

RESULT

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RESULT-D6.4:

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

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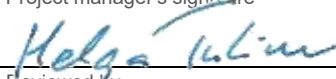
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Abstract Wells R-23 and R-39 are low-temperature geothermal wells, located in Elliðaárdalur, Reykjavík, Iceland. The wells, which were drilled in the sixties (R-23) and the eighties (R-39), were imaged by acoustic borehole Televiewer in December 2020 as a part of the RESULT (Enhancing REServoirs in Urban develOpmenT: smart wells and reservoir development) project, with the main objective of locating fractures and identifying their orientations. Altogether 651 fractures were identified in the Televiewer data from R-23 and 454 fractures in R-39. The main fracture trend in R-23 is NNW-SSE to N-S although the trend is quite variable. The main fracture trend in R-39 is NNW-SSE. Potentially open and permeable fractures in the vicinity of feed-points in R-23 have variable trends, although N-S and E-W trends are common (as well as NE-SW trending fractures and potentially porous rock formations). Potentially open and permeable fractures in the vicinity of feed-points in R-39 commonly have a NNW-SSE trend as well as a NW-SE trend.		
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1.1 Methodology and data processing

Acoustic imaging in the two wells was carried out with an ABI-43 (Acoustic Borehole Imaging, 43 mm diameter) instrument. Data processing and interpretation were performed using the petrophysical and borehole data analysis program WellCad (version 5.4). The ABI-43 instrument provides oriented, 360° unwrapped 3D images of the borehole wall by emitting an ultrasonic beam towards the formation and recording the amplitude and the travel-time of the reflected signal (ALT, 2015). The returning amplitude of the sonic wave relates to the acoustic impedance of the borehole wall, while the travel-time is dependent on the shape and diameter of the well (see e.g. ALT, 2015; Davatzes and Hickman, 2010). Planar features intersecting the well appear as sinusoids across the Televiewer images and can be interactively picked recording dip azimuth, dip values and apertures.

1.1.1 Fracture classification

Three levels of confidence (high, medium and low) were assigned to each fracture. The method of confidence classification (which is modified from Massiot et al. (2015) system) is described hereunder:

- *High confidence:* Fractures which are observed >270° around the borehole, form continuous sinusoids and are picked with the least ambiguity.
- *Medium confidence:* Fractures which are observed 180-270° around the borehole, (i.e. form partial or discontinuous sinusoids*) and thus cannot be selected on the images with high confidence.
- *Low confidence:* Fractures that are observed only 90-180° around the borehole (i.e. form only partial or discontinuous sinusoids*), or are very poorly resolved, and difficult to select on the images. Picking of such fractures can be inaccurate, and there is a risk that these are not always real fractures.










* Discontinuity may be caused by the fracture itself being discontinuous or non-planar; by borehole conditions, or by poor signal of the returning acoustic wave.

The orientation (strike, dip direction and dip value) of medium and low confidence features should be used with caution and only to reinforce interpretations made from high confidence fractures (see Massiot et al., 2015).

Also assigned to each fracture is its appearance in the travel-time image (visible, partially visible or not visible), which is considered to provide indication on whether the fracture extends beyond the borehole wall or not, for the following reason. As stated above, the travel-time of the sonic wave is dependent on the shape and diameter of the well, while the returning amplitude of the wave relates to the acoustic impedance of the borehole wall (see e.g. Davatzes and Hickman, 2010). Thus, if a fracture is visible in both the amplitude and the travel-time image, it suggests that the signal, or a large part of it, is lost into the borehole wall (i.e. into the fracture), which is considered to indicate that the fracture is likely to be open and not filled with alteration minerals. Large, open fractures are thus classified as “visible in the travel-time image”. On the other hand, if the fracture is only visible in the amplitude image and not in the travel-time image, it indicates that the signal, or a large part of it, returns to the tool, which could suggest that the fracture is either closed or filled with alteration minerals. Thus, fractures that are partially visible in the travel-time image could be open and partially filled with alteration minerals, or only partially open. In some instances, fractures can be partially visible in the travel-time image due to spalling from the borehole wall.

An overview of the classification system is presented in Table 1.

Table 1. Classification system and colour legend:

Color*	Visibility in the travel-time image	Confidence level
	Fracture, visible (largely or entirely) in the travel-time image (large, open fracture, not filled with alteration minerals).	High confidence
	Fracture, visible (largely or entirely) in the travel-time image (large, open fracture, not filled with alteration minerals)	Medium confidence
	Fracture, visible (largely or entirely) in the travel-time image (large, open fracture, not filled with alteration minerals)	Low confidence
	Fracture, partially visible in the travel-time image (open and partially filled with alteration minerals)	High confidence
	Fracture, partially visible in the travel-time image (open and partially filled with alteration minerals)	Medium confidence
	Fracture, partially visible in the travel-time image (open and partially filled with alteration minerals)	Low confidence
	Fracture, not visible in the travel-time image (closed or filled with alteration minerals)	High confidence
	Fracture, not visible in the travel-time image (closed or filled with alteration minerals)	Medium confidence
	Fracture, not visible in the travel-time image (closed or filled with alteration minerals)	Low confidence

* Refers to symbols that present analysed fractures (i.e. sinusoids and tadpoles), and poles and great circles in Wulff-plots.

1.1.2 Aperture measurements

The fracture apertures presented in this report are apparent apertures, measured directly from the acoustic image. The aperture was generally not measured unless it was obvious. Apertures which are too small to be measured, or where the fracture is too obscure in the image to allow aperture measurement, are established in Appendix 1 as 0.00.

Regarding the aperture measurements, the following factors should be kept in mind. First, the aperture measurements suffer from an under-sampling of narrow fractures which are below the detection limit or resolution of the Televiewer log, and of wide aperture fractures which have a lower probability to be encountered and may be a composite of a number of narrow fractures (Massiot et al., 2015). Secondly, the apparent aperture values presented here are larger than the true apertures of the fractures, as apparent aperture of a structure intersecting the borehole at an angle is greater than the actual aperture which would be measured perpendicular to the walls of the structure (see e.g. Massiot et al., 2015). In addition to that, the measured aperture values are probably overestimates due to scattering of the ultrasonic acoustic pulse at the edge of the fracture, where the roughness of the borehole wall is high (Davatzes and Hickman, 2005; see also Massiot et al., 2015).

For the abovementioned reasons, the aperture values presented in this report are only approximated and only intended to provide insight into the relative importance of the fractures.

1.1.3 Factors that can cause biases in the structural orientation data

It is also important to note, before using the interpretation results for further studies, that there are several factors that can cause biases in structural orientation data obtained from acoustic images. The three most important factors (underlined) are (Massiot et al., 2012):

1) Difficulties in identifying fractures due to image quality. In this regard, fracture density is also heavily influenced by image quality, and comparisons of fracture densities should therefore only be made between intervals of similar image quality ranking (Massiot et al., 2015).

2) Lack of acoustic contrast between the host rock and the fracture, e.g. due to a similar alteration assemblage within the fracture and present pervasively through the host rock.

3) Natural under-sampling of fractures sub-parallel to the borehole axis. This factor has two aspects. First, fractures subparallel to the borehole will either not be intersected or will be systematically undersampled as they are less likely to be intersected by the well (Barton & Zoback, 1992). Secondly, spalling from the borehole wall may occur due to the weakness of the rock at the low-angle intersection between the fractures and the borehole walls, preventing the detection of the fractures (Massiot et al., 2012).

2 Well R-23

Well R-23 is a 1266 m deep well in the Elliðaárdalur low-temperature geothermal field in Reykjavík, drilled in 1967. The well was imaged with Televiewer on the 21st of December 2020 at 295-1253 m depth. The Televiewer images are presented in Appendix 2a along with Caliper logs, Tool Roll, Gravity and Magnetic Field logs from the Televiewer tool, orientation of the well (azimuth and tilt data from the Televiewer tool), fracture interpretation, and Wulff-plots (upper hemisphere) showing the orientations of fractures at 10 m intervals.

The Televiewer images (amplitude and travel-time) are oriented to magnetic north. After picking the fractures, the structure log was rotated 12.69°W, which was the magnetic declination at the time of logging. The images were processed in the WellCAD software, bad traces were interpolated and the images then filtered with selective despiking filter, normalized and centralized.

The Televiewer data were shifted down by 1 m with the casing shoe as reference. Similarly, the caliper log was shifted down by 0.18 m. The production part of the well was drilled with 8¾" drill bit. The caliper log can be seen in Figure 2.

The well path of R-23, according to the azimuth and tilt measurements from the Televiewer tool, is shown in Figure 3. It should be noted that the presented well path is restricted to the depth interval 295-1253 m. In the figure, the azimuth log has been corrected with regards to the magnetic declination (12.69°W). The left Figure shows the projection of the well path into a horizontal plane (Bull's Eye projection), while the right Figure shows the closure (drift) distance against measured depth (Closure View projection). The well was drilled as a vertical well and has an inclination of 0.5-2° within the logged part.

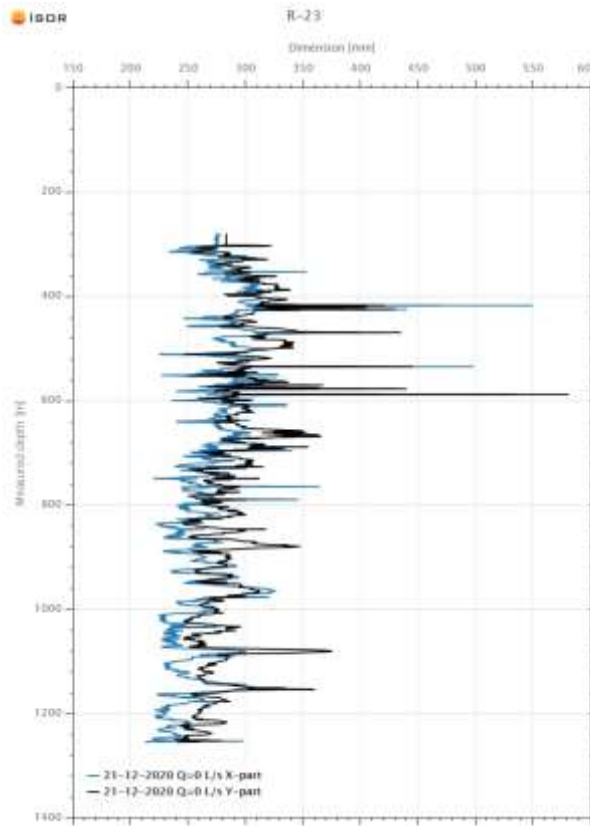


Figure 2. Caliper log in well R-23.

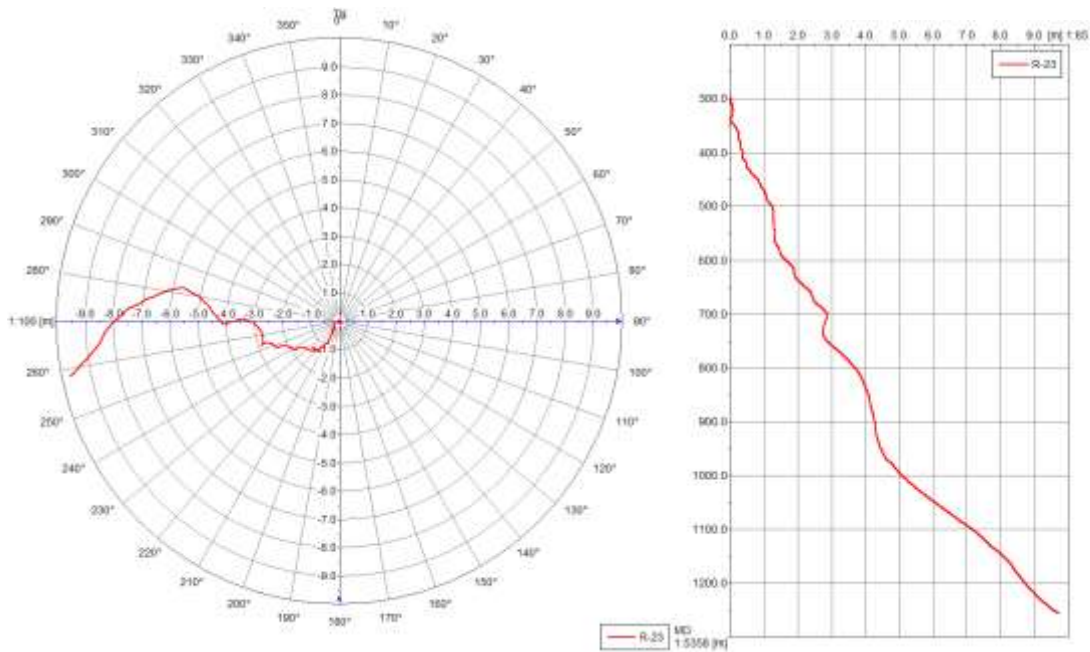


Figure 3. Orientation of well R-23 according to azimuth and tilt measurements from the Televiewer instrument at 295-1253 m depth.

2.1 Notes on image quality and fracture identification confidence

The image quality is rather poor in depth intervals where the caliper logs show widening in the well but fairly good in other places. This is reflected in the number of fractures identified. As the detection of a feature depends on sufficient acoustic amplitude with the host rock (Paillet, 1994), the image quality also affects confidence in the identification of fractures. Within poor image quality intervals, structural interpretation resulted in recording of relatively few fractures and a large number of fractures identified with low confidence.

2.2 Orientations of identified fractures

Orientations of all fractures identified in the Televiewer log data are shown in Wulff plots (Wulff stereographic nets) and rose diagrams in Figures 4-11. Please note that all Wulff plots in this report show the upper (northern) hemisphere, and that dip values are given from horizontal. Orientations (dip directions and dip values) of all identified features are given in Appendix 1a along with the measured apertures, depths and classification (high confidence fractures are labelled with blue colour).

Altogether 651 fractures were identified in the Televiewer images from R-23 (Figure 4). The fractures are distributed over the fracture groups in the following way (also summarized in Table 2):

- * The majority (440 fractures) was picked with low confidence, while 198 fractures were picked with medium confidence and only 13 with high confidence.
- * Of the 13 fractures picked with high confidence, 7 are largely or entirely visible in the travel-time image, 5 are partially visible and 1 is not visible.
- * The majority (168 of 198 fractures) of the fractures picked with medium confidence are partially visible in the travel-time image, while 1 is not visible and 29 are largely/entirely visible.
- * The majority (390 of 440 fractures) of the fractures picked with low confidence are partially visible in the travel-time image, while the rest (50) is not visible.

Table 2. Summary of how fractures in R-23 are distributed over the fracture groups:

	High confidence	Medium confidence	Low confidence	Total
Visible in the travel-time image (large, open, not filled)	7	29	0	36
Partially visible in the travel-time image (open, partially filled)	5	168	390	563
Not visible in the travel-time image (closed or filled)	1	1	50	52
Total	13	198	440	651

When considering all identified fractures in the Televiewer images from R-23 the predominant strike seems to be NNW-SSE to N-S with the most common dip direction towards W and WSW (Figure 4). The strike is, however, quite variable and there are also indications of fractures trending NNE-SSW to NE-SW and less common are fractures that have approximately E-S direction. The fractures most commonly dip $\sim 70-80^\circ$ from horizontal although it is very common for them to dip as little as 40° .

Fractures picked with high confidence have variable strikes and do not seem to have a pronounced trend (Figure 5). There is nevertheless a certain indication of a N-S strike as well as NE-SW and NW-SE. \sim E-W strike is noted in 2 fractures. The most common dip is $50-60^\circ$.

When fractures picked with medium confidence are considered, the most common strike is N-S as well as NNW-SSE. The fractures dip both towards the east and the west and the most common dip is $40-60^\circ$ (Figure 6). Variable strike directions are also seen within the medium confidence fractures.

The low confidence fractures have a slightly more pronounced N-S to NNW-SSE strike (Figure 7). This may be related to a higher number of fractures within this group relative to the high and medium confidence groups. NE-SW is also quite common. As before there are variable directions noted in the strike of the fractures. The most common dip is 70-80°.

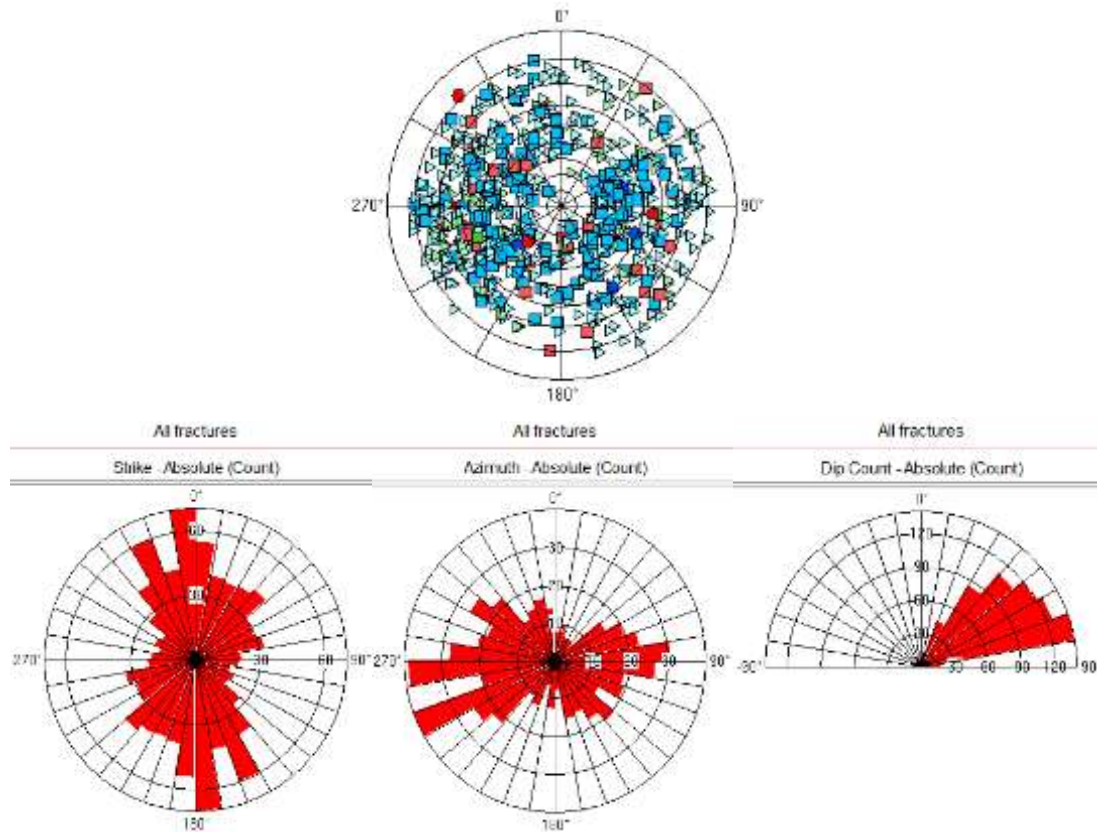


Figure 4. All fractures identified in the Televiewer images from well R-23. Wulff plot (upper hemisphere) above. Colour legend for Wulff plots is presented in Table 1.

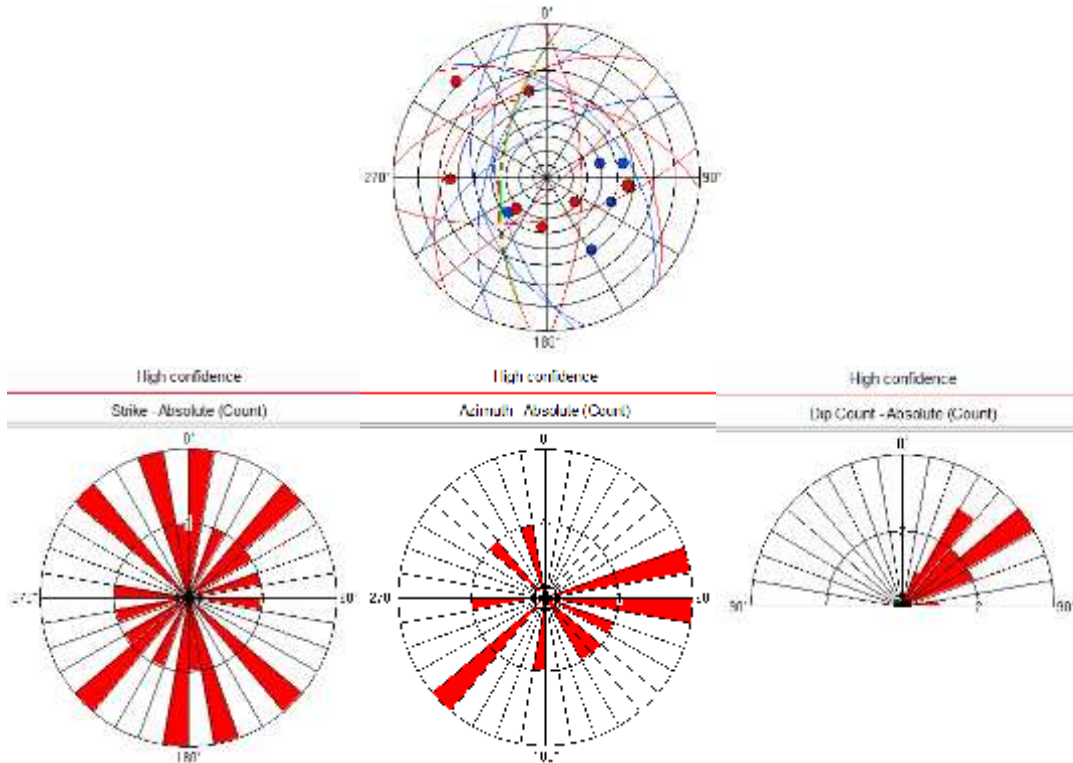


Figure 5. Fractures picked with high confidence. Wulff plot above.

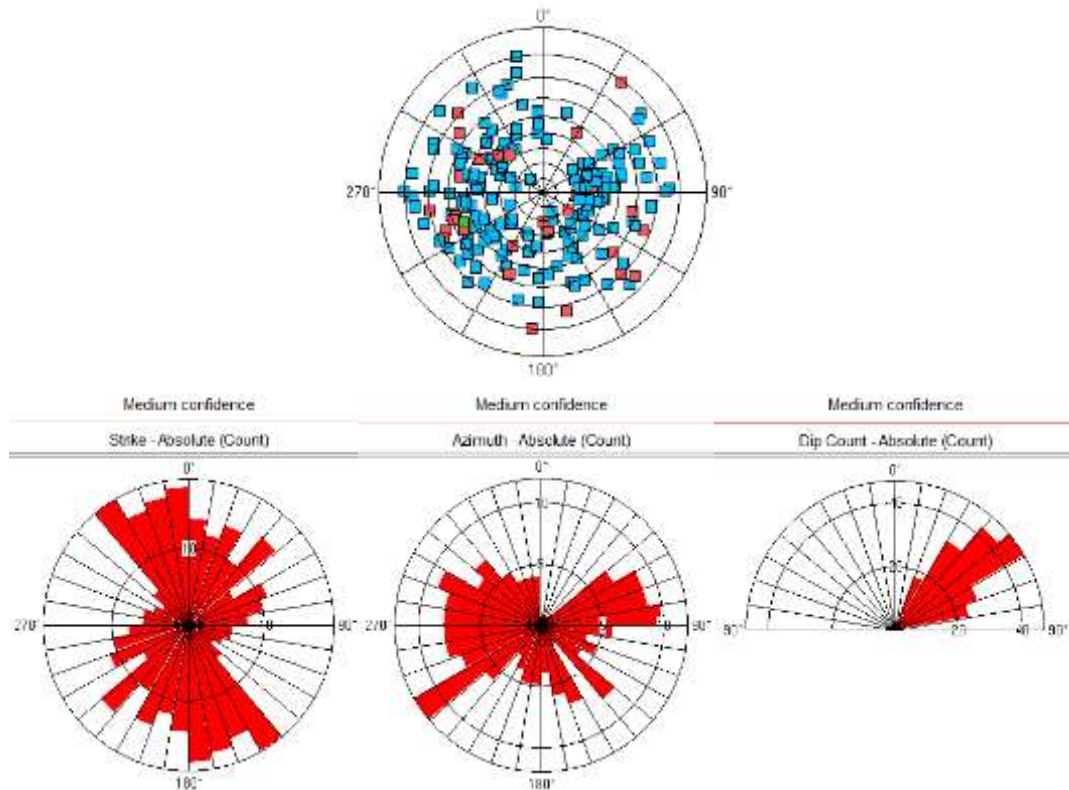


Figure 6. Fractures picked with medium confidence. Wulff plot above.

