Connecting Red Lake: Integrating 80 years of history, remotely
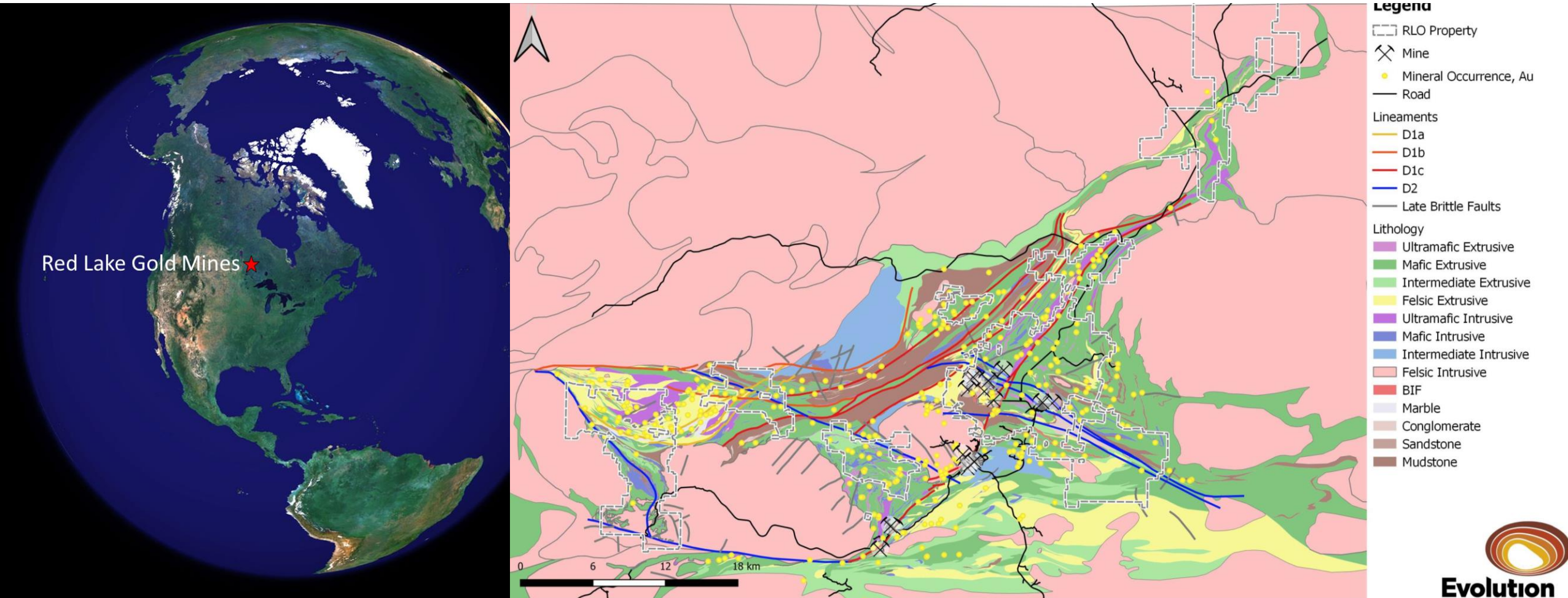
TGDG 2020

Valerie Wilson, P.Geo.

