



**GoExplore Consulting**

**Free Friday Webinars**  
**Probabilistic Volumes with**  
**Prospector**

**April 24<sup>th</sup> 9am Houston Time**

- Introduction to Exploration Volume Calculation
- Deterministic, Probabilistic and pseudo-Probabilistic Volumes
- GoExplore: Prospector
- Compare Prospector and Prospector-Light Calculators
- Widgets
- Demo
- Wrap-up

**GoExplore: Prospector**

One Tool  
Four Windows  
Simple Fast Accurate

1. Meta-Data
2. Volumes
3. Risking
4. Cutoffs

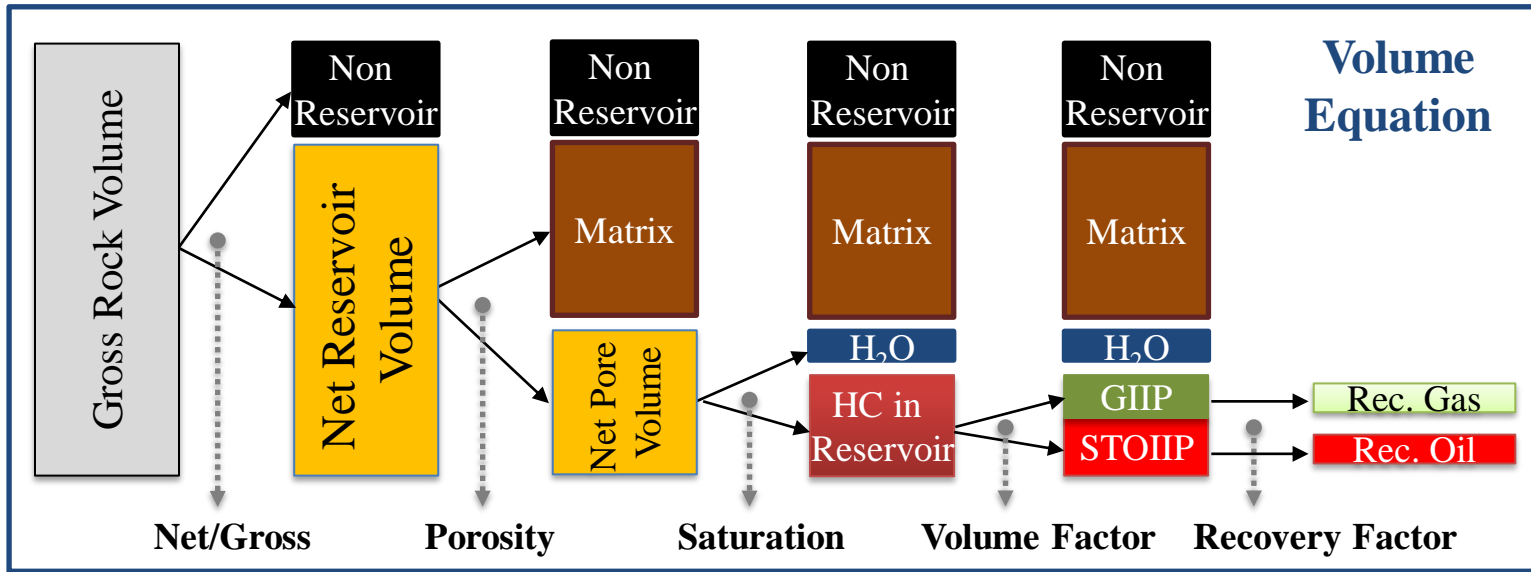
© 2020 GoExplore Consulting Ltd Co.

**GoExplore: Prospector Light**

**Prospector light**  
Exploration Volume Calculator  
GoExplore Consulting Ltd Co

1. Deterministic Volume Calculator
2. Pseudo-Probabilistic Volume Calculator
3. Digitize Map areas for GRV
4. Risk-Merge of Multiple Objectives

© 2020 GoExplore Consulting Ltd Co.