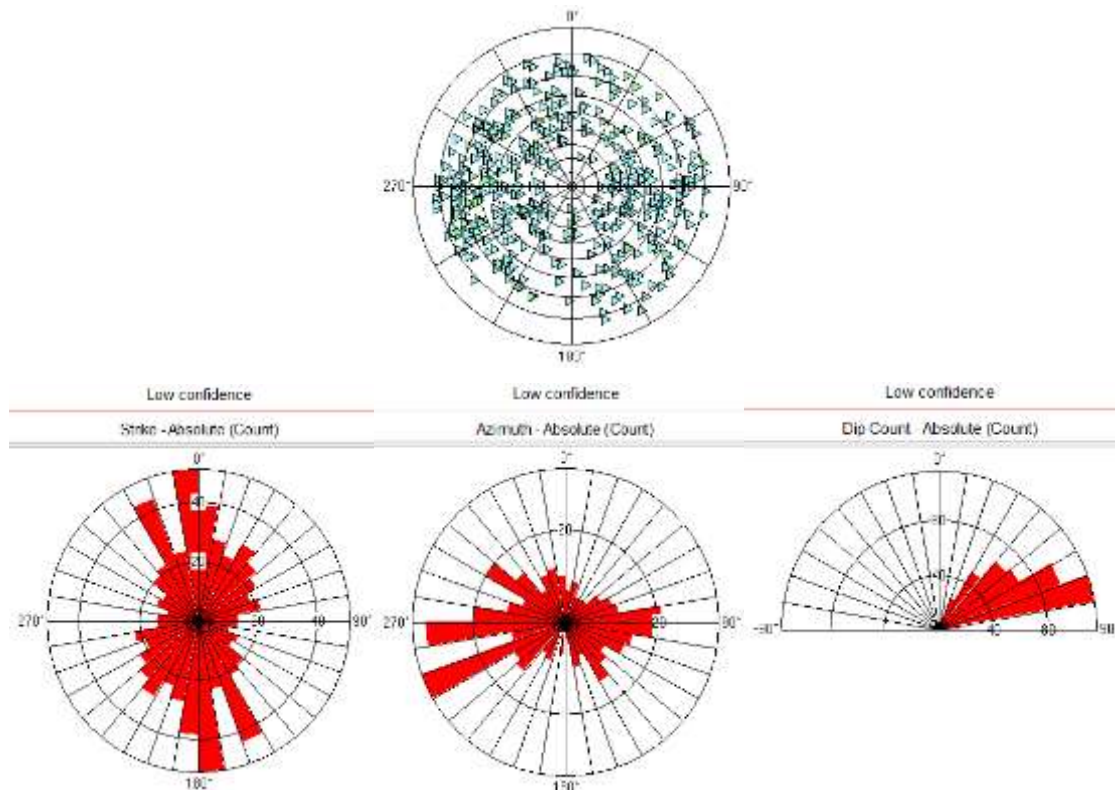


Figure 7. Fractures picked with low confidence. Wulff plot above.

Total of 25 large, open fractures (visible in the travel-time image) were identified with high and medium confidence (Figure 8). These fractures have variable strikes. The most common strike, however, is NE-SW. Another common strike direction is ~N-S (with both easterly and westerly dips). The dip values are commonly in the range of 50-70° (Figure 8). Many of the fractures have low dip values which suggests that the fractures may not all be of tectonic origin.

The fractures classified as partially visible in the travel-time image (open and partially filled) mainly strike ~N-S (Figure 9). When the fractures with medium and low confidence are added the most common strike is still ~N-S with dip directions both to the east and to the west. The most common dip is 30-50° although fractures with a higher dip are fairly common (Figure 10).

Closed or filled fractures (not visible in the travel-time image) mainly strike NNW-SSE, N-S and NNE-SSW. The most common dip is 60-70° and the dip direction is mainly westerly.

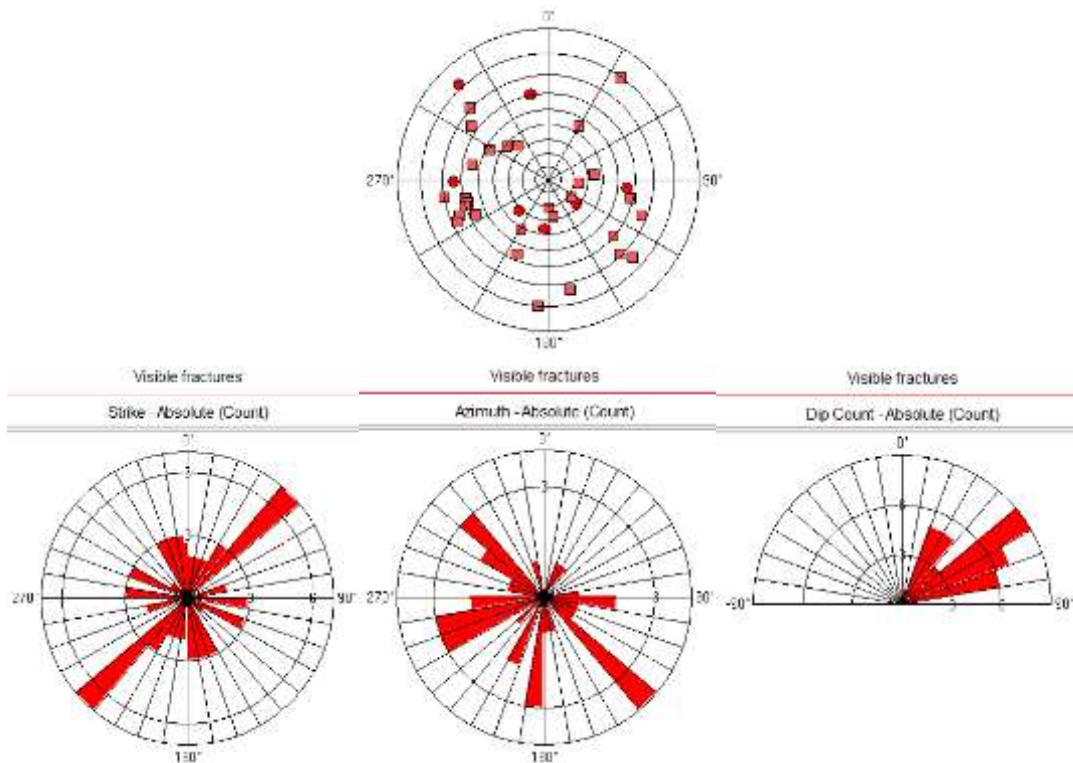


Figure 8. Open fractures, not filled (largely or entirely visible in the travel-time image).

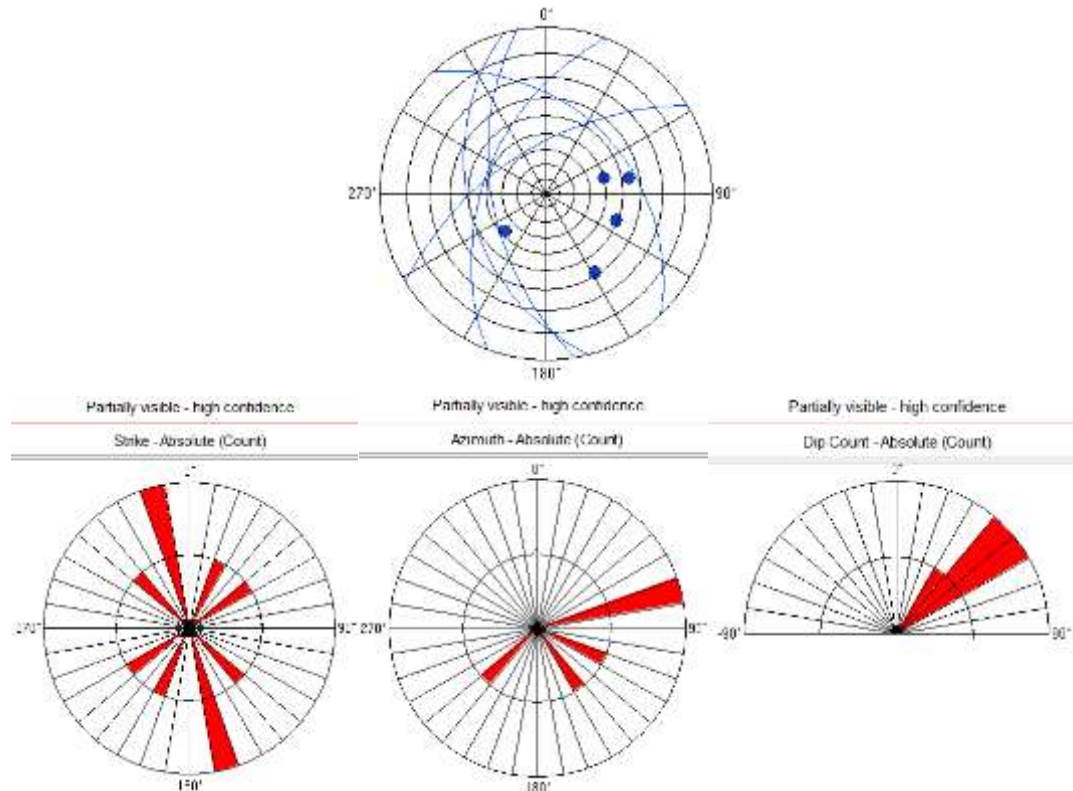


Figure 9. Partially open/partially filled, high confidence fractures (partially visible in the travel-time images).

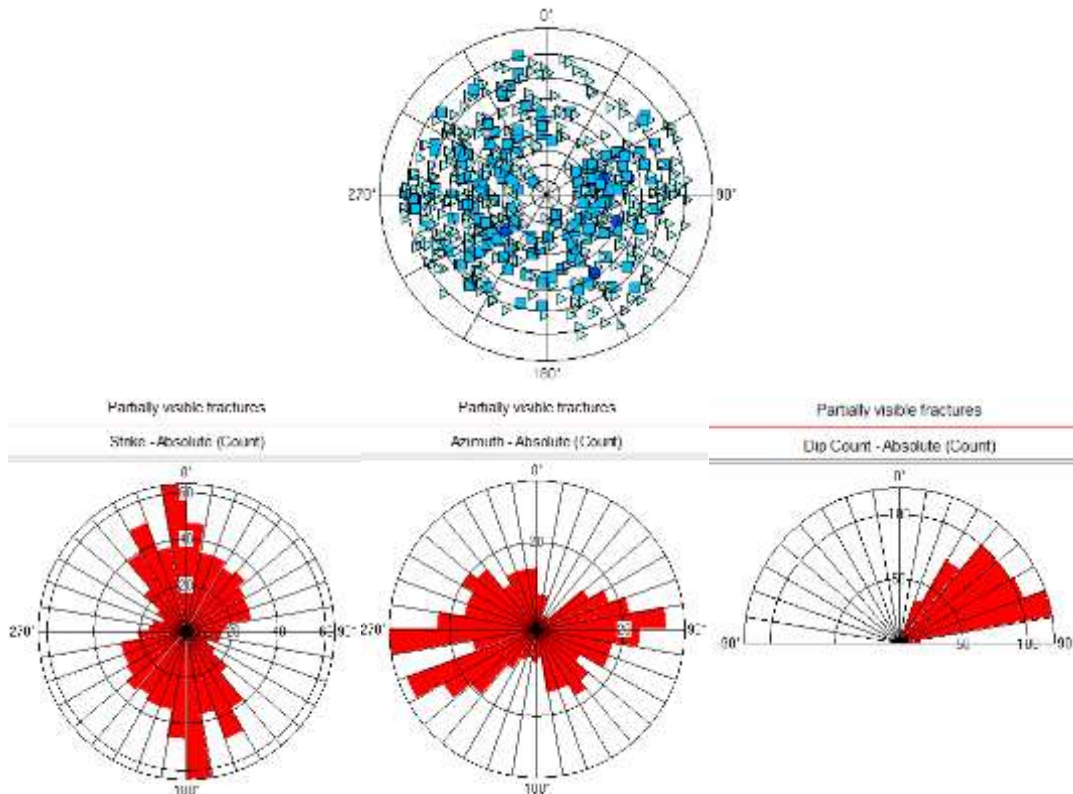


Figure 10. All partially open/partially filled fractures (partially visible in the travel-time images).

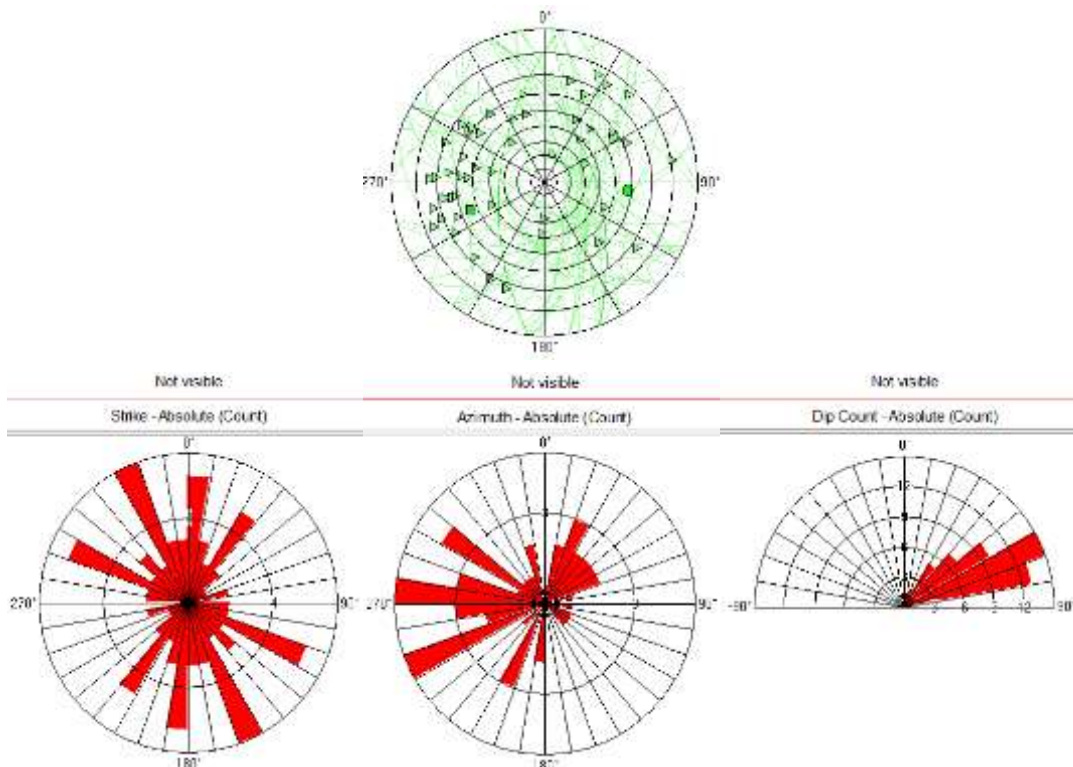


Figure 11. All closed fractures (not visible in the travel-time images).

2.3 Interpretation

2.3.1 Feed-points compared to Televiewer data

Four feed-points were identified in R-23 on grounds of temperature logs and circulation losses within the depth interval of the Televiewer images. Below is a comparison of the feed-points with fractures identified in the Televiewer log data.

Feed-point at ~350 m: Between 353 and 354 m depth there is an open fracture picked with high confidence, striking N-S with 64° dip towards the west (Figure 12).

Feed-point at ~467 m: Five fractures were identified at 468-471 m where there is a widening in the caliper log. The fractures are all picked with low confidence except for one at 470.6 m depth which is picked with high confidence and appears to be open. The open fracture strikes ~W-E with a ~60° dip towards N (Figure 13). Two fractures picked with low confidence and seem to be partially open strike approximately NE-SW and ENE-WSW with 61° and 41° dip towards NW and NNW respectively. The rock may be porous at this depth according to the Televiewer images.

Feed-point at ~682 m: Fractures at 680-690 m depth are mostly picked with medium confidence and are either open or partially open/partially filled. The most likely fractures to be connected to the feed-point are two fractures at ~682 m depth which both have an E-W strike and a dip of 73° and 80° towards south (Figure 14). According to the Televiewer images the rock may be porous at that depth.

Feed-point at ~1024-1033 m: Fractures at 1027-1036 m depth mainly have a strike of N-S to NE-SW with a dip towards either NW or E to ESE. Two fractures, that appear to be either partially open or open, are picked with high confidence around 1029 m. These fractures strike close to N-S and dip 49° and 56° towards ESE and E respectively (Figure 15). Two fractures are identified with medium confidence at 1034-1035.5 m depth. One appears open and the other at least partially open and both have a NE-SW strike and dip 71-77° to the northeast. Low amplitude and high travel-time between these two fractures may indicate that more open fractures exist at this interval. It is therefore considered likely that the fractures at ~1035 m are connected to the feed-point.

Possible feed-points have also been identified from temperature logs, one at ~770 m and another at ~1220 m. At approximately 764-768 m there are several fractures identified (Figure 16). The fractures that are considered open are at ~766 and 767 m (medium confidence). The fracture at 766 m strikes NNW-SSE with a 60° dip towards WSW and the one at 767 m has a NNE-SSW strike with a 50° dip towards WNW. In addition, there seems to be a change in formation at ~765 m where softer or more porous rock appears to be. No open fractures were identified in the vicinity of 1220, but at ~1220.5-1222 m there may be an interlayer of softer or more porous rock (see Appendix 2a).

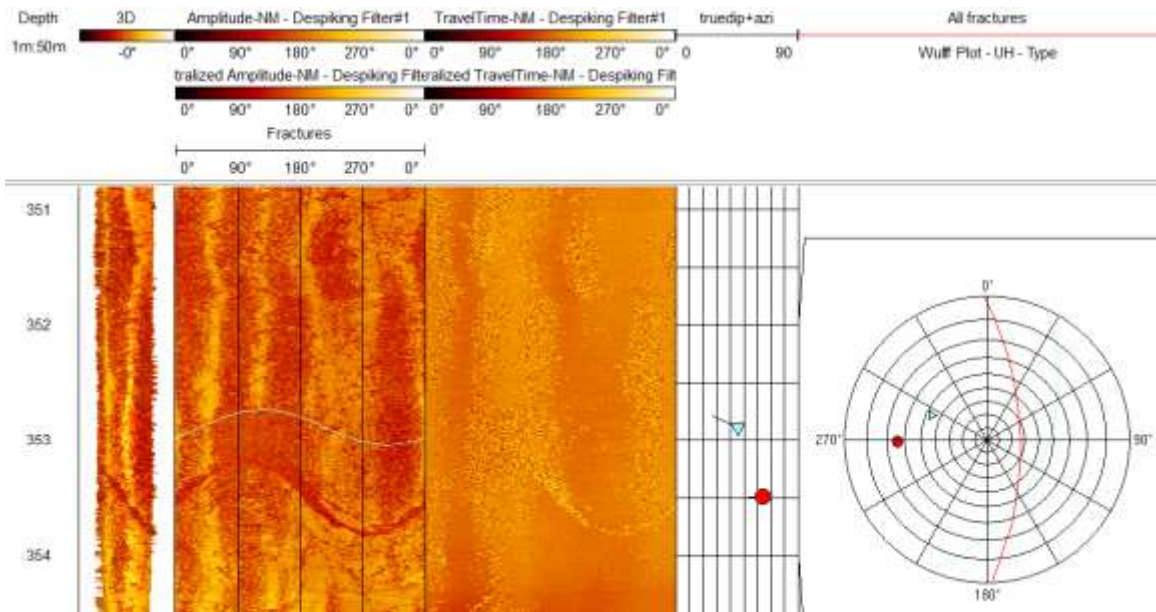


Figure 12. Fractures in R-23 in the vicinity of a feed-point at ~350 m.

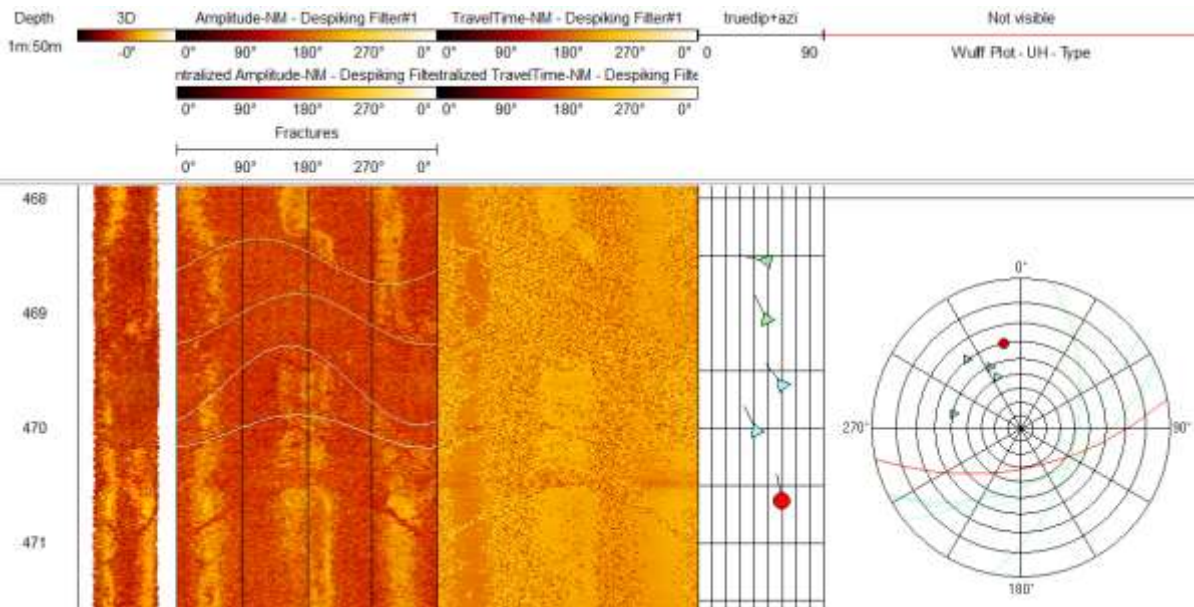


Figure 13. Fractures in R-23 in the vicinity of a feed-point at ~467 m.

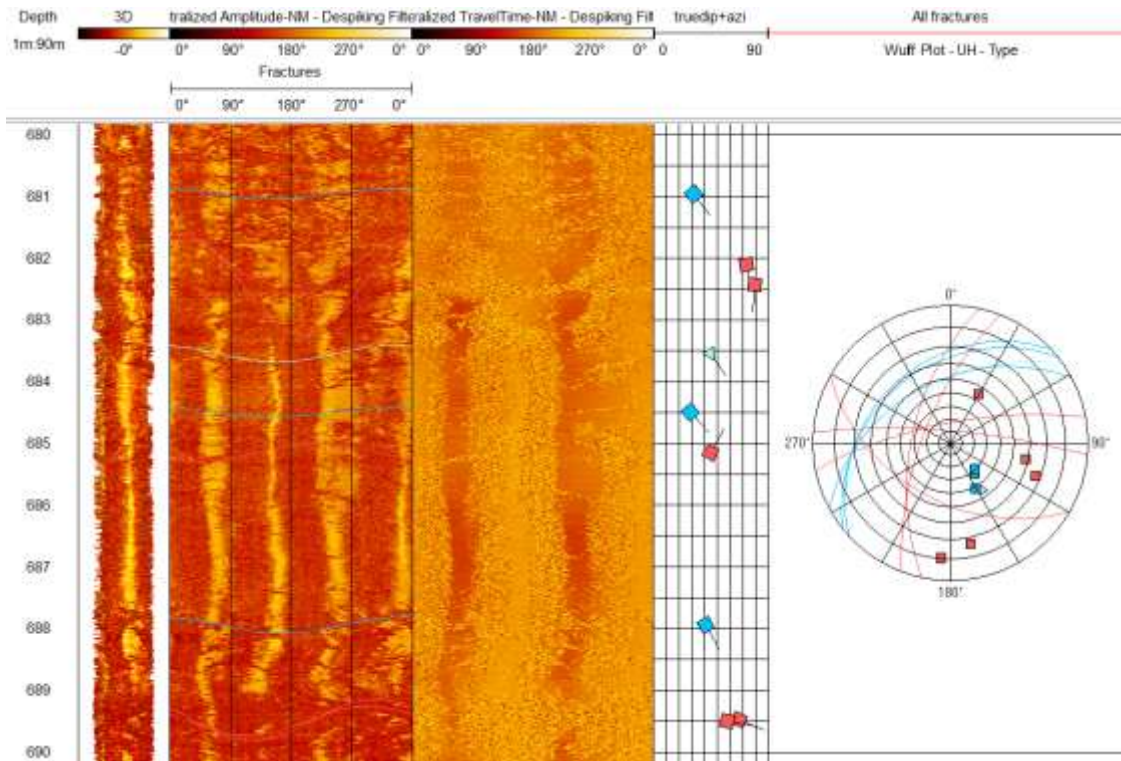


Figure 14. Fractures in R-23 in the vicinity of a feed-point at ~682 m.

