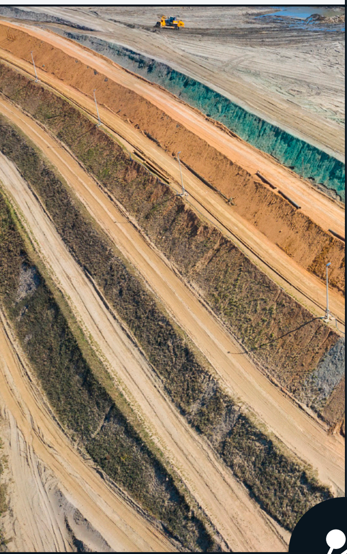
SEEQUENT

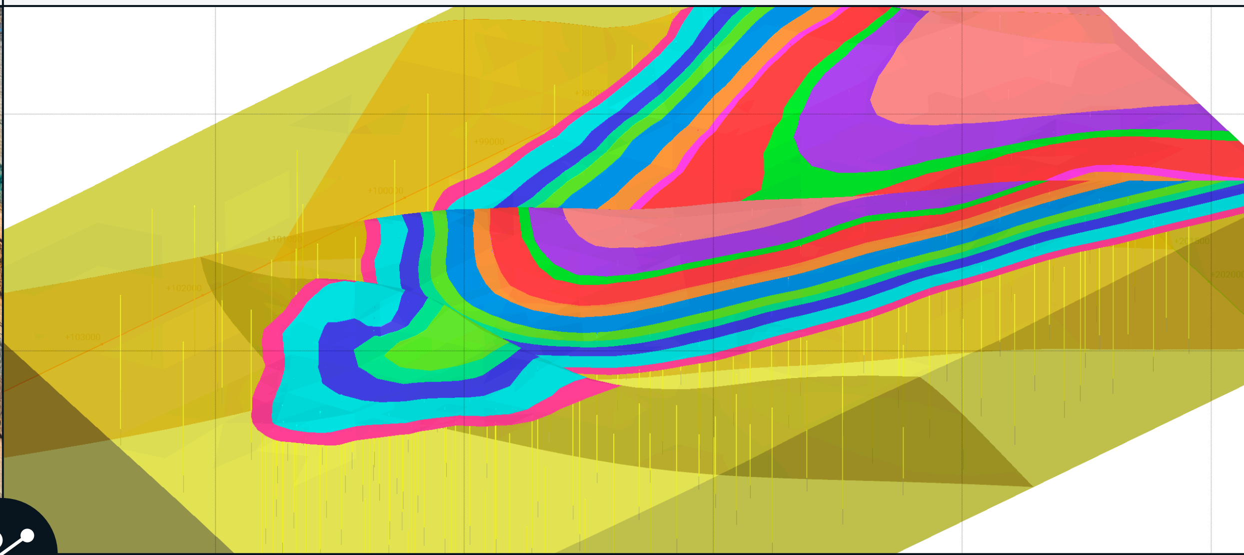
Leapfrog Geo

2026.1.0

NEW RELEASE

Release Notes





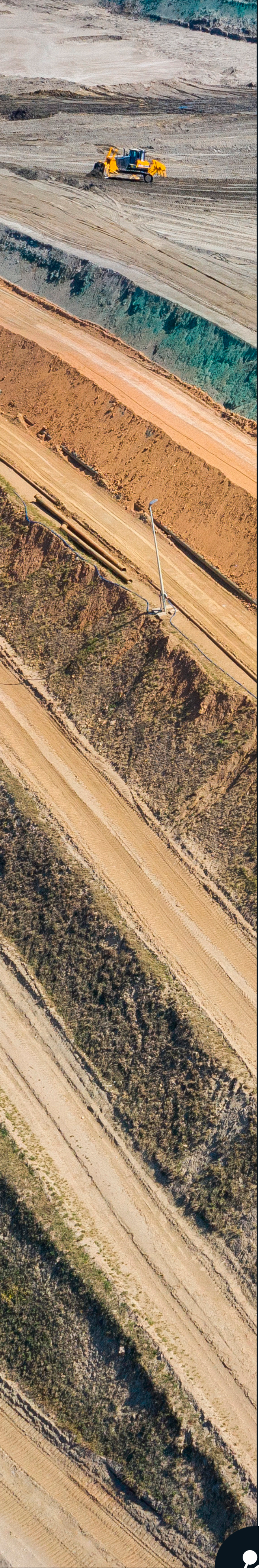
Leapfrog Geo 2026.1.0 is a major release that delivers a powerful new suite of capabilities, reinforcing our position as the market leader in geological interpretation and modelling. This release introduces fundamental new workflows that target three critical stages of the mining value chain: drillhole planning, stratigraphic modelling, and estimation.

With Leapfrog 2026.1.0, you can build more geologically realistic models with greater control. We have focused on replacing slow, subjective manual processes with efficient, data-driven systems designed to give you greater confidence in your results.

Key highlights include a new stratigraphic modelling workflow that dramatically reduces manual edits in complex geology, drillhole planning tools that accelerate campaign design, and a dedicated data preparation workflow for resource estimation that decouples statistical analysis and key data decisions from the constraints of the individual domained estimator.

Beyond these headline additions, this release delivers valuable improvements throughout the product and its integration with Evo. Together, these updates deliver immediate productivity gains, enhance model defensibility, and represent a significant step forward in connected, data-driven modelling.

Seequent, The Bentley Subsurface Company



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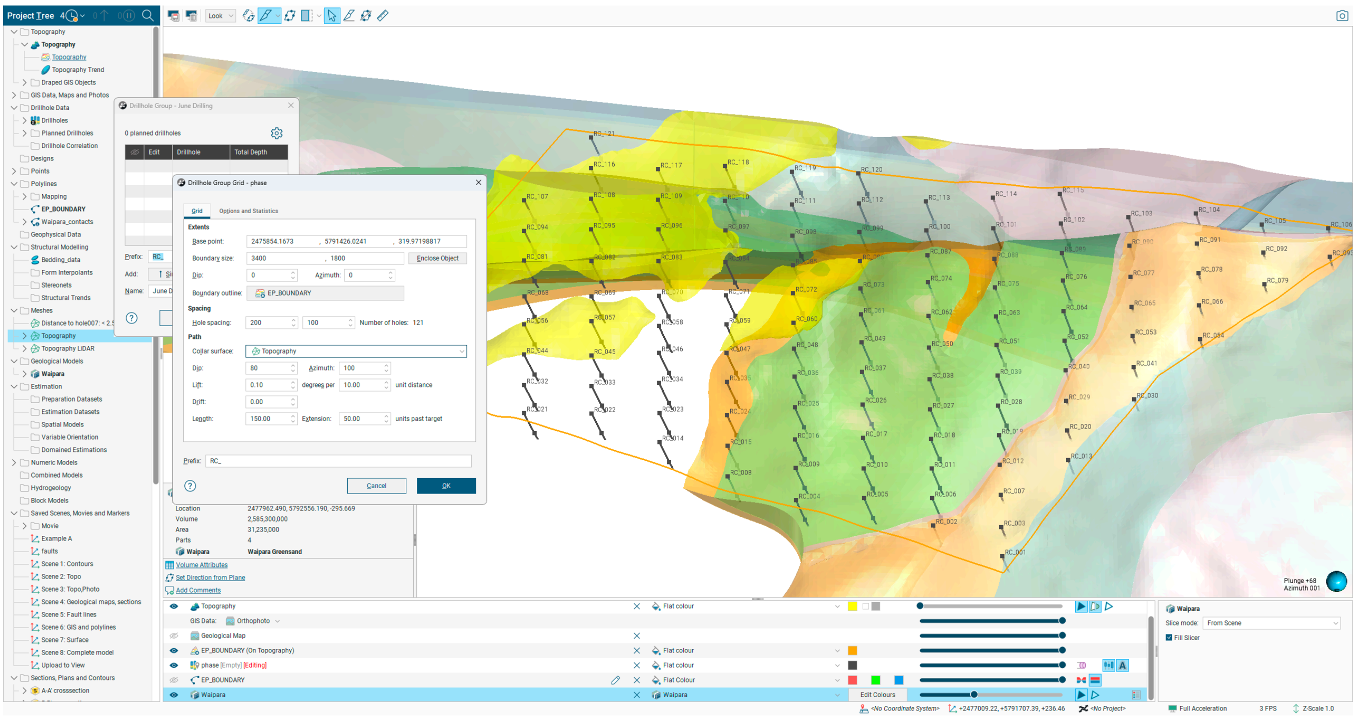
1.1. Strategic, high-precision drillhole planning

1.1.1. Grid planner: design strategic campaigns with rapid, interactive drill patterns

Planning pattern drilling campaigns has traditionally been a slow, manual process, especially when creating hundreds of holes, one-by-one, for a large resource drilling campaign. Designed to help with this, the new grid planner allows you to rapidly generate grid pattern drilling campaigns, saving valuable time.

Visualise the spacing of your planned drillholes with a live grid preview directly in the scene. Use on-screen handles to dynamically adjust the grid's extents and rotation, making the entire planning process visual and intuitive. You can now automatically set planned collars to any surface in your project, not just topography. This is particularly useful for infill drilling plans within open pits or where an updated topography mesh is available.

