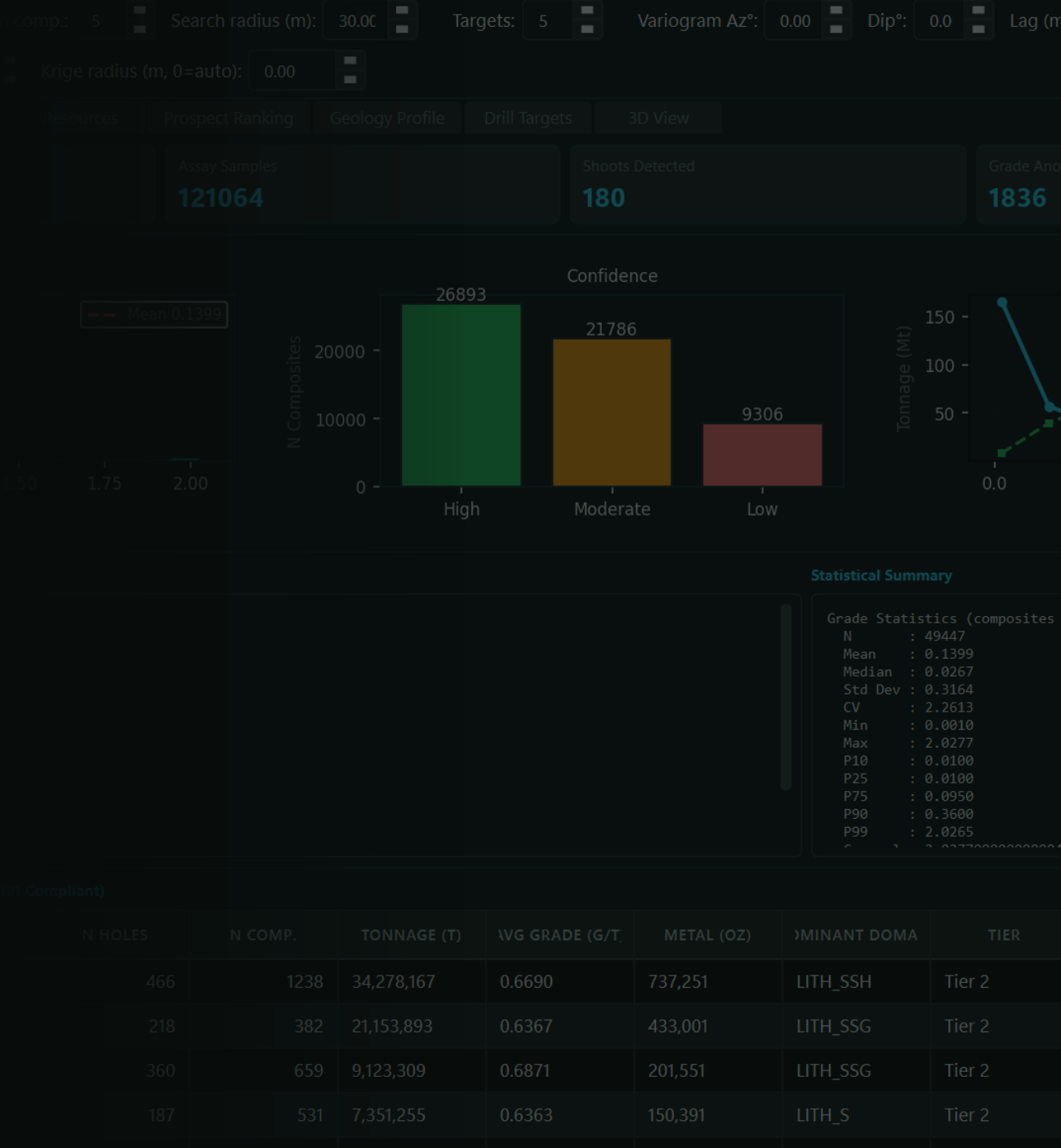




Geological Intelligence

Compositing, domaining, shoot detection, variography, block-model kriging, grade-tonnage curve, prospect ranking and drill targets — in one run across the whole database.

- Group: Integration
- 10 analytical tabs
- Ordinary kriging block model
- Exploration target — not JORC / NI 43-101 compliant



Executive summary

Geological Intelligence chains, in a single run over the whole database, what normally takes several packages: compositing, domains and lenses, variography, kriging on a block model, grade-tonnage curve, prospect ranking and drill targets.

