

■ Mobile Core Scanning Solution

■ Connecting Rock Properties to Value Drivers

■ 2025

Simon Lessard
CEO

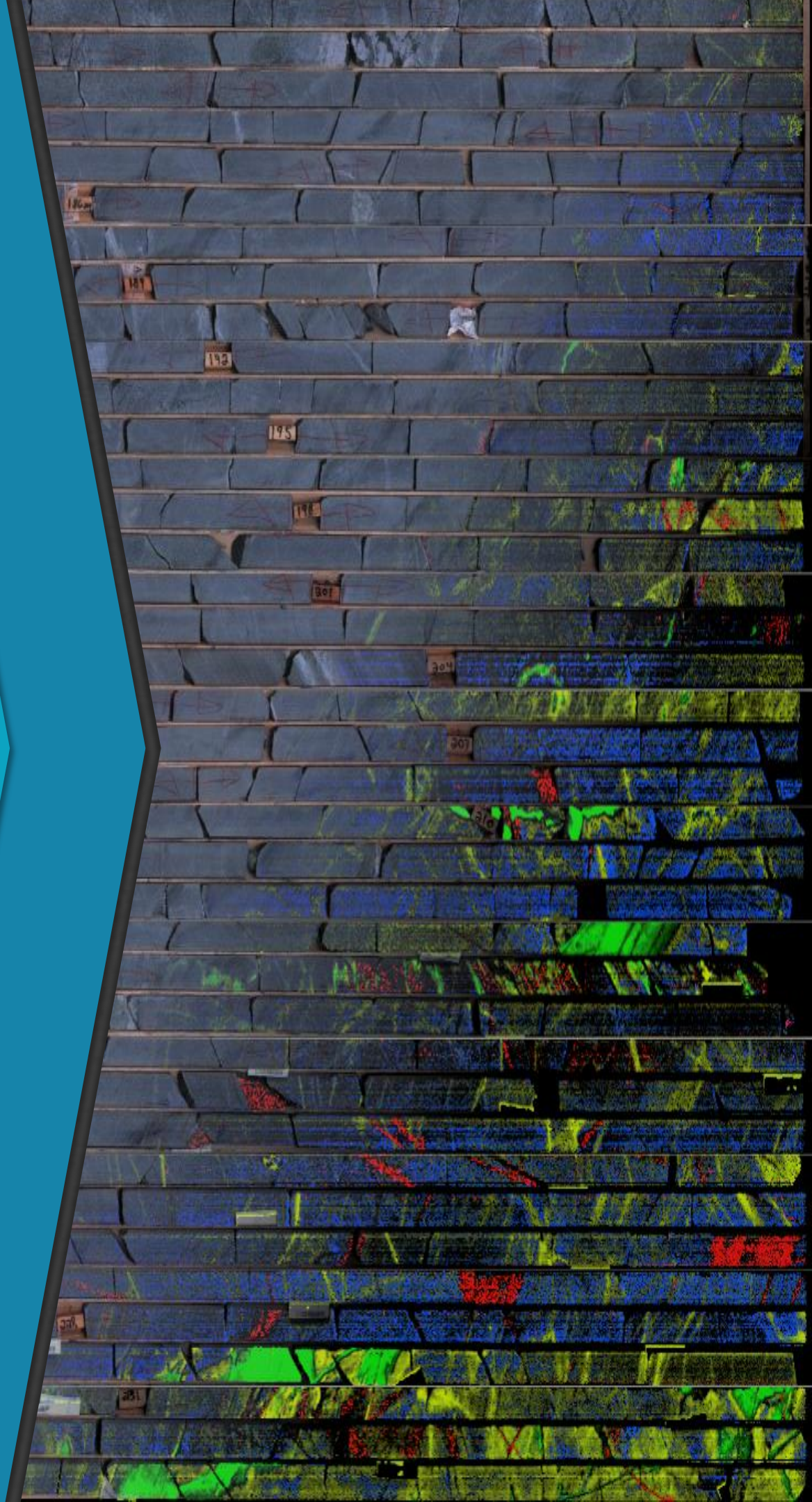
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About Us

Connecting Rock Properties to Value Drivers

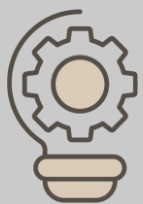
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Hyperspectral Core Pre-Logging Directly at the Mine Site

High-Quality, Fast and Accurate Mineralogy for Insightful Decision Making

LithologIQ is a technology company leveraging the latest advancements in **Hyperspectral Imaging** and **Artificial Intelligence** to deliver mobile mineralogical analysis solutions. These solutions accelerate mining discoveries and optimize mine operations, transforming workflows across the mining industry and delivering a quick return on investment.

Our Core Values:



Innovation



Collaboration



Value Adding



Sustainable



Head Office: [Montreal, Québec, Canada](#) 

Core Logging Challenges

Mining and Exploration

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Manual Core Logging

- ✗ Lengthy Core Logging
- ✗ Inconsistent Estimation
- ✗ Inefficient Use of Personnel
- ✗ Human-eye's Limited Data Collection
- ✗ Complicated Integration
- ✗ Logistic Challenge



LithologIQ Automated Core Logging

- ✓ Fast Core Logging
- ✓ High Accuracy
- ✓ Automated Process
- ✓ Quick Decision Making
- ✓ Full Integration
- ✓ Quick Return on Investment



Video Link: <https://youtu.be/hkSco6Abhww?si=9Ydg0vQSJIQFjcfC>




LithologIQ Core Scanner

All-in-One Mobile Lab

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The LithologIQ mobile core scanner lab offers the fastest scan time and quickest delivery of actionable reports. Equipped with the most sensors for the best accuracy and requiring no site-specific algorithm training, it provides one of the most cost-effective solutions available

Manual Logging		Other Technologies		LithologIQ	
	Drill Core Production	Scan Time	3-60 Minute per Core Box	Scan Time	1 Minute per Core Box
	Visual Logging	Box Handling	Manual Loading Single Box	Box Handling	Automated Loading Multiple Boxes Queue
	Sample Preparation	Imaging Volume	30m-1000m per Day	Imaging Volume	2,000m per Day
	Lab Transportation	Instruments	1-4 Sensors VNIR, SWIR, MWIR, LWIR, XRF, Mag, 3D, RGB	Instruments	7 Sensors VNIR + SWIR + MWIR*, LWIR* + RGB + Mag + UV
	Turnaround Time	New Setup Time	Days to Weeks Initial Setup	New Setup Time	Immediate No training or site-specific algorithm
	Decision Making	Analysis Type	Blackbox Site-Specific Library Training Required	Analysis Type	On-Site Direct Mineralogy On-device Offline
		Deliverable	1-4 Weeks Downhole Mineralogy	Deliverable	24 Hours Downhole Mineralogy + Spectral Metric
		Cost	\$20-\$100 per Meter	Cost	Project Base per Meter

Results in Weeks +

Results in 24 Hours



LithologIQ Mobile Lab

Cameras and Sensors

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7 Cameras and Sensors

Hyperspectral Cameras (1mm/pixel):

VNIR: 400 - 1000 nm - Rare Earth Elements

SWIR: 1000 - 2500nm - Hydrated minerals (muscovite/sericite, biotite, chlorite + chemistry)

MWIR: 2800 - 5400 nm - Carbonates (calcite, siderite, ankerite)

LWIR: 7500 - 12000 nm – Silicates, Quartz (Silicification, Rock Hardness)

High-Resolution Camera (50 µm/pixel):

RGB: Wet + Dry – RQD

Other:

