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Abstract

One of the aims of boreholes KLX09B–KLX09F was to connect fracture sets and geological structures between the boreholes. The lithology in all boreholes is dominated by Ävrö granite (501044). Subordinated rock types are fine-grained granite (511058) and fine-grained diorite-gabbro (505102). A spectacular occurrence is sandstone (506007) in two drill cores. The orientation for these sandstone occurrences is roughly 115/75°. The probable origin of this sandstone is loose sand on the bedrock surface which collapsed into steep, deep fractures.

StereoNet plots of all sealed and open fractures indticate a dominating fracture set oriented ~ 325/10° for both fracture types. Mylonites with a varying degree of intensity were found in all drill cores with similar orientation as the main fracture set. Interesting to mention is that as many as 162 fractures, open and sealed, contain fluorite. Fluorite has earlier been found in large amounts in KLX06, located in the vicinity of the DFN drill site.

Another purpose of the drilling was to locate the redox-front in the bedrock, and therefore, special care was taken in observing the first appearance of sulphides. Mainly pyrite was noted, with a first appearance varying from 13–22.7 m depth.

Sammanfattning

Ett av syftena med borrhålen KLX09B–KLX09F var att försöka koppla ihop sprickset och strukturer mellan borrhålen. Litologin i samtliga borrhål domineras av Ävrö granit (501044). Underordnade bergarter är finkornig granit (511058) och finkornig diorit-gabbro (505102). Intressant var att även sandsten påträffades i två borrhål (506007). Ungefärlig orientering för dessa sandstensförekomster är 115/75°. Det troliga ursprunget till dessa sandstenar är sand som fyllt branta och djupa sprickor.

StereoNet plottar av samtliga sprickor, både öppna och läkta, indikerar ett dominerande sprickset med orienteringen ~ 325/10° för båda typerna. Myloniter med varierande intensitet påträffades i samtliga borrkärnor, med samma orientering som det dominerande spricksetet. Intressant att nämna är att det påträffades 162 sprickor, öppna och läkta, som innehåller fluorit. Fluorit har tidigare påträffats i stora mängder i KLX06, som ligger i närheten av borrplatsen för DFN-borrhålen.

Ett annat syfte med borrningarna var att ta reda på var redox-fronten är belägen i berget och därför var det av intresse att notera den första förekomsten av sulfider. Huvudsakligen pyrit påträffades på djup som varierar mellan 13–22.7 m.

Contents

1 Introduction

This report comprises the DFN-boreholes (DFN = Discrete Fracture Network) and consists of the following five boreholes: KLX09B, KLX09C, KLX09D, KLX09E and KLX09F. DFN is a method to create a 3D-model of different fracture sets in a defined volume.

The DFN-boreholes are situated in the northern part of Laxemar area (Figure 1-1). Mapping of the drill cores was performed between 2006-02-14 and 2006-03-16. Table 1-1 shows the orientation of the different boreholes.

Detailed mapping of the drill cores is essential for a three dimensional modelling of the geology at depth. The mapping is based on the use of BIPS-image (Borehole Image Processing System) of the borehole wall and by the study of the drill core itself. The BIPS-image enables the study of orientations, since the Boremap software calculates strike and dip of planar features such as foliations, rock contacts and fractures.

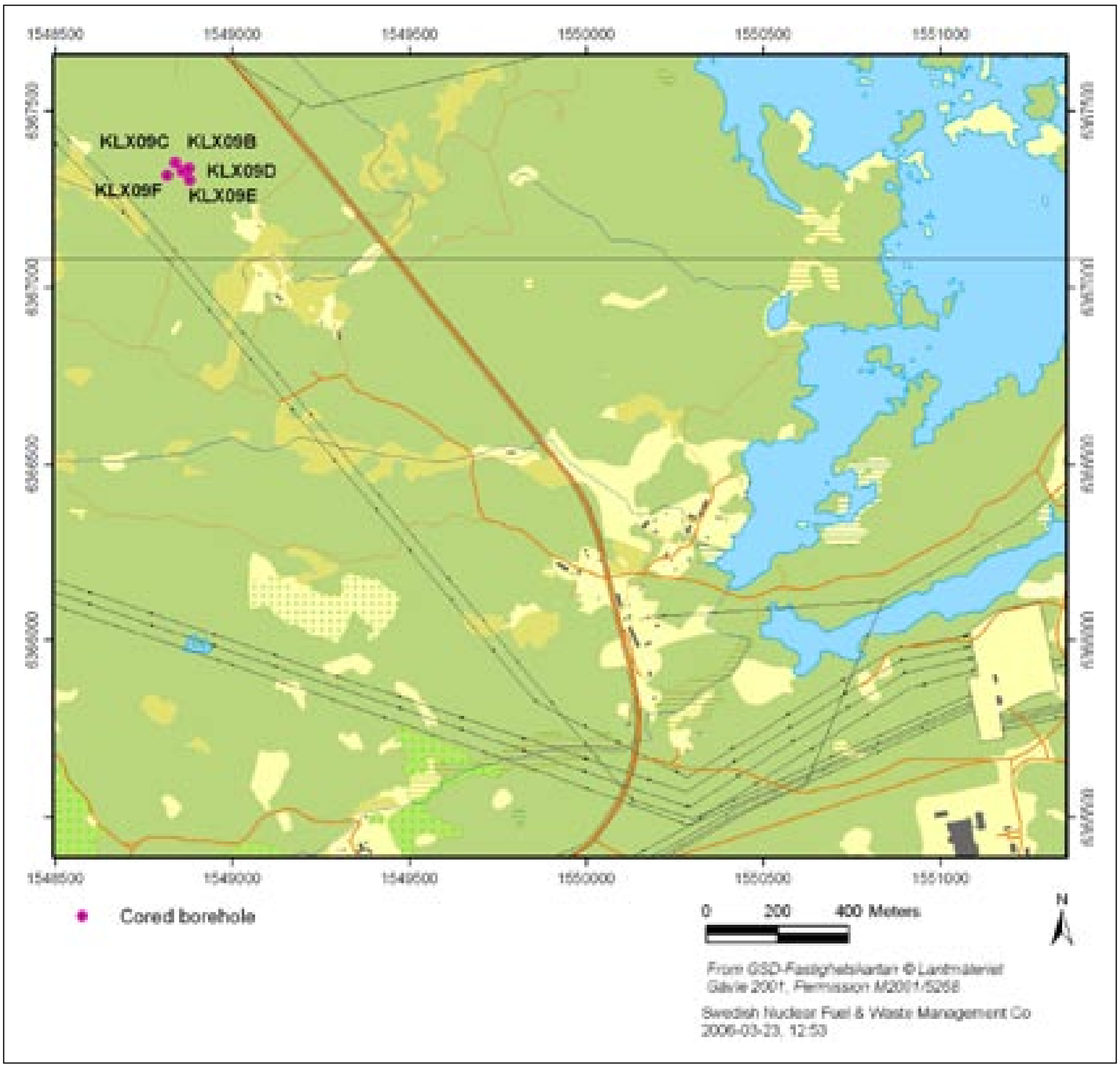


Figure 1-1. *Location of the core drilled DFN boreholes.*

Table 1-1. Orientation of the DFN boreholes.

Borehole	Bearing (°)	Inclination (°)	Length (m)
KLX09B	021.2	–89.5	~98
KLX09C	160.4	–58.7	~120
KLX09D	270.1	–59.6	~121
KLX09E	338.9	–59.9	~120
KLX09F	091.0	–59.0	~156

The work was carried out in accordance with Activity Plan AP PS 400-06-019. In Table 1-2 controlling documents for performing this activity are listed. Both Activity Plan and Method Descriptions are SKB's internal controlling documents. Rock type nomenclature that has been used is shown in Table 1-3.

The term *oxidation* has been used as an alteration type until the mapping of KLX05. However, research has shown that the red colour of the bedrock is actually not only a result of oxidation. Since April 2005 the term *red staining* is used instead of the term *oxidation.*

Table 1-2. Controlling documents for the performance of the activity.

Activity Plan	Number	Version
Boremapkartering av KLX09B, KLX09C, KLX09D, KLX09E och KLX09F	AP PS 400-06-019	1.0
Method Descriptions	**Number**	**Version**
Nomenklatur vid Boremapkartering	SKB MD 143.008	1.0
Method Description for Boremap mapping	SKB MD 143.006	2.0
Mätsystembeskrivning för Boremap	SKB MD 146.005	1.0
Instruktion: Regler för bergarters benämningar vid platsundersökning i Oskarshamn	SKB MD 132.004	1.0
Instruktion för längdkalibrering vid undersökningar i kärnborrhål	SKB MD 620.010	2.0

Table 1-3. Rock type nomenclature for the site investigation at Oskarshamn.

Rock type	Rock code	Rock description
Dolerite	501027	Dolerite
Fine-grained Götemar granite	531058	Granite, fine-to medium-grained, ("Götemar granite")
Coarse-grained Götemar granite	521058	Granite, coarse-grained, ("Götemar granite")
Fine-grained granite	511058	Granite, fine-to medium-grained
Pegmatite	501061	Pegmatite
Granite	501058	Granite, medium- to coarse-grained
Ävrö granite	501044	Granite to quartz monzodiorite, generally porphyritic
Quartz monzodiorite	501036	Quartz monzonite to monzodiorite, equigranular to weakly porphyritic
Diorite/gabbro	501033	Diorite to gabbro
Fine-grained dioritoid	501030	Intermediate magmatic rock
Fine-grained diorite-gabbro	505102	Mafic rock, fine-grained
Sulphide mineralization	509010	Sulphide mineralization
Sandstone	506007	Sandstone

2 Objective and scope

The main purpose of the DFN-boreholes is to enhance the knowledge about geological properties such as frequency and orientation of structures and fractures in sub-surface/near surface bedrock in the Laxemar area.

Special attention has been paid to the first occurrence of sulphides in the different drill cores, because it may provide hint as to where the redox-front is located in the bedrock.

3 Equipment

3.1 Description of software

Software used for the mapping was Boremap v.3.7, with bedrock and mineral standards of SKB. The data presentation was made using StereoNet, WellCad v.4, Microsoft Access and Microsoft Excel. Boremap is the software that unites orthodox core mapping with modern video mapping, where Boremap shows the image from BIPS (Borehole Image Processing System) and extracts the geometrical parameters: length, width, strike and dip from the image.

3.2 Other equipment

The following equipment is used to facilitate the core mapping: folding rule and pen, diluted hydrochloric acid, knife, water-filled atomiser and hand lens.

3.3 BIPS-image video film sequences

Table 3-1. BIPS-image length.

Borehole	Length (m)
KLX09B	10.000–99.984
KLX09C	9.000–118.824
KLX09D	9.000–119.720
KLX09E	8.000–119.872
KLX09F	8.000–151.360

3.4 BIPS-image video film quality

The visibility of thin fractures in BIPS depends on image resolution, image contrast and image quality.

3.4.1 BIPS-image resolution

Resolution of the BIPS-image is perhaps the principal reason why very thin fractures as well as very thin apertures are not visible in the BIPS-image and the resolution depends on the BIPS video camera pixel size and illumination angle.

3.4.2 BIPS-image contrast

Thick fractures are always visible in both drill core and the BIPS-image. However, the visibility of thin fractures depends strongly on the contrast between the fracture and the wall rock.
A bright fracture in a dark rock is clearly visible in the BIPS-image. But a bright coloured fracture in a light coloured rock might, however, be clearly visible in the drill core but not visible in the BIPS-image, especially if the fracture and wall rock have the same colour. The opposite is true for dark fractures.

In very rare cases when the BIPS-image contrast between a very thin fracture and the wall rock is very strong the fracture might be visible in the BIPS-image even if it is not visible in the drill core.

3.4.3 BIPS-image quality

BIPS-image quality is sometimes limited due to:

1) blackish coatings probably related to the drilling equipment,
2) vertical bleached bands from the clayey mixture of drill cuttings and water,
3) light and dark bands at high angle to the drill hole related to the automatic aperture of the video camera,
4) vertical enlargements of pixels due to stick-slip movement of the camera probe.

Vertical bleached bands and blackish coatings are usually the main disturbances in the BIPS-image quality.

The image quality is classified into four levels; good, acceptable, bad and very bad. Good quality means a more or less clear image which is easy to interpret. If the quality is acceptable it means that the image is not good, but that the mapping can be performed without any problems. An image of bad quality is somewhat difficult to interpret while an image of very bad quality cannot be interpreted except from very obvious and outstanding features. It should be remembered that even if only 10–20% of the image is visible, this is often enough for an acceptable interpretation. When the BIPS-image quality is so bad that fractures and structures cannot be identified they can still be oriented using the *guide-line method* (Section 4.3.3). The BIPS-image quality for the DFN-boreholes is presented in Table 3-2.

Table 3-2. BIPS-image quality.

Borehole	Interval (m)	Quality
KLX09B	0–11.00	No image
	11.00–82.00	Good
	82.00–99.80	Bad
KLX09C	0–9.00	No image
	9.00–117.00	Acceptable
KLX09D	0–10.00	No image
	10.00–15.00	Good
	15.00–119.40	Acceptable
KLX09E	0–9.00	No image
	9.00–119.80	Acceptable
KLX09F	0–9.00	No image
	9.00–15.00	Good
	15.00–151.20	Acceptable

4 Execution

4.1 General

Mapping of the drill core of the telescopic drilled borehole was performed and documented according to Activity Plan AP PS 400-06-019 (SKB, internal document) referring to the *Method Description for Boremap mapping* (SKB MD 143.006, v.2.0), *Nomenklatur vid Boremapkartering* (SKB MD 143.008, v.1.0), *Instruktion: Regler för bergarters benämningar vid platsundersökningen i Oskarshamn* (SKB MD 132.004, v.1.0) and *Instruktion för längd-kalibrering vid undersökningar i kärnborrhål* (SKB MD 620.010, v.2.0), all of them SKB internal documents.

The drill core was displayed on inclined roller tables and mapped in its entire length with the Boremap software. The core mapping was carried out without any detailed geological knowledge of the area but with access to geophysical logs from the borehole and rock samples.

The mapping was performed by Peter Dahlin and Karl-Johan Mattsson (Geosigma AB).

4.2 Preparations

Any depth registered in the BIPS-image deviates from the true depth in the borehole, a deviation which increases with depth, about 0.5 m/100 m. This problem is usually eliminated by adjusting the depth of the BIPS-image to reference slots cut into the borehole walls every fiftieth meter, but the DFN-boreholes lack these reference marks.

Necessary data adjustment is borehole diameter, reference marks, length and deviation; both collected from SICADA database (Appendices 6 and 7). The Boremap software uses all the data extracted from SICADA database to calculate the true orientations of the different observations.

4.3 Execution of measurements

Concepts used during the core mapping, are defined in this chapter.

4.3.1 Fracture definitions

Definitions of different fracture types and aperture, crush zones and sealed fracture network are found in *Nomenklatur vid Boremapkartering* (SKB MD 143.008, v.1.0), SKB internal document. Apertures for broken fractures have been mapped in accordance with the definitions in MD 143.008 v.1.0.

Two types of fractures are mapped in Boremap; broken and unbroken. Broken are fractures that split the core while unbroken fractures do not split the core. All fractures are described with their fracture minerals and other characteristics, e.g. width, aperture and roughness. Visible apertures are measured down to 1 mm in the BIPS-image. Smaller apertures, which are impossible to detect in the BIPS-image, are denoted a value of 0.5 mm. If the core pieces don't fit well, the aperture is considered "probable". If the core pieces do fit well, but the fracture surfaces are dull or altered, the aperture is considered "possible".

All fractures with apertures > 0 mm are treated as open in the SICADA database. Only few broken fractures are given the aperture = 0 mm. Unbroken fractures usually have apertures = 0 mm. Unbroken fractures that have apertures > 0 mm are interpreted as partly open and are included in the open-category. Open and sealed fractures are finally frequency calculated and shown in Appendix 1.

4.3.2 Fracture alteration and joint alteration number

Joint alteration number is principally related to the thickness of, and the clay content in a fracture. Thick fractures rich in clay minerals are given joint alteration numbers between 2 and 3. The majority of the broken fractures are very thin to extremely thin and seldom contain clay minerals. These fractures receive joint alteration numbers between 1 and 2.

A subdivision of fractures with joint alteration numbers between 1 and 2 was introduced to facilitate both the evaluation process for fracture alterations and the possibility to compare the alterations between different fractures in the boreholes. The subdivision is based on fracture mineralogy as follows:

a) fracture wall alterations,

b) fracture mineral fillings assumed to have been deposited from circulating water-rich solutions,

c) fracture mineral fillings most likely resulting from altered wall rock material.

Joint alteration number equal to 1: Fractures with or without wall rock alteration, e.g. oxidation or epidotization, and without mineral fillings is considered as fresh. The joint alteration number is thus set to 1.

Minerals such as calcite, quartz, fluorite, zeolites, laumontite and sulphides are regarded as deposited by circulating water-rich solutions and not as true fracture alteration minerals. The joint alteration number is thus set to 1.

Joint alteration number equal to 1.5: Epidote, prehnite, hematite, chlorite and/or clay minerals are regarded as fracture minerals most likely resulting from altered wall rock. A weak alteration is thus assumed and the joint alteration number was set to 1.5. Extra considerations have been given to clay minerals since the occurrence of these minerals often resulted in a higher joint alteration number.

Joint alteration numbers higher than 1.5: When the mineral fillings is thick and contain a few mm of clay minerals, often together with epidote and chlorite, the joint alteration number is set to 2. In rare cases, when a fracture contains 5–10 mm thick clay, together with chlorite, the joint alteration number is set to 3.

When the alteration of a fracture is too thick (and/or intense) to give the fracture the joint alteration number 1.5 and too thin and/or weak to give it a 2, 1.7 and 1.8 is used.

4.3.3 Mapping of fractures not visible in the BIPS-image

Not all fractures are visible in the BIPS-images, and these fractures are orientated by using the *guide-line method*, based on the following data:

- Amplitude (measured along the drill core) which is the interval between fracture extremes along the drill core.
- The relation between the orientations of the fracture trace, measured on the drill core and a well defined structure visible in the BIPS-image.
- Absolute depth.

Orientation of fractures and other structures with the *guide-line method* is done in the following way: The first step is to calculate the amplitude of the fracture trace in the BIPS-image (with 76 mm diameter) from the measured fracture amplitude in the drill core (with 50 mm diameter). The second step is the correction of strike and dip. This is done by rotating the fracture trace in the BIPS-image relative to a feature with known orientation. The fracture trace is then put at the correct depth according to the depth measured on the drill core.

The *guide-line method* can be used to orientate any feature that is not visible in the BIPS-image. It is also a valuable tool to control that the personnel working with the drill core is observing the same feature as the personnel delineating the trace in the BIPS-image, especially in intervals rich in fractures.

The error of orientating fractures using the *guide-line method* is not known but experience and an estimation using stereographic plots indicated that the error is most likely insignificant. Accordingly, the *guide-line method* is so far considered better than mapping lots of non-oriented fractures. The fractures in question are mapped as “non-visible in BIPS” and can therefore be separated from fractures visible in BIPS which probably have a more accurate orientation.

4.3.4 Definition of veins and dikes

Rock occurrence is the way Boremap handles the occurrence of lithology up to 1 meter wide. Chiefly two different rock occurrences are mapped: veins and dikes. These two are separated by their respectively length in the drill core; veins are set to 0–20 cm and dikes are set to 20–100 cm. Rock occurrences that covers more than 100 cm of the drill core are mapped under the feature *rock type.*

4.3.5 Mineral codes

In the case where properties and/or minerals are not represented in the mineral list, following mineral codes have been used:

X5 Bleached fracture walls.

X7 Broken fracture with a fresh appearance and no mineral fill.

X8 Fractures with epidotized/saussuritized walls.

X9 Weathered appearence.

4.4 Data handling

Mapping of the drill core is performed on-line on the SKB network, in order to obtain the best possible data security. Before every break (> 15 minutes) a back-up is saved on the local disk. As a regular quality check every working day a Summary report (from Boremap) and a WellCad plot is printed in order to find possible misprints. The mapping is also quality checked by a routine in Boremap before it is exported to and archived in SICADA database. Personnel from SKB also perform spot test controls and regular quality revisions. All primary data is stored in SKB’s database SICADA and only these data are later used for interpretation and modelling.

4.5 Geological summary table, general description

A Geological summary table (Appendix 1) is an overview of the features mapped with the Boremap software. It also facilitates comparisons between Boremap information collected from different boreholes and is more objective than a pure descriptive borehole summary. The table is the result of cooperation between Jan Ehrenborg from the mapping personnel and Pär Kinnbom from PO (site investigation, Oskarshamn). The aim was to make a standard form in handy A4-size, where all information is taken directly from the Boremap database using simple and well defined search paths for each geological parameter (Appendix 2).

Data from the Boremap database cannot automatically be extracted into the Geological summary table. First the data has to be sorted out and frequencies in the different column must be calculated in Microsoft Excel. WellCad is used to create the Geological summary table from the frequency calculations of mapped features. From the Boremap database the data to the non-frequency columns are retrieved, i.e. lithology and red staining.

The Geological summary table consists of 23 columns, each one representing a specific geological parameter, presented as either intervals or frequencies (see Section 4.5.1 for column description). Intervals are calculated for parameters with a width ≥ 1 m and frequencies for parameters with a width < 1 m. Frequency information is treated as point observations. It should be noted that parameters with a thickness of only 1 mm get the same "value" as a similar parameter with a thickness of 999 mm since both are treated as point observations and used for frequency calculations.

Parameters are sometimes related in such a way that the mapping of one parameter cause a decrease in the frequency of another parameter. This type of intimate relationship between parameters has been noted for the following cases;

- There is a decrease in the frequency of *unbroken fractures* with oxidised walls and without mineral fillings in intervals mapped with *Alteration – red staining.*
- No *unbroken fractures* are mapped in intervals of *sealed fracture network*.
- No *broken fractures* are mapped in intervals with *crush.*
- Hybrid rock and composite dikes generally include a large amount of fine to medium grained granite veins. These veins are not mapped and the frequency presented for veins + dikes in column 6 (Appendix 1) are lower than the true frequency in composite dike intervals.

4.5.1 Columns in the Geological summary table

The Geological summary table includes the following 23 columns:

Column 1: *Rock type/Lithology*, interval column. Only lithologies longer than 1 m are presented here. Shorter lithologies are presented in column 6. This column is identical with the ordinary WellCad presentation.

Column 2: *Rock type/Grain size*, interval column. Interval limits follows column 1. This column is identical with the ordinary WellCad presentation.

Column 3: *Rock type/Texture*, interval column. Interval limits follows column 1. This column is identical with the ordinary WellCad presentation.

Column 4: *Alteration/Type*, interval column. No frequency column is presented for alteration/type. The alteration/type column is identical with the ordinary WellCad presentation.

Column 5: *Alteration/intensity*, interval column. This column is identical with the ordinary WellCad presentation.

Column 6: *Rock occurrence/Veins + Dikes < 1 m wide*, frequency column. This rock type column can be seen as the frequency complement to the rock type/lithology interval column. Only rock type sections that are thinner than 1 m can be described as rock occurrences in Boremap. Thicker rock type sections are mapped as rock type.

Column 7: *Structure/Shear zone < 1 m wide*, frequency column. This column includes ductile shear structures as well as brittle-ductile shear structures and these are mapped as rock occurrences in Boremap. Ductile sections in mm – cm scale are mapped as shear structures and in dm – m scale as sections with foliation in column 12.

Column 8: *Structure/Brecciated < 1 m wide*, frequency column. Breccias < 1 m wide are mapped as rock occurrence in Boremap. Very thin micro breccias along sealed/natural fracture planes are generally not considered.

Column 9: *Structure/Brecciated ≥ 1 m wide*, interval column. Breccias > 1 m wide are mapped as rock type/structure in Boremap.

Column 10: *Structure/Mylonite < 1 m wide*, frequency column. Mylonites < 1 m wide are mapped as rock occurrence/structure in Boremap.

Column 11: *Structure/Mylonite ≥ 1 m wide* is an interval column. Mylonites > 1 m wide are mapped as rock type/structure in Boremap.