**Deterministic Volumes** = **GRV** x **N/G** x **Ø** x **Sat** x **1 / FVF** x **R<sub>f</sub>**

**Probabilistic Volumes** =  **Prospector**

**Pseudo-Probabilistic Volumes** =  **Prospector Light**

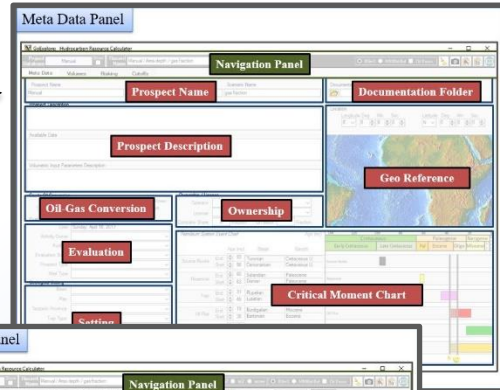
# GoExplore: Prospector



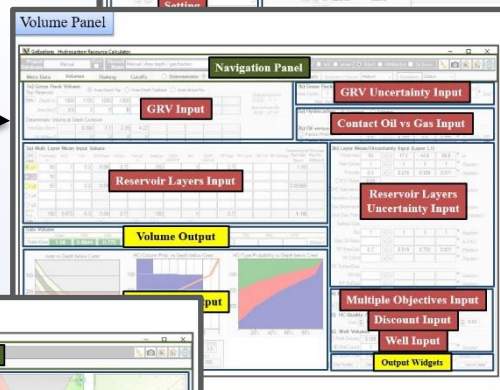
One Tool  
Four Windows  
Simple Fast Accurate

1. Meta-Data
2. Volumes
3. Risking
4. Cutoffs

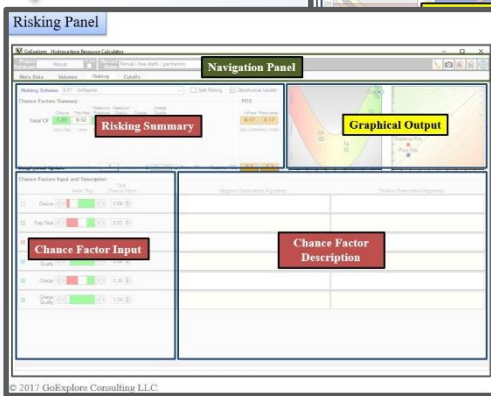
Meta Data Panel



Volume Panel



Risking Panel



Cutoff Panel



The screenshot shows the GoExplore Hydrocarbon Resource Calculator interface. The window title is "GoExplore: Hydrocarbon Resource Calculator". The interface is divided into several sections:

- Navigation Panel:** Located at the top, it includes a "Project Database" dropdown, "Manual" and "Record Name" buttons, and a "Manual | Area depth / gas fraction" label.
- GRV Input:** A section for "1a) Gross Rock Volume" with a "Top Reservoir" dropdown and a table for "Deterministic Volume at Depth Contours".
- GRV Uncertainty Input:** A section for "1b) Gross Rock Volume" with an "Area Factor" input field.
- Contact Oil vs Gas Input:** A section for "2a) Hydrocarbon Contact" and "2b) Oil versus Gas" with various input fields.
- Reservoir Layers Input:** A section for "3a) Multi Layer Mean Input Values" with a table for reservoir layers (L1 to L5).
- Reservoir Layers Uncertainty Input:** A section for "3b) Layer Mean/Uncertainty Input (Layer L1)" with a table for layer properties like Thickness, Net/Gross, Porosity, etc.
- Volume Output:** A section for "Sale Volume" with a table showing Mean, P90, and P50 values for Sale-Gas.
- Graphical Output:** A section containing three charts: "Area vs Depth below Crest", "HC-Column Prob. vs Depth below Crest", and "HC-Type Probability vs Depth below Crest".
- Multiple Objectives Input:** A section for "4) HC Quality" with a "Discount" input field.
- Well Input:** A section for "6) Well Volumes" with "Well Density" and "Well Count" input fields.
- Output Widgets:** A section at the bottom right with "Chart Tornado" and "Inversion" buttons.

