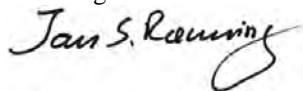


GEOLOGI FOR SAMFUNNET

GEOLOGY FOR SOCIETY



Rapport nr.: 2014.016		ISSN 0800-3416	Gradering: Åpen
Tittel: Borehullslogging med optisk televiwer, Bh 2 og Bh 3, Jettan, Nordnesfjellet, Kåfjord kommune, Troms			
Forfatter: Harald Elvebakk		Oppdragsgiver: Nordnorsk Fjellovervåkning	
Fylke: Troms		Kommune: Kåfjord	
Kartblad (M=1:250.000) Nordreisa		Kartbladnr. og -navn (M=1:50.000) 1634 II Kåfjord eller 1634 III Lyngen	
Forekomstens navn og koordinater: Jettan Bh2 477072Ø 7716612N WGS84 sone 34W Bh3 476859Ø 7716459N WGS84 sone 34W		Sidetall: 118 Kartbilag:	Pris: kr 500.-
Feltarbeid utført: Aug – okt. 2013	Rapportdato: 10.04.2014	Prosjektnr.: 340105	Ansvarlig: 
<p>Sammendrag: Nordnorsk Fjellovervåkning har gjort borehullslogging med optisk televiwer i to borehull i det oppsprukne fjellpartiet Jettan på Nordnesfjellet i Kåfjord kommune i Troms. Området er under overvåkning da det er fare for ras ned i Lyngenfjorden. For å kunne kartlegge det ustabile fjellpartiet er det i 2013 boret to hull på 98 og 101 m. Hullene skal også instrumenteres for å registrere bevegelser. På grunn av sterk oppsprekking måtte boring og utstøping av hullet forgå etappevis og logging ble gjort tilsvarende. NGU har prosessert data fra loggingen med optisk televiwer.</p> <p>Rapporten presenterer ulike foliasjons- og sprekkestatistikker basert på prosesserte data fra optisk televiwer.</p> <p>Foliasjonens retning og vinkel er beregnet i begge hull. Beregningene for Bh 2 viser entydig gjennomsnittlig fall mot sørvest i hele hullet. Stedvis er retningen mer vestlig og stedvis mer sydlig. Fallvinkelen varierer lite, 10 - 25 °. Mellom 25 og 55 m dyp øker fallvinkelen fra ca 30 ° til 55 – 75 °. I dette området er fallretningen nesten vest, altså ned mot Lyngenfjorden. Området er også sterkt oppsprukket. Foliasjonsparallele sprekker i dette området vil være ugunstig med hensyn til fare for utglidning. Fallretningen varierer mer Bh 3 enn i Bh 2. Ned til ca 45 m er det store variasjoner, men fallretningen er hovedsakelig mellom sør og øst. Fra 45 til 70 m er fallretningen klart mot øst. Under 70 m går fallet i alle retninger, mest mot vest mens det i bunnen er fall mot nord. Fallvinkelen i Bh 3 er noenlunde konstant i hele hullet, for det meste under 15 °.</p> <p>Begge hull er stedvis sterkt oppknust. Det er mange soner med helt oppknust fjell og hulrom. I Bh 2 er området 36 – 52 m spesielt sterkt oppsprukket og det er ca 25 % kjernetap fra boringen. Flere av sonene i dette området har steilt fall mot SV. Det er ikke spesielt mange foliasjonsparallele sprekker og det er stor spredning i fallretning og fallvinkel. Bh 3 er mest oppsprukket ved 24 – 45 m og 75 -80 m dyp. Også i dette hullet er det stor spredning i fallretning og fallvinkel. Ved 75 – 80 m dyp er det foliasjonsparallele sprekker med vestlig fallretning (ned mot fjorden). I en knusingsone ved 80 -81 m er det påvist finstoff men det er ikke leire.</p>			
Emneord: Geofysikk	Borehullslogging	Optisk televiwer	
Fjellskred			
		Fagrapport	

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1. INNLEDNING

NGU har prosessert data fra logging med optisk televierer i Bh 2 og Bh 3 på Jettan, Nordnesfjellet i Kåfjord kommune. Loggingen er utført av Nordnorsk Fjellovervåkning som har egen optisk televierer (OPTV). Bh 2 og Bh 3 er boret i det ustabile fjellpartiet på Nordnesfjellet hvor det er fare for fjellskred. Hensikten var å kartlegge sprekker og sprekkesoner som kan ha betydning for fjellets stabilitet, samt å bidra til å kartlegge størrelsen av det ustabile partiet. Hullene skal også instrumenteres for registrering og overvåking av bevegelser. På grunn av svært dårlig fjell med mye oppsprekking foregikk boring og logging i flere etapper. Flere partier måtte støpes for å stabilisere fjellet.

Det er logget ned til 97.5 m dyp i Bh 2 og 87 m i Bh 3. I 2012 ble Bh 1 boret og logget i samme område (Elvebakk 2013). NGU har tidligere gjort 2D resistivitetsmålinger og georadar (Tønnesen & Dalsegg 2004) og 2D resistivitetsmålinger og refraksjonsseismikk (Rønning et al. 2008) i området.

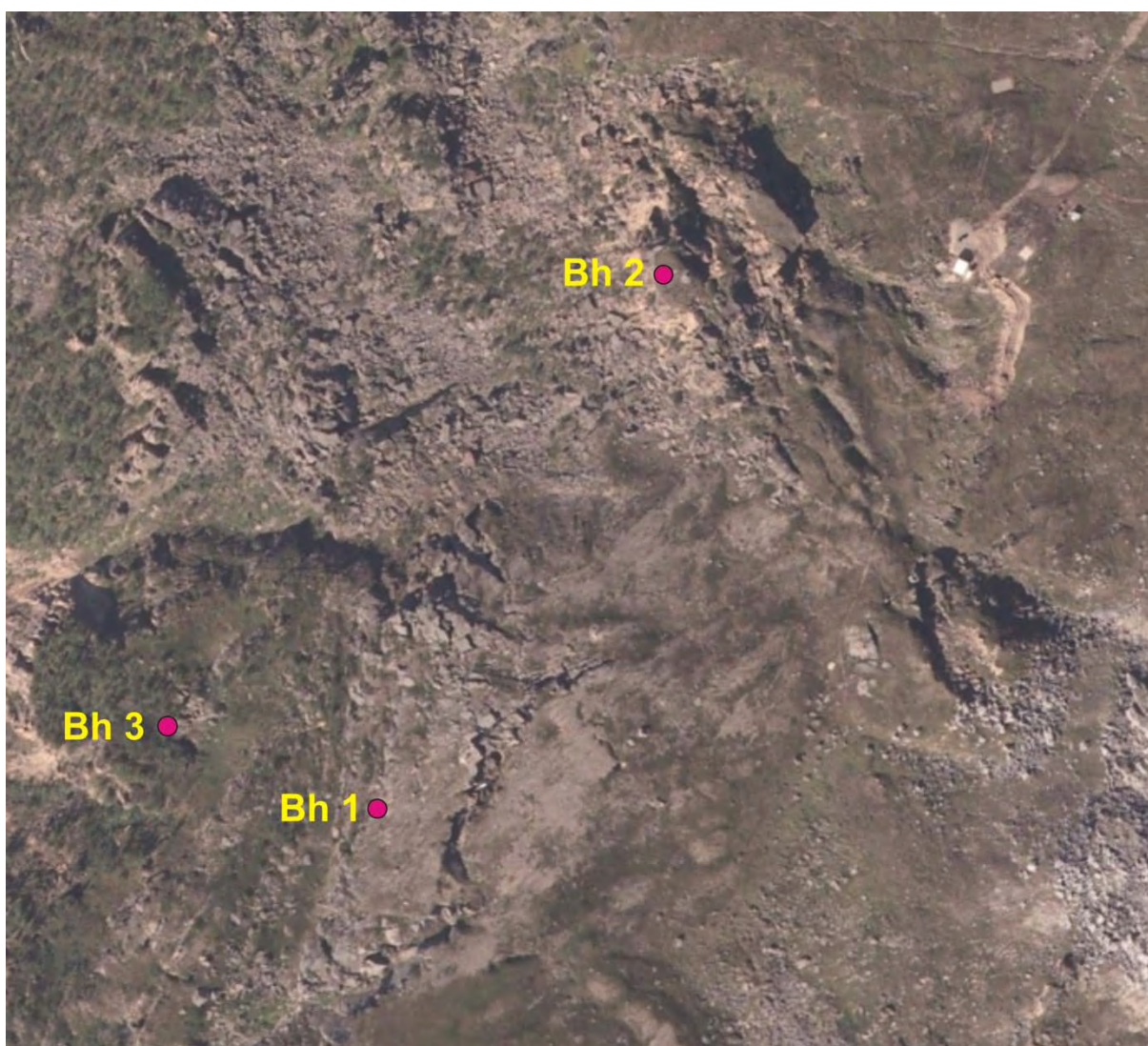
Logging ble utført i perioden august-oktober 2013 av Nordnorsk Fjellovervåkning. Vannspeilet lå på 90 – 92 m dyp og opptakene ble meget gode både i luft og vann.

2. MÅLEOMRÅDE OG BOREHULL

Figur 1 viser oversiktskart med Bh 2 og Bh 3 tegnet inn. Figur 2 viser et oversiktsbilde med alle borehull. Bergartene i området består av glimmerskifre med innslag av dolomitt- og kalkspatmarmor (Zwaan 1988).



Figur 1. Oversiktskart som viser plassering av Bh 2 og Bh 3 på Jettan, Nordnesfjellet.



Figur 2. Oversiktsbilde med borehull.

Data for borehullene er vist i tabell 1.

Tabell 1. Data for Bh 2 og Bh 3, Jettan.

Lokalitet	Nord wgs 84	Øst wgs 84	Sone	Høyde m.o.h.	Dato logging	Fall	Diam (cm)	Dyp (m)	Boring
Bh 2	7716612	477072	34W	656	sept-okt 2013	90 °	9.8	98.7	avsluttet 12.09.13
Bh 3	7716459	476859	34W	522	aug 2013	90 °	9.8	101.3	avsluttet 23.10.13

3. MÅLEMETODE OG UTFØRELSE

Det er benyttet loggeutstyr produsert av Robertson Geologging Ltd. (<http://www.geologging.com>).

Nordnorsk Fjellovervåkning benytter en annen modell optisk televiewer enn det NGU gjør, men prinsippene for bruken er de samme. Metodebeskrivelse for optisk televiewer ligger på NGU's hjemmesider på følgende link:

<http://www.ngu.no/no/hm/Norges-geologi/Geofysikk/Borehullsgeofysikk/>

Optisk televiewer filmer innvendig borehullsvegg kontinuerlig nedover med en pixelstørrelse på ca.1 x 1 mm. Fra opptaket kan en digitalisere sprekker og geologiske strukturer og beregne strøk og fall til sprekker og foliasjon. Data presenteres som sprekkestereogram, frekvenshistogram og rosedigram. Tabell 2 viser loggehastighet og samplingstetthet for optisk televiewer.

Tabell 2. Loggehastighet og samplingstetthet for optisk televiewer.

Målt parameter	Loggehastighet	Samplingstetthet
Borehullsavvik (televiewer)	1 m/min	1 m
Optisk televiewer	1 m/min	1 mm

4. RESULTATER

Det er i denne rapporten ikke gjort vurderinger av fjellets stabilitet ut fra det som vites om geologi, geologiske strukturer, oppsprekkingsmønster i dagen, kjernemateriale fra boringen og kartlagte bevegelser. Rapporten presenterer de målbare data en kan få fra OPTV.

På grunn av sterkt oppsprukket fjell der det var påkrevd med støping, måtte loggingen tilpasses boringens fremdrift.

Foliasjonen (fallretning og fallvinkel) er presentert i tabell og i grafisk plott som viser variasjon av fallretning og fallvinkel nedover hullet. Alle sprekker og sprekkesoner er digitalisert med beregning av strøk og fall. Der det er mulig er det beregnet tykkelse (åpning) av sprekken. Deler av hullene er veldig oppsprukket, og det er ikke mulig å beregne (digitalisere) strøk og fall til de sprekkesoner en ser. Prosesserte data er presentert som sprekkestereogram og sprekkefrekvenshistogram. Prosessert OPTV-logg for begge hull er også presentert for å få et bedre og helhetlig bilde av oppsprekningen nedover hullet (Databilag 6 og 8).

4.1 Beregnet foliasjon Bh 2

Foliasjonens strøk, fallretning (strøk + 90°) og fallvinkel er beregnet langs hullet der det er tydelig foliasjon å se. Til dette er prosesseringsprogrammet til OPTV benyttet. Resultatet er vist i figur 3 som viser nåplott av alle digitaliserte foliasjonsretninger, der "nålene" peker i fallretning (vest til venstre) og nålens hode angir fallvinkel avlest på horisontalaksen øverst på plottet. Figur 4 viser de samme data plottet i XY-plott med hhv. fallretning og fallvinkel plottet mot hulldyp.

Både figur 3 og 4 viser entydig gjennomsnittlig fall mot sørvest i hele hullet. Stedvis er retningen mer vestlig og stedvis mer sydlig. Fallvinkelen varierer lite, 5 - 25 °. Mellom 25 og 55 m dyp øker fallvinkelen fra ca 30 ° til 55 – 75 °. I dette området er fallretningen nesten vest, altså ned mot Lyngenfjorden. Området er også sterkt oppsprukket. Foliasjonsparallelle sprekker i dette området vil være ugunstig med hensyn til fare for utglidning. For øvrig vises til kapittel 4.3 om sprekker og sprekkesoner i Bh 2. Databilag 1 viser foliasjonsdata i tabellform mens databilag 2 viser tolket OPTV-logg der foliasjonen er målt.

4.2 Beregnet foliasjon Bh 3

Figur 5 og 6 viser foliasjonens fallretning og fallvinkel i Bh 3. Fallretningen varierer mer i dette hullet enn i Bh 2. Ned til ca 45 m er det store variasjoner, men fallretningen er hovedsakelig mellom sør og øst. Fra 45 til 70 m er fallretningen klart mot øst. Under 70 m faller det i alle retninger, mest mot vest mens det i bunnen er fall mot nord. Dette kan tyde på at det kan være en del lokale folder.

Fallvinkelen er noenlunde konstant i hele hullet, for det meste under 15 °. En merker seg at i området med klart østlig fall (45 -70 m) er fallvinkelen liten (< 10 °) og konstant.

Databilag 3 viser foliasjonsdata i tabellform mens databilag 4 viser tolket OPTV-logg der foliasjonen er målt.

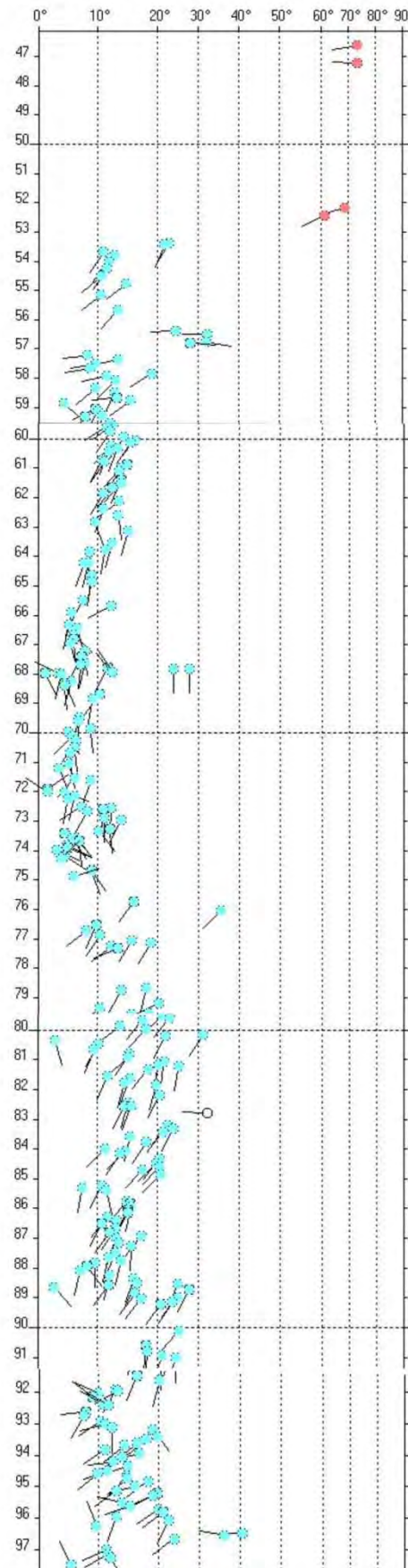
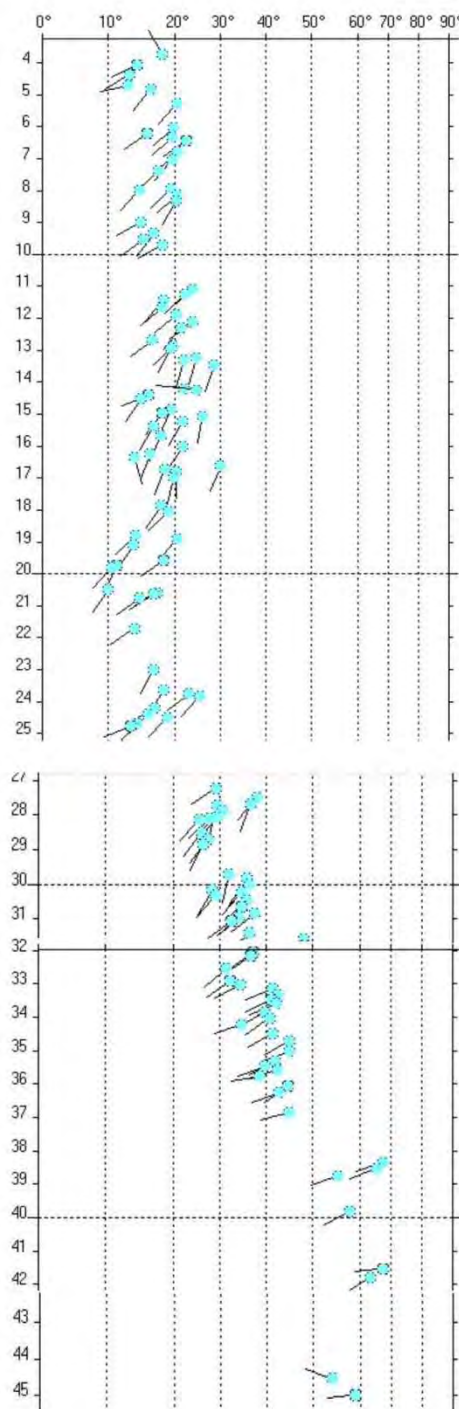
Bh2 3.238 - 25.251m 1/150
OPTV dips

Zi
nur

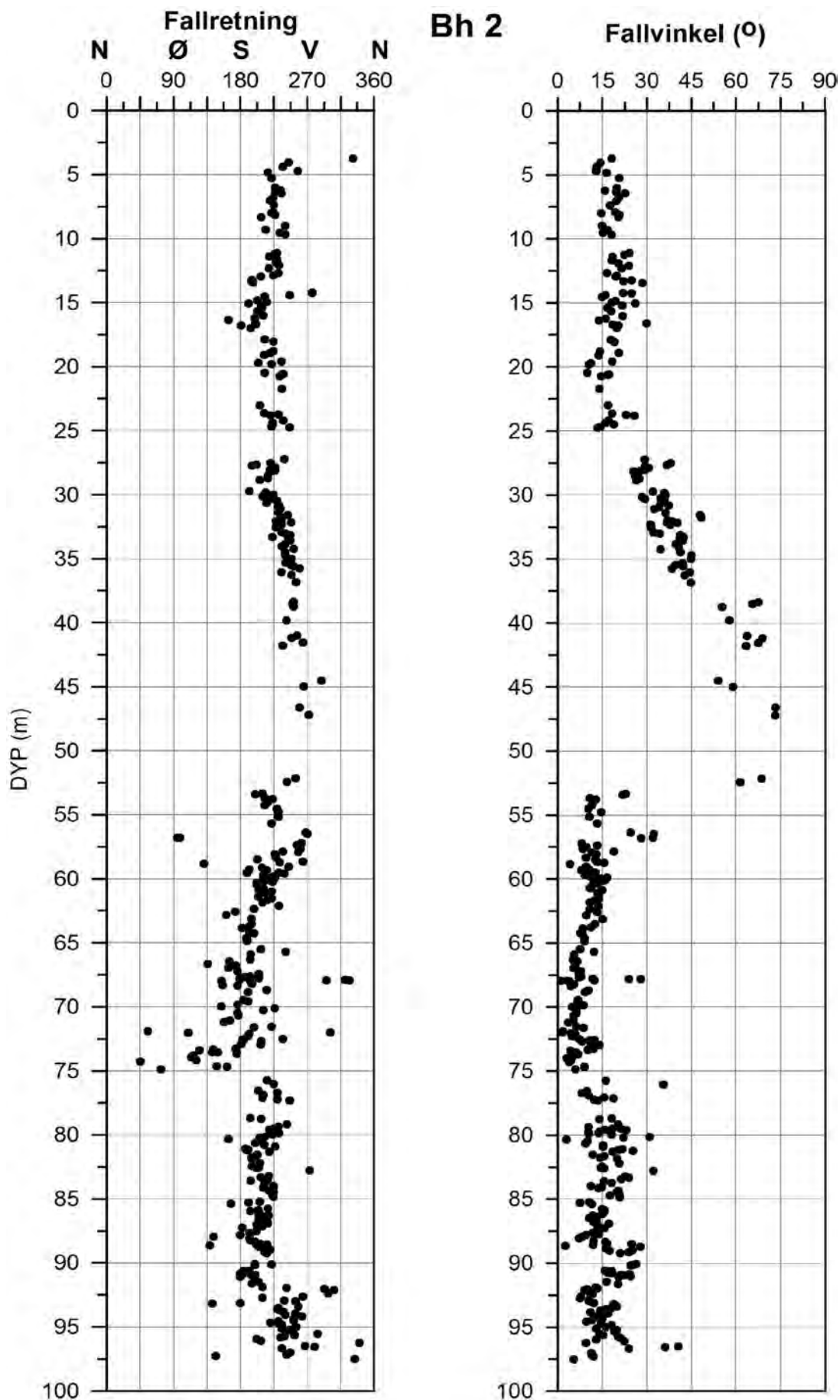
Bh 2

Bh2 46.115 - 59.910m 1/150
OPTV dips

Zc
nur



Figur 3. Bh 2, diagram som viser foliasjonens fallretning og fallvinkel.

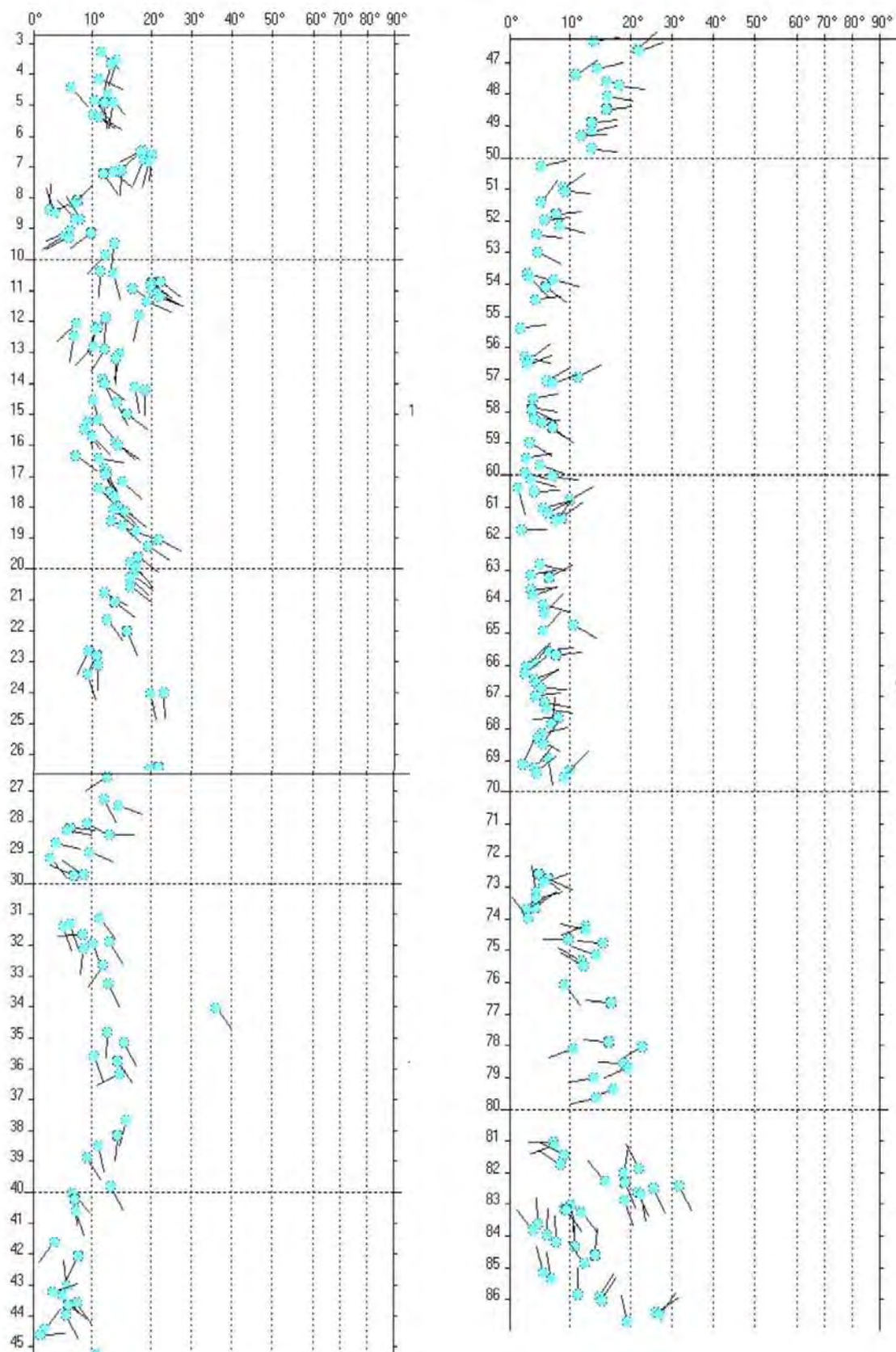


Figur 4. Bh 2, beregnet fallretning (venstre) og fallvinkel (høyre).

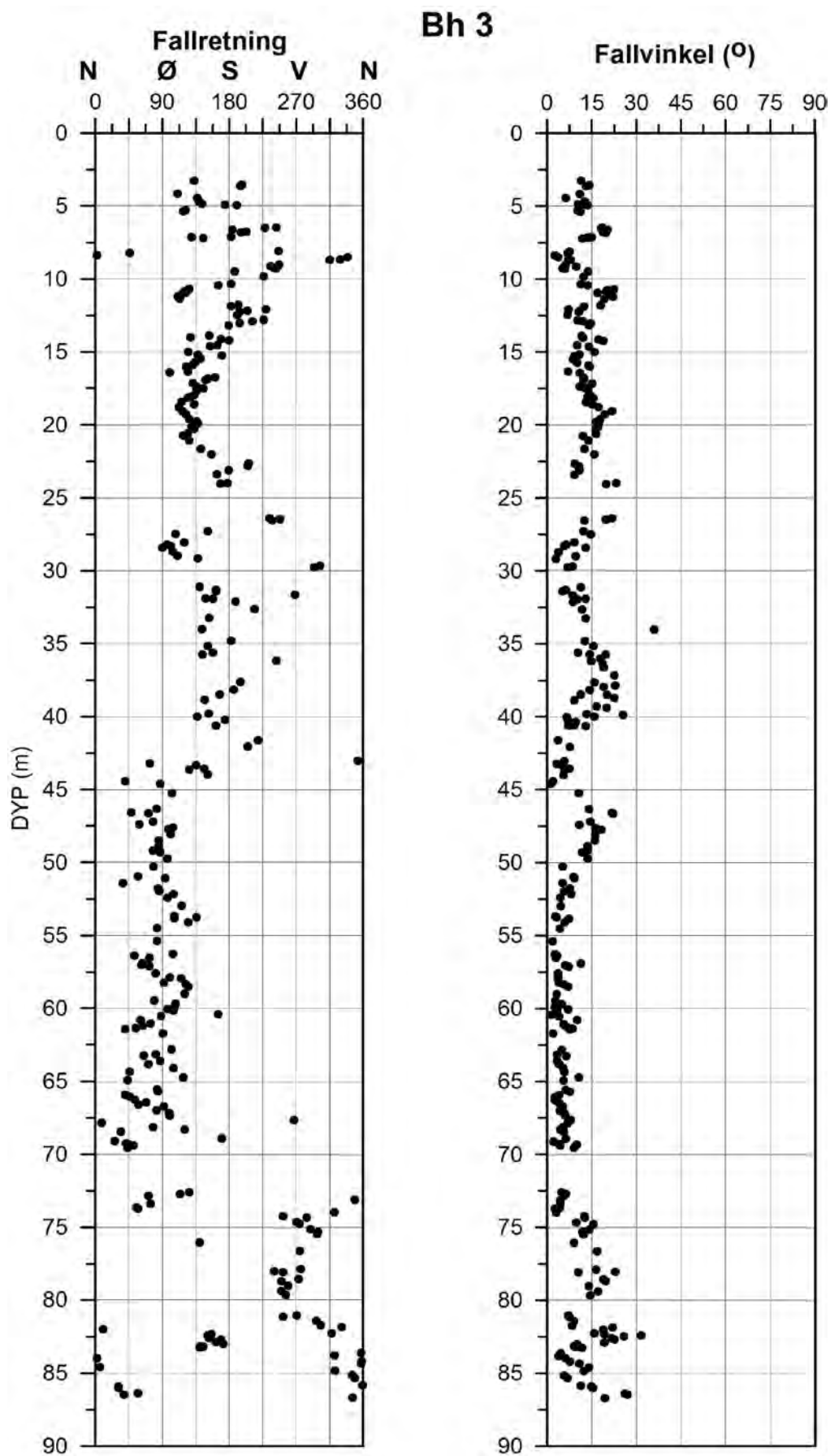
Bh 3

Bh3 2.764 - 26.930m 1/150
OPTV dips

Bh3 46.270 - 86.999m 1/150
OPTV dips



Figur 5. Bh 3, diagram som viser foliasjonens fallretning og fallvinkel.



Figur 6. Bh 3, beregnet fallretning (venstre) og fallvinkel (høyre).)

4.3 Sprekker Bh 2

Som nevnt innledningsvis ble det på grunn av sterkt oppknust fjell boret og logget i flere etapper. I Bh 2 ble det gjort 8 logger med televiwer. Med det filformat som nyttes i NNF's televiwer går det ikke an å slå sammen flere filer og lage en logg for hele hullet. Det er derfor laget 8 stereogram, 8 frekvenshistogram og 8 rosedigram. Data fra tabellene kan slås sammen og det er gjort for å lage plott av fallretning og fallvinkel.

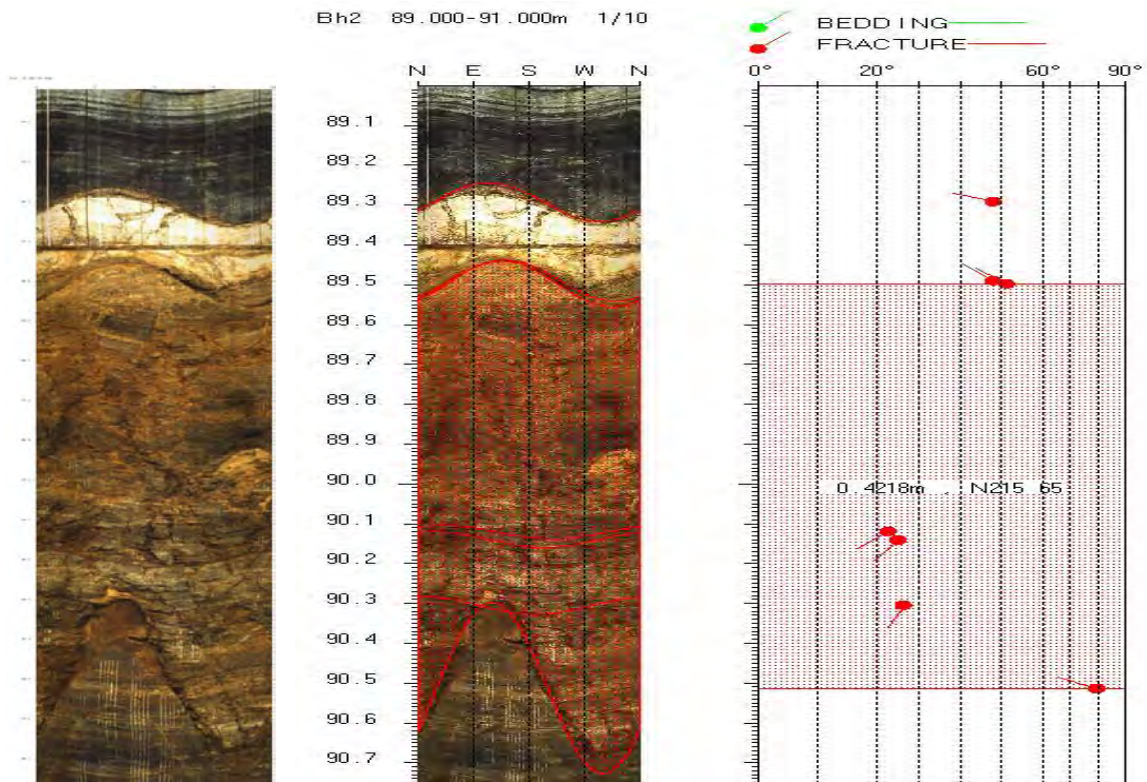
Det er flere soner i borehullet med sterkt oppsprukket fjell, knusningssoner. I tillegg er det stedvis mange "enkeltstående" sprekker. Størst sprekkefrekvens er målt ved 40 – 42 m, se figur 14. Det blir ikke gjort detaljert beskrivelse av hver enkelt sprekkesone (knusningssone). Detaljer for sonene finnes i databilag 5 og 6. Databilag 5 viser tabell over sprekke-data mens databilag 6 viser tolket sprekkelogg for hele hullet. Tabell 3 viser hvor knusningssonene opptrer i hullet. Tabellen viser også sonenes fallretning og fallvinkel. Mange av sonene er vanskelig å digitalisere og angitt retning og vinkel er for noen høyst usikker.

Tabell 3. Observerte sprekke- og knusningssoner i Bh 2

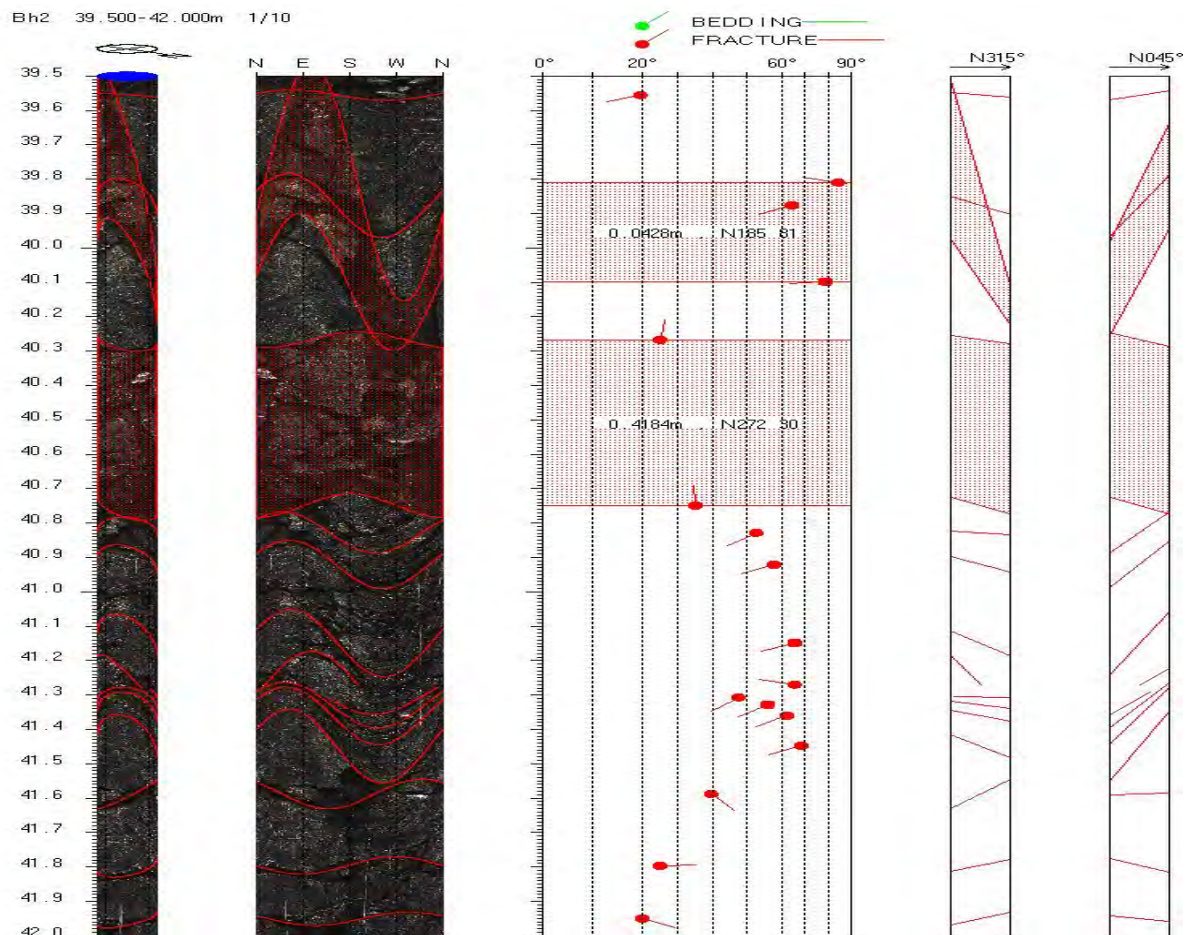
Dyp (m)	Tykkelse (m)	Fallretning-vinkel	Kommentar
24.4 – 25.3	0.30	N319 47	Usikker retning
25.7 – 27.1	1.33	N049 20	Ok retning
37.0 – 38.2	1.07	N249 27	Usikker retning
38.5 – 39.5	0.95	N236 19	Ok retning
39.9 – 40.0	0.05	N275 81	Ok retning
40.3 – 40.8	0.41	N002 30	Ok retning
42.3 – 44.4	1.79	N276 38	Usikker retning
45.3 – 49.4	3.85	N098 20	Usikker, sement
49.5 – 53.3	3.64	N214 20	Usikker, sement
68.7 – 69.3	0.24	N010 68	Ok retning
89.5 – 90.5	0.42	N305 65	Ok retning

Sonen ved 89.5 – 90.5 ligger like under vannspeilet på 89.4 m. OPTV bilde med tolkning er vist i figur 7. Denne sonen har en fallretning N305, VNV, og har et gjennomsnittsfall på 65 °. Sonen, som er sterkt oppknust, er ikke foliasjonsparell. Dersom bunnen av sonen representerer et plan, kan fall og retning være ugunstig med hensyn til fare for utglidning.

En tolket logg fra 39.5 – 42 m er vist i figur 8, og viser for det meste sprekker med fallretning VSV med fallvinkel 50 – 85 °.



Figur 7. OPTV bilde med tolkning av oppkjust sone ved 89.5 – 90.5 m dyp.



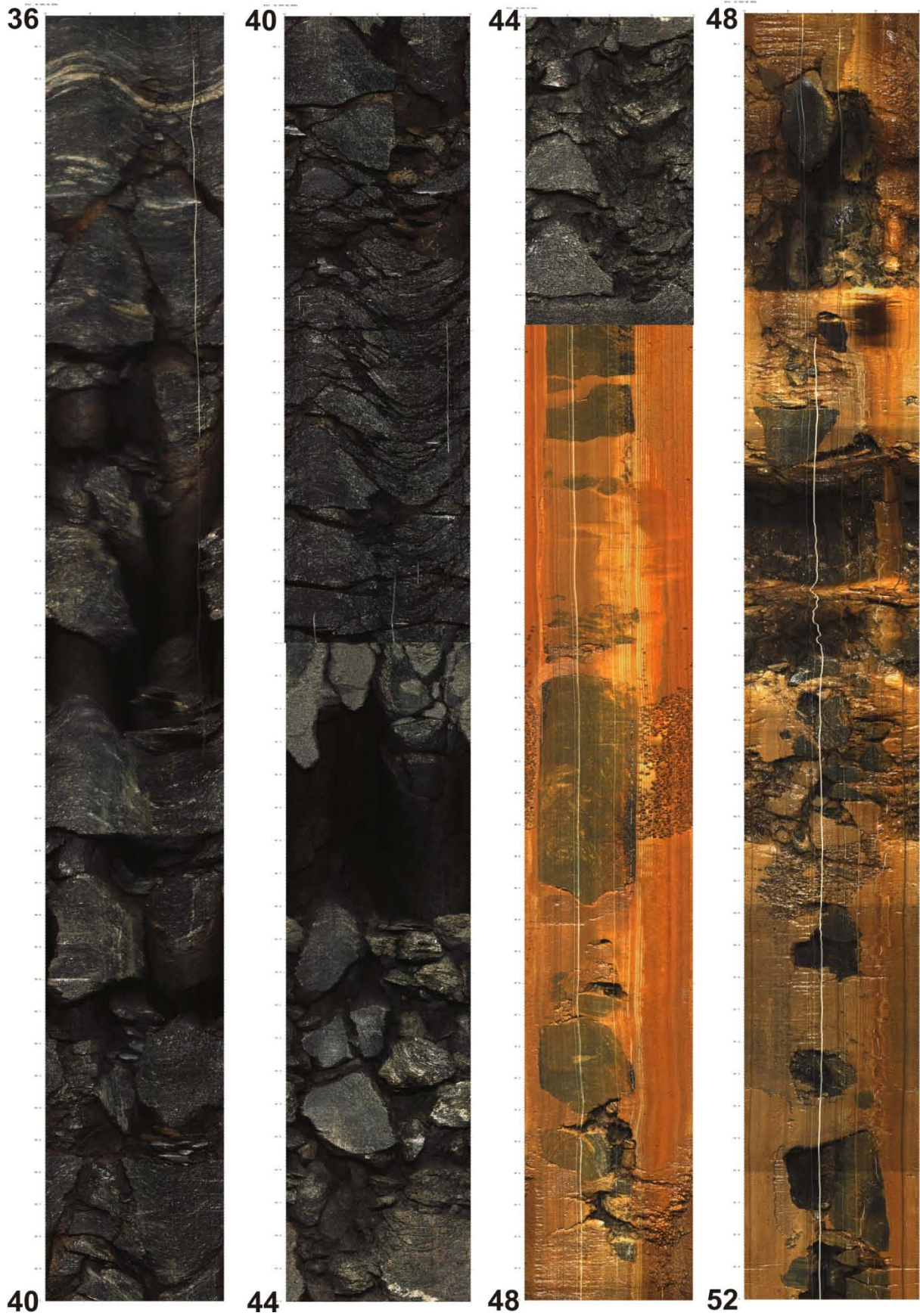
Figur 8. Tolket OPTV-logg Bh 2, 39.5 – 42 m.

Figur 9 viser OPTV-bilder fra 36 – 52 m. Fra ca 45 m dyp er logging gjort etter støping og utboring som gjør det umulig å digitalisere sonene. Figur 10 viser kjernebilder fra samme område og illustrerer tydelig hvor dårlig fjellet er i dette området. Det er ca 25 % kjernetap i disse 4 kassene med kjerner, eller 4 m uten kjerner. Alle kjerner er for øvrig logget ved NGU (Ganerød G.V. 2014).

Figur 11, 12 og 13 viser sprekkestereogram for Bh 2. Tabellene på figurene angir gjennomsnittlig strøkretning, fallretning og sprekkefrekvens for de enkelte sprekkegruppene. Sprekkefrekvenshistogrammene i figur 14 og 15 er representert med de samme gruppene (fargene) og viser nålplott av alle digitaliserte sprekkeretninger, der ”nålene” peker i fallretning (vest til venstre) og nålens hode angir fallvinkel avlest på horisontalaksen øverst på plottet. På grunn av forskjellig antall definerte sprekkegrupper kan frekvenshistogrammene være noe uoversiktige. Nålplottene for sprekkeene i Bh 2 viser stor spredning både i fallretning og fallvinkel. Histogrammene angir sprekker pr. meter og lengst til høyre vises borehullsforløp og RQD indeks.

Rosediagram som viser fallretning og fallvinkel er vist i figur 16, 17 og 18. Det er laget rosedigram for hver loggeseksjon og de illustrerer godt stor spredning i fallretning og fallvinkel. Om en skulle trekke fram ugunstige retninger og fall i forhold til stabilitet, har seksjon 32 – 42 m fall mot SSV og steilt fall ($45 - 75^\circ$). Seksjon 59 – 80 m har fall mot VNV og fall $15 - 75^\circ$.

I figur 19 er data (fallretning og fallvinkel) for foliasjon og sprekker plottet i samme diagram der sprekkeene er vist i rødt. Et slikt diagram viser om det er foliasjonsparallele sprekker tilstede. Slike sprekker kan øke risikoen for utglidning dersom fallretningen er ned fjellsiden. Figur 19 viser at det er få sprekker som er foliasjonsparallele. Det er stor spredning både i fallretning og fallvinkel. Omtrent halvparten har en fallvinkel over 45° .



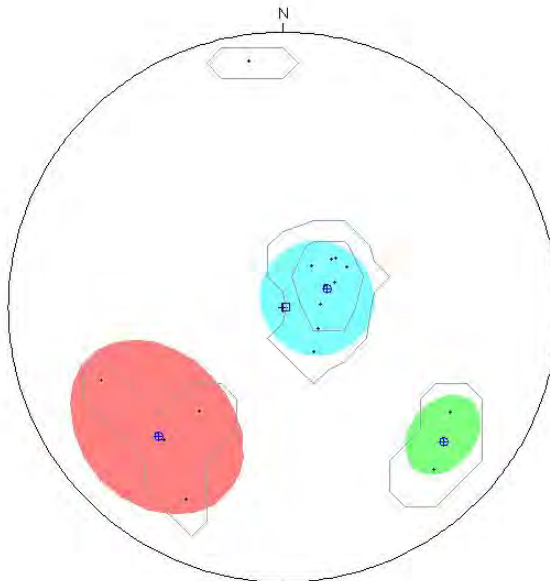
Figur 9. Bh 2, OPTV-bilder fra 36 – 52 m dyp som viser oppknust fjell. Støpt fra 45 – 52 m.



Figur 10. Kjernebilder fra Bh 2, 36 – 52 m. Treklosser betyr kjernetap.

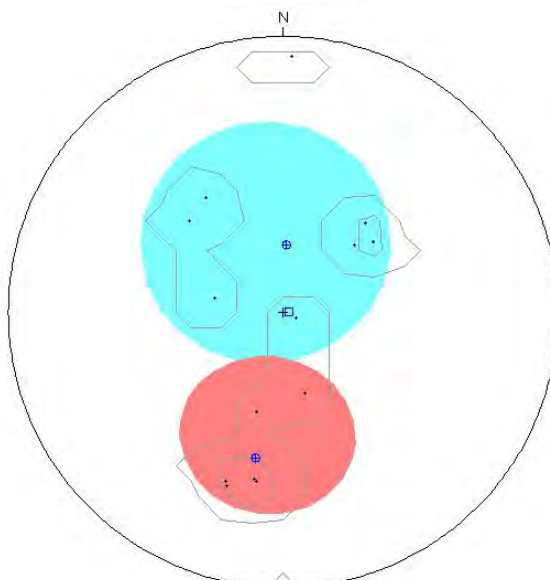
Bh2
 Zone 0, 3.088 - 25.309m
 Deviation 0.8 N78.4
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N157 14	N157 14	9	(0.42)
N314 55	N314 55	4	(0.32)
N220 65	N220 65	2	(0.21)



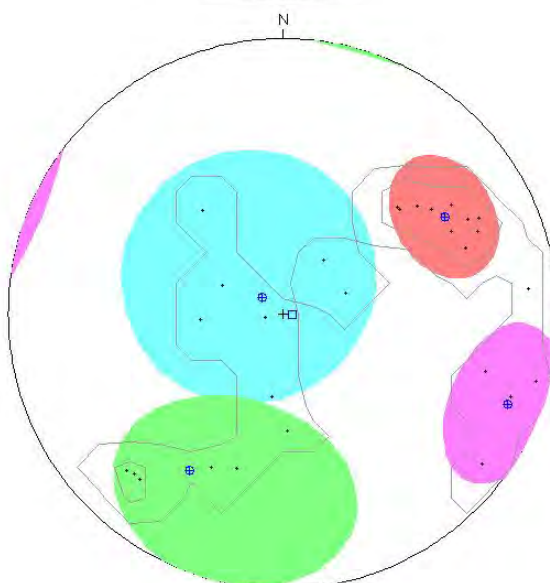
Bh2
 Zone 0, 25.230 - 31.765m
 Deviation 1.6 N95.8
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N093 20	N093 20	7	1.14
N281 45	N281 45	6	1.29



Bh2
 Zone 0, 32.651 - 42.220m
 Deviation 2.5 N98.8
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

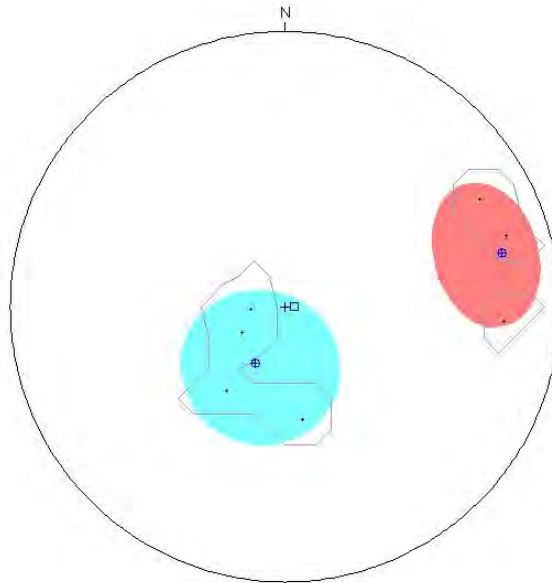
	mean dip	n	f
N037 8	N037 8	7	0.74
N149 58	N149 58	10	1.86
N301 56	N301 56	6	1.15
N202 77	N202 77	4	(1.54)



Figur 11. Jettan Bh 2. Sprekkestereogram, observerte sprekker. Øverst 3 – 25.3 m dyp, i midten 25.2 – 31.7 m dyp og nederst 32.6 – 42.2 m dyp.

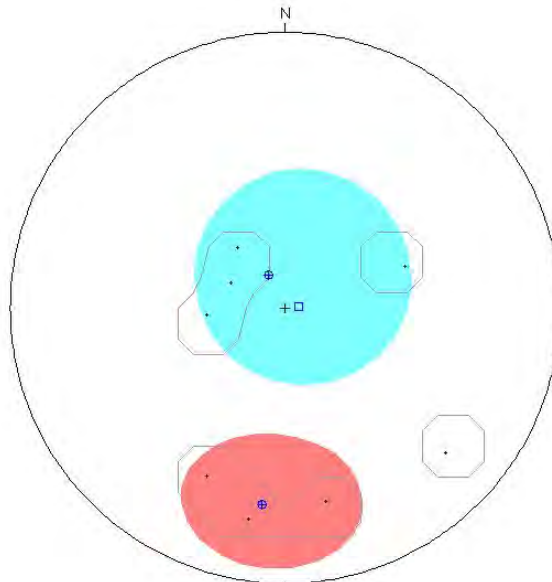
Bh2
 Zone 0, 41.729 - 45.490m
 Deviation 2.6 N95.8
 Mean dip format: strike and dip
 dip data sets
 OPTV dips
 Highlighted dips: Discolored

	mean dip	n	f
N298 19	N298 19	4	1.14
N166 70	N166 70	3	2.11



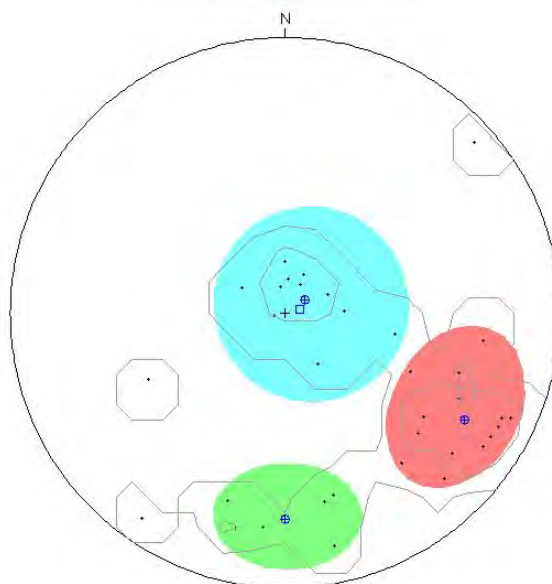
Bh2
 Zone 0, 44.920 - 59.910m
 Deviation 3.8 N85.8
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N062 11	N062 11	4	(0.27)
N277 61	N277 61	3	(0.42)



Bh2
 Zone 0, 60.758 - 79.537m
 Deviation 4.2 N76.5
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

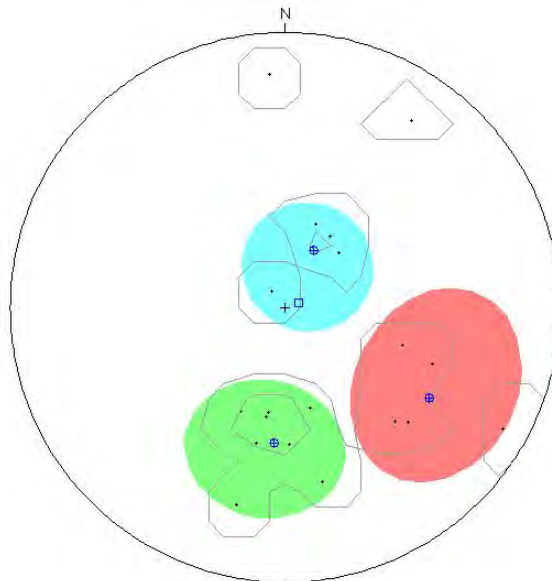
	mean dip	n	f
N145 7	N145 7	11	0.59
N211 65	N211 65	14	1.58
N270 64	N270 64	6	(0.77)



Figur 12. Jettan Bh 2. Sprekkestereogram, observerte sprekker. Øverst 41.7 – 45.5 m dyp, i midten 44.9 – 59.9 m dyp og nederst 60.7 – 79.5 m dyp.

