Appendix 6.2-B

Edith Lake Fault Zone Investigation and Characterization

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

KGHM AJAX MINING INC.

AJAX PROJECT EA

EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION

FINAL

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July 20, 2015
Project No.: 1125-007-07

Nettie Ore
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Dear Ms. Ore,

Re: Ajax Project EA – Edith Lake Fault Zone Investigation and Characterization - FINAL

Please find attached a copy of the above referenced FINAL report. BGC appreciates the opportunity to be involved in this world class mining project. We look forward to providing continued support to KGHM Ajax Mining Inc.

Should you have any questions or comments, please do not hesitate to contact the undersigned.

Yours sincerely,

BGC ENGINEERING INC.
per:

Cassandra Koenig, M.Sc., P.Geo.
Hydrogeologist

EXECUTIVE SUMMARY

A fault mapped by the B.C. Geological Survey (Logan and Mihalynuk, 2005; 2006) is believed to underlie the North Embankment of the Ajax Tailings Storage Facility (TSF), South Mine Rock Storage Facility (MRSF), West MRSF, Jacko Lake, and Edith Lake. This fault is referred to as the Edith Lake Fault Zone (ELFZ). As part of the ongoing Environmental Assessment (EA) of the Ajax Project, BGC Engineering Inc. (BGC) recommended investigation of this fault because of its potential to influence bedrock groundwater flow below these facilities.

BGC completed a drilling program to determine the presence of the ELFZ and characterize its dip, dip direction, thickness and hydraulic properties. The program included drilling of 2 diamond drill core holes (DH-BGC15-01 and -02), core logging and orientation, installation of groundwater monitoring instruments, packer testing, sampling, and borehole televiewer surveys.

Three possible interpretations of the faulting encountered in DH-BGC15-01 are presented:

1. The ELFZ is a fault intersected from 71.9 metres along hole (mah) to 80.9 mah in DH-BGC15-01. This fault dips steeply to the northeast, has a true thickness of approximately 5 m, and a hydraulic conductivity greater than or equal to $3x10^{-6}$ m/s along the fault zone.
2. The ELFZ is steeply southwest dipping and roughly parallels DH-BGC15-01, with a true thickness of approximately 4 m. Several small faults of this orientation were recorded, one example with a dip and dip direction of 62°/208°.
3. The ELFZ of Interpretation 1 marks the northeastern extent of a larger fault zone which encompasses DH-BGC15-01 from 72 mah to at least 191.5 mah. In this interpretation the ELFZ is near-vertical with a true thickness of approximately 50 to 60 m, and includes faults with a wide diversity of orientations acting as a zone or system, with an overall close-to-vertical orientation.

The information presented in this report will be used in ongoing assessments of groundwater flow for the Ajax Project.

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1.0 INTRODUCTION

1.1. Overview

The Ajax Project (the Project) is currently planned to be a 65,000 tonne/day (t/d) open pit copper and gold mine located in the south-central interior of British Columbia, south of the City of Kamloops. BGC Engineering Inc. (BGC) has been providing KGHM Ajax Mining Inc. (KAM) with hydrological and hydrogeological support for the 2015 provincial Application (the Application) for an Environmental Assessment (EA) Certificate and the federal Environmental Impact Statement (EIS) for the Project, hereafter referred to as the Application/EIS.

The B.C. Geological Survey (BCGS) (Logan and Mihalynuk, 2005, 2006) identified the Edith Lake Fault Zone (ELFZ) underlying Jacko Lake, Edith Lake, and the planned North Embankment of the Tailings Storage Facility (TSF), the West Mine Rock Storage Facility (MRSF) and South MRSF.

Zones of geologic faulting can influence groundwater flow patterns depending on their hydraulic conductivity compared to the host rock. Fault zones may act as preferential groundwater flow pathways if they are more hydraulically conductive than the host rock. Conversely, fault zones may behave as barriers to groundwater flow if less hydraulically conductive than the host rock. In addition, fault movement can create a rock fabric within the fault zone that has greater hydraulic conductivity in directions along the fault plane, and lower hydraulic conductivity across the fault plane potentially resulting in a combined conduit/barrier.

The likelihood of contact water from the above noted mine facilities infiltrating into the bedrock and travelling through the ELFZ to Edith Lake, Jacko Lake and/or Peterson Creek is being evaluated by BGC as part of the groundwater quantity effects assessment for the Project Application/EIS. The location of the area investigated with respect to the Project General Arrangement (GA) is shown on Drawing 1.

1.2. Scope of Work

The objective of the current work was to determine the presence of the ELFZ, and if found to exist, use the available data to characterize its dip, dip direction, thickness and hydraulic properties in the vicinity of the drill hole.

The scope of work completed as part of the 2015 investigation included the following tasks:

- Drill two (2) core holes and perform core logging, vibrating wire piezometer (VWP) installation, fault infill sampling, packer testing, and borehole televiewer surveys.
- Review drill core and develop a structural interpretation with support from Dr. Vin Campbell.
- Assess the location, thickness, orientation, and estimate hydraulic conductivity of the ELFZ.

BGC completed field work for these investigations between February 17 and March 5, 2015.

1.3. Previous Work

The ELFZ was identified by the BCGS and has been included in a geological compilation map of the area (Logan and Mihalynuk, 2006). The 2006 compilation map is based on seven weeks of fieldwork and outcrop mapping by the BCGS, with heavy reliance on previously published mapping and unpublished assessment work. In areas of no exposure or subsurface information, the BCGS relied on an aeromagnetic survey of the area to guide interpretation (Logan and Mihalynuk, 2005).

The trace of the fault, as interpreted by the BCGS, is approximately 12.3 km in length, oriented in a northwest to southeasterly direction, and has an average dip direction of approximately 040°. The ELFZ is covered by overburden over most of its length, and is only shown as exposed in outcrop in a few locations (Logan and Mihalynuk, 2006). The BCGS does not describe outcrop mapping of the fault, explicitly describe its dip, or comment on its thickness or age. The trace of ELFZ shows little topographic deviation as mapped by the BCGS, suggesting a steeply dipping fault plane. It was originally interpreted by the BCGS as a thrust fault; thrust faults typically have shallow dip angles. In personal communications with BGC, Mihalynuk (2015) clarified that the ELFZ is considered to be a steeply dipping reverse fault.

The interpreted ELFZ cross-cuts late Triassic Nicola Group bedrock in the vicinity of the 2015 ELFZ drilling program (Drawing 2) and is overlain by a thick blanket of glacial sediment. It does not extend to topography. The available mapping predicts sedimentary rocks with augite porphyry source in this area. These sedimentary rocks are described by Logan and Mihalynuk (2006) as:

> "Green, grey and black interlayered pyroxene porphyritic breccias, crystal-rich tuffite and subordinate thin-laminated siltstone. The unit consists primarily of thick bedded or massive, well sorted sandstone units comprising primarily pyroxene and plagioclase crystals are rare lithic grains. Intercalated with these massive sandstone units are crystal-lithic tuff that forms distinct graded beds, between 10 and 50 cm thick, and thin-laminated, commonly graded, siltstone-sandstone couplets."

Volcanic sub-units of the Nicola Group mapped in the study area include: augite porphyry, picrite flow or breccia, and porphyritic lapilli tuff. The ELFZ marks a contact and offset between sedimentary rocks and these volcanic units (Logan and Mihalynuk, 2006).

Dr. Campbell completed outcrop mapping and a review of existing data to investigate the ELFZ (BGC, 2014), and found limited evidence of faulting near the mapped trace of the ELFZ in drilling results from Knight Piesold and KAM. One of the drill holes reviewed was KAM condemnation hole KAX-14-126, located in the current study area (Drawings 2 and 3), where faulting and shearing was noted from 119.5 m to 144.7 m below ground surface in picrite. Data from this drill hole are also considered in the current work by BGC.

2.0 SITE INVESTIGATION PROGRAM

Site investigations were completed between February 17 and March 5, 2015. Two geotechnical drill holes (DH-BGC15-01 and DH-BGC15-02) were completed as part of this work (Table 1) in the area of the ELFZ trace interpreted by the BCGS (Drawing 2). The holes were drilled at an angle of 65 to 67 degrees from the horizontal and oriented to intersect the mapped fault trace. Due to uncertainty in the fault location, and the potential for either multiple steeply dipping reverse faults (i.e., a fault zone), or a potentially thicker shallower dipping thrust fault, the two holes were advanced in a fence line to increase the likelihood of intersecting the fault/fault zone.

Diamond core drilling was performed by Geotech Drilling Services (Geotech) using a skid mounted A-5 drill rig at both drill holes. Bentonite mud was used during overburden drilling. Polymer mud was used during bedrock drilling. All coring was completed using a triple-tube HQ3 core barrel setup, yielding 61 mm diameter core. BGC was present on a 24-hour rotation to observe drilling activities. Geotechnical logging of soil and rock, sample collection, and core photography was completed at the rig. BGC conducted packer testing at select intervals of the drill holes. Acoustic televiewer surveys were conducted in each boring by BGC staff. After the drilling and televiewer surveys were completed, vibrating wire piezometers were installed in each of the drill holes.

Geotech collected drilling returns in a trench at the borehole collar that drained into a sump that was backfilled. Gouge samples were bagged and some samples were submitted for laboratory testing.

2.1. Rock Core Logging

Core recovered during drilling was geomechanically logged by BGC following industry standard methods. Geotechnical borehole logs describing the rock mass encountered, features of geological and geotechnical note, and conditions during drilling are presented in Appendix A.

The rock core retrieved during this drilling investigation was boxed and brought to the core shack for geological logging by KAM geologists. Draft geological logs provided by KAM are included in Appendix B. While the core was undergoing geological logging, Dr. Vin Campbell reviewed the core on behalf of BGC. His observations and geological interpretations (Appendix C) have been incorporated into BGC's assessment of the ELFZ. The drill core was subsequently stored in core racks at the KAM camp.

Regional geology is discussed in BGC, 2015. The following is a summary of the units encountered during the site investigation:

- PICRITE: encountered in DH-BGC15-01 and DH-BGC15-02, picrite is a greyish-green mafic to ultramafic volcanic rock of the Nicola Group with a very fine grained groundmass and up to 50% medium grained phenocrysts (Figure 1). This unit is generally poor to fair rock quality, faintly to moderately altered, medium strong, with

closely spaced discontinuities. One section of highly to completely altered picrite was observed from 57.9 metres along hole (mah) to 68.4 mah in DH-BGC15-02 (Figure 2).

- MUDSTONE: a typically very fine grained bedded sedimentary unit of the Nicola Group encountered mainly in DH-BGC15-01 (Figure 3). This unit is generally dark grey, interbedded with sandstone and siltstone, with a highly variable rock quality.
- SANDSTONE: a well graded sedimentary unit of the Nicola Group (Figure 3). Sandstone was encountered mainly in DH-BGC15-01, though it comprises the dominant clast type in the volcaniclastic rock of DH-BGC15-02. Sandstone was observed to be greyish green, generally poor quality, faintly to moderately altered, medium strong, with closely spaced discontinuities. Some sandstone intervals are good quality; an example of good quality sandstone is presented in Figure 3.
- VOLCANICLASTIC: observed only in DH-BGC15-02, this is a polymictic unit with a mafic, chlorite rich groundmass and varying amounts of sandstone, mudstone, and picrite clasts (Figure 4). The volcaniclastic unit is dark green to greyish pink, generally good quality, fresh to faintly altered, medium strong to strong, with moderately to widely spaced discontinuities.

The contacts with sedimentary units at the base of the two picrite layers are highly faulted.

2.2. Drilling Observations

BGC made the following observations during drilling:

DH-BGC15-01

- Casing was advanced to a depth of 43.5 mah, 0.6 m past the top of bedrock at 42.9 mah.
- Recovery in overburden was poor. Recovered material consisted of well graded gravel with trace amounts of sand and silt.
- Bedrock drilling conditions were fair. Geotech encountered difficult drilling conditions from approximately 70 mah to 80 mah and 180 mah to 195 mah. In these locations the drilling contractors noted grabbing of the drill rods, and reaming was required to continue drilling.
- The borehole fluid was level with the ground surface during overburden drilling. Note bentonite was used during overburden drilling; the borehole fluid level likely does not represent static groundwater conditions.
- The first measured borehole fluid level during bedrock drilling was 17.8 mah, when the drill hole had been advanced to 52 mah. This level generally increased as drilling advanced, with a measured fluid level of 13.0 mah after reaching target depth. Water levels were measured at shift change or prior to packer testing, when the borehole fluid

had approximately 30 minutes to as much as one hour to stabilize. As such, these level readings are not likely to represent 'static' groundwater conditions.

- Loss of drilling fluid return was observed over large portions of the drill hole, from (approximately) 67 mah to 79 mah, 115 mah to 142 mah, and 148 mah to 200 mah.
- Recovery was poor in several faulted sections, notably from 71.5 mah to 80.9 m, 140.5 mah to 159.3 mah, and 182.5 mah to 192.1 mah.

DH-BGC15-02

- Casing was advanced to 57 mah, just above the bedrock contact encountered at 57.9 mah.
- Recovery in overburden was poor. Recovered material generally consisted of well graded gravel with some sand and some silt.
- Bedrock drilling conditions were good and core recovery was excellent.
- The borehole fluid level was recorded as 1.6 mah during overburden drilling.
- The first measured borehole fluid level during bedrock drilling was 8.9 mah, when the drill hole had been advanced to 111 mah. This level varied as drilling advanced, reaching 27.8 mah when the drillhole had been advanced to 176 mah and 16.9 mah after reaching target depth. Water levels were measured at shift change or prior to packer testing, when the borehole fluid had approximately 30 minutes to as much as one hour to stabilize; these levels likely do not represent static groundwater conditions. The borehole fluid level was measured at 41.5 mah during the televiewer survey of the hole approximately 12 hours after drilling and packer testing were complete.
- No loss of drilling fluid return was observed.

2.3. Structural Data Collection and Observations

2.3.1. Televiewer Surveys

BGC completed borehole televiewer surveys at DH-BGC15-01 and DH-BGC15-02 using an acoustic televiewer (ATV). The ATV is a geophysical tool that emits ultra-sonic pulses and records the reflection of those pulses from the borehole wall. It requires fluid in the borehole to function. The data collected by the ATV include borehole orientation, magnetic field, borehole fluid temperature and amplitude and travel time of the reflected acoustic signal. These data can be used to estimate the orientation, density and in-situ aperture of discontinuities intersected by the boreholes. The data from these surveys also provide accurate estimates of location and orientation of closed features such as contacts, bedding and veins where there is a discernable change in acoustic reflectivity.

In DH-BGC15-01, several zones of bedrock were excluded from the surveys as poor borehole conditions increased the likelihood of damage to the televiewer probe. DH-BGC15-01 was

surveyed from 45.6 to 49.3 mah, 54.8 to 74.2 mah, 81.6 to 103.3 mah, and 105.3 to 128.2 mah. Most bedrock in DH-BGC15-02 was surveyed; only a zone of highly to completely weathered picrite from 57.9 to 70.2 mah was excluded. Surveyed intervals are shown on the summary logs in Appendix A.

BGC analyzed the televiewer data to identify and match features from the televiewer survey to features observed in the drill core. This matching process allowed BGC to combine discontinuity type and character information from manual core observations with the orientations and aperture measured by the ATV. Some of the features identified in the ATV could not be matched to manually logged features; those discontinuities were assigned types based on their appearance in the surveys and comparison with nearby matched discontinuities. A 360 degree digital caliper log was produced from travel time data recorded as part of the ATV survey; the minimum and maximum borehole diameter data and the position of these readings with respect to magnetic north were estimated from the digital caliper data. The televiewer logs are provided in Appendix D. The geological structures logged from the televiewer surveys are discussed further in Sections 2.3.3 and 2.3.4.

2.3.2. Core Orientation

Drill core was oriented using the Reflex ACT III tool. The orientations of discontinuities relative to the ACT reference line were measured at the drill rig by BGC. These data were processed to calculate dip and dip direction. The geological structures logged from the boreholes are discussed further in the following sections.

2.3.3. Rock Mass Fabric

Sets or “families” of geological structures which divide the rock mass into blocks are considered to be part of the rock mass fabric; the majority of these discontinuities are shears, minor faults, or joints with limited persistence or aperture. BGC analyzed structural data from oriented core and televiewer data (Figures 5 and 6) to characterize the rock mass fabric. All orientations are provided in the dip/dip direction convention.

The three most prominent sets in DH-BGC15-01 include a steeply east dipping set (71°/081°), a subvertical west-southwest dipping set (85°/253°), and a moderately west dipping set (45°/259°) (Figure 5). In DH-BGC15-02, the major sets include a steeply east-dipping set (71°/080°), a moderately west-dipping set (36°/282°), and a vertical set dipping towards the north and south (89°/185°) (Figure 6).

2.3.4. Faults

Faults represent discrete and distinct geological structures where displacement has occurred. Zones of intense fracturing or altered and disintegrated rock (“gouge”) may be associated with faults. Faults with measureable orientations from the oriented core and/or televiewer data are presented on Figures 7 and 8.

No evidence of faulting was observed in overburden. Faulting was encountered at several bedrock depth intervals in DH-BGC15-01 (Appendix A). A list of faults identified in core logging is included in the first table of Appendix C. The following list incorporates those data and also includes 'damage zones' of weakened or reduced quality rock. The largest fault zones in DH-BGC15-01 are:

72 mah to 80.9 mah: Recovery of core and possible fault infill material in this zone was poor. The interpreted hanging wall has a measured orientation of 83°/039° from televiewer data. Adjusting for the orientation of the drill hole and the fault, the calculated 'true' thickness of the fault is approximately 5 m. An oriented core measurement of 76°/074° was recorded from a possible secondary hanging wall within this zone at 74.5 mah.

Most of the fault infill material recovered over this zone is gravel-sized (Figure 9). Finer grained constituents may have washed away during the drilling process, contributing to the low recovery through this fault. Drilling fluid return loss, which can indicate faulting or zones of high hydraulic conductivity, occurred just above this fault at approximately 67 mah.

This zone is straddled by fair quality picrite in the hanging wall and good quality mudstone in the foot wall. The picrite-mudstone contact is located between 74.5 mah and 76.0 mah; the precise depth of the contact between these units is unclear due to poor core recovery. The damage zone in the immediate vicinity of the fault is observed to be minor, and only a small amount of fault gouge was recovered from within the fault zone.

140.5 mah to 149.5 mah: Poor recovery was encountered in this zone. Fault breccia infill from this zone is described as silty fine to coarse sand with some gravel. Oriented core fault measurements from this zone indicate structures generally steeply dipping to the southwest (approximately 62°/208°), roughly parallel to the drill hole. True thickness of this zone is approximately 0.5 m for this orientation.

149.5 mah to 166 mah: The fault infill from within this zone was sampled and consists of sandy, well graded gravel with some high plasticity clay. Oriented core fault measurements from this zone show structures generally dipping shallowly to the southwest (approximately 28°/212°), with some structures dipping steeply to the northeast. True thickness of this zone calculated from this orientation and the intersected thickness is approximately 10 m.

182.5 mah to 191.5 mah: A sample of fault breccia infill from this zone is described as low plastic, firm to hard silt with some gravel and some sand. Only two oriented core fault measurements are available from this zone. One measurement is of a tight fault (i.e., having an aperture thickness of approximately 1 mm) that dips moderately towards the southwest (56°/231°), and the other is a steeply northeast dipping fault (67°/035°). Using these orientations as inputs, calculated true thickness ranges from 2 m to 7 m.

No faults with an aperture thickness greater than 1 m were observed in DH-BGC15-02, except for a generally good rock quality zone from 67.4 m to 79.0 m, which was logged in the KAM geology logs as a healed fault. The largest poor quality fault in DH-BGC15-02 was

encountered at a depth of 166.8 m in the volcaniclastic unit, with an intersected thickness of 0.6 m and gravel infill.

The geology logs of KAX-14-126 (Appendix B) describe fault-related fracturing, faulting, gouge, and shearing between approximately 119.5 mah and 144.7 mah (Figures 10 and 11). No dip or dip direction data are available for this zone. The rock below this depth in KAX-14-126 is generally good quality.

2.4. Vibrating Wire Piezometer Installations

Fully-grouted vibrating wire piezometers (VWPs) were installed into both boreholes upon completion of drilling and downhole testing. Six vibrating wire piezometers were installed in total, three in each borehole, to measure pore-pressures within the bedrock. VWP 1 in DH-BGC15-01 was installed 1.5 mah above the interpreted ELFZ hanging wall (discussed in Section 3). The pore pressure data and elevations of the VWPs were used to calculate the approximate vertical component of hydraulic gradient at each borehole location. Data loggers are housed within a dedicated enclosure at each drill hole collar. Instrumentation details are provided in Table 2 and shown on Drawing 3. Groundwater elevations shown on Drawing 3 were measured on June 17, 2015. VWP data are plotted on Figure 12 and approximate vertical hydraulic gradients are included in Table 2.

Piezometric heads in DH-BGC15-01 appear to have a slight upward vertical gradient, while the heads in DH-BGC15-02 show little variation with depth.

2.5. Packer Testing

2.5.1. Overview

Packer tests were completed at select depths in boreholes DH-BGC15-01 and DH-BGC15-02 to characterize the hydraulic conductivity (K) of the bedrock and potential fault zone(s) prior to the installation of the VWPs. Test intervals targeted zones above, within and below faults observed in the drill core as indicated by increased fracture intensity, poor core recovery or soil-like material inferred to be fault gouge.

A total of nine packer tests were completed (Table 3, Appendix E): six tests within DH-BGC15-01 and three within DH-BGC15-02. Eight of the tests were constant head injection tests. A single falling head test was completed in DH-BGC15-02 between 197.6 mah and 225.9 mah because no measurable volume of water could be injected into the test zone during attempted constant head testing. Of the nine tests that were conducted, five were completed within the Nicola Group sediments and volcaniclastics and four were completed within picrite.

Each target interval was flushed with water for 20 to 60 minutes or until clean return water was observed. No bentonite muds were used during bedrock drilling. Pneumatic (nitrogen) packer testing equipment provided by the drilling contractor was used to isolate each zone for hydraulic testing. Packer testing was performed according to industry-standard procedures,

consistent with other work undertaken by BGC for The Project. Packer testing procedures are detailed in Appendix G of BGC, 2015.

2.5.2. Results

BGC analyzed packer testing data using the Lugeon interpretation practice proposed by Houlsby (1976). This interpretation practice involves comparing flow rates at five pressure intervals to choose a representative conductivity value, based on the behavior of the rock during the test. During packer tests 1, 2, and 4 in DH-BGC15-01, target injection pressures were not achieved even when pumping at near the drill pump's maximum capacity (i.e. bedrock accepted water faster than the drill rig could pump without potentially damaging equipment, approximately 13 gallons per minute). Results for these tests are presented as lower bound estimates of the hydraulic conductivity for these zones. The falling head test completed in DH-BGC15-02 (test 3) was analyzed using the Hvorslev (1951) solution for a slug test in an unconfined aquifer.

Packer test results are presented on Table 3 with test intervals and interpreted hydrostratigraphic units, and are shown for each borehole on Section A (Drawing 3). Table 3 and Drawing 3 show that:

- Hydraulic conductivity estimates from packer tests conducted in DH-BGC15-01 and above the potential ELFZ are on the order of 2 $x10^{-6}$ m/s (test 6 between 55 and 61 mah) to greater than 3 $x10^{-6}$ m/s (test 1 between 55 and 64 mah).
- Hydraulic conductivity is estimated to be greater than or equal to 3 $x10^{-6}$ m/s for the zone interpreted to be the intercepted ELFZ, found between a depth of 72 mah to 80.9 mah in DH-BGC15-01 (i.e., test 2).
- Hydraulic conductivity for the unfaulted sedimentary rocks of the Nicola Group tested below the potential ELFZ in DH-BGC15-01 is estimated to be 2 $x10^{-7}$ m/s.
- Hydraulic conductivity estimates from tests conducted within the unfaulted volcaniclastic rocks encountered in DH-BGC15-02 were lower than the values estimated from tests conducted in DH-BGC15-01 by an order of magnitude or more (i.e., 4 $x10^{-9}$ to 2 $x10^{-8}$ m/s).
- There is no discernable correlation between hydraulic conductivity and test depth based on the tests conducted in DH-BGC15-01.
- Hydraulic conductivity decreases with depth in DH-BGC15-02 based on the three packer tests conducted in this hole. This is consistent with the general trend observed within the compiled dataset for the Ajax Project (BGC 2015).

Packer test results for the ELFZ investigation were also compared to the available data from previous studies on the Ajax property completed by BGC and others (Table 4). Tables 3 and 4 show:

- The range in estimated hydraulic conductivity for the five tests conducted within the sedimentary and volcaniclastic rocks (4 $x10^{-9}$ to $1x10^{-6}$ m/s) is in agreement with the range of estimated values from previous work (3 $x10^{-10}$ to 8 $x10^{-6}$ m/s).
- Of the four tests conducted within picrite, three were higher than the maximum hydraulic conductivity value of 6 $x10^{-7}$ m/s estimated from previous work.
- The estimated hydraulic conductivity from all tests conducted within interpreted faulted zones are higher than the maximum estimated values from the Ajax Project database (BGC, 2015).

Packer test calculation sheets and curve fits to test data are provided in Appendix E.

2.6. Fault Infill Sampling and Testing

BGC completed visual descriptions of fault infill according to the Unified Soil Classification System (USCS) (Casagrande, 1948). BGC selected five samples of this infill for Atterberg limits, grain size distribution, and X-ray diffraction (XRD) testing. Atterberg limit and grain size distribution testing was done at a laboratory owned by Golder Associates located in Vancouver, and XRD testing was done by the University of British Columbia (UBC). Grain size results show that fault infill is typically composed of roughly equal amounts of sand and gravel with some fines. Atterberg limit testing results show that the fines are low plasticity clay, except for Sample 13 from 150 mah in DH-BGC15-01, which is high plasticity clay. XRD testing shows that the clay found in the faults is mainly composed of (from greatest to least percent composition) montmorillonite, clinochlore (chlorite), quartz, and dolomite, along with trace amounts of eight other clay minerals. Laboratory testing reports are provided in Appendix F.

3.0 CONCLUSIONS AND DISCUSSION

The drilling program identified a zone of faulting that supports the existence of the ELFZ. However, there is uncertainty in the interpretation of the extent, orientation (dip and dip direction), thickness and hydraulic properties of the ELFZ due to the available data and current understanding of the Ajax Property geology. Based on the available evidence, there are three potential interpretations of the zone of faulting encountered in the drilling program. Conceptual sketches of each interpretation are presented on Figure 13.

3.1. Interpretation 1

In Interpretation 1 the ELFZ is interpreted to be a fault intersected from 71.9 mah to 80.9 mah (approximately 59.2 m bgs to 67.9 m bgs) in DH-BGC15-01. This fault was measured to steeply dip to the northeast (83°/039°). The ELFZ has an estimated true thickness of approximately 5 m, and a hydraulic conductivity in the zone tested of greater than 3×10^{-6} m/s, over an order of magnitude higher than the surrounding country rock. Fault infill material recovered from this zone is comprised mainly of gravel; little gouge was recovered. The fault zone occurs at a contact between picrite and sedimentary rock from the Nicola Group.

This fault's location and orientation are consistent with the BCGS interpretation of the ELFZ (Logan and Mihalynuk, 2006), and when projected in cross section (Drawing 3) it appears to be consistent with the largest fault encountered in KAM condemnation borehole KAX-14-126 (Figures 10 and 11), located from approximately 119.5 mah and 144.7 mah. The fault zones in DH-BGC15-01 and KAX-14-126 spatially coincide assuming a fault dip of approximately 80°. This corresponds with a true thickness of approximately 4 m in KAX-14-126.

In this interpretation the other faults encountered at greater depths in DH-BGC15-01 are not included as part of the ELFZ. If these faults are continuous and steeply dip to the northeast they should be observed in KAX-14-126, but rock quality in KAX-14-126 is generally good from 144.7 mah to the end of hole.

Campbell (Appendix C) notes that the ELFZ trace is mapped as defining the southwest limits of the Nicola Group picrite unit. If true, this is incongruent with Interpretation 1 as picrite is encountered to the southwest of the ELFZ in DH-BGC15-01 (Drawing 3). There is some uncertainty regarding the location and age relationship between picrite and other units. The BCGS (2005) notes instances of picrite-sedimentary inter-beds and makes the following comment: "in no location is it possible to demonstrate unequivocal intrusive relationships, although feeder dikes must exist locally".

3.2. Interpretation 2

The ELFZ is a steeply southwest (instead of northeast) dipping fault zone that encompasses DH-BGC15-01 from 72 mah to 191.5 mah and is oriented roughly parallel to the drill hole. Several faults of this orientation were recorded, one example with a dip and dip direction of 62°/208°. Despite its much longer drill hole intersection than Interpretation 1, this interpreted fault has a calculated true thickness of only approximately 4 m because of its similar

orientation. The observed widths of the faults measured to subparallel DH-BGC15-01 are generally small; the largest having an intersected true thickness of 34 mm.

3.3. Interpretation 3

The fault interpreted as the ELFZ in Section 3.1 marks the northeastern extent of a larger fault zone which encompasses DH-BGC15-01 from 72 mah to at least 191.5 mah. In this interpretation the ELFZ has a true thickness of approximately 50 to 60 m, and includes faults with a wide diversity of orientations acting as a zone or system as suggested as a possibility in Appendix C. As the good quality rock observed at depth in KAX-14-126 does not resemble the more faulted rock observed in DH-BGC15-01, this would require a close-to-vertical fault zone orientation.

4.0 CLOSURE

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Yours sincerely,

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per:

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TABLES

Table 1. Drill Hole Summary

Hole ID	Source	Easting[1]	Northing[1]	Elevation[1]	Trend	Plunge	Final Length	Comments
					(°)	(°)	(m)	
DH-BGC15-01	BGC	682638	5608871	938	219	-65	200.5	
DH-BGC15-02	BGC	682712	5608971	948	219	-67	225.9	
KAX-14-126	KAM	682620	5608858	934	N/A	-90	304.5	Basic rock mass and geology data only[2]

1. All coordinates provided in UTM Zone 10. See Drawing 1 for drill hole locations.
2. Logs for KAX-14-126 were provided by KAM on February 24, 2015.

Table 2. Vibrating Wire Piezometer (VWP) Installation Summary

Hole ID	Planning Hole ID	VWP Number	VWP Serial Number	Pressure Rating (MPa)	Depth of VWP (m along Borehole)	Elevation of VWP (m above sea level)	Piezometric Head (m above sea level)	Lithology	Interval Includes Fault Zone(s)	VWP Installation Date	Data Logger Serial Number	Data Logger Installation Date	Approximate Vertical Hydraulic Gradient
DH-BGC15-01	A-1	1	VW31159	3.0	71	874	916.5	Picrite	Y	2/25/2015	4124; Port 5	2/27/2015	-0.0248
		2	VW31164	10.0	151	801	918.3	Picrite	Y	2/25/2015	4124; Port 1	2/27/2015	-0.0883
		3	VW31165	10.0	191	765	921.5	Sandstone	Y	2/25/2015	4124; Port 3	2/27/2015	-
DH-BGC15-02	A-3	1	VW31158	3.0	66	887	908.4	Picrite	N	3/3/2015	4125; Port 1	3/5/2015	0.0095
		2	VW31161	3.0	111	845	908.0	Volcaniclastic	N	3/3/2015	4125; Port 2	3/5/2015	0.0079
		3	VW31157	3.0	167	794	907.6	Volcaniclastic	Y (minor fault)	3/3/2015	4125; Port 5	3/5/2015	-

Notes:
1. See Drawing 3 for piezometric heads measured on June 17, 2015
2. Vertical hydraulic gradients calculated between VWP 1 and 2, and VWP 2 and 3 within each borehole.

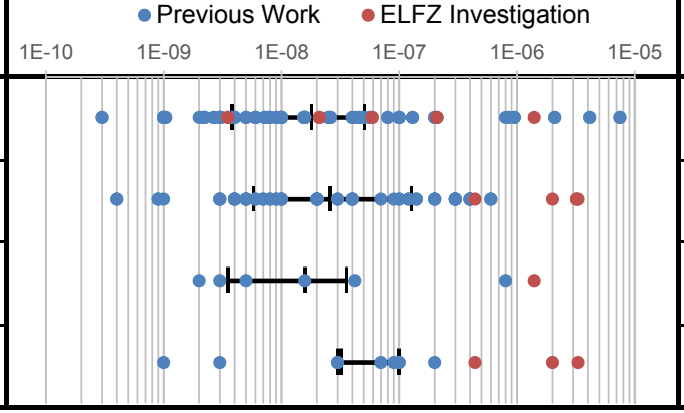
Table 3. Summary of Packer Testing Results

Hole ID	Test No.	Average RQD (%)	Average RQD (Class)	Lithology	Hydrostratigraphic Unit	Interval Includes Fault Zone(s)	Interval Top (m along borehole)	Interval Bottom (m along borehole)	Interval Length (m)	Hydraulic Conductivity[1] "K" (m/s)	Comments
DH-BGC15-01	1	54	Fair	Picrite	Picrite		54.8	64.3	9.4	3×10^{-6}*	
	2	7	Very Poor	Picrite/Mudstone	Picrite	Y	71.2	79.0	7.8	3×10^{-6}*	Targets interpreted ELFZ
	3	22	Very Poor	Picrite	Picrite	Y	131.3	140.5	9.2	4×10^{-7}	
	4	36	Poor	Sandstone	Nicola Group	Y	182.3	200.5	18.2	1×10^{-6}*	
	5	41	Poor	Sandstone	Nicola Group		168.8	176.3	7.5	2×10^{-7}	Double packer setup
	6	54	Fair	Picrite	Picrite		54.8	60.8	6.0	2×10^{-6}	Double packer setup
DH-BGC15-02	1	94	Excellent	Volcaniclastic	Nicola Group		101.2	111.9	10.7	5×10^{-8}	
	2	89	Good	Volcaniclastic	Nicola Group		164.2	176.4	12.2	2×10^{-8}	
	3	99	Excellent	Volcaniclastic	Nicola Group		198.9	225.9	27.0	2×10^{-9}	Falling head test

Notes:

1. * Indicates K value is a minimum bound. The maximum achievable flow rate was limited by drill pump capacity.
2. Range of previous K estimates for Nicola Group: 2×10^{-11} m/s to 3.5×10^{-5} m/s; for picrite: 4×10^{-10} m/s to 6×10^{-7} m/s.
3. See Appendix E for field testing data.

Table 4. Range in Estimated K Values

Hydrostratigraphic Unit	Hydraulic Conductivity Data (m/s)	Range of Previous K Estimates (m/s)			Range of ELFZ K Estimates (m/s)		
		Minimum	Geometric Mean	Maximum	Minimum	Geometric Mean[4]	Maximum[4]
Sedimentary and Volcaniclastic Rock (All Data)		3 E-10	2 E-08	8 E-06	2 E-09	1 E-07	1 E-06
Picrite (All Data)		4 E-10	3 E-08	6 E-07	4 E-07	2 E-06	3 E-06
Sedimentary and Volcaniclastic Rock (Faulted Zones)		2 E-09	2 E-08	8 E-07	1 E-06	1 E-06	1 E-06
Picrite (Faulted Zones)		1 E-09	3 E-08	2 E-07	4 E-07	1 E-06	3 E-06

Notes:

1. ⊢⊣ Denotes first quartile, geometric mean, and third quartile values for K estimated from Ajax SI data.
2. See Table 3 for ELFZ investigation packer testing details.
3. Previous hydraulic conductivity estimates from compiled test data as indicated in BGC (2015).
4. Calculations include K estimates listed as minimum bounds in the report text. The maximum achievable flow rate was limited by the capacity of the drill pump and testing equipment.

FIGURES

Figure 1 DH-BGC15-01: Fair quality picrite with 3-5% irregular quartz veining

Figure 2 **DH-BGC15-02: Very Poor quality, highly to completely weathered picrite**

Figure 3 **DH-BGC15-01: Poor to Good quality sedimentary rock including interbedded mudstone (dark grey) and siltstone (grey) with a layer of sandstone (light green).**

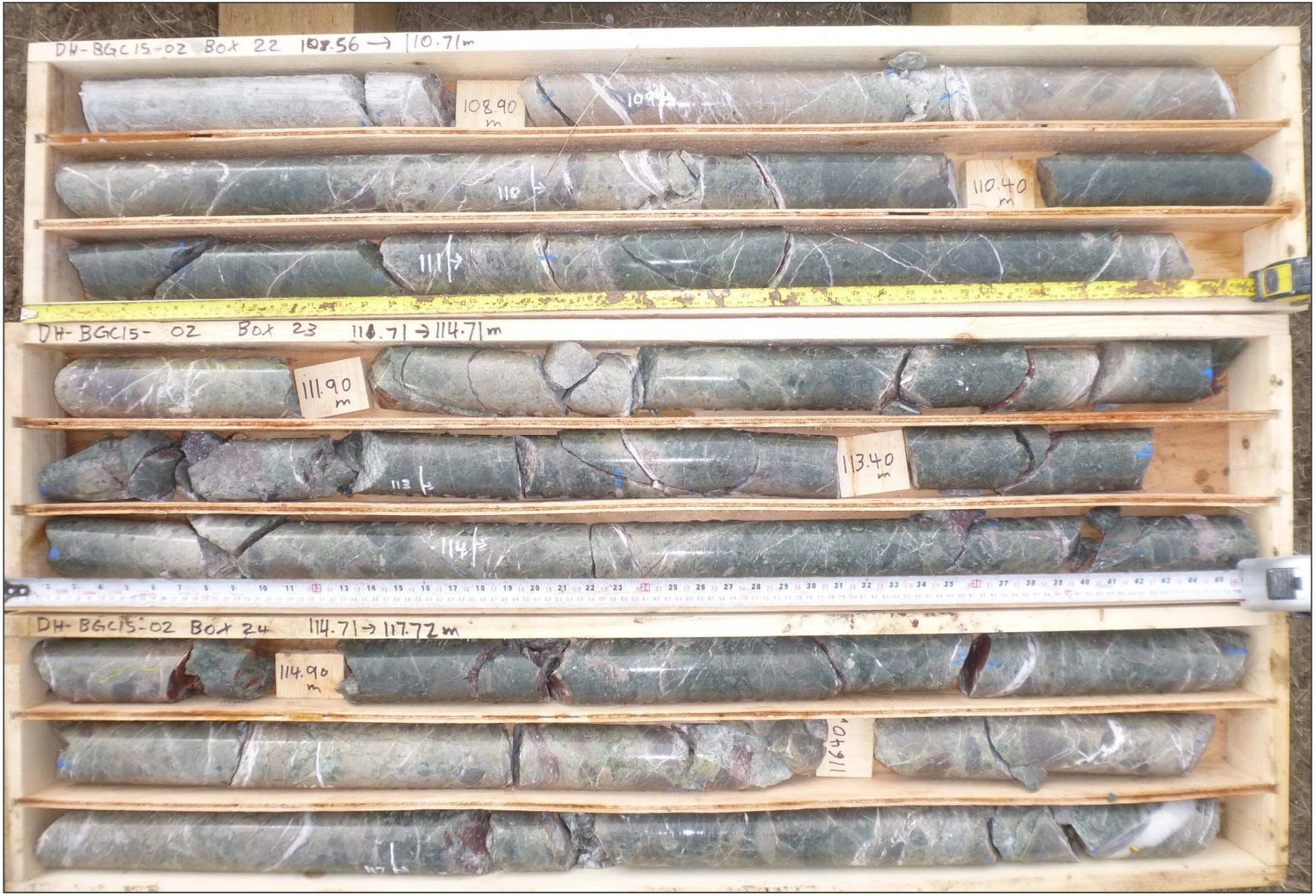
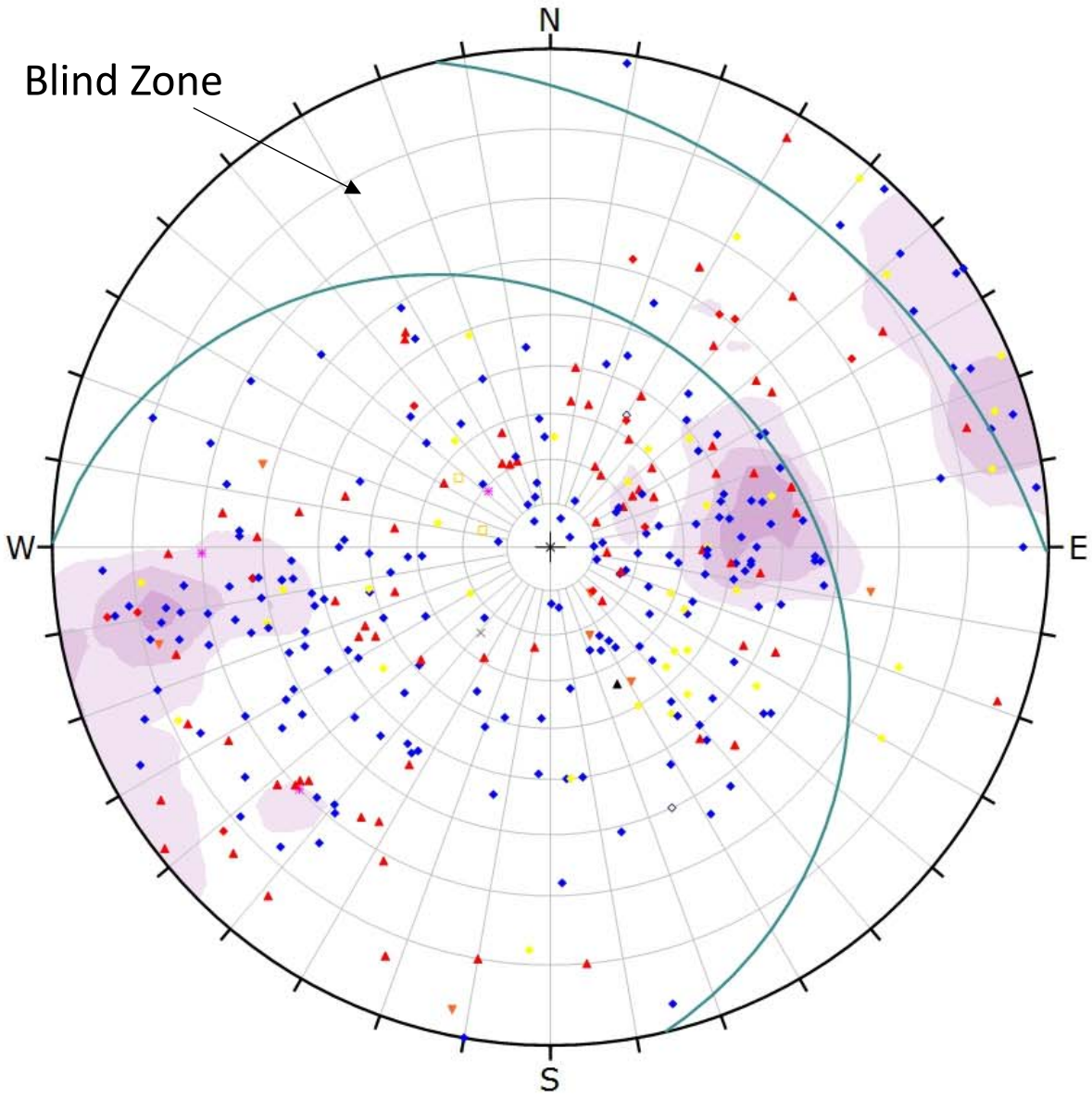


Figure 4 **DH-BGC15-02: Good quality volcaniclastic rock with 3-5% quartz veining**



Symbol	TYPE	Quantity
◇	C	2
▲	F	58
◆	FV	12
▲	FW	19
◆	J	190
□	JO	2
●	JV	38
▲	Rubble	1
▼	S	7
✱	SC	3
	Others	8

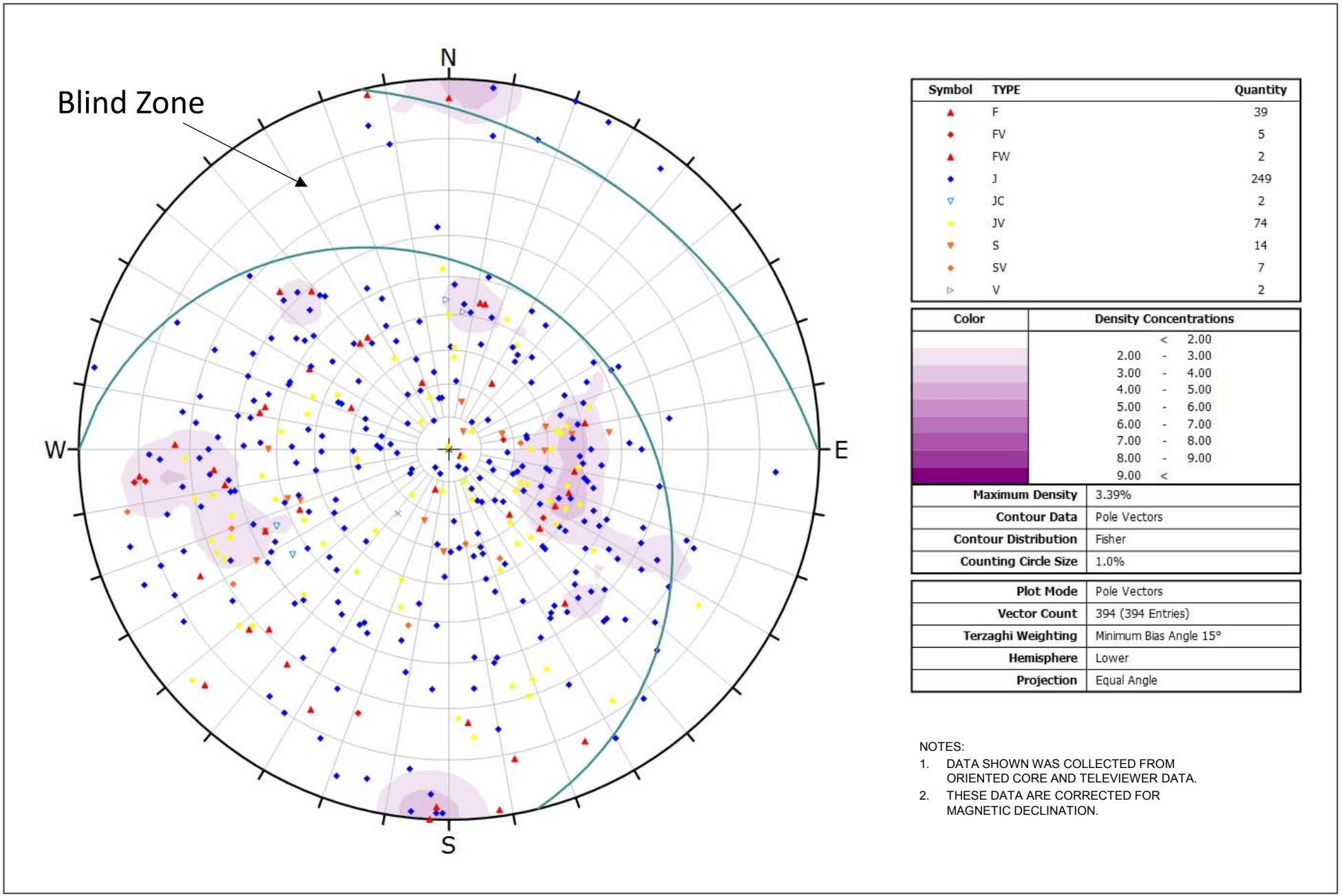
Color	Density Concentrations
	< 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 <

Maximum Density	4.71%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count	340 (340 Entries)
Terzaghi Weighting	Minimum Bias Angle 15°
Hemisphere	Lower
Projection	Equal Angle

NOTES:
1. DATA SHOWN WAS COLLECTED FROM ORIENTED CORE AND TELEVIEWER DATA.
2. THESE DATA ARE CORRECTED FOR MAGNETIC DECLINATION.

Figure 5 DH-BGC15-01 Stereonet – all structure types



Symbol	TYPE	Quantity
▲	F	39
◆	FV	5
▲	FW	2
◆	J	249
▽	JC	2
●	JV	74
▼	S	14
◆	SV	7
▷	V	2

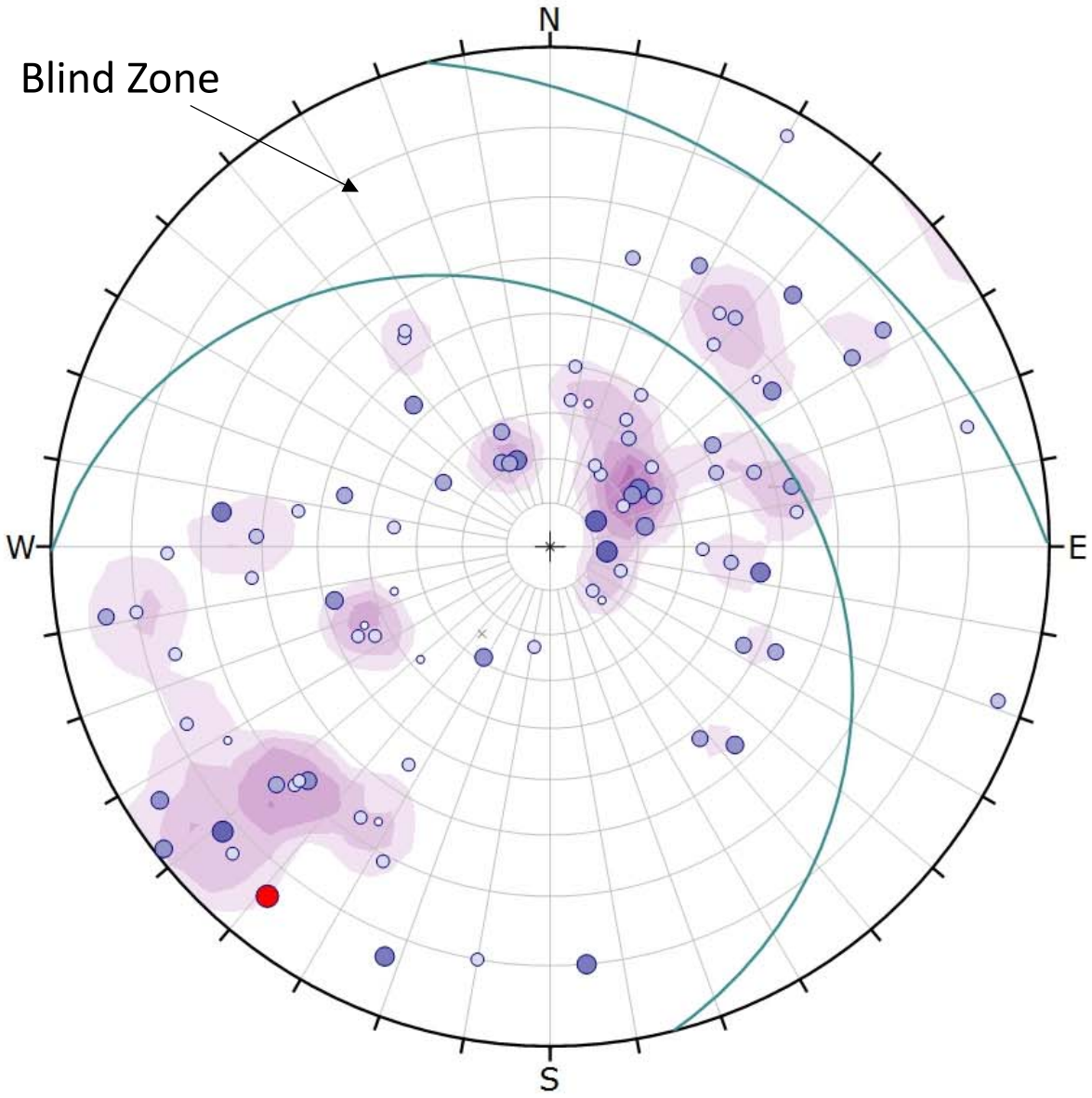
Color	Density Concentrations
	< 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 <

Maximum Density	3.39%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count	394 (394 Entries)
Terzaghi Weighting	Minimum Bias Angle 15°
Hemisphere	Lower
Projection	Equal Angle

NOTES:
1. DATA SHOWN WAS COLLECTED FROM ORIENTED CORE AND TELEVIEWER DATA.
2. THESE DATA ARE CORRECTED FOR MAGNETIC DECLINATION.

Figure 6 DH-BGC15-02 Stereonet – all structure types



Symbol	Apparent Thickness			Quantity
○		<	1.00	9
○	1.00	-	3.16	35
○	3.16	-	10.00	8
○	10.00	-	31.62	16
○	31.62	-	100.00	11
○	100.00	-	316.23	6
○	316.23	-	1000.00	3
○	1000.00	<		1

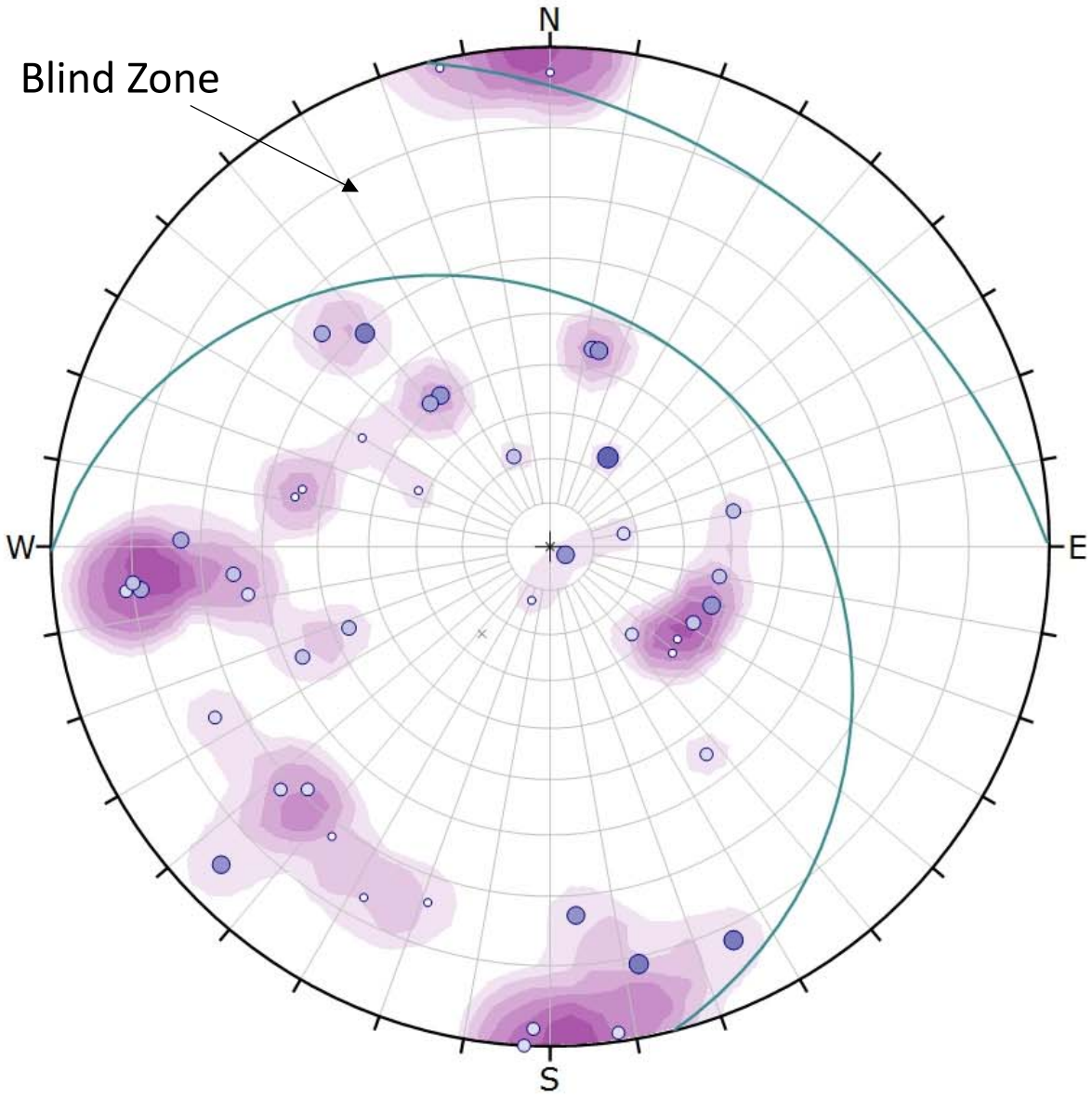
Color	Density Concentrations		
		<	2.00
	2.00	-	3.00
	3.00	-	4.00
	4.00	-	5.00
	5.00	-	6.00
	6.00	-	7.00
	7.00	-	8.00
	8.00	-	9.00
	9.00	<	

Maximum Density	6.52%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count	89 (89 Entries)
Hemisphere	Lower
Projection	Equal Angle

NOTES:
1. DATA SHOWN WAS COLLECTED FROM ORIENTED CORE AND TELEVIEWER DATA.
2. THESE DATA ARE CORRECTED FOR MAGNETIC DECLINATION.

Figure 7 DH-BGC15-01 Stereonet – faults



Symbol	Apparent Thickness			Quantity
○		<	1.00	12
○	1.00	-	3.16	11
○	3.16	-	10.00	8
○	10.00	-	31.62	5
○	31.62	-	100.00	6
○	100.00	-	316.23	3
○	316.23	-	1000.00	1

Color	Density Concentrations		
		<	2.00
	2.00	-	3.00
	3.00	-	4.00
	4.00	-	5.00
	5.00	-	6.00
	6.00	-	7.00
	7.00	-	8.00
	8.00	-	9.00
	9.00	<	

Maximum Density	7.97%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count	46 (46 Entries)
Hemisphere	Lower
Projection	Equal Angle

NOTES:
1. DATA SHOWN WAS COLLECTED FROM ORIENTED CORE AND TELEVIEWER DATA.
2. THESE DATA ARE CORRECTED FOR MAGNETIC DECLINATION.

Figure 8 DH-BGC15-02 Stereonet – faults

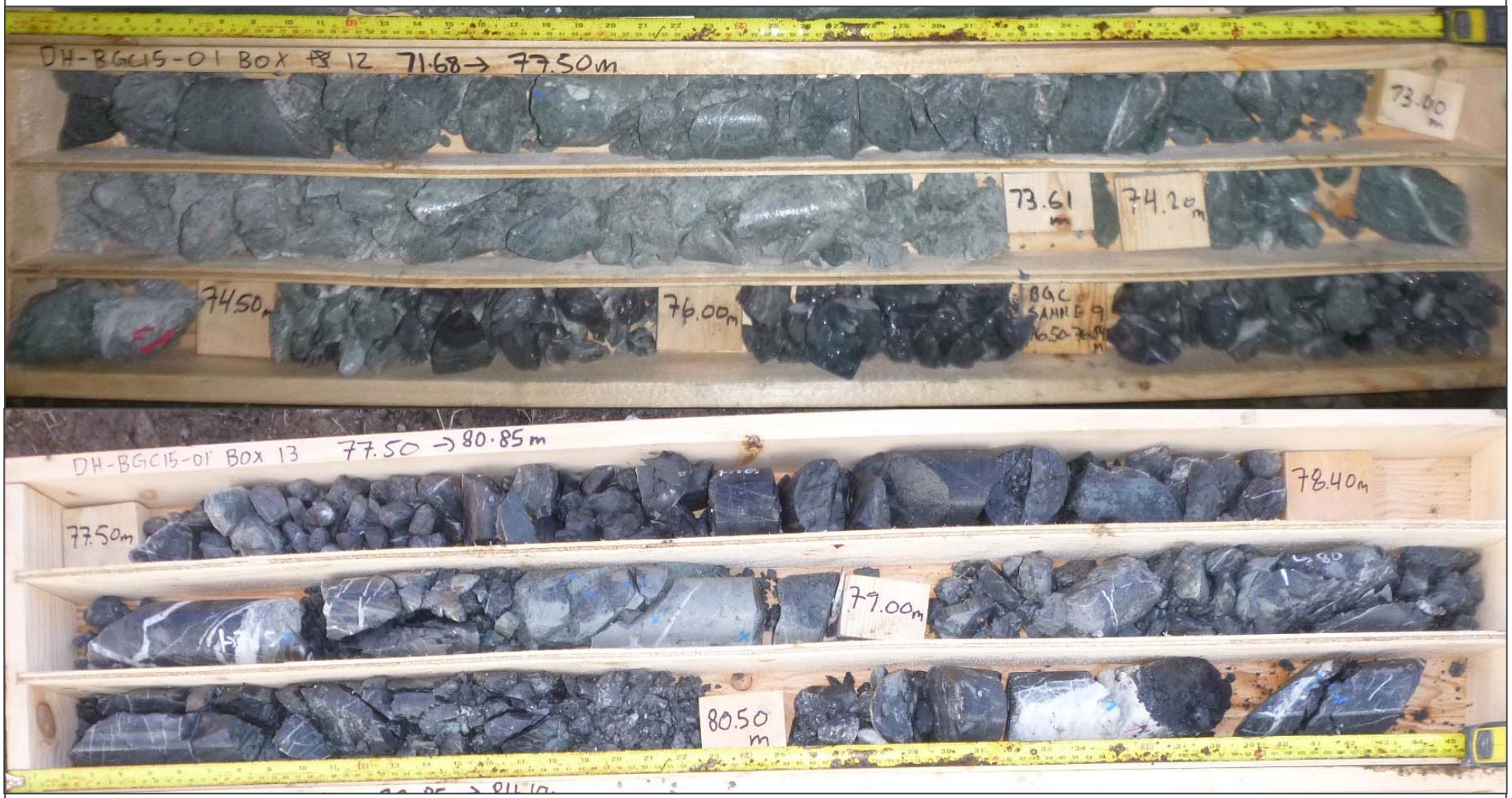


Figure 9 **Core box photos of the interpreted ELFZ in DH-BGC15-01**

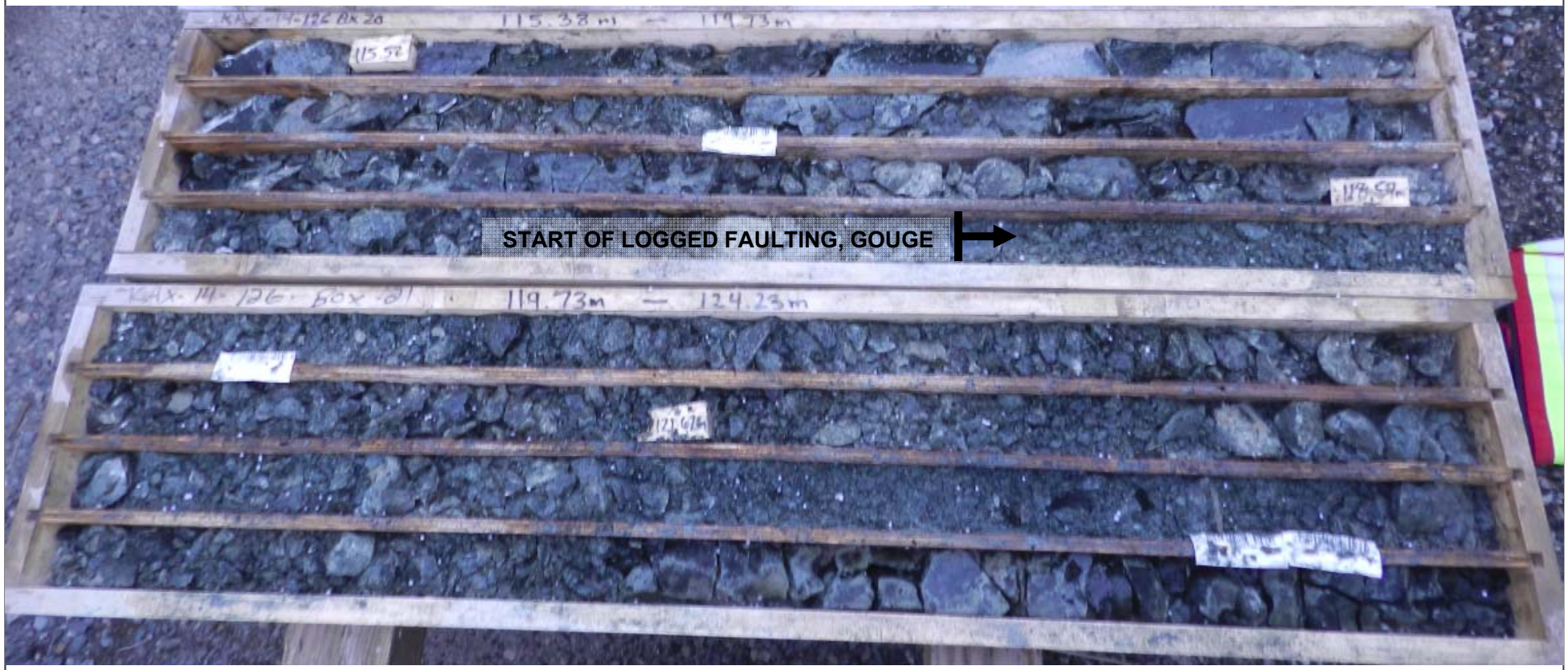


Figure 10 Core box photos of the interpreted ELFZ in KAX-14-126

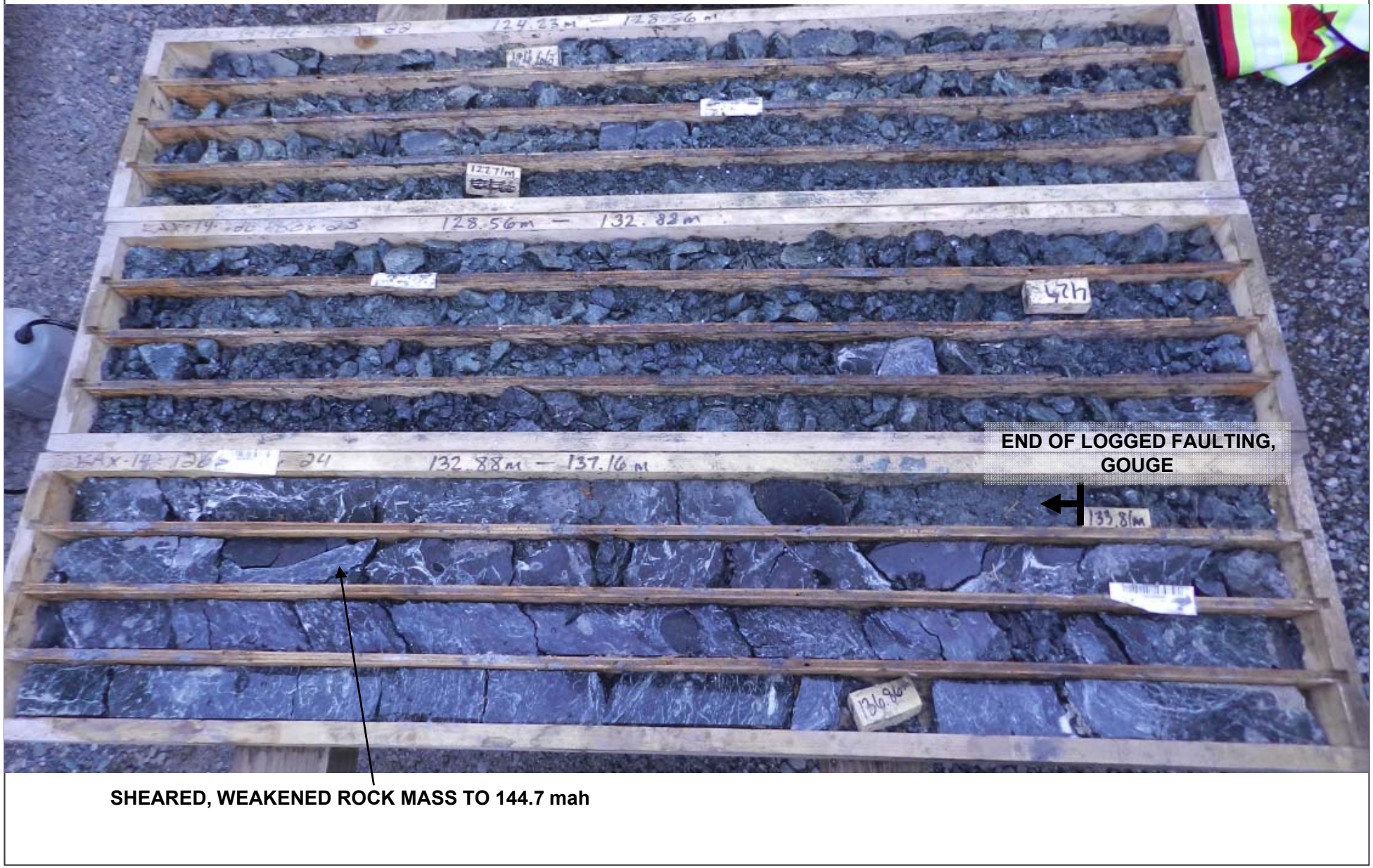
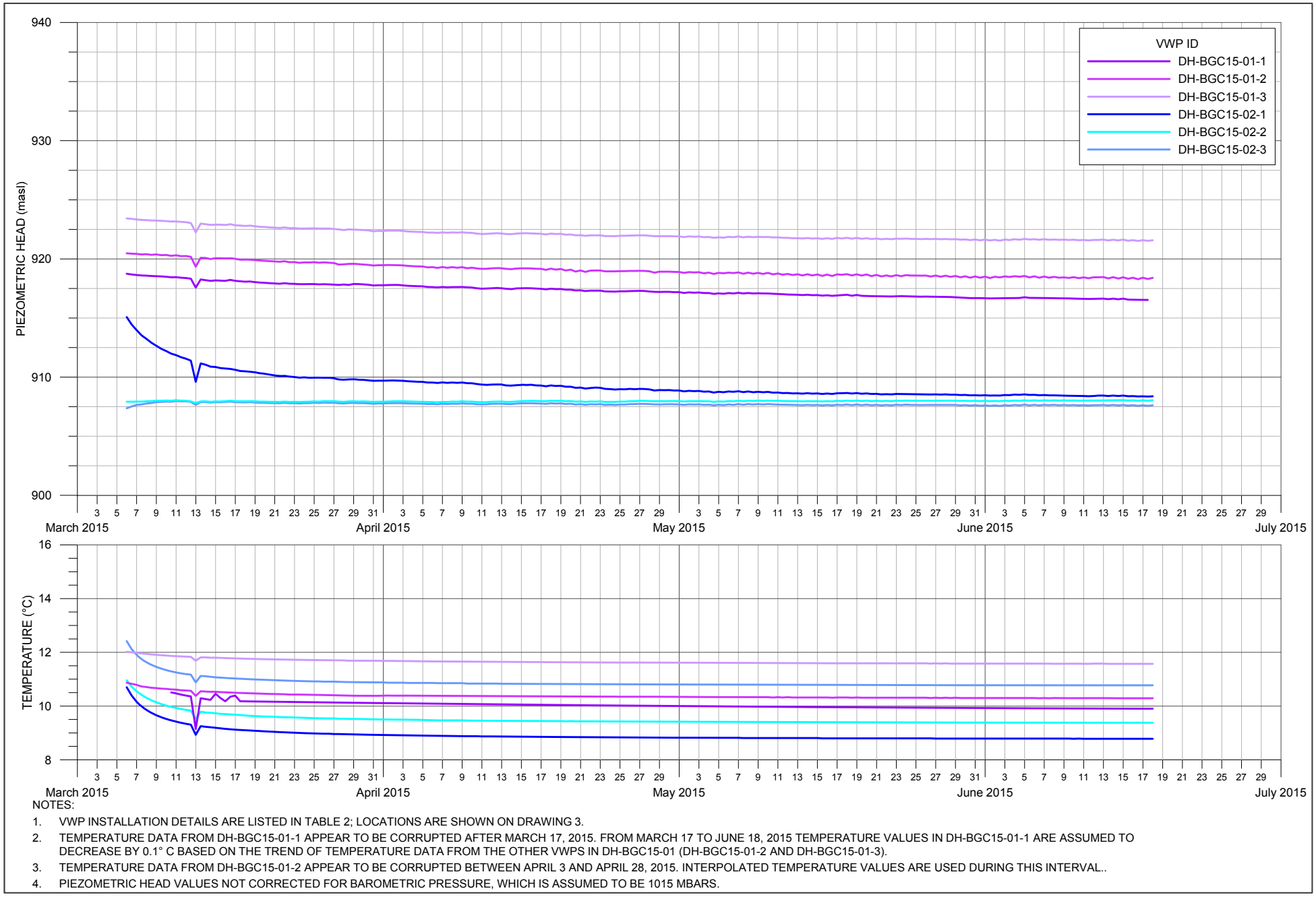


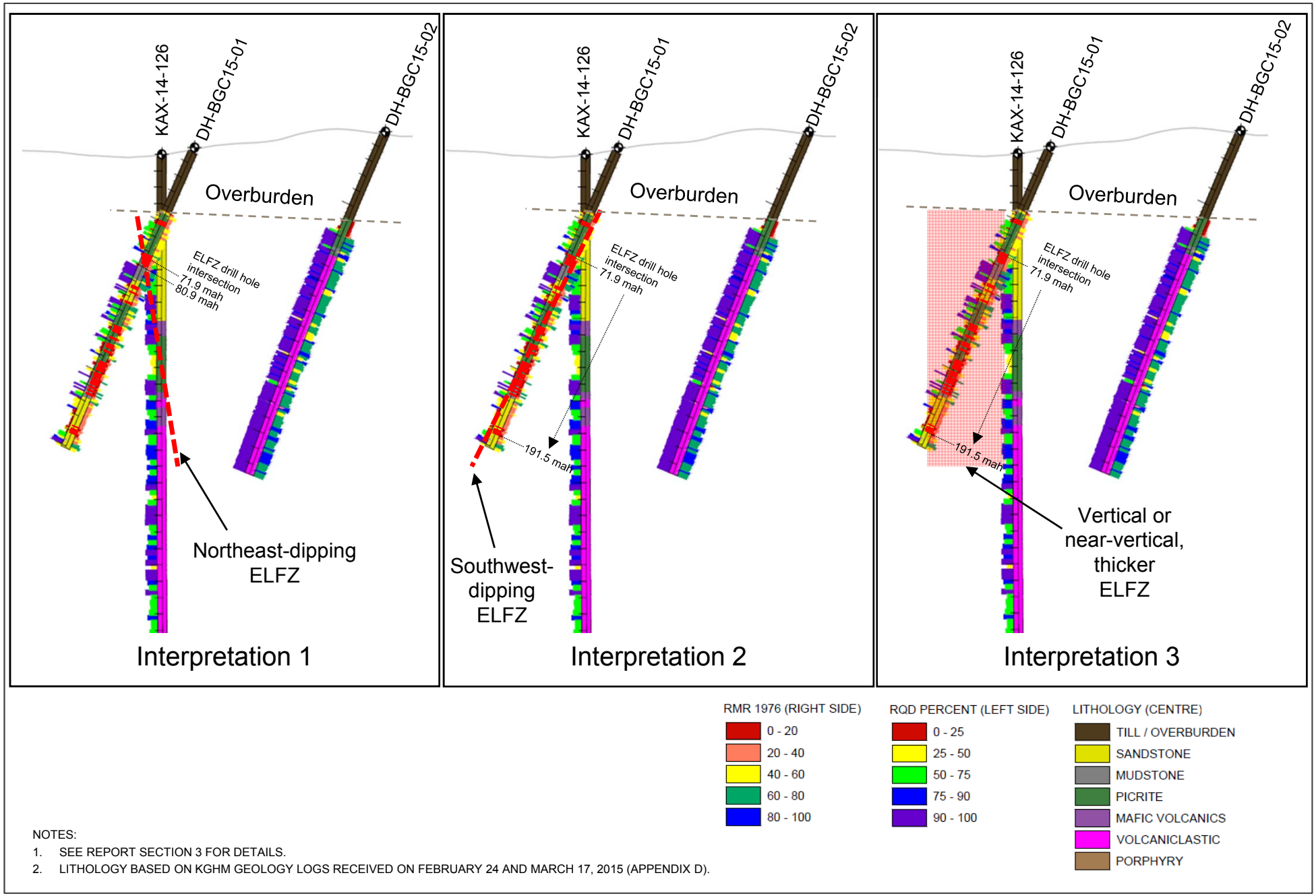
Figure 11 Core box photos of the interpreted ELFZ in KAX-14-126



NOTES:

1. VWP INSTALLATION DETAILS ARE LISTED IN TABLE 2; LOCATIONS ARE SHOWN ON DRAWING 3.
2. TEMPERATURE DATA FROM DH-BGC15-01-1 APPEAR TO BE CORRUPTED AFTER MARCH 17, 2015. FROM MARCH 17 TO JUNE 18, 2015 TEMPERATURE VALUES IN DH-BGC15-01-1 ARE ASSUMED TO DECREASE BY 0.1° C BASED ON THE TREND OF TEMPERATURE DATA FROM THE OTHER VWPS IN DH-BGC15-01 (DH-BGC15-01-2 AND DH-BGC15-01-3).
3. TEMPERATURE DATA FROM DH-BGC15-01-2 APPEAR TO BE CORRUPTED BETWEEN APRIL 3 AND APRIL 28, 2015. INTERPOLATED TEMPERATURE VALUES ARE USED DURING THIS INTERVAL..
4. PIEZOMETRIC HEAD VALUES NOT CORRECTED FOR BAROMETRIC PRESSURE, WHICH IS ASSUMED TO BE 1015 MBARS.