Column 12: *Structure/Foliated < 1 m wide* is a frequency column. Sections with foliation < 1 m wide are mapped as rock occurrence/structure in Boremap. Very thin sections with foliation are called ductile shear structures and presented in column 7.

Column 13: *Structure/Foliated ≥ 1 m wide* is an interval column. Sections with foliation ≥ 1 m wide are mapped as rock type/structure in Boremap.

Column 14: *Sealed fractures/All*, frequency column. This column includes all fractures mapped as unbroken in the Boremap system and this includes unbroken fractures where the drill core is not broken as well as unbroken fractures interpreted to have broken up artificially during/after drilling.

Column 15: *Sealed fractures/Broken fractures with aperture = 0*, frequency column. This column includes unbroken fractures interpreted to have broken up artificially during/after drilling.

Column 16: *Sealed fractures/Sealed fracture network < 1 m wide*, frequency column. The sealed fracture network parameter is the only parameter that is generally evaluated directly from observations of the drill core. These types of sealed fractures can only in rare cases be observed in the BIPS-image.

Column 17: *Sealed fractures/Sealed fracture network ≥ 1 m wide*, interval column.

Column 18: *Open fractures/All Apertures > 0*, frequency column. This column includes all broken fractures, both fractures that with certainty were open before drilling and fractures that probably or possibly were open before drilling.

Column 19: *Open fractures/Uncertain Aperture = 0.5 probable + 0.5 possible*, frequency column. This column includes fractures that probably or possibly open before drilling.

Column 20: *Open fractures/Certain Aperture = 0.5 and > 0.5*, frequency column. This column includes fractures that with certainty were open before drilling.

Column 21: *Open fractures/Joint alteration > 1.5*, frequency column. This column show fractures with stronger joint alteration than normal. This parameter is generally correlated with the location of lithologies with a more weathered appearance.

Column 22: *Open fractures/Crush < 1 m wide*, frequency column. This column includes shorter sections with crush.

Column 23: *Open fractures/Crush ≥ 1 m wide*, interval column. This column includes longer sections with crush.

4.6 Nonconformities

Due to the lack of reference marks for length adjustments recorded length from the BIPS-logging was used.

The uppermost part of the drill core is not covered by a BIPS image. In these intervals only broken fractures and rock types were mapped, and the mapped features are not oriented.

5 Results

5.1 General

All results from the mapping are principally found in the appendices. Information from the SICADA database is shown in the Geological summary tables in Appendix 1 and as WellCad diagrams in Appendix 4. BIPS-images are presented in Appendix 3. Search paths to Geological summary table are presented in Appendix 2 and In-data, such as borehole length, deviation data and diameter are presented in Appendices 6 and 7.

Original data from the reported activity are stored in the primary database SICADA. Data are traceable in SICADA by the Activity Plan number (AP PS 400-06-019). Only data in databases are accepted for further interpretation and modelling. The data presented in this report are regarded as copies of the original data. Data in the databases may be revised, if needed. Such revisions will not necessarily result in a revision of the P-report, although the normal procedure is that major revisions entail a revision of the P-report. Minor revisions are normally presented as supplements, available at www.skb.se.

The DFN-boreholes vary between 100 m and 156 m in length and Table 5-1 shows the exact lengths of each drill core.

5.2 Lithology and structures

The lithology is dominated by Ävrö granite (501044) in all five boreholes, varying from 89% to 94%. The remaining 5–10% is mostly made up of fine-grained granite (511058) and fine-grained diorite-gabbro (505102). KLX09F and KLX09C contain thin intervals of sandstone (506007). The occurrences were 7.2 cm long in KLX09C and 6.5 cm long in KLX09F. These rock occurrences are situated at ~ 117 m length in KLX09C with orientation 107/70°, and at ~ 113 m length in KLX09F, oriented 125/84°. Table 5-2 shows the documented rock types.

Wide sections ranging from 1 m to 10 m with mylonite occurs in all five drill cores. 29 thin mylonites with varying intensity were mapped and plotted in Figure 5-1. The plot shows a dominating orientation of 290/15°.

Table 5-1. Length of the DFN-boreholes.

Borehole	Length (m)
KLX09B	2.48–100.20
KLX09C	0.00–120.05
KLX09D	0.00–121.09
KLX09E	0.00–120.00
KLX09F	0.30–156.00

Table 5-2. Lithology distribution in the DFN-boreholes.

Rock type	KLX09B (%)	KLX09C (%)	KLX09D (%)	KLX09E (%)	KLX09F (%)
Ävrö granite (501044)	93.3	94.3	94.4	92.8	89.3
Fine-grained granite (511058)	3.9	5.7	1.1	1.1	1.0
Fine-grained diorite-gabbro (505102)	2.8	–	3.6	6.2	3.8
Granite (501058)	–	–	–	–	5.2

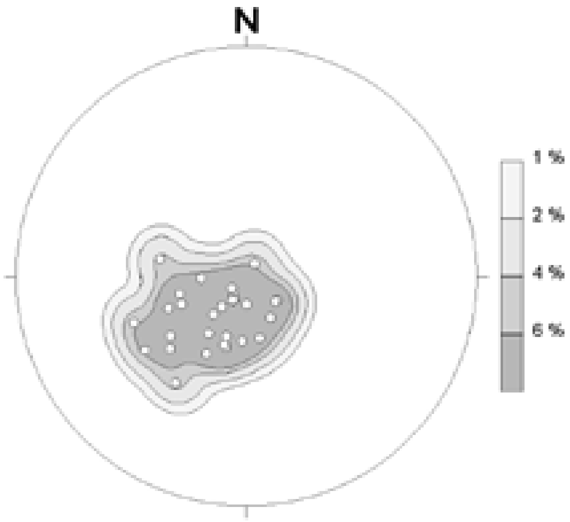


Figure 5-1. Lower hemisphere stereographic projections showing poles to thin Mylonite bands, n=28.

5.3 Fracture mineralogy and orientation

The mineralogy in sealed fractures is dominated by calcite and chlorite, and to a lesser extent by hematite. In KLX09F a dark red to brown mineral filling is common, between 9.5–12.1 m, consisting of adularia, chlorite and hematite. Fluorite, which is generally a rare mineral in Laxemar, is common in all DFN boreholes (especially in KLX09B) and usually occurs together with muscovite and calcite. This mineral mixture is similar to the one that was found in KLX06. Figure 5-3 shows all fluorite filled fractures with a dominating orientation of 330/10°. Fluorite-bearing fractures usually occur in association with an alteration that has been mapped as saussuritization and more rarely as silicification. In the uppermost part of the boreholes, to about 10 m length, open fractures often lacked any visible mineral but had a weathered appearance, mapped as X9.

Open fractures have one dominating fracture set oriented 325/10 and sealed fractures have one dominating fracture set oriented 325/10 and one minor fracture set striking WSW-ENE and dipping vertically, (Figure 5-2). The first appearance of sulphides that may provide information as to depth of the redox-front is listed in Table 5-5.

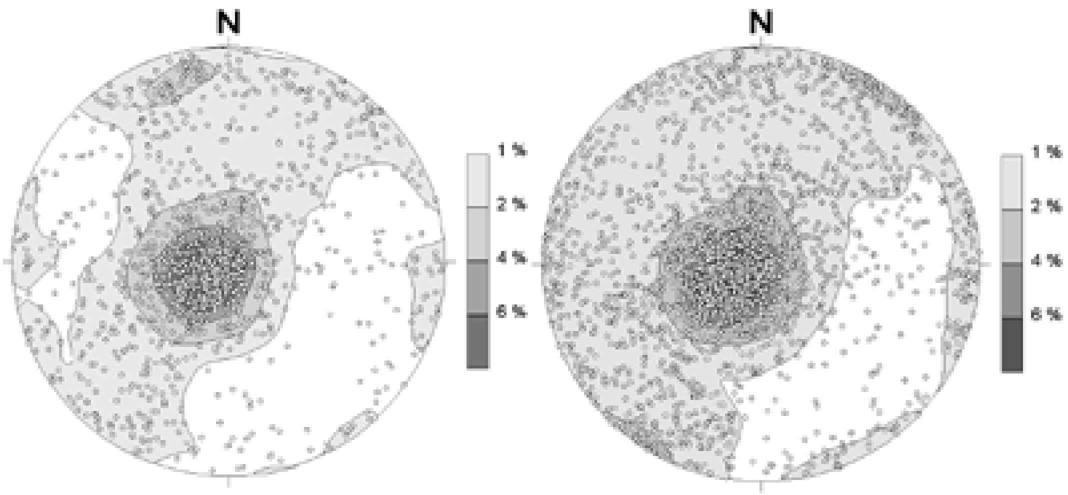


Figure 5-2. Lower hemisphere stereographic projections showing poles to fractures. Left – All open fractures, n=1,375. Right – All sealed fractures n=2,813.

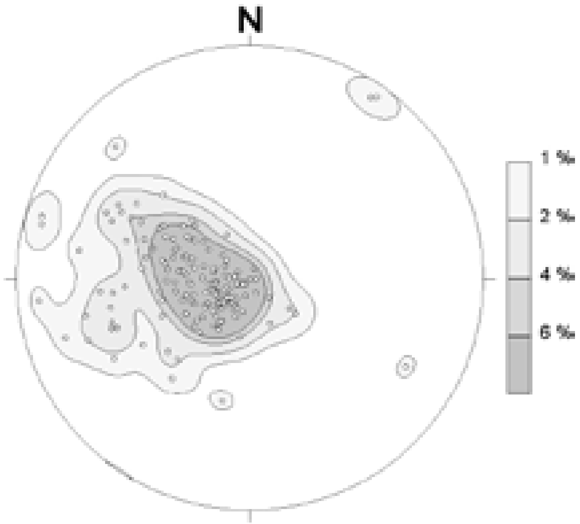


Figure 5-3. *Lower hemisphere stereographic projections showing poles to fractures. All fluorite bearing fractures in the DFN drill cores, n=161.*

Calcite and chlorite dominates the mineralogy in open fractures. Secondary is clay minerals, pyrite and hematite. Especially in KLX09F there are lots of documented fractures with clay minerals. Fluorite is common in open fractures, especially in KLX09B. Table 5-3 shows the mineralogy in sealed fractures and Table 5-4 shows the mineralogy in open fractures.

Table 5-3. Minerals and rock wall alteration in sealed fractures in the DFN-boreholes.

Mineral	KLX09B (%)	KLX09C (%)	KLX09D (%)	KLX09E (%)	KLX09F (%)
Calcite	56	55	62	57	49
Oxidized walls	48	62	49	47	41
Chlorite	32	31	35	36	44
Hematite	17	26	23	20	26
Epidote	13	9	18	19	8
Quartz	12	5	6	9	9
Fluorite	11	5	5	4	4
Prehnite	10	5	3	4	6
White feldspar	6	6	5	7	6
Muscovite	5	2	2	3	3
Adularia	4	5	3	6	13
Pyrite	3	2	1	2	3
Clay minerals	1	0	1	1	0
Laumontite	1	0	1	0	3
X8	1	1	0	3	0
X5	1	1	0	1	1
X7	1	0	1	0	0
Iron hydroxide	0	0	0	0	1

Table 5-4. Minerals and rock wall alteration in open fractures in the DFN-boreholes.

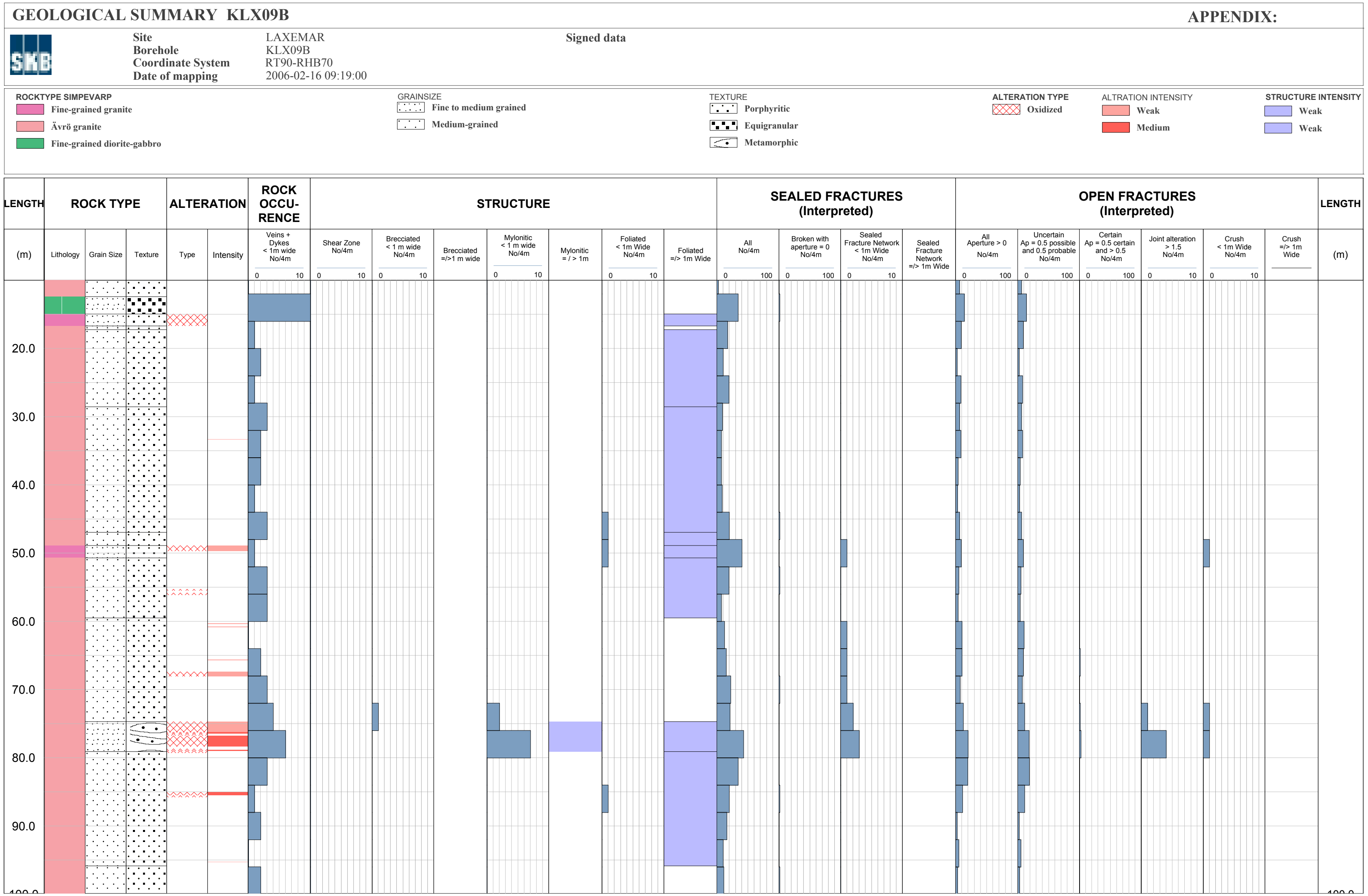
Mineral	KLX09B (%)	KLX09C (%)	KLX09D (%)	KLX09E (%)	KLX09F (%)
Calcite	89	79	82	88	88
Chlorite	77	70	78	76	79
Pyrite	24	20	16	14	22
Hematite	22	32	29	26	36
Clay minerals	18	19	22	17	38
Oxidized walls	12	11	12	12	6
Fluorite	9	4	4	3	2
Epidote	7	9	6	12	3
X7	2	4	1	3	1
Laumontite	1	3	3	4	4
Iron hydroxide	1	1	1	1	2
Muscovite	1	2	1	2	2
Quartz	1	1	0	1	1
Chalcopyrite	1	0	0	0	0
Adularia	0	1	0	3	3
Prehnite	0	3	1	0	0

Table 5-5. First appearance of pyrite.

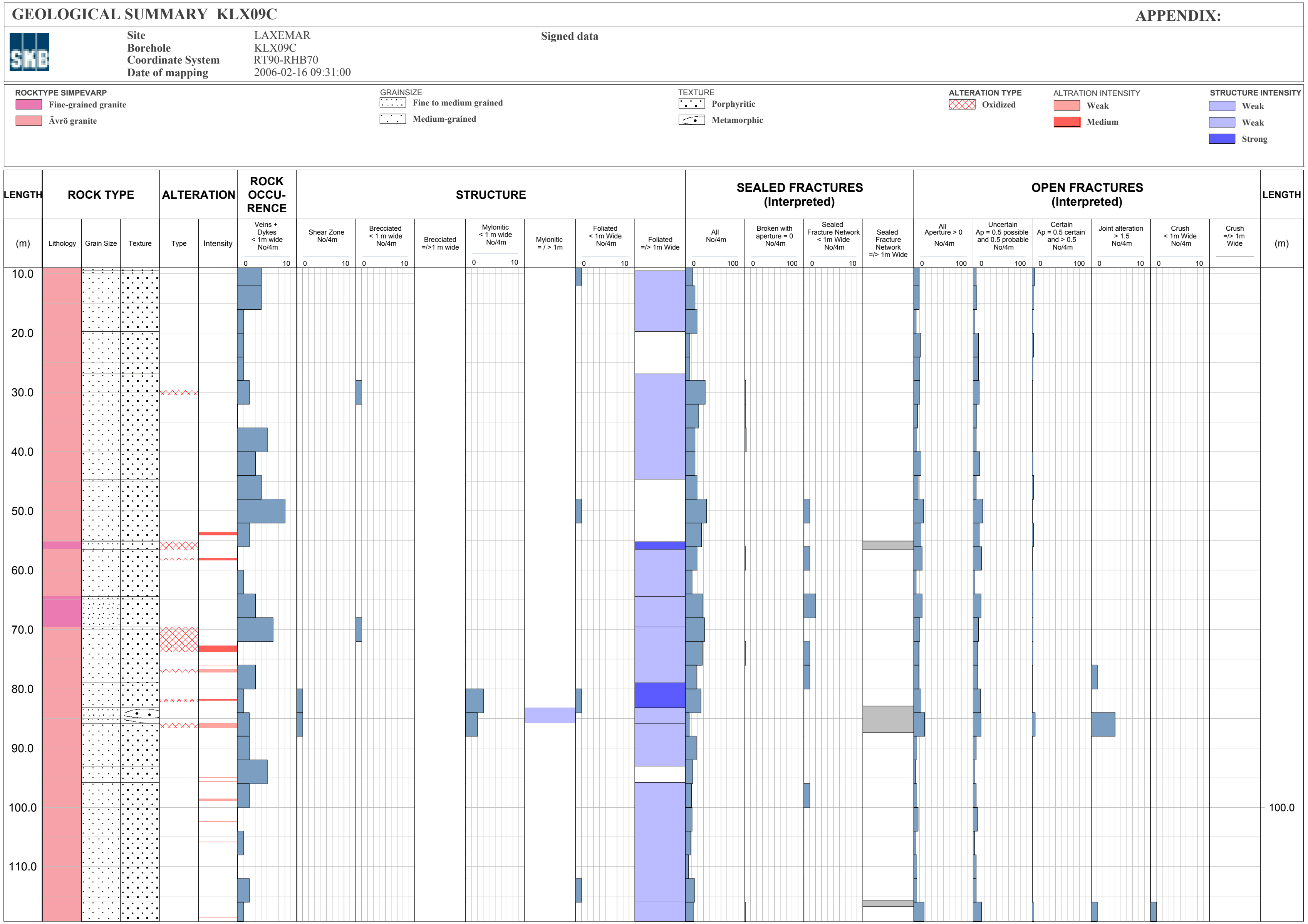
Borehole	Length (m)	Depth (m)
KLX09B	12.97	12.97
KLX09C	29.75	22.66
KLX09D	19.91	15.16
KLX09E	29.39	22.38
KLX09F	17.51	13.34