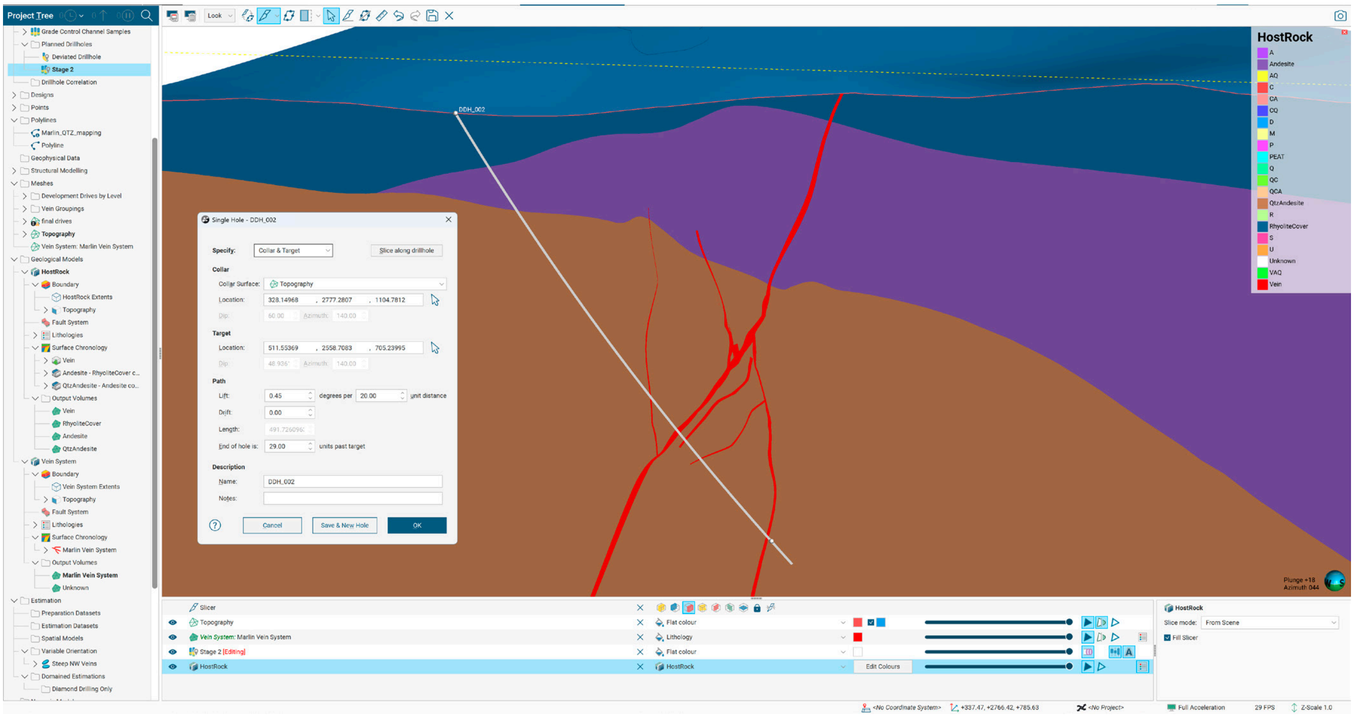
Keep your drilling plan precisely on target by constraining planned collars within a boundary. Simply define a boundary using any closed polyline or GIS line, and Leapfrog will generate collars only within that area. Once the grid is configured, hole statistics update automatically, including the number of holes, total length, minimum length, maximum length, and average length. You can configure default hole naming to match site conventions, with options to sequence names line by line or in snake order (alternating direction row by row). While the grid capability is designed for bulk planning, every hole remains fully editable. After bulk-creating holes at a set spacing, the location and target of each hole can be adjusted individually, providing the flexibility to refine and iterate on the plan as required.



1.1.2. Collar & Target mode: drill critical targets with precision

When you have a constrained drill pad location and a specific geological target, Collar & Target mode provides the control you need. Collar & Target mode is one of three single-hole planning modes in Leapfrog Geo, each suited to a different planning scenario:

- In Collar mode, you plan holes from a fixed collar at a set dip and azimuth.
- In Target mode, you fix the target location, and the collar is projected back to the selected collar surface, giving freedom over where the drill pad is positioned.
- In Collar & Target mode, you fix both the collar and target point in 3D, and Leapfrog automatically calculates the dip and azimuth required to connect them.



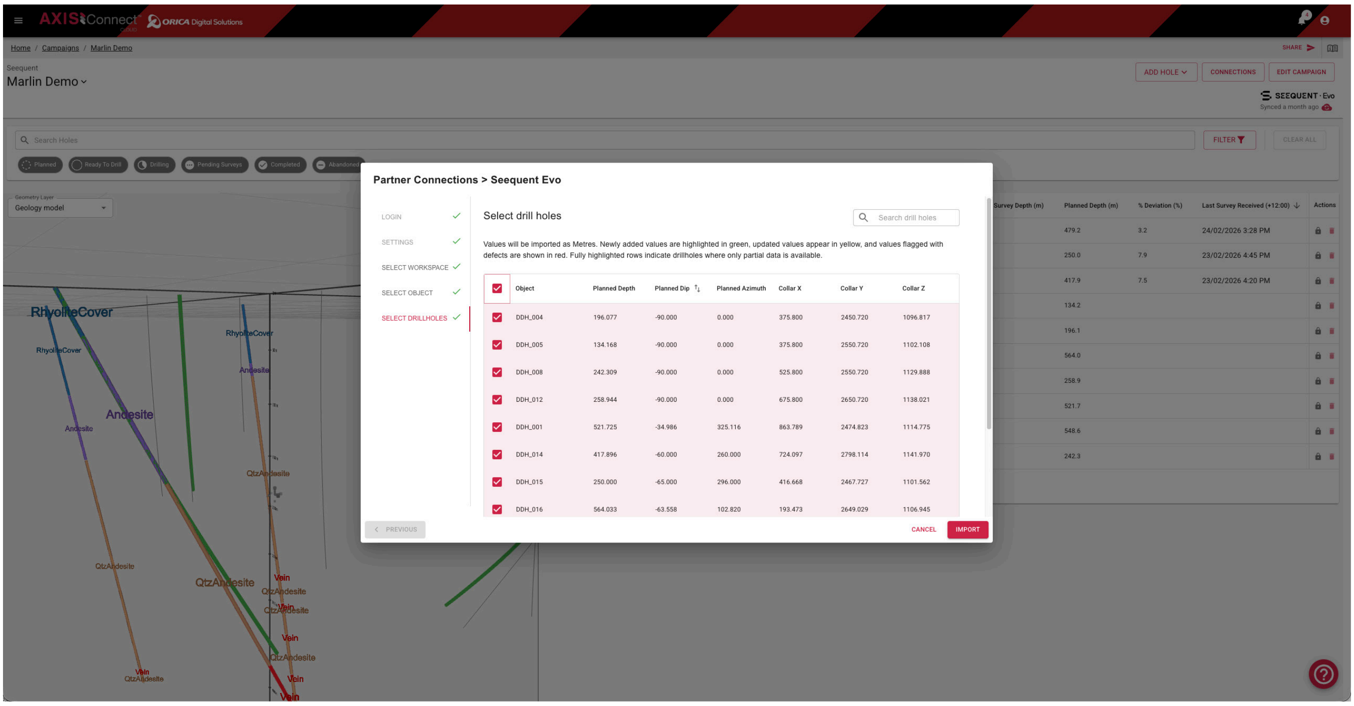
Collar & Target mode is designed to account for real-world drilling challenges. When natural deviation is expected, you can apply lift and drift, and Leapfrog will adjust the starting trajectory to ensure the hole intercepts the target. For fan drilling, set the collar offset between successive holes to zero in the hole defaults. This places multiple holes at the same collar point. The entire workflow is interactive and flexible. Place collar and target locations by pointing and clicking directly in the scene and set collar elevation from any surface in your project, not just the topography. For maximum control, in this mode the collar and target points are locked independently, allowing you to refine one point without inadvertently moving the other and losing your position.

1.1.3. AXIS Connect integration: confident planning to connected drill rig execution

Leapfrog Geo and AXIS Connect are integrated via Seequent Evo, connecting drillhole planning directly to drilling execution.

Publish planned drillholes from Leapfrog Geo to Evo, making them instantly available for import directly into AXIS Connect. This gives drillers up-to-date hole plans, enriched with geological context, including predicted intercepts from the current model. As drilling progresses, as-drilled survey data syncs back to AXIS Connect for real-time comparison against the planned trajectory. This live connection ensures that everyone is working from the latest information. When a hole plan is updated in Leapfrog, the new version flows to the drill rig via Evo – no manual exports or file handling required.

With both the geological context and live as-drilled survey data available from the rig, geologists and drillers can make informed, real-time decisions to continue, stop, or redirect a hole as conditions require.