Figure 12 Vibrating wire piezometer data



NOTES:
1. SEE REPORT SECTION 3 FOR DETAILS.
2. LITHOLOGY BASED ON KGHM GEOLOGY LOGS RECEIVED ON FEBRUARY 24 AND MARCH 17, 2015 (APPENDIX D).

Figure 13 Conceptual sketches of the ELFZ interpretations in the vicinity of DH-BGC15-01

APPENDIX A
BOREHOLE LOGS

LEGEND FOR DRILL HOLE LOGS

The parameters depicted on the provided drill holes logs are described below according to the column headings found on the logs.

DEPTH ALONG HOLE

Depth shown on the left side of the logs and is measured in decimal metres along borehole. On the one-page summary logs elevation is also shown, located on the right side of the page.

TOTAL CORE RECOVERY (%)

Total Core Recovery (TCR) is defined as the percentage of core length successfully recovered from a drilled interval. This is mathematically defined as follows:

$$TCR = \frac{\sum \text{Length of core pieces}}{\text{Total length of core interval}} \times 100\%$$

RQD (%)

The Rock Quality Designation (RQD) is defined as the percentage of sound core recovered of intact pieces of 100 mm or more in length, as measured along the core axis, for the total length of core interval (Deere and Deere, 1988). Only natural core breaks (i.e. joints, faults) are considered in this calculation. Mechanical breaks due to drilling or handling are ignored, and the affected core pieces are considered intact. Core pieces which are very weak (strength grade $\leq$ R1) or are weathered/altered to a soil-like material do not count towards the intact core length for RQD. RQD is mathematically defined in the following formula:

$$RQD = \frac{\sum \text{Length of sound intact core pieces} > 100 \text{ mm}}{\text{Total length of core interval}} \times 100\%$$

LONGEST STICK (m)

Longest stick is the longest piece of sound and intact core measured in each interval. Core pieces which are very weak (strength grade $\leq$ R1) or are weathered/altered to a soil-like material are not considered for the longest stick measurement. Mechanical breaks due to drilling or handling are ignored.

FRACTURE INTERCEPT (m)

Fracture intercept is the average distance between discontinuities. It is calculated for each

interval as follows:

$$\text{Fracture Intercept} = \frac{\text{Total recovered length of core}}{\text{\# Natural discontinuities in the interval}}$$

JOINT CONDITION (1976)

Joint condition (1976) is a numeric index which summarizes the typical surface properties and infilling of discontinuities within an interval.

The joint condition is logged based on the descriptions proposed by Bieniawski (1976), as provided in Table A-1.

Table A-1: Joint Condition

Rating	Condition of Discontinuity (RMR 1976)	BGC Notes
25	Very rough surface; not continuous; no separation; unweathered wall rock	Includes intervals with no discontinuities; JRC > 16
20	Slightly rough surfaces; separation <1 mm; slightly weathered walls	> R3 wall rock; interlocking discontinuities with 8 < JRC < 14
12	Slightly rough surfaces; separation <1 mm; highly weathered walls	< R3 wall rock and slightly rough OR > R3 planar/smooth surfaces with no infill
6	Slickensided surfaces or gouge < 5 mm thick or separation 1 to 5 mm; continuous	Veins $\leq$ R1 or Mohs # $\leq$ ~3 included as "infilling"
0	Soft gouge >5mm or separation > 5 mm; continuous joints	Veins $\leq$ R1 or Mohs # $\leq$ ~3 included as "infilling"

INTACT STRENGTH ('R')

Intact strength (R) is based on simple mechanical tests, which are performed in the field using a rock hammer, pocket knife, and fingernail. The strength grades vary from extremely weak (R0) to extremely strong (R6) as shown in Table A-2.

Table A-2: Rock Strength Grades (ISRM, 1978)

Grade	Description	Field Identification	UCS (MPa)	Point Load Index "Is_{50}" (MPa)
R6	Extremely Strong	Specimen can only be chipped with flat end geological hammer.	> 250	> 10
R5	Very Strong	Specimen requires many blows with flat end geological hammer to fracture.	100-250	4-10
R4	Strong	Specimen requires more than one blow of flat end geological hammer to fracture.	50-100	2-4
R3	Medium Strong	Cannot be scraped or peeled with pocket knife; can be fractured with single firm blow of flat end geological hammer.	25-50	1-2
R2	Weak	Can be peeled by a pocket knife with difficulty; shallow indentation made by firm blow with point geologic hammer.	5-25	-
R1	Very Weak	Crumbles under firm blows with point of geological hammer.	1-5	-
R0	Extremely Weak	Indented by thumbnail.	< 1	-

ROCK MASS RATING (1976)

The Rock Mass Rating (RMR) system, published in 1976 by Bieniawski, classifies rock on a scale of 0-100 based on the sum of the ratings given to five parameters. The five parameters are:

- Rock Quality Designation (RQD)
- Fracture Intercept
- Joint Condition (1976)
- Intact Strength ('R')
- Groundwater Conditions

For the core logging purposes, the value of the "Groundwater Conditions" parameter is assumed to be 10. The sum of the ratings may then be used to assess the quality of the rock based on the following classification table:

Table A-3: RMR '76 Classification Table

RMR	Rock Quality
81-100	Very Good
61-80	Good
41-60	Fair
21-40	Poor
0-20	Very Poor

PACKER TESTING AND HYDRAULIC CONDUCTIVITY (m/s)

Packer testing is a method for obtaining hydraulic conductivity "K" estimates of geologic units. This can be performed using a single or double packer test set-up, effectively monitoring the change in volume of water into a formation over a known period of time, under various pressure intervals by implementing a constant head, falling head or flow recession test. Packer tests were executed over zones of interest (i.e. low recovery, loss of drilling return). Results are presented as labels on the logs (i.e. K = 2.8E-06 m/s).

VIBRATING WIRE PIEZOMETER (VWP)

A vibrating wire piezometer (VWP) is a pressure transducer that records measurements of water pressure and temperature. This data may then be converted into a groundwater elevation. Repeated measurements of the transducer allow for monitoring changes in groundwater pressures over time. The depth and serial number of each VWP installed is indicated on the logs.

TELEVIEWER SURVEY (TV)

Televiewer surveying utilizes a downhole probe to collect data imagery which is used to estimate the orientation and in-situ aperture of discontinuities intersected by the drill holes. A drill hole survey is recorded from the end of hole to ground surface, and it is often completed in multiple intervals. Where rock quality is very poor, it is possible to have zones where no data is collected in order to preserve the integrity of the probe. The tested intervals are distinguished clearly on the logs, under the Testing and Instrumentation section.

DRILL HOLE #

DH-BGC15-01

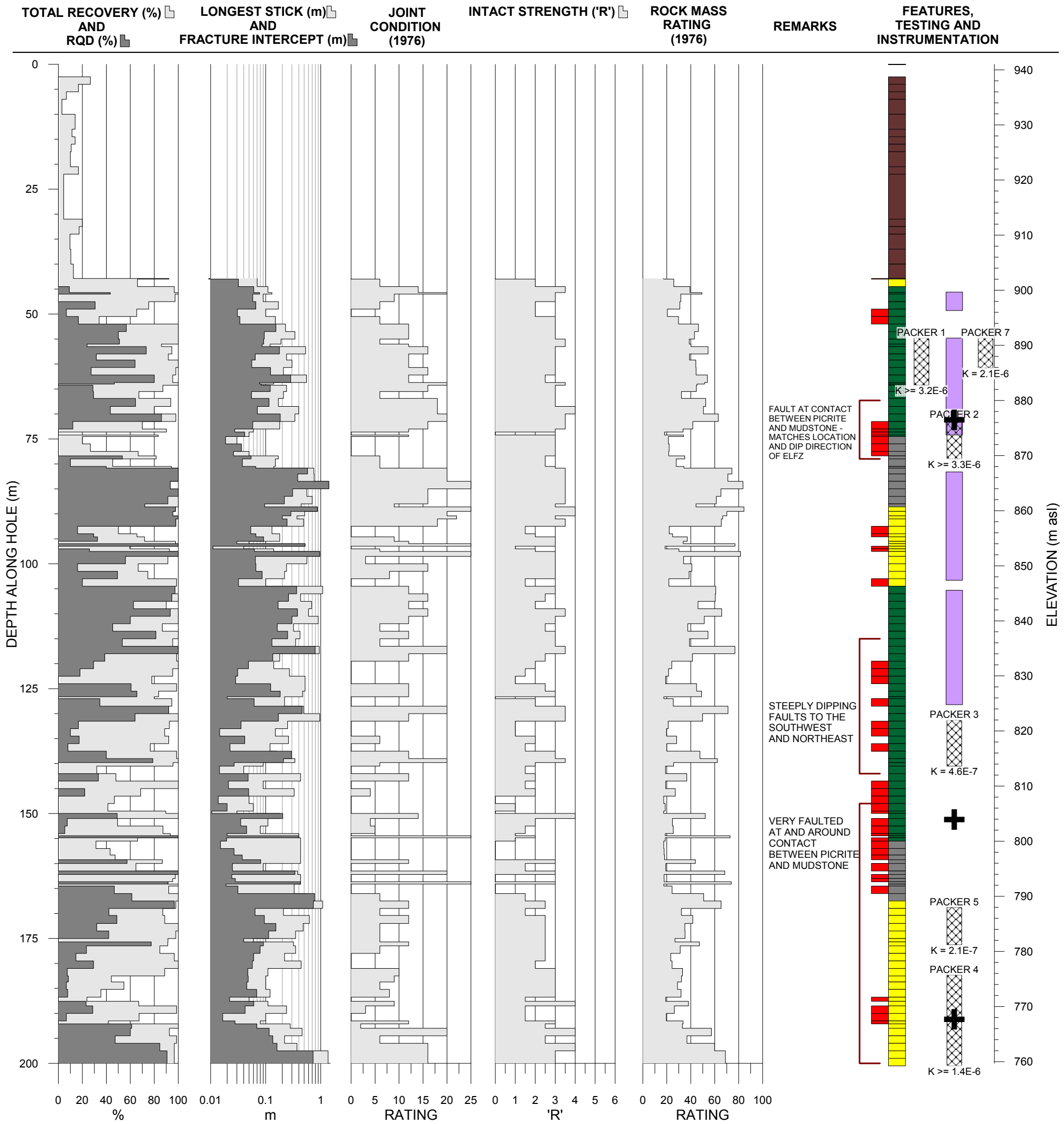
PROPOSED: A-1

PROJECT: **EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION** PROJECT NO.: **1125-007-07**

LOCATION: NORTH OF THE PROPOSED TSF
COORDINATES (m): 682638.31 E, 5608870.85 N
COLLAR ELEVATION (m asl): 938.11
DATUM: NAD83 UTM
TREND (°): 217
PLUNGE (°): -65

DRILL DESIGNATION: A-5
DRILLING CONTRACTOR: GEOTECH DRILLING
DRILLING METHOD: MUD ROTARY
CORE DIAMETER: HQ3
FLUID: WATER/POLYMER
CASED TO (m): 52

START DATE: FEBRUARY 17, 2015
FINISH DATE: FEBRUARY 26, 2015
FINAL DEPTH (m): 200.5
DEPTH TO TOP OF ROCK (m): 42.78
LOGGED BY: JND/GND
REVIEWED BY: CK



FEATURES
- FAULT ZONE
- ZONE OF LOST CIRCULATION

LITHOLOGY[2]
- TILL
- PICRITE
- SANDSTONE
- MUDSTONE

TESTING AND INSTRUMENTATION
- PACKER TEST
- VWP
- TV SURVEY

SCALE 1:800

NOTES:
1. ALL DEPTHS MEASURED FROM GROUND SURFACE.
2. LITHOLOGY DEPTHS ARE APPROXIMATED FROM GEOLOGY LOGS PROVIDED BY KGHM ON MARCH 17, 2015 (APPENDIX D).

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,638.30E, 5,608,870.85N
Ground Elevation (m): 938.11
Datum: NAD83
Dip (degrees from horizontal): -65
Direction: 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Casing: HWT **Cased To (m):** 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth of Hole (m): 200.50
Depth to Top of Rock (m): 42.87
Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description	Instrument Details	SPT Blows per 150mm
0				GRAVEL (GW) Fine to coarse, trace sand, trace silt, well graded, subangular to subrounded, equidimensional, brown and grey, moist to wet, no visible structure, cobbles and/or boulders likely present; fines are: low plastic, firm to stiff, brown, moist. [TILL]		
1		1				
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13				▼		
14						
15						
16						

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
DCT (blows/300mm)
Hydraulic Conductivity (m/sec)
10^{-8} 10^{-6} 10^{-4} 10^{-2}
● SPT (blows/300mm)
Moisture Content & SPT N
W_P% W% W_L%
Core Recovery
20 40 60 80
20 40 60 80

(Continued on next page)

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,638.30E, 5,608,870.85N
Ground Elevation (m): 938.11
Datum: NAD83
Dip (degrees from horizontal): -65
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Drill Designation: A-5
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Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description	Instrument Details	SPT Blows per 150mm

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
Hydraulic Conductivity (m/sec)
10^{-8} 10^{-6} 10^{-4} 10^{-2}
DCT (blows/300mm)
● SPT (blows/300mm)
Core Recovery
20 40 60 80
Moisture Content & SPT N
W_P% W% W_L%
20 40 60 80

(Continued on next page)

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,638.30E, 5,608,870.85N
Ground Elevation (m): 938.11
Datum: NAD83
Dip (degrees from horizontal): -65
Direction: 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Casing: HWT **Cased To (m):** 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth of Hole (m): 200.50
Depth to Top of Rock (m): 42.87
Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description	Instrument Details	SPT Blows per 150mm
32–43		2, 3				
43				Rock encountered at 42.87 depth. See DH-BGC15-01 rock log.		
44–48						

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
DCT (blows/300mm)
SPT (blows/300mm)
Hydraulic Conductivity (m/sec)
10^{-8} 10^{-6} 10^{-4} 10^{-2}
Core Recovery
20 40 60 80
Moisture Content & SPT N
W_P% W% W_L%
20 40 60 80

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m) | Instrument Details | Sample Type | Lithologic Description | Symbol | Weathering Grade (A/W) | Strength Grade (R) | Total Core Recovery / RQD (%) | Longest Stick / Fracture Intercept (Meters) | Average Joint Condition (RMR '76)

32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

43 — At 42.87 m: 670 mm wide fault breccia zone. Infill made up of SILT (ML) - sandy, some fine to coarse gravel, low plastic, very stiff, greyish green, DTPL.

Poor quality SANDSTONE
Slightly to moderately altered, weak to medium strong, greenish grey, generally fine grained, fabric is faulted to uniform, very close to closely spaced discontinuities.

At 44.39 m: 70 mm wide fault zone. Infill made up of GRAVEL (GP) - generally fine, sandy, trace clay, poorly graded, subangular, equidimensional, greyish green, moist. Clay is low plasticity, stiff.

Poor quality PICRITE
Slightly to moderately altered, weak to medium strong, greenish grey, very fine grained groundmass with medium grained phenocrysts, fabric is faulted to uniform, very close to closely spaced discontinuities. 3-5% quartz veining, in some places showing offsets along open or healed discontinuities.

Weathering Grade (A/W): 1 2 3 4 5 6 — FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL
Strength Grade (R): 0 1 2 3 4 5 6 — EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG
Total Core Recovery / RQD (%): 0 25 50 75 90 100 — V. POOR, POOR, FAIR, GOOD, EXT. GOOD
Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3 — V. CLOSE, CLOSE, MODERATE, WIDE
Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N	***Drill Designation:*** A-5	***Start Date:*** 17 Feb 15
Ground Elevation (m): 938.1	***Drilling Contractor:*** Geotech Drilling	***Finish Date:*** 25 Feb 15
Survey Method: Survey	***Drill Method:*** Diamond	***Final Depth (m):*** 200.5
Datum: NAD83	***Core:*** HQ3	***Depth To Top Of Rock (m):*** 42.9
Plunge (°): -65	***Fluid:*** Water/polymer	***Logged By:*** JND/GJD
Trend (°): 217	***Cased To (m) :*** 43.5	***Reviewed By:*** CK

Depth (m) | Instrument Details | Sample Type | Lithologic Description | Symbol | Weathering Grade (A/W) | Strength Grade (R) | Total Core Recovery / RQD (%) | Longest Stick / Fracture Intercept (Meters) | Average Joint Condition (RMR '76)

At 50.31 m: 190 mm wide fault breccia zone. Infill made up of GRAVEL (GW) - fine to coarse, sandy, some silt, well graded, subangular, equidimensional, light greyish green with some orange, wet, original rock mass structure intact, maximum particle size 40 mm, intact rock strength varies between R2 and R4.

At 50.91 m: 70 mm wide fault zone. Infill made up of GRAVEL (GP) - fine, silty, some coarse sand, poorly graded, subangular, equidimensional, light greyish green, moist, maximum particle size 18 mm.

Fair quality PICRITE
Faintly to slightly altered, medium strong, greenish grey to greyish green, very fine grained groundmass with medium grained phenocrysts, closely spaced discontinuities. 3-5% quartz veining, in some places showing offsets along open or healed discontinuities.

At 53.63 m: 70 mm wide fault zone. Infill made up of CLAY (CL) - silty, some sand, low plastic, firm to stiff, light grey, WTPL.

At 59.20 m: 150 mm wide fault zone. Approximately 60 mm of fault gouge infill made up of CLAY (CL) - silty, trace sand, low plastic, firm, grey, WTPL.

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

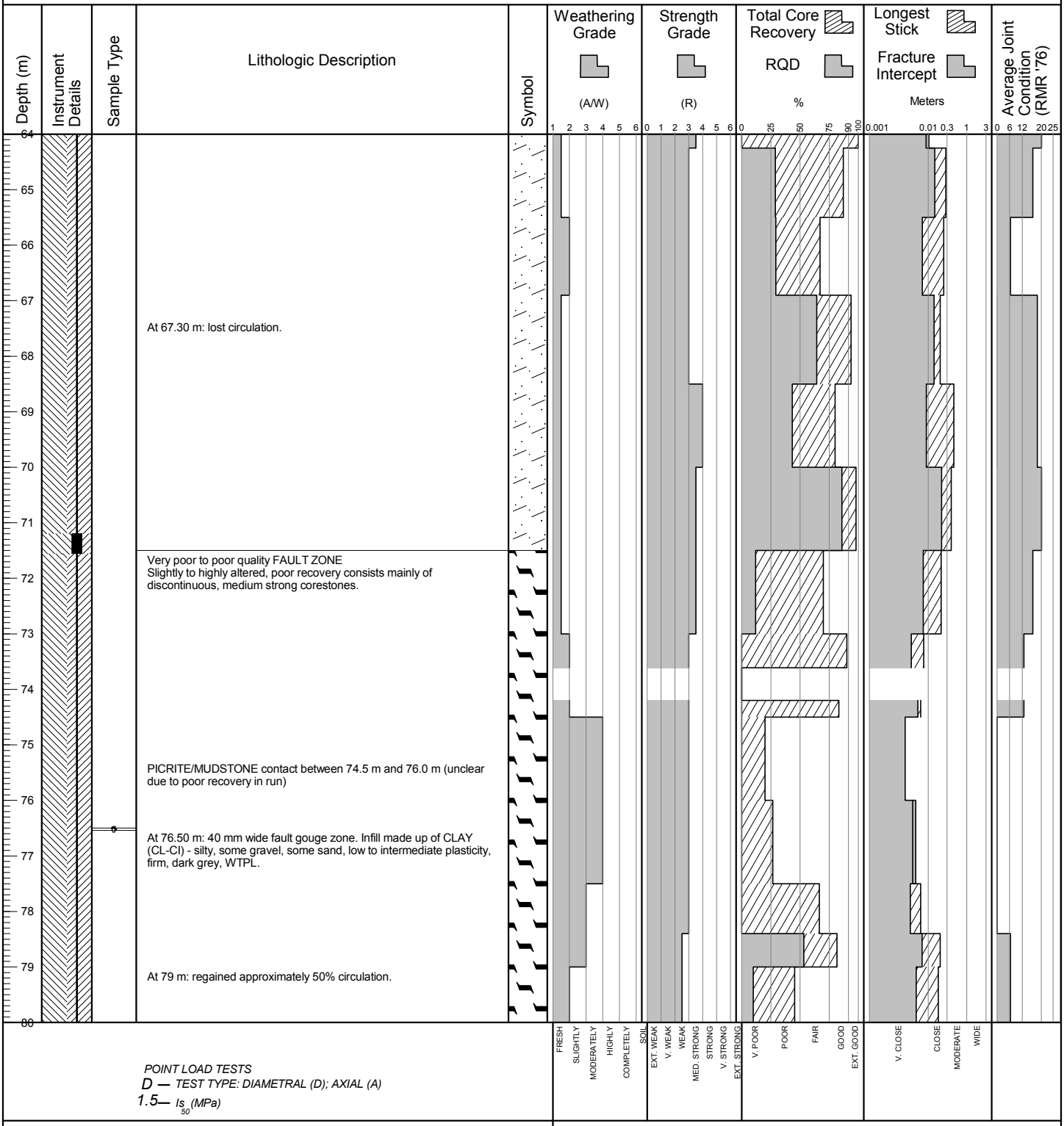
DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK



POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m) | Instrument Details | Sample Type | Lithologic Description | Symbol | Weathering Grade (A/W) | Strength Grade (R) | Total Core Recovery / RQD (%) | Longest Stick / Fracture Intercept (Meters) | Average Joint Condition (RMR '76)

Good quality MUDSTONE
Fresh to faintly altered, medium strong to strong, dark grey, fine grained, deformed bedding with siltstone laminations, moderately spaced discontinuities.

Good quality SANDSTONE
Fresh to faintly altered, medium strong to strong, greyish green, fine grained, chaotic interbedded laminations of dark grey mudstone (~35%), moderately spaced discontinuities.

Poor quality SANDSTONE
Slightly to moderately altered, generally medium strong, greenish grey, fine grained, chaotic interbedded laminations of dark grey mudstone (~35%), closely spaced discontinuities.

At 93.30 m: 30 mm wide drill hole parallel fault zone. Infill made up of SAND (SC) - fine to coarse, gravelly, fine, clayey, well graded, dark grey to black, moist. Clay is low plasticity, hard, DTPL, weak cementation.

At 94.10 m: 250 mm wide fault zone. Infill made up of SILT (ML) - some sand, trace gravel, low plastic, very stiff to hard, dark grey, NPL.

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

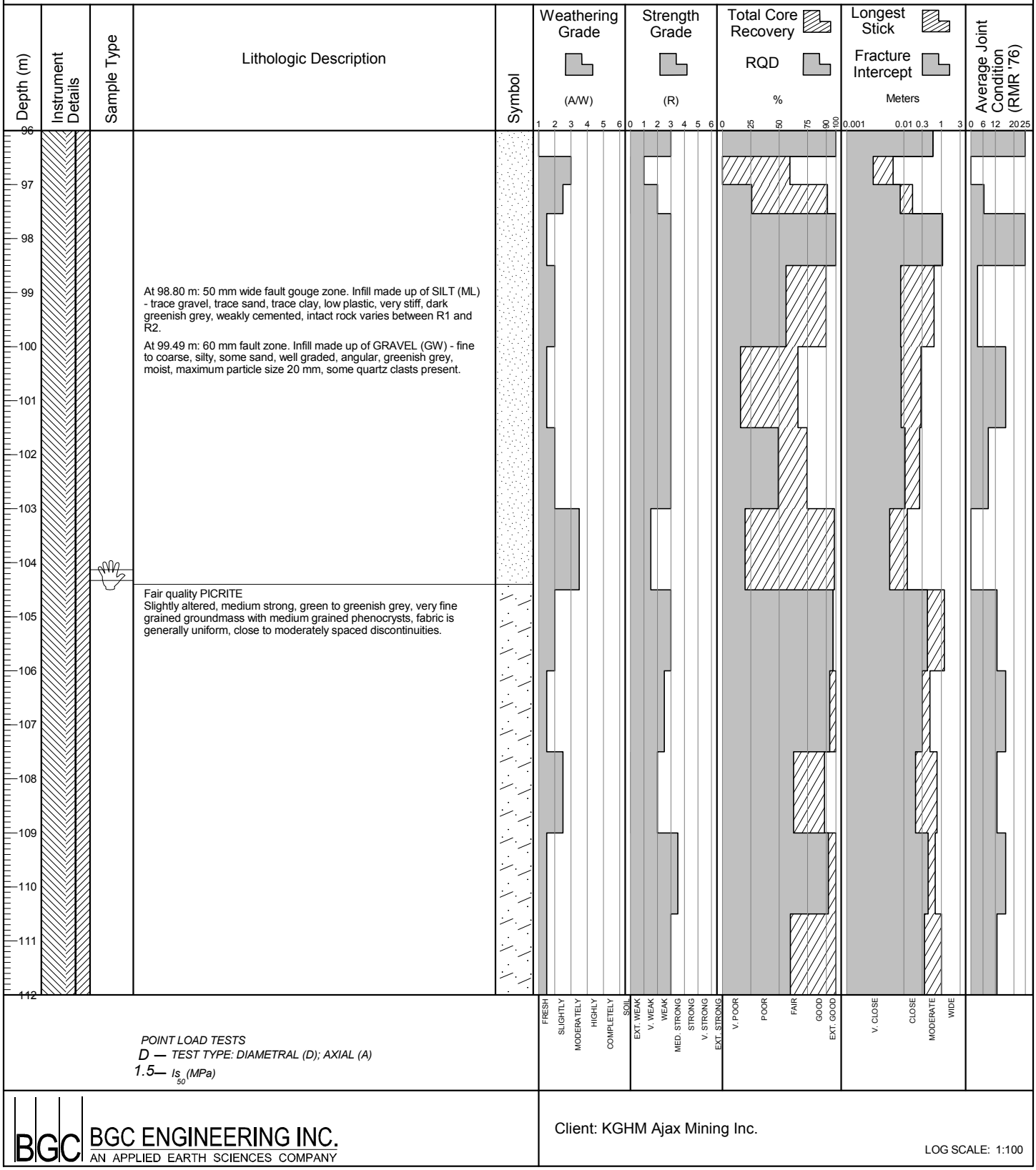
DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK



POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m)	Instrument Details	Sample Type	Lithologic Description
112–128			At 115 m: lost circulation.
			Poor quality PICRITE Slightly to highly altered, very weak to medium strong, green to greenish grey, very fine grained groundmass with medium grained phenocrysts, faulted fabric, with minor uniform and stockwork zones, generally very closely spaced discontinuities.

Symbol

Weathering Grade (A/W): 1 2 3 4 5 6 — FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL

Strength Grade (R): 0 1 2 3 4 5 6 — EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG

Total Core Recovery / RQD (%): 0 25 50 75 90 100 — V. POOR, POOR, FAIR, GOOD, EXT. GOOD

Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3 — V. CLOSE, CLOSE, MODERATE, WIDE

Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
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Cased To (m) : 43.5

Start Date: 17 Feb 15
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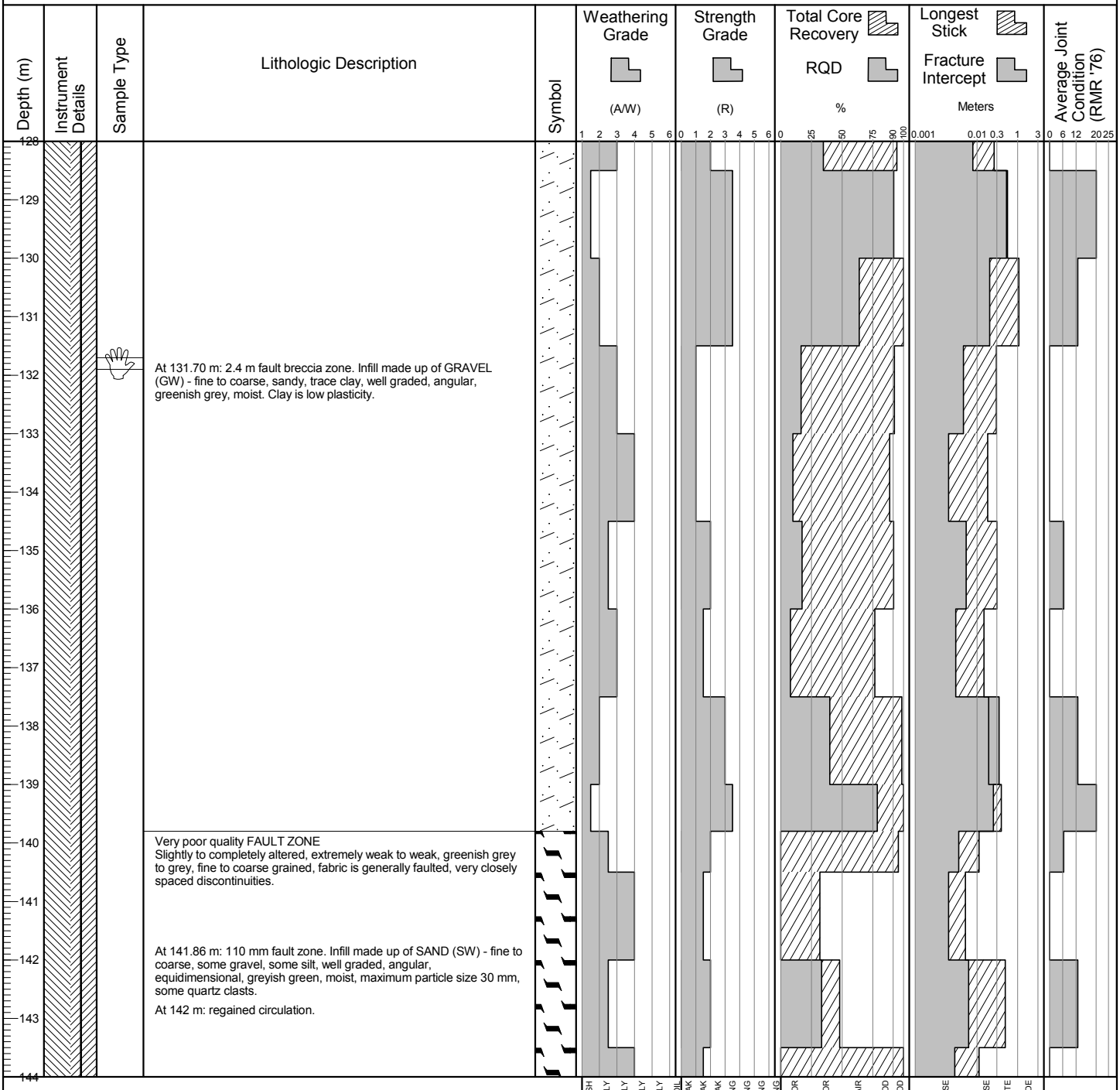
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK



POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
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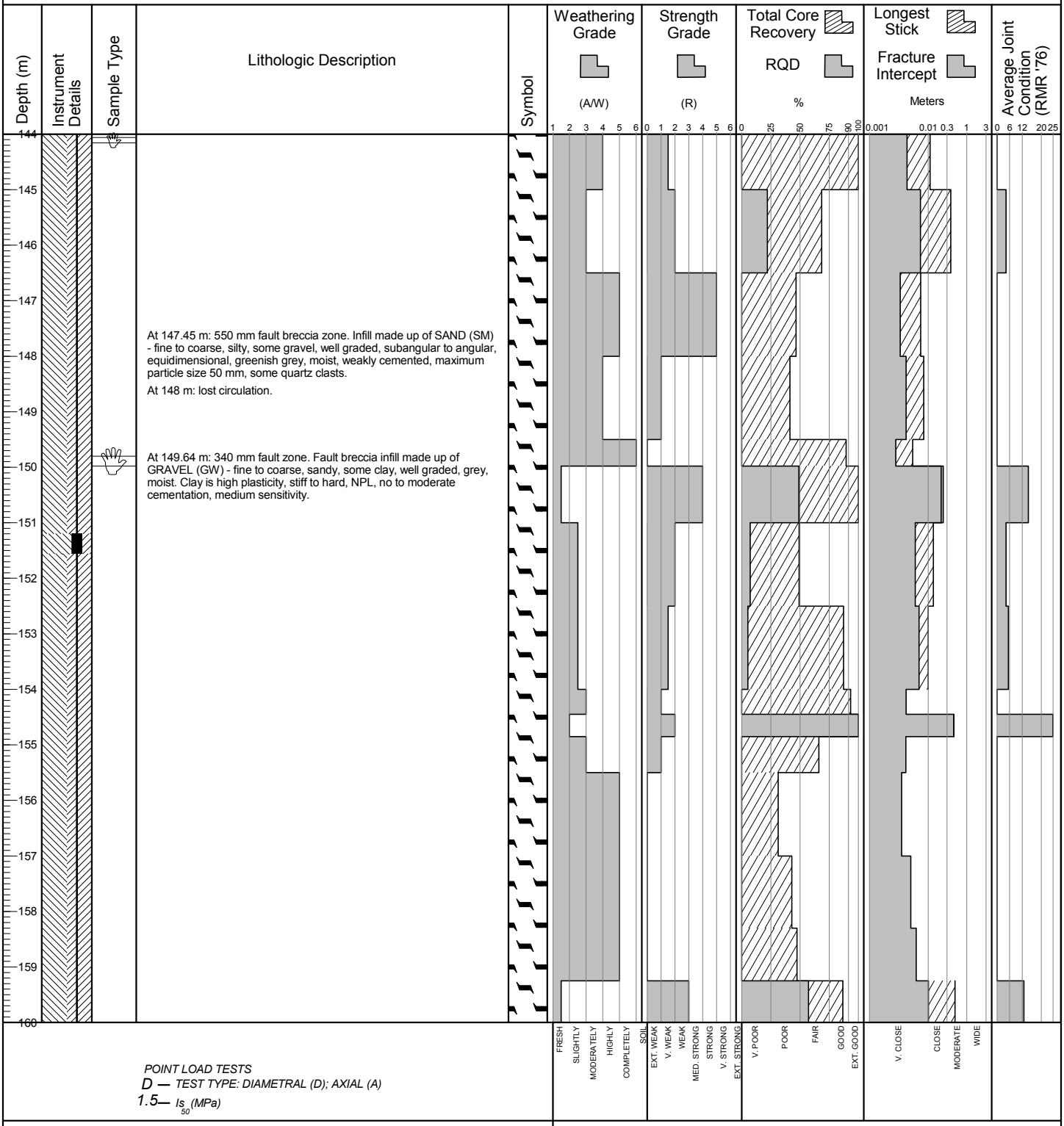

At 147.45 m: 550 mm fault breccia zone. Infill made up of SAND (SM) - fine to coarse, silty, some gravel, well graded, subangular to angular, equidimensional, greenish grey, moist, weakly cemented, maximum particle size 50 mm, some quartz clasts.

At 148 m: lost circulation.

At 149.64 m: 340 mm fault zone. Fault breccia infill made up of GRAVEL (GW) - fine to coarse, sandy, some clay, well graded, grey, moist. Clay is high plasticity, stiff to hard, NPL, no to moderate cementation, medium sensitivity.

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
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Final Depth (m): 200.5
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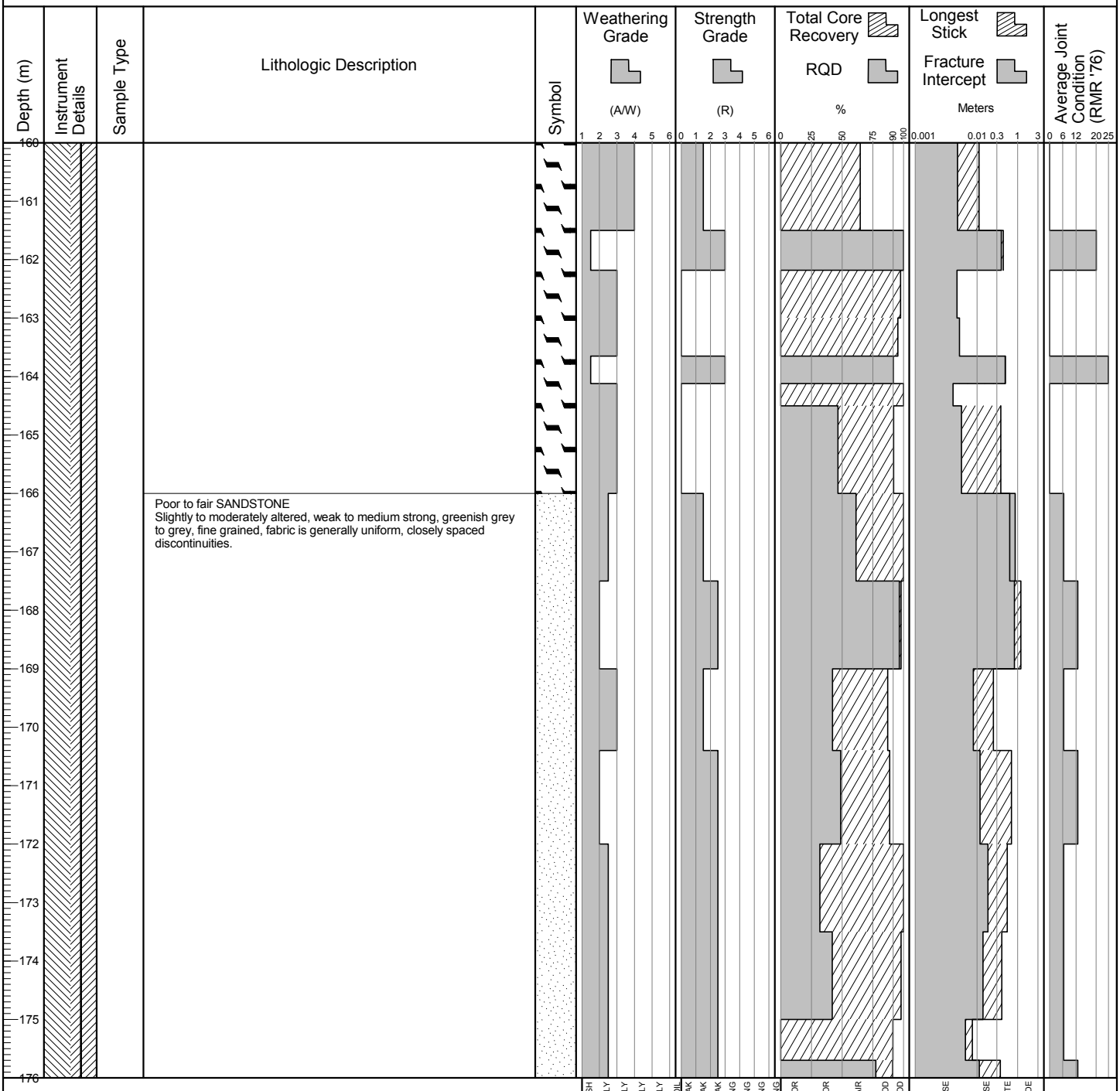

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
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Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
Finish Date: 25 Feb 15
Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m)	Instrument Details	Sample Type	Lithologic Description
176			Poor SANDSTONE Slightly to moderately altered, very weak to medium strong, grey, fine to medium grained, fabric is uniform to faulted, very closely spaced discontinuities.
177			
178			
179			
180			
181			
182			
183			
184			
185			
186			
187			
188			
189			
190			
191			At 190.55 m: 450 mm fault breccia zone. Infill made up of SILT (ML) - some gravel, some sand, low plastic, firm to hard, greyish green, NPL, breccia structure, weak cementation; clasts are: subangular, intact strength of R2. At 191.50 m: circulation almost regained, water came within inches of
192			

Symbol

Weathering Grade (A/W): 1 2 3 4 5 6 — FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL

Strength Grade (R): 0 1 2 3 4 5 6 — EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG

Total Core Recovery / RQD (%): 0 25 50 75 90 100 — V. POOR, POOR, FAIR, GOOD, EXT. GOOD

Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3 — V. CLOSE, CLOSE, MODERATE, WIDE

Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-01

Location: North of the Proposed TSF

Co-ordinates (m): 682,638E - 5,608,871N
Ground Elevation (m): 938.1
Survey Method: Survey
Datum: NAD83
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Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 43.5

Start Date: 17 Feb 15
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Final Depth (m): 200.5
Depth To Top Of Rock (m): 42.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m)	Instrument Details	Sample Type	Lithologic Description	Symbol	Weathering Grade (A/W)	Strength Grade (R)	Total Core Recovery / RQD (%)	Longest Stick / Fracture Intercept (Meters)	Average Joint Condition (RMR '76)
192			the top of the casing.						
193			Fair to good SANDSTONE Fresh to slightly altered, medium strong to strong, greenish grey to grey, fine grained, uniform fabric, close to widely spaced discontinuities.						
194									
195									
196									
197									
198									
199									
200									
201			At 200.5 m: regained some circulation. End of drill hole at 200.50 m.						
202									
203									
204									
205									
206									
207									
208									

Weathering Grade (A/W): 1 2 3 4 5 6 — FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL
Strength Grade (R): 0 1 2 3 4 5 6 — EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG
Total Core Recovery / RQD (%): 0 25 50 75 90 100 — V. POOR, POOR, FAIR, GOOD, EXT. GOOD
Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3 — V. CLOSE, CLOSE, MODERATE, WIDE
Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

DRILL HOLE #

DH-BGC15-02

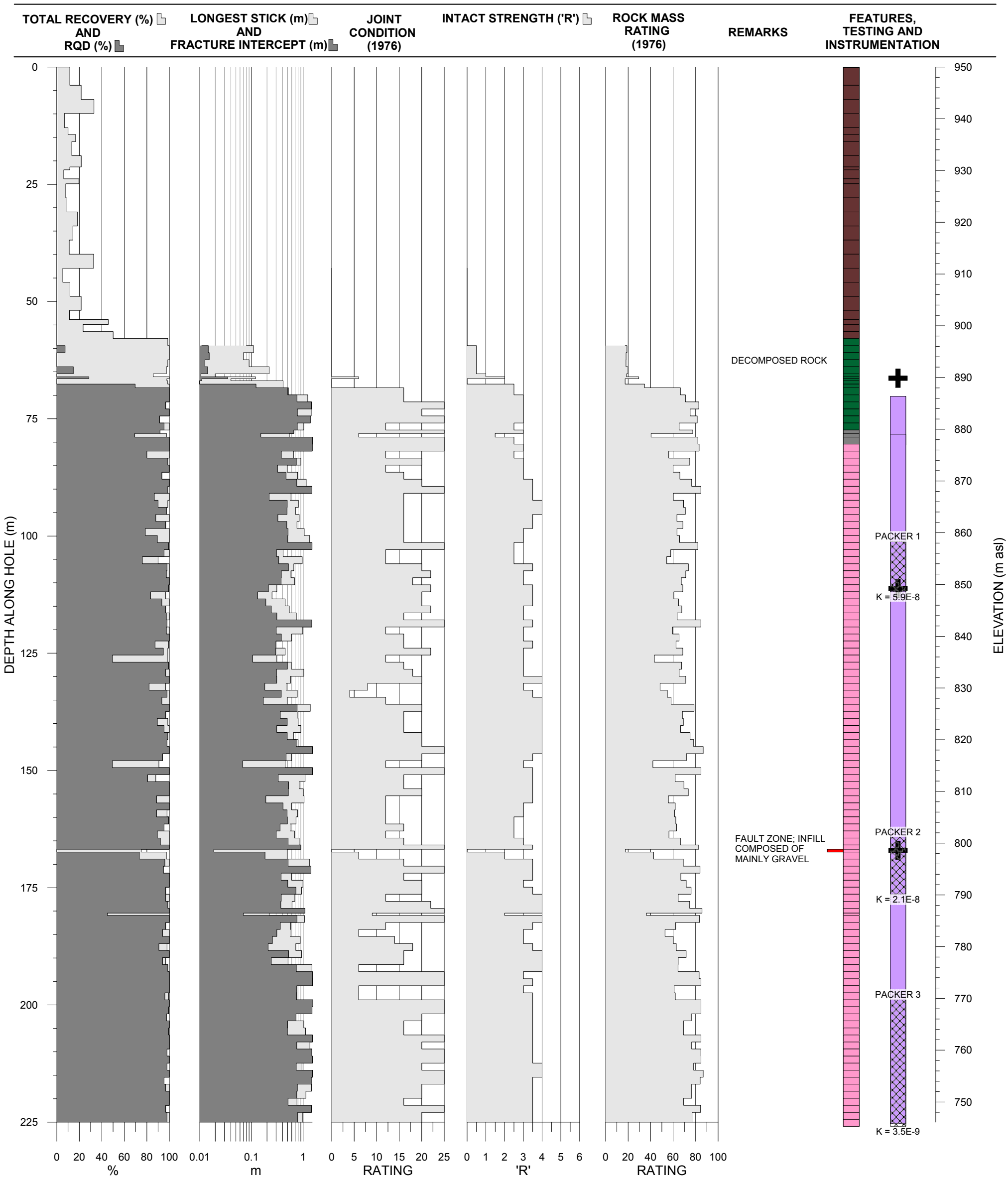
PROPOSED: A-3

PROJECT: **EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION** PROJECT NO.: **1125-007-07**

LOCATION: NORTH OF THE PROPOSED TSF
COORDINATES (m): 682711.64 E, 5608970.80 N
COLLAR ELEVATION (m asl): 947.66
DATUM: NAD83 UTM
TREND (°): 217
PLUNGE (°): -65

DRILL DESIGNATION: A-5
DRILLING CONTRACTOR: GEOTECH DRILLING
DRILLING METHOD: MUD ROTARY
CORE DIAMETER: HQ3
FLUID: WATER/POLYMER
CASED TO (m): 57

START DATE: FEBRUARY 27, 2015
FINISH DATE: MARCH 4, 2015
FINAL DEPTH (m): 225.9
DEPTH TO TOP OF ROCK (m): 57.85
LOGGED BY: JND/GND
REVIEWED BY: CK



FEATURES
- FAULT ZONE
- ZONE OF LOST CIRCULATION

LITHOLOGY[2]
- TILL
- PICRITE
- MUDSTONE
- VOLCANICLASTIC

TESTING AND INSTRUMENTATION
- PACKER TEST
- VWP
- TV SURVEY

SCALE 1:800

NOTES:
1. ALL DEPTHS MEASURED FROM GROUND SURFACE.
2. LITHOLOGY DEPTHS ARE APPROXIMATED FROM GEOLOGY LOGS PROVIDED BY KGHM ON MARCH 17, 2015 (APPENDIX D).

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,711.64E, 5,608,970.80N
Ground Elevation (m): 947.66
Datum: NAD83
Dip (degrees from horizontal): -65
Direction: 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Casing: HWT **Cased To (m):** 57

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
Final Depth of Hole (m): 225.90
Depth to Top of Rock (m): 57.85
Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description
0				GRAVEL (GW) Fine to coarse, trace to some sand, trace silt, well graded, angular to subangular, equidimensional, brown, wet, cobbles and/or boulders likely present. [TILL]
7		14		CLAY (CI) Silty, sandy, some gravel to gravelly, intermediate plastic, very stiff to hard, brown, NPL, cobbles and/or boulders likely present. [TILL]
10				GRAVEL (GM) Fine to coarse, sandy, some silt, some clay, well graded, subangular, equidimensional, brown, moist; fines are: intermediate plastic, firm, cobbles and/or boulders likely present. [TILL]
15				GRAVEL (GW) Fine to coarse, some sand, trace to some silt, well graded, subangular to subrounded, equidimensional, brownish grey, wet; fines are: low plastic, stiff, WTPL, cobbles and/or boulders likely present. [TILL]
16				

Instrument Details

SPT Blows per 150mm

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
Hydraulic Conductivity (m/sec) 10^{-8} 10^{-6} 10^{-4} 10^{-2}
DCT (blows/300mm)
SPT (blows/300mm)
Core Recovery
20 40 60 80
Moisture Content & SPT N
W_P% W% W_L%
20 40 60 80

(Continued on next page)

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,711.64E, 5,608,970.80N
Ground Elevation (m): 947.66
Datum: NAD83
Dip (degrees from horizontal): -65
Direction: 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Casing: HWT **Cased To (m):** 57

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Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description	Instrument Details	SPT Blows per 150mm

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
Hydraulic Conductivity (m/sec)
10^{-8} 10^{-6} 10^{-4} 10^{-2}
DCT (blows/300mm)
● SPT (blows/300mm)
Core Recovery
20 40 60 80
Moisture Content & SPT N
W_P% W% W_L%
20 40 60 80

(Continued on next page)

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,711.64E, 5,608,970.80N
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Start Date: 26 Feb 15
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Depth to Top of Rock (m): 57.85
Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description	Instrument Details	SPT Blows per 150mm
32–48				At 39.90 m: material becomes grey.		

Su - kPa: 40, 80, 120, 160
VANE / PEAK / REMOLD — FIELD ◆ ◇ LAB ■ □
▲ UC/2 △ Pocket Pen /2
★ % Fines
Hydraulic Conductivity (m/sec) 10^{-8} 10^{-6} 10^{-4} 10^{-2}
DCT (blows/300mm) SPT (blows/300mm)
Core Recovery 20 40 60 80
Moisture Content & SPT N: W_P% W% W_L% 20 40 60 80

(Continued on next page)

Location: North of the Proposed TSF **Project No.:** 1125-007

Survey Method: Survey
Co-ordinates (m): 682,711.64E, 5,608,970.80N
Ground Elevation (m): 947.66
Datum: NAD83
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Fluid: Water/polymer
Casing: HWT **Cased To (m):** 57

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
Final Depth of Hole (m): 225.90
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Logged by: JND/GJD
Reviewed by: CK

Depth (m)	Sample Type	Sample No.	Symbol	Lithologic Description
48–64		15		SILT (ML) Some gravel, some sand, trace clay, low plastic, hard, grey, DTPL, no visible structure, rapid dilatancy. [TILL] Rock encountered at 57.85 depth. See DH-BGC15-02 rock log.

Instrument Details

SPT Blows per 150mm

Su - kPa
40 80 120 160
VANE FIELD LAB
PEAK ◆ ■
REMOLD ◇ □
▲ UC/2
△ Pocket Pen /2
★ % Fines
Hydraulic Conductivity (m/sec)
10^{-8} 10^{-6} 10^{-4} 10^{-2}
DCT (blows/300mm)
● SPT (blows/300mm)
Core Recovery
20 40 60 80
Moisture Content & SPT N
W_P% W% W_L%
20 40 60 80

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

Location: North of the Proposed TSF

Co-ordinates (m): 682,712E - 5,608,971N
Ground Elevation (m): 947.7
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 57.0

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
Final Depth (m): 225.9
Depth To Top Of Rock (m): 57.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m) | Instrument Details | Sample Type | Lithologic Description | Symbol | Weathering Grade (A/W) | Strength Grade (R) | Total Core Recovery / RQD (%) | Longest Stick / Fracture Intercept (Meters) | Average Joint Condition (RMR '76)

Very poor quality PICRITE
Moderately to completely altered, extremely weak to very weak, greenish grey, medium grained, very closely spaced discontinuities.

At 57.90 m: 0.2 m section of decomposed rock sampled for testing - made up for SAND (SW) - fine to coarse, gravelly, some clay, well graded, green-grey, moist. Clay is low plasticity, stiff to hard, DTPL, retains structure of rock mass, weakly cemented in places.

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

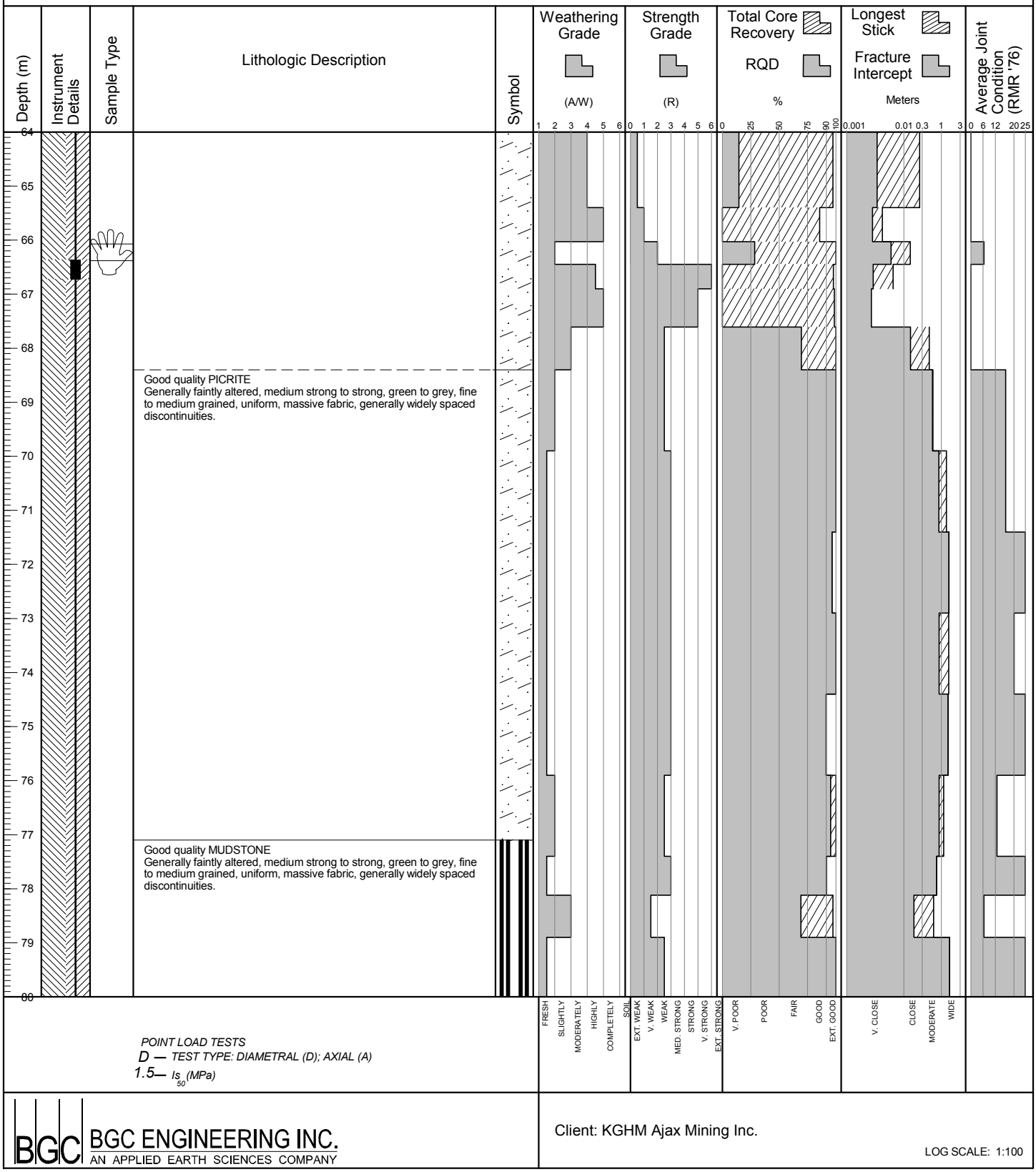
DRILL HOLE # DH-BGC15-02

Location: North of the Proposed TSF

Co-ordinates (m): 682,712E - 5,608,971N
Ground Elevation (m): 947.7
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 57.0

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
Final Depth (m): 225.9
Depth To Top Of Rock (m): 57.9
Logged By: JND/GJD
Reviewed By: CK



POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

Location: North of the Proposed TSF

Co-ordinates (m): 682,712E - 5,608,971N
Ground Elevation (m): 947.7
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
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Drill Designation: A-5
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Fluid: Water/polymer
Cased To (m) : 57.0

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
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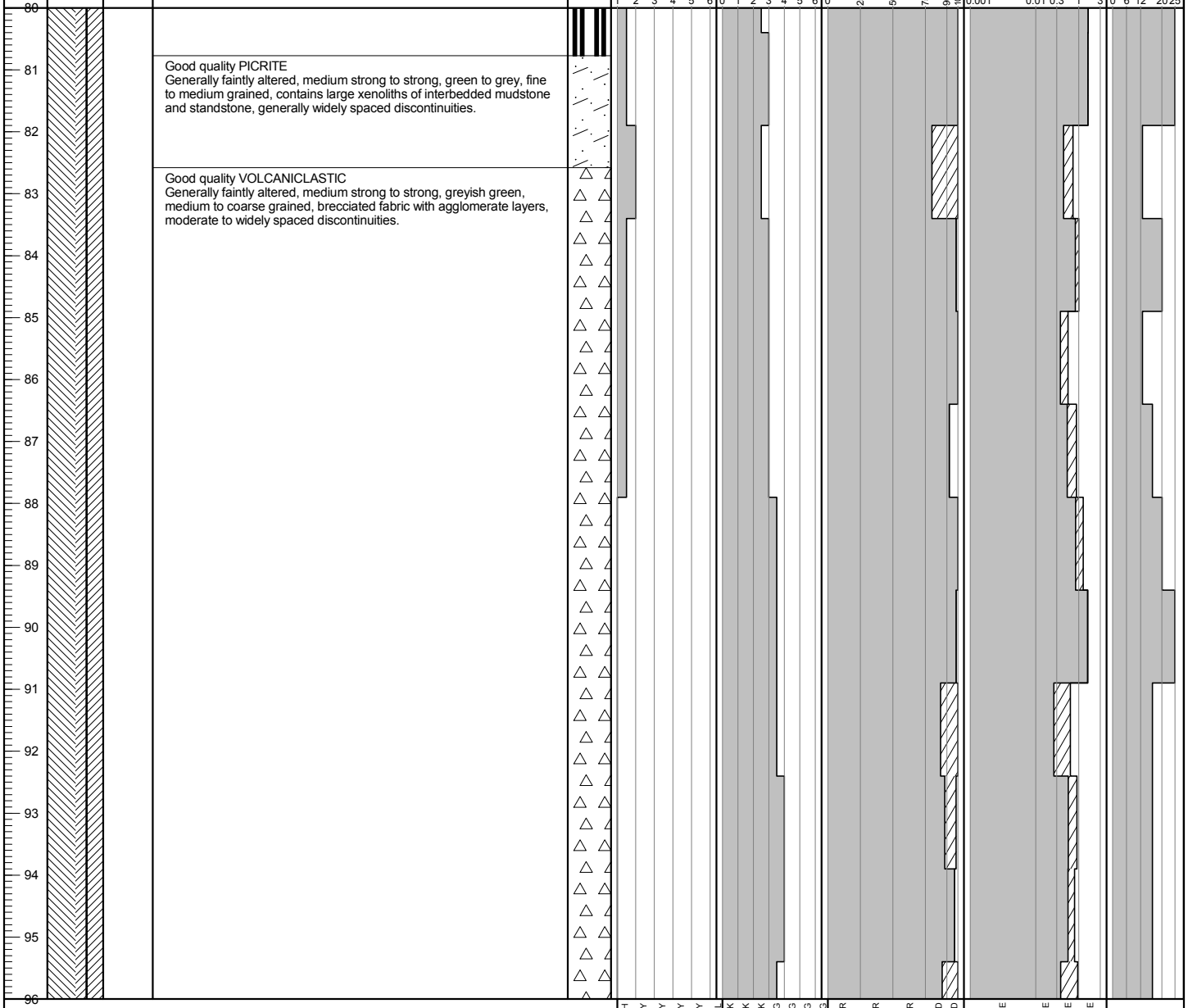
Depth To Top Of Rock (m): 57.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m) | Instrument Details | Sample Type | Lithologic Description | Symbol | Weathering Grade (A/W) | Strength Grade (R) | Total Core Recovery / RQD (%) | Longest Stick / Fracture Intercept (Meters) | Average Joint Condition (RMR '76)

Good quality PICRITE
Generally faintly altered, medium strong to strong, green to grey, fine to medium grained, contains large xenoliths of interbedded mudstone and standstone, generally widely spaced discontinuities.

Good quality VOLCANICLASTIC
Generally faintly altered, medium strong to strong, greyish green, medium to coarse grained, brecciated fabric with agglomerate layers, moderate to widely spaced discontinuities.



POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

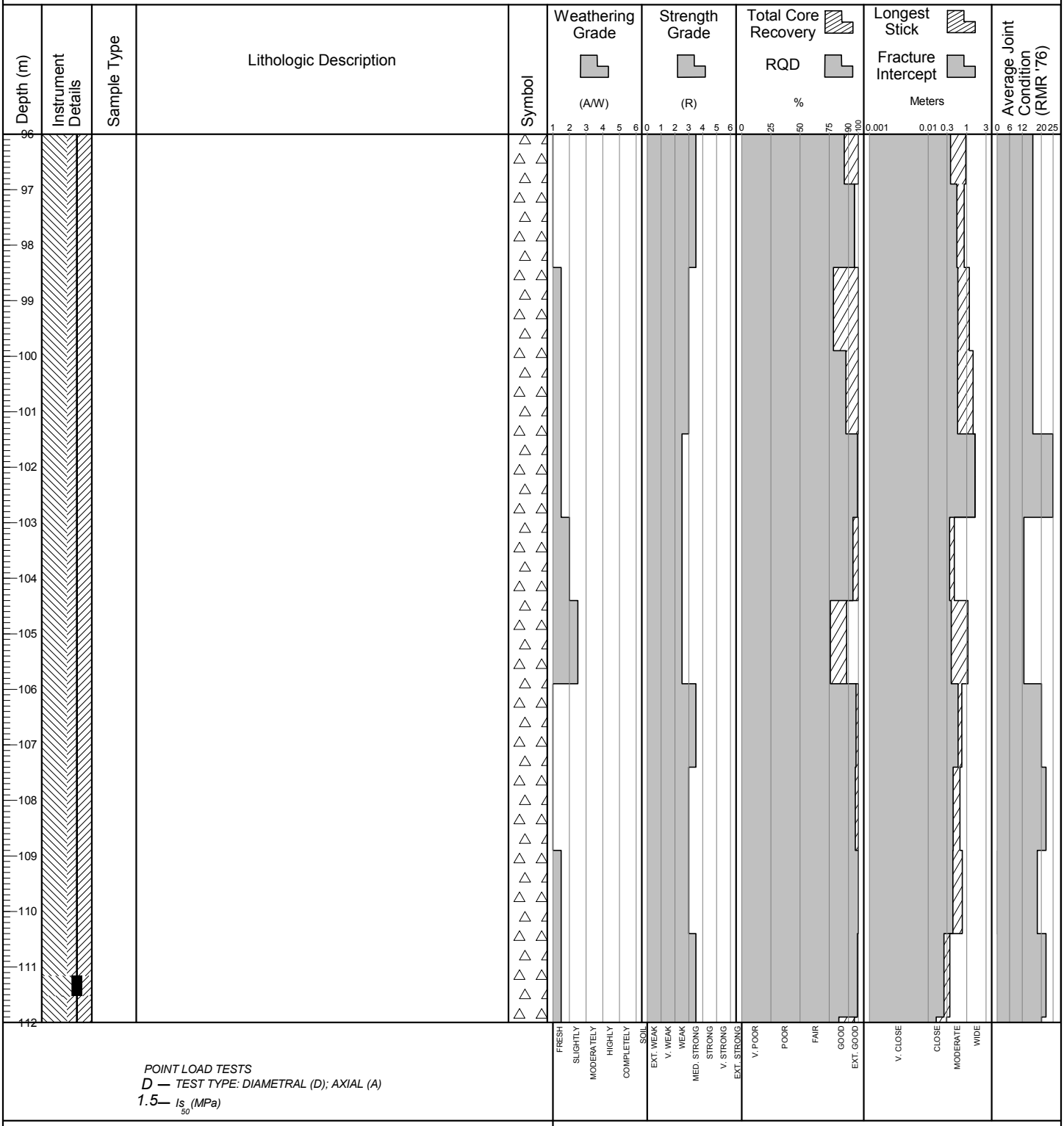
AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

Location: North of the Proposed TSF

Co-ordinates (m): 682,712E - 5,608,971N	***Drill Designation:*** A-5	***Start Date:*** 26 Feb 15
Ground Elevation (m): 947.7	***Drilling Contractor:*** Geotech Drilling	***Finish Date:*** 04 Mar 15
Survey Method: Survey	***Drill Method:*** Diamond	***Final Depth (m):*** 225.9
Datum: NAD83	***Core:*** HQ3	***Depth To Top Of Rock (m):*** 57.9
Plunge (°): -65	***Fluid:*** Water/polymer	***Logged By:*** JND/GJD
Trend (°): 217	***Cased To (m) :*** 57.0	***Reviewed By:*** CK



POINT LOAD TESTS
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BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

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AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

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Fluid: Water/polymer
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Start Date: 26 Feb 15
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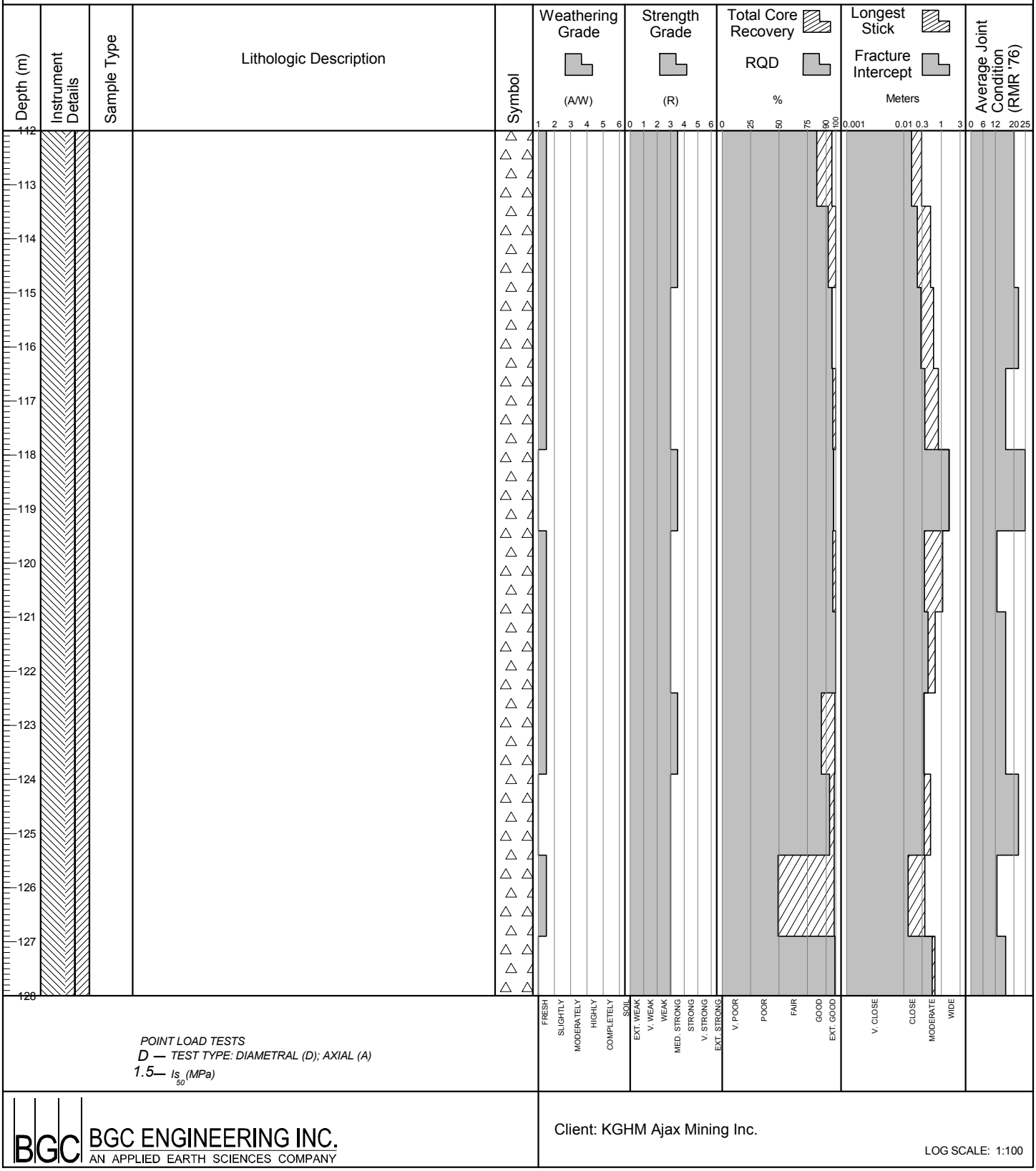
Reviewed By: CK



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BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

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AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

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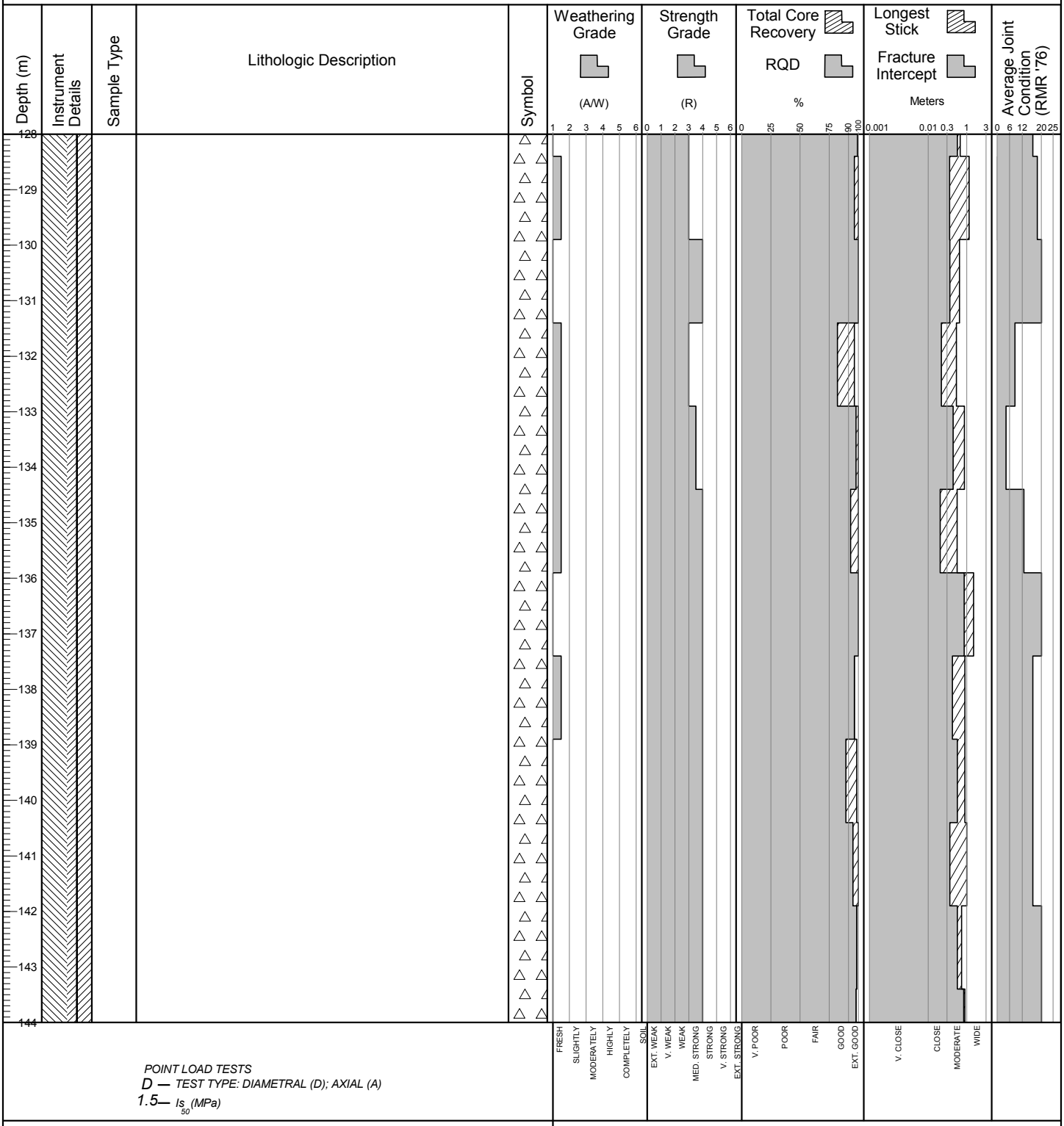

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BGC ENGINEERING INC.
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AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

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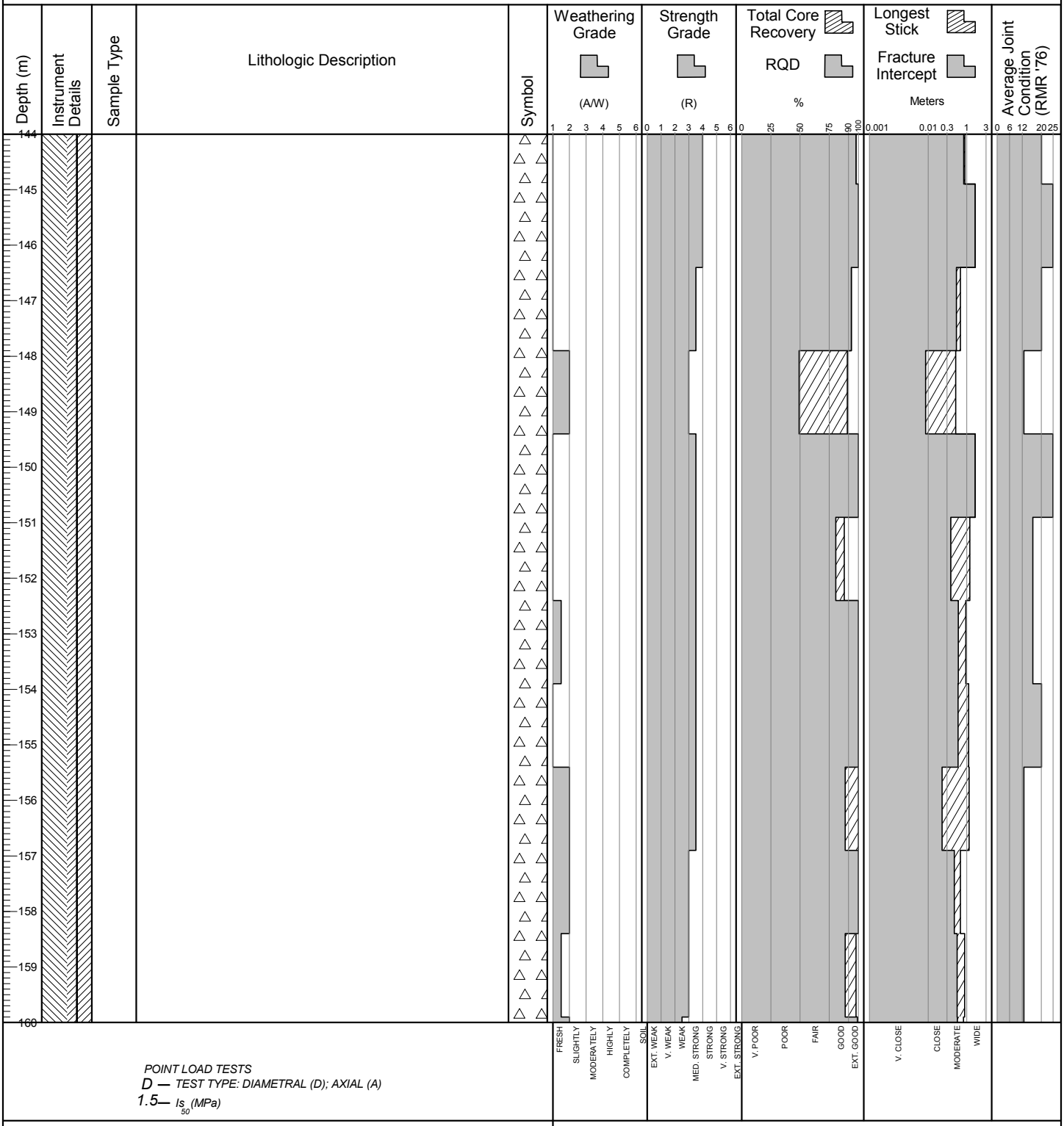

POINT LOAD TESTS
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BGC ENGINEERING INC.
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AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
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Reviewed By: CK

Depth (m)	Instrument Details	Sample Type	Lithologic Description
160–176			At 166.80 m: 0.63 m fault zone. Infill made up of GRAVEL (GW) - fine to coarse, sandy, silty, trace clay, well graded, angular, elongate, grey, moist, fines are non plastic.