Appendix 1

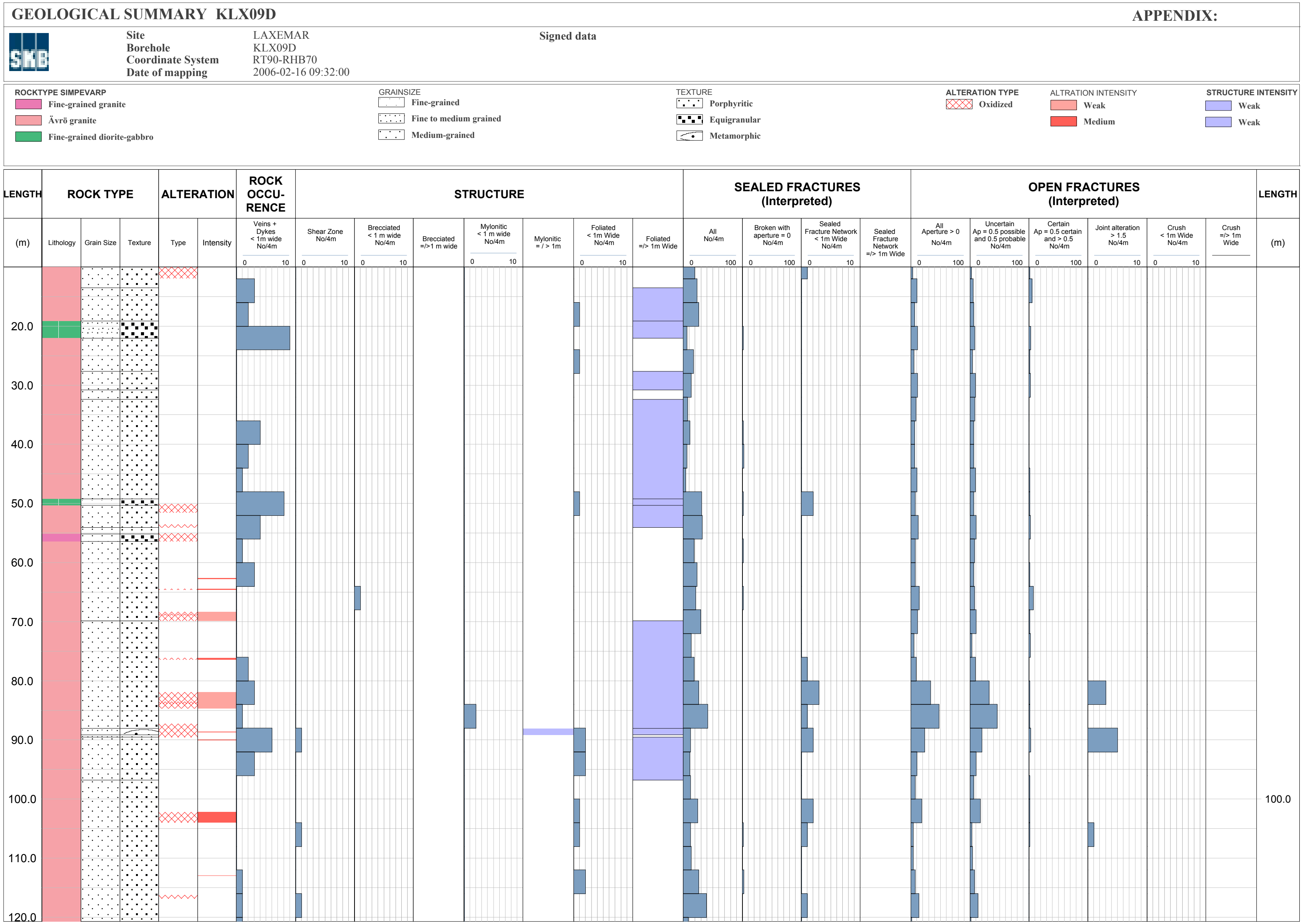
A: Geological summary table KLX09B



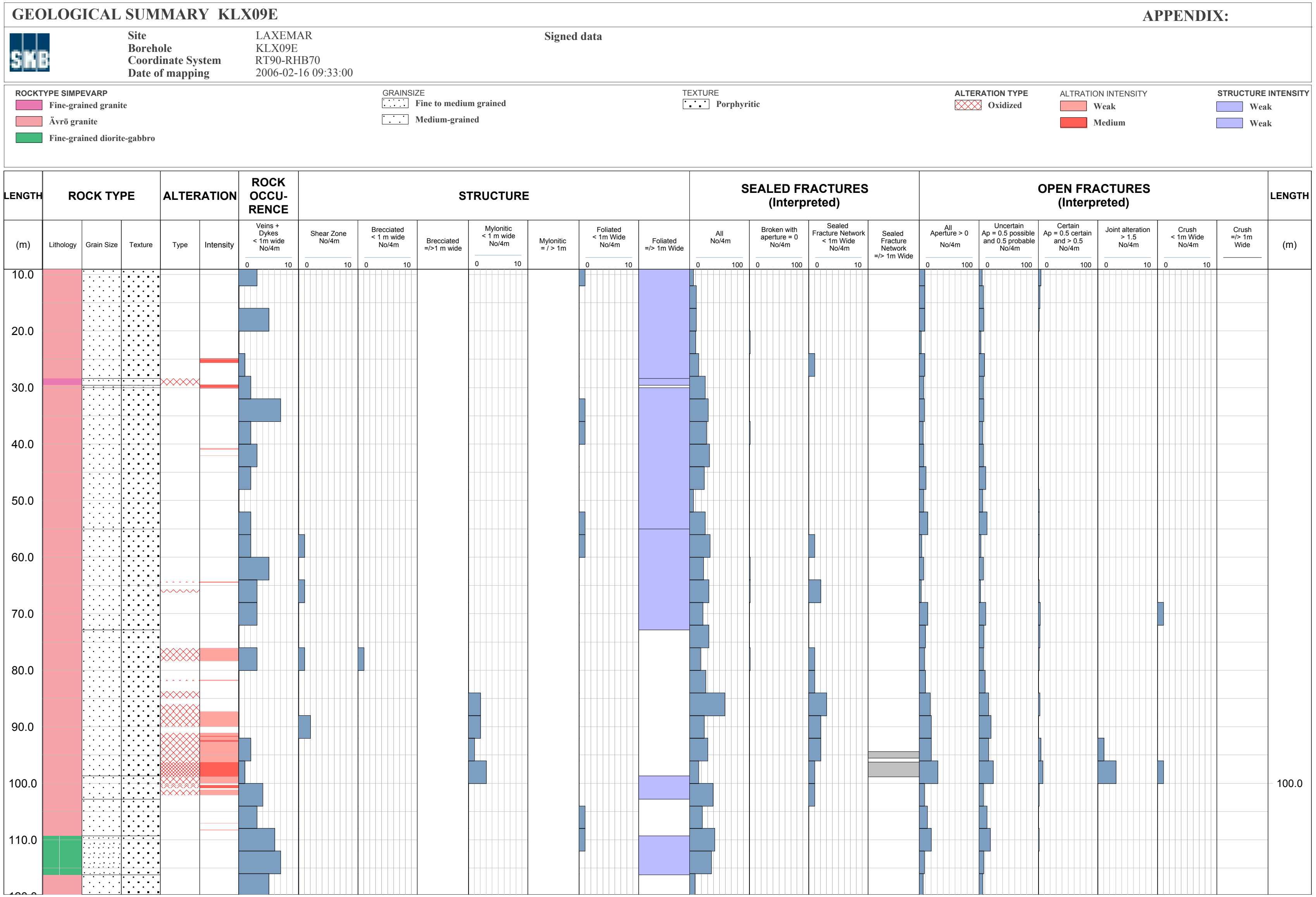
B: Geological summary table KLX09C



C: Geological summary table KLX09D



D: Geological summary table KLX09E



E: Geological summary table KLX09F

GEOLOGICAL SUMMARY KLX09F — **APPENDIX:**

SKB

Site	LAXEMAR	**Signed data**
Borehole	KLX09F	
Coordinate System	RT90-RHB70	
Date of mapping	2006-02-14 11:07:00	

ROCKTYPE SIMPEVARP
- Fine-grained granite
- Granite
- Ävrö granite
- Fine-grained diorite-gabbro

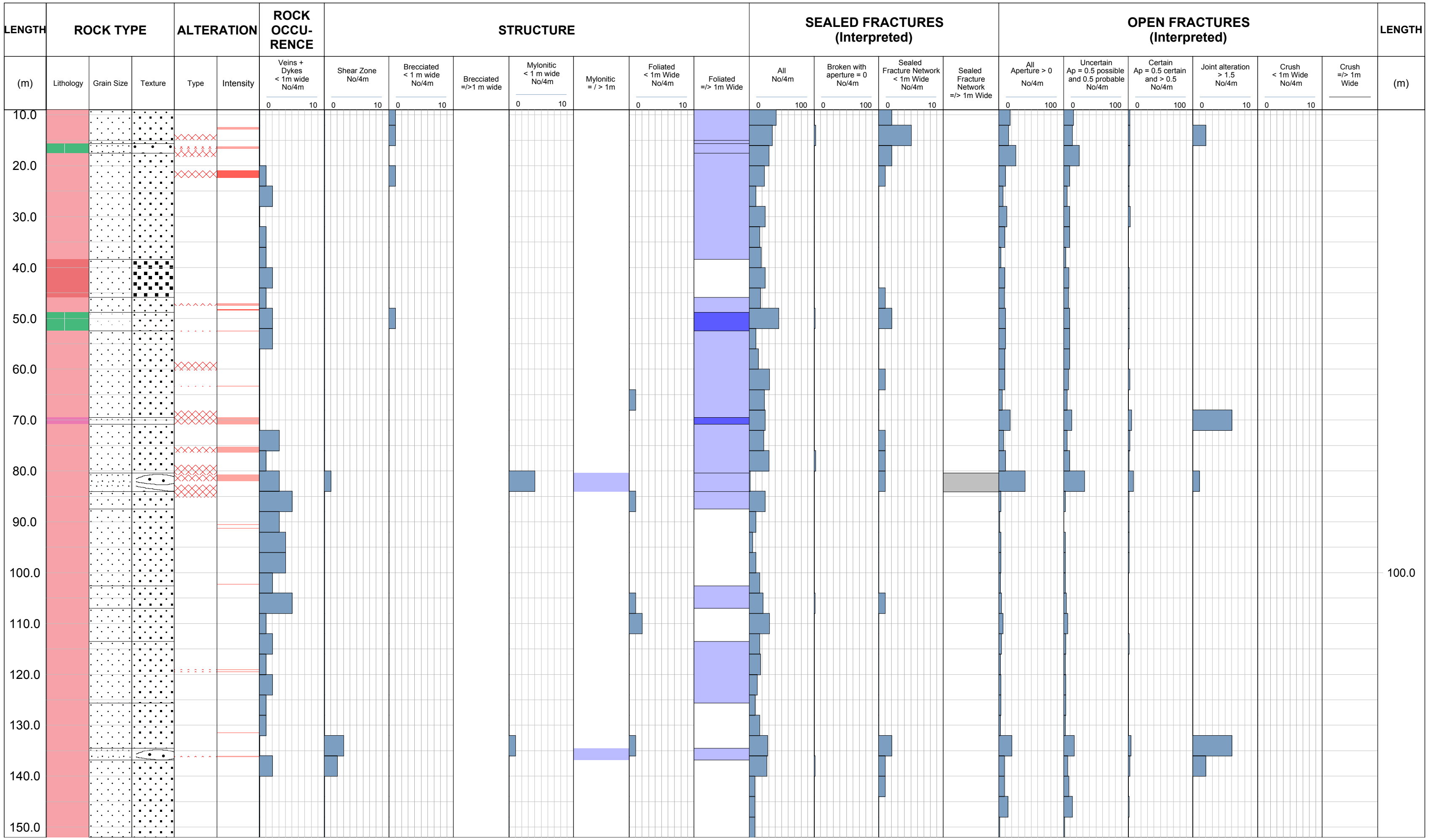
GRAINSIZE
- Fine-grained
- Fine to medium grained
- Medium-grained

TEXTURE
- Porphyritic
- Equigranular
- Unequigranular
- Metamorphic

ALTERATION TYPE
- Oxidized

ALTRATION INTENSITY
- Weak
- Medium

STRUCTURE INTENSITY
- Weak
- Weak
- Strong



Appendix 2

Search paths for the Geological summary table

TABLE HEAD LINES		INFORMATION SOURCE			PRESENTATION
Head lines	**Sub head lines**	**Varcode**	**First suborder**	**Second suborder**	**Interval / frequence**
Rock type	Lithology	5	Sub 1		Interval
	Grain size	5	Sub 5		Interval
	Texture	5	Sub 6		Interval
Alteration	Type	7	Sub 1 = 700		Interval
	Intensity	7	Sub 1 = 700	Sub 2	Interval
Rock occurrence	Vein + dyke	31	Sub 1 = 2 and 18		Frequence
Structure	Shear zone, < 1m wide	31	Sub 4 = 41 and 42		Frequence
	Brecciated, < 1m wide	31	Sub 4 = 7		Frequence
	Brecciated, >/= 1m wide	5 5	Sub 3 = 7 Sub 3 = 7	Sub 4; 101 and 102 = 102 Sub 4; 103 and 104 = 104	Interval
	Mylonite, < 1 m wide	31	Sub 4 = 34		Frequence
	Mylonite, >/= 1 m wide	5 5	Sub 3 = 34 Sub 3 = 34	Sub 4; 101 and 102 = 102 Sub 4; 103 and 104 = 104	Interval
	Foliated, < 1 m wide	31	Sub 4 = 81		Frequence
	Foliated, >/= 1 m wide	5 5	Sub 3 = 81 Sub 3 = 81	Sub 4; 101 and 102 = 102 Sub 4; 103 and 104 = 104	Interval
Sealed fracture	All unbroken fractures and broken fractures	3 2	 SNUM 11= 0		Frequence
	Broken fractures, Aperture = 0	2	SNum 11 = 0		Frequence
	Sealed fracture network < 1 m wide	32			Frequence
	Sealed fracture network>/= 1 m wide	32			Interval
Open fractures	All, Aperture > 0	2 and 3	SNum 11>0		Frequence
	Uncertain, Aperture = 0.5 possible and 0.5 probable	2 and 3 2 and 3	SNum 11>0 SNum 11>0	Sub 12 = 3 Sub 12 = 2	Frequence
	Certain, Aperture = 0.5 and >0.5	2 and 3	SNum 11>0	Sub 12 = 1	Frequence
	Joint alteration > 1.5	2	SNum16 > 1.5		Frequence
	Crush < 1 m wide	4			Frequence
	Crush >/= 1 m wide	4			Interval

A: BIPS-image of KLX09B

Borehole Image Report

Borehole Name:	KLX09B
Mapping Name:	KLX09B_JD_KJM_1
Mapping Range:	10.000 - 99.984 m
Diameter:	76.0 mm
Printed Range:	10.000 - 99.984
Pages:	6

Image File Information:

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End Depth:	99.984 m
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Orientation:	Magnetic
Image height:	89984 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX09B
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

Magnetic north to borehole coord north: 2.514
Image rotation to borehole direction: 248.314

Borehole: KLX09B
Mapping: KLX09B_JD_KJM_1

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Azimuth: 245.8
Inclination: -89.9

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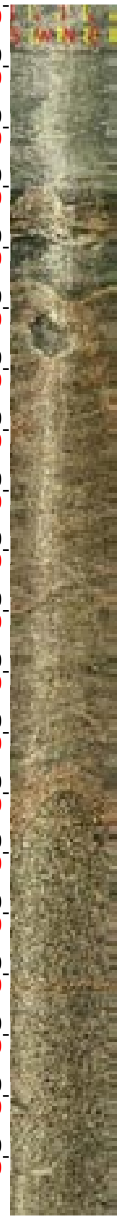

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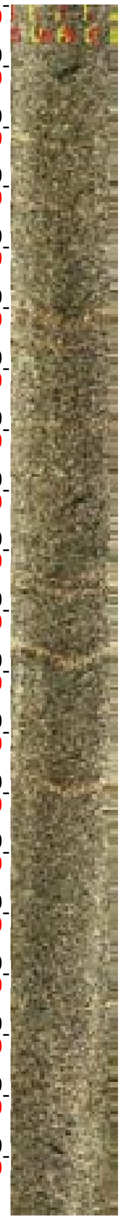

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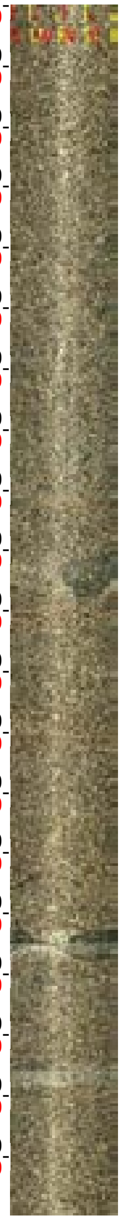

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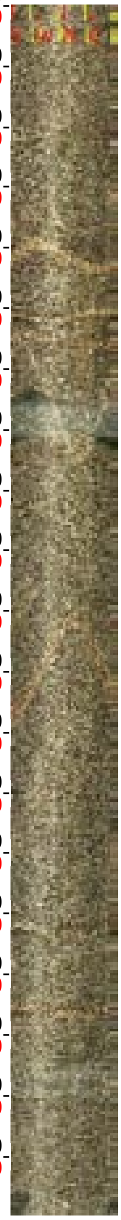

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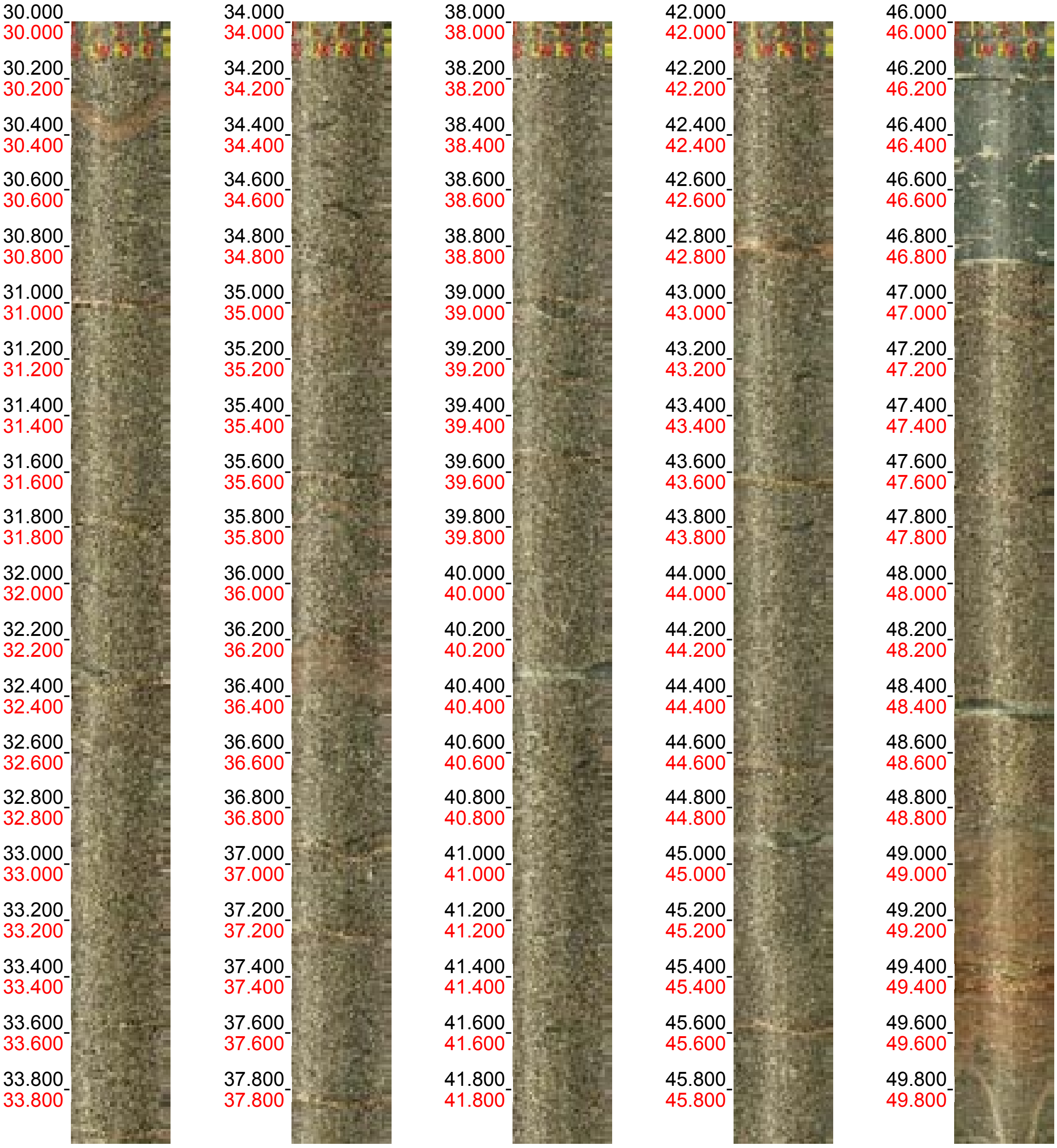
Azimuth: 245.8
Inclination: -89.9



Borehole: KLX09B
Mapping: KLX09B_JD_KJM_1

Depth range: 50.000 - 70.000 m
Azimuth: 245.8
Inclination: -89.9

Borehole: KLX09B
Mapping: KLX09B_JD_KJM_1

Depth range: 70.000 - 90.000 m
Azimuth: 245.8
Inclination: -89.9

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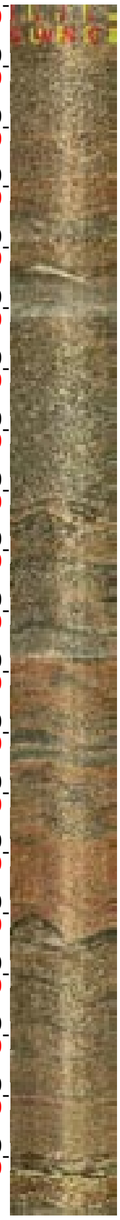

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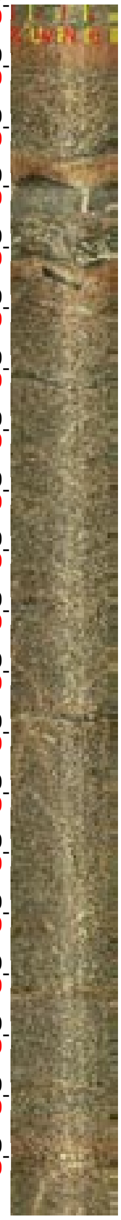

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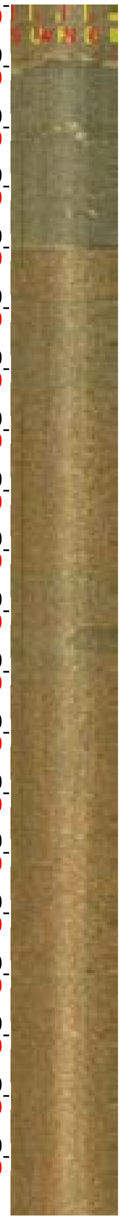

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Mapping: KLX09B_JD_KJM_1

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Azimuth: 245.8
Inclination: -89.9

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B: BIPS-image of KLX09C

Borehole Image Report

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Mapping Name:	KLX09C_JD_KJM_1
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Diameter:	76.0 mm
Printed Range:	9.000 - 118.824
Pages:	7

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End Depth:	118.824 m
Resolution:	1.00 mm/pixel (depth)
Orientation:	Gravmetric
Image height:	109824 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX09C
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

Borehole: KLX09C
Mapping: KLX09C_JD_KJM_1

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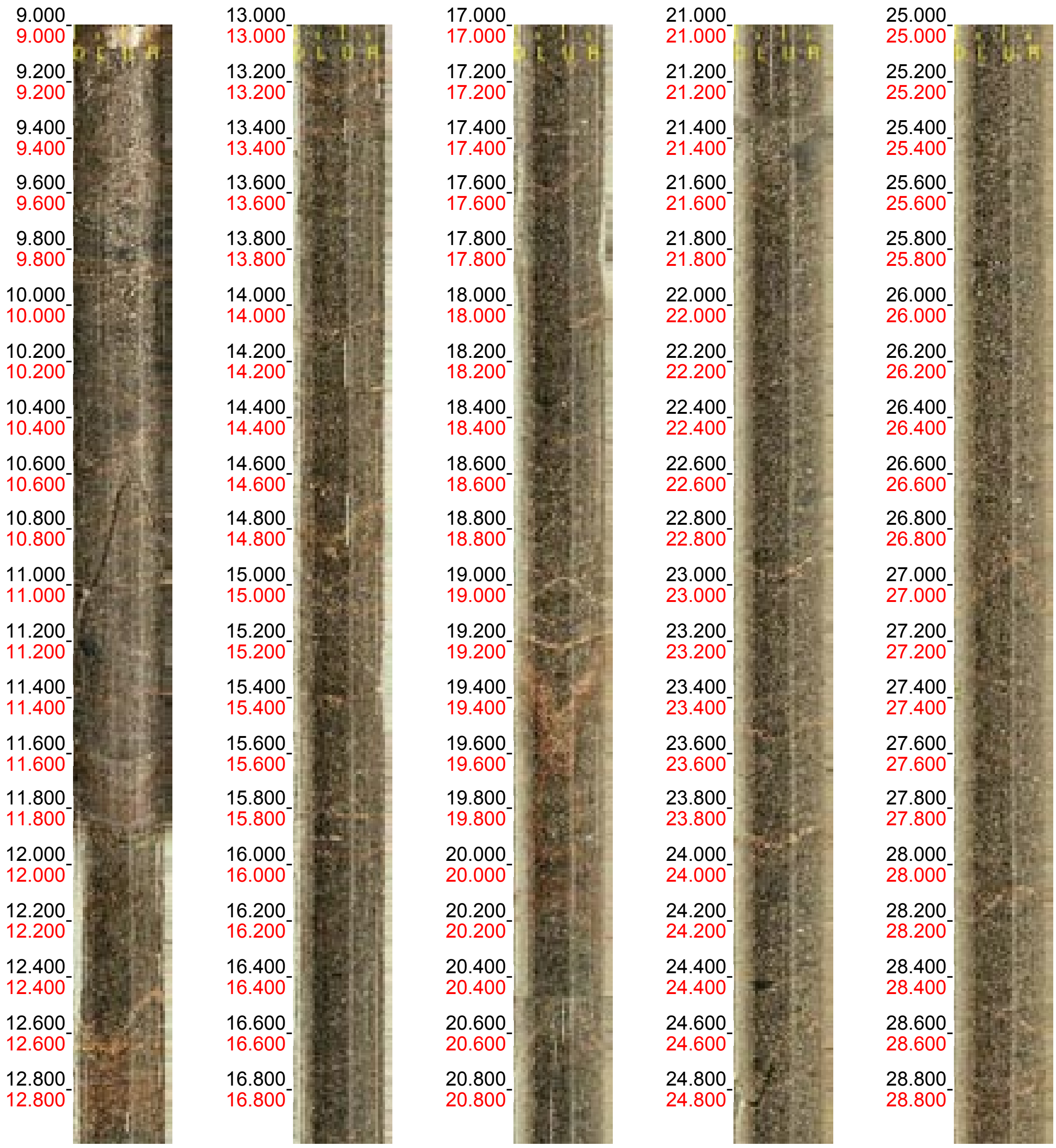

Borehole: KLX09C
Mapping: KLX09C_JD_KJM_1

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Azimuth: 162.8
Inclination: -58.9

Borehole: KLX09C
Mapping: KLX09C_JD_KJM_1

Depth range: 49.000 - 69.000 m
Azimuth: 165.1
Inclination: -58.3

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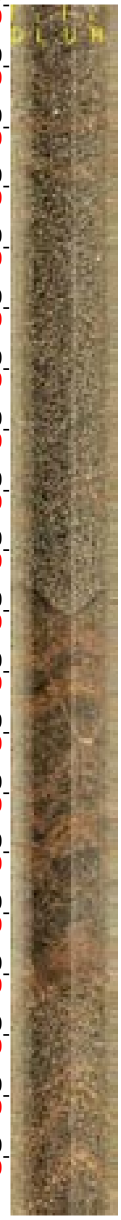