01 What it replaces

The round trip between the database package, the geostatistics package and the spreadsheet — with its intermediate exports and its diverging versions.

02 How it works

You choose the scope, set the compositing, tune the search and run. The engine composites, domains, computes variograms, krigs and returns the grade-tonnage curve and the ranking.

03 Who it is for

The exploration geologist who has to steer the next campaign — not the geostatistician producing a code-compliant resource estimate.

1

run, the whole chain

OK

ordinary kriging per domain

4

prospects ranked automatically



exploration target only

The figures the engine produces carry the label “exploration target only — not JORC / NI 43-101 compliant”. They are not a resource estimate.

Contents

01 What the engine does

From raw composite to a ranked drill target, in one run.

02 Compositing and domains

Composite length, cut-off, density, confidence thresholds.

03 Shoot detection

Mineralised bodies identified by grade continuity.

04 Variography

Azimuth, dip, lag, lag count and angular tolerance.

05 Block model

Ordinary kriging, search radius, automatic block size.

06 Grade-tonnage

Sensitivity of tonnage and average grade to the cut-off.

07 Prospect ranking

Per-prospect score, dominant domain and priority tier.

08 Usage caveat

Exploration target only — not a reportable resource estimate.



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SECTION I

The module

The problem addressed, the capabilities delivered, the processing chain and the module's place in the platform.

-
- 01 Context
 - 02 Key capabilities
 - 03 Processing chain
 - 04 Place in the platform
-

Context

Between the drillhole database and the resource estimate lies a gap usually crossed by exporting into specialist software and waiting several weeks.

The Geological Intelligence engine gives an order of magnitude immediately: composites, domains, variogram, kriged block model, grade-tonnage curve and prospect ranking.

One run, the whole database

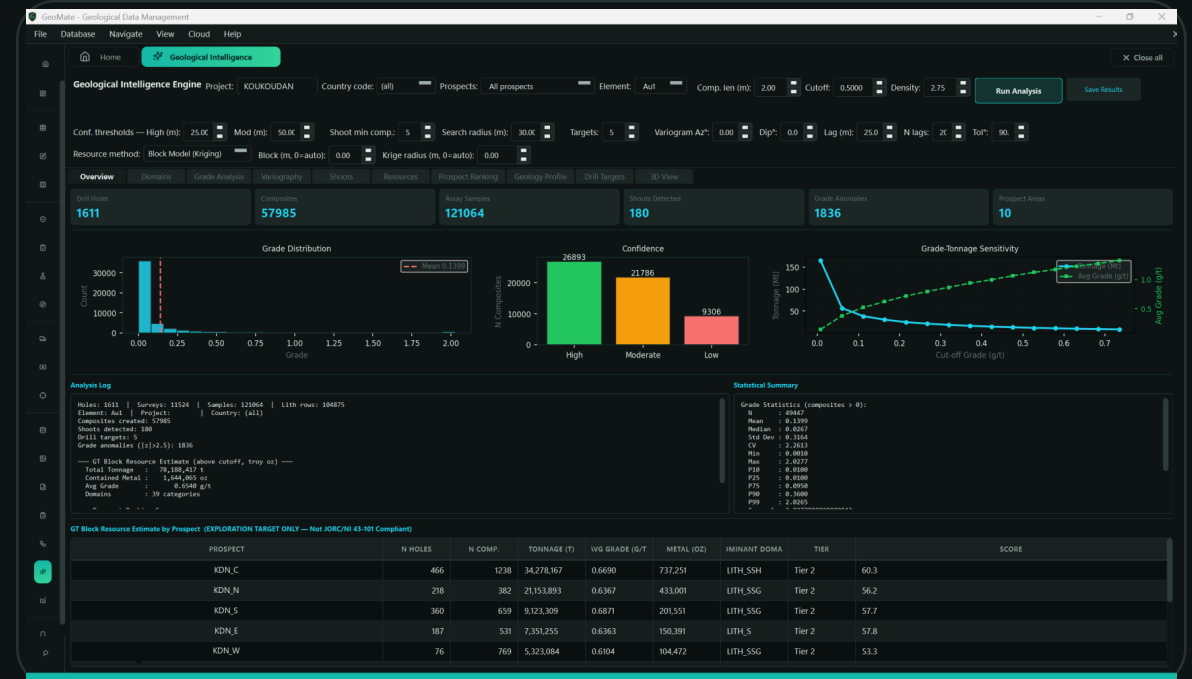
On the demonstration set: 1,611 holes, 11,524 surveys, 121,064 assayed samples, 104,875 logging rows.