Symbol

Weathering Grade (A/W): 1 2 3 4 5 6 — FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL

Strength Grade (R): 0 1 2 3 4 5 6 — EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG

Total Core Recovery / RQD (%): 0 25 50 75 90 100 — V. POOR, POOR, FAIR, GOOD, EXT. GOOD

Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3 — V. CLOSE, CLOSE, MODERATE, WIDE

Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
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AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

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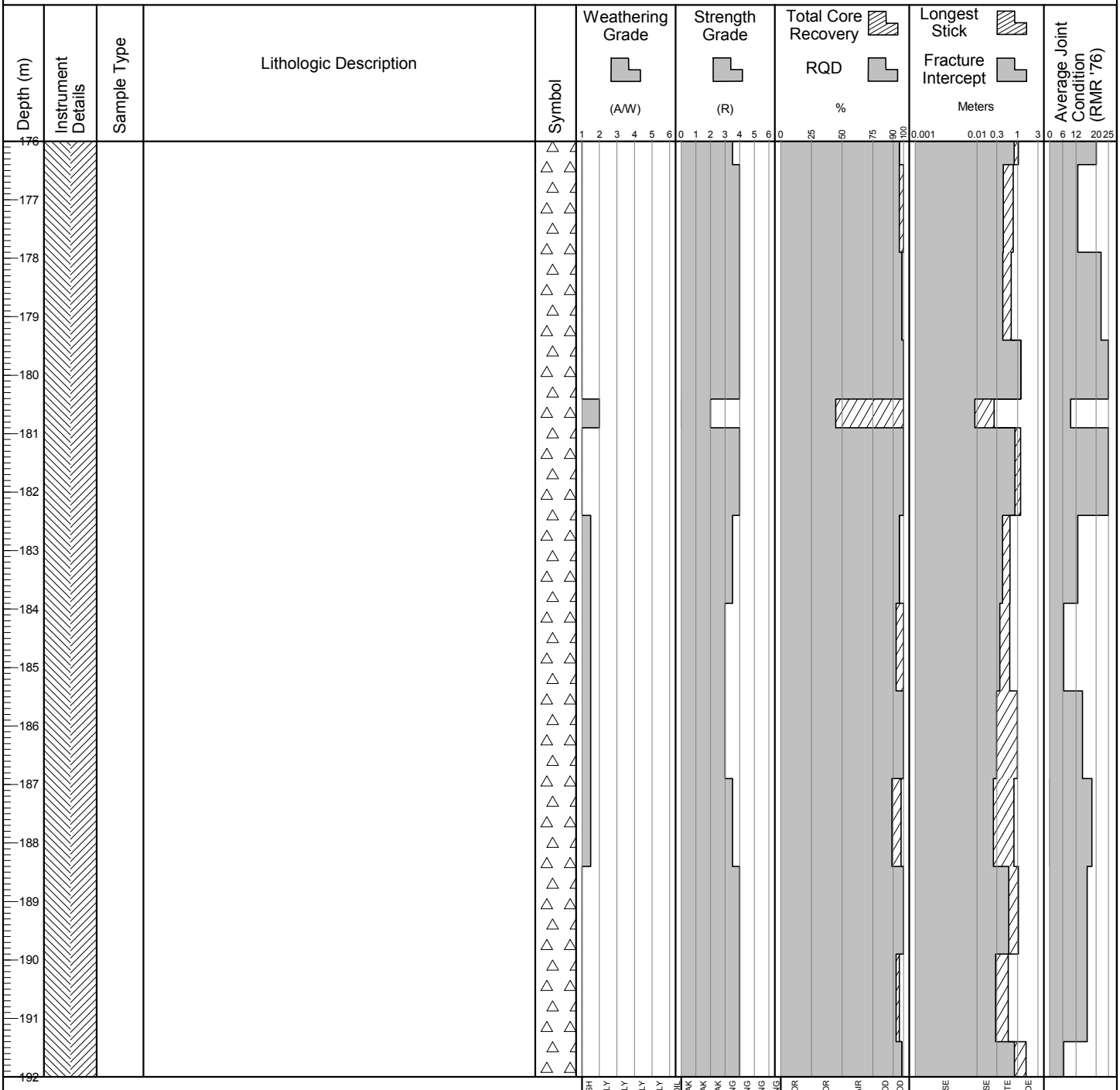

POINT LOAD TESTS
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BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

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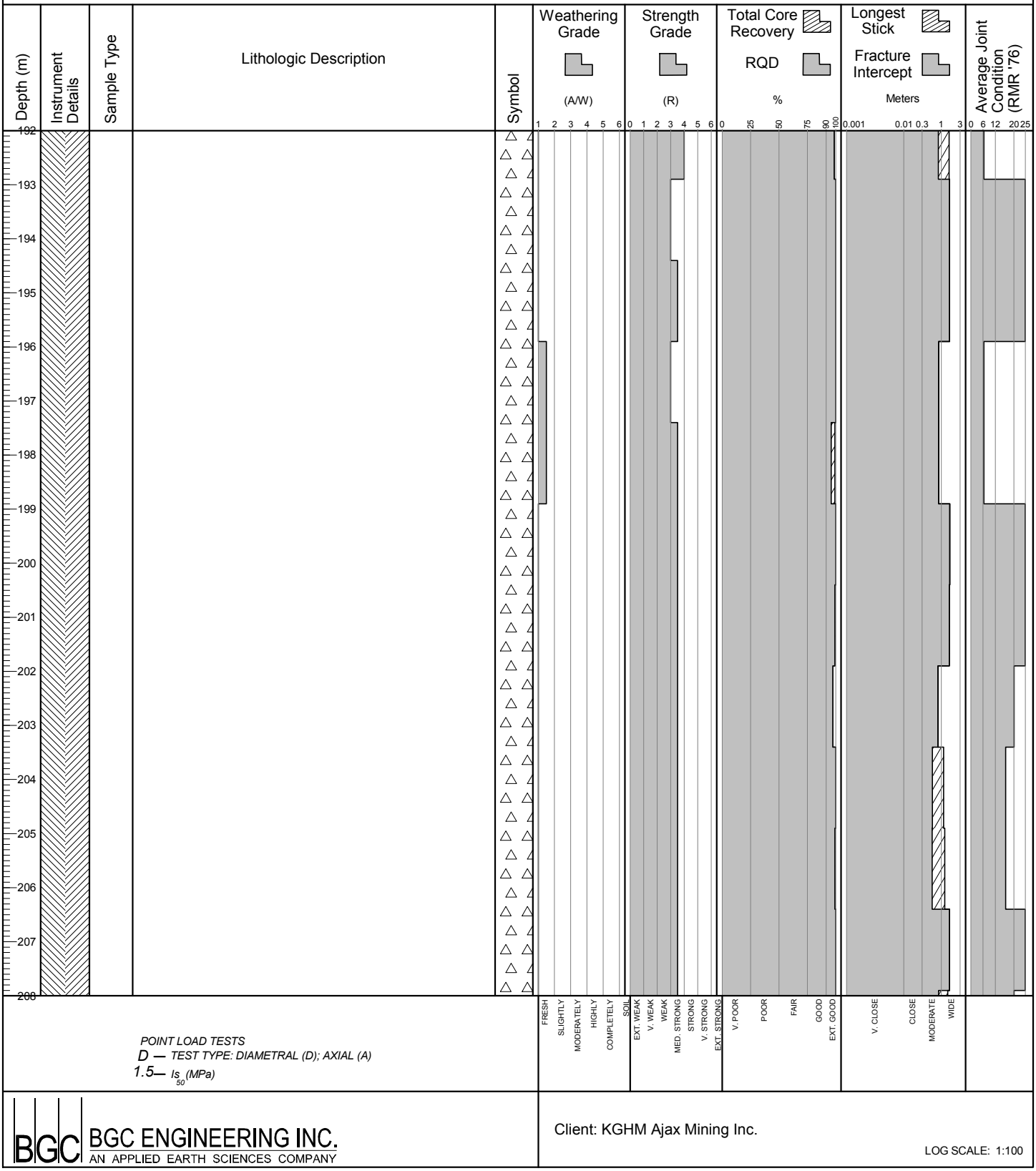

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

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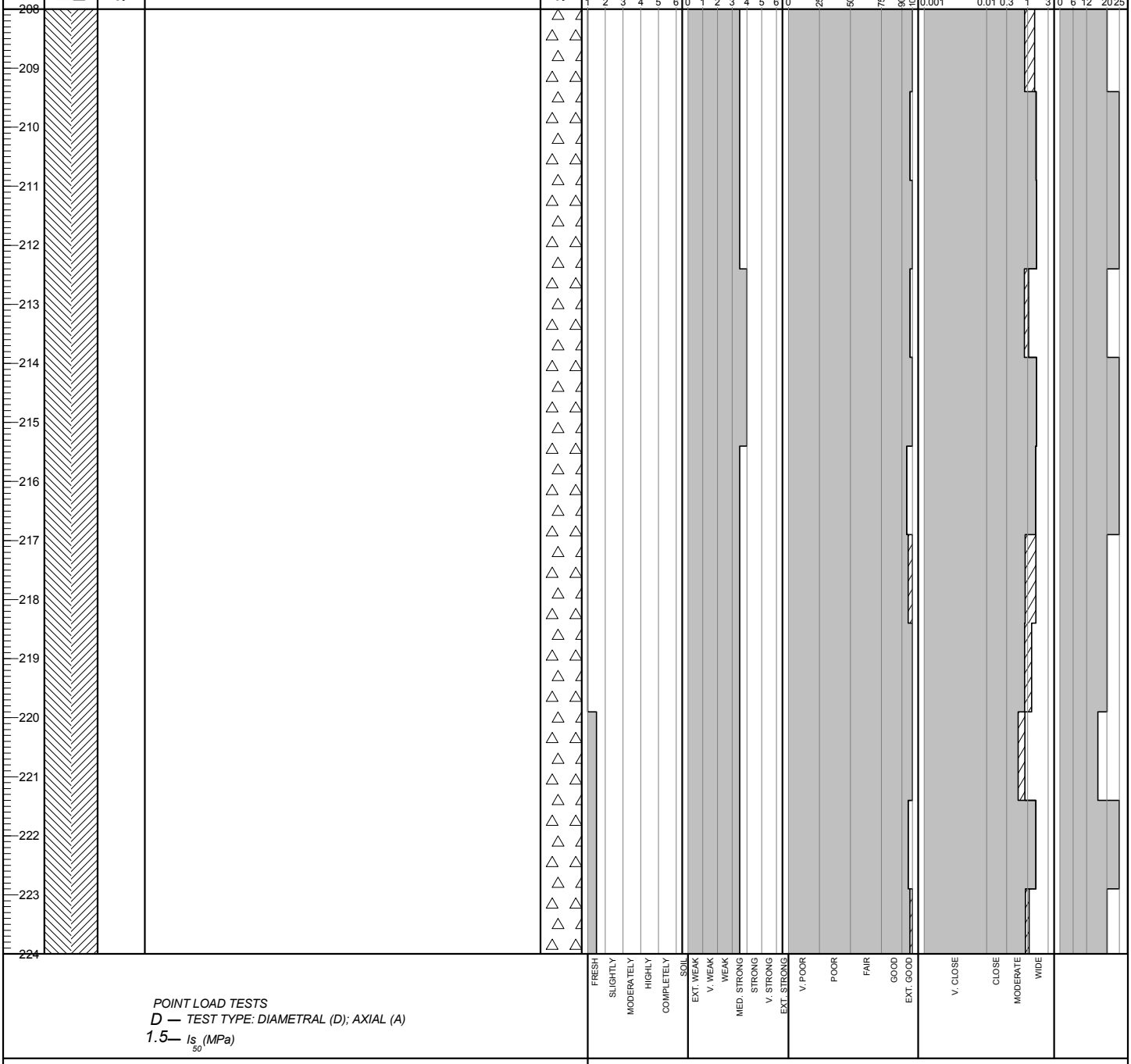

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM Ajax Mining Inc.

LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

Project: Ajax Project Environmental Assessment
Project No.: 1125-007

DRILL HOLE # DH-BGC15-02

Location: North of the Proposed TSF

Co-ordinates (m): 682,712E - 5,608,971N
Ground Elevation (m): 947.7
Survey Method: Survey
Datum: NAD83
Plunge (°): -65
Trend (°): 217

Drill Designation: A-5
Drilling Contractor: Geotech Drilling
Drill Method: Diamond
Core: HQ3
Fluid: Water/polymer
Cased To (m) : 57.0

Start Date: 26 Feb 15
Finish Date: 04 Mar 15
Final Depth (m): 225.9
Depth To Top Of Rock (m): 57.9
Logged By: JND/GJD
Reviewed By: CK

Depth (m)	Instrument Details	Sample Type	Lithologic Description
224			
225			
226			End of drill hole at 225.90 m.
227			
228			
229			
230			
231			
232			
233			
234			
235			
236			
237			
238			
239			
240			

Symbol

Weathering Grade (A/W): 1 2 3 4 5 6
FRESH, SLIGHTLY, MODERATELY, HIGHLY, COMPLETELY, SOIL

Strength Grade (R): 0 1 2 3 4 5 6
EXT. WEAK, V. WEAK, WEAK, MED. STRONG, STRONG, V. STRONG, EXT. STRONG

Total Core Recovery / RQD (%): 0 25 50 75 90 100
V. POOR, POOR, FAIR, GOOD, EXT. GOOD

Longest Stick / Fracture Intercept (Meters): 0.001 0.01 0.3 1 3
V. CLOSE, CLOSE, MODERATE, WIDE

Average Joint Condition (RMR '76): 0 6 12 20 25

POINT LOAD TESTS
D — TEST TYPE: DIAMETRAL (D); AXIAL (A)
1.5— Is_{50} (MPa)

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

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LOG SCALE: 1:100

AJAX_EA (ROCK) AJAX_ROCK.GDL BGC.GDT 6/18/15

APPENDIX B
KAM GEOLOGY LOGS

KGHM INTERNATIONAL
AJAX PROJECT

Detailed Log Report

Hole Number: KAX-14-126

Hole Number: KAX-14-126 **Units: METRIC**

Project		Logger		Coordinates		Collar			
Project Name:	AJAX	**Logged By:**	rpotvin/rmarkel	**Coordinates Grid:**	UTM83-10	**Collar Dip:**	-90.00	**Collar Az:**	0.00
Project Code:	AJAX	**Log Start Date:**	4/21/2014	**Northing:**	5,608,858.00	**Length:**	304.50		
Location:	Proposed Tailings Area	**Log Completed Date:**	4/21/2014	**Easting:**	682,620.00	**Hole Size:**	NQ		
Start Date:	Apr 16, 2014			**Elevation:**	934.00	**Hole Type:**	Diamond Drill		
Completed Date:	Apr 20, 2014	**Last Modified By:**	RPotvin			**Casing:**	Pulled		
Contractor:	Matrix Diamond Drilling Inc.	**Last Modified Date:**	10/17/2014 10:34:22AM			**Collar Survey:**	N	**Plugged:**	N
Core Storage:						**Multishot Survey:**	N	**Pulse EM Survey:**	Y
Units:	METRIC	**Current Owner:**	rmarkel			**Making Water:**	N	**Cemented:**	N

Comments: Condemnation drill hole.

Drillhole Survey

Depth	Test Type	Azimuth	Dip	Flag	Mag	Comments
0.00	COL	0.00	-90.00	O		
30.18	RX	126.30	-89.60	O	43,385.00	MS
54.56	RX	309.40	-88.50	N	56,037.00	Single shot; use multi shot data instead
60.66	RX	305.00	-88.60	O	56,052.00	MS
66.75	RX	306.80	-88.90	N	56,663.00	Single shot; use multi shot data instead
91.14	RX	304.10	-88.60	O	56,243.00	MS
97.23	RX	303.90	-88.50	N	56,345.00	Single shot; use multi shot data instead
121.62	RX	304.50	-88.60	O	55,957.00	MS
152.10	RX	311.10	-88.40	O	56,134.00	MS
182.58	RX	315.10	-88.30	O	55,686.00	MS
185.62	RX	318.40	-88.10	N	56,404.00	Single shot; use multi shot data instead
213.06	RX	316.50	-88.20	O	55,945.00	MS
243.54	RX	317.70	-88.30	O	56,214.00	MS
274.02	RX	324.20	-88.40	O	55,485.00	MS
277.06	RX	339.20	-88.20	N	56,230.00	Single shot; use multi shot data instead
304.50	RX	330.40	-87.90	O	55,744.00	MS

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
0.00 TO 36.58	**OVBN - Overburden** No core recovered.						

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
36.58 TO 39.42	**SLTS - Siltstone** Moderate gray, fine grained <1mm, occasionally interbedded with very fine grained dark gray mudstone layers. 1-2% irregular carbonate stringers (all angles; 1-3mm thick), weak chlorite fracture filling, weak pervasive talc alteration. Core is moderately rubbly (dominantly mechanical breakage). Lower contact is approximated due to broken core.	**36.58-39.42:** FG		**36.58-39.42:** TLC,P,W **36.58-39.42:** CHLT,F,W dark chlorite, trace fracture filling	**36.58-39.42:** 0.20cm, 1.00%, QZ, STRN all angles, irregular, 1-3mm thick		**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025246 36.58-39.42 2.84 0.0065 0.0360
39.42 TO 53.42	**FPI - Feldspar Porphyry Intr** Plagioclase porphyry? Moderate-dark gray, fine grained groundmass with ~20-30% subhedral and occasionally euhedral plagioclase porphyroblasts 1-4mm. The plagioclase are replaced dominantly by chlorite. Hematite on fracture selvages, intervals of pervasive chlorite/siliceous alteration. Minor gouge sections throughout (up to 30cm) and the core is moderate-highly broken up (mechanical).	**39.42-53.42:** PORPH 1-4mm, subhedral-euhedral plag(?) **39.42-53.42:** FG	**45.10-45.42:** GOU clay gouge seam, very soft **46.60-46.85:** GOU clay/hematite gouge **53.40-53.42:** CT sharp but irregular	**46.00-53.42:** OXID,F,W weak to locally moderate **47.50-53.42:** SIL,P,M **39.42-53.42:** CHLT,P,W **39.42-42.30:** HEM,F,W	**39.42-48.65:** 0.30cm, 2.00%, QZ, STRN all angles, irregular and broken up, trace carb **48.65-51.00:** 1.00cm, 5.00%, QZ, VN		**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025247 39.42-42.00 2.58 0.0074 0.0025 AX025248 42.00-45.00 3.00 0.0083 0.0025 AX025249 45.00-48.00 3.00 0.0089 0.0025 AX025250 48.00-51.00 3.00 0.0054 0.0025 AX025251 51.00-53.42 2.42 0.0080 0.0130

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
53.42 TO 101.10	**SNDS - Sandstone** Fine grained (1mm), moderate gray, patchy siliceous and chlorite alteration (with very minor chrome mica). Interbedded with dark gray, very fine grained mudstone (irregular contacts). Irregular quartz veining throughout (up to 2%), 0.1-1.5cm thick. Localized disseminated pyrite. Unit is cross-cut by plagioclase porphyry dykes with sharp contacts. From 73.63-76m, the texture appears to be a micro-conglomerate with mafic grains up to 2.5mm (subhedral).	**53.42-101.10:** FG 1mm	**63.13-63.14:** CT sharp, chilled **69.55-69.55:** CT sharp, chilled **70.21-70.22:** CT sharp, chilled **72.16-72.18:** CT sharp, chilled **72.45-72.47:** CT sharp, chilled **73.01-73.02:** CT sharp, chilled **92.00-92.24:** BX brecciation due to quartz veining	**90.72-91.14:** CHLT,P,M chlorite + **73.02-73.63:** CHLT,P,M mod-strong **72.16-72.47:** CHLT,P,M mod-strong **69.55-70.22:** CHLT,P,M mod-strong **60.50-101.10:** CHLT,PCH,W	**53.42-101.10:** 0.50cm, 2.00%, QZ, VN all angles, irregular, 0.1-1.5cm wide **69.55-70.22:** 0.10cm, 3.00%, QZ, STRN all angles, discontinuous and irregular 1-3mm **72.16-72.47:** 0.20cm, 5.00%, QZ, STRN all angles, discontinuous and irregular 1-3mm **73.02-77.92:** 0.30cm, 5.00%, QZ, STRN all angles, irregular and discontinuous	**83.16-91.14:** 0.50% PY **91.14-91.40:** 1.50% PY **91.40-101.10:** 0.50% PY	**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025252 53.42-56.00 2.58 0.0067 0.0025 AX025253 56.00-59.00 3.00 0.0070 0.0025 AX025254 59.00-61.00 2.00 0.0037 0.0025 AX025255 61.00-63.14 2.14 0.0081 0.0025 AX025256 63.14-66.00 2.86 0.0021 0.0025 AX025257 66.00-69.55 3.55 0.0021 0.0025 AX025258 69.55-70.22 0.67 0.0059 0.0130 AX025259 70.22-73.02 2.80 0.0029 0.0060 AX025261 73.02-76.00 2.98 0.0057 0.0340 AX025262 76.00-79.00 3.00 0.0074 0.0025 AX025263 79.00-82.00 3.00 0.0056 0.0025 AX025264 82.00-85.00 3.00 0.0065 0.0080 AX025265 85.00-88.00 3.00 0.0060 0.1300 AX025266 88.00-91.00 3.00 0.0056 0.0250 AX025267 91.00-94.00 3.00 0.0067 0.0350 AX025268 94.00-97.00 3.00 0.0065 0.0025 AX025269 97.00-100.00 3.00 0.0069 0.0050 AX025270 100.00-103.00 3.00 0.0054 0.0025
63.14 TO 69.55	**UNK - Unknown** Plagioclase Porphyry Dyke Fine grained <1mm, light to mod gray groundmass with ~2-5% subhedral-anhedral plag <2mm. Unit is moderately silicified with weak chlorite halo alteration. Sharp but irregular contacts. 2%, 1-5mm quartz veining (all angles).	**63.14-69.55:** PORPH <2mm subhedral-anhedral plag **63.14-69.55:** FG <1mm	**69.55-69.55:** CT sharp, chilled	**63.14-69.55:** SIL,P,M **63.14-69.55:** CHLT,HALO,W			**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025256 63.14-66.00 2.86 0.0021 0.0025 AX025257 66.00-69.55 3.55 0.0021 0.0025
97.55 TO 98.14	**MDST - Mudstone** Dark gray, very fine grained, interbedded with <1cm, <1mm siltstone. Sharp contacts with surrounding sandstone beds.	**97.55-98.14:** EQUI **97.55-98.14:** FG very fine grained					**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025269 97.00-100.00 3.00 0.0069 0.0050

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
101.10 TO 110.55	**MAFV - Mafic Volcanic** Dark gray/green, fine grained with ~5% (1mm) subhedral plag. Some patches appear to be picritic, but zones are diffuse. Pervasive weak chloritization. ~1.5% irregular quartz/chlorite veining throughout, 1-8mm thick.	**101.10-110.55:** PORPH 1mm, subhedral plag **101.10-110.55:** FG dark gray/green		**101.10-110.55:** CHLT,P,W			**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025270 100.00-103.00 3.00 0.0054 0.0025 AX025271 103.00-106.00 3.00 0.0045 0.0025 AX025272 106.00-109.00 3.00 0.0057 0.0025 AX025273 109.00-112.00 3.00 0.0059 0.0025
110.55 TO 144.67	**PICR - Picrite** Dark gray/green, very fine grained groundmass with ~25% ameoboid 1-2mm relict olivine phenos (replaced by chlorite). Weak chlorite patches throughout and occasional fault zones with strong chloritization, weak-mod shearing and chlorite/clay gouge. 137.25-144.67 occasional bright green cr-mica alteration (fuch?), patchy, weak. 137.25-141.49 occasion (2%) subrounded SLST inclusions up to 8cm wide.	**110.55-144.67:** PORPH relict olivine phenos (replaced by chlorite), ~25% **110.55-144.67:** FG very fine grained groundmass	**119.47-123.60:** FRA fracturing related to faulting, infilled with chlorite/serpentine **119.47-120.67:** FLT **121.62-123.08:** FLT **121.62-123.08:** GOU ~95% clay/chlorite gouge **125.46-125.84:** FLT **127.86-129.04:** FLT **129.76-131.56:** GOU ~15% clay/chlorite gouge **129.76-131.56:** FLT **133.63-133.81:** GOU cct, chlt and clay infill **135.06-137.27:** SHR **138.30-141.49:** SHR **141.49-141.50:** CT sharp **141.95-141.96:** CT sharp **141.96-144.67:** SHR	**137.25-141.49:** HEM,PCH,M interlayered in shear zone **110.55-144.67:** CHLT,PCH,M	**132.00-141.49:** 0.20cm, 20.00%, QZ, STRN varies from 30 to 55 deg in strongly sheared zone		**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025273 109.00-112.00 3.00 0.0059 0.0025 AX025274 112.00-115.00 3.00 0.0048 0.0025 AX025276 115.00-118.00 3.00 0.0054 0.0025 AX025277 118.00-121.00 3.00 0.0053 0.0025 AX025278 121.00-124.00 3.00 0.0047 0.0025 AX025279 124.00-127.00 3.00 0.0044 0.0025 AX025281 127.00-130.00 3.00 0.0049 0.0025 AX025282 130.00-133.00 3.00 0.0055 0.0025 AX025283 133.00-136.00 3.00 0.0053 0.0025 AX025284 136.00-139.00 3.00 0.0052 0.0025 AX025285 139.00-142.00 3.00 0.0063 0.0025 AX025286 142.00-144.67 2.67 0.0046 0.0650

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
141.49 TO 141.96	**SLTS - Siltstone** Medium greenish grey		**141.49-141.50:** CT sharp **141.95-141.96:** CT sharp				**Sample #** / **From - To** / **Length** / **Cu %** / **Au gpt** AX025285 / 139.00-142.00 / 3.00 / 0.0063 / 0.0025
144.00 TO 144.67	**MDST - Mudstone** Interlayered MDST (35%), SLTS (25%), PICR (25%) and 15% qtz +/- cct veining.						**Sample #** / **From - To** / **Length** / **Cu %** / **Au gpt** AX025286 / 142.00-144.67 / 2.67 / 0.0046 / 0.0650

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization
144.67 TO 304.50	**MAFV - Mafic Volcanic** Variable light to medim to dark greenish grey. Breccia textures very common, with rounded clasts of Nicola Sediments (SLTS, SNDS) 5-25%. 159.68-304.5m 1-2% rounded SNDS inclusions, unmineralized.	**144.67-304.50:** FG	**144.67-144.68:** CT sharp **148.83-154.05:** BX volcaniclastic? **154.05-155.88:** SHR **155.88-155.89:** CT sharp, sheared **165.20-175.10:** BX angular SLTS and occasional SNDS clasts, gradational within MAFV unit **175.10-304.50:** BX bx'n common throughout unit, with clasts of SLTS, SNDS and MAFV **181.77-182.00:** SHR **190.55-190.56:** CT sharp **221.84-221.85:** CT sharp **250.95-252.15:** SHR **265.05-265.43:** SHR **268.18-268.20:** SHR **273.50-273.51:** GOU too broken to get angle. Chlt and hem infill **283.80-283.81:** CT sharp, MAFV seems to disappear until end of msv shear zone **283.82-285.45:** SHR **286.30-286.40:** SHR **287.95-293.60:** SHR 45-55deg on average **293.59-293.60:** CT sharp	**297.63-298.53:** ALB-SER,P,I **301.90-304.50:** ALB-SER,PCH,M **293.60-304.50:** HEM,PCH,M **283.80-293.60:** HEM,PCH,W **283.80-293.60:** ALB-SER,P,I assoc with shear and bx zone **282.50-283.80:** ALB-SER,PCH,M **267.50-283.80:** EPID,PCH,M **274.10-276.40:** ALB-SER,P,S **272.00-274.10:** ALB-SER,PCH,M **269.30-270.97:** ALB-SER,PCH,M **267.50-283.80:** HEM,F,M **267.50-268.33:** ALB-SER,PCH,S **250.10-252.15:** ALB-SER,P,M **225.70-232.50:** ALB-SER,PCH,M **201.80-210.35:** ALB-SER,PCH,S **201.20-304.50:** HEM,F,W **200.63-201.20:** HEM,PCH,S **196.40-199.65:** ALB-SER,PCH,S **193.90-196.40:** ALB-SER,PCH,W **190.56-193.90:** ALB-SER,PCH,S **180.60-187.90:** ALB-SER,PCH,M	**144.67-304.50:** 0.50cm, 4.00%, QZ, VN also irreg (branching) **165.20-304.50:** 0.20cm, 1.00%, CCT, STRN all angles **206.85-208.30:** 8.00cm, 25.00%, QZ, VN several wide qtz veins **245.34-247.10:** 10.00cm, 10.00%, QZ, VN several wide qtz veins in this interval **285.76-286.70:** 9.00cm, 15.00%, QZ, VN interval of increased qtz veins, assoc with py and cp blebs	**159.68-165.20:** 1.00% PY **165.20-175.10:** 0.10% CP possible **165.20-175.10:** 7.00% PY and blebs, within SLTS **192.95-200.63:** 5.00% PY and blebs **203.95-213.00:** 4.00% PY in groundmass, SLST clasts and as blebs within qtz veins **213.00-232.50:** 1.00% PY mostly assoc with SLST intervals but also in MAFV **232.50-244.60:** 0.50% PY **244.60-261.25:** 4.00% PY and dissem, 3-5% **258.78-258.85:** 0.10% CP assoc with py and qtz veining **261.25-265.05:** 0.10% PY **265.05-265.43:** 3.00% PY in shear zone **265.43-280.00:** 0.10% PY **280.00-293.60:** 2.00% PY also as stringers and blebs, in MAFV, shear and qtz veins **285.76-286.70:** 0.10% CP assoc with qtz veins and py, in between shear zones **293.60-304.50:** 1.00% PY **302.75-302.85:** 0.10% CP assoc with qtz vein in MAFV, near mod hem altd bx clast

Assays

Sample #	From - To	Length	Cu %	Au gpt
AX025287	144.67-147.00	2.33	0.0122	0.0025
AX025288	147.00-150.00	3.00	0.0149	0.0660
AX025289	150.00-153.00	3.00	0.0137	0.0530
AX025290	153.00-155.88	2.88	0.0133	0.0530
AX025291	155.88-157.50	1.62	0.0098	0.0490
AX025292	157.50-159.68	2.18	0.0125	0.0130
AX025293	159.68-162.00	2.32	0.0139	0.0060
AX025294	162.00-165.00	3.00	0.0146	0.0050
AX025295	165.00-168.00	3.00	0.0230	0.6980
AX025296	168.00-171.00	3.00	0.0154	0.1930
AX025297	171.00-173.00	2.00	0.0127	0.2860
AX025298	173.00-175.10	2.10	0.0142	0.0460
AX025299	175.10-178.00	2.90	0.0141	0.0050
AX025301	178.00-181.00	3.00	0.0156	0.0025
AX025302	181.00-184.00	3.00	0.0150	0.0100
AX025303	184.00-187.00	3.00	0.0106	0.0350
AX025304	187.00-189.00	2.00	0.0132	0.0025
AX025305	189.00-190.55	1.55	0.0135	0.0025
AX025306	190.55-193.60	3.05	0.0117	0.1190
AX025307	193.60-196.00	2.40	0.0133	0.0025
AX025308	196.00-199.00	3.00	0.0150	0.0025
AX025309	199.00-202.00	3.00	0.0105	0.0025
AX025310	202.00-205.00	3.00	0.0112	0.1820
AX025311	205.00-208.00	3.00	0.0112	0.0850
AX025312	208.00-211.00	3.00	0.0152	0.0550
AX025313	211.00-214.00	3.00	0.0144	0.0025
AX025314	214.00-217.00	3.00	0.0096	0.0025
AX025315	217.00-219.63	2.63	0.0146	0.0025
AX025316	219.63-221.85	2.22	0.0107	0.0025
AX025317	221.85-224.00	2.15	0.0153	0.0050
AX025318	224.00-226.00	2.00	0.0149	0.0310
AX025319	226.00-228.40	2.40	0.0131	0.0210
AX025321	228.40-231.00	2.60	0.0083	0.0025
AX025322	231.00-233.00	2.00	0.0130	0.0050
AX025323	233.00-235.00	2.00	0.0117	0.0025
AX025324	235.00-237.73	2.73	0.0130	0.0025
AX025326	237.73-240.00	2.27	0.0147	0.0090
AX025327	240.00-243.00	3.00	0.0134	0.0050
AX025328	243.00-246.00	3.00	0.0175	0.0390
AX025329	246.00-249.00	3.00	0.0178	0.0025

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
				175.50-180.60: ALB-SER,PCH,W **175.10-304.50:** CHLT,PCH,M **164.35-175.10:** CHLT,PCH,W **160.25-163.50:** ALB-SER,PCH,M **151.85-160.25:** ALB-SER,P,S **150.90-151.10:** ALB-SER,P,S **147.95-149.75:** ALB-SER,PCH,S **144.67-147.95:** ALB-SER,PCH,W **153.50-200.63:** HEM,F,W **144.67-153.50:** HEM,F,M **144.67-164.35:** CHLT,PCH,M			AX025330 249.00-252.00 3.00 0.0210 0.6230 AX025331 252.00-255.00 3.00 0.0155 0.2320 AX025332 255.00-258.00 3.00 0.0171 0.0025 AX025333 258.00-261.00 3.00 0.0190 0.0025 AX025334 261.00-264.00 3.00 0.0147 0.0190 AX025335 264.00-267.00 3.00 0.0168 0.1140 AX025336 267.00-270.00 3.00 0.0146 0.0140 AX025337 270.00-273.00 3.00 0.0165 0.0025 AX025338 273.00-276.00 3.00 0.0125 0.0025 AX025339 276.00-279.00 3.00 0.0146 0.0025 AX025341 279.00-282.00 3.00 0.0151 0.0025 AX025342 282.00-283.80 1.80 0.0166 0.0050 AX025343 283.80-286.00 2.20 0.0200 0.4190 AX025344 286.00-289.00 3.00 0.0202 0.0360 AX025345 289.00-291.00 2.00 0.0173 0.3740 AX025346 291.00-293.60 2.60 0.0114 0.2200 AX025347 293.60-296.00 2.40 0.0137 0.0025 AX025348 296.00-299.00 3.00 0.0133 0.0060 AX025349 299.00-302.00 3.00 0.0116 0.0110 AX025350 302.00-304.50 2.50 0.0117 0.0090
155.88 TO 159.68	**SLTS - Siltstone** With interbedded SNDS 157.42~157.95m. Bx texture occasionally visible.		**155.88-155.89:** CT sharp, sheared				**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025291 155.88-157.50 1.62 0.0098 0.0490 AX025292 157.50-159.68 2.18 0.0125 0.0130
165.20 TO 175.10	**SLTS - Siltstone** Gradational contacts within MAFV. Very irreg, locally sheared, bx texture throughout. Py and occasional cp(?) mineralization associated with this unit. 1% SNDS clasts, not mineralized.		**165.20-175.10:** BX angular SLTS and occasional SNDS clasts, gradational within MAFV unit				**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025295 165.00-168.00 3.00 0.0230 0.6980 AX025296 168.00-171.00 3.00 0.0154 0.1930 AX025297 171.00-173.00 2.00 0.0127 0.2860 AX025298 173.00-175.10 2.10 0.0142 0.0460

From To	Lithology	Texture	Structure	Alteration	Vein	Mineralization	Assays
190.55 TO 193.60	**SLTS - Siltstone** UCT sharp, LCT gradational within bx'd MAFV.		**190.55-190.56:** CT sharp				**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025306 190.55-193.60 3.05 0.0117 0.1190
219.63 TO 221.85	**SLTS - Siltstone** UCT sharp but irreg. MAFV is chilled at UCT (LCT of SLTS). MAFV in between 219.95-216.13m.		**221.84-221.85:** CT sharp				**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025316 219.63-221.85 2.22 0.0107 0.0025
228.40 TO 237.73	**SLTS - Siltstone** Still a mixture of SLTS, SNDS and MAFV (bx texture) but dominantly SLTS in this interval.						**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025321 228.40-231.00 2.60 0.0083 0.0025 AX025322 231.00-233.00 2.00 0.0130 0.0050 AX025323 233.00-235.00 2.00 0.0117 0.0025 AX025324 235.00-237.73 2.73 0.0130 0.0025
283.80 TO 293.60	**SLTS - Siltstone** Unit is somewhat assumed due to strong albt alteration, bx, shear and f.gr texture obscuring rocktype.		**283.80-283.81:** CT sharp, MAFV seems to disappear until end of msv shear zone **283.82-285.45:** SHR **286.30-286.40:** SHR **287.95-293.60:** SHR 45-55deg on average **293.59-293.60:** CT sharp		**285.76-286.70:** 9.00cm, 15.00%, QZ, VN interval of increased qtz veins, assoc with py and cp blebs		**Sample #** **From - To** **Length** **Cu %** **Au gpt** AX025343 283.80-286.00 2.20 0.0200 0.4190 AX025344 286.00-289.00 3.00 0.0202 0.0360 AX025345 289.00-291.00 2.00 0.0173 0.3740 AX025346 291.00-293.60 2.60 0.0114 0.2200

RQD

Depth From	Depth To	Length	Rec Length	REC %	RQD Length	RQD %	Strength	Weathering
36.58	39.32	2.74	2.82	102.92	0.00	0.00	R3	W2
39.32	42.37	3.05	3.48	114.10	0.15	4.92	R2	W1
42.37	45.42	3.05	3.20	104.92	0.20	6.56	R2	W1
45.42	48.46	3.04	2.68	88.16	0.19	6.25	R2	W1
48.46	51.51	3.05	2.86	93.77	1.12	36.72	R4	W2
51.51	54.56	3.05	2.66	87.21	0.76	24.92	R3	W1
54.56	55.47	0.91	1.03	113.19	0.53	58.24	R3	W1
55.47	57.61	2.14	2.61	121.96	1.13	52.80	R3	W1
57.61	60.66	3.05	3.10	101.64	0.76	24.92	R3	W1
60.66	63.70	3.04	3.22	105.92	1.13	37.17	R3	W1
63.70	66.75	3.05	3.25	106.56	1.45	47.54	R3	W1
66.75	69.80	3.05	2.81	92.13	1.65	54.10	R4	W1
69.80	72.85	3.05	3.26	106.89	2.42	79.34	R4	W1
72.85	75.90	3.05	2.91	95.41	1.99	65.25	R5	W1
75.90	78.94	3.04	3.44	113.16	2.26	74.34	R4	W1
78.94	81.99	3.05	3.31	108.52	2.21	72.46	R4	W1
81.99	85.04	3.05	3.17	103.93	2.27	74.43	R4	W1
85.04	88.09	3.05	3.21	105.25	2.87	94.10	R4	W1
88.09	91.14	3.05	3.06	100.33	2.78	91.15	R4	W1
91.14	94.18	3.04	3.22	105.92	2.88	94.74	R3	W1
94.18	97.23	3.05	2.87	94.10	2.51	82.30	R3	W1
97.23	100.30	3.07	3.26	106.19	2.16	70.36	R4	W1
100.30	103.33	3.03	3.19	105.28	2.69	88.78	R4	W1
103.33	106.38	3.05	3.00	98.36	2.82	92.46	R4	W1
106.38	109.42	3.04	3.15	103.62	2.33	76.64	R4	W1
109.42	112.47	3.05	3.04	99.67	2.81	92.13	R4	W1
112.47	115.52	3.05	3.11	101.97	2.80	91.80	R4	W1
115.52	118.57	3.05	3.19	104.59	2.26	74.10	R4	W1
118.57	121.62	3.05	3.06	100.33	1.91	62.62	R3	W2
121.62	124.66	3.04	3.09	101.64	1.06	34.87	R2	W2
124.66	127.71	3.05	3.08	100.98	1.51	49.51	R2	W1
127.71	130.76	3.05	3.01	98.69	1.02	33.44	R2	W2
130.76	133.81	3.05	3.12	102.30	0.93	30.49	R2	W2
133.81	136.86	3.05	3.09	101.31	2.23	73.11	R3	W1
136.86	139.90	3.04	3.17	104.28	2.76	90.79	R3	W1
139.90	142.95	3.05	3.09	101.31	2.83	92.79	R4	W1
142.95	146.00	3.05	3.11	101.97	2.76	90.49	R4	W1
146.00	149.05	3.05	3.06	100.33	1.91	62.62	R4	W1
149.05	152.10	3.05	3.12	102.30	2.51	82.30	R4	W1
152.10	155.14	3.04	3.07	100.99	2.60	85.53	R3	A1
155.14	158.19	3.05	3.08	100.98	2.27	74.43	R4	A1
158.19	161.24	3.05	3.14	102.95	1.78	58.36	R4	A1
161.24	164.29	3.05	3.13	102.62	2.67	87.54	R4	A1
164.29	167.34	3.05	2.93	96.07	2.62	85.90	R4	A1
167.34	170.38	3.04	3.06	100.66	2.84	93.42	R4	A1
170.38	173.43	3.05	3.05	100.00	2.08	68.20	R4	A1
173.43	176.48	3.05	3.07	100.66	2.13	69.84	R4	A1
176.48	179.53	3.05	3.07	100.66	2.51	82.30	R4	A1
179.53	182.58	3.05	3.05	100.00	2.68	87.87	R4	A1
182.58	185.62	3.04	2.98	98.03	2.32	76.32	R4	A1
185.62	188.67	3.05	3.08	100.98	1.61	52.79	R4	A1
188.67	191.72	3.05	3.07	100.66	2.44	80.00	R4	A1
191.72	194.77	3.05	3.17	103.93	1.70	55.74	R4	A1
194.77	197.82	3.05	3.03	99.34	2.29	75.08	R4	A1
197.82	200.86	3.04	3.06	100.66	2.64	86.84	R4	A1
200.86	203.91	3.05	3.07	100.66	2.78	91.15	R4	A1
203.91	206.96	3.05	3.03	99.34	1.69	55.41	R4	A1
206.96	210.00	3.04	3.22	105.92	1.16	38.16	R3	A1
210.00	213.06	3.06	2.98	97.39	2.23	72.88	R4	A1
213.06	216.10	3.04	3.03	99.67	2.81	92.43	R4	A1
216.10	219.15	3.05	3.07	100.66	2.91	95.41	R4	A1

Depth From	Depth To	Length	Rec Length	REC %	RQD Length	RQD %	Strength	Weathering
219.15	222.20	3.05	3.05	100.00	2.88	94.43	R4	A1
222.20	225.25	3.05	3.01	98.69	2.95	96.72	R4	A1
225.25	228.30	3.05	3.11	101.97	1.94	63.61	R3	A1
228.30	231.34	3.04	3.28	107.89	1.63	53.62	R3	A1
231.34	234.39	3.05	3.07	100.66	2.29	75.08	R4	A1
234.39	237.44	3.05	2.98	97.70	2.17	71.15	R4	A1
237.44	240.49	3.05	3.09	101.31	2.57	84.26	R4	A1
240.49	243.54	3.05	3.01	98.69	2.87	94.10	R4	A1
243.54	246.58	3.04	3.03	99.67	2.28	75.00	R4	A1
246.58	249.63	3.05	3.07	100.66	2.92	95.74	R4	A1
249.63	252.68	3.05	3.14	102.95	1.52	49.84	R4	A1
252.68	255.73	3.05	3.08	100.98	2.87	94.10	R4	A1
255.73	258.78	3.05	3.13	102.62	2.84	93.11	R4	A1
258.78	261.82	3.04	3.05	100.33	2.41	79.28	R4	A1
261.82	264.87	3.05	3.09	101.31	1.98	64.92	R4	A1
264.87	267.92	3.05	3.01	98.69	2.92	95.74	R4	A1
267.92	270.97	3.05	2.92	95.74	1.54	50.49	R4	A1
270.97	274.02	3.05	3.15	103.28	1.86	60.98	R4	A1
274.02	277.06	3.04	3.04	100.00	1.75	57.57	R4	A1
277.06	280.11	3.05	3.15	103.28	2.04	66.89	R3	A1
280.11	283.16	3.05	3.15	103.28	2.52	82.62	R3	A1
283.16	286.21	3.05	3.06	100.33	1.63	53.44	R3	A1
286.21	289.26	3.05	3.09	101.31	1.57	51.48	R3	A1
289.26	292.30	3.04	3.22	105.92	1.97	64.80	R3	A1
292.30	295.35	3.05	3.07	100.66	1.13	37.05	R3	A1
295.35	298.40	3.05	3.10	101.64	2.24	73.44	R4	A1
298.40	301.45	3.05	3.10	101.64	2.18	71.48	R4	A1
301.45	304.50	3.05	2.97	97.38	1.91	62.62	R4	A1

Samples

Sample Number	From	To	Sample Type	Ref Num	Status	Cu %	Au gpt	Pt gpt	Pd gpt	Ag gpt	Mo ppm	Fe per	LAB ID	Status	Analysis Date
AX025246	36.58	39.42	ASSAY	KL14072033	Failed	0.0065	0.0360			0.6000	1.0000	4.3600	1.00	Failed	5/20/2014
AX025247	39.42	42.00	ASSAY	KL14072033	Failed	0.0074	0.0025			0.2500	1.0000	5.8200	1.00	Failed	5/20/2014
AX025248	42.00	45.00	ASSAY	KL14072033	Failed	0.0083	0.0025			0.2500	0.5000	5.4700	1.00	Failed	5/20/2014
AX025249	45.00	48.00	ASSAY	KL14072033	Failed	0.0089	0.0025			0.2500	0.5000	6.0200	1.00	Failed	5/20/2014
AX025250	48.00	51.00	ASSAY	KL14072033	Failed	0.0054	0.0025			0.2500	0.5000	4.9800	1.00	Failed	5/20/2014
AX025251	51.00	53.42	ASSAY	KL14072033	Failed	0.0080	0.0130			0.2500	1.0000	5.0600	1.00	Failed	5/20/2014
AX025252	53.42	56.00	ASSAY	KL14072033	Failed	0.0067	0.0025			0.2500	1.0000	4.8200	1.00	Failed	5/20/2014
AX025253	56.00	59.00	ASSAY	KL14072033	Failed	0.0070	0.0025			0.2500	1.0000	4.6600	1.00	Failed	5/20/2014
AX025254	59.00	61.00	ASSAY	KL14072033	Failed	0.0037	0.0025			0.2500	1.0000	3.6800	1.00	Failed	5/20/2014
AX025255	61.00	63.14	ASSAY	KL14072033	Failed	0.0081	0.0025			0.2500	1.0000	4.8300	1.00	Failed	5/20/2014
AX025256	63.14	66.00	ASSAY	KL14072033	Failed	0.0021	0.0025			0.2500	0.5000	3.6500	1.00	Failed	5/20/2014
AX025257	66.00	69.55	ASSAY	KL14072033	Failed	0.0021	0.0025			0.2500	0.5000	3.5900	1.00	Failed	5/20/2014
AX025258	69.55	70.22	ASSAY	KL14072033	Failed	0.0059	0.0130			0.2500	1.0000	5.2800	1.00	Failed	5/20/2014
AX025259	70.22	73.02	ASSAY	KL14072033	Failed	0.0029	0.0060			0.2500	2.0000	3.9400	1.00	Failed	5/20/2014
AX025261	73.02	76.00	ASSAY	KL14072033	Failed	0.0057	0.0340			0.2500	0.5000	5.4500	1.00	Failed	5/20/2014
AX025262	76.00	79.00	ASSAY	KL14072033	Failed	0.0074	0.0025			0.2500	0.5000	5.8600	1.00	Failed	5/20/2014
AX025263	79.00	82.00	ASSAY	KL14072033	Failed	0.0056	0.0025			0.2500	0.5000	5.1500	1.00	Failed	5/20/2014
AX025264	82.00	85.00	ASSAY	KL14072033	Failed	0.0065	0.0080			0.2500	0.5000	5.0100	1.00	Failed	5/20/2014
AX025265	85.00	88.00	ASSAY	KL14072033	Failed	0.0060	0.1300			2.1000	1.0000	5.4300	1.00	Failed	5/20/2014
AX025266	88.00	91.00	ASSAY	KL14072033	Failed	0.0056	0.0250			0.2500	0.5000	5.2400	1.00	Failed	5/20/2014
AX025267	91.00	94.00	ASSAY	KL14072033	Failed	0.0067	0.0350			0.2500	1.0000	5.0100	1.00	Failed	5/20/2014
AX025268	94.00	97.00	ASSAY	KL14072033	Failed	0.0065	0.0025			0.2500	1.0000	5.0100	1.00	Failed	5/20/2014
AX025269	97.00	100.00	ASSAY	KL14072033	Failed	0.0069	0.0050			0.2500	0.5000	5.2400	1.00	Failed	5/20/2014
AX025270	100.00	103.00	ASSAY	KL14072033	Failed	0.0054	0.0025			0.2500	1.0000	5.3500	1.00	Failed	5/20/2014
AX025271	103.00	106.00	ASSAY	KL14072033	Failed	0.0045	0.0025			0.2500	0.5000	5.7300	1.00	Failed	5/20/2014
AX025272	106.00	109.00	ASSAY	KL14072033	Failed	0.0057	0.0025			0.2500	0.5000	5.9900	1.00	Failed	5/20/2014
AX025273	109.00	112.00	ASSAY	KL14072033	Failed	0.0059	0.0025			0.2500	0.5000	5.9100	1.00	Failed	5/20/2014
AX025274	112.00	115.00	ASSAY	KL14072033	Failed	0.0048	0.0025			0.2500	0.5000	5.8600	1.00	Failed	5/20/2014
AX025276	115.00	118.00	ASSAY	KL14072033	Failed	0.0054	0.0025			0.2500	0.5000	6.2000	1.00	Failed	5/20/2014
AX025277	118.00	121.00	ASSAY	KL14072033	Failed	0.0053	0.0025			0.2500	0.5000	5.9800	1.00	Failed	5/20/2014
AX025278	121.00	124.00	ASSAY	KL14072033	Failed	0.0047	0.0025			0.2500	0.5000	5.7300	1.00	Failed	5/20/2014
AX025279	124.00	127.00	ASSAY	KL14072033	Failed	0.0044	0.0025			0.2500	0.5000	5.6400	1.00	Failed	5/20/2014
AX025281	127.00	130.00	ASSAY	KL14072033	Failed	0.0049	0.0025			0.2500	0.5000	5.4900	1.00	Failed	5/20/2014
AX025282	130.00	133.00	ASSAY	KL14072033	Failed	0.0055	0.0025			0.2500	0.5000	5.3700	1.00	Failed	5/20/2014
AX025283	133.00	136.00	ASSAY	KL14072033	Failed	0.0053	0.0025			0.2500	0.5000	5.6700	1.00	Failed	5/20/2014
AX025284	136.00	139.00	ASSAY	KL14072033	Failed	0.0052	0.0025			0.2500	0.5000	4.8000	1.00	Failed	5/20/2014
AX025285	139.00	142.00	ASSAY	KL14072033	Failed	0.0063	0.0025			0.2500	0.5000	5.2300	1.00	Failed	5/20/2014
AX025286	142.00	144.67	ASSAY	KL14072033	Failed	0.0046	0.0650			0.2500	0.5000	5.2700	1.00	Failed	5/20/2014
AX025287	144.67	147.00	ASSAY	KL14072033	Failed	0.0122	0.0025			0.2500	0.5000	6.0700	1.00	Failed	5/20/2014
AX025288	147.00	150.00	ASSAY	KL14072033	Failed	0.0149	0.0660			0.2500	0.5000	5.3700	1.00	Failed	5/20/2014
AX025289	150.00	153.00	ASSAY	KL14072033	Failed	0.0137	0.0530			0.2500	0.5000	5.3700	1.00	Failed	5/20/2014
AX025290	153.00	155.88	ASSAY	KL14072033	Failed	0.0133	0.0530			0.2500	9.0000	4.9800	1.00	Failed	5/20/2014
AX025291	155.88	157.50	ASSAY	KL14072033	Failed	0.0098	0.0490			0.2500	1.0000	4.8400	1.00	Failed	5/20/2014
AX025292	157.50	159.68	ASSAY	KL14072033	Failed	0.0125	0.0130			0.2500	5.0000	5.5400	1.00	Failed	5/20/2014
AX025293	159.68	162.00	ASSAY	KL14072033	Failed	0.0139	0.0060			0.2500	8.0000	5.8500	1.00	Failed	5/20/2014
AX025294	162.00	165.00	ASSAY	KL14072033	Failed	0.0146	0.0050			0.2500	11.0000	5.9000	1.00	Failed	5/20/2014
AX025295	165.00	168.00	ASSAY	KL14072033	Failed	0.0230	0.6980			1.3000	8.0000	5.8200	1.00	Failed	5/20/2014
AX025296	168.00	171.00	ASSAY	KL14072033	Failed	0.0154	0.1930			0.2500	13.0000	5.8600	1.00	Failed	5/20/2014
AX025297	171.00	173.00	ASSAY	KL14072033	Failed	0.0127	0.2860			0.9000	29.0000	5.8200	1.00	Failed	5/20/2014
AX025298	173.00	175.10	ASSAY	KL14072033	Failed	0.0142	0.0460			0.2500	8.0000	5.8300	1.00	Failed	5/20/2014
AX025299	175.10	178.00	ASSAY	KL14072033	Failed	0.0141	0.0050			0.2500	0.5000	5.5400	1.00	Failed	5/20/2014
AX025301	178.00	181.00	ASSAY	KL14072033	Failed	0.0156	0.0025			0.2500	0.5000	6.1400	1.00	Failed	5/20/2014
AX025302	181.00	184.00	ASSAY	KL14072033	Failed	0.0150	0.0100			0.2500	0.5000	5.7900	1.00	Failed	5/20/2014

Sample Number	From	To	Sample Type	Ref Num	Status	Cu %	Au gpt	Pt gpt	Pd gpt	Ag gpt	Mo ppm	Fe per	LAB ID	Status	Analysis Date
AX025303	184.00	187.00	ASSAY	KL14072033	Failed	0.0106	0.0350			0.2500	0.5000	5.4500	1.00	Failed	5/20/2014
AX025304	187.00	189.00	ASSAY	KL14072033	Failed	0.0132	0.0025			0.2500	0.5000	6.0600	1.00	Failed	5/20/2014
AX025305	189.00	190.55	ASSAY	KL14072033	Failed	0.0135	0.0025			0.2500	0.5000	6.4400	1.00	Failed	5/20/2014
AX025306	190.55	193.60	ASSAY	KL14072033	Failed	0.0117	0.1190			0.2500	0.5000	4.8500	1.00	Failed	5/20/2014
AX025307	193.60	196.00	ASSAY	KL14072033	Failed	0.0133	0.0025			0.2500	0.5000	5.4200	1.00	Failed	5/20/2014
AX025308	196.00	199.00	ASSAY	KL14072033	Failed	0.0150	0.0025			0.2500	0.5000	5.1500	1.00	Failed	5/20/2014
AX025309	199.00	202.00	ASSAY	KL14072033	Failed	0.0105	0.0025			0.2500	0.5000	5.4600	1.00	Failed	5/20/2014
AX025310	202.00	205.00	ASSAY	KL14072033	Failed	0.0112	0.1820			0.2500	6.0000	5.1400	1.00	Failed	5/20/2014
AX025311	205.00	208.00	ASSAY	KL14072033	Failed	0.0112	0.0850			0.2500	0.5000	5.0800	1.00	Failed	5/20/2014
AX025312	208.00	211.00	ASSAY	KL14072033	Failed	0.0152	0.0550			0.2500	0.5000	5.3500	1.00	Failed	5/20/2014
AX025313	211.00	214.00	ASSAY	KL14072033	Failed	0.0144	0.0025			0.2500	2.0000	5.9300	1.00	Failed	5/20/2014
AX025314	214.00	217.00	ASSAY	KL14072033	Failed	0.0096	0.0025			0.2500	0.5000	5.3700	1.00	Failed	5/20/2014
AX025315	217.00	219.63	ASSAY	KL14072033	Failed	0.0146	0.0025			0.2500	0.5000	5.5600	1.00	Failed	5/20/2014
AX025316	219.63	221.85	ASSAY	KL14072033	Failed	0.0107	0.0025			0.2500	0.5000	5.2500	1.00	Failed	5/20/2014
AX025317	221.85	224.00	ASSAY	KL14072033	Failed	0.0153	0.0050			0.2500	2.0000	6.1400	1.00	Failed	5/20/2014
AX025318	224.00	226.00	ASSAY	KL14072033	Failed	0.0149	0.0310			0.2500	0.5000	5.5400	1.00	Failed	5/20/2014
AX025319	226.00	228.40	ASSAY	KL14072033	Failed	0.0131	0.0210			0.2500	0.5000	5.7600	1.00	Failed	5/20/2014
AX025321	228.40	231.00	ASSAY	KL14072033	Failed	0.0083	0.0025			0.2500	0.5000	5.0600	1.00	Failed	5/20/2014
AX025322	231.00	233.00	ASSAY	KL14072033	Failed	0.0130	0.0050			0.2500	0.5000	5.1800	1.00	Failed	5/20/2014
AX025323	233.00	235.00	ASSAY	KL14072033	Failed	0.0117	0.0025			0.2500	1.0000	5.4500	1.00	Failed	5/20/2014
AX025324	235.00	237.73	ASSAY	KL14072033	Failed	0.0130	0.0025			0.2500	1.0000	5.0100	1.00	Failed	5/20/2014
AX025326	237.73	240.00	ASSAY	KL14072033	Failed	0.0147	0.0090			0.2500	0.5000	5.9100	1.00	Failed	5/20/2014
AX025327	240.00	243.00	ASSAY	KL14072033	Failed	0.0134	0.0050			0.2500	0.5000	6.2400	1.00	Failed	5/20/2014
AX025328	243.00	246.00	ASSAY	KL14072033	Failed	0.0175	0.0390			0.2500	11.0000	6.2100	1.00	Failed	5/20/2014
AX025329	246.00	249.00	ASSAY	KL14072033	Failed	0.0178	0.0025			0.2500	0.5000	5.8700	1.00	Failed	5/20/2014
AX025330	249.00	252.00	ASSAY	KL14072033	Failed	0.0210	0.6230			0.7000	0.5000	5.6000	1.00	Failed	5/20/2014
AX025331	252.00	255.00	ASSAY	KL14072033	Failed	0.0155	0.2320			0.2500	0.5000	6.0400	1.00	Failed	5/20/2014
AX025332	255.00	258.00	ASSAY	KL14072033	Failed	0.0171	0.0025			0.2500	0.5000	6.1700	1.00	Failed	5/20/2014
AX025333	258.00	261.00	ASSAY	KL14072033	Failed	0.0190	0.0025			0.2500	0.5000	6.4300	1.00	Failed	5/20/2014
AX025334	261.00	264.00	ASSAY	KL14072033	Failed	0.0147	0.0190			0.2500	0.5000	6.4500	1.00	Failed	5/20/2014
AX025335	264.00	267.00	ASSAY	KL14072033	Failed	0.0168	0.1140			0.2500	0.5000	6.4400	1.00	Failed	5/20/2014
AX025336	267.00	270.00	ASSAY	KL14072033	Failed	0.0146	0.0140			0.2500	0.5000	5.9400	1.00	Failed	5/20/2014
AX025337	270.00	273.00	ASSAY	KL14072033	Failed	0.0165	0.0025			0.2500	0.5000	5.7500	1.00	Failed	5/20/2014
AX025338	273.00	276.00	ASSAY	KL14072033	Failed	0.0125	0.0025			0.2500	0.5000	6.0400	1.00	Failed	5/20/2014
AX025339	276.00	279.00	ASSAY	KL14072033	Failed	0.0146	0.0025			0.2500	0.5000	5.8400	1.00	Failed	5/20/2014
AX025341	279.00	282.00	ASSAY	KL14072033	Failed	0.0151	0.0025			0.2500	1.0000	5.5100	1.00	Failed	5/20/2014
AX025342	282.00	283.80	ASSAY	KL14072033	Failed	0.0166	0.0050			0.2500	0.5000	5.4800	1.00	Failed	5/20/2014
AX025343	283.80	286.00	ASSAY	KL14072033	Failed	0.0200	0.4190			0.2500	1.0000	5.1500	1.00	Failed	5/20/2014
AX025344	286.00	289.00	ASSAY	KL14072033	Failed	0.0202	0.0360			0.2500	1.0000	4.5400	1.00	Failed	5/20/2014
AX025345	289.00	291.00	ASSAY	KL14072033	Failed	0.0173	0.3740			0.2500	0.5000	4.7200	1.00	Failed	5/20/2014
AX025346	291.00	293.60	ASSAY	KL14073874	Failed	0.0114	0.2200			0.2500	0.5000	5.1000	1.00	Failed	5/30/2014
AX025347	293.60	296.00	ASSAY	KL14073874	Failed	0.0137	0.0025			0.2500	0.5000	5.5700	1.00	Failed	5/30/2014
AX025348	296.00	299.00	ASSAY	KL14073874	Failed	0.0133	0.0060			0.2500	0.5000	5.2800	1.00	Failed	5/30/2014
AX025349	299.00	302.00	ASSAY	KL14073874	Failed	0.0116	0.0110			0.2500	0.5000	5.3800	1.00	Failed	5/30/2014
AX025350	302.00	304.50	ASSAY	KL14073874	Failed	0.0117	0.0090			0.2500	0.5000	5.0700	1.00	Failed	5/30/2014

DETAILED LOG

Hole Number: DH-BGC15-01

Units: METRIC

Project Name:	AJAX	Primary Coordinates	Grid:		Destination Coordinates	Grid:	Collar Dip:	
Project Number:	AJAX	North:			North:		Collar Az:	
Location:	Ajax South	East:			East:		Length:	200.50
		Elev:			Elev:		Start Depth:	0.00
Date Started:	Mar 12, 2015	Collar Survey:	N	Plugged: N	Contractor:	Geotech Drilling Services Ltd.	Final Depth:	200.50
Date Completed:		Multishot Survey:	N	Hole Size: HQ	Core Storage:	Camp		
		Pulse EM Survey:	N	Casing: Pulled				

Comments:

Sample Averages

Detailed Lithology			Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_LAB	Cu_per_LAB	
0.00	43.00	CAS, Casing Several meters of erratic granitic boulders and regolith. MINOR INTERVALS: Minor Interval: 34.00 - 37.00 LC, Lost Core BGC Sample # 2, sample # 1 block missing Minor Interval: 37.00 - 40.00 LC, Lost Core BGC Sample # 3 Minor Interval: 42.87 - 43.00 LC, Lost Core BGC Sample # 4							
43.00	44.50	SNDS, Sandstone Dark green sandstone (glauconite), very well sorted, very fine sand sized particles. Highly fractured, typically @ 25 tca. Faulted @ contact with picrite @ 50 tca. Very weakly magnetic.							

Hole Number: DH-BGC15-01 Units: METRIC

Detailed Lithology			Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_LAB	Cu_per_LAB	
44.50	75.25	PICR, Picrite Med. green moderately altered PICR. Aphanitic groundmass with ~45-50% mg phenocrysts. Phenocrysts comprise of sub-euhedral px/plag/ol, with relict olivine replaced by mt. All phenocrysts have a bleached apperance, atypical of PICR observed in the area. Fairly soft to scratch. Mod pervasive to selective (phenos) chl, wk fract talc, rare serp on fractures, wk fract hem. Weak to locally moderate limonitic oxidation occuring in fractures extending to 60.90m depth. Moderate to strongly magnetic. ~3-5% irregular qtz veining (1-5mm) cutting core at all angles. Minor gouge, and faulting throughout. Healed fault from 52-53.50m; ~55 tca, serp, chl cement, later silicified. Angular fragments of qtz (0.2-1.5cm) randomly oriented within HF, moderate qtz/silica veining/flooding fractures. Nature of lower contact lost, LC from 74.50-76.00m; 30cm recovered. MINOR INTERVALS: Minor Interval: 53.63 - 53.70 LC, Lost Core BGC Sample # 7, Sample 5 and 6 blocks not found in core Minor Interval: 59.28 - 59.35 LC, Lost Core BGC sample 8 Minor Interval: 73.61 - 74.26 LC, Lost Core zero core recovery							
75.25	88.63	MDST, Mudstone Dark grey-black. Thin beds to thick laminations of mud stone (~80%) intermittent with thick laminations of siltstone (~20%). Typically sheared @ 20-30 tca, creating sometimes discontinuous to boudinaged silt stone laminations. Rare lenticular silt stone texture. Minor inclusion of very fine sand, sand stone; beige - grey, exhibits folding (80.85-81.90m). Relatively unaltered. ~5-8% qtz veins typically @ 40-50 tca. MINOR INTERVALS: Minor Interval: 75.25 - 81.90 SNDS, Sandstone Beige-light green sand stone, very fine sand size particles. Asymetric folding, cross-cut by simple qtz veins @ 40-45 tca.							

Hole Number: DH-BGC15-01 Units: METRIC

Detailed Lithology			Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_LAB	Cu_per_LAB	
88.63	104.40	SNDS, Sandstone Beige-green, well sorted sand stone. Thin to thick laminations of sandstone (v. fn. sand) (~65%) with interbedded laminations of black mudstone (~35%). Moderately sheared mess of chaotic to stepped beds, minor folding in sandstone near upper contact. Moderate lw angle (5-10 tca) qtz veining. Several low angle faults with rare serpentine kinematic indicators, perv chl and carb gouge. MINOR INTERVALS: Minor Interval: 92.50 - 92.80 LC, Lost Core BGC sample # 9, no meterage indicated on block. Minor Interval: 104.13 - 104.33 LC, Lost Core BGC sample # 10								
104.40	155.65	PICR, Picrite Med. green moderately altered PICR. Aphanitic groundmass with ~45-50% mg phenocrysts. Phenocrysts comprise of sub-euhedral px/plag/ol, with relict olivine replaced by mt. Phenocrysts have a bleached apperance, atypical of PICR observed in the area. Mod to locally strong pervasive to selective (phenos) chl, rare fract talc, rare serp on fractures, rare fract hem. Moderate to strongly magnetic. Minor inclusions of chaotic mud stone/sand stone from 116.63-117.29m. ~3-5% irregular calcite veining (1-5mm) filling fractures. ~5% qtz veining/filling fractures. Minor gouge, and moderately fractured/faulting throughout. MINOR INTERVALS: Minor Interval: 116.63 - 117.29 MDST, Mudstone black to beige-green interlaminated mud and sand stones. minor inclusion of picrite. sheared @ 20 tca Minor Interval: 131.70 - 131.90 LC, Lost Core BGC Sample # 11 Minor Interval: 149.80 - 149.98 LC, Lost Core BGC Sample # 13, could not find sample 12								
155.65	167.49	MDST, Mudstone Dark black-grey mud stone. ~10-15% sandstone components highly faulted/sheared. Entire unit sheared @ 10-15 tca. Small brecciated section with very angular sandstone weakly oriented @ 20-30 tca. Nature of upper contact is questionable (starts in a fault) @ 50 tca. MINOR INTERVALS: Minor Interval: 164.86 - 165.07 LC, Lost Core BGC Sample # 14								

DETAILED LOG

Hole Number: DH-BGC15-01

Units: METRIC

Detailed Lithology			Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_LAB	Cu_per_LAB	
167.49	200.50	SNDS, Sandstone Light green, well sorted sandstone, fine to coarse sand size particles. Weak fracture to selective chl alt of ferromagnesium minerals. Subrounded to round grains of lithic frag/subhed. plag. and round qtz. Some grains zoned with chlorite-sericite rims. No visible bedding structures. Moderately faulted with sections of chl-cct gouge. Sheared from upper contact to 169.40m @ 20 tca. ~2-3% simple to irregular qtz veins typically from 10-30 tca or 50-60 tca. ~1% irreg to vuggy cct veins at all angles tca.							