**Entire Calculation is on one page (no hidden input)**

# Compare Volume Calculators **Prospector vs. Prospector-Light**

	<b>Prospector</b>	<b>Prospector Light</b>
Volumes	Deterministic & Probabilistic	Deterministic & Pseudo-Probabilistic
Gross Rock Volume	<ul style="list-style-type: none"> <li>• Top Area-Depth-Contact</li> <li>• Base Area-Depth-Contact</li> <li>• Area-Gross-Pay</li> <li>• Multi-Layer Reservoir</li> <li>• Thickening / Thinning</li> <li>• Onlap / Truncation / Wedge</li> <li>• Column Height Probability Fill-to-Spill</li> <li>• Seal Capacity Column Constraint</li> </ul>	<ul style="list-style-type: none"> <li>• Top Area-Depth-Contact</li> </ul>
Inputs	<ul style="list-style-type: none"> <li>• Uncertainty Distributions</li> <li>• Correlations between Distributions</li> </ul>	<ul style="list-style-type: none"> <li>• Single Numbers</li> </ul>
Additional Inputs	<ul style="list-style-type: none"> <li>• Saturation Height Curve</li> <li>• Sorbed Gas (Unconventional)</li> <li>• HC Quality / Sale Discount</li> <li>• Well Volume calculation</li> <li>• Multiple Reservoir-Seal-Pairs</li> </ul>	
Outputs	<ul style="list-style-type: none"> <li>• Uncertainty Distributions of multiple output Parameters of MonteCarlo Model</li> <li>• Sample Viewer</li> </ul>	<ul style="list-style-type: none"> <li>• Deterministic &amp; Pseudo-Probabilistic Volumes</li> </ul>
	<ul style="list-style-type: none"> <li>• Volume Inversion</li> </ul>	
	<ul style="list-style-type: none"> <li>• Widgets</li> </ul>	
License	Lease	Free

*“small optional side applications that facilitate insight and a more efficient and accurate assessment”*

1. MonteCarlo Cases
2. Volume Inversion
3. Output Panel
4. Paste Area-Depth Pairs
5. Digitize Map Areas
6. True Vertical Thickness
7. Seal-Capacity/Spill-Leak Probability
8. Rank Correlation Input Parameters
9. HC-Saturation and Water Porosity
10. Saturation Transition Zone
11. Gas Expansion
12. Oil Formation Volume Factor
13. Sorbed Gas Volume
14. Sorbed Gas Recovery

