micromine | Next Generation Technology for Mining

MICROMINE GRADE COPILOT

Using neural networks for geological modelling

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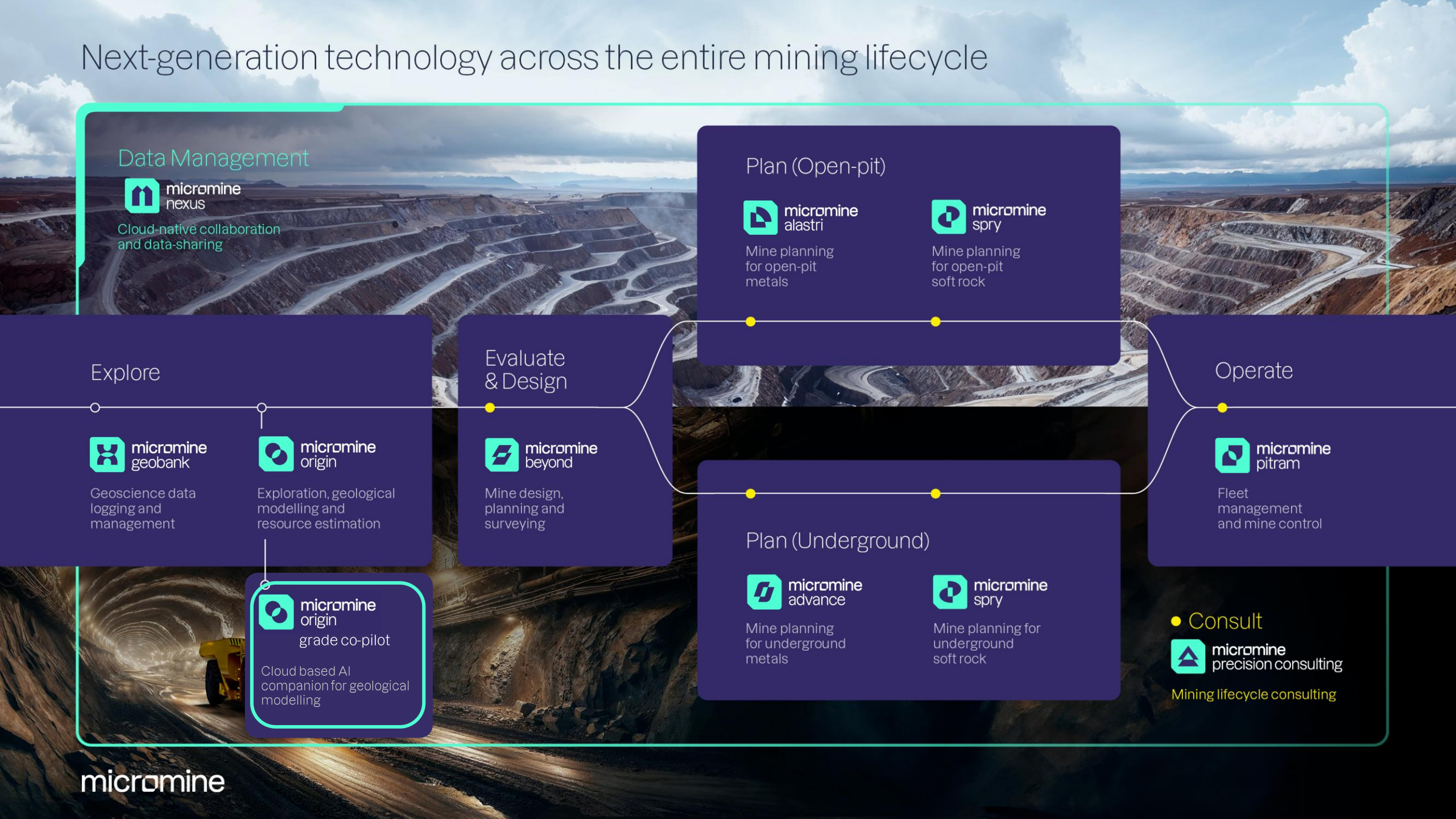
Next-generation technology across the entire mining lifecycle



Data Management

micromine nexus

Cloud-native collaboration and data-sharing

Explore

micromine geobank

Geoscience data logging and management

micromine origin

Exploration, geological modelling and resource estimation

micromine origin grade co-pilot

Cloud based AI companion for geological modelling

Evaluate & Design

micromine beyond

Mine design, planning and surveying

Plan (Open-pit)

micromine alastri

Mine planning for open-pit metals

micromine spry

Mine planning for open-pit soft rock

Plan (Underground)