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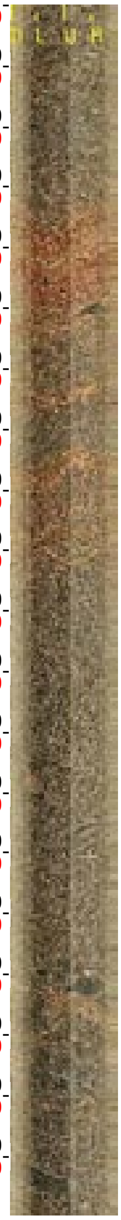

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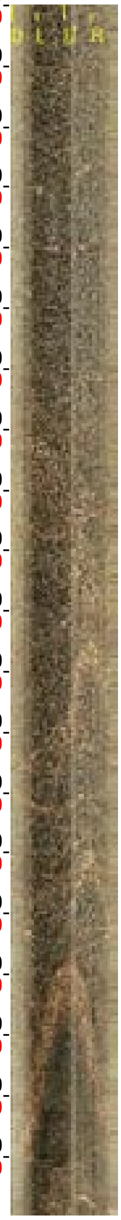

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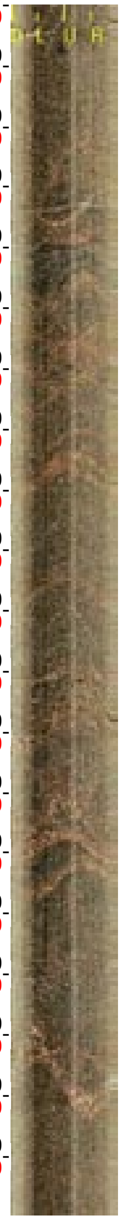

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Borehole: KLX09C
Mapping: KLX09C_JD_KJM_1

Depth range: 69.000 - 89.000 m
Azimuth: 166.3
Inclination: -57.9

Borehole: KLX09C
Mapping: KLX09C_JD_KJM_1

Depth range: 89.000 - 109.000 m
Azimuth: 167.0
Inclination: -57.7

89.000 89.000
89.200 89.200
89.400 89.400
89.600 89.600
89.800 89.800
90.000 90.000
90.200 90.200
90.400 90.400
90.600 90.600
90.800 90.800
91.000 91.000
91.200 91.200
91.400 91.400
91.600 91.600
91.800 91.800
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92.400 92.400
92.600 92.600
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93.200 93.200
93.400 93.400
93.600 93.600
93.800 93.800
94.000 94.000
94.200 94.200
94.400 94.400
94.600 94.600
94.800 94.800
95.000 95.000
95.200 95.200
95.400 95.400
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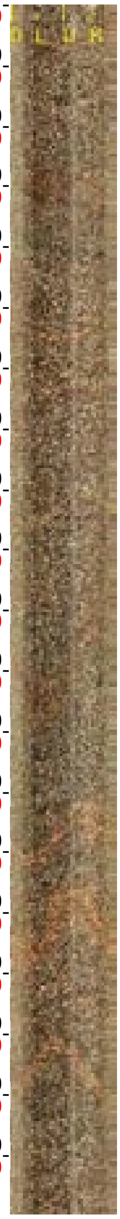
96.200 96.200
96.400 96.400
96.600 96.600
96.800 96.800



97.000 97.000
97.200 97.200
97.400 97.400
97.600 97.600
97.800 97.800
98.000 98.000
98.200 98.200
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98.600 98.600
98.800 98.800
99.000 99.000
99.200 99.200
99.400 99.400
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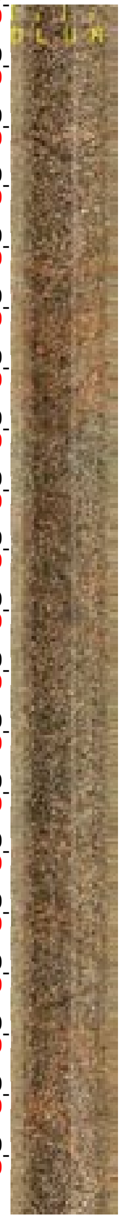

101.000 101.000
101.200 101.200
101.400 101.400
101.600 101.600
101.800 101.800
102.000 102.000
102.200 102.200
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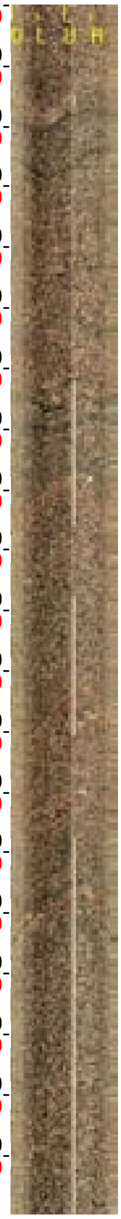
108.600 108.600
108.800 108.800



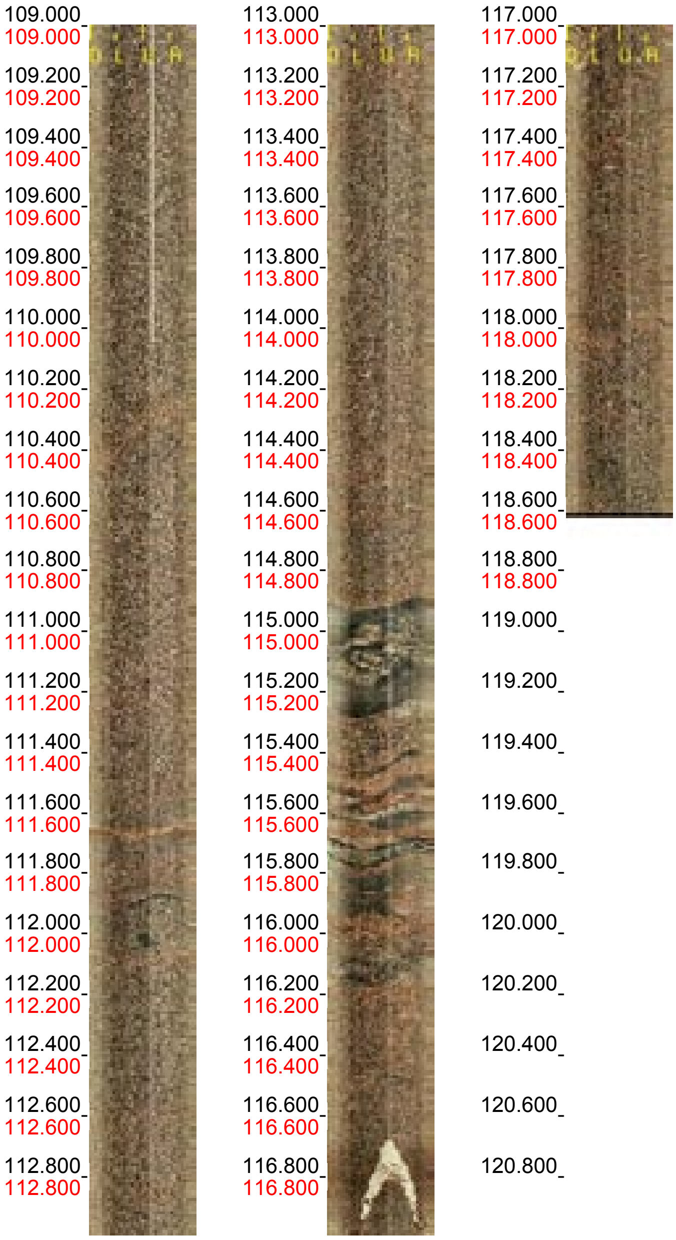
Borehole: KLX09C

Mapping: KLX09C_JD_KJM_1

Depth range: 109.000 - 118.824 m

Azimuth: 168.9

Inclination: -57.4



C: BIPS-image of KLX09D

Borehole Image Report

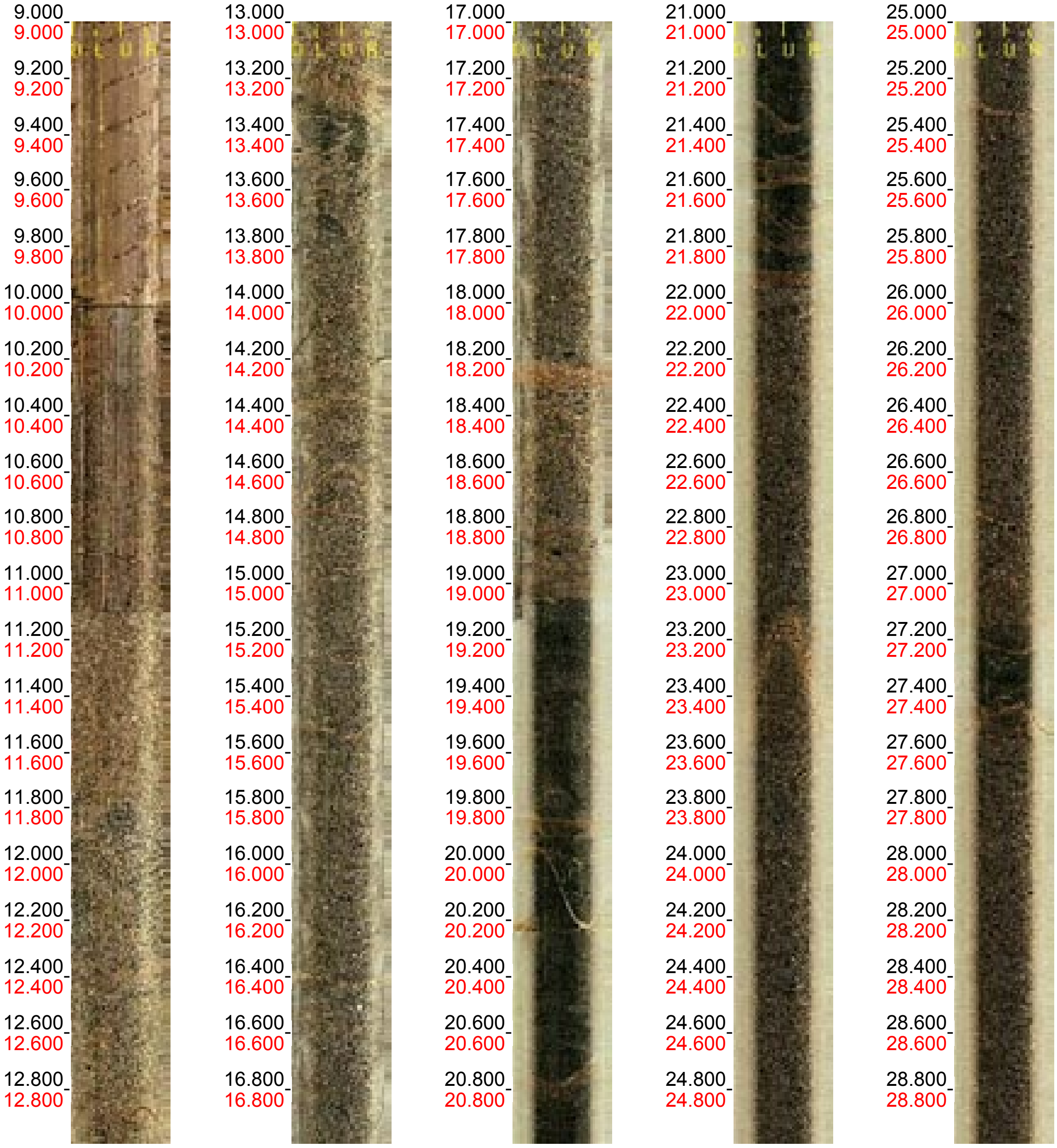
Borehole Name:	KLX09D
Mapping Name:	KLX09D_JD_KJM_1
Mapping Range:	9.000 - 119.720 m
Diameter:	76.0 mm
Printed Range:	9.000 - 119.720
Pages:	7

Image File Information:

File:	G:\skb\boremap\simpevarp\detaljkartering\KLX09B-G\KLX09D.BIP
Date/Time:	2006-02-07 14:58:00
Start Depth:	9.000 m
End Depth:	119.720 m
Resolution:	1.00 mm/pixel (depth)
Orientation:	Gravmetric
Image height:	110720 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX09D
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

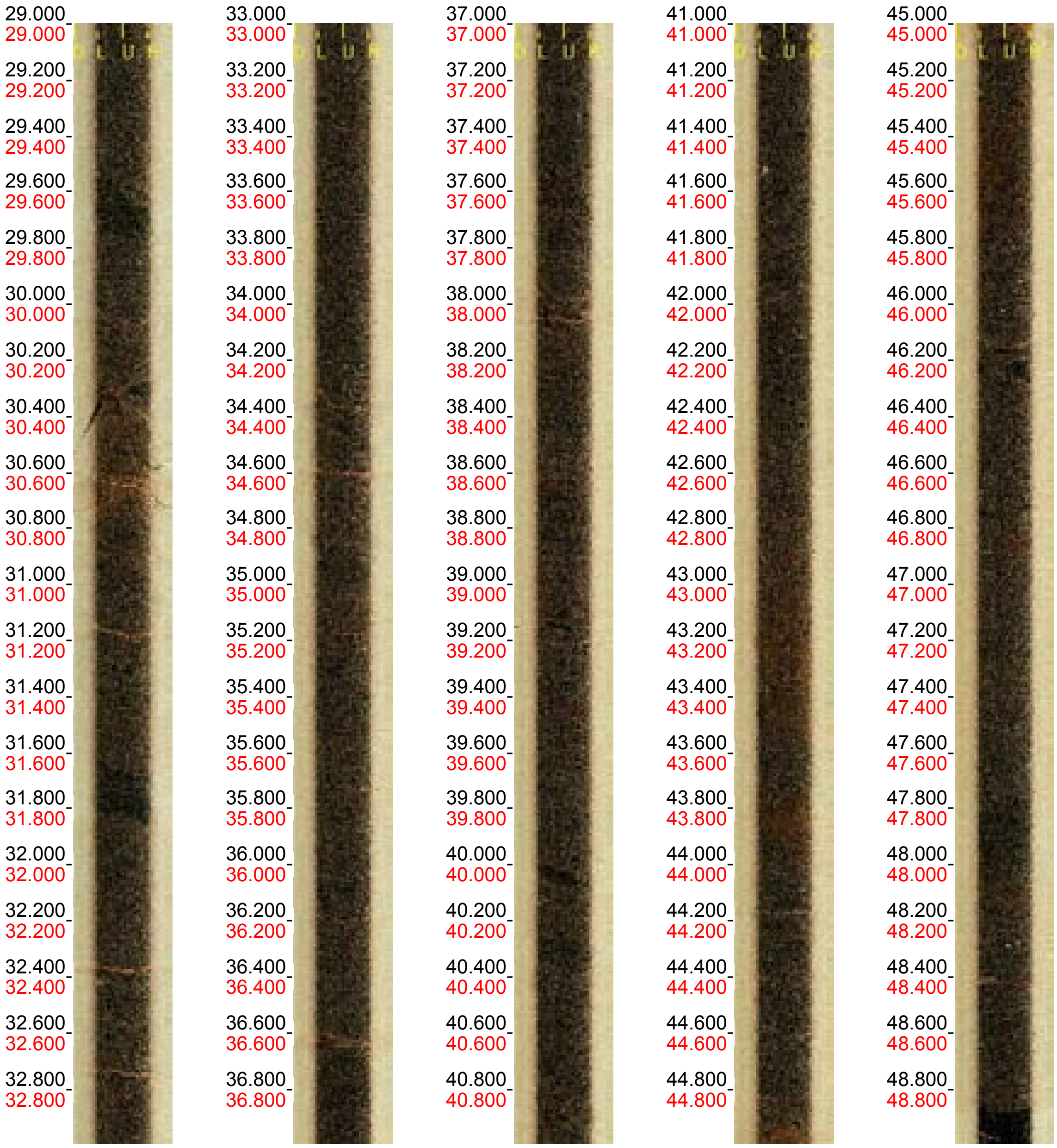
Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 9.000 - 29.000 m
Azimuth: 270.2
Inclination: -60.0



Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 29.000 - 49.000 m
Azimuth: 270.6
Inclination: -59.7



Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 49.000 - 69.000 m
Azimuth: 271.6
Inclination: -59.2

49.000 49.000
49.200 49.200
49.400 49.400
49.600 49.600
49.800 49.800
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50.400 50.400
50.600 50.600
50.800 50.800
51.000 51.000
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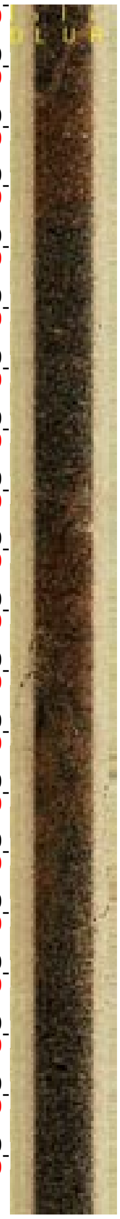

57.000 57.000
57.200 57.200
57.400 57.400
57.600 57.600
57.800 57.800
58.000 58.000
58.200 58.200
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58.600 58.600
58.800 58.800
59.000 59.000
59.200 59.200
59.400 59.400
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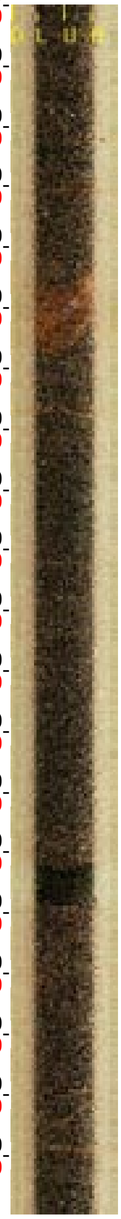

61.000 61.000
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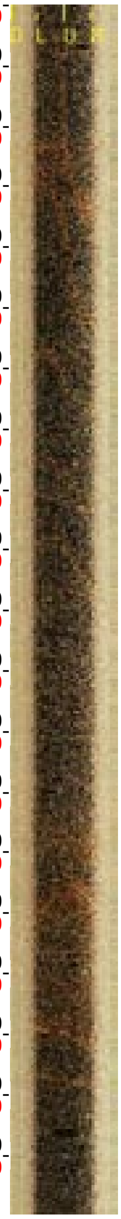

65.000 65.000
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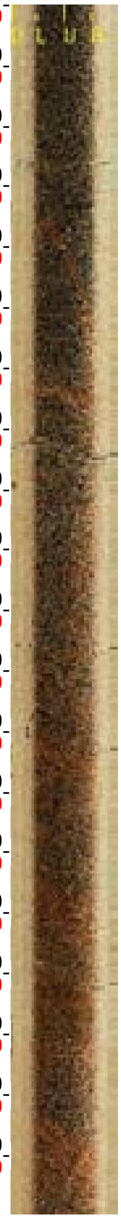

Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 69.000 - 89.000 m
Azimuth: 272.7
Inclination: -58.7

Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 89.000 - 109.000 m
Azimuth: 272.6
Inclination: -58.4

Borehole: KLX09D
Mapping: KLX09D_JD_KJM_1

Depth range: 109.000 - 119.720 m
Azimuth: 272.0
Inclination: -57.9

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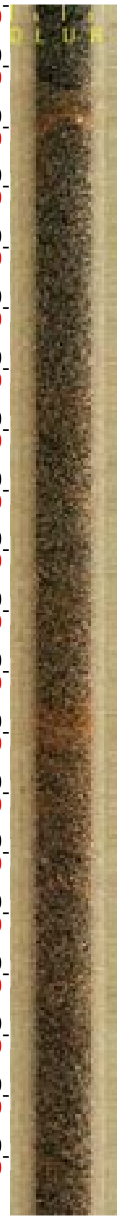

117.000
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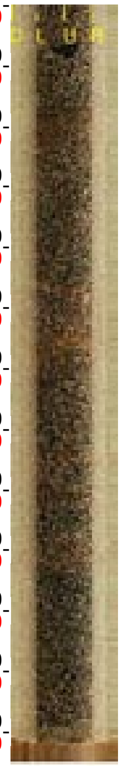

D: BIPS-image of KLX09E

Borehole Image Report

Borehole Name:	KLX09E
Mapping Name:	KLX09E_JD_KJM_1
Mapping Range:	8.000 - 119.872 m
Diameter:	76.0 mm
Printed Range:	8.000 - 119.872
Pages:	7

Image File Information:

File:	G:\skb\boremap\simpevarp\detaljkartering\KLX09B-G\KLX09E.BIP
Date/Time:	2006-02-08 15:17:00
Start Depth:	8.000 m
End Depth:	119.872 m
Resolution:	1.00 mm/pixel (depth)
Orientation:	Gravmetric
Image height:	111872 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX09E
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

Depth range: 8.000 - 28.000 m
Azimuth: 339.9
Inclination: -60.2

8.000
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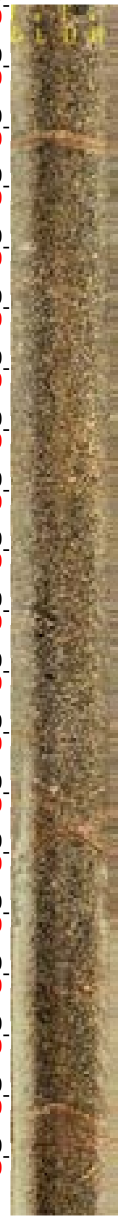

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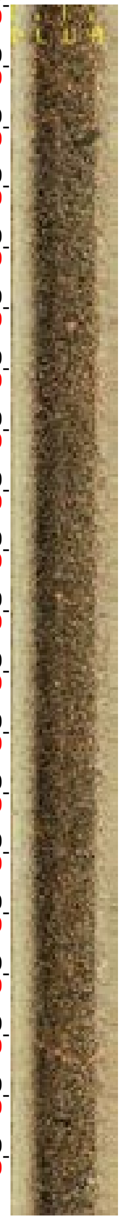

24.000
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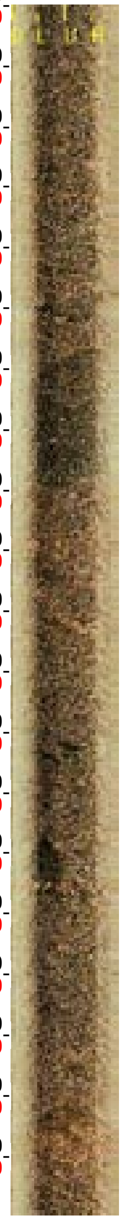
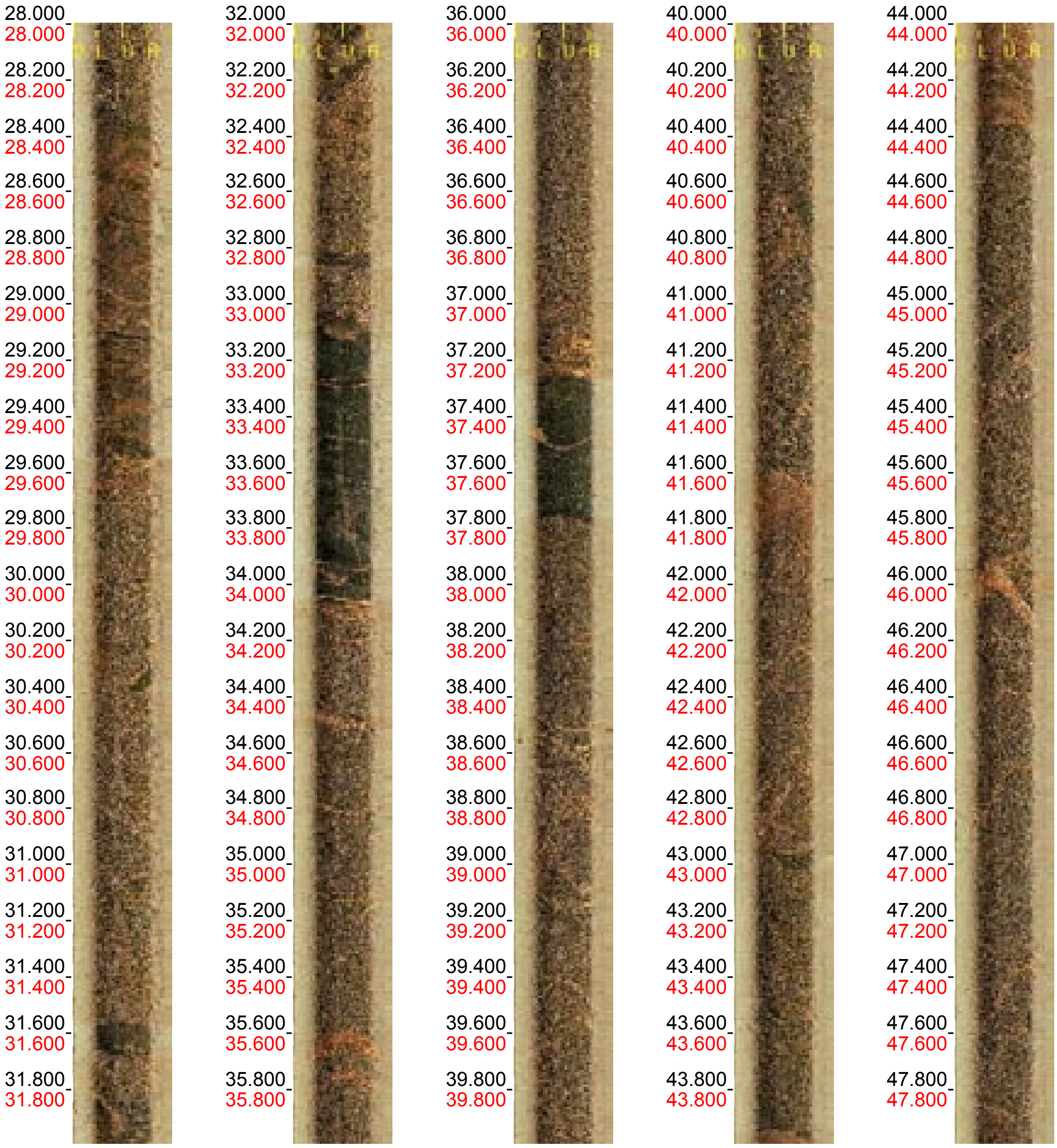