1.2. Dynamic, data-driven stratigraphic modelling

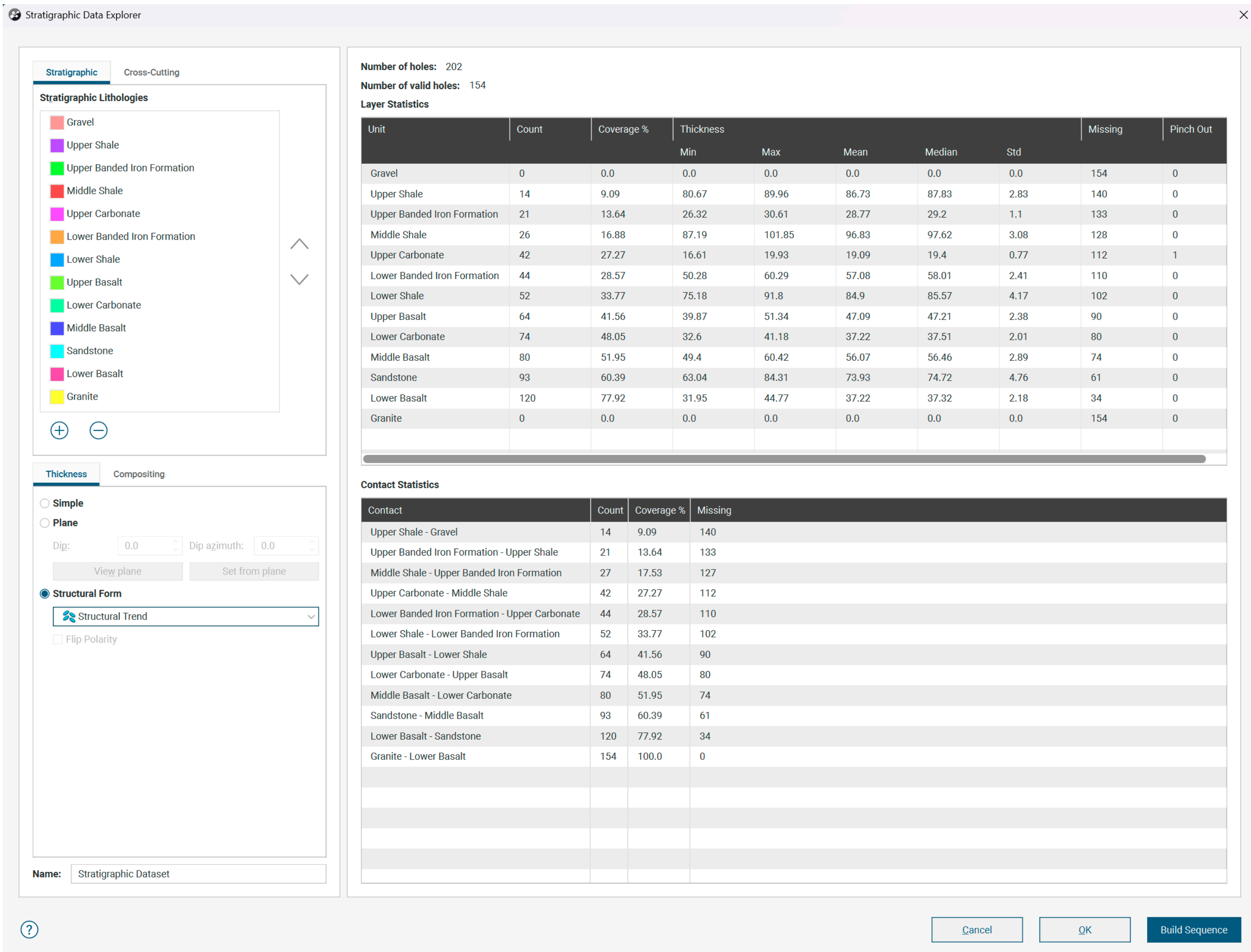
This release introduces a fundamental new workflow for geological modelling in Leapfrog, designed to help you master complex stratigraphies and create geologically realistic models.

1.2.1. Stratigraphic data explorer: build a strong foundation with interactive data analysis

We have adopted a data-first approach to stratigraphic modelling, beginning with the new stratigraphic data explorer interface. This establishes the data preparation foundations needed for stratigraphic modelling, ensuring subsequent models are built on structured, consistent input datasets.

Dataset analysis can be performed at various levels: on a geological model, on a fault block, or on refined geology within a geological model. Multi-level analysis means geoscientists can interrogate data at the appropriate resolution without duplicating effort thereby creating a single workflow that adapts to different structural contexts.

Frontloading quality assurance means errors are caught before they propagate into surfaces and geological models, where they are far more costly and time-consuming to diagnose and fix.



Unit	Count	Coverage %	Thickness Min	Max	Mean	Median	Std	Missing	Pinch Out
Gravel	0	0.0	0.0	0.0	0.0	0.0	0.0	154	0
Upper Shale	14	9.09	80.67	89.96	86.73	87.83	2.83	140	0
Upper Banded Iron Formation	21	13.64	26.32	30.61	28.77	29.2	1.1	133	0
Middle Shale	26	16.88	87.19	101.85	96.83	97.62	3.08	128	0
Upper Carbonate	42	27.27	16.61	19.93	19.09	19.4	0.77	112	1
Lower Banded Iron Formation	44	28.57	50.28	60.29	57.08	58.01	2.41	110	0
Lower Shale	52	33.77	75.18	91.8	84.9	85.57	4.17	102	0
Upper Basalt	64	41.56	39.87	51.34	47.09	47.21	2.38	90	0
Lower Carbonate	74	48.05	32.6	41.18	37.22	37.51	2.01	80	0
Middle Basalt	80	51.95	49.4	60.42	56.07	56.46	2.89	74	0
Sandstone	93	60.39	63.04	84.31	73.93	74.72	4.76	61	0
Lower Basalt	120	77.92	31.95	44.77	37.22	37.32	2.18	34	0
Granite	0	0.0	0.0	0.0	0.0	0.0	0.0	154	0

Contact	Count	Coverage %	Missing
Upper Shale - Gravel	14	9.09	140
Upper Banded Iron Formation - Upper Shale	21	13.64	133
Middle Shale - Upper Banded Iron Formation	27	17.53	127
Upper Carbonate - Middle Shale	42	27.27	112
Lower Banded Iron Formation - Upper Carbonate	44	28.57	110
Lower Shale - Lower Banded Iron Formation	52	33.77	102
Upper Basalt - Lower Shale	64	41.56	90
Lower Carbonate - Upper Basalt	74	48.05	80
Middle Basalt - Lower Carbonate	80	51.95	74
Sandstone - Middle Basalt	93	60.39	61
Lower Basalt - Sandstone	120	77.92	34
Granite - Lower Basalt	154	100.0	0

1.2.1.1. Defining stratigraphy and calculating statistics

Because the data preparation process is captured within the stratigraphic data explorer object, the decisions made (which units, which cross-cutting lithologies, which compositing rules) are transparent and traceable. This is critical for regulatory submissions, peer review, and project handovers.

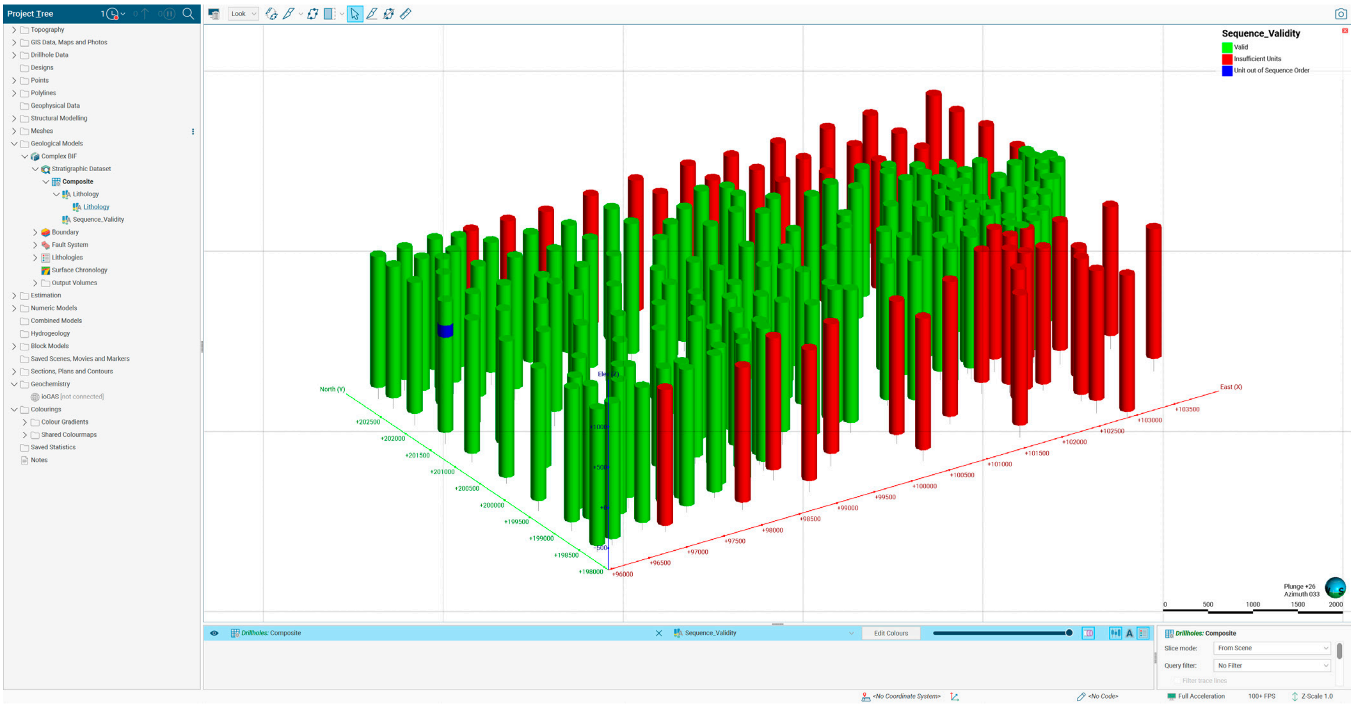
Within the stratigraphic data explorer, begin by creating your desired stratigraphy, selecting units from the source drilling chosen in the geological model. Define any cross cutting or intrusive lithologies so that the analysis can take this into account when determining the validity of the input data as well as calculating the statistics. Once defined, the explorer calculates statistics based on the original drilling data. You can use the integrated compositing option to quickly clean input data to achieve the best modelling results. This resembles the Category simplify composite available at the drillhole level.