micromine advance

Mine planning for underground metals

micromine spry

Mine planning for underground soft rock

Operate

micromine pitram

Fleet management and mine control

Consult

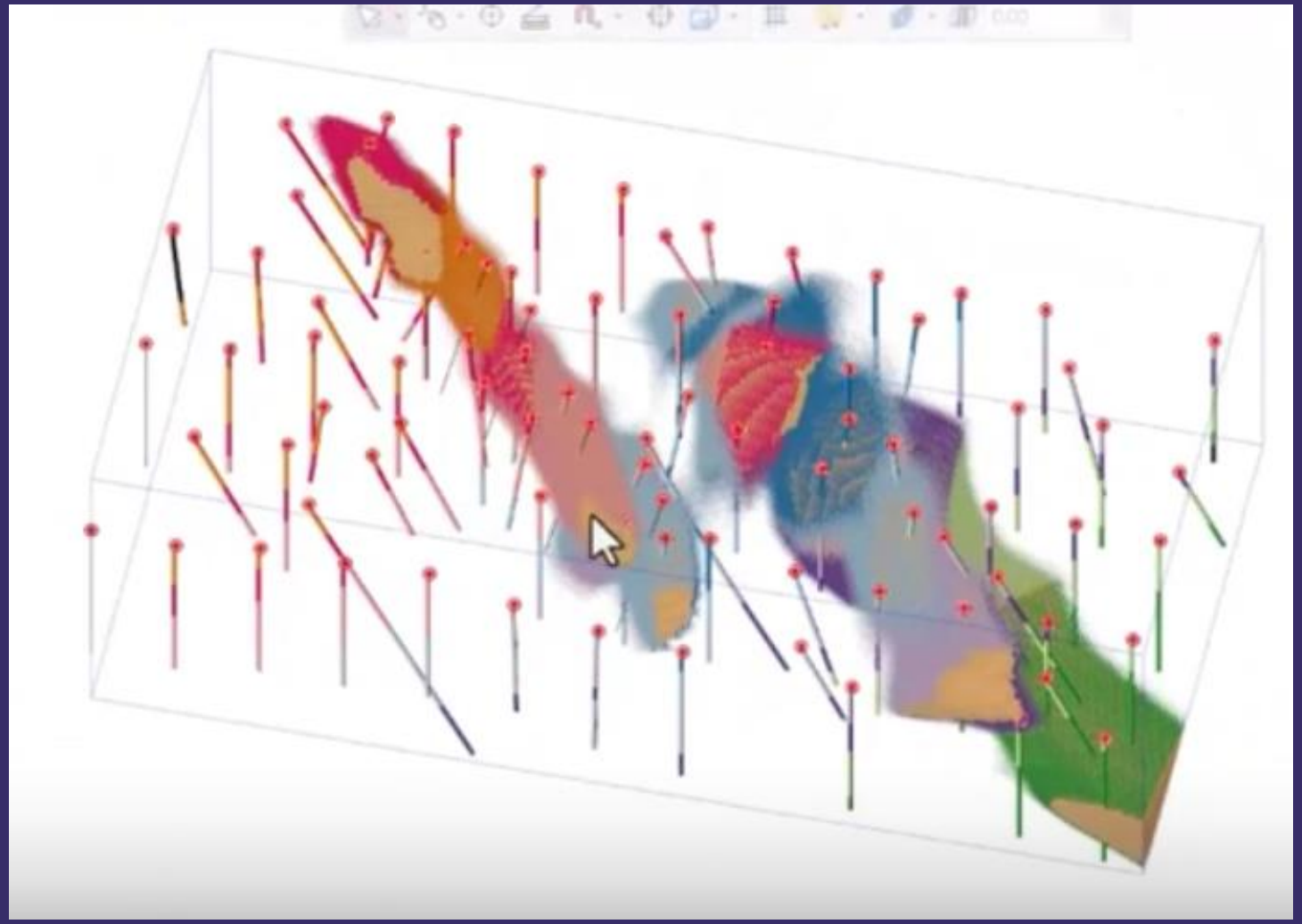
micromine precision consulting

Mining lifecycle consulting

micromine

What is Grade Copilot :

- 3D geological modelling and resource estimation tool
  - AI-powered
  - Cloud based
- Uses **neural networks**
- **Rapidly generates geological and grade models** from raw data.
- Significantly **reduces** manual input
- **Accelerates** decision-making.



What is Grade Copilot – Core Applications :

Automated 3D Modelling

- **Outputs** include **block models, wireframes, and probability maps**.

Cloud-Based Processing

- **Processed in the cloud** and returned within minutes
- Visualised in Micromine