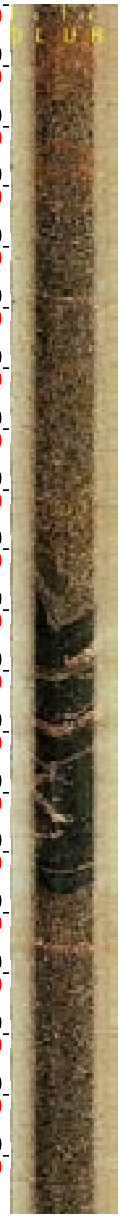
Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

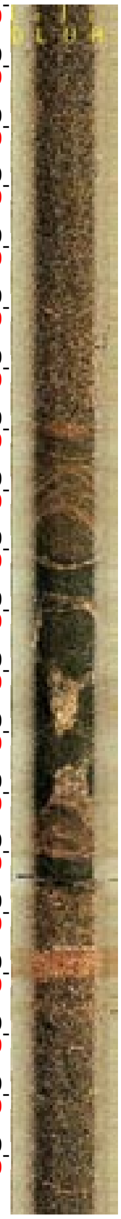
Depth range: 28.000 - 48.000 m
Azimuth: 341.3
Inclination: -60.1

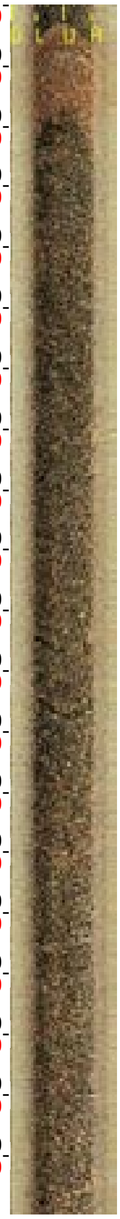


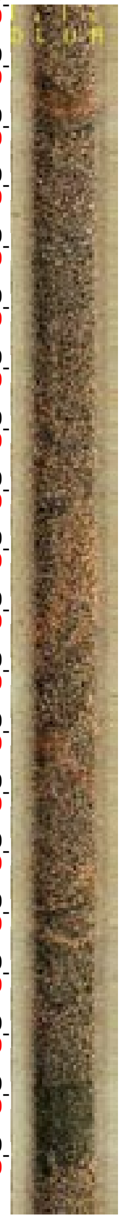
Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

Depth range: 48.000 - 68.000 m
Azimuth: 341.9
Inclination: -59.5









Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

Depth range: 68.000 - 88.000 m
Azimuth: 343.2
Inclination: -59.2

68.000 68.000
68.200 68.200
68.400 68.400
68.600 68.600
68.800 68.800
69.000 69.000
69.200 69.200
69.400 69.400
69.600 69.600
69.800 69.800
70.000 70.000
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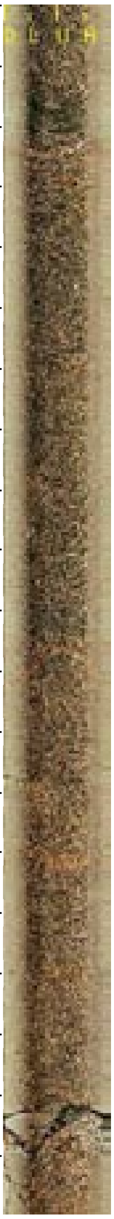

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73.600 73.600
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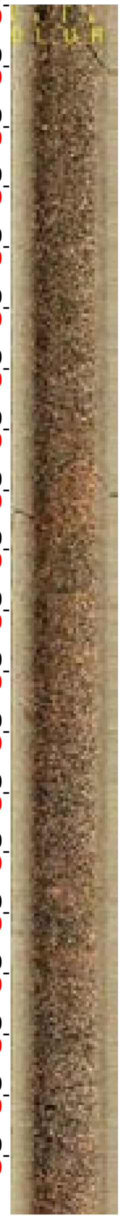

76.000 76.000
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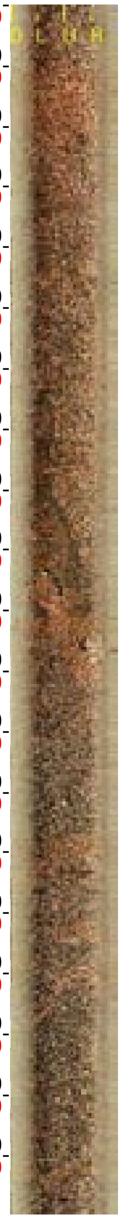

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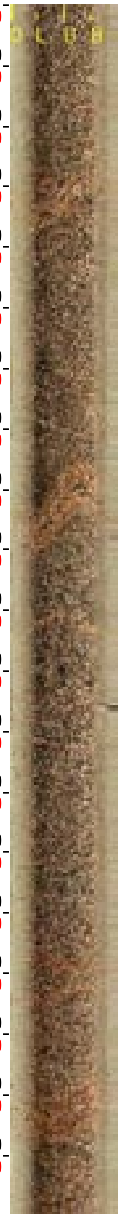
83.800 83.800



84.000 84.000
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85.600 85.600
85.800 85.800
86.000 86.000
86.200 86.200
86.400 86.400
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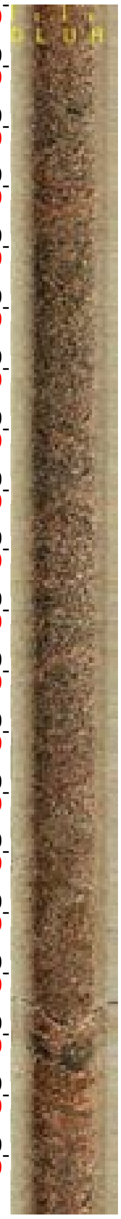
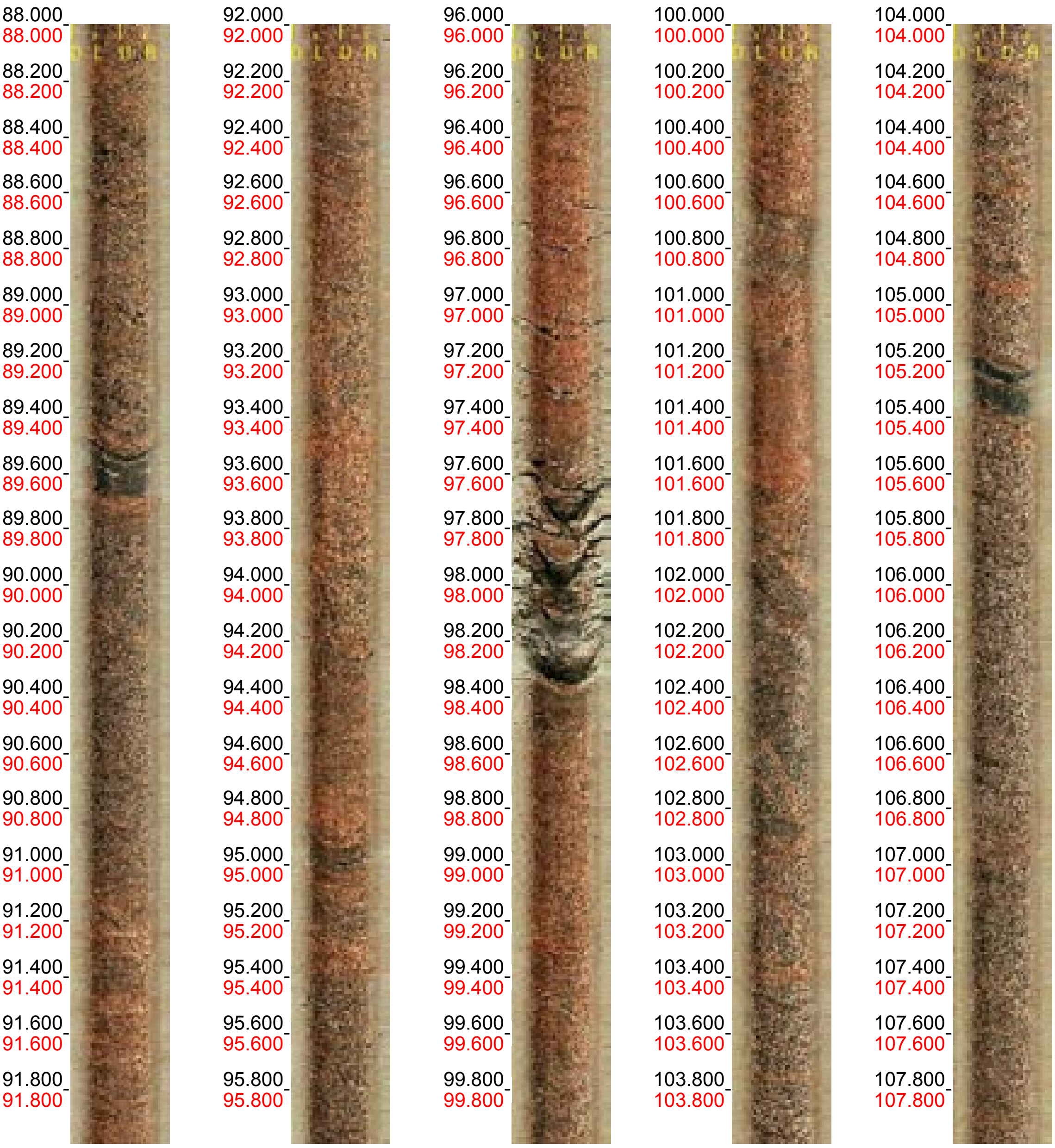
87.600 87.600
87.800 87.800



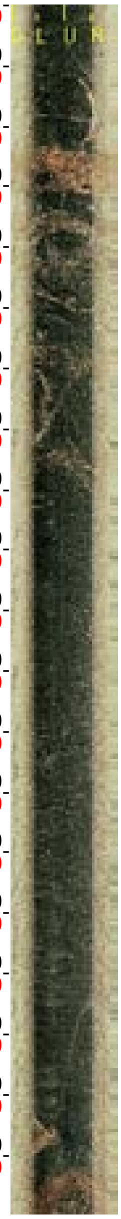
Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

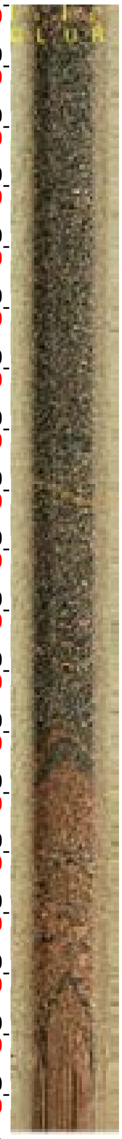
Depth range: 88.000 - 108.000 m
Azimuth: 345.1
Inclination: -58.8



Borehole: KLX09E
Mapping: KLX09E_JD_KJM_1

Depth range: 108.000 - 119.872 m
Azimuth: 345.4
Inclination: -58.2





E: BIPS-image of KLX09F

Borehole Image Report

Borehole Name:	KLX09F
Mapping Name:	KLX09F_PD_KJM
Mapping Range:	8.000 - 151.360 m
Diameter:	76.0 mm
Printed Range:	8.000 - 151.360
Pages:	9

Image File Information:

File:	G:\skb\boremap\simpevarp\detaljkartering\KLX09B-G\KLX09F.BIP
Date/Time:	2006-02-09 08:26:00
Start Depth:	8.000 m
End Depth:	151.360 m
Resolution:	1.00 mm/pixel (depth)
Orientation:	Gravmetric
Image height:	143360 pixels
Image width:	360 pixels
BIP Version:	BIP-III
Locality:	LAXEMAR
Borehole:	KLX09F
Scan Direction:	Down
Color adjust:	0 0 0 (RGB)

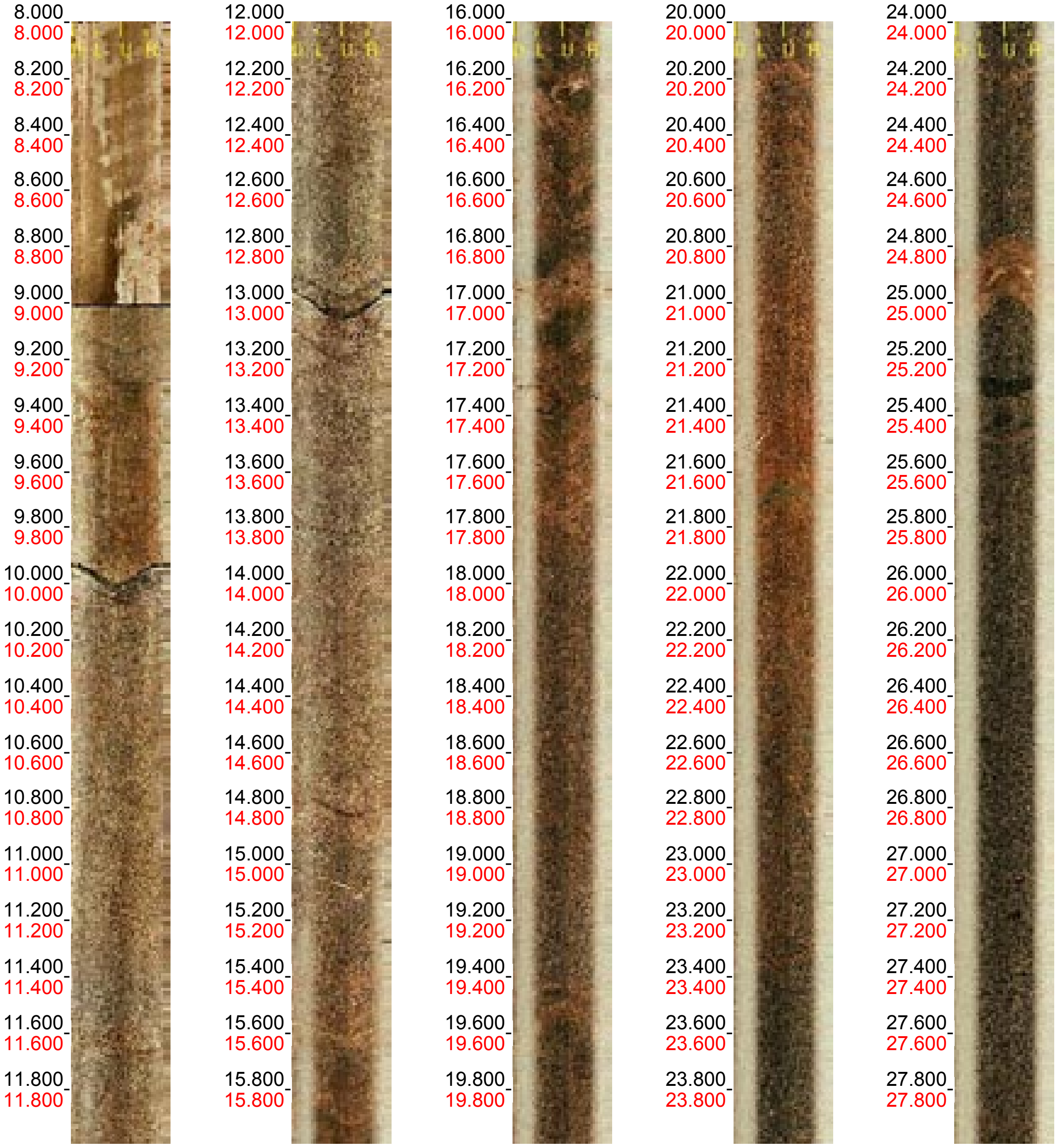
Borehole: KLX09F

Mapping: KLX09F_PD_KJM

Depth range: 8.000 - 28.000 m

Azimuth: 91.5

Inclination: -59.4



Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 28.000 - 48.000 m
Azimuth: 93.9
Inclination: -59.2

Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 48.000 - 68.000 m
Azimuth: 95.3
Inclination: -59.0

48.000 48.000
48.200 48.200
48.400 48.400
48.600 48.600
48.800 48.800
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49.400 49.400
49.600 49.600
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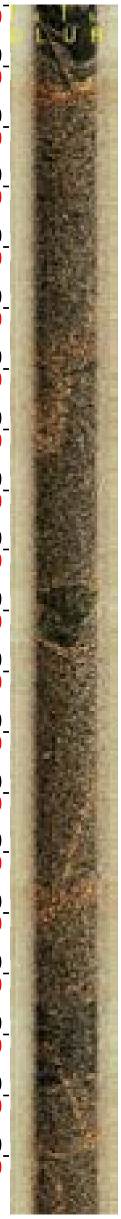

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57.200 57.200
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57.600 57.600
57.800 57.800
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58.400 58.400
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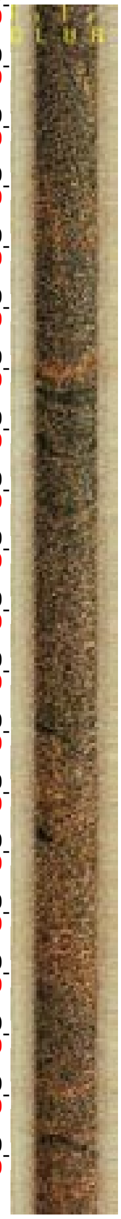
59.600 59.600
59.800 59.800



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60.800 60.800
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61.800 61.800
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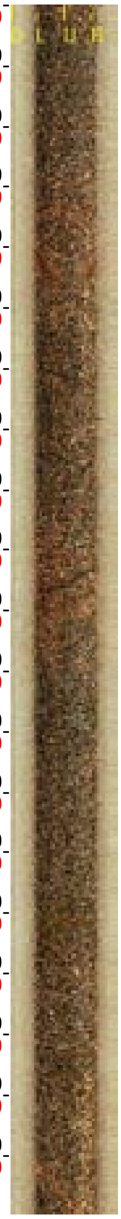

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65.200 65.200
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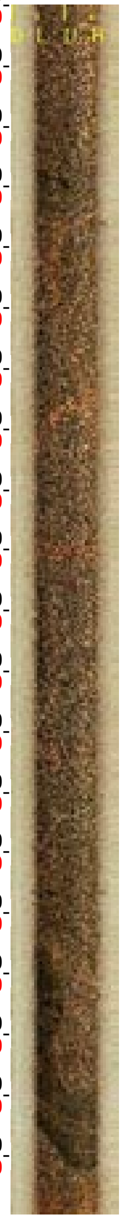

Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 68.000 - 88.000 m
Azimuth: 96.5
Inclination: -58.8

68.000
68.000
68.200
68.200
68.400
68.400
68.600
68.600
68.800
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69.400
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69.600
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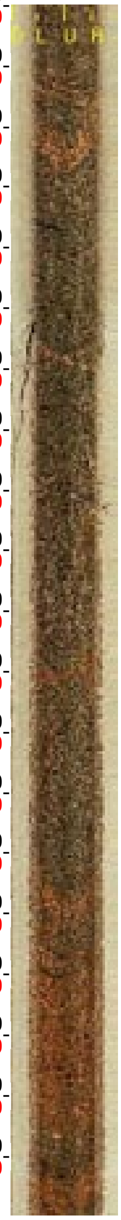

76.000
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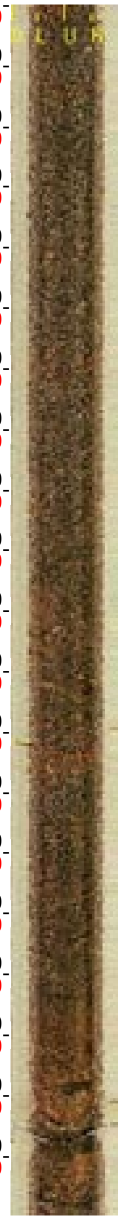

80.000
80.000
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80.200
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80.600
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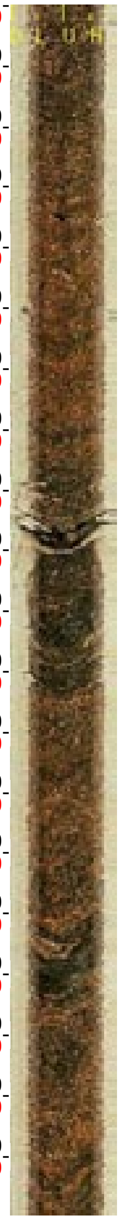

84.000
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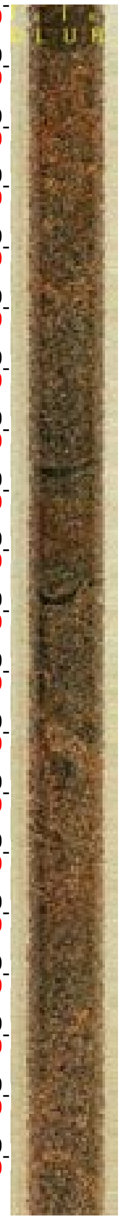

Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 88.000 - 108.000 m
Azimuth: 97.2
Inclination: -58.1

88.000
88.000
88.200
88.200
88.400
88.400
88.600
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88.800
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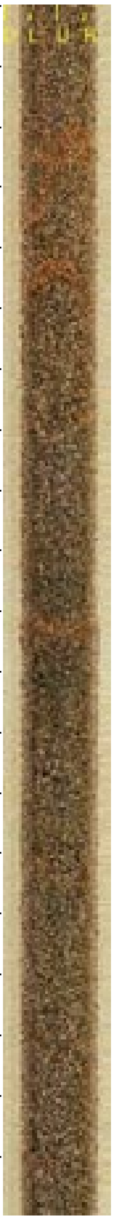

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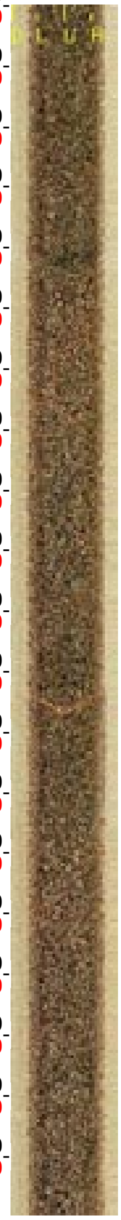