Widget: MonteCarlo Cases

Widget: Volume Inversion

Widget: Output Panel

Widget: Paste Area-Depth Pairs

Widget: Digitize Map Area

Widget: True Vertical Thickness

Widget: Seal-Capacity and Trap Spill-Leak Points

Widget: Rank Correlation Input Parameters

Widget: Hydrocarbon Saturation and Water Porosity

Widget: Saturation Transition Zone

Widget: Gas Expansion

Widget: Oil Formation Volume Factor

Widget: Sorbed Gas Volume

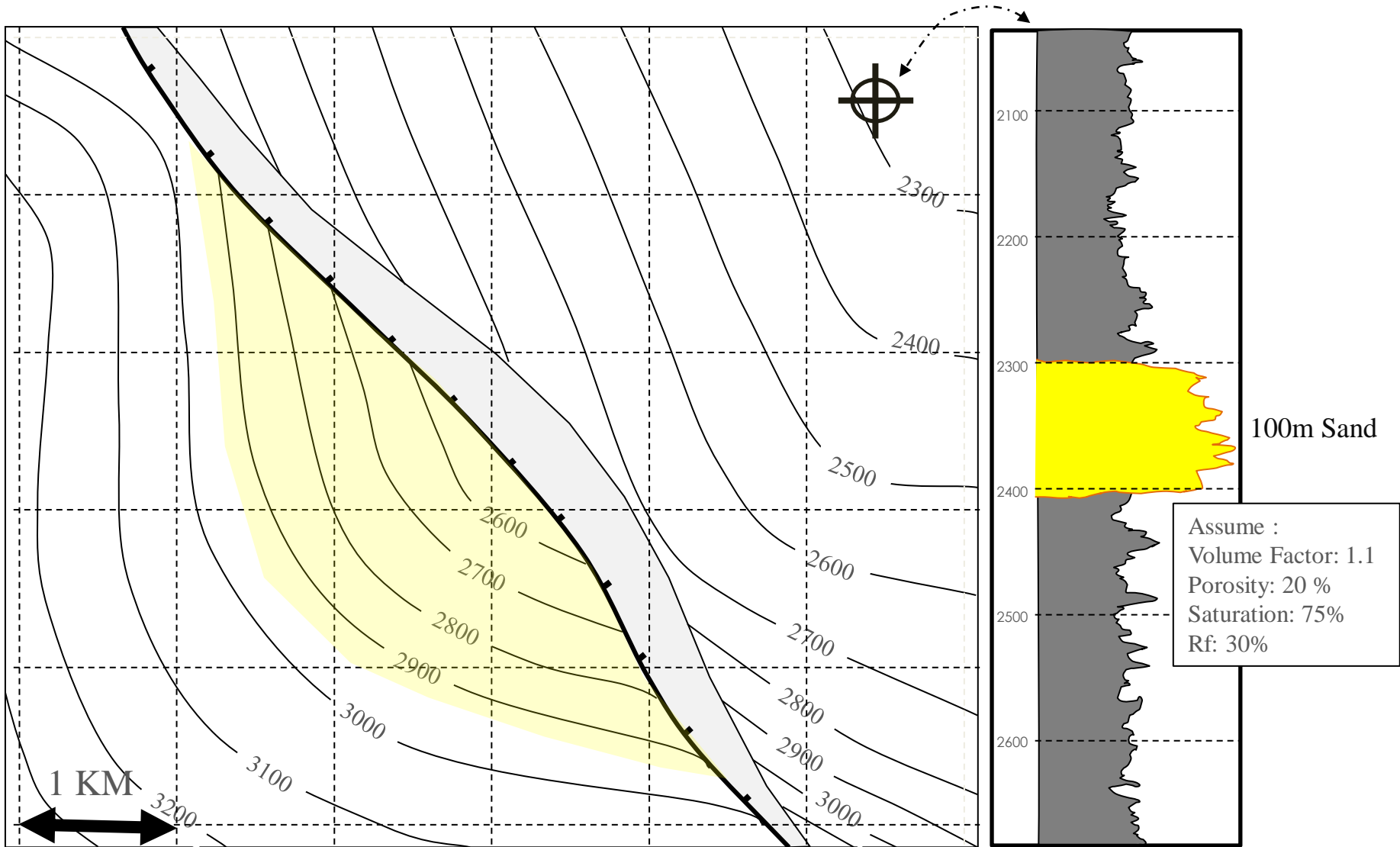
Widget: Sorbed Gas Recovery

**Sorbed Gas Recovery Factor**

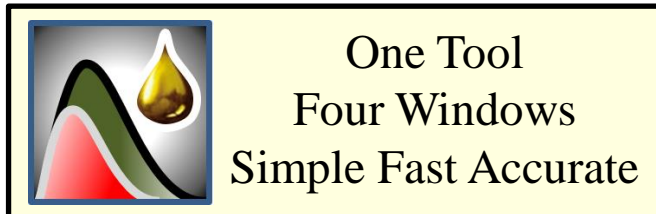
The recovery of the Sorbed Gas is a function of the Langmuir Isotherm, the initial conditions and the abandonment conditions. This widget uses these parameters to calculate a Sorbed Gas Recovery Factor

Langmuir Isotherm	Langmuir Volume	380	Gas scf/ton Rock
	Langmuir Pressure	2000	Psi
Initial Conditions	Initial Pressure	4000	Psi
	Initial Gas Content	200	Gas scf/ton Rock
	Max Gas Content @ Initial Pressure	253	Gas scf/ton Rock
	Critical Desorption Pressure	2220	Psi
Abandonment Conditions	Abandonment Pressure	500	Psi
	Abandonment Gas Content	76	Gas scf/ton Rock
Recovery	Recovery Volume	124	Gas scf/ton Rock
	Recovery Factor	0.62	Fraction

Sorbed Gas (Tonne Rock) vs Pressure (psi) graph showing a red curve.