Location and Geology

RED LAKE MINE
HISTORY

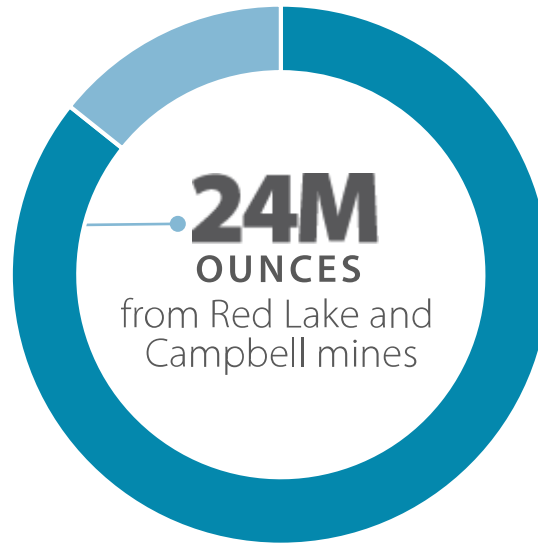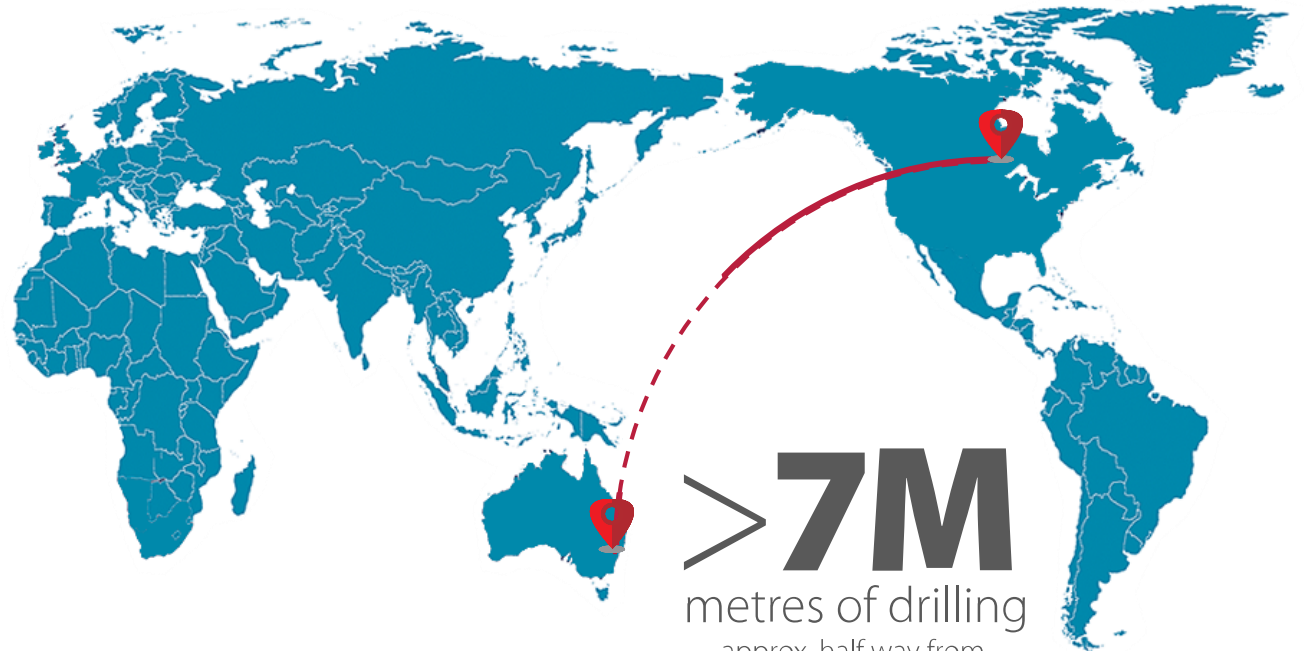**1925** — *Gold discovered in the Red Lake camp.*

1948 — Red Lake Mine — *Red Lake Mine established. Continuous operation.*

2020 — SOLD — *Red Lake Mine Operations purchased by Evolution*

Project Initiation

THE CHALLENGE

70 YEARS of mining

>7M metres of drilling
approx. half way from
Red Lake, ON to **Sydney, AUS**

~6,500 individual Wireframes

24M OUNCES from Red Lake and Campbell mines

28M OUNCES in Red Lake camp

>100 block models

RPA
Now part of SLR
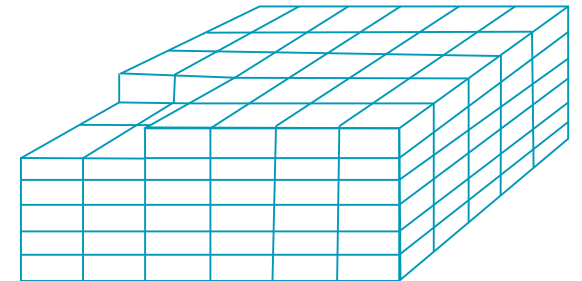
THE APPROACHES
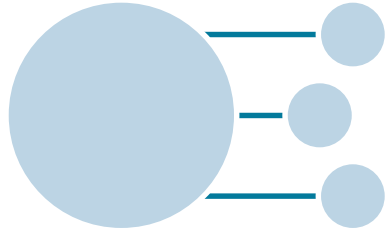
Data Partitioning