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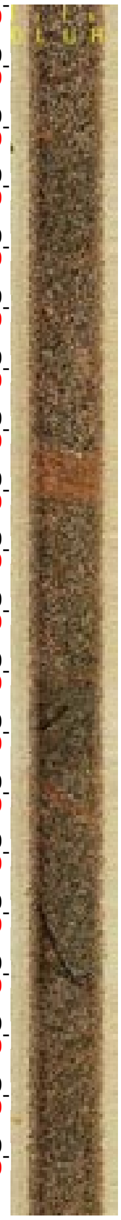

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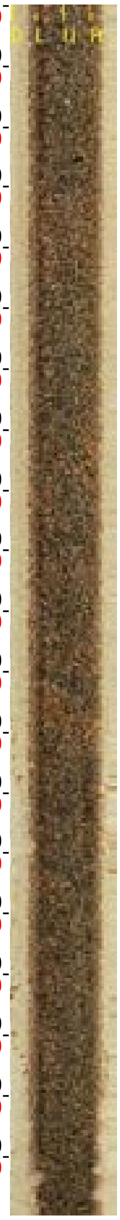

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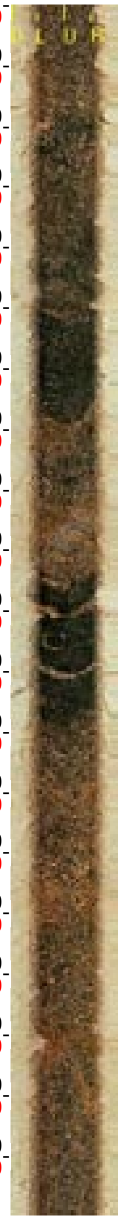
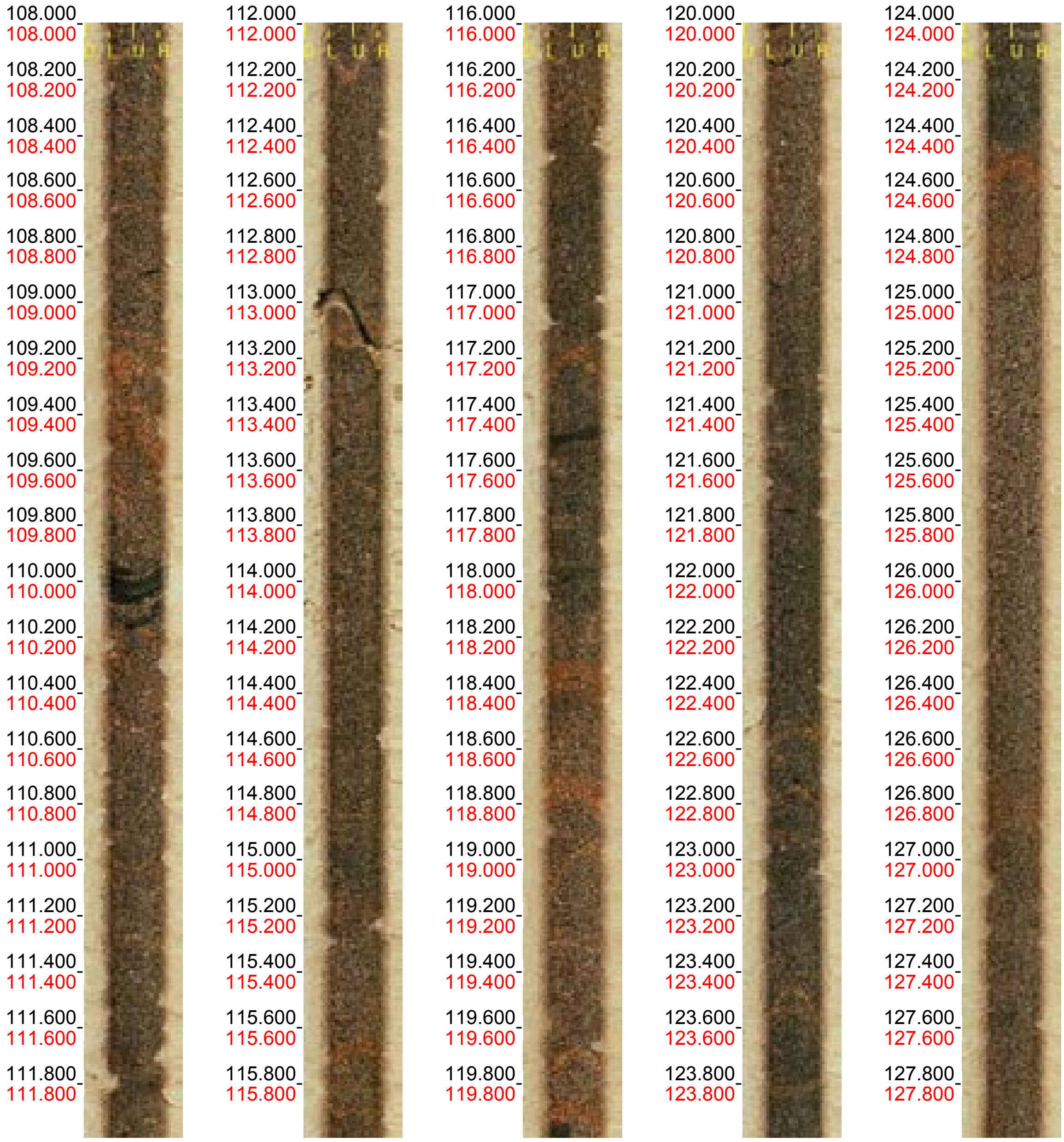


Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 108.000 - 128.000 m
Azimuth: 98.5
Inclination: -57.6



Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 128.000 - 148.000 m
Azimuth: 101.3
Inclination: -57.0

128.000
128.000
128.200
128.200
128.400
128.400
128.600
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128.800
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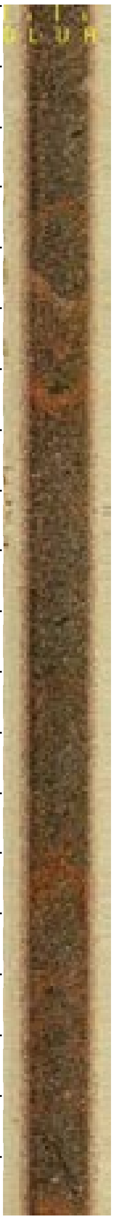

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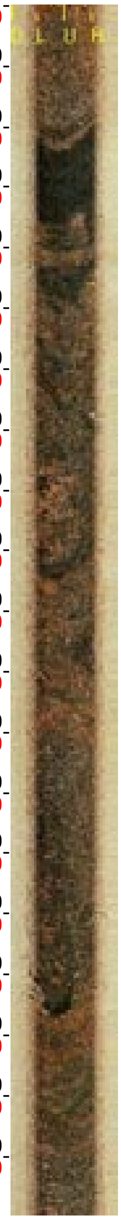

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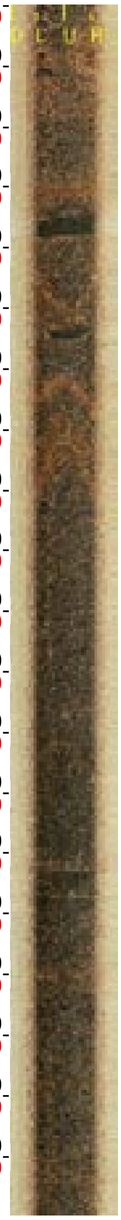

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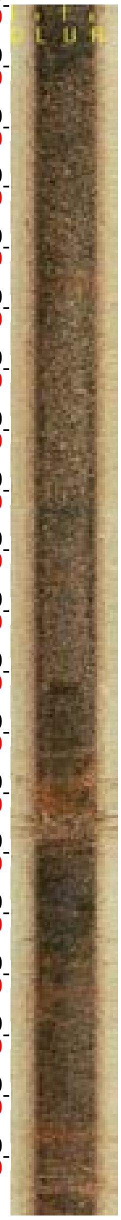

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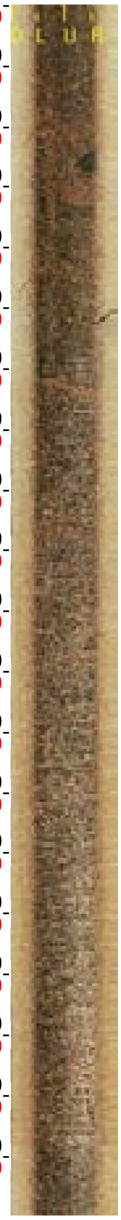

Borehole: KLX09F
Mapping: KLX09F_PD_KJM

Depth range: 148.000 - 151.360 m
Azimuth: 101.2
Inclination: -56.6

148.000
148.000
148.200
148.200
148.400
148.400
148.600
148.600
148.800
148.800
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149.000
149.200
149.200
149.400
149.400
149.600
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150.400
150.600
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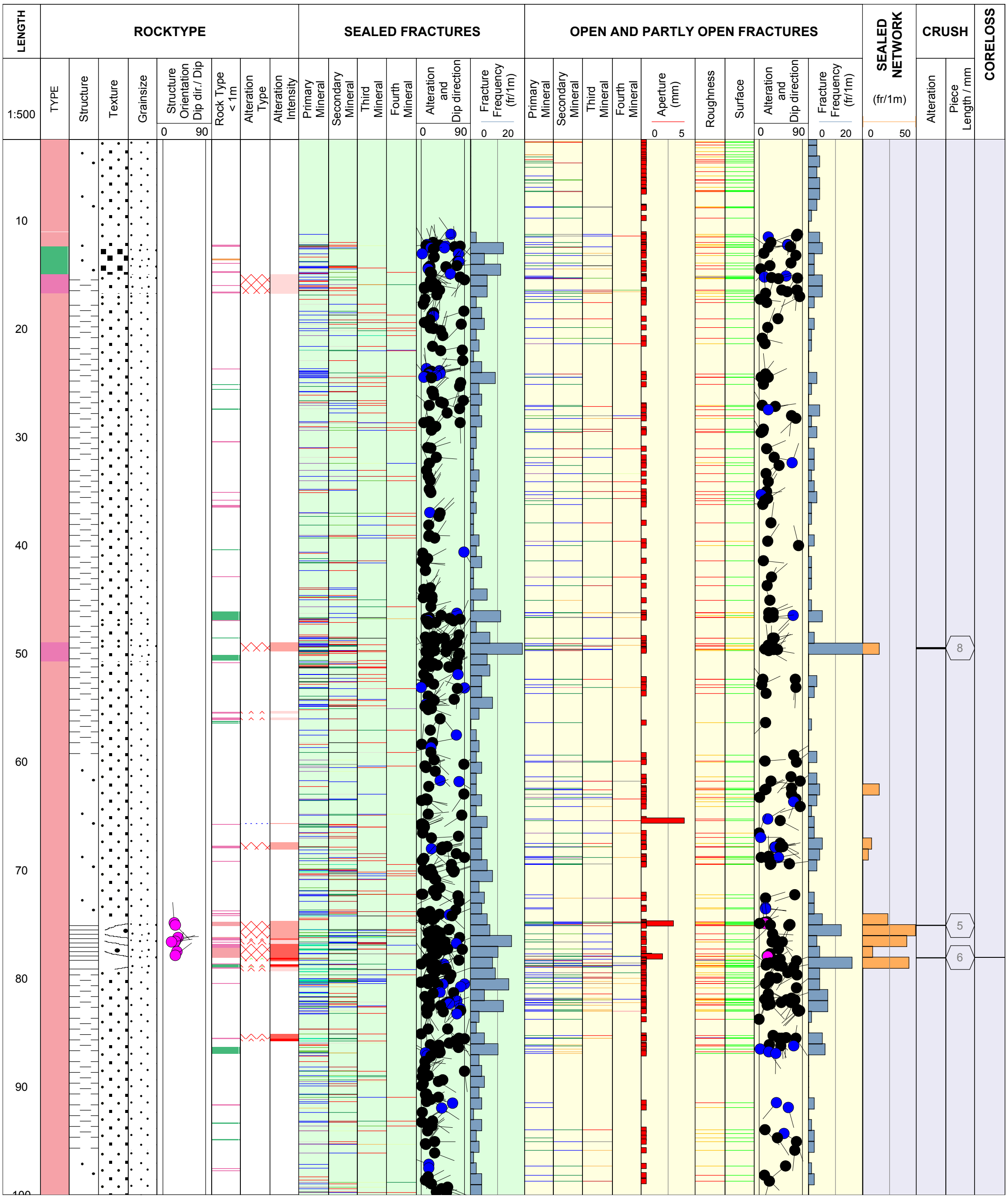
150.800
150.800
151.000
151.000
151.200
151.200
151.400
151.600
151.800

A: WellCad diagram of KLX09B

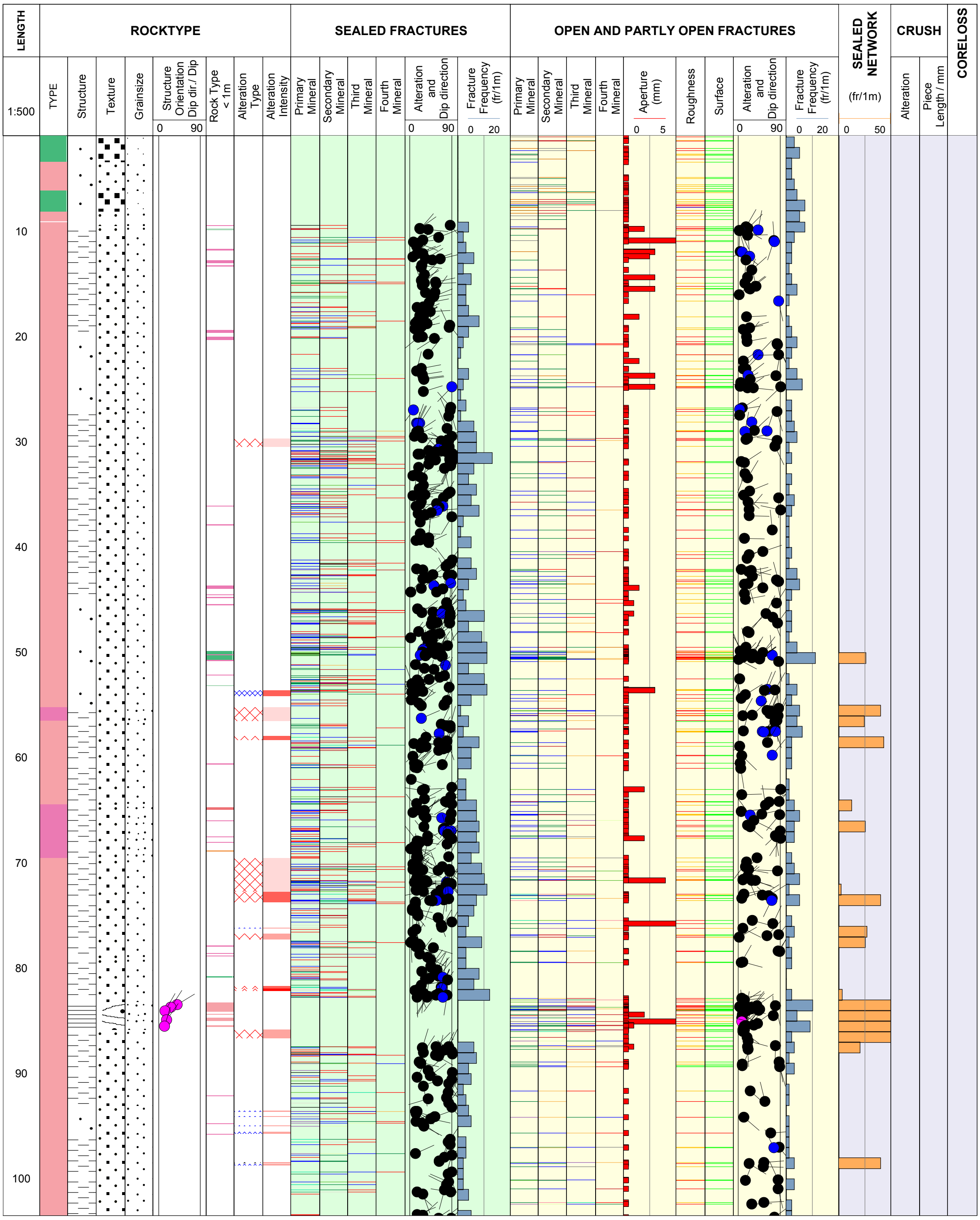
Title	GEOLOGY IN KLX09B		Appendix:
Site	LAXEMAR	Coordinate System	RT90-RHB70
Borehole	KLX09B	Northing [m]	6367329.07
Diameter [mm]	76	Easting [m]	1548859.01
Length [m]	100.220	Elevation [m.a.s.l.]	23.62
Bearing [°]	21.25	Drilling Start Date	2006-01-16 14:00:00
Inclination [°]	-89.82	Drilling Stop Date	2006-01-26 12:00:00
Date of coremapping	2006-02-16 09:19:00	Plot Date	2007-10-25 22:03:45
Rocktype data from	p_rock	Signed data	

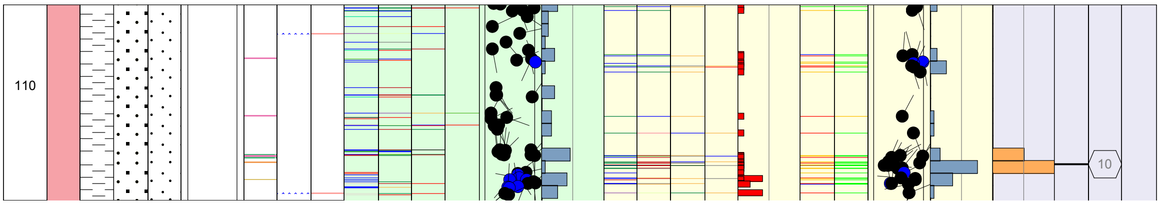


B: WellCad diagram of KLX09C

Title GEOLOGY IN KLX09C **Appendix:**

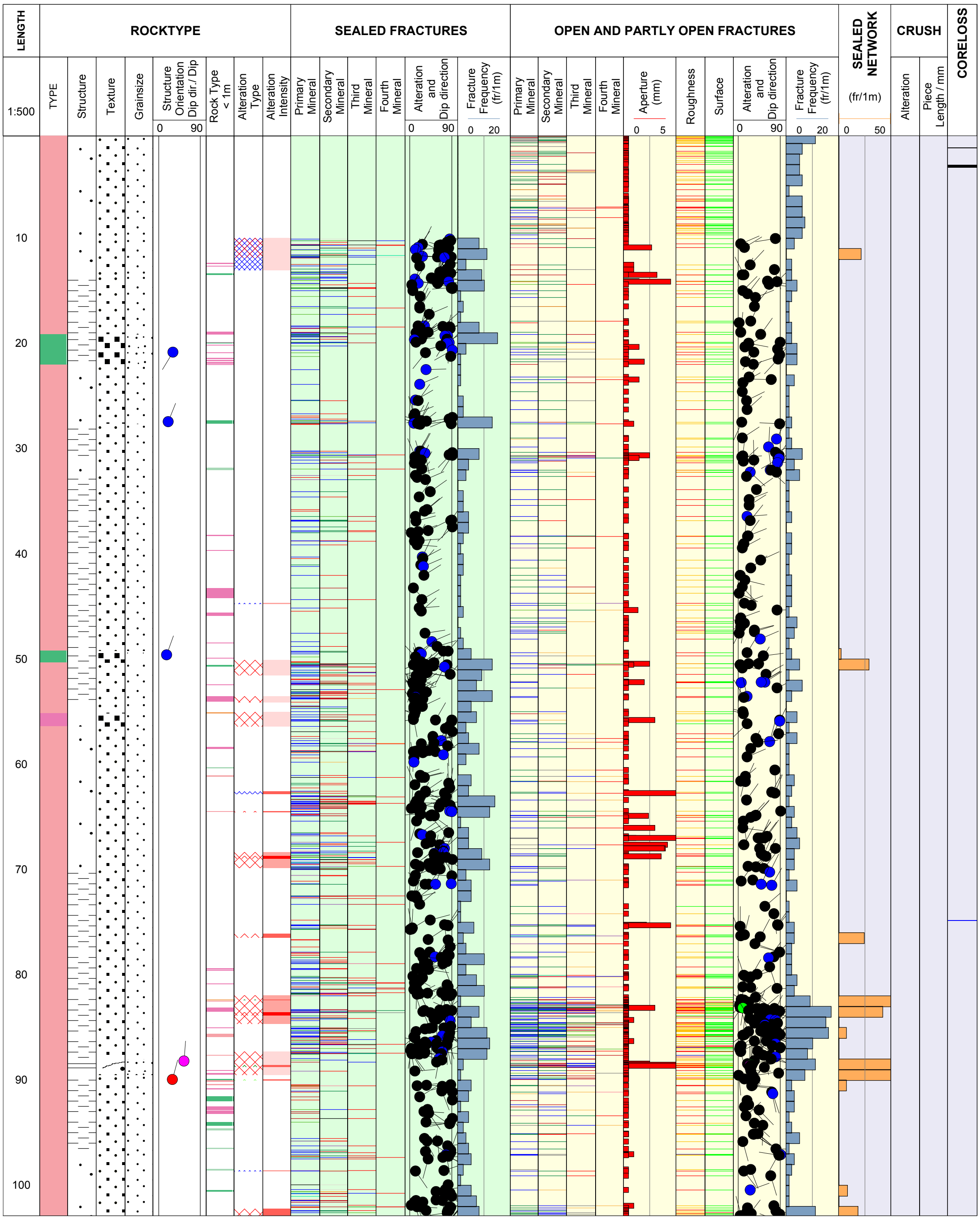
Site	LAXEMAR	Coordinate System	RT90-RHB70
Borehole	KLX09C	Northing [m]	6367353.43
Diameter [mm]	76	Easting [m]	1548838.82
Length [m]	120.050	Elevation [m.a.s.l.]	23.75
Bearing [°]	160.39	Drilling Start Date	2006-01-07 11:00:00
Inclination [°]	-59.51	Drilling Stop Date	2006-01-15 12:00:00
Date of coremapping	2006-02-16 09:31:00	Plot Date	2007-10-25 22:03:45
Rocktype data from	p_rock	Signed data	

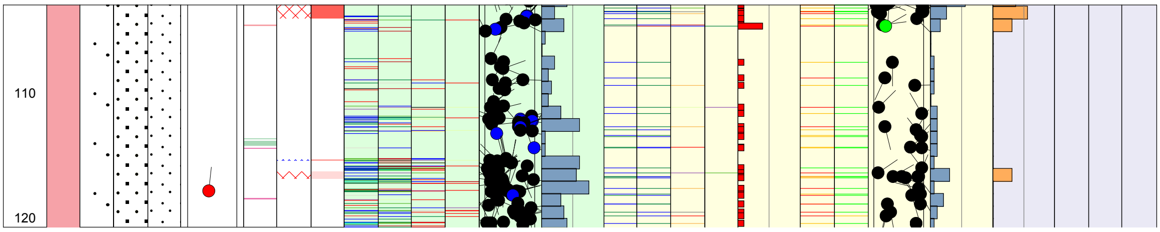



110
10

C: WellCad diagram of KLX09D

Title	GEOLOGY IN KLX09D		Appendix:
Site	LAXEMAR	Coordinate System	RT90-RHB70
Borehole	KLX09D	Northing [m]	6367336.99
Diameter [mm]	76	Easting [m]	1548878.22
Length [m]	121.020	Elevation [m.a.s.l.]	23.10
Bearing [°]	270.15	Drilling Start Date	2005-11-05 06:00:00
Inclination [°]	-60.24	Drilling Stop Date	2005-11-17 14:00:00
Date of coremapping	2006-02-16 09:32:00	Plot Date	2007-10-25 22:03:45
Rocktype data from	p_rock	Signed data	