The parameters are visible

Composite length, cut-off, density, search radius, variogram azimuth and dip are entered on screen, not buried.

The caveat is displayed

The results table carries the wording “exploration target only — not JORC / NI 43-101 compliant”. The software does not claim to replace the Qualified Person.



The figure produced is an order of magnitude intended for exploration prioritisation. A reportable resource estimate requires review by a Qualified Person under the applicable code.

Key capabilities



01

Compositing

Fixed-length composites built across the whole database, with handling of below-detection values and missing intervals.



02

Domains and shoots

Geological domains derived from the logging, and mineralised bodies detected by grade continuity above the cut-off.



03

Variography

Experimental variogram parameterised by azimuth, dip, lag, lag count and angular tolerance.



04

Kriged block model

Ordinary kriging with automatic or imposed search radius and block size, configurable density.



05

Grade-tonnage

Sensitivity curve of tonnage and average grade against cut-off grade, across the whole useful range.



06

Ranking and targets

Per-prospect score with dominant domain and priority tier, plus proposed drill targets.

Processing chain

From raw log to ranked target, through a complete geostatistical chain.

A Inputs

The project's whole database

- Collars, surveys, logs and assays
- Composite length and domain cut-off
- Density adopted per domain
- Search parameters: radii, anisotropy, minimum samples
- Scope: whole project, prospect or zone

B Processing

Geostatistical chain

- Regular-length compositing down the hole
- Domain construction and lens detection
- Variography: range, sill, nugget effect
- Ordinary kriging on a block model
- Grade-tonnage curve and prospect ranking

C Outputs

Campaign guidance

- Kriged block model, per domain
- Grade-tonnage curve at varying cut-offs
- Prospects ranked by potential
- Proposed drill targets, with their justification
- Tables and charts exportable into the report

EXPLORATION TARGET, NOT RESOURCE

The engine produces an order of magnitude intended to rank targets. It replaces neither a competent person's review, nor the classification into measured, indicated or inferred resources, nor compliance with the JORC or NI 43-101 codes. The label accompanies every figure, in the tables and in the footnotes.

An estimate is never better than the data feeding it: it assumes a validated database, an accepted QA/QC and a measured — not assumed — density.

Place in the platform

FED BY

05 Data Validation

Guarantees no duplicate collars and no under-surveyed holes.

06 QAQC Manager

Guarantees the estimated grades come from accepted batches.

08 Structural Analysis

Supplies the fabric orientation, and therefore the search anisotropy.



Geological Intelligence

The quantitative synthesis: it turns the whole database into an order of magnitude and a hierarchy of targets.

FEEDS

Drilling programme

The proposed targets steer the next campaign and its budget.

14 Report Builder

Curves and tables go into the report, with their caveat.

18 Mate BI Studio

The prospect ranking feeds the decision dashboard.

Before any external communication of a figure from this module, have the relevant slide reviewed by your competent person.