Mag: Magnetic Susceptibility - Responsive Minerals

UV: Fluorescence - Spodumene





LithologIQ Analyse

Viewer Dashboard

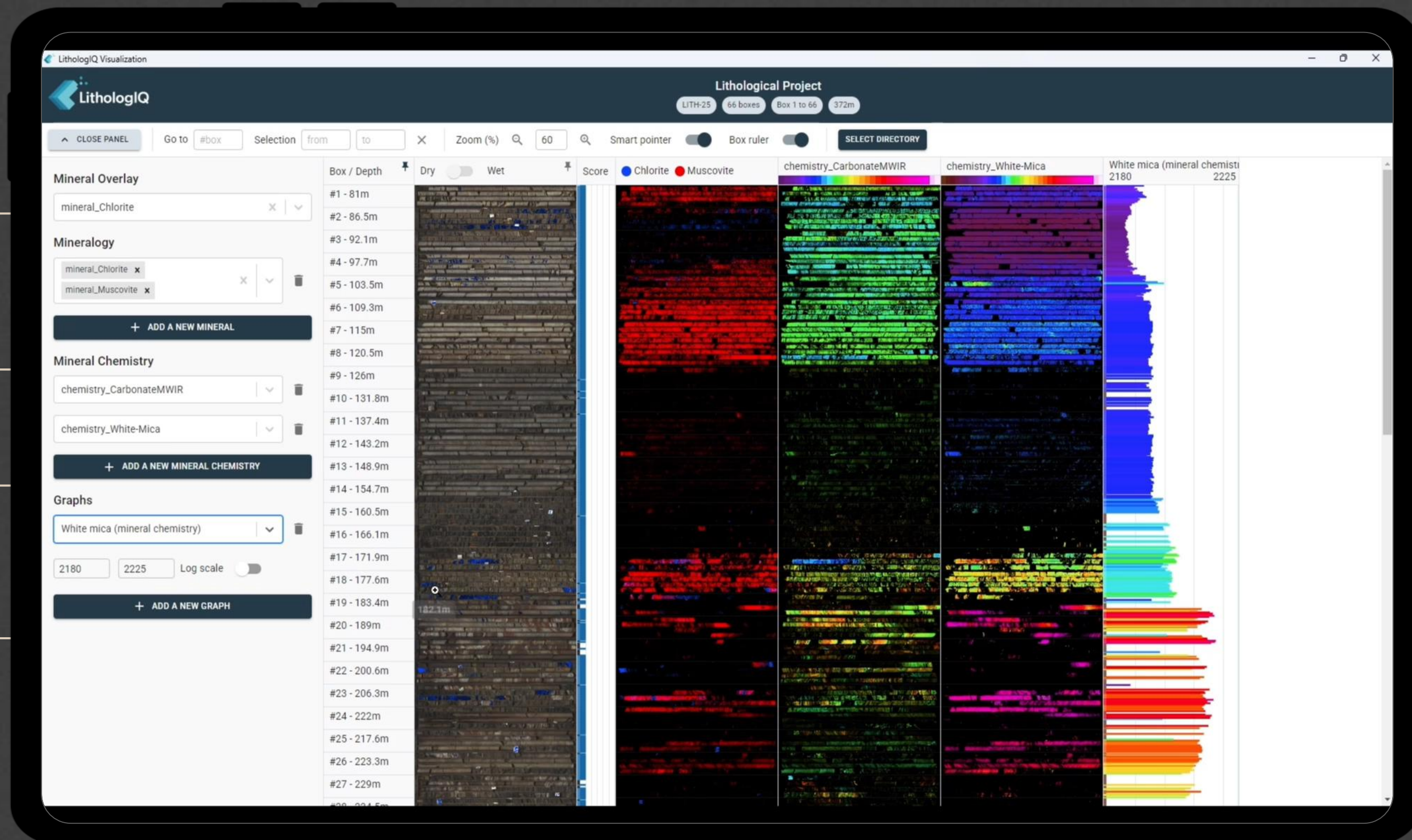
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RGB Mineralogy

Mineralogy Overlay

Chemicals Overlay

Graphs Filters



Hyperspectral Mineralogy

Mineral Chemistry Graph

Video Link: https://lithologiq.ca/wp-content/uploads/2025/03/dashboard_lithologic.mp4

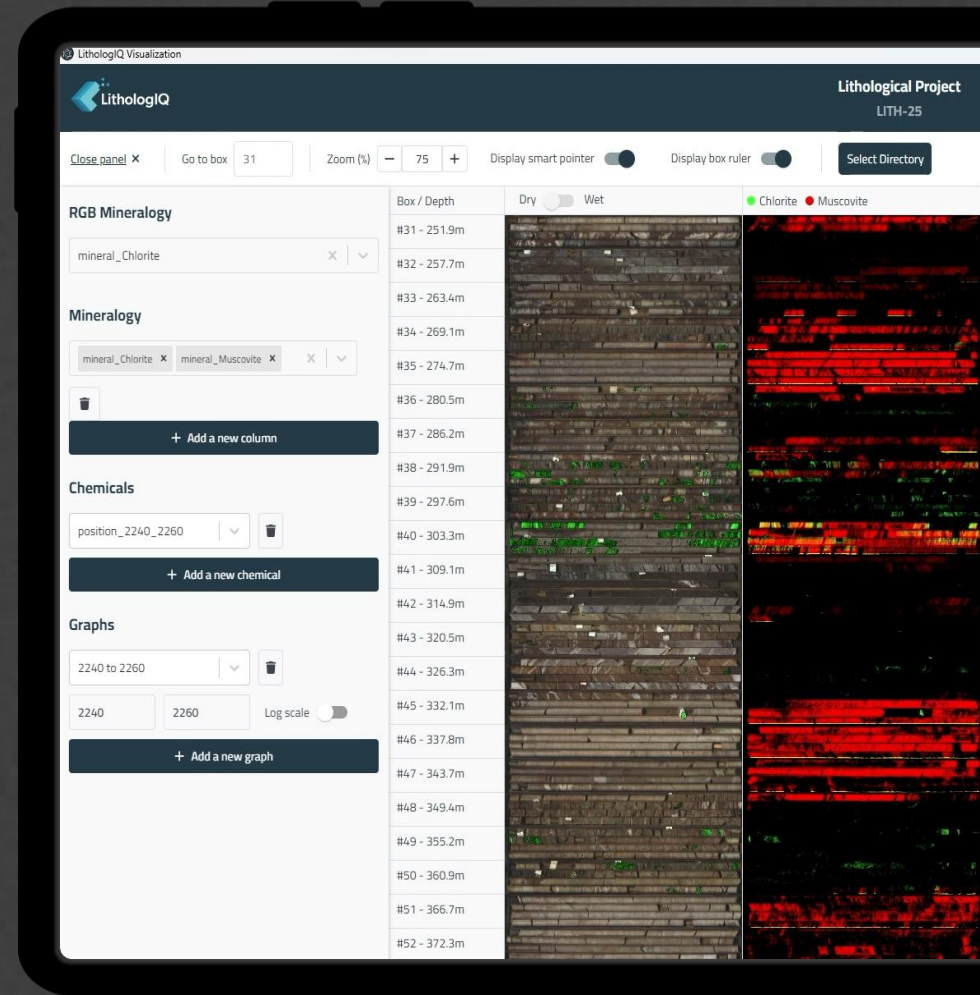
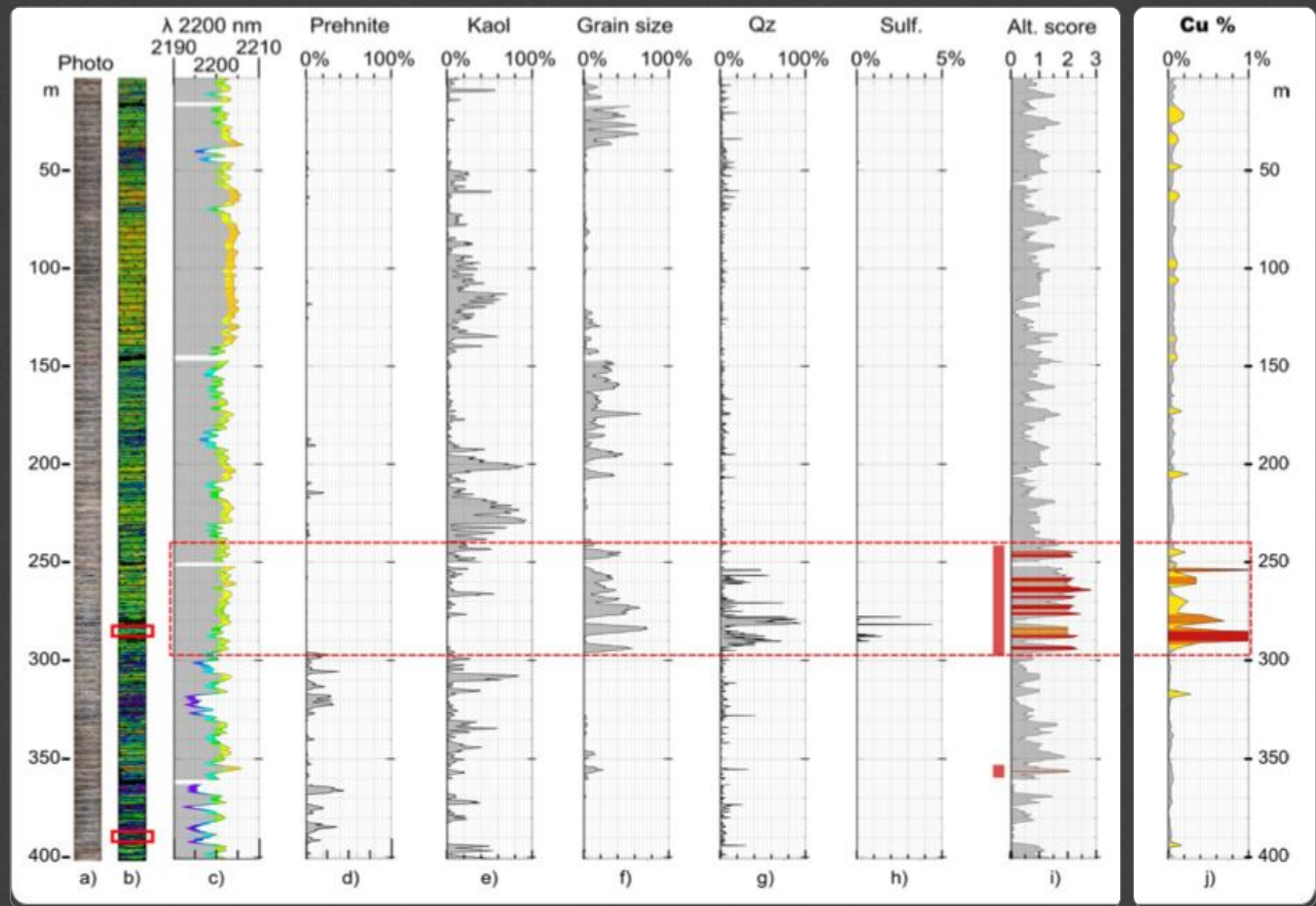