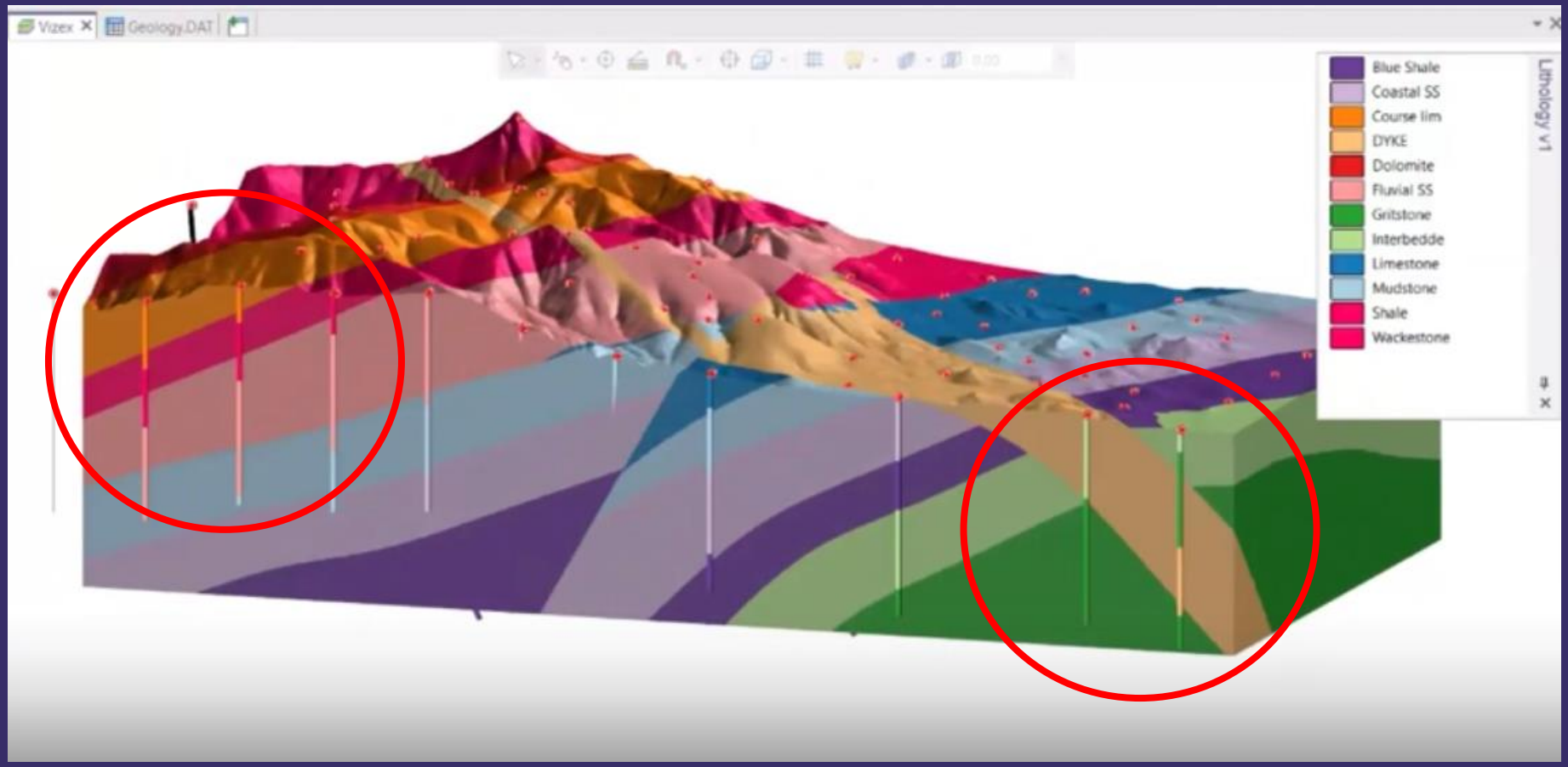
Flexible Inputs

- **Numerical and categorical data** (e.g., grade, lithology, oxidation states, RQD)
- Can model **multiple elements** (e.g., gold, silver, copper) together or separately

Rapid Hypothesis Testing

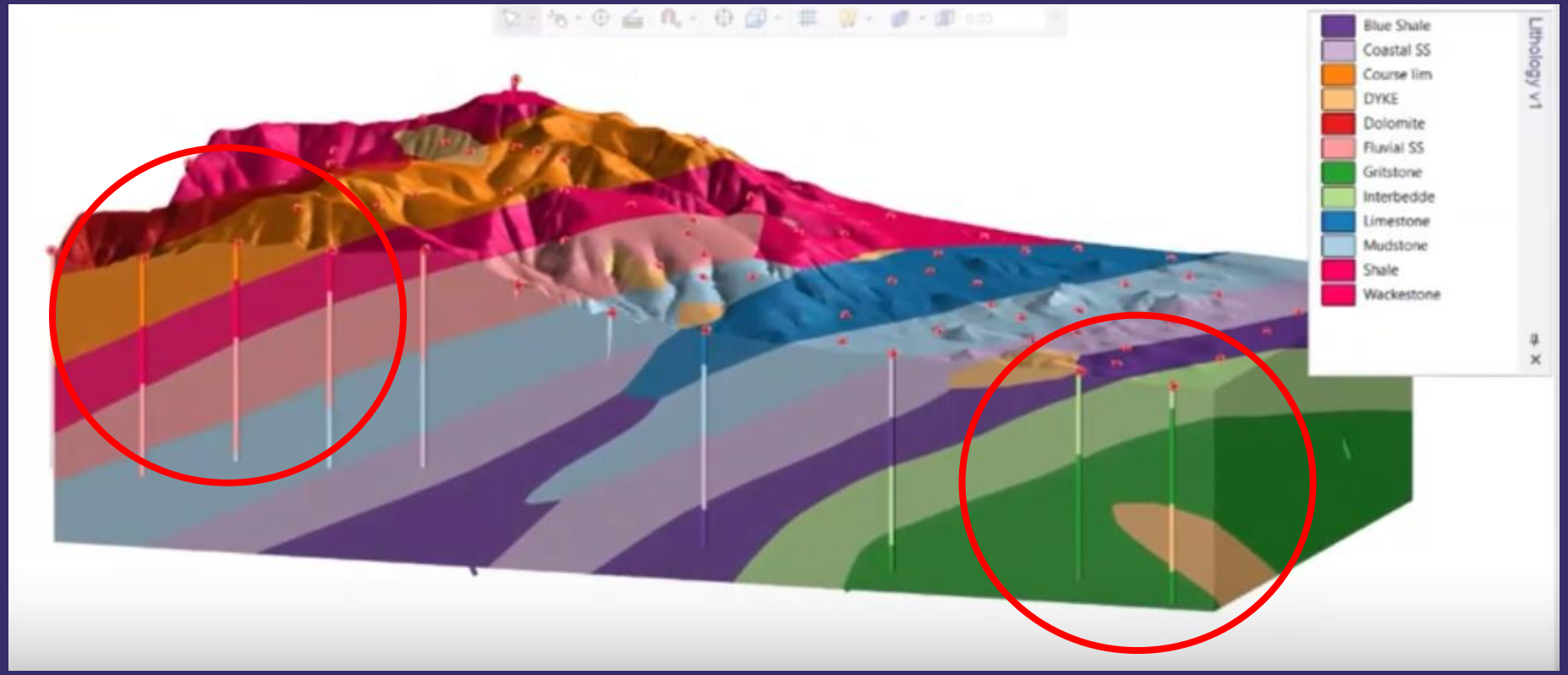
- Enables **quick testing** of multiple modelling scenarios (e.g., different cutoffs, element ratios)
- Supports cluster analysis and domain validation.