DETAILED LOG

Hole Number: DH-BGC15-02 Units: METRIC

Project Name:	AJAX	Primary Coordinates Grid:			Destination Coordinates Grid:	Collar Dip:	
Project Number:	AJAX	North:			North:	Collar Az:	
Location:		East:			East:	Length:	225.90
		Elev:			Elev:	Start Depth:	0.00
Date Started:	Mar 16, 2015	Collar Survey:	N	Plugged: N	Contractor: Geotech Drilling Services Ltd.	Final Depth:	225.90
Date Completed:		Multishot Survey:	N	Hole Size: HQ	Core Storage: Camp		
		Pulse EM Survey:	N	Casing: Pulled			

Comments:

Sample Averages

Detailed Lithology			Assay Data						
From	To	Lithology	Sample Number	From	To	Length	Au_gpt_LAB	Cu_per_LAB	
0.00	57.85	CAS, Casing Erratic cobbles to boulders of granodiorite, granite, mafv. mixed with sand mud and clay soils.							
57.85	77.10	PICR, Picrite Dark green moderate to locally strong magneitc PICR. Highly altered mod strong frac to perv talc, weak serp., strong perv chl, rare section preserving classic picrite texture; (mg sub-euhedral phenocysts of px/ol./mt). Large healed fault from 67.38-79.00m @ (fault runs through lower contact into mud stone interbedded with sandstones) with chl-hem gouge +/- chr-mica, then moderately silicified. Fault contains angular fragments of picrite (0.1-4cm), surrounded by silicified calcite and broken fragments of relict qtz veins.							
77.10	80.77	MDST, Mudstone Dark black-grey-green mudstone interbedded with (well sorted, fn. sand) sandstone (55/45 respectively). Upper contact starts in fault/shear @25 tca; mod pervasive silica, relatively unaltered below 79m with weak chl alt of sandstone beds. Chaotic/distorted bedding.							
80.77	82.58	PICR, Picrite Light green to grey in color. Aphanitic groundmass with mg phenocrysts subhedral phenocrysts of px/ol. Weakly magnetic. Contains large xenoliths of interbedded mud/sandstone (90/10). Moderate pervasive chl alteration. Trace chromuim mica around xenoliths. Minor shearing near end of unit.							
82.58	225.90	VCLT, Volcaniclastic Dark green to greyish-pink in color. Polymictic VCLT with mafic chlorite rich groundmass and varying amts (~25-50%) of angular Sand Stone, Mud Stone, and Picrite clasts (proto-cataclasite; >50% matrix). Sandstone appears to be the dominant clast type, followed by PICR. Clasts typically altered to hematite (hem also occurs in fract.), with bleached white rims. Moderate pervasive chlorite is stronger around clasts themselves. All fluids/veins typically albitic/silica rich, ~3-5% simple qtz-albite veins @ 50-60, or 20-30 tca. Moderate patchy to pervasive albite +/- ser. Minor shearing easily distinguished by bleached appearance or increase in pervasive albite.							

APPENDIX C
ELFZ DRILLING REVIEW

BGC Engineering Inc.

Edith Lake Fault Zone Project
Kamloops Mining Division, B.C.

Review of 2015 Drill Program Targeting Edith Lake Fault Zone

April 2015

ERSI EARTH RESOURCE SURVEYS INC.

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Figures

Photo

1. Regional Setting of DH-BGC15-001 and 002

DH-BGC15-001 and 002 are sited with unit LTrNps; Late Triassic Nicola Group- sediments with augite porphyry source, on northeast side of the mapped ELFZ trace. The same rocks are mapped on the southwest side of the ELFZ in the area of drilling. These rocks are described by Logan and Mihalynuk (2006) as:

> 'Green, grey and black interlayered pyroxene porphyritic breccias, crystal-rich tuffite and subordinate thin-laminated siltstone. The unit consists primarily of thick bedded or massive, well sorted sandstone units comprising primarily pyroxene and plagioclase crystals are rare lithic grains. Intercalated with these massive sandstone units are crystal-lithic tuff that form distinct graded beds, between 10 and 50 cm thick, and thin-laminated, commonly graded, siltstone-sandstone couplets. Crystal-rich sandstone displays good crosslaminations, normal graded beds and load structures....'

Mapping by the B.C. Geological Survey in the immediate area does not indicate the presence of picrite or mafic volcanics. The picrite unit is only mapped as lying on the northeast side of the ELFZ, Figure 1.

The nearest (?) outcropping to the drill sites is a feldspar pyroxene tuff ~ 150m northeast of DH-BGC15-002 with blocky layering dipping west-southwest. Several outcrops of pyroxene porphyry, siltite, feldspar pyroxene basalt occur in the Kinder Morgan pipeline cut ~1.2 to 1.6km southeast of the drill sites, both north and south of the mapped ELFZ trace. Layering of these rocks dips both to the northwest and to the northeast and it is possible the ELFZ separates these attitudes with rocks on the north side of the fault dipping westerly and those on the south side dipping northeasterly.

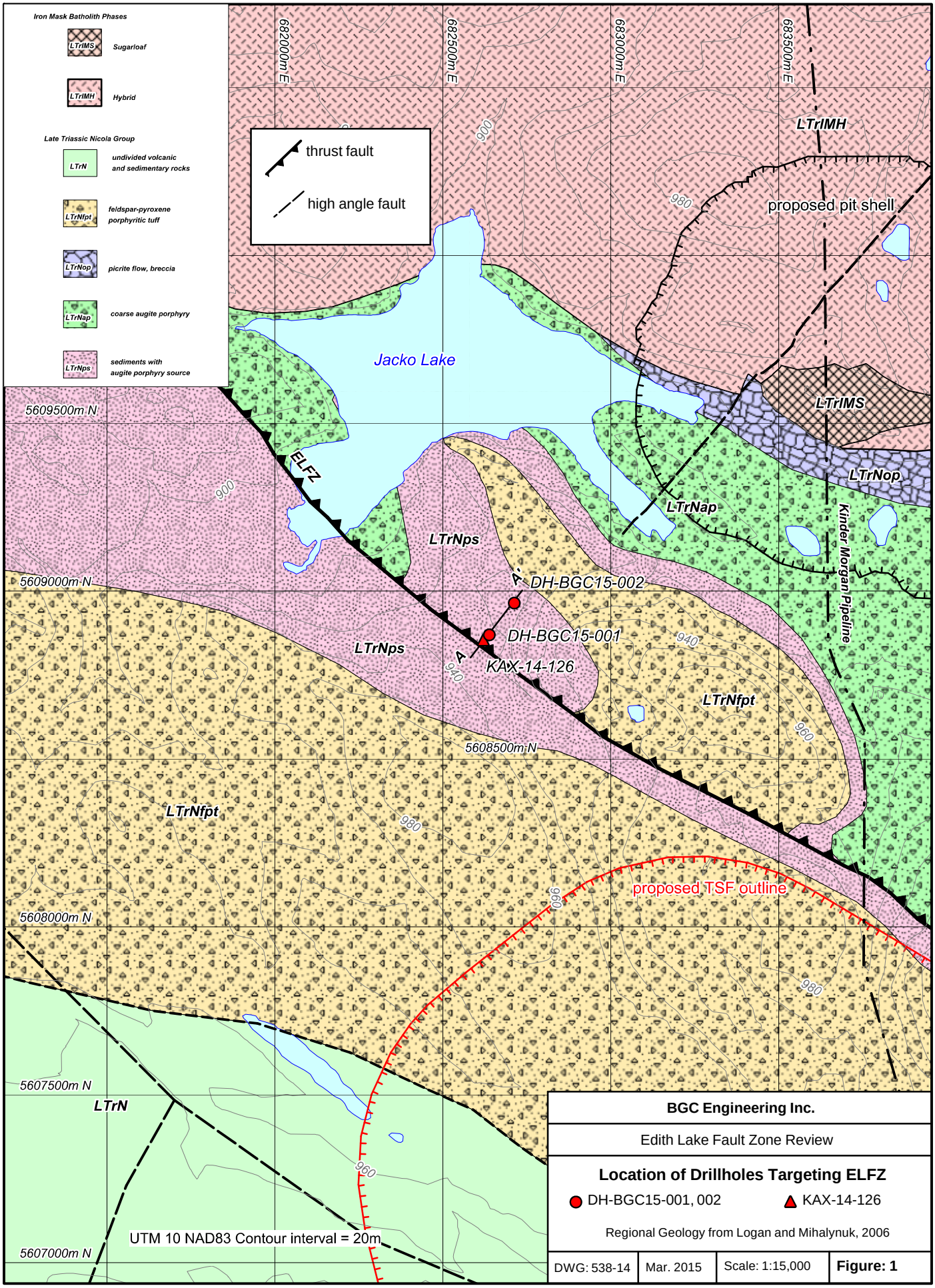
2. 2015 ELFZ Drill Program

A cross section through the two 2015 drill holes targeting the mapped trace of the ELFZ is shown in Figure 2. Included in the cross section is the 2014 condemnation hole KAX-14-126. The following observations are made:

Picrite occurs in all three holes. If there is a high angle fault marking the southwestern extent of the picrite unit then it must lie west of the mapped trace of the ELFZ.

There is not a great deal of stratigraphic correlation between the holes. The upper part of DH-BGC15-001 and KAX-14-126 are similar; picrite overlying sandstone in DH-BGC15-001 versus feldspar porphyry interbedded with sandstone and siltstone in KAX-14-126, followed in both holes by more picrite below the sandstone member(s).

The most significant difference between DH-BGC15-001 and KAX-14-126 on the west and DH-BGC15-002 on the east is the presence of ~143m of volcaniclastics in the latter hole, rocks which are not identified in the two western holes. An example of this unit is shown in Photo 1. The rocks have a distinctive mottled pale rose and pale green color, with rounded lapilli clasts and are correlated with Logan and Mihalynuk's (2006), feldspar porphyritic lapilli tuff (unit LTrNfpt) that occurs both northeast and southwest of the ELFZ. This leads to the possibility that there is a near vertical fault between the picrites


Iron Mask Batholith Phases
LTrIMS Sugarloaf
LTrIMH Hybrid
Late Triassic Nicola Group
LTrN undivided volcanic and sedimentary rocks
LTrNfpt feldspar-pyroxene porphyritic tuff
LTrNop picrite flow, breccia
LTrNap coarse augite porphyry
LTrNps sediments with augite porphyry source
thrust fault
high angle fault
682000m E
682500m E
683000m E
683500m E
5609500m N
5609000m N
5608500m N
5608000m N
5607500m N
5607000m N
Jacko Lake
ELFZ
LTrIMH
LTrIMS
LTrNop
LTrNap
LTrNps
LTrNfpt
LTrN
proposed pit shell
Kinder Morgan Pipeline
DH-BGC15-002
DH-BGC15-001
KAX-14-126
proposed TSF outline
900
940
960
980
UTM 10 NAD83 Contour interval = 20m
BGC Engineering Inc.
Edith Lake Fault Zone Review
Location of Drillholes Targeting ELFZ
DH-BGC15-001, 002
KAX-14-126
Regional Geology from Logan and Mihalynuk, 2006
DWG: 538-14
Mar. 2015
Scale: 1:15,000
Figure: 1

682,600mE

682,650mE

682,700mE

ELFZ Trace

KAX-14-126

DH-BGC15-01

DH-BGC15-02

A

A'

950m

900m

850m

800m

750m

700m

650m

contact 60°/335°

contact 34°/210°

hypothetical high angle fault zone ?

50

50

50

100

100

150

150

200

200

250

300

Logged Lithology

- overburden
- volcaniclastics
- mudstone
- siltstone
- sandstone
- feldspar porphyry dyke
- mafic volcanics
- feldspar porphyry
- picrite

Logged Structure

- fault
- fault zone
- fault breccia
- fault gouge

BGC Engineering Inc.

Review of ELFZ Drill Program

Section A-A'
View Northwest

DWG: 538-15	Scale: 1:1000		**Figure: 2**

Earth Resource Surveys Inc.
ERSi

in KAX-14-126 and DH-BGC15-001 and the base of volcaniclastic unit in DH-BGC15-002, an apparent distance in Section A-A' of ~ 30m.

Photo 1. Volcaniclastic unit, DH-BGC15-002, 175.5m depth.

3. Fault observations

Table 1. Faults identified from core logging.

Hole ID	From	To	Structure	Interval
DH-BGC15-01	42.87	43.54	FBX	0.67
DH-BGC15-01	44.39	45.09	FGG	0.70
DH-BGC15-01	50.31	50.50	FBX	0.19
DH-BGC15-01	50.91	51.61	FZ	0.70
DH-BGC15-01	53.63	54.33	FZ	0.70
DH-BGC15-01	59.20	59.35	FZ	0.15
DH-BGC15-01	72.00	80.85	FZ	8.85
DH-BGC15-01	93.30	93.60	FZ	0.30
DH-BGC15-01	94.10	94.35	FZ	0.25
DH-BGC15-01	98.80	99.30	FGG	0.50
DH-BGC15-01	99.49	100.09	FZ	0.60
DH-BGC15-01	119.50	124.10	FZ	4.60
DH-BGC15-01	131.70	134.10	FBX	2.40
DH-BGC15-01	141.86	141.97	FZ	0.11
DH-BGC15-01	143.50	150.00	FZ	6.50
DH-BGC15-01	162.25	164.50	FZ	2.25

DH-BGC15-01	190.55	191.00	FBX	0.45
DH-BGC15-02	67.38	79.00	FLT	11.62
DH-BGC15-02	166.80	167.43	FZ	0.63

The logged structure codes are: FBX - fault breccia, FGG - fault gouge, FZ - fault zone, FLT - fault.

Five zones of faulting with intersected widths greater than 1m are recognized in DH-BGC15-001 and one zone in DH-BGC15-002. A second fault interval in DH-BGC15-002, from 166.8 to 167.43m depth, is also highlighted for no other reason than there is scant evidence for faulting in this hole and it may be more significant than its width indicates. For the purpose of examining the fault attitudes poles to faults identified and recorded in the 'oriented core processor' files for each hole were plotted for three depth intervals; top of bedrock to 100m, 100 to 150m and 150 to 200m depth. These pole to fault diagrams (equal area, lower hemisphere projection) are shown in Figures 3 and 4 for the two holes.

Fault orientations corresponding to the highlighted fault intervals noted in Table 1 are indicated in Figures 3 and 4. The purpose of this was to see if the significant faults had any common orientation or could possibly represent high angle faults. The following points and interpretations can be made from the oriented core results.

- Although there are many exceptions, most poles plot in the northeast or southwest quadrants. This is particularly so in DH-BGC15-001 but less so in DH-BGC15-002.
- A fault zone occurs in DH-BGC15-001 from 70 to 80.85m depth. A structure flagged as a possible hangingwall in the fault zone dips[1] 83°/039°. It is possible this structure represents the ELFZ trace mapped on surface. It is also possible that it continues to depth in hole KAX-14-126 where a four meter wide fault was intersected between 119.47 and 123.6m depth. The attitude of this fault in KAX-14-126 is unknown.
- There are three fault zones in DH-BGC15-001 between 100 and 150m depth. There is no consistent attitude of these, which mostly dip at high angles both to the southwest and northeast. It is possible a moderately dipping conjugate set of faults striking northwest\southeast is represented by measurements in the 119.5 - 124.1m interval.
- There are several minor faults in DH-BGC15-001 between 150 and 200m depth which dip at low angles to the southwest. The one significant fault zone in this interval, between 162.25 and 164.5m depth dip steeply north. This attitude is matched in DH-BGC15-002 by 4 to 5 measurements in the same depth interval.

[1] unless otherwise noted the dip/dip direction convention is followed

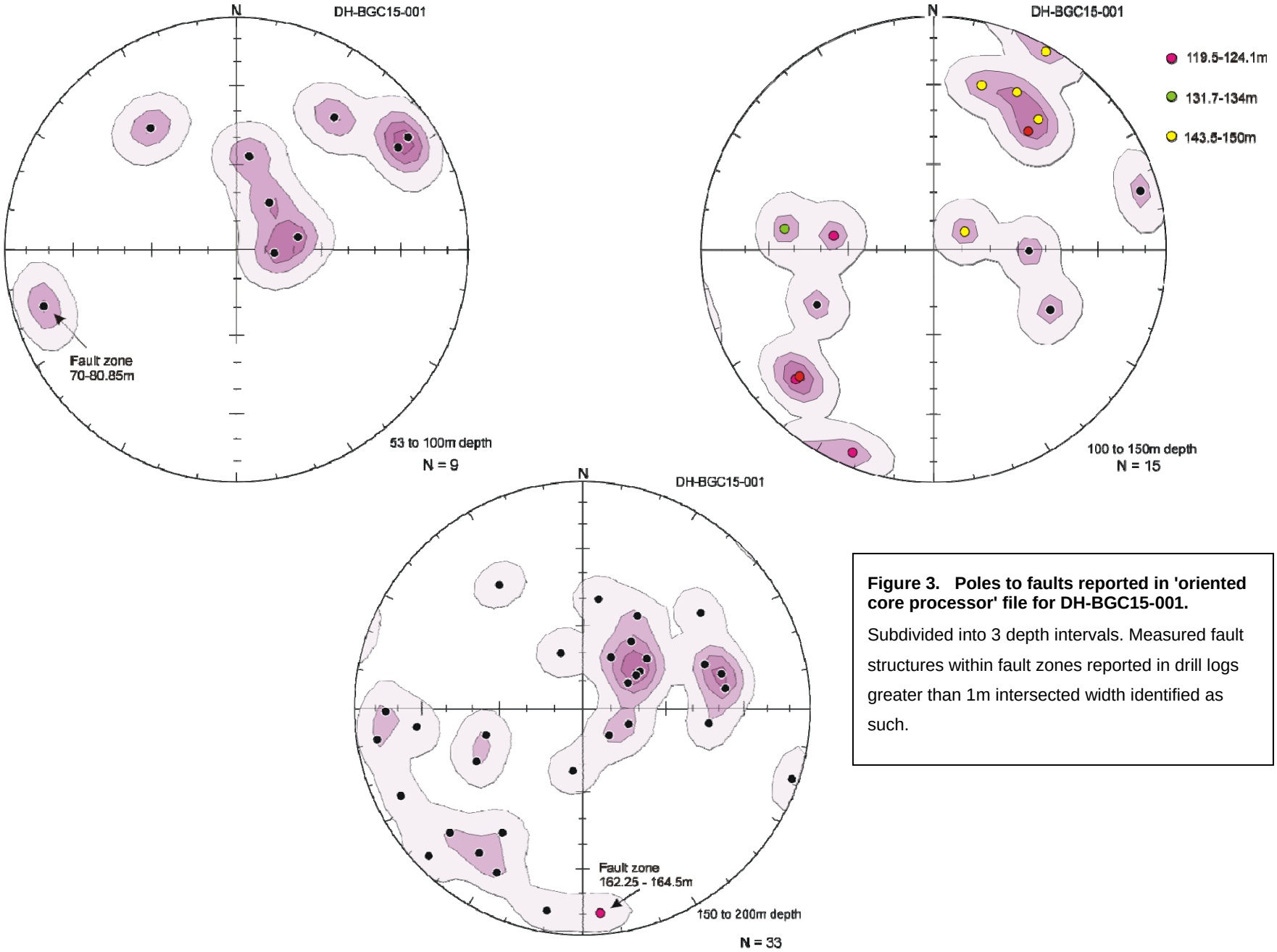


Figure 3. Poles to faults reported in 'oriented core processor' file for DH-BGC15-001.

Subdivided into 3 depth intervals. Measured fault structures within fault zones reported in drill logs greater than 1m intersected width identified as such.

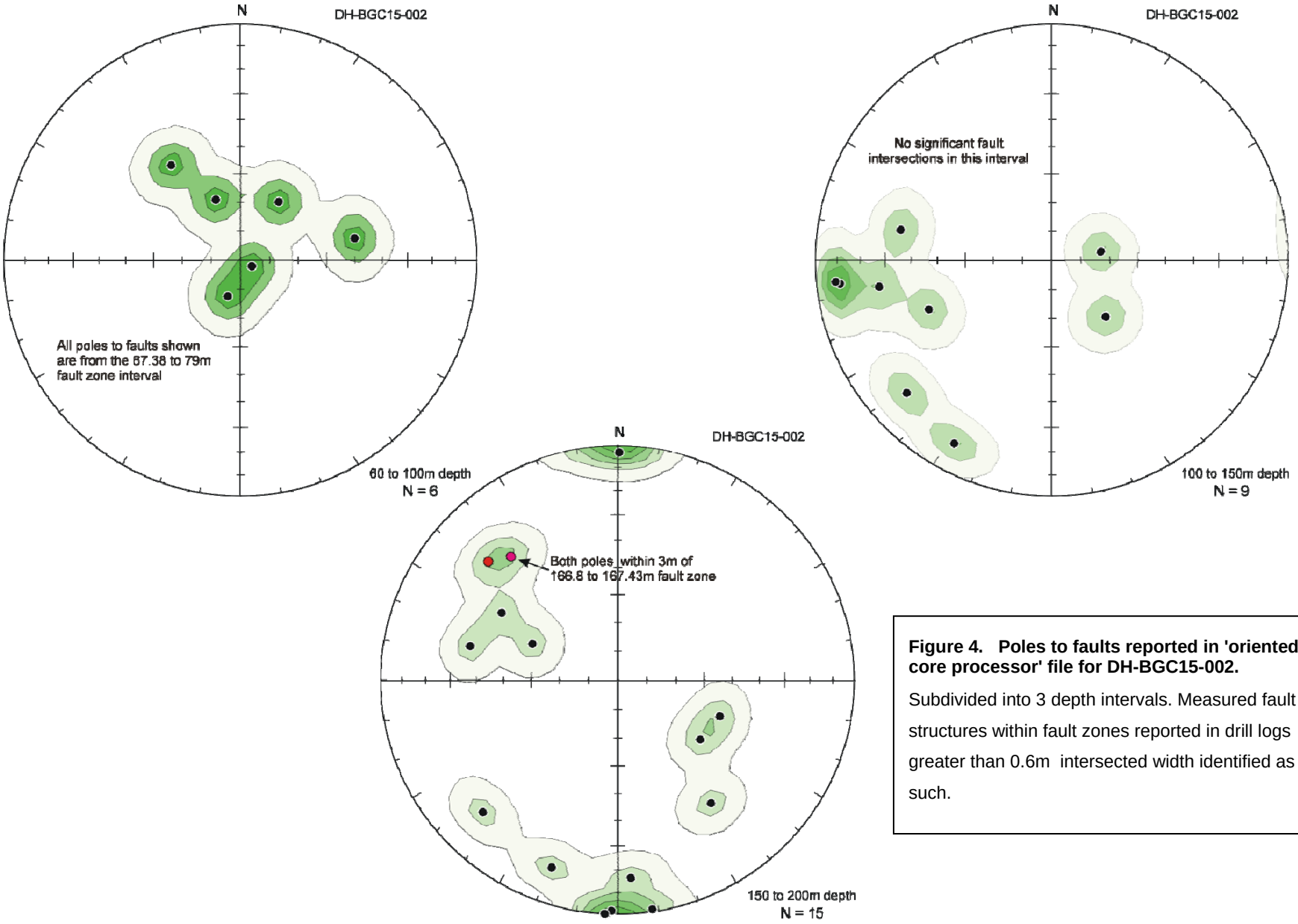


Figure 4. Poles to faults reported in 'oriented core processor' file for DH-BGC15-002.

Subdivided into 3 depth intervals. Measured fault structures within fault zones reported in drill logs greater than 0.6m intersected width identified as such.

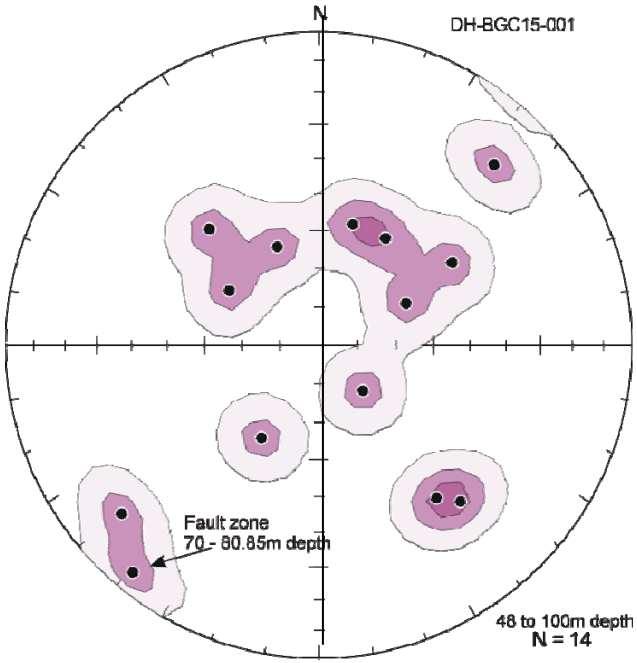
- The low angle fault measurements in the picrite in DH-BGC15-002 most likely do not represent faulting but are instead the result of the brecciated nature of the tuffs and mafic volcanics which dip at low to moderate angles in the area.
- The 0.63m fault interval in DH-BGC15-002, 166.8 to 167.43m depth most likely dips ~ 61° to 137°, as evidenced by fault measurements immediately above and below this interval. This attitude probably represents one of the minor or subordinate fault sets. It is also represented in DH-BGC15-001 both in the 53 to 100m and 150 to 200m depth intervals.

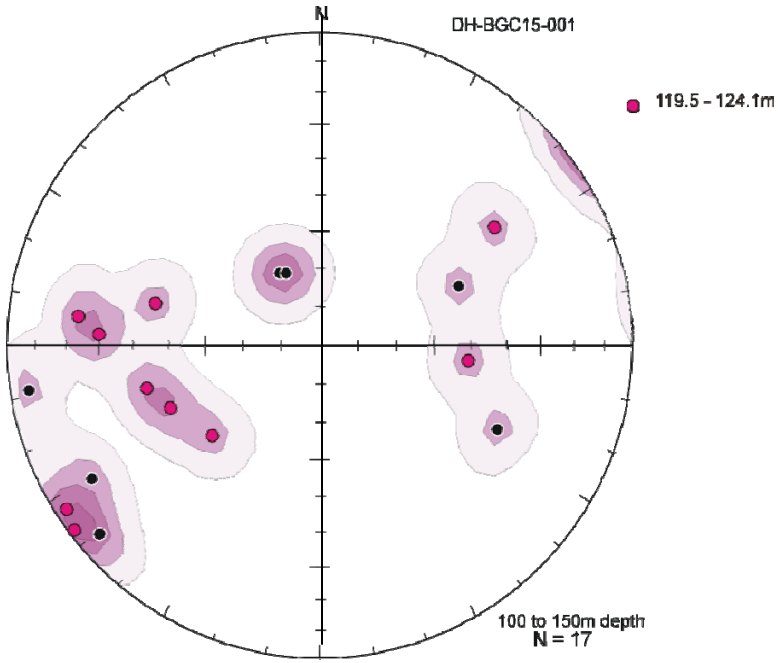
Figures 5 and 6 show a similar treatment as above, using the acoustic televiewer fault orientations.

- The fault zone occurring in DH-BGC15-001, 70-80.85m depth dips 76°/045° and is considered to be a more accurate attitude than that evidenced by the visual orientation (Figure 3).
- Televiewer fault measurements in the fault zone occurring between 119.5 and 124.1m in DH-BGC15-001A display a range of attitudes, similar to those recorded by the visual determinations. The other two fault zones in this depth interval don't appear to be represented by the televiewer measurements.
- The fault zone in DH-BGC15-002 between 67.38 and 79m depth is represented by two televiewer measurements dipping 44°/193°.
- DH-BGC15-002 fault attitudes in the 100 to 150m depth interval show some similarity to those in the same interval in DH-BGC15-001 with a cluster dipping steeply east.
- The fault zone between 166.8 and 167.43m depth in DH-BGC15-002 displays near vertical televiewer attitudes striking north-northwest/south-southeast. This is very similar to a pole to fault cluster in the visual determination for the same interval.

Compilations of all the televiewer faults for both holes are shown in Figures 7 and 8. A significant difference is evident. Faults in DH-BGC15-001 display a girdle of poles to faults striking northwest-southeast, subparallel to the predominant regional fault trend. In contrast, the poles to faults in DH-BGC15-002 are more scattered with no dominant trend(s) evident. This is taken as supporting evidence for a change in the structural domain between the two holes; the eastern domain underlain by predominantly volcaniclastic rocks, those encountered in DH-BGC15-002, and a western domain underlain by predominantly mafic volcanics and interbedded sediments, those encountered in DH-BGC15-001. It is postulated that the boundary between these two structural domains is the high angle fault shown in Figure 2.

A second difference between the two pole plots is the presence of near vertical faults striking east-northeast/west-southwest in the eastern hole, DH-BGC15-002, which is not recorded in the western hole.





No TV measurements recorded between 150 and 200m depth due to poor borehole conditions.

Figure 5. Poles to faults reported in 'televiewer structures' file for DH-BGC15-001.

Subdivided into 2 depth intervals. Measured fault structures within fault zones reported in drill logs greater than 1m intersected width identified as such.

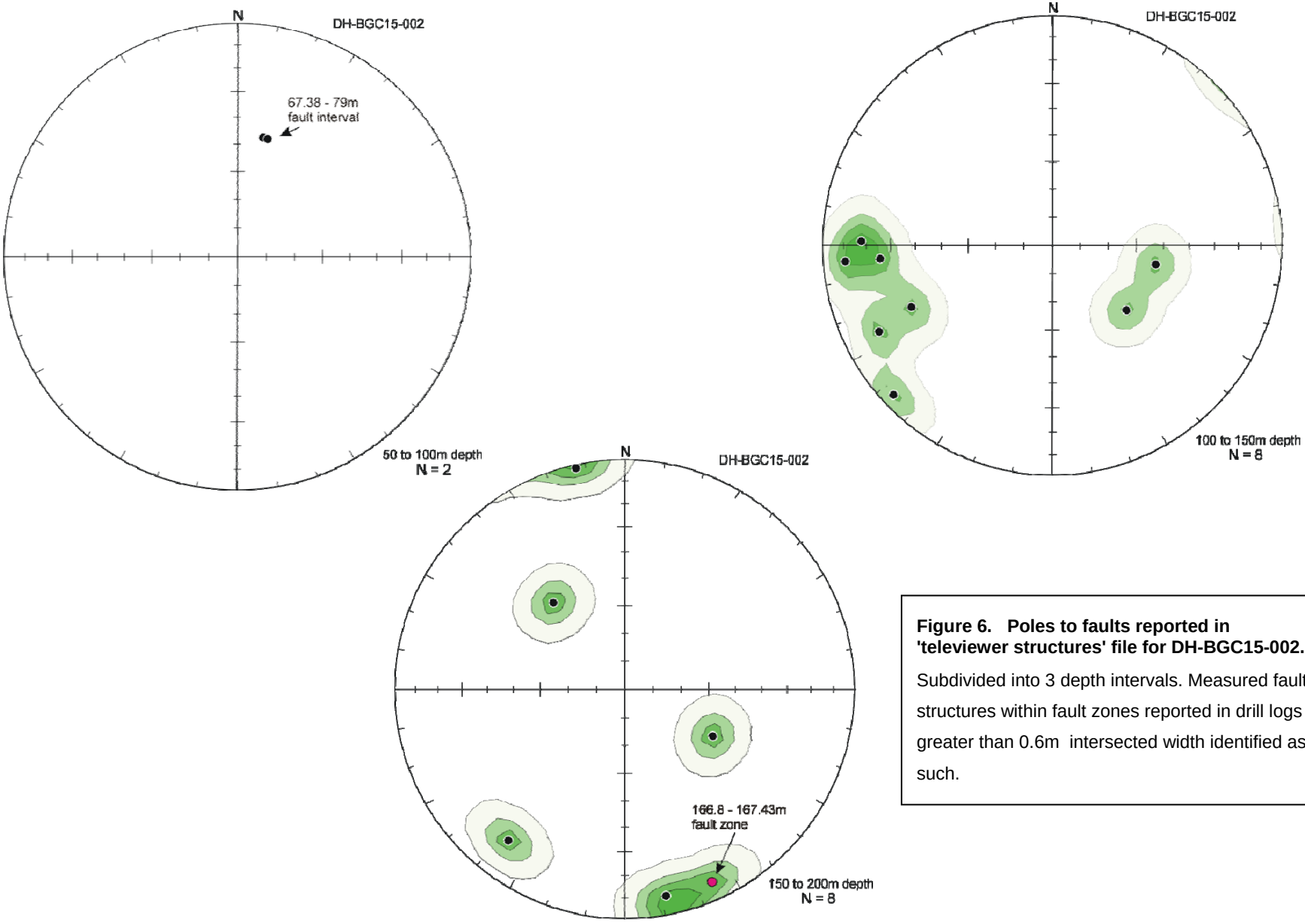


Figure 6. Poles to faults reported in 'televiewer structures' file for DH-BGC15-002.

Subdivided into 3 depth intervals. Measured fault structures within fault zones reported in drill logs greater than 0.6m intersected width identified as such.

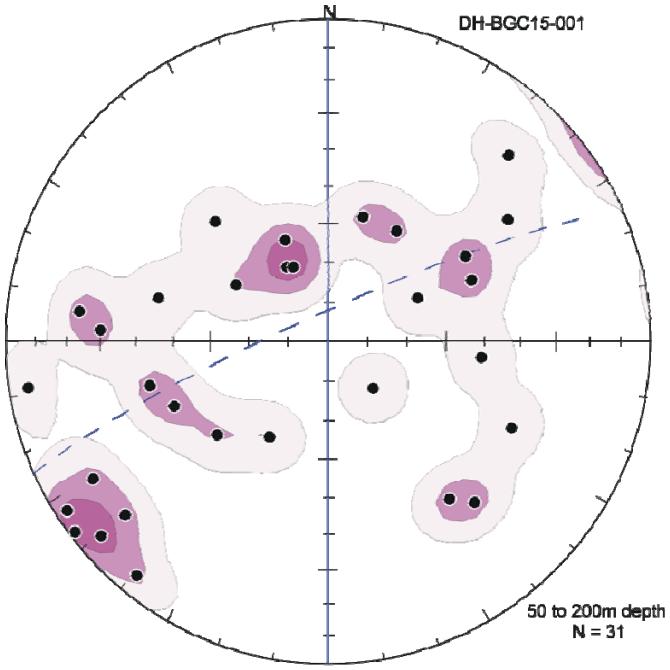


Figure 7. Televiewer fault attitudes, DH-BGC15-001

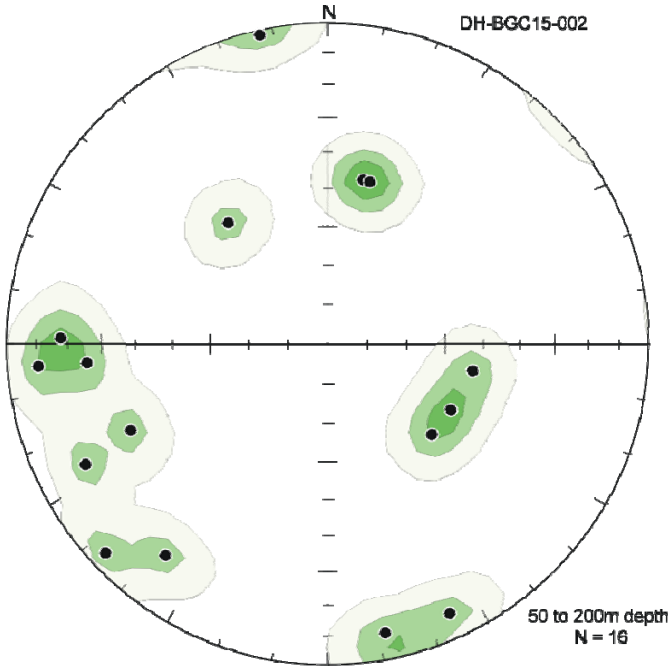


Figure 8. Televiewer fault attitudes, DH-BGC15-002.

4. Summary

1. There is a lack of lithologic correlation between the two 2015 drill holes and KAX-14-126 condemnation drill hole.
2. There is good evidence that DH-BGC15-001 intersected a number of high angle faults, dipping steeply both to the northeast and to the southwest. The most significant of these, occurring between 70 and 80.5m depth, could be extrapolated to surface and the trace of the ELFZ and to KAX-14-126 at ~ 126m depth.
3. Supporting evidence for the high angle fault indicated above and shown on Figure 2 includes: (a) the difference in lithologies between the eastern (DH-BGC15-002) and western holes and (b) the apparent difference in the pole to faults recorded by the acoustic televiewer measurements in the two 2015 drill holes.
4. The ELFZ trace is mapped as defining the southwest limits of the Nicola Group picrite unit. If so, then the mapped ELFZ trace shown in Figure 1 is incorrect as picrite occurs at depth in DH-BGC15-001 west of the mapped fault trace.
5. The wide diversity of fault measurements in DH-BGC15-001 and 002 is indicative of an interconnecting system of fractures.
6. The age of high angle faulting in the area is assumed to be post Iron Mask batholith and orebody emplacement, although no specific information is available (?) on this topic.
7. There is no conclusive evidence that the ELFZ connects northeastward to the area west and north of the existing Ajax open pits. There are, however, at least four northerly trending lineaments that cross the ELFZ and could represent fault or fracture zones. These are, from north to south, the projection of the northeast fault shown in Figure 1 ~1.7km southwest of DH-BGC15-001 through the two northeasterly 'spokes' of Jacko Lake and the drainage beyond; the pronounced north trending topographic lineament along the Kinder Morgan pipeline 'cut'; the northeasterly trending valley of Goose Lake; and the north-northeasterly drainage about halfway between Goose and Edith lakes.

K.V. Campbell, Ph.D., P.Geo.
ERSi Earth Resource Surveys Inc.

April 19, 2015

APPENDIX D
TELEVIEWER LOGS

LEGEND FOR ACOUSTIC BOREHOLE TELEVIEWER LOGS

The parameters shown on the acoustic or optical televiewer (ATV or OTV) logs are described below. Data obtained from the ATV or OTV is processed, analyzed and presented using WellCAD version 5.0 (Advanced Logic Technology, 2014).

DEPTH

Depth is measured in meters along the borehole. The logs are set to a 1:20 scale.

TILT

Tilt is the borehole inclination angle, measured in degrees with respect to vertical. It is measured by the internal inclinometer of the ATV or OTV. Plunge is the angle complement to tilt, and can be calculated by subtracting the tilt from 90 degrees.

AZIMUTH

Azimuth is the orientation of the televiewer probe in the borehole, measured in degrees with respect to magnetic north. It is measured by the internal magnetometer of the ATV or OTV. The magnetometer can be affected by proximity to metallic casing or magnetic minerals, disrupting data collection. Magnetic declination is not accounted for in this data source.

TEMPERATURE

The temperature log provides a record of the instrument temperature, measured in degrees Celsius. Instrument temperature can be affected by the ambient temperature at surface prior to completing the survey, as well as the temperature gradient in the surveyed formation.

CALIPER

The caliper log provides an estimation (in millimetres) of the minimum, average, and maximum borehole diameters along its depth. Caliper is calculated from the travel time of the acoustic signal and an assumed acoustic velocity in the borehole fluid.

TRAVEL TIME LOG

The travel time log provides a record of features that increase the distance between the borehole wall and the televiewer probe. The travel time image represents the time elapsed (in microseconds) between the acoustic signal’s transmission and receipt. As presented in the

logs, lighter colours indicate an increased distance between probe and the borehole wall. Discontinuities in the borehole wall appear as light areas with a curvilinear shape. The travel time log is presented in two dimensions, as if the cylindrical borehole has been sliced along its axis and unrolled to lay flat.

AMPLITUDE LOG

The amplitude log provides a record of any features intersecting the borehole wall that alter the reflectivity of the acoustic signal from the televiewer probe. The amplitude image represents the strength of the signal returning from the borehole wall. The strength of the received signal is affected by attenuation by the borehole fluid and reflection efficiency at the borehole wall (related to the formation hardness and the smoothness of the borehole wall). As presented in the logs, darker colours indicate a weaker reflection, which may indicate a less dense material. Discontinuities in the borehole wall appear as dark areas with a curvilinear shape. The amplitude log is presented in two dimensions, as if the cylindrical borehole has been sliced along its axis and unrolled to lay flat.

STRUCTURE LOG

The structure log allows for the measurement of discontinuity data including depth, dip angle, dip direction, and apparent aperture. In addition, a discontinuity type may be assigned to each discontinuity. The structure log is displayed in the following three styles:

Projection Style

The trace of the intersection of a planar discontinuity and a cylindrical borehole is an ellipse, as shown in Figure 1. The aspect ratio of the ellipse is a function of the difference between the borehole plunge and the discontinuity dip. For example, a discontinuity that intersects the borehole perpendicularly will appear circular, whereas an oblique intersection will appear as an ellipse. A discontinuity sub-parallel to the borehole will appear as an ellipse with the major axis much greater than the minor axis. In the data analysis, the cylindrical borehole is oriented to magnetic north and unrolled, such that each ellipse can be presented as a sine wave (Figure 1). Dip angle can be calculated from the amplitude of the sine wave, and dip direction (azimuth) can be obtained from the location of the peak or trough relative to magnetic north. Projection data is not corrected for borehole deviation or magnetic declination.

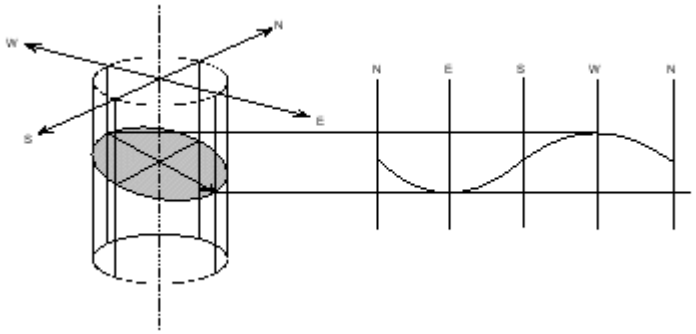


Figure 1 Unrolled Discontinuity into a Sine Wave

Tadpole Style

Data that has been corrected for borehole deviation is displayed using the tadpole style. The round body of the tadpole represents the dip angle of the discontinuity with respect to the horizontal scale of the log, while the "tail" of the tadpole is a vector line representing the dip direction. Tadpole data is not corrected for magnetic declination.

The projections on the structure log represent the discontinuities interpreted from the amplitude and travel time logs oriented to magnetic north, but subject to borehole deviation. The tadpoles are oriented to magnetic north and corrected for borehole deviation. The discontinuity types are differentiated by a colour scheme, as shown below in Table B-1. Using core photos and field logs, the discontinuities are matched to each manually logged discontinuity to assign the correct discontinuity types. Where no discontinuity was manually logged, either due to poor recovery or mechanical disturbance, a generic discontinuity type is assigned to the TV discontinuity. Often, bedding in the rock may be recognized in the amplitude and 3D image logs. If the discontinuity is oriented parallel to the bedding, it is further denoted with a 'B'.

Table B-1 Legend for Discontinuity Types

Code	Symbol	Type	Code	Symbol	Type
F		Fault	B		Bedding
S, S-O, S-V		Shear, Shear along Foliation, Shear along Vein	V		Vein
J		Joint	C		Contact
J-B		Joint along Bedding	J-V		Joint along Vein

3D LOG

The 3D log provides a three-dimensional rendering of the borehole cylinder. For an ATV survey, the travel time data is used as a caliper to model the shape of the cylinder and the amplitude data is applied to map the colours to the cylindrical surface. For an OTV survey, the image log is used to map the colours to the cylindrical surface, and no caliper data is modeled. The 3D logs are oriented normal to the average borehole azimuth, and parallel to the direction of looking “into the page” at a cross section. A small section of drill rods are surveyed at the top of each televiewer survey interval (Figure 2).

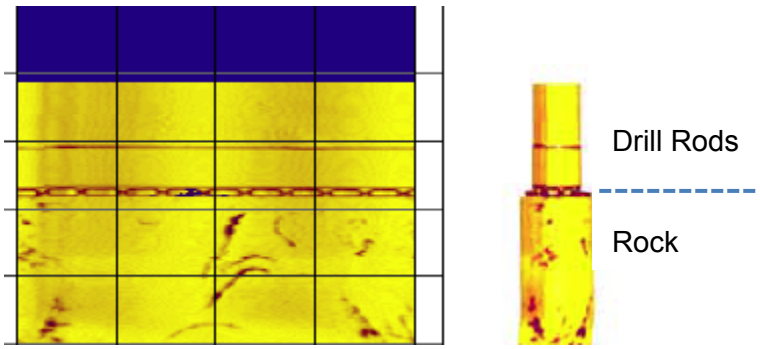


Figure 2 Surveyed Section of Drill Rod

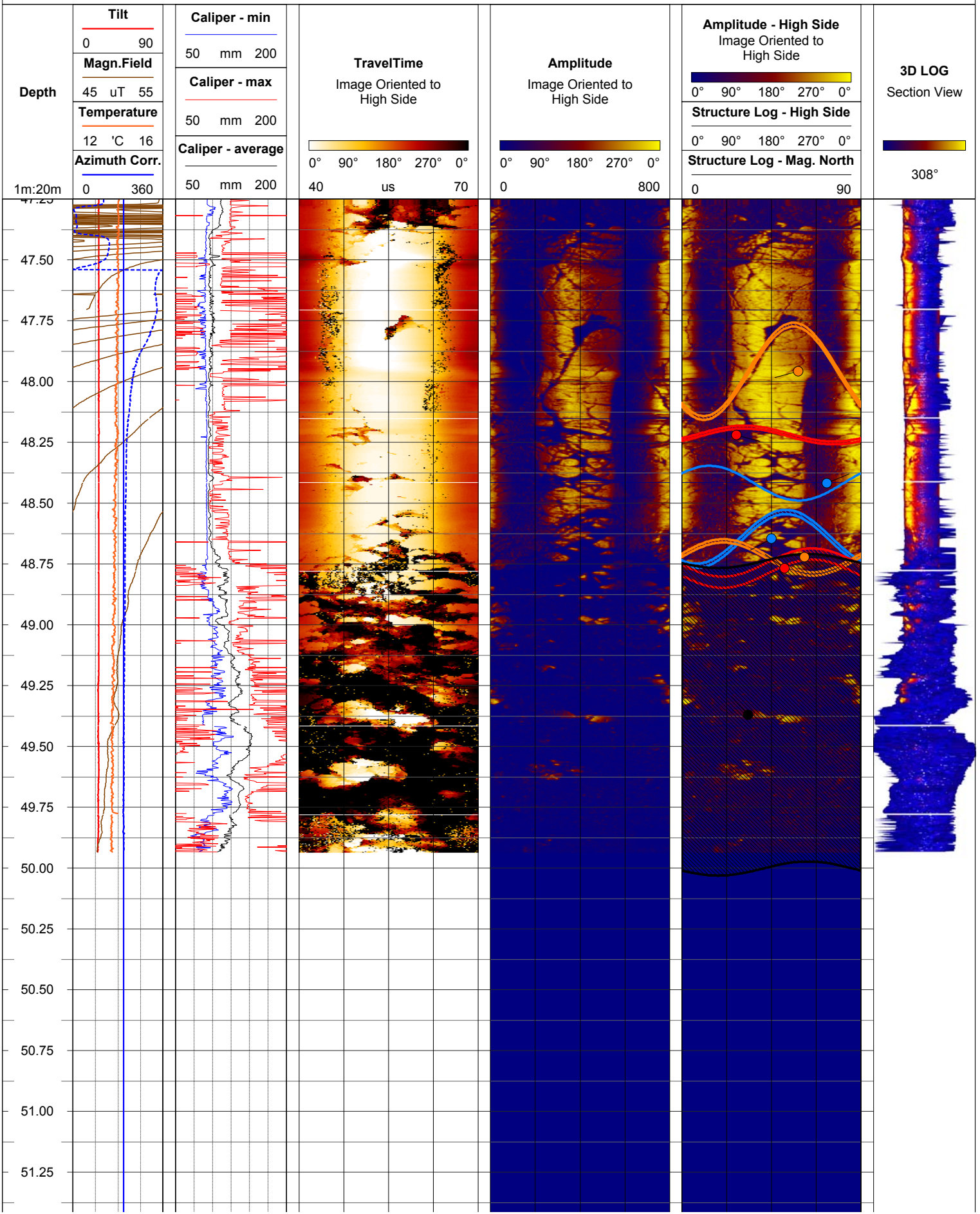
PROJECT : ELFZ INVESTIGATION AND CHARACTERIZATION
PROJECT NO. : 1125-007-07

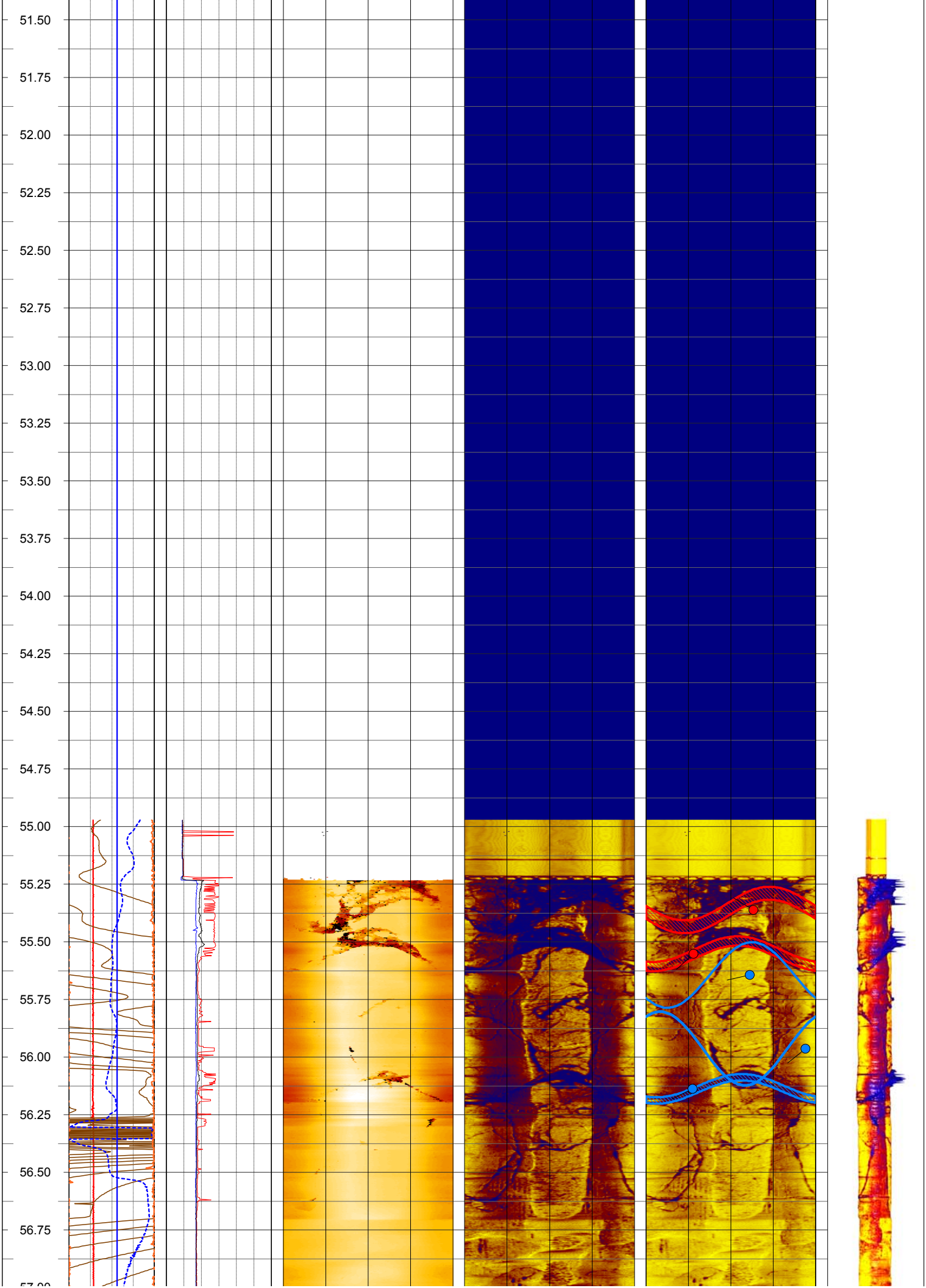
DRILLHOLE # DH-BGC15-01

LOCATION : NORTH OF THE PROPOSED TSF
CO-ORDINATES (m) : 682712 E, 5608875 N
COLLAR ELEVATION (m) : 941
DATUM : NAD83 UTM
TREND (°) : 217
PLUNGE (°) : -65

DRILL DESIGNATION : A-5
DRILLING CONTRACTOR : GEOTECH DRILLING
DRILLING METHOD : MUD ROTARY
CORE DIAMETER : HQ3
FLUID : WATER/POLYMER
CASED TO (m) : 42

START DATE : FEBRUARY 17, 2015
FINISH DATE : FEBRUARY 26, 2015
FINAL DEPTH (m) : 200.5
DEPTH TO TOP OF ROCK (m) : 42.87
ANALYZED BY : MAC
REVIEWED BY : JND