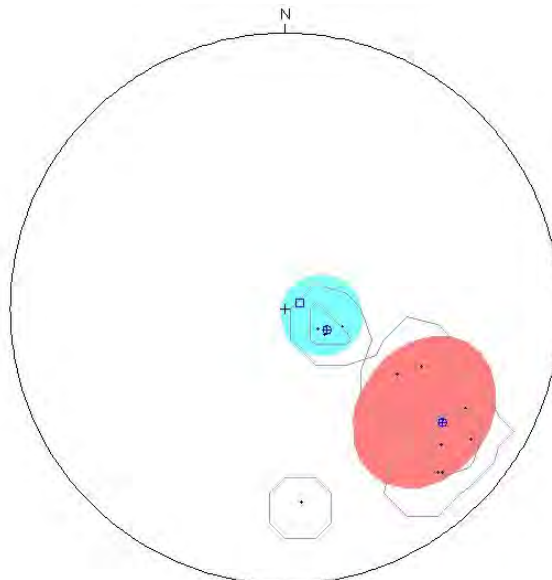
Bh2
 Zone 0, 80.724 - 91.002m
 Deviation 4.2 N71.1
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N117 19	N117 19	4	(0.40)
N212 52	N212 52	5	(0.75)
N275 41	N275 41	8	1.05

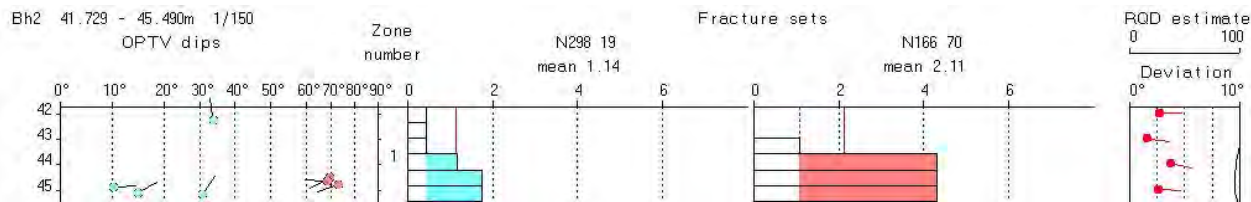
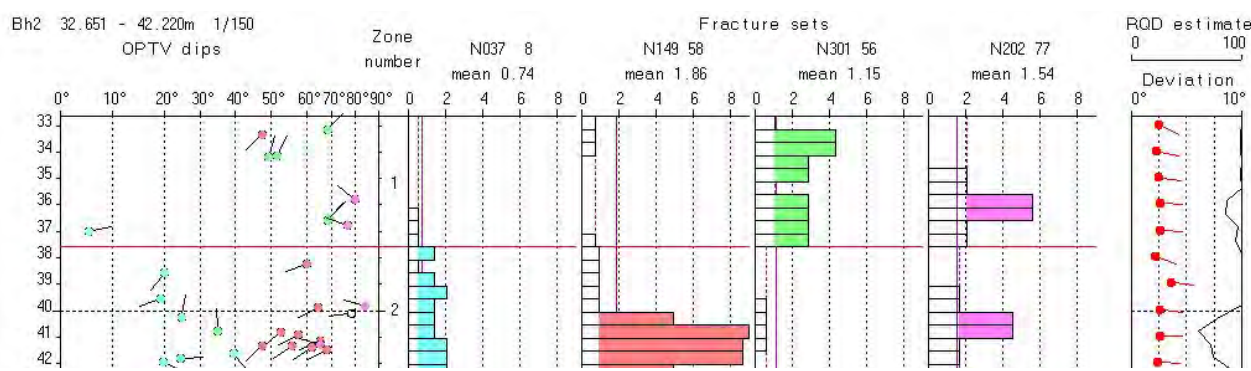
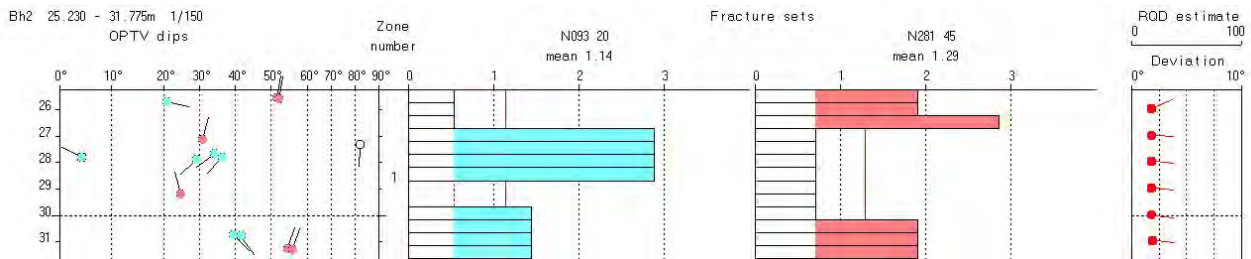
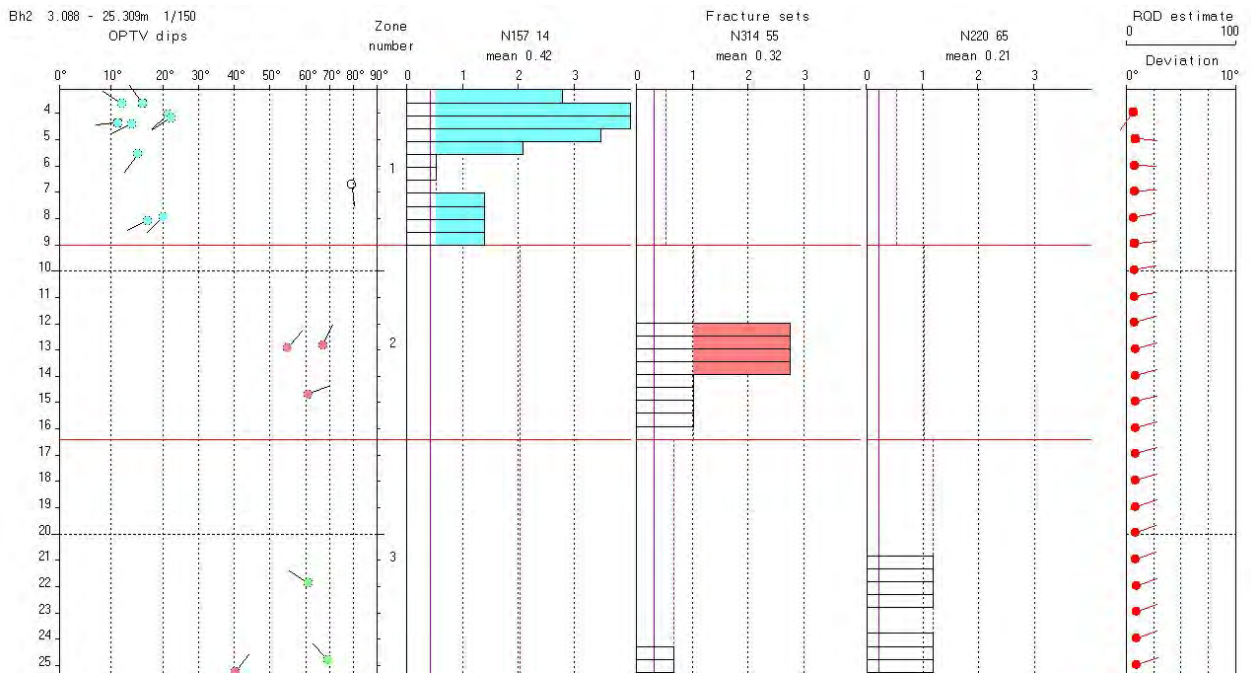


Bh2
 Zone 0, 90.157 - 97.729m
 Deviation 4.6 N69.4
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

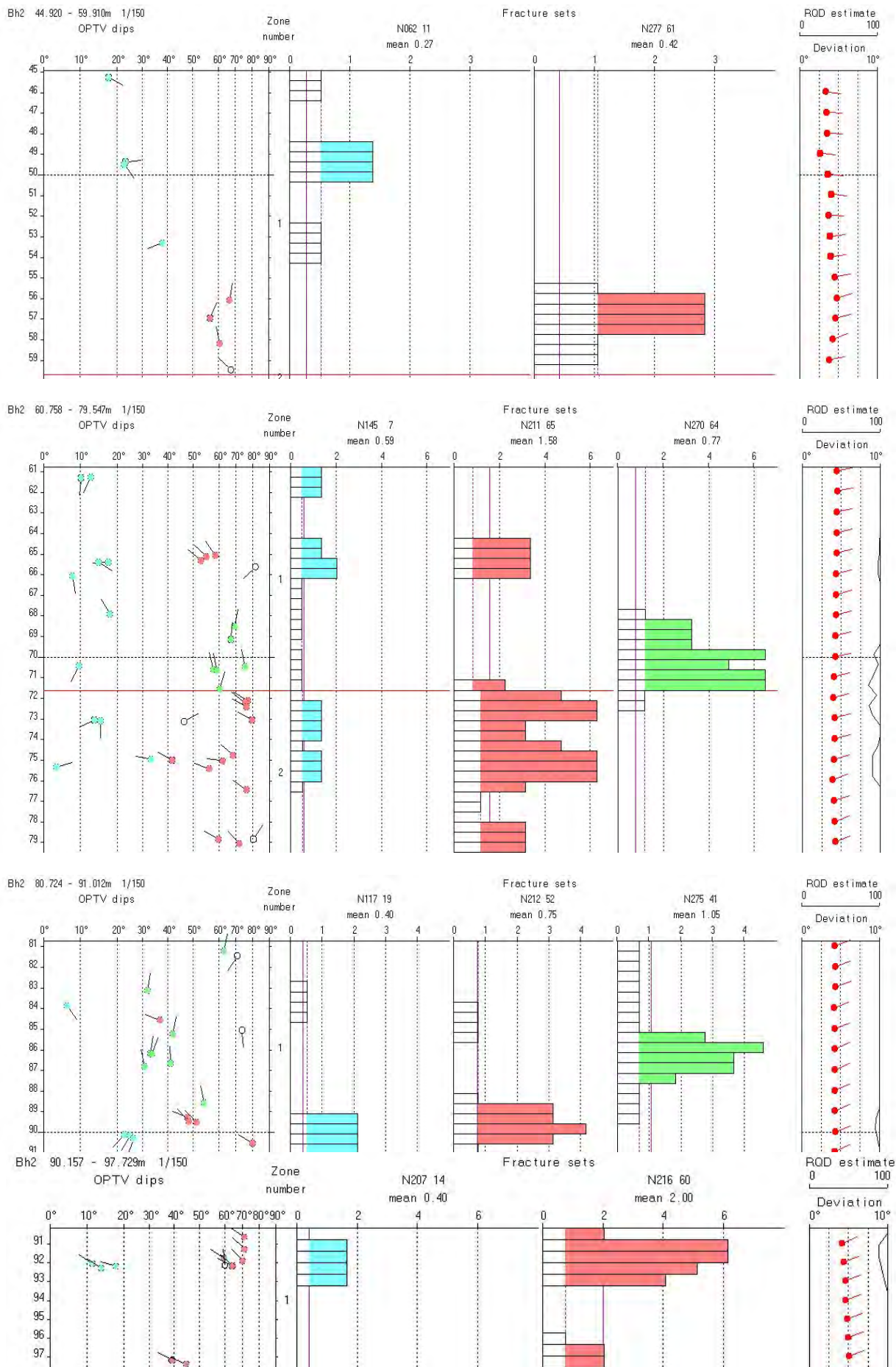
	mean dip	n	f
N207 14	N207 14	3	(0.40)
N216 60	N216 60	8	2.00



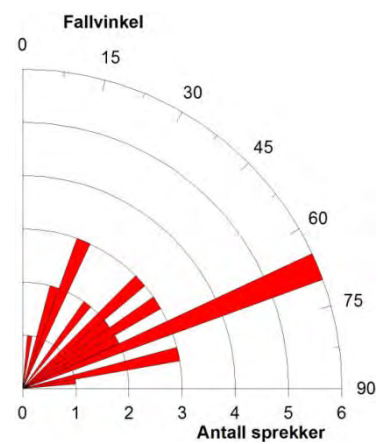
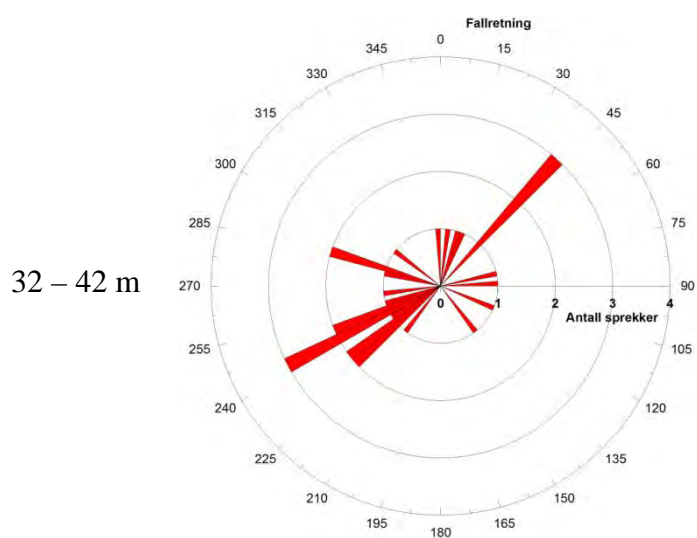
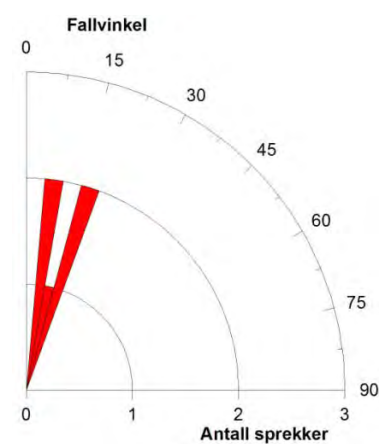
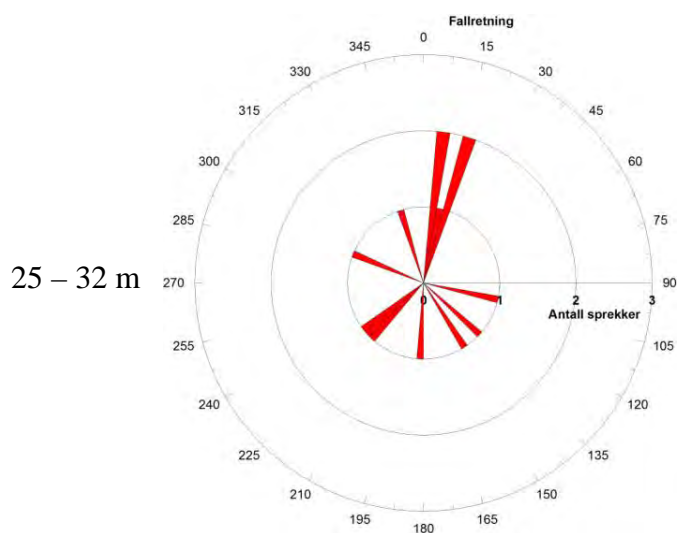
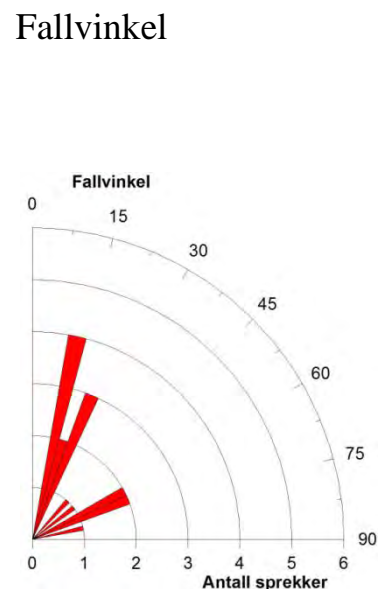
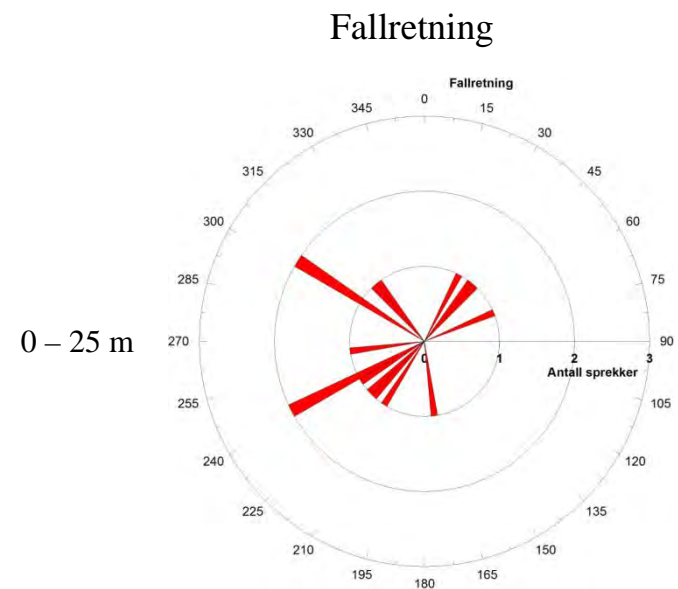
Figur 13. Jettan Bh 2. Sprekkestereogram, observerte sprekker. Øverst 80.7 – 91.0 m dyp og nederst 90.1 – 97.7 m dyp.



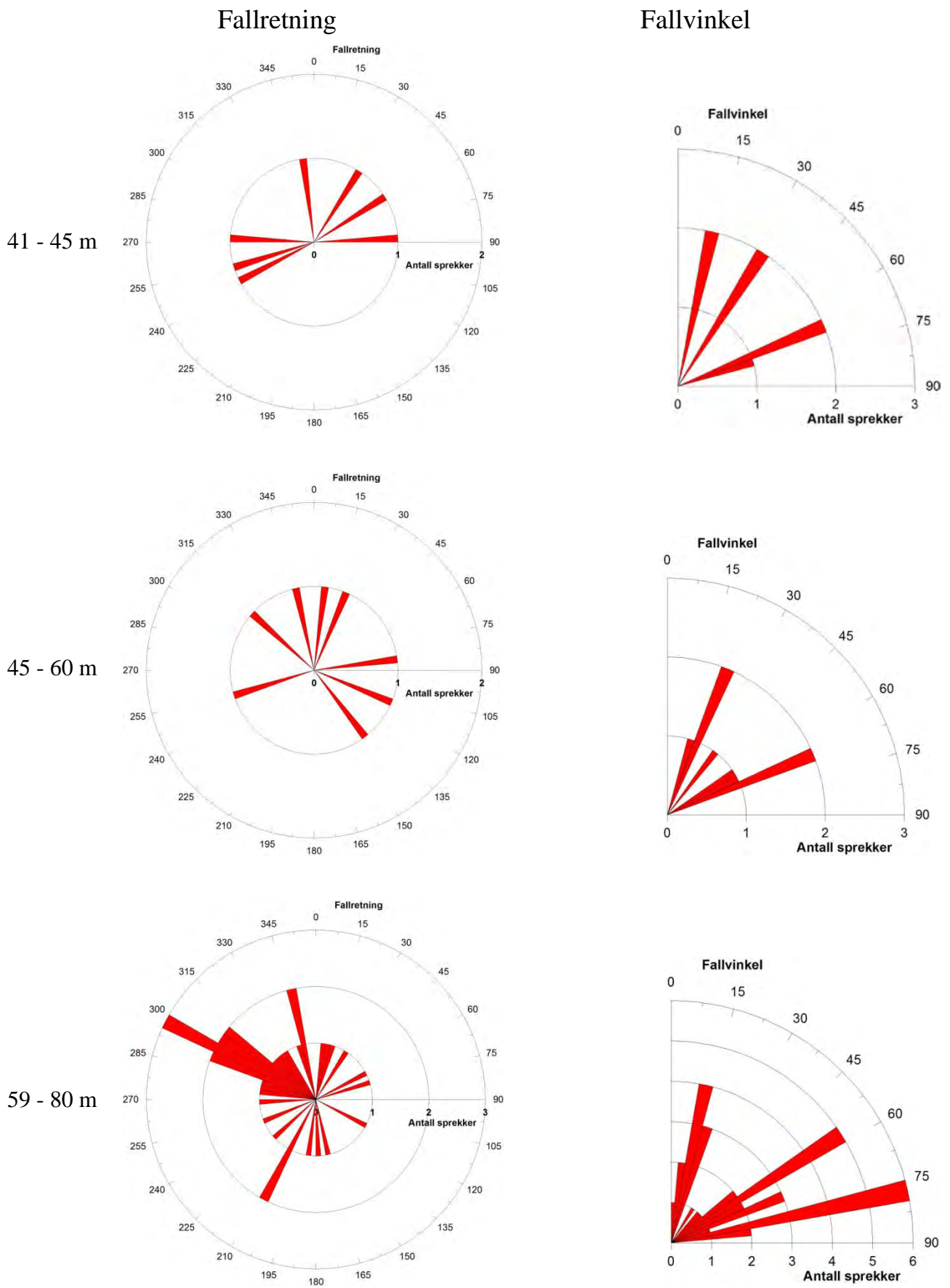
Figur 14. Jettan Bh 2. Sprekkefrekvenshistogram av observerte sprekker, 3- 45 m hulldyr.



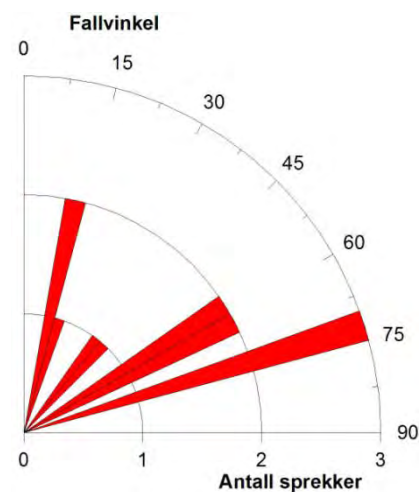
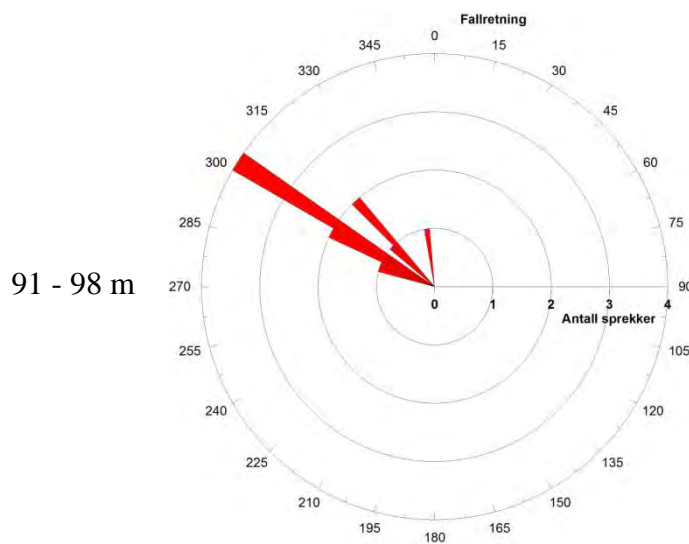
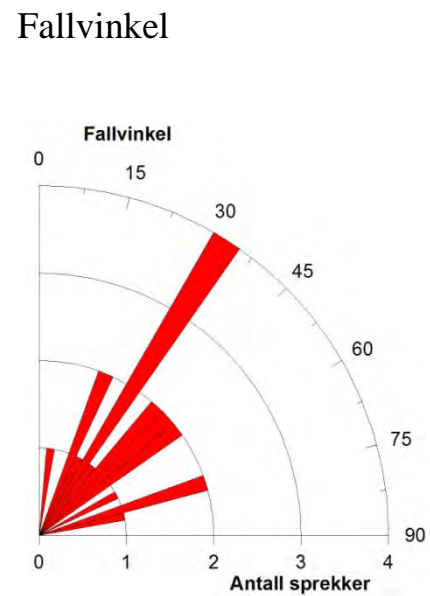
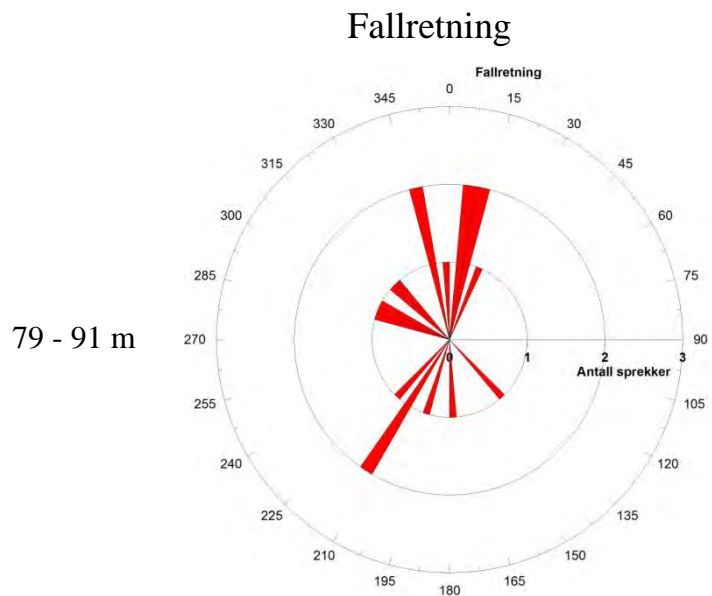
Figur 15. Jettan Bh 2. Sprekkefrekvenshistogram av observerte sprekker, 45 - 97 m hulldyp.



Figur 16. Rosediagram for observerte sprekker i Bh 2, 0 - 42 m dyp. Fallretning (venstre) og fallvinkel (høyre).

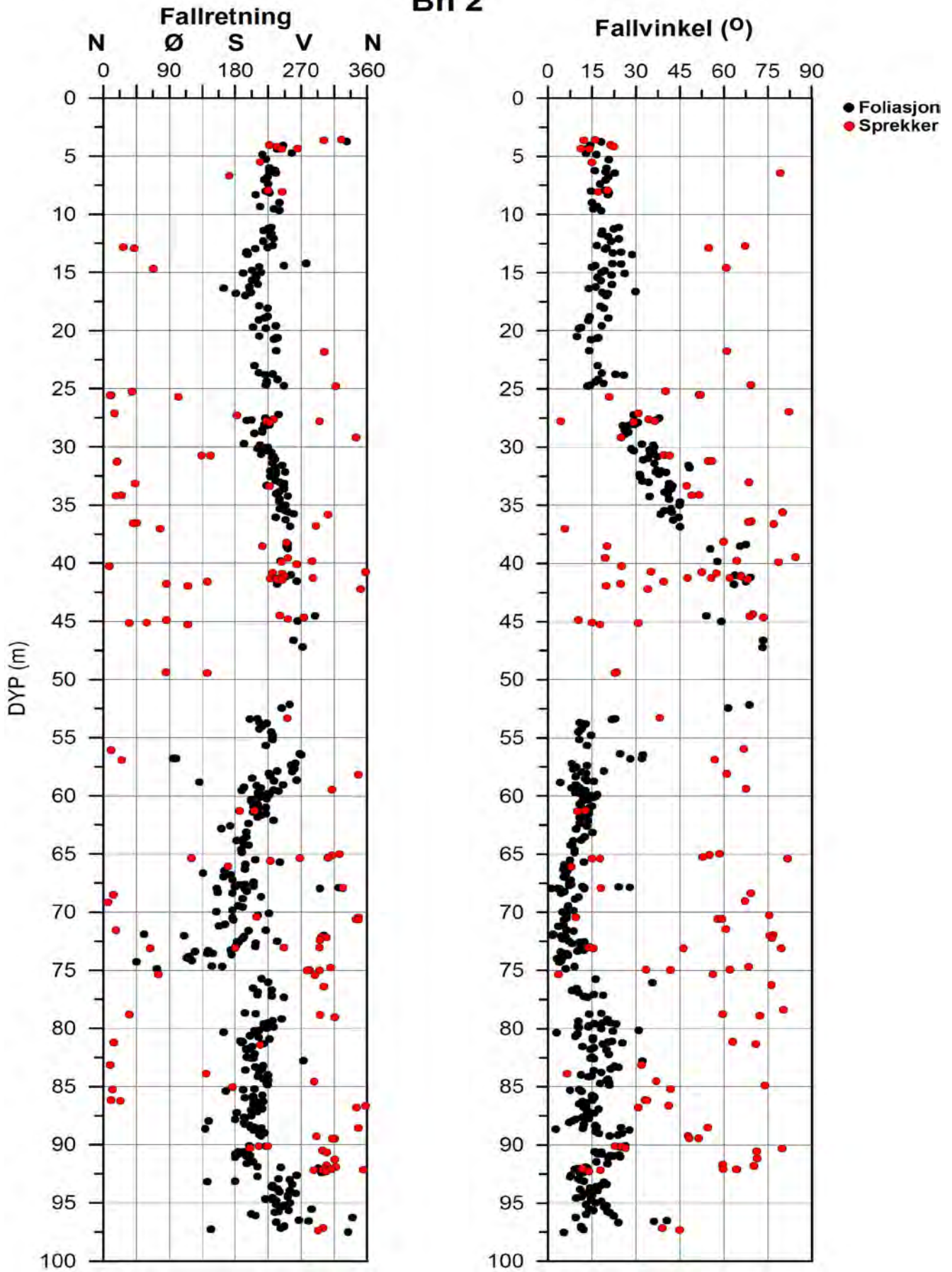


Figur 17. Rosediagram for observerte sprekker i Bh 2, 41 - 80 m dyp. Fallretning (venstre) og fallvinkel (høyre).



Figur 18. Rosediagram for observerte sprekker i Bh 2, 79 -98 m dyp. Fallretning (venstre) og fallvinkel (høyre).

Bh 2



Figur 19. Jettan Bh2. Sammenstilling av fallretning og fallvinkel for foliasjonsdata (svart) og sprekkedata (rød).

4.4 Sprekker Bh 3

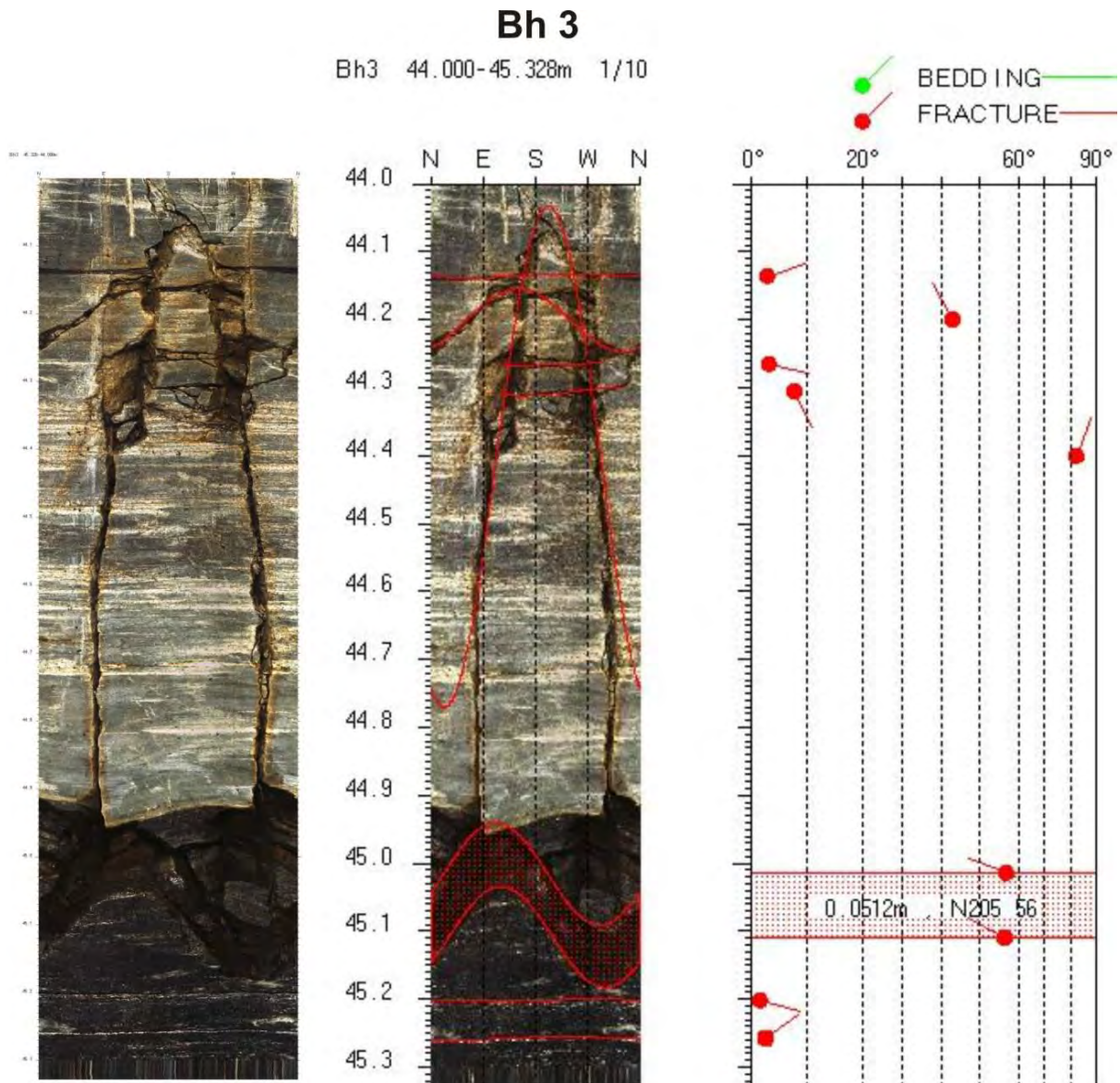
I Bh 3 ble det gjort 3 logger med televiewer. Med det filformat som nyttes i NNF's televiewer går det ikke an å slå sammen flere filer og lage en logg for hele hullet. Det er derfor laget 3 stereogram, 3 frekvenshistogram og 3 rosedigram. Data fra tabellene kan slås sammen og det er gjort for å lage plott av fallretning og fallvinkel.

Det er flere soner i borehullet med sterkt oppsprukket fjell, knusningssoner. Hullet er spesielt sterkt oppsprukket mellom 24 – 45 m og 75 – 81 m. Som i Bh 2 kan det være vanskelig å digitalisere noen av knusningssonene. Tabell 4 viser en oversikt over observerte sprekkesoner, knusningssoner i Bh 3.

Tabell 4. Observerte sprekkesoner (knusningssoner) i Bh 3.

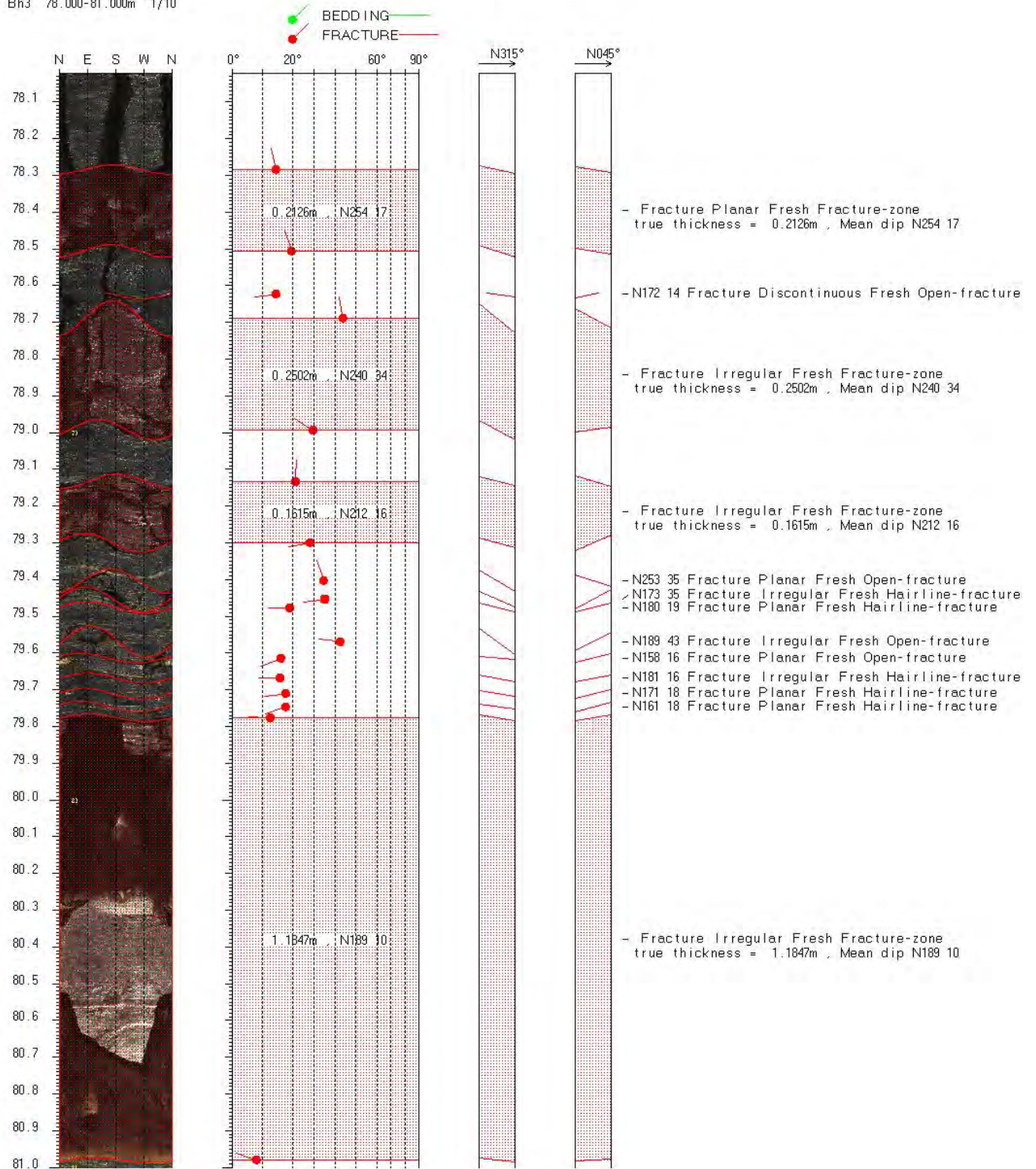
Dyp	Tykkelse	Fallretning/vinkel	Kommentar
5.2 – 6.0	0.80	N246 15	Ok retning
24.1 – 24.4	0.28	N220 31	Ok retning
24.4 – 26.1	1.69	N234 14	Usikker retning
26.9 – 27.2	0.26	N178 05	Ok retning
29.8 – 31.0	0.78	N256 49	Ok retning
33.5 – 33.6	0.06	N054 70	Ok retning
33.9 – 34.0	0.10	N147 29	Ok retning
35.0 – 35.1	0.09	N307 27	Usikker retning
36.0 – 36.15	0.15	N278 30	Usikker retning
41.9 – 42.0	0.08	N308 12	Ok retning
42.15 – 42.4	0.22	N045 05	Usikker retning
50.1 – 50.2	0.07	N345 60	Ok retning
50.3 – 50.5	0.16	N300 12	Usikker retning
69.8 – 71.2	0.81	N336 54	Usikker retning
71.2 – 72.6	0.99	N352 42	Ok retning
78.3 – 78.5	0.21	N344 17	Ok retning
78.7 – 79.0	0.25	N330 34	Ok retning
79.8 – 81.0	1.18	N279 10	Ok retning

Figur 20 viser en sprekk (sprekkeplan) under en vertikal oppsprukket lys bergart ved 45 m dyp. Planet fallretning er VNV med en fallvinkel på 56 °. En kan ikke se finstoff så det er vanskelig å si om det har vært bevegelse langs planet. Retning og fall er ugunstig med hensyn på fare for utglidning. De originale OPTV-opptakene viser detaljer bedre enn på figur 20.



Figur 20. OPTV bilde som viser sprekkeplan ved 45 m dyp som faller mot VNV.

Figur 21 viser tolket OPTV-logg fra 78 – 81 m med bl.a. en åpen sprekkesone med slakt fall vestover ved 79.8 – 81 m. Figur 22 viser et bilde av denne sonen. Spesielt i nedre del av sonen ser en tydelig finstoff, men det er neppe leire (personlig meddelelse L.Blikra, G.V. Ganerød). Både øvre og nedre grense for denne sonen er foliasjonsparallelle med et slakt fall mot vest. For øvrig vises til databilag 7 og 8 som viser tabell av sprekke data og tolkede OPTV-logger av hele hullet.



Figur 21. Tolket OPTV logg av seksjon 78 – 81 m, Bh 3 Jettan.



Figur 22. OPTV bilde Bh 3, 79.8 – 81 m av knusningssonen med innhold av finstoff.

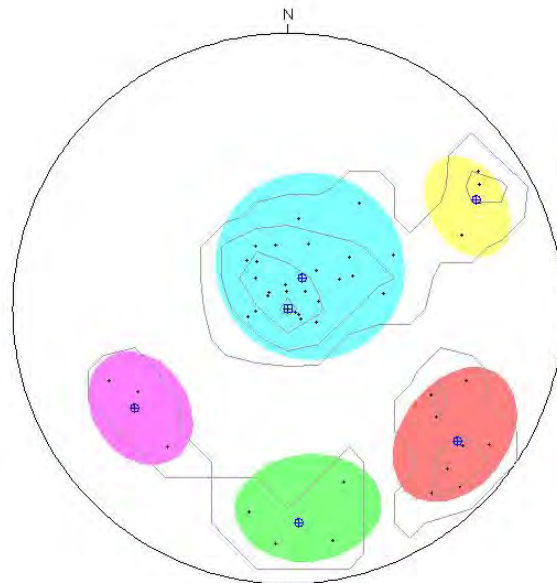
Sprekkestereogram for tre seksjoner av Bh 3 er vist i figur 23. Sprekkefrekvenshistogram for de samme seksjonene er vist i figur 24, 25 og 26. Som nevnt foran er sprekefrekvensen størst ved 24 – 45 m og 75 – 81 m dyp. Som en ser av figurene er det stor spredning både i sprekenes fallretning og fallvinkel. Rød gruppe ved 24 – 37 m har fall mot V-NV med fallvinkel $30 - 70^\circ$. Dette kan være ugunstig i forhold til fare for uglidning. Det samme kan sies om blå gruppe ved 75 – 80 m, der retningen er mer vestlig og slakere fall, ca $10 - 30^\circ$.

Figur 27 viser rosedigram av retning og fall til digitaliserte sprekker. Diagrammene viser stor spredning, men hoveddelen av sprekke har en fallretning mellom V og VNV. Fallvinkelen varierer også, men en stor del av sprekke har slakt fall $10 - 15^\circ$, men en ser også sprekkegrupper med fall $60 - 75^\circ$.

Figur 28 viser fallretning og fallvinkel for både foliasjon og sprekker plottet i samme diagram. Igjen ser en den store spredningen i sprekenes fallretning og fallvinkel. Diagrammet illustrerer også hvor det er foliasjonsparelle sprekker. Tydeligst vises dette ved 75 – 80 m dyp.

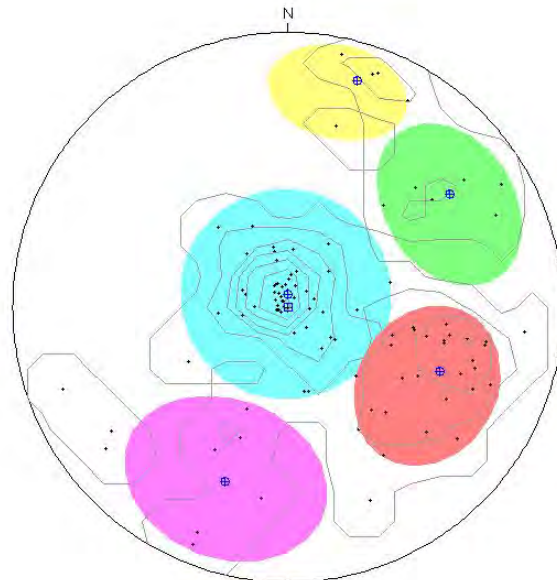
Bh3
 Zone 0, 2.925 - 26.930m
 Deviation 0.2 N311.0
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N114 10	N114 10	26	1.10
N218 67	N218 67	8	(0.86)
N267 67	N267 67	4	(0.43)
N327 56	N327 56	3	(0.22)
N150 68	N150 68	4	(0.45)



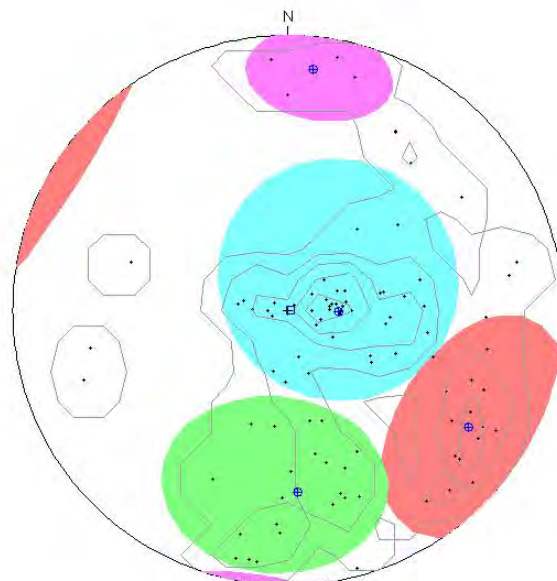
Bh3
 Zone 0, 26.461 - 45.329m
 Deviation 0.2 N320.3
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

	mean dip	n	f
N089 4	N089 4	51	2.71
N203 50	N203 50	26	2.15
N145 61	N145 61	6	(0.66)
N290 57	N290 57	6	(0.58)
N107 75	N107 75	4	(0.83)

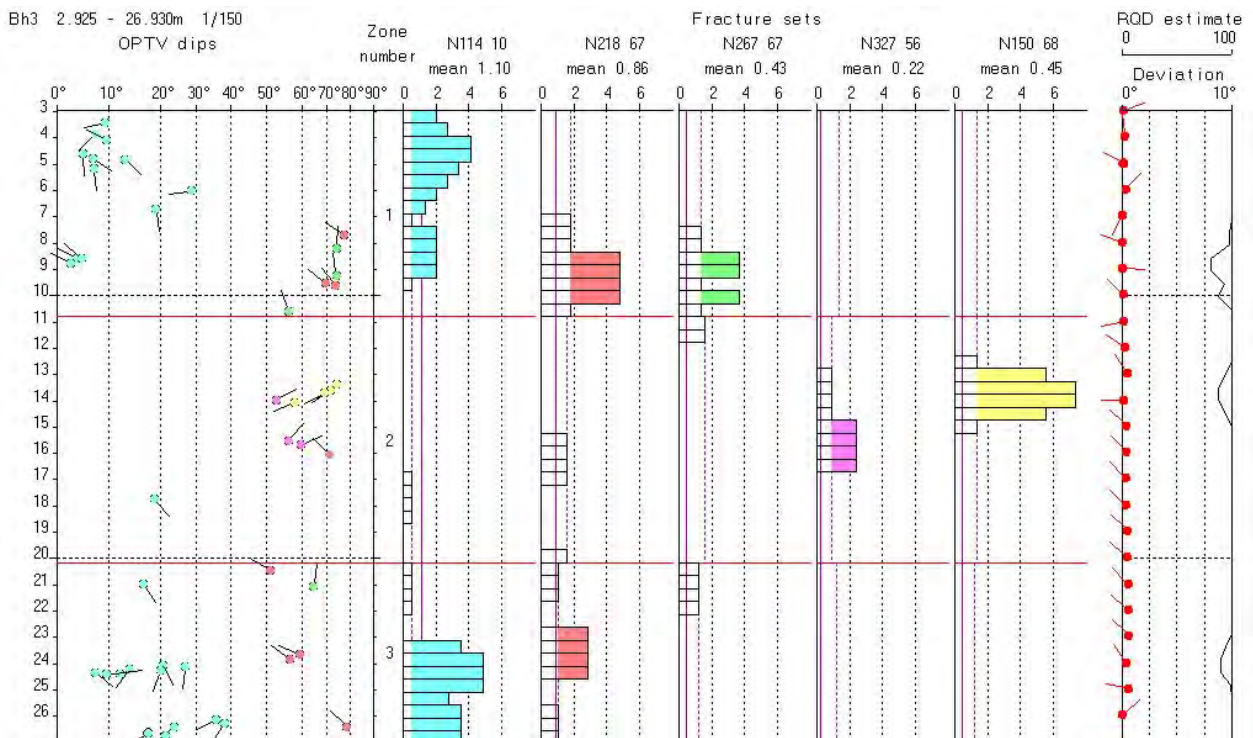


Bh3
 Zone 0, 46.270 - 86.999m
 Deviation 0.7 N84.2
 Mean dip format: strike and dip
 dip data sets
 OPTV dips

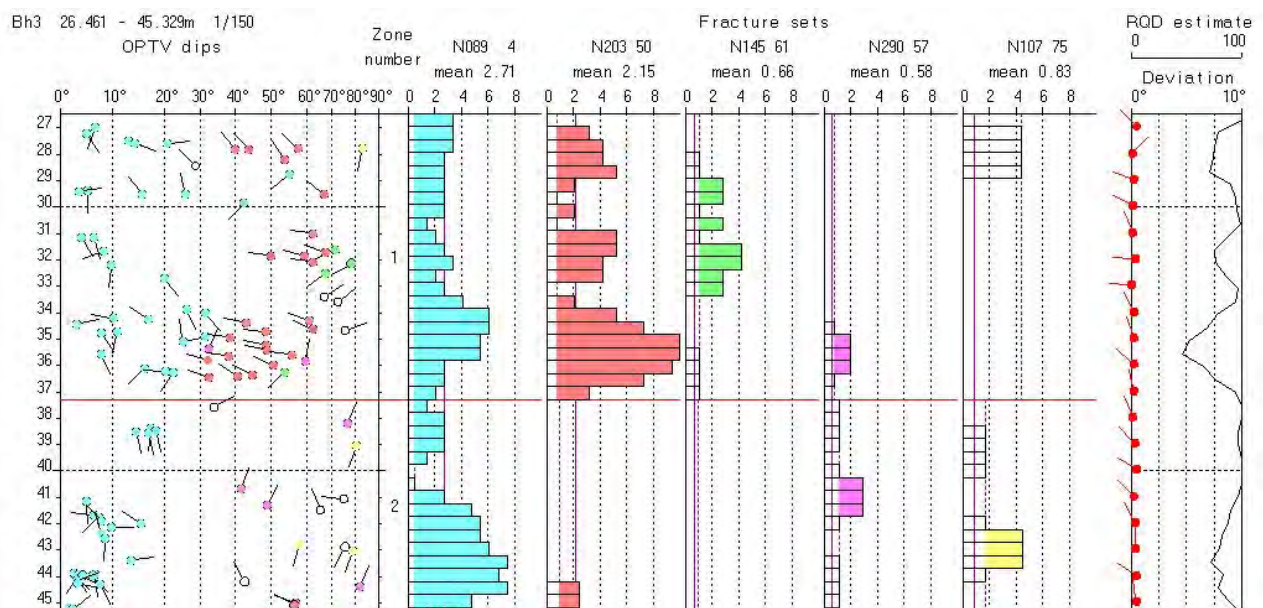
	mean dip	n	f
N182 15	N182 15	44	1.11
N213 67	N213 67	15	(0.92)
N267 56	N267 56	22	0.97
N096 77	N096 77	4	(0.43)



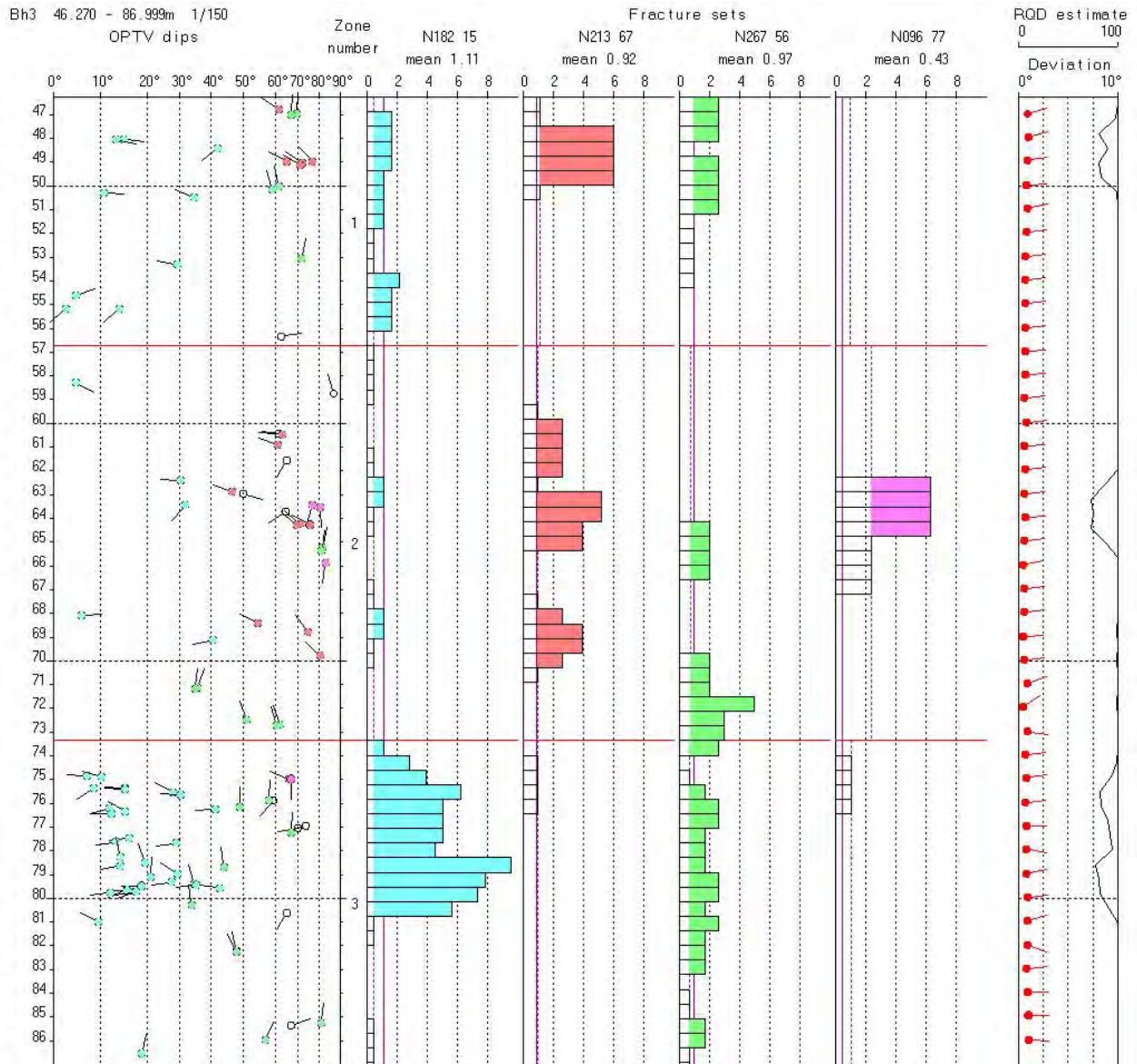
Figur 23. Jettan Bh 3. Sprekkesterogram, observerte sprekker. Øverst 3 – 27 m dyp, i midten 27 – 45 m dyp og nederst 46 – 87 m dyp.



Figur 24. Jettan Bh 3. Sprekkefrekvenshistogram av observerte sprekker, 3 - 27 m hulldyp.

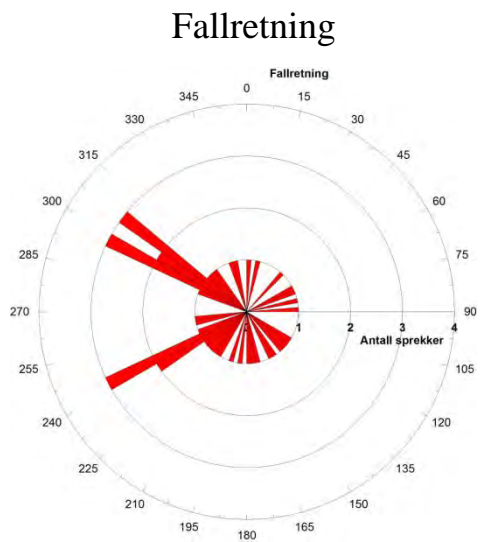


Figur 25. Jettan Bh 3. Sprekkefrekvenshistogram av observerte sprekker, 27 - 45 m hulldyp.

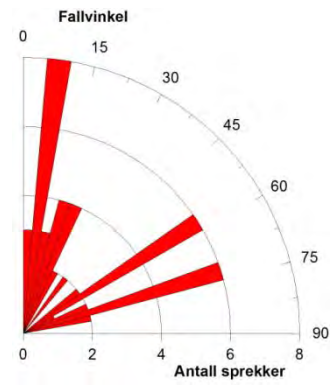


Figur 26. Jettan Bh 3. Sprekkefrekvenshistogram av observerte sprekker, 46 - 87 m hullyp.

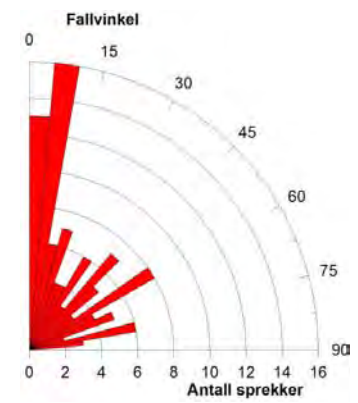
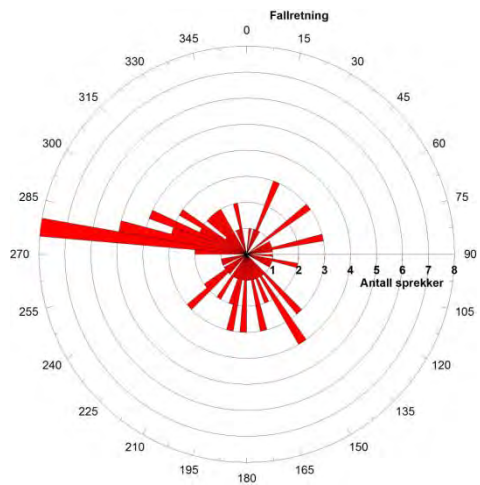
3 - 27 m



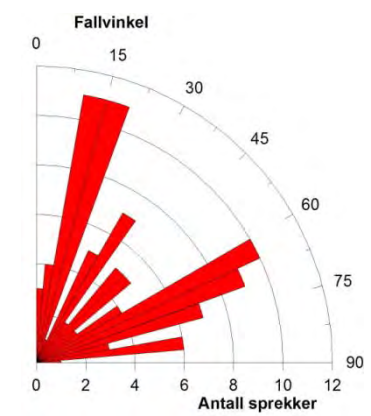
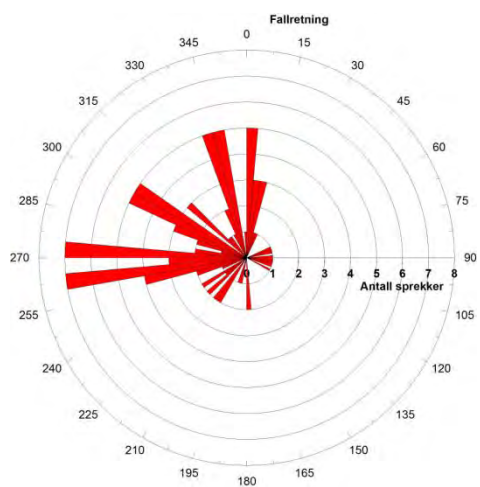
Fallvinkel



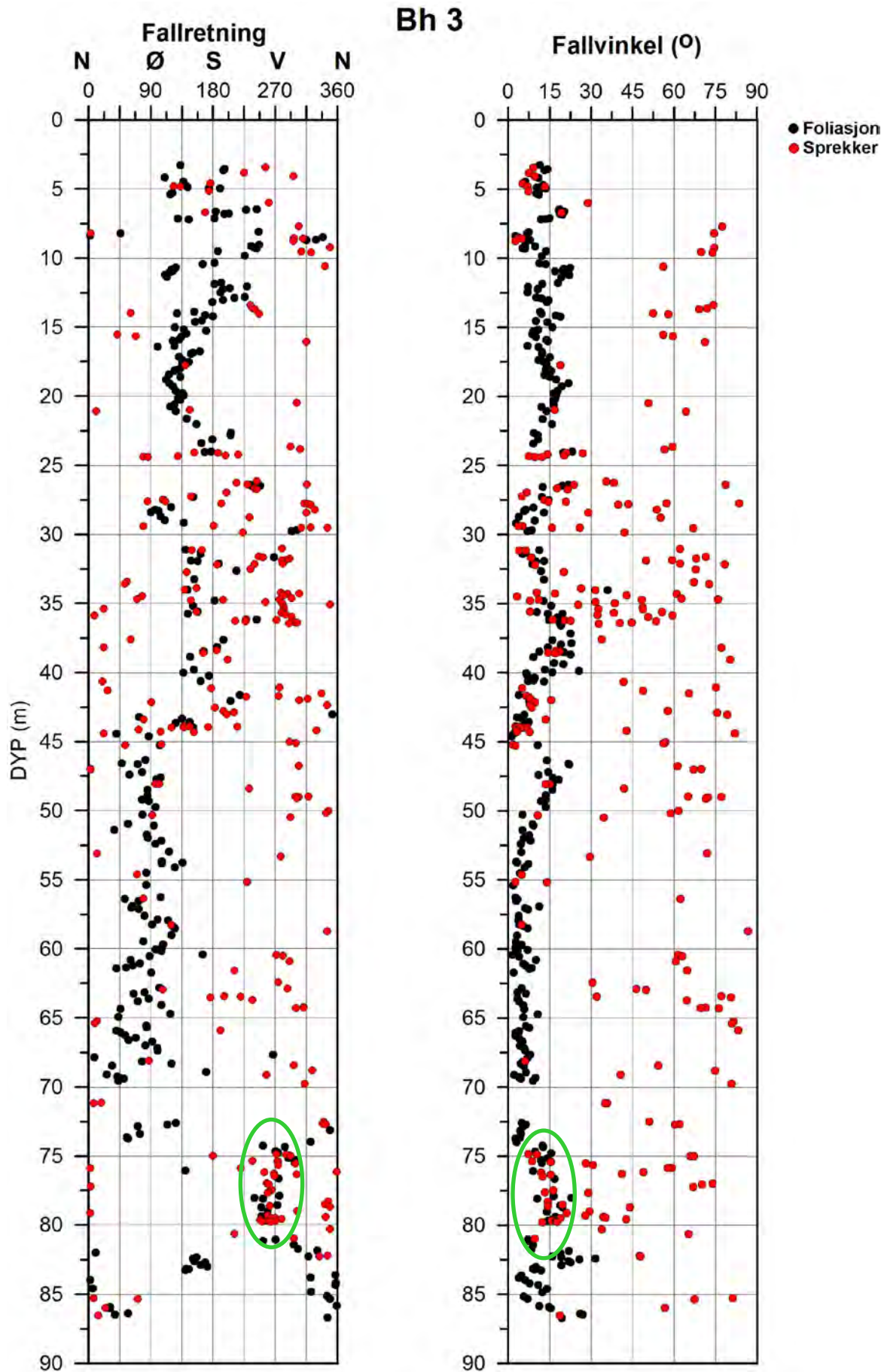
27 - 45 m



46 - 87 m



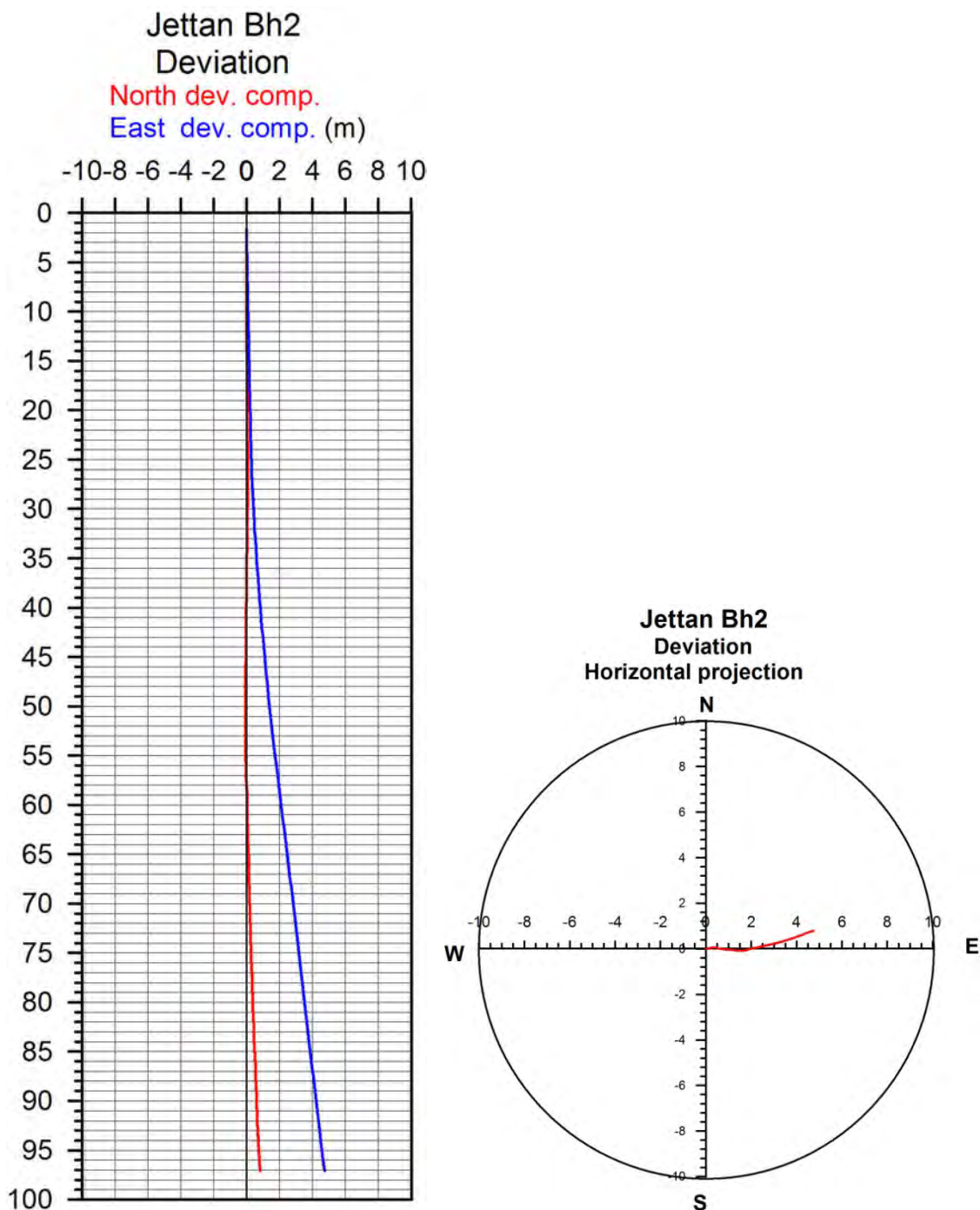
Figur 27. Rosediagram for observerte sprekker i Bh 3, 3 – 87 m dyp. Fallretning (venstre) og fallvinkel (høyre).