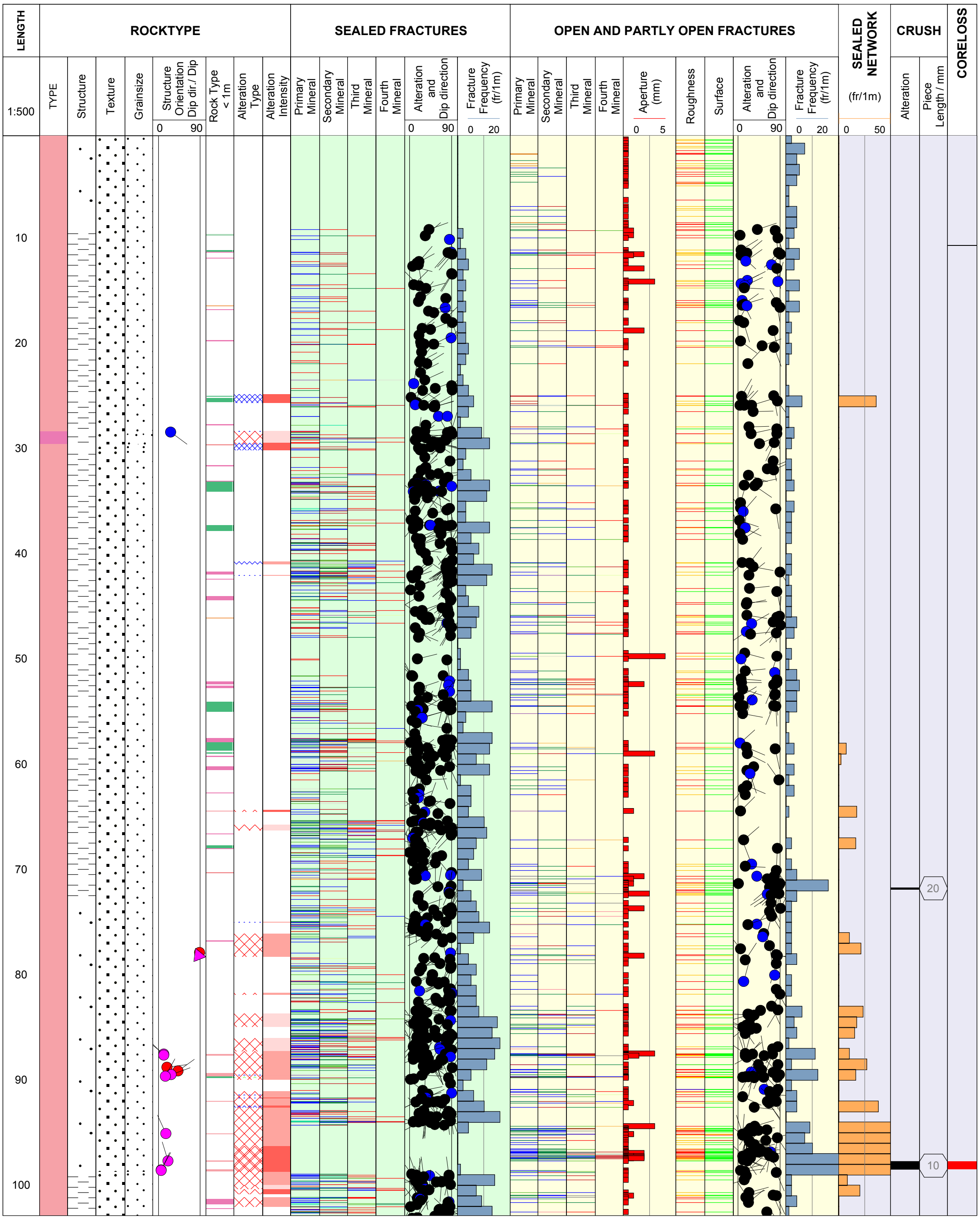


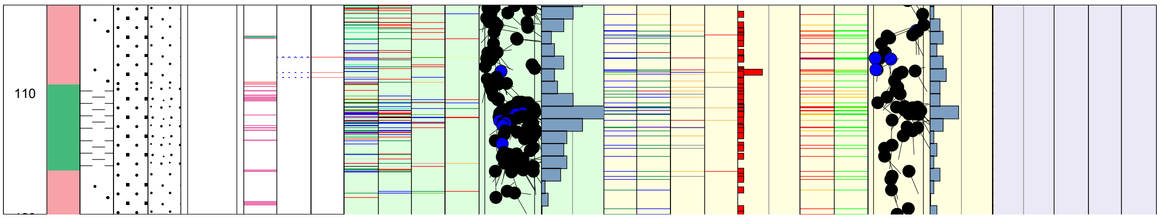

110
120

D: WellCad diagram of KLX09E

Title GEOLOGY IN KLX09E **Appendix:**

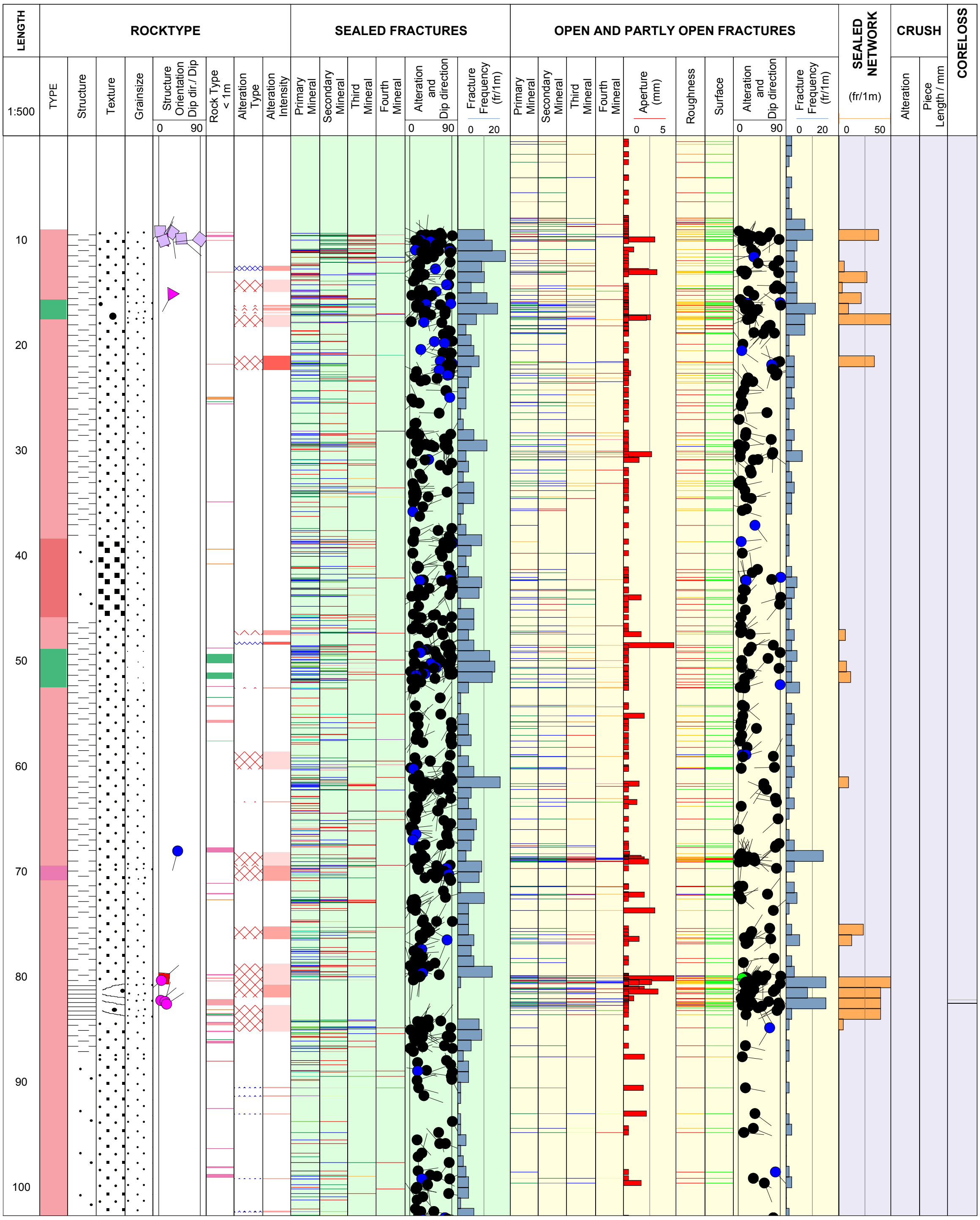
Site	LAXEMAR	**Coordinate System**	RT90-RHB70
Borehole	KLX09E	**Northing [m]**	6367304.45
Diameter [mm]	76	**Easting [m]**	1548880.37
Length [m]	120.000	**Elevation [m.a.s.l.]**	22.16
Bearing [°]	338.90	**Drilling Start Date**	2005-11-23 08:25:00
Inclination [°]	-59.95	**Drilling Stop Date**	2005-12-05 07:00:00
Date of coremapping	2006-02-16 09:33:00	**Plot Date**	2007-10-25 22:03:45
Rocktype data from	p_rock	**Signed data**	

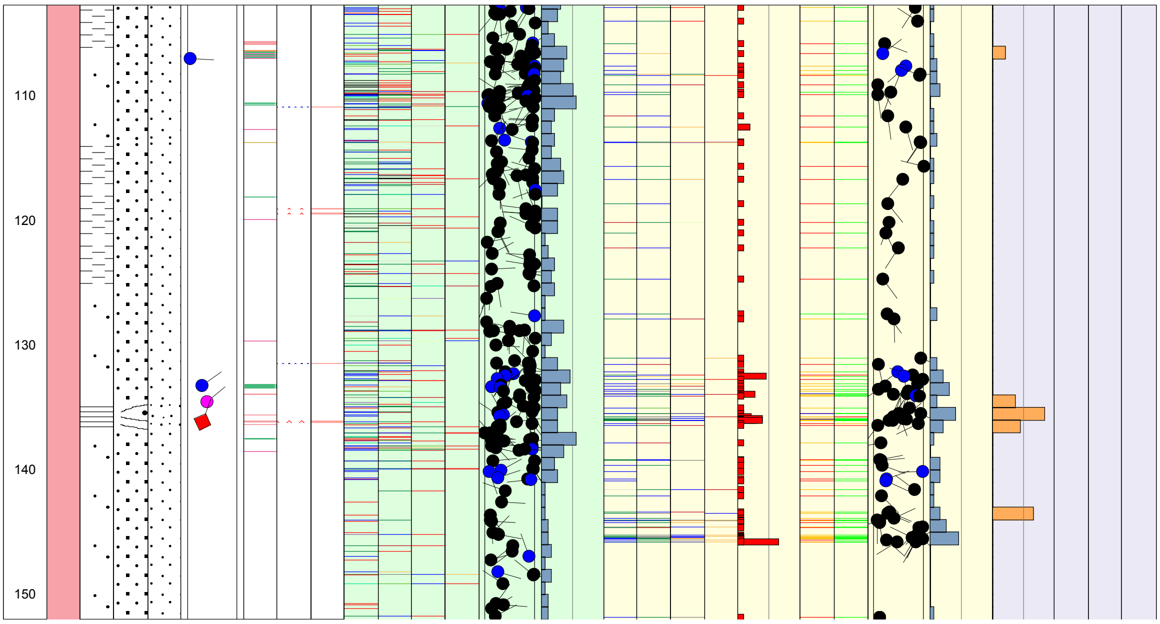



110

E: WellCad diagram of KLX09F

Title	GEOLOGY IN KLX09F		Appendix:
Site	LAXEMAR	Coordinate System	RT90-RHB70
Borehole	KLX09F	Northing [m]	6367318.02
Diameter [mm]	76	Easting [m]	1548817.27
Length [m]	152.300	Elevation [m.a.s.l.]	19.57
Bearing [°]	90.67	Drilling Start Date	2005-12-06 09:00:00
Inclination [°]	-59.73	Drilling Stop Date	2006-01-06 13:00:00
Date of coremapping	2006-02-14 11:07:00	Plot Date	2007-10-25 22:03:45
Rocktype data from	p_rock	Signed data	




110
120
130
140
150

Legend to WellCad diagram

Title	LEGEND FOR LAXEMAR	KLX09B
Site	LAXEMAR	
Borehole	KLX09B	
Plot Date	2007-10-25 22:03:45	
Signed data		

ROCKTYPE LAXEMAR
- Äspö Diorite
- Dolerite
- Fine-grained Götemargranite
- Coarse-grained Götemargranite
- Fine-grained granite
- Pegmatite
- Granite
- Ävrö granite
- Quartz monzodiorite
- Diorite / Gabbro
- Fine-grained dioritoid
- Fine-grained diorite-gabbro
- Sulphide mineralization
- Sandstone
- Soil
- Ävrö quartz monzodiorite
- Ävrö granodiorite

ROCK ALTERATION TYPE
- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization
- Laumontitization
- Fract zone alteration

MINERAL
- Epidote
- Flourite
- Hematite
- Calcite
- Chlorite
- Pyrite
- Clay Minerals
- Iron Hydroxide
- Oxidized Walls

STRUCTURE
- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated
- Lineated

TEXTURE
- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Unequigranular
- Metamorphic

GRAINSIZE
- Aphanitic
- Fine-grained
- Fine to medium grained
- Medium to coarse grained
- Coarse-grained
- Medium-grained

STRUCTURE ORIENTATION
- Cataclastic
- Bedded
- Gneissic
- Schistose
- Brittle-Ductile Shear Zone
- Ductile Shear Zone
- Lineated
- Banded
- Veined
- Brecciated
- Foliated
- Mylonitic

ROCK ALTERATION INTENSITY
- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS
- Planar
- Undulating
- Stepped
- Irregular

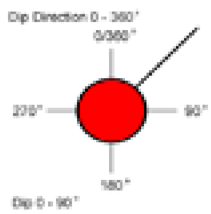
SURFACE
- Rough
- Smooth
- Slickensided

CRUSH ALTERATION
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

FRACTURE ALTERATION
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION



Title	LEGEND FOR LAXEMAR	KLX09C

SKB

Site LAXEMAR
Borehole KLX09C
Plot Date 2007-10-25 22:03:45
Signed data

ROCKTYPE LAXEMAR

- Äspö Diorite
- Dolerite
- Fine-grained Götemargranite
- Coarse-grained Götemargranite
- Fine-grained granite
- Pegmatite
- Granite
- Ävrö granite
- Quartz monzodiorite
- Diorite / Gabbro
- Fine-grained dioritoid
- Fine-grained diorite-gabbro
- Sulphide mineralization
- Sandstone
- Soil
- Ävrö quartz monzodiorite
- Ävrö granodiorite

ROCK ALTERATION TYPE

- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization
- Laumontitization
- Fract zone alteration

MINERAL

- Epidote
- Flourite
- Hematite
- Calcite
- Chlorite
- Quartz
- Clay Minerals
- Laumontite
- Prehnite
- Iron Hydroxide
- Oxidized Walls

STRUCTURE

- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated
- Lineated

TEXTURE

- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Unequigranular
- Metamorphic

GRAINSIZE

- Aphanitic
- Fine-grained
- Fine to medium grained
- Medium to coarse grained
- Coarse-grained
- Medium-grained

STRUCTURE ORIENTATION

- Cataclastic
- Bedded
- Gneissic
- Schistose
- Brittle-Ductile Shear Zone
- Ductile Shear Zone
- Lineated
- Banded
- Veined
- Brecciated
- Foliated
- Mylonitic

ROCK ALTERATION INTENSITY

- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS

- Planar
- Undulating
- Stepped
- Irregular

SURFACE

- Rough
- Smooth
- Slickensided

CRUSH ALTERATION

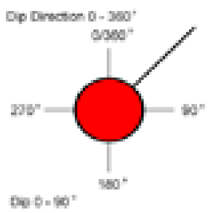
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

FRACTURE ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION



Title LEGEND FOR LAXEMAR KLX09D

Site LAXEMAR
Borehole KLX09D
Plot Date 2007-10-25 22:03:45
Signed data

ROCKTYPE LAXEMAR

- Äspö Diorite
- Dolerite
- Fine-grained Götemargranite
- Coarse-grained Götemargranite
- Fine-grained granite
- Pegmatite
- Granite
- Ävrö granite
- Quartz monzodiorite
- Diorite / Gabbro
- Fine-grained dioritoid
- Fine-grained diorite-gabbro
- Sulphide mineralization
- Sandstone
- Soil
- Ävrö quartz monzodiorite
- Ävrö granodiorite

ROCK ALTERATION TYPE

- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization
- Laumontitization
- Fract zone alteration

MINERAL

- Epidote
- Flourite
- Hematite
- Calcite
- Chlorite
- Quartz
- Pyrite
- Clay Minerals
- Laumontite
- Prehnite
- Iron Hydroxide
- Oxidized Walls

STRUCTURE

- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated
- Lineated

TEXTURE

- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Unequigranular
- Metamorphic

GRAINSIZE

- Aphanitic
- Fine-grained
- Fine to medium grained
- Medium to coarse grained
- Coarse-grained
- Medium-grained

STRUCTURE ORIENTATION

- Cataclastic
- Bedded
- Gneissic
- Schistose
- Brittle-Ductile Shear Zone
- Ductile Shear Zone
- Lineated
- Banded
- Veined
- Brecciated
- Foliated
- Mylonitic

ROCK ALTERATION INTENSITY

- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS

- Planar
- Undulating
- Stepped
- Irregular

SURFACE

- Rough
- Smooth
- Slickensided

CRUSH ALTERATION

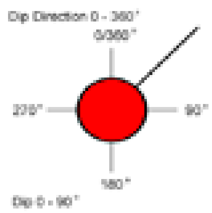
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

FRACTURE ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION



Title LEGEND FOR LAXEMAR KLX09E

Site	LAXEMAR
Borehole	KLX09E
Plot Date	2007-10-25 22:03:45
Signed data	

ROCKTYPE LAXEMAR

- Äspö Diorite
- Dolerite
- Fine-grained Götemargranite
- Coarse-grained Götemargranite
- Fine-grained granite
- Pegmatite
- Granite
- Ävrö granite
- Quartz monzodiorite
- Diorite / Gabbro
- Fine-grained dioritoid
- Fine-grained diorite-gabbro
- Sulphide mineralization
- Sandstone
- Soil
- Ävrö quartz monzodiorite
- Ävrö granodiorite

ROCK ALTERATION TYPE

- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization
- Laumontitization
- Fract zone alteration

MINERAL

- Epidote
- Flourite
- Hematite
- Calcite
- Chlorite
- Quartz
- Pyrite
- Clay Minerals
- Laumontite
- Prehnite
- Iron Hydroxide

STRUCTURE

- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated
- Lineated

TEXTURE

- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Unequigranular
- Metamorphic

GRAINSIZE

- Aphanitic
- Fine-grained
- Fine to medium grained
- Medium to coarse grained
- Coarse-grained
- Medium-grained

STRUCTURE ORIENTATION

- Cataclastic
- Bedded
- Gneissic
- Schistose
- Brittle-Ductile Shear Zone
- Ductile Shear Zone
- Lineated
- Banded
- Veined
- Brecciated
- Foliated
- Mylonitic

ROCK ALTERATION INTENSITY

- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS

- Planar
- Undulating
- Stepped
- Irregular

SURFACE

- Rough
- Smooth
- Slickensided

CRUSH ALTERATION

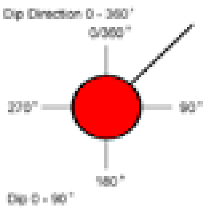
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

FRACTURE ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION



Title	LEGEND FOR LAXEMAR	KLX09F

Site: LAXEMAR
Borehole: KLX09F
Plot Date: 2007-10-25 22:03:45
Signed data

ROCKTYPE LAXEMAR

- Äspö Diorite
- Dolerite
- Fine-grained Götemargranite
- Coarse-grained Götemargranite
- Fine-grained granite
- Pegmatite
- Granite
- Ävrö granite
- Quartz monzodiorite
- Diorite / Gabbro
- Fine-grained dioritoid
- Fine-grained diorite-gabbro
- Sulphide mineralization
- Sandstone
- Soil
- Ävrö quartz monzodiorite
- Ävrö granodiorite

ROCK ALTERATION TYPE

- Oxidized
- Chloritisized
- Epidotisized
- Weathered
- Tectonized
- Sericitisized
- Quartz dissolution
- Silicification
- Argillization
- Albitization
- Carbonatization
- Saussuritization
- Steatitization
- Uralitization
- Laumontitization
- Fract zone alteration

MINERAL

- Epidote
- Hematite
- Calcite
- Chlorite
- Quartz
- Pyrite
- Clay Minerals
- Laumontite

STRUCTURE

- Cataclastic
- Schistose
- Gneissic
- Mylonitic
- Ductile Shear Zone
- Brittle-Ductile Zone
- Veined
- Banded
- Massive
- Foliated
- Brecciated
- Lineated

TEXTURE

- Hornfelsed
- Porphyritic
- Ophitic
- Equigranular
- Augen-Bearing
- Unequigranular
- Metamorphic

GRAINSIZE

- Aphanitic
- Fine-grained
- Fine to medium grained
- Medium to coarse grained
- Coarse-grained
- Medium-grained

STRUCTURE ORIENTATION

- Cataclastic
- Bedded
- Gneissic
- Schistose
- Brittle-Ductile Shear Zone
- Ductile Shear Zone
- Lineated
- Banded
- Veined
- Brecciated
- Foliated
- Mylonitic

ROCK ALTERATION INTENSITY

- No intensity
- Faint
- Weak
- Medium
- Strong

ROUGHNESS

- Planar
- Undulating
- Stepped
- Irregular

SURFACE

- Rough
- Smooth
- Slickensided

CRUSH ALTERATION

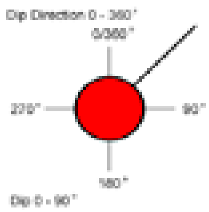
- Slightly Altered
- Moderately Altered
- Highly Altered
- Completley Altered
- Gouge
- Fresh

FRACTURE ALTERATION

- Slightly Altered
- Moderately Altered
- Highly Altered
- Completely Altered
- Gouge
- Fresh

FRACTURE DIRECTION

STRUKTURE ORIENTATION



A: In-data: Borehole length and diameter for KLX09B

KLX09B, 2006-01-16 14:00:00 - 2006-02-26 12:00:00 (0.000 - 100.220 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.300	10.740	0.0960	HQ
10.740	100.220	0.0757	Corac N/3

Printout from SICADA 2006-02-14 08:54:19.

B: In-data: Borehole length and diameter for KLX09C

KLX09C, 2006-01-07 11:00:00 - 2006-01-15 12:00:00 (0.300 - 120.050 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.300	9.000	0.0960	HQ
9.000	120.050	0.0757	Corac N/3

Printout from SICADA 2006-02-09 17:28:01.

C: In-data: Borehole length and diameter for KLX09D

KLX09D, 2005-11-05 06:00:00 - 2005-11-17 14:00:00 (0.300 - 121.020 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.300	9.750	0.0960	HQ
9.750	121.020	0.0758	Corac N/3

Printout from SICADA 2006-02-09 17:29:54.

D: In-data: Borehole length and diameter for KLX09E

KLX09E, 2005-11-23 08:25:00 - 2005-12-05 07:00:00 (0.300 - 120.000 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.300	9.000	0.0960	HQ
9.000	120.000	0.0758	Corac N/3

Printout from SICADA 2006-02-09 17:31:07.

E: In-data: Borehole length and diameter for KLX09F

KLX09F, 2005-12-06 09:00:00 - 2006-01-06 13:00:00 (0.300 - 152.300 m)

Sub Secup (m)	Sub Seclow (m)	Hole Diam (m)	Comment
0.300	9.000	0.0960	HQ
9.000	152.300	0.0757	Corac N/3

Printout from SICADA 2006-02-09 17:32:35.