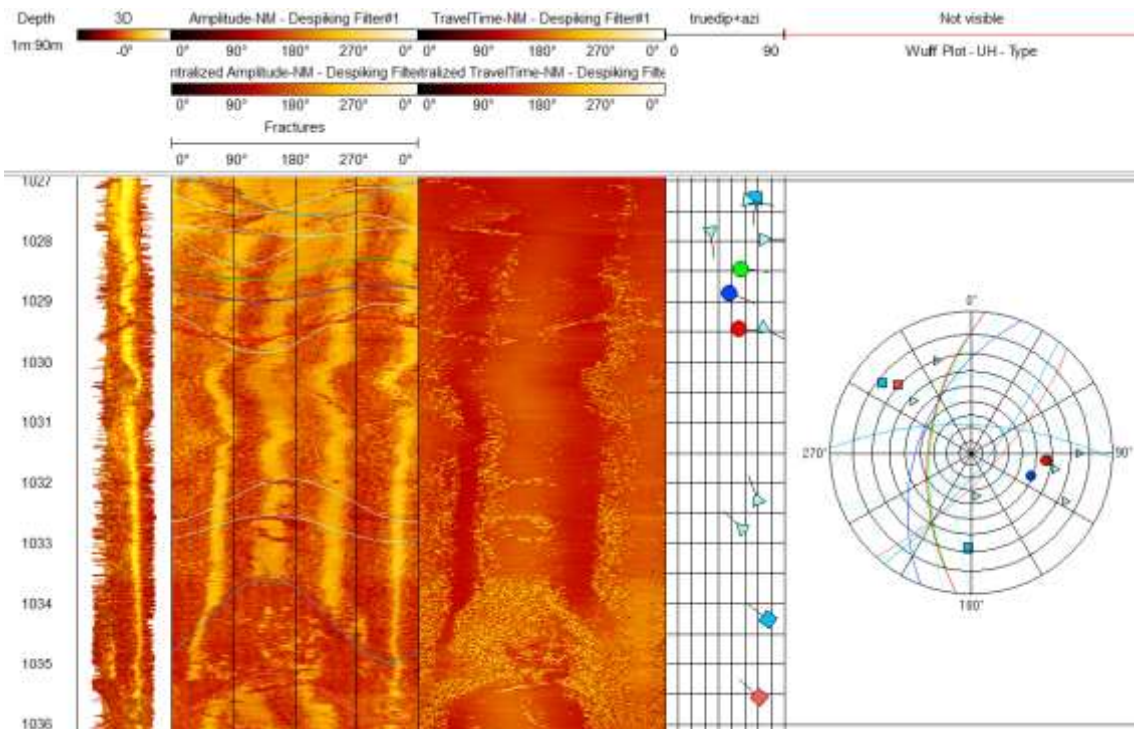


Figure 15. Fractures in R-23 in the vicinity of a feed-point at ~1024-1033 m.

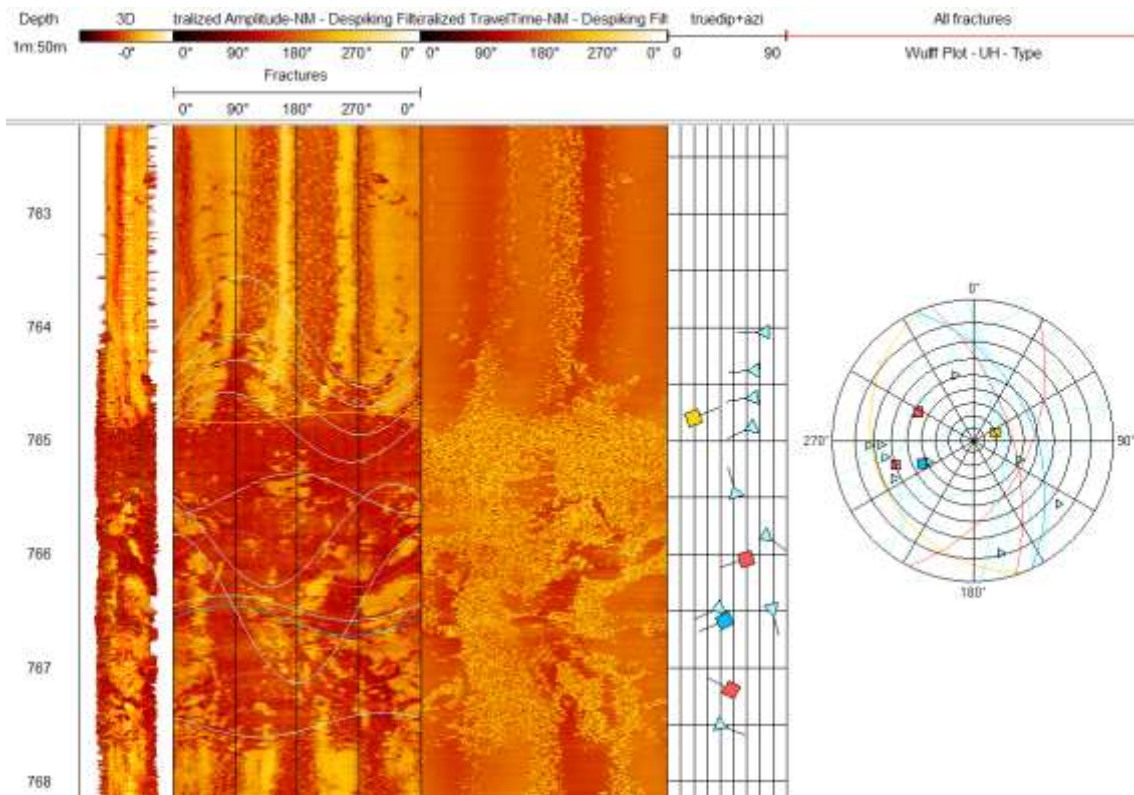


Figure 16. Fractures at 763-768 m depth in R-23.

3 Well R-39

Well R-39 is a 2100 m deep well drilled in 1983 and 1984. The well was imaged with Televiewer on the 22nd of December 2020 at 970-1492 m depth.

The Televiewer images are oriented to magnetic north. After picking the structures, the structure log was rotated 12.69°W, which was the magnetic declination at the time of logging.

The Televiewer data were shifted 1.93 m downwards with the casing shoe as reference. Similarly, the caliper log was shifted 2.3 m downwards. The production part of the well was drilled with 12¼" drill bit (Smárason et al., 1984). The caliper log is shown in Figure 17.

The Televiewer images are presented in Appendix 2b along with Tool Roll, Gravity and Magnetic Field logs from the Televiewer tool, orientation of the well (azimuth and tilt data from the Televiewer tool), fracture interpretation, and Wulff-plots (upper hemisphere) showing the orientations of fractures at 10 m intervals.

The well path, according to azimuth and tilt data from the Televiewer tool, is presented in Figure 18. Note that only the logged part of the well is shown (970-1492 m). The well was drilled as a vertical well and has for the most part an inclination of 1-2° in the logged part of the well.

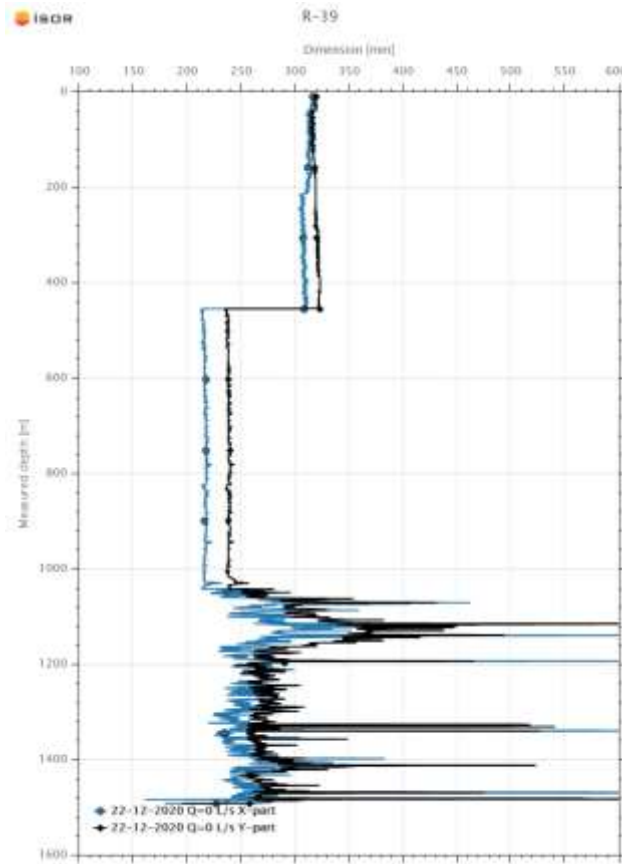


Figure 17. Caliper log from well R-39.

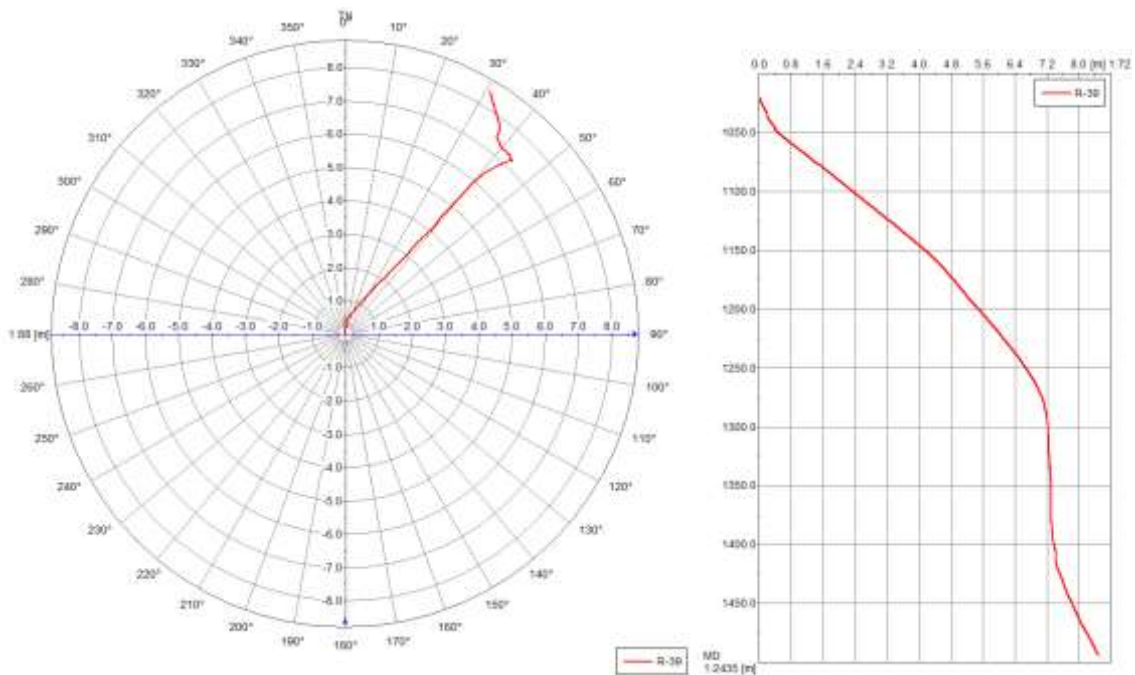


Figure 18. The path of well R-39 according to azimuth and tilt logs from the Televiewer.

3.1 Orientations of identified fractures

Orientations of all fractures identified in the Televiewer log data from R-39 are shown in Wulff plots (Wulff stereographic nets) and rose diagrams in Figures 19-Figure 25. Please note that all Wulff plots in this report show the upper (northern) hemisphere, and that dip values are given from horizontal. Orientations (dip directions and dip values) of all identified features are given in Appendix 1b along with the measured apertures, depths and classification (high confidence fractures are labelled with blue colour).

Altogether 454 fractures were identified in the Televiewer images (Figure 19). The fractures are distributed over the fracture groups as follows (also summarized in Table 3):

- * The majority (298 fractures) was picked with low confidence, while 139 fractures were picked with medium confidence and 17 with high confidence.
- * Of the 17 fractures picked with high confidence, 10 are largely/entirely visible in the travel-time image and 5 are partially visible and 2 are not visible.
- * 12 of the 139 fractures picked with medium confidence are visible in the travel-time image, while 102 are partially visible, and 25 not visible.
- * The majority (228 out of 298 fractures) of the fractures picked with low confidence are partially visible in the travel-time image, while none are visible and 70 are not visible.

Table 3. Summary of how fractures in R-39 are distributed over the fracture groups:

	High confidence	Medium confidence	Low confidence	Total
Visible in the travel-time image (large, open, not filled)	10	12	0	22
Partially visible in the travel-time image (open, partially filled)	5	102	228	335
Not visible in the travel-time image (closed or filled)	2	25	70	97
Total	17	139	298	454

When looking at all the fractures identified in the Televiewer images from R-39 (Figure 19), the predominant strike appears to be close to N-S to NNW-SS. The fractures dip both towards easterly and westerly directions. Nevertheless, it is more common to see dip directions towards west and west southwest.

Fractures picked with high confidence strike for the most part to NNW-SSE to NNE-SSW (close to N-S) and dip in both easterly and westerly directions (Figure 20). The majority of fractures picked with medium confidence (Figure 21) have a NNW-SSE to N-S strike similar to the fractures picked with low confidence (Figure 22).

21 fractures appear to be open (largely/entirely visible in the travel-time image) of which 8 are identified with high confidence. They primarily strike N-S to NNW-SSE and dip 70-80° both towards east and west (Figure 23). 327 fractures are identified as partially open (Figure 24) and the majority has a strike of N-S to NNW-SSE with a dip both towards easterly and westerly directions although the westerly ones are more common. Variable strike directions are, however, noted. Closed fractures (Figure 25) have variable strike directions as well, although the majority seems to have a northerly or NNW-SSE trend.

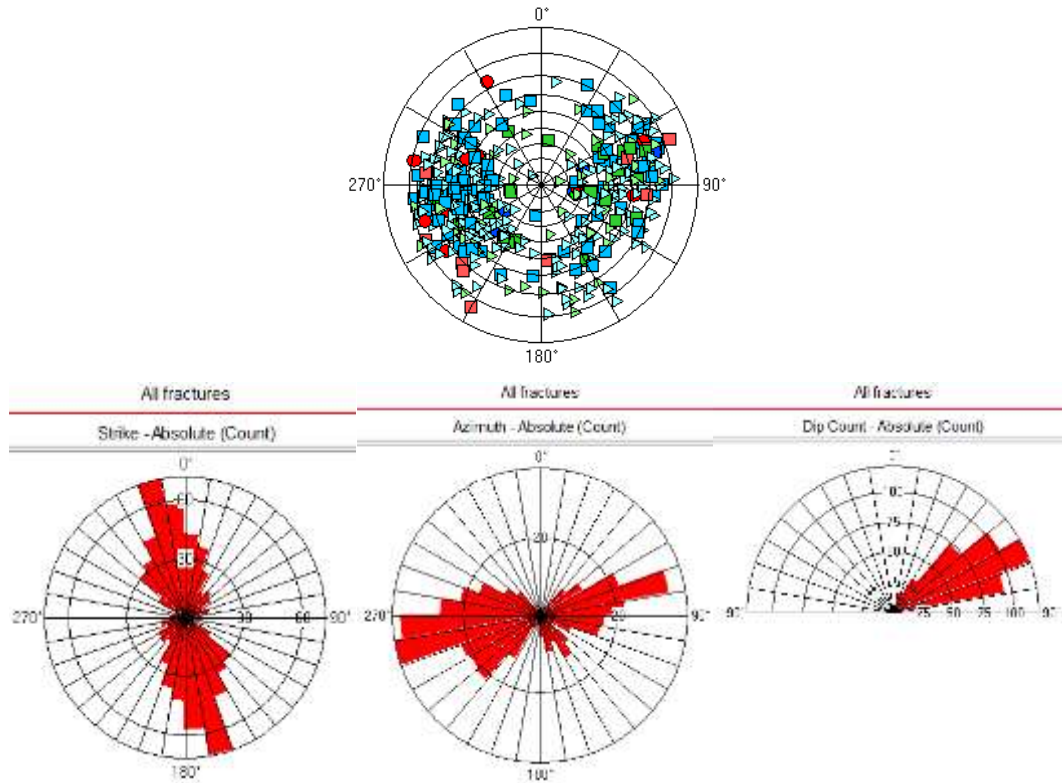


Figure 19. All fractures identified in Televiewer images from R-39. Wulff plot above (northern hemisphere).

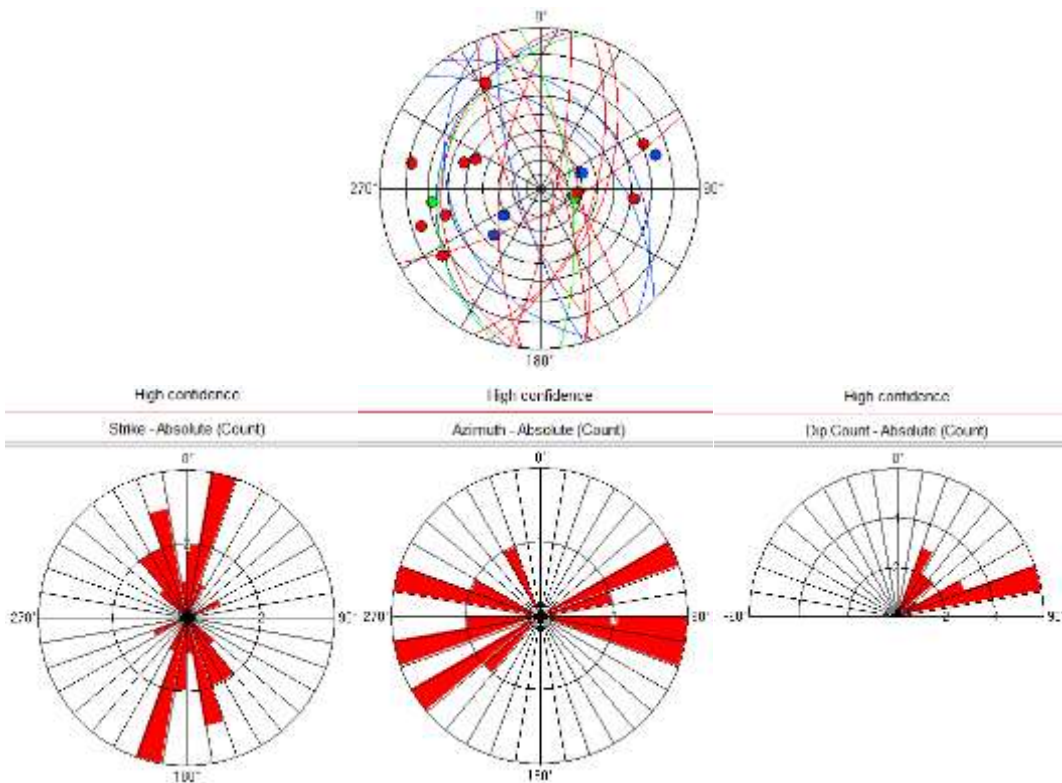


Figure 20. Fractures in R-39 picked with high confidence. Wulff plot above (northern hemisphere).

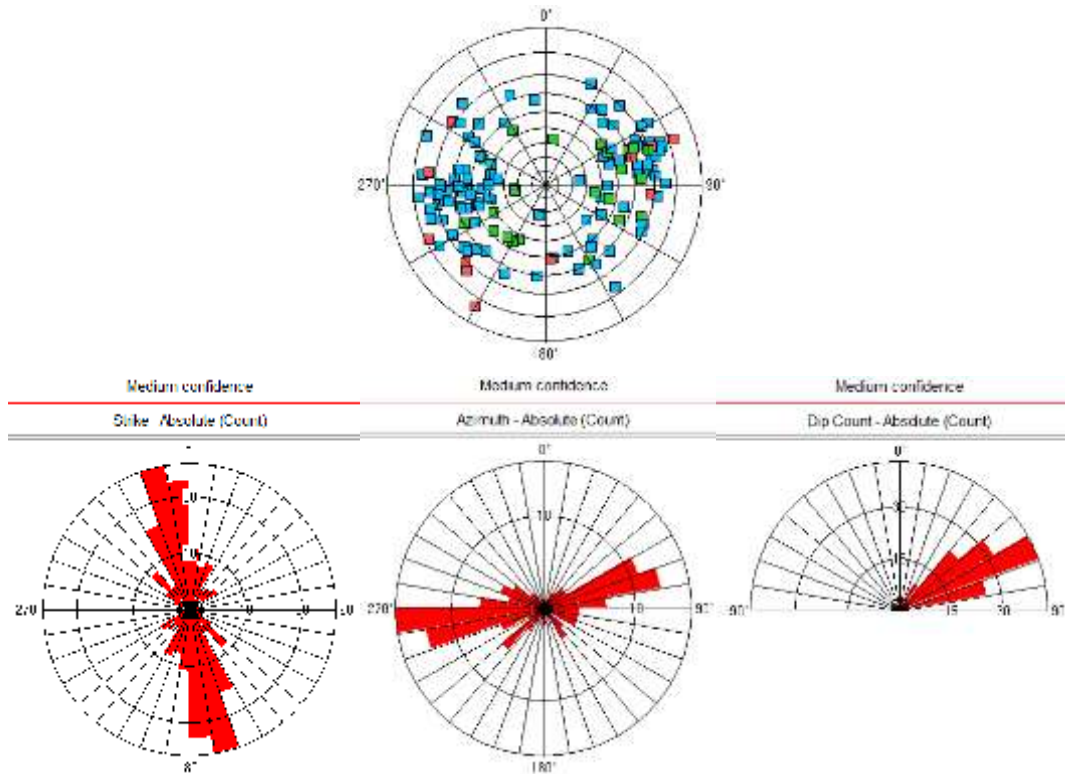


Figure 21. Fractures in R-39 picked with medium confidence. Wulff plot above (northern hemisphere).

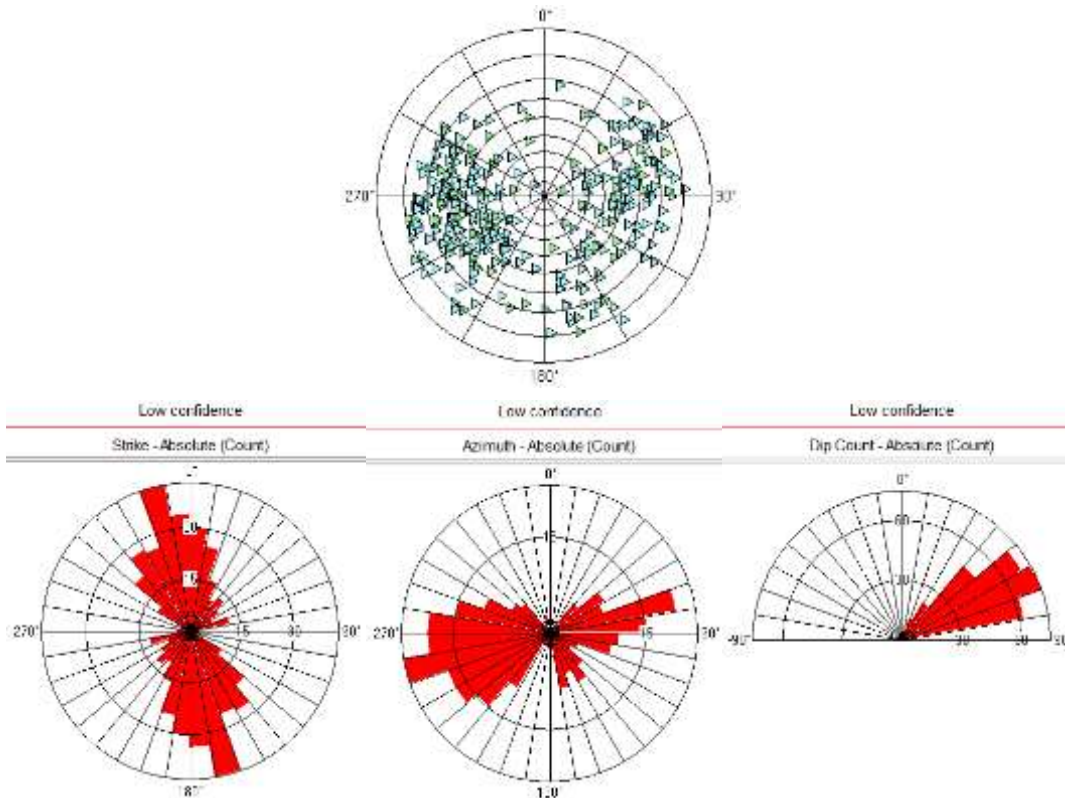


Figure 22. Fractures in R-39 picked with low confidence. Wulff plot above (northern hemisphere).