Downhole Mineralogy

Scan to Data in 24 Hours

LithologIQ Report
(24 Hours)

Ground Truth
(Months+)





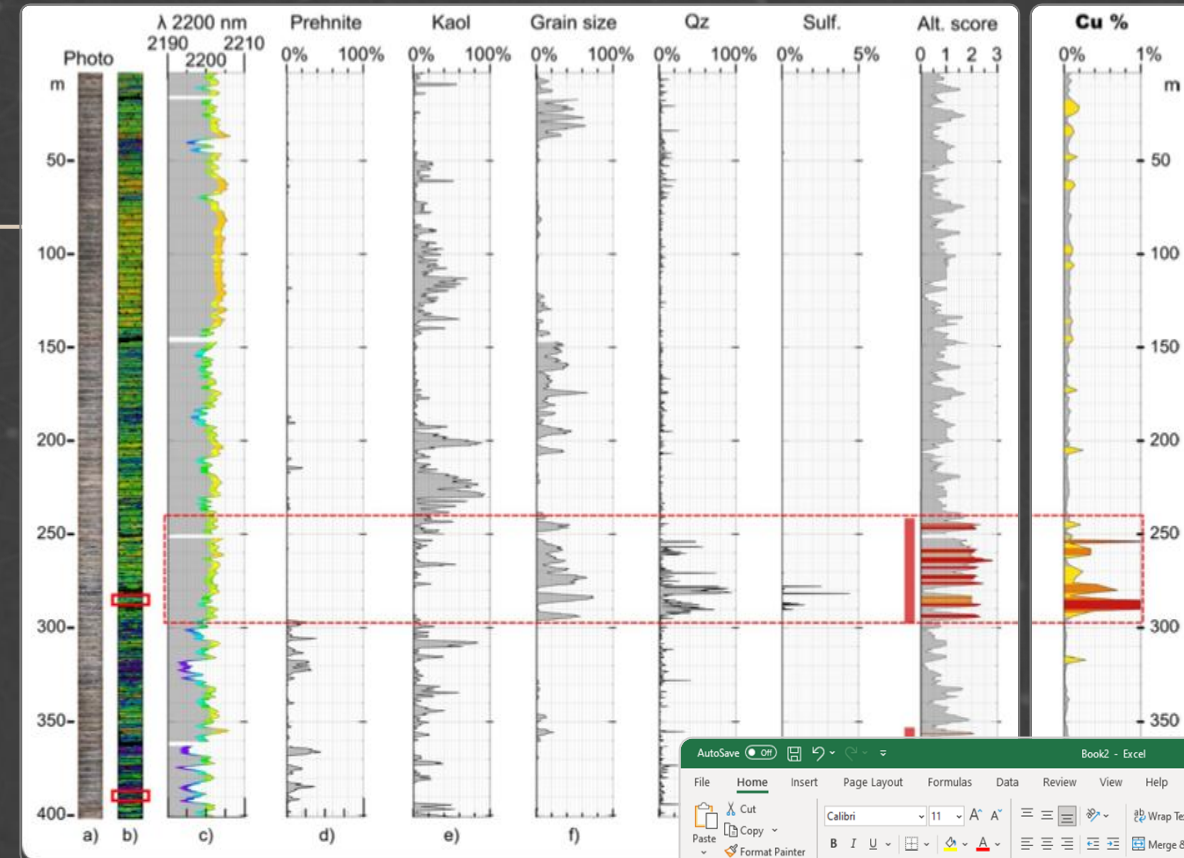
LithologIQ Compatibility

Data Delivery

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Data Delivery (24hrs)

- Interactive Viewer Dashboard
- High-Resolution RGB
- Hyperspectral Mineralogy
- Mineral Chemistry
- Spectral Alteration Score
- Downhole Mineralogy .csv