Example– Categorical Modelling



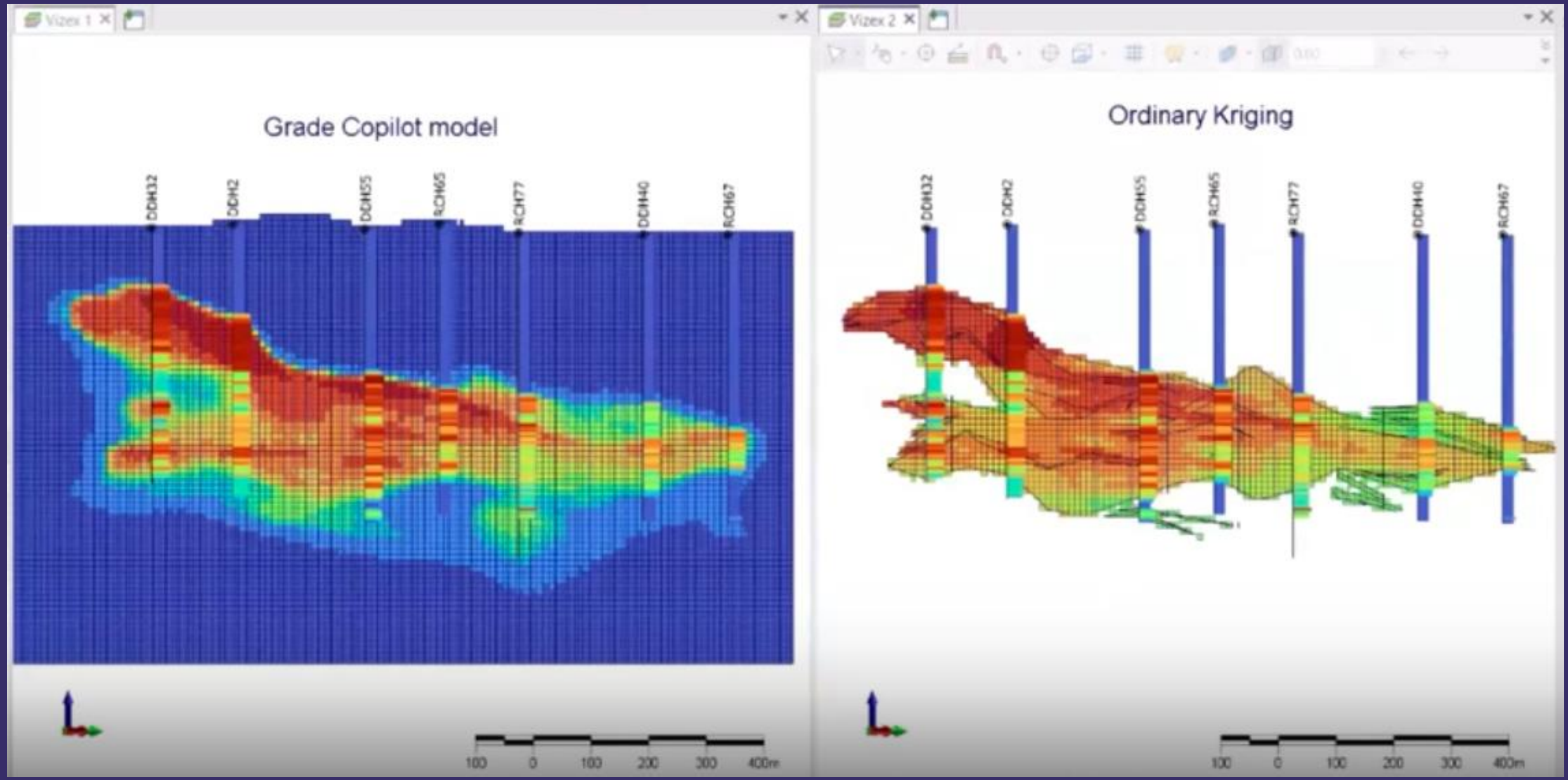
Implicit

Example – Categorical Modelling

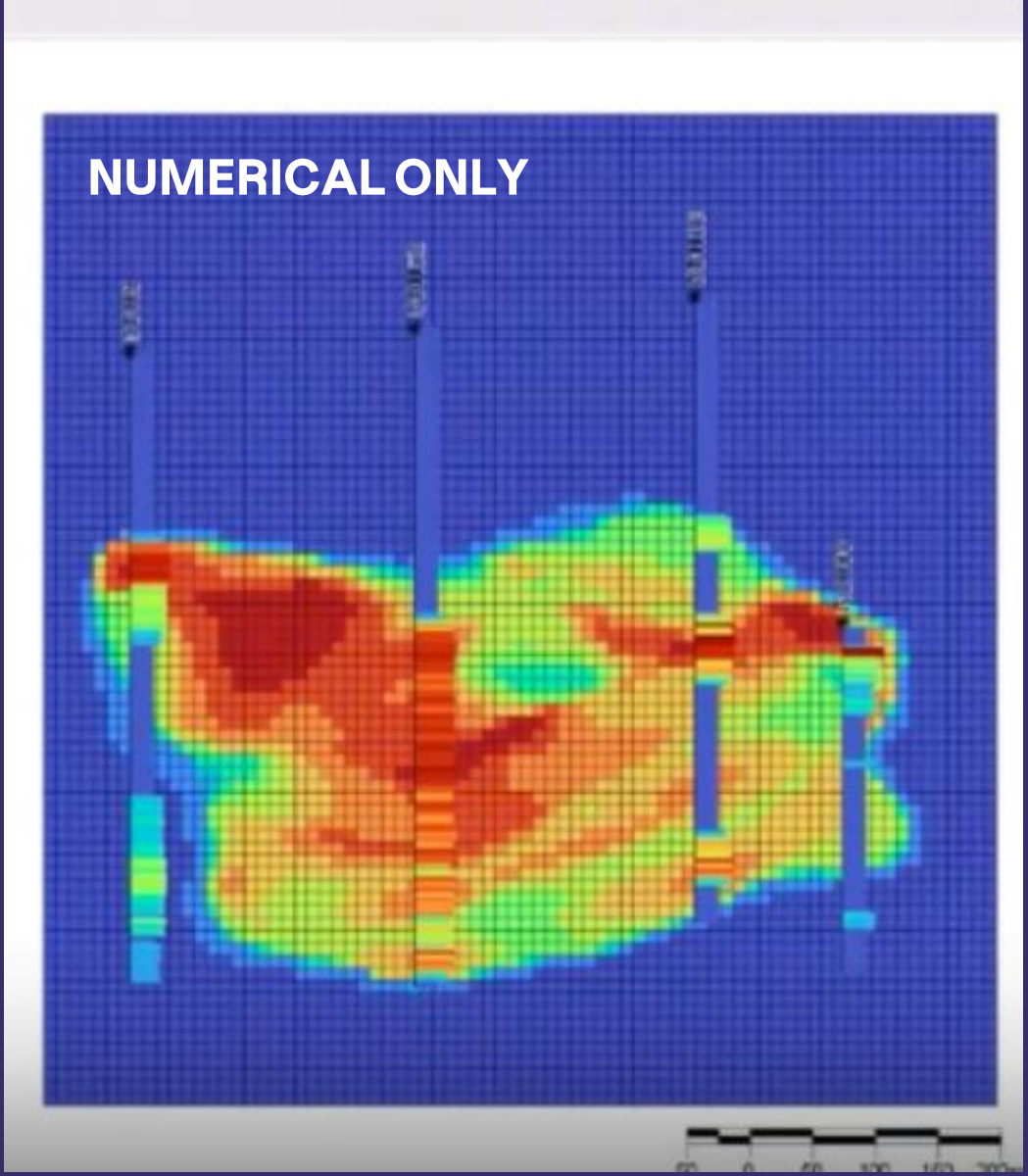