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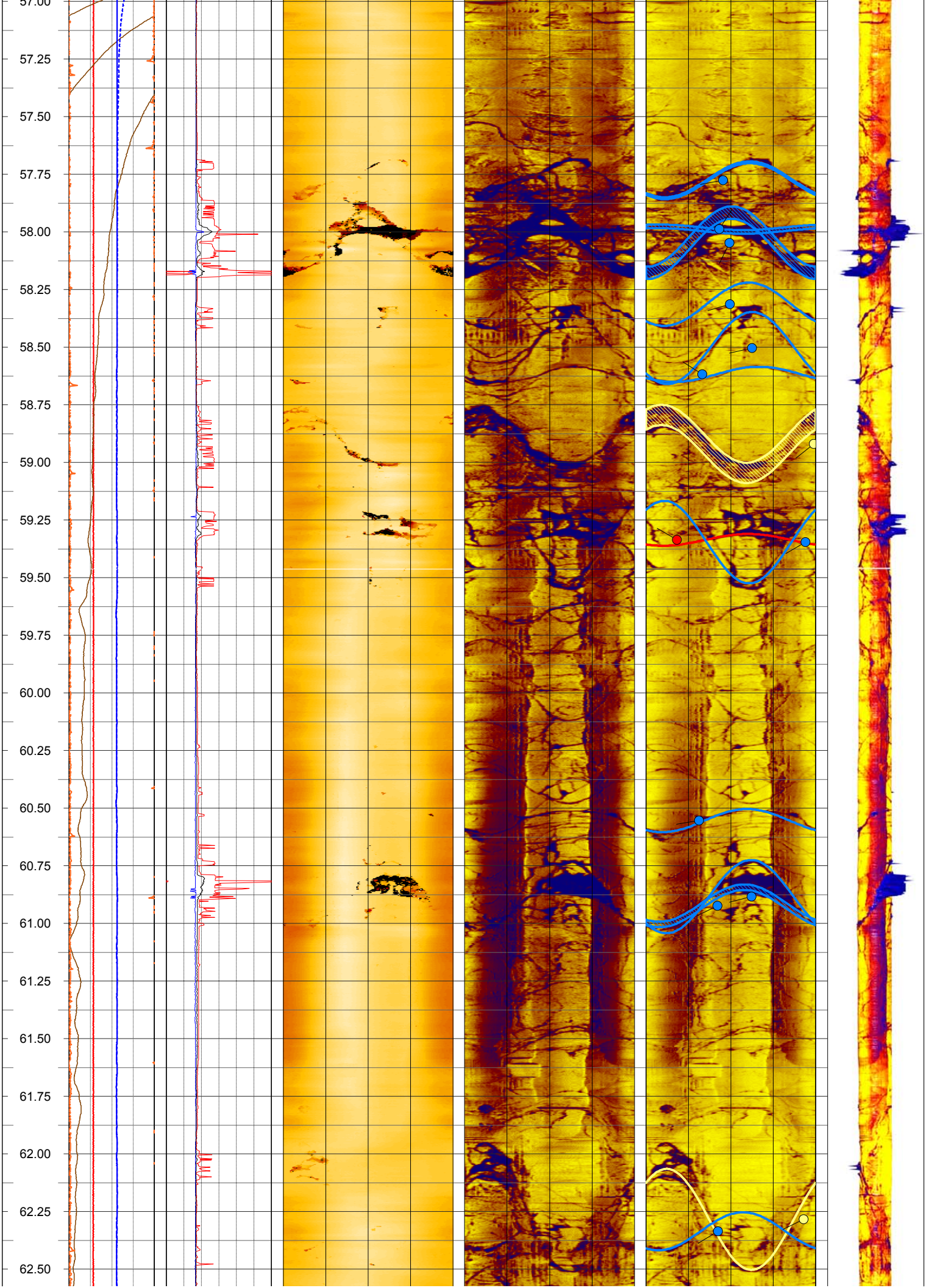
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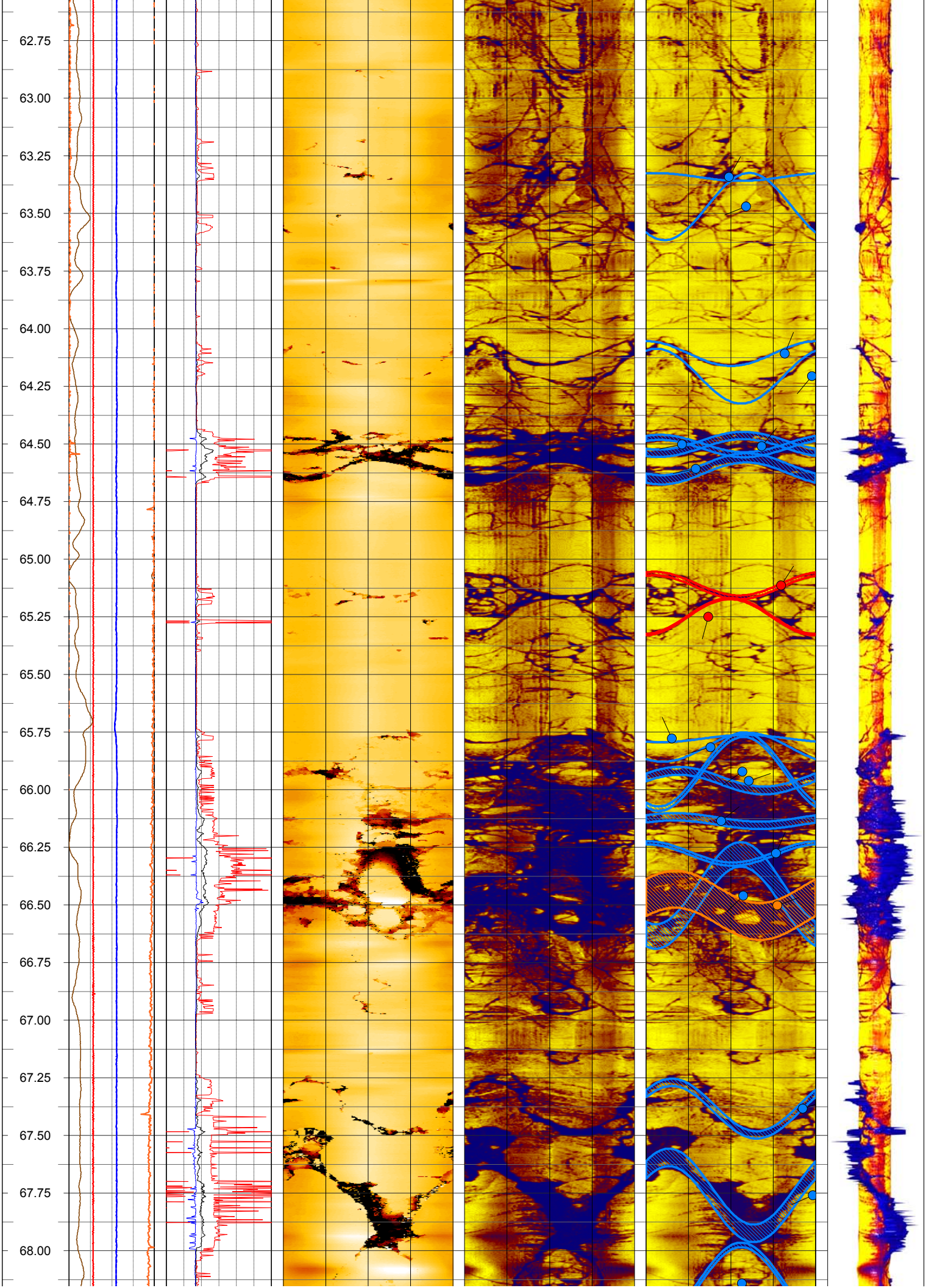
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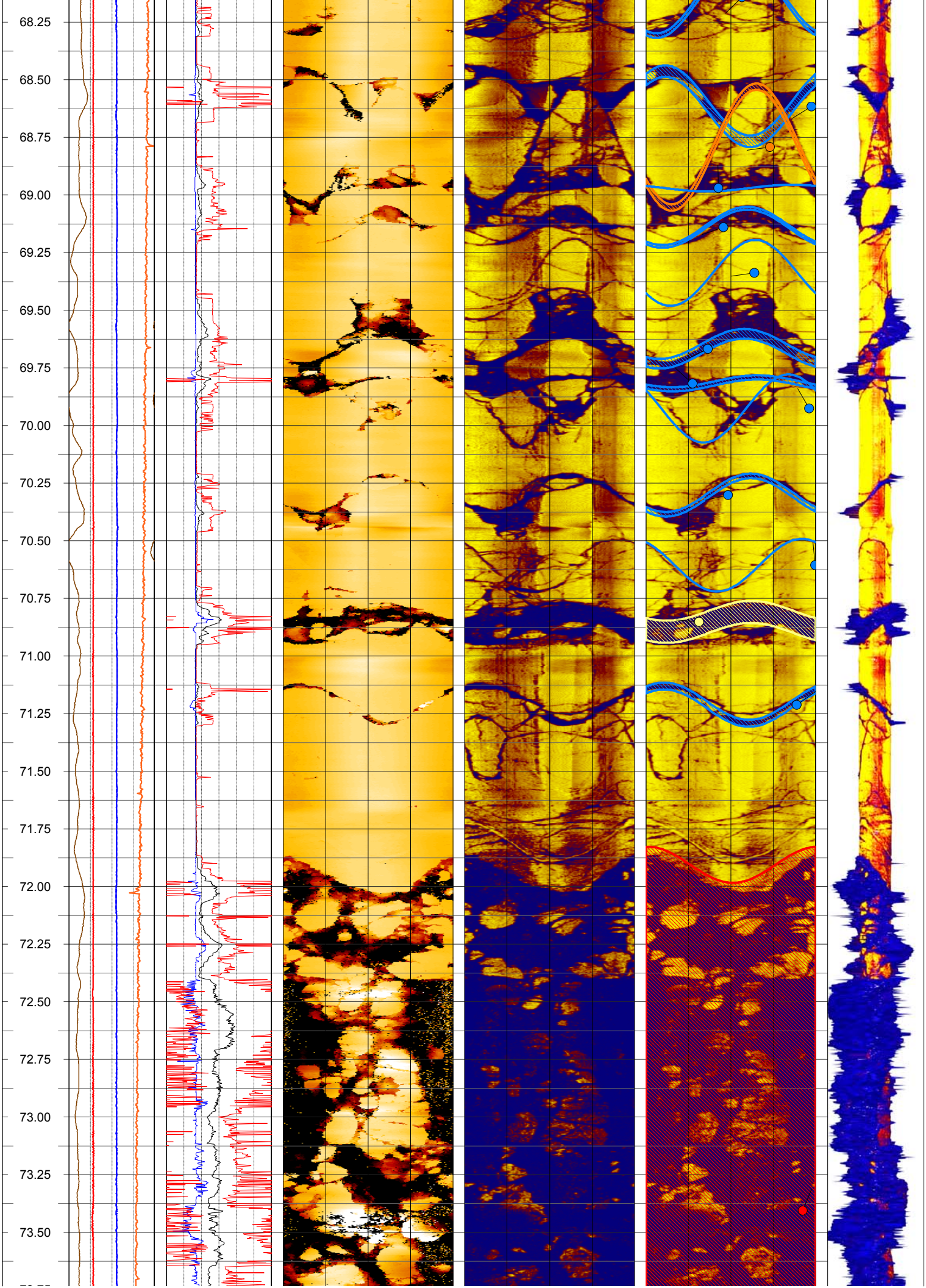
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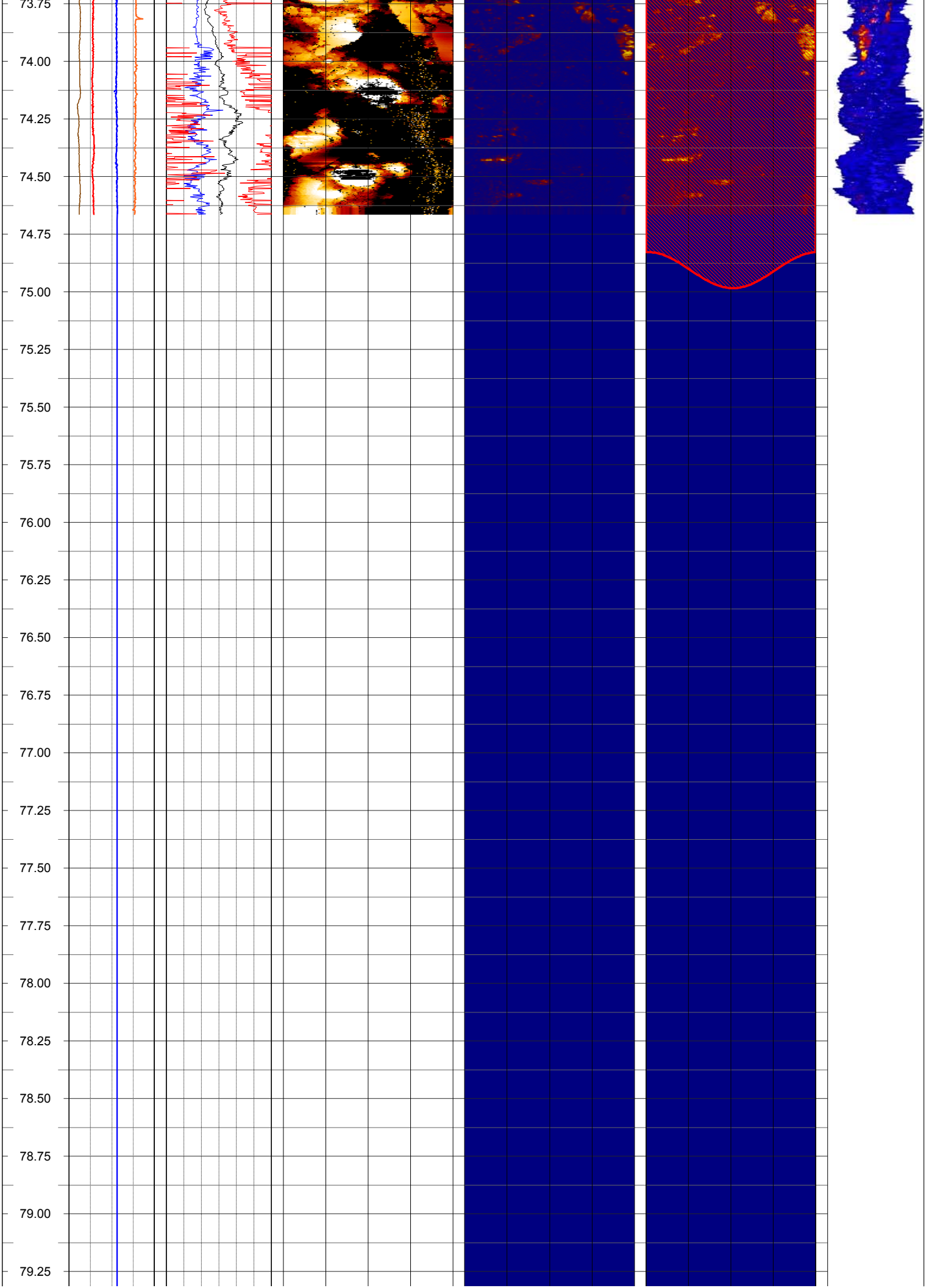
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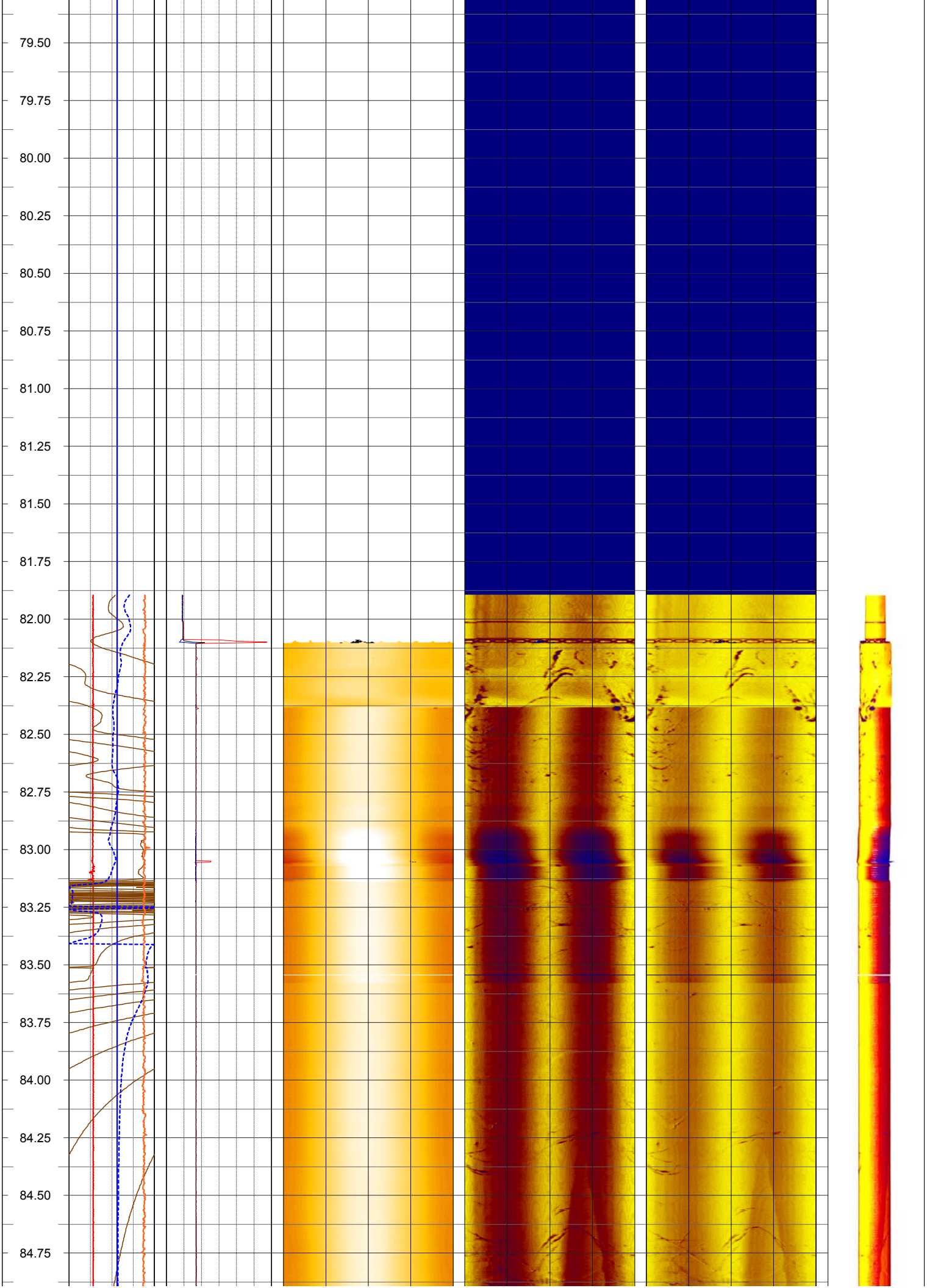
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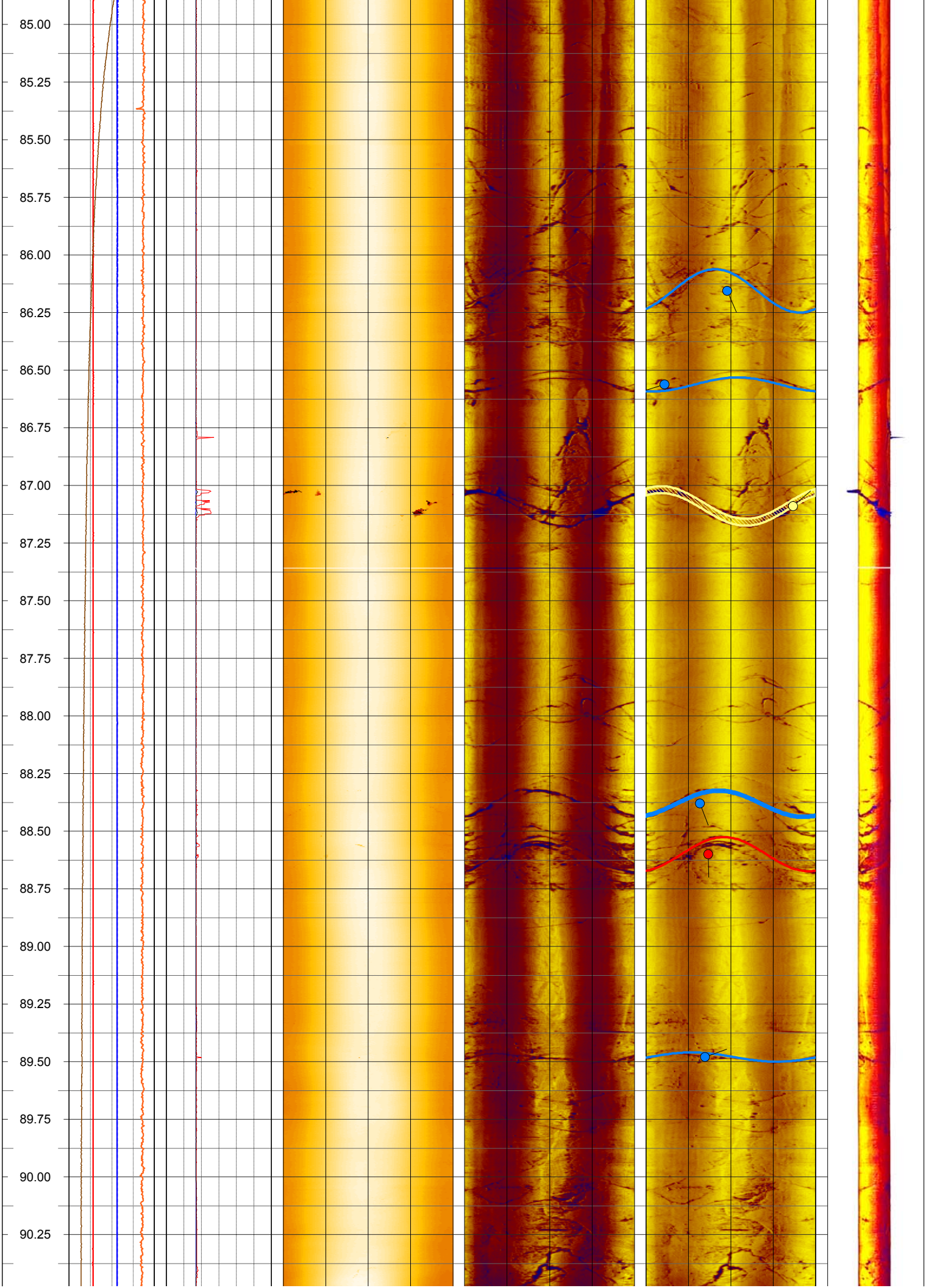
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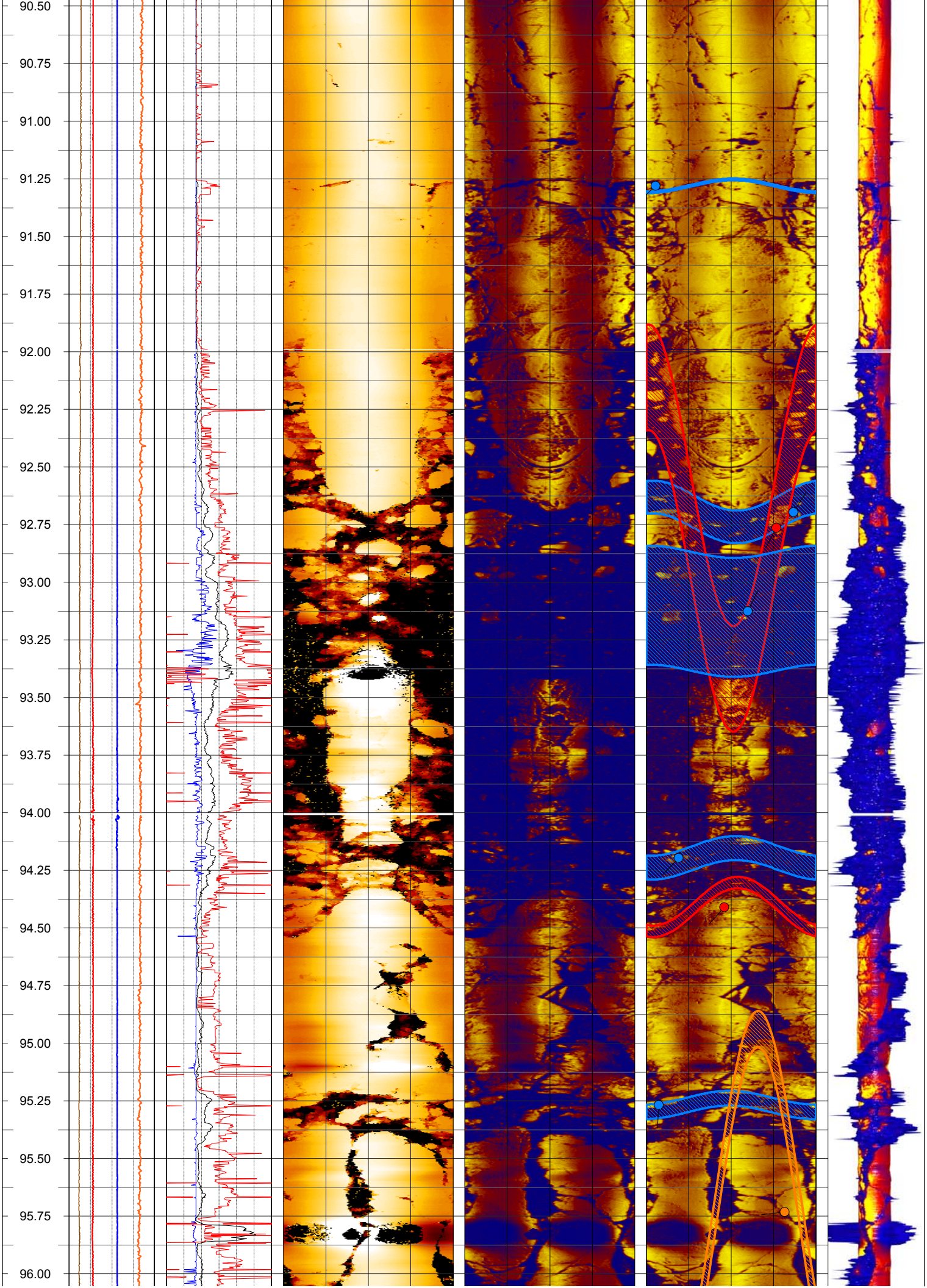
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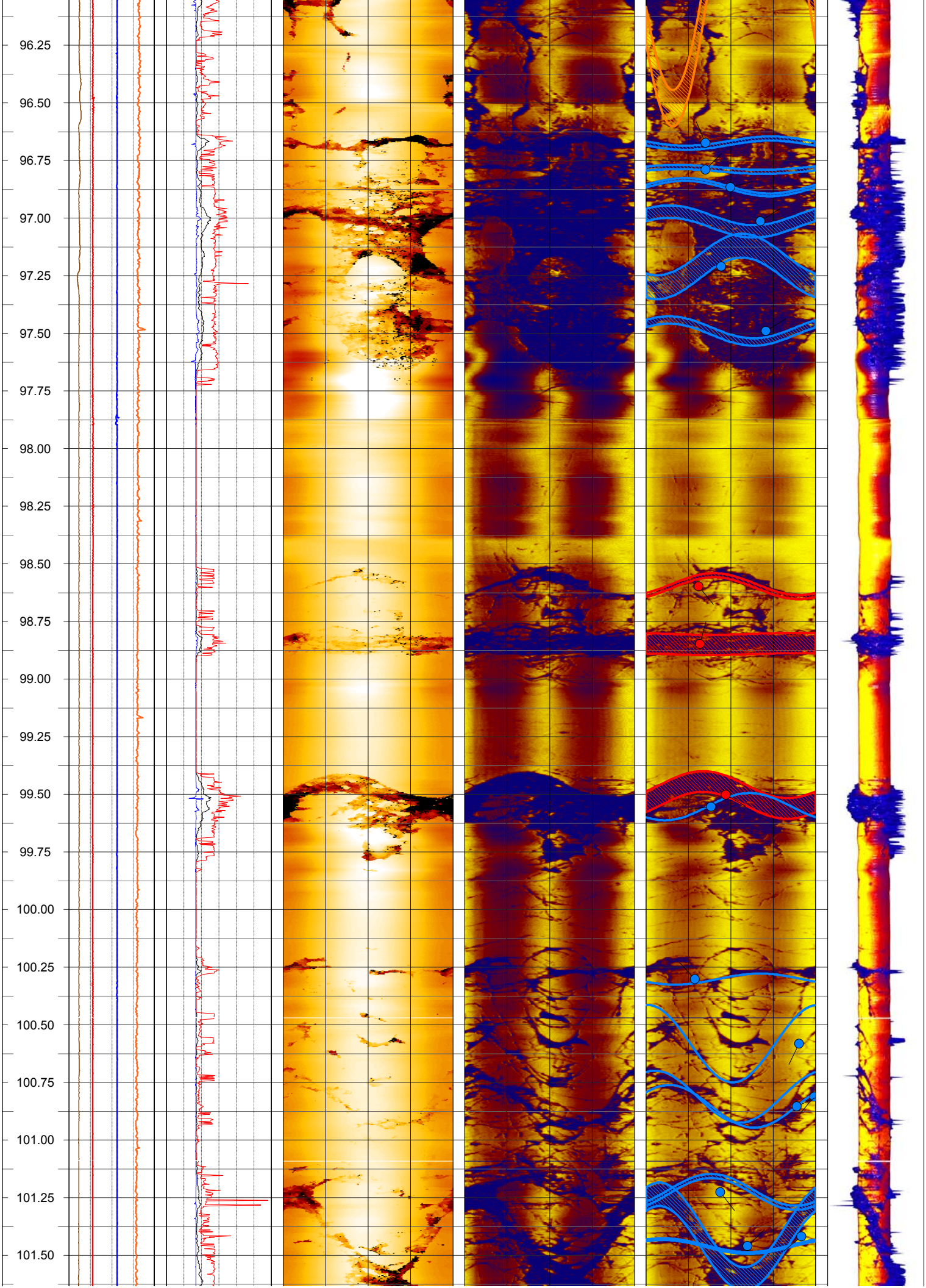
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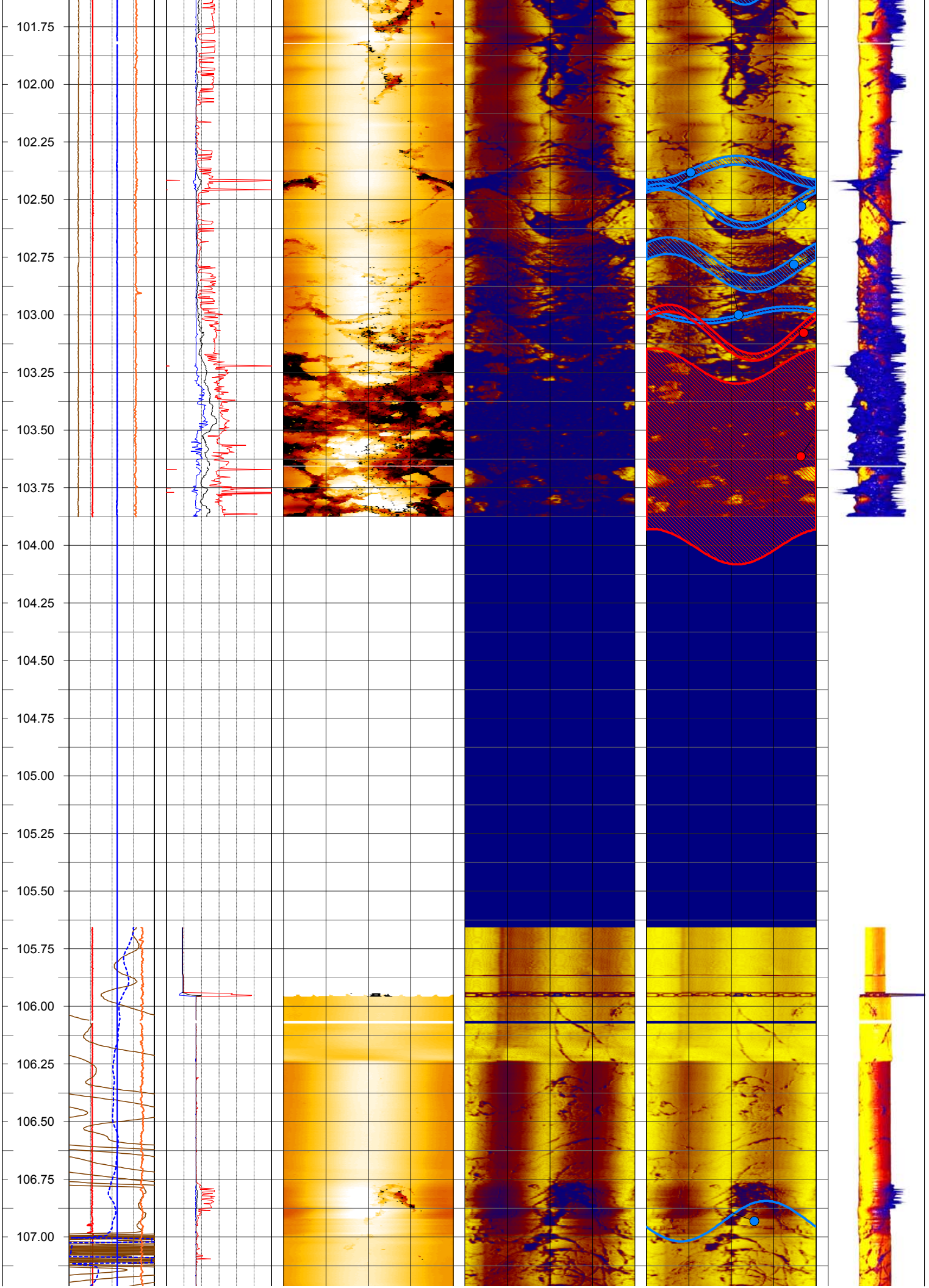
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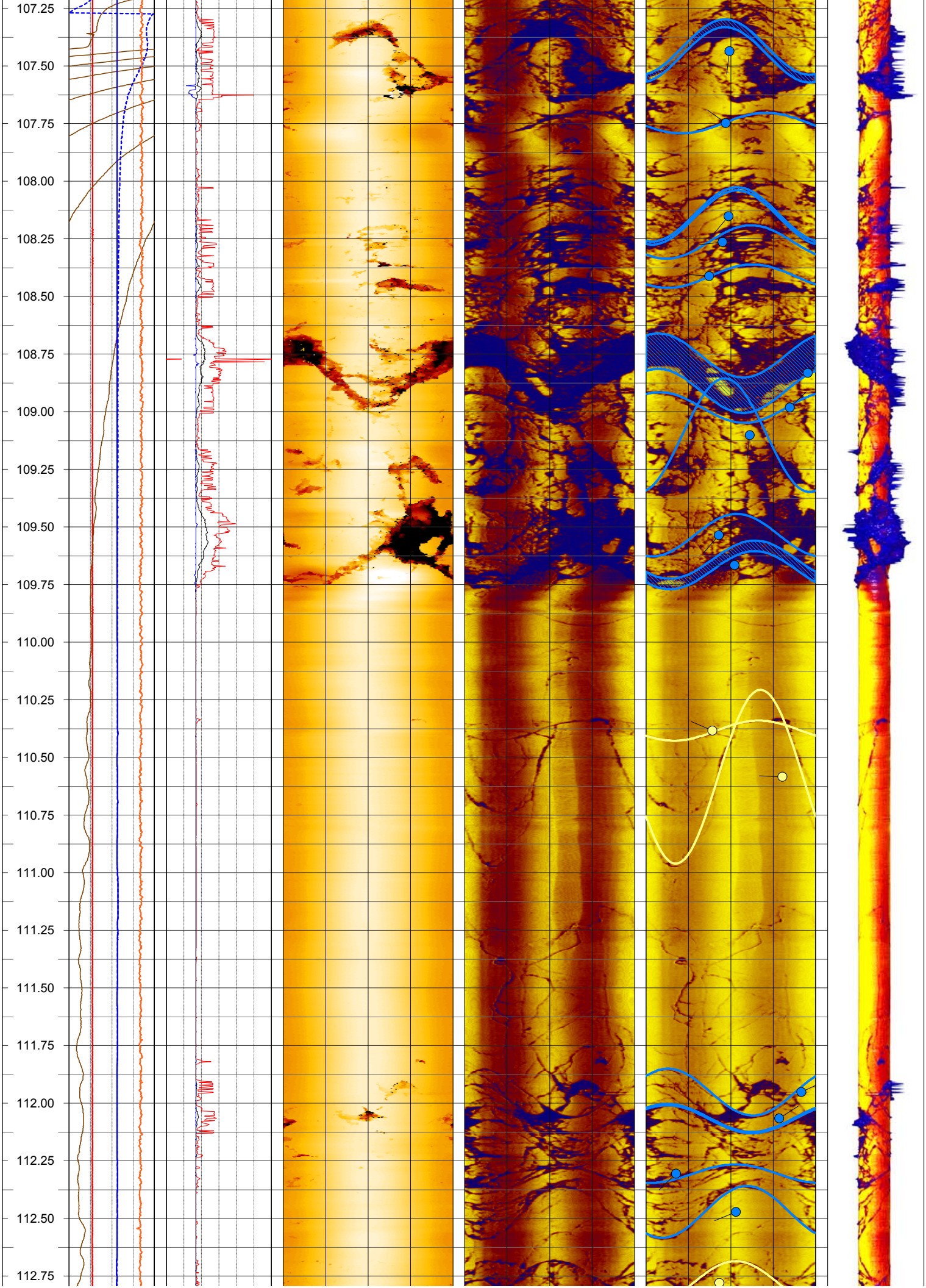
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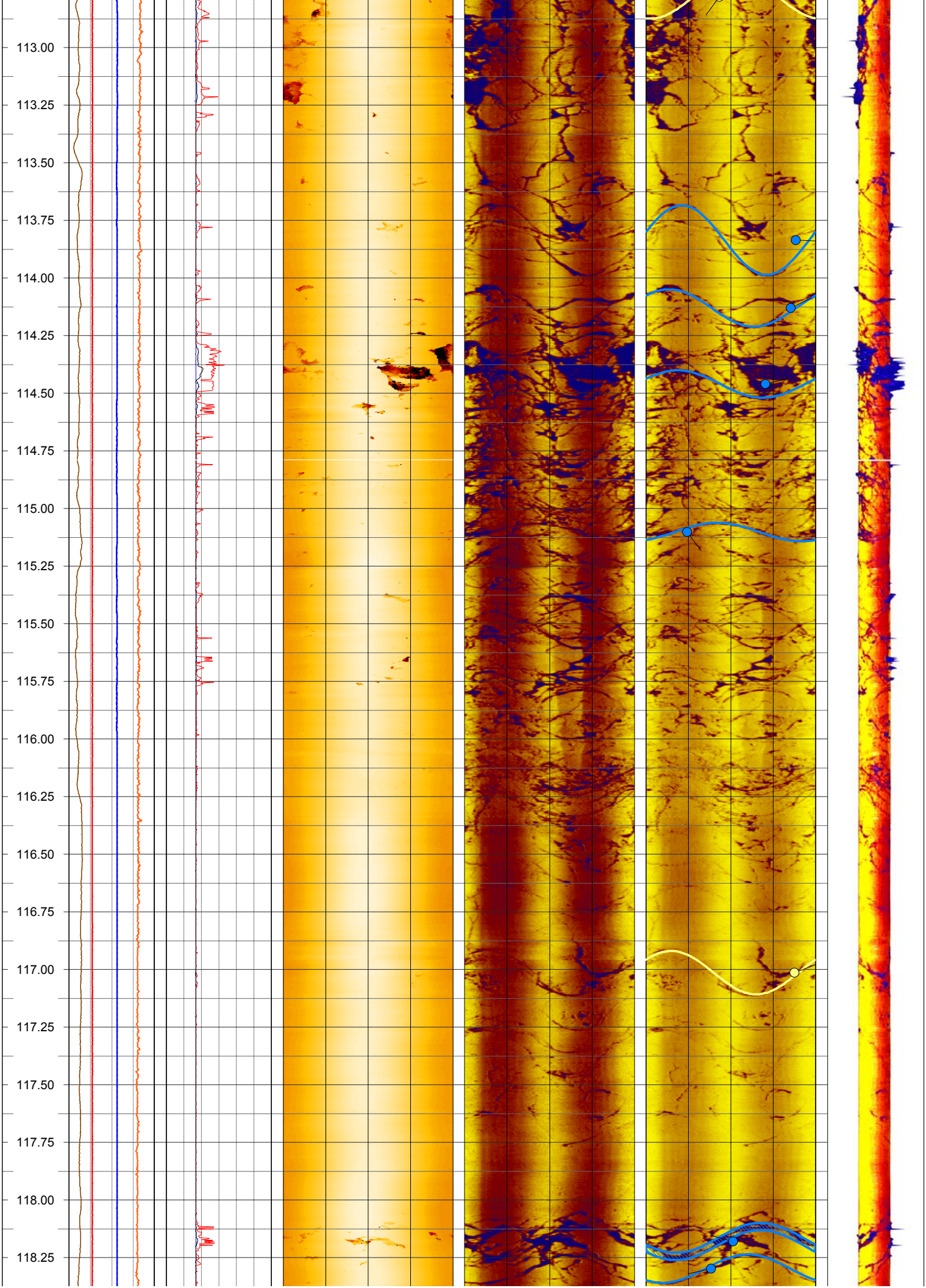
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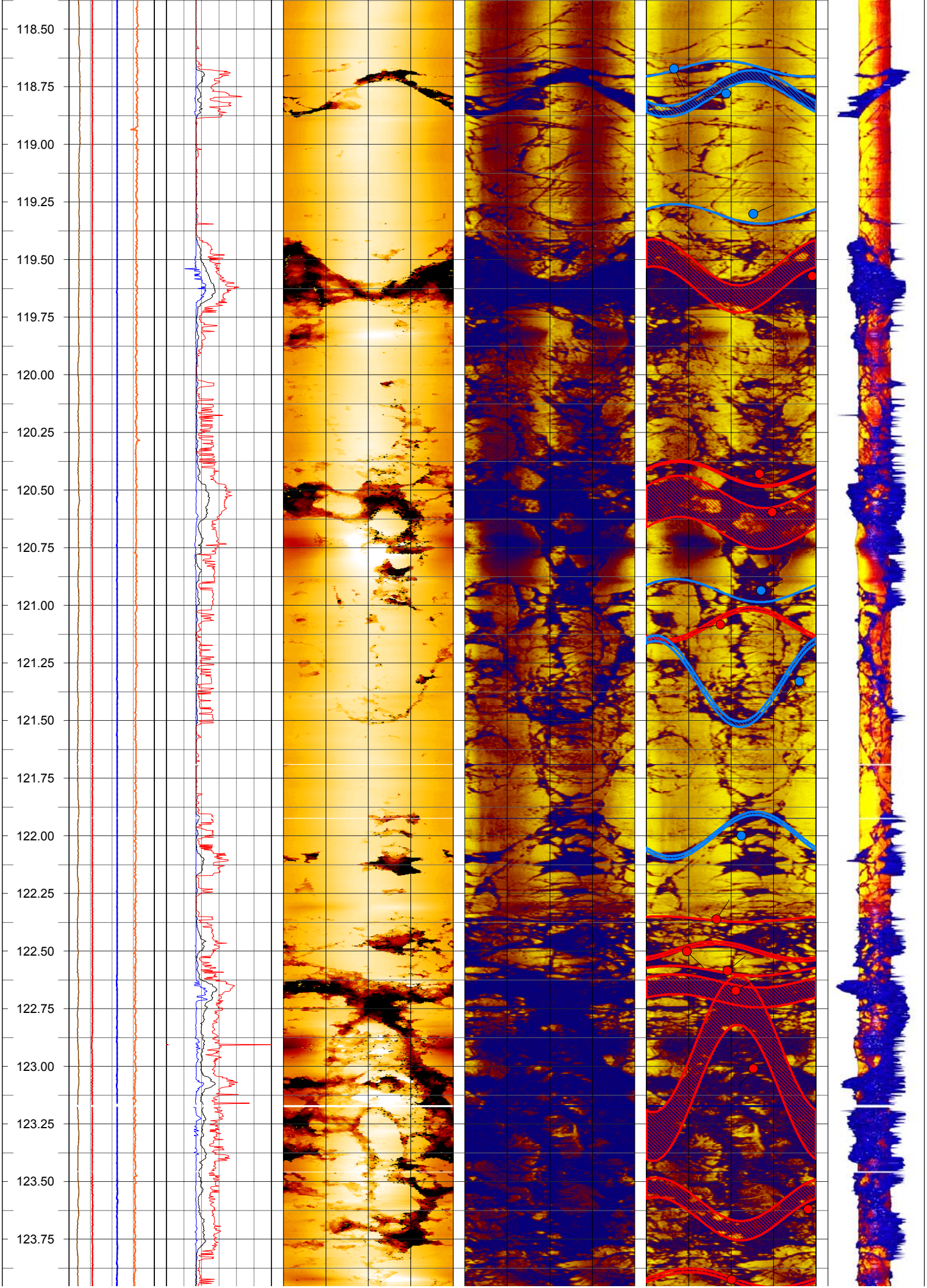
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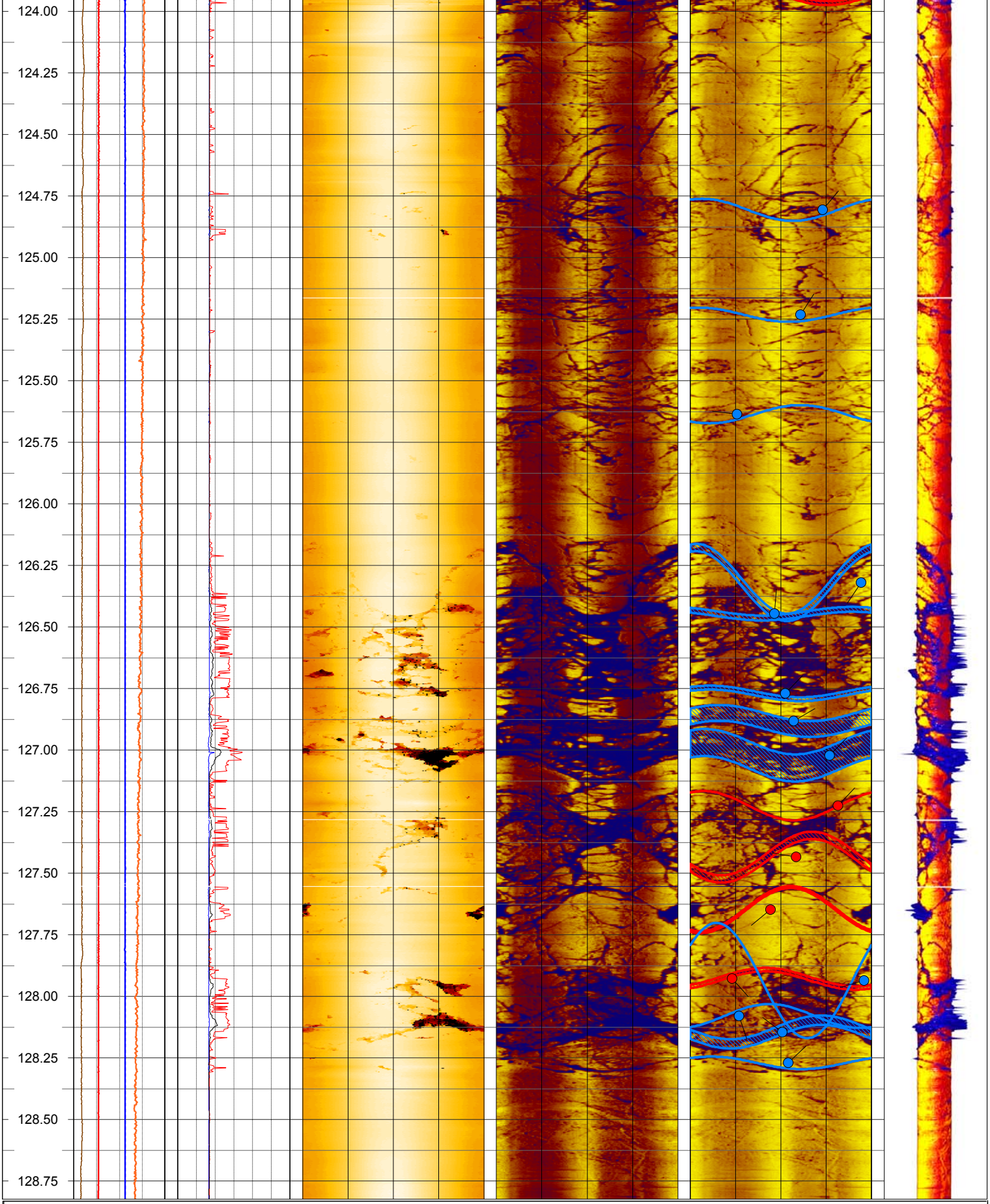


BGC

CLIENT : KGHM AJAX MINING INC.

PRINT DATE : 3/26/2015

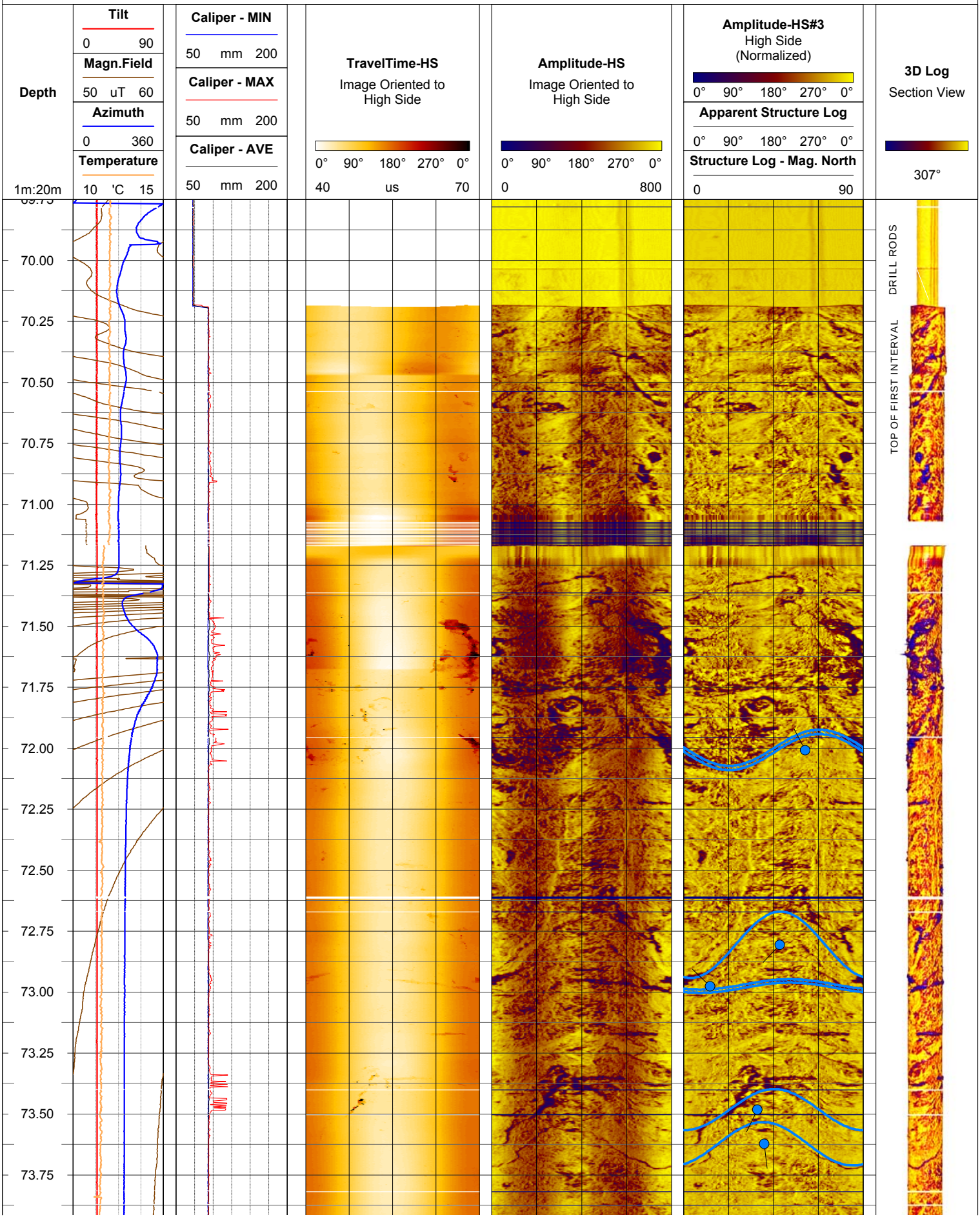
PROJECT : ELFZ INVESTIGATION AND CHARACTERIZATION
PROJECT NO. : 1125-007-07

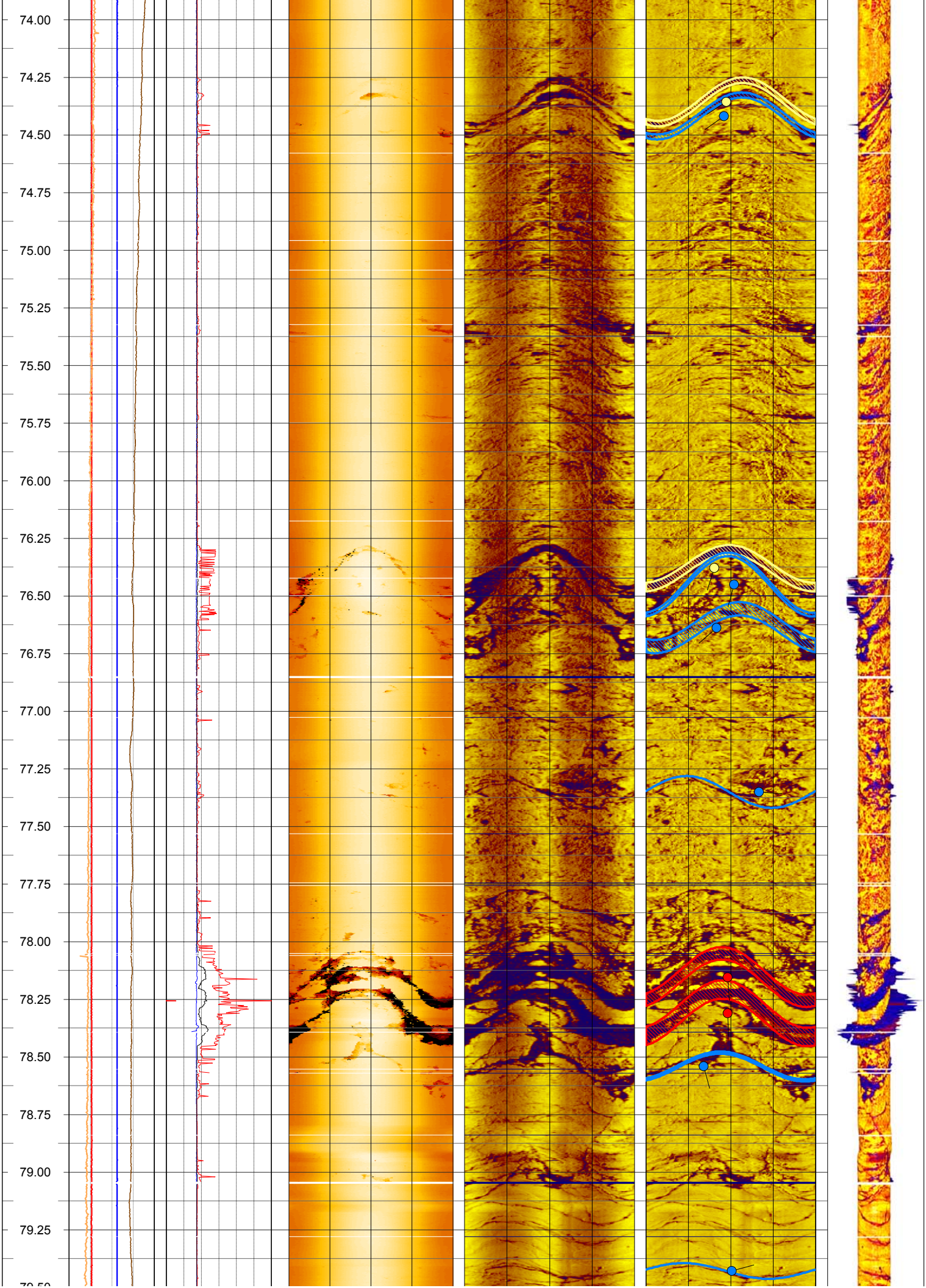
DRILLHOLE # DH-BGC15-02

LOCATION : NORTH OF THE PROPOSED TSF
CO-ORDINATES (m) : 682711.642 E, 5608970.8 N
COLLAR ELEVATION (m) : 947.661
DATUM : NAD83 UTM
TREND (°) : 217
PLUNGE (°) : -65

DRILL DESIGNATION : A-5
DRILLING CONTRACTOR : GEOTECH DRILLING
DRILLING METHOD : MUD ROTARY
CORE DIAMETER : HQ3
FLUID : WATER/POLYMER
CASED TO (m) : 57

START DATE : FEBRUARY 27, 2015
FINISH DATE : MARCH 4, 2015
FINAL DEPTH (m) : 225.9
DEPTH TO TOP OF ROCK (m) : 57.85
ANALYZED BY : MAC
REVIEWED BY : JND