AutoSave	File	Home	Insert	Page Layout	Formulas	Data	Review	View	Help	Book2 - Excel	Search (Alt-Q)	Philip Lypacswicz																					
<div> <div>Cut</div> <div>Copy</div> <div>Format Painter</div> </div> <div>Clipboard</div>	<div> <div>Calibri</div> <div>11</div> <div>A</div> <div>A</div> </div> <div> <div>B</div> <div>I</div> <div>U</div> <div>Font</div> </div>	<div> <div>Wrap Text</div> <div>Align Center</div> <div>Align Left</div> <div>Align Right</div> <div>Align Justify</div> <div>Align Merge & Center</div> </div> <div>Alignment</div>	<div> <div>Number</div> <div>\$ % ' 1/2 1/4 3/8 1/8 1/16 1/32</div> </div> <div>Number</div>	<div> <div>Normal</div> <div>Bad</div> <div>Good</div> <div>Neutral</div> </div> <div> <div>Calculation</div> <div>Check Cell</div> <div>Explanatory ...</div> <div>Input</div> </div> <div>Styles</div>	<div> <div>Conditional Formatting</div> <div>Format as Table</div> </div> <div> <div>Insert</div> <div>Delete</div> <div>Format</div> </div> <div>Cells</div>																												
Y21	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y								
1	DDH INFO				Mineralogy (%)																Mineral Chemistry												
2	Hole ID	Box #	Meter From	Meter To	Carbonate	Chlorite	% Epidote	% Smectite	% Talc	Tourmalin	Illite	% Muscovite	KFp	Ortho	Quartz	LW	Plag	Ab	L	KFp	Micro	Chlorite 2	Mg#	Position C	Position C	2180 to 2220							
3	str	int	meter	meter	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	percent	nanometer	percent	nanometer	nanometer	nanometer							
4	None	None	None	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2240	0	2515	3700	2180							
5	None	None	None	None	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2265	1	2555	3865	2220							
6	MO-20-93	1	20.9	21.0	14.5%	2.2%	15.1%	0.2%	0.0%	0.0%	0.0%	13.3%	67.8%	0.0%	78.0%	0.0%	16.0%																
7	MO-20-93	1	21.0	21.1	10.1%	18.6%	7.6%	0.1%	0.0%	0.0%	0.0%	8.2%	61.2%	0.0%	68.0%	0.0%	13.0%					2248.8	71.2	2530.9	3703.8	2194.9							
8	MO-20-93	1	21.1	21.2	12.9%	13.8%	2.4%	0.2%	0.0%	0.1%	29.4%	43.6%	1.0%	48.0%	0.0%	7.0%					2248.7	71.6	2530.1	3875.0	2203.8								
9	MO-20-93	1	21.2	21.2	4.9%	76.0%	2.5%	0.0%	0.0%	0.0%	0.0%	2.1%	8.0%	0.0%	55.0%	0.0%	3.0%					2249.6	67.6	2530.6	3711.6	2205.1							
10	MO-20-93	1	21.2	21.3	63.7%	66.8%	1.9%	0.3%	0.0%	0.0%	0.0%	32.0%	41.7%	0.0%	26.0%	0.0%	2.0%					2249.7	66.7	2530.5	3717.0	2189.0							
11	MO-20-93	1	21.3	21.4	90.5%	80.8%	0.0%	0.9%	0.0%	0.0%	0.0%	50.7%	47.1%	0.0%	17.0%	0.0%	1.0%					2251.0	60.9	2530.6	3717.8	2188.9							
12	MO-20-93	1	21.4	21.5	85.2%	81.2%	0.0%	0.6%	0.0%	0.0%	0.0%	16.0%	83.3%	1.0%	26.0%	0.0%	3.0%					2250.5	63.1	2531.3	3754.5	2190.3							
13	MO-20-93	1	21.5	21.6	81.2%	75.1%	0.0%	1.1%	0.0%	0.0%	0.0%	34.7%	60.0%	0.0%	20.0%	0.0%	0.0%					2250.7	62.3	2530.6	3717.8	2189.6							
14	MO-20-93	1	21.6	21.6	91.6%	64.5%	0.0%	1.1%	0.0%	0.0%	0.0%	24.1%	72.1%	1.0%	31.0%	0.0%	1.0%					2250.8	61.8	2523.0	3714.5	2190.6							
15	MO-20-93	1	21.6	21.7	90.9%	59.3%	0.0%	1.3%	0.0%	0.0%	0.0%	55.0%	41.9%	0.0%	29.0%	0.0%	2.0%					2250.9	61.4	2529.8	3718.6	2190.1							
16	MO-20-93	1	21.7	21.8	82.0%	50.9%	0.0%	2.9%	0.0%	0.0%	0.0%	65.8%	28.0%	2.0%	6.0%	0.0%	0.0%					2251.4	58.7	2529.3	3716.1	2191.8							
17	MO-20-93	1	21.8	21.9	97.1%	66.4%	0.0%	0.7%	0.0%	0.0%	0.0%	77.8%	20.6%	4.0%	13.0%	0.0%	4.0%					2251.5	58.2	2529.6	3715.3	2191.8							
18	MO-20-93	1	21.9	22.0	85.9%	46.3%	0.0%	2.7%	0.0%	0.0%	0.0%	47.2%	35.7%	27.0%	1.0%	0.0%	1.0%					2250.4	63.6	2521.5	3714.1	2194.4							
19	MO-20-93	1	22.0	22.1	86.6%	59.3%	0.0%	1.3%	0.0%	0.0%	0.0%	43.2%	44.8%	0.0%	9.0%	0.0%	0.0%					2251.7	57.3	2520.3	3716.6	2192.5							
20	MO-20-93	1	22.1	22.1	93.2%	25.5%	0.0%	1.8%	0.0%	0.0%	0.0%	76.9%	18.1%	0.0%	20.0%	0.0%	1.0%					2251.3	59.1	2524.7	3715.7	2192.9							
21	MO-20-93	1	22.1	22.2	89.9%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	77.9%	18.5%	0.0%	28.0%	0.0%	3.0%																
22	MO-20-93	1	22.2	22.3	93.5%	17.2%	0.0%	0.6%	0.0%	0.0%	0.0%	63.5%	33.7%	4.0%	3.0%	0.0%	0.0%																
23	MO-20-93	1	22.3	22.4	92.4%	70.2%	0.0%	0.6%	0.0%	0.0%	0.0%	7.2%	86.3%	2.0%	2.0%	0.0%	0.0%					2251.3	59.1	2519.1	3716.1	2194.1							
24	MO-20-93	1	22.4	22.5	83.4%	66.6%	0.0%	1.5%	0.0%	0.0%	0.0%	18.7%	76.8%	1.0%	9.0%	0.0%	1.0%					2251.1	60.5	2518.9	3716.1	2194.3							
25	MO-20-93	1	22.5	22.5	83.6%	19.0%	0.0%	1.2%	0.0%	0.0%	0.0%	39.9%	53.6%	1.0%	8.0%	0.0%	2.0%					2250.9	61.4	2518.5	3716.1	2194.1							
26	MO-20-93	1	22.5	22.6	63.5%	20.4%	0.0%	3.7%	0.0%	0.0%	0.0%	33.3%	57.7%	6.0%	3.0%	0.0%	1.0%					2251.0	60.9	2519.2	3716.1	2194.0							
27	MO-20-93	1	22.6	22.7	82.2%	69.1%	0.0%	0.6%	0.0%	0.0%	0.0%	9.0%	76.5%	14.0%	1.0%	0.0%	0.0%					2250.9	61.4	2520.0	3715.7	2195.1							
28	MO-20-93	1	22.7	22.8	86.6%	27.3%	0.0%	3.0%	0.0%	0.0%	0.0%	57.8%	31.4%	12.0%	2.0%	0.0%	1.0%					2251.0	60.9	2518.5	3715.7	2194.5							
29	MO-20-93	1	22.8	22.9	79.9%	4.2%	0.0%	10.0%	0.0%	0.0%	0.0%	69.5%	10.7%	9.0%	2.0%	0.0%	1.0%																
30	MO-20-93	1	22.9	23.0	80.9%	30.2%	0.0%	4.0%	0.0%	0.0%	0.0%	47.3%	40.0%	14.0%	3.0%	0.0%	1.0%					2250.7	62.3	2517.3	3716.1	2195.1							
31	MO-20-93	1	23.0	23.0	87.8%	51.1%	0.0%	0.4%	0.0%	0.0%	0.0%	31.8%	50.3%	58.0%	0.0%	0.0%	0.0%					2249.8	66.3	2521.5	3713.7	2195.3							
32	MO-20-93	1	23.0	23.1	86.0%	25.6%	0.0%	1.6%	0.0%	0.0%	0.0%	55.8%	27.3%	22.0%	1.0%	0.0%	0.0%					2250.9	61.4	2521.2	3712.0	2195.2							
33	MO-20-93	1	23.1	23.2	93.5%	87.9%	0.0%	0.4%	0.0%	0.0%	0.0%	2.9%	87.9%	30.0%	0.0%	0.0%	0.0%	0.0%					2250.7	62.3	2521.1	3713.7	2194.7						
34	MO-20-93	1	23.2	23.3	93.4%	59.0%	0.0%	0.6%	0.0%	0.0%	0.0%	13.6%	78.6%	13.0%	1.0%	0.0%	0.0%	0.0%					2250.6	62.7	2520.8	3712.0	2195.3						
35	MO-20-93	1	23.3	23.4	92.5%	73.0%	0.0%	0.5%	0.0%	0.0%	0.0%	4.5%	86.9%	21.0%	0.0%	0.0%	0.0%	0.0%					2250.6	62.7	2520.8	3712.4	2195.4						
36	MO-20-93	1	23.4	23.4	49.4%	9.7%	0.0%	1.0%	0.0%	0.0%	0.0%	29.7%	51.4%	3.0%	16.0%	0.0%	1.0%					2250.7	62.3	2526.2	3711.6	2195.2							
37	MO-20-93	1	23.4	23.5	92.6%	5.0%	0.0%	0.8%	0.0%	0.0%	0.0%	55.5%	29.0%	8.0%	12.0%	0.0%	0.0%	0.0%															
38	MO-20-93	1	23.5	23.6	86.4%	26.1%	0.0%	3.2%	0.0%	0.0%	0.0%	39.0%	53.2%	2.0%	3.0%	0.0%	0.0%	0.0%					2250.8	61.8	2521.6	3712.0	2195.2						

Data Compatibility

- Resampled to Assay Intervals
- Geology and 3D Software Compatible
 - Leapfrog
 - GeotocLog
 - MXDeposit
 - Datarock
 - Others