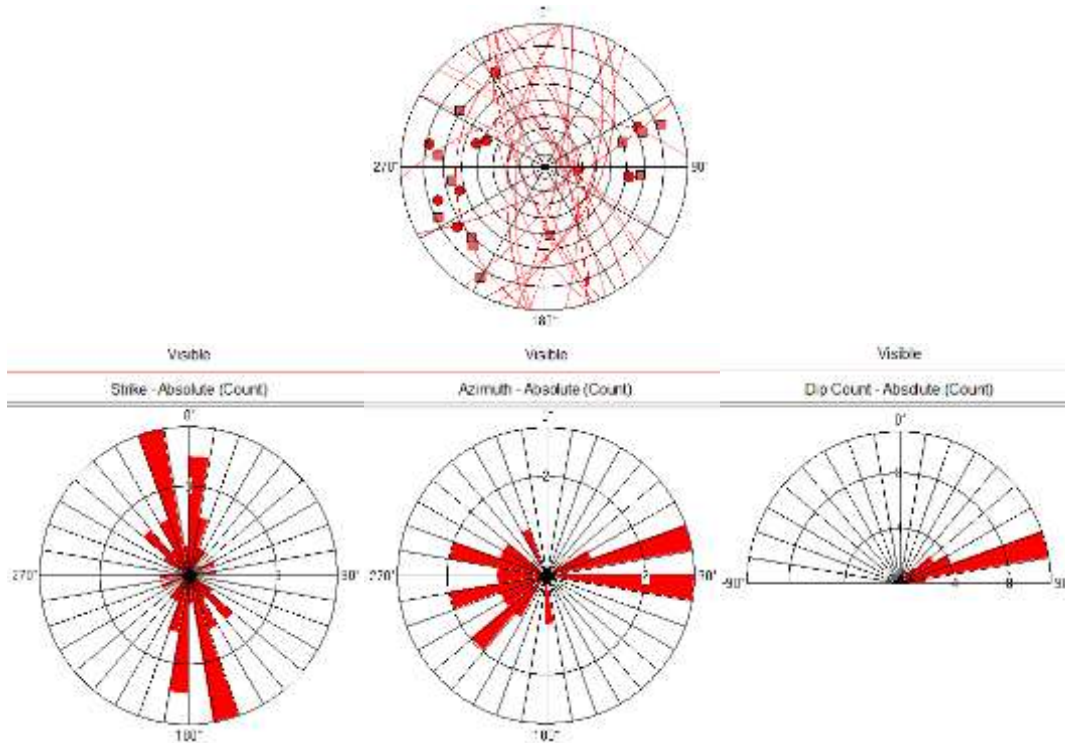


Figure 23. Large open fractures (visible in the travel-time image. Wulff plot above (northern hemisphere).

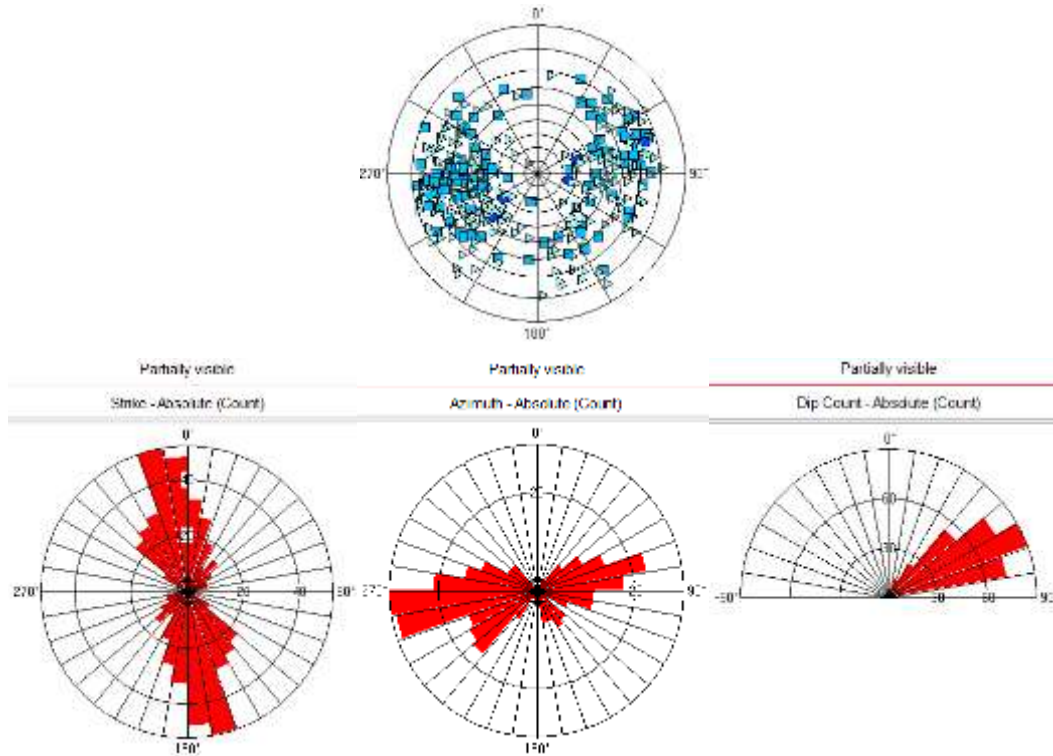


Figure 24. Partially filled fractures (partially visible in the travel-time image) in R-39. Wulff plot above (northern hemisphere).

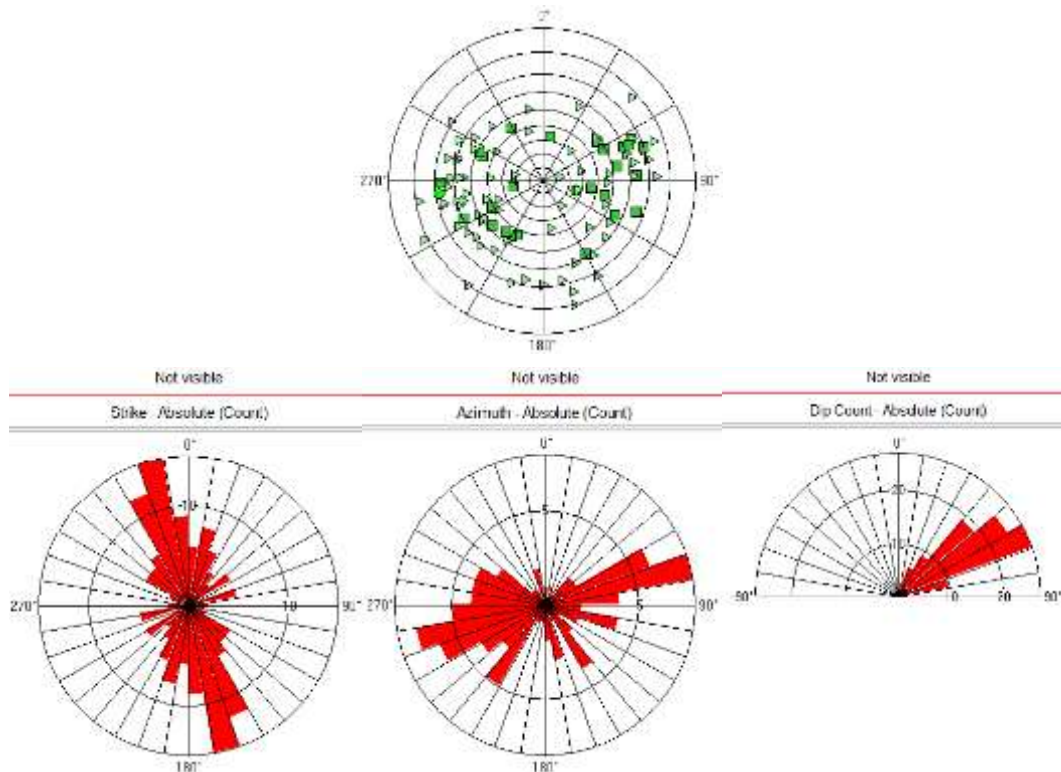


Figure 25. Closed and filled fractures (not visible in the travel-time image) in R-39. Wulff plot above (northern hemisphere).

3.2 Interpretation

3.2.1 Feed-points in R-39 compared to the Televiewer data

Six feed-points were identified in R-39 within the Televiewer imaging depth interval on grounds of temperature logs and circulation losses (Smárason et al., 1984). Two possible feed-points were also identified by the author from temperature logs. There are slight contradictions regarding the feed-points in Smárason et al., (1984) regarding their size or importance. The main feed-points in a table within the main text are considered to be 1035 m and 1125 m within the logged interval. In Figures and Tables at the end of the report there are several more feed-points mentioned, e.g. a feed-point at 1150 m which is considered to be of a medium size. In this report it was therefore decided not to distinguish between the sizes of the feed-points identified (most of them are small or minor in size).

According to Smárason et al. (1984), the largest feed-zone is at 1035 m where total loss of circulation occurred. There is no information in the Televiewer images at that depth because of a “loose” casing that goes down to 1045.2 m (according to ÍSOR’s database). Holes were later made in the casing where the feed-zone was assessed (Smárason et al., 1984).

Below is a comparison of the feed-points within the logged interval with the fractures identified in the Televiewer log data.

Feed-point at 1070 m: The televiewer images show either a broken zone or a softer formation at ~1072-1076 m (Figure 26). Fractures just above and below that depth that seem to be open have a NW-SE/NNW-SSE strike. The largest fractures identified around this depth are at 1071.9 m (this fracture dips 71° to SW), 1077 m (83° dip to SW/SSW) and at 1079 m (78° dip to WSW). Due to poor acoustic signal, image quality is very poor between ~1072 and 1076 m. The poor signal may result from very broken rock at this interval, and if so, these three open fractures are considered to provide indications of the main fracture orientation.

Feed-point at ~1125 m: The televiewer data is very poor at that depth, which is considered to result from increased width in the well (see Figure 17). Due to the poor image quality, no fractures were identified at that depth and only three fractures were assessed in the vicinity of this feed-zone (all classified as low confidence), partially visible in the travel-time image and therefore considered partially open. These fractures are at 1108-1115 m depth and have various strikes, N-S, NNE-SSW and NW-SE. The fracture with the highest dip (>80°) has a NW-SE strike with a dip towards SW. See Figure 27 and Figure 28.

Feed-point at 1150 m: At around this depth the images are very poor due to increased width of the well. Three fractures are identified with low confidence at 1154-1157 m depth. They strike NW-SE, N-S and NE-SW. It is therefore difficult to tell if there is a specific fracture trend connected to this feed-point.

Feed-point at 1180 m: In Figure 30 a few fractures that are partially visible in the travel-time images are seen. These fractures are identified with low and medium confidence but may give an indication of the strike of fractures at that depth. At 1179-1185 m the fractures have a N-S strike and dip 60-70° (majority to the west).

Feed-point at 1330-1340 m: Large cavings are seen in the caliper logs between 1333 and 1334 m and at 1342-1343 m (Figure 31), presumably related to soft and/or porous rock. No actual fractures were identified within those washed out areas because of the poor quality of the images at that depth. Image quality is rather good between those two poor-quality areas and several fractures are identified at this interval which are partially open, NNW-SSE striking with a dip towards west southwest.

Possible minor feed-point at ~1370 m: Fractures in the vicinity of 1370 m that can be considered to be possibly permeable are at 1372.5 m (considered open) and 1383 m (also considered open). Both of these fractures are identified with medium confidence. The one at 1372.5 m strikes NW-SE strike and dips 72° towards SW. The one at 1383 m has a NNW-SSE strike and a dip of 82° towards ENE (Figure 32).

Feed-point at 1398 m: At ~1400 m there is an interval which may be connected with this feed-point, with low amplitude and high travel-time where open fractures may exist. Fractures that are partially visible in the travel-time are at the upper boundary of that interval around 1399 m with a strike close to E-W but their dip is rather low (50-60°). Open fractures are both at ~1395 m and ~1404 m, both identified with high confidence. They both have NNW-SSE strike and dip more than 70° to both WSW and ENE (Figure 33).

Possible minor feed-point at ~1420 m: The largest fracture in the vicinity of 1420 m is at 1421 m (visible in the travel time image, identified with medium confidence). The fracture strikes NNW-SSE and dips 72° towards ENE (Figure 34).

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

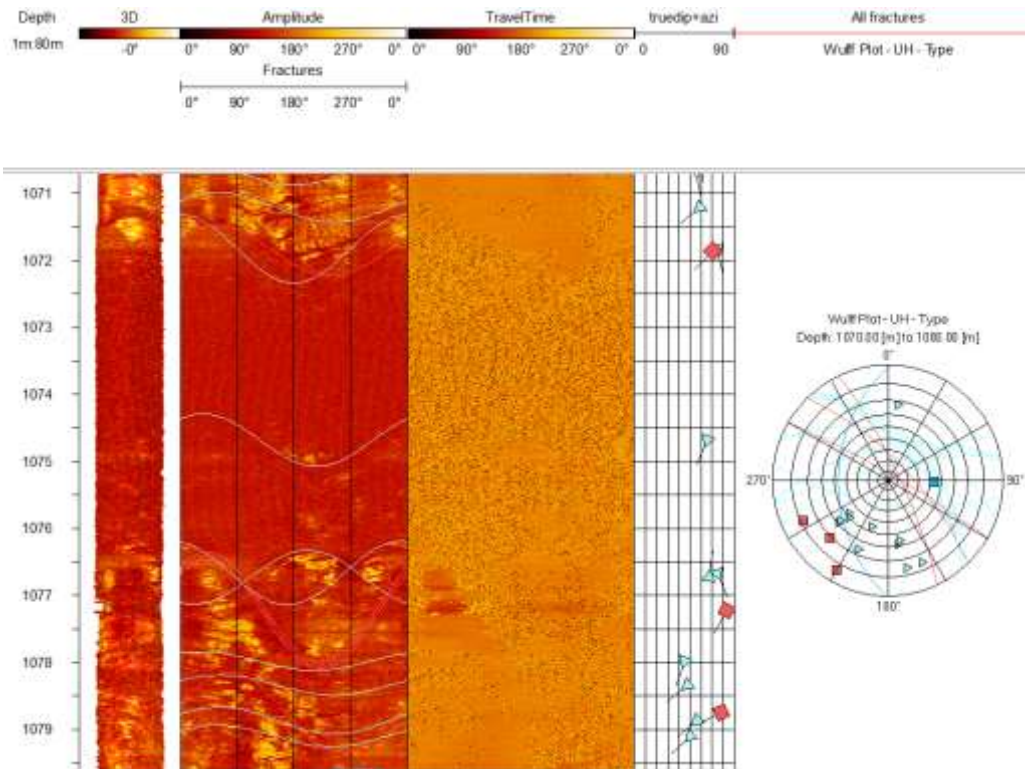


Figure 26. Fractures in the vicinity of a feed-point at 1070 m.

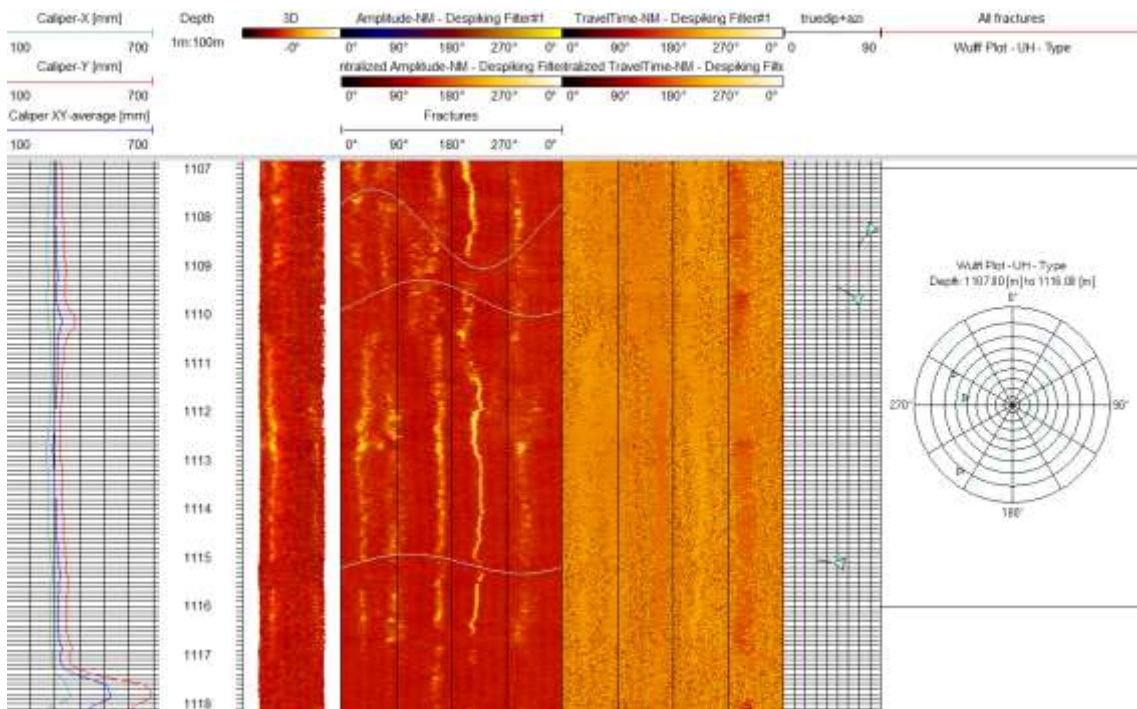


Figure 27. Identified fractures in the vicinity of feed-zone at ~1125 m in R-39. The caliper log shows increased width at this depth, explaining the poor quality of the Televiewer images.

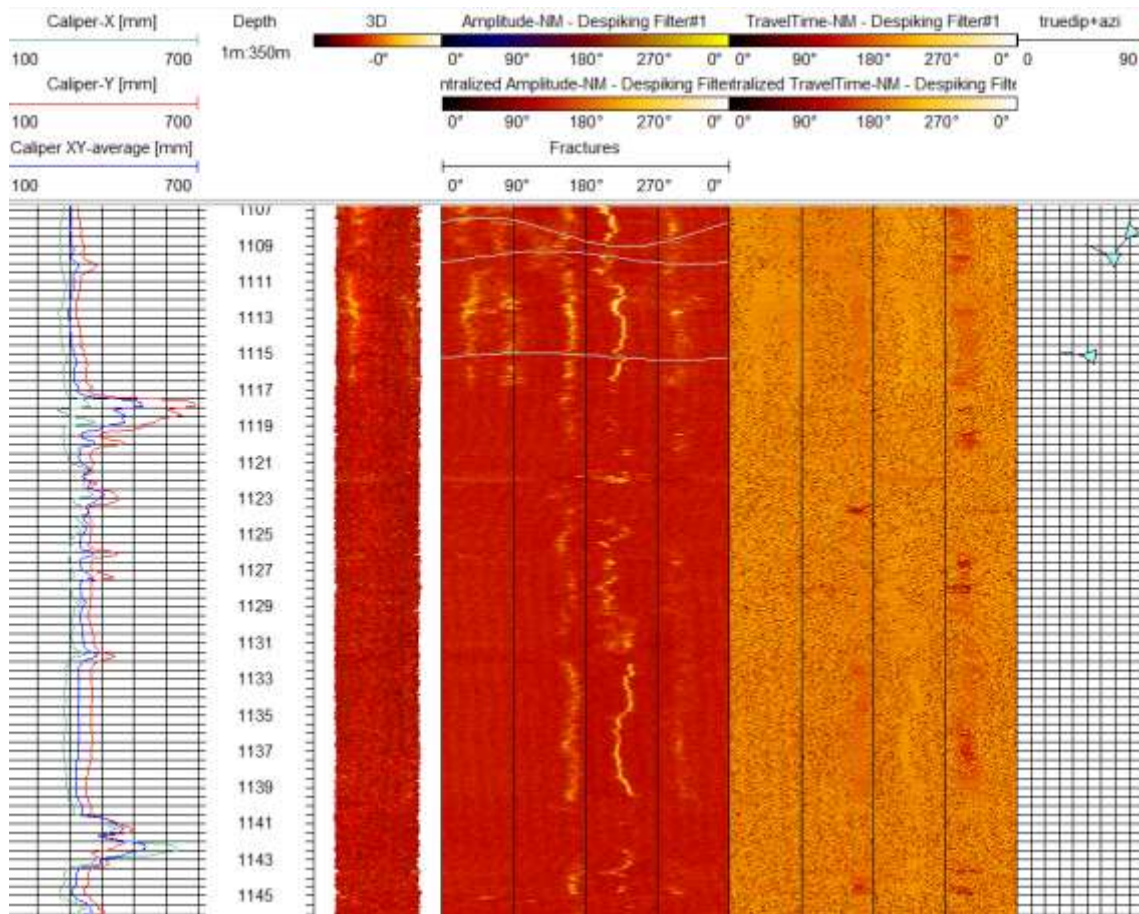


Figure 28. Depth interval 1107-1145 m in R-39 showing the poor quality of the images at that depth and the large cavings at certain depths according to the caliper logs on the left. This depth interval as a whole is in general rather wide (see Figure 17).

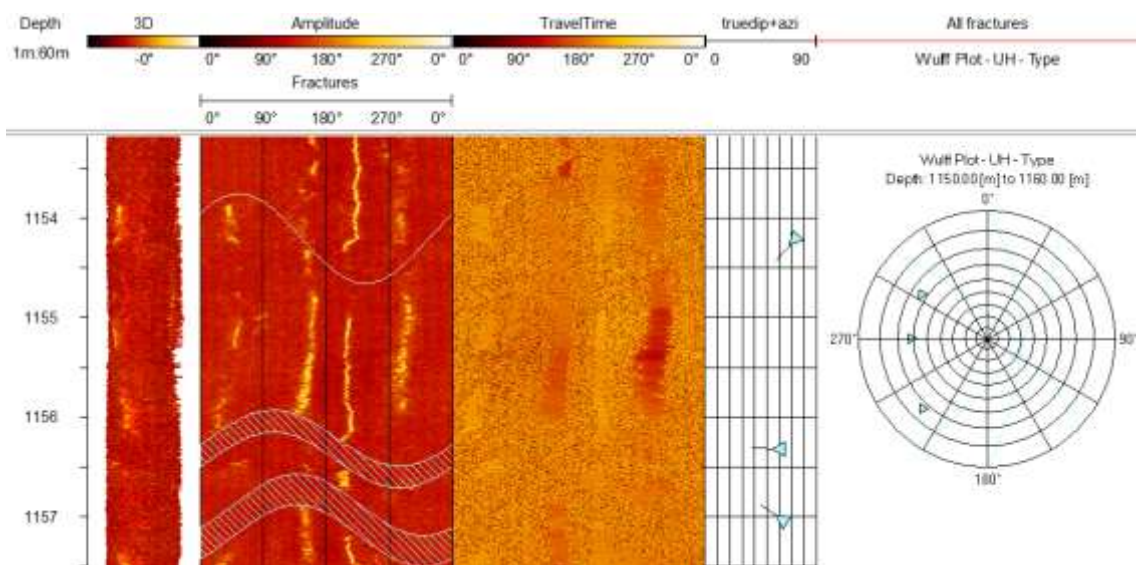


Figure 29. Fractures in the vicinity of a feed-point at 1150 m.

