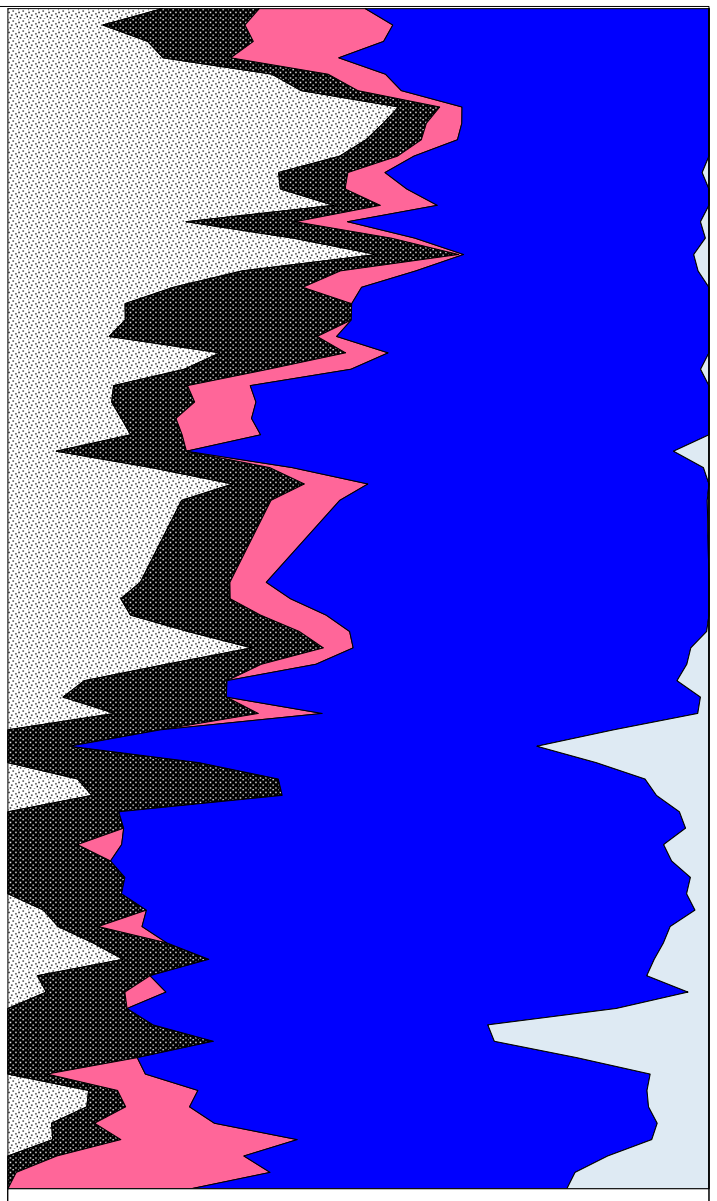
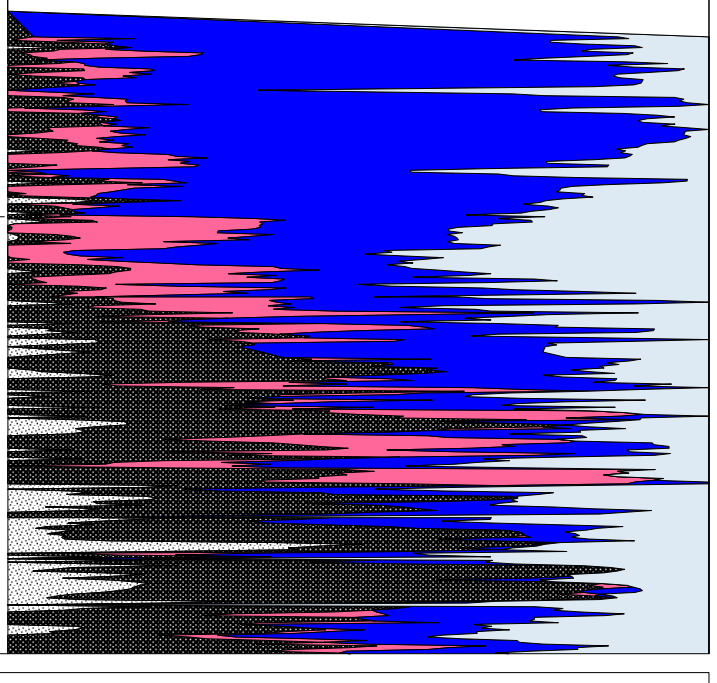
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description	
0–6			SILT: Orange and pale grey mottled silt/clay, partial recovery, 2m in 8.3. saprolite - pedogenic zone(?), would have been wet and clayey material	
7–10			BASALT: Slightly weathered blue grey basalt (with orange colouration on veins)	

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
10			
11			BASALT: Slightly weathered dark blue-grey basalt
12			No core
13			BASALT: Moderately weathered basalt
14			BASALT: Highly weathered kaolinised basal
15			BASALT: Slightly weathered basalt, medium blue grey. Vesicular?
16			BASALT: Moderately weathered basalt, orange on surfaces
17			
18			No core
19			
20			BASALT: Slightly weathered basalt. May be relocated downhole.