Appendix 7

A: In-data: Borehole deviation data for KLX09B

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX09B	RT90-RHB70	6367329.07	1548859.01	23.61	0.00	0.00	-89.83	21.25	0.178	133.447	0.00	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.08	1548859.01	20.62	3.00	3.00	-89.80	21.25	0.178	133.447	0.01	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.09	1548859.01	17.62	6.00	6.00	-89.79	2.05	0.178	133.447	0.02	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.10	1548859.01	14.62	9.00	9.00	-89.79	342.85	0.178	133.447	0.03	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.11	1548859.01	11.62	12.00	12.00	-89.75	323.65	0.178	133.447	0.04	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.11	1548859.00	8.62	15.00	15.00	-89.81	304.44	0.178	133.447	0.05	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.12	1548858.99	5.62	18.00	18.00	-89.79	285.24	0.178	133.447	0.06	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.12	1548858.98	2.62	21.00	21.00	-89.82	266.04	0.178	133.447	0.07	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.12	1548858.97	-0.38	24.00	24.00	-89.85	246.83	0.178	133.447	0.07	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.11	1548858.96	-3.38	27.00	27.00	-89.75	236.84	0.178	133.447	0.08	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.10	1548858.95	-6.38	30.00	30.00	-89.72	224.13	0.178	133.447	0.09	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.09	1548858.94	-9.38	33.00	33.00	-89.72	206.87	0.178	133.447	0.11	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.08	1548858.93	-12.38	36.00	36.00	-89.65	207.33	0.178	133.447	0.12	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.06	1548858.93	-15.38	39.00	39.00	-89.65	208.89	0.178	133.447	0.13	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.05	1548858.92	-18.38	42.00	42.00	-89.65	208.50	0.178	133.447	0.15	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.03	1548858.91	-21.38	45.00	45.00	-89.69	207.44	0.178	133.447	0.16	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.02	1548858.90	-24.38	48.00	48.00	-89.70	205.51	0.178	133.447	0.17	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367329.00	1548858.90	-27.38	51.00	51.00	-89.71	203.55	0.178	133.447	0.18	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.99	1548858.89	-30.38	54.00	54.00	-89.72	205.19	0.178	133.447	0.19	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.97	1548858.88	-33.38	57.00	57.00	-89.72	205.77	0.178	133.447	0.20	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.96	1548858.88	-36.38	60.00	60.00	-89.72	202.46	0.178	133.447	0.21	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.95	1548858.87	-39.38	63.00	63.00	-89.73	200.35	0.178	133.447	0.22	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.94	1548858.87	-42.38	66.00	66.00	-89.75	199.16	0.178	133.447	0.23	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.92	1548858.86	-45.38	69.00	69.00	-89.75	199.69	0.178	133.447	0.24	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.91	1548858.86	-48.38	72.00	72.00	-89.75	202.50	0.178	133.447	0.25	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.90	1548858.85	-51.38	75.00	75.00	-89.74	202.73	0.178	133.447	0.26	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.89	1548858.85	-54.38	78.00	78.00	-89.75	202.73	0.178	133.447	0.27	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.87	1548858.84	-57.38	81.00	81.00	-89.78	202.10	0.178	133.447	0.28	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.86	1548858.84	-60.38	84.00	84.00	-89.82	200.56	0.178	133.447	0.29	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.86	1548858.84	-63.38	87.00	87.00	-89.85	202.78	0.178	133.447	0.30	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.85	1548858.83	-66.38	90.00	90.00	-89.83	217.84	0.178	133.447	0.31	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.84	1548858.83	-69.38	93.00	93.00	-89.81	217.84	0.178	133.447	0.32	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.83	1548858.82	-72.38	96.00	96.00	-89.74	222.24	0.178	133.447	0.33	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.82	1548858.81	-75.38	99.00	99.00	-89.74	224.99	0.178	133.447	0.34	Measured	2007-01-22 10:27
KLX09B	RT90-RHB70	6367328.82	1548858.81	-76.60	100.22	100.22	-89.74	224.99	0.178	133.447	0.34	Measured	2007-01-22 10:27

B: In-data: Borehole deviation data for KLX09C

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX09C	RT90-RHB70	6367353.43	1548838.82	23.75	0.00	0.00	-59.52	160.39	0.085	0.820	0.00	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367352.00	1548839.33	21.17	3.00	2.59	-59.52	160.39	0.085	0.820	0.02	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367350.57	1548839.84	18.58	6.00	5.17	-59.52	160.70	0.085	0.820	0.04	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367349.12	1548840.34	16.00	9.00	7.75	-59.32	161.02	0.085	0.820	0.07	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367347.67	1548840.83	13.42	12.00	10.33	-59.20	161.34	0.085	0.820	0.09	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367346.21	1548841.32	10.84	15.00	12.91	-59.11	161.66	0.085	0.820	0.11	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367344.75	1548841.80	8.27	18.00	15.48	-59.04	161.98	0.085	0.820	0.13	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367343.28	1548842.28	5.70	21.00	18.05	-58.98	162.30	0.085	0.820	0.15	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367341.80	1548842.74	3.13	24.00	20.62	-58.92	162.62	0.085	0.820	0.18	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367340.32	1548843.21	0.56	27.00	23.19	-58.86	162.62	0.085	0.820	0.20	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367338.84	1548843.67	-2.01	30.00	25.76	-58.77	162.73	0.085	0.820	0.22	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367337.35	1548844.12	-4.57	33.00	28.32	-58.69	163.48	0.085	0.820	0.24	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367335.86	1548844.57	-7.13	36.00	30.89	-58.63	163.44	0.085	0.820	0.26	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367334.36	1548845.01	-9.69	39.00	33.45	-58.53	163.52	0.085	0.820	0.29	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367332.85	1548845.45	-12.25	42.00	36.00	-58.48	163.64	0.085	0.820	0.31	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367331.34	1548845.89	-14.81	45.00	38.56	-58.38	164.23	0.085	0.820	0.33	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367329.83	1548846.31	-17.36	48.00	41.11	-58.31	164.51	0.085	0.820	0.35	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367328.31	1548846.73	-19.91	51.00	43.66	-58.23	164.93	0.085	0.820	0.38	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367326.78	1548847.14	-22.46	54.00	46.21	-58.16	164.64	0.085	0.820	0.40	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367325.25	1548847.56	-25.01	57.00	48.76	-58.08	164.81	0.085	0.820	0.42	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367323.72	1548847.97	-27.56	60.00	51.31	-58.02	165.10	0.085	0.820	0.45	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367322.18	1548848.38	-30.10	63.00	53.85	-57.97	165.26	0.085	0.820	0.47	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367320.64	1548848.78	-32.64	66.00	56.39	-57.94	165.68	0.085	0.820	0.49	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367319.10	1548849.17	-35.19	69.00	58.94	-57.89	166.12	0.085	0.820	0.51	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367317.55	1548849.54	-37.73	72.00	61.48	-57.87	166.47	0.085	0.820	0.54	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367315.99	1548849.92	-40.27	75.00	64.02	-57.82	166.65	0.085	0.820	0.56	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367314.44	1548850.28	-42.80	78.00	66.56	-57.78	166.87	0.085	0.820	0.58	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367312.88	1548850.64	-45.34	81.00	69.09	-57.75	167.00	0.085	0.820	0.61	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367311.32	1548851.00	-47.88	84.00	71.63	-57.73	166.96	0.085	0.820	0.63	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367309.76	1548851.36	-50.41	87.00	74.17	-57.68	167.10	0.085	0.820	0.65	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367308.19	1548851.72	-52.95	90.00	76.70	-57.63	167.28	0.085	0.820	0.67	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367306.62	1548852.07	-55.48	93.00	79.23	-57.59	167.80	0.085	0.820	0.70	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367305.05	1548852.40	-58.01	96.00	81.77	-57.54	168.31	0.085	0.820	0.72	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367303.47	1548852.72	-60.54	99.00	84.30	-57.47	168.54	0.085	0.820	0.74	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367301.89	1548853.04	-63.07	102.00	86.82	-57.41	168.60	0.085	0.820	0.77	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367300.30	1548853.36	-65.60	105.00	89.35	-57.37	168.63	0.085	0.820	0.79	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367298.71	1548853.68	-68.13	108.00	91.88	-57.33	168.87	0.085	0.820	0.81	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367297.12	1548853.99	-70.65	111.00	94.40	-57.28	169.13	0.085	0.820	0.84	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367295.53	1548854.29	-73.17	114.00	96.92	-57.23	169.34	0.085	0.820	0.86	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367293.93	1548854.59	-75.70	117.00	99.45	-57.22	169.55	0.085	0.820	0.88	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367292.33	1548854.88	-78.22	120.00	101.97	-57.22	169.55	0.085	0.820	0.91	Measured	2007-02-06 08:23
KLX09C	RT90-RHB70	6367292.31	1548854.89	-78.26	120.05	102.01	-57.22	169.55	0.085	0.820	0.91	Measured	2007-02-06 08:23

C: In-data: Borehole deviation data for KLX09D

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX09D	RT90-RHB70	6367336.99	1548878.22	23.10	0.00	0.00	-60.25	270.15	0.035	1.374	0.00	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.00	1548876.73	20.50	3.00	2.60	-60.14	270.15	0.035	1.374	0.04	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.00	1548875.24	17.90	6.00	5.20	-60.14	270.19	0.035	1.374	0.07	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.01	1548873.74	15.30	9.00	7.80	-60.00	270.24	0.035	1.374	0.11	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.01	1548872.24	12.70	12.00	10.40	-59.95	270.29	0.035	1.374	0.14	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.02	1548870.74	10.10	15.00	13.00	-59.94	270.33	0.035	1.374	0.18	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.03	1548869.23	7.51	18.00	15.59	-59.88	270.38	0.035	1.374	0.22	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.04	1548867.73	4.91	21.00	18.19	-59.81	270.43	0.035	1.374	0.25	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.05	1548866.22	2.32	24.00	20.78	-59.74	270.48	0.035	1.374	0.29	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.07	1548864.70	-0.27	27.00	23.37	-59.70	270.48	0.035	1.374	0.32	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.08	1548863.19	-2.86	30.00	25.96	-59.64	270.45	0.035	1.374	0.36	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.08	1548861.67	-5.45	33.00	28.55	-59.55	269.51	0.035	1.374	0.40	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.07	1548860.15	-8.03	36.00	31.13	-59.52	269.51	0.035	1.374	0.43	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.05	1548858.63	-10.62	39.00	33.72	-59.45	269.48	0.035	1.374	0.47	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.05	1548857.10	-13.20	42.00	36.30	-59.38	270.58	0.035	1.374	0.51	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.08	1548855.57	-15.78	45.00	38.88	-59.28	271.46	0.035	1.374	0.54	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.12	1548854.04	-18.36	48.00	41.46	-59.23	271.43	0.035	1.374	0.58	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.16	1548852.50	-20.94	51.00	44.04	-59.16	271.75	0.035	1.374	0.62	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.20	1548850.96	-23.51	54.00	46.61	-59.10	271.32	0.035	1.374	0.65	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.24	1548849.42	-26.08	57.00	49.18	-59.03	271.55	0.035	1.374	0.69	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.28	1548847.88	-28.66	60.00	51.76	-58.97	271.55	0.035	1.374	0.73	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.33	1548846.33	-31.22	63.00	54.33	-58.89	271.84	0.035	1.374	0.77	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.39	1548844.78	-33.79	66.00	56.89	-58.81	272.36	0.035	1.374	0.80	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.45	1548843.22	-36.36	69.00	59.46	-58.73	272.23	0.035	1.374	0.84	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.51	1548841.67	-38.92	72.00	62.02	-58.66	272.63	0.035	1.374	0.88	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.58	1548840.11	-41.48	75.00	64.58	-58.58	272.19	0.035	1.374	0.92	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.65	1548838.54	-44.04	78.00	67.14	-58.52	272.69	0.035	1.374	0.95	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.71	1548836.98	-46.60	81.00	69.70	-58.47	272.15	0.035	1.374	0.99	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.78	1548835.41	-49.16	84.00	72.26	-58.41	272.86	0.035	1.374	1.03	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.85	1548833.84	-51.71	87.00	74.81	-58.38	272.27	0.035	1.374	1.07	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.91	1548832.26	-54.26	90.00	77.36	-58.32	272.38	0.035	1.374	1.10	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367337.98	1548830.69	-56.82	93.00	79.92	-58.26	272.06	0.035	1.374	1.14	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.04	1548829.11	-59.37	96.00	82.47	-58.21	272.30	0.035	1.374	1.18	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.10	1548827.53	-61.92	99.00	85.02	-58.14	272.30	0.035	1.374	1.22	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.16	1548825.95	-64.46	102.00	87.56	-58.09	272.17	0.035	1.374	1.26	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.22	1548824.36	-67.01	105.00	90.11	-58.00	272.19	0.035	1.374	1.29	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.28	1548822.77	-69.55	108.00	92.65	-57.95	272.04	0.035	1.374	1.33	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.34	1548821.18	-72.09	111.00	95.19	-57.87	272.33	0.035	1.374	1.37	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.40	1548819.58	-74.63	114.00	97.73	-57.82	272.20	0.035	1.374	1.41	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.47	1548817.98	-77.17	117.00	100.27	-57.78	272.45	0.035	1.374	1.45	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.53	1548816.38	-79.71	120.00	102.81	-57.76	272.20	0.035	1.374	1.48	Measured	2007-02-06 08:24
KLX09D	RT90-RHB70	6367338.55	1548815.84	-80.57	121.02	103.67	-57.76	272.20	0.035	1.374	1.50	Measured	2007-02-06 08:24

D: In-data: Borehole deviation data for KLX09E

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX09E	RT90-RHB70	6367304.45	1548880.37	22.16	0.00	0.00	-59.96	338.90	0.075	0.777	0.00	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367305.85	1548879.83	19.56	3.00	2.60	-59.98	338.90	0.075	0.777	0.02	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367307.25	1548879.30	16.96	6.00	5.20	-60.16	339.39	0.075	0.777	0.04	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367308.65	1548878.78	14.36	9.00	7.80	-60.19	339.88	0.075	0.777	0.06	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367310.05	1548878.27	11.75	12.00	10.40	-60.19	340.37	0.075	0.777	0.08	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367311.45	1548877.78	9.15	15.00	13.01	-60.22	340.86	0.075	0.777	0.10	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367312.86	1548877.30	6.55	18.00	15.61	-60.25	341.35	0.075	0.777	0.12	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367314.28	1548876.83	3.94	21.00	18.22	-60.25	341.85	0.075	0.777	0.14	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367315.69	1548876.36	1.34	24.00	20.82	-60.22	341.69	0.075	0.777	0.16	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367317.11	1548875.89	-1.27	27.00	23.42	-60.14	341.60	0.075	0.777	0.18	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367318.53	1548875.42	-3.87	30.00	26.02	-60.05	341.75	0.075	0.777	0.20	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367319.95	1548874.95	-6.47	33.00	28.62	-59.98	342.10	0.075	0.777	0.22	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367321.38	1548874.50	-9.06	36.00	31.22	-59.93	342.37	0.075	0.777	0.24	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367322.82	1548874.04	-11.66	39.00	33.81	-59.88	342.40	0.075	0.777	0.26	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367324.25	1548873.58	-14.25	42.00	36.41	-59.79	342.40	0.075	0.777	0.28	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367325.69	1548873.12	-16.84	45.00	39.00	-59.70	341.78	0.075	0.777	0.30	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367327.13	1548872.65	-19.43	48.00	41.59	-59.62	341.78	0.075	0.777	0.33	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367328.58	1548872.18	-22.02	51.00	44.18	-59.56	342.51	0.075	0.777	0.35	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367330.03	1548871.72	-24.61	54.00	46.76	-59.52	342.62	0.075	0.777	0.37	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367331.48	1548871.27	-27.19	57.00	49.35	-59.47	342.67	0.075	0.777	0.39	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367332.94	1548870.82	-29.77	60.00	51.93	-59.42	342.80	0.075	0.777	0.41	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367334.40	1548870.37	-32.36	63.00	54.51	-59.34	343.14	0.075	0.777	0.43	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367335.86	1548869.93	-34.94	66.00	57.09	-59.30	343.32	0.075	0.777	0.45	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367337.33	1548869.49	-37.51	69.00	59.67	-59.19	343.59	0.075	0.777	0.47	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367338.81	1548869.06	-40.09	72.00	62.25	-59.13	343.91	0.075	0.777	0.49	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367340.29	1548868.64	-42.66	75.00	64.82	-59.08	344.04	0.075	0.777	0.51	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367341.77	1548868.21	-45.24	78.00	67.39	-59.02	344.11	0.075	0.777	0.53	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367343.26	1548867.80	-47.81	81.00	69.96	-58.95	344.72	0.075	0.777	0.55	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367344.76	1548867.39	-50.38	84.00	72.53	-58.90	344.93	0.075	0.777	0.58	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367346.26	1548866.99	-52.95	87.00	75.10	-58.85	345.23	0.075	0.777	0.60	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367347.76	1548866.60	-55.51	90.00	77.67	-58.80	345.59	0.075	0.777	0.62	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367349.27	1548866.21	-58.08	93.00	80.23	-58.75	345.66	0.075	0.777	0.64	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367350.78	1548865.83	-60.64	96.00	82.80	-58.58	345.70	0.075	0.777	0.66	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367352.30	1548865.44	-63.20	99.00	85.35	-58.47	345.69	0.075	0.777	0.68	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367353.82	1548865.05	-65.75	102.00	87.91	-58.41	345.63	0.075	0.777	0.70	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367355.34	1548864.66	-68.31	105.00	90.46	-58.34	345.68	0.075	0.777	0.72	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367356.87	1548864.27	-70.86	108.00	93.02	-58.27	345.69	0.075	0.777	0.74	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367358.40	1548863.88	-73.41	111.00	95.57	-58.24	345.69	0.075	0.777	0.77	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367359.93	1548863.49	-75.96	114.00	98.12	-58.20	345.79	0.075	0.777	0.79	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367361.46	1548863.11	-78.51	117.00	100.67	-58.20	346.08	0.075	0.777	0.81	Measured	2007-02-06 08:24
KLX09E	RT90-RHB70	6367363.00	1548862.73	-81.06	120.00	103.22	-58.20	346.08	0.075	0.777	0.83	Measured	2007-02-06 08:24

E: In-data: Borehole deviation data for KLX09F

SICADA - object_location

Idcode	Coord System	Northing (m)	Easting (m)	Elevation (m.a.s.l.)	Length (m)	Vertical Depth (m)	Inclination (degrees)	Bearing (degrees)	Inclination Uncert (degrees)	Bearing Uncert (degrees)	Radius Uncert (m)	Origin	Indat
KLX09F	RT90-RHB70	6367318.02	1548817.26	19.57	0.00	0.00	-59.74	90.67	0.030	0.650	0.00	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367318.01	1548818.78	16.98	3.00	2.59	-59.70	90.67	0.030	0.650	0.02	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.98	1548820.29	14.39	6.00	5.18	-59.70	91.11	0.030	0.650	0.03	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.95	1548821.81	11.80	9.00	7.77	-59.44	91.54	0.030	0.650	0.05	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.90	1548823.34	9.22	12.00	10.35	-59.40	91.97	0.030	0.650	0.07	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.84	1548824.86	6.64	15.00	12.93	-59.36	92.40	0.030	0.650	0.09	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.77	1548826.39	4.06	18.00	15.51	-59.33	92.84	0.030	0.650	0.10	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.69	1548827.92	1.48	21.00	18.09	-59.24	93.27	0.030	0.650	0.12	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.60	1548829.45	-1.10	24.00	20.67	-59.20	93.57	0.030	0.650	0.14	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.50	1548830.99	-3.67	27.00	23.25	-59.16	93.83	0.030	0.650	0.16	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.40	1548832.52	-6.25	30.00	25.82	-59.11	93.85	0.030	0.650	0.17	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.29	1548834.06	-8.82	33.00	28.39	-59.08	94.04	0.030	0.650	0.19	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.18	1548835.60	-11.40	36.00	30.97	-59.06	94.05	0.030	0.650	0.21	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367317.06	1548837.14	-13.97	39.00	33.54	-59.02	94.77	0.030	0.650	0.23	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.93	1548838.68	-16.54	42.00	36.11	-59.01	94.87	0.030	0.650	0.24	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.80	1548840.22	-19.11	45.00	38.68	-59.00	94.99	0.030	0.650	0.26	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.66	1548841.76	-21.68	48.00	41.25	-58.98	95.11	0.030	0.650	0.28	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.52	1548843.30	-24.25	51.00	43.83	-58.97	95.57	0.030	0.650	0.30	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.36	1548844.83	-26.82	54.00	46.40	-58.92	96.34	0.030	0.650	0.31	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.19	1548846.37	-29.39	57.00	48.96	-58.91	96.54	0.030	0.650	0.33	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367316.01	1548847.91	-31.96	60.00	51.53	-58.87	96.44	0.030	0.650	0.35	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367315.84	1548849.46	-34.53	63.00	54.10	-58.86	96.50	0.030	0.650	0.37	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367315.66	1548851.00	-37.10	66.00	56.67	-58.85	96.70	0.030	0.650	0.38	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367315.48	1548852.54	-39.66	69.00	59.24	-58.78	96.75	0.030	0.650	0.40	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367315.29	1548854.09	-42.23	72.00	61.80	-58.67	96.91	0.030	0.650	0.42	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367315.10	1548855.64	-44.79	75.00	64.36	-58.58	96.78	0.030	0.650	0.44	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367314.92	1548857.19	-47.35	78.00	66.92	-58.50	96.75	0.030	0.650	0.45	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367314.74	1548858.75	-49.91	81.00	69.48	-58.39	96.75	0.030	0.650	0.47	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367314.55	1548860.31	-52.46	84.00	72.03	-58.34	96.99	0.030	0.650	0.49	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367314.35	1548861.88	-55.01	87.00	74.58	-58.20	97.23	0.030	0.650	0.51	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367314.15	1548863.45	-57.56	90.00	77.13	-58.11	97.43	0.030	0.650	0.53	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367313.94	1548865.02	-60.11	93.00	79.68	-58.05	97.59	0.030	0.650	0.54	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367313.73	1548866.60	-62.65	96.00	82.22	-57.97	97.79	0.030	0.650	0.56	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367313.51	1548868.17	-65.19	99.00	84.76	-57.91	98.37	0.030	0.650	0.58	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367313.27	1548869.75	-67.73	102.00	87.30	-57.81	98.48	0.030	0.650	0.60	Measured	2007-02-06 08:25

KLX09F	RT90-RHB70	6367313.04	1548871.33	-70.27	105.00	89.84	-57.73	98.48	0.030	0.650	0.62	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367312.80	1548872.92	-72.80	108.00	92.38	-57.61	98.50	0.030	0.650	0.64	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367312.55	1548874.51	-75.34	111.00	94.91	-57.53	99.08	0.030	0.650	0.65	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367312.30	1548876.10	-77.87	114.00	97.44	-57.48	99.11	0.030	0.650	0.67	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367312.04	1548877.70	-80.40	117.00	99.97	-57.34	99.35	0.030	0.650	0.69	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367311.77	1548879.30	-82.92	120.00	102.49	-57.24	100.14	0.030	0.650	0.71	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367311.47	1548880.89	-85.44	123.00	105.01	-57.15	100.57	0.030	0.650	0.73	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367311.17	1548882.50	-87.96	126.00	107.53	-57.02	100.77	0.030	0.650	0.75	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367310.87	1548884.10	-90.48	129.00	110.05	-56.95	100.77	0.030	0.650	0.76	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367310.56	1548885.71	-92.99	132.00	112.56	-56.86	101.08	0.030	0.650	0.78	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367310.24	1548887.32	-95.50	135.00	115.07	-56.81	100.85	0.030	0.650	0.80	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367309.93	1548888.93	-98.01	138.00	117.58	-56.74	101.08	0.030	0.650	0.82	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367309.61	1548890.55	-100.52	141.00	120.09	-56.69	101.32	0.030	0.650	0.84	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367309.29	1548892.17	-103.02	144.00	122.59	-56.66	101.38	0.030	0.650	0.86	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367308.96	1548893.78	-105.53	147.00	125.10	-56.64	101.39	0.030	0.650	0.88	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367308.63	1548895.40	-108.04	150.00	127.61	-56.63	101.39	0.030	0.650	0.89	Measured	2007-02-06 08:25
KLX09F	RT90-RHB70	6367308.38	1548896.64	-109.96	152.30	129.53	-56.63	101.39	0.030	0.650	0.91	Measured	2007-02-06 08:25