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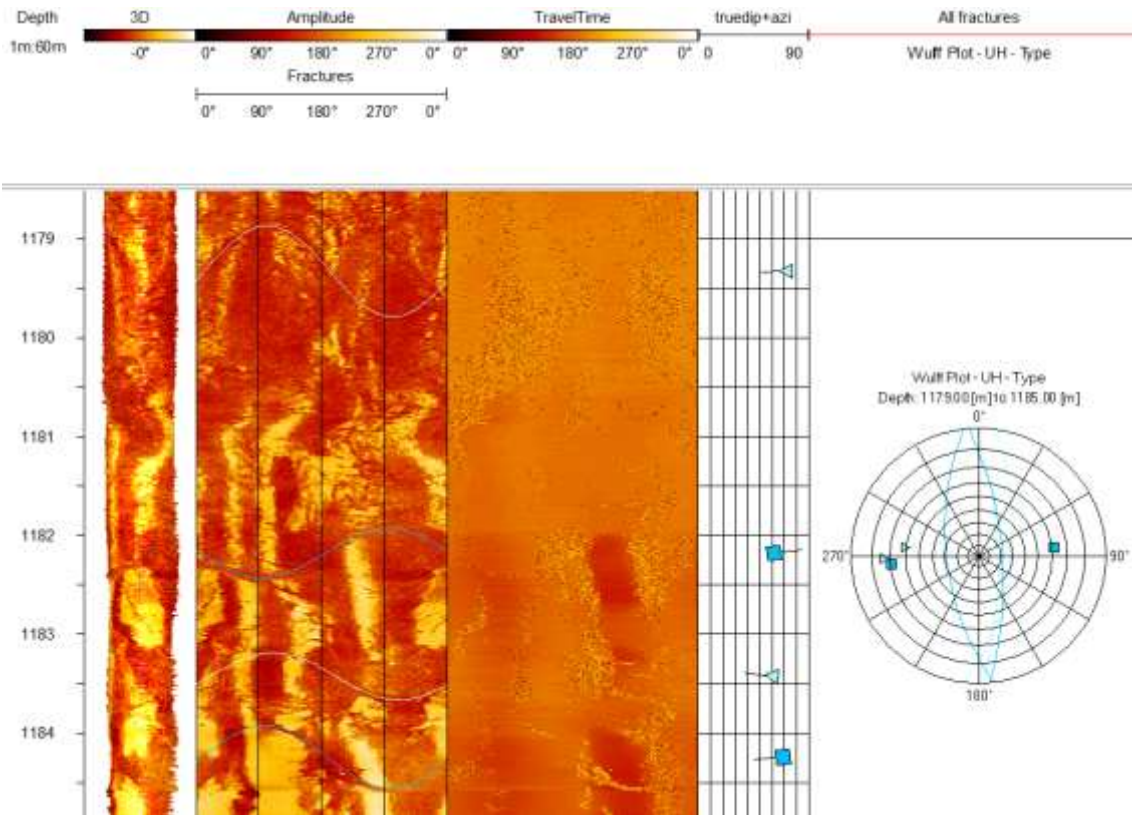


Figure 30. Fractures in the vicinity of a feed-point at ~1180 m.

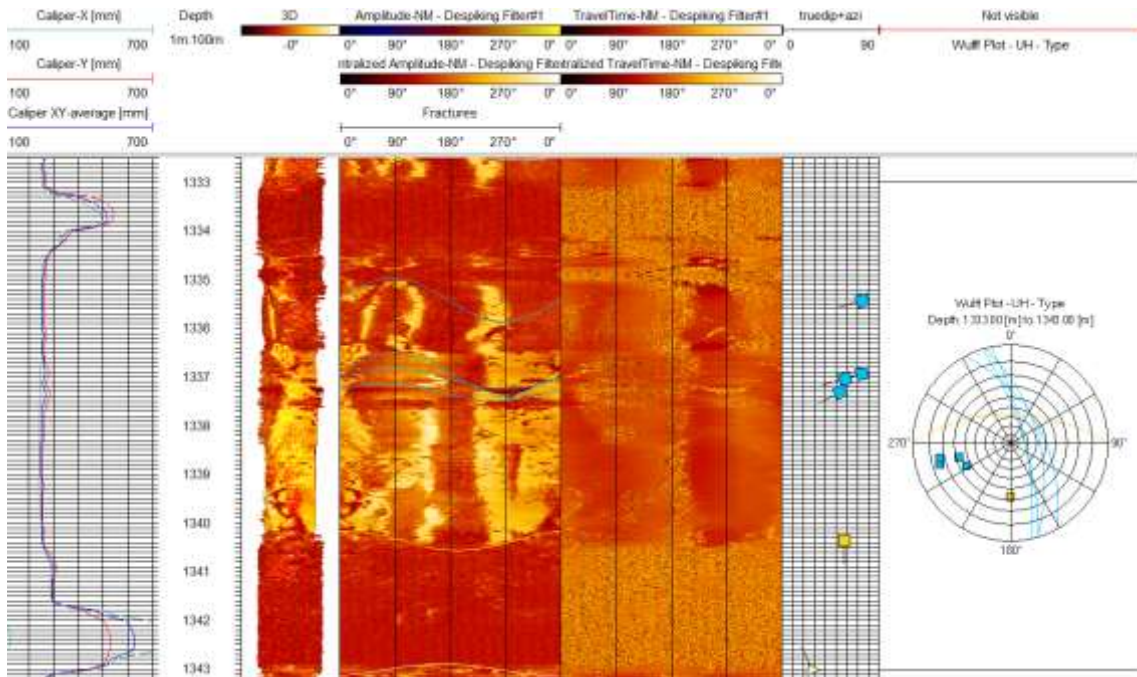


Figure 31. Televiewer images and caliper logs in the vicinity of a possible feed-zone at ~1330-1340 m.

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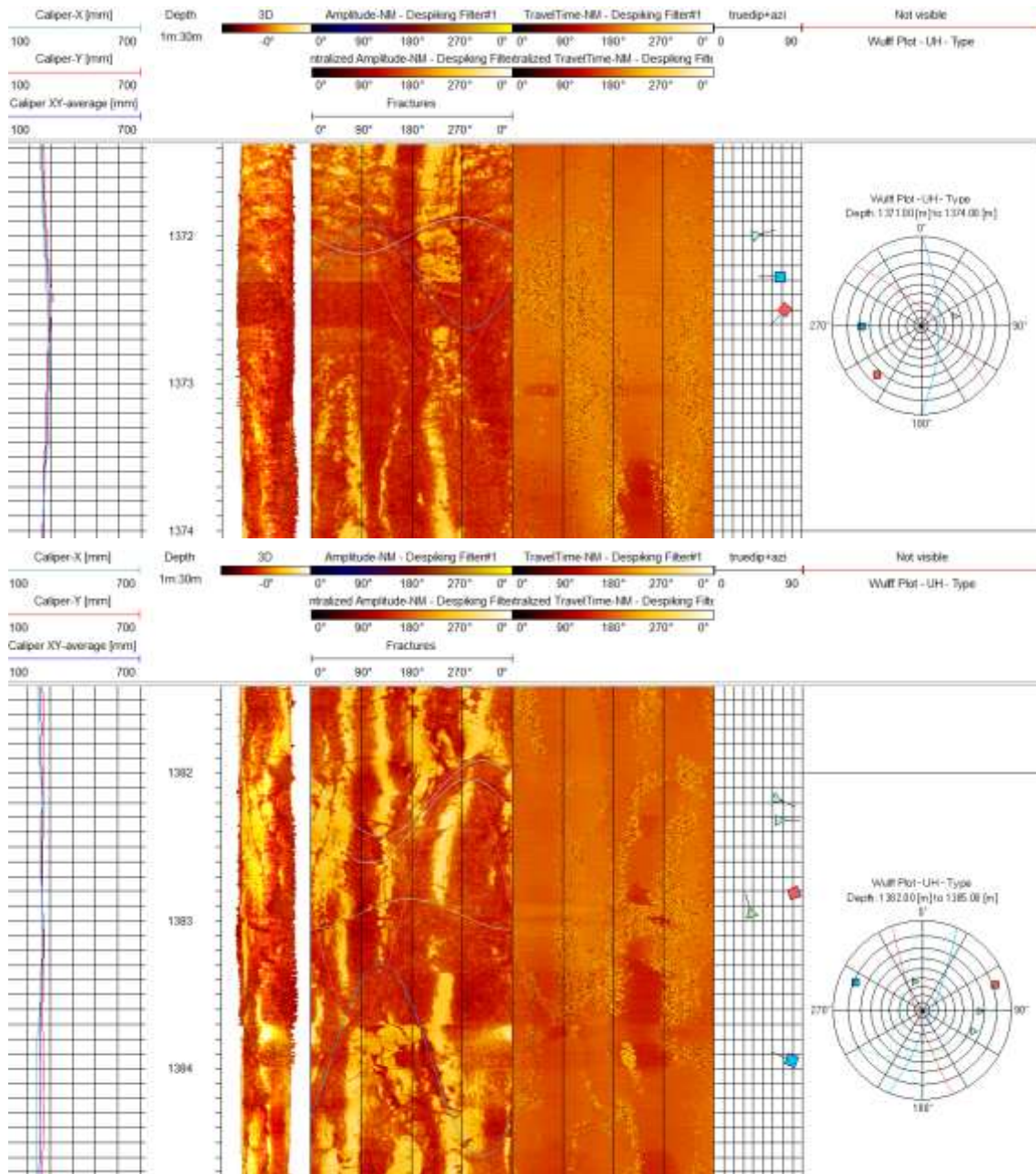


Figure 32. Fractures in the vicinity of a possible feed-zone at approximately 1370 m depth.

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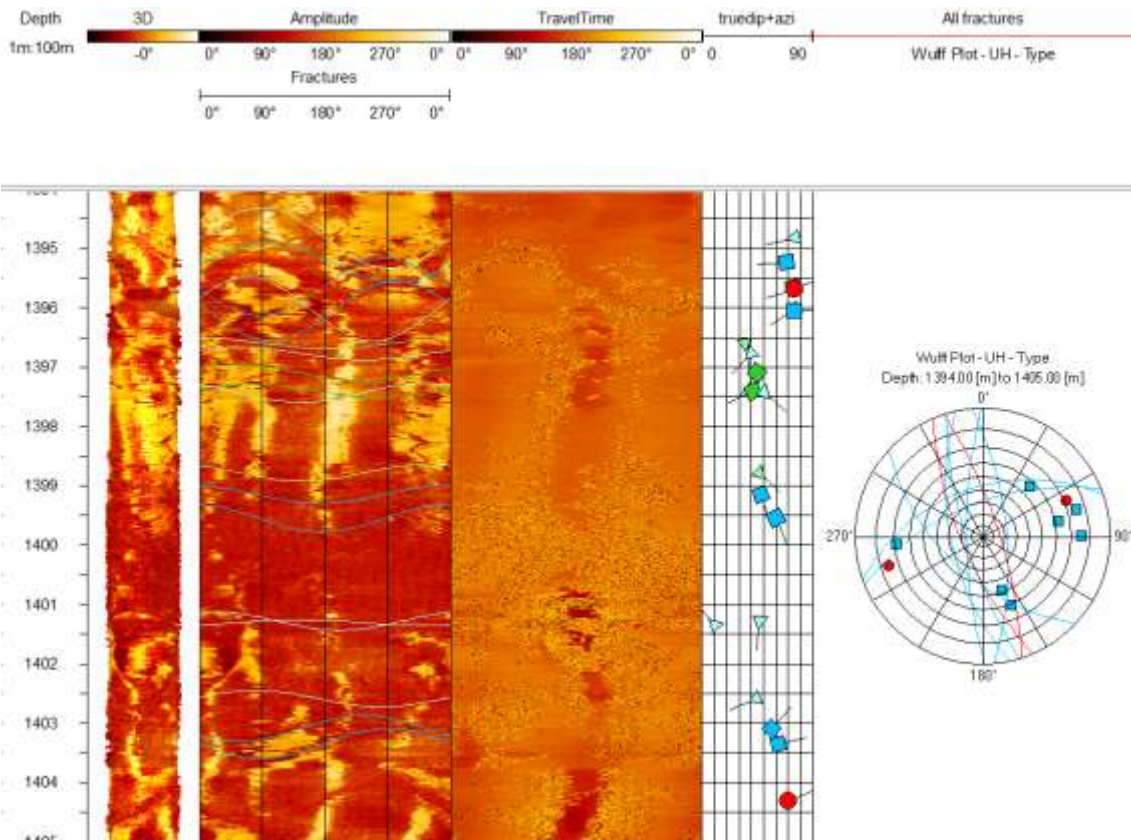


Figure 33. Fractures in the vicinity of a feed-point at 1398 m.

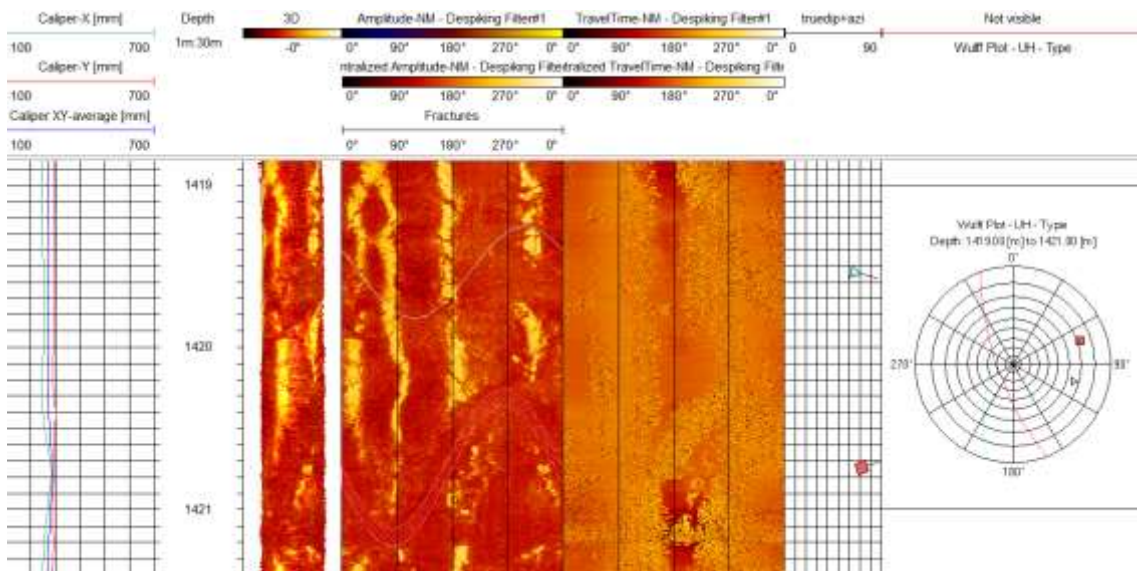


Figure 34. Fractures in the vicinity of a possible feed-point at ~1420 m.

4 Concluding remarks

Altogether 651 fractures were identified in the Televiewer images from well R-23, and 454 fractures from R-39. The main conclusions of this study are:

- Most fractures in both of the wells were identified with low confidence which is explained by the poor quality of large parts of the Televiewer images. Increased width in parts of the wells is the likeliest cause of the poorer quality parts.
- Fracture trends in R-23 are rather variable. However, ~N-S and NNW-SSE trends are most common. The variability in fracture trends may be explained by the poor quality of the Televiewer images.
- The main fracture trend in R-39 is NNW-SSE with a dip towards WSW.
- Open or partially open fractures are identified in the vicinity of most of the feed-points in the wells.
 - Open fractures in the vicinity of feed points in R-23 have a fracture trend of N-S to NE-SW as well as E-W. Porous rock formations may also be connected to feed-points in some cases.
 - Open fractures in the vicinity of feed points in R-39 commonly have a NNW-SSE trend. NW-SE trend is also noted.

There is a short distance between the two wells (Figure 1). There is, however, a slight difference between the strike of the identified open fractures in the vicinity of feed-points in the two wells. It is hard to know the reason for this difference or if it is even real. The main reason might be that the logged interval in R-23 is much shallower than the logged interval in R-39. Porous rock formations or boundaries may also be connected to the shallower feed-points.

The area of Elliðaárdalur is just west of the Krýsuvík fissure swarm which influences fracture trends in the easternmost part of Reykjavík (Figure 35). The Elliðaárdalur area has not been tectonically mapped in any detail and it is therefore difficult to discuss the results of this study with a tectonical focus. The main fracture trend of NNW-SSE and N-S in both wells may, however, be connected to the general behaviour of the volcanic systems in the Reykjanes Peninsula. Parallel, northerly striking transcurrent faults overprint the pattern of the volcano-tectonic structures (normal faults and fissures) of individual NE-trending volcanic systems in the Reykjanes Peninsula (e.g. Einarsson et al., 2020) (Figure 35).

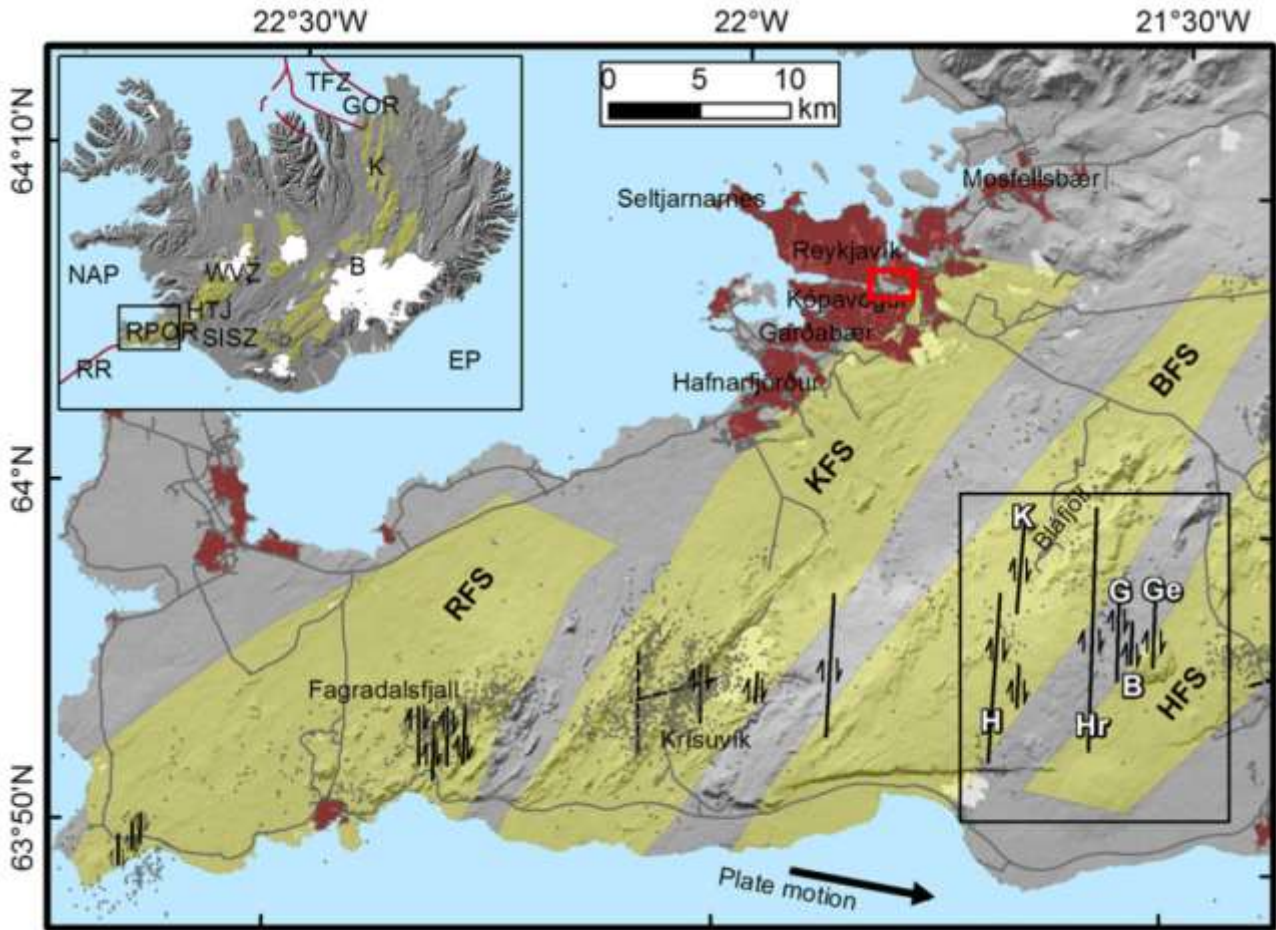


Figure 35. A Figure from Einarsson et al. (2020). A map of structural features of the Reykjanes Peninsula Oblique Rift, and the active zones of Iceland (inset figure). Fissure swarms: RFS: Reykjanes, KFS: Krýsuvík, BFS: Brennisteinsfjöll, HFS: Hengill Fissure Swarm. Known strike-slip faults mapped at the surface are shown with black lines. Arrow at the bottom shows the plate motion of Eurasia with respect to North America. For more details see Einarsson et al. (2020). Elliðaárdalur is approximately within the red rectangle.

5 References

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Appendix 1a: Orientations of fractures in R-23

Depth (m)	Azimuth (dip direction) (°)	Dip (°)	Aperture (mm)	Classification
305.00	128.94	30.01	Not measured	Partially visible, low confidence
305.07	94.99	24.43	Not measured	Partially visible, low confidence
305.53	127.28	41.61	Not measured	Partially visible, low confidence
306.03	157.31	43.68	Not measured	Partially visible, low confidence
306.98	336.98	66.20	Not measured	Partially visible, medium confidence
307.16	124.17	66.65	Not measured	Partially visible, low confidence
307.32	143.50	70.27	Not measured	Partially visible, low confidence
307.49	144.71	68.41	Not measured	Partially visible, medium confidence
310.26	158.12	44.44	Not measured	Partially visible, medium confidence
311.49	285.67	65.82	Not measured	Partially visible, low confidence
311.75	289.61	63.52	Not measured	Partially visible, low confidence
312.05	231.91	67.81	Not measured	Partially visible, low confidence
312.48	223.32	37.60	Not measured	Boundary, medium confidence
313.19	309.76	31.63	Not measured	Partially visible, low confidence
313.21	94.16	70.29	Not measured	Partially visible, low confidence
313.58	353.31	42.57	Not measured	Partially visible, low confidence
313.81	331.65	44.97	Not measured	Partially visible, low confidence
314.81	265.12	77.72	Not measured	Partially visible, low confidence
314.98	301.55	71.02	Not measured	Partially visible, low confidence
315.12	101.64	59.39	Not measured	Partially visible, low confidence
315.14	336.43	71.01	Not measured	Partially visible, low confidence
315.42	272.08	38.00	Not measured	Partially visible, low confidence
315.83	189.19	17.99	Not measured	Boundary, high confidence
315.85	271.27	50.73	Not measured	Partially visible, low confidence
317.25	301.32	70.14	Not measured	Partially visible, low confidence
318.56	239.53	38.38	Not measured	Partially visible, low confidence
318.77	220.91	39.70	Not measured	Partially visible, low confidence
319.88	80.63	76.13	Not measured	Partially visible, low confidence
320.96	341.63	42.25	Not measured	Partially visible, low confidence
321.61	248.14	21.36	Not measured	Boundary, medium confidence
324.49	122.85	44.94	Not measured	Partially visible, medium confidence
324.75	33.25	40.88	Not measured	Partially visible, low confidence
325.32	302.89	42.55	Not measured	Partially visible, medium confidence
325.39	303.23	40.84	Not measured	Partially visible, medium confidence
327.83	225.50	35.80	Not measured	Partially visible, low confidence
330.14	310.93	27.62	Not measured	Partially visible, low confidence
330.72	165.24	70.22	Not measured	Partially visible, low confidence
330.92	319.70	58.15	Not measured	Partially visible, medium confidence
333.30	225.63	28.01	Not measured	Partially visible, low confidence
333.52	109.89	61.28	Not measured	Partially visible, low confidence
333.94	37.03	24.86	Not measured	Partially visible, low confidence
334.07	54.20	9.05	Not measured	Boundary, medium confidence
334.99	87.84	75.06	Not measured	Partially visible, medium confidence
339.37	328.26	42.96	Not measured	Boundary, low confidence
339.48	136.48	75.09	Not measured	Partially visible, medium confidence
340.23	237.04	52.24	Not measured	Partially visible, low confidence
342.17	56.07	71.22	Not measured	Partially visible, low confidence