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
20			No core
21			COARSE SAND: Moderately well Orange and white coarse sand unconsolidated, moderately well sorted
22			FINE SAND: Well sorted Pale brown fine sand
23			
24			
25			
26			
27			
28			SILT: Well sorted pale brown
29			
30			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

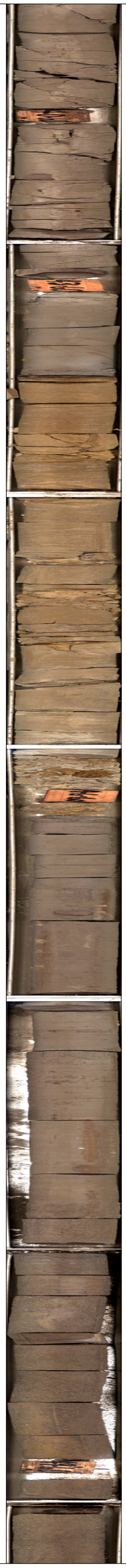
Depth log	Hylogger Image	Lithology	Description
30			
31			
32			
33			
34			
35			FINE SAND: Well sorted Pale brown fine sand
36			
37			
38			
39			SILT: Well sorted pale brown
40			

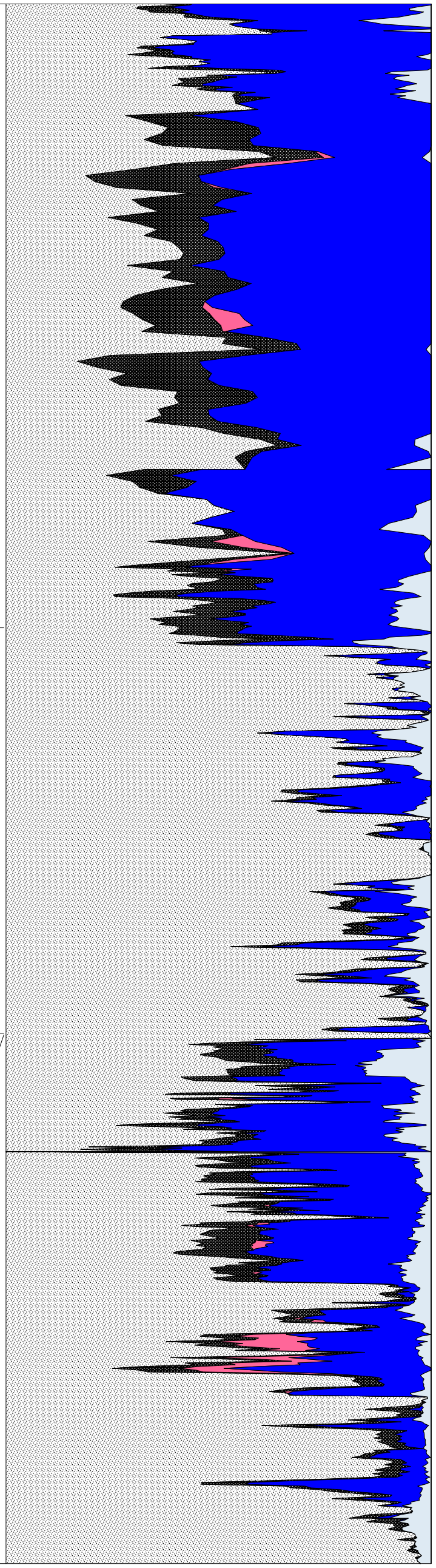
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
40			
41			
42			
43			
44			
45			MEDIUM SAND: Well sorted Medium sand more ron rich (orange) up profile
46			
47			IRONSTONE: Well sorted Cemented ferruginous interval. Sharp contact
48			
49			SILT: brown
50			