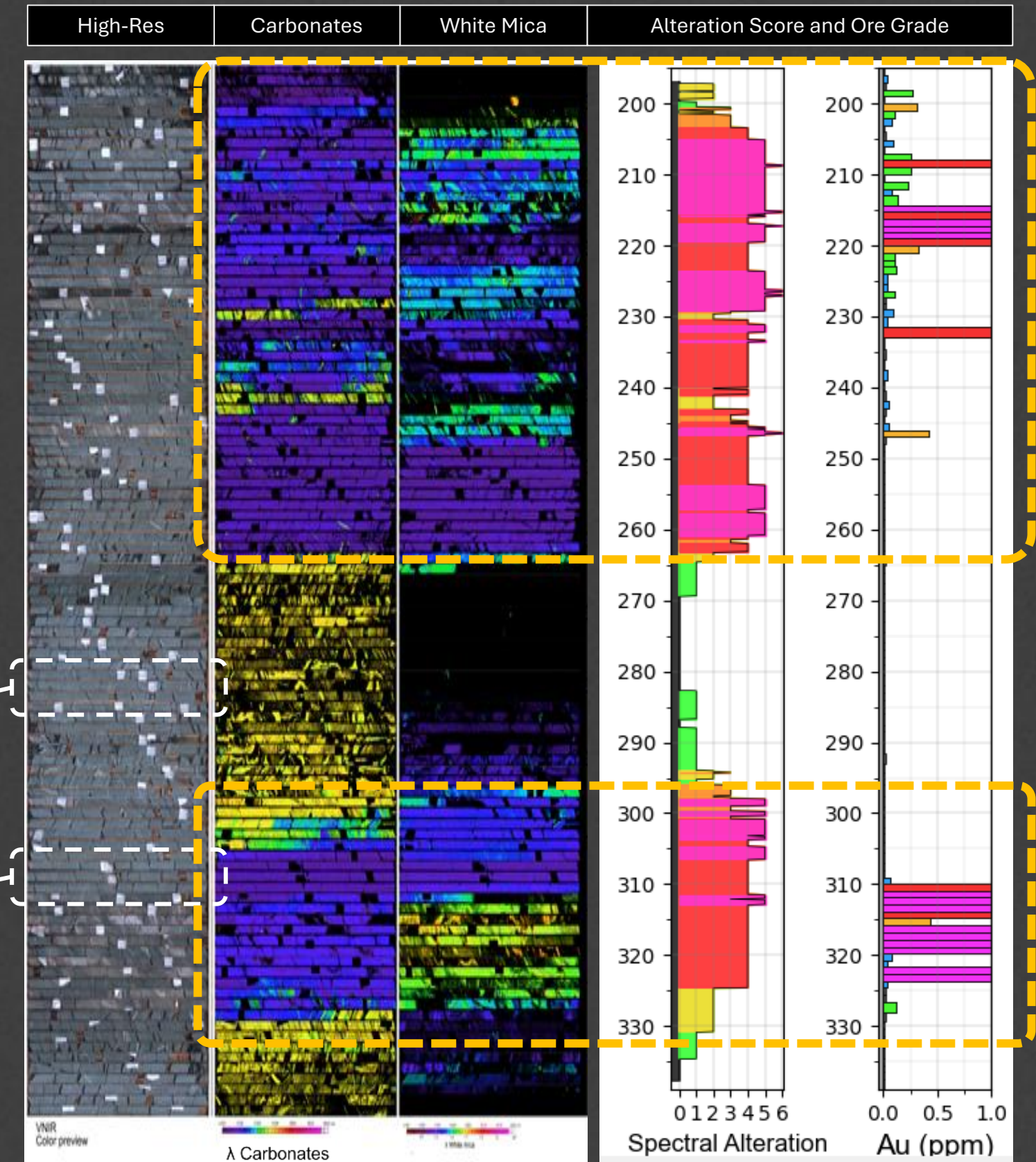
Gold Project

Column 1: High-Resolution Photo of Wet Core

Column 2: Alteration mineralogy **Ankerite** proximal vs **Calcite** distal

Column 3: Detection clays and micas (**Muscovite**)

Background Zone vs Mineralized Zone (White mica presence not visible to the naked eye)



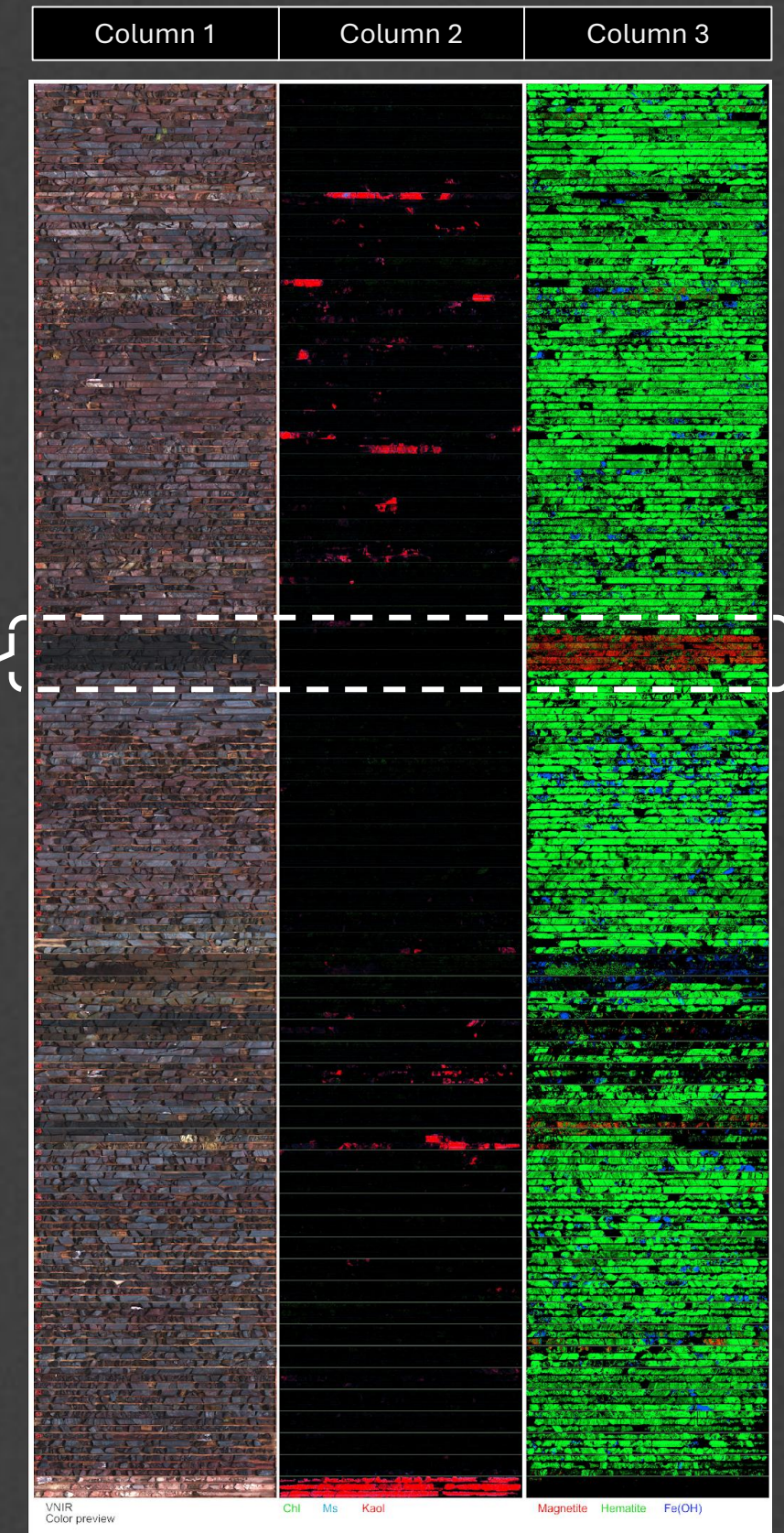
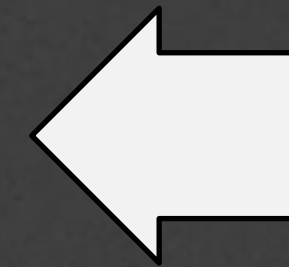
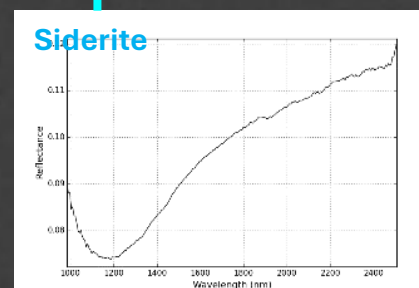
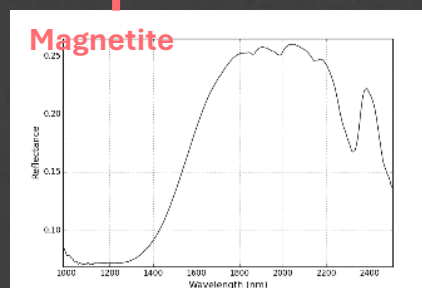
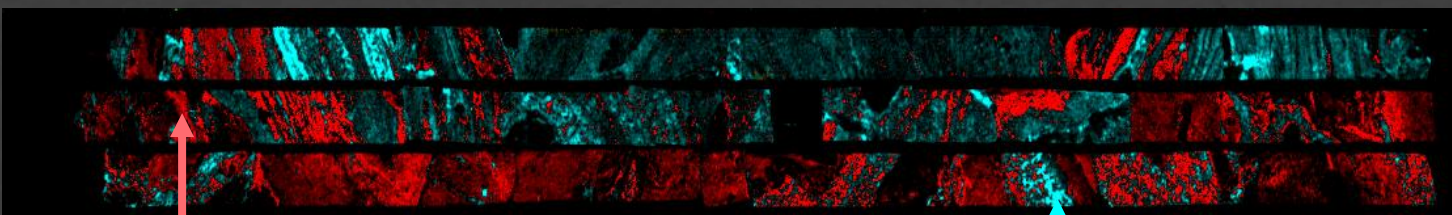
Iron Ore Minerals

Column 1: High-resolution photo of wet core

Column 2: Mapping of deleterious minerals such as **Carbonates** or **Kaolinite**

Column 3: Identification of **Hematite** vs. **Magnetite** vs. **Limonite** ratio

Each pixel will be individually analyzed to highlight mineralogy at **1 mm/pixel**



Copper Project

The presence of these minerals (and the absence of others) can be used to compute a spectral alteration score to estimate if a sample is potentially mineralized

Felsic Rocks:

Cu mineralization is associated to:

- Quartz
- Coarse white mica (high-Al)
- Kaolinite

Distal alteration is associated to:

- Prehnite
- Coarse white mica (low-Al)