3 Modelling Methods
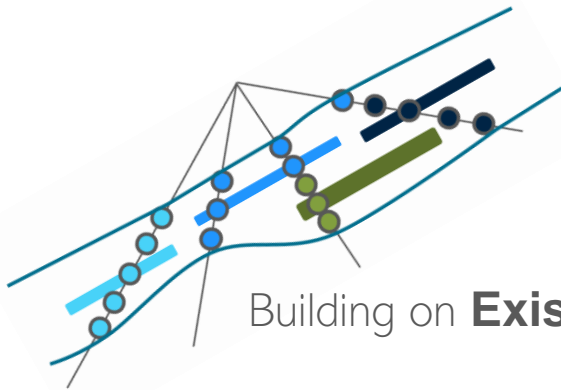
Building on **Existing** Work

MODIFIED DISCRETE Structural Trend

CONVEX Corridor

VEIN System

Upper Campbell

Upper Red Lake

Lower Campbell

Lower Red Lake
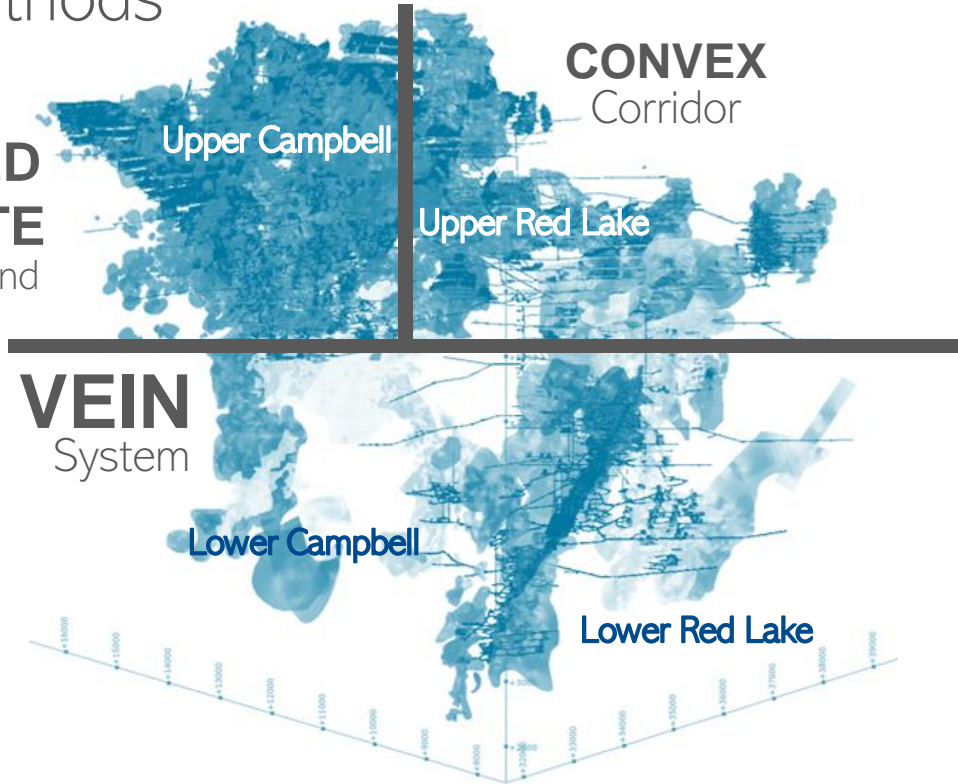
