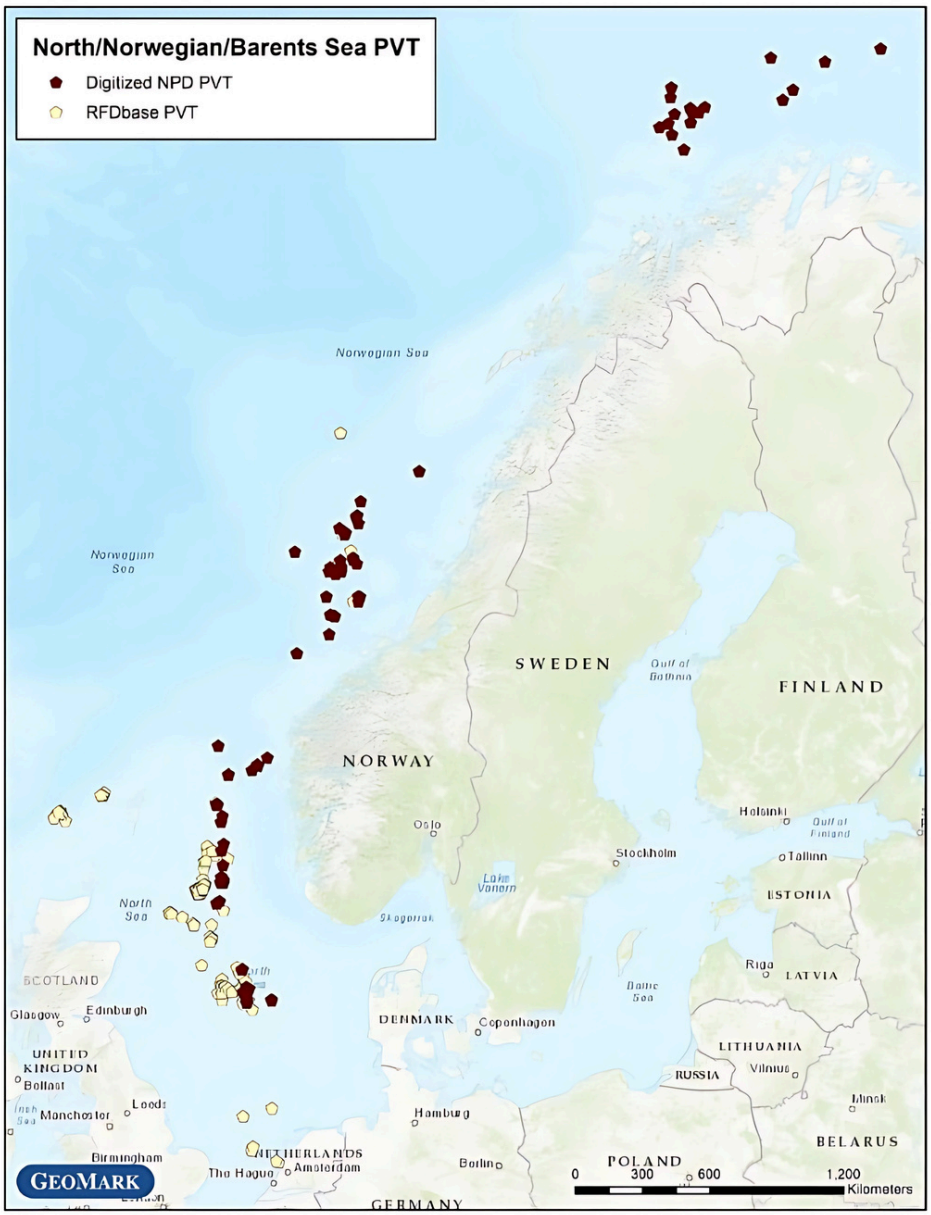
CO2 sequestration: Modeling of CO2 phase behavior at different pressures and temperatures and understanding the formation flow and capacity.





PVT data loading efforts so far

At the start of 2024, GeoMark Research's PVT data team started the process of identifying, downloading, digitizing and technically reviewing a selection of PVT data reports across the North Sea and Norwegian Sea. Immediate focus was given to regions of known infill drilling activity and areas where GeoMark Research's PVT data was missing. As the year progresses, the PVT data team will continue to identify and load quality PVT data across this region. The plan is to exhaust all current public PVT data resources to ensure both geographic and vertical representation of fluid phase properties.