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343.38	231.16	28.63	Not measured	Partially visible, medium confidence
347.76	234.82	23.88	Not measured	Partially visible, low confidence
348.32	108.53	41.24	Not measured	Partially visible, low confidence
348.45	293.44	64.05	Not measured	Partially visible, low confidence
348.55	58.82	53.23	Not measured	Partially visible, medium confidence
352.89	294.31	45.87	Not measured	Partially visible, low confidence
353.50	268.70	64.21	3.09	Visible, high confidence
355.15	296.95	56.45	Not measured	Partially visible, medium confidence
356.50	207.37	71.74	Not measured	Partially visible, low confidence
358.48	199.55	72.51	Not measured	Partially visible, low confidence
359.64	279.04	54.69	Not measured	Partially visible, low confidence
360.03	322.10	42.69	Not measured	Partially visible, medium confidence
360.46	239.17	56.79	Not measured	Partially visible, medium confidence
360.47	233.36	48.33	Not measured	Partially visible, medium confidence
360.64	230.65	57.19	Not measured	Partially visible, medium confidence
360.86	235.74	59.00	Not measured	Partially visible, medium confidence
361.05	10.69	44.96	Not measured	Partially visible, low confidence
361.17	248.21	64.74	Not measured	Visible, medium confidence
361.70	260.97	70.17	Not measured	Visible, medium confidence
361.80	245.31	67.41	5.62	Visible, medium confidence
362.68	53.65	74.63	Not measured	Partially visible, low confidence
362.72	179.57	53.16	Not measured	Partially visible, medium confidence
363.04	162.50	59.54	Not measured	Partially visible, medium confidence
364.49	146.10	79.94	Not measured	Partially visible, low confidence
365.01	49.47	42.29	Not measured	Partially visible, low confidence
365.35	281.51	38.93	Not measured	Not visible, low confidence
366.46	145.66	34.33	Not measured	Partially visible, low confidence
366.98	84.03	23.28	Not measured	Boundary, medium confidence
370.74	260.34	74.05	Not measured	Partially visible, low confidence
372.99	227.24	51.32	Not measured	Partially visible, low confidence
373.54	230.29	57.26	Not measured	Partially visible, low confidence
374.48	228.86	53.84	Not measured	Partially visible, low confidence
375.01	129.85	76.84	Not measured	Partially visible, low confidence
375.92	130.85	76.15	Not measured	Partially visible, low confidence
378.35	36.10	65.78	Not measured	Partially visible, low confidence
381.55	85.01	28.17	Not measured	Partially visible, low confidence
381.87	90.98	20.94	Not measured	Partially visible, low confidence
382.57	133.58	41.86	Not measured	Partially visible, low confidence
383.18	134.71	27.61	Not measured	Partially visible, low confidence
390.99	178.86	20.41	Not measured	Boundary, low confidence
395.59	216.09	39.35	Not measured	Partially visible, low confidence
395.91	204.22	47.25	Not measured	Partially visible, low confidence
396.88	234.88	43.42	Not measured	Partially visible, medium confidence
397.60	59.97	79.78	Not measured	Partially visible, low confidence
411.77	184.11	36.57	Not measured	Not visible, low confidence
412.25	71.20	40.96	Not measured	Partially visible, medium confidence
412.29	187.72	62.47	Not measured	Partially visible, low confidence
412.31	242.23	29.20	Not measured	Partially visible, low confidence
412.83	347.15	31.55	Not measured	Partially visible, low confidence
414.86	52.13	67.16	Not measured	Partially visible, low confidence
415.63	24.45	67.44	Not measured	Partially visible, low confidence

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415.81	313.80	37.84	Not measured	Partially visible, low confidence
416.79	160.87	59.87	Not measured	Partially visible, medium confidence
416.88	350.47	48.06	Not measured	Partially visible, low confidence
417.79	187.45	16.97	Not measured	Boundary, low confidence
419.76	151.71	30.40	Not measured	Partially visible, medium confidence
419.84	105.37	53.19	Not measured	Partially visible, low confidence
422.39	278.09	45.16	Not measured	Partially visible, medium confidence
422.53	133.66	41.86	Not measured	Partially visible, low confidence
425.69	317.30	72.36	Not measured	Partially visible, low confidence
425.81	17.09	74.70	Not measured	Partially visible, low confidence
426.93	247.82	30.03	Not measured	Partially visible, low confidence
432.88	267.95	42.59	Not measured	Partially visible, low confidence
432.89	83.70	27.59	Not measured	Partially visible, low confidence
433.37	160.20	19.52	Not measured	Partially visible, medium confidence
436.61	128.01	36.26	Not measured	Partially visible, medium confidence
437.67	26.28	75.77	Not measured	Not visible, low confidence
441.89	117.75	31.70	Not measured	Partially visible, low confidence
442.65	141.62	26.16	Not measured	Partially visible, low confidence
443.00	218.11	51.71	Not measured	Partially visible, low confidence
443.25	176.27	57.34	Not measured	Partially visible, low confidence
443.52	168.13	72.90	Not measured	Partially visible, low confidence
444.22	6.99	78.71	Not measured	Partially visible, low confidence
444.32	79.58	41.45	Not measured	Partially visible, medium confidence
444.45	79.10	46.30	Not measured	Partially visible, low confidence
444.50	81.53	64.96	Not measured	Partially visible, medium confidence
444.76	234.36	74.87	Not measured	Partially visible, low confidence
448.40	209.68	71.57	Not measured	Not visible, low confidence
449.40	40.18	70.91	Not measured	Partially visible, low confidence
455.72	238.66	78.04	Not measured	Partially visible, low confidence
456.25	155.31	80.67	Not measured	Partially visible, low confidence
456.89	269.82	79.93	Not measured	Partially visible, low confidence
457.11	79.54	53.85	Not measured	Partially visible, high confidence
457.38	54.39	57.01	Not measured	Not visible, low confidence
457.92	111.11	67.75	Not measured	Partially visible, low confidence
458.35	265.07	81.28	Not measured	Partially visible, low confidence
458.38	86.87	72.46	Not measured	Partially visible, low confidence
460.75	308.65	42.67	Not measured	Partially visible, low confidence
460.85	302.79	36.43	Not measured	Partially visible, low confidence
461.01	314.03	36.60	Not measured	Partially visible, low confidence
462.28	226.12	29.77	Not measured	Partially visible, low confidence
462.41	226.03	30.17	Not measured	Partially visible, medium confidence
466.12	213.32	44.64	Not measured	Partially visible, medium confidence
468.54	282.04	49.52	Not measured	Not visible, low confidence
469.05	333.47	49.28	Not measured	Not visible, low confidence
469.62	322.04	60.72	Not measured	Partially visible, low confidence
470.02	334.57	41.64	Not measured	Partially visible, low confidence
470.63	348.29	60.12	Not measured	Visible, high confidence
473.91	342.07	77.06	Not measured	Partially visible, low confidence
474.29	292.37	43.37	Not measured	Partially visible, low confidence
478.03	284.38	70.77	Not measured	Partially visible, low confidence
480.48	312.44	46.42	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

482.42	294.97	24.86	Not measured	Partially visible, medium confidence
482.61	303.85	70.12	Not measured	Partially visible, low confidence
483.01	52.08	25.66	Not measured	Partially visible, medium confidence
502.81	317.02	18.82	Not measured	Partially visible, low confidence
507.80	218.02	24.87	Not measured	Partially visible, low confidence
509.10	286.46	76.86	Not measured	Partially visible, low confidence
509.36	322.76	72.87	Not measured	Partially visible, low confidence
510.38	258.55	73.39	Not measured	Partially visible, low confidence
511.47	266.94	50.81	Not measured	Boundary, high confidence
512.04	267.90	39.23	Not measured	Partially visible, low confidence
512.09	78.73	52.73	Not measured	Partially visible, low confidence
512.25	250.21	35.36	Not measured	Boundary, low confidence
515.30	241.68	56.31	Not measured	Partially visible, low confidence
524.88	111.27	41.38	Not measured	Partially visible, low confidence
526.80	319.31	38.20	Not measured	Not visible, low confidence
527.21	77.76	26.96	Not measured	Partially visible, low confidence
527.52	84.80	30.58	Not measured	Partially visible, low confidence
527.87	88.95	73.95	Not measured	Partially visible, medium confidence
527.92	75.84	44.13	Not measured	Partially visible, medium confidence
528.14	68.11	36.34	Not measured	Partially visible, medium confidence
528.38	63.42	33.62	Not measured	Partially visible, medium confidence
528.65	283.85	43.11	Not measured	Partially visible, medium confidence
530.66	97.48	57.38	Not measured	Partially visible, low confidence
532.34	292.31	76.90	Not measured	Partially visible, low confidence
534.78	163.68	47.97	Not measured	Partially visible, low confidence
541.86	235.57	76.38	Not measured	Partially visible, low confidence
542.10	240.51	74.89	Not measured	Partially visible, low confidence
544.73	247.36	44.20	Not measured	Partially visible, low confidence
545.29	101.52	16.15	Not measured	Boundary, medium confidence
547.53	314.82	38.57	Not measured	Partially visible, medium confidence
547.91	130.27	27.40	Not measured	Visible, high confidence
547.96	125.20	27.49	Not measured	Partially visible, medium confidence
548.05	281.74	54.69	Not measured	Partially visible, medium confidence
548.12	265.67	52.30	Not measured	Partially visible, medium confidence
548.13	242.29	33.28	Not measured	Partially visible, low confidence
548.29	183.16	16.00	Not measured	Partially visible, low confidence
548.61	242.32	48.98	Not measured	Partially visible, medium confidence
548.67	168.44	49.17	Not measured	Partially visible, medium confidence
548.78	79.07	37.26	Not measured	Partially visible, medium confidence
548.79	176.44	53.36	Not measured	Partially visible, medium confidence
549.32	281.29	54.80	Not measured	Visible, medium confidence
549.45	257.61	58.93	Not measured	Visible, medium confidence
549.68	245.14	56.61	Not measured	Visible, medium confidence
549.84	213.90	49.02	Not measured	Partially visible, medium confidence
550.24	209.98	40.95	Not measured	Visible, medium confidence
550.83	83.07	33.72	Not measured	Visible, medium confidence
550.98	95.86	22.61	Not measured	Visible, medium confidence
551.19	309.68	39.25	Not measured	Visible, medium confidence
551.24	125.71	21.14	Not measured	Visible, medium confidence
551.49	111.52	33.54	Not measured	Partially visible, medium confidence
551.65	123.07	61.69	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

552.17	310.78	73.09	Not measured	Partially visible, low confidence
552.57	239.79	67.92	Not measured	Partially visible, medium confidence
552.64	274.82	42.00	Not measured	Partially visible, medium confidence
552.65	270.35	59.54	Not measured	Partially visible, medium confidence
553.19	237.64	58.41	Not measured	Partially visible, low confidence
553.40	211.11	40.41	Not measured	Partially visible, low confidence
553.88	249.59	46.71	Not measured	Partially visible, low confidence
554.24	70.82	32.87	Not measured	Partially visible, low confidence
555.38	78.10	36.73	Not measured	Partially visible, low confidence
555.77	87.21	42.55	Not measured	Partially visible, low confidence
557.30	14.55	40.64	Not measured	Partially visible, low confidence
558.42	192.51	39.38	Not measured	Partially visible, medium confidence
564.97	231.22	64.48	Not measured	Partially visible, low confidence
565.57	221.35	59.51	Not measured	Partially visible, low confidence
566.27	217.86	66.55	Not measured	Partially visible, low confidence
566.31	326.05	34.49	Not measured	Partially visible, medium confidence
567.08	225.84	43.49	Not measured	Partially visible, medium confidence
569.08	261.83	73.47	Not measured	Partially visible, low confidence
570.07	253.05	46.93	Not measured	Partially visible, low confidence
570.43	236.91	31.81	Not measured	Partially visible, low confidence
570.51	86.57	74.08	Not measured	Partially visible, low confidence
573.46	243.56	52.54	Not measured	Partially visible, low confidence
573.72	254.03	53.60	Not measured	Partially visible, low confidence
574.05	136.72	26.65	Not measured	Partially visible, low confidence
574.10	143.99	27.51	Not measured	Partially visible, low confidence
575.12	314.93	35.38	Not measured	Partially visible, low confidence
576.00	95.75	41.19	Not measured	Partially visible, medium confidence
576.79	287.54	58.61	Not measured	Not visible, low confidence
578.41	263.39	35.27	Not measured	Partially visible, medium confidence
578.51	78.09	52.29	Not measured	Partially visible, medium confidence
578.68	263.10	53.45	Not measured	Partially visible, medium confidence
579.20	44.51	53.32	Not measured	Partially visible, low confidence
579.93	81.26	51.22	Not measured	Partially visible, low confidence
580.22	91.52	39.54	Not measured	Partially visible, low confidence
580.39	85.47	41.80	Not measured	Partially visible, low confidence
581.33	103.73	55.59	Not measured	Partially visible, low confidence
581.56	93.06	52.51	Not measured	Partially visible, low confidence
581.61	85.16	54.37	Not measured	Partially visible, low confidence
581.80	80.37	42.17	Not measured	Partially visible, medium confidence
582.03	112.41	45.80	Not measured	Not visible, low confidence
583.00	268.25	77.51	Not measured	Partially visible, medium confidence
583.53	35.37	79.54	Not measured	Visible, medium confidence
585.04	78.86	64.64	Not measured	Partially visible, low confidence
585.98	184.29	36.00	Not measured	Visible, high confidence
586.92	256.35	60.44	Not measured	Partially visible, medium confidence
587.33	224.29	68.94	Not measured	Partially visible, low confidence
587.45	304.71	71.95	Not measured	Partially visible, low confidence
588.06	353.56	56.24	Not measured	Partially visible, low confidence
588.55	161.57	68.56	Not measured	Partially visible, low confidence
589.98	249.69	54.23	Not measured	Partially visible, low confidence
590.56	273.11	44.46	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

590.62	86.57	30.44	Not measured	Partially visible, low confidence
590.78	75.26	72.76	Not measured	Partially visible, medium confidence
591.80	232.51	36.44	Not measured	Partially visible, medium confidence
591.91	193.38	67.80	Not measured	Partially visible, medium confidence
592.33	183.34	55.37	Not measured	Partially visible, medium confidence
592.44	194.55	52.43	Not measured	Partially visible, medium confidence
592.68	230.78	28.04	Not measured	Partially visible, medium confidence
592.94	278.78	78.10	Not measured	Partially visible, medium confidence
593.32	273.19	78.32	Not measured	Partially visible, low confidence
593.47	282.39	47.99	Not measured	Partially visible, medium confidence
594.39	92.68	54.68	Not measured	Partially visible, low confidence
595.36	258.94	50.49	Not measured	Partially visible, medium confidence
596.01	4.87	35.87	Not measured	Partially visible, medium confidence
597.80	262.48	51.61	Not measured	Partially visible, low confidence
600.21	58.59	42.70	Not measured	Partially visible, low confidence
600.65	254.66	57.79	Not measured	Visible, medium confidence
601.10	177.21	28.43	Not measured	Partially visible, medium confidence
601.38	207.96	38.36	Not measured	Partially visible, low confidence
601.44	257.19	23.29	Not measured	Boundary, low confidence
602.77	266.10	58.98	Not measured	Partially visible, low confidence
603.57	67.96	23.59	Not measured	Partially visible, medium confidence
603.71	117.87	30.92	Not measured	Partially visible, medium confidence
604.09	206.74	53.38	Not measured	Partially visible, medium confidence
605.59	201.40	29.72	Not measured	Partially visible, medium confidence
607.16	4.59	61.80	Not measured	Partially visible, low confidence
608.94	38.04	44.83	Not measured	Partially visible, low confidence
609.46	88.65	66.26	Not measured	Partially visible, low confidence
610.28	98.78	68.69	Not measured	Partially visible, low confidence
613.98	97.89	62.93	Not measured	Partially visible, low confidence
618.12	95.97	61.10	Not measured	Partially visible, low confidence
624.22	14.03	39.49	Not measured	Partially visible, low confidence
624.77	63.36	40.97	Not measured	Partially visible, low confidence
625.54	346.19	35.37	Not measured	Partially visible, low confidence
625.87	313.14	50.54	Not measured	Partially visible, medium confidence
626.00	137.57	54.28	Not measured	Partially visible, low confidence
626.64	229.34	43.31	Not measured	Partially visible, medium confidence
626.71	153.38	48.47	Not measured	Partially visible, medium confidence
627.31	117.09	64.17	Not measured	Partially visible, low confidence
627.44	250.62	24.80	Not measured	Partially visible, medium confidence
627.99	358.64	47.13	Not measured	Partially visible, low confidence
628.18	355.63	52.99	Not measured	Partially visible, medium confidence
628.40	354.71	40.29	Not measured	Partially visible, medium confidence
628.57	103.48	74.06	Not measured	Partially visible, low confidence
629.06	80.48	25.63	Not measured	Partially visible, medium confidence
629.48	93.59	28.92	Not measured	Partially visible, low confidence
629.52	108.08	76.52	Not measured	Partially visible, low confidence
630.38	311.56	46.01	Not measured	Partially visible, low confidence
630.47	132.30	79.85	Not measured	Partially visible, low confidence
630.95	125.88	67.70	Not measured	Partially visible, low confidence
631.02	76.84	52.21	Not measured	Partially visible, medium confidence
632.21	108.18	59.67	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

632.44	95.97	43.17	Not measured	Partially visible, low confidence
632.48	250.28	46.98	Not measured	Partially visible, medium confidence
632.65	268.08	71.36	Not measured	Partially visible, low confidence
632.86	229.50	55.64	Not measured	Partially visible, medium confidence
633.42	320.78	34.40	Not measured	Partially visible, low confidence
633.47	85.87	41.05	Not measured	Partially visible, medium confidence
633.85	119.97	53.87	Not measured	Partially visible, low confidence
634.05	105.37	31.07	Not measured	Partially visible, medium confidence
634.21	99.81	31.95	Not measured	Partially visible, medium confidence
634.52	75.32	43.55	Not measured	Partially visible, low confidence
635.18	61.78	46.86	Not measured	Partially visible, low confidence
635.84	226.97	37.15	Not measured	Partially visible, high confidence
636.71	56.71	46.50	Not measured	Partially visible, medium confidence
637.16	144.32	55.93	Not measured	Partially visible, low confidence
638.09	252.62	19.78	Not measured	Partially visible, low confidence
638.28	281.12	20.36	Not measured	Partially visible, medium confidence
638.35	115.01	41.80	Not measured	Partially visible, low confidence
638.90	117.41	39.56	Not measured	Partially visible, low confidence
639.15	84.96	47.68	Not measured	Partially visible, low confidence
639.96	153.66	63.38	Not measured	Partially visible, low confidence
640.64	6.69	51.23	Not measured	Partially visible, low confidence
640.88	348.52	55.47	Not measured	Partially visible, low confidence
641.07	356.02	51.94	Not measured	Partially visible, medium confidence
641.40	304.16	71.39	Not measured	Partially visible, low confidence
642.21	237.53	36.89	Not measured	Partially visible, low confidence
642.44	187.99	52.94	Not measured	Partially visible, low confidence
642.61	194.30	40.77	Not measured	Partially visible, medium confidence
642.66	16.33	54.34	Not measured	Partially visible, medium confidence
646.18	137.37	38.90	Not measured	Partially visible, medium confidence
650.72	23.19	68.33	Not measured	Partially visible, low confidence
653.80	199.85	31.16	Not measured	Partially visible, medium confidence
654.55	139.03	37.45	Not measured	Partially visible, low confidence
654.99	222.56	70.27	Not measured	Partially visible, low confidence
659.54	148.56	56.04	Not measured	Partially visible, low confidence
662.49	186.99	37.10	Not measured	Partially visible, medium confidence
663.08	344.04	49.97	Not measured	Not visible, low confidence
663.41	265.80	48.15	Not measured	Partially visible, low confidence
663.72	242.38	49.77	Not measured	Partially visible, low confidence
664.31	318.46	34.51	Not measured	Visible, medium confidence
664.55	334.46	42.20	Not measured	Partially visible, medium confidence
665.94	84.92	42.77	Not measured	Partially visible, medium confidence
672.01	149.72	46.96	Not measured	Partially visible, low confidence
675.11	291.71	31.96	Not measured	Partially visible, medium confidence
676.18	260.42	48.20	Not measured	Partially visible, medium confidence
678.78	97.97	45.63	Not measured	Partially visible, low confidence
679.40	328.42	48.48	Not measured	Partially visible, low confidence
680.96	141.39	31.50	Not measured	Partially visible, medium confidence
682.11	168.95	73.01	Not measured	Visible, medium confidence
682.43	184.88	79.67	Not measured	Visible, medium confidence
683.54	145.40	44.67	Not measured	Partially visible, low confidence
684.50	137.16	28.79	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

685.14	29.26	44.88	Not measured	Visible, medium confidence
687.95	151.80	41.28	Not measured	Partially visible, medium confidence
689.47	110.96	66.78	Not measured	Visible, medium confidence
689.49	102.08	58.30	Not measured	Visible, medium confidence
690.94	353.78	59.70	Not measured	Partially visible, low confidence
691.53	262.19	24.80	Not measured	Partially visible, low confidence
692.33	156.53	73.96	Not measured	Partially visible, low confidence
692.67	181.70	71.60	Not measured	Partially visible, low confidence
693.92	294.59	72.63	Not measured	Partially visible, medium confidence
695.17	348.77	33.40	Not measured	Partially visible, low confidence
695.91	347.11	73.65	Not measured	Partially visible, medium confidence
696.14	135.84	61.24	Not measured	Partially visible, low confidence
697.19	356.68	45.18	Not measured	Partially visible, medium confidence
697.28	136.22	54.94	Not measured	Partially visible, medium confidence
698.98	249.67	64.58	Not measured	Partially visible, low confidence
699.20	237.85	64.96	Not measured	Partially visible, low confidence
699.58	250.98	70.17	Not measured	Partially visible, low confidence
700.01	306.29	68.29	Not measured	Partially visible, low confidence
700.46	244.40	64.85	Not measured	Partially visible, low confidence
700.61	248.65	62.02	Not measured	Partially visible, low confidence
700.62	147.96	68.41	Not measured	Partially visible, low confidence
700.71	146.73	66.50	Not measured	Partially visible, low confidence
701.19	263.32	70.08	Not measured	Partially visible, low confidence
701.23	75.15	70.84	Not measured	Partially visible, low confidence
701.38	264.72	73.34	Not measured	Partially visible, low confidence
701.59	260.17	81.77	Not measured	Partially visible, low confidence
703.20	272.18	73.77	Not measured	Not visible, low confidence
704.78	105.49	61.48	Not measured	Partially visible, low confidence
704.99	223.26	40.01	Not measured	Partially visible, low confidence
705.64	320.59	52.14	Not measured	Partially visible, medium confidence
705.71	69.23	52.28	Not measured	Partially visible, medium confidence
705.87	62.82	55.64	Not measured	Partially visible, medium confidence
707.16	271.06	69.26	Not measured	Partially visible, medium confidence
714.57	102.71	80.78	Not measured	Partially visible, low confidence
726.38	159.22	28.71	Not measured	Boundary, medium confidence
726.46	138.05	53.52	Not measured	Partially visible, low confidence
726.73	348.02	71.15	Not measured	Partially visible, low confidence
727.01	341.62	69.63	Not measured	Partially visible, medium confidence
727.44	339.15	65.62	Not measured	Partially visible, low confidence
728.09	336.09	70.27	Not measured	Partially visible, low confidence
728.11	335.31	36.88	Not measured	Partially visible, low confidence
728.14	292.67	76.14	Not measured	Partially visible, low confidence
728.32	337.08	45.98	Not measured	Partially visible, medium confidence
728.55	328.56	76.04	Not measured	Partially visible, low confidence
729.02	164.25	48.19	Not measured	Partially visible, low confidence
729.08	240.12	37.91	Not measured	Partially visible, low confidence
729.13	279.09	68.39	Not measured	Partially visible, low confidence
730.16	20.45	72.17	Not measured	Partially visible, low confidence
730.77	288.32	41.65	Not measured	Partially visible, low confidence
731.69	86.35	76.72	Not measured	Partially visible, low confidence
733.39	255.69	73.72	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

734.51	278.95	69.61	Not measured	Partially visible, low confidence
737.52	81.54	74.94	Not measured	Partially visible, low confidence
737.54	291.74	71.58	Not measured	Partially visible, medium confidence
737.85	127.53	65.29	Not measured	Partially visible, low confidence
739.14	263.72	76.65	Not measured	Partially visible, medium confidence
740.44	248.27	76.63	Not measured	Partially visible, low confidence
741.02	230.39	66.70	Not measured	Partially visible, medium confidence
741.51	222.46	63.49	Not measured	Partially visible, medium confidence
741.68	64.36	71.48	Not measured	Partially visible, medium confidence
741.85	231.28	61.36	Not measured	Partially visible, medium confidence
744.21	92.20	80.20	Not measured	Partially visible, low confidence
746.50	245.24	38.18	Not measured	Partially visible, low confidence
747.41	358.38	74.93	Not measured	Partially visible, low confidence
747.91	0.54	72.52	Not measured	Partially visible, low confidence
748.26	293.64	57.34	Not measured	Partially visible, medium confidence
748.54	13.78	75.37	Not measured	Partially visible, low confidence
748.91	264.84	62.80	Not measured	Partially visible, low confidence
749.14	266.42	60.87	Not measured	Partially visible, low confidence
749.32	220.45	71.09	Not measured	Partially visible, medium confidence
749.76	212.98	66.72	Not measured	Partially visible, medium confidence
750.29	305.03	64.40	Not measured	Partially visible, low confidence
751.11	311.69	49.83	Not measured	Partially visible, medium confidence
751.67	283.63	50.95	Not measured	Partially visible, medium confidence
751.94	280.32	59.53	Not measured	Partially visible, low confidence
753.51	303.99	77.27	Not measured	Partially visible, low confidence
758.57	61.33	80.85	Not measured	Partially visible, low confidence
758.92	83.99	80.82	Not measured	Partially visible, low confidence
759.19	75.66	77.22	Not measured	Partially visible, low confidence
764.04	267.37	73.26	Not measured	Partially visible, low confidence
764.38	267.24	66.40	Not measured	Partially visible, low confidence
764.62	259.50	65.18	Not measured	Partially visible, low confidence
764.80	68.44	19.46	Not measured	Boundary, medium confidence
764.88	244.72	63.69	Not measured	Partially visible, low confidence
765.47	344.20	51.55	Not measured	Partially visible, low confidence
765.84	126.62	74.00	Not measured	Partially visible, low confidence
766.04	252.57	59.68	Not measured	Visible, medium confidence
766.47	244.85	38.89	Not measured	Partially visible, low confidence
766.47	165.97	78.77	Not measured	Partially visible, low confidence
766.59	246.10	43.49	Not measured	Partially visible, medium confidence
767.20	297.45	47.94	Not measured	Visible, medium confidence
767.50	112.09	39.28	Not measured	Partially visible, low confidence
773.74	250.50	64.41	Not measured	Partially visible, low confidence
774.84	16.39	22.41	Not measured	Not visible, low confidence
778.64	100.13	42.99	Not measured	Partially visible, low confidence
782.80	272.57	74.80	Not measured	Partially visible, low confidence
785.31	66.70	44.13	Not measured	Partially visible, low confidence
787.42	267.43	71.11	Not measured	Partially visible, low confidence
789.17	287.84	27.50	Not measured	Boundary, medium confidence
789.55	69.66	36.68	Not measured	Partially visible, medium confidence
790.38	148.42	70.35	Not measured	Partially visible, low confidence
792.75	246.82	75.57	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