1.2.1.2. Validating drillholes

After selecting lithologies for the stratigraphic sequence definition, the data explorer shows the count of holes included in the analysis and the number of valid holes. A hole is valid if it has one valid contact, contains no repeated units, and follows the stratigraphic order defined by the chosen lithologies. These checks ensure accurate unit statistics analysis; without them, results could be skewed.

Categorised invalidity provides actionable information, directing you to the right corrective action, whether that's re-logging, checking for data entry errors, or identifying genuine geological complexity, such as faulting.

You can investigate invalid holes in a column on the composite table in the stratigraphic data explorer, which details the different error types. You are also able to visualise invalid holes in the 3D scene to understand whether issues are localised (suggesting a data problem in a specific area) or widespread (suggesting a structural complication or sequence definition issue), a spatial context impossible to gain from tables alone. Once invalidated, a hole is excluded from statistical summaries and artifact generation. The column updates when changes to the input data validate previously invalid holes.



1.2.1.3. Calculated statistics

The data explorer automatically calculates key statistics for measured unit contacts, including contact count, coverage percentage, minimum, maximum, mean, standard deviation, missing contacts, and pinch outs.

Standard deviation as a consistency indicator is particularly powerful. A high standard deviation for a unit's thickness signals either genuine geological variability (e.g., a channelised deposit) or data quality issues. In either case, it tells you that this unit requires more attention during modelling.

Coverage percentage immediately reveals how well-constrained each unit is across the model domain. A unit with 30% coverage will behave very differently during interpolation than one with 90% coverage. Knowing this upfront sets appropriate expectations and guides decisions about where additional data collection (infill drilling) would have the greatest impact.

Pre-modelling insight allows you to make informed decisions about modelling strategy before committing to computationally expensive surface generation. For example, it gives you additional context before deciding whether a unit with very low coverage should be modelled as a continuous layer or handled differently.

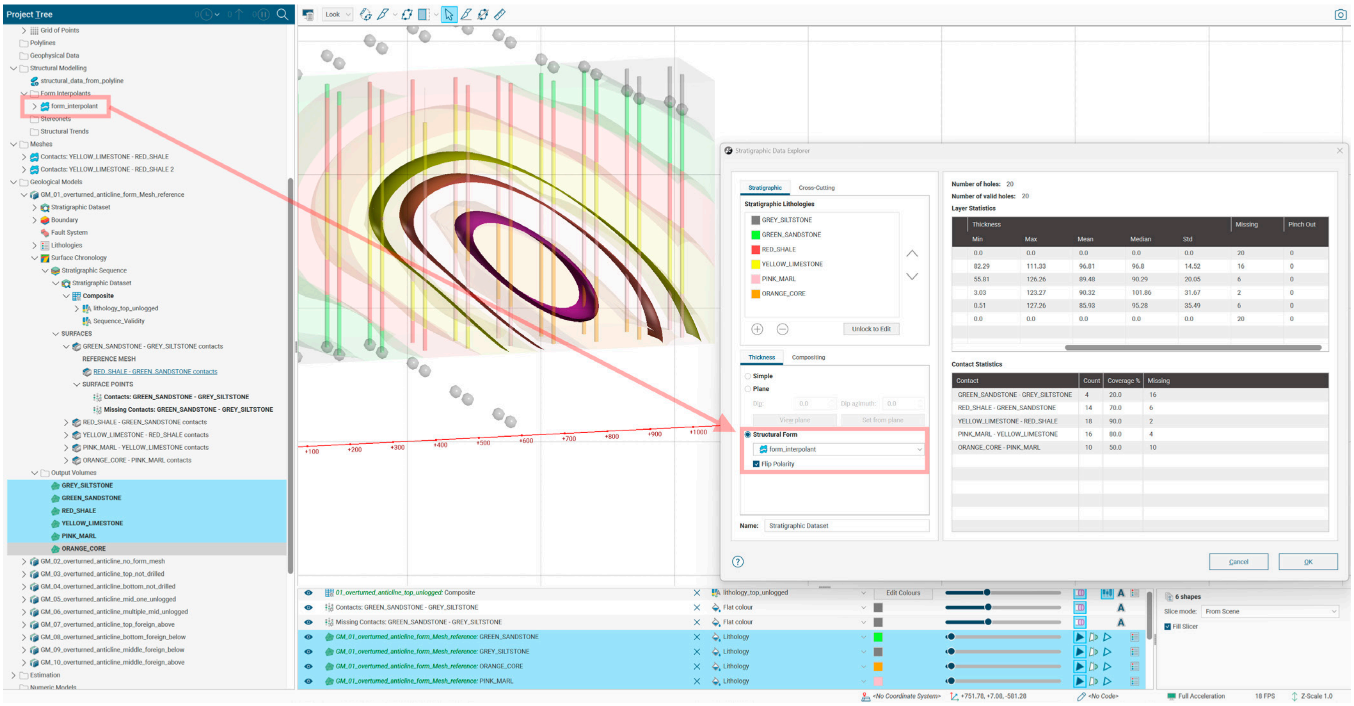
1.2.1.4. Unit thickness calculation methods

The stratigraphic data explorer provides more than one method to calculate true unit thickness. We know, as geologists, that the from and to depth of a unit may not represent the actual unit thickness.

Simple Plane: the stratigraphic data explorer calculates layer thicknesses as if all rock layers are tilted at a single, fixed angle that you specify. Instead of using the raw drillhole interval lengths, it calculates the thickness of each layer measured perpendicular to the layer boundaries. It uses an equation which accounts for the angle of the drillhole and the angle of the reference plane. This method is effective in consistently dipping strata.

Structural Form: the data explorer calculates layer thicknesses using a varying orientation that changes across your project area, defined by either a form interpolant or structural trend. For each drillhole interval, the calculation looks up the local orientation (dip and azimuth), at that specific location, of your form interpolant or structural trend and calculates the true thickness using that local orientation. This means the reference angle changes from point to point based on your structural model, rather than using a single fixed angle everywhere. Recommended when your geological layers have a varying orientation across your project area, for example:

- **Folded geology –** layers that curve and change dip direction
- **Complex structures –** areas where orientation varies significantly
- **When you have good structural data –** existing form interpolants or structural trends that accurately model the layer geometry.



The thickness calculation (plane or structural form) corrects a fundamental bias in raw drillhole data. In dipping or folded geology, apparent thickness from drillhole intervals systematically overestimates true layer thickness. Correcting this before surface generation means offset surfaces are positioned correctly from the outset, rather than requiring manual adjustment.