Figur 28. Jettan Bh 3. Sammenstilling av fallretning og fallvinkel for foliasjonsdata (svart) og sprekkedata (rød). Foliasjonsparallele sprekker markert med grønt.

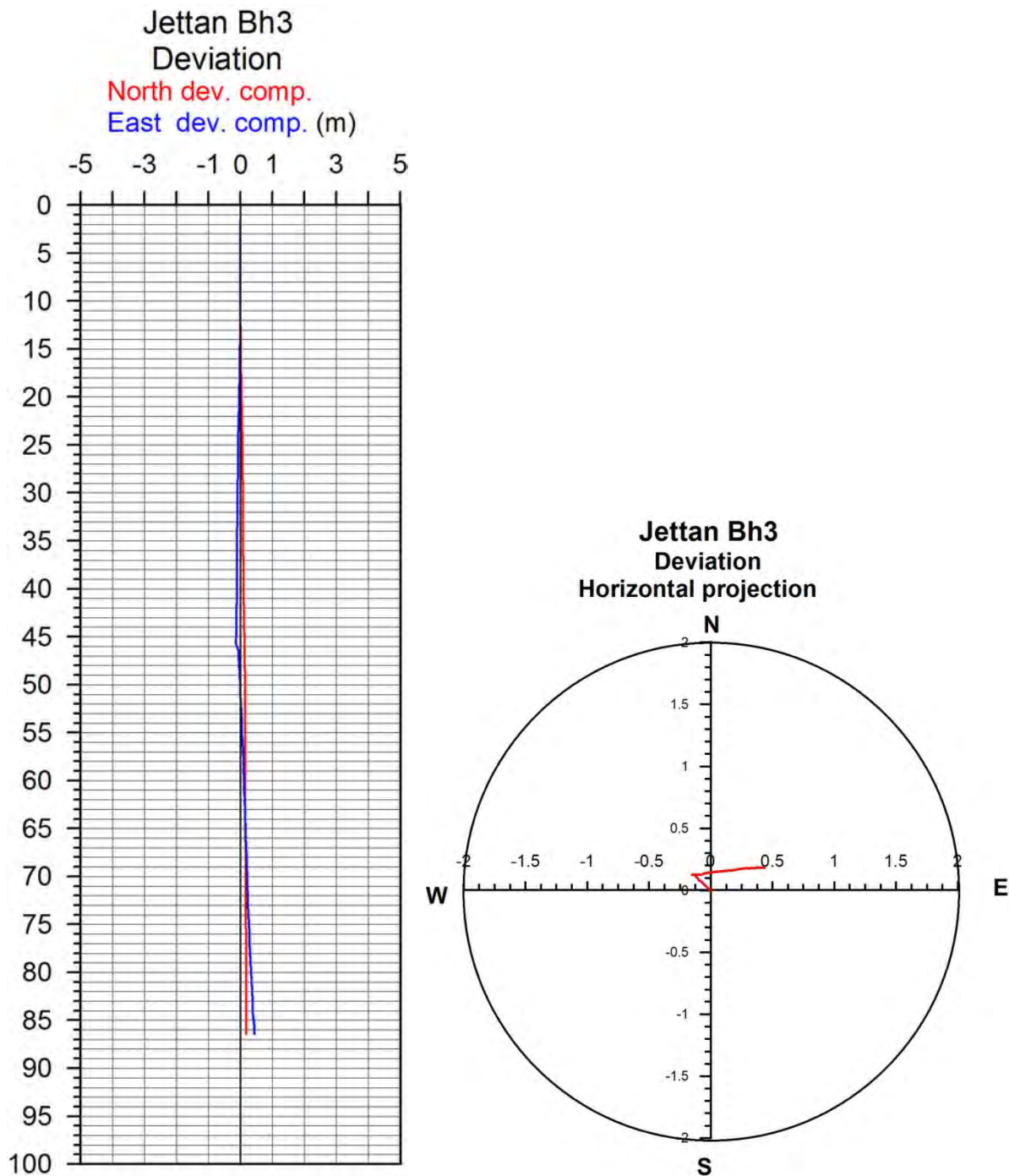
4.5 Borehullsforløp

Borehullsforløp måles som en integrert del av optisk televierer. Det beregnes øst- og nordkomponent i forhold til vertikalen. Figur 27 viser disse komponentene for Bh 2 samt horisontalprojeksjon av borehullsforløpet (retningen). Maksimum avvik i bunnen er 4.7 m mot øst. Databilag 9 viser tabell over borehullsdata.



Figur 29. Borehullsavvik Bh 2. Øst- og nordkomponent (venstre) og retning (høyre).

Figur 28 viser borehullsforløpet til Bh 3. Avviket fra vertikalen er svært lite med en øst-komponent i bunnen av hullet på 0.4 m. Hullet går mot øst. Databilag 10 viser tabell over borehullsdata.



Figur 30. Jettan Bh 3, borehullsforløp. Øst- og nordkomponent (venstre) og retning (høyre).

5. KONKLUSJON

Nordnorsk Fjellovervåkning har gjort borehullslogging med optisk televiewer i to borehull i det oppsprukne fjellpartiet Jettan på Nordnesfjellet i Kåfjord kommune i Troms. Området er under overvåkning da det er fare for ras ned i Lyngenfjorden. For å kunne kartlegge det ustabile fjellpartiet er det i 2013 boret to hull på 98 og 101 m. Hullene skal også instrumenteres for registrering av bevegelser. På grunn av sterk oppsprekking måtte boring og utstøping av hullet forgå etappevis og logging ble gjort tilsvarende. NGU har prosessert data fra loggingen med optisk televiewer.

Rapporten presenterer ulike foliasjons- og sprekkestatistikker basert på prosesserte data fra optisk televiewer.

Foliasjonens retning og vinkel er beregnet i begge hull. Beregningene for Bh 2 viser entydig gjennomsnittlig fall mot sørvest i hele hullet. Stedvis er retningen mer vestlig og stedvis mer sydlig. Fallvinkelen varierer lite, 10 - 25 °. Mellom 25 og 55 m dyp øker fallvinkelen fra ca 30 ° til 55 - 75 °. I dette området er fallretningen nesten vest, altså ned mot Lyngenfjorden. Området er også sterkt oppsprukket. Foliasjonsparallele sprekker i dette området vil være ugunstig med hensyn til fare for utglidning. Fallretningen varierer mer i Bh 3 enn i Bh 2. Ned til ca 45 m er det store variasjoner, men fallretningen er hovedsakelig mellom sør og øst. Fra 45 til 70 m er fallretningen klart mot øst. Under 70 m faller det i alle retninger, mest mot vest mens det i bunnen er fall mot nord. Fallvinkelen i Bh 3 er noenlunde konstant i hele hullet, for det meste under 15 °.

Begge hull er stedvis sterkt oppknust. Det er mange soner med helt oppknust fjell og hulrom. I Bh 2 er området 36 - 52 m spesielt sterkt oppsprukket og det er ca 25 % kjernetap fra boringen. Flere av sonene i dette området har fall mot SV og steilt fall. Det er ikke spesielt mange foliasjonsparallele sprekker og det er stor spredning i fallretning og fallvinkel. Bh 3 er mest oppsprukket ved 24 - 45 m og 75 -80 m dyp. Også i dette hullet er det stor spredning i fallretning og fallvinkel. Ved 75 - 80 m dyp er det foliasjonsparallele sprekker med vestlig fallretning (ned mot fjorden). I en knusningssone ved 80 -81 m er det påvist finstoff men det er ikke leire.

6. REFERANSER

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Robertson Geologging Ltd. 2004. Interpretation manual. RGLDIP version 6.2.

Rønning, J.S., Dalsegg, E., Heincke, B.H. Juliussen, H. & Tønnesen, J.F. 2008: Geofysiske målinger på Nordnesfjellet sommeren 2007, Kåfjord kommune, Troms. *NGU Rapport 2008.024*.

Tønnesen, J. F. & Dalsegg, E. 2004: Geofysiske målinger Nordnesfjellet, Kåfjord kommune, Troms. *NGU Rapport 2004.012*.

Zvaan, K.B. Dangla, P. & Quenardel, J.M., 2006: Berggrunnskart Kåfjord 1634 II, 1:50 000. NGU- kartserie.

Forklaring Databilag 1 og 3, foliasjon

Depth	-hulldyp
Azimuth	-fallretning
Dip	-fallvinkel
Upper Depth	-øvre grense for malt foliasjon
Lower Depth	- nedre grense for malt foliasjon
Well Diam	-hulldiameter (m)
Well Azimuth	-hullets fallretning
deviation Dev	-hulletsfallvinkel

Forklaring Databilag 2 og 4, målt foliasjon.

Til venstre, Retningsorientert (NESWN) utbrettet bilde av borehullsvegg med digitaliserte sprekker.
I midten, Nåplott som viser sprekkenes fallretning (N er opp) og fallvinkel (0 – 90 °). Åpning på åpne sprekker er beregnet.
Til høyre, To snitt fra forskjellige retninger (90 ° forskjell) som viser sprekkenes fall. Helt til høyre vises kommentar til hver sprekk.

Forklaring Databilag 5 og 7, sprekke-data

Depth	-hulldyp
Azimuth	-fallretning
Dip	-fallvinkel
Upper Depth	-øvre grense for sprekk
Lower Depth	- nedre grense for sprekk
Well Diam	-hulldiameter (m)
Well Azimuth	-hullets fallretning
deviation Dev	-hulletsfallvinkel
Thicknes	-Åpning , tykkelse av sprekk

Forklaring Databilag 6 og 8, tolket sprekkelogg.

Til venstre, Retningsorientert (NESWN) utbrettet bilde av borehullsvegg med digitaliserte sprekker.
I midten, Nåplott som viser sprekkenes fallretning (N er opp) og fallvinkel (0 – 90 °). Åpning på åpne sprekker er beregnet.
Til høyre, To snitt fra forskjellige retninger (90 ° forskjell) som viser sprekkenes fall. Helt til høyre vises kommentar til hver sprekk.

Forklaring Databilag 9 og 10, borehullsforløp

Depth,	hulldyp
North,	nordkomponent
East,	østkomponent
Down,	vertikalt dyp
Devaz ,	retning
Dev,	fallvinkel (målt fra vertikalt)

Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
3.738	332	18.2	3.723	3.754	0.098	159.31	0.61	0
4.066	245	14.3	4.054	4.078	0.098	109.76	0.69	0
4.377	237	13.1	4.366	4.388	0.098	110.3	0.74	0
4.724	257	13	4.713	4.734	0.098	97.61	0.84	0
4.842	217	16.5	4.828	4.856	0.098	96.24	0.9	0
5.265	222	20.7	5.247	5.283	0.098	90.57	0.86	0
6.022	227	19.9	6.005	6.04	0.098	92	0.71	0
6.215	234	15.9	6.201	6.228	0.098	93	0.73	0
6.328	227	19.6	6.311	6.345	0.098	92	0.74	0
6.442	235	22.7	6.422	6.462	0.098	91	0.74	0
6.788	224	20.6	6.77	6.806	0.098	89	0.75	0
7.03	220	19.7	7.013	7.047	0.098	89	0.76	0
7.382	225	17.6	7.367	7.397	0.098	86	0.77	0
7.939	224	19.4	7.923	7.956	0.098	80	0.66	0
7.994	222	14.7	7.982	8.007	0.098	77.59	0.66	0
8.14	227	20.7	8.122	8.158	0.098	77	0.64	0
8.315	208	20.4	8.297	8.333	0.098	77	0.61	0
8.982	240	14.9	8.97	8.994	0.098	84	0.73	0
9.314	214	16.8	9.299	9.328	0.098	82.81	0.74	0
9.528	233	15.3	9.515	9.541	0.098	79.95	0.74	0
9.688	240	18.1	9.673	9.703	0.098	80.68	0.75	0
11.111	229	24.1	11.09	11.132	0.098	77	0.73	0
11.234	225	22.4	11.215	11.254	0.098	75.4	0.71	0
11.415	219	18.4	11.4	11.431	0.098	77	0.71	0
11.673	229	18.2	11.658	11.689	0.098	76.61	0.71	0
11.884	228	20.5	11.866	11.901	0.098	74	0.71	0
12.094	232	24	12.073	12.115	0.098	74	0.72	0
12.302	218	21.5	12.283	12.321	0.098	73.04	0.75	0
12.681	231	16.6	12.667	12.695	0.098	74.54	0.77	0
12.867	224	19.9	12.85	12.885	0.098	75	0.77	0
12.95	207	19.5	12.933	12.967	0.098	74.08	0.77	0
13.224	196	24.9	13.201	13.246	0.098	75	0.76	0
13.321	195	22.1	13.302	13.341	0.098	76	0.77	0
13.447	197	28.6	13.42	13.473	0.098	72.3	0.77	0
14.21	277	21.9	14.191	14.229	0.098	78.89	0.75	0
14.257	277	24.8	14.235	14.279	0.098	78	0.76	0
14.408	246	16	14.395	14.421	0.098	78.92	0.76	0
14.515	213	14.9	14.502	14.527	0.098	77.21	0.78	0
14.836	203	19.4	14.819	14.853	0.098	78.28	0.79	0
14.974	215	18.1	14.958	14.989	0.098	76.39	0.79	0
15.059	191	26	15.035	15.082	0.098	74.73	0.78	0
15.222	208	21.6	15.204	15.241	0.098	72	0.78	0
15.393	209	16.8	15.379	15.407	0.098	73.78	0.79	0
15.666	203	18	15.651	15.682	0.098	74.25	0.8	0
16.014	211	21.8	15.995	16.033	0.098	75.8	0.79	0
16.228	199	16.2	16.214	16.242	0.098	72.52	0.79	0
16.348	164	13.9	16.336	16.36	0.098	73.12	0.81	0
16.61	200	29.9	16.583	16.638	0.098	73.13	0.8	0
16.709	201	18.4	16.694	16.725	0.098	73.11	0.79	0
16.788	181	20.4	16.77	16.806	0.098	74	0.78	0
16.98	194	19.8	16.963	16.998	0.098	74	0.8	0
17.869	213	17.9	17.854	17.884	0.098	74	0.79	0
18.054	224	19.1	18.038	18.07	0.098	75	0.81	0
18.79	224	14.2	18.778	18.801	0.098	73	0.84	0
18.908	220	20.6	18.89	18.926	0.098	73	0.84	0
19.106	212	13.7	19.094	19.117	0.098	73.93	0.85	0
19.589	235	18.3	19.574	19.605	0.098	73	0.83	0
19.716	204	11.2	19.707	19.725	0.098	72	0.84	0
19.814	222	10.5	19.805	19.822	0.098	71.81	0.84	0
20.478	213	9.9	20.47	20.486	0.098	72	0.84	0
20.594	238	17.3	20.58	20.609	0.098	72	0.83	0
20.622	236	16.8	20.608	20.636	0.098	72.35	0.83	0
20.748	233	14.7	20.736	20.76	0.098	72.87	0.84	0
21.723	236	14	21.712	21.735	0.098	70.62	0.83	0
23.012	206	16.9	22.998	23.027	0.098	70.17	0.87	0
23.641	212	18.3	23.626	23.657	0.098	70.26	0.87	0
23.742	231	23	23.722	23.762	0.098	71.76	0.87	0
23.807	221	25.7	23.784	23.83	0.098	71	0.88	0
24.188	238	17	24.174	24.202	0.098	72.33	0.89	0
24.386	223	16	24.373	24.4	0.098	72	0.89	0
24.508	223	18.9	24.492	24.524	0.098	72	0.9	0
24.687	222	14.3	24.675	24.698	0.098	72	0.89	0
24.751	246	13.4	24.74	24.762	0.098	72.94	0.9	0
27.227	239	29.3	27.201	27.254	0.098	107.37	1.27	0
27.512	221	38	27.475	27.548	0.098	94.3	1.78	0
27.679	202	36.7	27.643	27.715	0.098	96	1.77	0
27.727	196	29.4	27.7	27.754	0.098	96.92	1.77	0
27.881	227	30.6	27.853	27.908	0.098	95.93	1.8	0
28.052	220	29.5	28.025	28.078	0.098	95	1.7	0
28.103	227	27.8	28.079	28.128	0.098	94.01	1.58	0
28.145	223	25.5	28.123	28.168	0.098	98.11	1.65	0
28.524	217	26.1	28.501	28.547	0.098	98.6	1.73	0
28.713	217	27.4	28.689	28.738	0.098	97.82	1.77	0
28.849	206	26.4	28.825	28.873	0.098	96	1.81	0

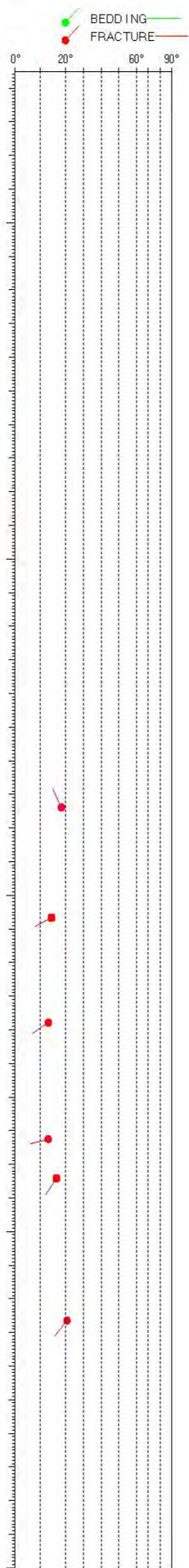
Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
29.733	192	32	29.703	29.764	0.098	97	1.8	0
29.835	214	35.8	29.8	29.869	0.098	97.61	1.77	0
30.019	224	36.2	29.984	30.054	0.098	98.3	1.78	0
30.151	210	28.3	30.125	30.177	0.098	99.12	1.78	0
30.236	222	34.6	30.203	30.268	0.098	96	1.81	0
30.333	221	29.3	30.306	30.359	0.098	96	1.83	0
30.481	229	35.9	30.447	30.515	0.098	96	1.85	0
30.641	215	34.7	30.608	30.674	0.098	95	1.86	0
30.842	232	37.3	30.806	30.877	0.098	94.25	1.88	0
30.959	231	34	30.928	30.991	0.098	94.79	1.86	0
31.08	234	32.5	31.051	31.11	0.098	95	1.85	0
31.399	231	36.3	31.365	31.433	0.098	95	1.84	0
31.577	244	47.9	31.526	31.629	0.098	94.53	1.87	0
31.768	234	48.3	31.716	31.82	0.098	94.28	1.89	0
31.989	234	37.1	31.954	32.024	0.098	94.59	1.9	0
32.056	228	38.5	32.018	32.093	0.098	93.03	1.9	0
32.176	248	40.2	32.137	32.215	0.098	94	1.91	0
32.328	235	31.2	32.3	32.356	0.098	94	1.92	0
32.35	229	37.8	32.314	32.386	0.098	94	1.93	0
32.047	235	37.1	32.012	32.082	0.098	108	2.17	0
32.151	235	36.7	32.117	32.186	0.098	108	2.19	0
32.54	228	31.4	32.511	32.569	0.098	108.55	2.15	0
32.91	235	32.2	32.881	32.939	0.098	112.37	2.38	0
33.033	241	34.3	33.001	33.065	0.098	112	2.41	0
33.135	247	41.4	33.094	33.176	0.098	113.24	2.43	0
33.324	223	42.4	33.281	33.368	0.098	113.4	2.45	0
33.454	245	41.1	33.414	33.494	0.098	113	2.49	0
33.579	247	42.1	33.537	33.621	0.098	114	2.49	0
33.851	240	39.8	33.813	33.89	0.098	103.23	2.25	0
34.04	236	40.8	34	34.081	0.098	104.73	2.26	0
34.235	252	34.6	34.204	34.266	0.098	99	2.29	0
34.492	240	41.4	34.451	34.532	0.098	99	2.35	0
34.712	240	45	34.666	34.758	0.098	104.35	2.38	0
35.003	249	44.8	34.958	35.048	0.098	100	2.46	0
35.318	241	41.9	35.277	35.359	0.098	96.28	2.54	0
35.467	248	39.6	35.43	35.505	0.098	99	2.56	0
35.587	252	42.3	35.545	35.628	0.098	102.95	2.6	0
35.763	260	38.4	35.727	35.799	0.098	110.51	2.64	0
36.053	235	44.5	36.008	36.098	0.098	98.93	2.64	0
36.269	249	42.7	36.227	36.31	0.098	97.25	2.65	0
36.855	255	44.9	36.81	36.9	0.098	95.97	2.57	0
38.369	252	67.5	38.262	38.475	0.098	86.41	2.34	0
38.525	250	65.6	38.427	38.624	0.098	103.15	2.39	0
38.755	252	55.3	38.691	38.819	0.098	92.06	3.11	0
39.824	242	57.8	39.753	39.896	0.098	97.97	2.65	0
41.558	264	67.5	41.455	41.661	0.098	90.08	2.94	0
41.793	237	63.4	41.703	41.882	0.098	92.22	2.64	0
41.017	256	63.8	40.927	41.106	0.098	93	2.65	0
41.183	249	69	41.071	41.296	0.098	92	2.65	0
44.521	289	54	44.459	44.583	0.098	94.67	2.4	0
44.97	265	59.1	44.896	45.044	0.098	94.94	2.63	0
46.615	260	73.3	46.48	46.749	0.098	95.79	3.39	0
47.208	272	73.2	47.075	47.341	0.098	95.92	3.46	0
52.162	254	68.7	52.056	52.268	0.098	92	3.69	0
52.44	243	61.5	52.361	52.519	0.098	88	3.69	0
53.358	210	22.9	53.339	53.377	0.098	85.08	3.85	0
53.403	200	21.8	53.384	53.421	0.098	85.97	3.86	0
53.687	213	10.8	53.68	53.695	0.098	83.33	3.81	0
53.78	223	12.8	53.771	53.789	0.098	83	3.88	0
54.018	217	11.8	54.01	54.027	0.098	82.71	4.03	0
54.236	213	11.5	54.228	54.244	0.098	82	4.13	0
54.51	229	10.4	54.503	54.516	0.098	82	4.23	0
54.782	231	14.6	54.772	54.792	0.098	81	4.45	0
55.154	231	10.6	55.148	55.16	0.098	80.01	4.55	0
55.671	222	13.3	55.663	55.68	0.098	76	4.7	0
56.384	268	24.6	56.366	56.402	0.098	74	4.68	0
56.484	270	32.3	56.458	56.51	0.098	75	4.65	0
56.772	99	32	56.736	56.808	0.098	72.1	4.57	0
56.8	95	28	56.769	56.831	0.098	73.78	4.58	0
57.209	262	8.1	57.206	57.213	0.098	74.89	4.56	0
57.372	256	13.3	57.365	57.38	0.098	73.64	4.58	0
57.52	260	9.6	57.516	57.525	0.098	73.67	4.54	0
57.669	261	8.5	57.665	57.672	0.098	72	4.43	0
57.86	237	19	57.847	57.873	0.098	72	4.33	0
57.915	258	11.5	57.908	57.921	0.098	72	4.3	0
58.069	226	13	58.061	58.077	0.098	71	4.15	0
58.322	228	9.5	58.316	58.327	0.098	73	3.76	0
58.49	203	12.7	58.48	58.499	0.098	76	3.7	0
58.66	264	13.2	58.652	58.669	0.098	76	3.7	0
58.729	233	15.6	58.719	58.74	0.098	76.51	3.71	0
58.843	131	4.1	58.837	58.849	0.098	77.78	3.75	0
59.052	245	9.5	59.047	59.057	0.098	79.97	3.84	0
59.123	209	9.9	59.116	59.13	0.098	80	3.91	0
59.277	192	10.7	59.269	59.286	0.098	79.47	4.2	0
59.325	215	7.9	59.32	59.33	0.098	80	4.24	0
59.547	189	12	59.537	59.557	0.098	80.86	4.27	0

Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
59.693	213	9.2	59.687	59.699	0.098	80	4.26	0
59.799	224	10.9	59.793	59.806	0.098	80.09	4.29	0
59.895	227	16.7	59.883	59.907	0.098	80	4.3	0
59.497	232	12.6	59.489	59.504	0.098	81	4.27	0
59.593	239	11.4	59.587	59.6	0.098	80.21	4.29	0
59.746	211	12.1	59.737	59.754	0.098	80.83	4.28	0
59.943	211	14.4	59.933	59.954	0.098	81	4.38	0
60.043	218	16.2	60.031	60.054	0.098	81	4.39	0
60.136	213	15.4	60.124	60.147	0.098	81	4.43	0
60.243	223	12.2	60.235	60.25	0.098	80.23	4.43	0
60.327	202	13.5	60.317	60.337	0.098	80	4.4	0
60.433	202	11.8	60.425	60.442	0.098	80	4.4	0
60.713	206	10.8	60.705	60.721	0.098	80.18	4.55	0
60.75	211	11.1	60.742	60.758	0.098	80.92	4.51	0
60.878	205	15	60.867	60.889	0.098	80	4.48	0
60.996	222	14	60.986	61.005	0.098	80	4.46	0
61.1	212	13.5	61.09	61.11	0.098	80	4.43	0
61.391	204	13.9	61.381	61.401	0.098	79	4.44	0
61.525	222	13.9	61.516	61.535	0.098	79.43	4.41	0
61.672	216	12.3	61.663	61.68	0.098	79	4.44	0
61.832	210	10.9	61.824	61.839	0.098	79	4.47	0
62.109	232	13.6	62.101	62.118	0.098	79	4.47	0
62.369	198	10.9	62.361	62.378	0.098	78	4.5	0
62.595	173	13.3	62.583	62.607	0.098	78	4.5	0
62.825	161	9.6	62.815	62.835	0.098	79	4.47	0
63.141	195	15.1	63.129	63.153	0.098	79	4.41	0
63.523	195	12.5	63.513	63.532	0.098	79	4.4	0
63.773	191	11.2	63.764	63.782	0.098	78	4.4	0
63.849	182	8.6	63.842	63.857	0.098	78	4.39	0
64.217	192	8.3	64.211	64.224	0.098	77	4.43	0
64.23	198	7.6	64.224	64.235	0.098	77	4.43	0
64.629	188	9	64.622	64.636	0.098	77	4.44	0
64.867	189	9	64.859	64.874	0.098	78	4.43	0
65.492	207	7.5	65.487	65.497	0.098	78	4.34	0
65.686	241	12.2	65.679	65.693	0.098	78	4.3	0
65.899	194	5.5	65.895	65.904	0.098	78	4.3	0
66.311	193	5.1	66.307	66.315	0.098	77	4.35	0
66.438	165	6.5	66.431	66.445	0.098	77	4.36	0
66.652	136	5.8	66.644	66.659	0.098	77	4.36	0
66.791	174	6	66.785	66.797	0.098	76	4.36	0
66.971	164	5.3	66.965	66.977	0.098	74.34	4.32	0
67.218	176	7.8	67.211	67.225	0.098	74.71	4.28	0
67.412	205	7.2	67.407	67.417	0.098	76.15	4.29	0
67.614	193	7.9	67.608	67.62	0.098	77.2	4.28	0
67.677	186	7.1	67.671	67.683	0.098	77.54	4.27	0
67.781	205	11.7	67.773	67.79	0.098	77	4.29	0
67.813	179	24	67.792	67.835	0.098	77	4.28	0
67.833	180	27.9	67.808	67.859	0.098	77	4.29	0
67.916	321	12.4	67.906	67.926	0.098	77.24	4.29	0
67.934	327	12.4	67.924	67.944	0.098	77.6	4.3	0
67.952	296	3.2	67.95	67.954	0.098	77.96	4.31	0
67.962	155	1.1	67.958	67.966	0.098	78	4.31	0
67.998	193	3.9	67.995	68.002	0.098	78	4.28	0
68.221	196	5.5	68.217	68.226	0.098	78	4.28	0
68.298	156	4.4	68.292	68.303	0.098	78	4.28	0
68.365	176	4.4	68.36	68.37	0.098	78	4.27	0
68.687	215	10.3	68.68	68.693	0.098	77	4.14	0
68.844	190	9.1	68.837	68.852	0.098	78.81	4.15	0
69.46	184	6.8	69.454	69.467	0.098	79	4.12	0
69.578	190	6.7	69.572	69.583	0.098	80	4.25	0
69.834	176	8.7	69.826	69.842	0.098	78.4	4.23	0
69.973	154	4.9	69.967	69.979	0.098	79	4.23	0
70.102	226	5.7	70.099	70.105	0.098	78	4.14	0
70.268	211	6.3	70.264	70.272	0.098	78.28	4.18	0
70.484	176	6.2	70.478	70.49	0.098	77	4.08	0
70.676	177	5.3	70.671	70.682	0.098	77.55	4	0
71.063	166	5.2	71.057	71.068	0.098	75.17	4.04	0
71.191	158	3.5	71.186	71.196	0.098	75	4.05	0
71.546	222	6.2	71.543	71.549	0.098	75	4.06	0
71.598	198	8.7	71.592	71.604	0.098	75	4.06	0
71.893	55	1.6	71.888	71.897	0.098	76	4.02	0
72	301	1.5	71.997	72.003	0.098	76	3.98	0
72.039	110	4.4	72.032	72.046	0.098	76	3.98	0
72.121	192	6	72.116	72.126	0.098	77.33	4	0
72.268	190	4.9	72.263	72.272	0.098	78	4.01	0
72.509	237	7.2	72.505	72.512	0.098	78	4.04	0
72.545	183	12.3	72.534	72.555	0.098	78	4.06	0
72.584	185	10.9	72.575	72.594	0.098	78	4.06	0
72.678	208	8.3	72.672	72.684	0.098	78	4.07	0
72.9	181	11.1	72.89	72.909	0.098	78	4.12	0
72.955	207	14	72.944	72.965	0.098	78.01	4.13	0
73.259	174	12	73.248	73.269	0.098	77	4.13	0
73.34	143	10.1	73.329	73.35	0.098	76.29	4.13	0
73.404	125	4.3	73.398	73.411	0.098	76	4.11	0

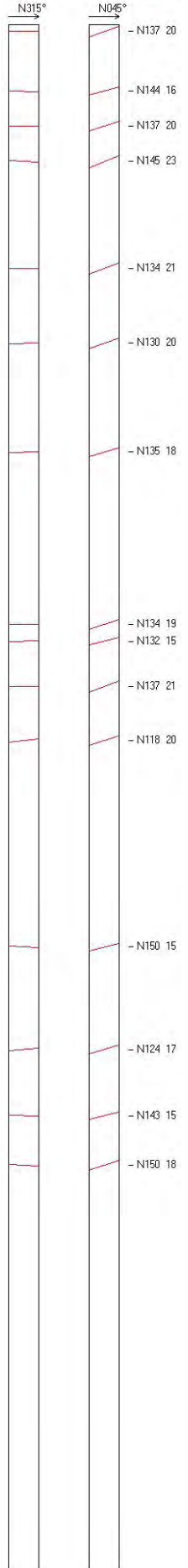
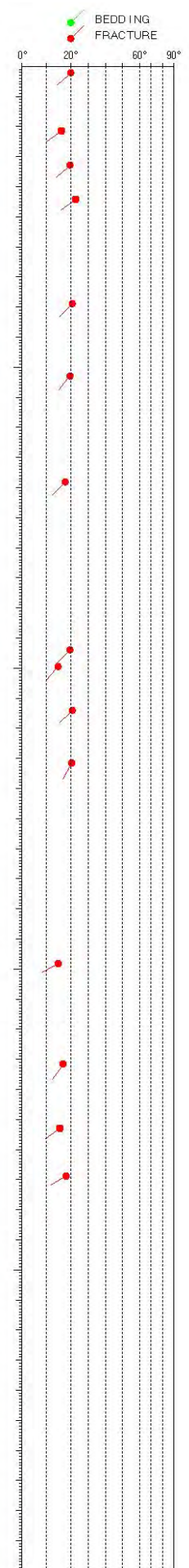
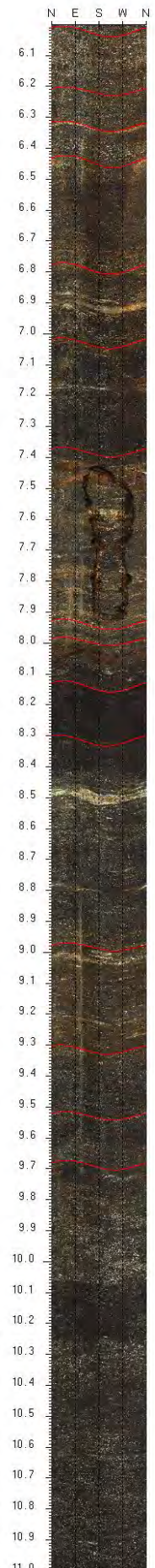
Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
73.556	142	6.2	73.549	73.564	0.098	76	4.1	0
73.577	149	5.8	73.57	73.584	0.098	76	4.1	0
73.661	175	6.9	73.655	73.668	0.098	76.14	4.12	0
73.81	117	4.9	73.803	73.817	0.098	76.88	4.1	0
73.917	114	4.9	73.91	73.924	0.098	76	4.11	0
73.974	117	3	73.968	73.979	0.098	76	4.12	0
74.187	121	4.4	74.18	74.194	0.098	77	4.06	0
74.286	45	3.8	74.279	74.293	0.098	76.36	4.08	0
74.646	148	8.9	74.636	74.655	0.098	76	4.07	0
74.676	162	8.9	74.667	74.684	0.098	76	4.08	0
74.871	73	5.9	74.863	74.88	0.098	75	4.07	0
75.728	216	16.1	75.716	75.739	0.098	74.53	3.91	0
76.034	225	35.6	76.003	76.065	0.098	73	3.89	0
76.539	204	9.7	76.533	76.546	0.098	74	4.11	0
76.707	230	8.1	76.703	76.711	0.098	75	4.1	0
76.883	211	10.4	76.876	76.889	0.098	74	4.11	0
77.045	210	15.6	77.034	77.056	0.098	73	4.04	0
77.126	210	18.8	77.112	77.14	0.098	73.88	4.05	0
77.228	230	12.2	77.22	77.235	0.098	73.52	4	0
77.307	246	13.4	77.299	77.315	0.098	73	4	0
78.687	193	18.1	78.673	78.702	0.098	72.66	4.18	0
78.744	208	14	78.734	78.753	0.098	73	4.18	0
79.182	243	20.3	79.167	79.196	0.098	73	4.23	0
79.354	231	10.3	79.348	79.36	0.098	74	4.24	0
79.517	225	18.5	79.504	79.53	0.098	72.73	4.24	0
79.577	224	15.7	79.567	79.588	0.098	72	4.25	0
79.754	230	14	79.745	79.763	0.098	72.99	4.28	0
79.81	228	10.2	79.804	79.816	0.098	74	4.28	0
79.893	224	10.5	79.887	79.9	0.098	74	4.3	0
79.518	227	21.2	79.502	79.533	0.098	73	4.26	0
79.604	219	23.1	79.586	79.621	0.098	72.01	4.26	0
79.689	220	17.6	79.677	79.701	0.098	70.7	4.29	0
79.851	232	13.7	79.842	79.859	0.098	74	4.28	0
79.989	223	18.1	79.976	80.002	0.098	73.7	4.29	0
80.153	213	31	80.127	80.178	0.098	71	4.28	0
80.201	206	22.1	80.183	80.218	0.098	70.07	4.28	0
80.336	164	2.9	80.332	80.341	0.098	72.65	4.28	0
80.459	208	10.1	80.453	80.466	0.098	73	4.27	0
80.657	200	9.3	80.651	80.664	0.098	74.94	4.23	0
80.782	212	15.2	80.772	80.793	0.098	74.43	4.24	0
80.914	227	15.2	80.904	80.924	0.098	73	4.23	0
81.077	187	21.7	81.059	81.095	0.098	72	4.21	0
81.164	190	20.4	81.147	81.18	0.098	72	4.2	0
81.219	189	25.3	81.197	81.24	0.098	72	4.2	0
81.313	219	18.5	81.3	81.326	0.098	71.83	4.21	0
81.545	203	11.7	81.537	81.553	0.098	72	4.23	0
81.641	201	15.5	81.629	81.652	0.098	72	4.3	0
81.764	195	14.4	81.753	81.775	0.098	72	4.3	0
81.851	196	20	81.835	81.866	0.098	71.07	4.32	0
82.197	206	20.7	82.181	82.213	0.098	71	4.32	0
82.456	196	15	82.444	82.467	0.098	70	4.35	0
82.548	205	14.5	82.538	82.558	0.098	69.11	4.34	0
82.577	202	15.6	82.566	82.588	0.098	70.38	4.33	0
82.789	273	32.1	82.763	82.815	0.098	72	4.33	0
83.214	218	22.7	83.196	83.231	0.098	74	4.21	0
83.323	207	23.9	83.304	83.342	0.098	71.63	4.21	0
83.444	217	21.4	83.428	83.46	0.098	74	4.19	0
83.59	194	15.5	83.578	83.602	0.098	73	4.23	0
83.755	213	18.1	83.742	83.768	0.098	72.02	4.19	0
83.991	224	11.2	83.985	83.998	0.098	71	4.16	0
84.068	225	14.8	84.058	84.078	0.098	71	4.17	0
84.142	211	13.7	84.133	84.152	0.098	71	4.14	0
84.346	218	20.5	84.331	84.361	0.098	71	4.15	0
84.464	225	19.9	84.45	84.479	0.098	70.79	4.18	0
84.611	223	20.7	84.596	84.626	0.098	71	4.25	0
84.723	223	17.6	84.711	84.735	0.098	71.62	4.21	0
84.852	224	20.9	84.837	84.867	0.098	72	4.25	0
85.217	206	10.7	85.21	85.224	0.098	71	4.29	0
85.299	191	7.5	85.294	85.305	0.098	71	4.29	0
85.388	167	11.5	85.378	85.398	0.098	71	4.25	0
85.759	217	14.9	85.748	85.769	0.098	71.09	4.22	0
85.844	204	15.5	85.833	85.855	0.098	71.2	4.21	0
85.948	193	15.7	85.936	85.96	0.098	70	4.21	0
86.049	205	15.1	86.038	86.06	0.098	70.9	4.2	0
86.145	205	15.1	86.134	86.156	0.098	70	4.22	0
86.284	218	11.7	86.277	86.291	0.098	71	4.18	0
86.379	212	13.1	86.37	86.388	0.098	71	4.19	0
86.501	205	10.6	86.494	86.508	0.098	70	4.21	0
86.672	212	12.9	86.663	86.681	0.098	70	4.21	0
86.797	216	12.1	86.789	86.804	0.098	70	4.21	0
86.91	217	17.3	86.898	86.923	0.098	70	4.2	0
87.007	202	13.1	86.998	87.017	0.098	70	4.21	0
87.137	210	13.6	87.128	87.146	0.098	69.34	4.2	0
87.262	182	15.7	87.249	87.275	0.098	70.16	4.16	0
87.499	202	13	87.49	87.508	0.098	70.9	4.16	0
87.645	192	11.8	87.636	87.654	0.098	70	4.15	0

Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
87.734	193	13.9	87.724	87.745	0.098	69	4.13	0
87.814	180	9.5	87.807	87.822	0.098	69	4.14	0
87.953	144	8.3	87.944	87.962	0.098	69	4.19	0
88.078	192	7.1	88.072	88.083	0.098	72.59	4.24	0
88.234	193	12.1	88.225	88.244	0.098	71.39	4.29	0
88.348	199	16	88.336	88.36	0.098	71.88	4.32	0
88.49	206	16.6	88.478	88.502	0.098	71.27	4.31	0
88.526	201	24.9	88.506	88.546	0.098	71	4.3	0
88.584	216	11.9	88.576	88.591	0.098	71	4.3	0
88.639	139	2.6	88.634	88.644	0.098	71.7	4.29	0
88.731	205	27.7	88.709	88.754	0.098	71.45	4.3	0
88.841	214	16.2	88.83	88.852	0.098	71	4.28	0
88.988	220	25.1	88.969	89.007	0.098	70	4.23	0
89.041	218	17.4	89.028	89.053	0.098	70	4.22	0
89.148	213	23.8	89.13	89.167	0.098	69.11	4.2	0
89.226	215	21	89.21	89.241	0.098	69	4.22	0
90.121	222	25.4	90.101	90.14	0.098	72.67	4.31	0
90.614	185	18.2	90.599	90.629	0.098	70.81	4.21	0
90.791	184	18.3	90.776	90.805	0.098	68.27	4.17	0
90.924	200	21.2	90.908	90.941	0.098	66.6	4.21	0
91.01	198	24.6	90.99	91.029	0.098	64.65	4.29	0
90.082	199	26.4	90.06	90.104	0.098	74	4.26	0
90.163	200	24.5	90.143	90.183	0.098	74	4.26	0
90.593	192	15.9	90.581	90.605	0.098	72	4.17	0
90.756	181	16.8	90.742	90.77	0.098	69.96	4.15	0
90.859	180	24.3	90.838	90.88	0.098	68	4.16	0
90.958	195	22.3	90.94	90.976	0.098	67	4.18	0
91.08	180	20.6	91.063	91.098	0.098	66	4.22	0
91.476	204	16.4	91.464	91.488	0.098	67	4.33	0
91.614	196	20.2	91.598	91.63	0.098	68	4.35	0
91.891	210	12.8	91.883	91.9	0.098	69	4.35	0
91.965	242	13.2	91.957	91.972	0.098	69	4.35	0
92.033	293	9.9	92.026	92.039	0.098	69	4.3	0
92.119	306	9	92.113	92.126	0.098	69	4.33	0
92.343	298	10.8	92.336	92.35	0.098	69	4.36	0
92.403	298	11.7	92.395	92.411	0.098	69	4.4	0
92.625	264	7.8	92.622	92.628	0.098	68	4.46	0
92.746	210	7.4	92.742	92.75	0.098	69	4.48	0
92.928	239	10.4	92.923	92.934	0.098	69	4.56	0
93.014	254	11	93.009	93.02	0.098	69	4.6	0
93.128	180	12.2	93.118	93.138	0.098	69	4.61	0
93.185	142	19	93.166	93.203	0.098	67.16	4.61	0
93.407	258	19.9	93.393	93.42	0.098	68	4.62	0
93.498	231	18	93.486	93.51	0.098	67.11	4.55	0
93.608	230	16.3	93.597	93.618	0.098	68.07	4.55	0
93.686	232	14.3	93.677	93.695	0.098	68.36	4.58	0
93.825	238	11	93.819	93.831	0.098	69	4.59	0
93.942	254	16.9	93.931	93.952	0.098	69	4.6	0
94.048	240	13.9	94.04	94.056	0.098	68	4.62	0
94.203	263	12.4	94.196	94.21	0.098	68	4.66	0
94.348	252	14.9	94.339	94.356	0.098	70.74	4.7	0
94.481	252	11.5	94.475	94.487	0.098	70	4.73	0
94.569	231	9.6	94.564	94.573	0.098	70	4.75	0
94.652	221	14.7	94.643	94.662	0.098	70.96	4.75	0
94.738	231	14.7	94.729	94.747	0.098	71	4.76	0
94.844	236	18.2	94.832	94.856	0.098	71	4.8	0
94.995	255	16.1	94.985	95.004	0.098	70.81	4.81	0
95.128	236	13	95.121	95.135	0.098	71.52	4.83	0
95.214	246	19.9	95.201	95.227	0.098	70.2	4.83	0
95.303	244	19.1	95.291	95.316	0.098	71.98	4.8	0
95.532	284	14	95.523	95.541	0.098	70	4.86	0
95.63	253	15.3	95.621	95.639	0.098	69.47	4.86	0
95.742	239	20.2	95.729	95.756	0.098	68.24	4.84	0
95.815	234	21.1	95.8	95.829	0.098	69.78	4.88	0
95.966	202	13	95.957	95.975	0.098	69.51	4.94	0
96.085	207	22.4	96.068	96.102	0.098	70.62	4.97	0
96.249	340	9.5	96.239	96.258	0.098	68	5	0
96.502	267	40.5	96.467	96.537	0.098	69	5.03	0
96.572	280	36.1	96.542	96.603	0.098	69.63	5.03	0
96.665	236	23.9	96.648	96.682	0.098	70	5.04	0
97.005	247	11.3	96.999	97.01	0.098	71	4.98	0
97.152	242	11.5	97.146	97.157	0.098	73	4.95	0
97.279	147	12	97.267	97.291	0.098	72	4.97	0
97.521	334	5.3	97.515	97.527	0.098	71	4.96	0