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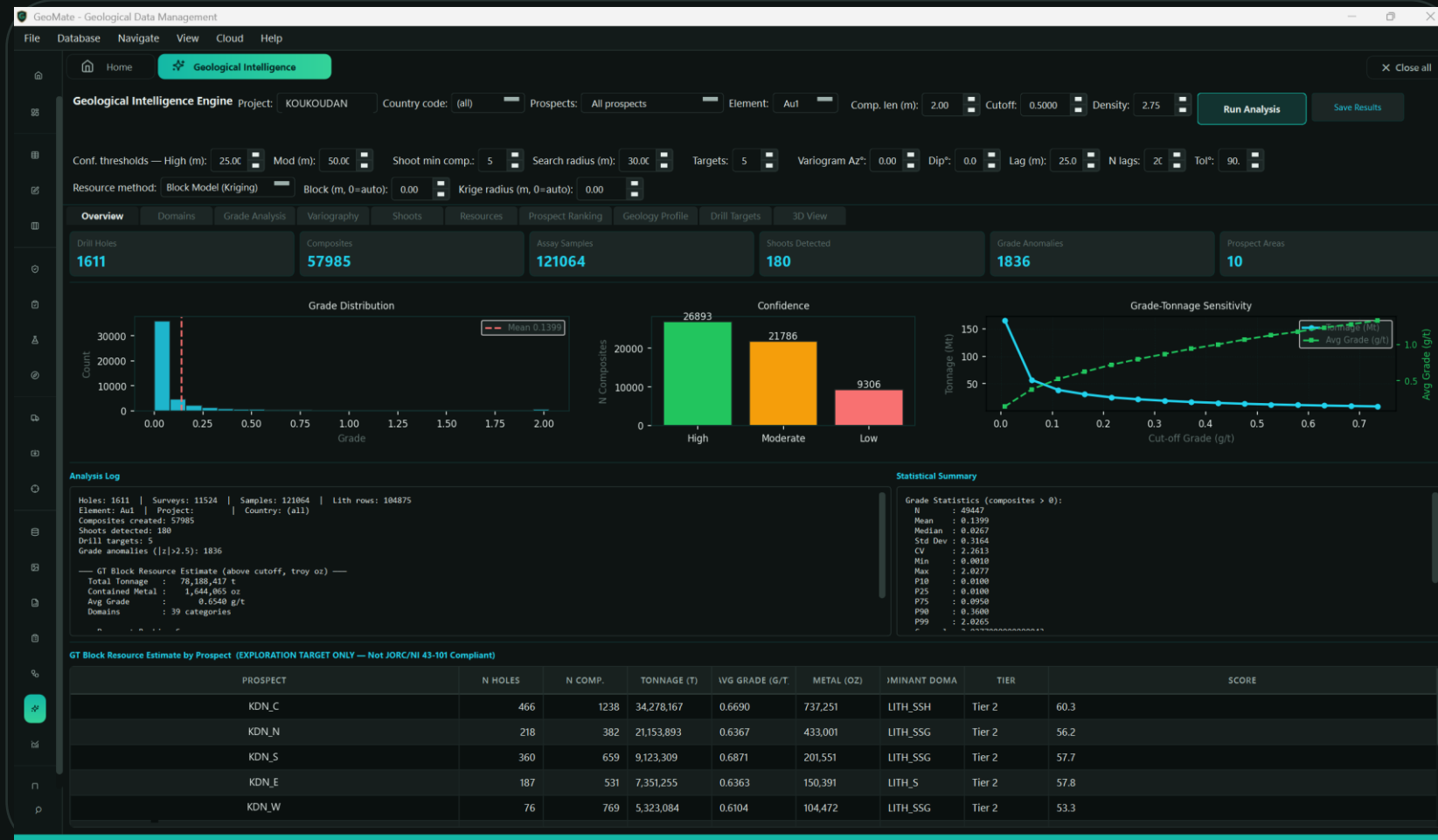
SECTION II

In practice

The real interface, the operating workflow, the reference settings, good practice and the questions that come up.

-
- 01 The interface
 - 02 Operating workflow
 - 03 In depth
 - 04 Good practice
 - 05 Frequently asked
-

The interface



1 Run parameters

Project, element, composite length, cut-off, density, search radius, target count.

2 Indicator strip

1,611 holes, 57,985 composites, 121,064 assays, 180 shoots, 1,836 anomalies, 10 prospects.

3 Three charts

Grade distribution, confidence split, grade-tonnage sensitivity.

4 Log and statistics

Run detail and grade statistics: mean, median, standard deviation, coefficient of variation, percentiles.

5 Prospect ranking

Tonnage, average grade, contained metal, dominant domain, tier and score — under the “exploration target only” caveat.

Actual GeoMate 2026 v2026.3.1.5 screen capture — Midnight theme.

Operating workflow

Five steps, and the order of magnitude is on the screen.

1

Choose the scope

Project, country code, prospects and the element to estimate.

2

Parameterise the compositing

Composite length, cut-off grade and rock density.

3

Set the search

Search radius, block size, variogram azimuth, dip, lag and tolerance.

4

Run

Composites, domains, shoots, variogram, block model and ranking are produced in one pass.

5

Read and save

Move through the ten tabs, then save the results into the database under the GIE_* tables.

The engine's ten tabs

TAB	WHAT IT PRODUCES
Overview	Indicators, grade distribution, confidence, grade-tonnage sensitivity, log and statistics
Domains	Geological domains derived from the logging, with per-domain statistics
Grade Analysis	Distribution, top-cutting and treatment of extreme values
Variography	Experimental variogram by azimuth, dip and lag
Shoots	Detected mineralised bodies, with a minimum composite count
Resources	Kriged block model, tonnage, average grade and contained metal
Prospect Ranking	Score, priority tier and dominant domain per prospect
Geology Profile	Interpretive section of the domains along the profile
Drill Targets	Proposed targets, ranked by priority score
3D View	Spatial rendering of composites, domains and shoots

Real engine output

Run on the demonstration database: element Au, 2.00 m composite, 0.50 g/t cut-off, density 2.75, 30 m search radius, ordinary kriging.