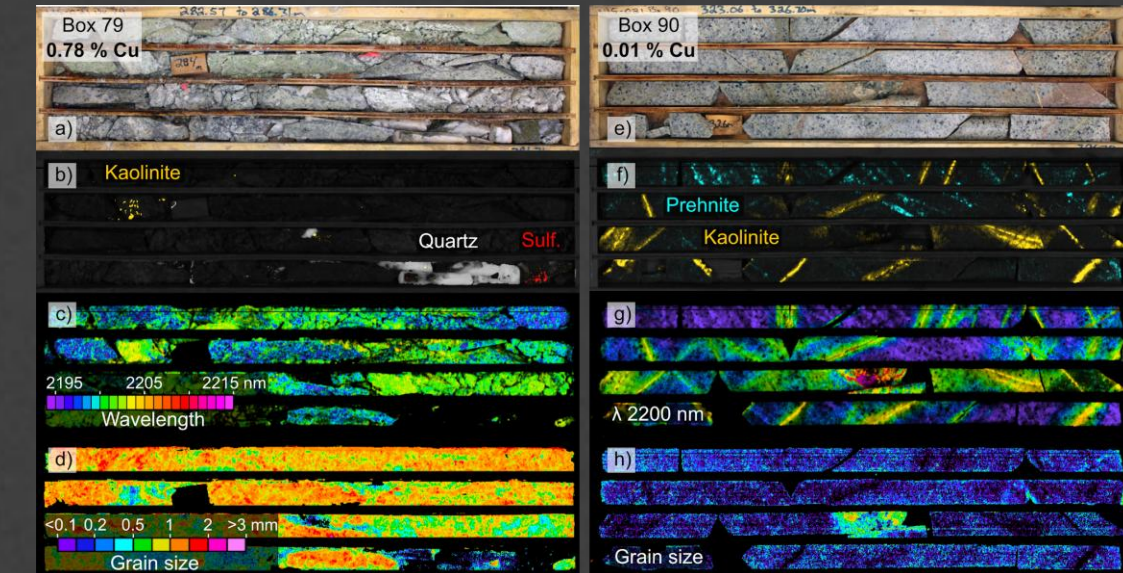
Mafic Rock:

Cu mineralization is associated to:

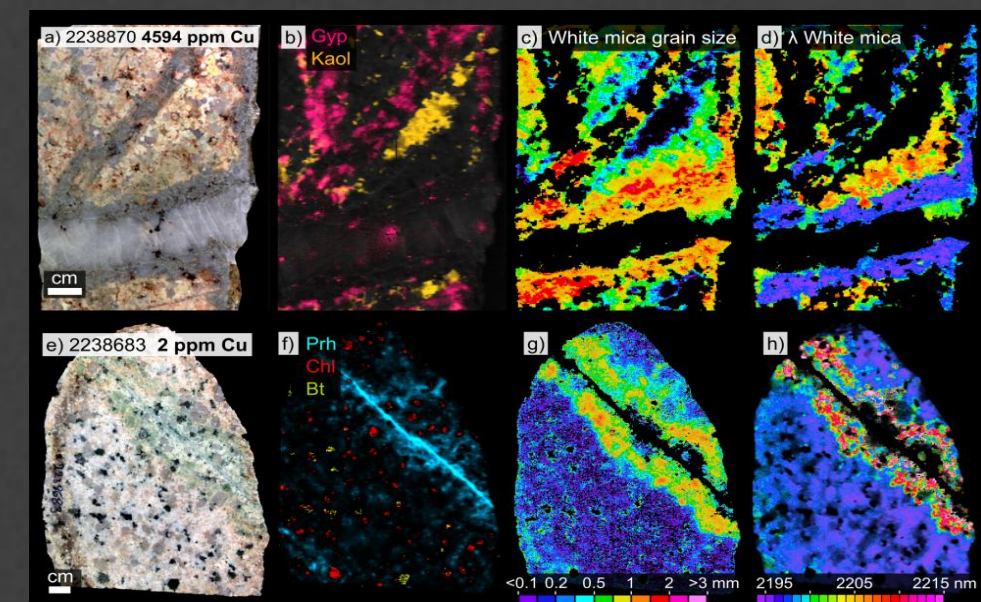
- Tourmaline
- Large amounts of epidote

Distal alteration is associated to:

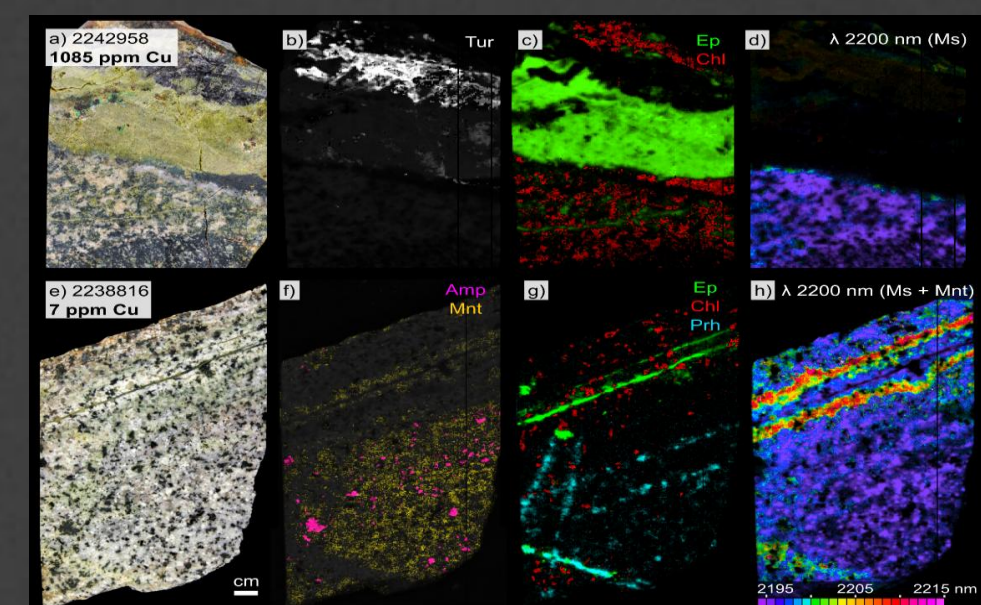
- Prehnite
- Phengitic white mica



Felsic Rocks

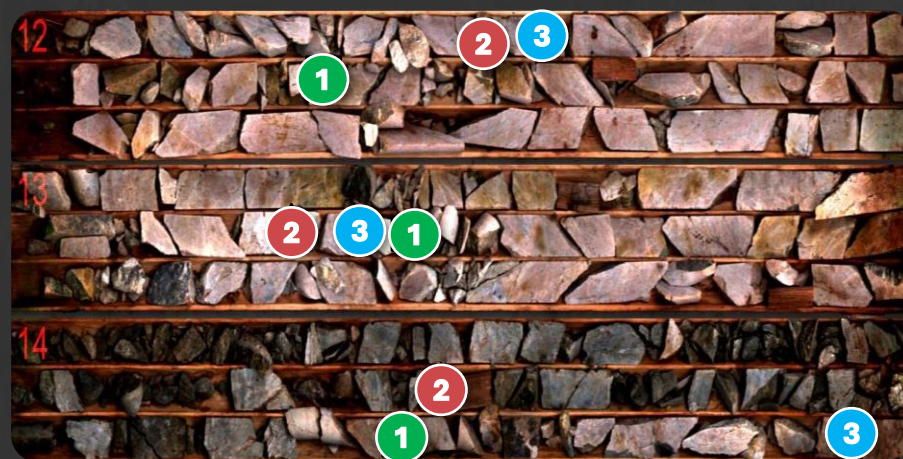


Mafic Rocks



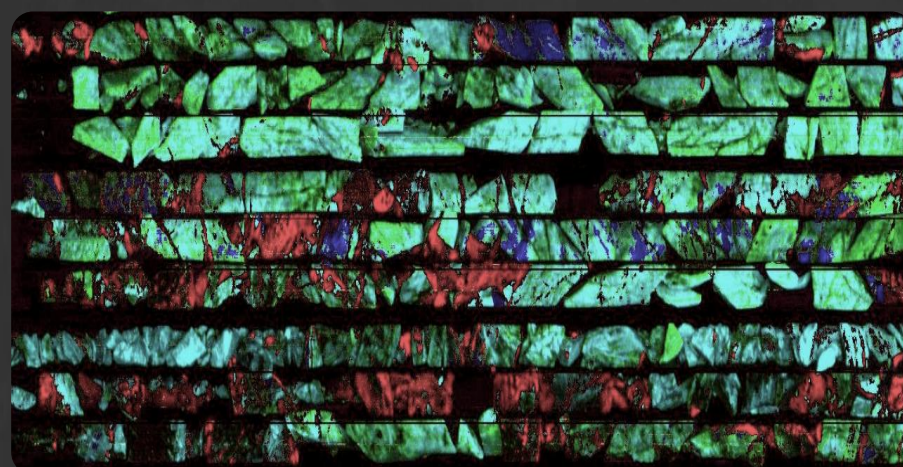
Core Logging

Example: Data Collection Comparison of Manual Logging vs. LithologIQ Hyperspectral Logging



No Hyperspectral (Manual Sampling)