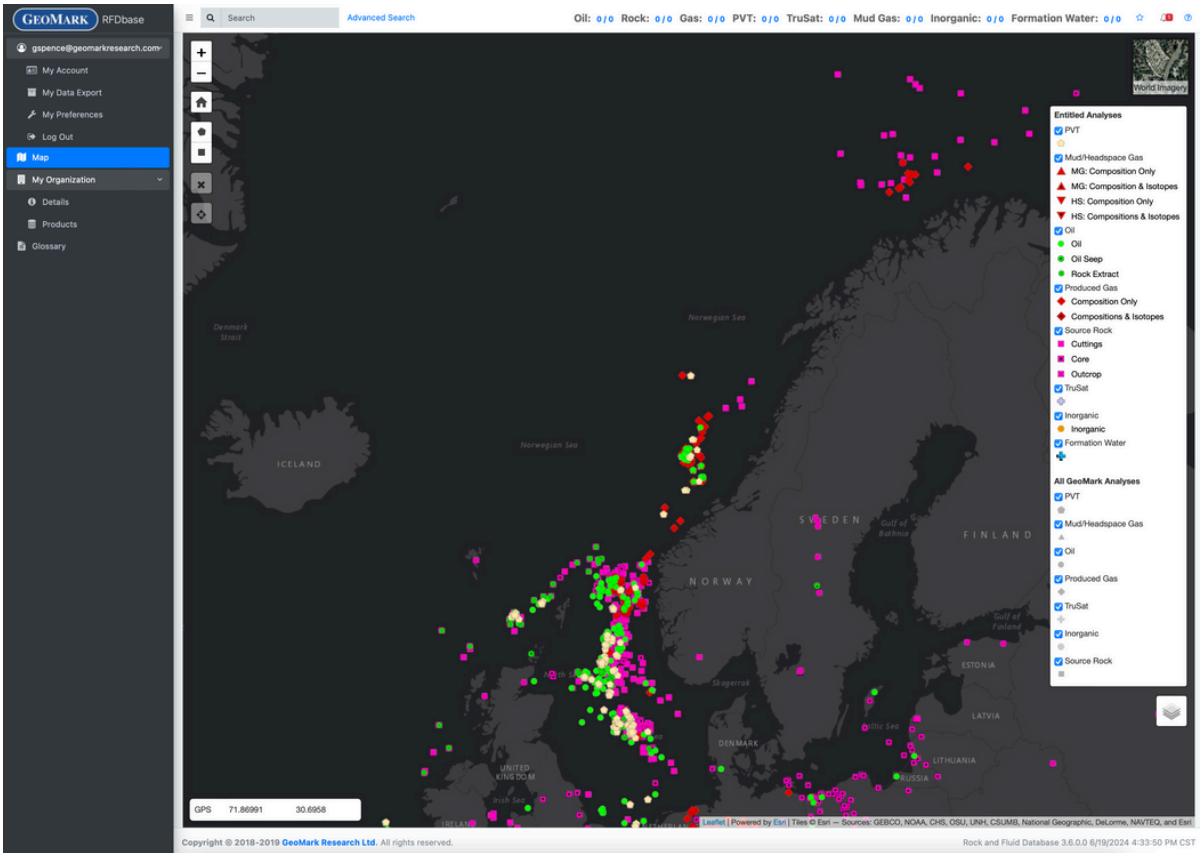
720+ PVT reports available now

344 Wells

RFDbase - An online platform to easily access quality PVT, Geochemistry and Gas data

GeoMark Research's RFDbase platform was designed by geochemists, geologists and engineers for geochemists, geologists and engineers. Quality data, logical data exploration, reporting and data export was at the heart of RFDbase development and continues today with the inclusion of new data types. RFDbase provides data access to subscribing companies anywhere in the world, at any time and by anyone. Access is by organization which allows infinite company subscribers at no additional or hidden costs. Request demo access www.rfdbase.com/web/

GeoMark Research also offers proprietary data loading to provide a centralized data location for your PVT, geochemistry, water and gas data.