BLENDED Capping

Manual and Semi-Automated **Classification**

Efficient **Dynamic Anisotropy** Implementation

RPA — Now part of SLR
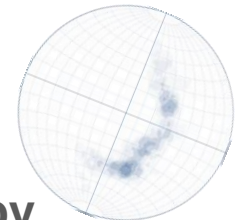
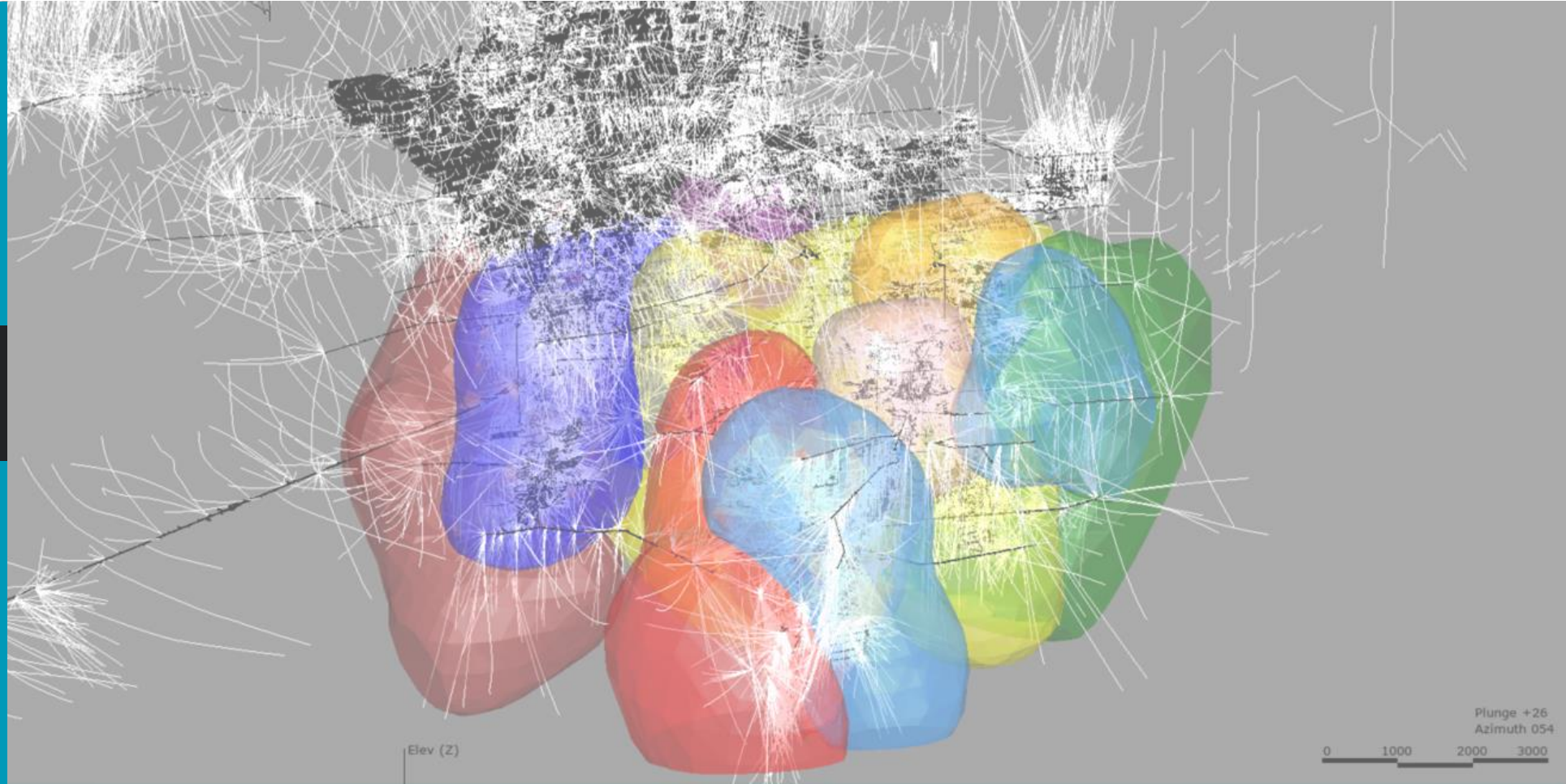# Working Remotely

SLR Team:

Luke Evans
Sean Horan
Valerie Wilson
Dorota El Rassi
Phil Geusebroek
John Makin
Jack Lunnon
Tudor Ciuculescu
Manuel Cortez
Christian Degen
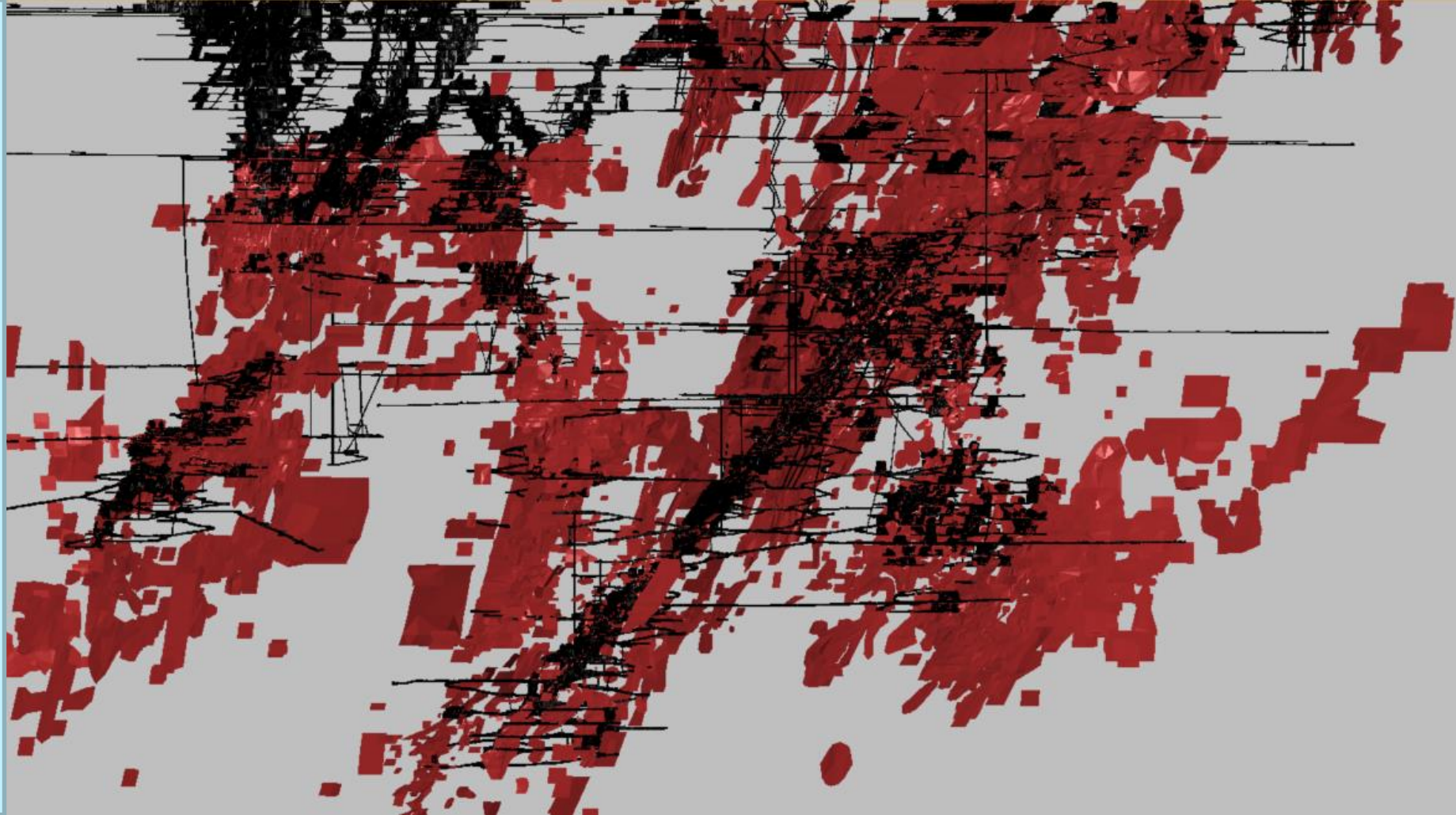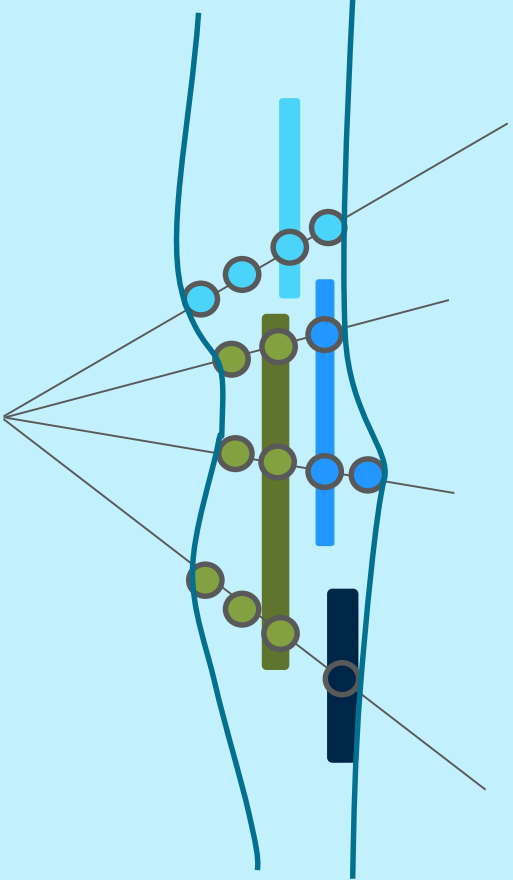Cole Mooney
Tick Knight