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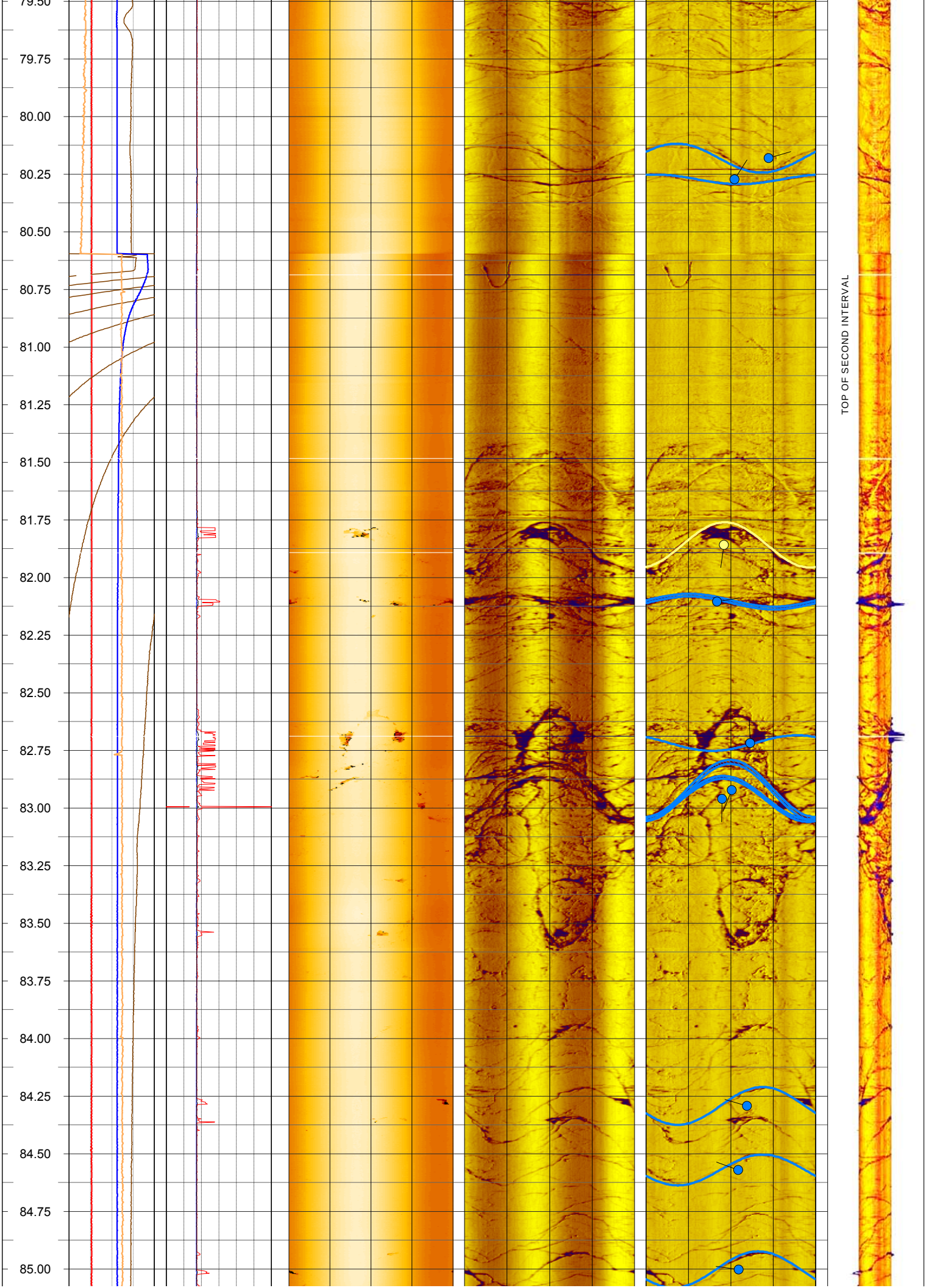
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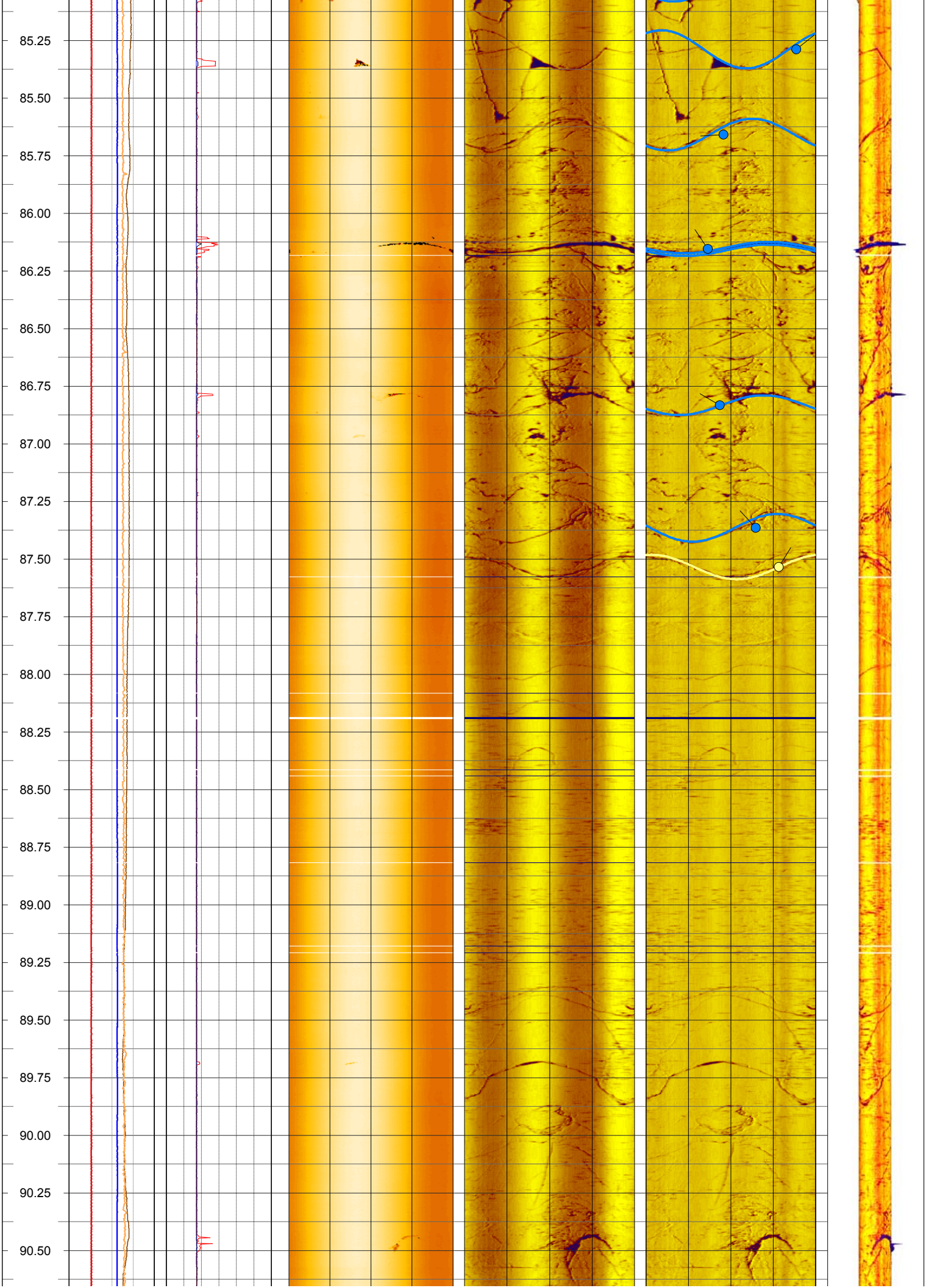
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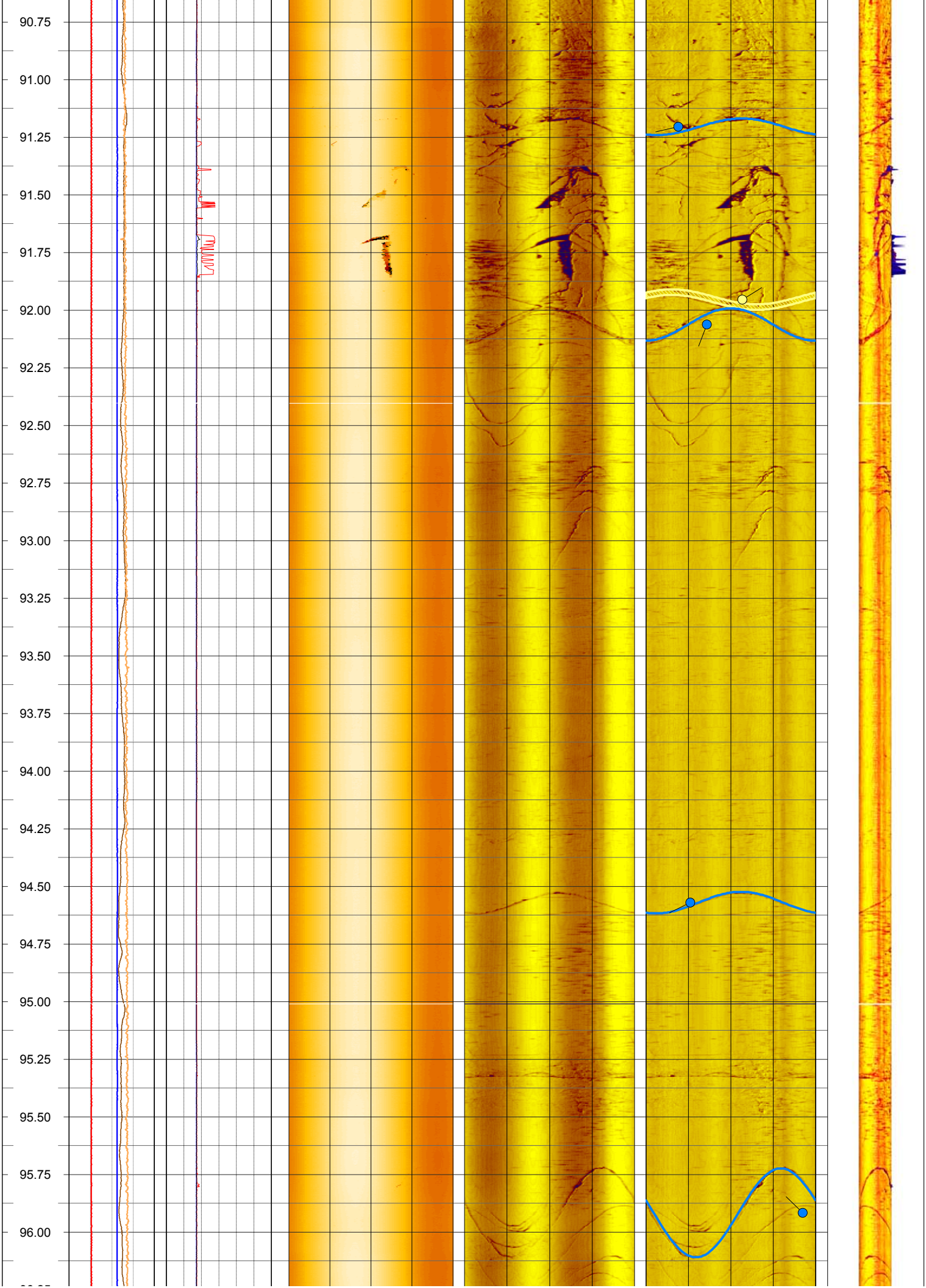
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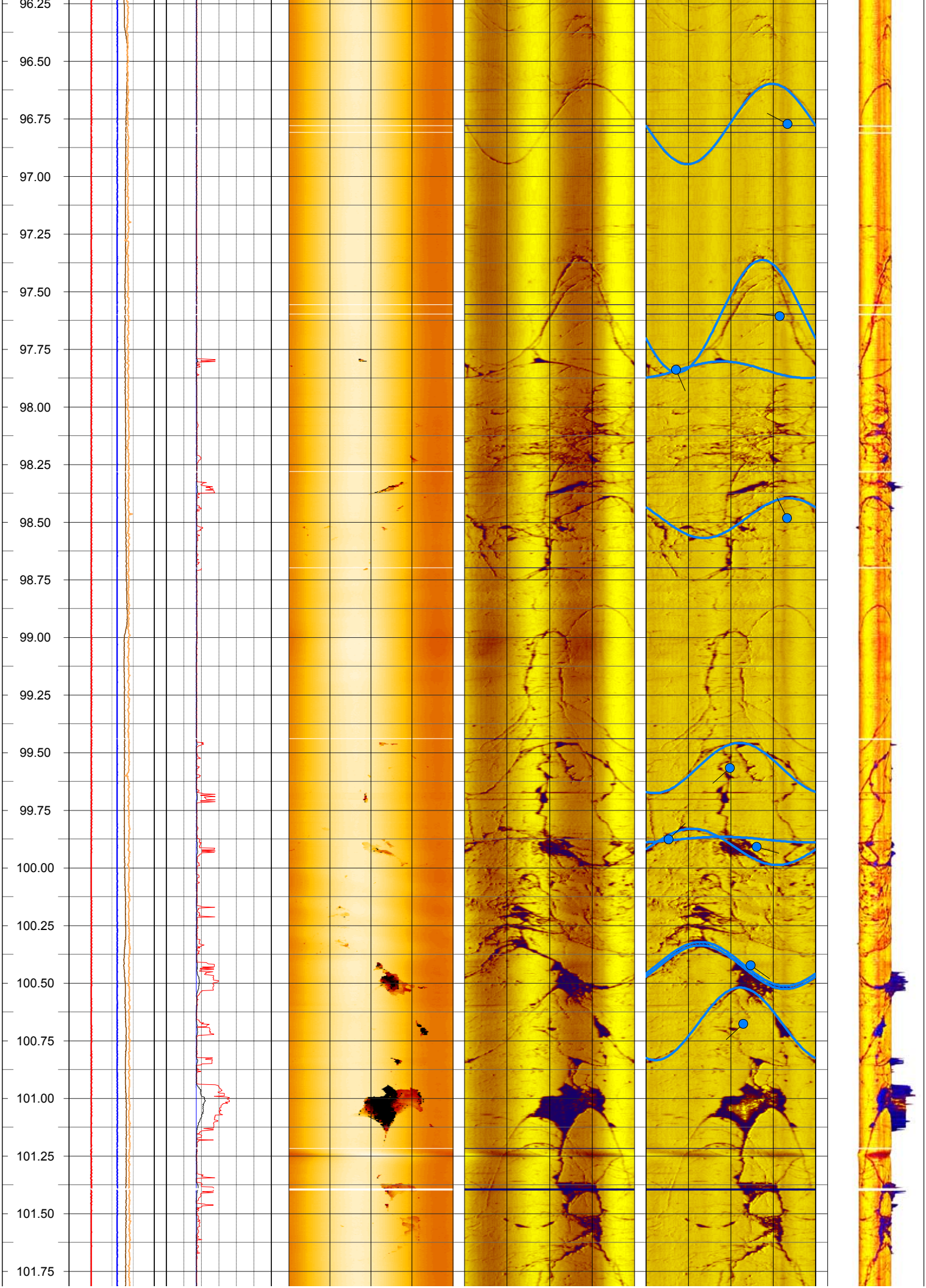
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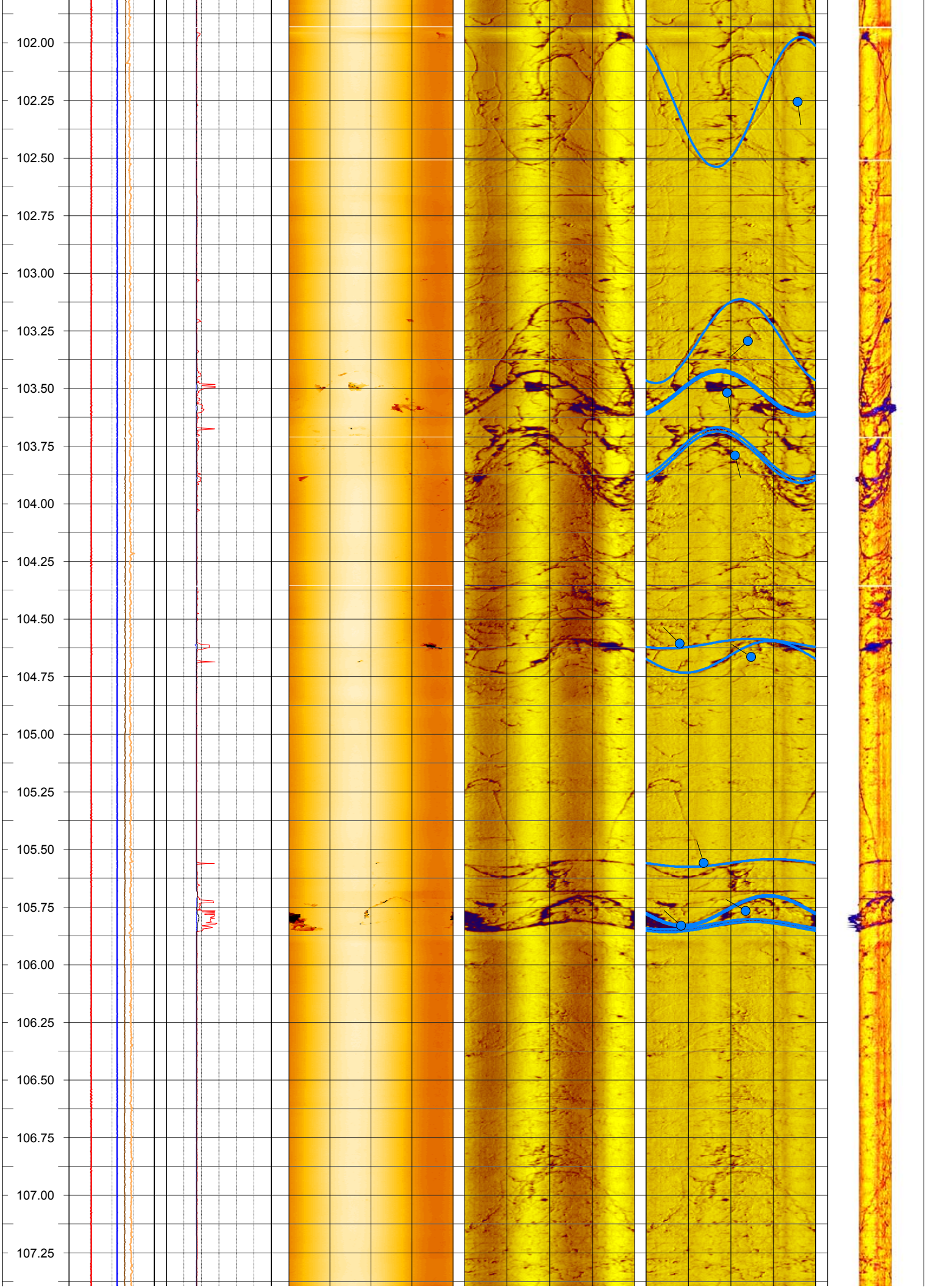
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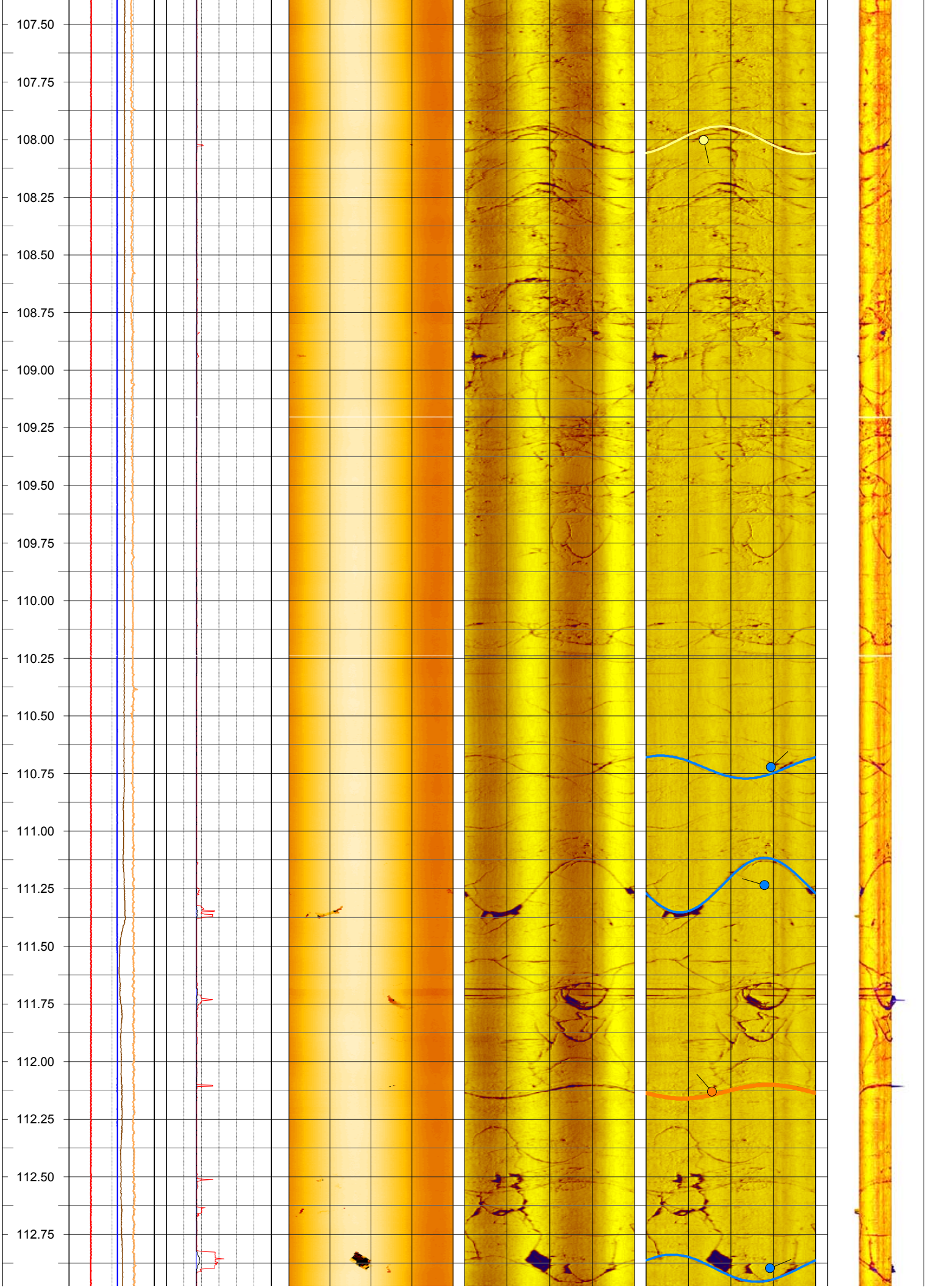
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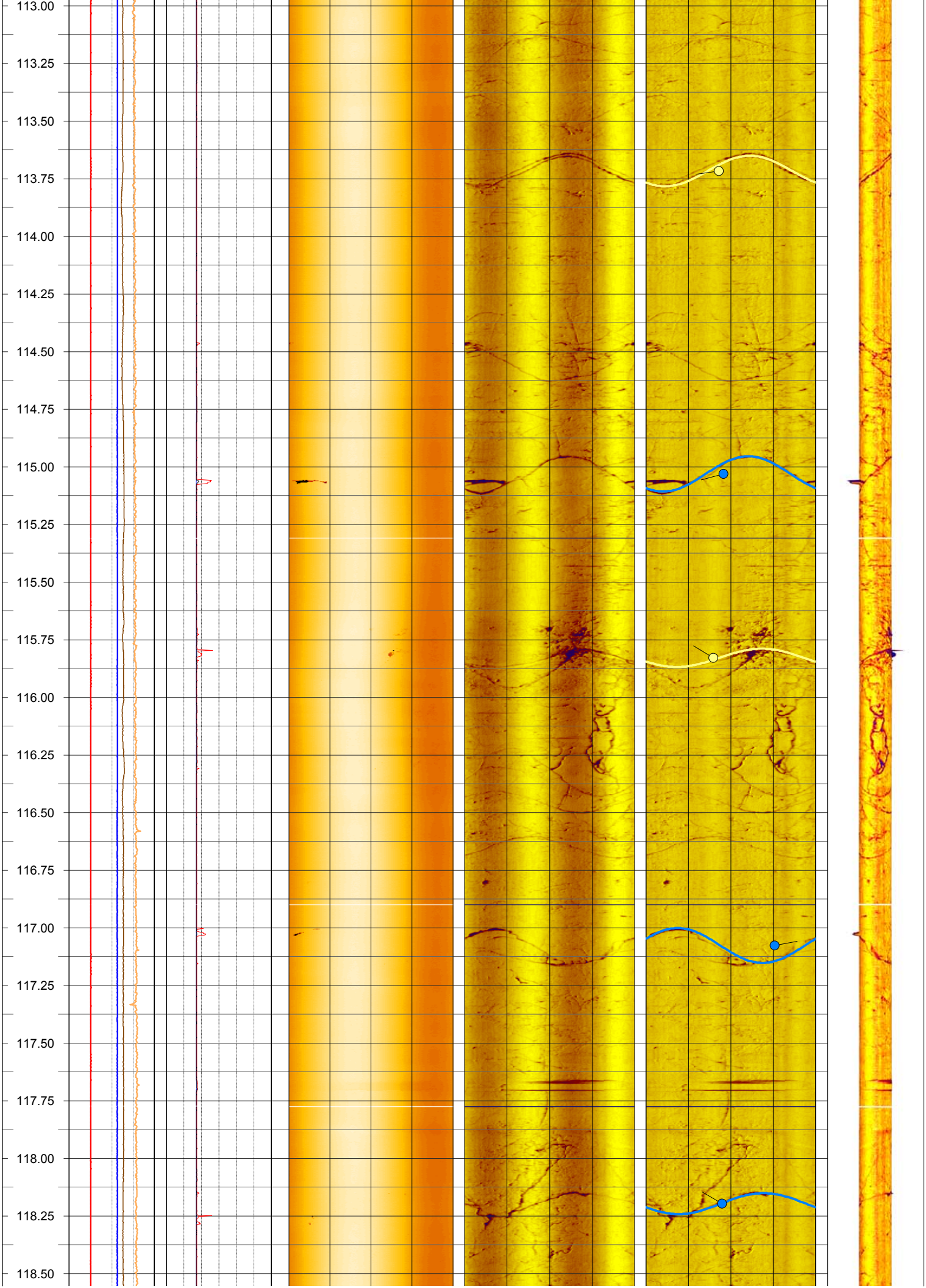
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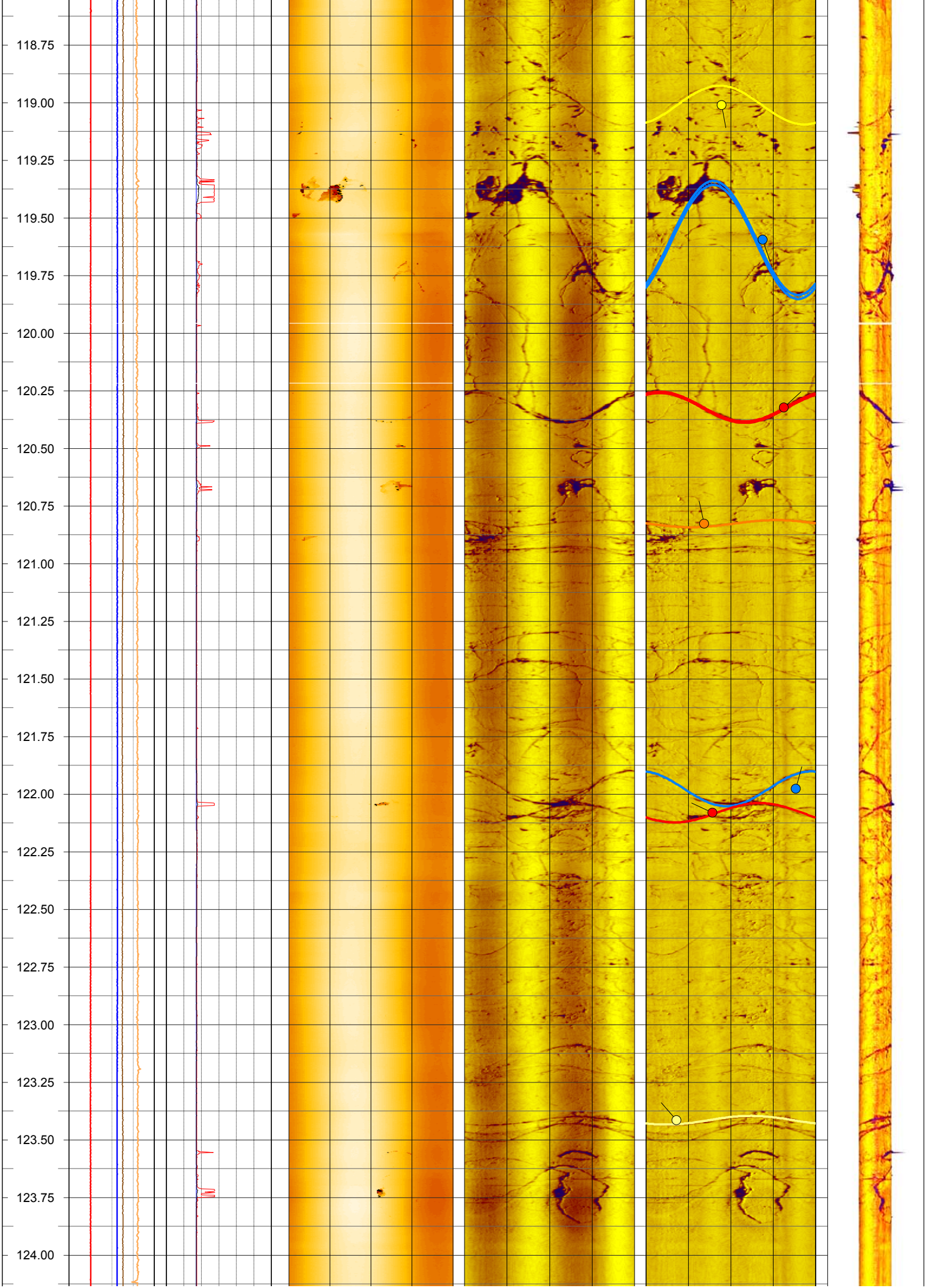
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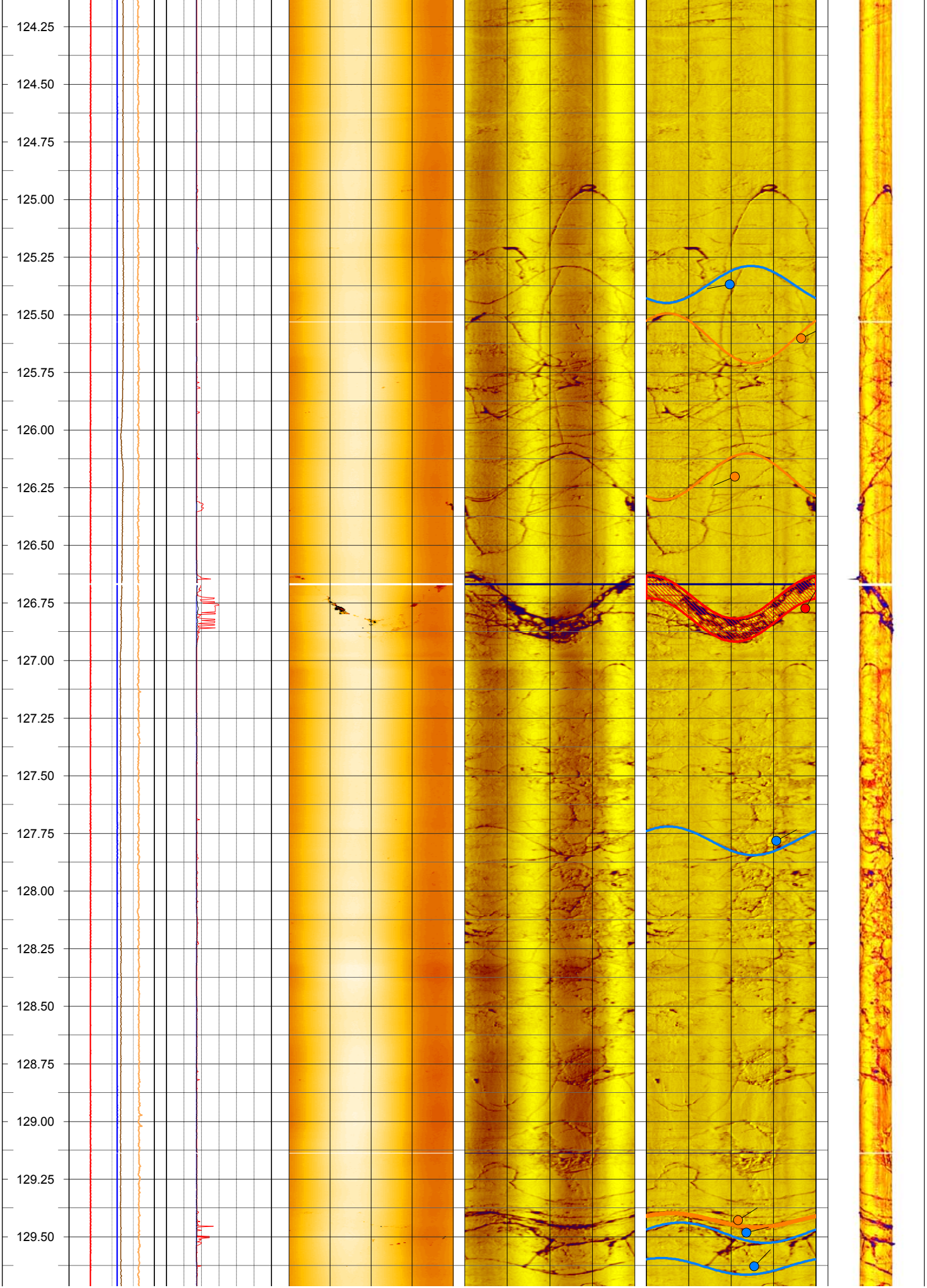
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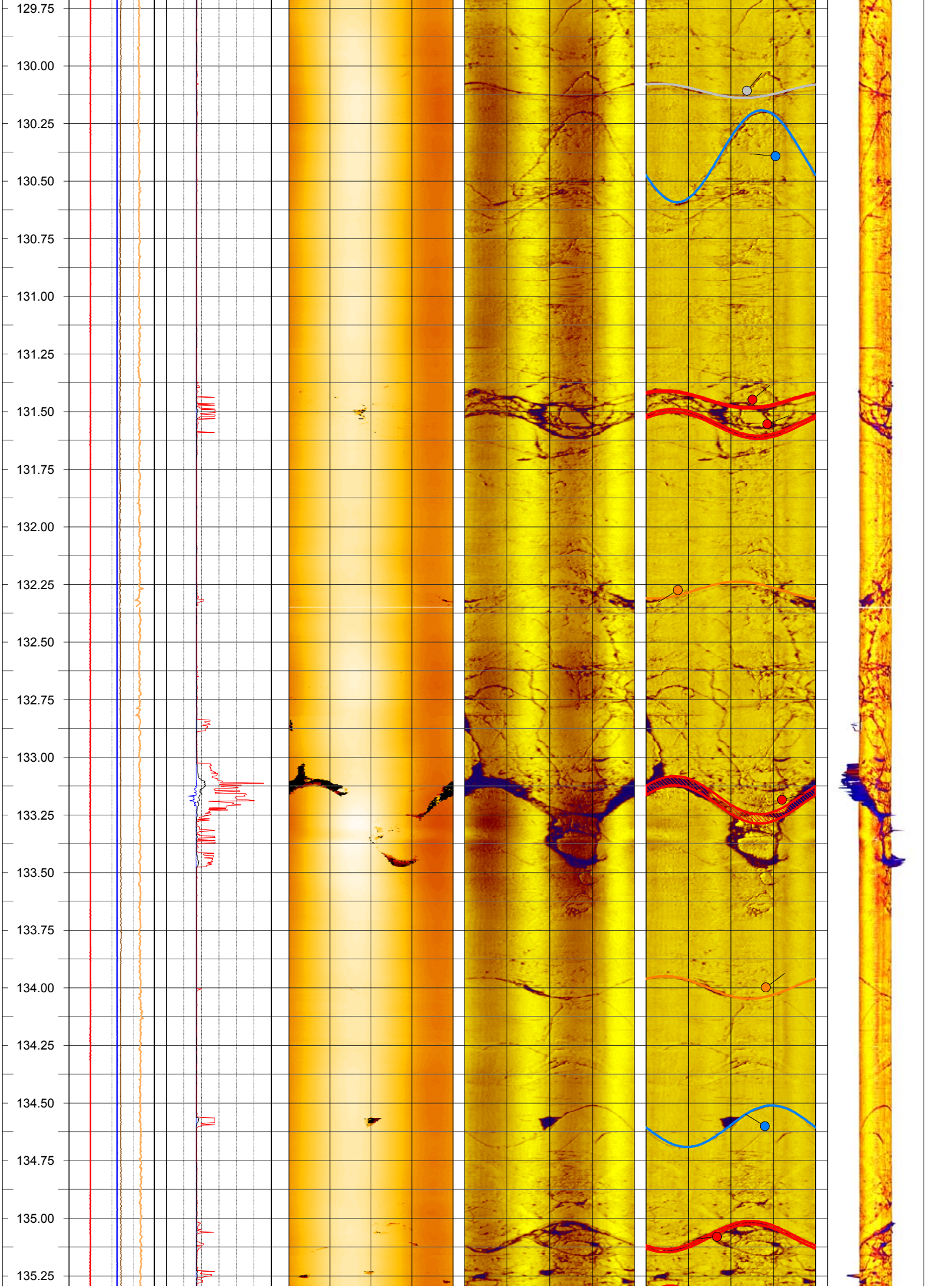
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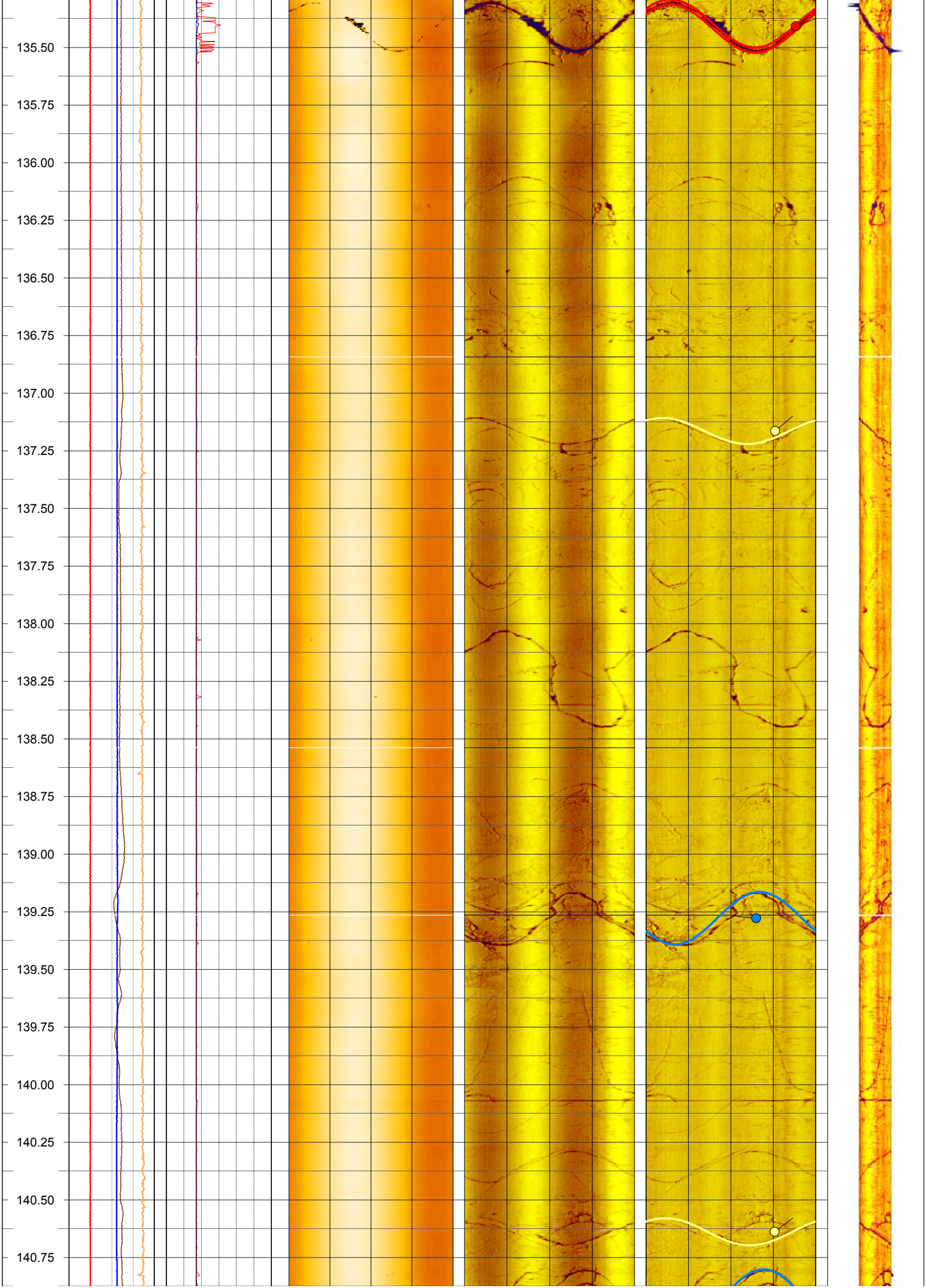
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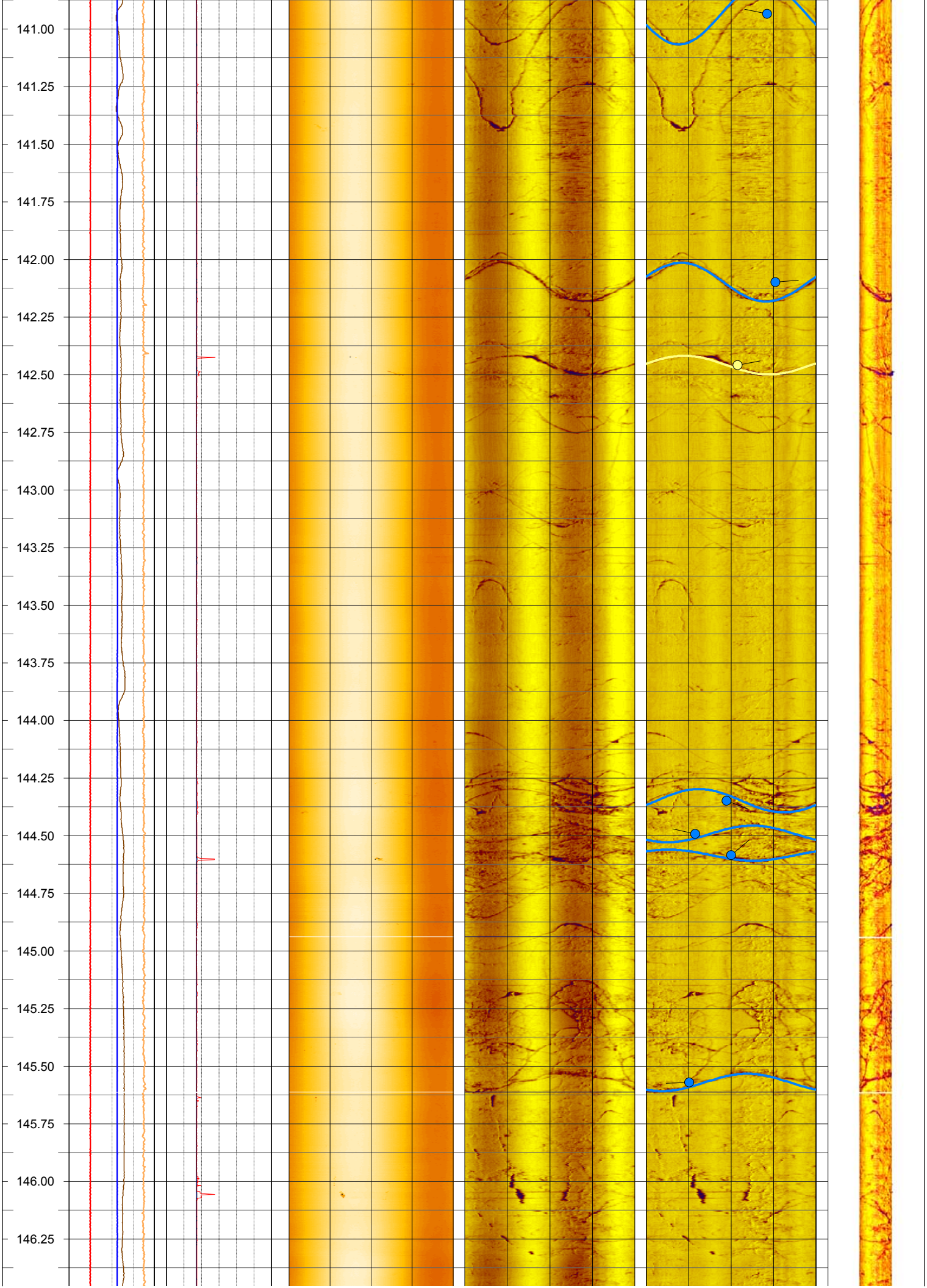
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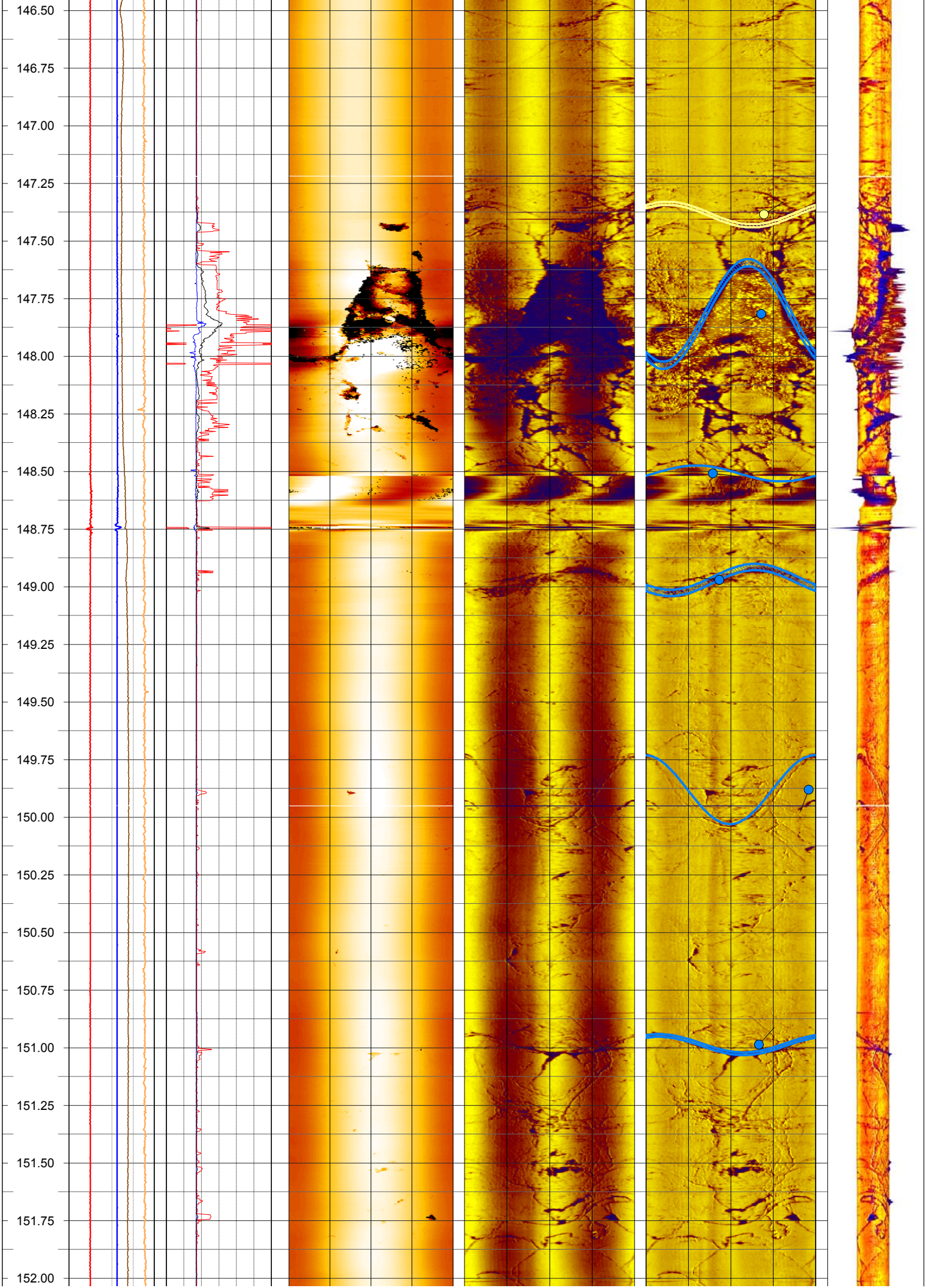
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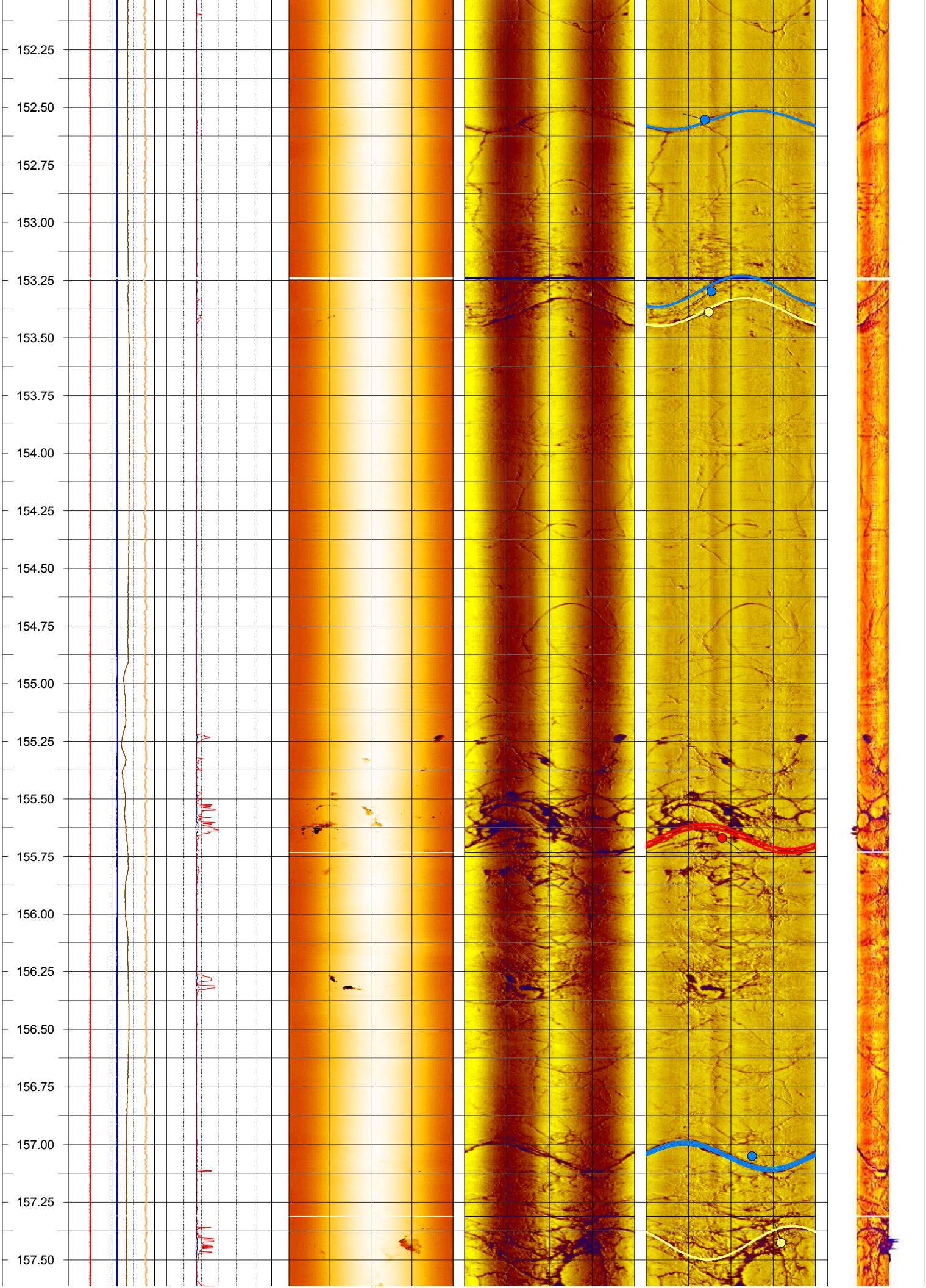
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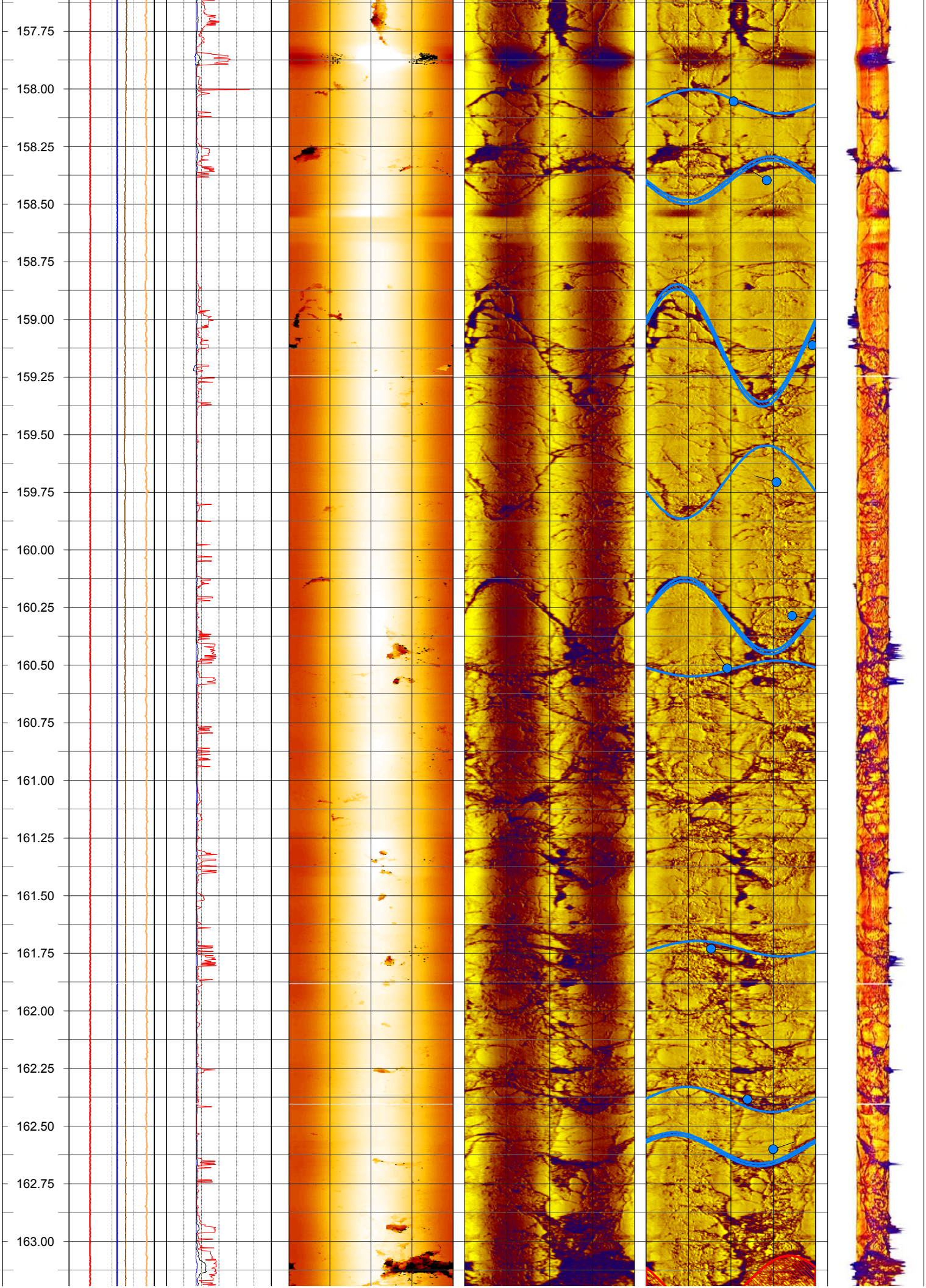
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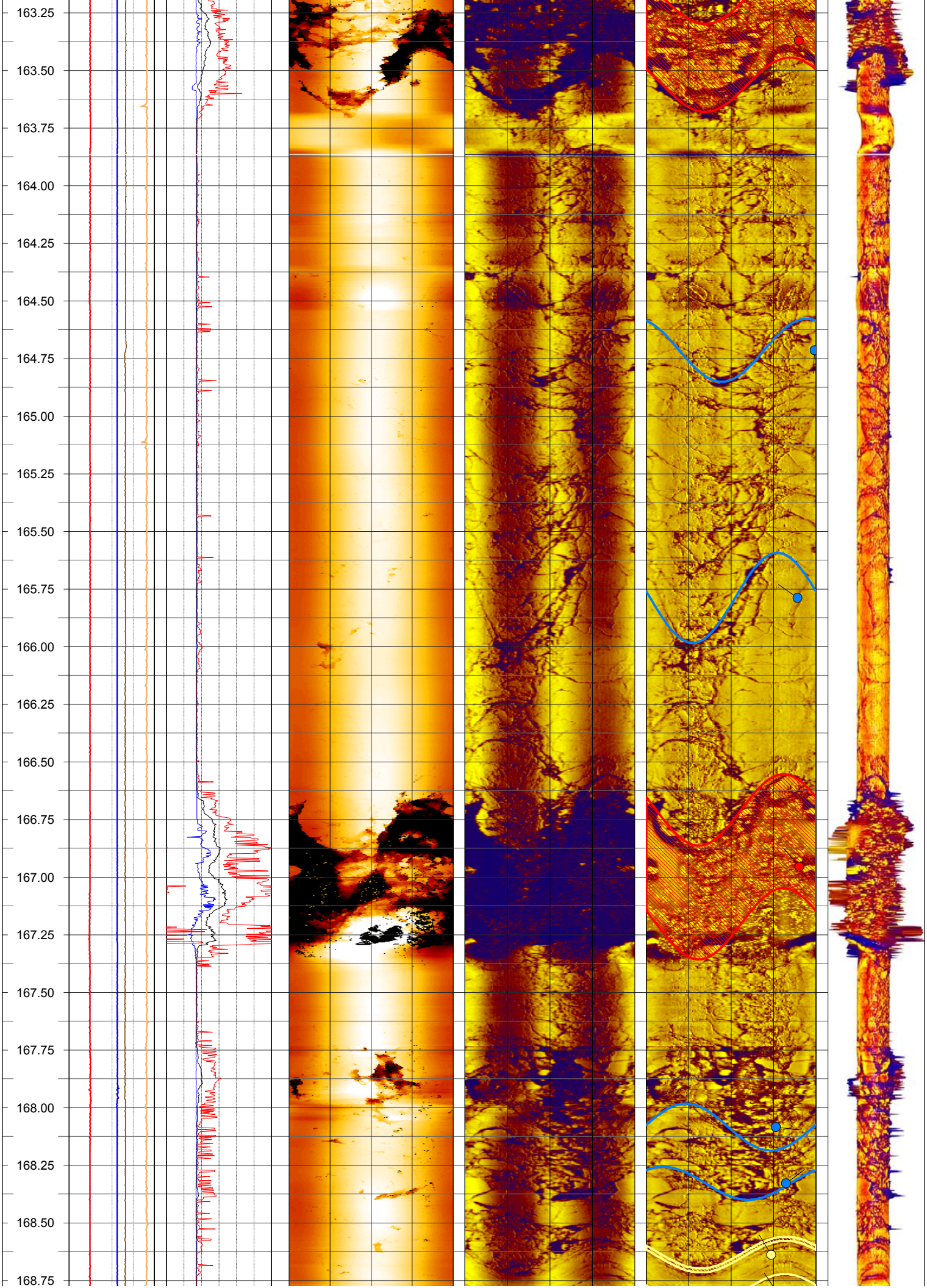
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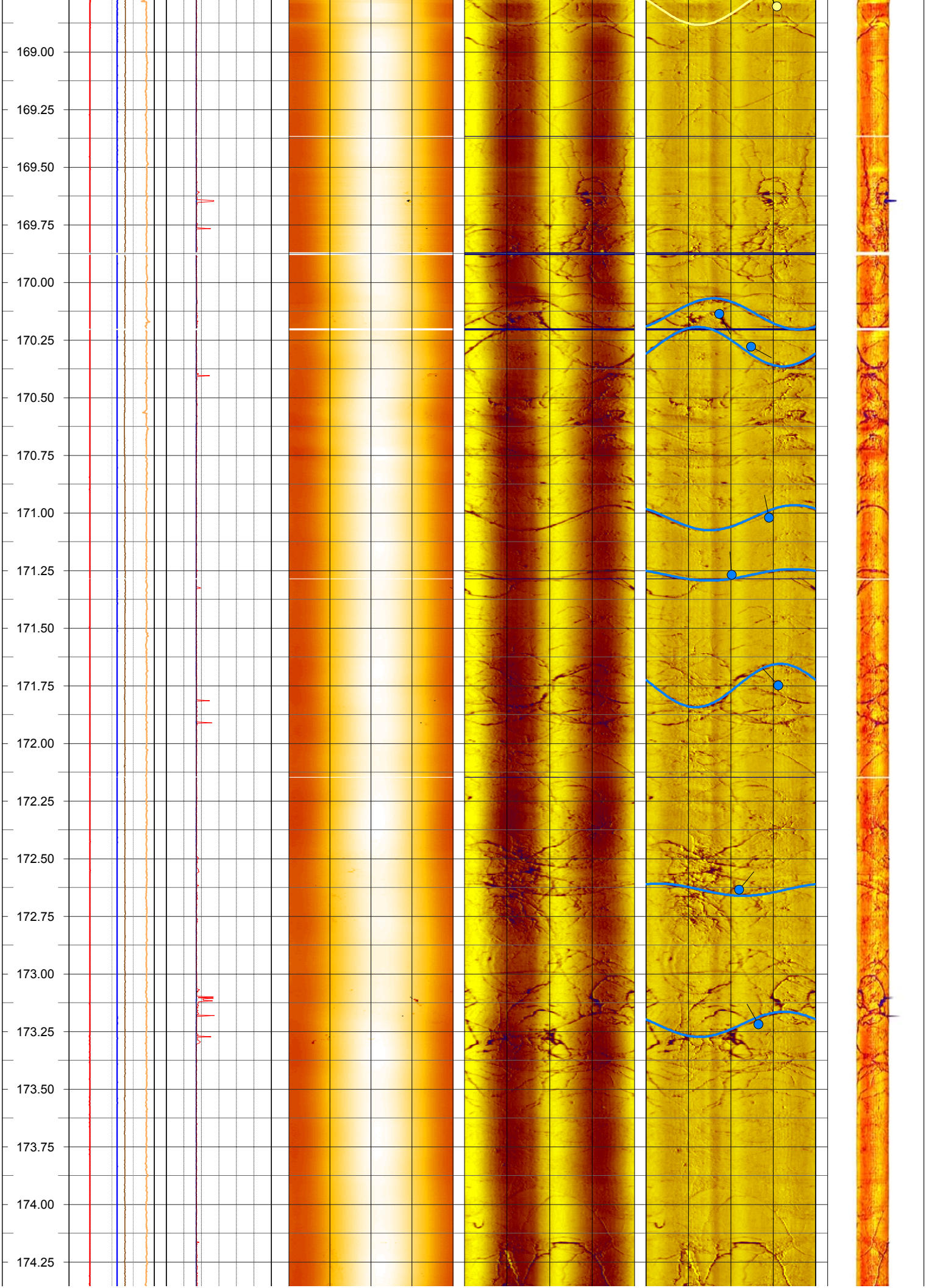
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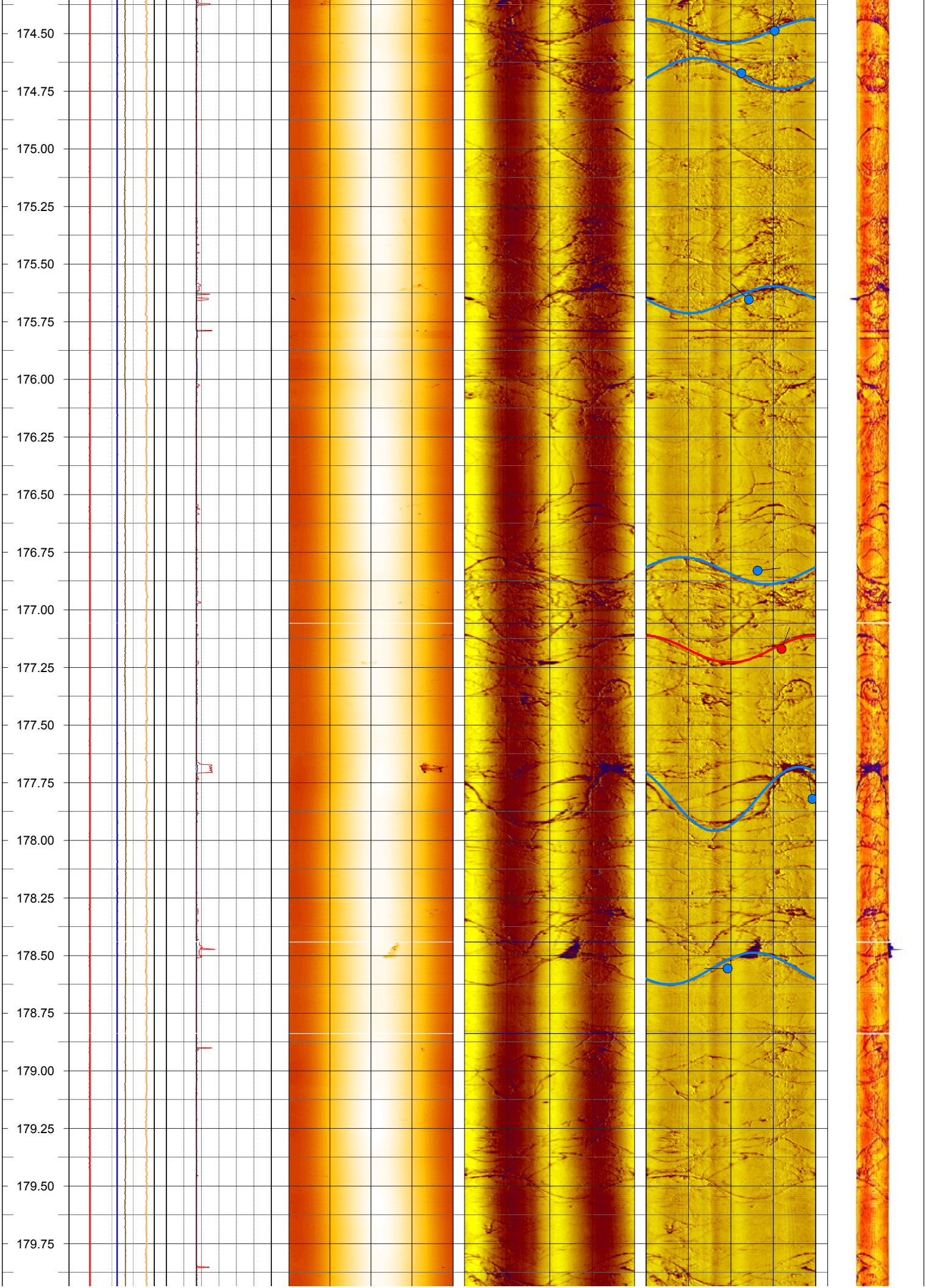
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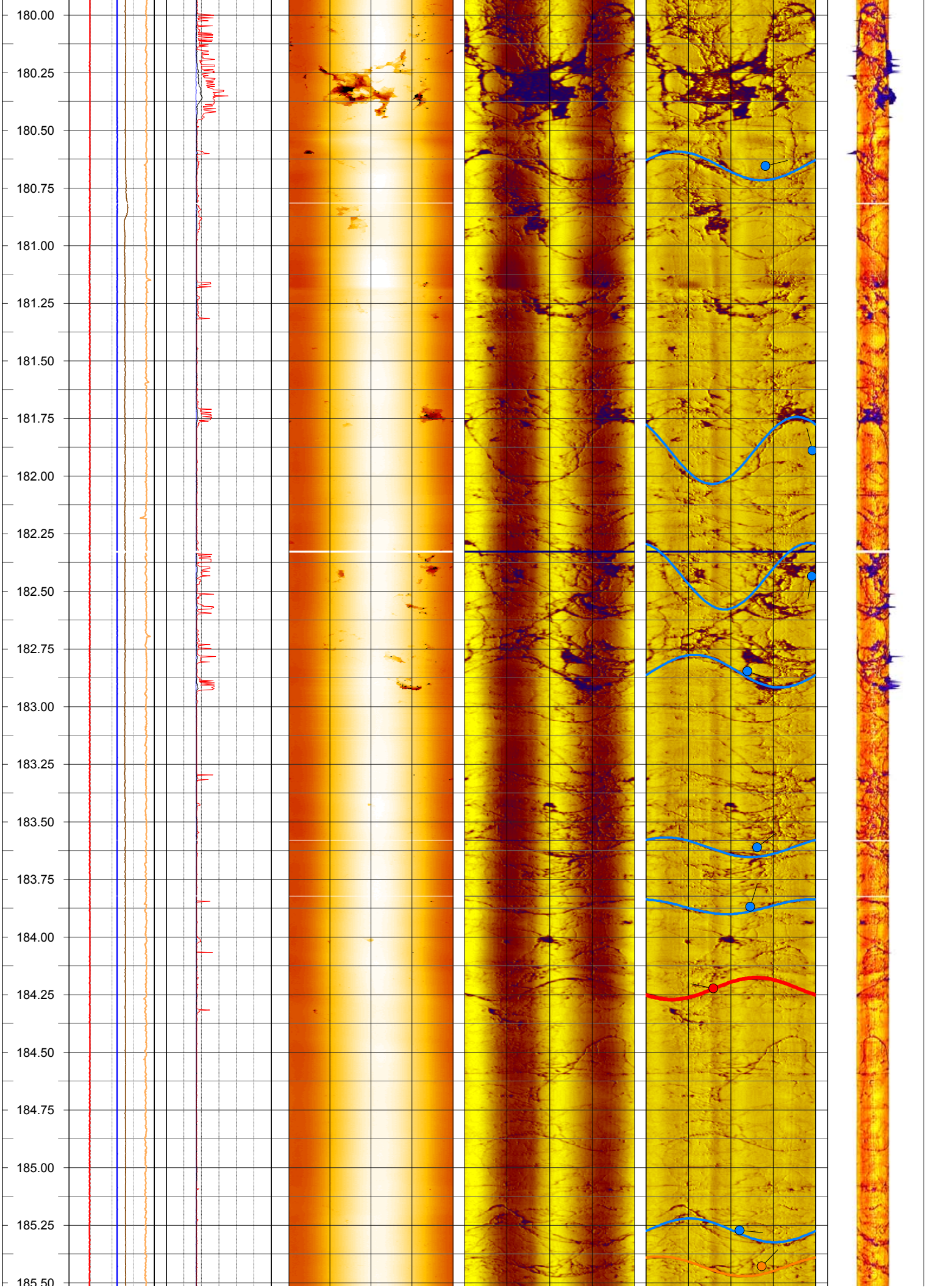
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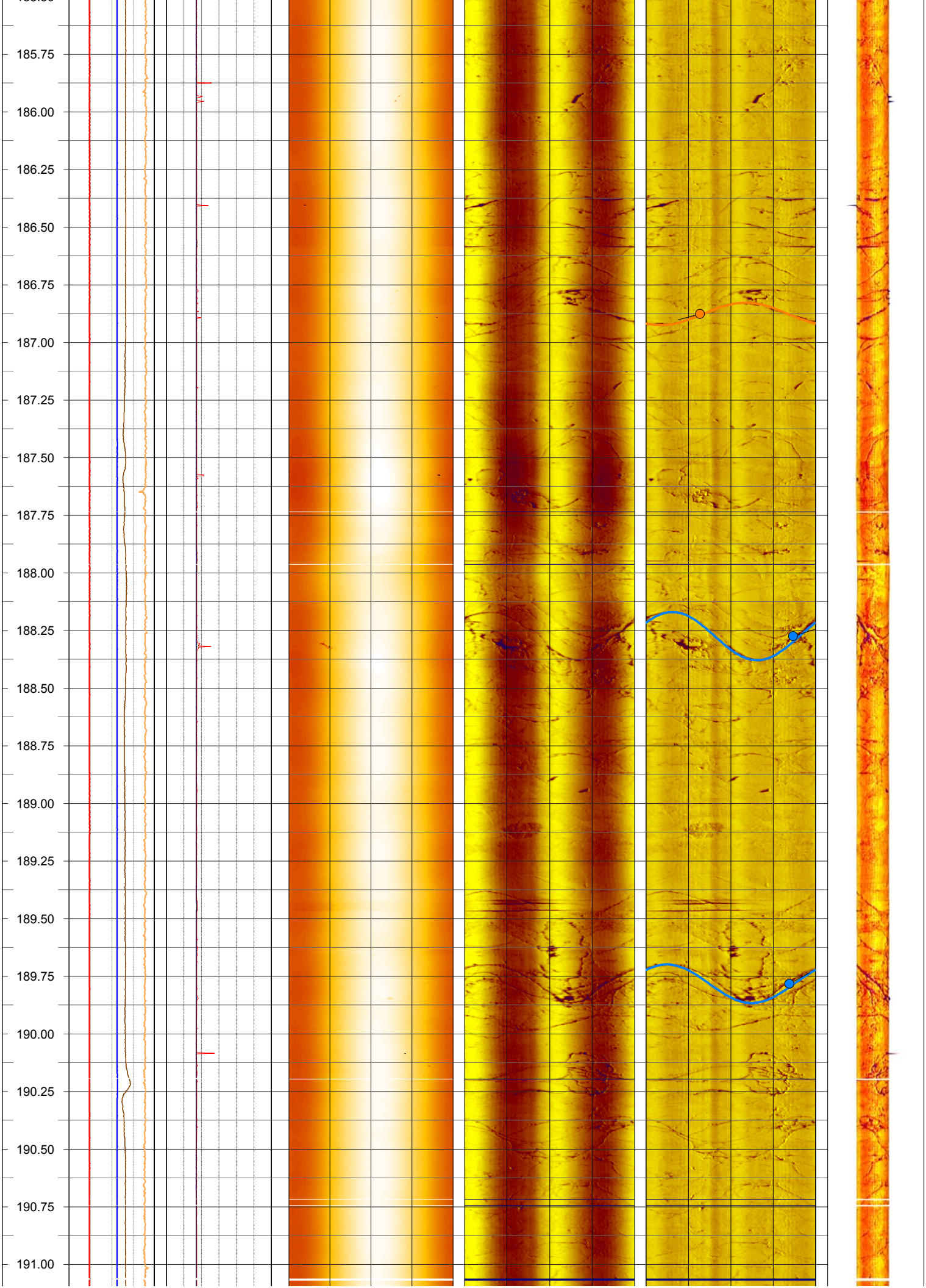
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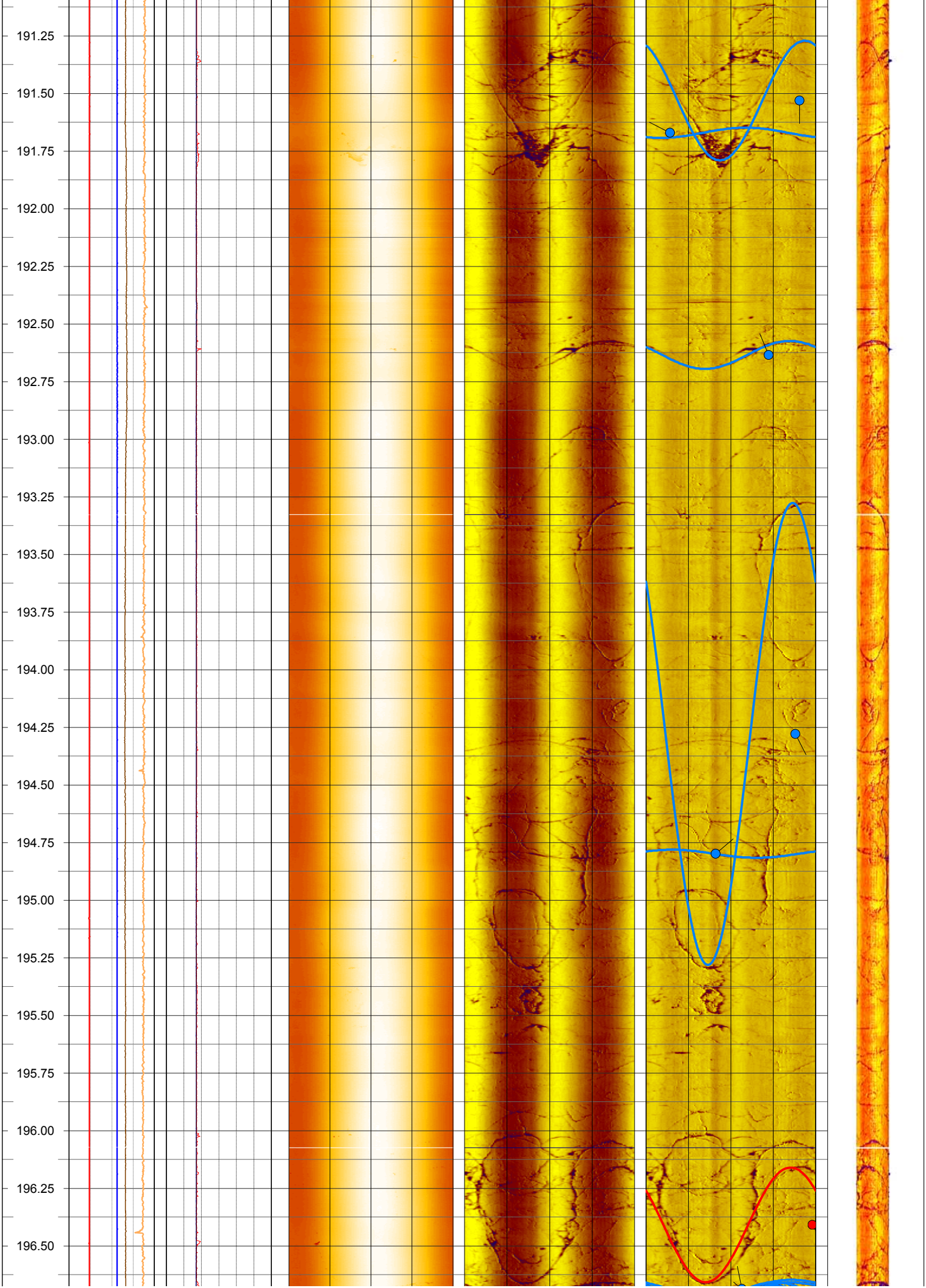
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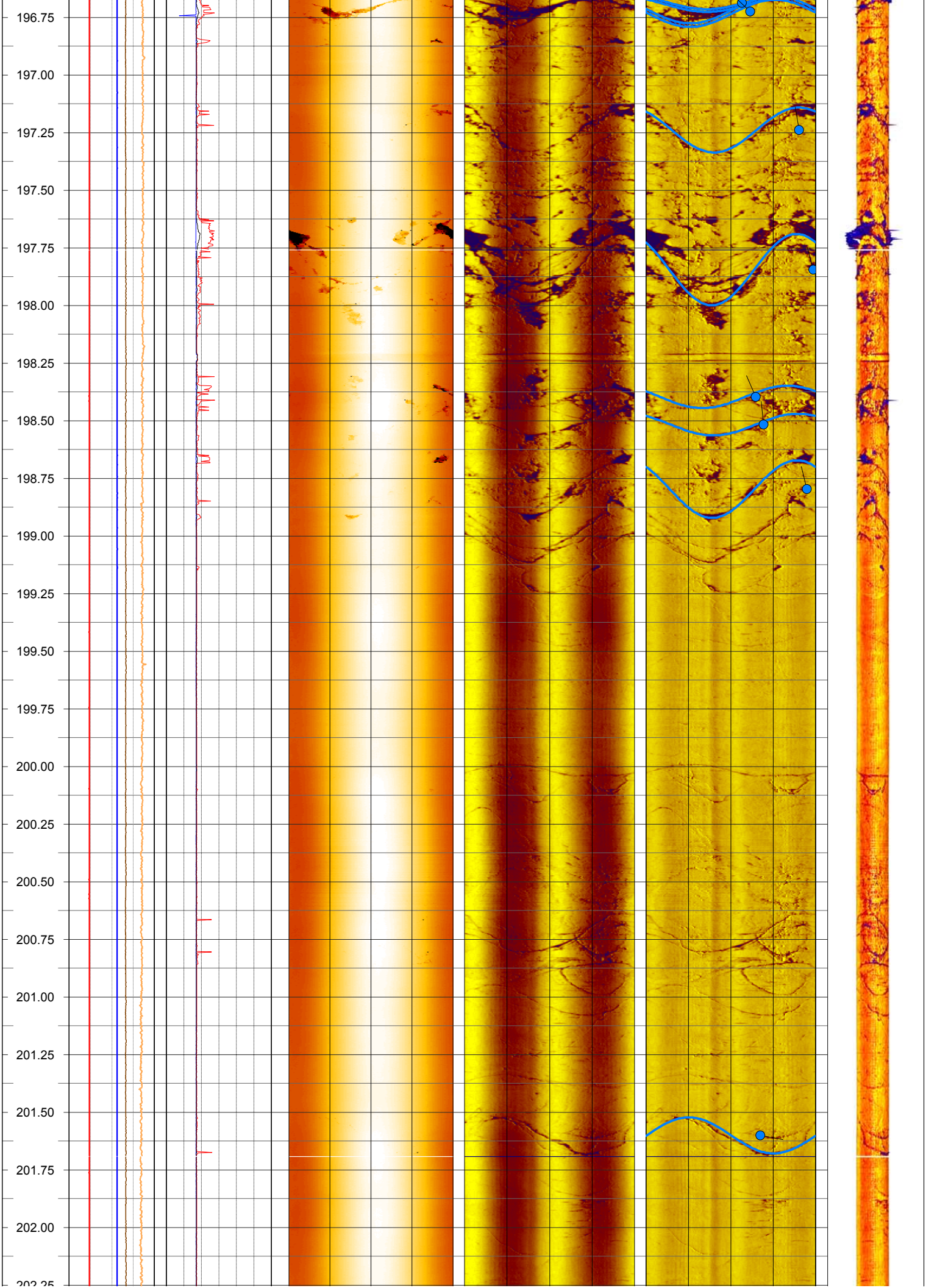
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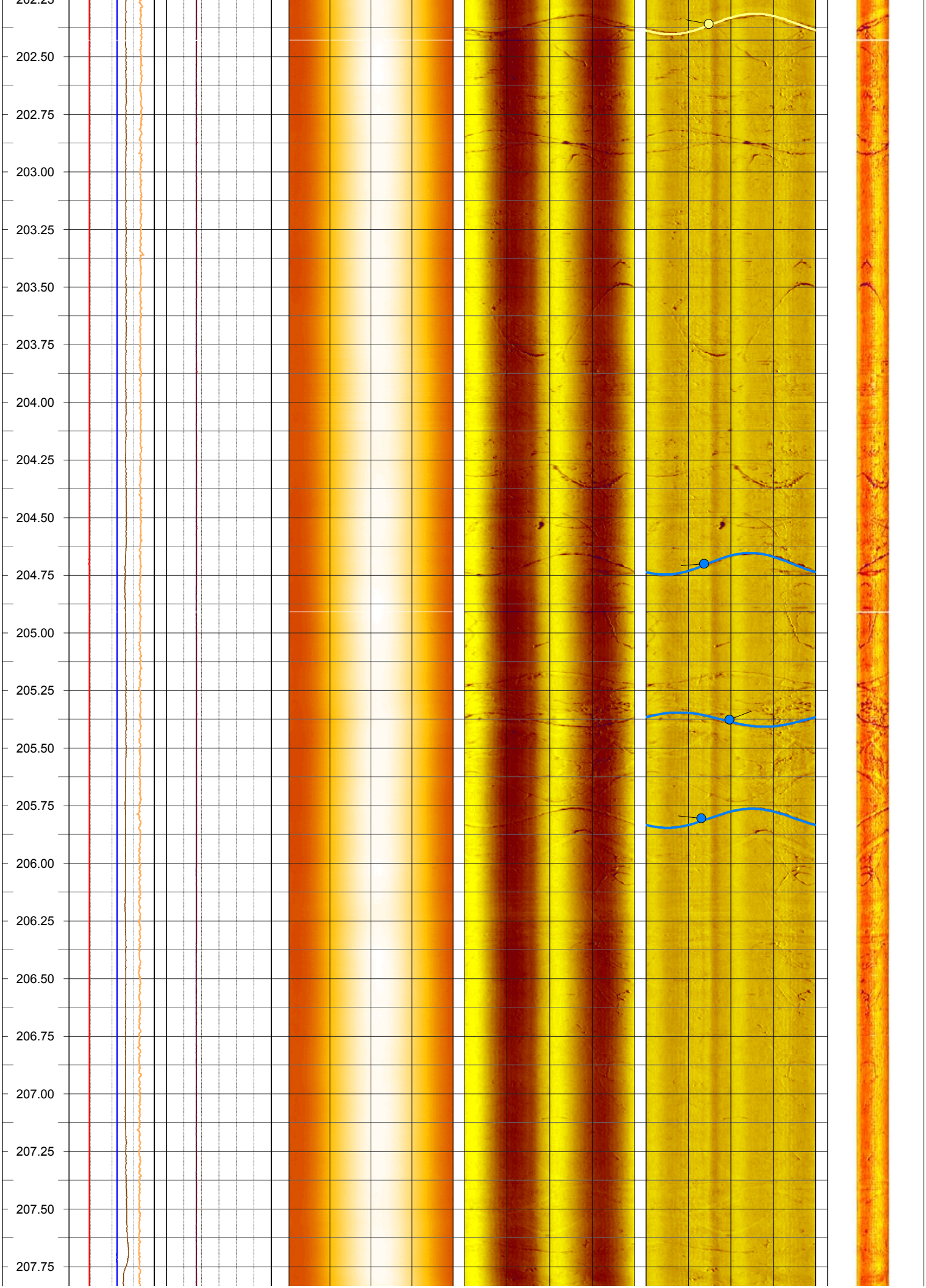
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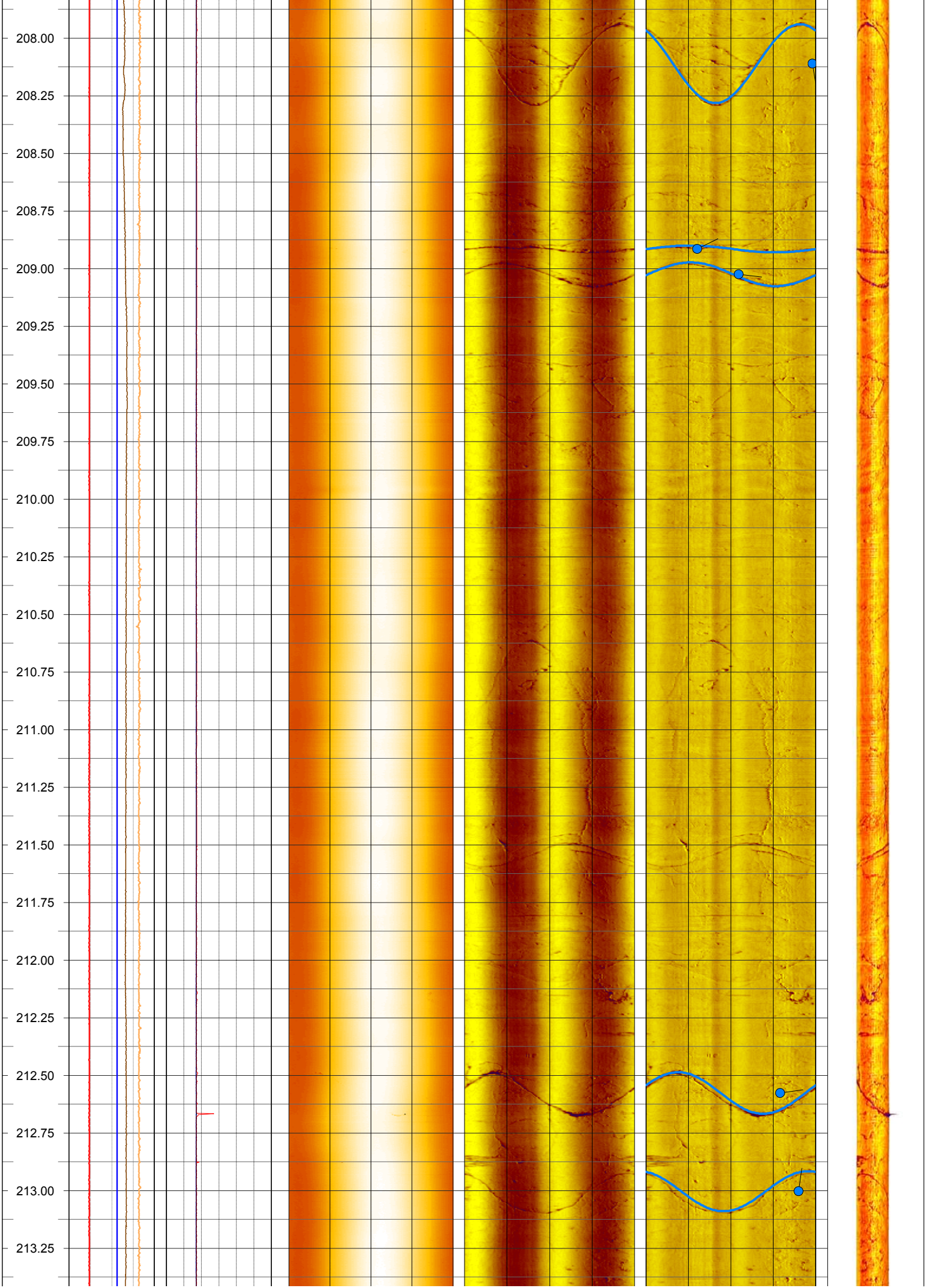
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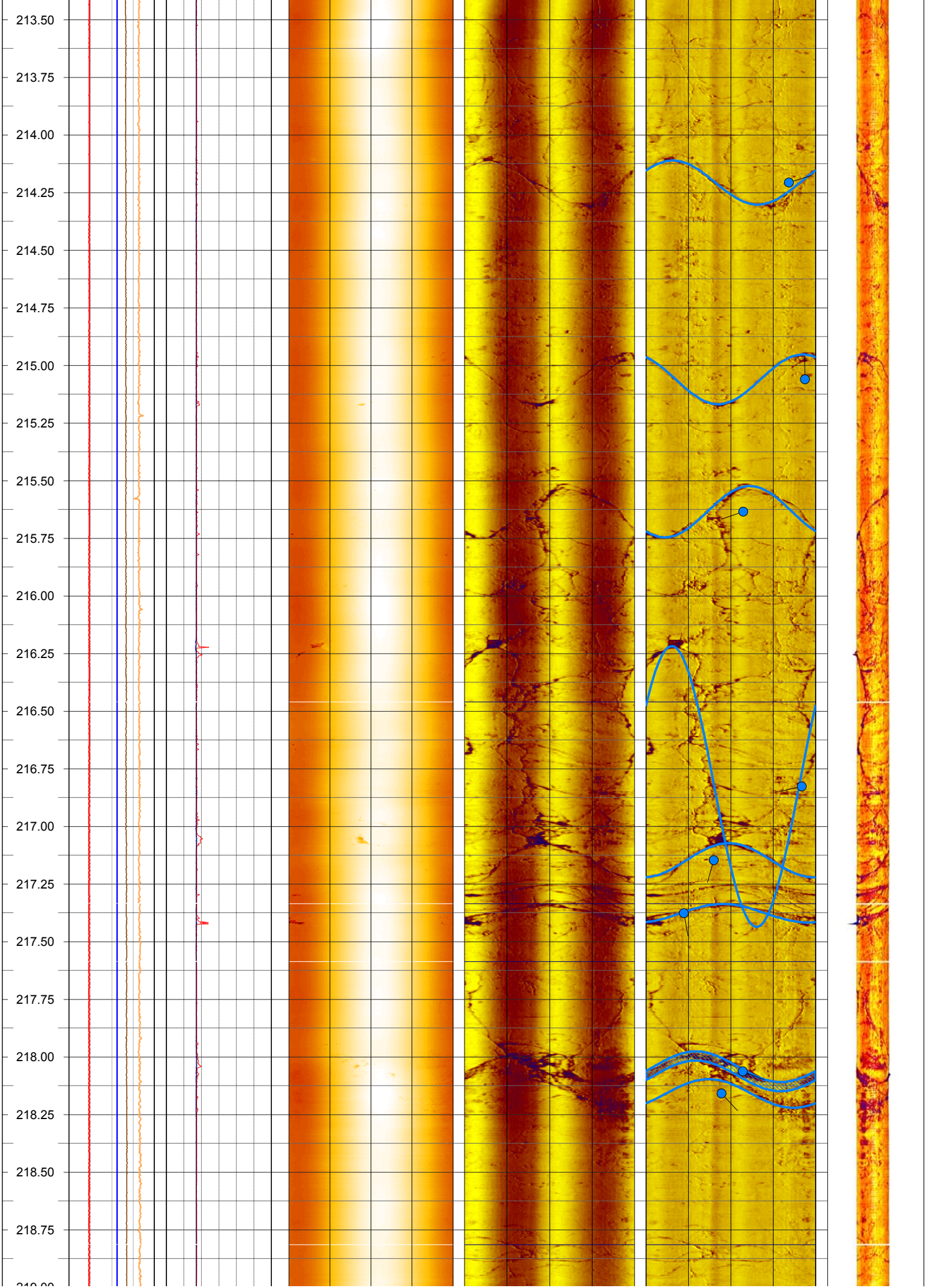
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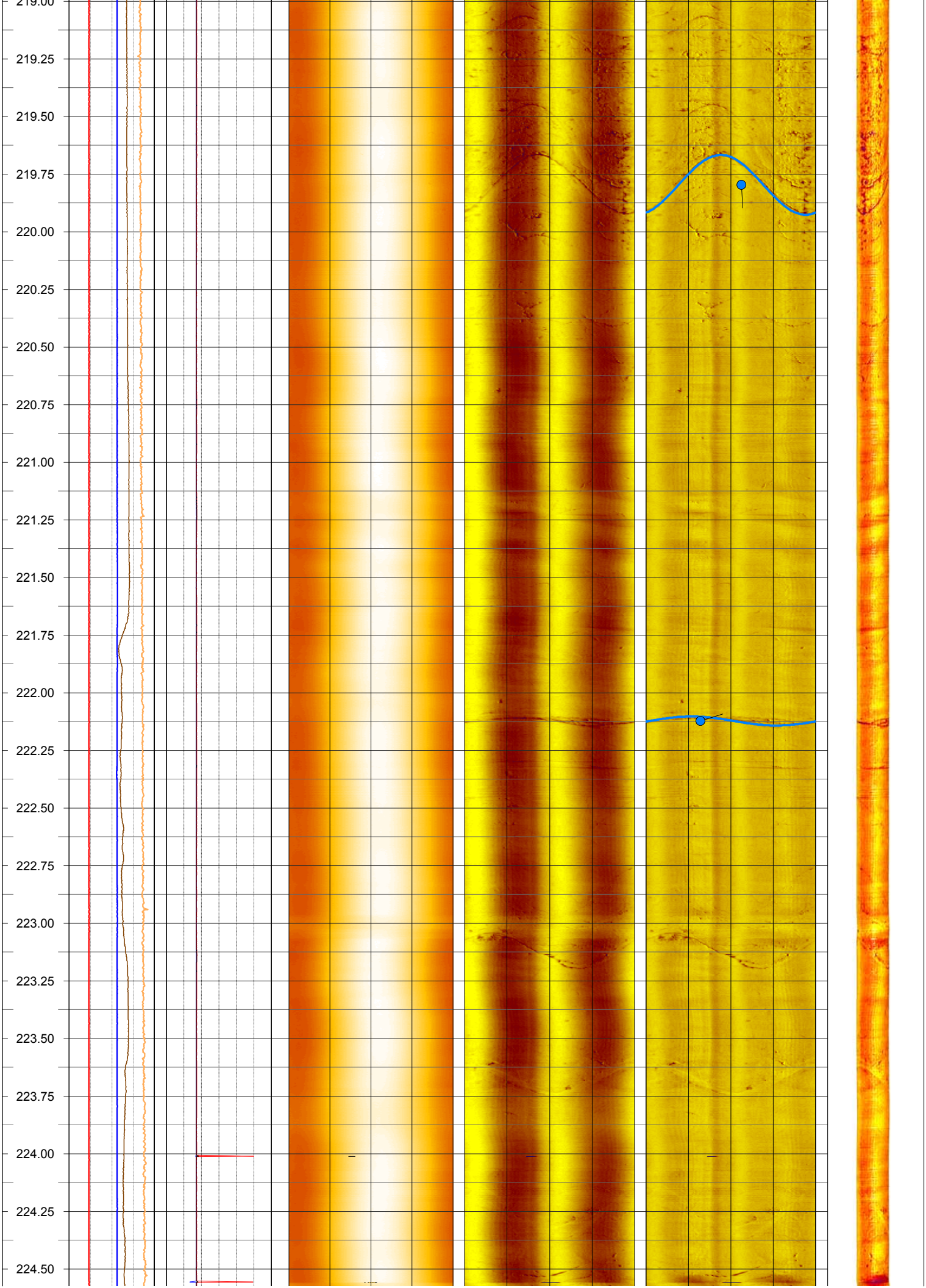
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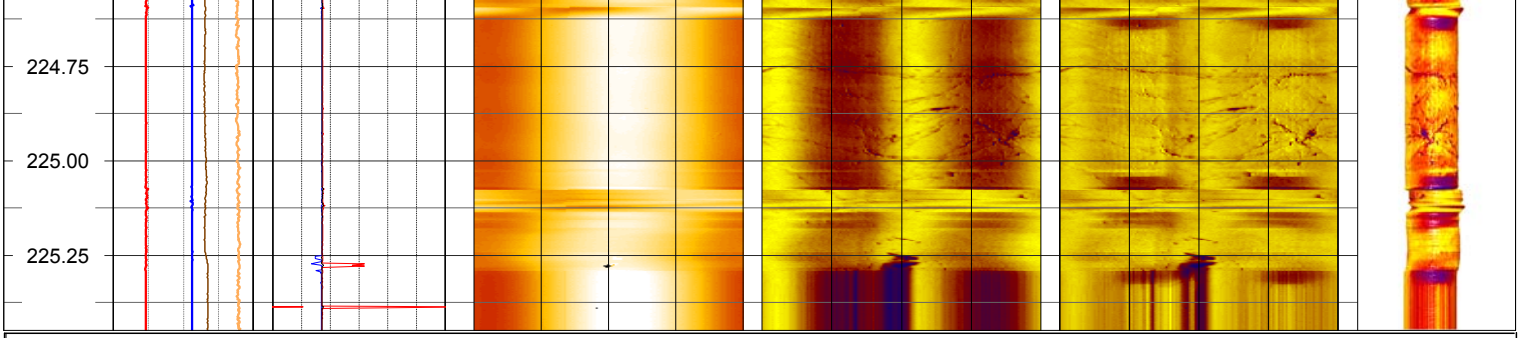

CLIENT : KGHM AJAX MINING INC.