Copilot

Example– Numerical Modelling



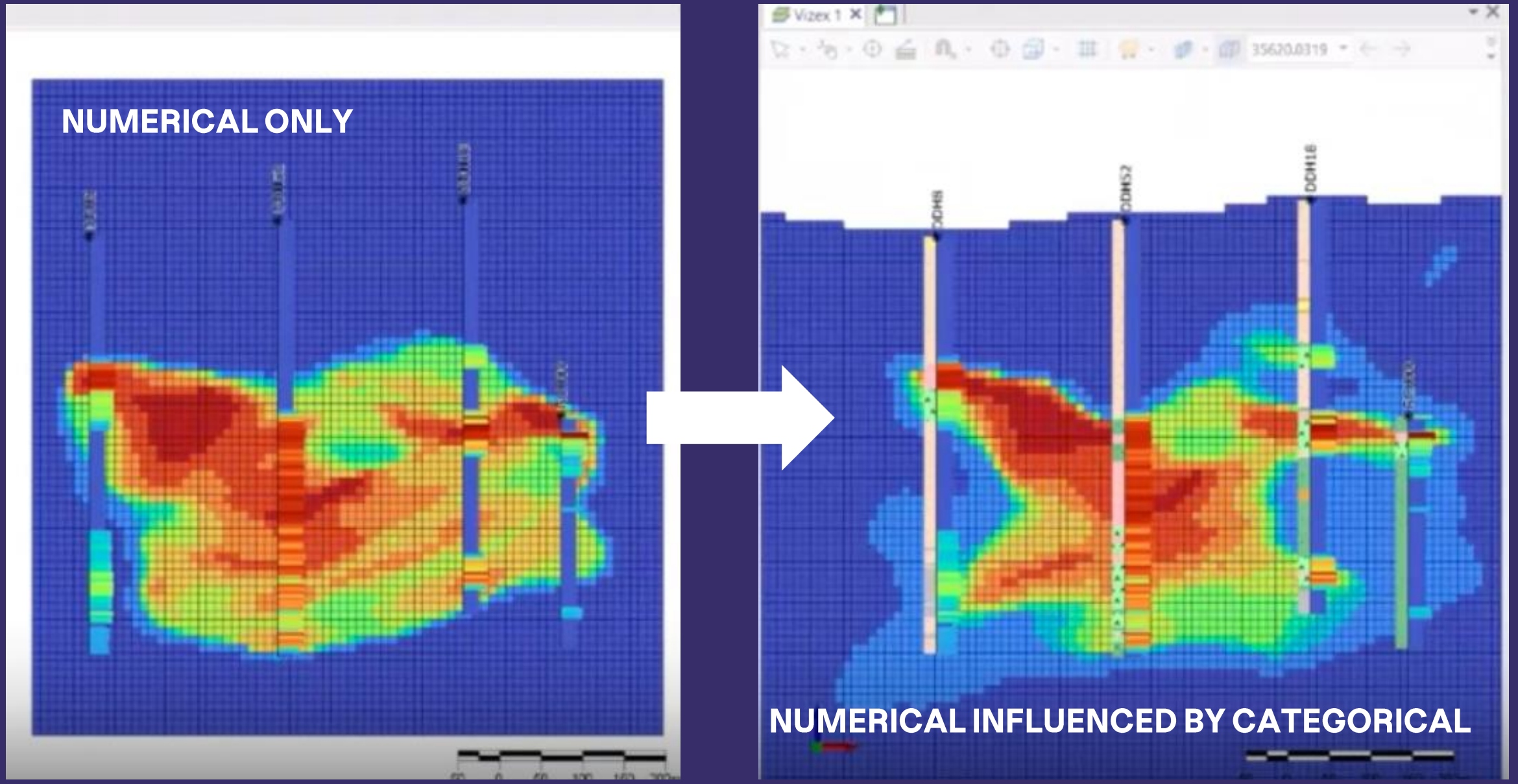
Example– Combining Categorical & Numerical Modelling