1.2.1.5. Contact statistics

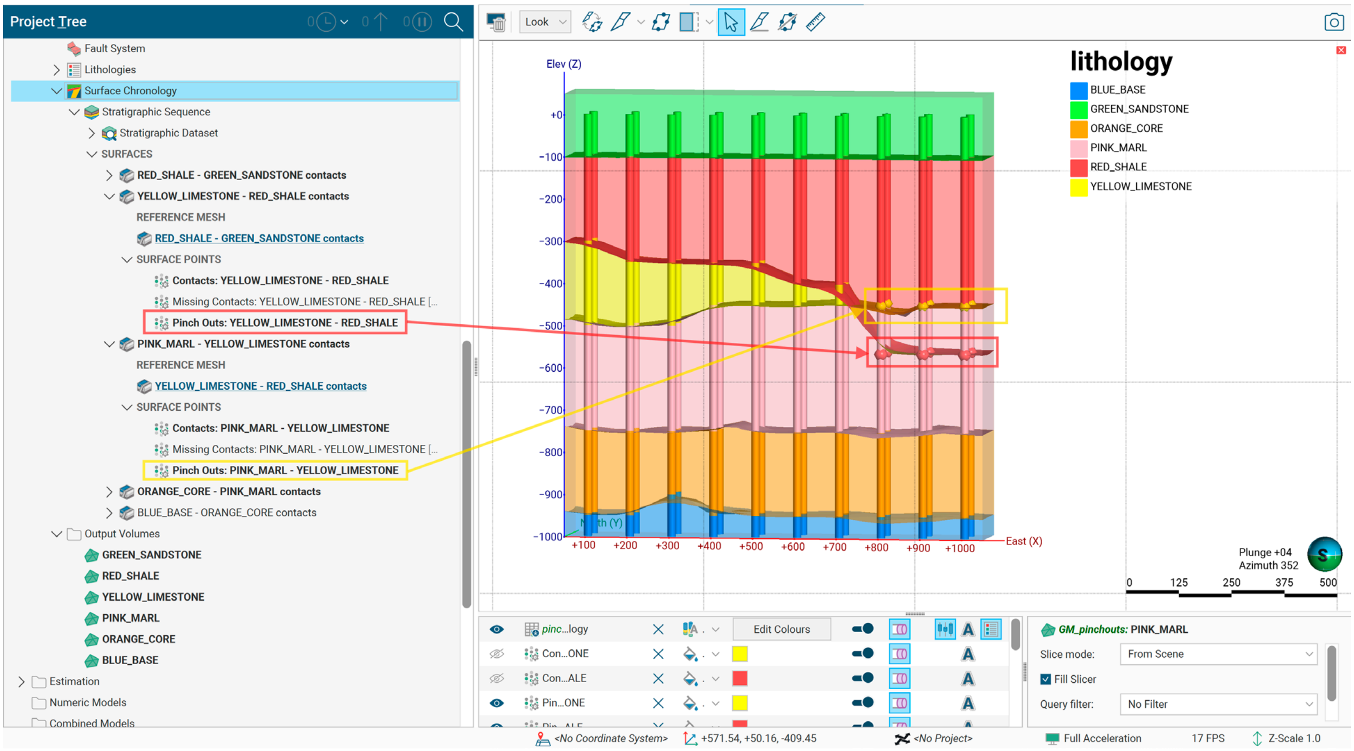
The stratigraphic data explorer provides detailed contact statistics for all stratigraphic contacts in your dataset which conform to your defined stratigraphic sequence. The count and coverage will be calculated from the valid holes within in the analysis. These contact statistics can be useful to help determine which surface might serve as the best reference surface when moving onto the next phase of modelling the stratigraphic sequence.

This moves the selection of a reference surface from a subjective decision to a data-driven one. In addition, contact statistics give geoscientists the language and data to communicate modelling confidence to stakeholders. A conversation like, “The A-B contact has 95% coverage and will produce a well-constrained surface, while the D-E contact has 20% coverage and carries significant uncertainty” drives more informed decision-making.

1.2.1.6. Pinch-out points

The stratigraphic data explorer will also generate a pinch-out points object nested under respective surfaces in the project tree. These 3D pointsets mark where geological layers “pinch out” (disappear) in your drillhole data for each surface modelled and serve as inputs for your contact surfaces. Using the thickness method chosen during your analysis, the algorithm estimates the contacts of the pinched-out layer and places new control points on the hole path that ensure the pinch-out occurs at that precise location. When used as input for contact surfaces in your geological model, these pinch-out points define layer boundaries where the layer has pinched out, improving your model’s behaviour in complex stratigraphy.

When a layer is absent between expected neighbours in a drillhole, the algorithm estimates the missing layer's contacts. For example, if the sequence should be A → B → C but only A above C is found, B's upper contact is placed at interval C's midpoint or interpolated thickness, whichever is less; B's lower contact is placed at the top of interval C, refined by subtracting the expected thickness of interval B if data exists. Drillhole X and Y coordinates are calculated using the desurveyor to account for deviation. This approach integrates layer boundaries and thickness estimates to position logical contact points for improved geological modelling.



1.2.1.7. Missing contacts

A missing contact occurs when your stratigraphic sequence expects certain layer boundaries, but the drillhole data lacks them. Unlike a pinch-out, which is a lateral disappearance of a layer, missing contacts typically result from the drillhole not reaching deep enough, starting within a unit below the top of the defined stratigraphic sequence, or missing intervals of logged data. The "Missing Contacts" are generated as a 3D pointset nested under each surface.

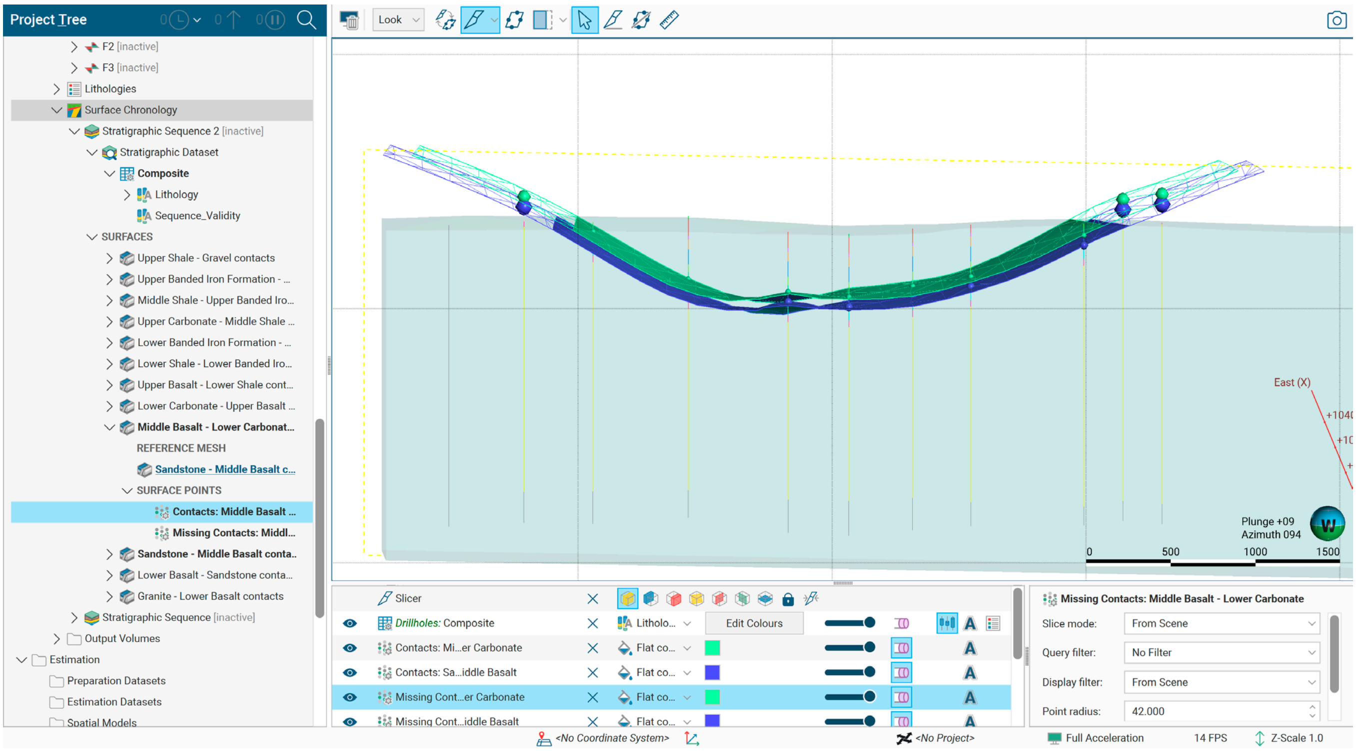
For example, if your sequence is A → B → C → D → E, but a drillhole logs only A, B, and C before ending, then contacts C/D and D/E are "missing." They likely exist deeper underground but weren't encountered by the drillhole. The stratigraphic data explorer handles three scenarios for missing contacts:

Missing contacts above the collar: when the drillhole starts within a layer other than the first lithology in your sequence, the data explorer works backward from the first known contact. It uses thickness, mean thickness, or 3D inverse distance interpolant from nearby drillholes to estimate how far above the first logged interval each missing contact lies. If the estimate is above the collar (ground surface), it extrapolates the drillhole trajectory upward using the tangent direction at the collar to place the point in 3D space.

Missing contacts below end of hole: when the drillhole ends before intersecting deeper layers of the defined sequence, the algorithm works forward from the last known contact. It estimates each successive contact by adding the interpolated or mean thickness of each missing layer to the previous contact depth. If contacts fall below the drillhole's maximum depth, it extrapolates the drillhole trajectory downward using the tangent at the bottom to project the point location.

Missing contacts internal to the sequence: when there's a gap in the middle (e.g., the drillhole shows A, B, then skips to E), the algorithm places contacts for missing layers (C/D and D/E) within the known interval. It calculates the space between the two known contacts, uses interpolated thicknesses for missing units, and scales these thicknesses proportionally to fit the space. This distributes estimated contact points sensibly between known boundaries. The algorithm includes safeguards: if more than two consecutive contacts are missing, it won't interpolate due to high uncertainty. It also avoids placing contact points inside intervals where data was logged, preventing contradictions with recorded observations.