PRINT DATE : 4/2/2015

APPENDIX E
PACKER TESTING RESULTS

Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM	**Collar El.:**	941	**Hole ID:**	DH-BGC15-01
Project:	ELFZ SI	**Trend:**	217	**Plunge:**	65
Project #:	1125-007-07	**Personnel:**	JND	**Date:**	20-Feb-15
Measurement Units		**Start Flushing:**	10:00		
Volume:	m^3	**End Flushing:**	11:00		
Pressure:	psi	**Start Packer Testing:**	12:30		
Length:	m	**End Packer Testing:**	1:30		

Design Test Interval: 54.8 to 64.3 m
Test #: 1
Packer Setup: ☑ Single ☑ Double
Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.00	m	
Depth to Water:			21.90
Depth to Top of Interval:	54.81	m	
Depth to Bottom of Interval:			64.25
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			96.0
Packer Inflation Pressure:	400	psi	
Cleaning (Vol./Time/Until Clean):			1 hr

Pressure Interval 1

Minutes	Pressure	Volume	Δ Volume
0	0.0	2.6290	--
1	0.0	2.6890	0.0600
2	0.0	2.7490	0.0600
3	0.0	2.8050	0.0560
4	0.0	2.8650	0.0600
5	0.0	2.9230	0.0580
6	0.0	2.9820	0.0590
7	0.0	3.0400	0.0580
8	0.0	3.0970	0.0570
9	0.0	3.1560	0.0590
10	0.0	3.2130	0.0570
Stable Avg:	0.0		0.0584

Pressure Interval 2

Minutes	Pressure	Volume	Δ Volume
0	20.0	3.7810	--
1	20.0	3.8590	0.0780
2	20.0	3.9350	0.0760
3	20.0	4.0110	0.0760
4	20.0	4.0870	0.0760
5	20.0	4.1660	0.0790
6	22.0	4.2410	0.0750
7	23.0	4.3170	0.0760
8	25.0	4.3950	0.0780
9			
10			
	21.3		0.0767

Pressure Interval 3

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
7			0.0000
8			0.0000
9			0.0000
10			0.0000
Stable Avg:	N/A		N/A

Pressure Interval 4

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
7			0.0000
8			0.0000
9			0.0000
10			0.0000
Stable Avg:	N/A		N/A

Pressure Interval 5

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
7			0.0000
8			0.0000
9			0.0000
10			0.0000
Stable Avg:	N/A		N/A

Pressure Interval

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
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8			0.0000
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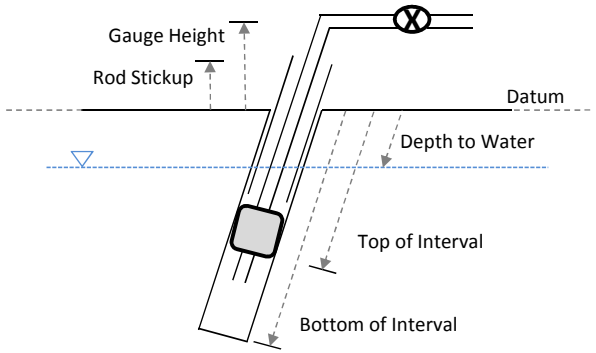
10			0.0000
Stable Avg:	N/A		N/A



IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC15-01

Project: ELFZ SI **Test #:** 1

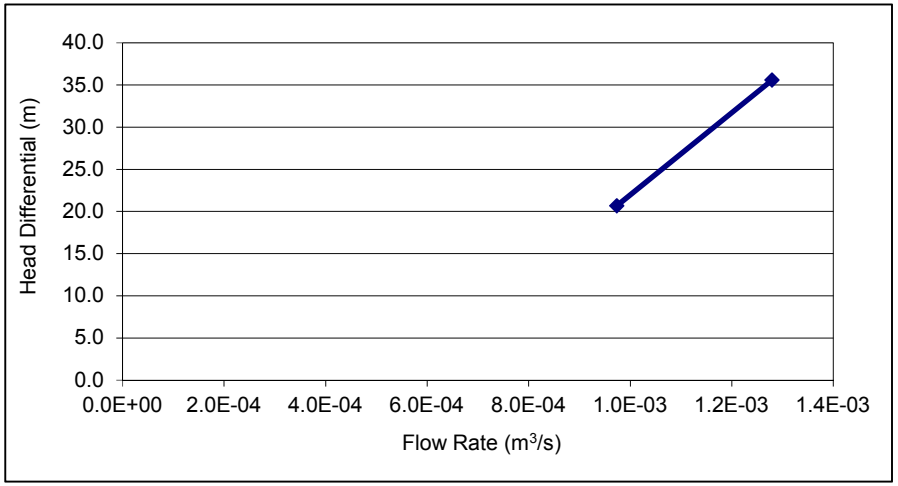
Project #: 1125-007-07 **From (m):** 54.81 **To (m):** 64.25

Calculation Input Parameters:

L: Length of Test Interval (m)	9.44	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	59.53	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	21.90	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
0.0	9.7E-04	0.0	20.6	4.2E-06	
21.3	1.3E-03	14.9	35.6	3.2E-06	X
N/A		N/A		N/A	
N/A		N/A		N/A	
N/A		N/A		N/A	
N/A		N/A		N/A	
			Geo Mean	**3.2.E-06**	



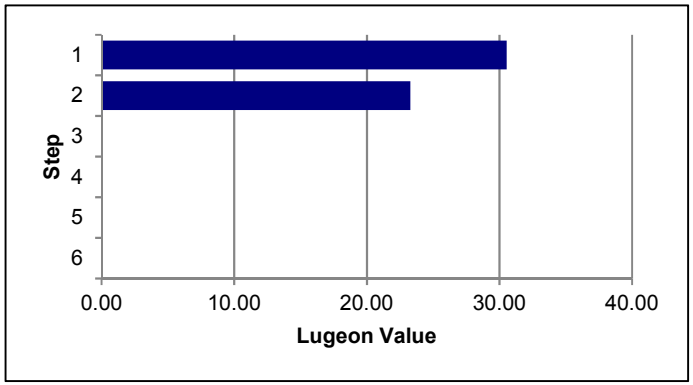
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	2.0	15.43	6.19	30.55	
2	3.5	20.28	8.13	23.30	X
3	N/A	N/A	N/A		
4	N/A	N/A	N/A		
5	N/A	N/A	N/A		
6	N/A	N/A	N/A		
			Geo Mean	**23.30**	
			Max L	**30.55**	

Lugeon Estimate Check:

K (from packer test): 3.2E-04 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 32.00



Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM
Project:	ELFZ SI
Project #:	1125-007-07
Measurement Units	
Volume:	m3
Pressure:	psi
Length:	m

Collar El.: 941

Trend: 217 **Plunge:** 65

Personnel: GJD **Date:** 21-Feb-15

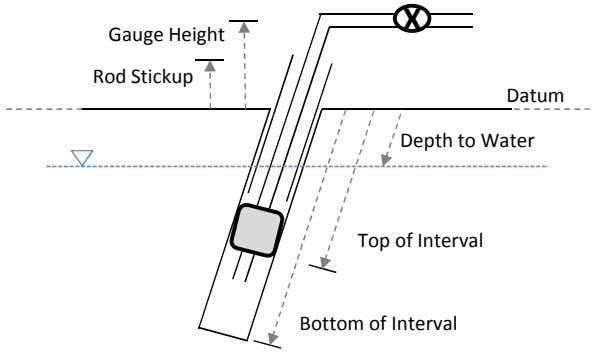
Start Flushing:	3:30
End Flushing:	3:45
Start Packer Testing:	5:15
End Packer Testing:	6:15

Hole ID: DH-BGC15-01

Design Test Interval:	71.2 to 79.0 m
Test #:	2
Packer Setup:	☑ Single ☐ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.00	m
Depth to Water:	16.30	
Depth to Top of Interval:	71.20	m
Depth to Bottom of Interval:	79.00	
Height of Gauge:	0.80	m
Drill Rod ID:	77.8	mm
Borehole Outside Diameter:	96.0	
Packer Inflation Pressure:	350	psi
Cleaning (Vol./Time/Until Clean):	15 min	



Pressure Interval 1

Minutes	Pressure	Volume	Δ Volume
0	10.0	1.7413	--
1	9.0	1.7878	0.0466
2	10.0	1.8348	0.0469
3	10.0	1.8825	0.0477
4	10.0	1.9298	0.0473
5	10.0	1.9783	0.0485
6	10.0	2.0263	0.0481
7	10.0	2.0748	0.0485
8	10.0	2.1229	0.0481
9	10.0	2.1713	0.0485
10	10.0	2.2198	0.0485
Stable Avg:	9.9		0.0478

Pressure Interval 2

Minutes	Pressure	Volume	Δ Volume
0	16.0	2.3091	--
1	16.5	2.3735	0.0644
2	16.5	2.4378	0.0644
3	16.5	2.5037	0.0659
4	16.5	2.5673	0.0636
5	16.5	2.6320	0.0647
6	16.5	2.6971	0.0651
7	16.5	2.7615	0.0644
8	16.5	2.8266	0.0651
9	16.5	2.8913	0.0647
10	16.5	2.9560	0.0647
	16.5		0.0647

Pressure Interval 3

Minutes	Pressure	Volume	Δ Volume
0	24.0	10.6749	--
1	24.0	10.7544	0.0795
2	24.0	10.8335	0.0791
3	24.0	10.9122	0.0787
4	24.0	10.9925	0.0803
5	24.0	11.0712	0.0787
6	24.0	11.1511	0.0799
7	20.0	11.2264	0.0753
8	16.0	11.2892	0.0628
9	17.0	11.3475	0.0583
10	18.0	11.4073	0.0598
Stable Avg:	21.5		0.0732

Pressure Interval 4

Minutes	Pressure	Volume	Δ Volume
0	16.0	0.6057	--
1	18.0	0.6617	0.0560
2	16.0	0.7143	0.0526
3	16.0	0.7662	0.0519
4	16.0	0.8173	0.0511
5	16.0	0.8680	0.0507
6	16.0	0.9202	0.0522
7	16.0	0.9713	0.0511
8	16.0	1.0217	0.0503
9	16.0	1.0739	0.0522
10	16.0	1.1246	0.0507
Stable Avg:	16.2		0.0519

Pressure Interval 5

Minutes	Pressure	Volume	Δ Volume
0	10.0	0.2271	--
1	10.0	0.2616	0.0344
2	10.0	0.2941	0.0326
3	10.0	0.3278	0.0337
4	10.0	0.3626	0.0348
5	10.0	0.3960	0.0333
6	10.0	0.4274	0.0314
7	10.0	0.4592	0.0318
8	10.0	0.4895	0.0303
9	10.0	0.5186	0.0291
10	10.0	0.5481	0.0295
Stable Avg:	10.0		0.0321

Pressure Interval

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
7			0.0000
8			0.0000
9			0.0000
10			0.0000
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST --->
FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC15-01

Project: ELFZ SI **Test #:** 2

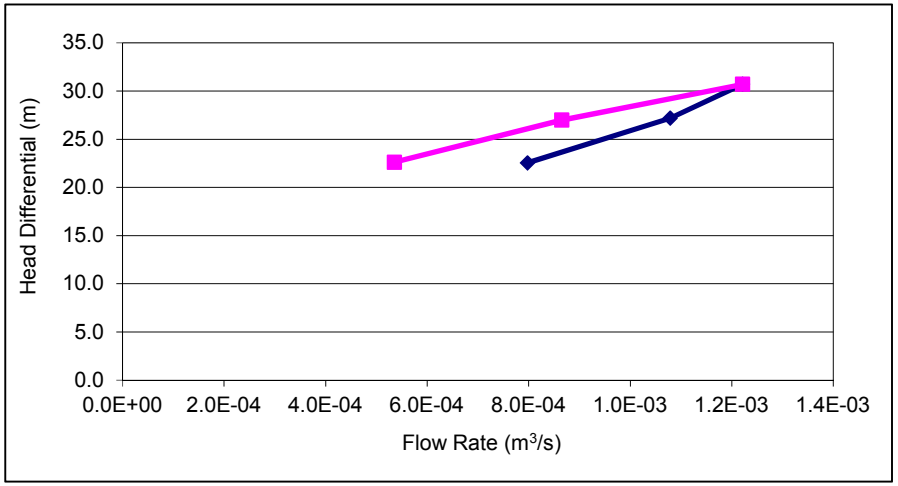
Project #: 1125-007-07 **From (m):** 71.20 **To (m):** 79.00

Calculation Input Parameters:

L: Length of Test Interval (m)	7.80	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	75.10	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	16.30	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
9.9	8.0E-04	7.0	22.5	3.7E-06	X
16.5	1.1E-03	11.6	27.2	4.1E-06	X
21.5	1.2E-03	15.1	30.7	4.1E-06	
16.2	8.6E-04	11.4	27.0	3.3E-06	X
10.0	5.4E-04	7.0	22.6	2.5E-06	X
N/A		N/A		N/A	
			Geo Mean	**3.3.E-06**	



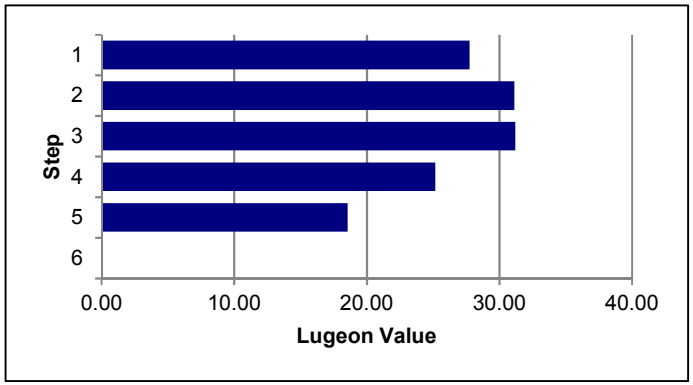
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	2.2	12.64	6.13	27.76	X
2	2.7	17.09	8.29	31.12	X
3	3.0	19.35	9.39	31.20	
4	2.6	13.71	6.65	25.16	X
5	2.2	8.48	4.12	18.57	X
6	N/A	N/A	N/A		
			Geo Mean	**25.21**	
			Max L	**31.20**	

Lugeon Estimate Check:

K (from packer test): 3.3E-04 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 33.38



Constant Head Packer Test - Data Form

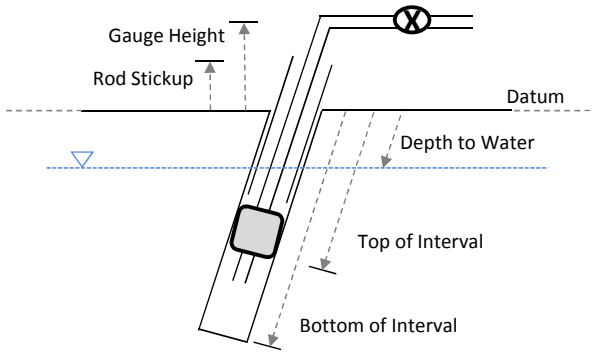
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM	**Collar El.:**	941	**Hole ID:**	DH-BGC15-01
Project:	ELFZ SI	**Trend:**	217	**Plunge:**	65
Project #:	1125-007-07	**Personnel:**	JND	**Date:**	22-Feb-15
Measurement Units		**Start Flushing:**	10:00		
Volume:	gal	**End Flushing:**		11:00	
Pressure:	psi	**Start Packer Testing:**	11:30		
Length:	m	**End Packer Testing:**		12:30	

Design Test Interval: 131.3 to 140.5 m
Test #: 3
Packer Setup: ☑ Single ☐ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.29	m	
Depth to Water:			12.80
Depth to Top of Interval:	131.30	m	
Depth to Bottom of Interval:			140.50
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			86.0
Packer Inflation Pressure:	520	psi	
Cleaning (Vol./Time/Until Clean):			1 hr



Pressure Inte 10

Minutes	Pressure	Volume	Δ Volume
0	11.0	3419.7	--
1	10.0	3423.4	3.7
2	10.5	3426.8	3.4
3	11.0	3430.2	3.4
4	11.0	3433.0	2.8
5	12.0	3435.7	2.7
6	12.0	3438.2	2.5
7	13.0	3440.4	2.2
8	14.0	3442.4	2.0
9	14.0	3444.0	1.6
10	14.0	3445.7	1.7
Stable Avg:	12.2		2.6

Pressure Int 20

Minutes	Pressure	Volume	Δ Volume
0	20.0	3356.9	--
1	18.0	3359.4	2.5
2	18.0	3360.3	0.9
3	18.0	3361.3	1.0
4	18.0	3362.2	0.9
5	18.0	3363.1	0.9
6	18.0	3363.9	0.8
7	18.0	3364.8	0.9
8	18.0	3365.7	0.9
9	18.0	3366.0	0.3
10	18.0	3367.4	1.4
Stable Avg:	18.0		1.1

Pressure Inte 20

Minutes	Pressure	Volume	Δ Volume
0	18.0	3450.0	--
1	20.0	3455.7	5.7
2	18.0	3459.5	3.8
3	18.0	3463.3	3.8
4	18.0	3469.0	5.7
5	18.0	3470.5	1.5
6	18.0	3474.5	4.0
7	18.0	3477.6	3.1
8	18.0	3481.0	3.4
9	18.0	3484.4	3.4
10	18.0	3487.8	3.4
	18.2		3.8

Pressure Int 10

Minutes	Pressure	Volume	Δ Volume
0	15.0	3367.3	--
1	15.0	3367.2	-0.1
2	14.0	3367.2	0.0
3	14.0	3367.2	0.0
4	16.0	3367.2	0.0
5	17.0	3368.1	0.9
6	17.0	3369.9	1.8
7	17.0	3371.7	1.8
8	17.0	3373.5	1.8
9	16.0	3375.4	1.9
10	17.0	3377.4	2.0
Stable Avg:	16.0		1.0

Pressure Inte 25

Minutes	Pressure	Volume	Δ Volume
0	28.0	3489.5	--
1	26.0	3498.9	9.4
2	26.0	3506.0	7.1
3	25.0	3513.3	7.3
4	25.0	3520.5	7.2
5	25.0	3527.8	7.3
6	25.0	3534.5	6.7
7	25.0	3542.0	7.5
8	25.0	3549.1	7.1
9	25.0	3556.3	7.2
10			
Stable Avg:	25.2		7.4

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments: After the test was complete, reversed flow occurred dropping the recorded value on the flow gauge from 3577.4 gal to 3549.5 gal over 2 minutes. It dropped another 0.7 gal over 30 seconds, then backwards flow stopped. Note during the 5th pressure interval no flow was being recorded at 15 psi. Flow resumed when pressure was increased to 17 psi.

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC15-01

Project: ELFZ SI **Test #:** 3

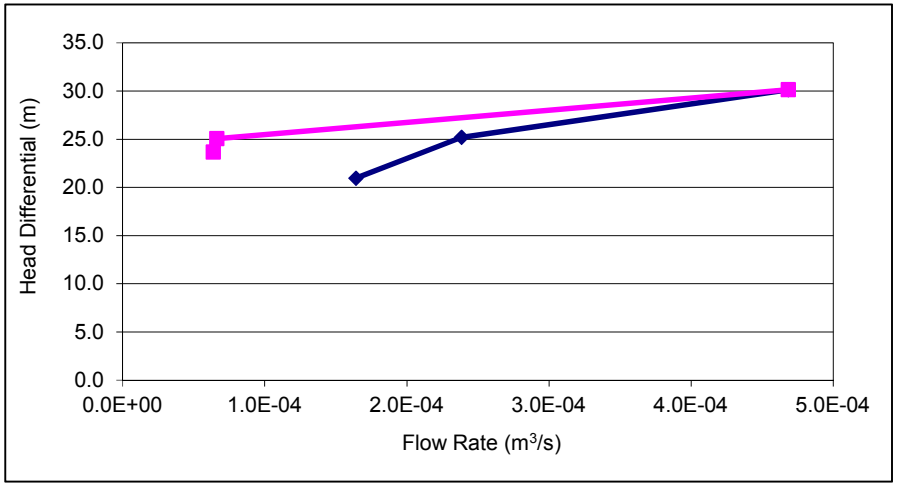
Project #: 1125-007-07 **From (m):** 131.30 **To (m):** 140.50

Calculation Input Parameters:

L: Length of Test Interval (m)	9.20	Borehole Diameter (m):	0.086	Comments:
Test Interval Midpoint (m Depth):	135.90	r: Borehole Radius (m):	0.043	
Gauge Height (m Above Ground):	0.80	A: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	12.80	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
12.2	1.6E-04	8.5	20.9	7.3E-07	X
18.2	2.4E-04	12.8	25.2	8.8E-07	X
25.2	4.7E-04	17.7	30.1	1.4E-06	
18.0	6.6E-05	12.7	25.1	2.5E-07	X
16.0	6.4E-05	11.2	23.7	2.5E-07	X
N/A		N/A		N/A	
			Geo Mean	**4.4.E-07**	



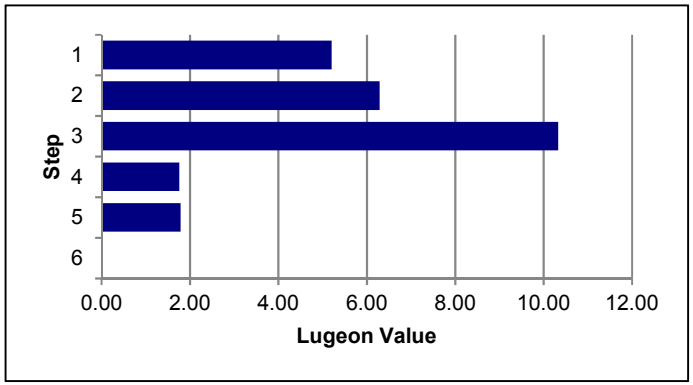
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	2.1	2.60	1.07	5.21	X
2	2.5	3.78	1.56	6.29	X
3	3.0	7.42	3.05	10.33	
4	2.5	1.05	0.43	1.76	X
5	2.3	1.01	0.42	1.79	X
6	N/A	N/A	N/A		
			Geo Mean	**3.19**	
			Max L	**10.33**	

Lugeon Estimate Check:

K (from packer test): 4.4E-05 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 4.45



Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM	**Collar El.:**	941	**Hole ID:**	DH-BGC-15-01
Project:	ELFZ SI	**Trend:**	217	**Plunge:**	65
Project #:	1125-007-07	**Personnel:**	JND	**Date:**	23-Feb-15
Measurement Units		**Start Flushing:**		**Design Test Interval:**	182.3 to 200.5 m
Volume:	gal	**End Flushing:**		**Test #:**	4
Pressure:	psi	**Start Packer Testing:**	17:55	**Packer Setup:**	☑ Single ☐ Double
Length:	m	**End Packer Testing:**	18:55	**Measurements Taken from Collar (Ground):**	

Rod Stickup Height:	2.19	m	
Depth to Water:			12.66
Depth to Top of Interval:	182.31	m	
Depth to Bottom of Interval:			200.50
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			96.0
Packer Inflation Pressure:	600	psi	
Cleaning (Vol./Time/Until Clean):			until clean

Pressure Inte 10

Minutes	Pressure	Volume	Δ Volume
0	10.0	3669.5	--
1	9.0	3678.0	8.5
2	10.0	3686.8	8.8
3	10.0	3695.6	8.8
4	10.0	3704.4	8.8
5	10.0	3713.2	8.8
6	10.0	3722.0	8.8
7	10.0	3730.6	8.6
8	10.0	3739.0	8.4
9	10.0	3747.4	8.4
10	10.0	3755.9	8.5
Stable Avg:	9.9		8.6

Pressure Int 15

Minutes	Pressure	Volume	Δ Volume
0	16.0	3988.5	--
1	14.0	3998.1	9.6
2	14.0	4007.7	9.6
3	14.0	4017.4	9.7
4	14.0	4027.2	9.8
5	14.0	4036.7	9.5
6	14.0	4046.3	9.6
7	14.0	4055.8	9.5
8	14.0	4065.5	9.7
9	14.0	4075.2	9.7
10	14.0	4084.9	9.7
Stable Avg:	14.0		9.6

Pressure Inte 15

Minutes	Pressure	Volume	Δ Volume
0	16.0	3763.0	--
1	14.0	3773.1	10.1
2	14.0	3783.3	10.2
3	14.0	3793.5	10.2
4	14.0	3803.5	10.0
5	15.0	3813.7	10.2
6	15.0	3823.7	10.0
7	15.0	3833.8	10.1
8	16.0	3843.9	10.1
9	16.0	3854.0	10.1
10	16.0	3864.2	10.2
	14.9		10.1

Pressure Int 10

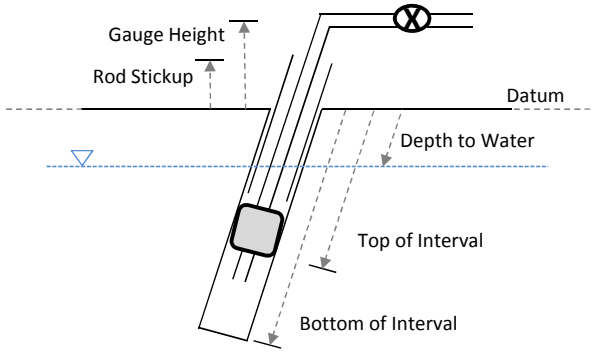
Minutes	Pressure	Volume	Δ Volume
0	10.0	4088.7	--
1	10.0	4096.9	8.2
2	10.0	4105.1	8.2
3	10.0	4113.3	8.2
4	10.0	4121.5	8.2
5	10.0	4129.7	8.2
6	10.0	4137.9	8.2
7	10.0	4146.1	8.2
8	10.0	4154.3	8.2
9	9.0	4162.5	8.2
10	9.0	4170.7	8.2
Stable Avg:	9.8		8.2

Pressure Inte 20

Minutes	Pressure	Volume	Δ Volume
0	20.0	3870.0	--
1	20.0	3881.4	11.4
2	20.0	3892.6	11.2
3	20.0	3903.9	11.3
4	20.0	3915.2	11.3
5	20.0	3926.5	11.3
6	20.0	3938.8	12.3
7	20.0	3949.0	10.2
8	20.0	3960.4	11.4
9	20.0	3971.7	11.3
10	20.0	3983.0	11.3
Stable Avg:	20.0		11.3

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A



IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-01

Project: ELFZ SI **Test #:** 4

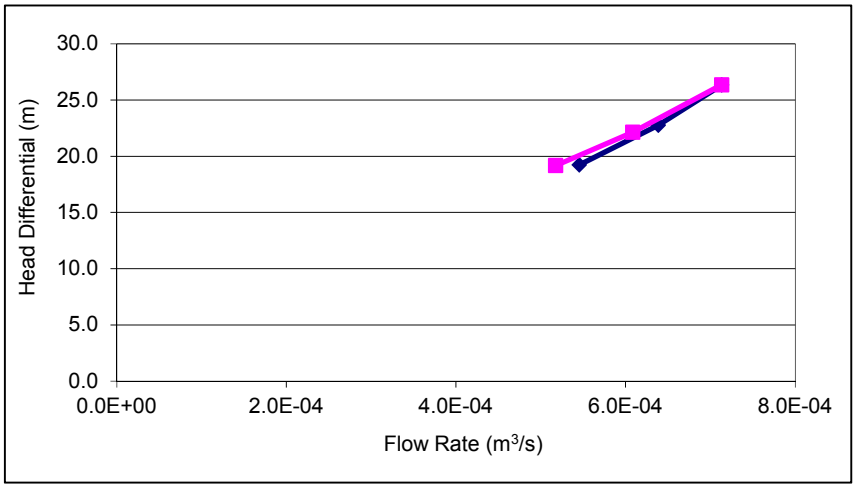
Project #: 1125-007-07 **From (m):** 182.31 **To (m):** 200.50

Calculation Input Parameters:

L: Length of Test Interval (m)	18.19	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	191.41	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	12.66	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
9.9	5.5E-04	7.0	19.2	1.5E-06	X
14.9	6.4E-04	10.5	22.8	1.5E-06	X
20.0	7.1E-04	14.1	26.3	1.4E-06	X
14.0	6.1E-04	9.8	22.1	1.4E-06	X
9.8	5.2E-04	6.9	19.2	1.4E-06	X
N/A		N/A		N/A	
			Geo Mean	**1.4.E-06**	



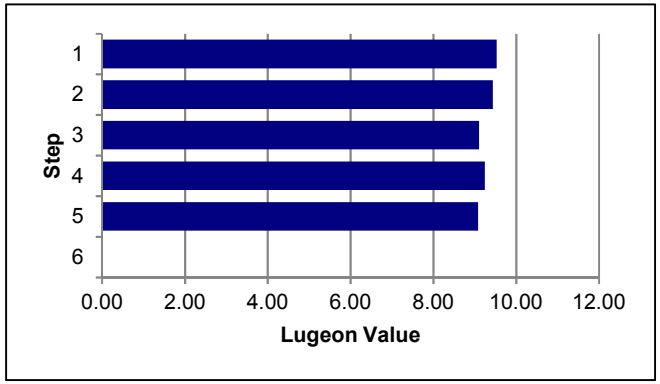
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	1.9	8.64	1.80	9.53	X
2	2.2	10.12	2.11	9.44	X
3	2.6	11.30	2.35	9.11	X
4	2.2	9.64	2.01	9.25	X
5	1.9	8.20	1.71	9.08	X
6	N/A	N/A	N/A		
			Geo Mean	**9.28**	
			Max L	**9.53**	

Lugeon Estimate Check:

K (from packer test): 1.4E-04 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 14.33



Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM
Project:	ELFZ SI
Project #:	1125-007-07

Measurement Units

Volume:	gal
Pressure:	psi
Length:	m

Collar El.:	941		
Trend:	217	**Plunge:**	65
Personnel:	GJD	**Date:**	23-Feb-15

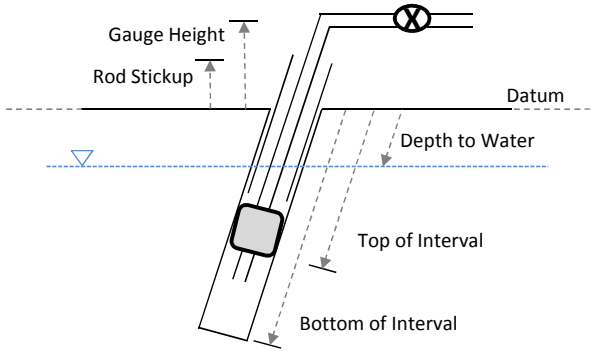
Start Flushing:	
End Flushing:	
Start Packer Testing:	
End Packer Testing:	

Hole ID: DH-BGC-15-01

Design Test Interval:	168.8 to 176.3 m
Test #:	5
Packer Setup:	☐ Single ☑ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.20	m	
Depth to Water:			12.78
Depth to Top of Interval:	168.80	m	
Depth to Bottom of Interval:			176.30
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			96.0
Packer Inflation Pressure:	550	psi	
Cleaning (Vol./Time/Until Clean):			until clean



Pressure Int 35

Minutes	Pressure	Volume	Δ Volume
0	36.0	4215.0	--
1	36.0	4216.3	1.3
2	36.0	4217.5	1.3
3	36.0	4218.5	1.0
4	36.0	4220.0	1.5
5	36.0	4221.2	1.2
6	36.0	4222.4	1.2
7	36.0	4223.7	1.3
8	36.0	4224.8	1.1
9	36.0	4226.1	1.3
10	36.0	4227.3	1.2
Stable Avg:	36.0		1.2

Pressure Int 50

Minutes	Pressure	Volume	Δ Volume
0	51.0	4267.7	--
1	51.0	4269.2	1.5
2	51.0	4270.6	1.4
3	51.0	4272.1	1.5
4	51.0	4273.5	1.4
5	51.0	4275.0	1.5
6	51.0	4276.4	1.4
7	51.0	4277.9	1.5
8	51.0	4279.4	1.5
9	51.0	4280.8	1.4
10	51.0	4282.3	1.5
Stable Avg:	51.0		1.5

Pressure Int 50

Minutes	Pressure	Volume	Δ Volume
0	50.0	4231.5	--
1	50.0	4233.0	1.5
2	51.0	4234.5	1.5
3	51.0	4236.0	1.5
4	51.0	4237.5	1.5
5	51.0	4239.0	1.5
6	51.0	4240.5	1.5
7	51.0	4242.0	1.5
8	51.0	4243.5	1.5
9	51.0	4244.9	1.4
10	51.0	4246.3	1.4
	50.9		1.5

Pressure Int 36

Minutes	Pressure	Volume	Δ Volume
0	36.0	4283.5	--
1	36.0	4284.6	1.1
2	36.0	4285.8	1.2
3	36.0	4286.7	0.9
4	36.0	4288.1	1.4
5	36.0	4289.3	1.2
6	36.0	4290.4	1.1
7	36.0	4291.6	1.2
8	36.0	4292.7	1.1
9	36.0	4293.9	1.2
10	36.0	4295.0	1.1
Stable Avg:	36.0		1.2

Pressure Int 65

Minutes	Pressure	Volume	Δ Volume
0	66.0	34248.5	--
1	66.0	34250.2	1.7
2	66.0	34251.9	1.7
3	66.0	34253.6	1.7
4	66.0	34255.3	1.7
5	66.0	34257.0	1.7
6	66.0	34258.8	1.8
7	66.0	34260.5	1.7
8	66.0	34262.2	1.7
9	66.0	34263.9	1.7
10	66.0	34265.7	1.8
Stable Avg:	66.0		1.7

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-01

Project: ELFZ SI **Test #:** 5

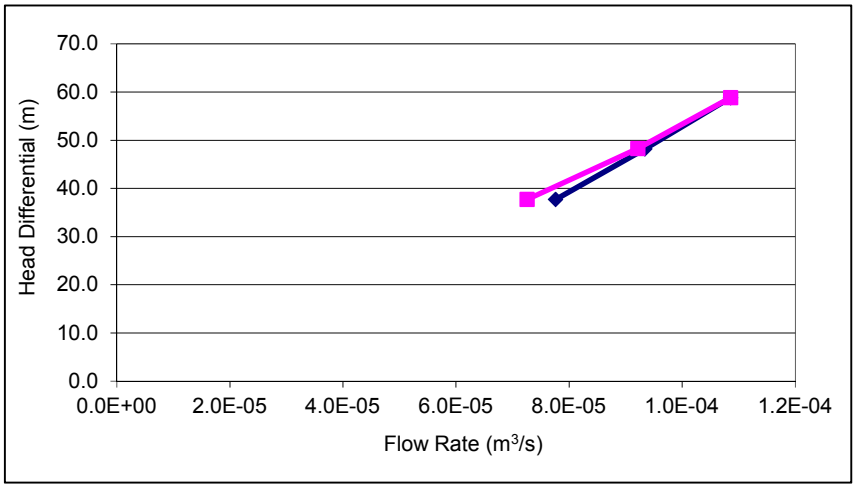
Project #: 1125-007-07 **From (m):** 168.80 **To (m):** 176.30

Calculation Input Parameters:

L: Length of Test Interval (m)	7.50	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	172.55	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	12.78	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
36.0	7.8E-05	25.3	37.7	2.2E-07	X
50.9	9.3E-05	35.8	48.2	2.1E-07	X
66.0	1.1E-04	46.4	58.8	2.0E-07	X
51.0	9.2E-05	35.9	48.2	2.0E-07	X
36.0	7.3E-05	25.3	37.7	2.1E-07	X
N/A		N/A		N/A	
			Geo Mean	**2.1.E-07**	



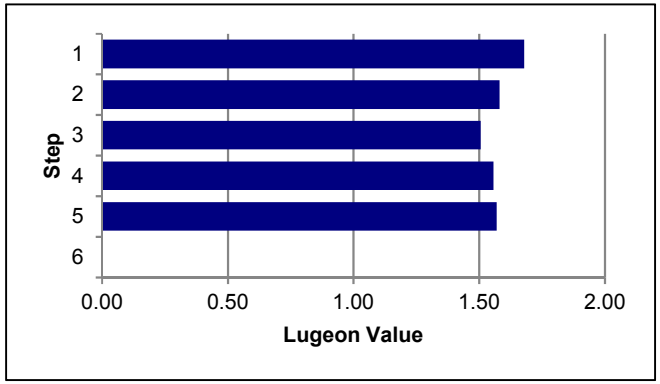
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	3.7	1.23	0.62	1.68	X
2	4.7	1.48	0.75	1.58	X
3	5.8	1.72	0.87	1.51	X
4	4.7	1.46	0.74	1.56	X
5	3.7	1.15	0.58	1.57	X
6	N/A	N/A	N/A		
			Geo Mean	**1.58**	
			Max L	**1.68**	

Lugeon Estimate Check:

K (from packer test): 2.1E-05 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 2.07



Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM
Project: ELFZ SI
Project #: 1125-007-07

Measurement Units
Volume: gallons
Pressure: psi
Length: m

Collar El.: 941
Trend: 217 **Plunge:** 65
Personnel: GJD **Date:** 23-Feb-15

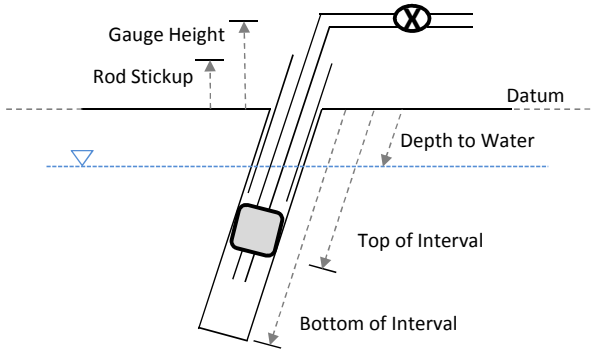
Start Flushing:
End Flushing:
Start Packer Testing: 1:50
End Packer Testing: 3:00

Hole ID: DH-BGC-15-01
Design Test Interval: 143.3 to 200.0 m
Test #: 6
Packer Setup: ☑ Single ☐ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height: 2.00 m
Depth to Water: 12.89
Depth to Top of Interval: 143.30 m
Depth to Bottom of Interval: 200.50
Height of Gauge: 0.80 m

Drill Rod ID: 77.8 mm
Borehole Outside Diameter: 96.0
Packer Inflation Pressure: 550 psi
Cleaning (Vol./Time/Until Clean): until clean



Pressure Int 10

Minutes	Pressure	Volume	Δ Volume
0	10.0	34399.0	--
1	10.0	34406.7	7.7
2	10.0	34414.9	8.2
3	10.0	34423.0	8.1
4	10.0	34431.0	8.0
5	10.0	34439.0	8.0
6	9.0	34447.2	8.2
7	9.0	34455.4	8.2
8	9.0	34463.8	8.4
9	9.0	34471.8	8.0
10	9.0	34479.8	8.0
Stable Avg:	9.5		8.1

Pressure Int 15

Minutes	Pressure	Volume	Δ Volume
0	15.0	4501.5	--
1	14.0	4511.4	9.9
2	14.0	4521.8	10.4
3	15.0	4532.5	10.7
4	15.0	4543.2	10.7
5	15.0	4553.7	10.5
6	15.0	4564.5	10.8
7	15.0	4575.2	10.7
8	15.0	4585.8	10.6
9	15.0	4596.4	10.6
10	15.0	4607.3	10.9
	14.8		10.6

Pressure Int 20

Minutes	Pressure	Volume	Δ Volume
0	20.0	4717.0	--
1	20.0	4729.4	12.4
2	20.0	4742.1	12.7
3	21.0	4754.8	12.7
4	21.0	4767.4	12.6
5	21.0	4779.7	12.3
6	20.0	4791.9	12.2
7	20.0	4804.4	12.5
8	20.0	4816.5	12.1
9	20.0	4829.0	12.5
10	20.0	4841.5	12.5
Stable Avg:	20.3		12.5

Pressure Int 15

Minutes	Pressure	Volume	Δ Volume
0	15.0	4859.0	--
1	15.0	4869.7	10.7
2	15.0	4880.3	10.6
3	15.0	4890.4	10.1
4	15.0	4901.0	10.6
5	15.0	4911.3	10.3
6	15.0	4921.8	10.5
7	15.0	4932.3	10.5
8	15.0	4942.0	9.7
9	15.0	4953.1	11.1
10	15.0	4963.5	10.4
Stable Avg:	15.0		10.5

Pressure Int 10

Minutes	Pressure	Volume	Δ Volume
0	10.0	4996.0	--
1	10.0	5004.5	8.5
2	10.0	5012.6	8.1
3	10.0	5021.1	8.5
4	10.0	5029.2	8.1
5	10.0	5037.6	8.4
6	10.0	5046.0	8.4
7	10.0	5054.3	8.3
8	10.0	5062.7	8.4
9	10.0	5071.0	8.3
10	10.0	5079.5	8.5
Stable Avg:	10.0		8.4

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments: During first attempt at the 20 psi pressure interval the mud tank ran out of water due to the high pumping rates. The 20 psi pressure interval (shown above) was restarted after the tank was refilled.

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-01

Project: ELFZ SI **Test #:** 6

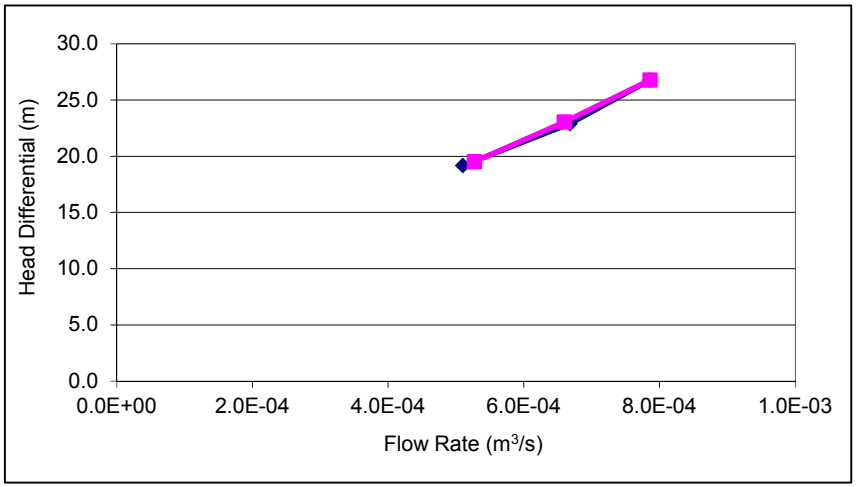
Project #: 1125-007-07 **From (m):** 143.30 **To (m):** 200.50

Calculation Input Parameters:

L: Length of Test Interval (m)	57.20	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	171.90	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	12.89	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
9.5	5.1E-04	6.7	19.2	5.2E-07	X
14.8	6.7E-04	10.4	22.9	5.7E-07	X
20.3	7.9E-04	14.3	26.8	5.8E-07	X
15.0	6.6E-04	10.5	23.0	5.6E-07	X
10.0	5.3E-04	7.0	19.5	5.3E-07	X
N/A		N/A		N/A	
			Geo Mean	**5.5.E-07**	



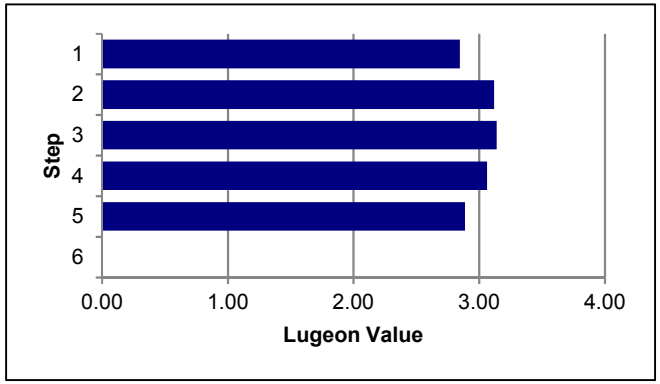
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	1.9	8.08	0.53	2.85	X
2	2.2	10.58	0.70	3.12	X
3	2.6	12.45	0.82	3.14	X
4	2.3	10.45	0.69	3.06	X
5	1.9	8.35	0.55	2.89	X
6	N/A	N/A	N/A		
			Geo Mean	**3.01**	
			Max L	**3.14**	

Lugeon Estimate Check:

K (from packer test): 5.5E-05 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 5.54



31.51

Constant Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM
Project:	ELFZ SI
Project #:	1125-007-07
Measurement Units	
Volume:	gal
Pressure:	psi
Length:	m

Collar El.: 941

Trend: 217 **Plunge:** 65

Personnel: GJD **Date:** 23-Feb-15

Start Flushing:
End Flushing:
Start Packer Testing: 4:45
End Packer Testing: 5:45

Hole ID: DH-BGC-15-01

Design Test Interval: 54.8 to 60.8 m
Test #: 7
Packer Setup: ☐ Single ☑ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.00	m
Depth to Water:	13.24	
Depth to Top of Interval:	54.80	m
Depth to Bottom of Interval:	60.80	
Height of Gauge:	0.80	m
Drill Rod ID:	77.8	mm
Borehole Outside Diameter:	96.0	
Packer Inflation Pressure:	300	psi
Cleaning (Vol./Time/Until Clean):	until clean	

Pressure Inte 20

Minutes	Pressure	Volume	Δ Volume
0	20.0	5107.0	--
1	20.0	5108.4	1.4
2	20.0	5109.8	1.4
3	20.0	5111.4	1.6
4	20.0	5112.9	1.5
5	20.0	5114.5	1.6
6	21.0	5116.1	1.6
7	20.0	5117.7	1.6
8	20.0	5119.3	1.6
9	20.0	5121.0	1.7
10	20.0	5122.9	1.9
Stable Avg:	20.1		1.6

Pressure Int 30

Minutes	Pressure	Volume	Δ Volume
0	30.0	5261.0	--
1	31.0	5269.0	8.0
2	30.0	5277.0	8.0
3	30.0	5285.1	8.1
4	30.0	5293.0	7.9
5	30.0	5300.9	7.9
6	30.0	5308.5	7.6
7	30.0	5316.2	7.7
8	29.0	5323.9	7.7
9	30.0	5331.6	7.7
10	30.0	5339.5	7.9
Stable Avg:	30.0		7.9

Pressure Inte 30

Minutes	Pressure	Volume	Δ Volume
0	30.0	5126.0	--
1	30.0	5129.4	3.4
2	30.0	5133.1	3.7
3	30.0	5137.0	3.9
4	30.0	5141.0	4.0
5	30.0	5145.0	4.0
6	30.0	5148.9	3.9
7	30.0	5153.9	5.0
8	30.0	5158.8	4.9
9	30.0	5163.7	4.9
10	30.0	5168.5	4.8
Stable Avg:	30.0		4.3

Pressure Int 20

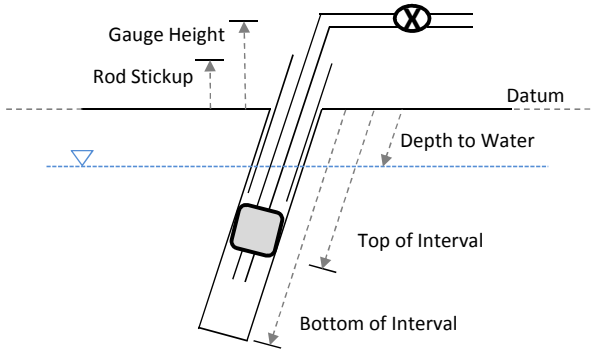
Minutes	Pressure	Volume	Δ Volume
0	20.0	5345.0	--
1	20.0	5351.7	6.7
2	20.0	5358.2	6.5
3	20.0	5364.8	6.6
4	20.0	5371.5	6.7
5	20.0	5378.0	6.5
6	20.0	5384.6	6.6
7	20.0	5391.2	6.6
8	20.0	5397.7	6.5
9	20.0	5404.3	6.6
10	20.0	5411.0	6.7
Stable Avg:	20.0		6.6

Pressure Inte 40

Minutes	Pressure	Volume	Δ Volume
0	40.0	5178.0	--
1	40.0	5184.5	6.5
2	40.0	5191.7	7.2
3	40.0	5199.1	7.4
4	40.0	5206.8	7.7
5	40.0	5214.0	7.2
6	39.0	5221.4	7.4
7	40.0	5228.8	7.4
8	40.0	5236.7	7.9
9	40.0	5245.3	8.6
10	40.0	5254.0	8.7
Stable Avg:	39.9		7.6

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A



IF NO MEASUREABLE FLOW IN CH TEST ---> FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

N:\BGC\Projects\1125 KGHM Ajax\006 EA GW scope\07 ELFZ Investigation\02 Site Investigation\04 Field Data\01 Log Data\DH-BGC15-01\10 Packer Testing\DH-BGC15-01 Packer Test 7_54.8 to 60.8 m.xlsx

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-01

Project: ELFZ SI **Test #:** 7

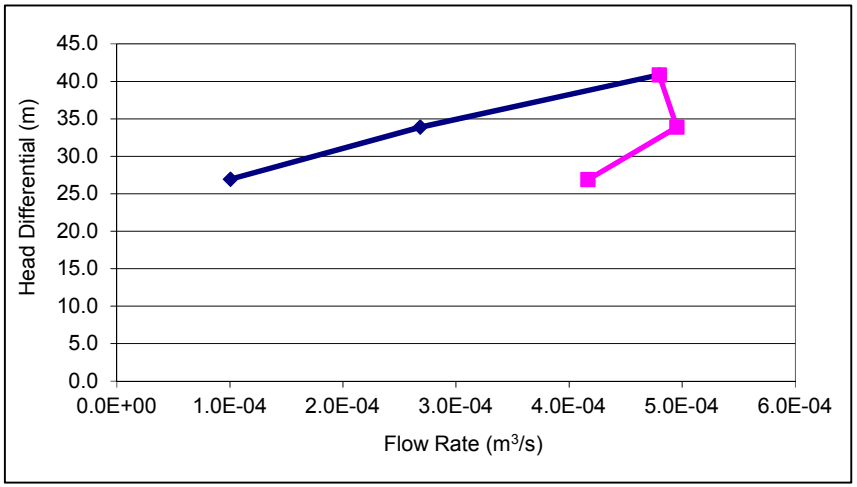
Project #: 1125-007-07 **From (m):** 54.80 **To (m):** 60.80

Calculation Input Parameters:

L: Length of Test Interval (m)	6.00	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	57.80	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	13.24	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
20.1	1.0E-04	14.1	26.9	4.8E-07	
30.0	2.7E-04	21.1	33.9	1.0E-06	
39.9	4.8E-04	28.1	40.9	1.5E-06	
30.0	5.0E-04	21.1	33.9	1.9E-06	
20.0	4.2E-04	14.1	26.9	2.0E-06	X
N/A		N/A		N/A	
			Geo Mean	**2.0.E-06**	



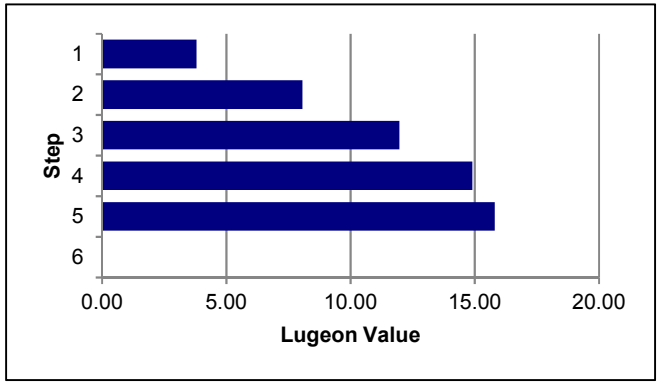
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	2.6	1.59	1.00	3.80	
2	3.3	4.25	2.68	8.07	
3	4.0	7.60	4.79	11.97	
4	3.3	7.85	4.95	14.90	
5	2.6	6.60	4.16	15.81	X
6	N/A	N/A	N/A		
			Geo Mean	**15.81**	
			Max L	**15.81**	

Lugeon Estimate Check:

K (from packer test): 2.0E-04 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 19.85



-19.69

Constant Head Packer Test - Data Form

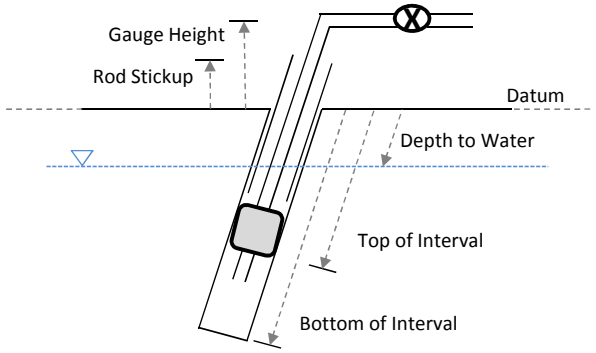
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM	**Collar El.:**	950.00	**Hole ID:**	DH-BGC-15-02
Project:	ELFZ SI	**Trend:**	217	**Plunge:**	65
Project #:	1125-007-07	**Personnel:**	JND	**Date:**	1-Mar-15
Measurement Units		**Start Flushing:**	8:30		
Volume:	gal	**End Flushing:**		9:20	
Pressure:	psi	**Start Packer Testing:**	10:00		
Length:	m	**End Packer Testing:**			

Design Test Interval: 101.21 m - 111.90 m
Test #: 1
Packer Setup: ☑ Single ☐ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.25	m	
Depth to Water:			8.95
Depth to Top of Interval:	101.21	m	
Depth to Bottom of Interval:			111.90
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			96.0
Packer Inflation Pressure:	490	psi	
Cleaning (Vol./Time/Until Clean):			until clean



Pressure Inte 40

Minutes	Pressure	Volume	Δ Volume
0	40.0	5432.4	--
1	40.0	5432.5	0.1
2	41.0	5432.7	0.2
3	40.0	5432.8	0.1
4	40.0	5433.0	0.2
5	40.0	5433.1	0.1
6	42.0	5433.3	0.2
7	42.0	5433.5	0.2
8	43.0	5433.6	0.1
9	43.0	5433.8	0.2
10	43.0	5434.0	0.2
Stable Avg:	41.4		0.2

Pressure Int 60

Minutes	Pressure	Volume	Δ Volume
0	58.0	5444.4	--
1	59.0	5444.9	0.5
2	59.0	5445.5	0.6
3	59.0	5446.0	0.5
4	59.0	5446.5	0.5
5	60.0	5447.1	0.6
6	60.0	5447.6	0.5
7	60.0	5448.2	0.6
8	60.0	5448.6	0.4
9	59.0	5449.1	0.5
10	60.0	5449.6	0.5
Stable Avg:	59.5		0.5

Pressure Inte 60

Minutes	Pressure	Volume	Δ Volume
0	61.0	5434.2	--
1	62.0	5434.5	0.3
2	62.0	5434.8	0.3
3	62.0	5435.1	0.3
4	62.0	5435.4	0.3
5	62.0	5435.6	0.2
6	62.0	5436.1	0.5
7	62.0	5436.6	0.5
8	62.0	5437.0	0.4
9	62.0	5437.3	0.3
10	62.0	5437.7	0.4
	62.0		0.4

Pressure Int 40

Minutes	Pressure	Volume	Δ Volume
0	38.0	5449.8	--
1	38.0	5450.3	0.5
2	38.0	5450.7	0.4
3	39.0	5451.1	0.4
4	39.0	5451.5	0.4
5	39.0	5451.9	0.4
6	39.0	5452.3	0.4
7	39.0	5452.7	0.4
8	39.0	5453.0	0.3
9	38.0	5453.6	0.6
10	38.0	5454.0	0.4
Stable Avg:	38.6		0.4

Pressure Inte 80

Minutes	Pressure	Volume	Δ Volume
0	77.0	5438.0	--
1	76.0	5438.5	0.5
2	76.0	5439.0	0.5
3	81.0	5439.6	0.6
4	83.0	5440.2	0.6
5	81.0	5440.8	0.6
6	81.0	5441.4	0.6
7	81.0	5442.0	0.6
8	81.0	5442.6	0.6
9	82.0	5443.3	0.7
10	82.0	5443.9	0.6
Stable Avg:	80.4		0.6

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST --->
FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-02

Project: ELFZ SI **Test #:** 1

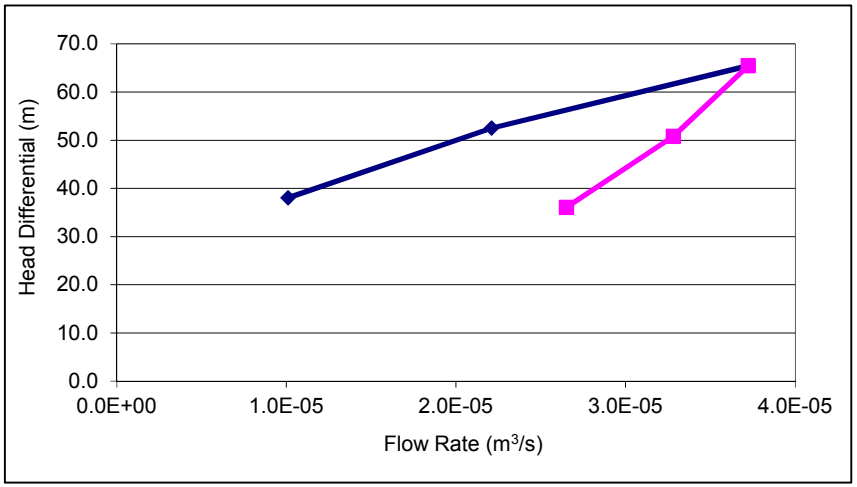
Project #: 1125-007-07 **From (m):** 101.21 **To (m):** 111.90

Calculation Input Parameters:

L: Length of Test Interval (m)	10.69	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	106.56	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	8.95	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
41.4	1.0E-05	29.1	38.0	2.1E-08	
62.0	2.2E-05	43.6	52.5	3.4E-08	
80.4	3.7E-05	56.5	65.4	4.6E-08	
59.5	3.3E-05	41.8	50.7	5.2E-08	
38.6	2.6E-05	27.1	36.1	5.9E-08	X
N/A		N/A		N/A	
			Geo Mean	**5.9.E-08**	



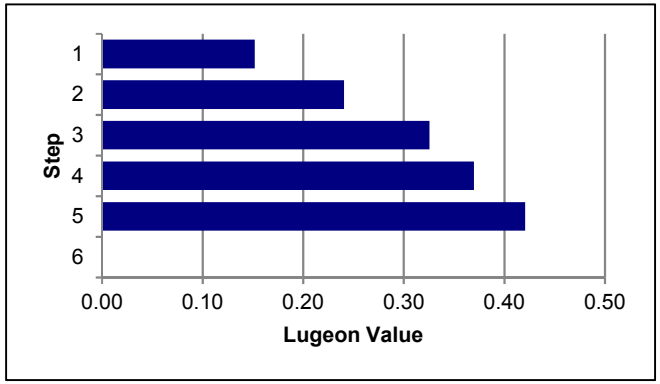
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	3.7	0.16	0.06	0.15	
2	5.1	0.35	0.12	0.24	
3	6.4	0.59	0.21	0.33	
4	5.0	0.52	0.18	0.37	
5	3.5	0.42	0.15	0.42	X
6	N/A	N/A	N/A		
			Geo Mean	**0.42**	
			Max L	**0.42**	

Lugeon Estimate Check:

K (from packer test): 5.9E-06 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 0.59



Constant Head Packer Test - Data Form

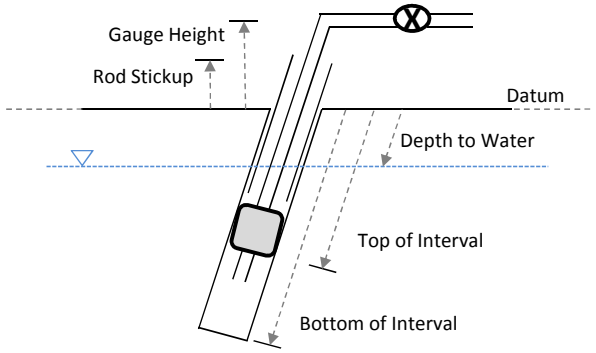
BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client:	KGHM	**Collar El.:**	950	**Hole ID:**	DH-BGC-15-02
Project:	ELFZ SI	**Trend:**	217	**Plunge:**	65
Project #:	1125-007-07	**Personnel:**	JND	**Date:**	2-Mar-15
Measurement Units		**Start Flushing:**	8:00		
Volume:	gal	**End Flushing:**		9:00	
Pressure:	psi	**Start Packer Testing:**	9:20		
Length:	m	**End Packer Testing:**		10:20	

Design Test Interval: 164.21 m - 176.40 m
Test #: 2
Packer Setup: ☑ Single ☑ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height:	2.18	m	
Depth to Water:			27.82
Depth to Top of Interval:	164.21	m	
Depth to Bottom of Interval:			176.40
Height of Gauge:	0.80	m	
Drill Rod ID:	77.8	mm	
Borehole Outside Diameter:			96.0
Packer Inflation Pressure:	570	psi	
Cleaning (Vol./Time/Until Clean):			until clean



Pressure Int 40

Minutes	Pressure	Volume	Δ Volume
0	39.0	5495.4	--
1	39.0	5495.6	0.2
2	39.0	5495.8	0.2
3	41.0	5495.9	0.1
4	41.0	5496.1	0.2
5	42.0	5496.3	0.2
6	42.0	5496.4	0.1
7	43.0	5496.6	0.2
8	44.0	5496.8	0.2
9	44.0	5497.0	0.2
10	40.0	5497.2	0.2
Stable Avg:	41.5		0.2

Pressure Int 60

Minutes	Pressure	Volume	Δ Volume
0	58.0	5505.9000	--
1	58.0	5506.2000	0.3000
2	58.0	5506.5000	0.3000
3	58.0	5506.8000	0.3000
4	58.0	5507.1000	0.3000
5	59.0	5507.4000	0.3000
6	58.0	5507.7000	0.3000
7	59.0	5508.0000	0.3000
8	60.0	5508.3000	0.3000
9	59.0	5508.5000	0.2000
10	60.0	5508.9000	0.4000
Stable Avg:	58.7		0.3000

Pressure Int 60

Minutes	Pressure	Volume	Δ Volume
0	62.0	5497.4	--
1	62.0	5497.6	0.2
2	64.0	5497.9	0.3
3	60.0	5498.2	0.3
4	62.0	5498.4	0.2
5	63.0	5498.7	0.3
6	64.0	5499.0	0.3
7	60.0	5499.2	0.2
8	60.0	5499.5	0.3
9	61.0	5499.8	0.3
10	62.0	5500.1	0.3
	61.8		0.3

Pressure Int 40

Minutes	Pressure	Volume	Δ Volume
0	38.0	5509.0000	--
1	38.0	5509.2000	0.2000
2	38.0	5509.5000	0.3000
3	38.0	5509.7000	0.2000
4	38.0	5510.0000	0.3000
5	38.0	5510.2000	0.2000
6	38.0	5510.4000	0.2000
7	38.0	5510.7000	0.3000
8	39.0	5510.9000	0.2000
9	38.0	5511.2000	0.3000
10	38.0	5511.4000	0.2000
Stable Avg:	38.1		0.2400

Pressure Int 80

Minutes	Pressure	Volume	Δ Volume
0	81.0	5500.6	--
1	82.0	5500.9	0.3
2	83.0	5501.3	0.4
3	84.0	5501.7	0.4
4	79.0	5502.0	0.3
5	80.0	5502.4	0.4
6	82.0	5502.7	0.3
7	83.0	5503.1	0.4
8	80.0	5503.5	0.4
9	80.0	5503.9	0.4
10	82.0	5504.2	0.3
Stable Avg:	81.5		0.4

Pressure Interval _____

Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0000
2			0.0000
3			0.0000
4			0.0000
5			0.0000
6			0.0000
7			0.0000
8			0.0000
9			0.0000
10			0.0000
Stable Avg:	N/A		N/A

IF NO MEASUREABLE FLOW IN CH TEST --->
FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0		-
1		
2		
4		
6		
8		
10		
15		
20		
25		
30		
40		
50		
60		

Additional Comments:

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM **Hole ID:** DH-BGC-15-02

Project: ELFZ SI **Test #:** 2

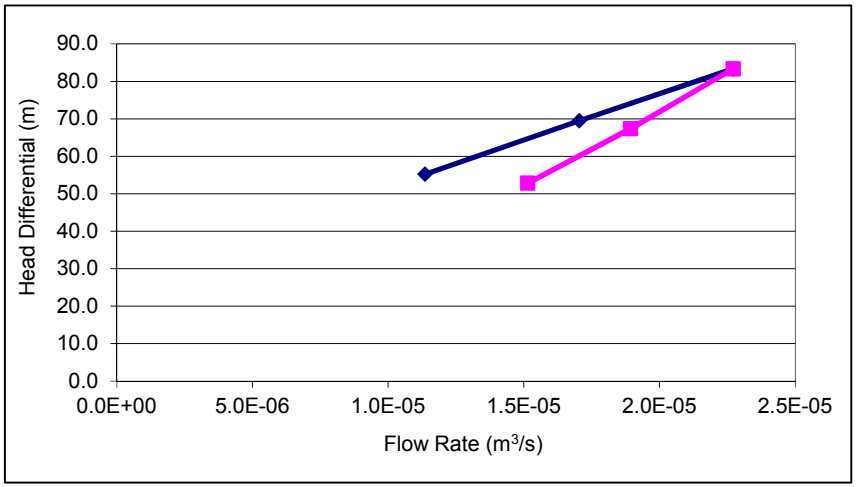
Project #: 1125-007-07 **From (m):** 164.21 **To (m):** 176.40

Calculation Input Parameters:

L: Length of Test Interval (m)	12.19	Borehole Diameter (m):	0.096	Comments:
Test Interval Midpoint (m Depth):	170.31	**r**: Borehole Radius (m):	0.048	
Gauge Height (m Above Ground):	0.80	**A**: Angle From Horizontal (deg):	65	
Depth to Water Table (m Depth):	27.82	Other:		

Hydraulic Conductivity:

Pressure (psi)	Q: Flowrate (m^3/s):	Pressure (m)	dH: Head Differential (m)	K: Hydraulic Conductivity (m/s)	Included in GeoMean
41.5	1.1E-05	29.2	55.2	1.5E-08	X
61.8	1.7E-05	43.5	69.5	1.8E-08	X
81.5	2.3E-05	57.3	83.3	2.0E-08	X
58.7	1.9E-05	41.3	67.3	2.0E-08	X
38.1	1.5E-05	26.8	52.8	2.1E-08	X
N/A		N/A		N/A	
			Geo Mean	**1.9.E-08**	



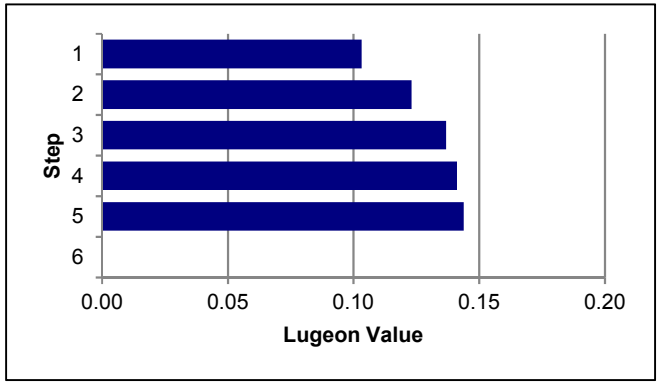
Lugeon Units Calculation:

Step	Differential Pressure (BARS)	Flow (GPM)	Water Take (L/m/min)	Lugeon Value	Included in GeoMean
1	5.4	0.18	0.06	0.10	X
2	6.8	0.27	0.08	0.12	X
3	8.2	0.36	0.11	0.14	X
4	6.6	0.30	0.09	0.14	X
5	5.2	0.24	0.07	0.14	X
6	N/A	N/A	N/A		
			Geo Mean	**0.13**	
			Max L	**0.14**	

Lugeon Estimate Check:

K (from packer test): 1.9E-06 cm/s

Notes: 1 lugeon ≅ 1e-5 cm/s *Lugeons (from K):* 0.19



Falling Head Packer Test - Data Form

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

Client: KGHM
Project: ELFZ SI
Project #: 1125-007-07

Measurement Units
Volume: gal
Pressure: psi
Length: m

Collar El.: 950
Trend: 217 **Plunge:** 65
Personnel: GJD **Date:** 3-Mar-15

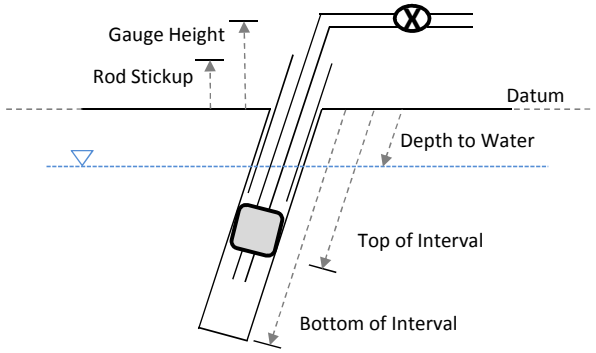
Start Flushing:
End Flushing:
Start Packer Testing:
End Packer Testing:

Hole ID: DH-BGC-15-02
Design Test Interval: 197.59 m - 225.90 m
Test #: 3
Packer Setup: ☑ Single ☐ Double

Measurements Taken from Collar (Ground):

Rod Stickup Height: 2.18 m
Depth to Water: 13.72
Depth to Top of Interval: 197.59 m
Depth to Bottom of Interval: 225.90
Height of Gauge: 0.80 m

Drill Rod ID: 77.8 mm
Borehole Outside Diameter: 96.0
Packer Inflation Pressure: 625 psi
Cleaning (Vol./Time/Until Clean): until clean



Pressure Inte 40

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

Stable Avg: N/A N/A

Pressure Int 60

Minutes			Δ Volume
0			--
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

Stable Avg: N/A N/A

Pressure Inte 60

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

N/A N/A

Pressure Int 40

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

Stable Avg: N/A N/A

Pressure Inte 80

Minutes	Pressure	Volume	Δ Volume
0			--
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

Stable Avg: N/A N/A

Pressure Interval _____

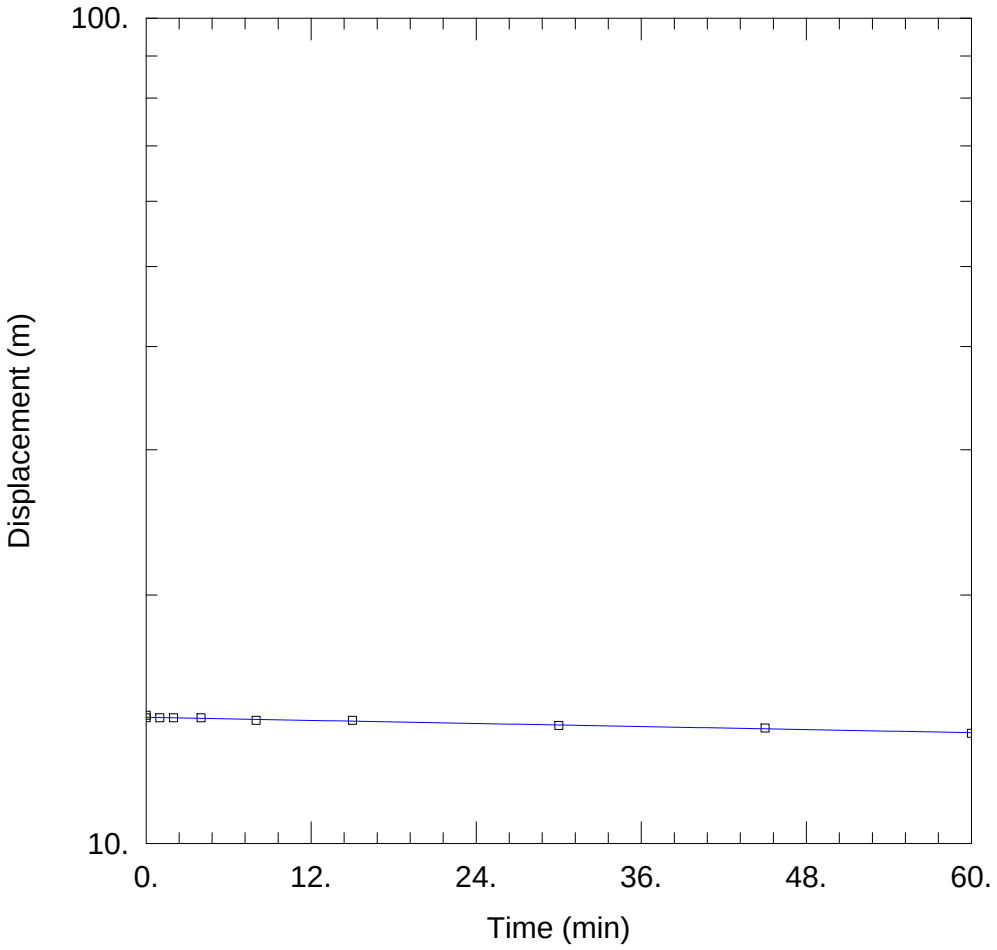
Minutes	Pressure	Volume	Δ Volume
0			-
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0

Stable Avg: N/A N/A

IF NO MEASUREABLE FLOW IN CH TEST --->
FALLING HEAD TEST or RISING HEAD TEST

Time (Min)	Depth to H2O	Δ Depth/Min
0	0.213	-
1	0.23	0.017
2	0.242	0.012
4	0.258	0.008
8	0.295	0.009
15	0.368	0.010
30	0.527	0.011
45	0.687	0.011
60	0.862	0.012

Additional Comments:



WELL TEST ANALYSIS

Data Set: N:\...\DH-BGC15-02_ck.aqt
Date: 04/13/15 Time: 14:04:28

PROJECT INFORMATION

Company: BGC Engineering
Client: KAM
Project: 1125-007
Location: Ajax Project
Test Well: DH-BGC15-02
Test Date: March 3, 2015

AQUIFER DATA

Saturated Thickness: 213.7 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DH-BGC15-02)

Initial Displacement: 14.3 m
Total Well Penetration Depth: 213.7 m
Casing Radius: 0.0389 m
Static Water Column Height: 213.7 m
Screen Length: 28.3 m
Well Radius: 0.048 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 2.242E-9 m/sec y0 = 14.22 m

APPENDIX F
LABORATORY TESTING RESULTS

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

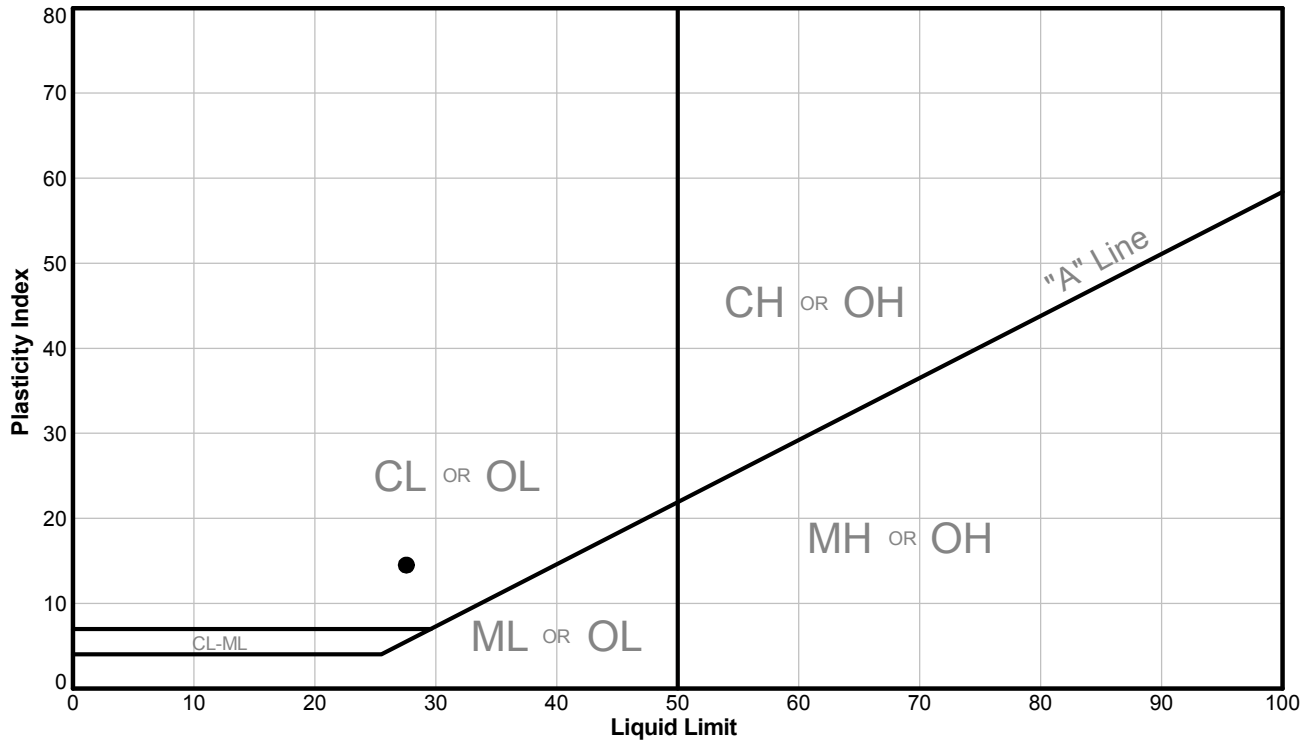
Reference(s)
ASTM D 4318-10

Client: BGC Engineering Inc.	**ID: DH-BGC15-01**
Project: 2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.: 5**
Location: N/A	**Depth Interval (m):** 44.42 to 44.50
Project No.: 1525980 **Phase:** 1000	**Lab Schedule No.:** 81

Other Remarks: **N/A**

Test Method: A-Multi Point | **Preparation Method: Air Dried**

PLASTICITY CHART



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	DH-BGC15-01	5	44.42	44.50	16	28	13	15.0	9.0	-0.3

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

SJ/DC	3/18/2015	LP	3/25/2015
Tech	Date	Checked	Date

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

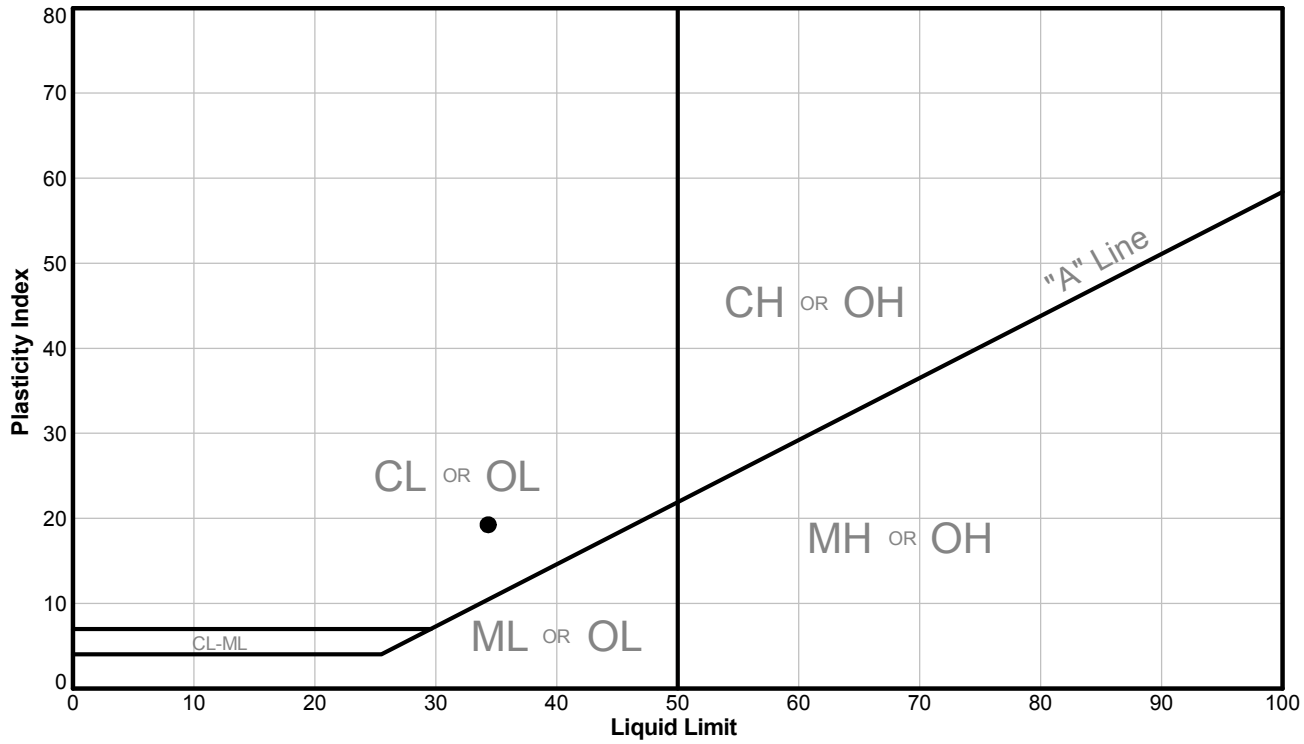
Reference(s)
ASTM D 4318-10

Client: BGC Engineering Inc.	**ID: DH-BGC15-01**
Project: 2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.: 19**
Location: N/A	**Depth Interval (m):** 93.30 to 93.40
Project No.: 1525980 **Phase:** 1000	**Lab Schedule No.:** 81

Other Remarks: **N/A**

Test Method: A-Multi Point | **Preparation Method: Air Dried**

PLASTICITY CHART



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	DH-BGC15-01	19	93.30	93.40	36	34	15	19.0	10.3	-0.2

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

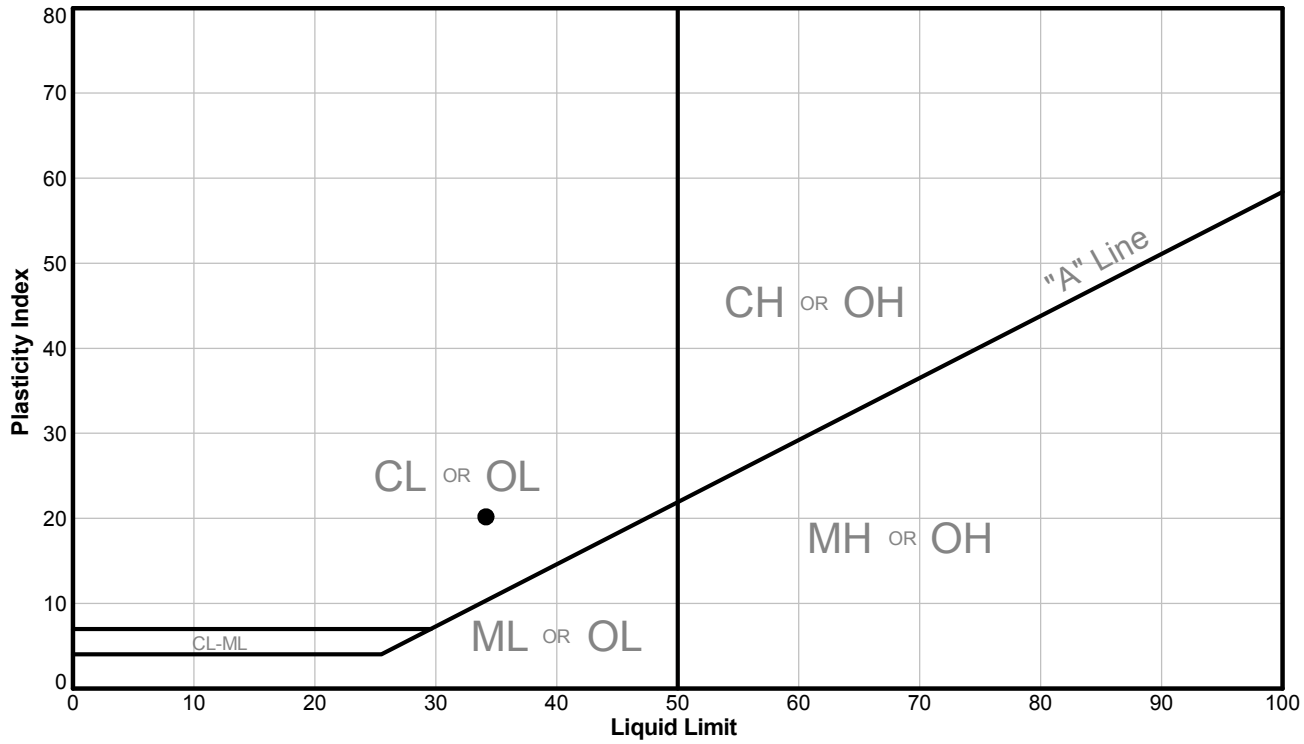
Reference(s)
ASTM D 4318-10

Client: BGC Engineering Inc.	**ID: DH-BGC15-01**
Project: 2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.: 11**
Location: N/A	**Depth Interval (m):** 131.70 to 131.90
Project No.: 1525980 **Phase:** 1000	**Lab Schedule No.:** 81

Other Remarks: **N/A**

Test Method: A-Multi Point | **Preparation Method: Air Dried**

PLASTICITY CHART



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	DH-BGC15-01	11	131.70	131.90	19	34	14	20.0	4.8	-0.5

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

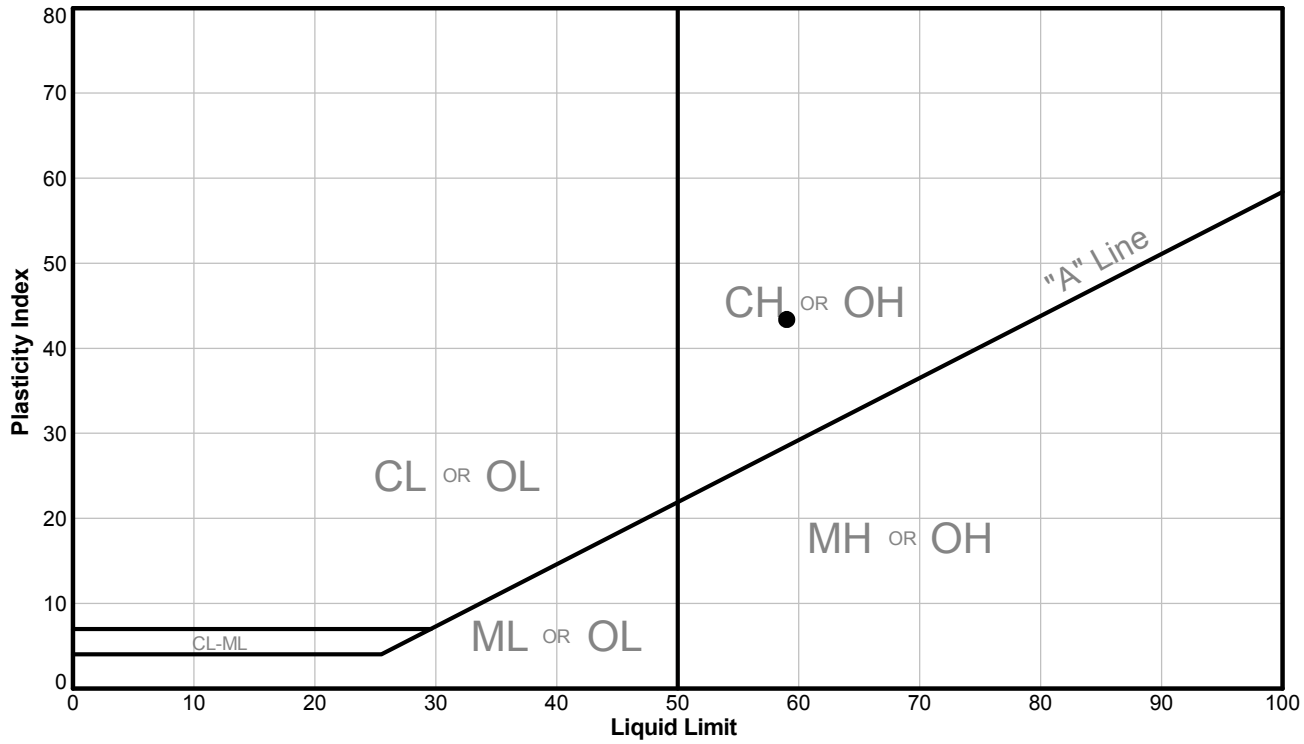
Reference(s)
ASTM D 4318-10

Client: BGC Engineering Inc.	**ID: DH-BGC15-01**
Project: 2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.: 13**
Location: N/A	**Depth Interval (m):** 149.80 to 149.98
Project No.: 1525980 **Phase:** 1000	**Lab Schedule No.:** 81

Other Remarks: **N/A**

Test Method: A-Multi Point | **Preparation Method: Air Dried**

PLASTICITY CHART



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	DH-BGC15-01	13	149.80	149.98	17	59	16	43.0	8.6	-0.2

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

SJ/DC	3/18/2015	LP	3/25/2015
Tech	Date	Checked	Date

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

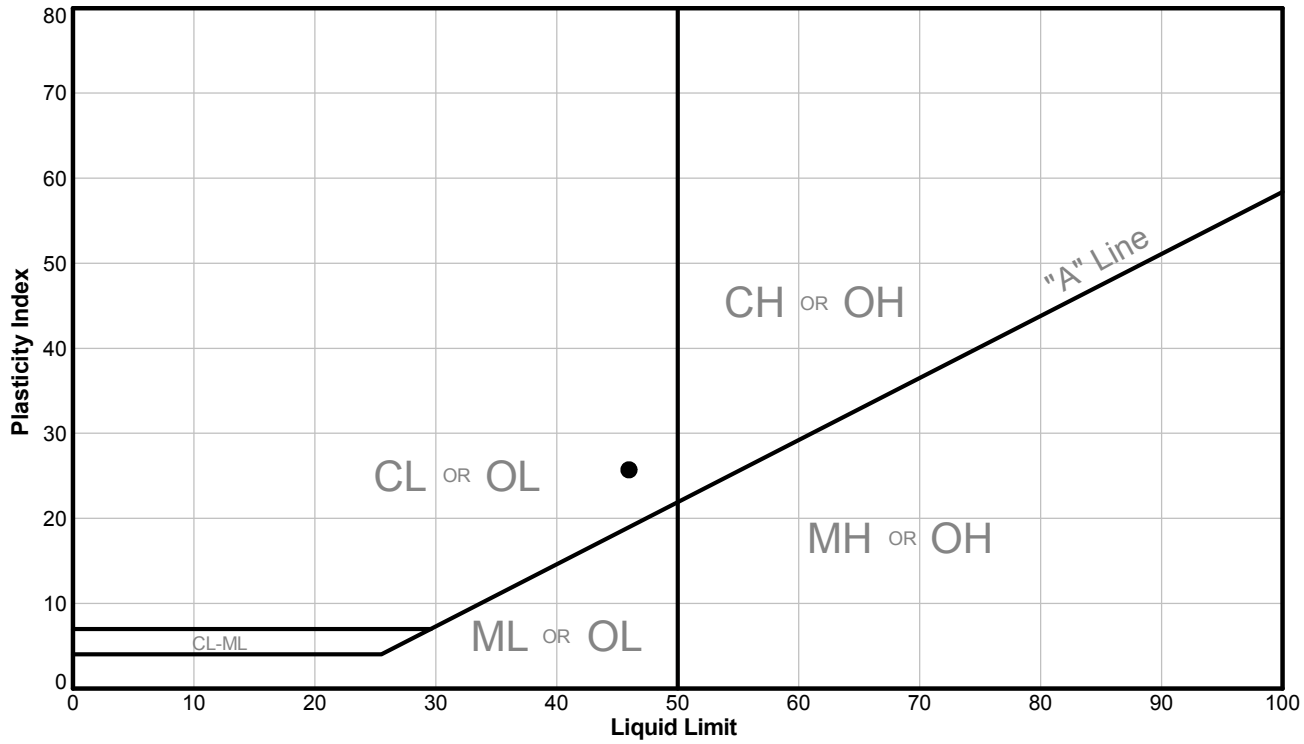
Reference(s)
ASTM D 4318-10

Client: BGC Engineering Inc.	**ID: DH-BGC15-02**
Project: 2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.: 16**
Location: N/A	**Depth Interval (m):** 57.90 to 58.10
Project No.: 1525980 **Phase:** 1000	**Lab Schedule No.:** 81

Other Remarks: **N/A**

Test Method: A-Multi Point | **Preparation Method: Air Dried**

PLASTICITY CHART



Sym.	Sample Location	Sample / Specimen Number	Depth (m)	Bottom (m)	Percent Passing #40 Sieve (%)	Liquid Limit	Plastic Limit	Plasticity Index	Natural Water Content (%)	Liquidity Index
●	DH-BGC15-02	16	57.90	58.10	33	46	20	26.0	8.7	-0.4

NP - NON-PLASTIC RESULT ND - NOT DETERMINED

Note: The test data given herein pertain to the sample provided only. This report constitutes a testing service only.