Copilot modelling using **numerical approach**

(ie using the grade intersects in the drillhole database)

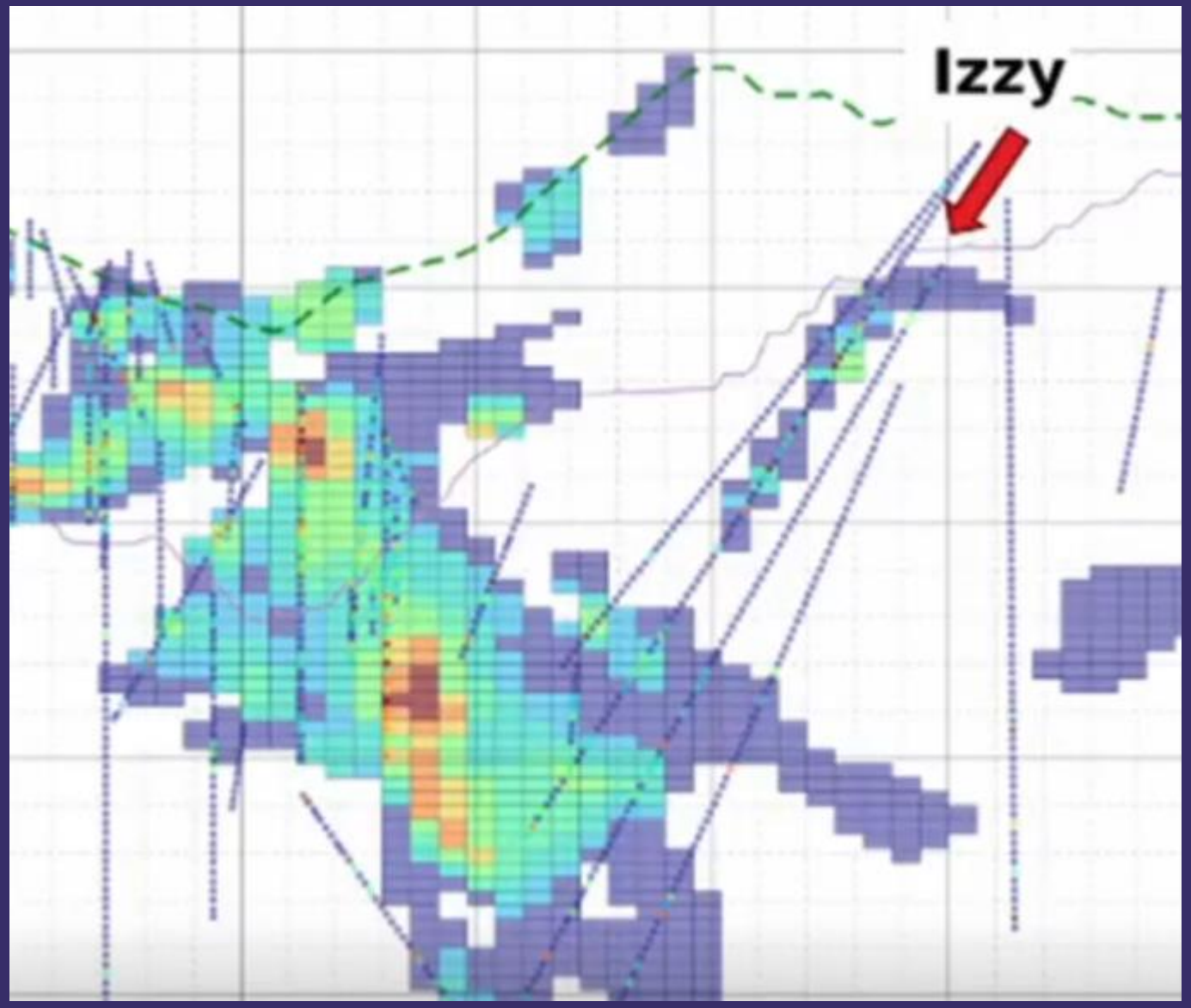
Example– Combining Categorical & Numerical Modelling



Case Studies – Harmony

Discovery of Previously Overlooked Structures

Identified ‘Izzy’ structure
Missed by traditional methods.