Evolution Team:

Dean Fredericksen
Nick Cianci
Maura Kolb
Tarna Werndly
Jason Krauss
John Fingas
Teresa Boehm
Craig Milne
Stephanie Vanos
Sheldon Rowland
Jordan Seaby
Richard Melquist
Amy Newport
Jacqueline Borchardt

Partitioning Data

Use of Previous Wireframes

Two Innovative Approaches to Intrusion Modelling

Modified Discrete Structural Trend
Exhaustive trend construction and pre-processing

Convex Corridor
Processing of interval selections in python to improve intrusion continuity

Blended Capping Approach

Probability of exceeding threshold

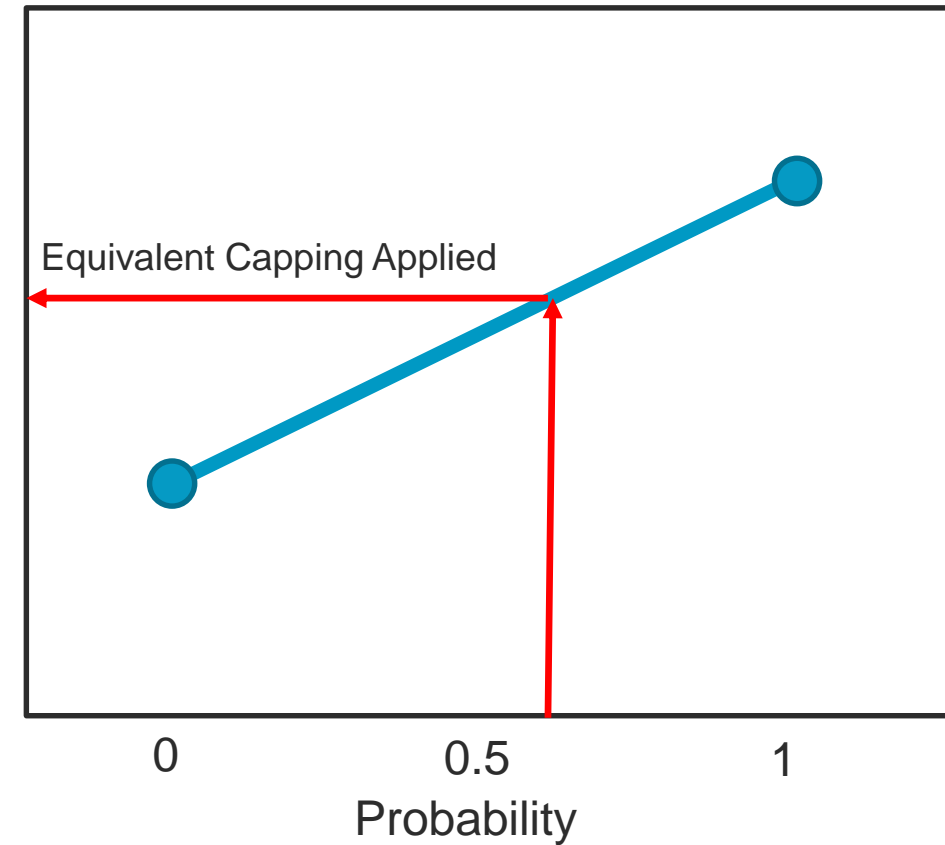- 🔴 **Very high-grade composite**
- ⚪ **Informing composite**