3D points are estimated for each missing contact, including attributes for hole ID, depth, and contact name (e.g., "D - C" for the contact between layers D and C). These points serve as default inputs for building contact surfaces, helping you constrain your geological model in areas where drillhole data is incomplete.



Algorithmically generated pinch-out and missing contact points provide surface constraints in precisely the locations where data is absent, which is where surfaces are most prone to unrealistic behaviour. Without these, geoscientists must manually place control points, a process that is slow, subjective, and difficult to maintain as models evolve.

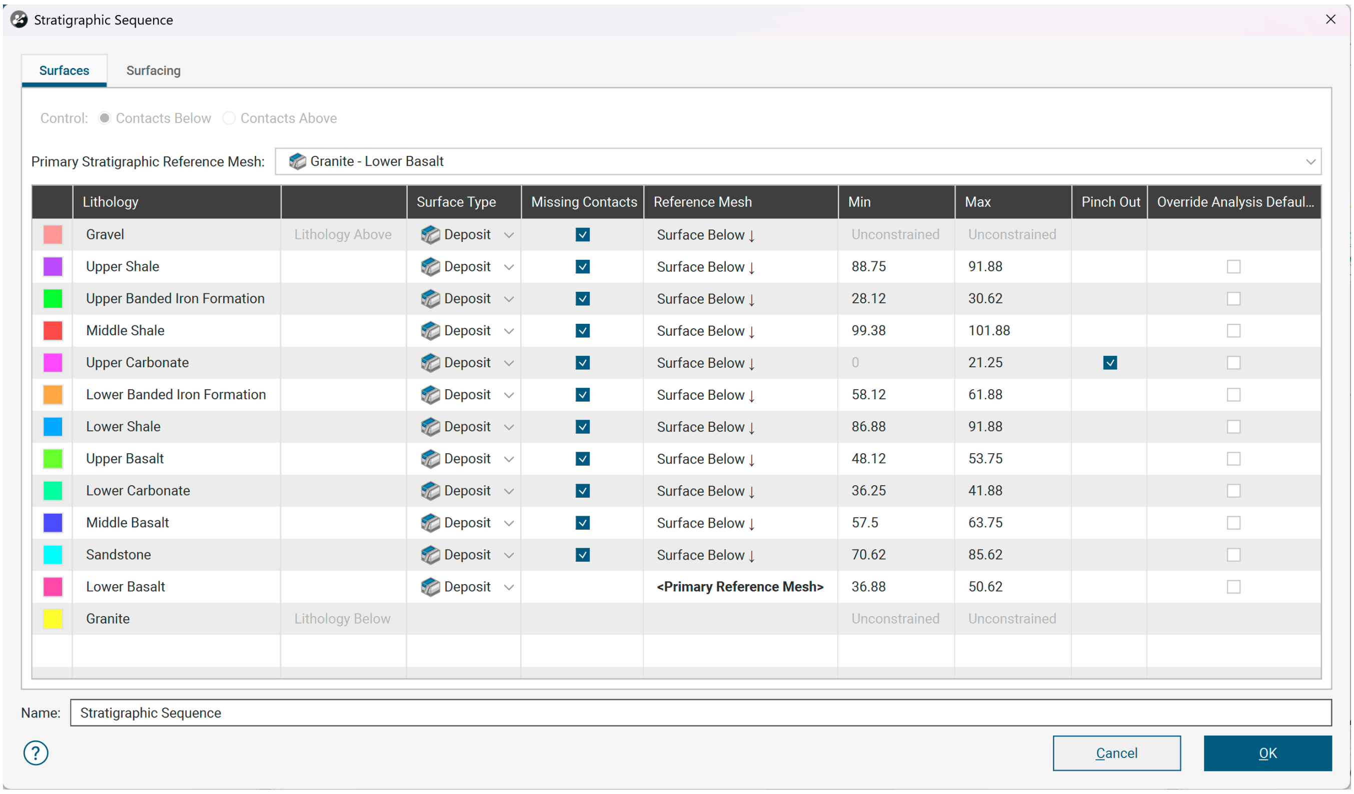
1.2.2. Building the stratigraphic sequence

After thorough data interrogation and analysis, you are ready to build your stratigraphic surfaces. The data defined in the stratigraphic data explorer informs surface building in your geological model using the “Build Sequence” feature.

1.2.2.1. Sequence builder features

The sequence builder allows you to model all of your stratigraphic surfaces in one location. Informed defaults from data exploration mean that the first surface generation is already close to geologically reasonable, rather than starting from arbitrary parameters. This shifts your effort from construction to refinement, a far more productive use of expert time.

Here, you can choose to model surfaces above or below a unit, based on preference, but your first critical decision is to select the primary reference mesh that will represent the stratigraphy’s form across the model. Choosing the most informed surface, identified during stratigraphic data explorer analysis, is a good starting point. Objective reference surface selection replaces what is often a subjective or experience-based decision. By quantifying contact count and coverage for each stratigraphic boundary, the data explorer and sequence builder provides an evidence-based recommendation for which surface should anchor the model.



This mesh serves as the base reference for stratigraphy and has outsized importance, as it underpins all thickness controls and all other surfaces are offset from it. Choosing the best-informed contact as the reference improves the behaviour of the entire stratigraphic package, not just one surface.

You can decide whether to model surfaces as erosion or deposit surface type. The chosen lithologies appear on the dialog’s left, with top and bottom units indicated. Top and bottom unit thicknesses appear unconstrained because they lack the full intersection to yield accurate thickness statistics.

Minimum and maximum thicknesses from data exploration define surface offsets controlling modelled unit thickness. The reference mesh column shows which surface is used in offset projections. An option includes “missing contacts” in surfaces to constrain surfaces in hole paths lacking the modelled contacts. You can also include pinch-out points; if selected, minimum thickness drops to zero, allowing the layer to pinch out in the model.

You can override analysis defaults to apply different thickness controls to units. Individual fine-tuning preserves the flexibility that expert modelling requires for complex areas, ensuring the workflow doesn’t sacrifice control for convenience.

The sequence builder produces a full set of customizable surfaces in the geologic model. Each surface (erosion or deposit) can be edited individually, and you can add structural points or other inputs as required.

Surfaces can also be edited in bulk, enabling you to make large-scale adjustments and fine-tune individual surfaces as needed. Bulk editing enables rapid scenario testing, for example, changing the reference mesh or adjusting thickness constraints across all surfaces simultaneously to evaluate the impact of different modelling assumptions.

Centralised surface management in a single dialog eliminates the cognitive overhead of managing dozens of individual surfaces across different parts of the project tree. For a 15-unit stratigraphy, this could mean managing 14+ surfaces. Doing this individually is not just slow, it’s error prone.

These benefits collectively represent a shift from artisanal, manual geological modelling to a systematic, data-driven, and auditable workflow delivering faster turnaround, higher model quality, better communication, and reduced risk.

Because the explorer and sequence builder are linked to source data, changes to drilling data (new holes, re-logged intervals, corrected collars) propagate through the workflow. Statistics update, validity reassesses, pinch-out and missing contact points regenerate, and surfaces can be rebuilt.

2. Leapfrog Edge features and functionality

2.1. Introducing the data preparation workflow

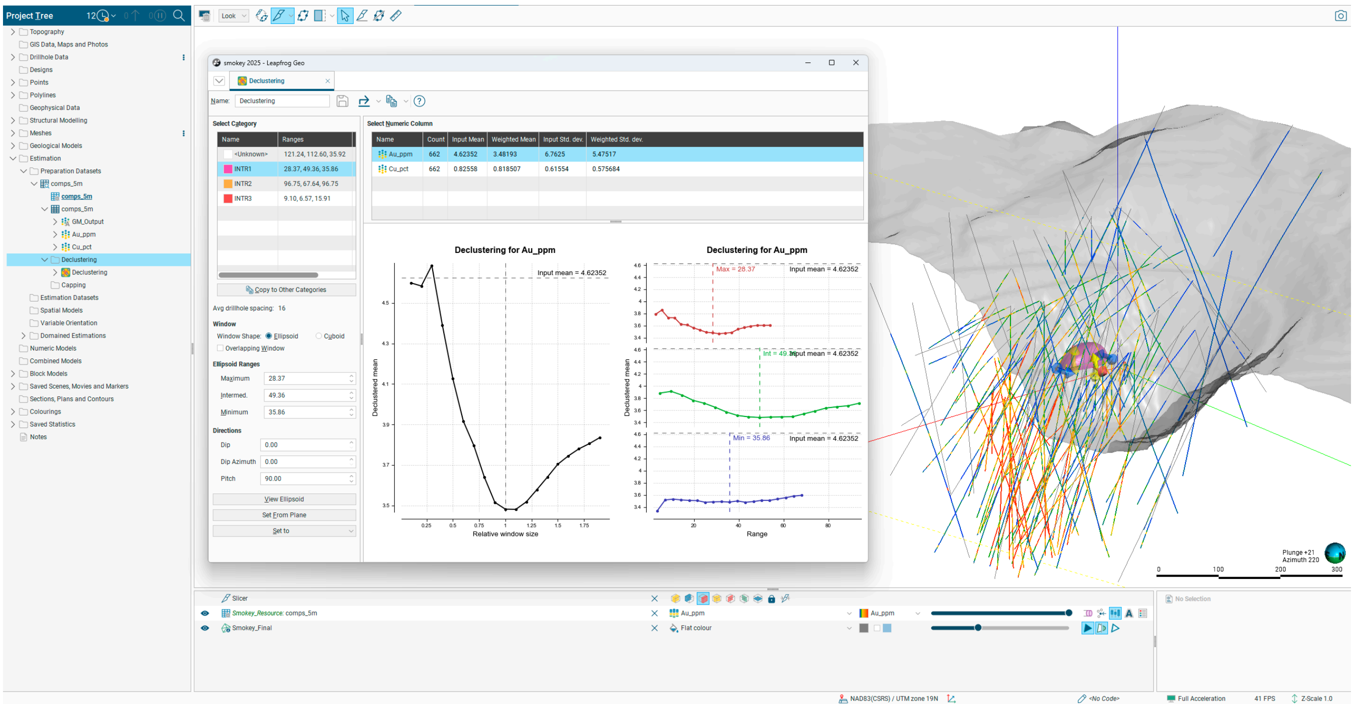
We are thrilled to launch a major change to the workflow in Leapfrog Edge. The new data preparation workflow decouples statistical analysis and key data decisions, such as declustering and capping, from the constraints of the individual domained estimator, and instead provides tools for performing these tasks across entire categorised datasets in a single, cohesive process. In combination with our new compositing comparison tool, the changes to data preparation are an important step towards creating new scalable and flexible workflows for modelling of complex multi-domain, multi-element resource projects.