- Sampling 1 → Muscovite
- Sampling 2 → Kaolinite
- Sampling 3 → Clays

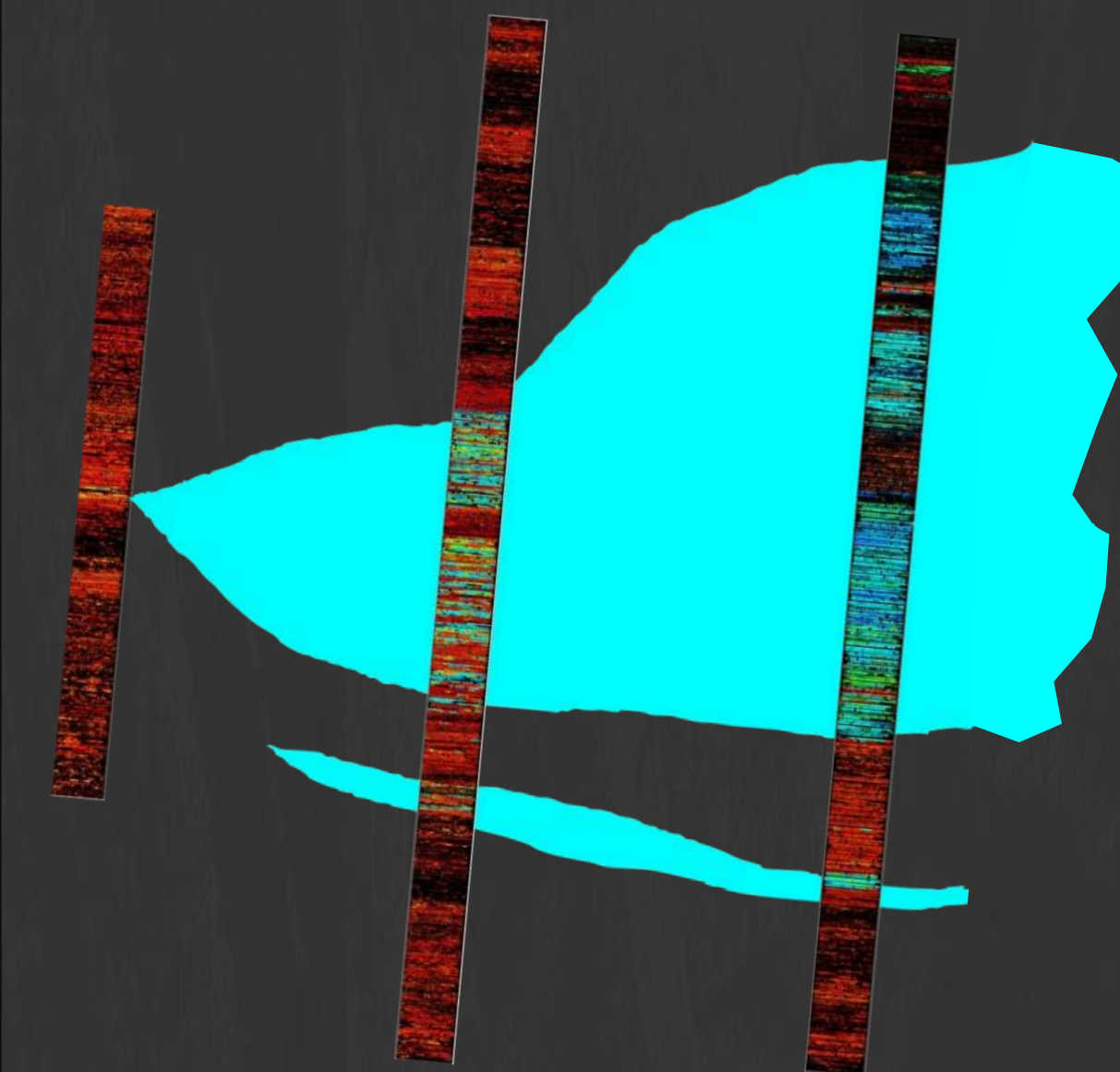


LithologIQ Hyperspectral Imaging (1mm/pixel)