793.04	250.85	77.47	Not measured	Partially visible, low confidence
796.02	59.74	41.78	Not measured	Partially visible, low confidence
797.81	321.16	59.65	Not measured	Not visible, low confidence
800.07	9.00	54.83	Not measured	Partially visible, low confidence
800.28	207.77	67.24	Not measured	Partially visible, low confidence
801.05	57.57	56.12	Not measured	Not visible, low confidence
801.34	248.13	80.28	Not measured	Partially visible, low confidence
801.47	304.98	66.59	Not measured	Not visible, low confidence
802.37	65.21	63.27	Not measured	Partially visible, medium confidence
802.50	64.05	61.46	Not measured	Not visible, low confidence
803.21	66.65	80.65	Not measured	Partially visible, low confidence
804.27	240.83	78.93	Not measured	Partially visible, low confidence
804.87	262.23	81.30	Not measured	Partially visible, low confidence
808.70	321.48	74.64	Not measured	Partially visible, low confidence
809.35	330.24	75.00	Not measured	Partially visible, low confidence
809.92	103.62	37.57	Not measured	Partially visible, low confidence
810.35	91.18	36.45	Not measured	Partially visible, low confidence
811.14	207.77	70.85	Not measured	Partially visible, low confidence
823.12	241.14	28.26	Not measured	Partially visible, low confidence
827.04	72.76	64.07	Not measured	Partially visible, low confidence
827.78	270.81	45.80	Not measured	Partially visible, low confidence
830.28	110.34	61.42	Not measured	Partially visible, medium confidence
832.78	32.87	73.98	Not measured	Not visible, low confidence
833.17	214.64	69.96	Not measured	Partially visible, low confidence
834.32	217.47	36.18	Not measured	Boundary, low confidence
834.79	244.42	67.55	Not measured	Partially visible, low confidence
834.94	255.48	35.48	Not measured	Boundary, low confidence
835.64	50.87	74.72	Not measured	Partially visible, medium confidence
838.31	39.36	39.48	Not measured	Not visible, low confidence
838.81	216.82	67.48	Not measured	Partially visible, low confidence
839.68	223.00	67.53	Not measured	Not visible, low confidence
839.96	240.84	68.02	Not measured	Not visible, low confidence
840.50	68.02	71.92	Not measured	Partially visible, low confidence
840.63	247.30	72.06	Not measured	Partially visible, low confidence
843.45	255.00	75.20	Not measured	Partially visible, low confidence
844.09	150.72	83.75	Not measured	Partially visible, low confidence
847.39	180.95	20.91	94.13	Visible, medium confidence
847.58	172.43	27.02	Not measured	Visible, medium confidence
852.28	316.92	12.89	Not measured	Partially visible, medium confidence
852.38	77.37	47.55	Not measured	Partially visible, low confidence
852.80	180.98	26.50	Not measured	Not visible, low confidence
853.38	155.46	15.02	Not measured	Partially visible, medium confidence
855.63	284.65	47.05	Not measured	Partially visible, medium confidence
855.83	114.85	39.55	Not measured	Partially visible, low confidence
855.99	187.24	34.28	Not measured	Partially visible, low confidence
859.06	307.17	56.55	Not measured	Not visible, low confidence
859.40	303.62	61.85	Not measured	Not visible, low confidence
859.59	309.35	63.14	Not measured	Partially visible, low confidence
859.78	307.41	62.03	Not measured	Not visible, low confidence
859.96	290.72	59.69	Not measured	Partially visible, low confidence
860.26	276.10	64.63	Not measured	Not visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

860.44	274.30	53.57	Not measured	Not visible, low confidence
860.71	274.60	57.62	Not measured	Not visible, low confidence
860.73	292.18	69.76	Not measured	Not visible, low confidence
861.96	243.57	38.55	Not measured	Partially visible, low confidence
862.03	95.51	40.23	Not measured	Partially visible, medium confidence
863.17	65.15	32.85	Not measured	Not visible, low confidence
865.45	53.87	33.98	Not measured	Partially visible, medium confidence
877.78	305.01	64.10	19.49	Visible, medium confidence
878.06	345.76	61.18	Not measured	Not visible, low confidence
880.64	248.68	67.26	Not measured	Partially visible, low confidence
881.70	88.17	68.00	Not measured	Partially visible, low confidence
881.86	165.99	81.87	Not measured	Partially visible, low confidence
884.49	19.10	53.79	Not measured	Partially visible, low confidence
885.47	262.01	36.68	Not measured	Partially visible, low confidence
891.86	84.47	29.06	Not measured	Partially visible, medium confidence
895.38	171.69	64.53	Not measured	Partially visible, low confidence
908.84	271.95	70.77	Not measured	Partially visible, low confidence
924.45	256.90	73.83	Not measured	Not visible, low confidence
926.25	7.88	54.04	Not measured	Partially visible, low confidence
928.75	97.41	30.87	Not measured	Partially visible, low confidence
929.66	40.01	49.21	Not measured	Not visible, low confidence
932.91	72.90	16.72	Not measured	Boundary, medium confidence
935.79	270.89	80.43	Not measured	Partially visible, medium confidence
936.60	279.27	78.07	Not measured	Partially visible, low confidence
948.00	84.39	19.50	Not measured	Boundary, medium confidence
948.16	286.02	65.28	Not measured	Partially visible, low confidence
948.96	65.96	29.06	Not measured	Boundary, low confidence
949.27	66.97	60.96	Not measured	Partially visible, low confidence
951.50	79.11	17.82	Not measured	Boundary, low confidence
976.56	136.14	68.68	Not measured	Visible, medium confidence
976.63	130.54	59.21	Not measured	Visible, medium confidence
976.92	203.26	56.52	Not measured	Visible, medium confidence
977.43	132.59	74.18	Not measured	Visible, medium confidence
980.49	293.65	66.17	Not measured	Partially visible, low confidence
981.11	309.99	60.08	Not measured	Partially visible, low confidence
982.23	131.43	65.94	Not measured	Partially visible, medium confidence
983.32	292.61	53.19	Not measured	Partially visible, low confidence
983.39	105.55	55.64	Not measured	Partially visible, low confidence
985.72	320.25	58.16	Not measured	Partially visible, medium confidence
985.73	161.07	62.05	Not measured	Partially visible, medium confidence
986.04	223.62	31.68	Not measured	Visible, high confidence
988.17	145.94	72.34	Not measured	Partially visible, low confidence
988.41	268.51	53.66	Not measured	Partially visible, low confidence
991.53	125.59	72.76	Not measured	Not visible, low confidence
992.44	200.39	72.85	Not measured	Not visible, low confidence
992.87	272.88	71.18	Not measured	Not visible, low confidence
993.47	315.06	59.69	Not measured	Partially visible, low confidence
994.00	165.02	67.19	Not measured	Partially visible, low confidence
995.02	247.37	41.31	Not measured	Not visible, low confidence
995.54	230.24	50.17	Not measured	Partially visible, medium confidence
995.63	56.54	36.85	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1007.37	140.63	77.66	Not measured	Partially visible, low confidence
1007.78	356.59	72.08	Not measured	Partially visible, low confidence
1008.28	336.30	68.13	Not measured	Partially visible, medium confidence
1008.78	352.56	73.61	Not measured	Partially visible, low confidence
1023.25	79.76	79.93	Not measured	Not visible, low confidence
1027.29	182.11	67.57	Not measured	Partially visible, medium confidence
1027.33	100.92	61.94	Not measured	Partially visible, low confidence
1027.83	173.52	33.90	Not measured	Partially visible, low confidence
1027.97	90.15	74.23	Not measured	Partially visible, low confidence
1028.46	95.72	57.36	Not measured	Not visible, high confidence
1028.87	110.89	48.63	Not measured	Partially visible, high confidence
1029.43	117.22	73.57	Not measured	Partially visible, low confidence
1029.45	95.91	55.65	Not measured	Visible, high confidence
1032.29	338.86	70.00	Not measured	Partially visible, low confidence
1032.75	311.90	57.92	Not measured	Partially visible, low confidence
1034.26	308.15	77.51	Not measured	Partially visible, medium confidence
1035.55	312.84	70.80	Not measured	Visible, medium confidence
1037.15	284.20	47.77	Not measured	Partially visible, low confidence
1040.22	319.70	62.93	Not measured	Partially visible, low confidence
1044.10	216.40	64.38	Not measured	Partially visible, low confidence
1045.46	79.58	17.76	Not measured	Boundary, high confidence
1046.67	205.39	17.50	Not measured	Boundary, medium confidence
1047.44	116.75	50.98	Not measured	Partially visible, medium confidence
1047.55	202.27	46.51	Not measured	Partially visible, low confidence
1052.35	152.15	36.80	Not measured	Partially visible, medium confidence
1052.49	346.72	58.00	Not measured	Partially visible, medium confidence
1055.87	63.26	80.09	Not measured	Partially visible, low confidence
1057.66	339.57	78.94	Not measured	Partially visible, low confidence
1057.88	248.19	75.69	Not measured	Not visible, low confidence
1059.26	353.94	77.09	Not measured	Partially visible, low confidence
1059.76	348.60	80.70	Not measured	Partially visible, medium confidence
1064.17	260.42	63.36	Not measured	Not visible, low confidence
1064.30	273.76	67.56	Not measured	Partially visible, medium confidence
1067.49	329.21	71.05	Not measured	Partially visible, low confidence
1069.18	114.82	19.81	Not measured	Partially visible, low confidence
1069.32	331.40	58.33	Not measured	Partially visible, low confidence
1071.75	248.21	63.33	Not measured	Not visible, low confidence
1073.61	272.87	71.93	Not measured	Partially visible, low confidence
1074.48	266.76	72.57	Not measured	Partially visible, low confidence
1075.10	266.32	61.40	Not measured	Partially visible, low confidence
1086.42	83.94	47.74	Not measured	Partially visible, low confidence
1087.33	298.72	63.90	Not measured	Partially visible, low confidence
1087.90	270.68	66.40	Not measured	Partially visible, low confidence
1089.21	52.42	72.60	Not measured	Partially visible, medium confidence
1089.60	220.86	65.60	Not measured	Partially visible, low confidence
1090.51	262.70	40.31	Not measured	Partially visible, low confidence
1101.35	137.98	55.78	Not measured	Not visible, low confidence
1101.98	159.46	75.02	Not measured	Partially visible, low confidence
1103.70	118.14	76.35	Not measured	Partially visible, low confidence
1104.05	97.39	67.13	Not measured	Partially visible, medium confidence
1106.34	91.89	68.92	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1117.42	305.13	66.38	Not measured	Partially visible, low confidence
1117.72	95.65	69.42	Not measured	Partially visible, low confidence
1118.39	85.25	47.56	Not measured	Partially visible, medium confidence
1118.92	57.21	59.46	Not measured	Partially visible, low confidence
1118.92	43.60	76.74	Not measured	Not visible, low confidence
1119.00	67.91	59.93	Not measured	Partially visible, low confidence
1129.54	243.33	72.28	Not measured	Partially visible, low confidence
1130.10	209.02	70.88	Not measured	Not visible, low confidence
1133.76	149.14	65.56	Not measured	Partially visible, low confidence
1134.96	247.20	73.20	Not measured	Partially visible, low confidence
1135.63	249.47	54.76	Not measured	Not visible, medium confidence
1137.04	148.01	58.48	Not measured	Partially visible, high confidence
1142.22	273.19	80.48	Not measured	Partially visible, low confidence
1144.48	263.13	50.80	Not measured	Partially visible, medium confidence
1146.25	103.48	69.37	Not measured	Partially visible, low confidence
1148.13	157.11	58.76	Not measured	Partially visible, low confidence
1148.66	161.58	57.86	Not measured	Partially visible, low confidence
1150.49	112.32	54.31	Not measured	Partially visible, low confidence
1152.85	72.49	63.47	Not measured	Partially visible, medium confidence
1153.36	88.28	64.69	Not measured	Partially visible, low confidence
1153.86	84.99	69.31	Not measured	Partially visible, low confidence
1154.87	287.54	59.33	Not measured	Partially visible, low confidence
1155.64	289.10	56.61	Not measured	Partially visible, medium confidence
1156.61	153.13	61.97	Not measured	Partially visible, low confidence
1160.20	276.41	74.23	Not measured	Partially visible, low confidence
1161.70	154.12	60.68	Not measured	Partially visible, medium confidence
1164.74	9.80	77.78	Not measured	Partially visible, low confidence
1167.39	244.83	70.26	Not measured	Partially visible, medium confidence
1168.99	100.99	55.53	Not measured	Partially visible, low confidence
1169.30	74.89	40.04	Not measured	Partially visible, high confidence
1169.46	77.98	36.55	Not measured	Partially visible, medium confidence
1169.93	83.30	25.92	Not measured	Partially visible, low confidence
1177.22	325.60	75.19	Not measured	Partially visible, medium confidence
1177.25	316.73	81.54	Not measured	Visible, high confidence
1177.75	138.25	80.22	Not measured	Partially visible, low confidence
1180.18	304.66	62.57	Not measured	Partially visible, low confidence
1183.04	285.88	55.91	Not measured	Partially visible, low confidence
1185.03	255.55	70.48	Not measured	Partially visible, low confidence
1186.93	68.12	31.88	Not measured	Partially visible, medium confidence
1187.15	103.02	25.72	Not measured	Partially visible, medium confidence
1188.22	166.33	40.72	Not measured	Boundary, medium confidence
1191.00	98.69	38.71	Not measured	Partially visible, medium confidence
1195.93	245.31	72.31	Not measured	Partially visible, low confidence
1204.42	250.89	71.26	Not measured	Not visible, low confidence
1204.68	260.90	67.22	Not measured	Not visible, low confidence
1204.86	261.18	61.11	Not measured	Not visible, low confidence
1206.82	266.05	58.54	Not measured	Partially visible, low confidence
1207.54	340.58	56.28	Not measured	Partially visible, low confidence
1207.65	221.47	63.12	Not measured	Partially visible, low confidence
1207.72	192.29	52.84	Not measured	Partially visible, low confidence
1207.73	349.38	63.69	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1211.60	296.22	34.81	Not measured	Partially visible, medium confidence
1213.79	171.22	23.48	Not measured	Partially visible, low confidence
1214.26	303.02	32.71	Not measured	Partially visible, medium confidence
1217.03	26.05	49.09	Not measured	Not visible, low confidence
1220.52	68.07	7.68	Not measured	Boundary, low confidence
1222.23	241.93	13.43	Not measured	Boundary, low confidence
1224.00	302.33	59.55	Not measured	Partially visible, low confidence
1227.96	14.62	68.65	Not measured	Not visible, low confidence
1228.89	24.24	64.11	Not measured	Not visible, low confidence
1239.79	226.18	81.29	Not measured	Partially visible, low confidence
1240.03	43.49	67.93	Not measured	Partially visible, low confidence
1249.29	161.21	68.18	Not measured	Partially visible, low confidence
1251.86	326.38	62.44	Not measured	Boundary, high confidence
1252.74	297.09	60.89	Not measured	Partially visible, medium confidence
1253.46	276.98	25.98	Not measured	Partially visible, low confidence
1253.64	359.71	71.53	Not measured	Partially visible, low confidence
1253.71	318.71	22.66	Not measured	Partially visible, low confidence
1254.41	125.36	55.77	Not measured	Partially visible, low confidence
1255.35	17.42	40.36	Not measured	Partially visible, low confidence