SJ/DC	3/18/2015	LP	3/25/2015
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National IM Server\GINT_GAL_NATIONAL\IM Unique Project ID, Output Form: _LAB_ATTERBERG CASAGRANDE (SINGLE) sjohn 3/25/15

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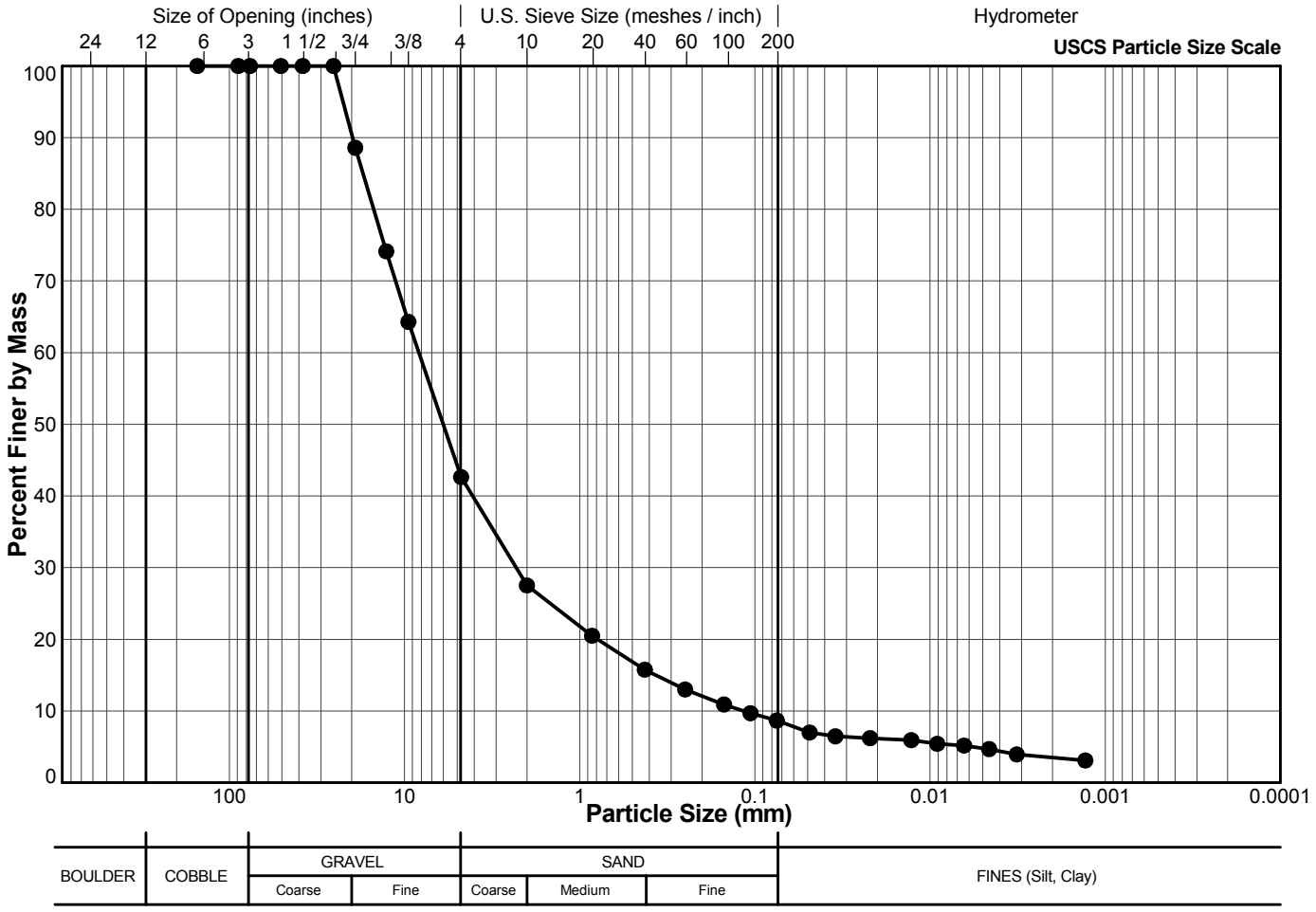
SUMMARY OF PARTICLE SIZE DISTRIBUTION

Reference(s)
ASTM D 422

Client:	BGC Engineering Inc.	**Sample Location:**	DH-BGC15-01
Project:	2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.:**	5
Location:	N/A	**Depth Interval (m):**	44.42 to 44.50
Project No.:	1525980 **Phase:** 1000	**Lab Schedule No.:**	81



Legend

Sieve Size (USS)	(mm)	Particle Size (mm)	Percent Passing
6"	152.4		100.0
3.5"	88.9		100.0
3"	76.2		100.0
2"	50.8		100.0
1 1/2"	38.1		100.0
1"	25.4		100.0
3/4"	19.1		88.6
1/2"	12.7		74.1
3/8"	9.5		64.3
#4 US MESH	4.75		42.6
#10 US MESH	2		27.5
#20 US MESH	0.85		20.5
#40 US MESH	0.425		15.8
#60 US MESH	0.25		13.0
#100 US MESH	0.15		10.9
#140 US MESH	0.106		9.7
#200 US MESH	0.075		8.7
		0.0487	7.0
		0.0347	6.5
		0.0220	6.2
		0.0128	5.9
		0.0091	5.4
		0.0064	5.2
		0.0046	4.7
		0.0032	3.9
		0.0013	3.1

	SJ/VN	3/18/2015	LP	3/25/2015	
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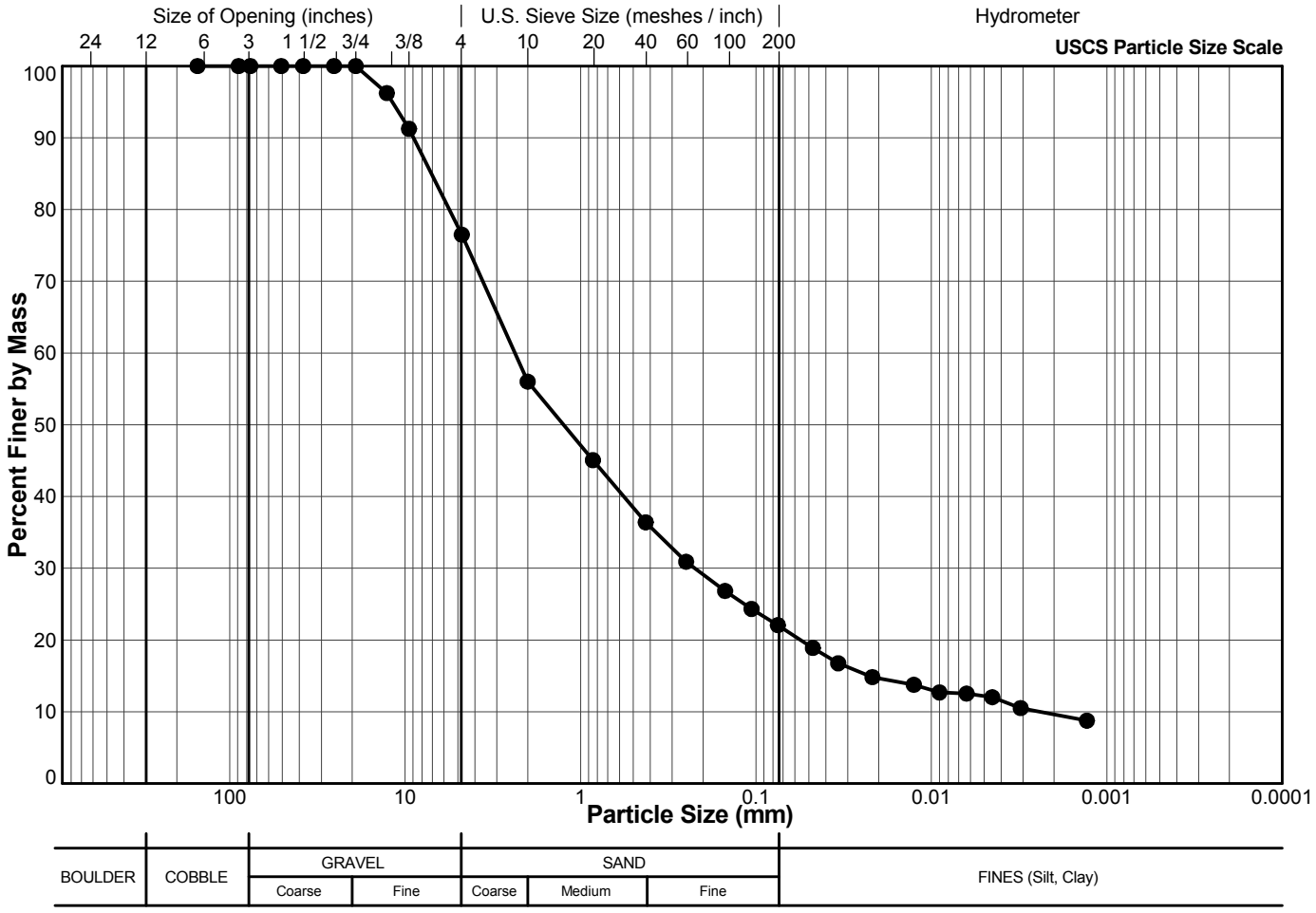
SUMMARY OF PARTICLE SIZE DISTRIBUTION

Reference(s)
ASTM D 422

Client:	BGC Engineering Inc.	**Sample Location:**	DH-BGC15-01
Project:	2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.:**	19
Location:	N/A	**Depth Interval (m):**	93.30 to 93.40
Project No.:	1525980 **Phase:** 1000	**Lab Schedule No.:**	81



Legend

Sieve Size (USS)	(mm)	Particle Size (mm)	Percent Passing
6"	152.4		100.0
3.5"	88.9		100.0
3"	76.2		100.0
2"	50.8		100.0
1 1/2"	38.1		100.0
1"	25.4		100.0
3/4"	19.1		100.0
1/2"	12.7		96.2
3/8"	9.5		91.3
#4 US MESH	4.75		76.5
#10 US MESH	2		56.0
#20 US MESH	0.85		45.1
#40 US MESH	0.425		36.4
#60 US MESH	0.25		30.9
#100 US MESH	0.15		26.8
#140 US MESH	0.106		24.3
#200 US MESH	0.075		22.1
		0.0474	18.9
		0.0340	16.8
		0.0217	14.8
		0.0126	13.8
		0.0090	12.7
		0.0063	12.5
		0.0045	12.0
		0.0031	10.5
		0.0013	8.8

	SJ/VN	**3/18/2015**	**LP**	**3/25/2015**
	Tech	Date	Checked	Date

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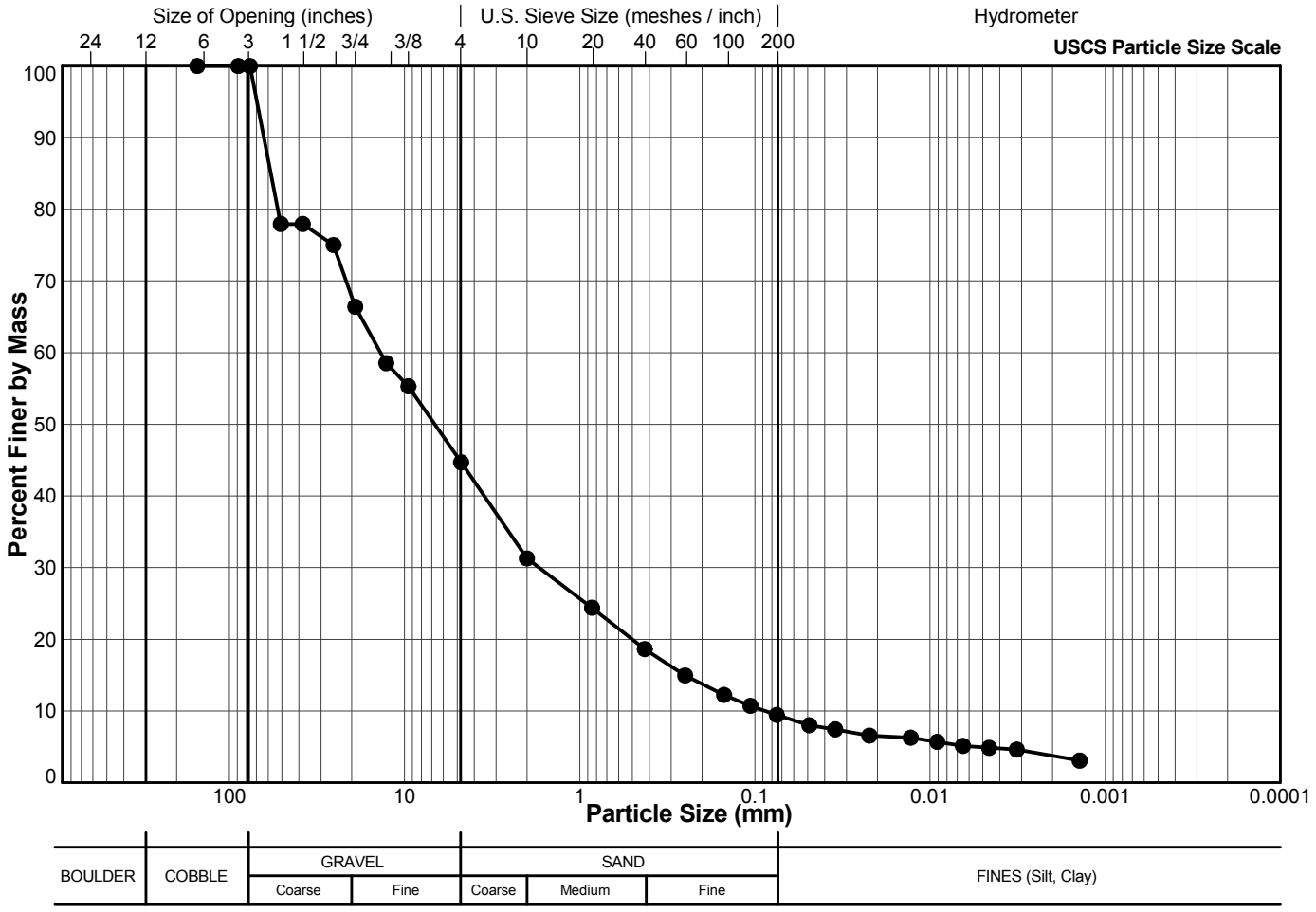
SUMMARY OF PARTICLE SIZE DISTRIBUTION

Reference(s)
ASTM D 422

Client:	BGC Engineering Inc.	**Sample Location:**	DH-BGC15-01
Project:	2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.:**	11
Location:	N/A	**Depth Interval (m):**	131.70 to 131.90
Project No.:	1525980 **Phase:** 1000	**Lab Schedule No.:**	81



Legend

Sieve Size (USS)	(mm)	Particle Size (mm)	Percent Passing
6"	152.4		100.0
3.5"	88.9		100.0
3"	76.2		100.0
2"	50.8		78.0
1 1/2"	38.1		78.0
1"	25.4		75.0
3/4"	19.1		66.4
1/2"	12.7		58.5
3/8"	9.5		55.3
#4 US MESH	4.75		44.7
#10 US MESH	2		31.3
#20 US MESH	0.85		24.4
#40 US MESH	0.425		18.6
#60 US MESH	0.25		14.9
#100 US MESH	0.15		12.2
#140 US MESH	0.106		10.7
#200 US MESH	0.075		9.4
		0.0489	8.0
		0.0348	7.4
		0.0222	6.6
		0.0129	6.3
		0.0091	5.7
		0.0065	5.1
		0.0046	4.8
		0.0032	4.6
		0.0014	3.1

	SJ/VN	**3/18/2015**	**LP**	**3/25/2015**
	Tech	Date	Checked	Date

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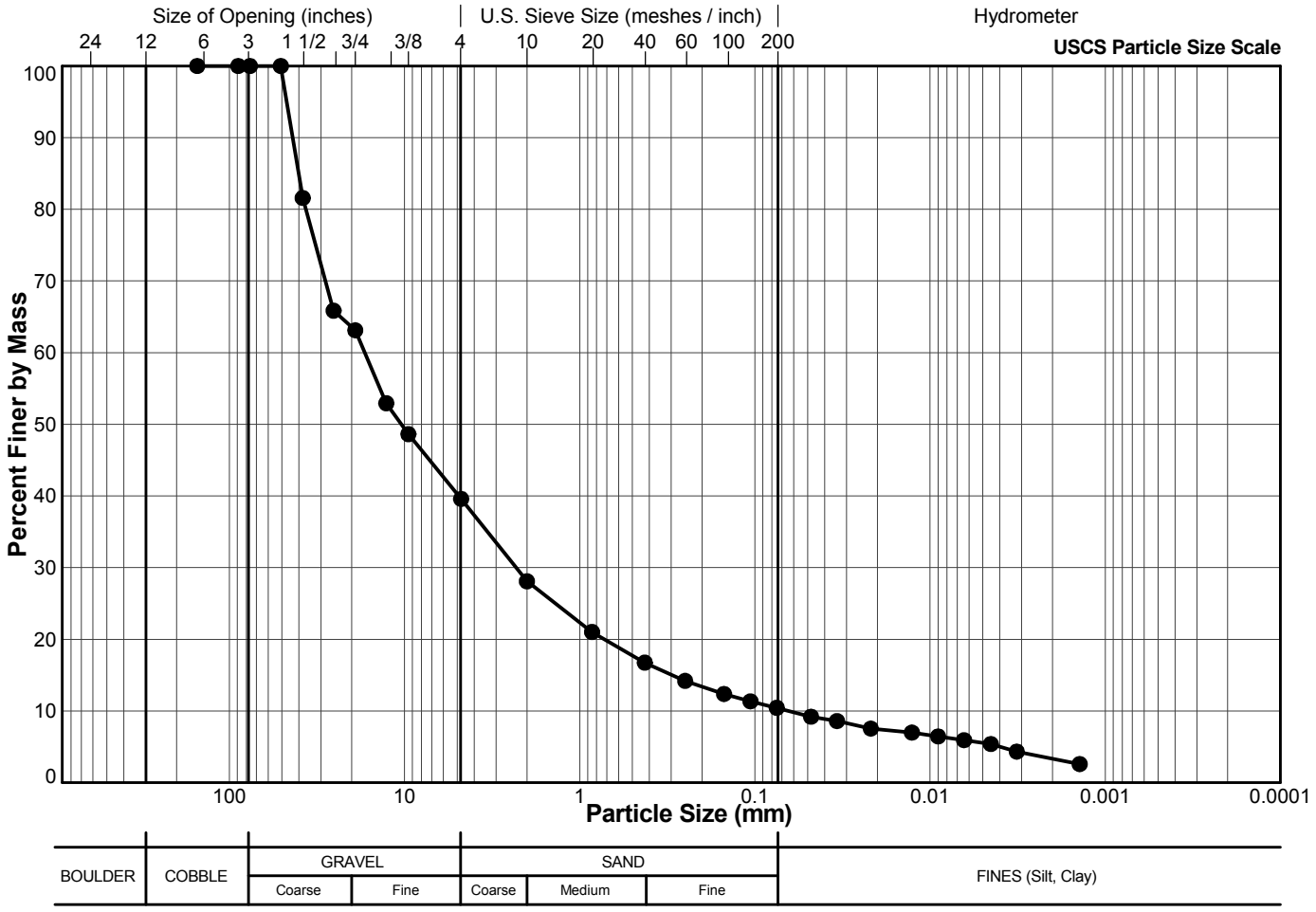
SUMMARY OF PARTICLE SIZE DISTRIBUTION

Reference(s)
ASTM D 422

Client:	BGC Engineering Inc.	**Sample Location:**	DH-BGC15-01
Project:	2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.:**	13
Location:	N/A	**Depth Interval (m):**	149.80 to 149.98
Project No.:	1525980 **Phase:** 1000	**Lab Schedule No.:**	81



Legend

Sieve Size (USS)	(mm)	Particle Size (mm)	Percent Passing
6"	152.4		100.0
3.5"	88.9		100.0
3"	76.2		100.0
2"	50.8		100.0
1 1/2"	38.1		81.6
1"	25.4		65.9
3/4"	19.1		63.1
1/2"	12.7		52.9
3/8"	9.5		48.6
#4 US MESH	4.75		39.6
#10 US MESH	2		28.1
#20 US MESH	0.85		21.0
#40 US MESH	0.425		16.7
#60 US MESH	0.25		14.2
#100 US MESH	0.15		12.4
#140 US MESH	0.106		11.3
#200 US MESH	0.075		10.4
		0.0478	9.2
		0.0340	8.6
		0.0218	7.5
		0.0127	7.0
		0.0090	6.4
		0.0064	5.9
		0.0045	5.4
		0.0032	4.3
		0.0014	2.6

	SJ/VN	**3/18/2015**	**LP**	**3/25/2015**
	Tech	Date	Checked	Date

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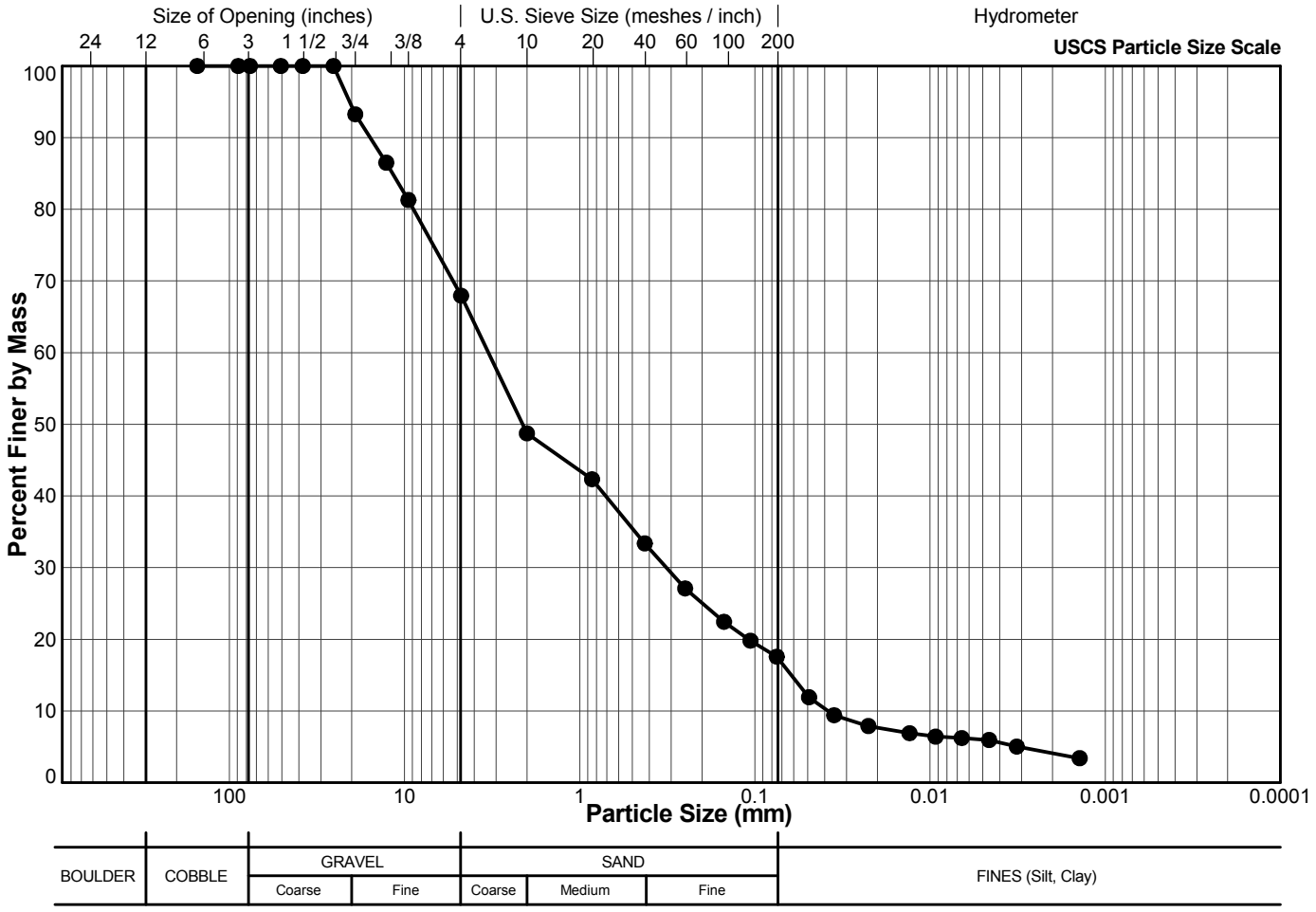
SUMMARY OF PARTICLE SIZE DISTRIBUTION

Reference(s)
ASTM D 422

Client:	BGC Engineering Inc.	**Sample Location:**	DH-BGC15-02
Project:	2015 ELFZ Site Investigation, Project No.: 1125-007-07	**Sample No.:**	16
Location:	N/A	**Depth Interval (m):**	57.90 to 58.10
Project No.:	1525980 **Phase:** 1000	**Lab Schedule No.:**	81



Legend

Sieve Size (USS)	(mm)	Particle Size (mm)	Percent Passing
6"	152.4		100.0
3.5"	88.9		100.0
3"	76.2		100.0
2"	50.8		100.0
1 1/2"	38.1		100.0
1"	25.4		100.0
3/4"	19.1		93.3
1/2"	12.7		86.5
3/8"	9.5		81.3
#4 US MESH	4.75		67.9
#10 US MESH	2		48.7
#20 US MESH	0.85		42.3
#40 US MESH	0.425		33.4
#60 US MESH	0.25		27.1
#100 US MESH	0.15		22.4
#140 US MESH	0.106		19.8
#200 US MESH	0.075		17.6
		0.0491	11.9
		0.0353	9.4
		0.0225	7.9
		0.0131	6.9
		0.0093	6.4
		0.0066	6.2
		0.0046	5.9
		0.0032	5.0
		0.0014	3.4

	SJ/VN	**3/18/2015**	**LP**	**3/25/2015**
	Tech	Date	Checked	Date

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QUANTITATIVE PHASE ANALYSIS OF 5 POWDER SAMPLES USING THE RIETVELD METHOD AND X-RAY POWDER DIFFRACTION DATA.

Project: 15-25980-1000

John Danielson
BGC Engineering Inc.
Suite 800 – 1045 Howe Street
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Dept. of Earth, Ocean & Atmospheric Sciences
The University of British Columbia
6339 Stores Road
Vancouver, BC V6T 1Z4

March 23, 2015

EXPERIMENTAL METHOD

The samples were reduced to the optimum grain-size range for quantitative X-ray analysis (<10 μm) by grinding under ethanol in a vibratory McCrone Micronising Mill for 7 minutes. Continuous-scan X-ray powder-diffraction data were collected over a range 3-80°2θ with CoKα radiation on a Bruker D8 Advance Bragg-Brentano diffractometer equipped with an Fe monochromator foil, 0.6 mm (0.3°) divergence slit, incident- and diffracted-beam Soller slits and a LynxEye-XE detector. The long fine-focus Co X-ray tube was operated at 35 kV and 40 mA, using a take-off angle of 6°.

RESULTS

The X-ray diffractograms were analyzed using the International Centre for Diffraction Database PDF-4 and Search-Match software by Bruker. X-ray powder-diffraction data of the samples were refined with Rietveld program Topas 4.2 (Bruker AXS). The results of quantitative phase analysis by Rietveld refinements are given in Table 1 (separate file, ***Golder Associates Report Table 1 Mar 24 2015 - Project 15-25980-1000.xlsx***) These amounts represent the relative amounts of crystalline phases normalized to 100%. The Rietveld refinement plots are shown in Figures 1 – 5. The ideal formulae of the mineral phases are shown in Table 2.

The samples contain disordered swelling clay (smectite group), likely montmorillonite. As the crystal structure of this mineral is disordered and not predictable, we have used an empirical model to fit the patterns and estimate the amount. The reported amount of montmorillonite will include various interstratified clays such as chlorite-smectite which cannot be distinguished here. Sample DH-BGC15-01 SA19 also contains minor unanalyzed illite-smectite. The ambundant clinochlore also exhibits structural disorder and fitting to its pattern is approximate. Consider the results semi-quantitative.

Table 1. Results (wt.%)

	#1		#2		#3
	DH-BGC15-01 SA5		**DH-BGC15-01 SA11**		**DH-BGC15-01 SA13**
Albite low	11	Albite low	8	Albite low, calcian	3
Clinochlore	24	Clinochlore	21	Calcite	1
Dolomite	22	Dolomite	20	Clinochlore	24
Montmorillonite	21	Illite/Muscovite 2M1	7	Dolomite	7
Quartz low	22	Montmorillonite	25	Illite/Muscovite 2M1	3
		Quartz low	19	Montmorillonite	40
				Orthoclase	3
				Quartz low	21
Total	100		100		100

	#4		#5
	DH-BGC15-01 SA19		**DH-BGC15-02 SA16**
Albite low	12	Actinolite	6
Calcite	1	Calcite	5
Clinochlore	4	Clinochlore	33
Dolomite	20	Montmorillonite	56
Illite/Muscovite 1M	15		
Illite/Muscovite 2M1	7		
Montmorillonite	16		
Pyrite	3		
Quartz low	22		
	100		100

Table 2. Ideal Formulae of Minerals Present.

Mineral	**Ideal Formula**
Actinolite	$Ca_2(Mg,Fe^{2+})_5Si_8O_{22}(OH)_2$
Albite low	$NaAlSi_3O_8$
Albite low, calcian	$(Na,Ca)(Al,Si)_4O_8$
Calcite	$CaCO_3$
Clinochlore	$(Mg,Fe^{2+})_5Al(Si_3Al)O_{10}(OH)_8$
Dolomite	$CaMg(CO_3)_2$
Illite/Muscovite 2M1	$\sim K_{0.65}Al_{2.0}Al_{0.65}Si_{3.35}O_{10}(OH)_2$
Montmorillonite	$\sim(Na,Ca)_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2 \cdot nH_2O$
Orthoclase	$KAlSi_3O_8$
Pyrite	FeS_2
Quartz low	SiO_2

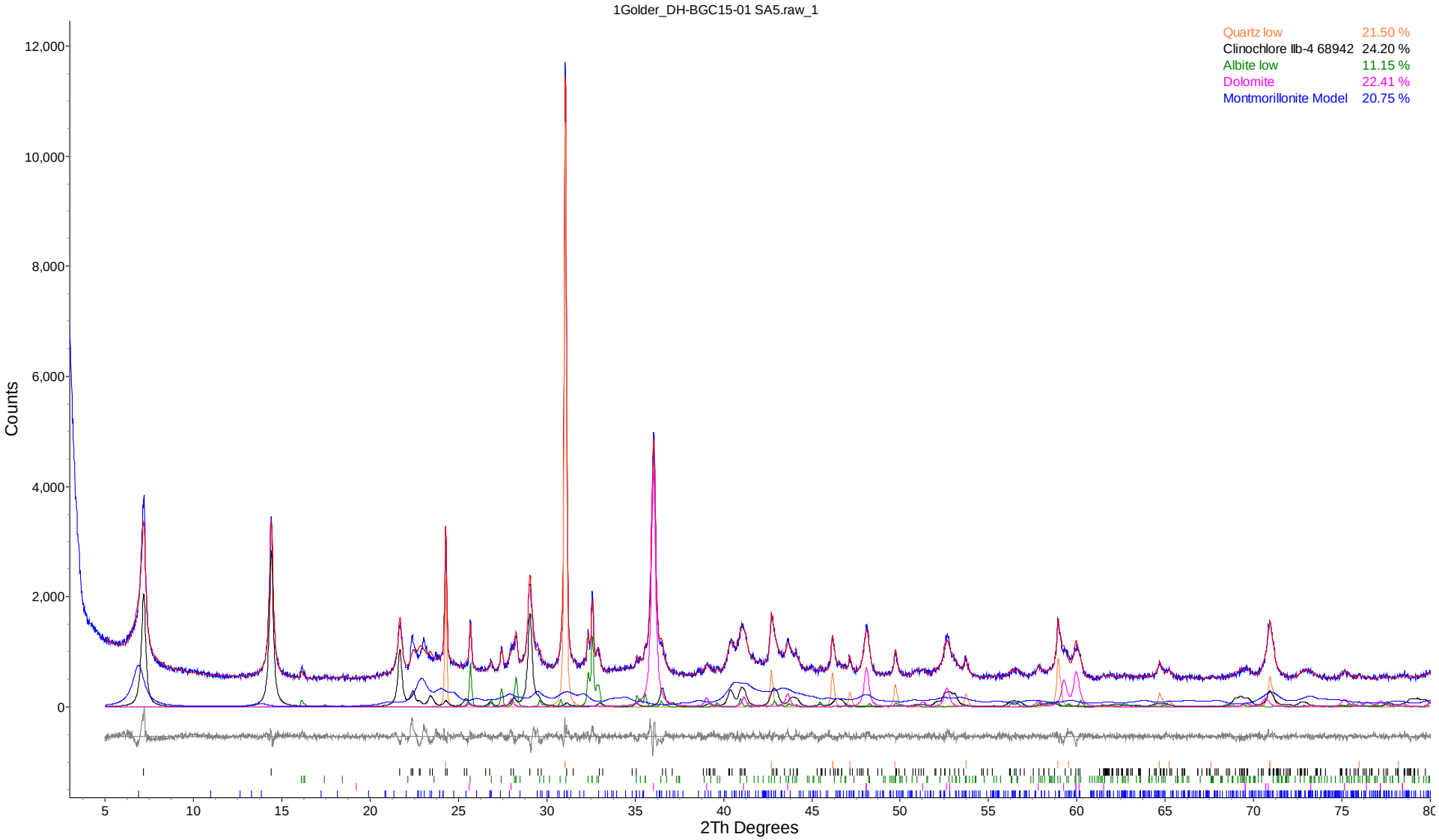


Figure 1. Rietveld refinement plot of sample **1Golder_DH-BGC15-01 SA5** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

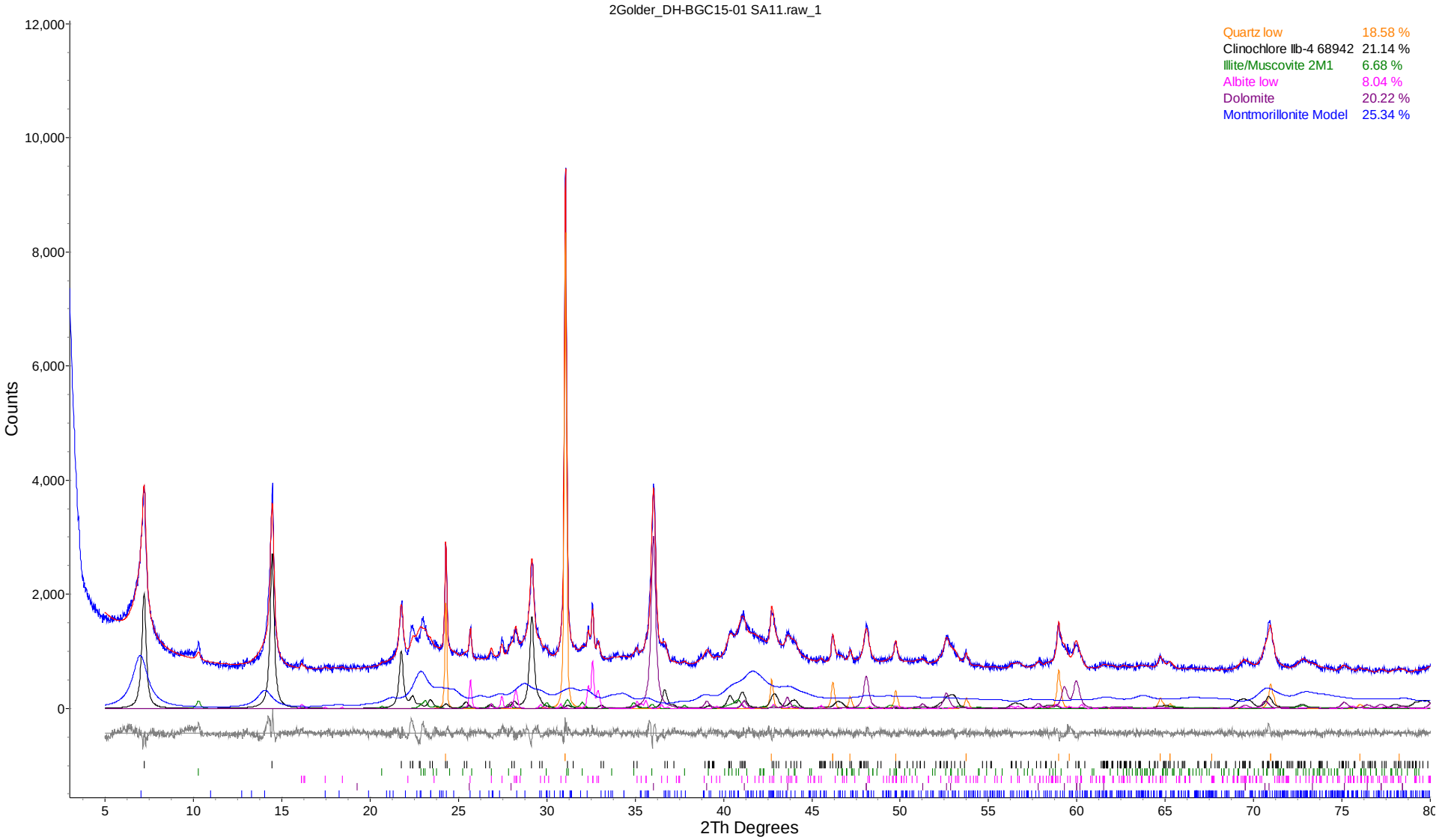


Figure 2. Rietveld refinement plot of sample **2Golder_DH-BGC15-01 SA11** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

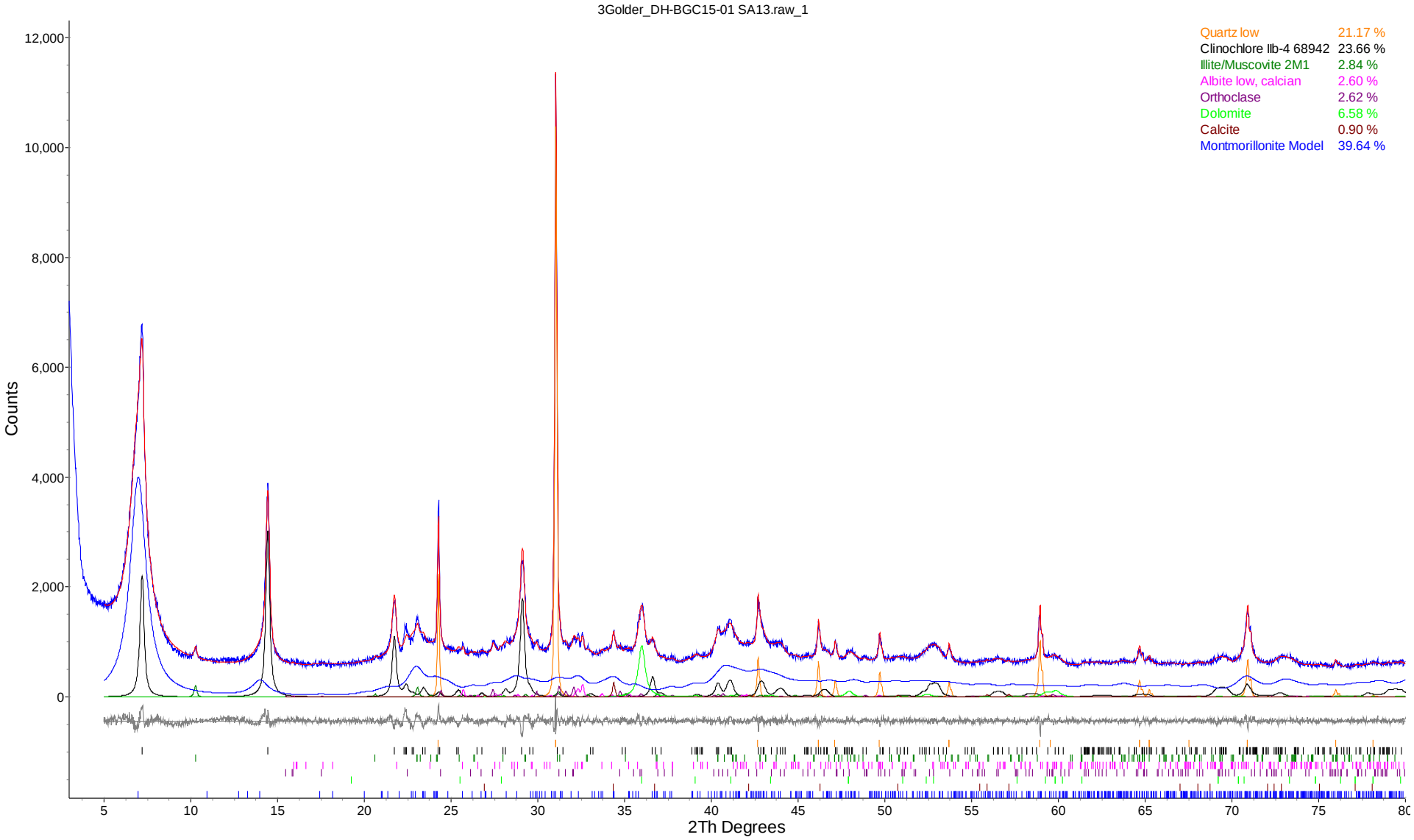


Figure 3. Rietveld refinement plot of sample **3Golder_DH-BGC15-01 SA13** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

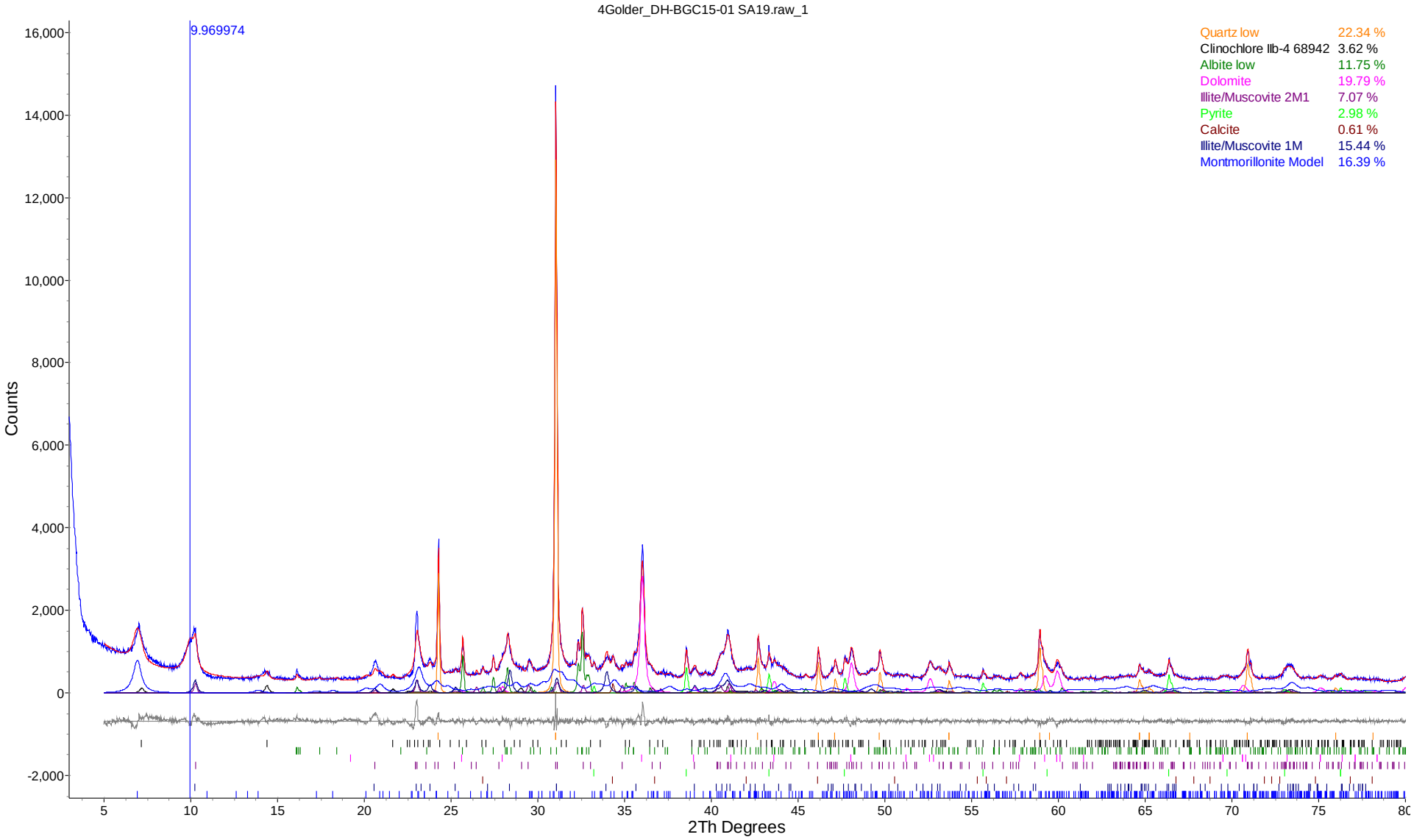


Figure 4. Rietveld refinement plot of sample **4Golder_DH-BGC15-01 SA19** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

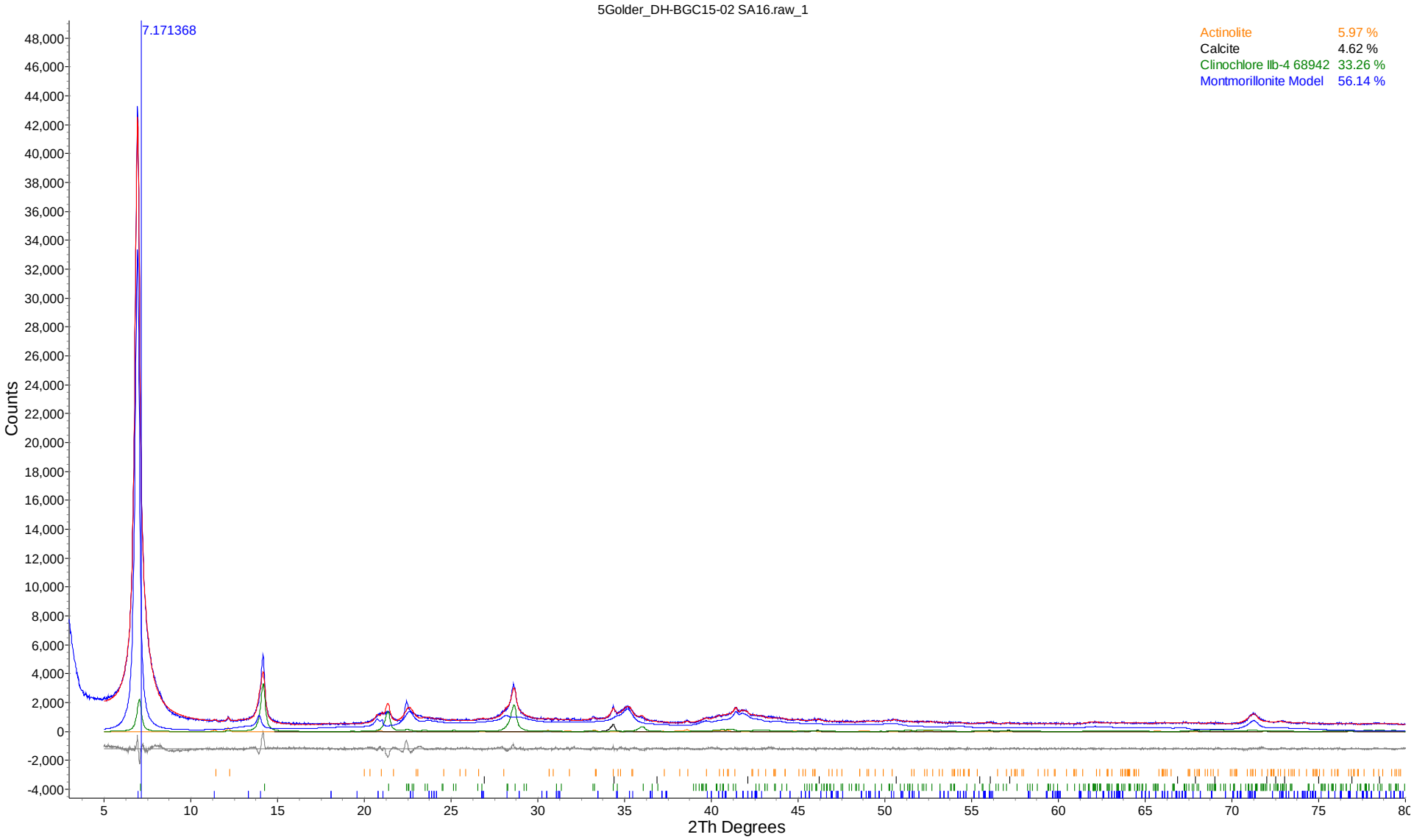
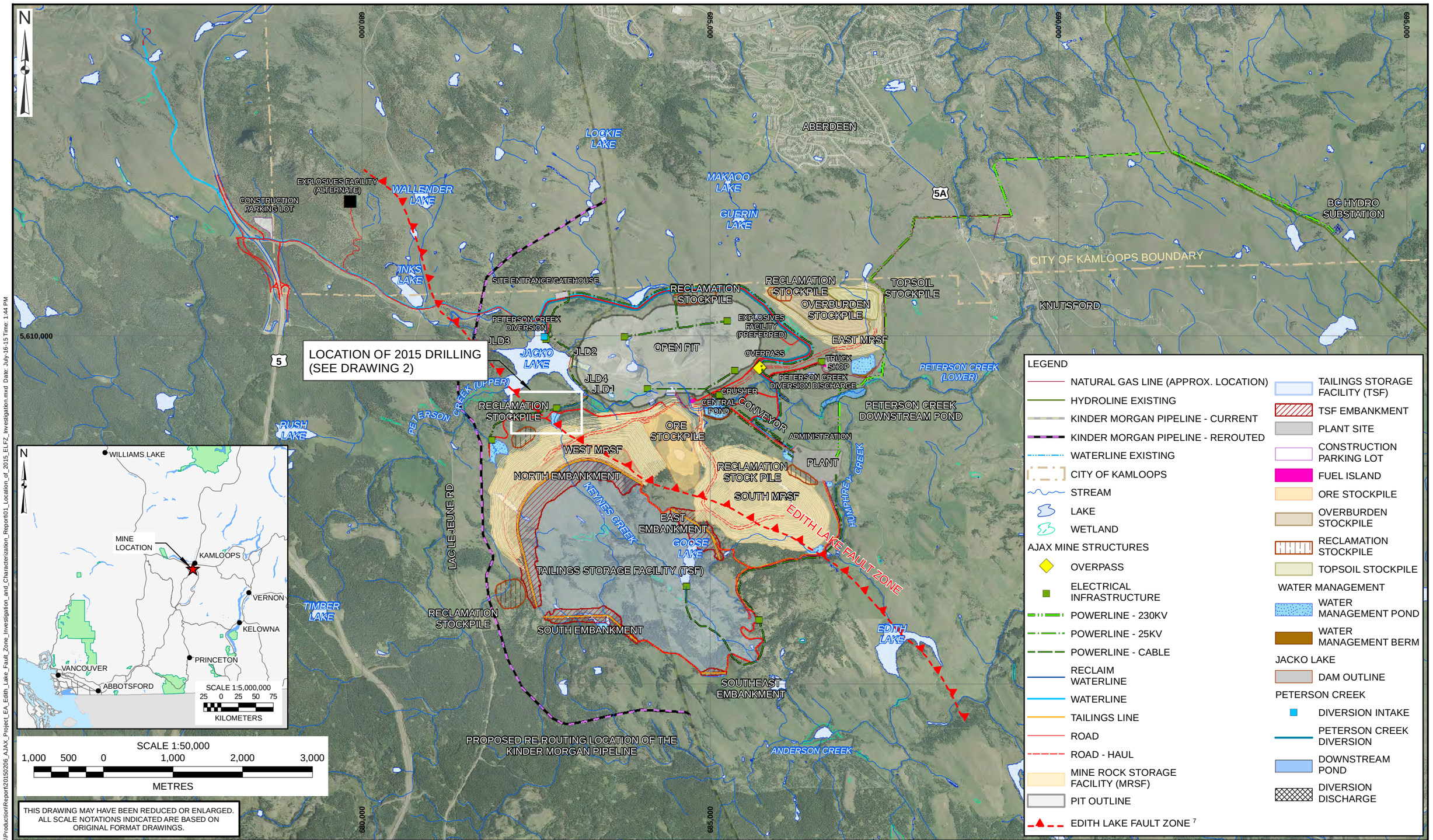


Figure 5. Rietveld refinement plot of sample **5Golder_DH-BGC15-02 SA16** (blue line - observed intensity at each step; red line - calculated pattern; solid grey line below – difference between observed and calculated intensities; vertical bars - positions of all Bragg reflections). Coloured lines are individual diffraction patterns of all phases.

DRAWINGS



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NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED "AJAX PROJECT EA - EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION," AND DATED JULY 2015.
3. GENERAL ARRANGEMENT OF MINE SITE FACILITIES PROVIDED BY KAM ON APRIL 15, 2015.
4. ORTHOPHOTO PROVIDED BY KAM FROM EAGLE MAPPING AERIAL PHOTOGRAPHY DATED JUNE 26, 2006, PUBLISHED SEPTEMBER 29, 2006.
5. INSET BASEMAP FROM ESRI TOPOGRAPHIC BASEMAP.
6. PROJECTION IS NAD 1983 UTM ZONE 10N.
7. EDITH LAKE FAULT TRACE INTERPRETED BY LOGAN AND MIHALYNUK (2006).
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SCALE:	AS SHOWN
DATE:	JUL 2015
DRAWN:	IL, MIB
CHECKED:	JD
APPROVED:	CK

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: KGHM AJAX MINING INC.

PROJECT: AJAX PROJECT EA - EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION

TITLE: LOCATION OF 2015 ELFZ INVESTIGATION

PROJECT No.: 1125-007-07

01

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N

JACKO LAKE

682,250

682,500

682,750

683,000

5,609,000

5,608,750

LTrNap

LTrNps

LTrNfpt

900

925

950

975

EDITH LAKE FAULT ZONE

DH-BGC15-01

DH-BGC15-02

KAX-14-126

KEYNES CREEK

WEST MINE ROCK STORAGE FACILITY

A 02

N

W

E

S

SCALE 1:2,500

30 0 30 60 90

METRES

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LEGEND

FAULT STEREONET [5]

BGC DRILL HOLE

DRILL HOLE TRACE

CONDEMNATION DRILL HOLE

EDITH LAKE FAULT ZONE [6]

LITHOLOGY [6]

LTrNap COARSE AUGITE PORPHRY

LTrNfpt FELDSPAR PYROXENE PORPHYRITIC LAPILLI TUFF

LTrNps SEDIMENTS WITH AUGITE PORPHYRY SOURCE

COMPONENTS OF AJAX MINE

STREAM

INTERMITTENT STREAM

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED "AJAX PROJECT EA – EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION", AND DATED JULY 2015.
3. BASE TOPOGRAPHIC DATA BASED ON LIDAR PROVIDED BY AJAX AIRBORNE IMAGING, DATED APRIL 2013. CONTOUR INTERVAL IS 5 m.
4. PROJECTION IS NAD 1983 UTM ZONE 10N.
5. STEREONET LEGENDS SHOWN ON FIGURES 5 AND 6.
6. EDITH LAKE FAULT TRACE AND GEOLOGY MAPPED BY LOGAN AND MIHALYNUK (2006).
7. NO EXPOSED OUTCROP WAS OBSERVED IN THE CURRENT STUDY AREA.
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SCALE:	1:2,500
DATE:	JUL 2015
DRAWN:	MIB, JVC
CHECKED:	JD
APPROVED:	CK

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: KGHM AJAX MINING INC.

PROJECT: AJAX PROJECT EA – EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION

TITLE: SITE INVESTIGATION OVERVIEW

PROJECT No.:	DWG No:
1125-007-07	02

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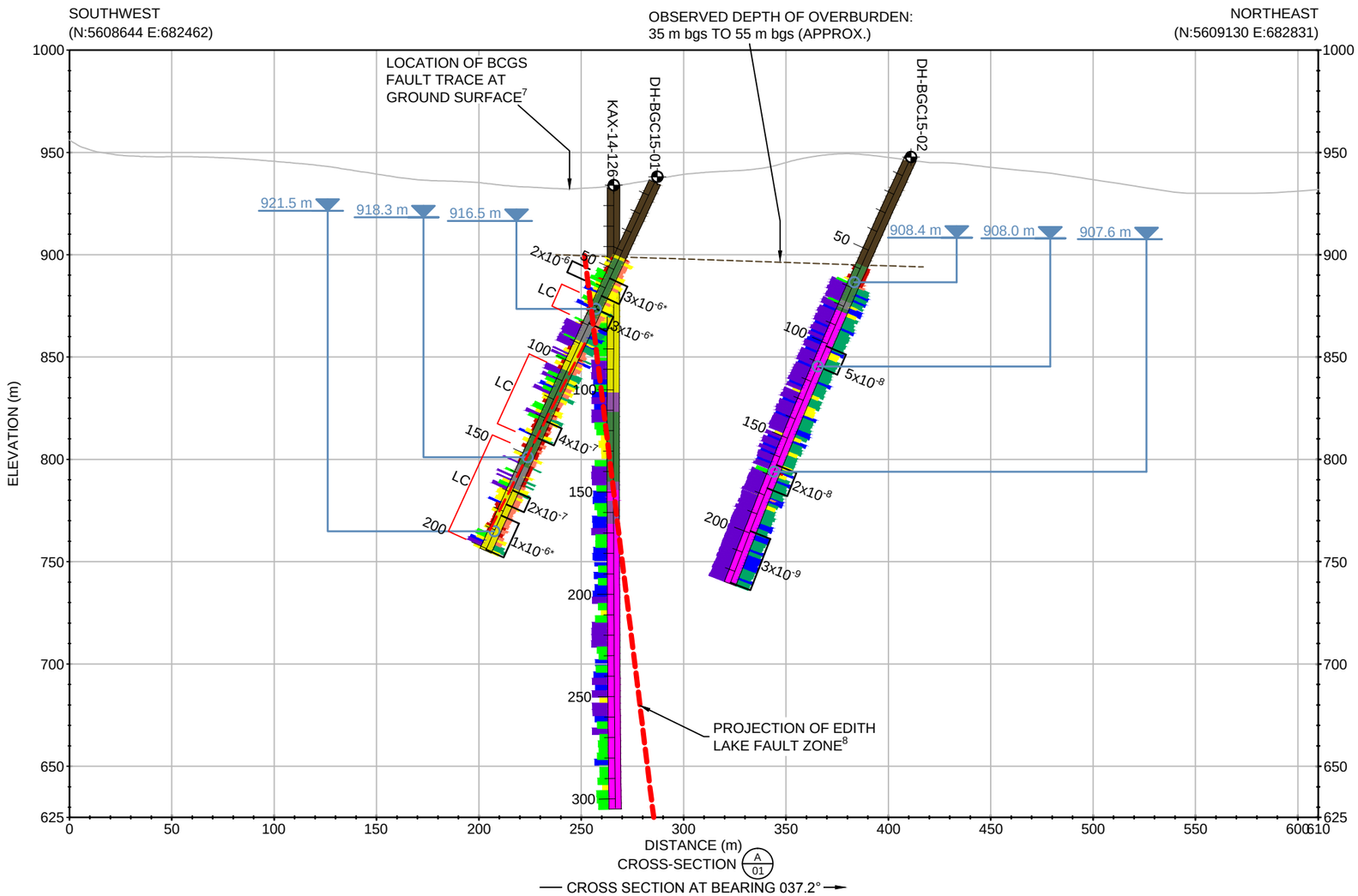

SCALE 1:2,500

25 0 25 50 75

METRES

THIS DRAWING MAY HAVE BEEN REDUCED OR ENLARGED.
ALL SCALE NOTATIONS INDICATED ARE BASED ON
ORIGINAL FORMAT DRAWINGS.

LEGEND

- INTERPRETED FAULT ZONE
- APPROX. DEPTH OF OVERBURDEN
- DRILL HOLE

DRILL HOLE ATTRIBUTES

- VIBRATING WIRE PIEZOMETER
- PIEZOMETRIC HEAD - ON JUNE 17, 2015

PACKER TEST INTERVAL WITH HYDRAULIC CONDUCTIVITY (m/s)

- 3x10-6*

* INDICATES HYDRAULIC CONDUCTIVITY VALUE IS A MINIMUM BOUND ESTIMATE

LOST CIRCULATION

- LC

LITHOLOGY (CENTRE)[5]

- TILL / OVERBURDEN
- SANDSTONE
- MUDSTONE
- PICRITE
- MAFIC VOLCANICS
- VOLCANICLASTIC
- PORPHYRY

RQD PERCENT (LEFT SIDE)

- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 90
- 90 - 100

RMR 1976 (RIGHT SIDE)

- 0 - 20
- 20 - 40
- 40 - 60
- 60 - 80
- 80 - 100

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THIS DRAWING MUST BE READ IN CONJUNCTION WITH BGC'S REPORT TITLED “AJAX PROJECT EA - EDITH LAKE FAULT ZONE INVESTIGATION AND CHARACTERIZATION”, AND DATED JULY 2015.
3. BASE TOPOGRAPHIC DATA BASED ON LIDAR PROVIDED BY KGHM AJAX MINING INC., DATED JUNE 3, 2013.
4. PROJECTION IS NAD83 UTM ZONE 10N.
5. LITHOLOGY BASED ON KGHM GEOLOGY LOGS RECEIVED ON FEBRUARY 24 AND MARCH 17, 2015 (APPENDIX D).
6. REPORTED WATER ELEVATIONS RECORDED ON JUNE 17, 2015 AT 12:00PM.
7. BCGS FAULT TRACE MAPPED BY LOGAN AND MIHALYNUK (2006).
8. INTERPRETATION FROM CURRENT WORK.
9. UNLESS BGC AGREES OTHERWISE IN WRITING, THIS DRAWING SHALL NOT BE MODIFIED OR USED FOR ANY PURPOSE OTHER THAN THE PURPOSE FOR WHICH BGC GENERATED IT. BGC SHALL HAVE NO LIABILITY FOR ANY DAMAGES OR LOSS ARISING IN ANY WAY FROM ANY USE OR MODIFICATION OF THIS DOCUMENT NOT AUTHORIZED BY BGC. ANY USE OF OR RELIANCE UPON THIS DOCUMENT OR ITS CONTENT BY THIRD PARTIES SHALL BE AT SUCH THIRD PARTIES' SOLE RISK.

SCALE:	1:2,500
DATE:	JUL 2015
DRAWN:	WKL
CHECKED:	JD
APPROVED:	CK

BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

CLIENT: KGHM AJAX MINING INC.

PROJECT: AJAX PROJECT EA
EDITH LAKE FAULT ZONE INVESTIGATION
AND CHARACTERIZATION

TITLE: SECTION A

PROJECT No.: 1125-007-07

DWG No.: 03

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