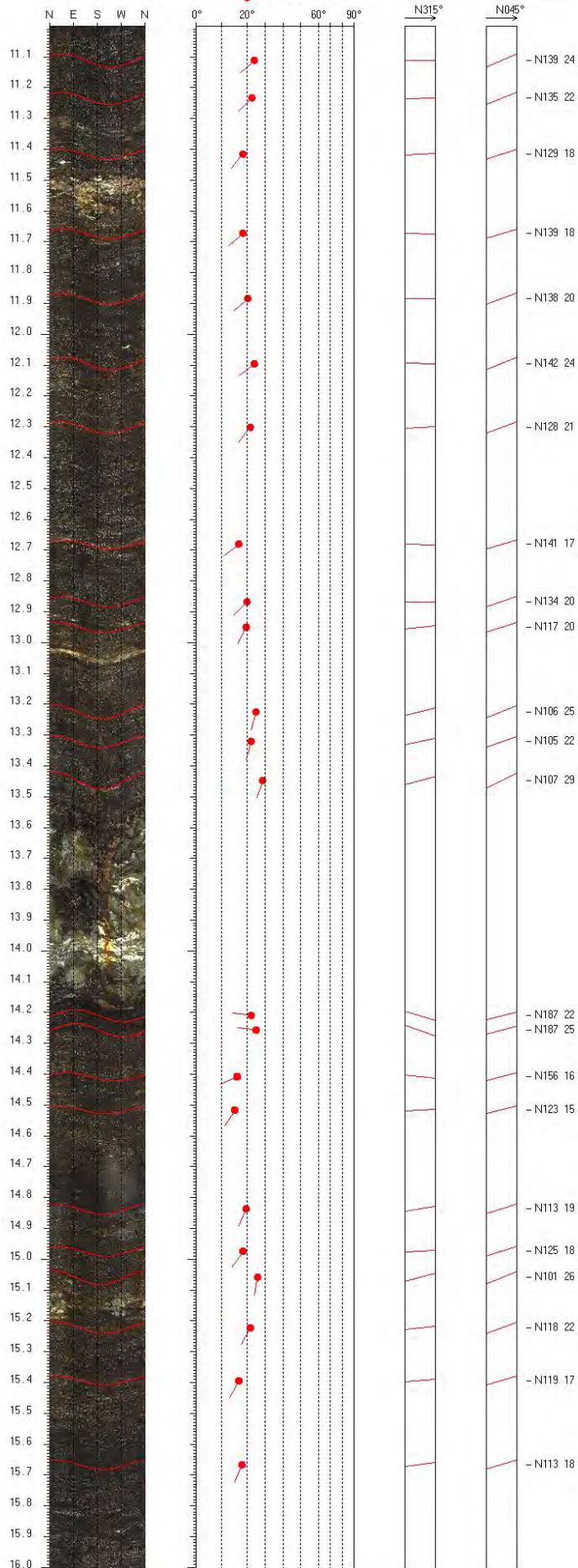
Bh2 1.550-6.000m 1/10



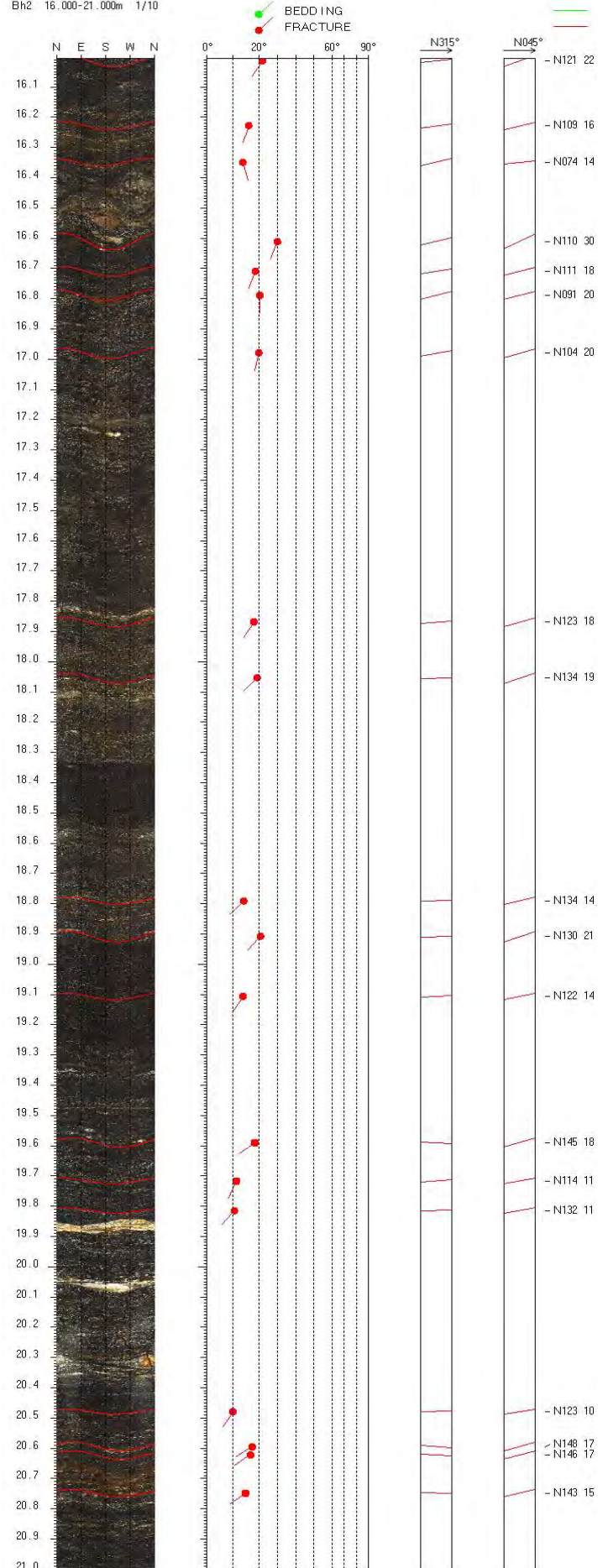
Bh2 6.000-11.000m 1/10



Bh2 11.000-16.000m 1/10

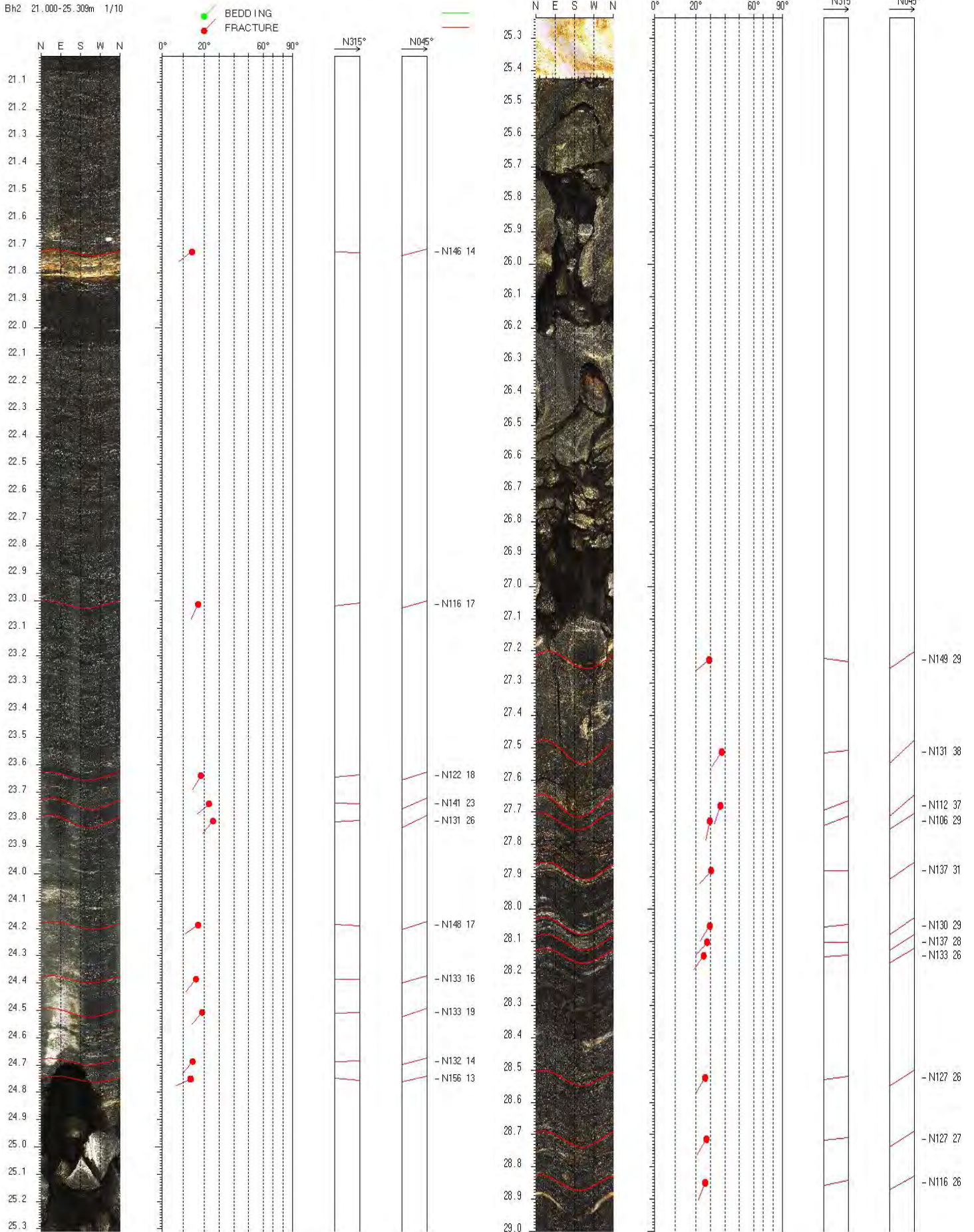


Bh2 16.000-21.000m 1/10

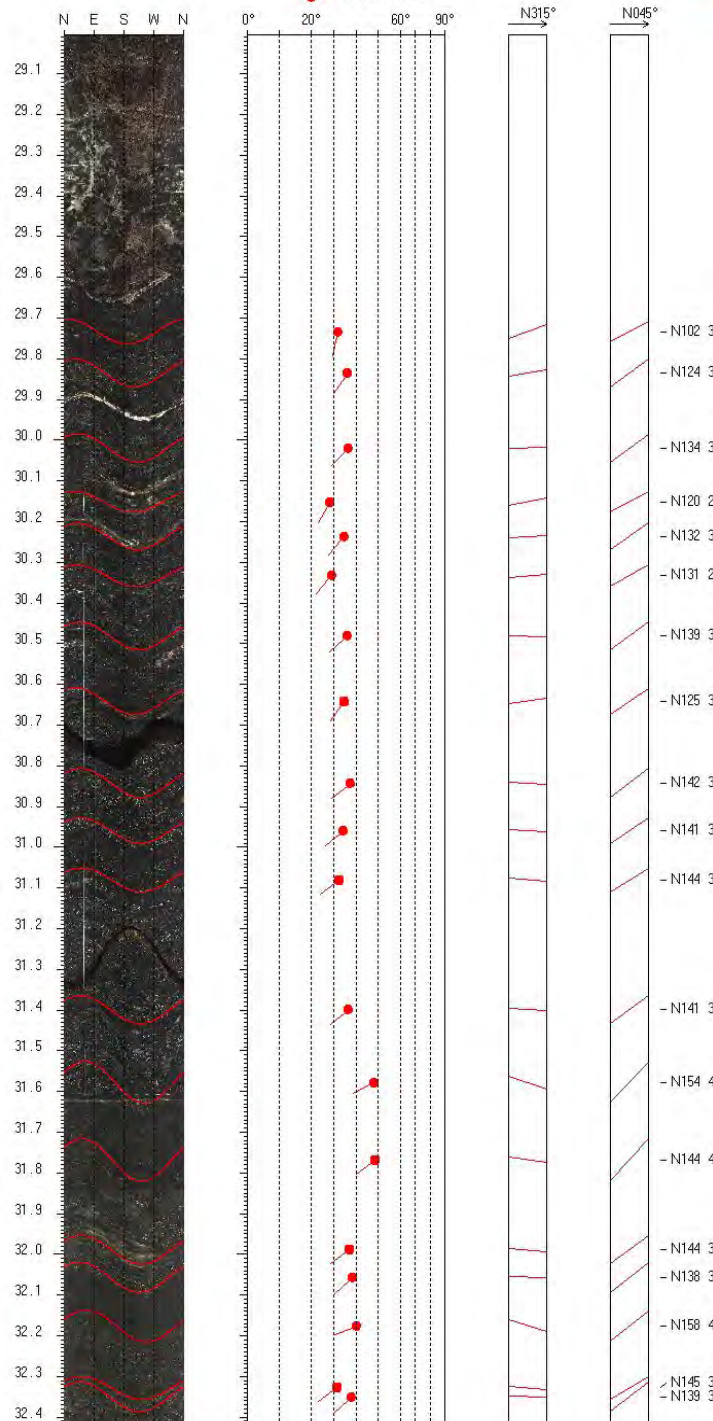


Bh2 25.230-29.000m 1/10

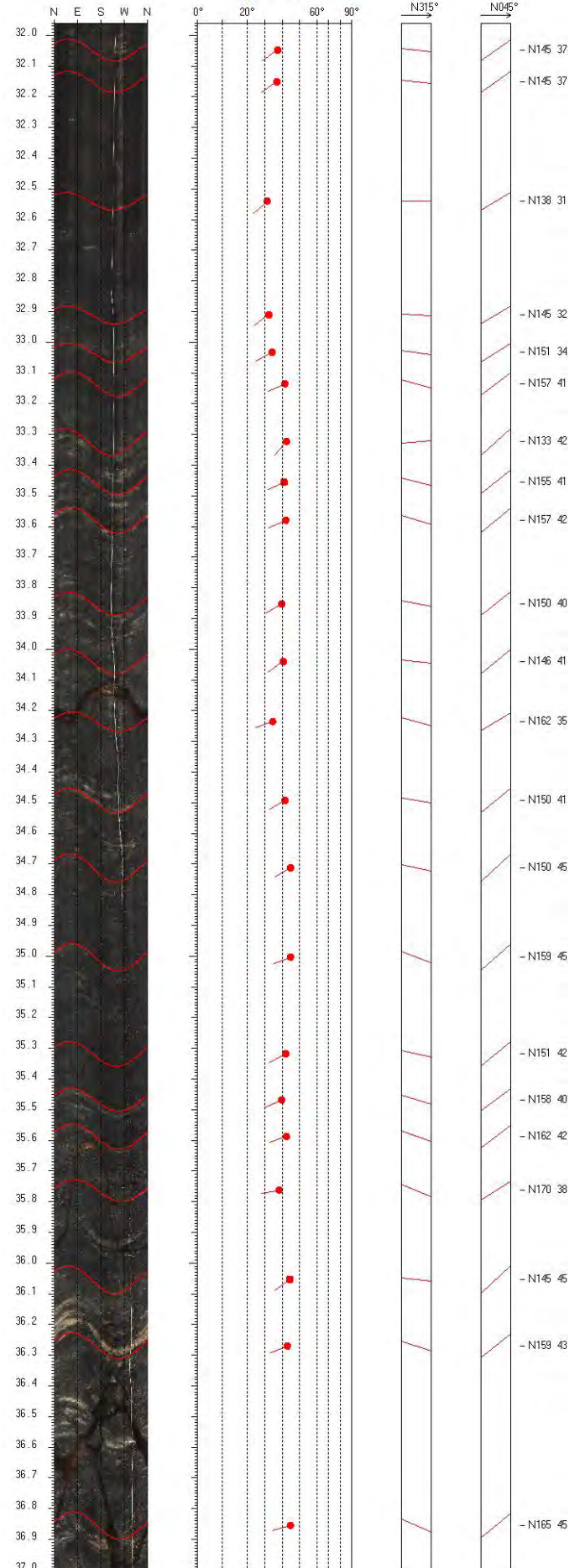
Bh2 21.000-25.309m 1/10



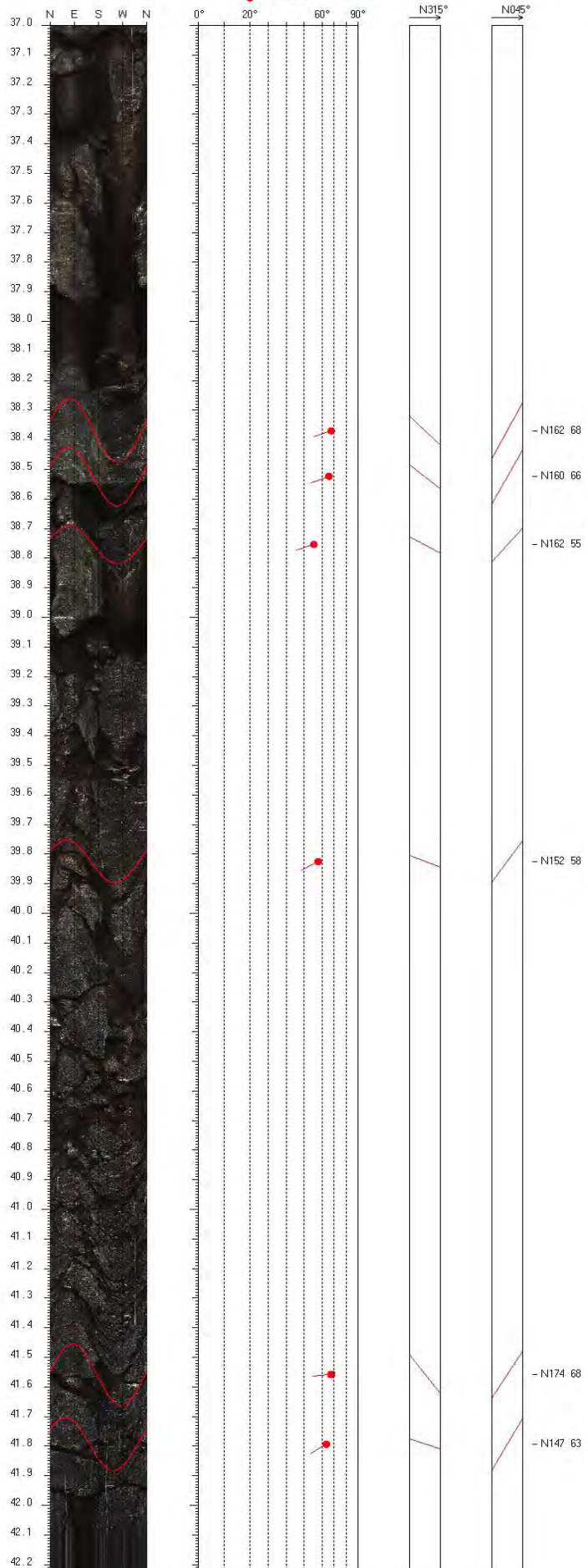
Bh2 29.000-32.419m 1/10



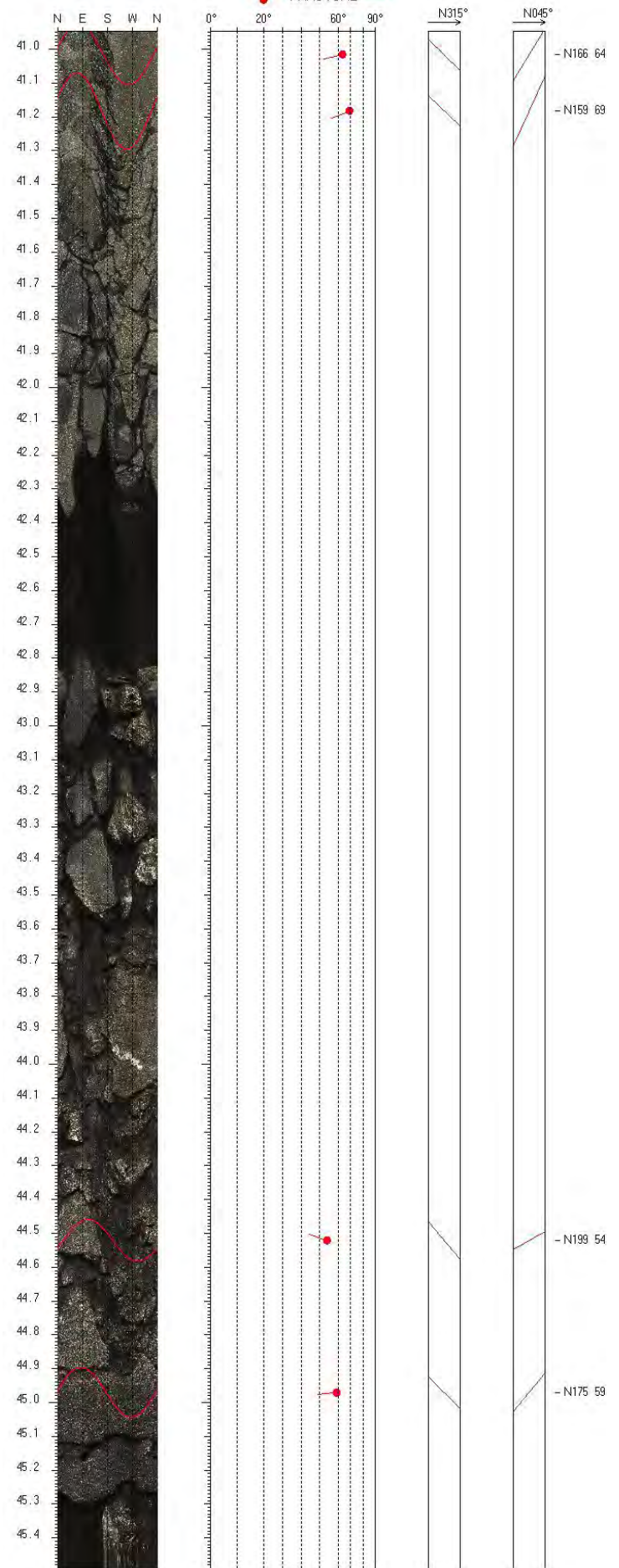
Bh2 31.960-37.000m 1/10



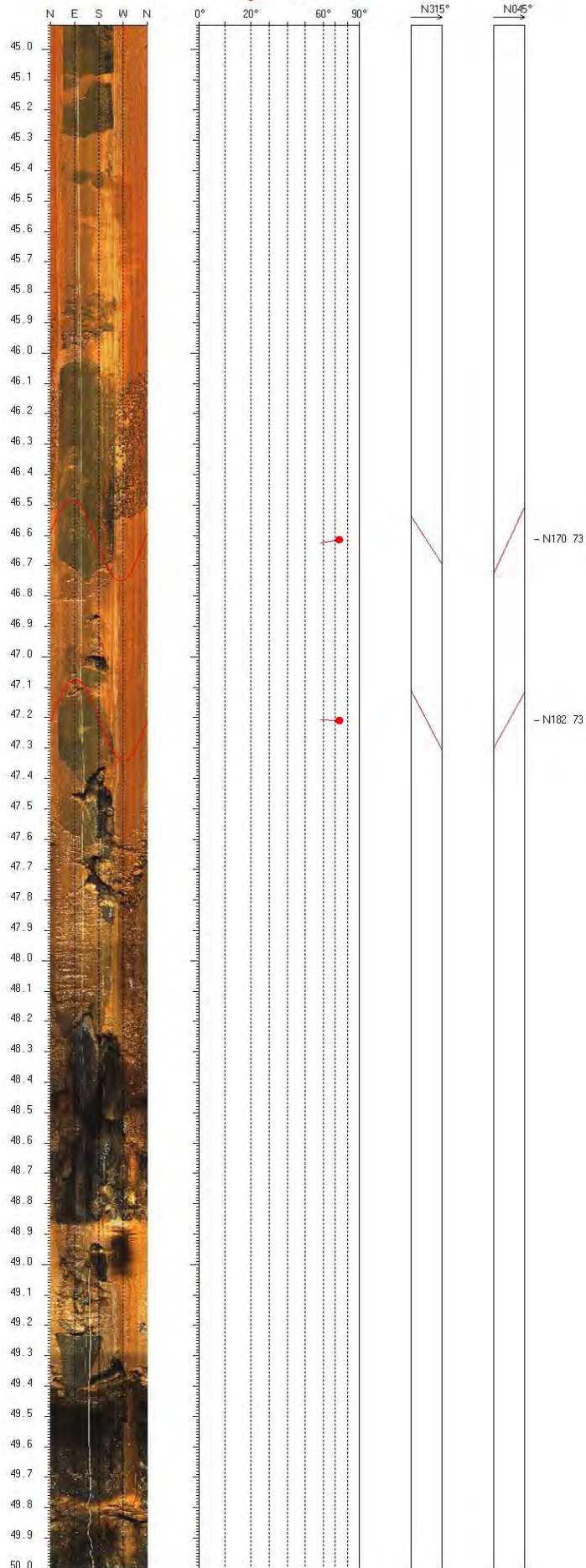
Bh2 37.000-42.220m 1/10



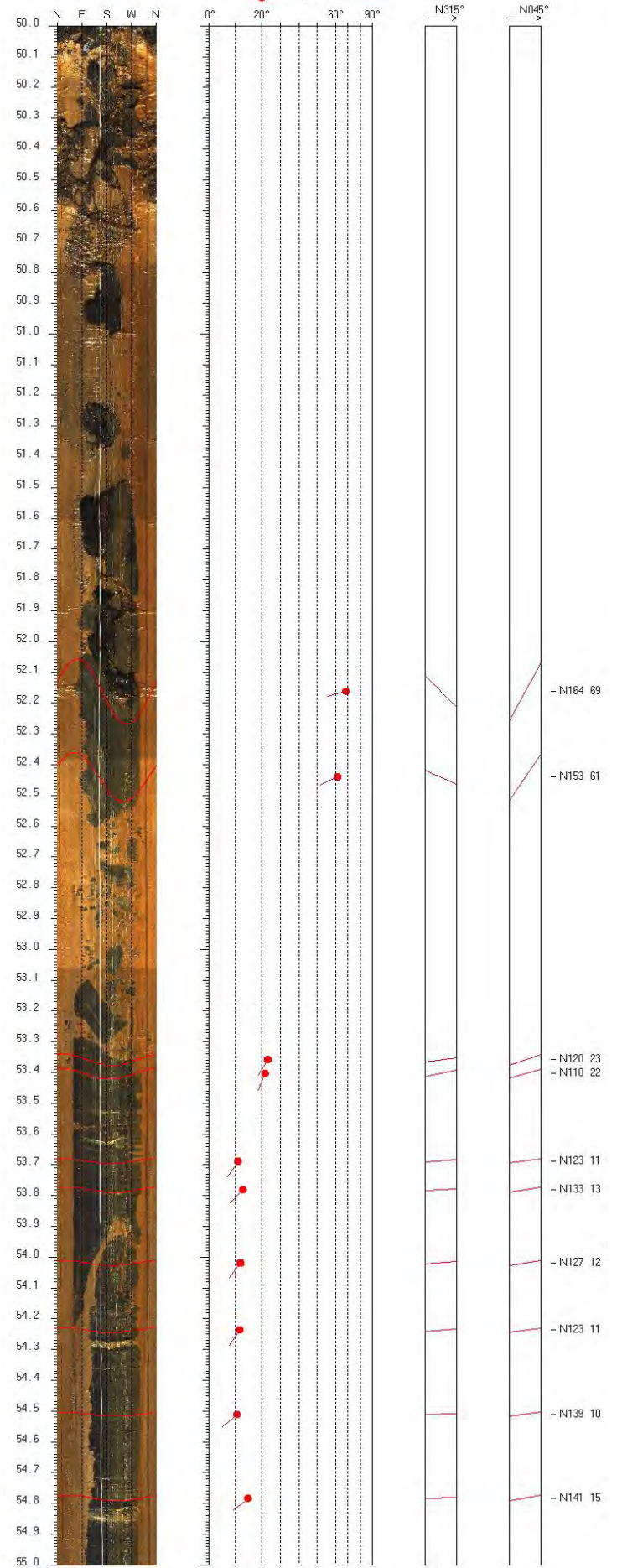
Bh2 40.940-45.489m 1/10



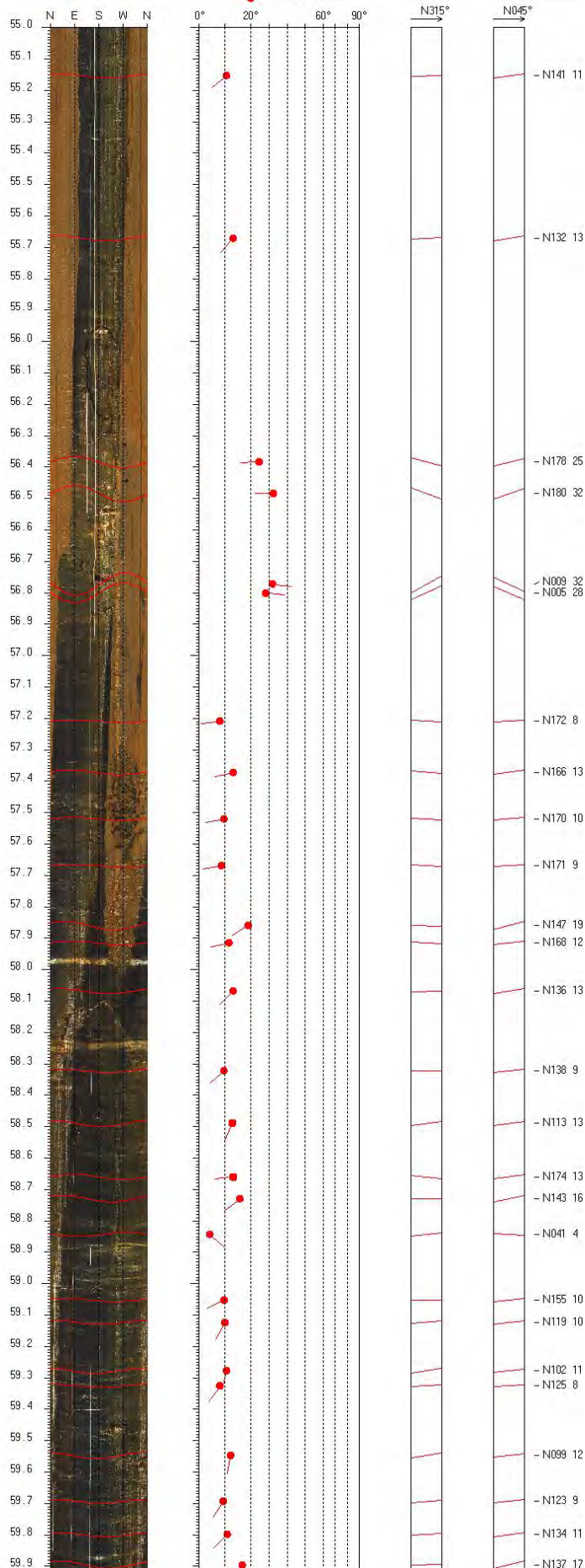
Bh2 44.920-50.000m 1/10



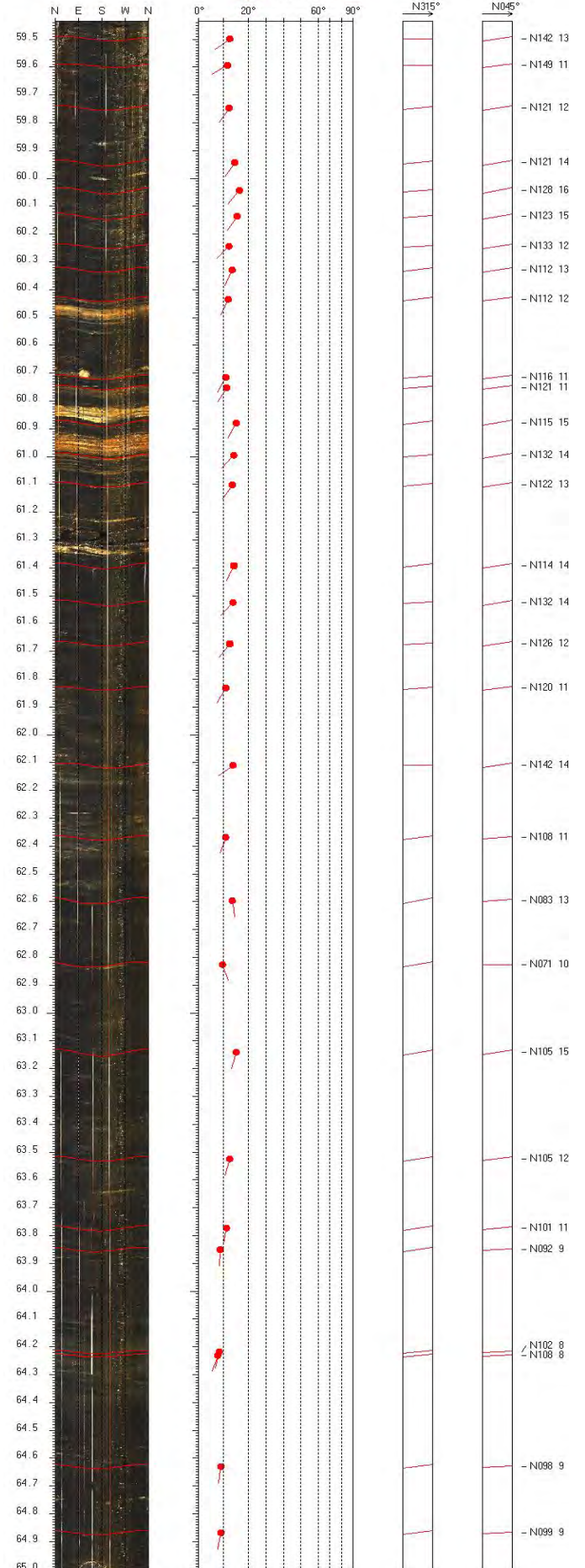
Bh2 50.000-55.000m 1/10



Bh2 55.000-59.910m 1/10

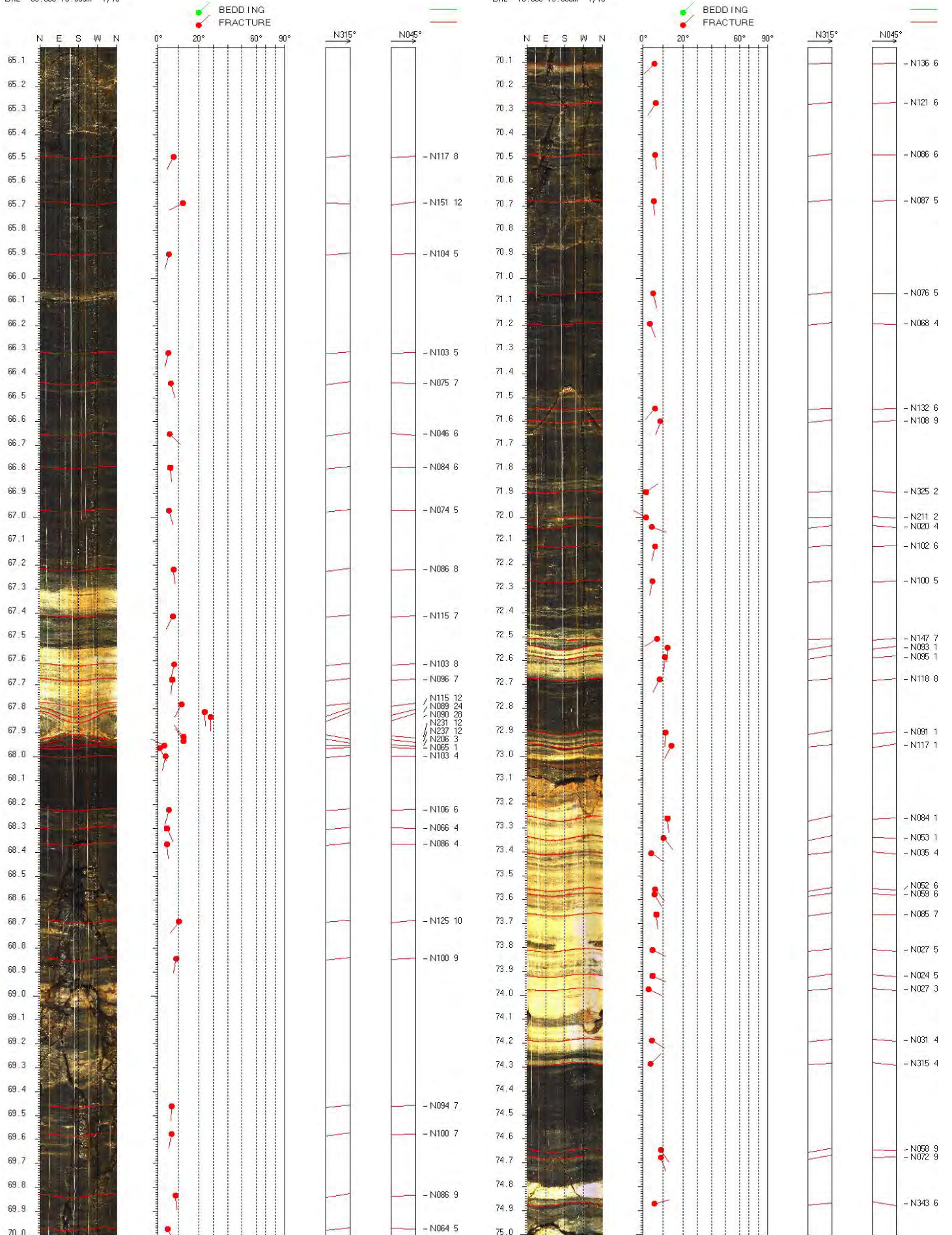


Bh2 59.430-65.000m 1/10

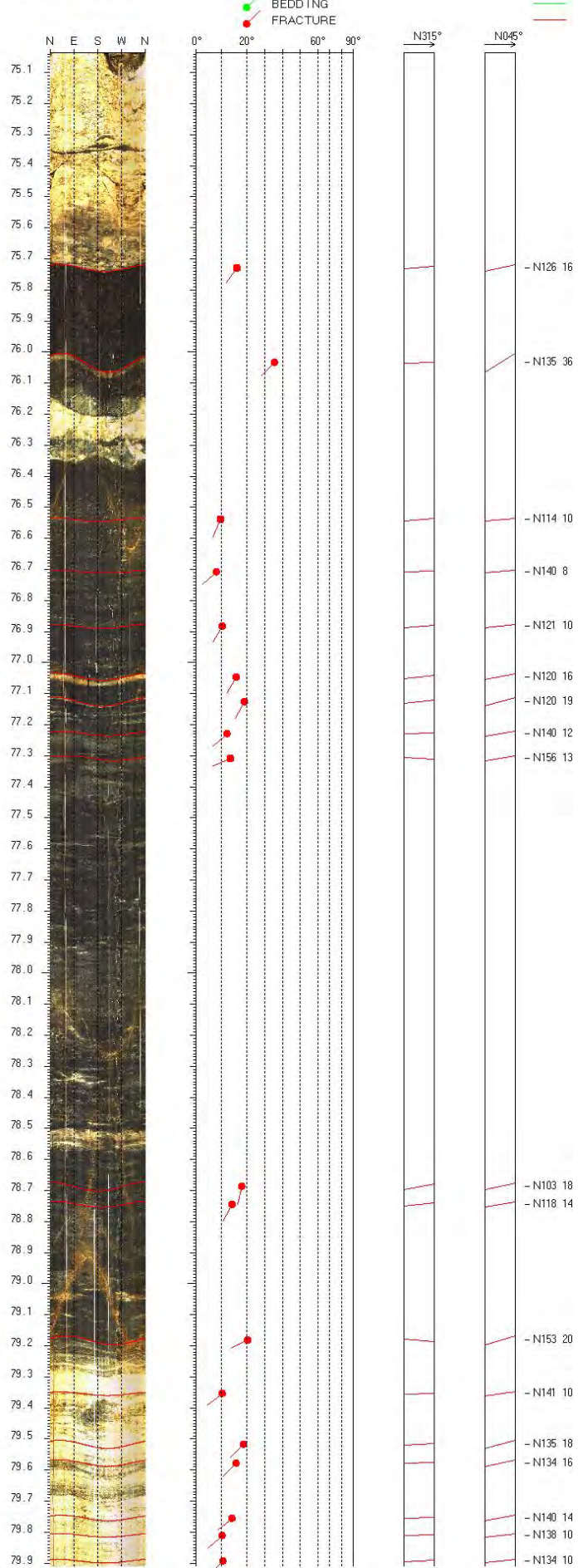


Bh2 65.000-70.000m 1/10

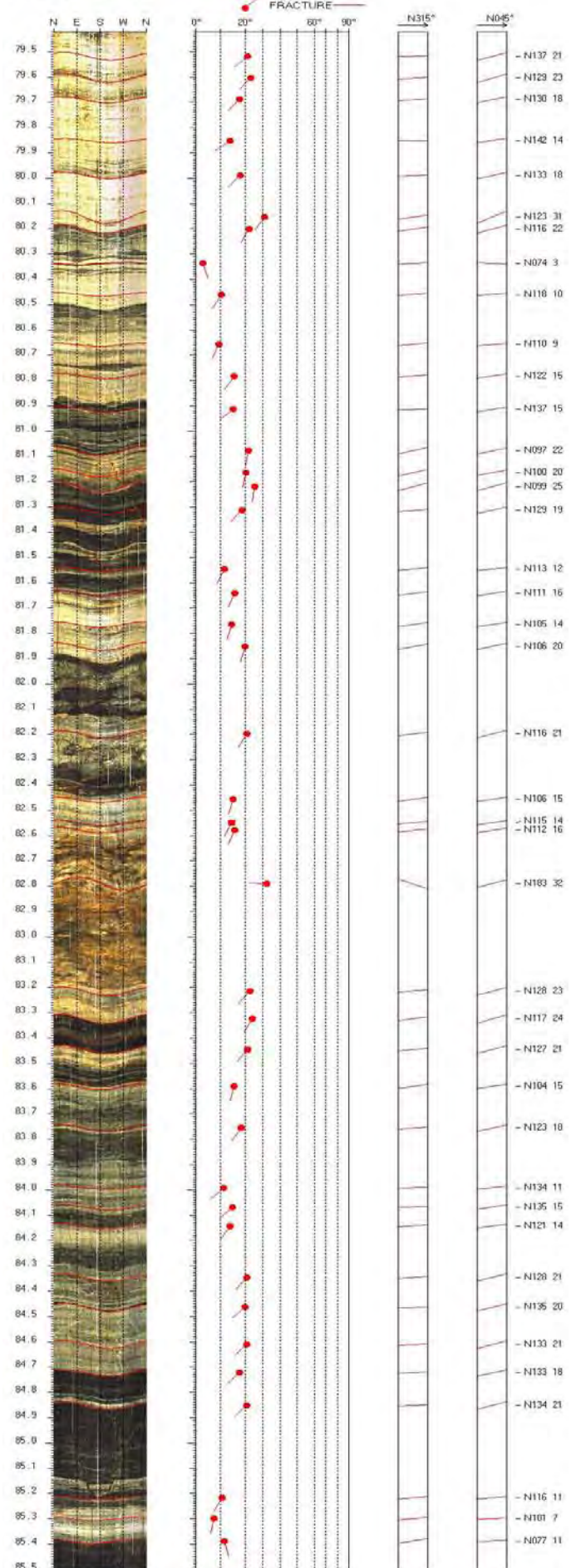
Bh2 70.000-75.000m 1/10



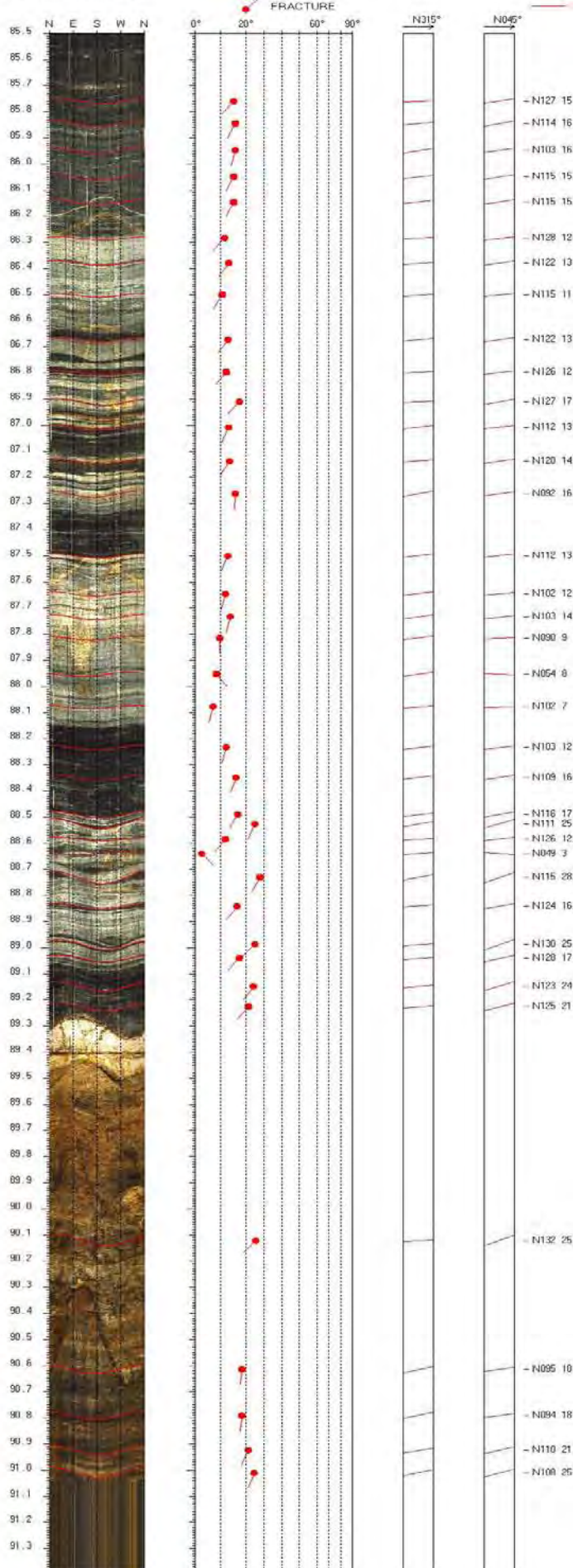
Bh2 75.000-79.909m 1/10



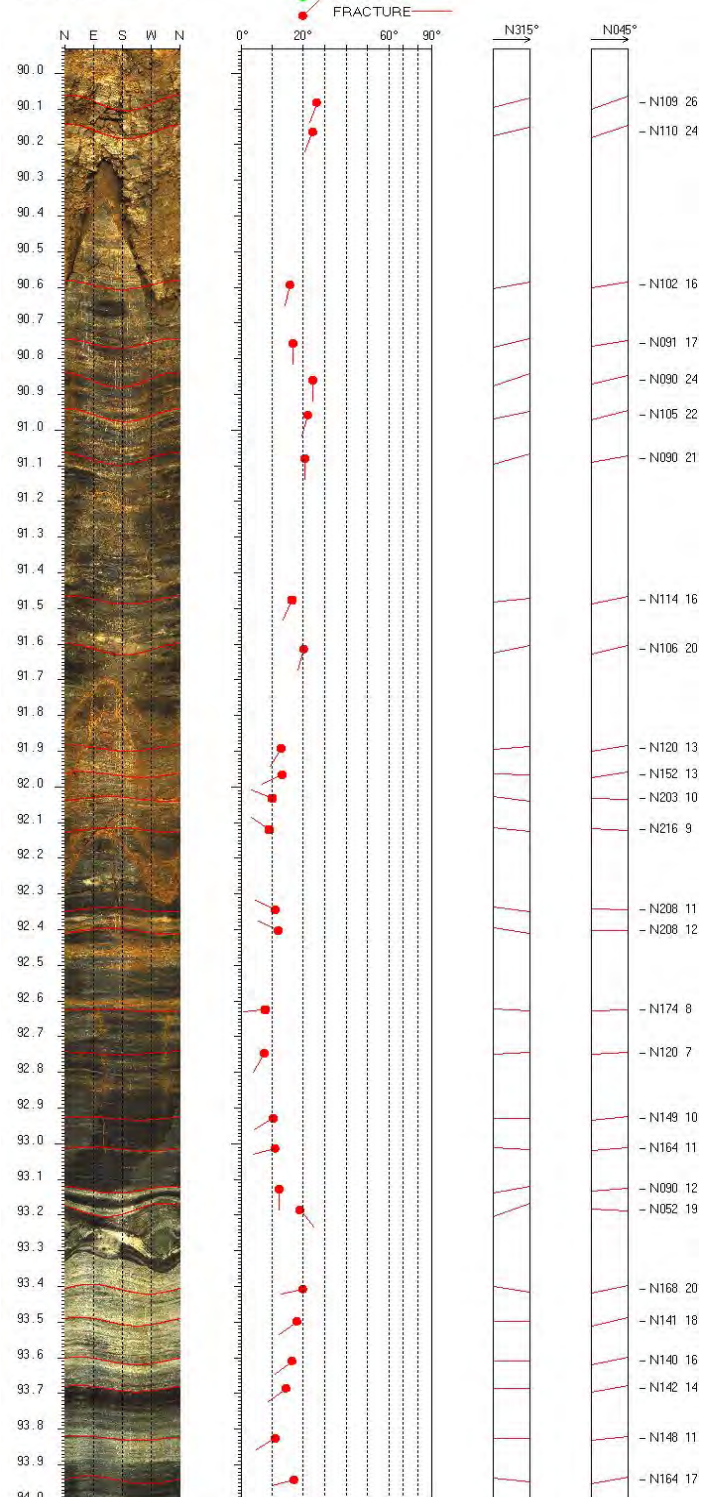
Bh2 79.420-85.500m 1/10



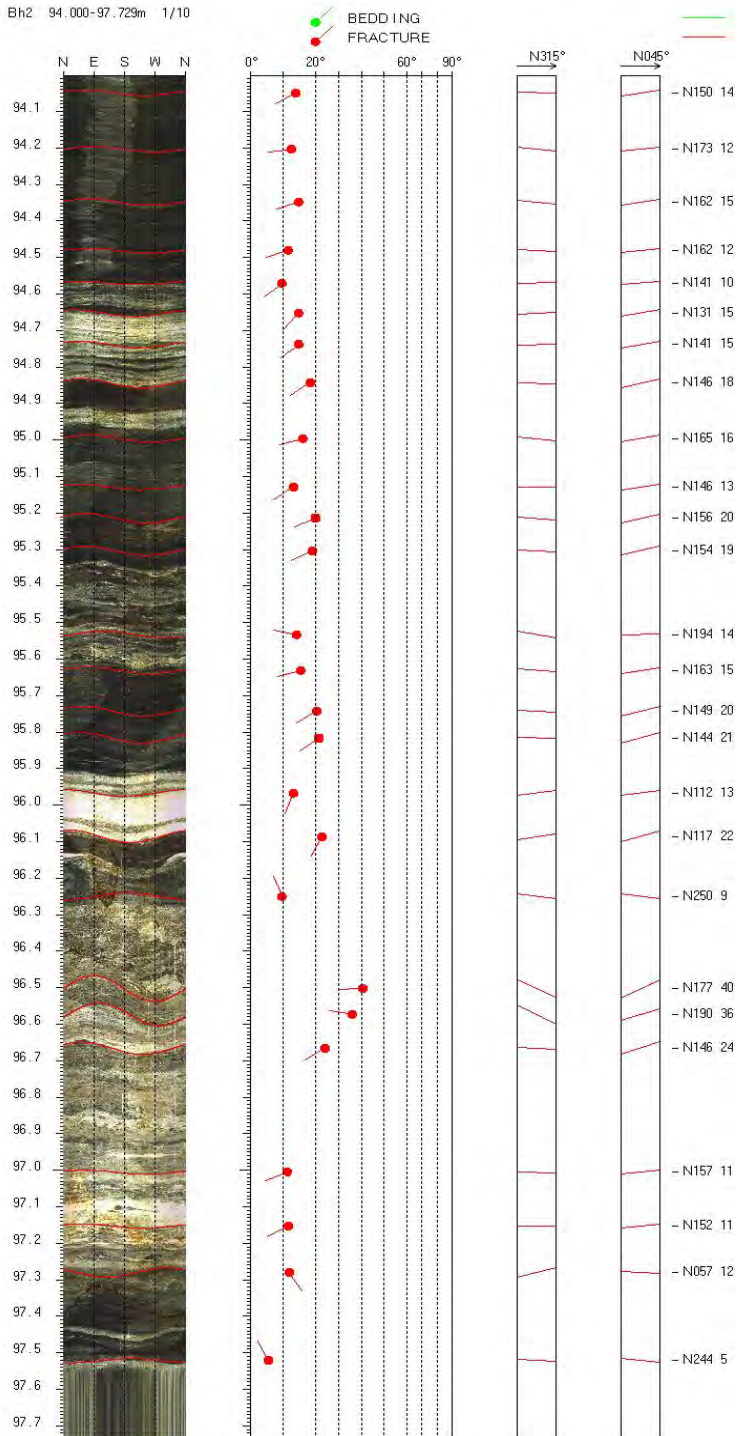
Bh2 85.500-91.389m 1/10



Bh2 89.930-94.000m 1/10



Bh2 94.000-97.729m 1/10



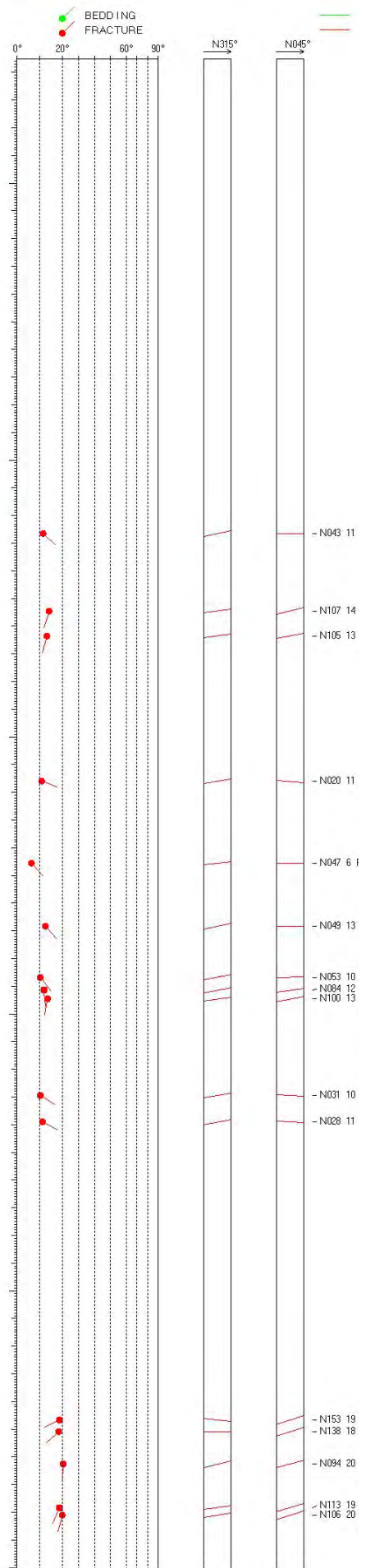
Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
3.264	N133	11.4	3.254	3.274	0.098	322.39	0.08	0
3.544	N197	14.2	3.531	3.556	0.098	211.18	0.09	0
3.634	N195	13.1	3.623	3.646	0.098	200.97	0.13	0
4.159	N110	11	4.149	4.168	0.098	186.82	0.2	0
4.456	N137	6.2	4.451	4.462	0.098	177.7	0.1	0
4.683	N139	12.6	4.672	4.694	0.098	249.43	0.04	0
4.867	N143	10.3	4.858	4.876	0.098	297.02	0.06	0
4.914	N174	12	4.903	4.924	0.098	300	0.06	0
4.945	N190	13.5	4.933	4.957	0.098	300	0.06	0
5.294	N121	10.2	5.286	5.303	0.098	113.72	0.06	0
5.389	N118	11.1	5.38	5.399	0.098	97.38	0.06	0
6.465	N243	18.6	6.448	6.481	0.098	263.08	0.23	0
6.508	N228	18.2	6.491	6.524	0.098	266.19	0.23	0
6.625	N184	20.2	6.607	6.643	0.098	238.85	0.21	0
6.782	N203	18.7	6.766	6.799	0.098	271.69	0.28	0
6.809	N196	19.7	6.791	6.826	0.098	283.96	0.34	0
7.112	N182	14.9	7.1	7.125	0.098	329.5	0.27	0
7.158	N129	13.5	7.147	7.17	0.098	52.04	0.19	0
7.21	N145	11.9	7.199	7.22	0.098	46.36	0.08	0
8.095	N246	7.4	8.088	8.101	0.098	305.46	0.04	0
8.213	N046	6.8	8.207	8.219	0.098	297.41	0.03	0
8.364	N002	2.6	8.362	8.366	0.098	290.4	0.03	0
8.503	N339	3.7	8.5	8.506	0.098	298.98	0.03	0
8.677	N329	7.9	8.67	8.684	0.098	309.64	0.02	0
8.697	N315	7.2	8.691	8.704	0.098	319	0.01	0
9.041	N247	6.1	9.036	9.046	0.098	94.08	0.03	0
9.135	N235	9.7	9.127	9.144	0.098	81.89	0.02	0
9.255	N240	5.2	9.251	9.26	0.098	73.51	0.03	0
9.29	N243	6	9.285	9.295	0.098	60.36	0.03	0
9.486	N187	13.7	9.474	9.498	0.098	2.02	0.01	0
9.83	N226	12.2	9.82	9.841	0.098	270.36	0.05	0
10.36	N182	11.3	10.35	10.369	0.098	307	0.07	0
10.436	N165	13.5	10.424	10.447	0.098	299	0.08	0
10.693	N126	22.4	10.673	10.714	0.098	286.96	0.07	0
10.757	N125	20.1	10.739	10.775	0.098	285.07	0.06	0
10.839	N120	19.8	10.822	10.857	0.098	280.21	0.07	0
10.934	N122	16.9	10.919	10.949	0.098	253.62	0.08	0
10.96	N119	20.2	10.942	10.978	0.098	258.6	0.08	0
11.07	N116	21.5	11.051	11.09	0.098	265.64	0.09	0
11.214	N111	22.1	11.195	11.234	0.098	266.38	0.11	0
11.363	N113	19.2	11.346	11.38	0.098	270.78	0.13	0
11.786	N192	18	11.77	11.802	0.098	302.53	0.14	0
11.869	N182	12.3	11.858	11.879	0.098	296.42	0.17	0
12.069	N229	7.2	12.063	12.076	0.098	285.39	0.31	0
12.188	N204	10.8	12.178	12.197	0.098	300.42	0.32	0
12.253	N194	10.6	12.244	12.262	0.098	311.83	0.33	0
12.474	N191	6.9	12.468	12.48	0.098	311.19	0.31	0
12.829	N226	10.2	12.82	12.838	0.098	323.01	0.49	0
12.897	N211	12	12.886	12.907	0.098	324	0.5	0
13.034	N194	14.7	13.021	13.046	0.098	2.6	0.55	0
13.174	N179	14	13.162	13.186	0.098	352.39	0.34	0
13.882	N153	11.6	13.872	13.892	0.098	260.49	0.12	0
14.018	N128	12	14.008	14.028	0.098	285.85	0.16	0
14.131	N169	17.2	14.115	14.146	0.098	287.94	0.27	0
14.217	N180	18.9	14.2	14.234	0.098	287.23	0.29	0
14.536	N164	10.1	14.528	14.545	0.098	295.41	0.32	0
14.619	N154	14.1	14.607	14.632	0.098	306.62	0.32	0
15.006	N125	15.9	14.992	15.019	0.098	315.14	0.32	0
15.181	N138	10.8	15.172	15.191	0.098	316.45	0.33	0
15.266	N170	9.1	15.258	15.273	0.098	312.77	0.32	0
15.484	N141	8.7	15.477	15.492	0.098	316	0.34	0
15.714	N134	10	15.706	15.722	0.098	314	0.35	0
15.905	N131	13.9	15.893	15.917	0.098	318.96	0.3	0
16.007	N122	14.3	15.995	16.019	0.098	311.94	0.3	0
16.346	N124	7	16.34	16.352	0.098	308.86	0.27	0
16.412	N100	11	16.403	16.421	0.098	312.53	0.26	0
16.756	N161	12.1	16.746	16.766	0.098	326.26	0.28	0
16.85	N151	12.3	16.839	16.86	0.098	310.94	0.3	0
16.949	N148	12.2	16.939	16.959	0.098	314.57	0.31	0
17.151	N131	15.1	17.138	17.164	0.098	320	0.35	0
17.384	N136	11	17.375	17.393	0.098	316	0.37	0
17.505	N145	13	17.494	17.516	0.098	311	0.39	0
17.66	N136	13.8	17.648	17.672	0.098	311.88	0.39	0
17.98	N133	14.4	17.968	17.993	0.098	313	0.38	0
18.081	N128	13.6	18.07	18.093	0.098	313.55	0.41	0
18.155	N124	15.5	18.142	18.168	0.098	312.01	0.4	0
18.431	N116	13.1	18.42	18.442	0.098	315.46	0.43	0
18.596	N133	15.1	18.583	18.609	0.098	316	0.44	0
18.783	N112	17.3	18.768	18.798	0.098	316.58	0.45	0
19.055	N117	21.8	19.036	19.074	0.098	316.02	0.45	0
19.28	N122	19.4	19.263	19.296	0.098	316	0.43	0
19.603	N126	17.8	19.588	19.619	0.098	316.04	0.43	0
19.777	N136	16.4	19.763	19.791	0.098	312.47	0.43	0
19.929	N138	17.4	19.914	19.944	0.098	311.01	0.42	0
20.154	N129	17	20.14	20.169	0.098	310.01	0.43	0

Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
20.276	N133	16.4	20.262	20.29	0.098	309.68	0.44	0
20.598	N124	16.5	20.584	20.612	0.098	312.78	0.47	0
20.76	N118	12	20.75	20.77	0.098	312	0.48	0
21.068	N126	13.8	21.057	21.08	0.098	313	0.54	0
21.641	N142	12.5	21.631	21.652	0.098	310.74	0.56	0
22.016	N156	15.8	22.002	22.029	0.098	311.47	0.57	0
22.639	N206	9.3	22.631	22.647	0.098	316.31	0.56	0
22.816	N205	10.7	22.807	22.825	0.098	317.25	0.57	0
23.118	N179	10.8	23.109	23.127	0.098	318	0.57	0
23.405	N163	9.1	23.397	23.412	0.098	317.99	0.57	0
23.996	N177	23.2	23.976	24.017	0.098	338.84	0.41	0
24.048	N168	19.9	24.031	24.065	0.098	314.64	0.65	0
26.406	N234	21.8	26.386	26.426	0.098	302.12	0.24	0
26.475	N248	19.7	26.457	26.493	0.098	299.05	0.4	0
26.553	N238	12.5	26.542	26.564	0.098	313	0.54	0
27.286	N151	12.1	27.276	27.296	0.098	339.57	0.27	0
27.488	N108	14.6	27.475	27.501	0.098	33.56	0.2	0
28.042	N119	9.1	28.034	28.05	0.098	46.49	0.08	0
28.202	N096	6.4	28.197	28.208	0.098	323.15	0.09	0
28.296	N101	5.8	28.291	28.301	0.098	280.42	0.36	0
28.415	N090	13	28.404	28.426	0.098	279.35	0.41	0
28.711	N104	3.8	28.708	28.714	0.098	287	0.42	0
28.982	N110	9.6	28.974	28.99	0.098	289.13	0.24	0
29.167	N138	2.9	29.165	29.17	0.098	282.47	0.2	0
29.695	N302	8.5	29.688	29.703	0.098	292.31	0.18	0
29.757	N294	6.9	29.751	29.763	0.098	290.18	0.18	0
31.118	N140	11.2	31.108	31.127	0.098	350.88	0.22	0
31.322	N162	6.3	31.317	31.327	0.098	339.27	0.14	0
31.412	N162	5.2	31.408	31.416	0.098	267.72	0.25	0
31.66	N268	8.5	31.653	31.667	0.098	354.76	0.33	0
31.906	N148	12.9	31.895	31.917	0.098	281.62	0.26	0
31.944	N158	10.1	31.935	31.953	0.098	274	0.34	0
32.115	N188	8.7	32.107	32.122	0.098	280.95	0.26	0
32.637	N214	11.8	32.626	32.647	0.098	290.48	0.06	0
33.251	N153	12.9	33.24	33.262	0.098	288.94	0.11	0
34.017	N143	36	33.981	34.052	0.098	324.55	0.15	0
34.817	N182	12.7	34.806	34.828	0.098	260.56	0.12	0
35.156	N151	15.5	35.143	35.17	0.098	316	0.18	0
35.61	N158	10.4	35.601	35.619	0.098	325.63	0.21	0
35.741	N144	14.3	35.729	35.754	0.098	318.51	0.2	0
36.175	N243	14.8	36.162	36.188	0.098	324.55	0.16	0
37.652	N195	15.9	37.638	37.666	0.098	347.65	0.2	0
38.164	N186	14.3	38.151	38.176	0.098	0.8	0.15	0
38.484	N167	11.2	38.475	38.494	0.098	346.84	0.15	0
38.853	N147	9.2	38.845	38.86	0.098	315.12	0.31	0
39.798	N152	13.2	39.786	39.809	0.098	307.36	0.39	0
40.023	N137	6.6	40.018	40.029	0.098	304.77	0.39	0
40.227	N174	7	40.221	40.233	0.098	312.81	0.31	0
40.607	N162	7.2	40.601	40.613	0.098	316.1	0.24	0
41.622	N219	3.7	41.618	41.625	0.098	321.69	0.27	0
42.052	N205	7.6	42.045	42.058	0.098	331	0.35	0
43.043	N353	5.7	43.038	43.049	0.098	4.37	0.39	0
43.215	N073	3.2	43.212	43.219	0.098	21.37	0.59	0
43.324	N135	5	43.32	43.328	0.098	19.25	0.6	0
43.575	N146	7.4	43.568	43.581	0.098	9.09	0.15	0
43.624	N126	5.9	43.619	43.629	0.098	349.25	0.23	0
43.98	N151	5.5	43.976	43.985	0.098	297.58	0.45	0
44.42	N040	1.9	44.418	44.422	0.098	333.51	0.58	0
44.606	N087	1.2	44.605	44.607	0.098	323.17	0.37	0
45.246	N103	10.6	45.237	45.255	0.098	356.24	0.34	0
46.324	N082	14	46.311	46.338	0.098	83	0.97	0
46.58	N048	21.8	46.56	46.601	0.098	82.42	0.95	0
46.64	N071	22.1	46.62	46.661	0.098	79.54	0.95	0
47.195	N077	14.5	47.181	47.208	0.098	72.19	0.94	0
47.394	N059	10.9	47.384	47.405	0.098	71	0.98	0
47.606	N104	16.1	47.591	47.621	0.098	71.03	0.97	0
47.737	N098	18.2	47.721	47.754	0.098	72.67	0.96	0
48.068	N101	16.2	48.053	48.084	0.098	76.42	0.98	0
48.481	N085	16	48.466	48.496	0.098	79.55	0.87	0
48.877	N085	13.5	48.865	48.89	0.098	80.53	0.89	0
49.183	N077	13.5	49.17	49.196	0.098	82.74	0.87	0
49.311	N087	11.8	49.3	49.323	0.098	83.85	0.85	0
49.729	N097	13.6	49.716	49.741	0.098	82.51	0.83	0
50.278	N078	5.2	50.273	50.283	0.098	86.47	0.67	0
50.972	N057	8.8	50.964	50.98	0.098	77.64	0.85	0
51.07	N094	9.2	51.061	51.079	0.098	77.32	0.88	0
51.402	N037	5.1	51.397	51.407	0.098	81.1	0.84	0
51.763	N084	7.6	51.756	51.77	0.098	83.82	0.78	0
51.981	N086	5.6	51.976	51.987	0.098	83.54	0.77	0
52.166	N105	8.1	52.158	52.173	0.098	83.76	0.76	0
52.407	N097	4.5	52.402	52.411	0.098	83.95	0.76	0
52.973	N116	4.6	52.968	52.977	0.098	83.63	0.73	0
53.674	N106	2.8	53.671	53.677	0.098	84.39	0.72	0
53.756	N136	3.2	53.753	53.759	0.098	84.04	0.71	0
53.835	N106	7.3	53.828	53.842	0.098	85	0.71	0