2.1.1. Centralised data preparation

Your journey starts in the preparation datasets folder. This is your dedicated space to import the point, assay, or composite table you intend to prepare for resource modelling. All subsequent data preparation steps are organised here, providing a clear and auditable starting point for your entire project.

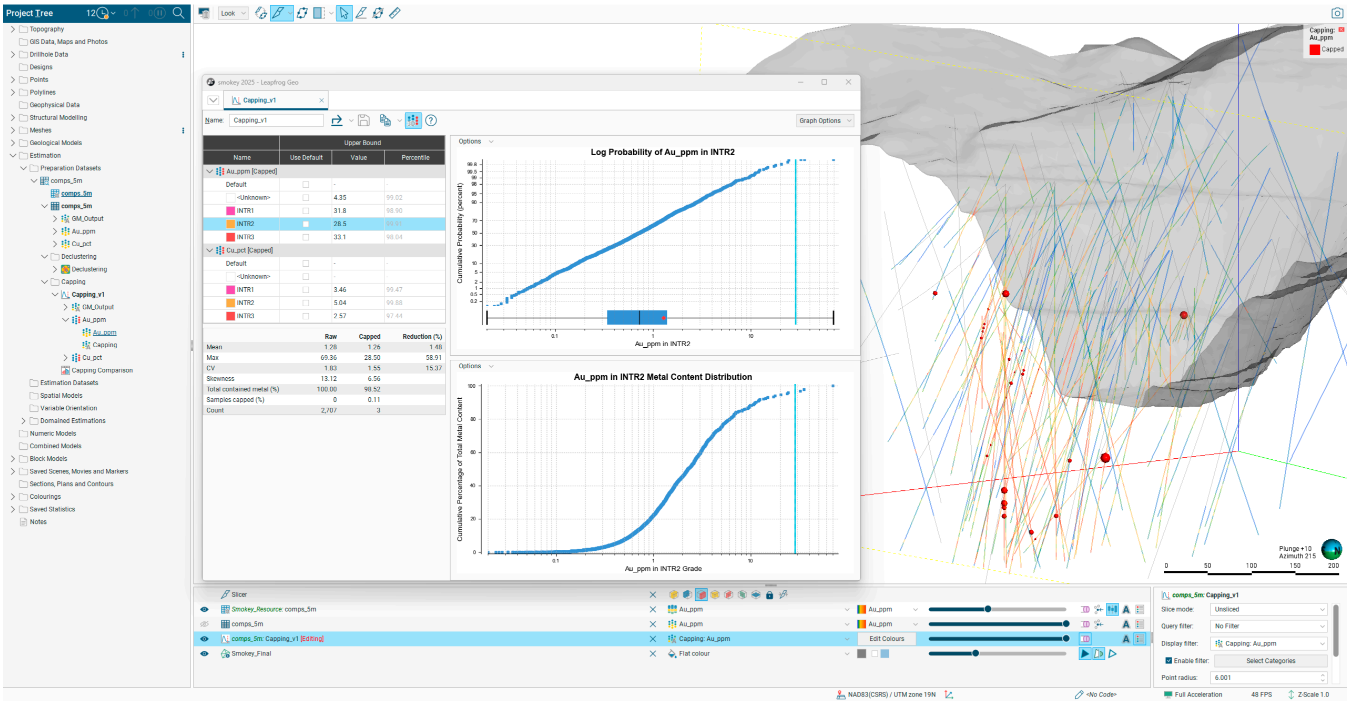
2.1.2. Correct for spatial bias with declustering

In the new declustering folder, correct for spatial bias with a streamlined, per-domain analysis of declustering weights. Next, you can easily compare different declustering strategies and report on multiple scenarios to support your validation workflow.



2.1.3. Define capping thresholds with confidence

The dedicated capping folder is where you can make informed and defensible decisions on capping. Define your thresholds with confidence using a range of analytical tools, including grade-metal content probability plots with full 3D interaction to gain further spatial insights.



A powerful new capping comparison feature allows you to statistically compare the original data against all capping scenarios side-by-side with a full suite of analyses to quantify and report on the impact of capping thresholds considered.

2.1.4. Create a flexible estimation dataset

The estimation dataset, resulting from capping and declustering selections, contains your prepared data, ready for resource modelling. This provides a more flexible and scalable way to manage the input data values across multiple domained estimators, in the case of updated drillhole data or changes to your data preparation workflow.

2.1.5. Connect seamlessly to your estimator

Finally, your prepared estimation dataset is ready for use. To take advantage of the estimation dataset, select it from the numeric values dropdown when creating a new domained estimator. This creates a direct link between the estimation dataset and the domained estimator to ensure a smooth and error-resistant transition from data preparation to resource estimation.

2.2. Flexible vein surface selection in variable orientation

With Leapfrog 2026.1.0, you have greater control and flexibility when using vein objects as inputs in variable orientation. You can now select which surfaces of a vein system (the hanging wall, the footwall, or both) are used to influence your variable orientation. This enhancement provides more representative and customised variable orientation output, particularly in complex vein geometries.

This new option appears directly in the variable orientation dialog when a vein is selected, integrating seamlessly into your existing workflow. By giving you direct control over the input surfaces, you can ensure the orientation of your data is influenced precisely as intended.

For projects created prior to Leapfrog 2026.1.0 that use a vein object in a variable orientation, the input will default to using the footwall surface only to maintain consistency with previous results. You can now edit the object to select the hanging wall, footwall, or both surfaces to take full advantage of this new flexibility.

2.3. Targeted model validation with swath plots

For the 2026.1.0 release, we have continued to enhance the swath plot in Leapfrog Edge, solidifying its role as an essential tool for robust model validation. These improvements are designed to give you greater analytical power, more flexibility, and a significantly faster workflow, allowing you to interrogate your estimates with higher precision and confidence.

- **Deeper & more targeted analysis:** You can now show associated values from a combined estimator, allowing you to display different domains or passes with the same query filter applied into your block model.
- **Analyse data preparation impact:** Visualise the effect of your data treatment by displaying raw, capped, or declustered data directly on the plot. This provides immediate insight into how your choices affect the estimate locally.
- **Experience a faster, more efficient workflow:** We've made significant performance improvements with on-demand processing, so plots update only when you make a change. You can also now duplicate complex swath plots with a single click, dramatically reducing setup time.
- **Create clearer, customizable graphs:** Improved labelling and the ability to customise marker style and size help you create more readable, presentation-ready plots to better communicate your findings.

These enhancements make the swath plot more dynamic and indispensable, helping you validate your models with greater confidence and efficiency.

3. What’s new in Leapfrog 2026.1.0

3.1. Drilling data

Leapfrog 2026.1.0 introduces new data analysis capabilities and enhances saved statistics into a powerful, interactive interface for analysis and reporting.