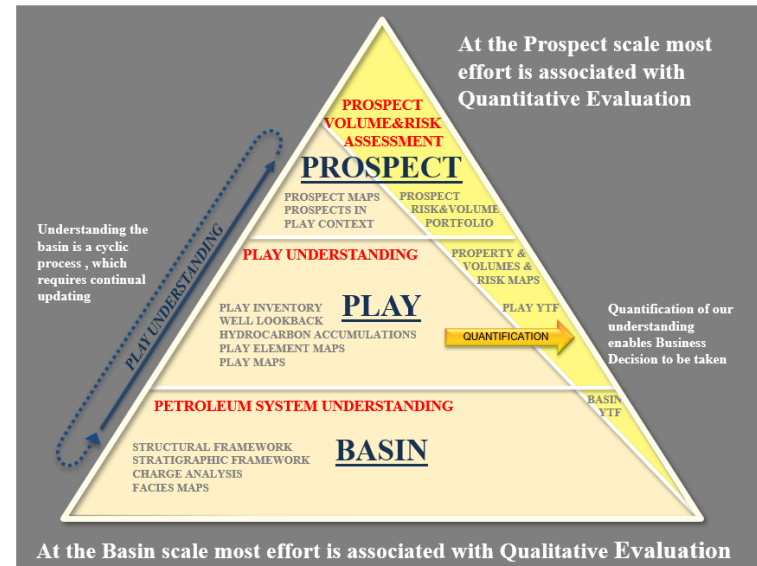




## Key Features

1. **Ingeniously Simple:** user interface kept simple, the complexity in the code.
2. **Fast and Accurate:** Get to the right answer fast, intuitive design allows for a very steep learning curve.
3. **Comprehensive:** Form dynamically adjusts to **multiple calculation Methods**.
4. Changes in input give instant output. **Instant Feedback** creates **Insight** (instead of confusion).
5. **Reduced Chance** to have **(unintended) Errors:**
  - **No hidden input**, (all input is visible on one page).
  - **Visualize and Analyze** input and output data instantly.
6. Facilitates the **Auditing** of evaluations (what you see is all the input that resulted in the output).
7. The data can be **Presented as Calculated**, that is in an understandable way.
8. **Quality Control** of Portfolio using Excel and ArcGIS.
9. **Collaboration** and **Quality Assurance** through instant evaluation-sharing.
10. Stand-Alone tool, ability to use on **Business Trips** and **Data-Rooms**.

- Understanding the Basin/Plays context is essential for **Quantitative Prospect Evaluation**.
- **Prospector-Light** can help you to get accurate volume estimates for screening purposes.
- **Pseudo-Probabilistic** volumes are a good approximation of Probabilistic Volumes.
- **Prospector** is our **full probabilistic** application, which can be used for a **comprehensive prospect analysis**.



GoExplore: Prospector Light

**Prospector light**  
Exploration Volume Calculator  
GoExplore Consulting Ltd Co

GoExplore: Prospector

One Tool  
Four Windows  
Simple Fast Accurate

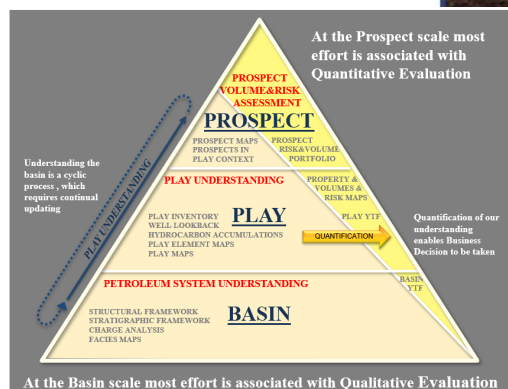
1. Meta-Data
2. Volumes
3. Risking
4. Cutoffs

The software interface includes several panels: 'Meta-Data Panel', 'Volume Panel', 'Risking Panel', and 'Cutoff Panel'. It displays various charts and data tables, including a 'Prospect Risk & Volume Portfolio' chart and a 'Volume Histogram' chart. The interface is designed for comprehensive prospect analysis, allowing users to input data and generate probabilistic volume estimates.

© 2020 GoExplore Consulting Ltd Co.

We offer a:

- 3-day course on Quantitative Prospect Evaluation
- 3- or 5-day course on Prospect Evaluation in the Play Context (PBE)



GoExplore

## Techniques for Quantitative Prospect Evaluation

1. Analyzing a Prospect
2. Prospect Volumetric Methods
3. Prospect Risking Methods
4. Prospect Volume Reporting and Cutoffs
5. MonteCarlo Models and Volume Calculators
6. Distributions and Estimating Techniques
7. Conditional Probabilities ; Bayesian Analysis ; QI uplift
8. Scenarios and Multiple Hypothesis Analysis
9. Multiple Objectives Workflows
10. Learning from Look backs
11. Evaluation Pitfalls

You can download the Software at:  
[www.goexplore.consulting](http://www.goexplore.consulting)

Contact: [Bloemendaal@GoExplore.Consulting](mailto:Bloemendaal@GoExplore.Consulting)



**GoExplore Consulting**

**Free Friday Webinars**  
**Any Questions ?**



**GoExplore Consulting**

**Free Friday Webinars**  
**Thank You**