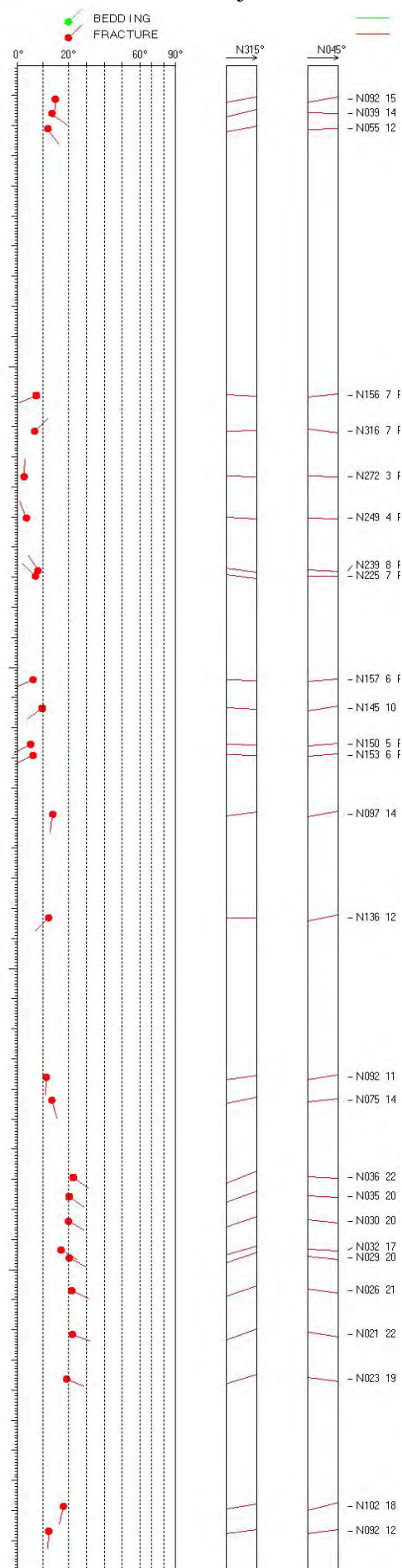
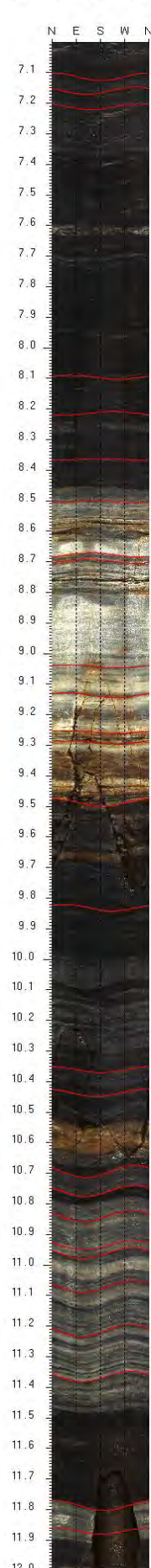
Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
54.089	N125	5.9	54.083	54.094	0.098	85.7	0.72	0
54.499	N083	4.2	54.495	54.503	0.098	85.9	0.71	0
55.384	N083	1.8	55.381	55.386	0.098	82.41	0.72	0
56.273	N104	2.5	56.27	56.276	0.098	84.76	0.69	0
56.383	N052	3.3	56.379	56.386	0.098	86	0.69	0
56.527	N072	2.9	56.524	56.53	0.098	86	0.69	0
56.906	N063	11.2	56.896	56.916	0.098	87	0.71	0
57.036	N062	6.1	57.03	57.042	0.098	87	0.73	0
57.128	N072	7.1	57.121	57.135	0.098	87	0.72	0
57.596	N081	3.7	57.592	57.599	0.098	88	0.72	0
57.874	N100	3.7	57.87	57.878	0.098	87	0.72	0
57.95	N115	3.6	57.947	57.954	0.098	87	0.73	0
58.233	N092	4	58.229	58.237	0.098	85	0.68	0
58.335	N121	5.3	58.329	58.34	0.098	84	0.64	0
58.504	N125	7	58.497	58.51	0.098	82	0.59	0
59.007	N120	3.2	59.003	59.01	0.098	83	0.56	0
59.467	N079	2.7	59.464	59.47	0.098	85	0.76	0
59.685	N108	4.9	59.68	59.69	0.098	83.62	0.77	0
59.918	N106	2.5	59.915	59.92	0.098	84.27	0.75	0
60.049	N097	7	60.042	60.056	0.098	85	0.76	0
60.165	N105	3.4	60.161	60.169	0.098	86	0.71	0
60.414	N165	1.4	60.412	60.415	0.098	87.2	0.69	0
60.544	N088	4	60.54	60.548	0.098	88.58	0.64	0
60.799	N061	10	60.79	60.808	0.098	88	0.64	0
61.046	N074	5.5	61.041	61.051	0.098	87.16	0.59	0
61.217	N064	6.3	61.211	61.223	0.098	85.73	0.61	0
61.369	N054	8.5	61.362	61.377	0.098	84.69	0.61	0
61.423	N040	7.6	61.416	61.43	0.098	84	0.62	0
61.717	N091	1.9	61.715	61.719	0.098	84	0.63	0
62.823	N102	4.9	62.818	62.828	0.098	84.38	0.59	0
63.153	N081	3.4	63.15	63.157	0.098	82.02	0.59	0
63.245	N065	6.4	63.239	63.251	0.098	84	0.59	0
63.6	N087	3.3	63.597	63.604	0.098	86.07	0.62	0
63.806	N071	3.9	63.802	63.81	0.098	87.03	0.64	0
64.088	N105	5.4	64.083	64.094	0.098	89.69	0.63	0
64.354	N046	5.7	64.349	64.36	0.098	89.98	0.61	0
64.727	N118	10.6	64.717	64.736	0.098	83	0.61	0
64.925	N043	5.5	64.92	64.93	0.098	82.42	0.59	0
65.569	N083	6.3	65.563	65.575	0.098	81	0.52	0
65.682	N084	7.6	65.675	65.688	0.098	80.45	0.52	0
65.942	N040	3.9	65.938	65.945	0.098	78.49	0.47	0
66.054	N046	2.6	66.051	66.056	0.098	76.02	0.46	0
66.277	N053	2.5	66.275	66.28	0.098	79	0.44	0
66.453	N068	4	66.449	66.457	0.098	77.99	0.46	0
66.586	N058	4.4	66.581	66.59	0.098	79	0.48	0
66.719	N092	5.2	66.715	66.724	0.098	81.31	0.49	0
66.998	N082	4.2	66.994	67.003	0.098	82.11	0.54	0
67.184	N099	5.7	67.178	67.189	0.098	83	0.54	0
67.35	N100	6.1	67.344	67.355	0.098	81	0.55	0
67.659	N267	7.9	67.652	67.665	0.098	79.1	0.55	0
67.859	N008	6.9	67.852	67.865	0.098	80.37	0.53	0
68.144	N077	5.4	68.139	68.149	0.098	86	0.51	0
68.303	N120	4.5	68.299	68.307	0.098	86.04	0.51	0
68.47	N034	5.6	68.465	68.475	0.098	88.32	0.5	0
68.922	N170	6.3	68.916	68.927	0.098	84.72	0.51	0
69.113	N026	2.1	69.111	69.115	0.098	83.52	0.52	0
69.258	N041	3.9	69.254	69.261	0.098	84.85	0.51	0
69.333	N045	9.9	69.324	69.342	0.098	81.86	0.55	0
69.399	N051	4.5	69.394	69.403	0.098	82.79	0.56	0
69.543	N043	9	69.535	69.551	0.098	80.21	0.55	0
72.599	N126	4.8	72.594	72.604	0.098	85.4	0.7	0
72.714	N114	6.3	72.708	72.72	0.098	93.62	0.64	0
72.837	N071	5.5	72.832	72.843	0.098	95.64	0.9	0
73.127	N349	4.4	73.123	73.13	0.098	83.38	0.65	0
73.382	N074	4.5	73.377	73.386	0.098	60.54	0.48	0
73.637	N055	4.3	73.633	73.641	0.098	81.66	0.55	0
73.725	N057	2.6	73.723	73.728	0.098	84.82	0.56	0
73.98	N321	3	73.978	73.982	0.098	85	0.66	0
74.245	N252	12.5	74.235	74.255	0.098	83.82	0.66	0
74.336	N284	12.6	74.326	74.347	0.098	83.65	0.67	0
74.646	N271	9.8	74.639	74.654	0.098	80.15	0.71	0
74.773	N274	15.5	74.76	74.786	0.098	82.63	0.74	0
75.149	N289	14.2	75.137	75.161	0.098	81.8	0.79	0
75.31	N299	11.9	75.3	75.319	0.098	83.11	0.82	0
75.481	N298	12.2	75.471	75.491	0.098	86	0.83	0
76.067	N140	8.9	76.059	76.075	0.098	83.74	0.7	0
76.63	N275	16.8	76.616	76.645	0.098	81.47	0.69	0
77.894	N276	16.5	77.88	77.908	0.098	99	0.87	0
78.029	N240	22.9	78.009	78.049	0.098	95.54	0.74	0
78.086	N252	10.5	78.078	78.095	0.098	94.3	0.71	0
78.553	N273	18.9	78.537	78.569	0.098	86	0.75	0
78.701	N250	19.7	78.684	78.718	0.098	77.68	0.5	0
79.015	N259	14	79.004	79.026	0.098	84.75	0.96	0
79.373	N250	17.1	79.358	79.387	0.098	93.38	0.83	0
79.651	N256	14.4	79.64	79.663	0.098	86.61	0.93	0
81.042	N271	7.2	81.037	81.048	0.098	77.08	0.76	0

Depth	Azimuth	Dip	Upper Depth	Lower Depth	Well Diam	Well Azimuth	deviation Dev	Thickness
81.148	N252	7.5	81.142	81.155	0.098	83.89	0.36	0
81.424	N297	9	81.417	81.431	0.098	77	1.22	0
81.731	N303	8.4	81.725	81.738	0.098	88.55	0.83	0
81.85	N331	21.9	81.83	81.869	0.098	98.22	0.81	0
82.009	N010	18.9	81.992	82.026	0.098	90.29	1.08	0
82.262	N318	15.9	82.249	82.275	0.098	90.16	0.87	0
82.323	N156	19.2	82.305	82.34	0.098	89.87	0.89	0
82.421	N151	31.5	82.391	82.452	0.098	89.31	0.86	0
82.478	N153	25.7	82.454	82.502	0.098	88.47	0.85	0
82.598	N153	21.7	82.578	82.618	0.098	85.12	0.82	0
82.692	N169	22.5	82.672	82.713	0.098	85	0.83	0
82.885	N162	19.2	82.868	82.903	0.098	83.37	0.82	0
83.003	N172	10.1	82.994	83.012	0.098	83.02	0.83	0
83.15	N141	9	83.141	83.158	0.098	81.09	0.82	0
83.186	N145	9.4	83.177	83.194	0.098	81.64	0.8	0
83.251	N140	11.8	83.241	83.262	0.098	81.05	0.82	0
83.618	N357	4.6	83.614	83.622	0.098	88.72	0.89	0
83.813	N321	3.8	83.81	83.816	0.098	89	0.89	0
83.971	N002	6.1	83.966	83.976	0.098	89.34	0.91	0
84.199	N358	7.7	84.192	84.206	0.098	90	0.95	0
84.328	N357	10.8	84.318	84.337	0.098	90	0.95	0
84.598	N006	14	84.585	84.61	0.098	88	0.96	0
84.845	N322	12.4	84.834	84.855	0.098	88.81	0.97	0
85.141	N345	5.6	85.136	85.145	0.098	91	0.98	0
85.338	N349	6.9	85.332	85.344	0.098	92	0.98	0
85.847	N359	11.2	85.837	85.857	0.098	93	1.03	0
85.926	N031	14.8	85.912	85.939	0.098	92	1.03	0
86.011	N031	15.4	85.997	86.025	0.098	92	1.03	0
86.401	N057	26.1	86.376	86.426	0.098	90	1.05	0
86.472	N038	27	86.446	86.498	0.098	89	1.03	0
86.701	N346	19.4	86.684	86.718	0.098	90	1.02	0

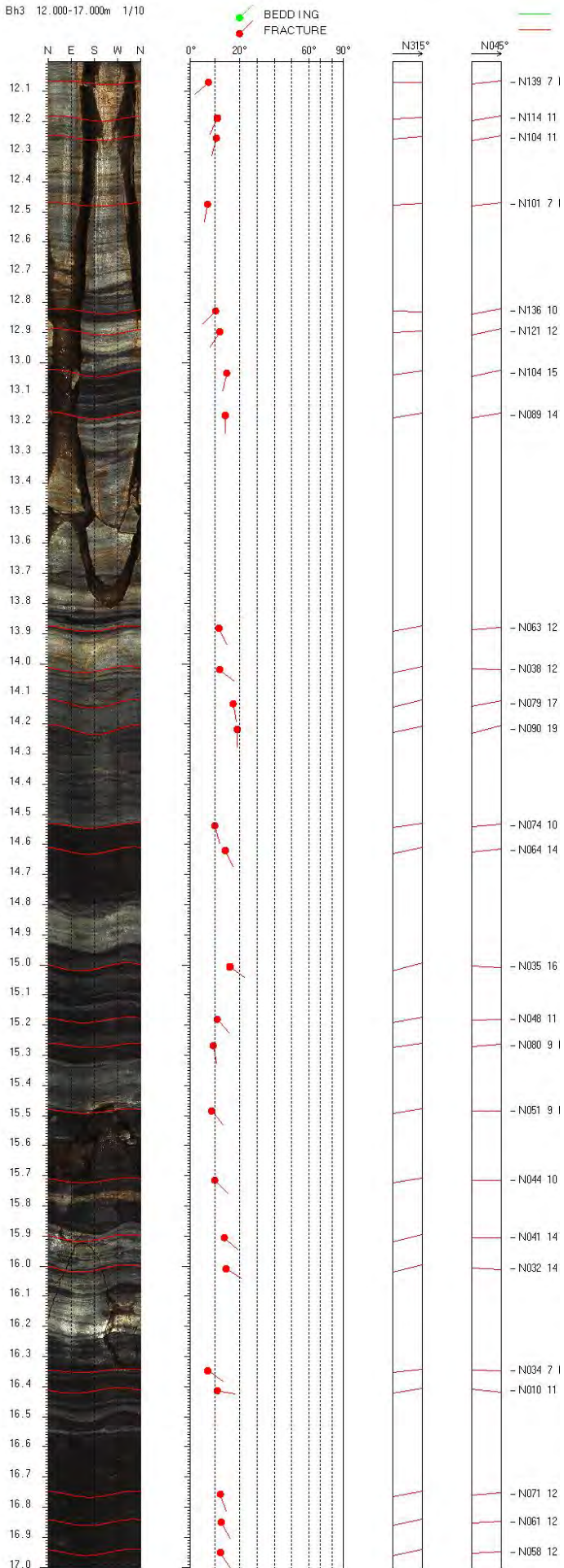
Bh3 1.550-7.000m 1/10



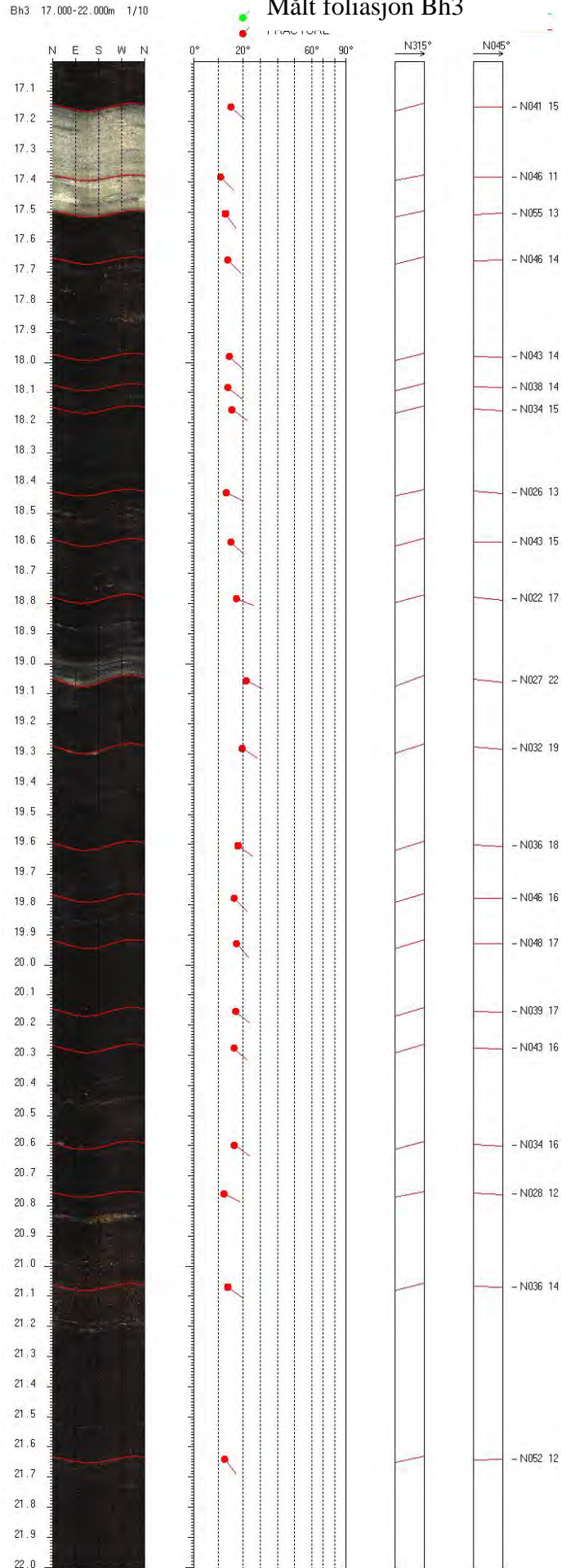
Bh3 7.000-12.000m 1/10



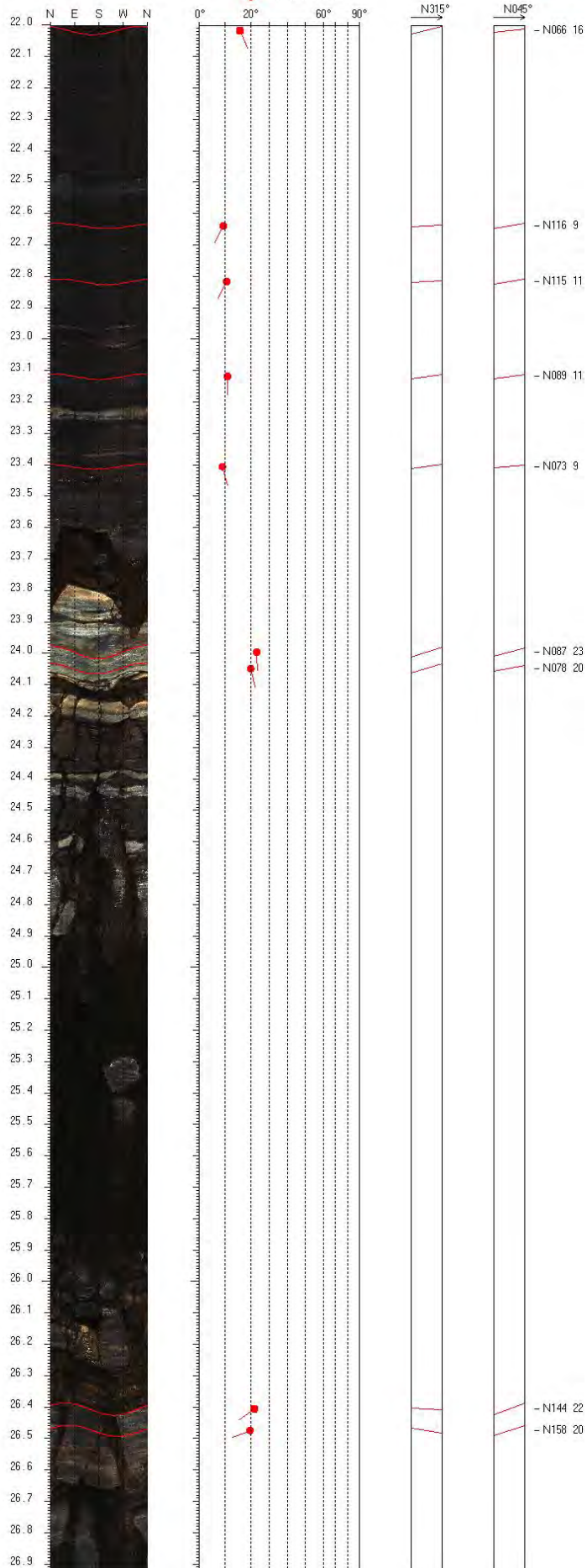
Bh3 12.000-17.000m 1/10



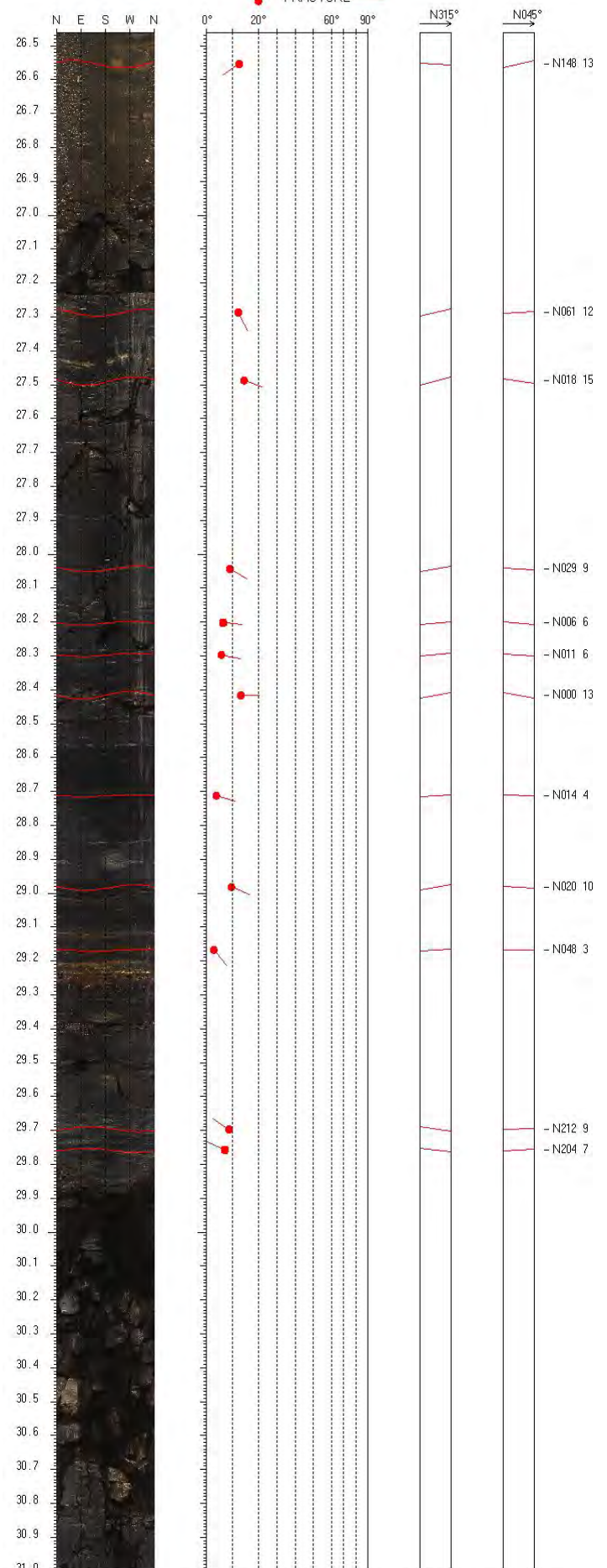
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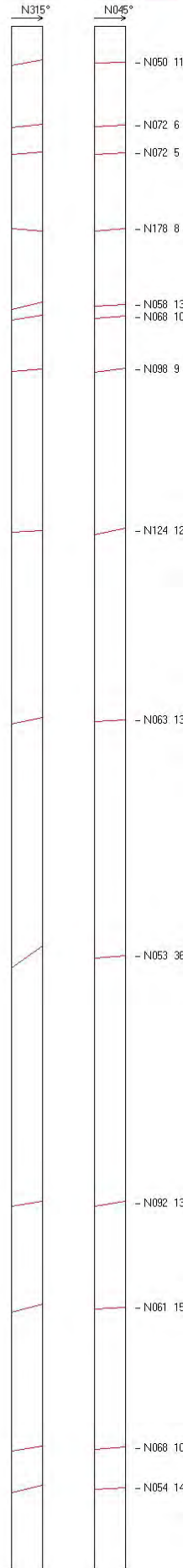
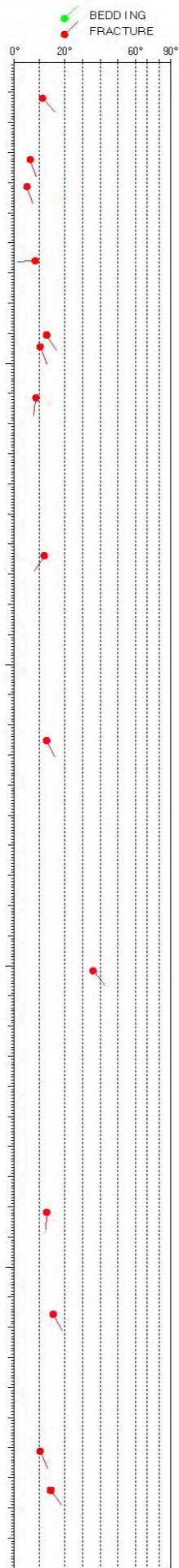
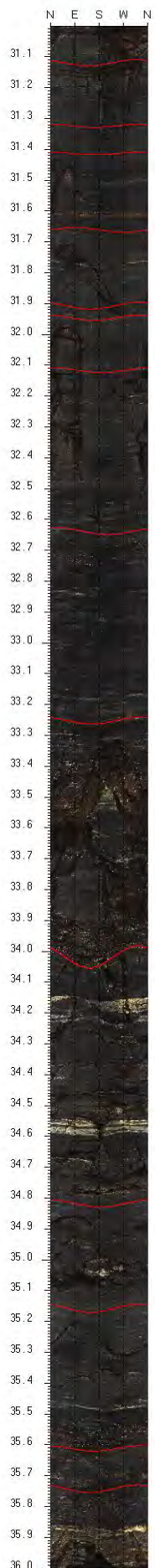
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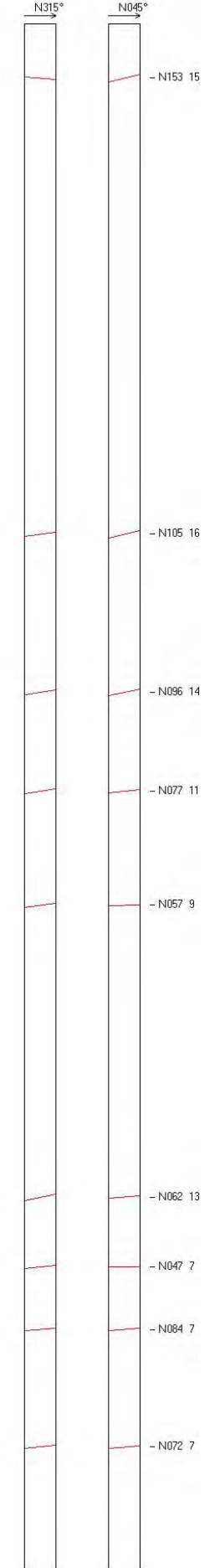
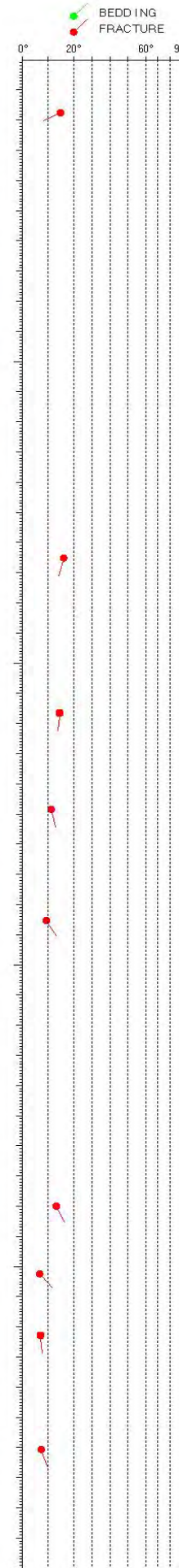
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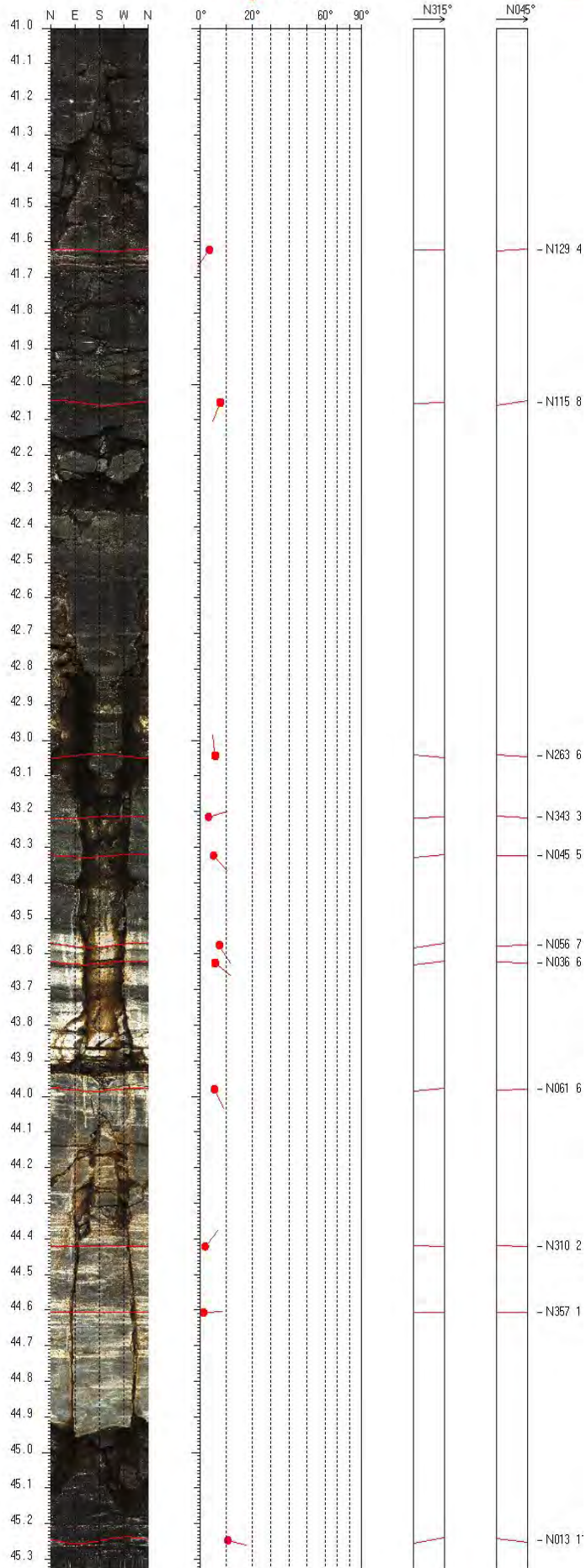
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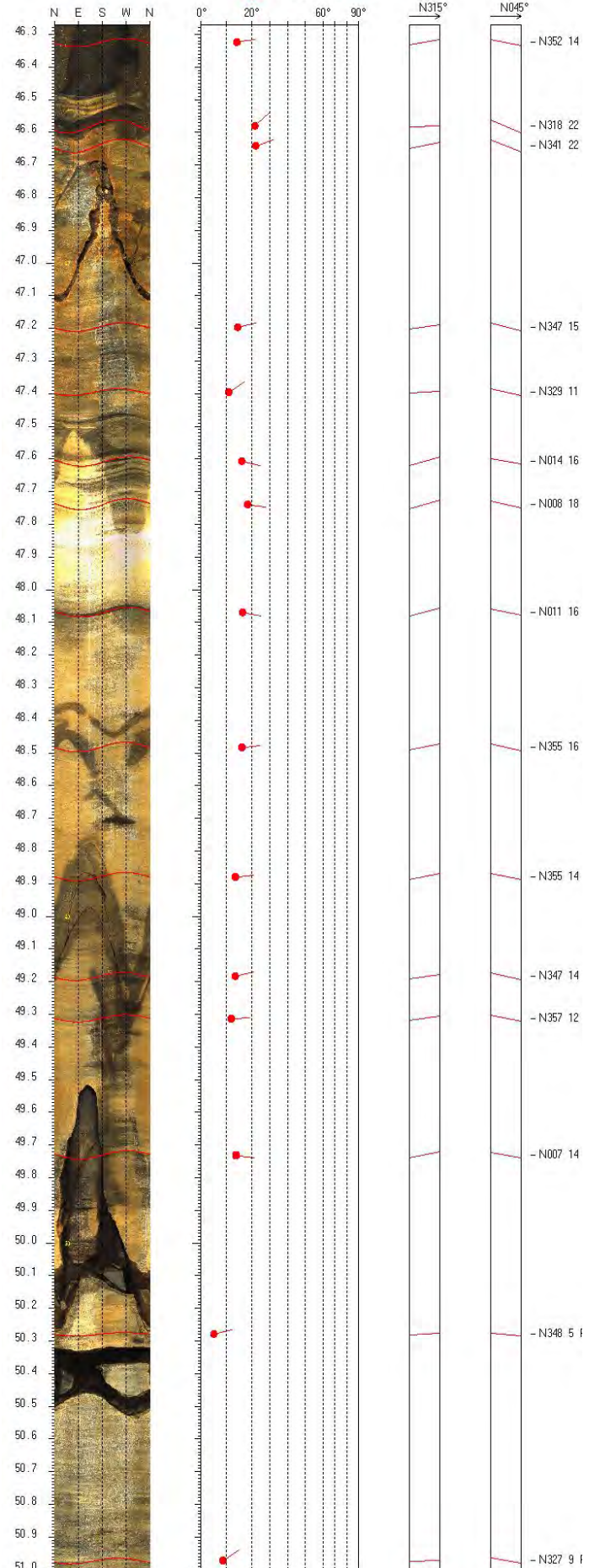
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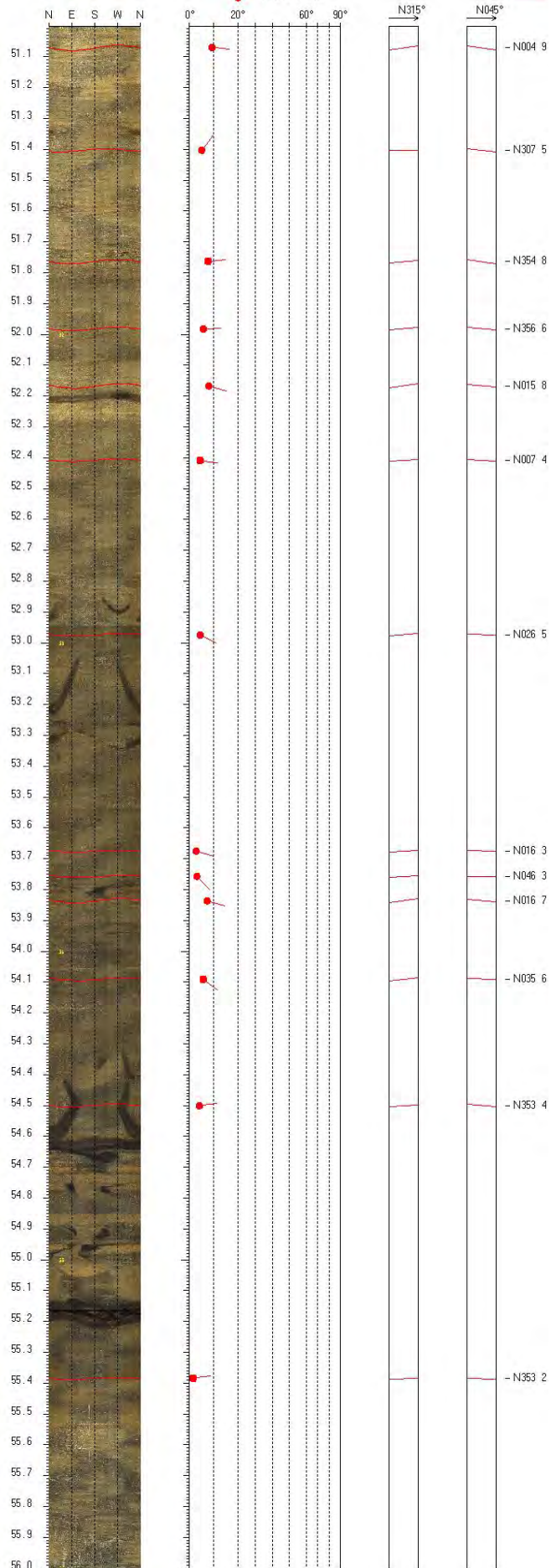
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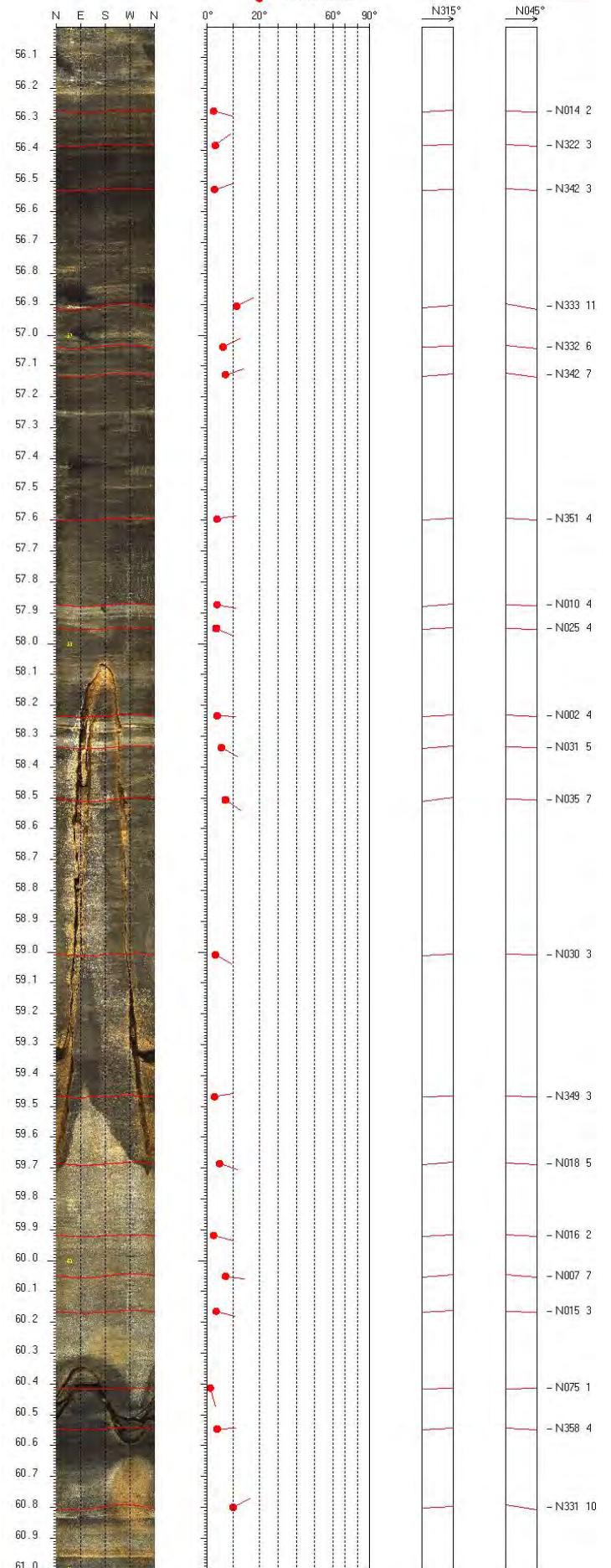
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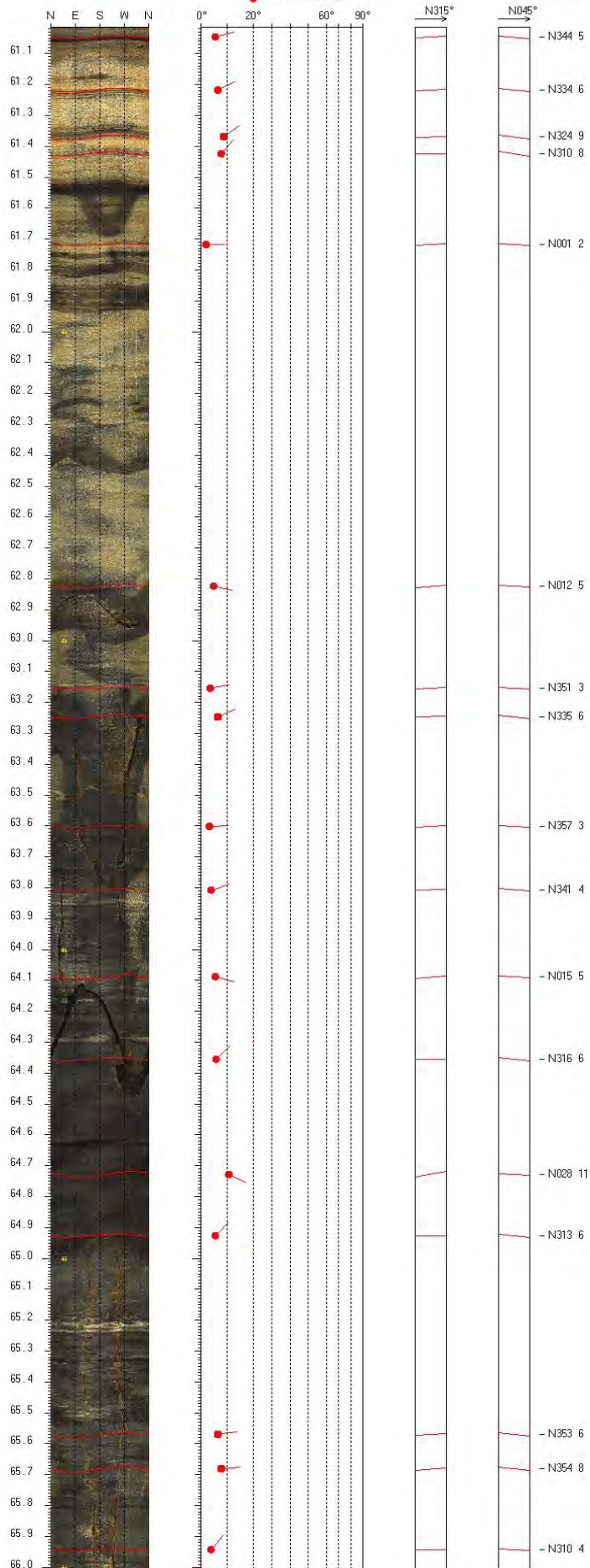
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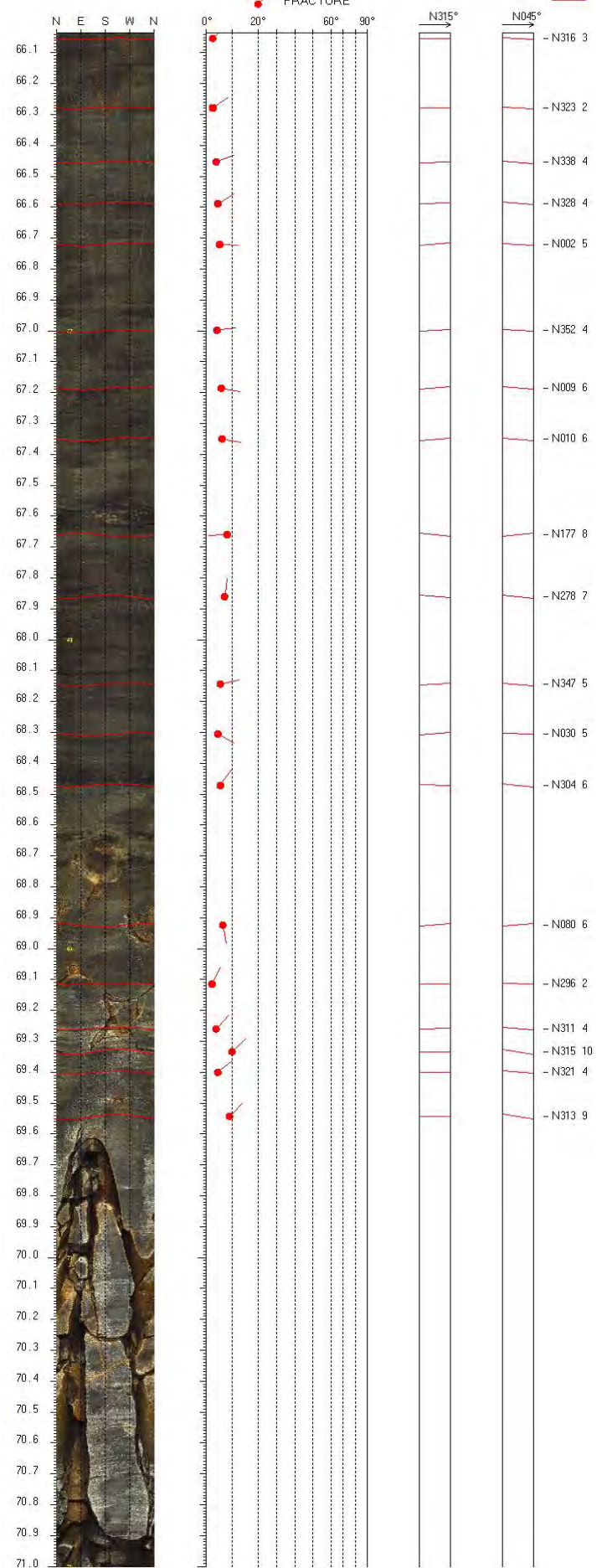
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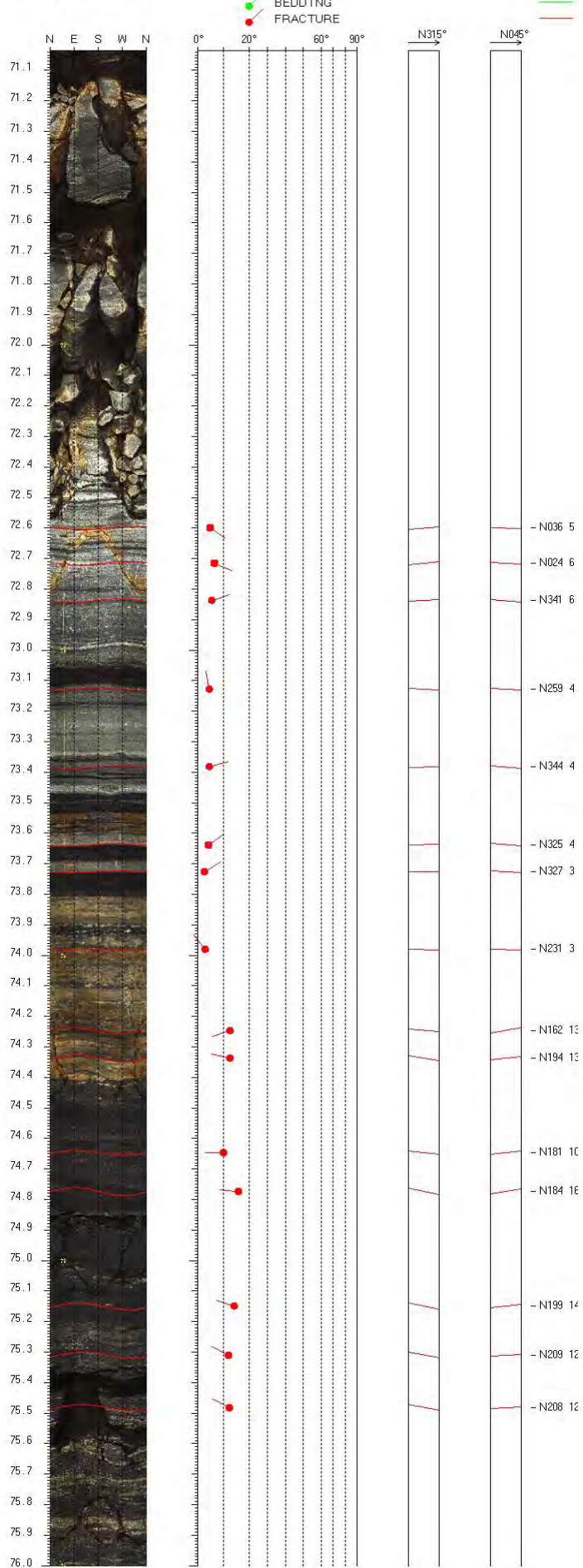
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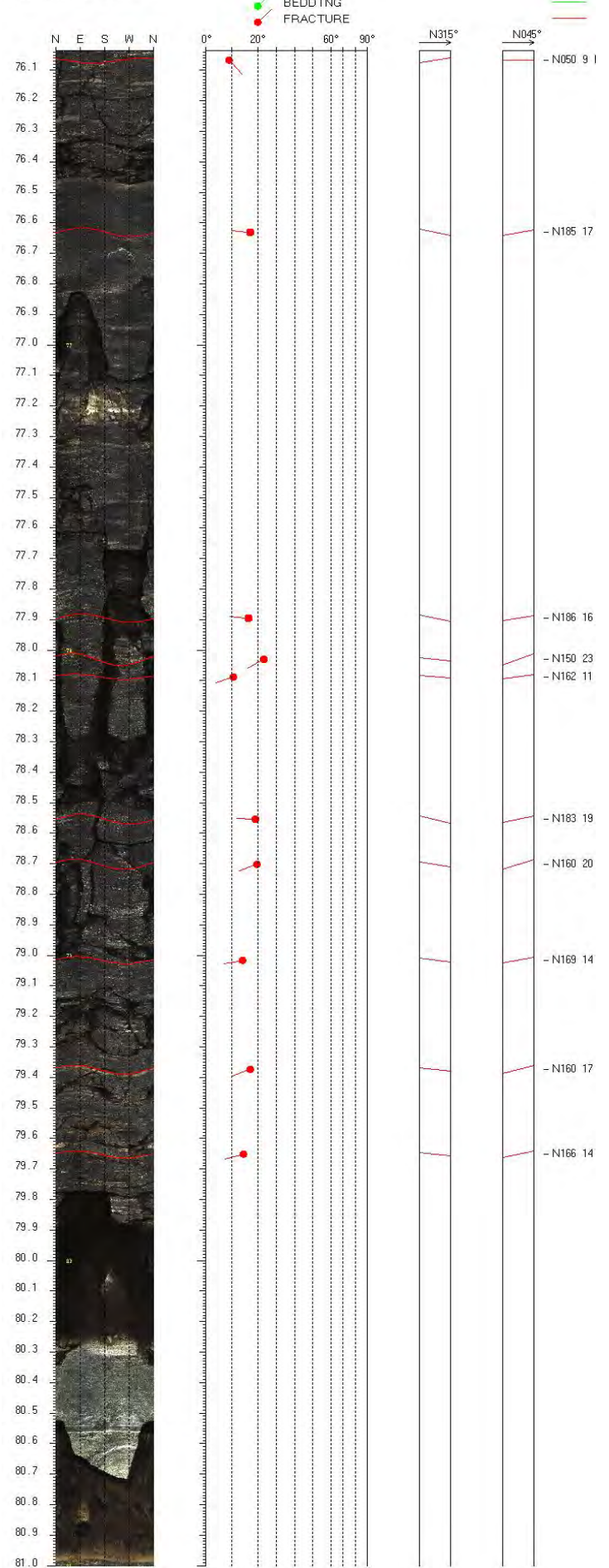
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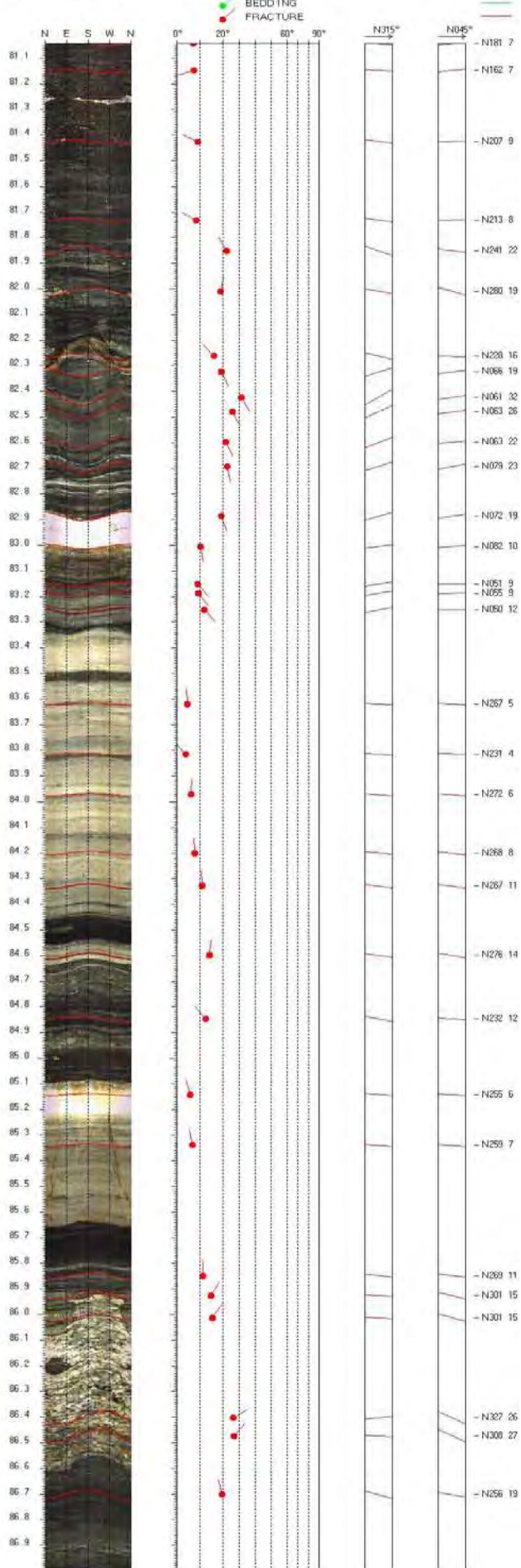
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Bh3 76.000-81.000m 1/10



Bh3 81.000-86.999m 1/10

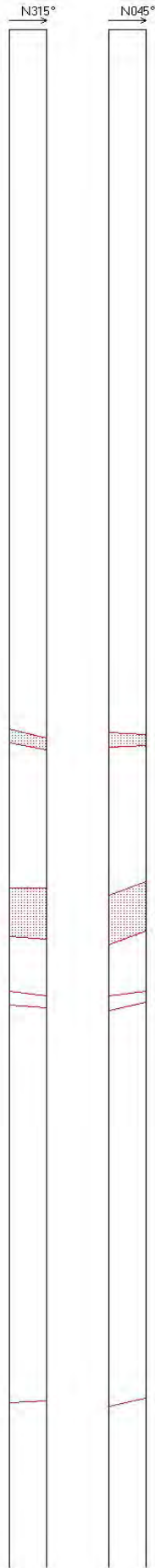
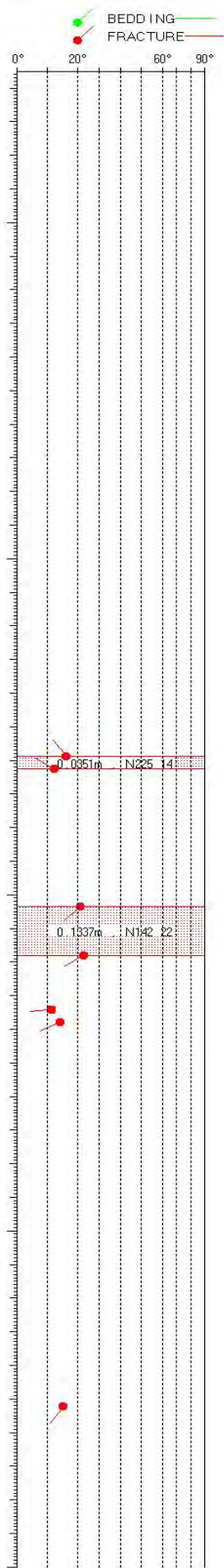
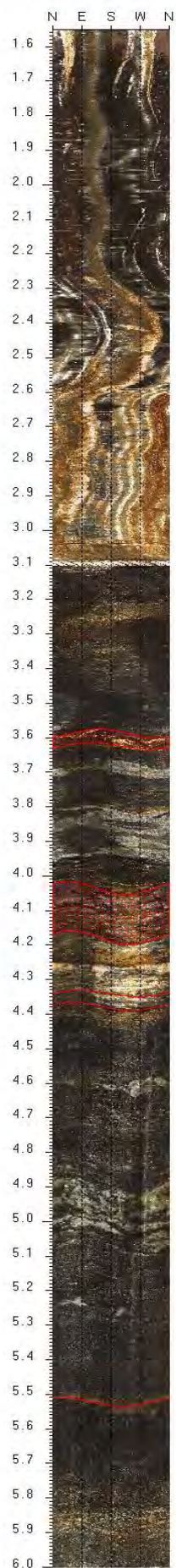