Feature	What's Changed
Compositing comparison	
Side-by-side analysis for composite validation	Instantly compare your data before and after compositing in a new multi-graph view with grade distribution plots, interval length comparisons, and a detailed statistics table. This includes % difference calculations, domain column UX, composite status filtering, and category column support.
Interactive, contextual analysis	All comparison plots are now fully interactive: apply filters, toggle between different numeric variables, and link selections directly to the 3D scene to see data in context.
Deeper residual analysis	Directly investigate and quantify the potential grade bias from how residuals were handled. You can now create a residual category to segment your data and use it in a box plot or statistics table to clearly visualise and report on the impact of your choices.
Saved statistics	
Saved graphs folder in project tree	Saved graphs now have their own dedicated Saved Statistics folder in the project tree. This allows you to manage graphs like any other project object – right-click to open, copy, rename, and view relationships.
More control with expanded filtering & customisation	We have extended categorical filtering to more graph types including scatter plots and comparison graphs for deeper analysis. You also now have more granular control over individual graph settings, such as font size and legend placement.
Embedded statistics on univariate graphs	You can now display key statistics (mean, std dev, etc.) directly on univariate graph views for presentation-ready visuals.
Grouping by numeric column in Table of Statistics	The Table of Statistics now supports grouping by a numeric column.
Accelerated reporting with bulk export	Export all graphs from the Saved Statistics folder in a single click using the "Export All" button. Scatter plot export was also added to the bulk export dialog.

3.2. Planned drilling

Feature	What's Changed
Single hole planning	
Flexible collar placement on any surface or volume	Planned hole collar locations are no longer limited to topography. You can now drape them onto any surface in your project for more flexible planning.
Precise hole targeting with a new 'Collar & Target' planning mode	This new mode is designed for scenarios where both the drill pad and target are constrained. You can now fix both the collar and target locations in 3D, and Leapfrog will automatically calculate the required dip and azimuth, including when lift or drift is applied to account for natural deviation.
Hole organisation through drag and drop	Simply drag and drop planned holes to copy them between different drillhole groups.
Grid hole planning	
Visual, rapid drill campaign design with in-scene grid	Use the interactive scene grid to define your drill pattern's location, size, and spacing. The grid checkerboard preview updates in real time to reflect your adjustments to the X/Y. You can toggle grid visibility on or off.
Constrain pattern with boundary outlines	Collar locations can be constrained to within any closed polyline or GIS line. The boundary can be a 3D line – Leapfrog determines which collars fall within it using a flat vertical projection.
Drape collars onto any surface or volume	Just as with single holes, you can drape planned grid collars onto any surface, not just topography.
Instant feedback from hole statistics	Planned hole statistics are generated automatically and include: number of holes, total length, minimum length, maximum length, and average length.
Hole naming and notes	Configure hole naming and position order from the start to suit your naming requirements. Options include sequencing names line by line or in snake order. You can also add notes that apply to all holes in the grid.

3.3. Modelling and meshes

Feature	What's Changed
Geological modelling	
Stratigraphic data explorer	Analyse your stratigraphic input data in a custom-built tool to prepare your drilling data for advanced stratigraphic modelling.
Advanced stratigraphic modelling	This release introduces a methodology in Leapfrog for defining stratigraphies. Advanced stratigraphic modelling in the new sequence builder enables fast, complex surface building using reference surfaces and built in thickness controls derived from drilling data.
Scenario testing with copy combined model	Create a non-static copy of a combined geological model, giving more flexibility when iterating designs.
Agile input mesh change for any model surface	You can now change the input mesh for deposits, erosions, and intrusions that were built from meshes, without needing to recreate the surface in the chronology
Organised fault chronology	Arrange faults in the project tree by chronology rather than alphabetically, helping build cleaner structural frameworks.
Structural modelling	
Structural disks from 3 points	You can now generate structural disks directly from three selected points.
Meshes	
Preserved extruded mesh attributes	When you update a source polyline, the attribute columns on the resulting extruded mesh are now preserved.
Updated attribute icons	The icons for mesh and volume attributes have been updated for improved clarity.
Block models	
Direct attributed mesh evaluation	Evaluate attributed mesh categories directly onto block models without any intermediate steps.

3.4. Cross sections

Clearer cross-sections, more confident interpretation. We've improved both how sections look and how data is presented, so your insights are more consistent and reliable.

Feature	What's Changed
Visual clarity & presentation	
Downhole graph readability	You can now adjust line widths for downhole curves, while clear axis scales show value ranges and units, removing ambiguity. We have also improved axes behaviour and responsiveness.
Consistency across section views	Section end-labels now automatically synchronise across section views, strip views, and plan views. To customise, you can now show or hide frames around embedded plan views.
Faster navigation in complex layouts	Drillholes and related datasets in the section layout tree now use clearer prefixes, helping you stay oriented when working with large, complex layouts.
Improved evaluation of planned drillholes on sections	You can now select planned holes on an individual or query filtered basis for projection onto sections. This makes planned holes consistent with how drillholes are evaluated onto sections.
Data confidence on sections	
Clearer projected-point information	Projected points now display additional context such as hole ID, depth, and panel.
Enhanced handling of dense data on sections	You can now sort projected points by multiple criteria and filter by panel.
Feedback for ambiguous projections	When a point could project onto more than one panel, the relevant panel is highlighted directly in the section view for instant clarity. An optional visualisation shows the distance to the section plane, and the closest panel is always chosen.
Aligned behaviour with drillholes	Points can be managed alongside drillholes to use the same advanced projection algorithms.
Balanced accuracy and performance	Projection methods stay aligned for drillholes on the same section.

Feature	What's Changed
Greater flexibility with planned drillholes	
Per-object evaluation	You can now choose specific planned drillholes for evaluation giving you more precise control over what is displayed on the section.
Strip view	The strip view now has a folder structure consistent with the section folder, allowing you to manage multiple sets of drillhole (planned and/or actual) evaluations more intuitively.
Group filtering	Apply query filters when selecting planned drillhole groups.
Smarter defaults for individual holes	When you add single deep, directional, or deviated planned drillholes to a section, the relevant evaluation parts are now automatically selected, saving you clicks.
Automatic upgrade of existing layouts	Older layouts using the combined planned drillholes object are automatically upgraded to equivalent evaluations.

3.5. Resource estimation

Feature	What's Changed
New data preparation workflow	
New folder structure	A new preparation datasets folder provides a dedicated and organised home for your entire data preparation workflow.
Declustering	Correct for spatial bias per-domain or across the entire (global) data set. Additionally, the declustering comparison can be used to review the impact of different declustering strategies.
Capping	Define your thresholds with confidence using a range of analytical tools, including grade-metal content graphs with full 3D interaction for spatial insights. Capping comparison allows for statistical interrogation of different capping scenarios.
Estimation Dataset	This object contains your prepared, validated data and provides a more flexible and scalable way to manage your estimation inputs, especially in projects with continuously updating drillhole data or multiple domained estimators.
Variable orientation	
Flexible vein surface selection	You can now select which surfaces of a vein system (the hanging wall, the footwall, or both) are used to influence your variable orientation, for more representative and customised variable orientation output, particularly in complex vein geometries.
Swath plots	
Comparison of multiple associated values	Select and display multiple associated values simultaneously on swath plots. Associated values can now be displayed for combined estimators.
Data preparation analysis	Capping and declustering values are now available as associated values, allowing you to visualise the local impact of your data preparation choices.
Precise filtering	You can now apply query filters directly to selected items and add filters from within the selected items list.
Clear, report-ready graphs	New graph style settings, improved axis labelling, copy-to-clipboard, and improved overall readability enhance and accelerate your reporting workflow.
Performance improvement	When you remove evaluations from a plot, Leapfrog no longer fully reprocesses the object.

3.6. Evo integration

Working with Evo data is safer, clearer, and more predictable. We've strengthened how Evo data reloads, improved feedback when things don't line up and made Evo options easier to recognise and use throughout the interface, so Evo feels like a fully integrated part of Leapfrog.

Feature	What's Changed
Safer reloads when Evo data changes	
Attribute key-based reloading	Leapfrog now uses Evo's unique attribute keys, rather than relying on column names only, when reloading data such as points, polylines, structural data, interval tables, and block models. This means that you can rename, reorganise, or reuse attributes in Evo with far less risk of data being mis-mapped or silently ending up in the wrong column after a reload.
Preserved mesh attributes on Evo reload	Mesh attribute columns are now preserved when reloading from Evo, preventing loss of assigned attributes during a data refresh.
Clear warnings for mismatched downhole data	
Hole ID mismatch warnings	When importing or reloading downhole interval tables from Evo (such as lithology, samples, or screens), Leapfrog now checks that all Hole IDs exist in the corresponding collar table. If mismatches are found, a clear warning explains which tables are affected and how many Hole IDs don't match, allowing you to fix the issue immediately or continue knowing exactly which data won't be displayed.
Confirm delete on table save	The table tab now raises a confirmation dialog when you save changes that will delete columns, giving you a chance to verify your action and preventing accidental data loss.
A more intuitive and consistent Evo experience	
Structured and consistent Evo actions	Evo publish and import actions in Leapfrog are now logically structured, consistently named, and easier to find, reducing missteps and guesswork.
Aligned wording and visual cues	Evo-linked content now uses aligned wording and visual cues in the project tree, making it obvious what is driven by Evo and how it will behave. Once you've learned how Evo appears in one part of the project, the same patterns apply everywhere.
Most-recent appears first	The most recently modified Evo objects are displayed at the top of import lists.
Planned drilling colourmap publishing	Evaluation colourmaps on planned drillholes can now be published to Evo, ensuring a consistent experience with Evo partner integrations.