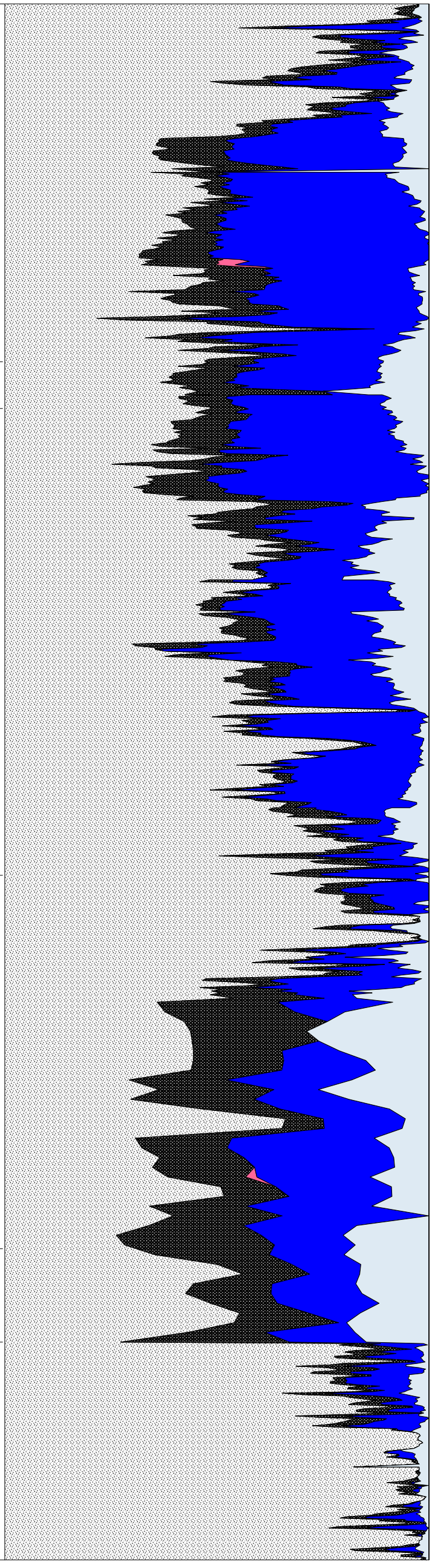
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
50			
51			
52			CARBONACEOUS SILT: Black carbonaceous silt with plant material, fissile
53			SILT: brown
54			
55			
56			FINE SAND: white-pale grey
57			
58			CARBONACEOUS FINE SAND: Black carbonaceous silt, with plant material, fissile
59			
60			



Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
60			FINE SAND: White pale grey
61			
62			FINE SAND: brown
63			
64			
65			
66			
67			
68			SILT: brown
69			
70			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
70			
71			
72			
73			
74			SILT: leaf fossils reserved in lamination/fracture
75			FINE SAND: grey
76			
77			
78			
79			
80			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
80			
81			
82			
83			
84			SILT: brown
85			
86			
87			
88			
89			
90			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

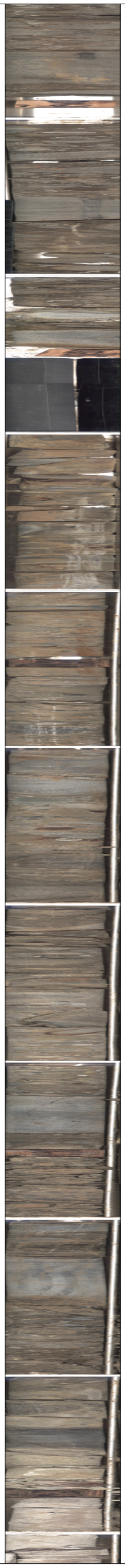
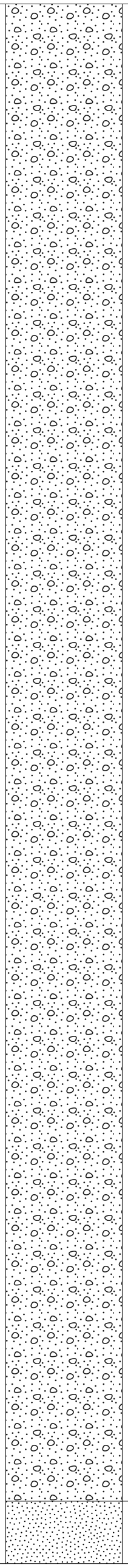
Depth log	Hylogger Image	Lithology	Description
90			
91			
92			
93			SILT: pale grey
94			
95			FINE SAND: purple (fine sand interval) SILT: pale grey
96			COARSE SAND: pale grey CONGLOMERATE: pale grey (bleached?) conglomerate with coarse sand matrix, small pebble conglomerate
97			
98			
99			
100			