Map based search | Text based search | Evergreen

24/7 online access | Unlimited users | Proven

Standardised data | Proprietary data load | Trusted

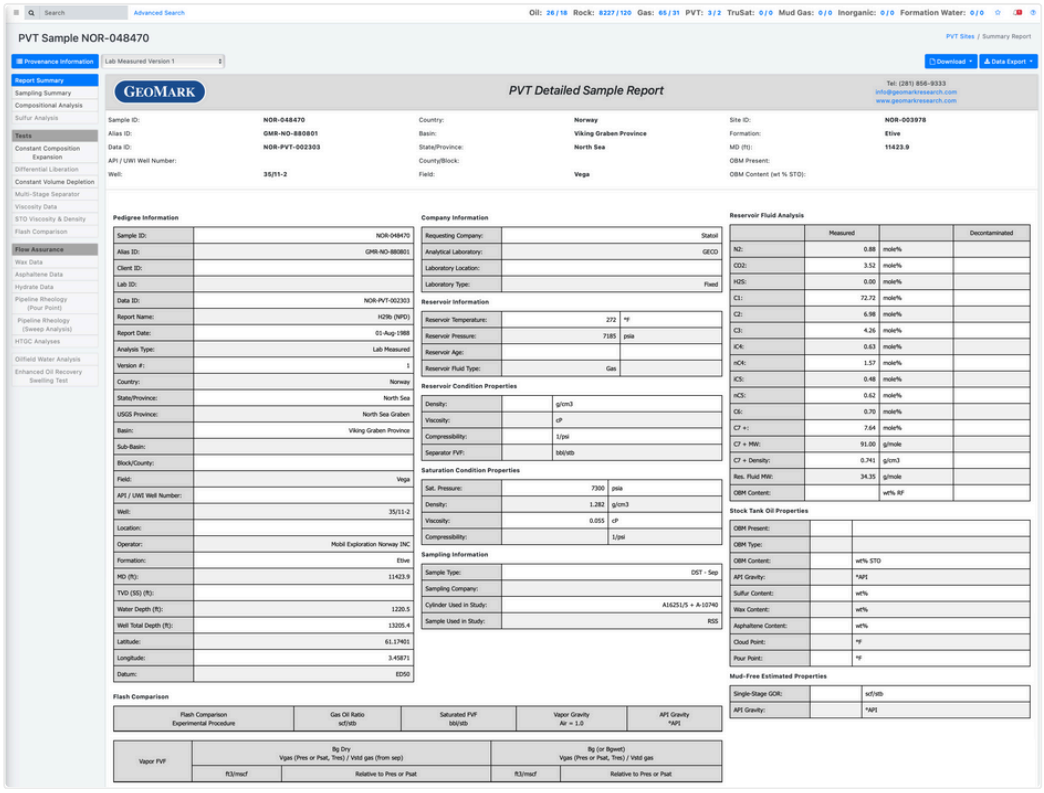
2024

PVT Data Capture & Reporting

Our data capture is inclusive of all associated PVT measurements to ensure the most complete PVT report is provided. The table below presents the PVT data types that are captured and reported within our reports.

Section	Features
Report Summary	Well, Report & Sample Information, Reservoir Properties, Key data points from the study (SSF, CCE, DL, CVD, MSST, Visc, Comp)
Sample History	Onsite Field Data (IDs, Production Data, Opening, Restoration, Closing)
Sample Validation	Preliminary Lab QC (Opening; Restoration; Saturation Pressure; Flash Data; Air, Water, BS&W Content)
Compositional Analyses	Sample Type; Flashed, Separator, Overall, Mud Compositions (mol, wt); Flash Data; Recombination GOR; Fluid Groupings; Mud Contamination
Constant Composition Expansion (CCE)	Oil, Gas, and Mud Properties
Differential Liberation (DL)	Oil and Gas Properties and Compositions
Constant Volume Depletion (CVD)	Oil and Gas Properties and Compositions
Multi-Stage Separator (MSST)	Oil and Gas Properties and Compositions
Swelling	Swollen Fluid Properties and Compositions; Solvent Composition
Live Viscosity	Oil and Gas Properties
Stock Tank Viscosity & Density	Absolute & Kinematic Viscosity, Density
Stock Tank Properties	Wax, Asphaltene, Cloud & Pour Point, SARA, RVP, Acid Number, Content (S, V, Ni, Water)
Sulfur Speciation	Flashed, Separator, Overall Fluids (ppm-mol, ppm-wt, ppm-wtS)
Water Analyses	Cations, Anions, Organic Acids, Physical Properties; Flash Data; Flash Gas Compositions (mol, wt)
EoS Model Parameters	Model Meta Data; EoS, Viscosity, BIP(0) & BIP(T) Parameters

The image below provides an example of our PVT Detailed Sample Report from a Norwegian well.. Users can export or directly link (API connection) data in a standard and consistent format, ready for consumption into any preferred modeling or visualisation software.

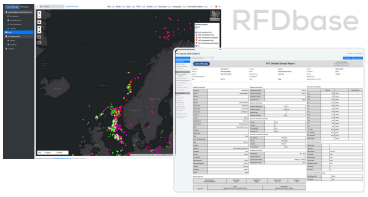


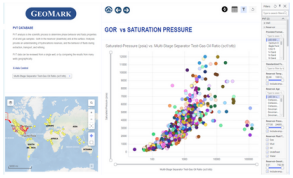
Generalised workflow

Data import

- Template file
- Original PVT report
- Supporting files

Data visulisation





Data export

- Data loading template
- Original PVT report
- Supporting files

- Summary PVT data
- Unlimited wells
- One row per record

- Calsep Templates

Data application

Pricing

Reach out to sales@geomarkresearch.com for more information about pricing.

GeoMark

Contact Us

Website	www.geomarkresearch.com
Phone	+1 281 856 9333
E-mail	info@geomarkresearch.com
HQ address	9748 Whithorn Drive, Houston, Texas 77095