Databilag 5 side 1
 NGU Rapport 2014.016
 Sprekkedata Bh2

Upper Depth	Lower Azimuth	Well Dip	Well Depth	deviation Depth	Diam	Azimuth	Dev	Thickness					
3.588	N325	16	3.575	3.602	0.098	153.63	0.57	0	Vein		Irregular	Weathered	Calcite-vein
3.624	N301	12.1	3.614	3.634	0.098	139.96	0.59	0.0351	Vein		Irregular	Weathered	Calcite-vein
4.035	N227	21.4	4.016	4.054	0.098	137.74	0.68	0	Fracture	Irregular	Weathered	Fracture-zone	
4.179	N237	22.4	4.159	4.199	0.098	98	0.77	0.1337	Fracture	Irregular	Weathered	Fracture-zone	
4.34	N265	11.2	4.331	4.349	0.098	106.31	0.78	0	Fracture	Planar		Weathered	Open-fracture
4.377	N243	14	4.365	4.389	0.098	110.31	0.74	0	Fracture	Planar		Weathered	Open-fracture
5.522	N214	15	5.51	5.535	0.098	89.37	0.79	0	Fracture	Planar		Fresh	Hairline-fracture
6.69	N172	79.3	6.429	6.953	0.098	89.72	0.75	0	Vein		Irregular	Weathered	Calcite-vein
7.94	N225	20.2	7.922	7.957	0.098	80	0.66	0	Fracture	Planar		Fresh	Hairline-fracture
8.064	N244	17	8.049	8.078	0.098	77	0.64	0	Fracture	Planar		Fresh	Hairline-fracture
12.812	N027	67.2	12.692	12.931	0.098	75.85	0.75	0	Fracture	Irregular	Fresh	Hairline-fracture	
12.928	N042	54.8	12.857	12.999	0.098	74.52	0.77	0	Fracture	Irregular	Fresh	Hairline-fracture	
14.684	N068	60.8	14.594	14.775	0.098	78	0.77	0	Fracture	Irregular	Fresh	Hairline-fracture	
21.841	N302	61	21.755	21.811	0.098	71	0.85	0	Fracture	Discontinuous		Fresh	Hairline-fracture
24.795	N317	69.3	24.668	24.922	0.098	72.19	0.9	0	Fracture	Crushed		Fresh	Open-fracture
25.242	N039	40.1	25.2	25.285	0.098	46.91	0.6	0.3046	Fracture	Crushed		Fresh	Open-fracture
25.553	N010	51.6	25.491	25.615	0.098	101.16	1.34	0	Fracture	Planar		Fresh	Open-fracture
25.565	N009	52	25.502	25.628	0.098	92.3	1.34	0.0079	Fracture	Planar		Fresh	Open-fracture
25.698	N102	20.8	25.679	25.717	0.098	27.25	1.44	0	Fracture	Irregular	Fresh	Fracture-zone	
27.115	N015	30.8	27.086	27.145	0.098	99.36	1.74	1.335	Fracture	Irregular	Fresh	Fracture-zone	
27.305	N182	82.2	26.952	27.657	0.098	88.02	1.44	0	Fracture	Irregular	Fresh	Open-fracture	
27.629	N232	34.3	27.598	27.661	0.098	95.51	1.78	0	Fracture	Irregular	Fresh	Open-fracture	
27.787	N295	4.2	27.785	27.79	0.098	97.33	1.78	0	Fracture	Irregular	Fresh	Open-fracture	
27.794	N223	36.4	27.759	27.829	0.098	97.21	1.78	0	Fracture	Irregular	Fresh	Open-fracture	
27.88	N227	29.3	27.854	27.906	0.098	95.96	1.8	0	Fracture	Planar		Fresh	Open-fracture
29.195	N345	24.8	29.173	29.217	0.098	96	1.87	0	Fracture	Planar		Oxidized	Hairline-fracture
30.722	N134	39.5	30.679	30.764	0.098	94.64	1.87	0	Fracture	Planar		Fresh	Open-fracture
30.756	N146	41.5	30.711	30.801	0.098	94.04	1.87	0.026	Fracture	Planar		Fresh	Open-fracture
31.261	N019	54.6	31.191	31.332	0.098	95	1.87	0	Fracture	Planar		Fresh	Open-fracture
31.275	N018	56	31.201	31.348	0.098	95	1.87	0.0075	Fracture	Planar		Fresh	Open-fracture
33.151	N043	68.6	33.02	33.281	0.098	113.87	2.43	0	Fracture	Irregular	Fresh	Hairline-fracture	
33.363	N227	47.3	33.312	33.414	0.098	113.82	2.47	0	Fracture	Planar		Fresh	Hairline-fracture
34.159	N025	51.6	34.096	34.222	0.098	99.9	2.28	0	Fracture	Irregular	Fresh	Open-fracture	
34.183	N017	49.1	34.126	34.24	0.098	99.43	2.29	0.0151	Fracture	Irregular	Fresh	Open-fracture	
35.806	N307	80	35.584	36.028	0.098	103.86	2.62	0	Fracture	Irregular	Fresh	Open-fracture	
36.512	N045	69.4	36.369	36.656	0.098	95.34	2.65	0	Fracture	Irregular	Fresh	Open-fracture	
36.568	N041	68.4	36.433	36.702	0.098	97.27	2.64	0.0198	Fracture	Irregular	Fresh	Open-fracture	
36.795	N290	77	36.618	36.972	0.098	95.83	2.58	0	Fracture	Irregular	Fresh	Open-fracture	
37.024	N077	5.6	37.017	37.031	0.098	96.4	2.61	0	Fracture	Fresh			Fracture-zone
38.232	N250	59.9	38.151	38.313	0.098	120.78	1.89	1.0746	Fracture	Fresh			Fracture-zone
38.548	N217	20.1	38.531	38.565	0.098	102.25	2.41	0	Fracture	Irregular	Fresh	Fracture-zone	
39.555	N252	19.5	39.539	39.57	0.098	97	2.59	0.9522	Fracture	Irregular	Fresh	Fracture-zone	
39.81	N285	84.5	39.466	40.155	0.098	99.39	2.64	0	Fracture	Irregular	Fresh	Fracture-zone	
39.876	N243	64.4	39.783	39.969	0.098	95	2.63	0	Fracture	Irregular	Fresh	Open-fracture	
40.098	N264	78.7	39.899	40.297	0.098	98	2.56	0.0428	Fracture	Irregular	Fresh	Fracture-zone	
40.266	N008	25	40.243	40.289	0.098	98.24	3.16	0	Fracture	Irregular	Fresh	Fracture-zone	
40.749	N358	35.1	40.715	40.783	0.098	93.1	2.41	0.4184	Fracture	Irregular	Fresh	Fracture-zone	
40.827	N231	52.5	40.767	40.886	0.098	92.55	2.55	0	Fracture	Irregular	Fresh	Open-fracture	
40.92	N244	57.5	40.849	40.99	0.098	90.38	2.54	0	Fracture	Irregular	Fresh	Open-fracture	
41.149	N247	65.8	41.052	41.247	0.098	92	2.71	0	Fracture	Irregular	Fresh	Open-fracture	
41.27	N286	65.8	41.173	41.271	0.098	90.31	2.71	0	Fracture	Discontinuous		Fresh	Open-fracture
41.306	N228	47.5	41.276	41.356	0.098	90.97	2.74	0	Fracture	Discontinuous		Fresh	Open-fracture
41.329	N235	55.7	41.263	41.395	0.098	90.5	2.74	0	Fracture	Irregular	Fresh	Open-fracture	
41.36	N237	62	41.276	41.444	0.098	90.12	2.74	0	Fracture	Irregular	Fresh	Open-fracture	
41.448	N244	68.2	41.341	41.555	0.098	91.88	3.08	0	Fracture	Irregular	Fresh	Open-fracture	
41.587	N142	39.5	41.544	41.63	0.098	90.66	2.84	0	Fracture	Irregular	Fresh	Open-fracture	
41.795	N086	24.7	41.77	41.821	0.098	92.17	2.64	0	Fracture	Irregular	Fresh	Open-fracture	
41.95	N115	19.8	41.93	41.97	0.098	91.84	2.36	0	Fracture	Irregular	Fresh	Open-fracture	
42.229	N351	34	42.197	42.262	0.098	94.5	2.61	0	Fracture	Irregular	Fresh	Fracture-zone	
44.497	N241	69.8	44.377	44.617	0.098	95.87	2.43	1.7948	Fracture	Irregular	Fresh	Fracture-zone	
44.661	N274	68.9	44.549	44.772	0.098	91.26	2.52	0	Fracture	Crushed		Fresh	Fracture-zone
44.79	N252	73.5	44.645	44.935	0.098	100.36	2.4	0.0426	Fracture	Crushed		Fresh	Fracture-zone
44.892	N086	10.3	44.881	44.903	0.098	85.74	2.48	0	Fracture	Irregular	Fresh	Open-fracture	
45.107	N059	15	45.092	45.122	0.098	95.88	2.47	0	Fracture	Irregular	Fresh	Open-fracture	
45.138	N035	30.8	45.107	45.169	0.098	94.64	2.61	0.0286	Fracture	Irregular	Fresh	Open-fracture	
45.267	N115	17.7	45.248	45.286	0.098	92.74	3.35	0	Fracture	Crushed		Fresh	Fracture-zone
49.364	N085	23.3	49.339	49.39	0.098	97	4.5	3.8534	Fracture	Crushed		Fresh	Fracture-zone
49.455	N142	22.8	49.431	49.479	0.098	96.02	4.51	0	Fracture	Crushed		Fresh	Fracture-zone
53.319	N251	38.1	53.286	53.353	0.098	85	3.83	3.6408	Fracture	Crushed		Fresh	Fracture-zone
56.074	N010	66.7	55.947	56.031	0.098	74	4.76	0	Fracture	Discontinuous		Fresh	Open-fracture
56.938	N025	56.8	56.854	57.022	0.098	75.67	4.56	0	Fracture	Irregular	Fresh	Hairline-fracture	
58.188	N348	61	58.098	58.278	0.098	72	4.07	0	Fracture	Irregular	Fresh	Hairline-fracture	
59.47	N312	67.6	59.365	59.574	0.098	80.69	4.31	0	Fracture	Planar		Fresh	Hairline-fracture
61.258	N206	12.7	61.249	61.267	0.098	79	4.44	0	Fracture	Planar		Fresh	Open-fracture
61.309	N186	10.1	61.301	61.318	0.098	79	4.44	0.0503	Fracture	Planar		Fresh	Open-fracture
65.037	N322	58.6	64.962	65.112	0.098	78	4.4	0	Fracture	Planar		Fresh	Open-fracture
65.12	N312	55	65.056	65.184	0.098	78	4.39	0	Fracture	Planar		Fresh	Open-fracture
65.307	N307	52.8	65.248	65.365	0.098	78	4.34	0	Fracture	Irregular	Fresh	Open-fracture	
65.376	N120	14.9	65.368	65.392	0.098	78	4.35	0	Fracture	Discontinuous		Fresh	Hairline-fracture
65.376	N268	17.6	65.377	65.388	0.098	78	4.35	0	Fracture	Discontinuous		Fresh	Hairline-fracture
65.607	N228	81.7	65.377	65.837	0.098	78	4.31	0	Fracture	Irregular	Fresh	Open-fracture	
66.085	N170	7.9	66.078	66.093	0.098	77	4.32	0	Fracture	Planar		Fresh	Open-fracture
67.914	N327	18	67.899	67.929	0.098	77.2	4.29	0	Fracture	Irregular	Fresh	Hairline-fracture	
68.512	N013	69.2	68.369	68.655	0.098	77.84	4.24	0	Fracture	Irregular	Fresh	Fracture-zone	
69.163	N006	67.2	69.038	69.287	0.098	79	4.18	0.2417	Fracture	Irregular	Fresh	Fracture-zone	

Upper Depth	Lower Azimuth	Well Dip	Well Depth	deviation Depth	Diam	Azimuth	Dev	Thickness				
70.425	N209	9.5	70.419	70.432	0.098	77	4.09	0	Fracture	Irregular	Fresh	Hairline-fracture
70.458	N348	75.4	70.268	70.647	0.098	77	4.09	0	Fracture	Crushed		Fresh Open-fracture
70.619	N345	57.9	70.542	70.697	0.098	78	4.02	0	Fracture	Irregular	Fresh	Hairline-fracture
70.641	N348	59.3	70.559	70.724	0.098	78	4.01	0	Fracture	Irregular	Fresh	Hairline-fracture
71.548	N017	60.7	71.452	71.644	0.098	75	4.06	0	Fracture	Planar		Fresh Open-fracture
72.125	N298	76.9	71.955	72.005	0.098	77.43	4	0	Fracture	Discontinuous		Fresh Hairline-fracture
72.182	N304	75.6	72.023	72.34	0.098	78	4	0	Fracture	Irregular	Fresh	Hairline-fracture
72.399	N296	76.4	72.236	72.338	0.098	78.09	4.03	0	Fracture	Discontinuous		Fresh Hairline-fracture
73.046	N295	79.6	73.091	73.246	0.098	79	4.14	0	Fracture	Discontinuous		Fresh Open-fracture
73.052	N246	13.8	73.044	73.061	0.098	79	4.14	0	Fracture	Irregular	Fresh	Hairline-fracture
73.095	N180	15.4	73.082	73.109	0.098	78.17	4.15	0	Fracture	Irregular	Fresh	Open-fracture
73.109	N064	46.2	73.097	73.168	0.098	78	4.15	0	Fracture	Discontinuous		Fresh Open-fracture
74.795	N310	68.4	74.685	74.905	0.098	75	4.09	0	Fracture	Planar		Fresh Open-fracture
74.977	N281	33.4	74.949	75.005	0.098	75.46	4.07	0	Fracture	Irregular	Fresh	Open-fracture
75.003	N295	41.7	74.964	75.042	0.098	75.98	4.09	0.0205	Fracture	Irregular	Fresh	Open-fracture
75.027	N278	62	74.948	75.106	0.098	75.54	4.09	0	Fracture	Irregular	Fresh	Open-fracture
75.348	N075	3.5	75.342	75.355	0.098	76.77	3.96	0	Fracture	Planar		Fresh Open-fracture
75.411	N289	56.2	75.346	75.466	0.098	74.7	3.98	0	Fracture	Discontinuous		Fresh Open-fracture
76.419	N301	76.2	76.253	76.585	0.098	73	4.1	0	Fracture	Irregular	Fresh	Hairline-fracture
78.82	N035	80.4	78.379	79.26	0.098	72.69	4.18	0	Fracture	Discontinuous		Oxidized Hairline-fracture
78.844	N296	59.7	78.769	78.919	0.098	72.2	4.19	0	Fracture	Planar		Oxidized Hairline-fracture
79.047	N316	72.3	78.909	79.186	0.098	73	4.19	0	Fracture	Planar		Oxidized Hairline-fracture
81.224	N014	63	81.117	81.325	0.098	72	4.2	0	Fracture	Discontinuous		Fresh Hairline-fracture
81.427	N214	70.9	81.324	81.546	0.098	72	4.22	0	Fracture	Discontinuous		Fresh Hairline-fracture
83.142	N009	31.9	83.109	83.175	0.098	74	4.24	0	Fracture	Irregular	Mineralized	Hairline-fracture
83.883	N140	6.4	83.875	83.89	0.098	72	4.18	0	Fracture	Planar		Fresh Hairline-fracture
84.554	N288	36.9	84.521	84.587	0.098	71	4.19	0	Fracture	Planar		Fresh Hairline-fracture
85.051	N176	73.9	84.891	85.211	0.098	72	4.27	0	Fracture	Irregular	Fresh	Hairline-fracture
85.232	N012	41.8	85.184	85.279	0.098	71	4.29	0	Fracture	Irregular	Fresh	Hairline-fracture
86.164	N010	33.1	86.129	86.198	0.098	70.19	4.22	0	Fracture	Irregular	Mineralized	Hairline-fracture
86.224	N023	33.7	86.188	86.26	0.098	71	4.2	0	Fracture	Planar		Oxidized Hairline-fracture
86.659	N358	41.1	86.614	86.655	0.098	70	4.21	0	Fracture	Discontinuous		Oxidized Hairline-fracture
86.801	N346	30.8	86.771	86.832	0.098	70	4.21	0	Fracture	Planar		Oxidized Hairline-fracture
88.564	N348	54.4	88.494	88.634	0.098	71	4.29	0	Fracture	Irregular	Fresh	Hairline-fracture
89.292	N291	47.8	89.243	89.34	0.098	69	4.25	0	Fracture	Planar		Fresh Open-fracture
89.489	N316	48.1	89.437	89.541	0.098	69.7	4.28	0	Fracture	Irregular	Fresh	Open-fracture
89.497	N313	51.4	89.439	89.554	0.098	69.85	4.28	0	Fracture	Brecciated	Fresh	Fracture-zone
90.12	N224	22.8	90.103	90.137	0.098	72.69	4.31	0	Fracture	Irregular	Fresh	Hairline-fracture
90.139	N212	25	90.119	90.158	0.098	72.31	4.31	0	Fracture	Irregular	Fresh	Hairline-fracture
90.305	N200	26.4	90.284	90.327	0.098	72	4.3	0	Fracture	Irregular	Fresh	Hairline-fracture
90.512	N299	79.9	90.298	90.727	0.098	70.83	4.17	0.4218	Fracture	Brecciated	Fresh	Fracture-zone
90.657	N305	71.2	90.531	90.783	0.098	70.94	4.2	0	Fracture	Irregular	Fresh	Hairline-fracture
91.291	N316	71.3	91.158	91.424	0.098	67	4.32	0	Fracture	Irregular	Fresh	Hairline-fracture
91.776	N305	59.6	91.7	91.852	0.098	69	4.37	0	Fracture	Planar		Oxidized Hairline-fracture
91.917	N317	70.3	91.791	92.043	0.098	69	4.35	0	Fracture	Planar		Oxidized Hairline-fracture
92.05	N302	11.6	92.042	92.058	0.098	69	4.3	0	Fracture	Planar		Fresh Hairline-fracture
92.125	N311	64.4	92.118	92.218	0.098	69	4.33	0	Fracture	Discontinuous		Oxidized Hairline-fracture
92.165	N355	59.8	92.076	92.117	0.098	69	4.34	0	Fracture	Discontinuous		Oxidized Hairline-fracture
92.191	N287	17.8	92.178	92.204	0.098	69	4.34	0	Fracture	Planar		Oxidized Hairline-fracture
92.206	N299	64.1	92.117	92.296	0.098	69	4.34	0	Fracture	Planar		Oxidized Hairline-fracture
92.294	N304	13.9	92.283	92.304	0.098	69	4.36	0	Fracture	Planar		Fresh Open-fracture
97.167	N300	39.1	97.131	97.202	0.098	72.48	4.96	0	Fracture	Irregular	Fresh	Hairline-fracture
97.359	N293	44.8	97.316	97.402	0.098	71	4.95	0	Fracture	Irregular	Fresh	Open-fracture

Bh2 1.550-6.000m 1/10

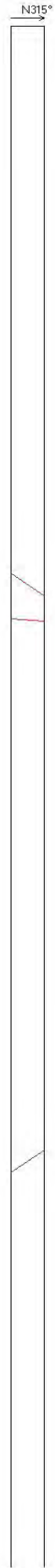
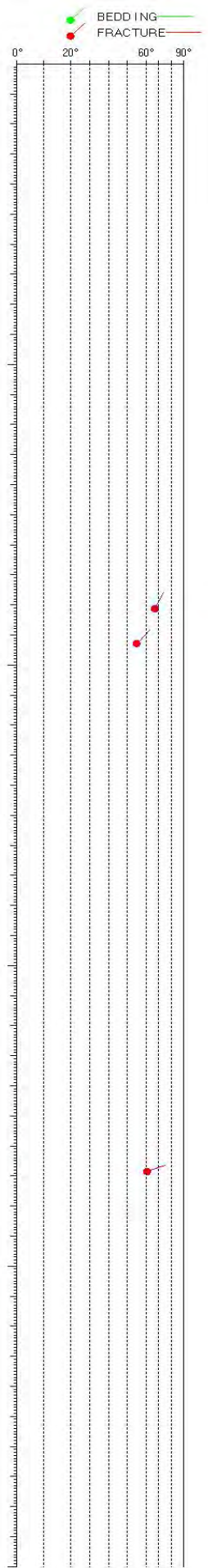
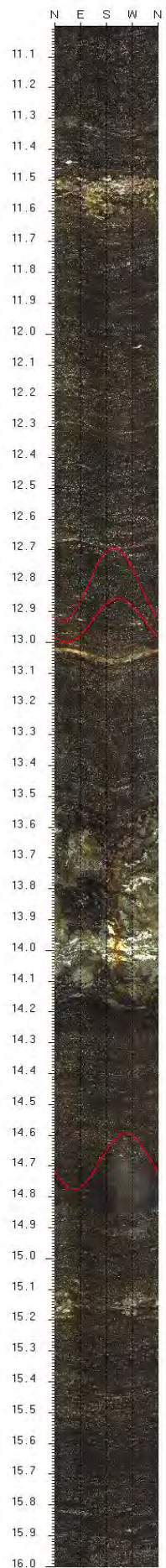


- Vein Irregular Weathered Calcite-vein
true thickness = 0.0351m , Mean dip N225 14
- Fracture Irregular Weathered Fracture-zone
true thickness = 0.1337m , Mean dip N142 22
- N175 11 Fracture Planar Weathered Open-fracture
- N153 14 Fracture Planar Weathered Open-fracture
- N124 15 Fracture Planar Fresh Hairline-fracture

3h2 6.000-11.000m 1/10



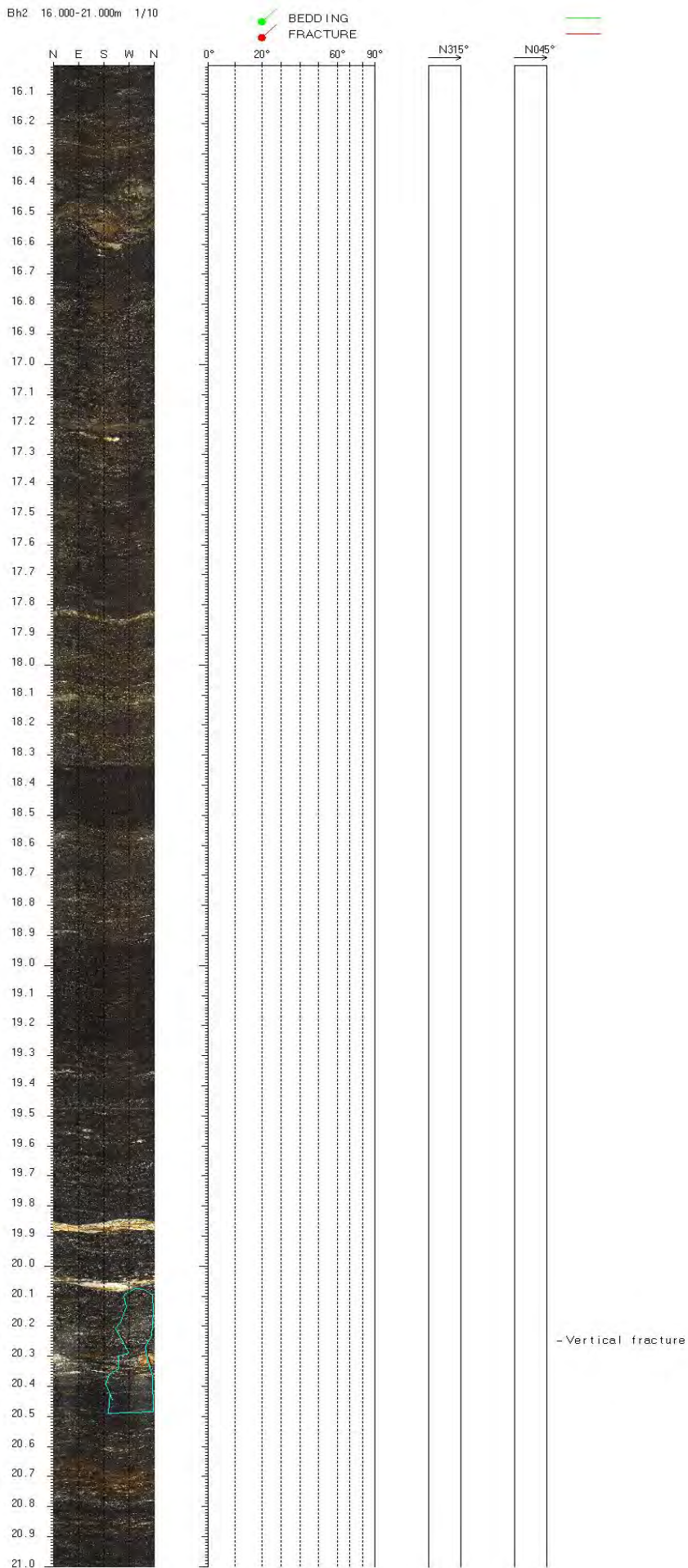
Bh2 11.000-16.000m 1/10



-N297 67 Fracture Irregular Fresh Hairline-fracture
 -N312 55 Fracture Irregular Fresh Hairline-fracture

-N338 61 Fracture Irregular Fresh Hairline-fracture

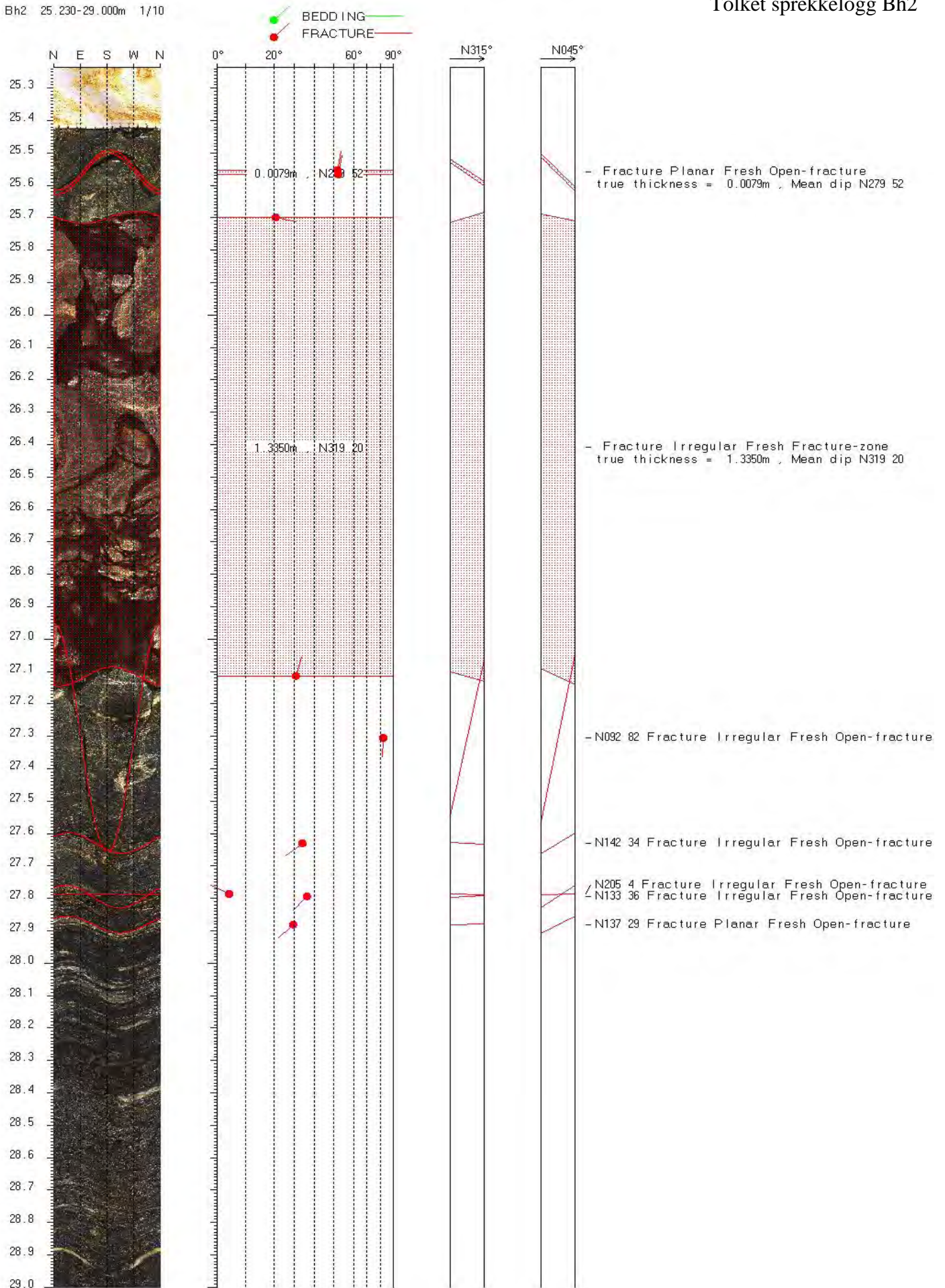
Bh2 16.000-21.000m 1/10



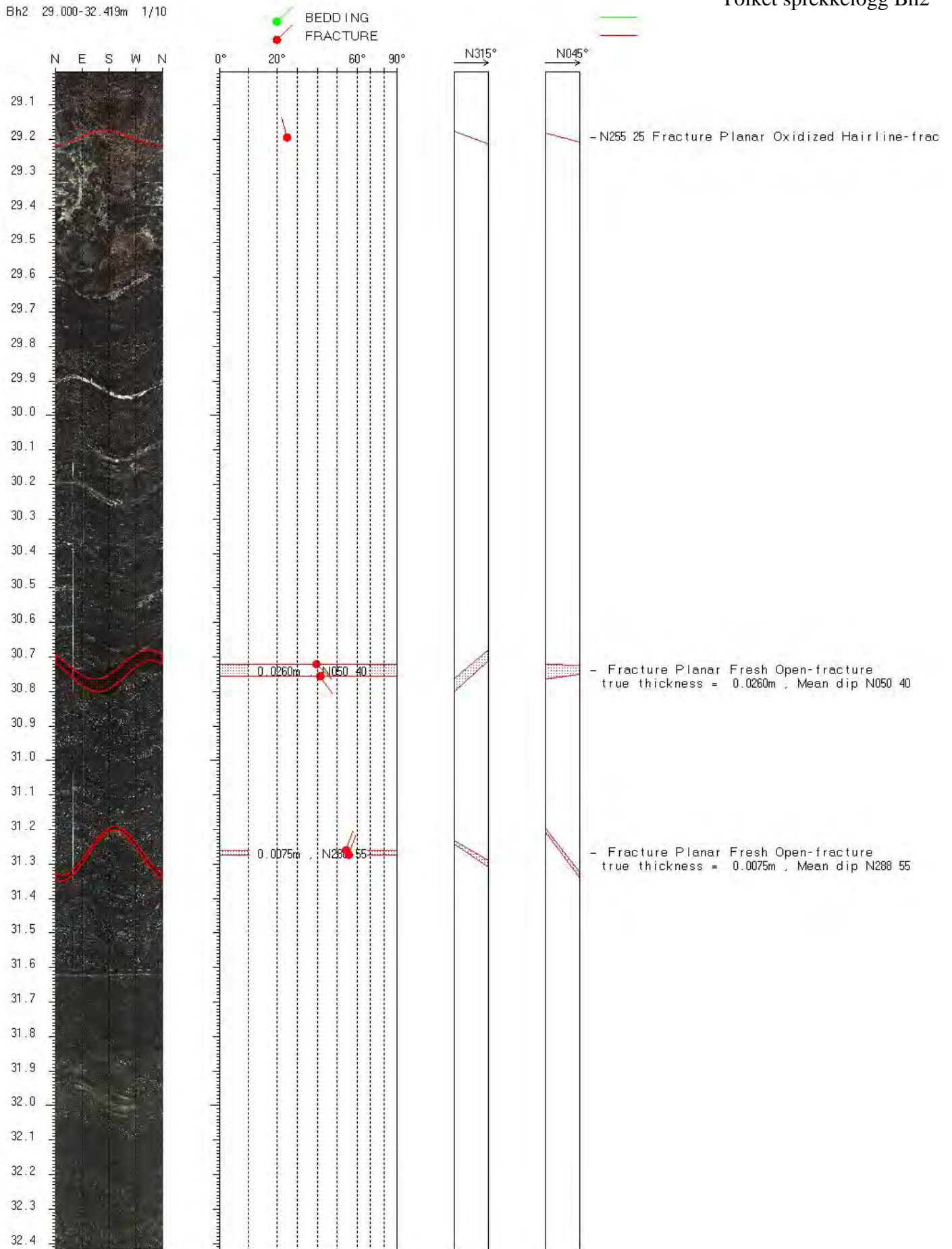
Bh2 21.000-25.309m 1/10



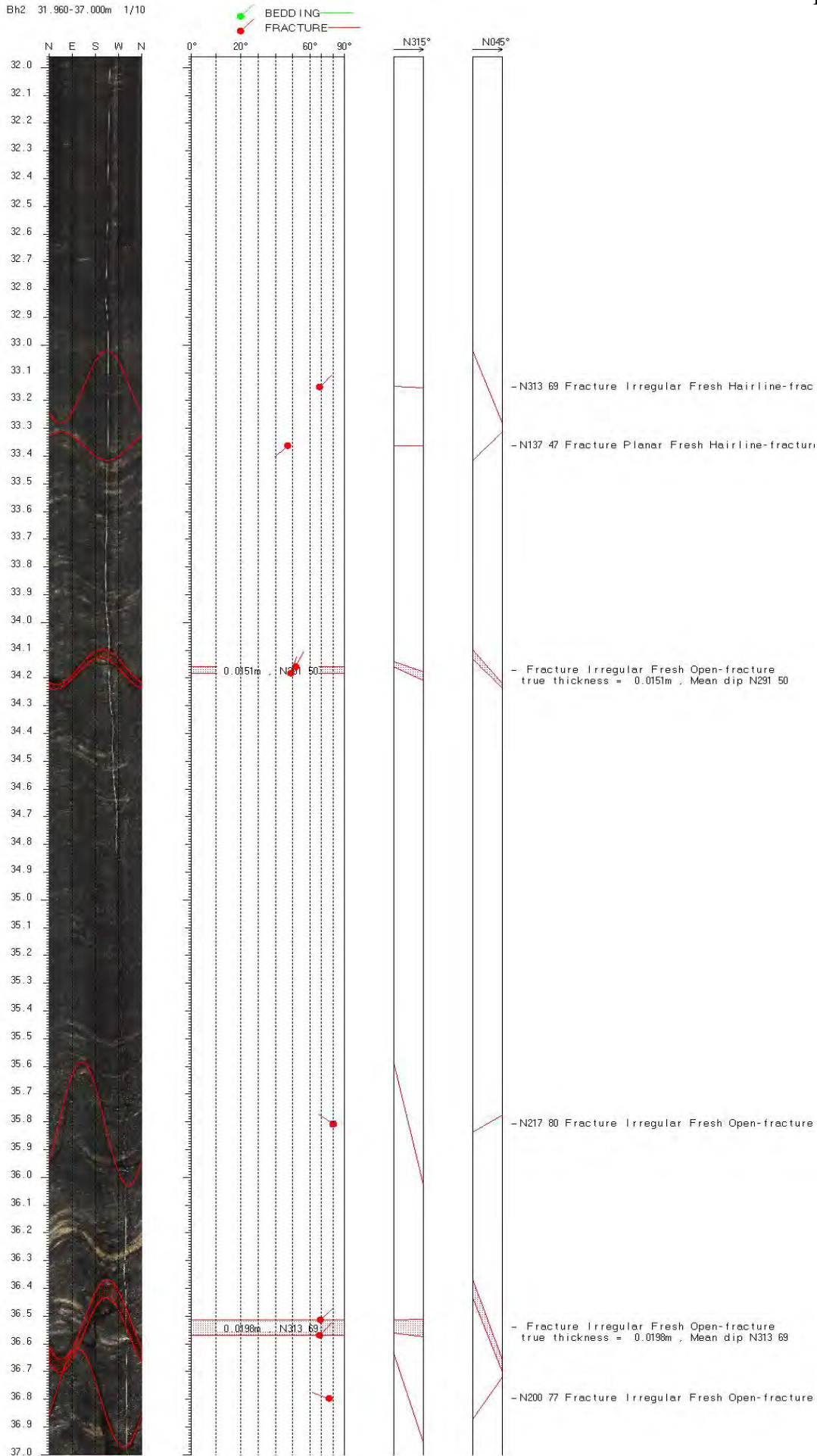
Bh2 25.230-29.000m 1/10



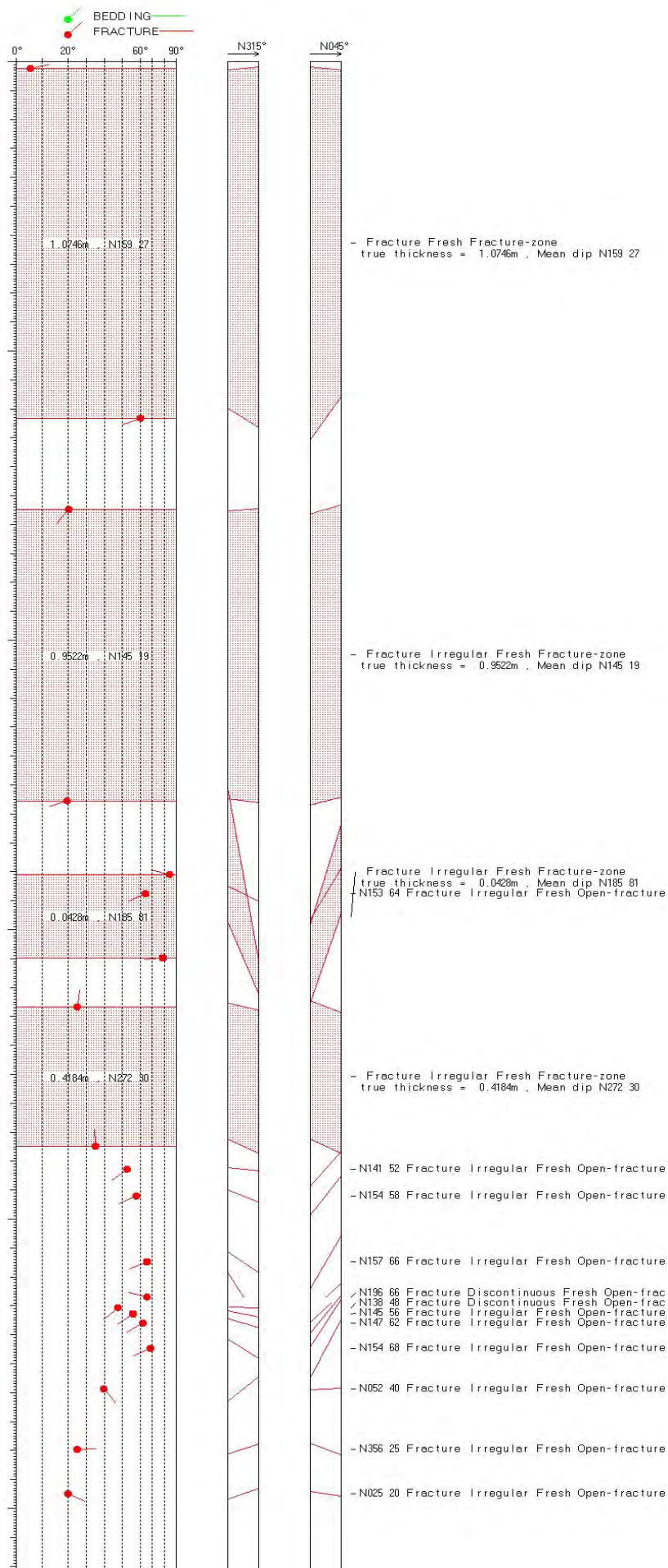
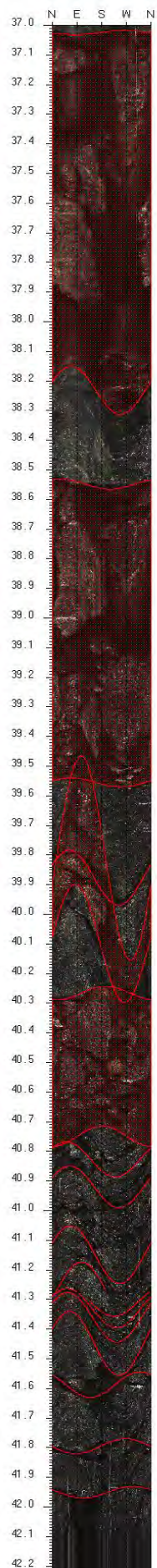
Bh2 29.000-32.419m 1/10



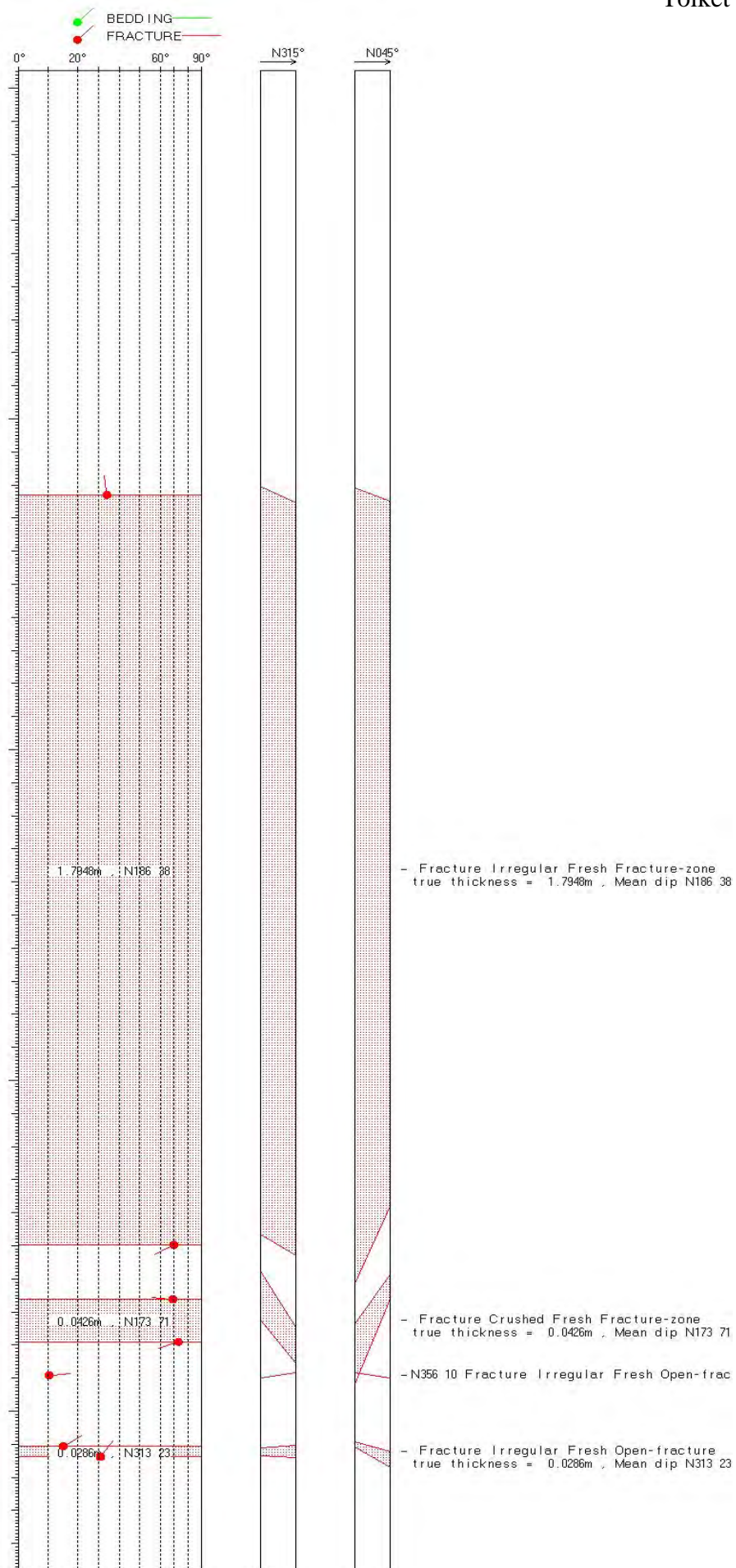
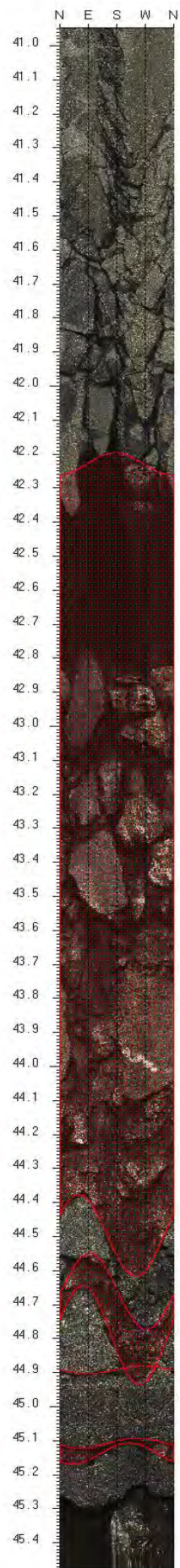
Bh2 31.960-37.000m 1/10



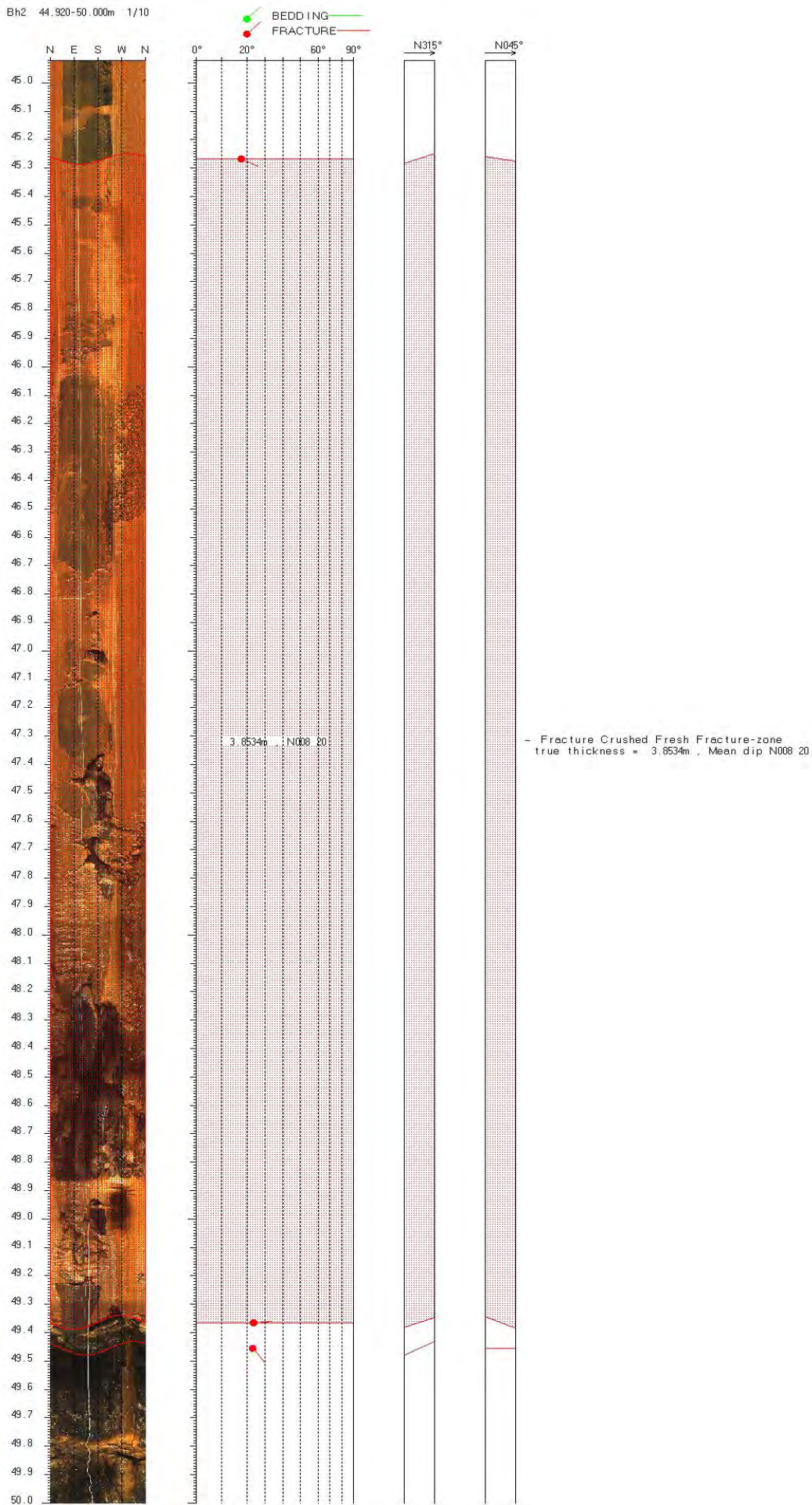
Bh2 37.000-42.220m 1/10



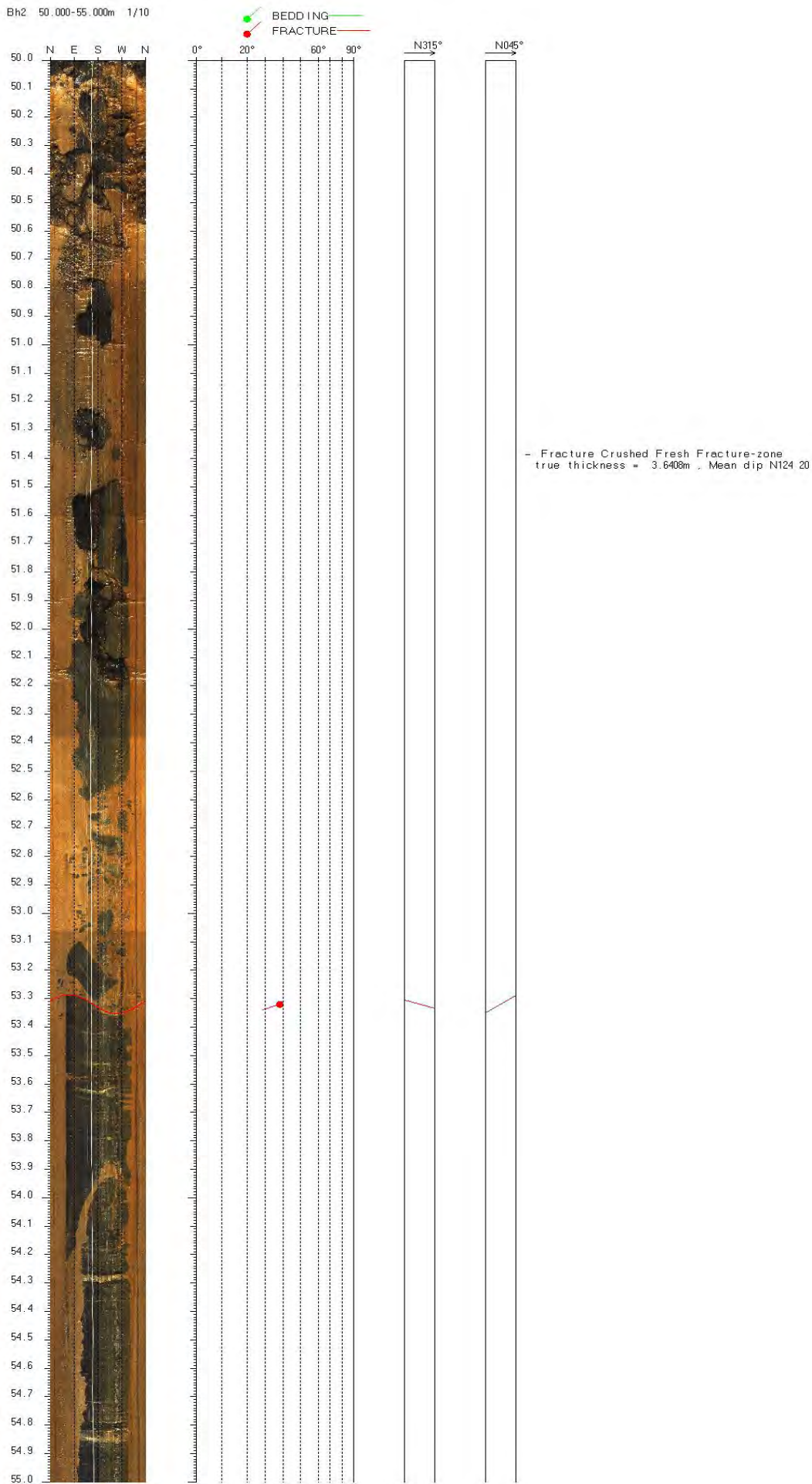
Bh2 40.940-45.489m 1/10



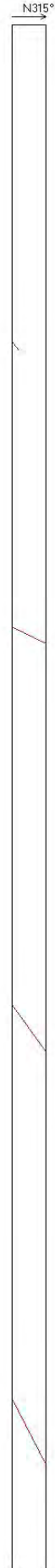
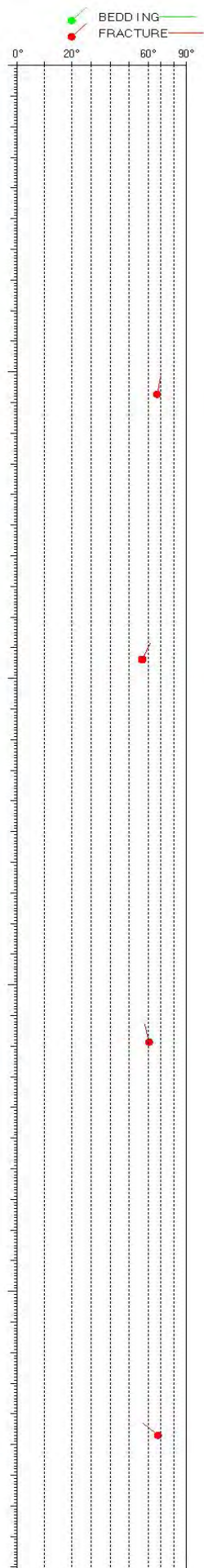
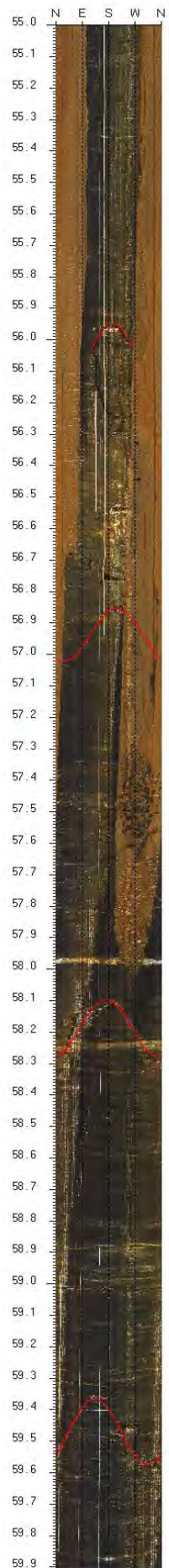
Bh2 44.920-50.000m 1/10



Bh2 50.000-55.000m 1/10



Bh2 55.000-59.910m 1/10



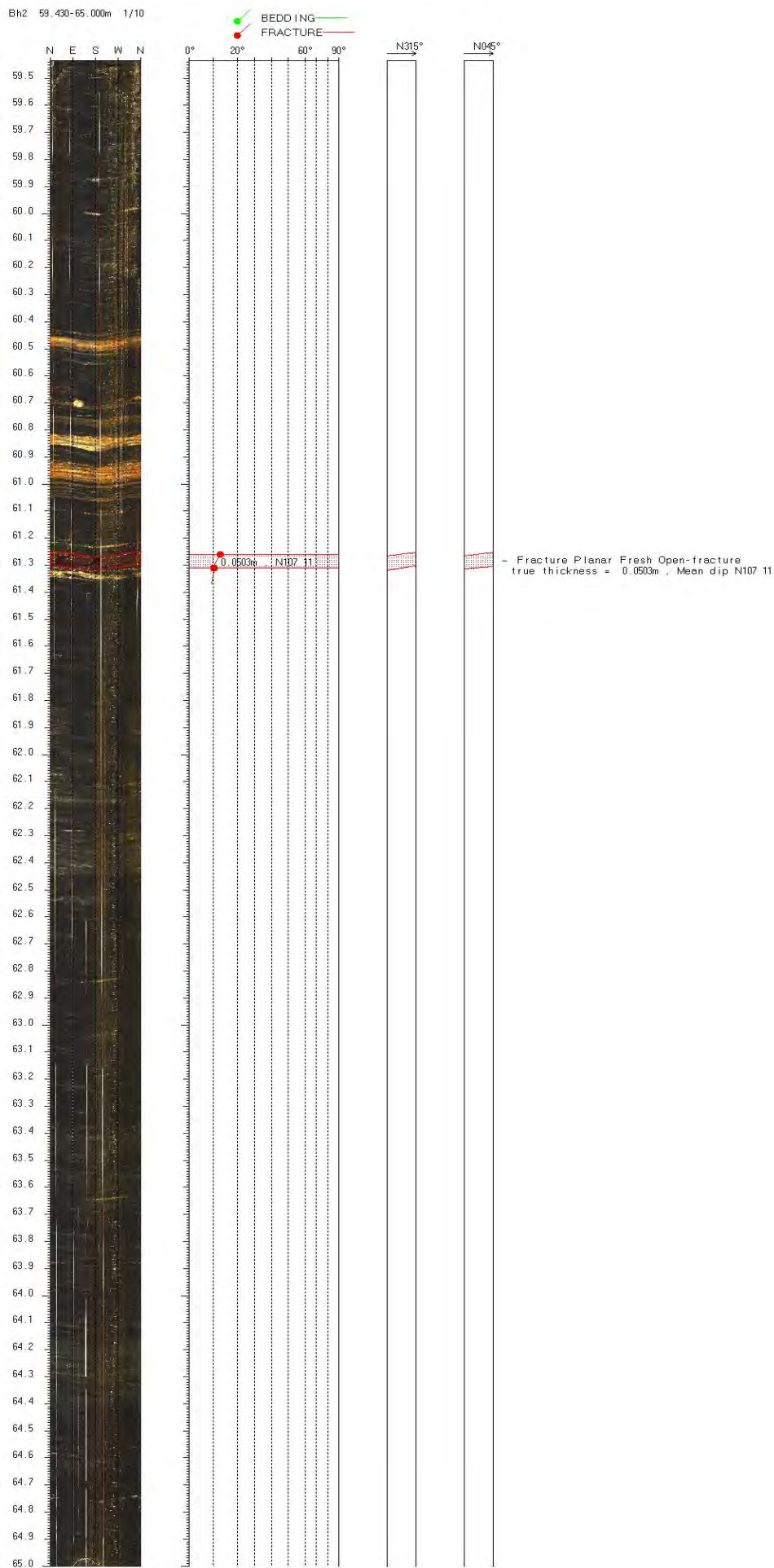
-N280 67 Fracture Discontinuous Fresh Open-frac

-N295 57 Fracture Irregular Fresh Hairline-frac

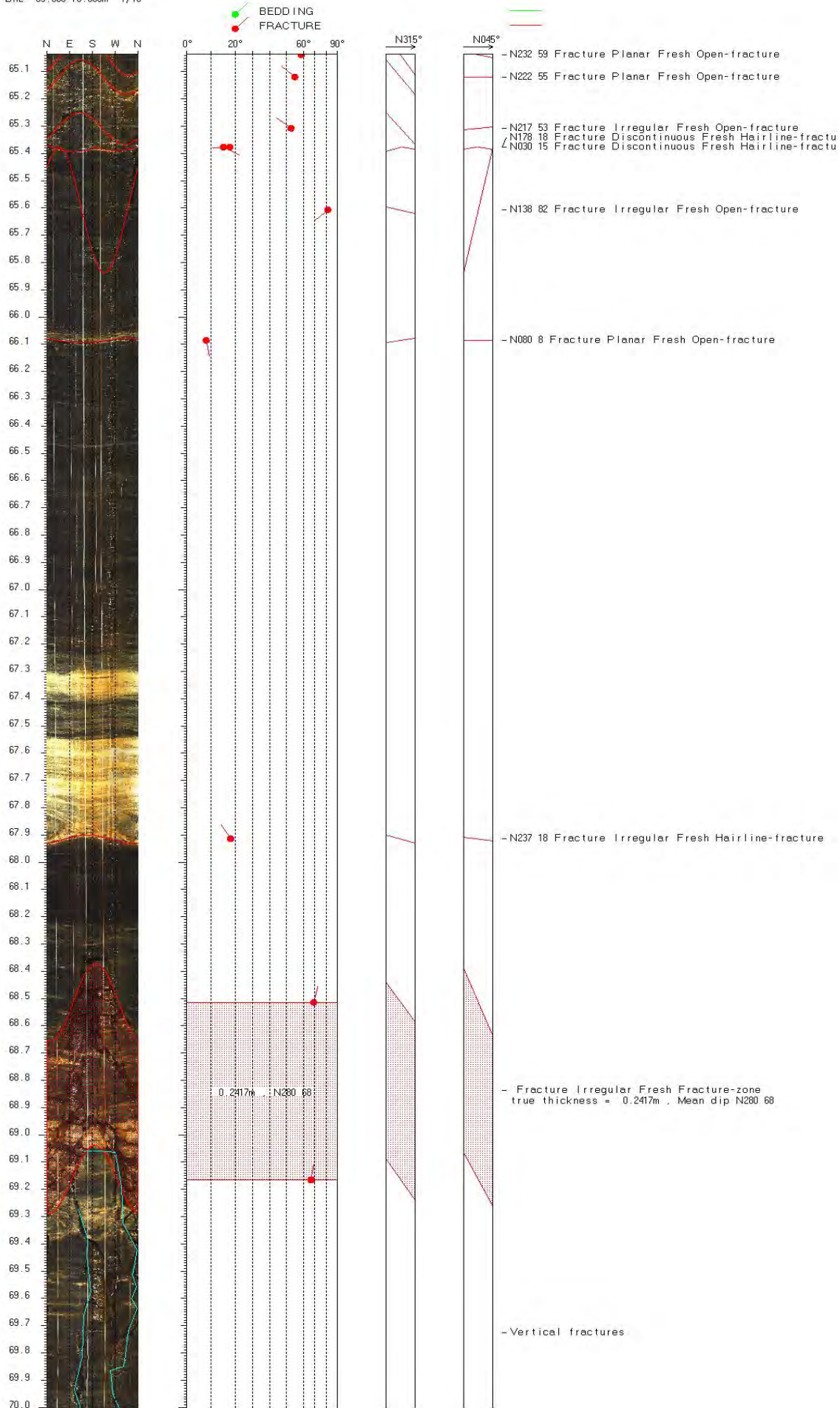
-N258 61 Fracture Irregular Fresh Hairline-frac