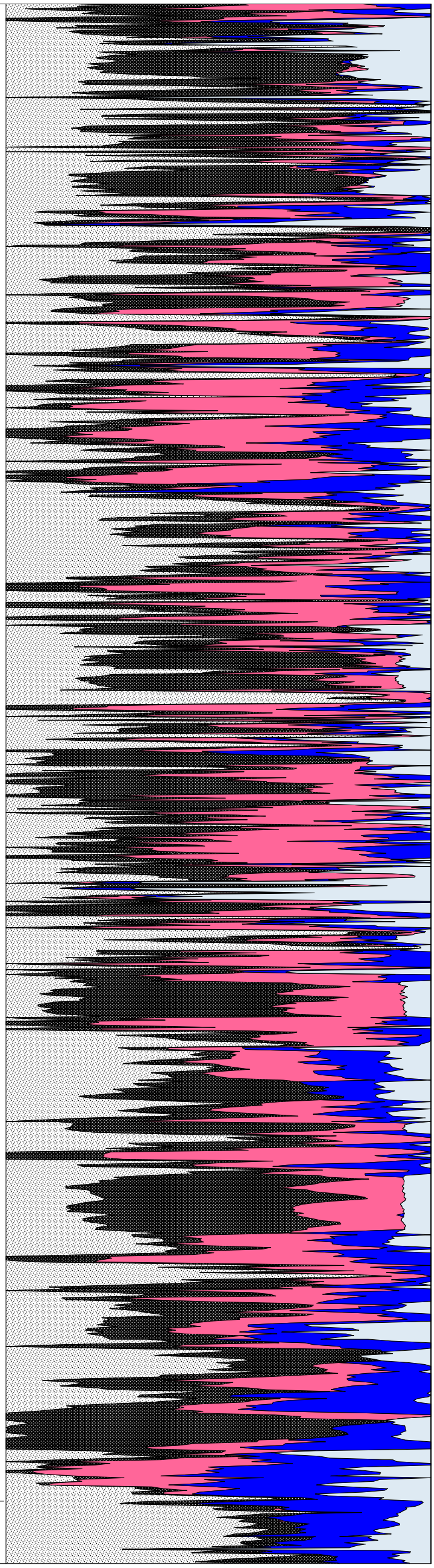
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
100			CONGLOMERATE: dolerite conglomerate, poorly sorted pebble conglomerate, matrix supported, between large dolerite cobbles and boulders up to 30 cm. Matrix = yellow fine sand at base of section, but transitions into moderately brown coarse sand for balance of section .
101			
102			
103			
104			
105			
106			
107			
108			
109			
110			



Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
110			
111			FINE SAND: very pale grey silt grading up to fine sand
112			
113			
114			SILT: dark brown silt with bioturbation?
115			SILT: pale grey
116			SILT: pale brown to brown up profile, bioturbated? Silt
117			FINE SAND: pale grey fine sand grading up into pale grey silt
118			FINE SAND: pale grey
119			
120			SILT: black carbonaceous silt, fracture fabric approximately 35-40 degrees from horizontal

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
120			SILT: bleached interval around 20cm inclined
121			SILT: black carbonaceous silt, fracture fabric approximately 35-40 degrees from horizontal
122			FINE SAND: pale grey fine sand, inclined fabric ~ 40-45 degrees from horizontal
123			SILT: brown silt fracture fabric spaced ~ 35-40 degrees from horizontal
			FINE SAND: 5cm interval, similarly inclined
124			SILT: brown silt fracture fabric spaced ~ 35-40 degrees from horizontal
125			SILT+ FINE SAND: alternating black silt and brown fine sand mm scale laminations, well developed fracture fabric ~ 40-45 from horizontal (sample looks like stacked pringles).
126			
127			FINE SAND: pale medium grey fine sand-silt
128			
129			SILT: brown silt with black carbonaceous plant material fracture fabric~ 40-45 degrees from horizontal
130			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
130			
131			
132			SILT: brown silt broadly spaced fracture fabric~4cm spacing, ~45-50 degrees from horizontal
133			
134			
135			SILT: pale grey/pale brown
136			IRONSTONE: Cemented ferruginous interval(~5cm)
137			
138			SILT: pale grey/pale brown
139			
140			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
140			
141			SILT: dark brown
142			
143			SILT: grey/black carbonaceous silt with plant material, fracturing fabric ~35-40 degrees from horizontal
144			SILT: pale grey
145			
146			
147			
148			
149			SILT: pale yellow brown
150			