6 Appendix 1b: Orientations of fractures in R-39

Depth (m)	Azimuth (dip direction) (°)	Dip (°)	Aperture (°)	Classification
1046.88	101.53	24.52	Not measured	Partially visible, high confidence
1048.50	173.70	50.25	Not measured	Partially visible, medium confidence
1048.62	191.85	22.21	Not measured	Partially visible, medium confidence
1049.43	236.61	38.52	Not measured	Not visible, low confidence
1050.09	105.87	26.06	Not measured	Not visible, high confidence
1050.39	232.83	31.40	Not measured	Partially visible, high confidence
1050.63	139.71	49.39	Not measured	Partially visible, medium confidence
1051.47	133.07	46.98	Not measured	Partially visible, low confidence
1051.85	287.76	19.27	Not measured	Boundary, medium confidence
1052.43	297.94	39.75	Not measured	Boundary, medium confidence
1053.03	72.71	37.65	Not measured	Partially visible, low confidence
1055.36	240.00	75.75	Not measured	Partially visible, medium confidence
1055.71	263.34	22.89	Not measured	Partially visible, medium confidence
1056.24	238.02	45.01	Not measured	Partially visible, low confidence
1056.71	126.84	59.46	Not measured	Partially visible, low confidence
1057.22	75.53	57.12	Not measured	Partially visible, low confidence
1057.79	104.97	73.15	Not measured	Partially visible, low confidence
1058.74	228.78	47.82	Not measured	Not visible, medium confidence
1059.13	224.61	44.48	Not measured	Partially visible, high confidence
1059.83	96.34	26.96	Not measured	Visible, high confidence
1060.24	69.58	31.46	Not measured	Partially visible, high confidence
1060.65	251.34	44.75	Not measured	Partially visible, low confidence
1060.82	102.76	39.57	Not measured	Partially visible, medium confidence
1063.92	104.81	27.13	Not measured	Partially visible, low confidence
1063.93	236.42	28.92	Not measured	Partially visible, low confidence
1064.14	149.71	71.34	Not measured	Not visible, low confidence
1064.15	145.57	76.30	Not measured	Partially visible, medium confidence
1064.32	235.23	56.82	Not measured	Partially visible, low confidence
1066.93	204.75	63.85	Not measured	Partially visible, medium confidence
1067.05	185.58	60.35	Not measured	Partially visible, medium confidence
1067.59	205.09	42.01	Not measured	Not visible, medium confidence
1068.88	149.34	57.83	Not measured	Not visible, medium confidence
1069.55	213.03	74.89	Not measured	Partially visible, low confidence
1069.93	156.99	62.41	Not measured	Partially visible, low confidence
1070.44	170.81	58.67	Not measured	Partially visible, low confidence
1070.67	169.04	55.66	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1071.21	229.87	59.08	Not measured	Partially visible, low confidence
1071.82	167.67	75.04	Not measured	Partially visible, low confidence
1071.86	225.85	70.61	Not measured	Visible, medium confidence
1074.68	203.29	66.01	Not measured	Partially visible, low confidence
1076.66	157.38	74.92	Not measured	Partially visible, low confidence
1076.73	7.87	67.41	Not measured	Partially visible, low confidence
1077.23	210.13	83.46	19.10	Visible, medium confidence
1077.98	200.41	45.68	Not measured	Partially visible, low confidence
1078.34	230.80	47.88	Not measured	Partially visible, low confidence
1078.75	244.69	78.51	Not measured	Visible, medium confidence
1078.86	230.17	56.83	Not measured	Partially visible, low confidence
1079.10	226.62	50.16	Not measured	Partially visible, low confidence
1079.72	90.68	43.04	Not measured	Partially visible, medium confidence
1080.66	61.67	33.05	Not measured	Partially visible, low confidence
1082.58	118.44	44.04	Not measured	Partially visible, medium confidence
1083.08	91.18	45.56	Not measured	Not visible, low confidence
1084.74	104.25	70.59	Not measured	Partially visible, low confidence
1084.76	121.64	70.10	Not measured	Partially visible, low confidence
1085.68	31.31	26.90	Not measured	Boundary, low confidence
1085.91	41.31	73.72	Not measured	Partially visible, low confidence
1088.00	258.87	48.72	Not measured	Partially visible, low confidence
1088.91	256.08	67.48	Not measured	Partially visible, low confidence
1089.52	247.63	56.98	Not measured	Partially visible, low confidence
1091.15	267.86	73.53	Not measured	Partially visible, low confidence
1092.44	222.26	59.09	Not measured	Partially visible, medium confidence
1092.88	227.51	60.79	Not measured	Partially visible, low confidence
1094.18	55.08	25.56	Not measured	Partially visible, low confidence
1094.20	71.00	46.15	Not measured	Partially visible, medium confidence
1095.28	269.74	70.16	Not measured	Partially visible, low confidence
1095.33	254.03	63.30	Not measured	Visible, high confidence
1096.45	258.54	66.94	Not measured	Partially visible, low confidence
1097.48	269.37	75.00	Not measured	Partially visible, low confidence
1100.31	30.67	59.20	Not measured	Partially visible, low confidence
1103.77	60.53	69.73	Not measured	Partially visible, low confidence
1104.69	69.10	66.06	Not measured	Partially visible, low confidence
1108.24	218.44	81.48	Not measured	Partially visible, low confidence
1109.66	297.97	68.18	Not measured	Partially visible, low confidence
1115.12	279.00	52.50	Not measured	Partially visible, low confidence
1149.36	197.02	69.80	Not measured	Not visible, low confidence
1154.20	222.83	73.18	Not measured	Partially visible, low confidence
1156.32	270.73	61.46	107.86	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1157.04	304.39	63.67	137.63	Partially visible, low confidence
1168.86	177.40	78.57	Not measured	Partially visible, low confidence
1169.73	83.83	67.34	Not measured	Partially visible, medium confidence
1170.02	65.62	50.11	Not measured	Partially visible, low confidence
1170.10	268.24	34.76	Not measured	Partially visible, low confidence
1171.86	88.18	64.13	Not measured	Partially visible, low confidence
1172.12	71.58	52.86	Not measured	Partially visible, medium confidence
1172.32	63.39	44.63	Not measured	Partially visible, medium confidence
1172.64	131.64	58.27	Not measured	Not visible, low confidence
1174.13	242.00	51.44	Not measured	Not visible, low confidence
1174.25	249.71	72.74	Not measured	Partially visible, low confidence
1174.37	244.72	59.80	Not measured	Not visible, medium confidence
1174.75	254.41	39.46	Not measured	Partially visible, medium confidence
1174.88	63.97	65.16	Not measured	Not visible, medium confidence
1175.07	253.47	58.71	Not measured	Not visible, low confidence
1175.38	106.08	55.06	Not measured	Partially visible, medium confidence
1175.70	54.20	47.40	Not measured	Not visible, medium confidence
1176.14	52.56	55.61	Not measured	Partially visible, low confidence
1176.72	42.25	30.27	Not measured	Not visible, low confidence
1178.25	215.18	37.84	Not measured	Partially visible, low confidence
1179.33	268.72	73.75	Not measured	Partially visible, low confidence
1182.18	83.09	61.47	Not measured	Partially visible, medium confidence
1183.43	276.95	61.56	Not measured	Partially visible, low confidence
1184.24	265.37	69.19	Not measured	Partially visible, medium confidence
1185.50	267.26	67.98	Not measured	Partially visible, medium confidence
1185.86	283.50	59.96	Not measured	Not visible, low confidence
1187.56	290.97	59.27	Not measured	Partially visible, low confidence
1187.74	81.48	56.34	Not measured	Partially visible, low confidence
1187.85	264.36	62.97	Not measured	Partially visible, low confidence
1188.00	275.57	60.73	Not measured	Partially visible, low confidence
1188.56	229.52	59.42	Not measured	Not visible, low confidence
1189.43	210.41	45.15	Not measured	Not visible, medium confidence
1189.60	69.89	68.69	Not measured	Partially visible, medium confidence
1190.48	270.88	53.01	Not measured	Partially visible, low confidence
1190.94	265.70	51.33	Not measured	Partially visible, medium confidence
1191.42	300.93	53.35	Not measured	Partially visible, low confidence
1191.80	97.93	52.45	Not measured	Partially visible, low confidence
1192.36	120.65	74.97	Not measured	Partially visible, low confidence
1192.91	159.65	69.35	Not measured	Partially visible, low confidence
1195.26	235.51	72.91	1.95	Visible, high confidence
1197.17	240.82	66.53	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1198.02	274.99	43.81	Not measured	Partially visible, low confidence
1200.37	114.06	70.26	Not measured	Partially visible, low confidence
1201.50	281.22	78.83	Not measured	Visible, high confidence
1203.53	264.08	78.62	Not measured	Partially visible, medium confidence
1206.64	265.10	56.45	Not measured	Partially visible, low confidence
1207.68	304.48	72.62	Not measured	Partially visible, low confidence
1207.93	284.92	68.54	Not measured	Partially visible, low confidence
1209.54	179.39	68.25	Not measured	Not visible, low confidence
1211.26	256.52	60.11	Not measured	Not visible, low confidence
1211.97	196.90	40.82	Not measured	Partially visible, low confidence
1212.74	131.11	38.00	Not measured	Partially visible, medium confidence
1215.26	248.65	58.37	Not measured	Partially visible, low confidence
1218.34	263.52	71.91	Not measured	Partially visible, low confidence
1219.52	289.98	69.40	Not measured	Partially visible, low confidence
1223.48	292.78	46.30	Not measured	Not visible, medium confidence
1226.10	259.23	22.60	Not measured	Not visible, medium confidence
1233.20	255.13	49.26	Not measured	Partially visible, medium confidence
1234.38	95.71	71.31	Not measured	Partially visible, medium confidence
1237.66	71.77	59.93	Not measured	Not visible, low confidence
1238.10	272.97	55.01	Not measured	Not visible, low confidence
1242.30	148.07	75.87	Not measured	Partially visible, low confidence
1242.85	240.85	78.05	Not measured	Partially visible, low confidence
1242.93	85.27	55.39	Not measured	Partially visible, low confidence
1243.33	145.20	58.42	Not measured	Partially visible, low confidence
1243.49	122.00	54.21	Not measured	Not visible, low confidence
1243.63	231.30	51.16	Not measured	Partially visible, low confidence
1243.63	80.36	51.04	Not measured	Partially visible, low confidence
1243.64	313.70	68.18	Not measured	Partially visible, low confidence
1243.75	74.84	54.56	Not measured	Partially visible, low confidence
1244.38	272.10	62.25	Not measured	Not visible, low confidence
1244.57	255.97	56.57	Not measured	Not visible, low confidence
1246.85	233.08	65.99	24.19	Partially visible, medium confidence
1249.15	280.45	39.36	Not measured	Partially visible, medium confidence
1249.42	294.59	49.00	Not measured	Not visible, medium confidence
1249.95	294.68	47.86	3.99	Visible, high confidence
1250.44	157.92	59.89	Not measured	Not visible, low confidence
1250.45	48.42	59.69	Not measured	Partially visible, medium confidence
1250.83	260.42	78.79	Not measured	Not visible, low confidence
1250.91	98.07	35.10	Not measured	Not visible, medium confidence
1250.97	296.02	69.84	Not measured	Partially visible, low confidence
1252.03	75.43	13.46	Not measured	Not visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1252.26	62.13	48.75	Not measured	Not visible, medium confidence
1252.55	98.64	46.23	Not measured	Partially visible, low confidence
1253.01	108.98	55.71	Not measured	Partially visible, low confidence
1253.05	280.67	55.22	Not measured	Partially visible, medium confidence
1253.22	97.95	49.63	Not measured	Partially visible, low confidence
1253.63	247.22	35.06	Not measured	Not visible, low confidence
1254.18	74.38	55.75	Not measured	Partially visible, low confidence
1254.50	291.22	69.70	Not measured	Partially visible, low confidence
1254.90	302.82	55.42	Not measured	Not visible, low confidence
1256.47	69.61	75.81	Not measured	Partially visible, medium confidence
1256.65	242.86	41.33	Not measured	Partially visible, low confidence
1256.73	271.74	29.77	Not measured	Partially visible, low confidence
1257.53	280.96	38.41	Not measured	Partially visible, medium confidence
1258.64	260.51	53.94	Not measured	Not visible, low confidence
1259.00	110.66	47.09	Not measured	Not visible, low confidence
1259.86	297.74	61.78	Not measured	Partially visible, low confidence
1260.22	276.28	45.81	Not measured	Partially visible, low confidence
1260.31	271.06	55.62	Not measured	Partially visible, low confidence
1260.43	244.03	58.52	Not measured	Partially visible, low confidence
1260.57	323.25	59.14	Not measured	Partially visible, low confidence
1262.43	272.11	57.65	Not measured	Not visible, low confidence
1263.23	241.78	64.35	Not measured	Not visible, low confidence
1263.46	252.32	68.57	Not measured	Partially visible, low confidence
1264.18	295.96	62.99	Not measured	Not visible, low confidence
1264.36	237.01	50.85	Not measured	Not visible, low confidence
1265.76	215.60	79.94	Not measured	Not visible, low confidence
1266.14	229.71	42.47	Not measured	Partially visible, low confidence
1266.96	282.39	71.09	Not measured	Partially visible, low confidence
1267.24	279.44	31.24	Not measured	Partially visible, low confidence
1267.40	287.27	46.14	Not measured	Partially visible, low confidence
1267.65	297.77	60.07	Not measured	Partially visible, low confidence
1268.50	210.78	49.34	Not measured	Not visible, low confidence
1268.51	92.61	53.65	Not measured	Partially visible, low confidence
1273.63	265.24	75.52	Not measured	Partially visible, low confidence
1273.80	290.45	63.41	Not measured	Partially visible, low confidence
1274.71	295.42	52.80	Not measured	Not visible, low confidence
1275.88	243.44	81.38	Not measured	Not visible, low confidence
1276.35	274.81	76.43	Not measured	Partially visible, medium confidence
1276.68	257.73	59.37	Not measured	Partially visible, low confidence
1277.28	264.60	75.29	Not measured	Partially visible, low confidence
1277.68	266.74	60.89	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1277.85	264.14	74.56	Not measured	Partially visible, low confidence
1278.13	254.83	76.01	Not measured	Partially visible, low confidence
1278.92	262.77	51.96	Not measured	Partially visible, low confidence
1279.12	264.77	56.15	Not measured	Partially visible, medium confidence
1279.28	252.39	48.06	Not measured	Partially visible, medium confidence
1279.35	63.42	64.96	Not measured	Partially visible, medium confidence
1279.40	262.11	51.25	Not measured	Partially visible, medium confidence
1279.41	266.46	72.70	Not measured	Partially visible, medium confidence
1280.06	253.43	55.55	66.19	Partially visible, medium confidence
1280.83	255.72	58.79	Not measured	Partially visible, medium confidence
1281.34	50.16	48.52	Not measured	Not visible, low confidence
1281.36	67.79	71.06	Not measured	Partially visible, medium confidence
1282.49	258.50	50.60	Not measured	Partially visible, low confidence
1282.52	152.55	52.04	Not measured	Partially visible, low confidence
1282.87	81.76	25.31	Not measured	Partially visible, medium confidence
1283.92	266.15	63.86	Not measured	Not visible, low confidence
1284.64	302.02	59.92	Not measured	Partially visible, medium confidence
1284.81	311.96	59.61	Not measured	Partially visible, medium confidence
1285.43	256.94	77.74	Not measured	Partially visible, low confidence
1285.93	43.21	69.29	Not measured	Partially visible, medium confidence
1287.56	47.80	64.47	Not measured	Partially visible, low confidence
1288.02	24.31	70.42	Not measured	Partially visible, medium confidence
1288.49	154.35	71.85	Not measured	Partially visible, low confidence
1289.18	72.10	75.96	Not measured	Partially visible, medium confidence
1289.83	60.96	50.81	Not measured	Partially visible, medium confidence
1291.22	216.31	52.20	Not measured	Partially visible, low confidence
1291.24	76.19	57.72	Not measured	Partially visible, low confidence
1292.98	75.08	32.96	Not measured	Partially visible, low confidence
1293.62	175.69	50.81	Not measured	Visible, medium confidence
1294.18	259.62	69.76	Not measured	Partially visible, medium confidence
1294.75	304.04	70.79	Not measured	Visible, medium confidence
1295.60	252.63	79.51	Not measured	Partially visible, low confidence
1297.44	328.98	44.06	Not measured	Not visible, medium confidence
1297.51	166.47	55.61	Not measured	Partially visible, low confidence
1297.68	145.76	60.63	Not measured	Not visible, low confidence
1297.96	332.45	73.08	Not measured	Visible, high confidence
1299.84	220.59	67.39	Not measured	Partially visible, low confidence
1300.24	43.98	60.75	Not measured	Partially visible, low confidence
1301.22	261.85	66.12	86.92	Visible, medium confidence
1302.78	344.70	56.85	Not measured	Partially visible, low confidence
1307.05	259.13	76.23	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1307.32	133.40	47.32	Not measured	Partially visible, low confidence
1307.48	283.88	74.95	Not measured	Partially visible, low confidence
1307.61	250.95	62.51	Not measured	Partially visible, low confidence
1307.75	260.47	65.76	Not measured	Partially visible, medium confidence
1307.91	251.19	69.26	Not measured	Partially visible, medium confidence
1308.39	269.42	67.17	Not measured	Partially visible, medium confidence
1308.77	141.97	41.28	Not measured	Partially visible, low confidence
1308.94	148.57	44.34	Not measured	Partially visible, low confidence
1312.76	82.20	69.45	Not measured	Partially visible, medium confidence
1312.92	76.02	71.53	Not measured	Partially visible, medium confidence
1313.45	266.65	64.94	Not measured	Partially visible, medium confidence
1313.46	266.75	44.58	Not measured	Partially visible, medium confidence
1317.84	86.45	64.71	Not measured	Partially visible, low confidence
1317.97	84.72	67.27	Not measured	Partially visible, low confidence
1318.20	72.73	70.04	Not measured	Partially visible, low confidence
1318.31	265.65	70.38	Not measured	Partially visible, low confidence
1319.92	96.26	55.04	Not measured	Partially visible, low confidence
1320.59	238.81	66.85	Not measured	Partially visible, low confidence
1323.56	235.32	61.98	Not measured	Not visible, low confidence
1325.34	164.61	73.90	Not measured	Not visible, low confidence
1325.43	165.44	79.82	Not measured	Not visible, low confidence
1325.58	60.51	72.30	Not measured	Partially visible, low confidence
1326.34	62.78	75.80	Not measured	Partially visible, low confidence
1326.73	253.53	38.23	Not measured	Partially visible, low confidence
1326.76	84.51	29.03	Not measured	Partially visible, low confidence
1327.16	326.65	50.43	Not measured	Partially visible, medium confidence
1327.46	348.49	51.07	Not measured	Not visible, low confidence
1328.09	189.90	66.27	Not measured	Not visible, low confidence
1328.58	223.97	60.99	Not measured	Not visible, low confidence
1330.11	211.46	48.95	Not measured	Partially visible, low confidence
1330.30	244.71	31.57	Not measured	Partially visible, low confidence
1332.01	293.15	47.60	Not measured	Partially visible, low confidence
1332.21	280.48	48.03	Not measured	Partially visible, low confidence
1332.34	282.78	58.28	Not measured	Partially visible, low confidence
1335.42	253.52	74.47	Not measured	Partially visible, medium confidence
1336.93	258.05	73.64	Not measured	Partially visible, medium confidence
1337.03	254.59	58.11	Not measured	Partially visible, medium confidence
1337.31	242.23	54.04	Not measured	Partially visible, medium confidence
1340.36	180.71	57.41	Not measured	Boundary, medium confidence
1343.01	335.64	27.44	Not measured	Boundary, low confidence
1346.89	273.07	60.99	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1347.13	252.13	48.95	Not measured	Partially visible, low confidence
1347.26	220.80	42.46	Not measured	Partially visible, low confidence
1347.28	257.10	59.70	Not measured	Partially visible, low confidence
1347.52	229.64	65.64	Not measured	Partially visible, medium confidence
1348.24	119.29	61.51	Not measured	Partially visible, low confidence
1348.63	283.84	70.42	Not measured	Partially visible, low confidence
1349.42	142.22	46.34	Not measured	Partially visible, low confidence
1349.44	285.70	60.11	Not measured	Not visible, low confidence
1349.54	87.02	79.83	Not measured	Partially visible, low confidence
1349.55	280.12	59.05	Not measured	Partially visible, medium confidence
1350.25	316.57	60.98	Not measured	Partially visible, low confidence
1351.40	96.39	61.60	Not measured	Visible, high confidence
1351.54	102.59	48.66	Not measured	Partially visible, low confidence
1351.58	274.36	38.23	Not measured	Not visible, low confidence
1352.12	102.73	45.40	Not measured	Not visible, medium confidence
1352.49	135.72	61.07	Not measured	Partially visible, medium confidence
1352.69	147.34	61.92	Not measured	Partially visible, medium confidence
1353.21	169.15	66.80	Not measured	Not visible, low confidence
1356.46	147.38	82.61	Not measured	Partially visible, low confidence
1356.54	138.87	29.13	Not measured	Partially visible, low confidence
1357.10	256.53	67.33	Not measured	Not visible, low confidence
1357.31	274.24	52.72	Not measured	Partially visible, medium confidence
1357.59	273.24	65.68	Not measured	Partially visible, low confidence
1358.35	86.35	63.05	Not measured	Not visible, medium confidence
1358.45	244.01	78.41	Not measured	Partially visible, low confidence
1359.50	259.47	49.25	Not measured	Partially visible, low confidence
1359.96	113.13	43.62	Not measured	Partially visible, low confidence
1360.18	291.02	40.36	Not measured	Partially visible, low confidence
1360.30	162.16	11.03	Not measured	Boundary, low confidence
1361.43	78.47	70.30	Not measured	Not visible, low confidence
1364.60	236.70	80.53	Not measured	Partially visible, low confidence
1364.72	59.41	80.04	Not measured	Partially visible, low confidence
1366.75	262.66	68.44	Not measured	Not visible, high confidence
1366.99	268.72	67.29	Not measured	Not visible, medium confidence
1367.62	277.46	67.79	Not measured	Partially visible, low confidence
1367.79	238.30	49.59	Not measured	Not visible, low confidence
1367.89	236.69	50.70	Not measured	Partially visible, low confidence
1369.19	63.33	76.16	Not measured	Partially visible, low confidence
1369.42	66.64	65.39	Not measured	Partially visible, medium confidence
1369.42	81.92	76.48	Not measured	Partially visible, low confidence
1370.46	143.78	52.40	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1372.00	73.42	42.35	Not measured	Partially visible, low confidence
1372.28	270.16	67.73	Not measured	Partially visible, medium confidence
1372.50	222.47	73.02	Not measured	Visible, medium confidence
1374.68	314.40	73.14	Not measured	Partially visible, medium confidence
1374.95	97.14	44.59	Not measured	Partially visible, low confidence
1375.14	81.91	51.40	Not measured	Partially visible, low confidence
1376.19	103.89	26.78	Not measured	Not visible, low confidence
1376.43	311.62	23.75	Not measured	Partially visible, low confidence
1376.55	130.51	39.61	Not measured	Partially visible, low confidence
1376.65	142.11	23.42	Not measured	Not visible, low confidence
1377.65	94.98	62.75	Not measured	Partially visible, low confidence
1378.12	234.26	41.32	Not measured	Partially visible, low confidence
1378.33	108.33	60.91	Not measured	Partially visible, low confidence
1378.91	45.35	61.84	Not measured	Partially visible, low confidence
1381.06	233.40	70.97	Not measured	Partially visible, low confidence
1382.17	112.44	63.09	Not measured	Partially visible, low confidence
1382.32	90.69	65.52	Not measured	Partially visible, low confidence
1382.81	70.19	81.59	Not measured	Visible, medium confidence
1382.96	343.36	37.64	Not measured	Not visible, low confidence
1383.94	292.44	78.58	Not measured	Partially visible, medium confidence
1385.31	103.08	30.54	Not measured	Partially visible, low confidence
1386.10	50.92	70.69	Not measured	Partially visible, low confidence
1387.44	9.42	32.92	Not measured	Not visible, medium confidence
1390.00	74.72	29.11	Not measured	Not visible, low confidence
1390.32	78.48	53.03	Not measured	Not visible, medium confidence
1390.40	67.15	59.39	Not measured	Not visible, medium confidence
1391.43	115.32	55.40	Not measured	Not visible, medium confidence
1392.30	50.26	67.91	Not measured	Partially visible, low confidence
1394.82	257.31	75.88	Not measured	Partially visible, low confidence
1395.23	265.15	68.91	Not measured	Partially visible, medium confidence
1395.65	73.36	74.46	Not measured	Partially visible, medium confidence
1395.69	252.34	75.67	13.77	Visible, high confidence
1396.02	236.21	76.11	Not measured	Partially visible, low confidence
1396.05	89.03	74.93	Not measured	Partially visible, medium confidence
1396.60	170.14	34.98	Not measured	Not visible, low confidence
1396.77	223.91	40.14	Not measured	Partially visible, low confidence
1397.09	216.87	44.62	Not measured	Not visible, medium confidence
1397.40	242.21	41.42	Not measured	Not visible, medium confidence
1397.43	132.43	50.84	Not measured	Partially visible, low confidence
1398.78	134.67	46.56	Not measured	Not visible, low confidence
1399.15	160.84	47.70	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1399.54	158.24	60.01	Not measured	Partially visible, medium confidence
1401.28	186.97	47.17	Not measured	Partially visible, low confidence
1401.34	316.82	10.62	156.91	Partially visible, low confidence
1402.59	246.85	44.27	Not measured	Partially visible, low confidence
1403.09	42.72	56.44	Not measured	Partially visible, medium confidence
1403.35	77.60	61.72	Not measured	Partially visible, medium confidence
1404.32	66.78	70.68	Not measured	Visible, high confidence
1405.80	319.29	34.04	Not measured	Partially visible, low confidence
1407.76	167.74	72.94	Not measured	Partially visible, low confidence
1409.57	77.57	47.65	Not measured	Partially visible, low confidence
1411.19	168.98	67.27	Not measured	Partially visible, low confidence
1413.55	227.63	39.33	Not measured	Partially visible, low confidence
1414.26	282.10	62.10	Not measured	Partially visible, low confidence
1418.34	168.99	51.36	Not measured	Partially visible, low confidence
1419.54	105.55	64.59	Not measured	Partially visible, low confidence
1420.74	70.23	71.65	36.59	Visible, medium confidence
1421.65	74.98	57.40	Not measured	Partially visible, low confidence
1421.70	288.56	48.44	Not measured	Partially visible, low confidence
1422.10	301.60	39.97	Not measured	Not visible, low confidence
1423.17	71.37	67.09	Not measured	Partially visible, low confidence
1423.83	57.07	60.35	Not measured	Partially visible, low confidence
1425.48	244.97	64.32	Not measured	Partially visible, low confidence
1425.92	90.09	74.29	Not measured	Partially visible, low confidence
1429.60	97.38	70.75	Not measured	Partially visible, low confidence
1430.64	73.75	74.10	Not measured	Partially visible, high confidence
1434.51	72.07	59.79	119.19	Visible, medium confidence
1435.76	79.87	74.38	Not measured	Partially visible, low confidence
1436.99	58.60	74.55	Not measured	Partially visible, medium confidence
1437.53	69.98	74.94	Not measured	Not visible, low confidence
1440.25	81.49	58.47	Not measured	Partially visible, low confidence
1440.32	57.38	72.12	Not measured	Partially visible, low confidence
1440.54	64.01	65.27	Not measured	Not visible, low confidence
1440.54	305.67	67.94	Not measured	Partially visible, medium confidence
1441.06	352.60	56.99	Not measured	Partially visible, medium confidence
1441.10	308.37	39.73	Not measured	Partially visible, low confidence
1441.12	276.66	34.30	Not measured	Partially visible, medium confidence
1441.44	72.65	69.26	Not measured	Not visible, low confidence
1441.47	338.38	63.49	Not measured	Partially visible, medium confidence
1441.97	74.83	69.93	Not measured	Partially visible, medium confidence
1442.59	71.14	69.66	Not measured	Not visible, medium confidence
1442.76	157.50	44.48	Not measured	Partially visible, low confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1443.33	218.22	43.30	Not measured	Partially visible, low confidence
1444.15	78.05	62.54	Not measured	Not visible, low confidence
1444.52	246.35	64.98	Not measured	Partially visible, low confidence
1444.97	56.69	74.24	Not measured	Partially visible, low confidence
1445.34	86.46	61.38	Not measured	Not visible, low confidence
1445.63	108.61	65.22	Not measured	Not visible, medium confidence
1446.26	58.82	71.31	Not measured	Partially visible, medium confidence
1447.28	112.14	67.52	Not measured	Partially visible, medium confidence
1448.09	235.29	58.89	Not measured	Partially visible, low confidence
1448.27	87.37	73.20	Not measured	Not visible, low confidence
1448.73	55.19	72.62	Not measured	Partially visible, low confidence
1449.57	273.47	60.17	Not measured	Partially visible, medium confidence
1450.79	270.59	39.90	Not measured	Partially visible, medium confidence
1450.87	291.76	40.60	Not measured	Partially visible, medium confidence
1451.04	261.04	42.58	Not measured	Partially visible, low confidence
1452.21	116.01	68.29	Not measured	Partially visible, medium confidence
1452.96	279.86	57.76	Not measured	Partially visible, low confidence
1453.19	67.16	62.86	Not measured	Not visible, medium confidence
1454.32	270.07	62.97	Not measured	Partially visible, low confidence
1455.04	107.16	37.45	Not measured	Partially visible, low confidence
1455.08	268.47	58.20	Not measured	Partially visible, medium confidence
1456.41	241.82	67.90	Not measured	Partially visible, medium confidence
1457.60	220.50	79.69	Not measured	Partially visible, low confidence
1459.80	317.23	52.35	Not measured	Not visible, low confidence
1460.49	75.97	51.99	Not measured	Partially visible, low confidence
1460.68	89.02	47.99	Not measured	Partially visible, low confidence
1461.43	301.59	55.22	Not measured	Partially visible, medium confidence
1462.46	95.12	67.78	Not measured	Visible, medium confidence
1463.67	289.14	53.08	9.41	Visible, high confidence
1465.22	283.74	65.20	Not measured	Not visible, low confidence
1465.28	83.24	46.93	Not measured	Not visible, low confidence
1465.81	282.66	21.53	Not measured	Not visible, low confidence
1467.07	25.57	56.65	Not measured	Not visible, low confidence
1467.08	215.65	58.04	Not measured	Not visible, low confidence
1467.94	225.83	35.41	Not measured	Partially visible, low confidence
1468.72	31.11	58.57	80.10	Partially visible, medium confidence
1469.06	36.94	61.75	Not measured	Partially visible, medium confidence
1470.08	216.76	43.91	Not measured	Partially visible, low confidence
1470.44	227.32	61.81	Not measured	Partially visible, medium confidence
1473.17	75.58	71.40	Not measured	Partially visible, low confidence
1474.91	78.96	66.95	Not measured	Partially visible, medium confidence

Borehole Televiewer Logging in Wells R-23 and R-39 in Elliðaárdalur, Reykjavík

1476.18	293.32	49.42	Not measured	Partially visible, medium confidence
1478.46	259.88	64.06	Not measured	Partially visible, medium confidence
1478.62	257.36	67.38	Not measured	Not visible, low confidence
1478.76	245.24	68.08	Not measured	Partially visible, low confidence
1480.74	276.17	73.34	Not measured	Visible, medium confidence
1481.23	303.31	70.81	Not measured	Not visible, low confidence
1482.81	280.59	73.14	Not measured	Partially visible, low confidence
1483.40	257.62	41.10	Not measured	Partially visible, medium confidence
1483.58	251.67	42.53	Not measured	Not visible, low confidence
1483.68	269.01	42.17	Not measured	Partially visible, low confidence
1484.16	228.26	26.09	Not measured	Partially visible, low confidence
1485.81	222.84	64.18	Not measured	Partially visible, low confidence
1489.65	85.09	70.14	Not measured	Partially visible, medium confidence
1490.16	46.72	77.12	Not measured	Not visible, low confidence

Appendix 2a: Televiewer data, R-23

(in a separate pdf file, RESULT-D6.4-Appendix_2a.pdf)

Appendix 2b: Televiewer data, R-39

(in a separate pdf file, RESULT-D6.4-Appendix_2b.pdf)