-N222 68 Fracture Planar Fresh Hairline-fractur

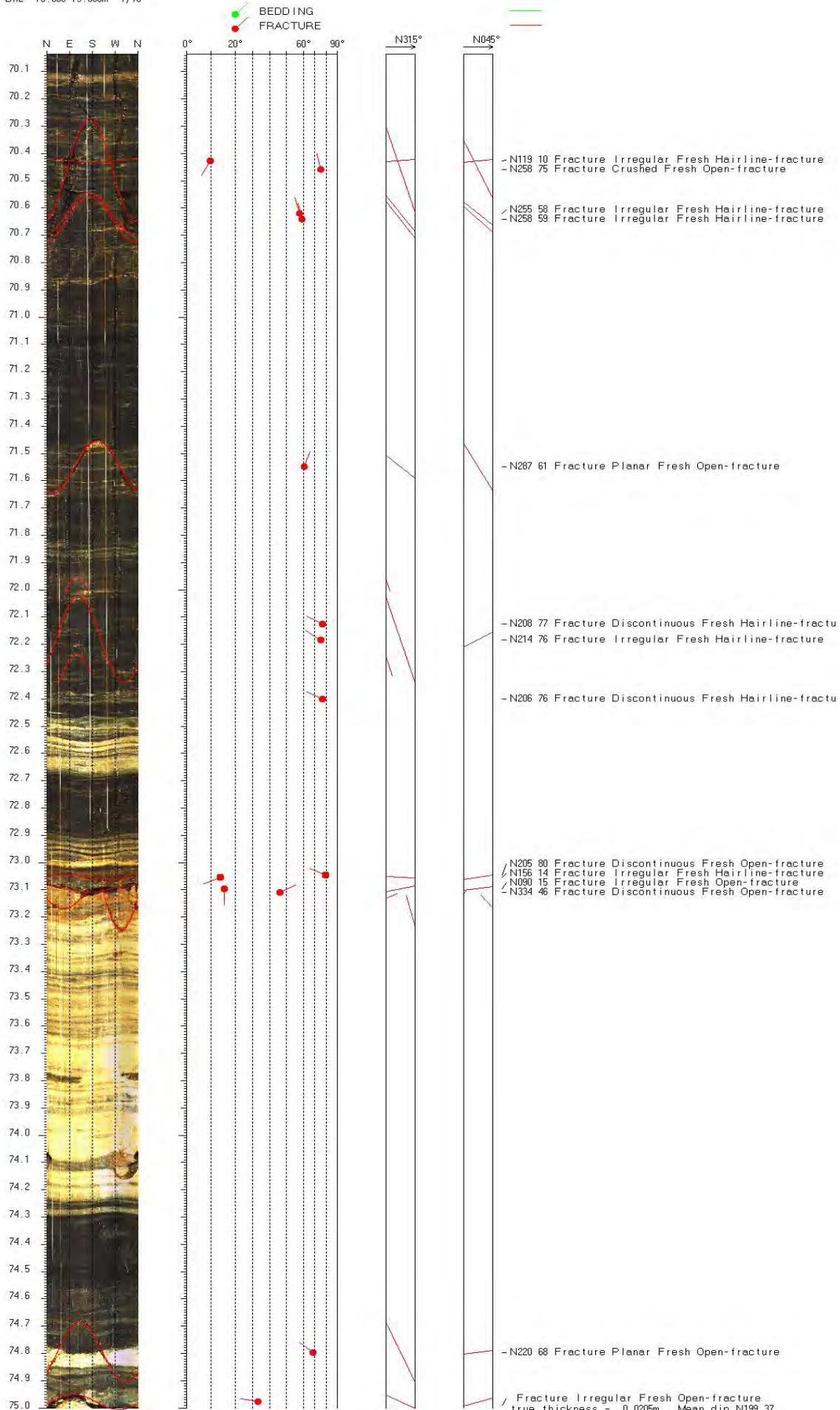
Bh2 59.430-65.000m 1/10



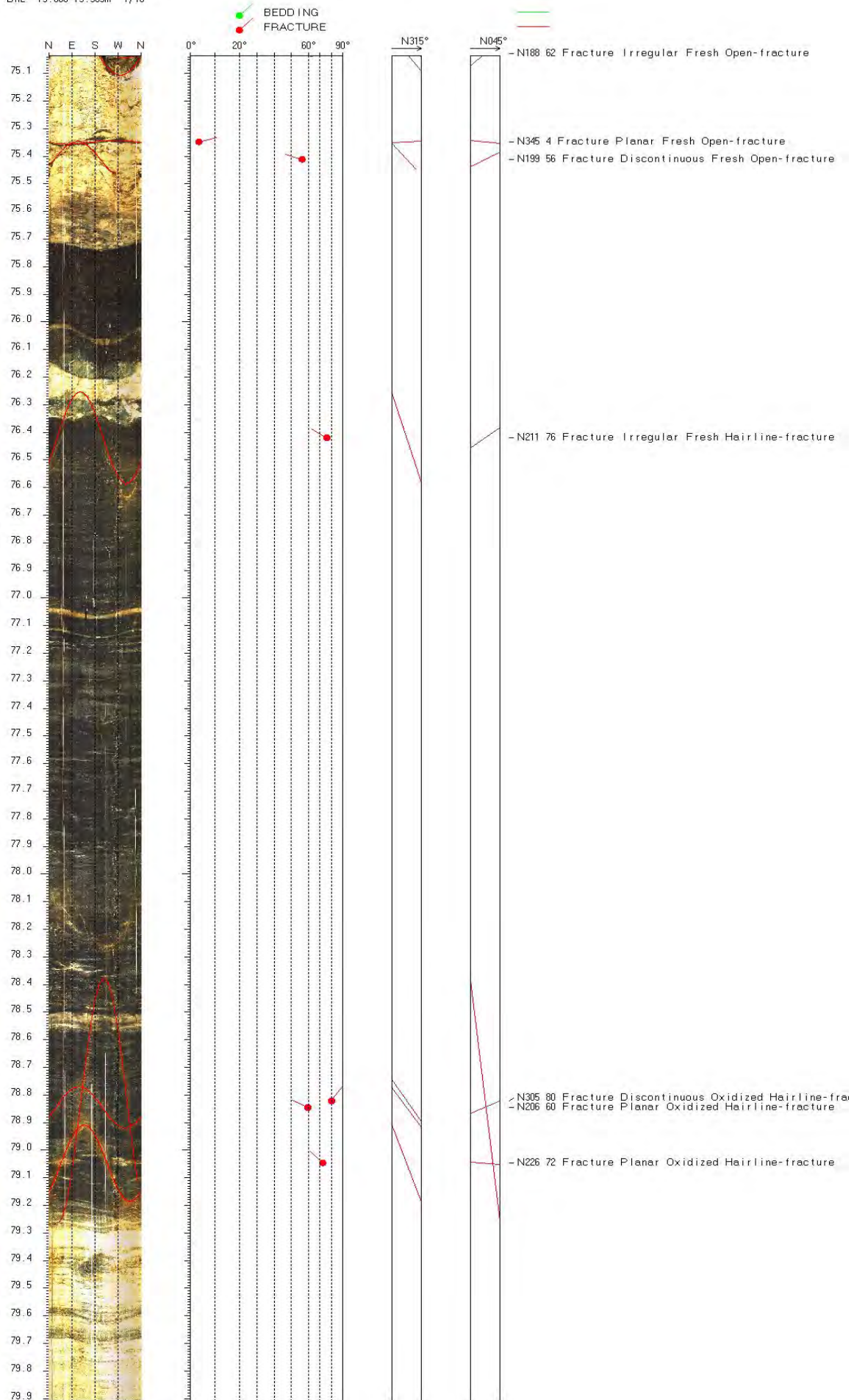
Bh2 65.000-70.000m 1/10

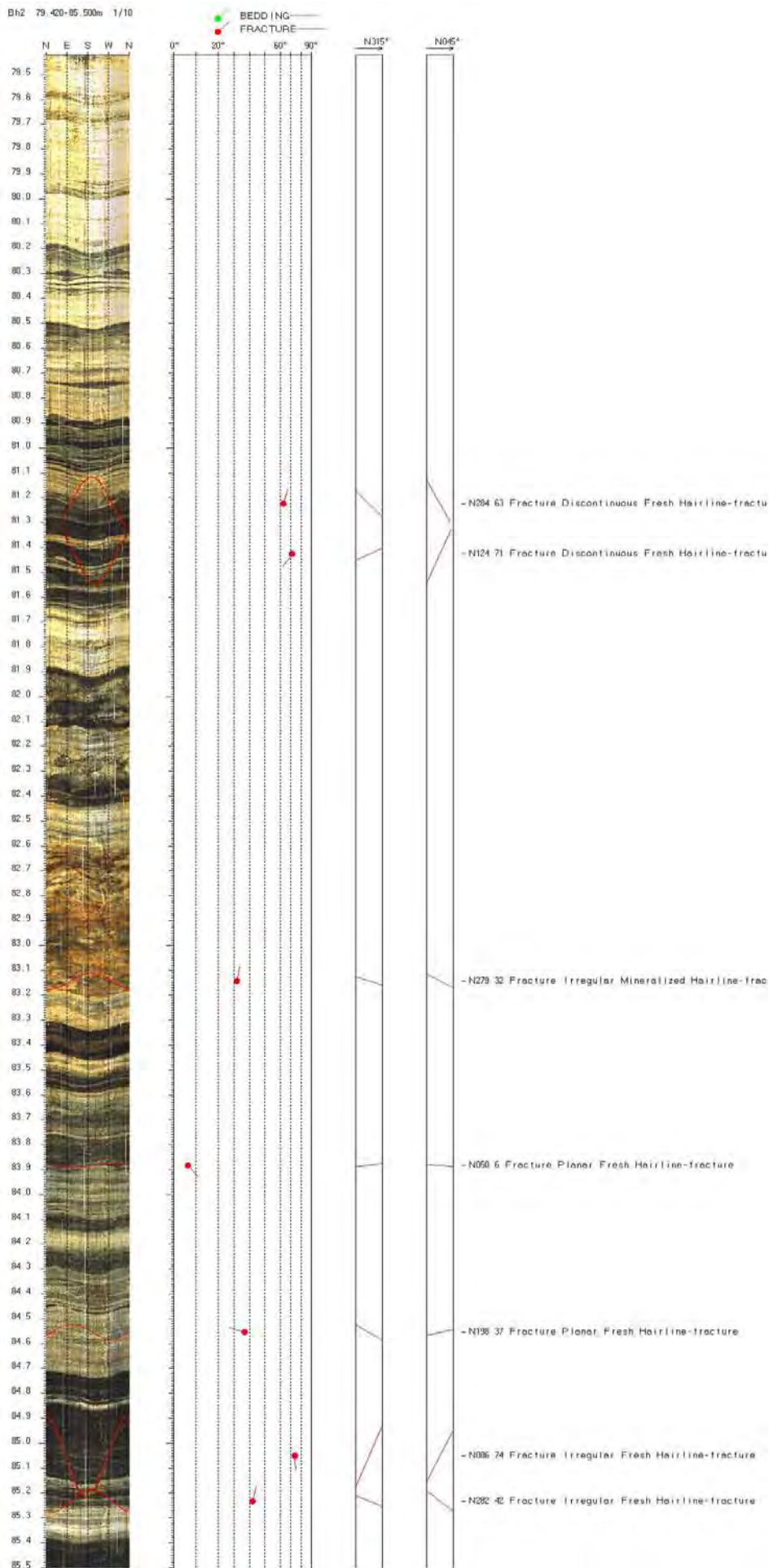


Bh2 70.000-75.000m 1/10

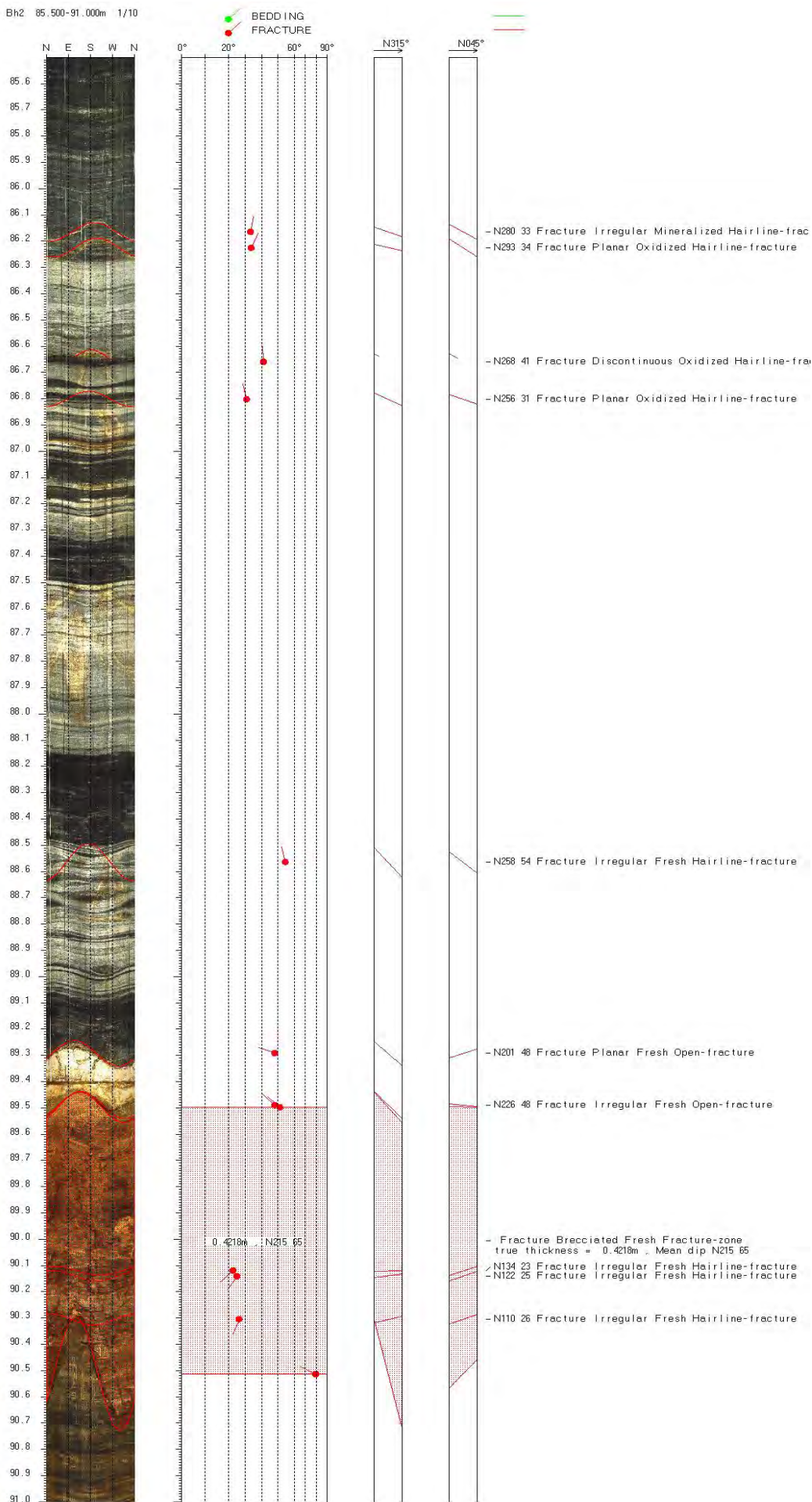


Bh2 75.000-79.909m 1/10

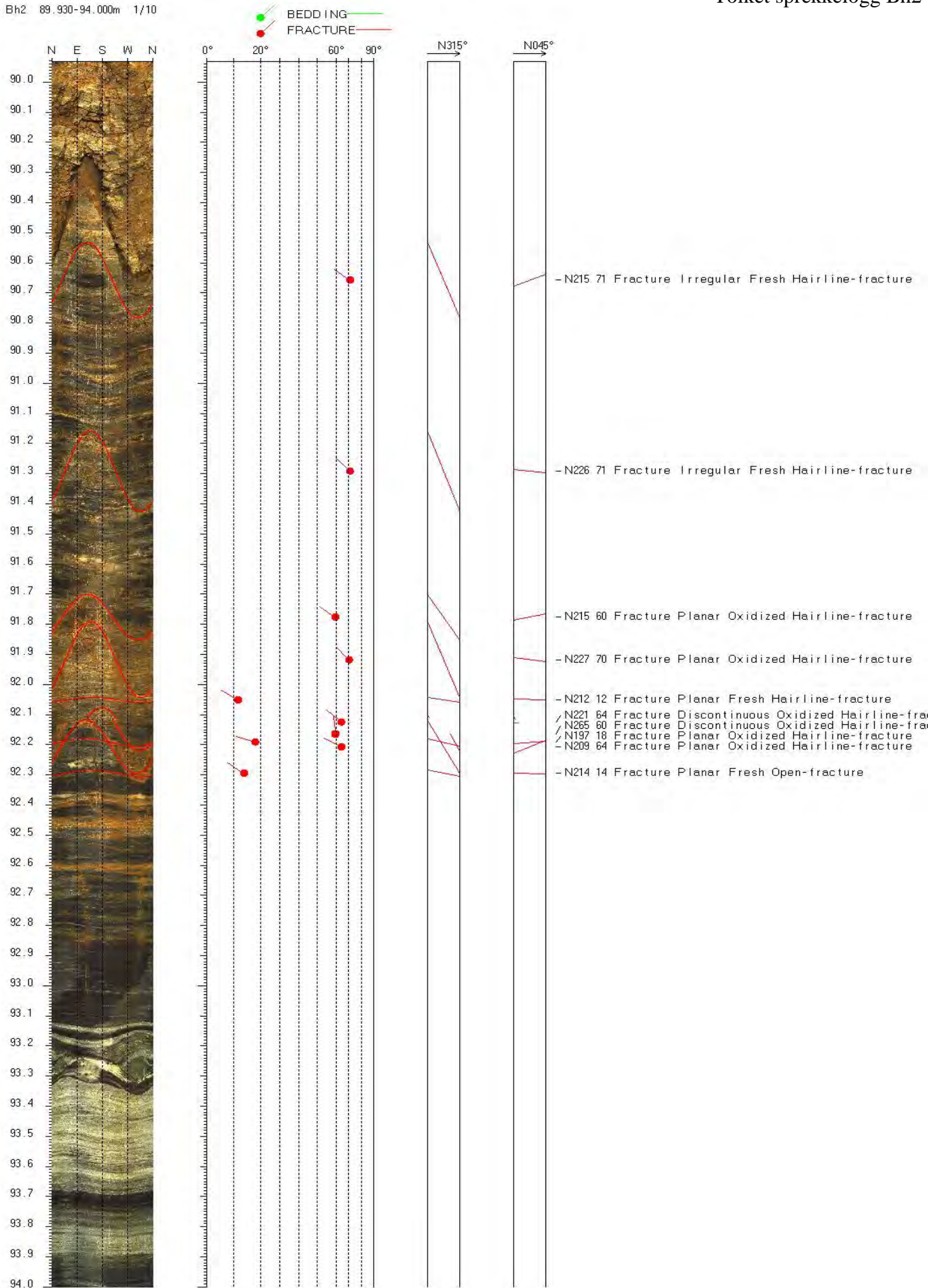




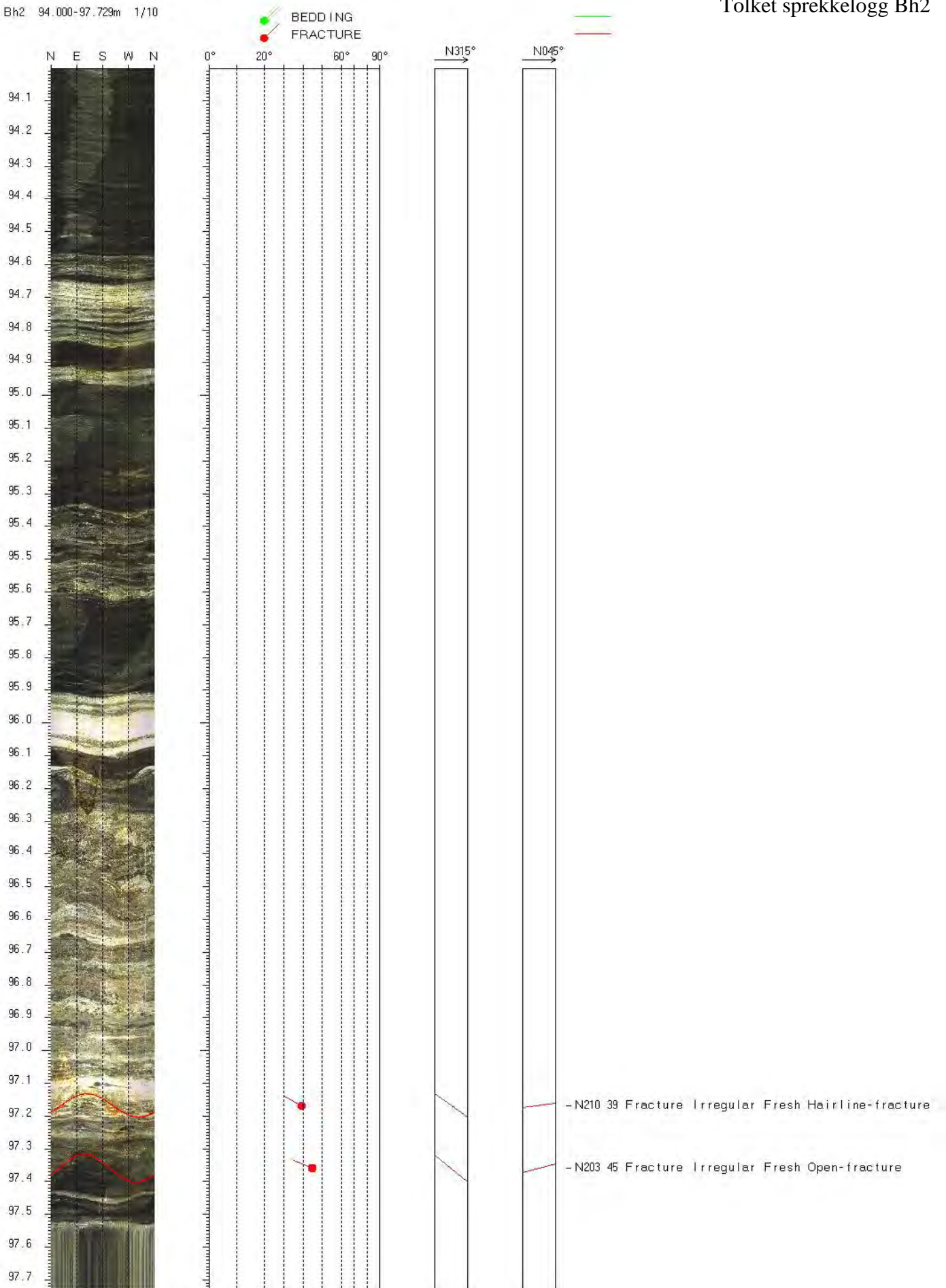
Bh2 85.500-91.000m 1/10



Bh2 89.930-94.000m 1/10



Bh2 94.000-97.729m 1/10



Databilag 7 side 1
 NGU Rapport 2014.016
 Sprekkedata Bh3

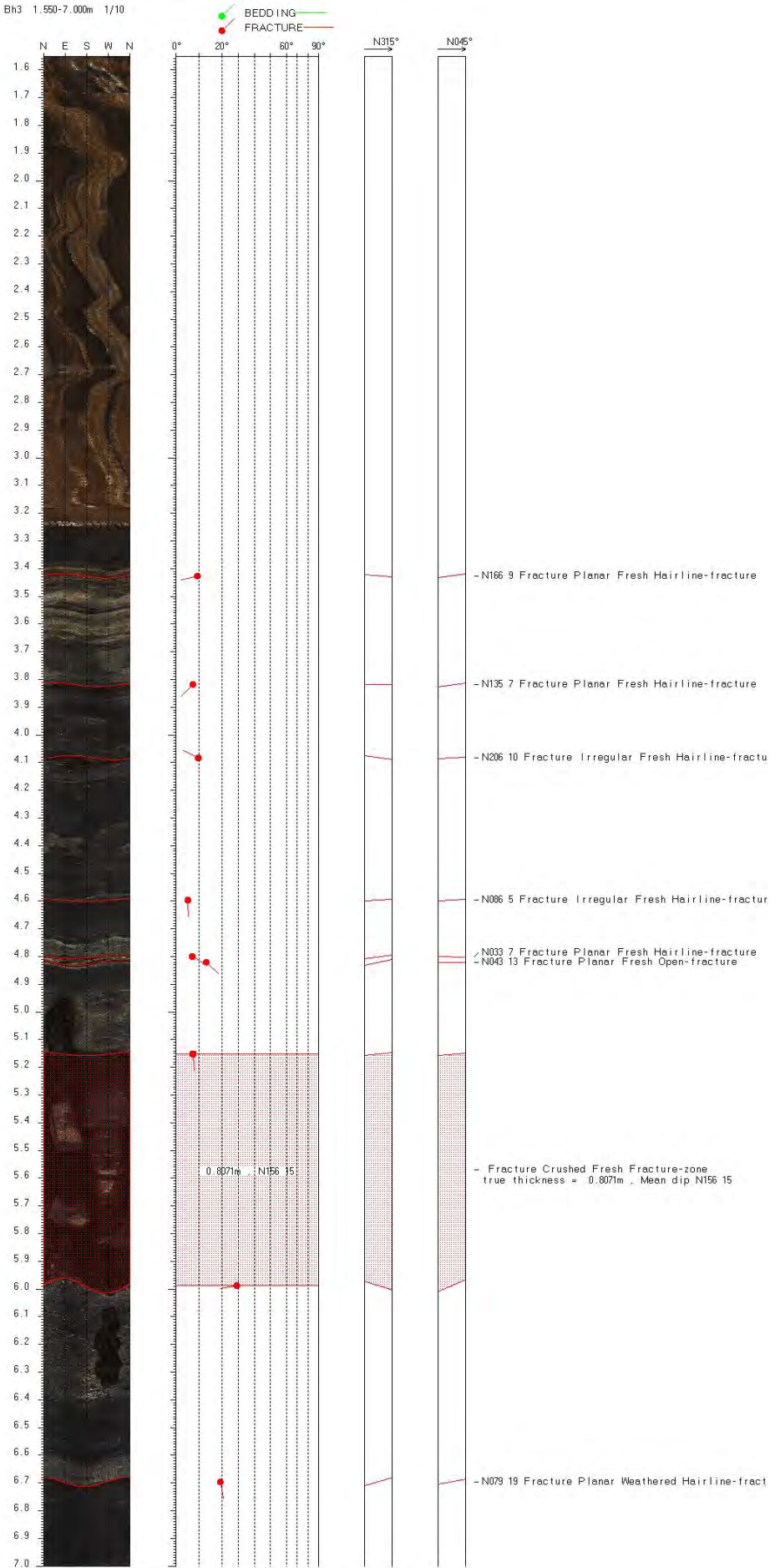
Upper Depth	Lower Azimuth	Well Dip	Well Depth	deviation Depth	Diam	Azimuth	Dev	Thickness				
3.425	256	9.2	3.417	3.433	0.098	119.16	0.08	0	Fracture	Plaar	Fresh	Hairlie-fracture
3.818	225	7.4	3.812	3.825	0.098	239.18	0.17	0	Fracture	Plaar	Fresh	Hairlie-fracture
4.081	296	9.5	4.073	4.089	0.098	138.82	0.19	0	Fracture	Irregular	Fresh	Hairlie-fracture
4.595	176	5.1	4.591	4.6	0.098	233.83	0.06	0	Fracture	Irregular	Fresh	Hairlie-fracture
4.8	123	7	4.794	4.806	0.098	271.35	0.05	0	Fracture	Plaar	Fresh	Hairlie-fracture
4.82	133	13.2	4.808	4.831	0.098	278.77	0.05	0	Fracture	Plaar	Fresh	Ope-fracture
5.151	174	7.3	5.144	5.157	0.098	264.1	0.04	0	Fracture	Crushed	Fresh	Fracture-zoe
5.987	261	28.8	5.96	6.014	0.098	353.08	0.2	0.8071	Fracture	Crushed	Fresh	Fracture-zoe
6.695	169	19.1	6.678	6.712	0.098	254.75	0.24	0	Fracture	Plaar	Weathered	Hairlie-fracture
7.709	304	77.5	7.488	7.617	0.098	288.88	0.03	0	Fracture	Discontinous	Fresh	Hairlie-fracture
8.2	3	74.5	8.024	8.377	0.098	297.09	0.03	0	Fracture	Discontinous	Fresh	Ope-fracture
8.556	297	3.8	8.552	8.559	0.098	303	0.04	0	Fracture	Plaar	Fresh	Hairlie-fracture
8.572	310	4.9	8.568	8.576	0.098	303	0.04	0	Fracture	Plaar	Fresh	Ope-fracture
8.757	296	2.6	8.754	8.759	0.098	296.62	0.01	0	Fracture	Plaar	Fresh	Ope-fracture
9.237	349	74.6	9.059	9.413	0.098	78.66	0.03	0	Fracture	Irregular	Fresh	Ope-fracture
9.524	308	69.8	9.391	9.657	0.098	330.93	0.01	0	Fracture	Crushed	Fresh	Ope-fracture
9.593	322	73.9	9.423	9.763	0.098	271.4	0.02	0.0217	Fracture	Crushed	Fresh	Ope-fracture
10.607	342	56	10.534	10.68	0.098	297.06	0.08	0	Fracture	Irregular	Fresh	Ope-fracture
13.387	234	74.3	13.214	13.56	0.098	2.31	0.17	0	Fracture	Irregular	Fresh	Ope-fracture
13.623	237	72	13.472	13.774	0.098	290.89	0.07	0	Fracture	Irregular	Fresh	Ope-fracture
13.694	241	69.1	13.565	13.822	0.098	276.63	0.09	0.0236	Fracture	Irregular	Fresh	Ope-fracture
13.994	61	52.5	13.931	14.022	0.098	280.65	0.15	0	Fracture	Plaar	Mieralized	Hairlie-fracture
14.049	247	57.9	13.971	14.128	0.098	292.1	0.2	0	Fracture	Plaar	Mieralized	Hairlie-fracture
15.532	41	56.1	15.459	15.605	0.098	316	0.34	0	Fracture	Crushed	Fresh	Fracture-zoe
15.648	68	59.6	15.565	15.731	0.098	317	0.36	0.0628	Fracture	Crushed	Fresh	Fracture-zoe
16.061	315	71.1	15.915	16.206	0.098	310.46	0.29	0	Fracture	Irregular	Fresh	Ope-fracture
17.751	140	18.9	17.734	17.767	0.098	312.86	0.38	0	Fracture	Plaar	Fresh	Hairlie-fracture
20.473	301	50.8	20.412	20.534	0.098	309.55	0.47	0	Fracture	Plaar	Fresh	Hairlie-fracture
20.99	146	16.7	20.975	21.004	0.098	312.57	0.52	0	Fracture	Plaar	Weathered	Hairlie-fracture
21.086	11	64.4	20.983	21.19	0.098	313	0.54	0	Fracture	Irregular	Fresh	Hairlie-fracture
23.647	292	59.4	23.563	23.732	0.098	315	0.58	0	Fracture	Crushed	Fresh	Fracture-zoe
23.834	306	56.5	23.758	23.91	0.098	313.6	0.56	0.0997	Fracture	Crushed	Fresh	Fracture-zoe
24.074	153	21	24.056	24.092	0.098	311.79	0.69	0	Fracture	Crushed	Fresh	Fracture-zoe
24.101	187	26.9	24.076	24.125	0.098	312.86	0.71	0	Fracture	Plaar	Fresh	Ope-fracture
24.219	216	14.2	24.207	24.231	0.098	315	0.58	0	Fracture	Plaar	Fresh	Ope-fracture
24.272	198	20.3	24.254	24.29	0.098	315	0.6	0	Fracture	Plaar	Fresh	Ope-fracture
24.336	129	7.5	24.331	24.342	0.098	315	0.59	0	Fracture	Plaar	Fresh	Ope-fracture
24.376	79	12.2	24.366	24.387	0.098	315.44	0.58	0.2939	Fracture	Crushed	Fresh	Fracture-zoe
24.398	86	9.6	24.39	24.406	0.098	315.89	0.57	0	Fracture	Crushed	Fresh	Fracture-zoe
26.145	243	35.5	26.11	26.18	0.098	297.04	0.15	1.6983	Fracture	Crushed	Fresh	Fracture-zoe
26.251	214	38.2	26.213	26.29	0.098	281.42	0.31	0	Fracture	Crushed	Fresh	Fracture-zoe
26.395	316	78.7	26.145	26.645	0.098	301.29	0.24	0	Fracture	Irregular	Fresh	Ope-fracture
26.402	230	23.8	26.381	26.424	0.098	301.88	0.24	0.13	Fracture	Crushed	Fresh	Fracture-zoe
26.652	240	17.6	26.636	26.668	0.098	292.04	0.7	0	Fracture	Crushed	Fresh	Fracture-zoe
26.719	243	21.4	26.7	26.739	0.098	294.49	0.57	0.0632	Fracture	Crushed	Fresh	Fracture-zoe
26.961	N199	6.7	26.955	26.966	0.098	314.73	0.46	0	Fracture	Planar	Fresh	Fracture-zone
27.228	N148	5	27.224	27.232	0.098	318.49	0.37	0.2664	Fracture	Planar	Fresh	Fracture-zone
27.488	N108	13.1	27.477	27.5	0.098	33.49	0.2	0	Fracture	Planar	Fresh	Open-fracture
27.604	N085	20.9	27.585	27.623	0.098	43.98	0.15	0	Fracture	Planar	Fresh	Hairline-fracture
27.609	N111	14.4	27.596	27.622	0.098	44.69	0.15	0	Fracture	Planar	Fresh	Open-fracture
27.756	N312	57.3	27.68	27.832	0.098	65.26	0.18	0	Fracture	Planar	Fresh	Open-fracture
27.758	N192	83.5	27.338	28.179	0.098	65.61	0.18	0	Fracture	Irregular	Fresh	Hairline-fracture
27.802	N317	43.5	27.756	27.848	0.098	71.73	0.18	0	Fracture	Planar	Fresh	Open-fracture
27.842	N321	39.8	27.801	27.883	0.098	71.23	0.16	0	Fracture	Planar	Fresh	Open-fracture
28.201	N327	53.8	28.134	28.268	0.098	323.23	0.09	0	Fracture	Planar	Fresh	Open-fracture
28.424	N315	28.9	28.396	28.451	0.098	280.34	0.4	0	Fracture	Planar	Fresh	Open-fracture
28.778	N233	55.1	28.707	28.849	0.098	288.46	0.43	0	Fracture	Planar	Fresh	Hairline-fracture
29.381	N181	5.2	29.376	29.385	0.098	280	0.2	0	Fracture	Planar	Weathered	Open-fracture
29.401	N079	3.6	29.398	29.404	0.098	280	0.19	0	Fracture	Planar	Weathered	Hairline-fracture
29.497	N321	15.8	29.483	29.511	0.098	285.41	0.19	0	Fracture	Planar	Weathered	Fracture-zone
29.521	N346	25.9	29.497	29.545	0.098	284	0.19	0.0226	Fracture	Planar	Weathered	Fracture-zone
29.53	N308	66.9	29.414	29.646	0.098	282.87	0.19	0	Fracture	Irregular	Fresh	Hairline-fracture
29.85	N223	42.1	29.805	29.894	0.098	294.83	0.17	0	Fracture	Crushed	Fresh	Fracture-zone
31.03	N280	62.2	30.936	31.123	0.098	6.05	0.29	0.7803	Fracture	Crushed	Fresh	Fracture-zone
31.144	N164	6.4	31.138	31.149	0.098	319.98	0.15	0	Fracture	Planar	Fresh	Hairline-fracture
31.158	N149	4	31.155	31.161	0.098	304.21	0.15	0	Fracture	Planar	Fresh	Hairline-fracture
31.616	N246	71.5	31.468	31.619	0.098	323.76	0.48	0	Fracture	Discontinuous	Fresh	Hairline-fracture
31.659	N252	8.3	31.652	31.666	0.098	354.56	0.33	0	Fracture	Planar	Fresh	Hairline-fracture
31.736	N291	67.9	31.66	31.857	0.098	10.54	0.31	0	Fracture	Discontinuous	Fresh	Hairline-fracture
31.838	N286	59.2	31.755	31.908	0.098	345.71	0.29	0	Fracture	Discontinuous	Fresh	Open-fracture
31.879	N280	49.9	31.82	31.937	0.098	303.36	0.28	0	Fracture	Planar	Fresh	Open-fracture
32.108	N281	62.2	32.016	32.202	0.098	277.14	0.28	0	Fracture	Discontinuous	Fresh	Open-fracture
32.155	N240	78.4	31.914	32.082	0.098	303	0.14	0	Fracture	Discontinuous	Fresh	Open-fracture
32.192	N186	9.8	32.184	32.2	0.098	303	0.12	0	Fracture	Planar	Fresh	Open-fracture
32.525	N234	67.8	32.415	32.645	0.098	278	0.09	0	Fracture	Discontinuous	Fresh	Open-fracture
32.723	N142	20.1	32.705	32.741	0.098	296.62	0.07	0	Fracture	Planar	Fresh	Hairline-fracture
33.431	N055	67.2	33.314	33.547	0.098	297.94	0.18	0	Fracture	Irregular	Clayey	Grout-filled
33.578	N052	72.7	33.422	33.734	0.098	289.91	0.25	0.0505	Fracture	Irregular	Clayey	Grout-filled
33.897	N156	26.4	33.873	33.921	0.098	3.12	0.35	0	Fracture	Irregular	Clayey	Grout-filled
34.011	N139	31.5	33.981	34.041	0.098	322.9	0.15	0.1	Fracture	Irregular	Clayey	Grout-filled
34.217	N278	10.3	34.208	34.226	0.098	342.26	0.19	0	Fracture	Irregular	Fresh	Quartz-vein
34.273	N305	16.9	34.258	34.288	0.098	349.74	0.16	0	Fracture	Planar	Fresh	Hairline-fracture
34.297	N288	60.9	34.209	34.386	0.098	344.48	0.15	0	Fracture	Irregular	Fresh	Hairline-fracture
34.393	N282	42.9	34.348	34.439	0.098	348.85	0.12	0	Fracture	Planar	Fresh	Hairline-fracture
34.463	N077	3.2	34.46	34.465	0.098	5.83	0.11	0	Fracture	Planar	Fresh	Hairline-fracture

Upper Depth	Lower Azimuth	Well Dip	Well Depth	deviation Depth	Diam	Azimuth	Dev	Thickness				
34.628	N294	62.6	34.534	34.723	0.098	12.58	0.15	0	Fracture	Irregular	Fresh	Open-fracture
34.681	N070	75.9	34.485	34.764	0.098	2.49	0.19	0	Fracture	Discontinuous		Fresh Open-fracture
34.713	N276	48.3	34.658	34.768	0.098	353.3	0.21	0	Fracture	Irregular	Fresh	Hairline-fracture
34.734	N194	11.1	34.724	34.743	0.098	344.54	0.18	0	Fracture	Planar	Fresh	Hairline-fracture
34.774	N148	7.8	34.768	34.781	0.098	307.64	0.12	0	Fracture	Planar	Fresh	Open-fracture
34.889	N256	31.5	34.859	34.919	0.098	297.33	0.16	0	Fracture	Planar	Fresh	Open-fracture
34.971	N280	38.6	34.932	35.01	0.098	339.32	0.16	0	Fracture	Planar	Fresh	Fracture-zone
35.077	N349	25.3	35.054	35.1	0.098	323.38	0.09	0.0945	Fracture	Planar	Fresh	Fracture-zone
35.258	N282	48.6	35.202	35.314	0.098	323.32	0.22	0	Fracture	Planar	Fresh	Open-fracture
35.388	N022	32.6	35.356	35.377	0.098	318.95	0.22	0	Fracture	Discontinuous		Fresh Hairline-fracture
35.431	N283	48.8	35.375	35.487	0.098	320.77	0.21	0	Fracture	Planar	Fresh	Hairline-fracture
35.589	N156	7.8	35.583	35.596	0.098	322.77	0.21	0	Fracture	Planar	Fresh	Hairline-fracture
35.608	N280	55.7	35.564	35.681	0.098	325.75	0.21	0	Fracture	Discontinuous		Fresh Hairline-fracture
35.678	N279	38.2	35.639	35.717	0.098	321.55	0.2	0	Fracture	Planar	Fresh	Hairline-fracture
35.815	N285	32.3	35.784	35.846	0.098	319	0.19	0	Fracture	Planar	Fresh	Hairline-fracture
35.858	N008	59.5	35.774	35.941	0.098	318.55	0.2	0	Fracture	Irregular	Fresh	Hairline-fracture
35.971	N294	50.6	35.91	36.031	0.098	312.32	0.23	0	Fracture	Irregular	Fresh	Fracture-zone
36.146	N228	16.2	36.132	36.16	0.098	320	0.17	0.1517	Fracture	Irregular	Fresh	Fracture-zone
36.201	N272	20.4	36.183	36.219	0.098	330.36	0.16	0	Fracture	Irregular	Fresh	Fracture-zone
36.259	N212	22.5	36.239	36.279	0.098	315.24	0.16	0.055	Fracture	Irregular	Fresh	Fracture-zone
36.289	N227	53.5	36.223	36.342	0.098	322.34	0.19	0	Fracture	Discontinuous		Fresh Open-fracture
36.367	N298	44.6	36.326	36.416	0.098	356.46	0.21	0	Fracture	Discontinuous		Fresh Open-fracture
36.398	N302	40.4	36.356	36.44	0.098	327.9	0.2	0	Fracture	Planar	Fresh	Open-fracture
36.446	N290	32.7	36.415	36.478	0.098	323.69	0.23	0	Fracture	Irregular	Fresh	Fracture-zone
37.593	N061	33.9	37.56	37.626	0.098	337.29	0.2	1.1075	Fracture	Irregular	Fresh	Fracture-zone
38.192	N022	77.1	37.975	38.409	0.098	0.24	0.14	0	Fracture	Planar	Fresh	Open-fracture
38.401	N185	17.4	38.386	38.416	0.098	354.11	0.16	0	Fracture	Planar	Fresh	Open-fracture
38.463	N166	18.5	38.45	38.479	0.098	343.41	0.16	0	Fracture	Discontinuous		Fresh Open-fracture
38.541	N166	14.5	38.531	38.554	0.098	339.58	0.17	0	Fracture	Discontinuous		Fresh Open-fracture
38.582	N166	17	38.569	38.597	0.098	328.71	0.18	0	Fracture	Discontinuous		Fresh Open-fracture
39.061	N201	80.4	38.776	39.078	0.098	324.47	0.31	0	Fracture	Discontinuous		Fresh Open-fracture
40.668	N020	41.7	40.624	40.712	0.098	318	0.24	0	Fracture	Planar	Fresh	Hairline-fracture
41.065	N276	75.2	40.877	41.253	0.098	314.65	0.24	0	Fracture	Irregular	Fresh	Hairline-fracture
41.134	N177	5	41.129	41.138	0.098	310	0.22	0	Fracture	Irregular	Fresh	Hairline-fracture
41.294	N027	48.7	41.238	41.35	0.098	315.23	0.27	0	Fracture	Irregular	Fresh	Fracture-zone
41.5	N337	65.4	41.392	41.609	0.098	320	0.29	0.1197	Fracture	Irregular	Fresh	Fracture-zone
41.681	N275	6.5	41.675	41.687	0.098	331.82	0.24	0	Fracture	Irregular	Clayey	Open-fracture
41.765	N228	7.4	41.759	41.771	0.098	328.55	0.3	0	Fracture	Irregular	Clayey	Open-fracture
41.896	N317	8	41.889	41.903	0.098	336.36	0.35	0	Fracture	Irregular	Fresh	Fracture-zone
41.983	N305	15.6	41.969	41.997	0.098	331	0.35	0.0853	Fracture	Irregular	Fresh	Fracture-zone
42.134	N091	9.7	42.125	42.142	0.098	332.59	0.37	0	Fracture	Irregular	Fresh	Fracture-zone
42.359	N345	7.9	42.352	42.367	0.098	330.44	0.34	0.2247	Fracture	Irregular	Fresh	Fracture-zone
42.538	N183	8.5	42.531	42.545	0.098	341.03	0.35	0	Fracture	Irregular	Fresh	Hairline-fracture
42.777	N195	57.8	42.7	42.854	0.098	345	0.3	0	Fracture	Discontinuous		Fresh Open-fracture
42.887	N210	75.7	42.698	43.076	0.098	350.32	0.33	0	Fracture	Discontinuous		Fresh Open-fracture
43.047	N200	79.3	42.797	43.298	0.098	4.6	0.39	0.0347	Fracture	Crushed	Fresh	Open-fracture
43.392	N080	13.6	43.38	43.404	0.098	18.83	0.5	0	Fracture	Irregular	Fresh	Open-fracture
43.863	N138	2.7	43.861	43.865	0.098	322.3	0.46	0	Fracture	Irregular	Fresh	Open-fracture
43.894	N146	2.5	43.893	43.896	0.098	319.77	0.48	0	Fracture	Irregular	Fresh	Open-fracture
43.908	N215	3.6	43.905	43.911	0.098	317.76	0.49	0	Fracture	Irregular	Fresh	Fracture-zone
43.935	N173	6.7	43.93	43.941	0.098	310.29	0.47	0.0266	Fracture	Irregular	Fresh	Fracture-zone
43.973	N138	6.2	43.968	43.978	0.098	299.71	0.45	0	Fracture	Irregular	Fresh	Hairline-fracture
43.98	N120	4.4	43.977	43.984	0.098	297.66	0.45	0	Fracture	Irregular	Fresh	Hairline-fracture
44.135	N072	3	44.133	44.138	0.098	289.52	0.42	0	Fracture	Planar	Fresh	Open-fracture
44.2	N330	42.8	44.154	44.246	0.098	289.39	0.5	0	Fracture	Irregular	Fresh	Open-fracture
44.266	N104	3.2	44.263	44.268	0.098	284.27	0.49	0	Fracture	Discontinuous		Fresh Open-fracture
44.305	N152	7.7	44.298	44.311	0.098	298.16	0.37	0	Fracture	Discontinuous		Fresh Open-fracture
44.401	N022	82.1	44.033	44.77	0.098	327.09	0.54	0	Fracture	Crushed	Fresh	Open-fracture
45.015	N291	56.8	44.94	45.091	0.098	348.14	0.31	0	Fracture	Irregular	Fresh	Fracture-zone
45.108	N300	56.3	45.034	45.182	0.098	340.24	0.24	0.0512	Fracture	Irregular	Fresh	Fracture-zone
45.201	N105	1.6	45.2	45.202	0.098	347.72	0.26	0	Fracture	Planar	Fresh	Hairline-fracture
45.257	N053	2.5	45.255	45.26	0.098	357	0.35	0	Fracture	Planar	Fresh	Hairline-fracture
46.762	N304	61.3	46.675	46.849	0.098	77.69	0.95	0	Fracture	Planar	Fresh	Open-fracture
46.966	N002	69.8	46.831	47.101	0.098	74.51	0.92	0.002	Fracture	Irregular	Fresh	Open-fracture
47.008	N003	67	46.891	47.126	0.098	72.91	0.94	0.0023	Fracture	Planar	Fresh	Open-fracture
48.059	N097	15	48.045	48.073	0.098	76.8	0.97	0	Fracture	Planar	Fresh	Open-fracture
48.067	N102	13.5	48.055	48.08	0.098	76.46	0.98	0.0082	Fracture	Planar	Fresh	Open-fracture
48.396	N232	42	48.354	48.439	0.098	78	0.87	0	Fracture	Irregular	Fresh	Hairline-fracture
48.965	N299	65.1	48.863	48.995	0.098	80.22	0.9	0	Fracture	Discontinuous		Fresh Open-fracture
48.979	N318	77.1	48.773	49.185	0.098	80.51	0.9	0	Fracture	Irregular	Fresh	Open-fracture
49.019	N304	72.3	48.872	49.051	0.098	81	0.89	0	Fracture	Discontinuous		Fresh Open-fracture
49.106	N301	71.5	48.964	49.247	0.098	79.07	0.88	0	Fracture	Irregular	Fresh	Open-fracture
50.015	N347	61.6	49.925	50.105	0.098	89	0.76	0	Fracture	Irregular	Fresh	Fracture-zone
50.166	N344	58.8	50.085	50.246	0.098	86.7	0.71	0.0748	Fracture	Irregular	Fresh	Fracture-zone
50.319	N092	10.7	50.309	50.329	0.098	87	0.66	0	Fracture	Irregular	Fresh	Open-fracture
50.488	N292	34.6	50.455	50.521	0.098	84.68	0.73	0.1652	Fracture	Irregular	Fresh	Open-fracture
53.085	N012	72	52.933	53.238	0.098	83	0.73	0	Fracture	Planar	Fresh	Hairline-fracture
53.311	N278	29.6	53.284	53.338	0.098	83.87	0.72	0	Fracture	Planar	Fresh	Hairline-fracture
54.629	N070	4.9	54.624	54.634	0.098	85.5	0.7	0	Fracture	Planar	Fresh	Hairline-fracture
55.157	N230	2.5	55.155	55.158	0.098	84	0.73	0	Fracture	Planar	Fresh	Open-fracture
55.181	N229	14	55.17	55.193	0.098	84	0.72	0.0245	Fracture	Planar	Fresh	Open-fracture
56.369	N079	62.4	56.273	56.465	0.098	86	0.69	0	Fracture	Planar	Fresh	Hairline-fracture
58.272	N119	4.8	58.267	58.276	0.098	84.65	0.67	0	Fracture	Planar	Fresh	Hairline-fracture
58.725	N345	86.7	57.901	59.549	0.098	83	0.55	0	Fracture	Irregular	Fresh	Open-fracture
60.428	N272	61.4	60.34	60.515	0.098	87.47	0.69	0	Fracture	Planar	Fresh	Fracture-zone

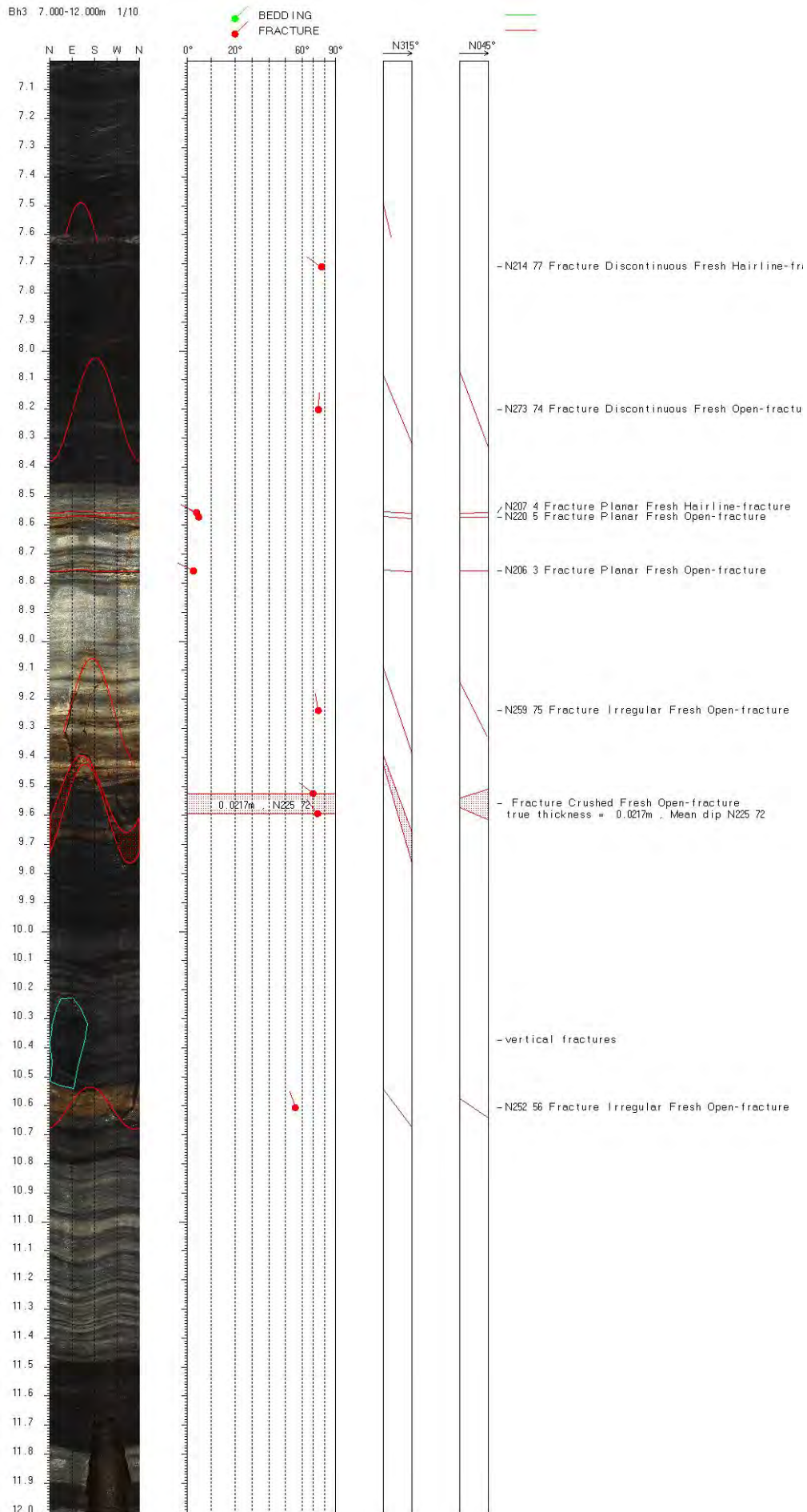
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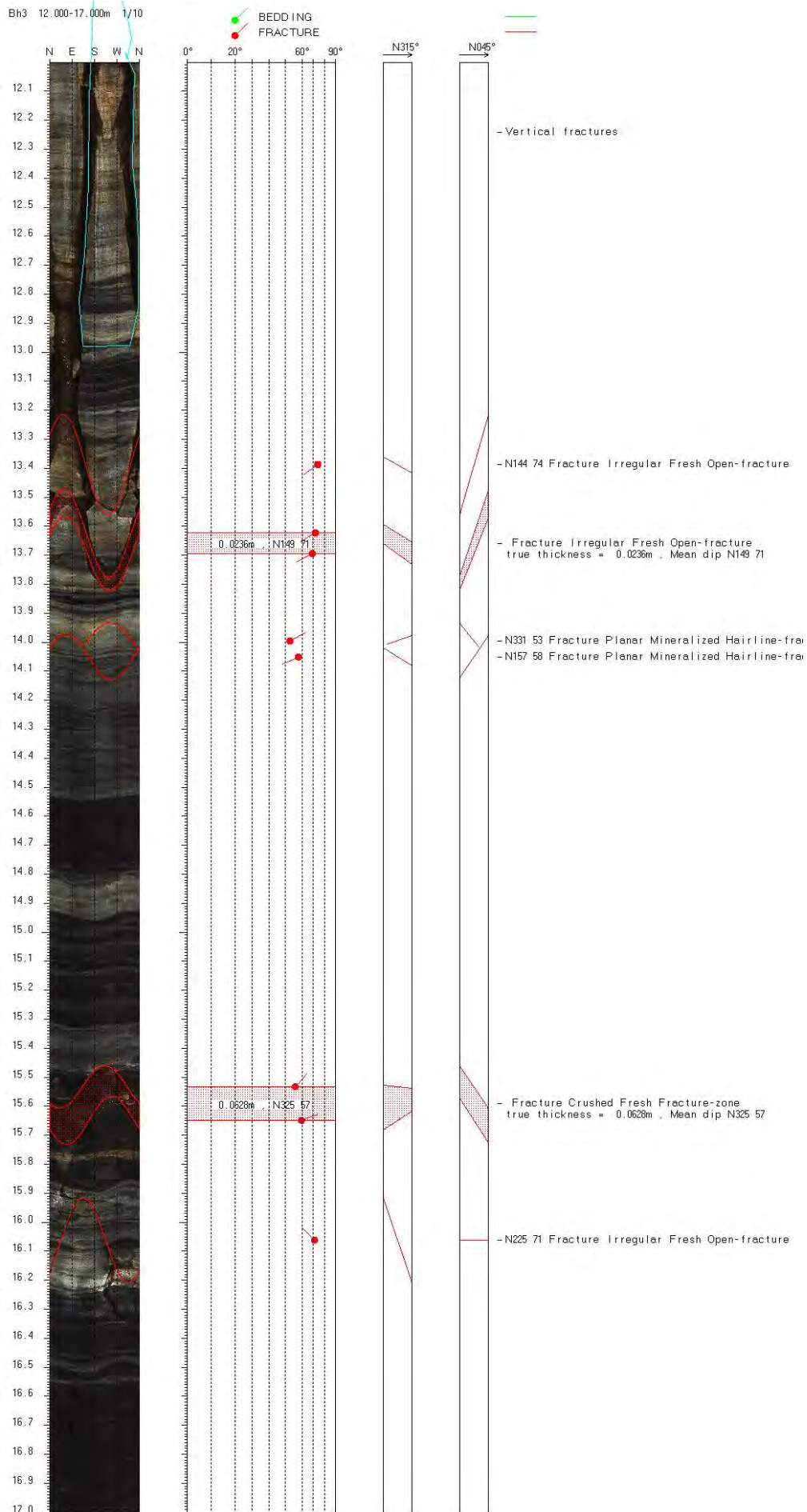
Upper Depth	Lower Azimuth	Well Dip	Well Depth	deviation Depth	Diam	Azimuth	Dev	Thickness				
60.501	N281	63	60.408	60.595	0.098	87.06	0.66	0.0344	Fracture	Planar	Fresh	Fracture-zone
60.887	N291	60.7	60.802	60.973	0.098	87	0.62	0	Fracture	Planar	Fresh	Hairline-fracture
61.558	N211	64.8	61.484	61.66	0.098	82.15	0.64	0	Fracture	Discontinuous	Fresh	Hairline-fracture
62.421	N274	30.5	62.393	62.449	0.098	84.34	0.61	0	Fracture	Planar	Fresh	Hairline-fracture
62.896	N288	46.3	62.845	62.946	0.098	83.33	0.6	0	Fracture	Planar	Fresh	Open-fracture
62.95	N107	49.9	62.891	62.923	0.098	83	0.57	0	Fracture	Discontinuous	Fresh	Open-fracture
63.42	N196	77.1	63.21	63.443	0.098	85	0.61	0	Fracture	Discontinuous	Fresh	Open-fracture
63.451	N220	31.9	63.441	63.481	0.098	85	0.61	0	Fracture	Discontinuous	Fresh	Open-fracture
63.518	N176	80.6	63.222	63.492	0.098	85.54	0.63	0	Fracture	Discontinuous	Fresh	Open-fracture
63.706	N237	64.6	63.606	63.807	0.098	87	0.63	0	Fracture	Planar	Fresh	Open-fracture
64.231	N311	71.5	64.089	64.374	0.098	89.46	0.62	0	Fracture	Irregular	Fresh	Open-fracture
64.26	N311	69.7	64.131	64.389	0.098	89.24	0.62	0.0096	Fracture	Irregular	Fresh	Open-fracture
64.288	N300	76.2	64.291	64.479	0.098	90.34	0.61	0	Fracture	Discontinuous	Fresh	Open-fracture
65.233	N012	81.5	64.897	65.154	0.098	80	0.58	0	Fracture	Discontinuous	Fresh	Hairline-fracture
65.379	N009	81	65.064	65.303	0.098	79.5	0.58	0	Fracture	Discontinuous	Fresh	Hairline-fracture
65.884	N191	83.2	66.053	66.284	0.098	80	0.49	0	Fracture	Discontinuous	Fresh	Hairline-fracture
68.105	N087	6	68.1	68.111	0.098	86	0.53	0	Fracture	Planar	Fresh	Hairline-fracture
68.436	N297	54.3	68.369	68.503	0.098	88.36	0.5	0	Fracture	Planar	Mineralized	Hairline-fracture
68.801	N324	74.9	68.623	68.979	0.098	87.95	0.5	0	Fracture	Irregular	Fresh	Hairline-fracture
69.124	N257	40.7	69.082	69.165	0.098	84.17	0.53	0	Fracture	Planar	Fresh	Open-fracture
69.765	N313	80.8	69.476	70.055	0.098	79.23	0.6	0	Fracture	Irregular	Fresh	Fracture-zone
71.157	N018	35.8	71.121	71.193	0.098	73.38	0.82	0.816	Fracture	Irregular	Fresh	Fracture-zone
71.164	N007	35	71.129	71.199	0.098	74.39	0.8	0	Fracture	Irregular	Fresh	Fracture-zone
72.505	N340	51	72.445	72.564	0.098	94.92	0.87	0.9928	Fracture	Irregular	Fresh	Fracture-zone
72.683	N339	62	72.592	72.774	0.098	94.71	0.66	0	Fracture	Irregular	Fresh	Hairline-fracture
72.708	N343	60.4	72.623	72.794	0.098	93.24	0.64	0	Fracture	Planar	Fresh	Open-fracture
74.851	N272	7.3	74.845	74.856	0.098	81.07	0.74	0	Fracture	Planar	Fresh	Open-fracture
74.885	N286	10.3	74.877	74.894	0.098	80.37	0.73	0.0345	Fracture	Planar	Fresh	Open-fracture
74.986	N292	65.9	74.88	75.092	0.098	80.64	0.75	0	Fracture	Irregular	Fresh	Open-fracture
74.992	N180	67.2	74.876	75.108	0.098	80.76	0.75	0	Fracture	Irregular	Fresh	Open-fracture
75.351	N237	8.7	75.344	75.358	0.098	83.94	0.83	0	Fracture	Planar	Fresh	Open-fracture
75.376	N273	15.4	75.363	75.388	0.098	84.87	0.83	0	Fracture	Planar	Fresh	Open-fracture
75.428	N274	15.4	75.415	75.44	0.098	86	0.84	0.0501	Fracture	Planar	Fresh	Open-fracture
75.528	N299	28	75.502	75.553	0.098	86	0.83	0	Fracture	Irregular	Fresh	Fracture-zone
75.646	N274	30.6	75.618	75.674	0.098	88	0.8	0.1038	Fracture	Irregular	Fresh	Fracture-zone
75.852	N220	59.1	75.828	75.932	0.098	86.2	0.82	0	Fracture	Discontinuous	Fresh	Open-fracture
75.86	N002	57.7	75.783	75.938	0.098	85.87	0.81	0	Fracture	Irregular	Fresh	Open-fracture
76.159	N359	48.9	76.103	76.216	0.098	83	0.66	0	Fracture	Planar	Fresh	Hairline-fracture
76.187	N254	11.8	76.178	76.197	0.098	83	0.67	0	Fracture	Planar	Fresh	Hairline-fracture
76.267	N268	41.1	76.253	76.309	0.098	84.52	0.67	0	Fracture	Discontinuous	Fresh	Open-fracture
76.339	N301	15.4	76.326	76.352	0.098	85.29	0.68	0	Fracture	Planar	Fresh	Fracture-zone
76.456	N269	12.5	76.445	76.466	0.098	85	0.66	0.1132	Fracture	Planar	Fresh	Fracture-zone
76.976	N258	73.9	76.814	77.137	0.098	90.57	0.8	0	Fracture	Irregular	Fresh	Open-fracture
77.048	N261	70.1	76.918	77.178	0.098	90.88	0.81	0.0223	Fracture	Irregular	Fresh	Open-fracture
77.216	N003	66.9	77.101	77.331	0.098	94.76	0.86	0	Fracture	Irregular	Weathered	Hairline-fracture
77.464	N265	16.3	77.451	77.478	0.098	96	0.83	0	Fracture	Irregular	Fresh	Hairline-fracture
77.617	N261	13.3	77.606	77.627	0.098	98.76	0.86	0	Fracture	Irregular	Fresh	Fracture-zone
77.66	N259	29	77.634	77.687	0.098	100.74	0.86	0.0409	Fracture	Irregular	Fresh	Fracture-zone
78.283	N347	14.3	78.27	78.295	0.098	85.85	0.79	0	Fracture	Planar	Fresh	Fracture-zone
78.505	N342	19.6	78.488	78.522	0.098	86	0.79	0.2126	Fracture	Planar	Fresh	Fracture-zone
78.623	N262	14.3	78.618	78.635	0.098	76.29	0.63	0	Fracture	Discontinuous	Fresh	Open-fracture
78.688	N349	44.1	78.641	78.736	0.098	76.1	0.51	0	Fracture	Irregular	Fresh	Fracture-zone
78.991	N302	29.4	78.965	79.018	0.098	81.48	0.91	0.2502	Fracture	Irregular	Fresh	Fracture-zone
79.131	N002	21.2	79.112	79.15	0.098	81.07	1.02	0	Fracture	Irregular	Fresh	Fracture-zone
79.299	N259	27.9	79.274	79.324	0.098	87.49	0.87	0.1615	Fracture	Irregular	Fresh	Fracture-zone
79.403	N343	34.5	79.37	79.436	0.098	93.98	0.84	0	Fracture	Planar	Fresh	Open-fracture
79.453	N263	35.2	79.419	79.486	0.098	92.05	0.84	0	Fracture	Irregular	Fresh	Hairline-fracture
79.475	N270	18.9	79.459	79.491	0.098	91.59	0.84	0	Fracture	Planar	Fresh	Hairline-fracture
79.568	N279	42.6	79.525	79.612	0.098	95.14	0.91	0	Fracture	Irregular	Fresh	Open-fracture
79.613	N248	15.9	79.6	79.626	0.098	95.85	1.07	0	Fracture	Planar	Fresh	Open-fracture
79.667	N271	15.7	79.654	79.68	0.098	86.52	0.9	0	Fracture	Irregular	Fresh	Hairline-fracture
79.709	N261	17.5	79.694	79.724	0.098	88.1	0.83	0	Fracture	Planar	Fresh	Hairline-fracture
79.745	N251	17.7	79.73	79.76	0.098	88.81	0.86	0	Fracture	Planar	Fresh	Hairline-fracture
79.777	N264	12.3	79.767	79.787	0.098	89	0.87	0	Fracture	Crushed	Fresh	Fracture-zone
80.29	N349	33.8	80.257	80.323	0.098	88.09	0.35	0.4861	Fracture	Crushed	Fresh	Fracture-zone
80.624	N211	65.3	80.519	80.729	0.098	96.9	0.76	0	Fracture	Crushed	Fresh	Fracture-zone
80.975	N297	9.5	80.967	80.983	0.098	74	0.95	0.2924	Fracture	Crushed	Fresh	Fracture-zone
82.212	N346	47.6	82.158	82.265	0.098	91.69	0.89	0	Fracture	Crushed	Fresh	Fracture-zone
82.266	N334	47.8	82.213	82.32	0.098	90.24	0.87	0.0368	Fracture	Crushed	Fresh	Fracture-zone
85.281	N007	81.3	85.182	85.597	0.098	92	0.98	0	Fracture	Discontinuous	Fresh	Hairline-fracture
85.353	N071	67.3	85.231	85.476	0.098	92	0.98	0	Fracture	Discontinuous	Fresh	Hairline-fracture
85.988	N024	56.7	85.912	86.063	0.098	92	1.03	0	Fracture	Irregular	Fresh	Hairline-fracture
86.524	N014	18.8	86.507	86.541	0.098	89.4	1.02	0	Fracture	Irregular	Mineralized	Hairline-fracture