Higher Cap

Lower Cap

Equivalent Capping Applied

Probability

0   0.5   1
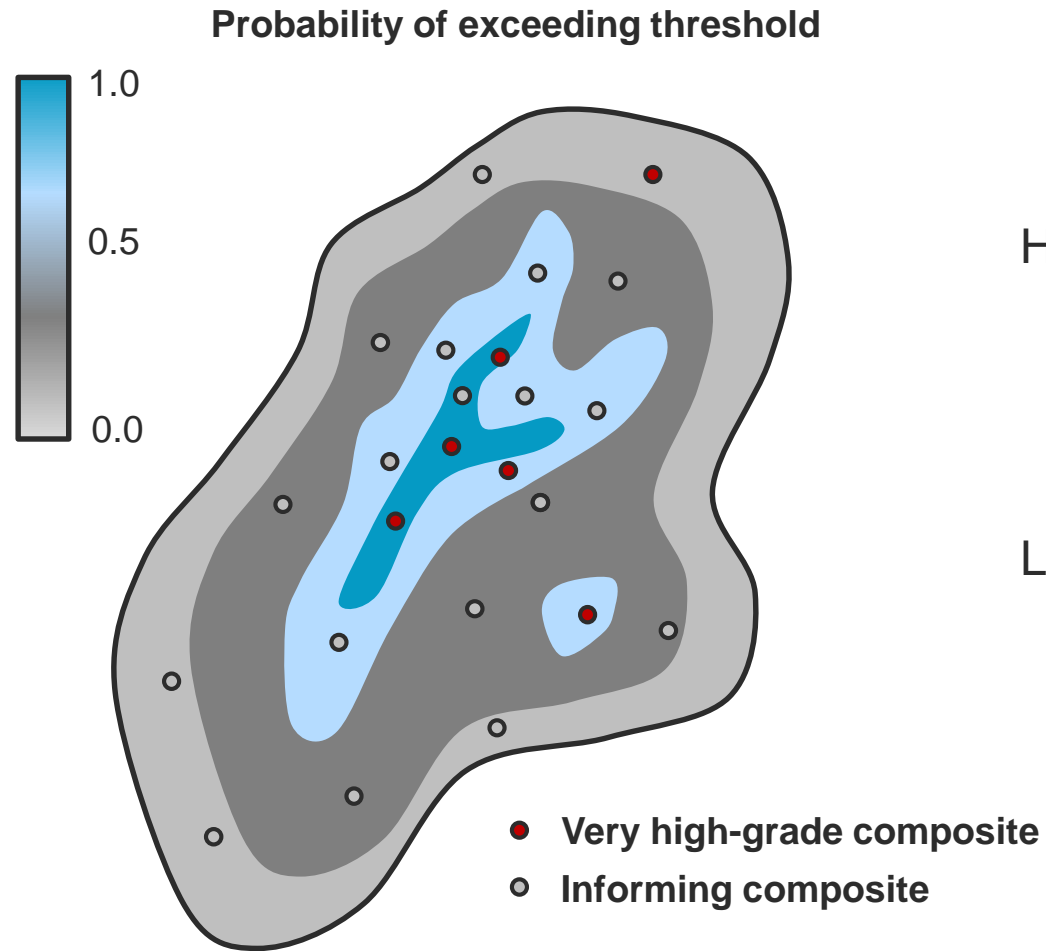
Outcomes

Delivered block models to engineers under a tight timeframe

Allowed Evolution to evaluate the models at lower cut-offs than traditionally considered

Approximately 10,000 person hours, 5,000 from SLR. Equivalent of 5 full time geologists for a whole year

Reduced number of wireframes from 1000's to 100's and block models from >100 to 17

Conceived and implemented innovative approaches to some of the challenges faced.