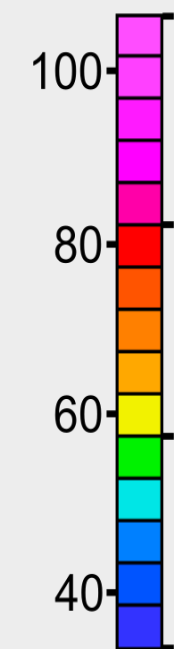
Hyperspectral Imaging → All of Above

- Muscovite → 51.3%
- Kaolinite → 38.4%
- Swelling Clays → 6.4%

Section of Downhole Carbonate Chemistry



Calcite



Ankerite

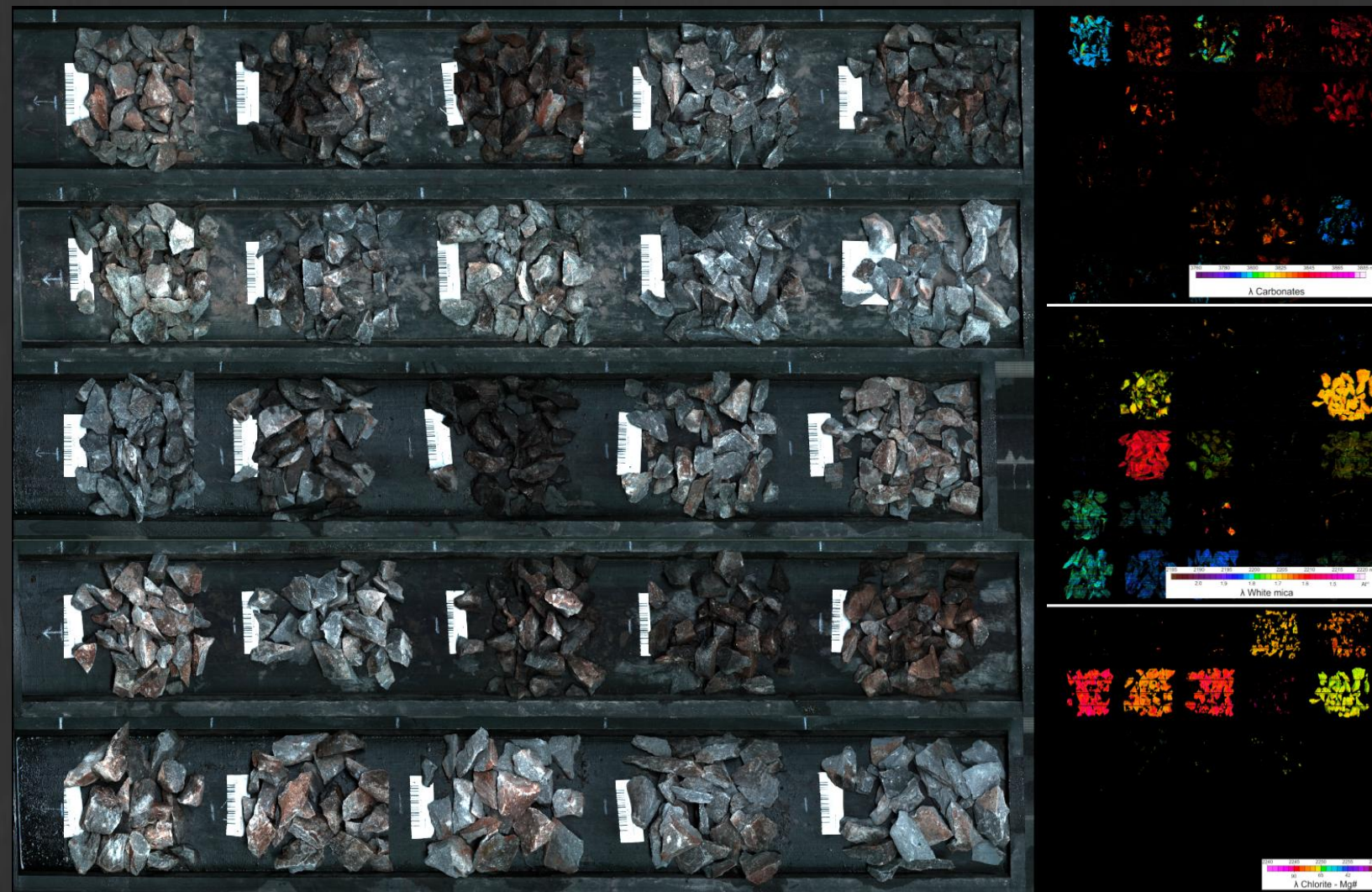


RC Chip Logging

Particles Scanning, Hand Samples

Chip Logging

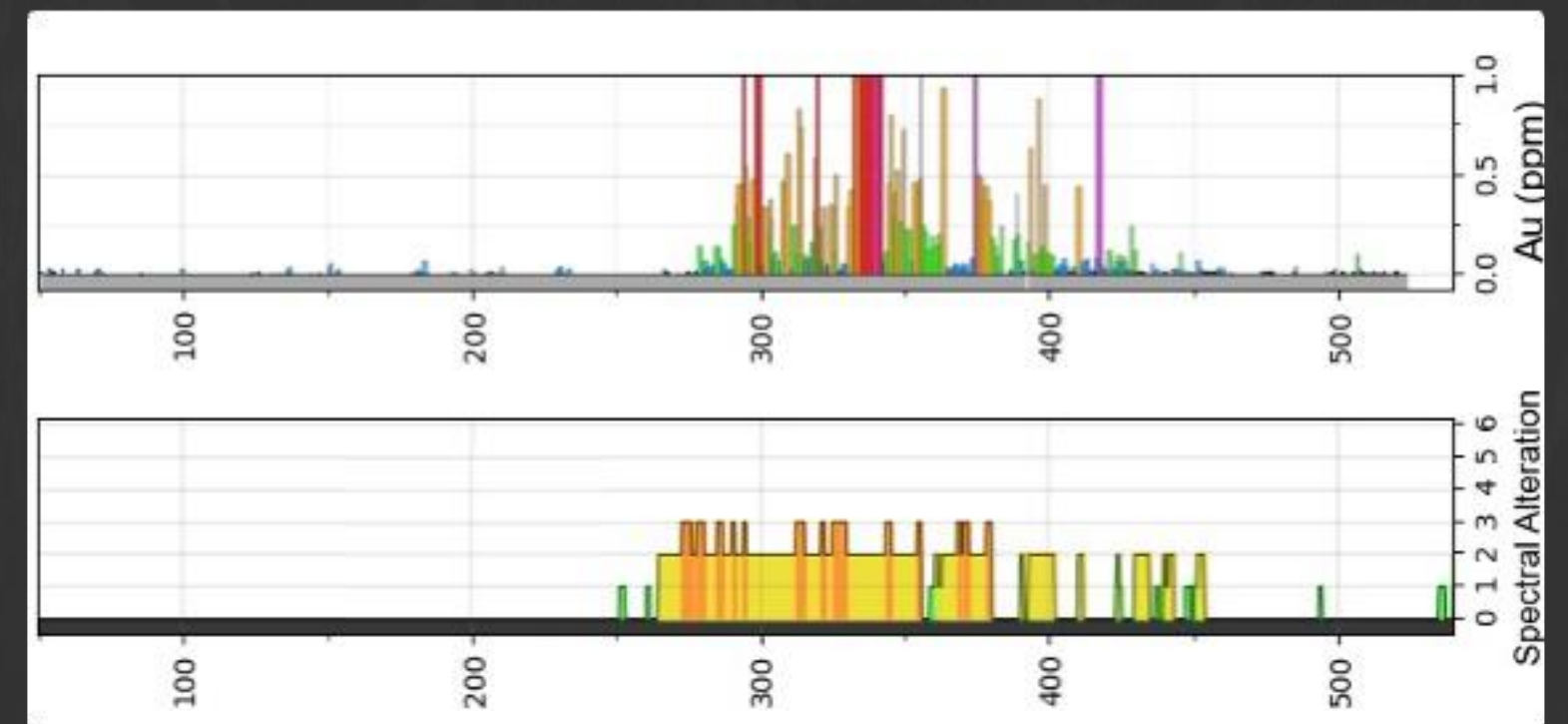
Example: Drill cuttings from blast drilling or ore grade estimation



Quick diagnostic

Case Study Result:

- | | | |
|---|---|-------------------------------|
| Alteration and mineral chemistry mapping | → | Grade Estimation |
| Rock hardness from silicification content | → | Blast Charges Optimization |
| DDH Example on 2000 m of core | → | 96% Accuracy, 57% Specificity |





Core Logging Automation

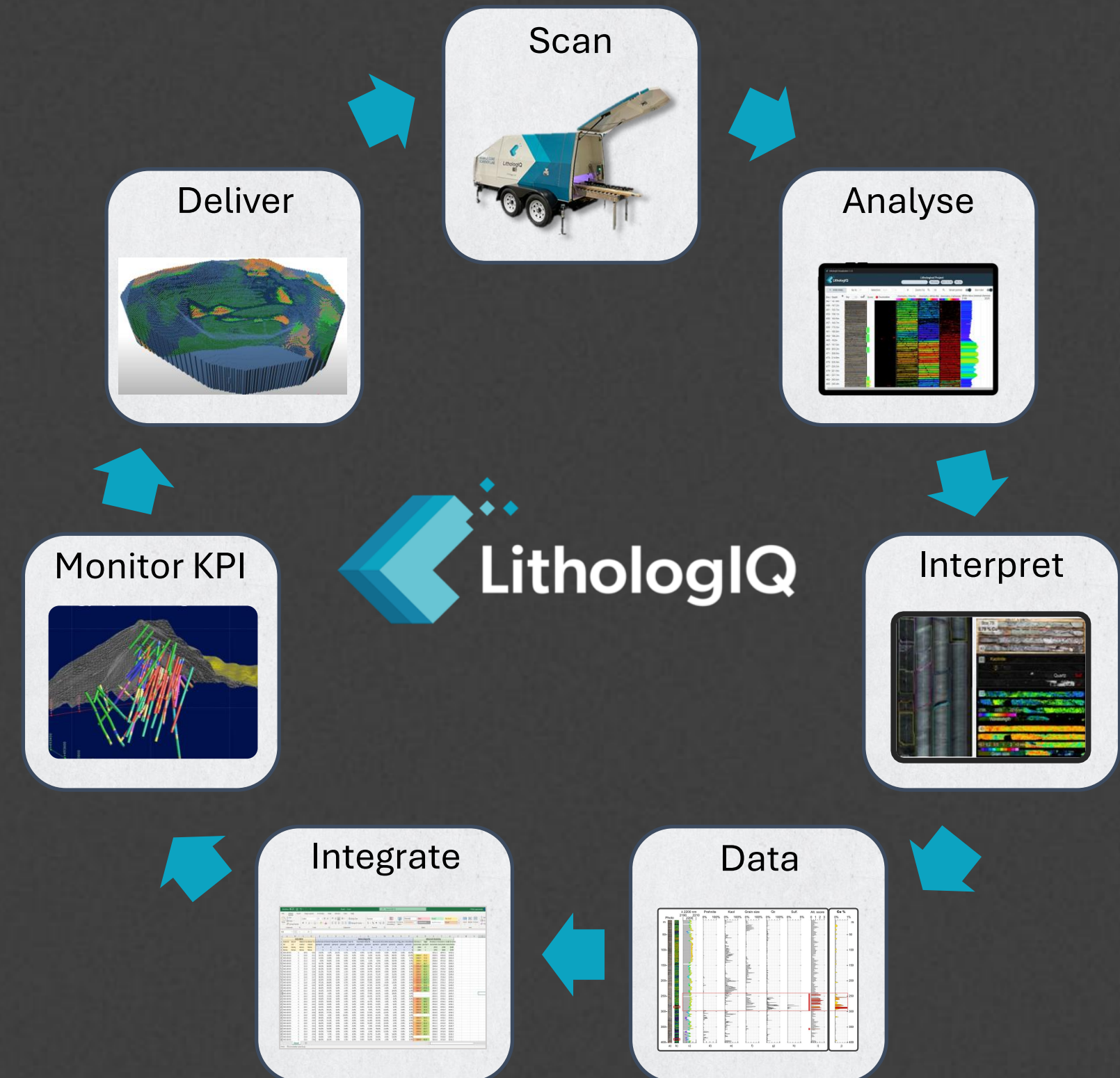
Partner Through the Process

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LithologIQ is built around a complete workflow that helps exploration teams from raw core to informed action:

1. **Scan:** High-speed capture of spectral and visual data
2. **Analyze:** Automated extraction of geological features using AI
3. **Interpret:** Interval tagging, structure detection and alteration zoning, model-ready
4. **Data:** Standardized outputs ready for direct use in geological software
5. **Integrate:** Seamless compatibility with 3D modeling platforms and exploration tools
6. **Monitor:** Real-time KPIs, QA/QC, and geometrical metrics across drilling campaigns
7. **Deliver:** Enables confident decisions on drilling, sampling, budgeting, and resources

By accelerating geological understanding, LithologIQ empowers teams to build orebody knowledge earlier and make better decisions while drilling is still in progress.





LithologIQ Complete Solution

Conclusion

At LithologIQ, we work as partners with our clients throughout the entire process. From the moment core samples are scanned to analyzing the data, interpreting the results, and delivering clear, actionable insights

High Throughput

2,000 m/shift Scanning

Fast Data Delivery

24 hr. Turnaround Time

No Data Training

No Site-Specific Algorithm

On-Site Mineralogy

Offline Data Processing

Core Shack Workflow

Automation Compatible

Cost Reduction

Rapid Return on Investment



Mobile Core Scanning Solution

Connecting Rock Properties to Value Drivers

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VP, Growth

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