QUANTITY	VALUE	COMMENT
Holes processed	1 611	With 11,524 survey stations
Composites created	57 985	Fixed length of 2.00 m
Assays read	121 064	Across 104,875 logging rows
Shoots detected	180	Minimum 5 composites per shoot
Grade anomalies	1 836	Absolute Z-score above 2.5
Domains	39	Categories from the lithological log
Total tonnage	78 188 417 t	Above cut-off, exploration target
Average grade	0.6540 g/t	Ordinary kriging
Contained metal	1 644 065 oz	Exploration target only — not JORC / NI 43-101 compliant

These figures are an order of magnitude intended for exploration prioritisation. They do not constitute a reportable resource estimate and have not been reviewed by a Qualified Person.

Good practice

The conditions of a usable — and communicable — estimate.

✓ Validate the database first

A duplicate collar or an under-surveyed hole moves samples in space and distorts the kriging without any warning.

✓ Measure the density, do not assume it

Tonnage is proportional to density. A default density carries its error unchanged through to the final figure.

✓ Domain before estimating

Kriging across a geological boundary mixes two populations and smooths exactly what you are trying to delineate.

✓ Read the variogram before accepting it

Range, sill and nugget describe the continuity. A dominant nugget signals continuity too weak to estimate.

✓ Check grade-tonnage at several cut-offs

A figure at a single cut-off shows no sensitivity. The whole curve is more honest than a point.

✓ Carry the caveat everywhere

“Exploration target only — not JORC / NI 43-101 compliant” must accompany the figure, not appear once at the end of the document.

Frequently asked

The questions asked in front of a tonnage figure.

Q Is this a resource estimate?

No. It is an exploration target intended to rank prospects. A resource requires classification and a competent person's signature.

Q Why ordinary kriging?

It is the reference unbiased linear estimator, robust and legible: its weights are justified by the variogram and the search geometry.

Q What does compositing do?

It brings runs of unequal length onto a regular length: without it a long run weighs unduly in the estimation.

Q How are the prospects ranked?

On the quantities the chain produces — tonnage, grade, continuity — not on judgement. The ranking is read, not negotiated.

Q Is a proposed target a drill collar?

It is a zone to investigate, not a setout. The setout depends on access, structure and cost.

Q How many holes are needed?

There is no universal threshold; the variogram says. If the range is shorter than the spacing, the estimate extrapolates more than it estimates.



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SECTION III

The data

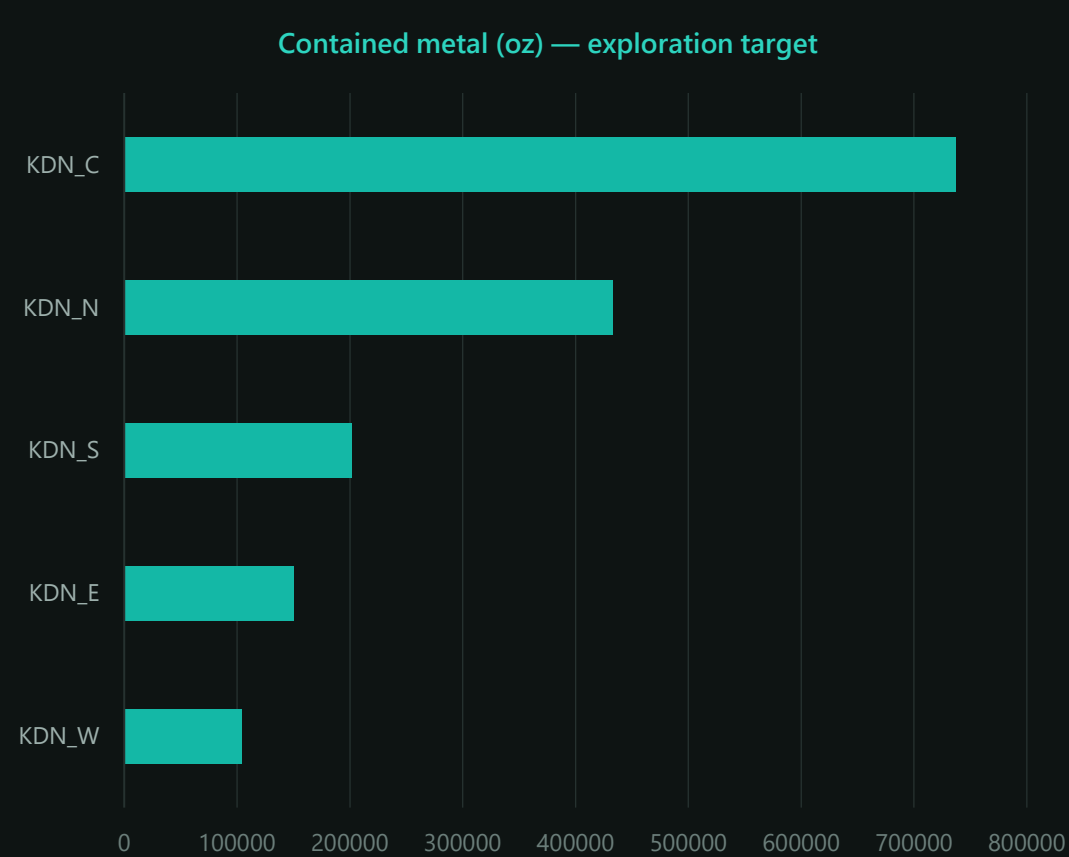
What the module produces on a real dataset, and the vocabulary needed to read those results.