Bh3 1.550-7.000m 1/10

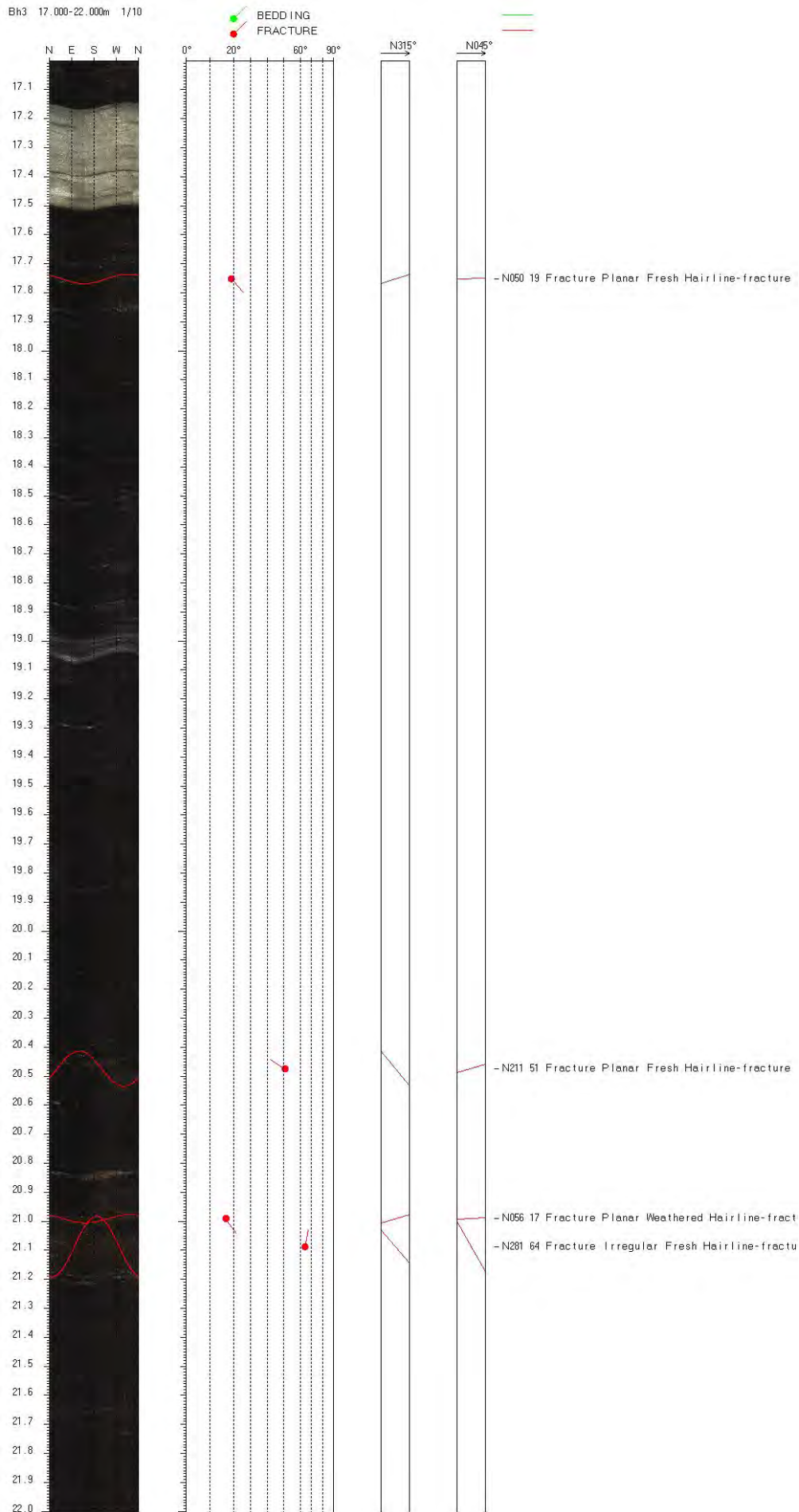


Bh3 7.000-12.000m 1/10

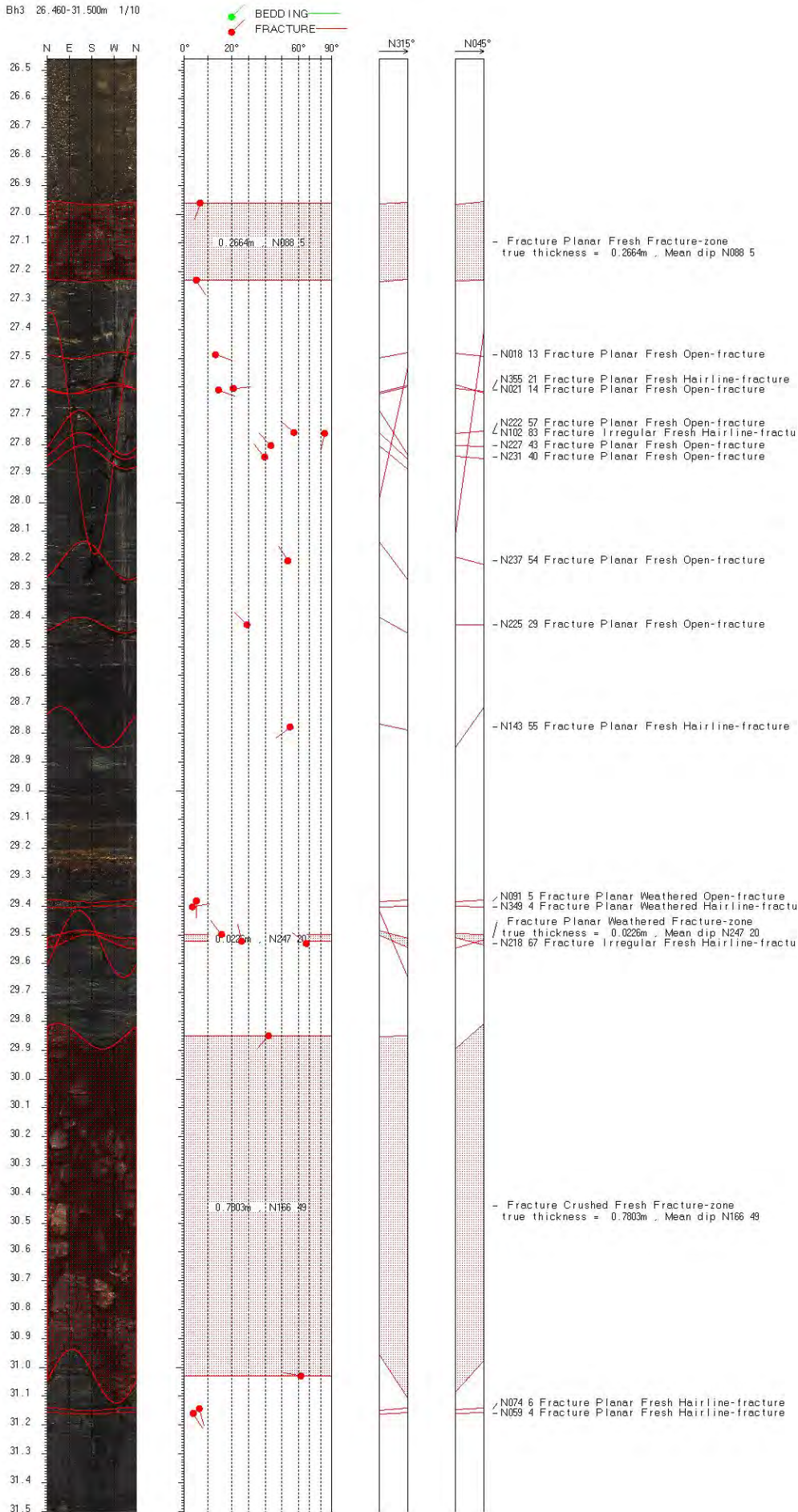




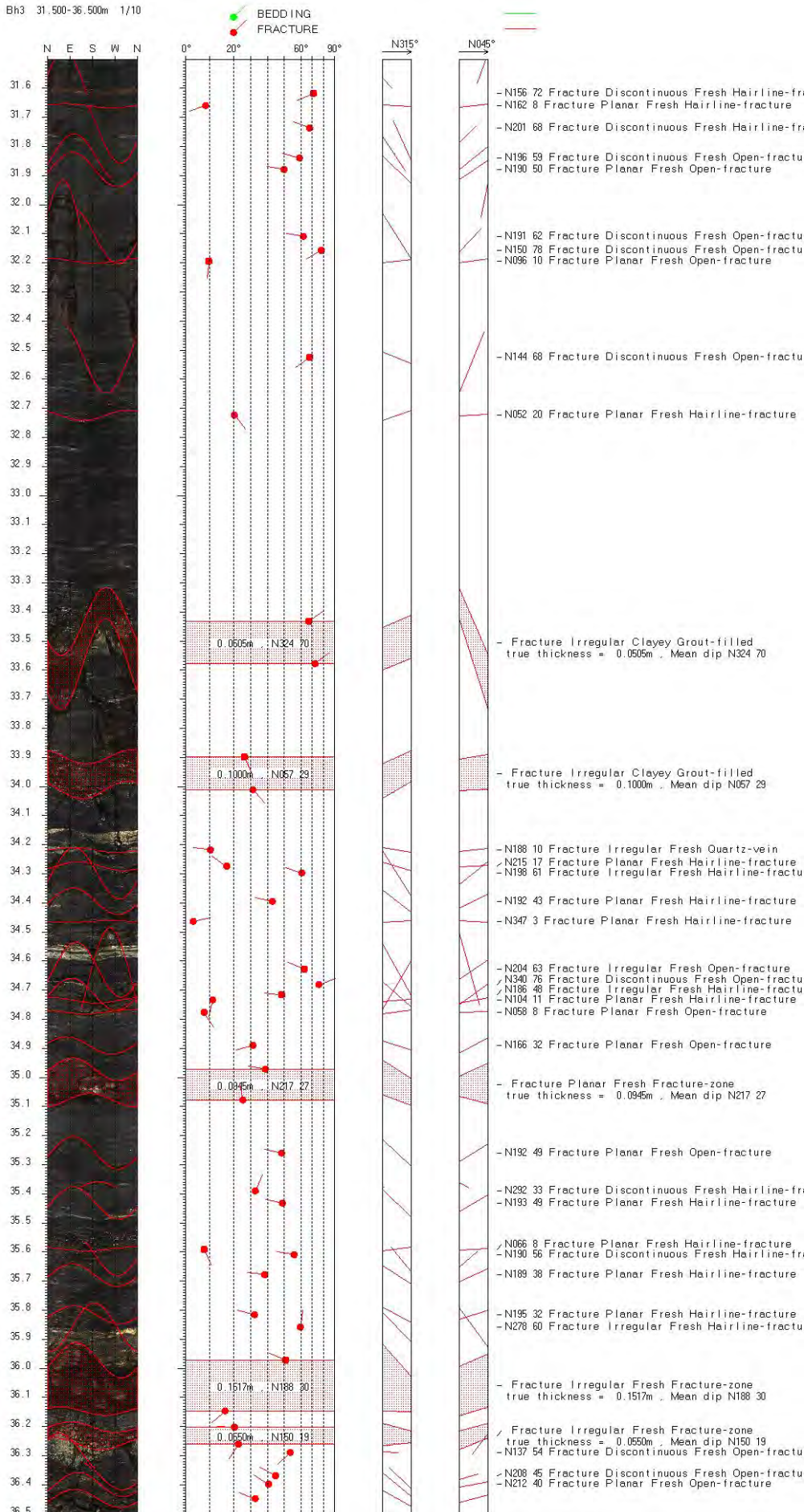
Bh3 17.000-22.000m 1/10



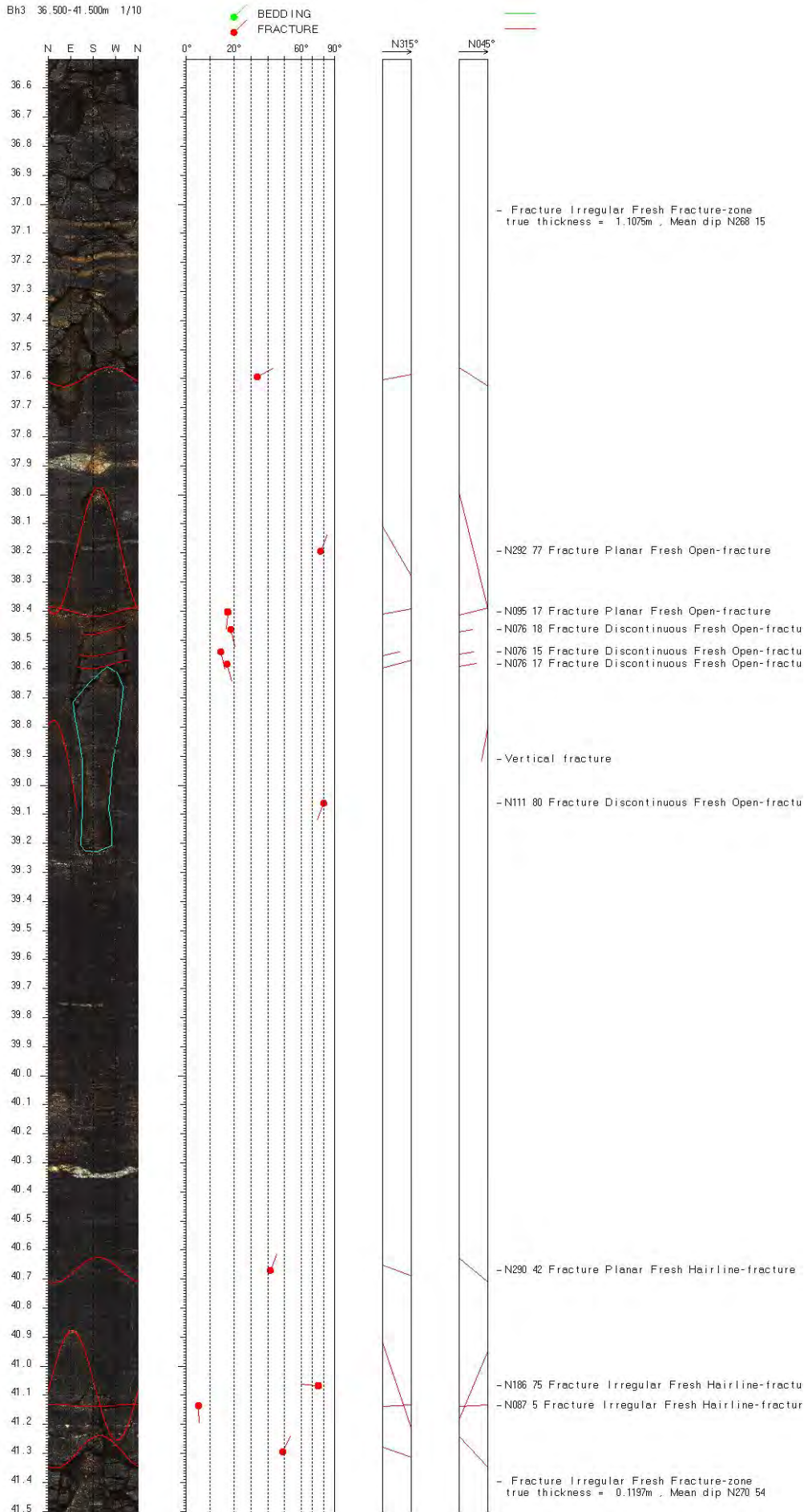
Bh3 26.460-31.500m 1/10



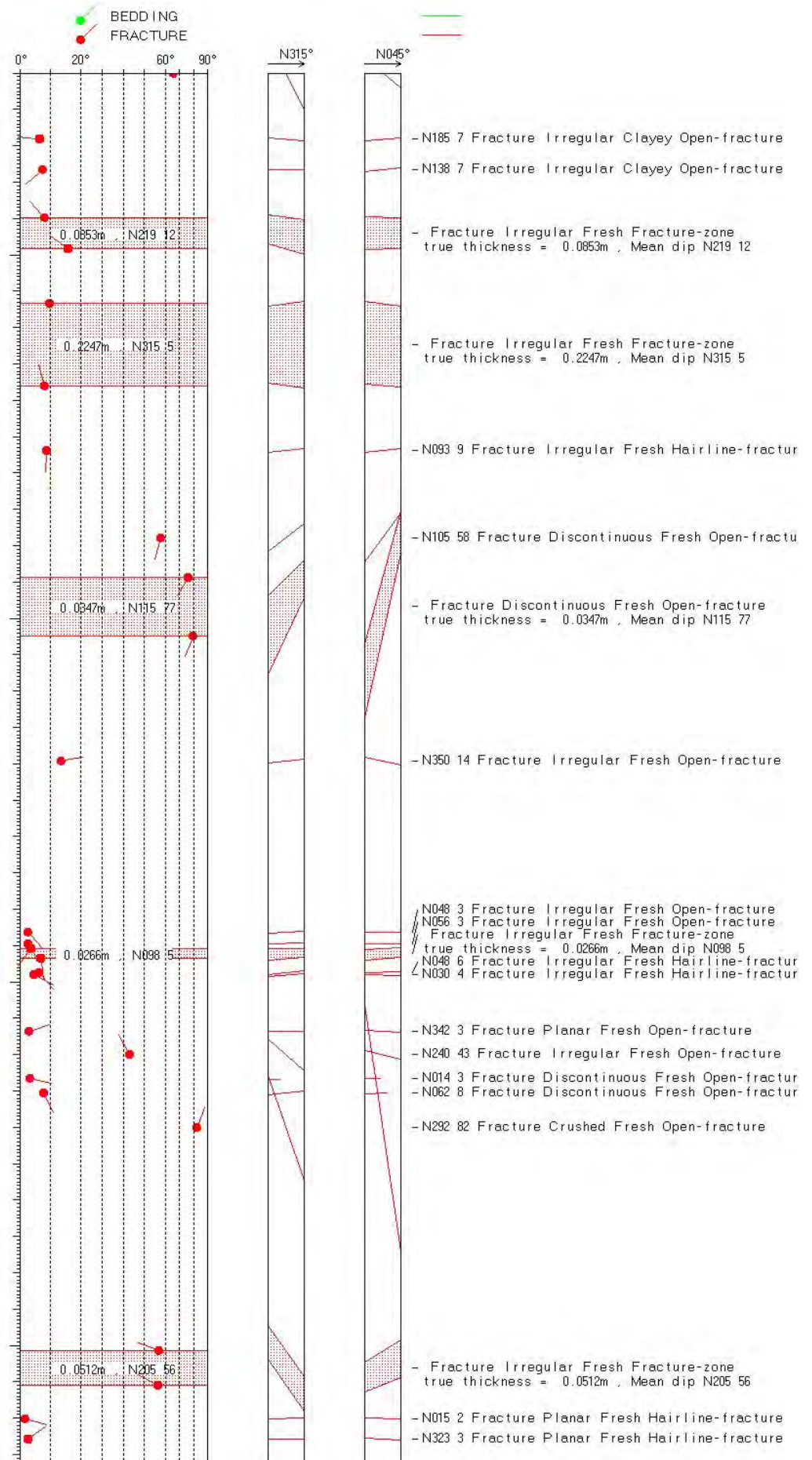
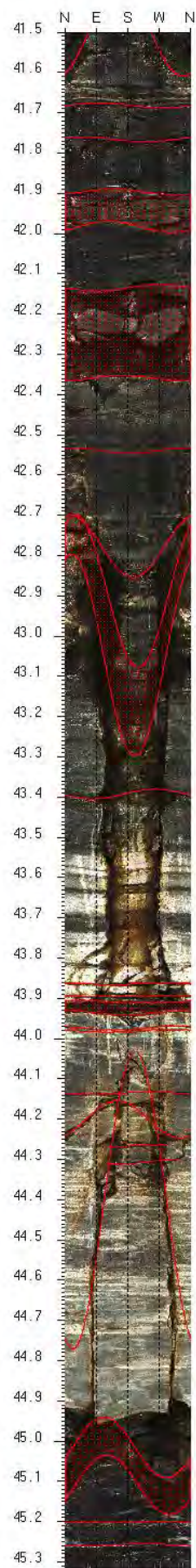
Bh3 31.500-36.500m 1/10



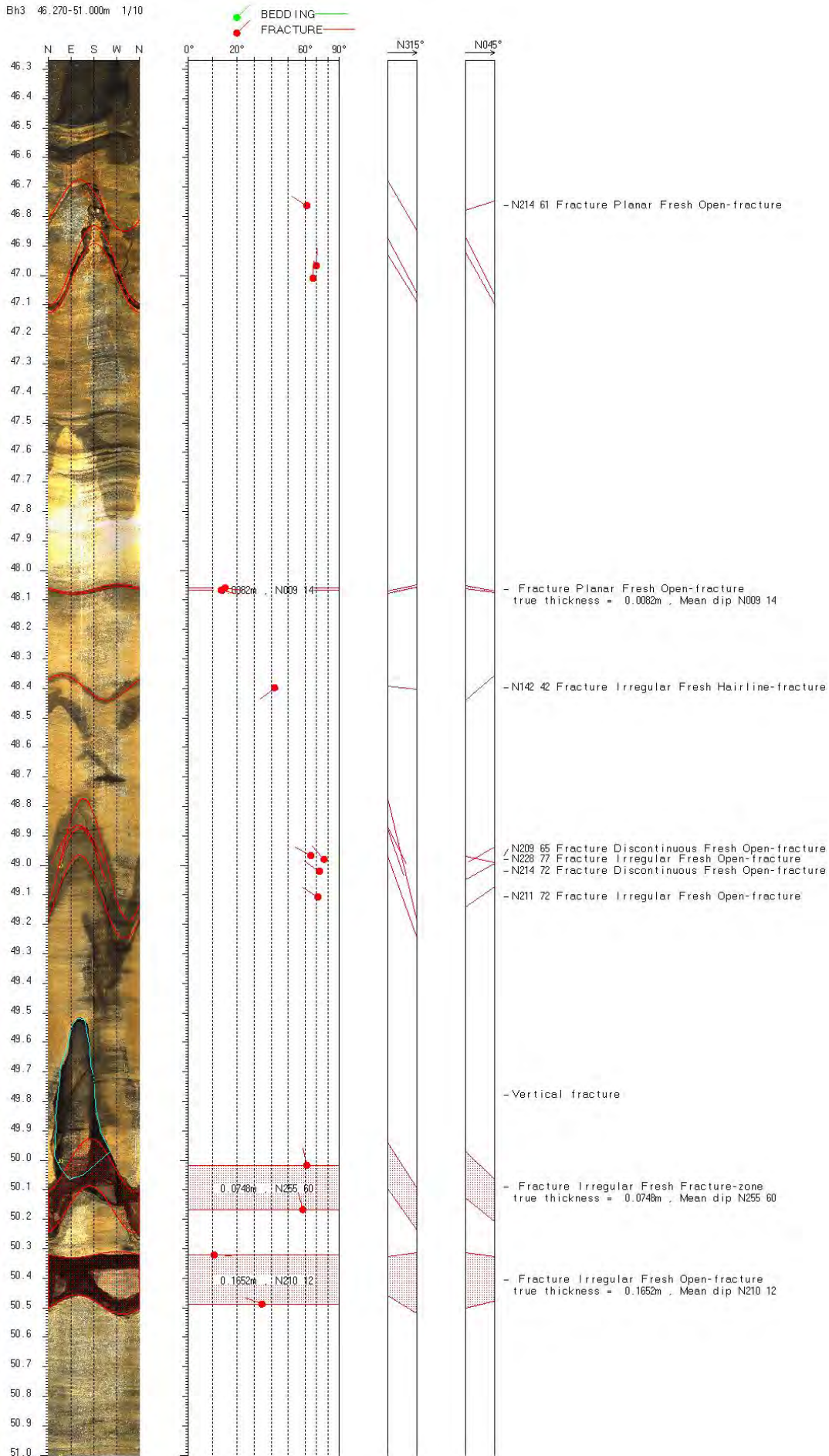
Bh3 36.500-41.500m 1/10



Bh3 41.500-45.328m 1/10



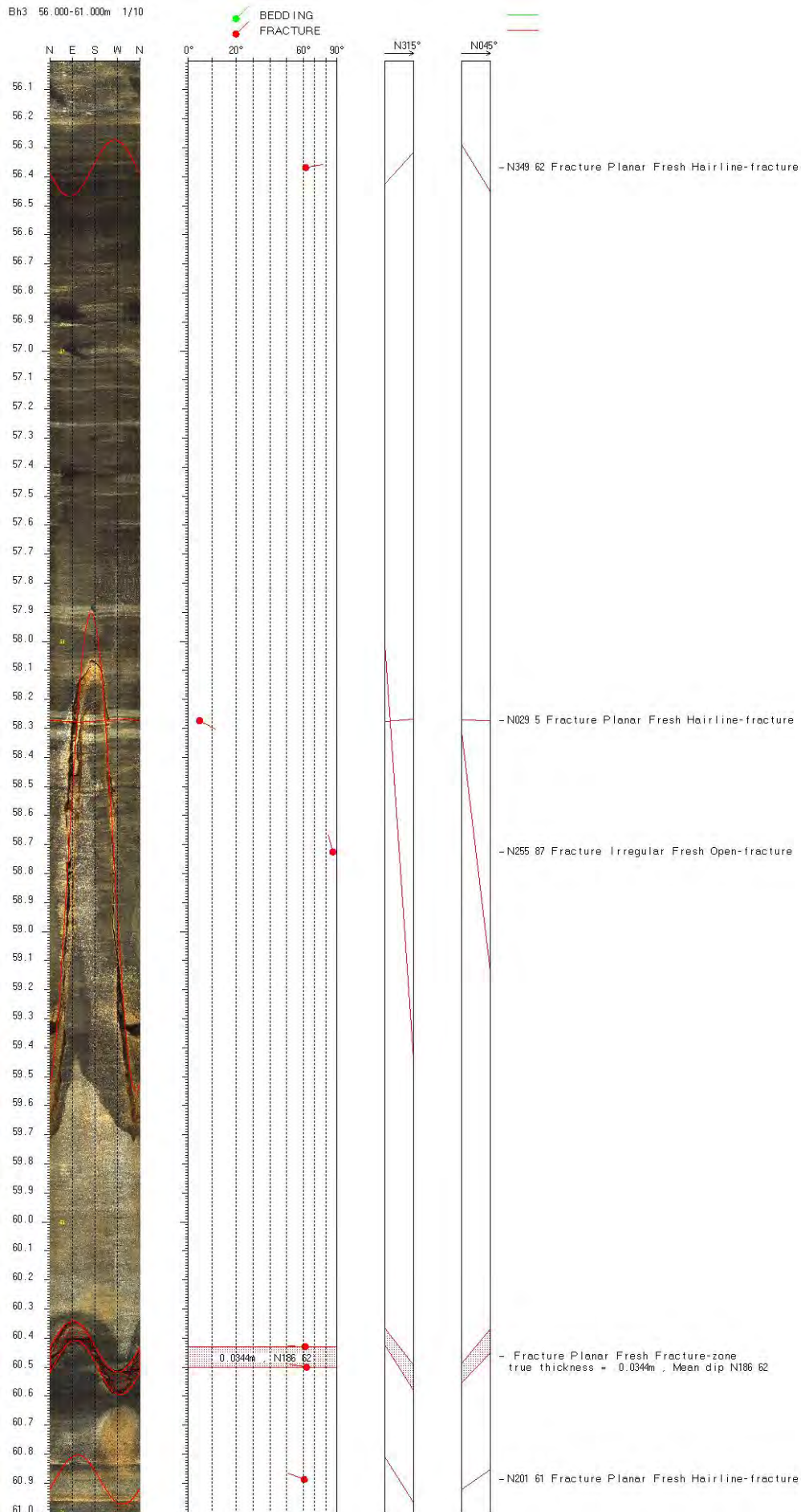
Bh3 46 270-51.000m 1/10



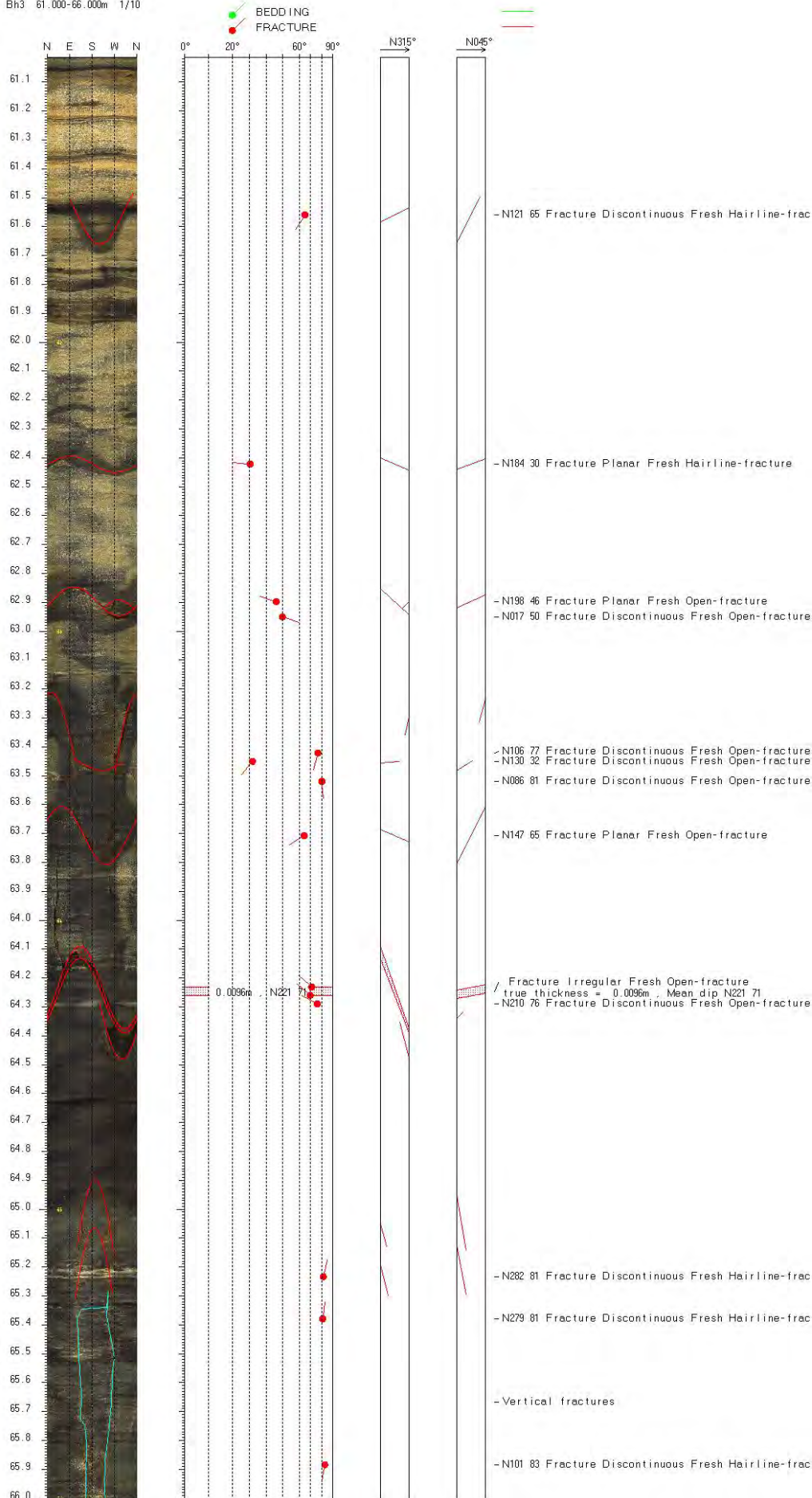
Bh3 51.000-56.000m 1/10



Bh3 56.000-61.000m 1/10



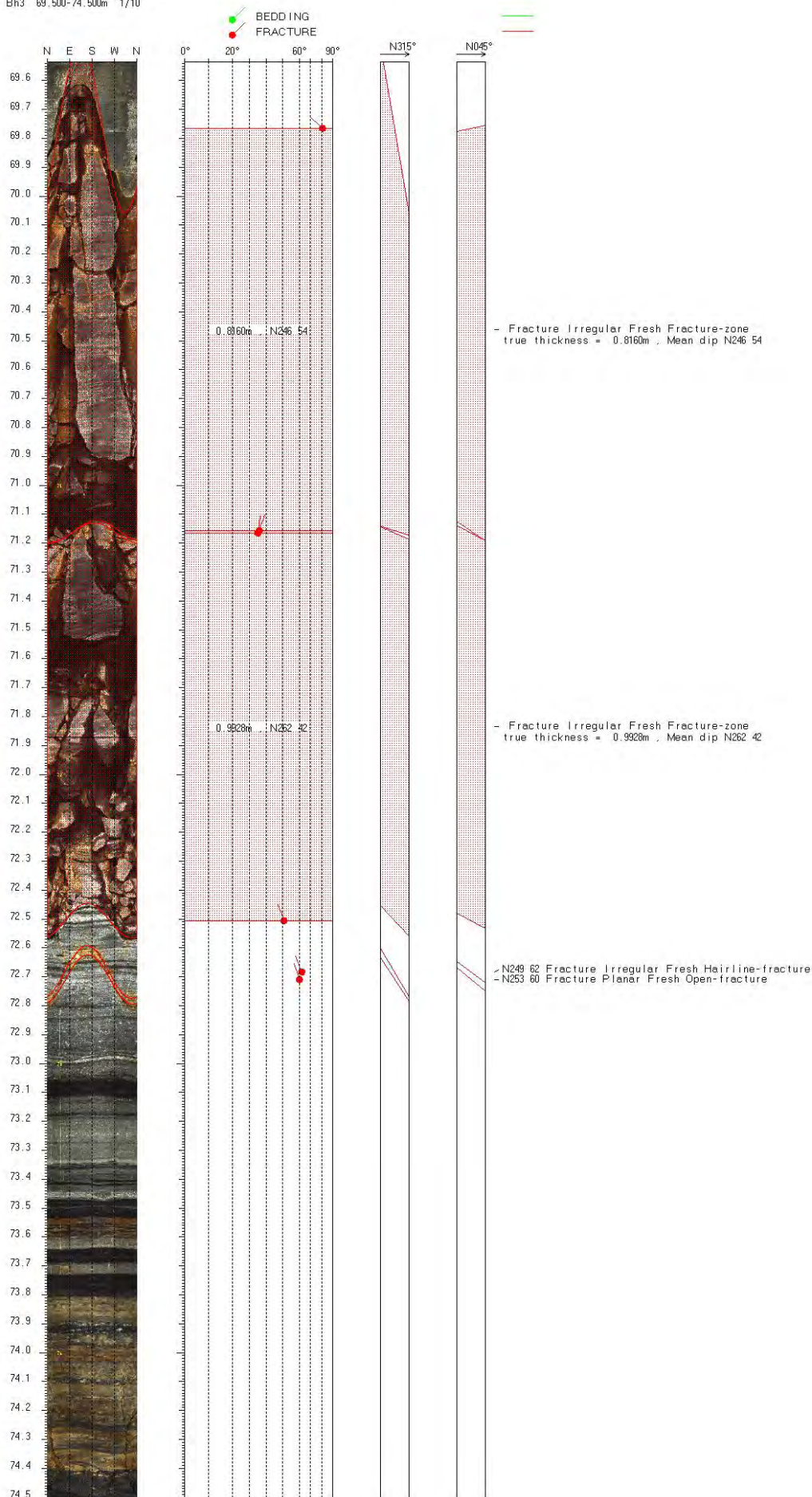
Bh3 61.000-66.000m 1/10



Bh3 66.000-71.000m 1/10



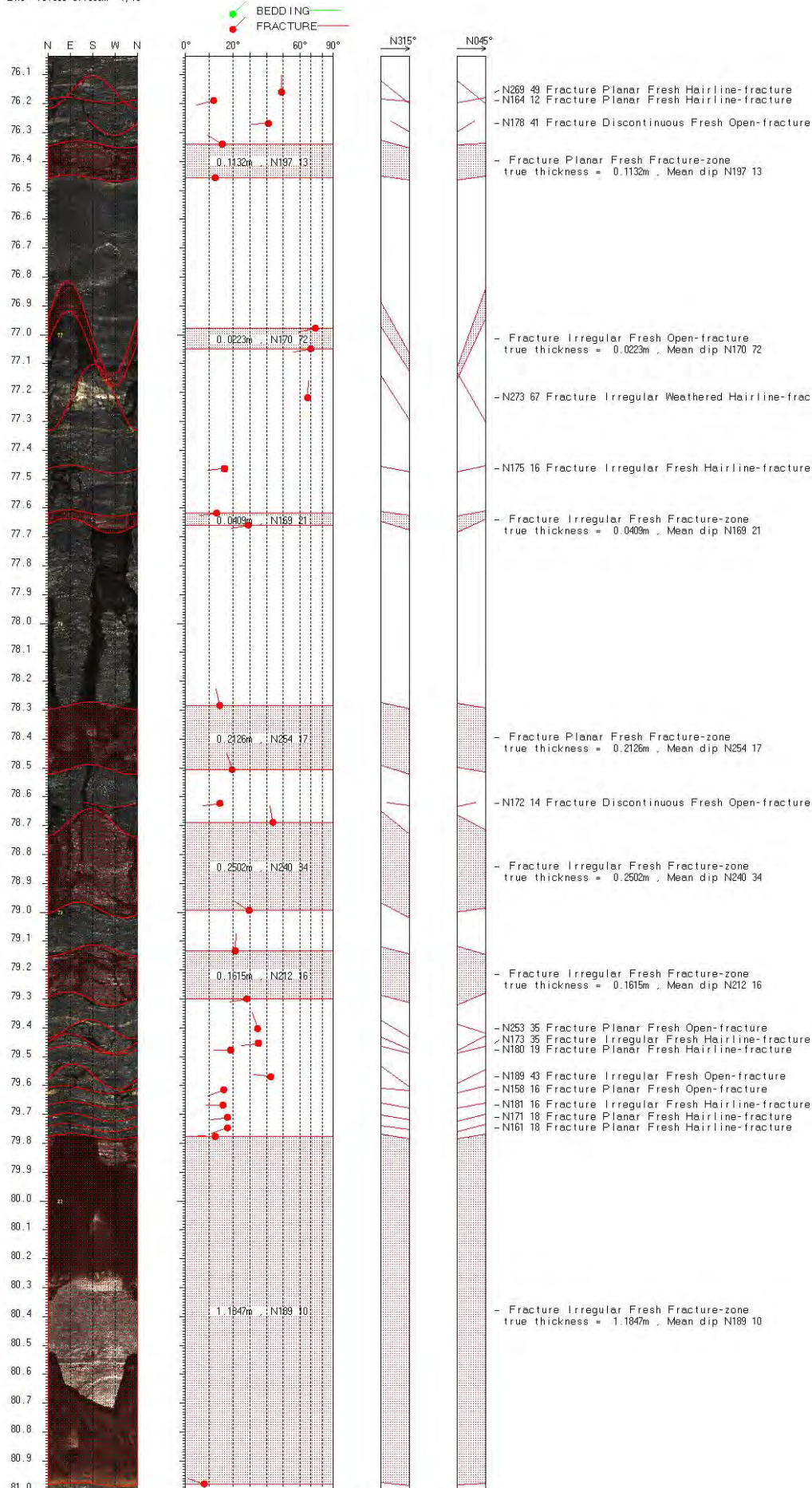
Bh3 69.500-74.500m 1/10

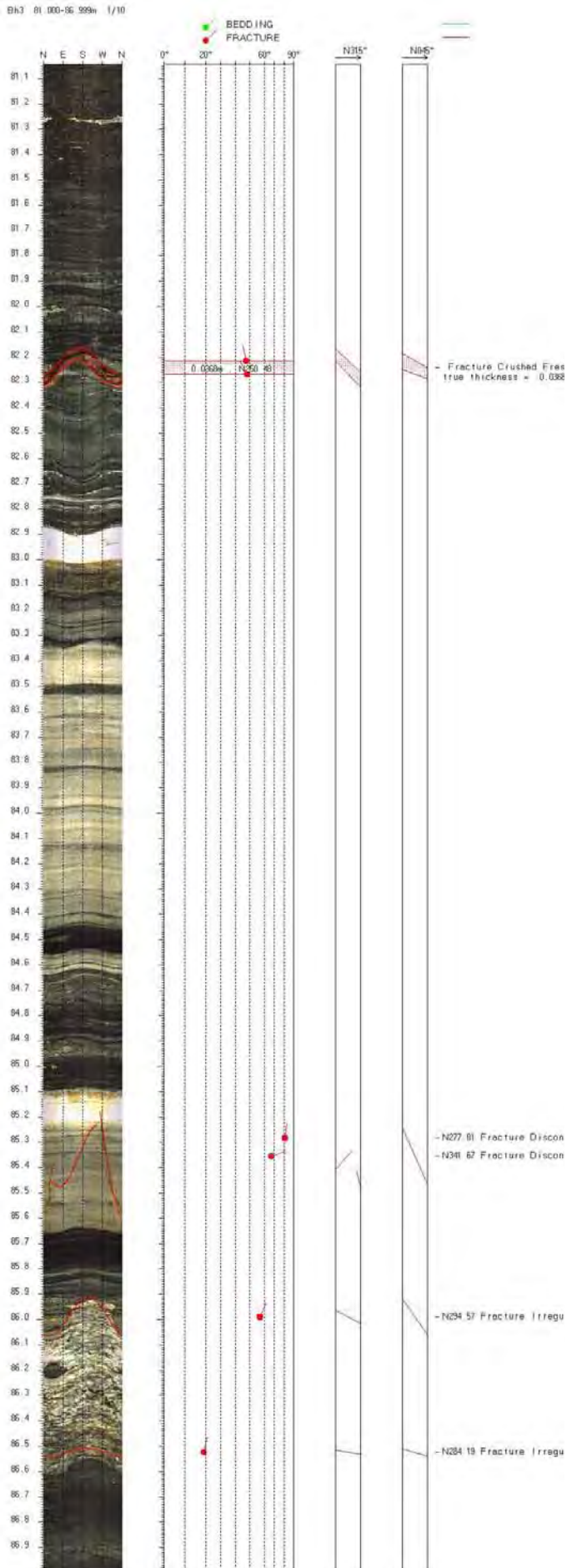


Bh3 71.000-76.000m 1/10



Bh3 76.000-81.000m 1/10





Depth	North	East	Down	Devaz	Dev	Depth	North	East	Down	Devaz	Dev
1.604	0	0	1.604	211	0.35	75.554	0.271	3.215	75.422	73	3.97
2.604	-0.002	-0.003	2.604	221	0.37	76.554	0.29	3.281	76.419	74	4.12
3.604	-0.004	-0	3.604	142	0.58	77.554	0.31	3.349	77.417	71	4.02
4.604	-0.01	0.009	4.604	102	0.78	78.554	0.333	3.418	78.414	73	4.22
5.604	-0.011	0.023	5.604	93	0.74	79.554	0.355	3.488	79.412	72	4.25
6.604	-0.012	0.036	6.604	90	0.74	80.504	0.376	3.553	80.307	73	4.27
7.604	-0.011	0.049	7.604	87	0.74	81.504	0.397	3.623	81.305	72	4.21
8.604	-0.009	0.06	8.604	78	0.63	82.504	0.421	3.694	82.302	70	4.35
9.604	-0.007	0.073	9.603	81	0.74	83.504	0.443	3.765	83.299	74	4.19
10.604	-0.005	0.085	10.603	76	0.72	84.504	0.466	3.834	84.296	71	4.18
11.604	-0.002	0.097	11.603	78	0.7	85.504	0.49	3.904	85.294	71	4.22
12.604	0.002	0.11	12.603	74	0.77	86.504	0.514	3.974	86.291	70	4.22
13.604	0.005	0.123	13.603	72	0.78	87.504	0.539	4.042	87.288	70	4.2
14.604	0.009	0.136	14.603	78	0.76	88.504	0.563	4.112	88.286	72	4.31
15.604	0.012	0.149	15.603	73	0.78	89.504	0.588	4.182	89.283	69	4.25
16.604	0.016	0.162	16.603	73	0.8	90.504	0.612	4.253	90.28	71	4.26
17.604	0.02	0.175	17.603	73	0.8	91.004	0.623	4.286	90.729	67	4.18
18.604	0.024	0.189	18.603	75	0.82	92.004	0.652	4.355	91.727	69	4.36
19.604	0.028	0.203	19.603	73	0.83	93.004	0.68	4.427	92.724	69	4.56
20.604	0.033	0.217	20.602	72	0.83	94.004	0.709	4.502	93.72	69	4.6
21.604	0.037	0.231	21.602	70	0.84	95.004	0.738	4.579	94.717	70	4.83
22.604	0.042	0.245	22.602	71	0.86	96.004	0.766	4.658	95.713	70	4.94
23.604	0.047	0.259	23.602	71	0.87	97.004	0.797	4.74	96.71	70	5.01
24.604	0.052	0.274	24.602	72	0.9						
25.354	0.057	0.287	25.316	140	1.34						
26.354	0.058	0.307	26.316	197	1.97						
27.354	0.053	0.332	27.315	90	1.67						
28.354	0.05	0.363	28.315	97	1.85						
29.354	0.046	0.394	29.314	96	1.87						
30.354	0.043	0.425	30.314	96	1.83						
31.354	0.04	0.458	31.313	95	1.86						
32.054	0.037	0.481	32.013	108	2.17						
33.054	0.024	0.517	33.012	112	2.41						
34.054	0.009	0.557	34.011	105	2.26						
35.054	0.0019	0.597	35.011	98	2.48						
36.054	-0.006	0.642	36.009	99	2.64						
37.054	-0.011	0.687	37.008	97	2.62						
38.054	-0.017	0.73	38.007	121	2.01						
39.054	-0.024	0.775	39.006	91	3.58						
40.054	-0.029	0.823	40.005	98	2.57						
41.054	-0.033	0.868	41.004	90	2.8						
42.054	-0.035	0.915	42.003	95	2.41						
43.054	-0.039	1	43.002	103	1.76						
44.054	-0.048	1.05	44.001	94	3.29						
45.054	-0.053	1.098	45	97	2.48						
46.054	-0.058	1.156	45.998	99	3.3						
47.054	-0.064	1.215	46.997	91	3.45						
48.054	-0.07	1.275	47.995	92	3.41						
49.054	-0.071	1.315	48.994	94	3.12						
50.054	-0.08	1.388	49.991	94	3.68						
51.054	-0.088	1.455	50.989	94	3.75						
52.054	-0.09	1.52	51.987	92	3.68						
53.054	-0.087	1.586	52.984	85	3.88						
54.054	-0.08	1.654	53.982	82	4.07						
55.054	-0.069	1.728	54.979	80	4.52						
56.054	-0.051	1.807	55.976	74	4.76						
57.054	-0.029	1.885	56.973	75	4.55						
58.054	-0.006	1.959	57.97	71	4.16						
59.054	0.01	2.023	58.968	80	3.84						
59.554	0.017	2.055	59.466	81	4.27						
60.554	0.03	2.13	60.463	80	4.48						
61.554	0.043	2.207	61.46	80	4.39						
62.554	0.059	2.283	62.457	78	4.52						
63.554	0.074	2.359	63.454	79	4.4						
64.554	0.091	2.434	64.451	77	4.42						
65.554	0.107	2.509	65.448	78	4.31						
66.554	0.123	2.583	66.445	77	4.33						
67.554	0.142	2.656	67.442	77	4.29						
68.554	0.158	2.728	68.44	77	4.21						
69.554	0.172	2.8	69.437	80	4.24						
70.554	0.186	2.871	70.434	77	4.07						
71.554	0.204	2.939	71.432	75	4.06						
72.554	0.22	3.008	72.429	78	4.07						
73.554	0.235	3.078	73.427	76	4.1						
74.554	0.252	3.147	74.424	76	4.1						

Depth	North	East	Down	Devaz	Dev	Depth	North	East	Down	Devaz	Dev
1.604	0	0	1.604	50	0.16	75.404	0.175	0.269	30.552	84	0.83
2.604	0	0.001	2.604	168	0.11	76.404	0.176	0.283	31.552	85	0.68
3.604	0	0.002	3.604	204	0.13	77.404	0.176	0.296	32.552	98	0.86
4.604	-0.001	0.001	4.604	234	0.06	78.404	0.175	0.31	33.552	81	0.78
5.604	-0.001	0.001	5.604	75	0.1	79.404	0.177	0.323	34.551	93	0.83
6.604	-0.001	-0.001	6.604	238	0.18	80.404	0.177	0.337	35.551	88	0.33
7.604	-0	-0.002	7.604	277	0.03	81.404	0.179	0.351	36.551	78	1.41
8.604	0	-0.003	8.604	303	0.03	82.404	0.18	0.368	37.551	88	0.88
9.604	0	-0.003	9.604	252	0.02	83.404	0.181	0.382	38.551	83	0.84
10.604	0.001	-0.004	10.604	297	0.08	84.404	0.182	0.398	39.551	90	0.96
11.604	0.001	-0.005	11.604	292	0.14	85.404	0.182	0.415	40.551	92	0.98
12.604	0.003	-0.009	12.604	307	0.35	86.404	0.181	0.433	41.551	90	1.04
13.604	0.008	-0.011	13.604	298	0.07						
14.604	0.009	-0.015	14.604	306	0.32						
15.604	0.013	-0.019	15.604	317	0.35						
16.604	0.017	-0.023	16.604	314	0.25						
17.604	0.021	-0.027	17.604	311	0.39						
18.604	0.026	-0.032	18.604	316	0.44						
19.604	0.032	-0.037	19.604	316	0.43						
20.604	0.037	-0.043	20.604	313	0.47						
21.604	0.043	-0.05	21.604	310	0.55						
22.604	0.049	-0.057	22.604	317	0.56						
23.604	0.057	-0.064	23.604	315	0.58						
24.604	0.064	-0.07	24.604	313	0.55						
25.604	0.065	-0.073	25.604	61	0.25						
26.604	0.067	-0.075	26.604	293	0.68						
26.604	0.067	-0.075	26.604	313	0.54						
27.604	0.072	-0.078	27.604	44	0.15						
28.604	0.073	-0.08	28.604	287	0.41						
29.604	0.074	-0.084	29.604	284	0.19						
30.604	0.077	-0.087	30.604	259	0.03						
31.604	0.078	-0.091	31.604	315	0.53						
32.604	0.079	-0.093	32.604	282	0.05						
33.604	0.08	-0.095	33.604	281	0.28						
34.604	0.083	-0.096	34.604	16	0.15						
35.604	0.085	-0.098	35.604	326	0.21						
36.604	0.088	-0.1	36.604	330	0.24						
37.604	0.091	-0.102	37.604	339	0.19						
38.604	0.094	-0.103	38.604	323	0.18						
39.604	0.098	-0.107	39.604	301	0.43						
40.604	0.101	-0.112	40.604	316	0.24						
41.604	0.105	-0.115	41.604	315	0.29						
42.604	0.11	-0.117	42.604	338	0.44						
43.604	0.116	-0.117	43.604	352	0.19						
44.604	0.121	-0.122	44.604	323	0.37						
45.604	0.126	-0.151	45.604	85	0.9						
46.404	0.129	-0.071	1.604	83	0.97						
47.404	0.133	-0.056	2.554	71	0.97						
48.404	0.137	-0.04	3.554	78	0.88						
49.404	0.14	-0.025	4.554	83	0.87						
50.404	0.141	-0.011	5.554	87	0.69						
51.404	0.144	0.003	6.553	83	0.88						
52.404	0.145	0.016	7.553	83	0.77						
53.404	0.147	0.029	8.553	83	0.74						
54.404	0.148	0.042	9.553	85	0.7						
55.404	0.149	0.054	10.553	83	0.72						
56.404	0.151	0.066	11.553	86	0.69						
57.404	0.151	0.078	12.553	87	0.73						
58.404	0.152	0.091	13.553	84	0.63						
59.404	0.153	0.101	14.553	85	0.68						
60.404	0.154	0.113	15.553	86	0.69						
61.404	0.155	0.124	16.553	85	0.61						
62.404	0.156	0.135	17.553	85	0.61						
63.404	0.157	0.146	18.553	84	0.6						
64.404	0.158	0.157	19.552	90	0.61						
65.404	0.159	0.167	20.552	79	0.57						
66.404	0.16	0.175	21.552	77	0.45						
67.404	0.162	0.184	22.552	81	0.55						
68.404	0.163	0.193	23.552	89	0.5						
69.404	0.164	0.202	24.552	81	0.55						
70.404	0.166	0.212	25.552	78	0.64						
71.404	0.17	0.225	26.552	70	0.89						
72.404	0.172	0.234	27.552	89	0.64						
73.404	0.172	0.246	28.552	71	0.48						
74.404	0.173	0.256	29.552	84	0.67						



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