Original 2022 resource model data

Case Studies – Harmony

Discovery of Previously Overlooked Structures

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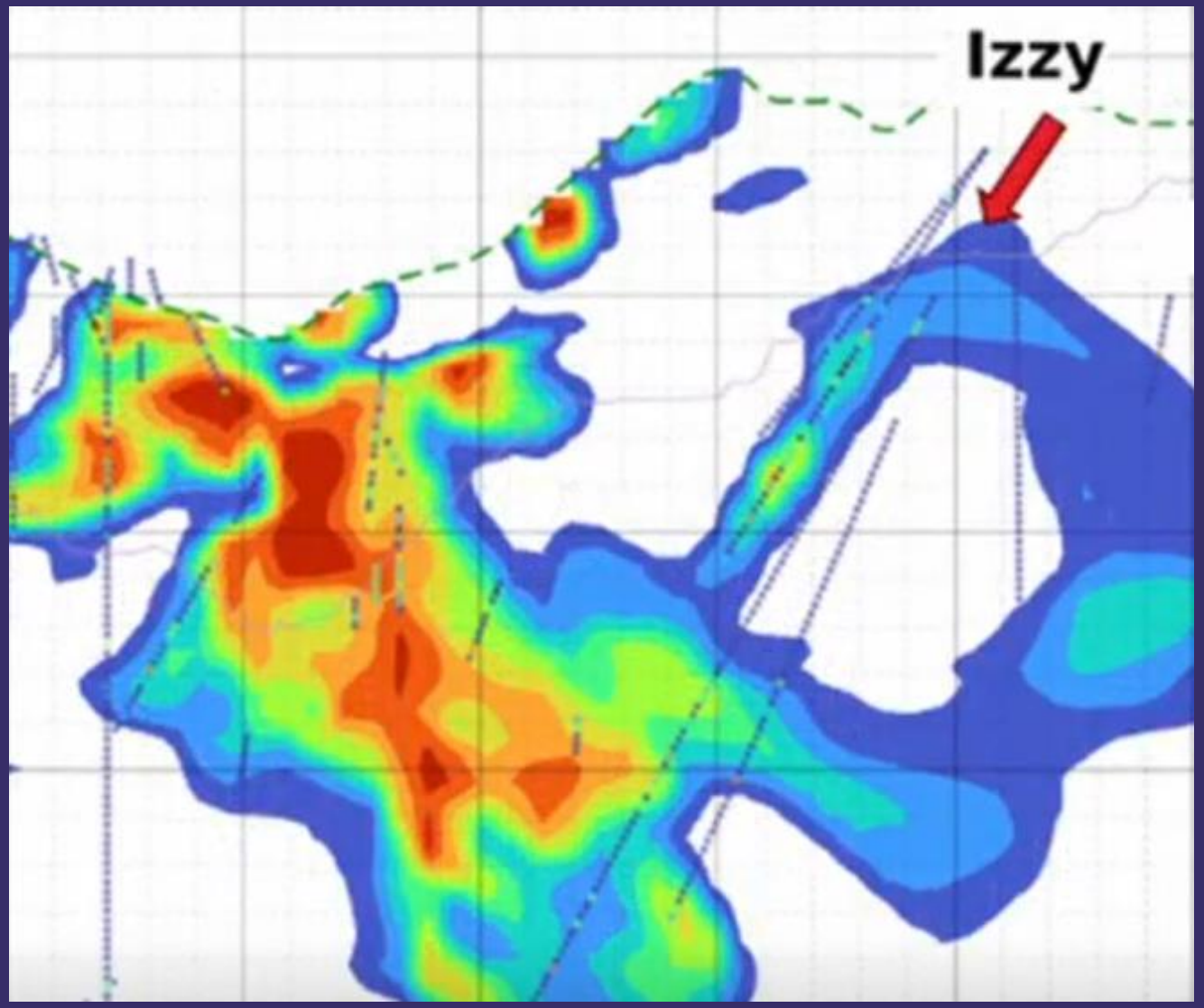
By rewinding historical data and reprocessing it with Copilot, Harmony could see early signs of mineralization that were not previously recognized.



Running same data through Copilot

Case Studies – Harmony

Discovery of Previously Overlooked Structures

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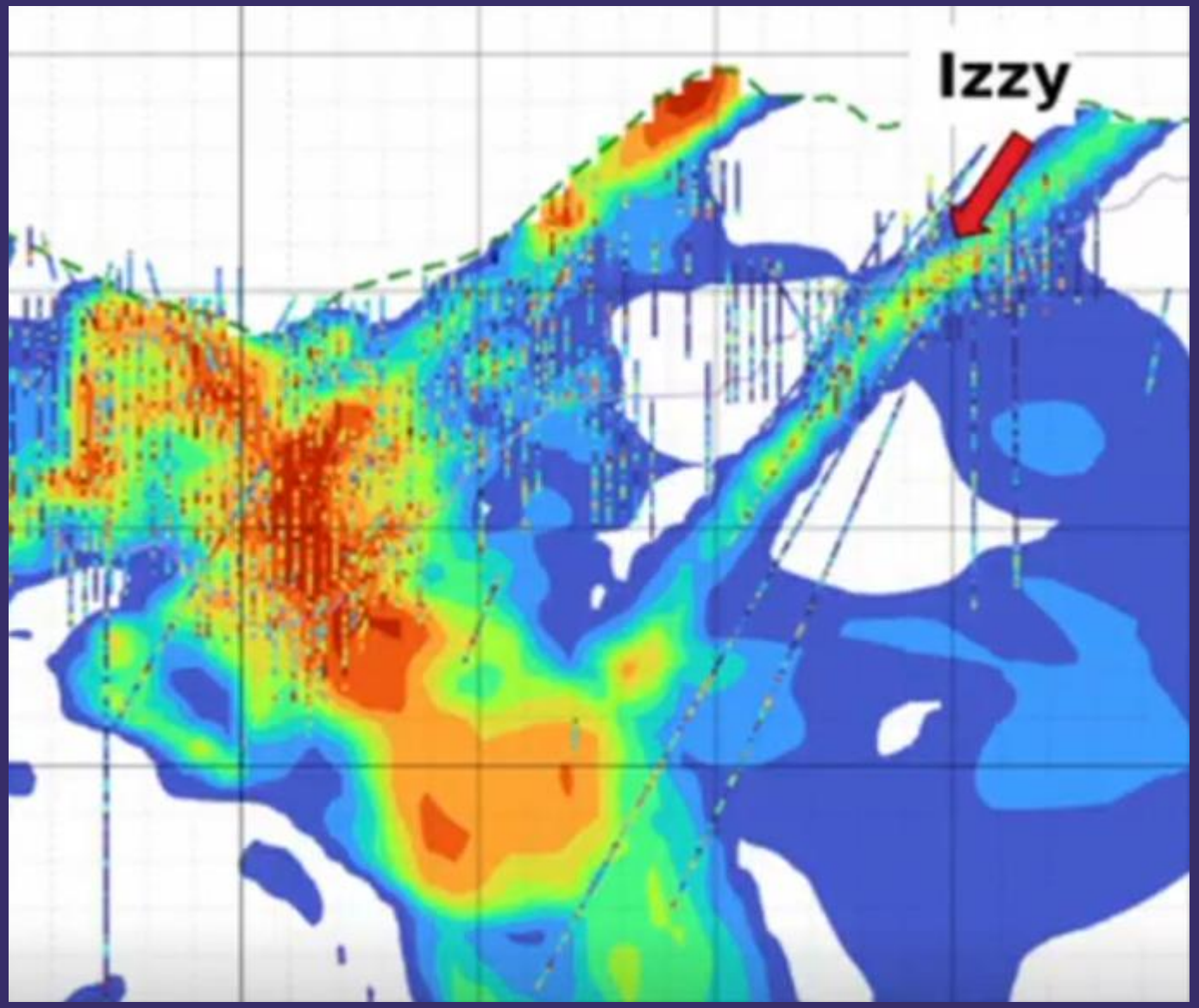
By rewinding historical data and reprocessing it with Copilot, Harmony could see early signs of mineralization that were not previously recognized.