01 Anonymised data

02 Key concepts

Anonymised data

Prospect ranking produced by the engine — exploration target only.



PROSPECT	TONNAGE (T)	GRADE	METAL (OZ)	SCORE
KDN_C	34 278 167	0.669	737 251	60.3
KDN_N	21 153 893	0.637	433 001	56.2
KDN_S	9 123 309	0.687	201 551	57.7
KDN_E	7 351 255	0.636	150 391	57.8
KDN_W	5 323 084	0.610	104 472	53.3
MODEL TOTAL	78 188 417	0.654	1 644 065	—

EXPLORATION TARGET ONLY — not JORC / NI 43-101 compliant. 2.00 m composite, 0.50 g/t cut-off, 2.75 density, 30 m search radius, ordinary kriging. These figures have not been reviewed by a Qualified Person.

Key concepts

The vocabulary of geostatistical estimation.

Compositing

The conversion of unequal-length runs into regular-length composites, the condition of a correct weighting.

Variogram

The description of the spatial continuity of grades: range, sill and nugget. It governs the kriging weights.

Block model

The subdivision of the volume into elementary blocks, each receiving an estimated grade. It is what the tonnage calculation rests on.

Domain

A volume within which mineralisation is treated as statistically homogeneous. One never estimates across its boundaries.

Nugget effect

The share of variance not explained by distance — sampling error and very-short-range variability combined.

Grade-tonnage curve

The relationship between the chosen cut-off, the remaining tonnage and the average grade. It shows the sensitivity a single figure hides.



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SECTION IV

Value & specifications

What the module changes for the project, and its technical integration profile.

01 Business value

02 Technical profile

Business value

The order of magnitude arrives in minutes

What used to take several weeks of outsourcing becomes one run, and informs where to drill next.

One run

Prospects are ranked, not eyeballed

Score, priority tier and dominant domain give an order of attack that stands up in committee.

Per-prospect score

The parameters are exposed

Cut-off, density, search radius and variogram are entered on screen: the result is reproducible.

Reproducible

The caveat is written down

"Exploration target only — not JORC / NI 43-101 compliant" sits on the result, not in a forgotten footnote.

Displayed caveat

Results go back into the database

Composites, domains, shoots and targets are written into the GIE_* tables and become usable by the other modules.

GIE_* tables

Technical profile

Compositing & domains

Length

Fixed-length composite, configurable

Cut-off

Cut-off grade applied to the composite

Density

Entered rock density, in t/m^3

Confidence

High and moderate thresholds in metres

Estimation

Method

Block model, ordinary kriging

Search

Configurable radius, automatic or imposed block size

Variogram

Azimuth, dip, lag, lag count, tolerance

Shoots

Minimum composite count per shoot

Outputs & caveats

Tables

GIE_Composites · GIE_Domains · GIE_Shoots · GIE_Targets

Charts

Distribution, confidence, grade-tonnage, variogram

Status

!!Exploration target — not JORC / NI 43-101 compliant

Review

Qualified Person required for any public report



One platform, from field to report

The “Geological Intelligence” module is one of the 19 modules of GeoMate 2026 — a single, fully offline platform covering the whole chain: database design, data entry, validation, QA/QC, dispatch, analysis and reporting.