Enabled:
Retrospective validation
Forward-looking exploration.



Further definition with 2024 resource data

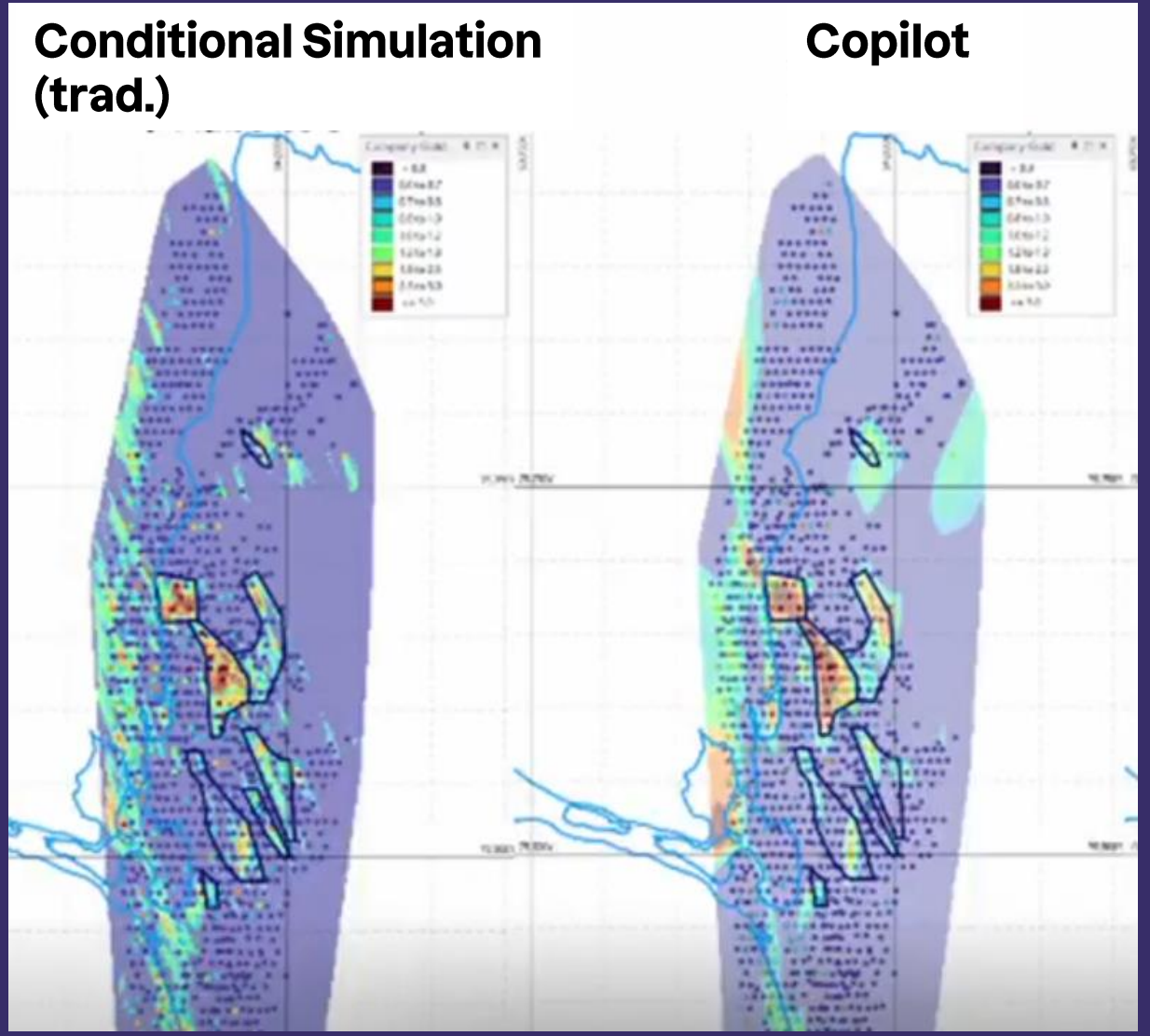
Case Study - Harmony

Improved Grade Control and Production Planning

Fast alternative to conditional simulation for grade control models.

Produced **comparable dig lines** to traditional methods with significantly less processing time.

Enabled **rapid campaign modelling** in data-rich environments.



SUMMARY:

- A powerful tool for data interrogation
- Enables fast hypothesis testing
- Exploration and Operational applications
- Prioritisation of deposits
    - Lower exploration costs
    - Better investment confidence
    - Faster replacement of resources and reserves

Grade Copilot is now standard in Micromine Origin

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Want to know more contact us:

Visit our website on

www.micromine.com

Grade Copilot videos

https://www.youtube.com/watch?v=JfpN6v1qwzo&t=308s

https://www.micromine.com/from-drillhole-to-estimate-confident-decisions-guided-by-ai/

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