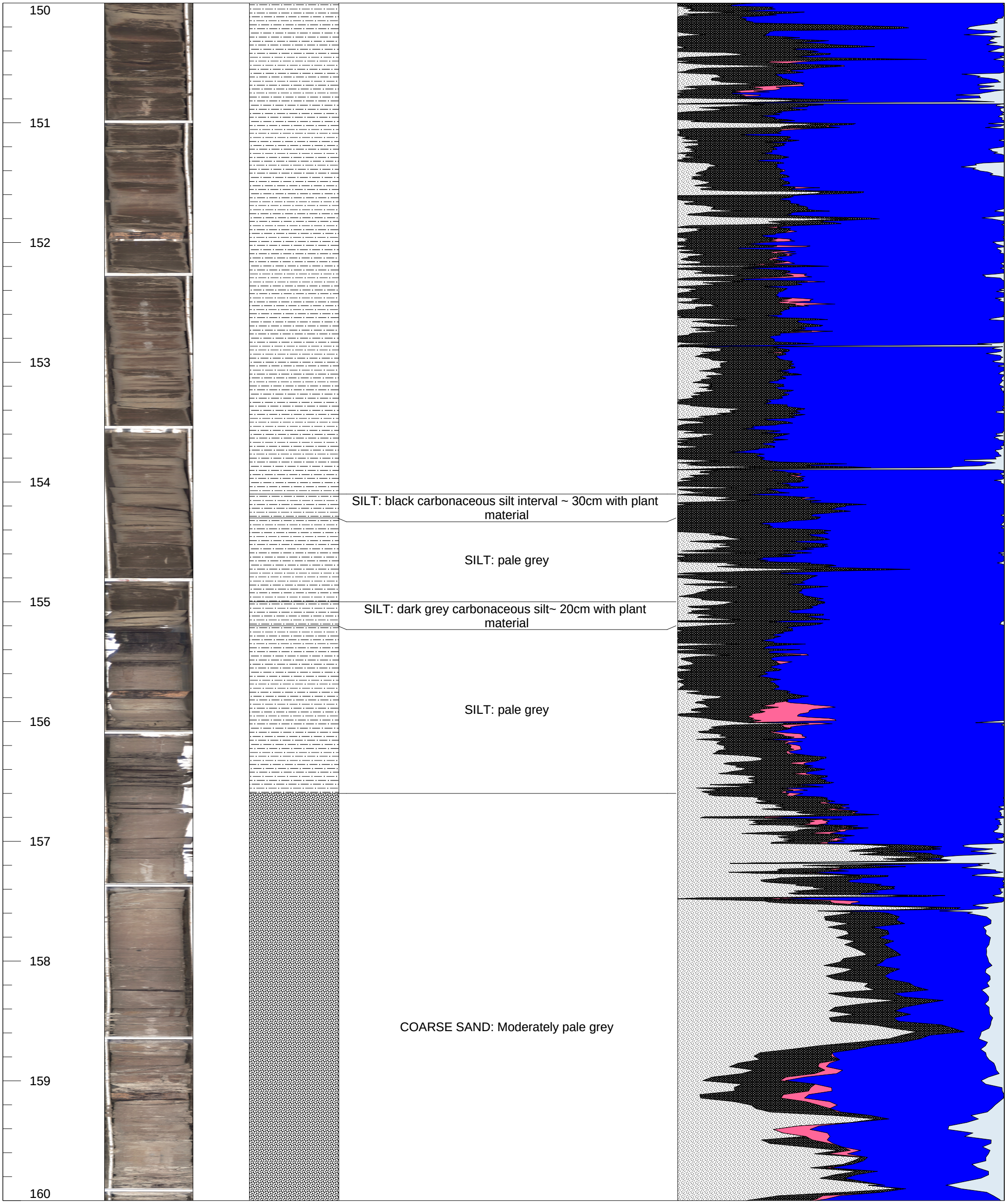
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
150			
151			
152			
153			
154			SILT: black carbonaceous silt interval ~ 30cm with plant material
			SILT: pale grey
155			SILT: dark grey carbonaceous silt~ 20cm with plant material
156			SILT: pale grey
157			
158			COARSE SAND: Moderately pale grey
159			
160			



Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
160			
			IRONSTONE: Cemented ferruginous interval(~5cm)
161			SILT: brown silt with ~ 5cm interval of yellow brown fine to medium sand (gradual boundary)
162			
163			
164			SILT: yellow brown
165			
166			
167			FINE SAND: yellow brown fine sand interval ~ 50 cm with vegetation
168			SILT: yellow brown
169			FINE SAND: yellow brown
			SILT: yellow brown silt interval~ 20 cm
170			FINE SAND: yellow brown

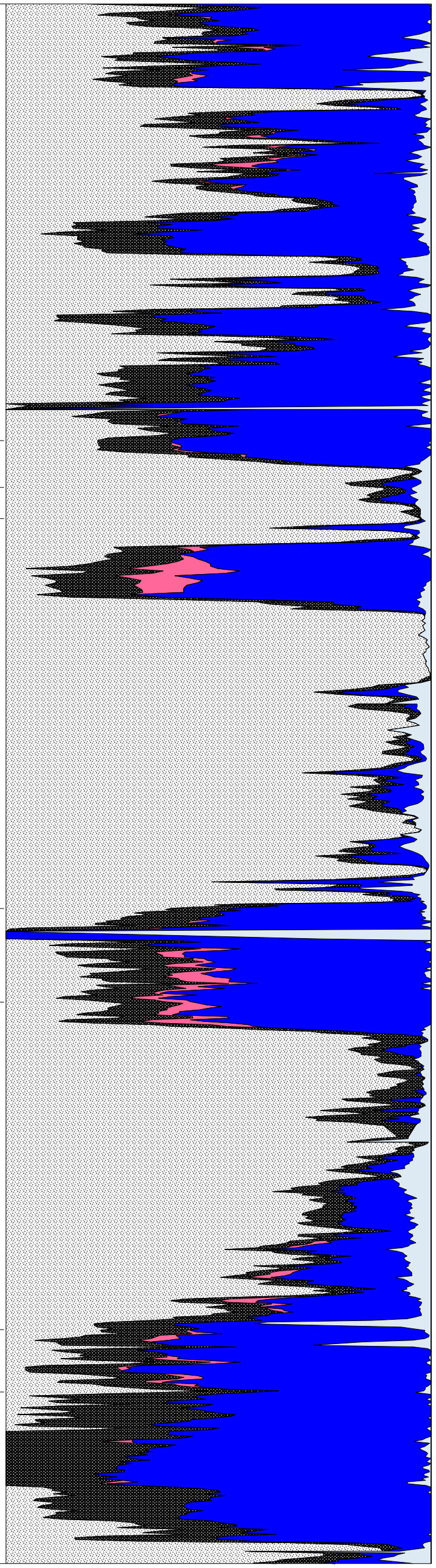
Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
170			
171			SILT: yellow brown
172			
173			FINE SAND: Yellow brown
			SILT: Yellow brown silt interval (20cm)
174			FINE SAND: Yellow brown fine sand
175			
176			SILT: Brown grey
177			FINE SAND: Yellow brown
178			
			SILT: Brown grey
179			
180			CARBONACEOUS SILT: Black carbonaceous silt with plant material. Transitional base from medium sand

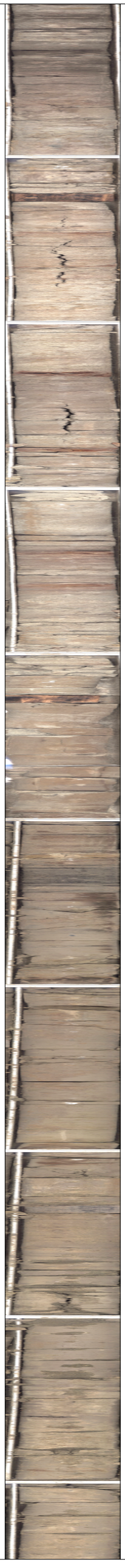


Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
180			
181			
182			MEDIUM SAND: Well sorted, pale grey medium sand
183			
184			MEDIUM SAND TO FINE SAND: Fining upward medium grey medium sand to pale gret fine sand
185			
186			FINE SAND: Black carbonaceous mm-laminated interval (sandy) ~20cm
187			SILT: yellow brown
188			
189			MEDIUM SAND: yellow brown fine to medium sand
190			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
190			
191			
192			
193			SILT: yellow brown
194			
195			-FINE SAND: ~ 10cm yellow brown fine sand
196			SILT: yellow brown
197			
198			SILT: grey carbonaceous silt
199			FINE SAND: medium grey brown alternating silt and fine sand
200			

Hylogger Analysis

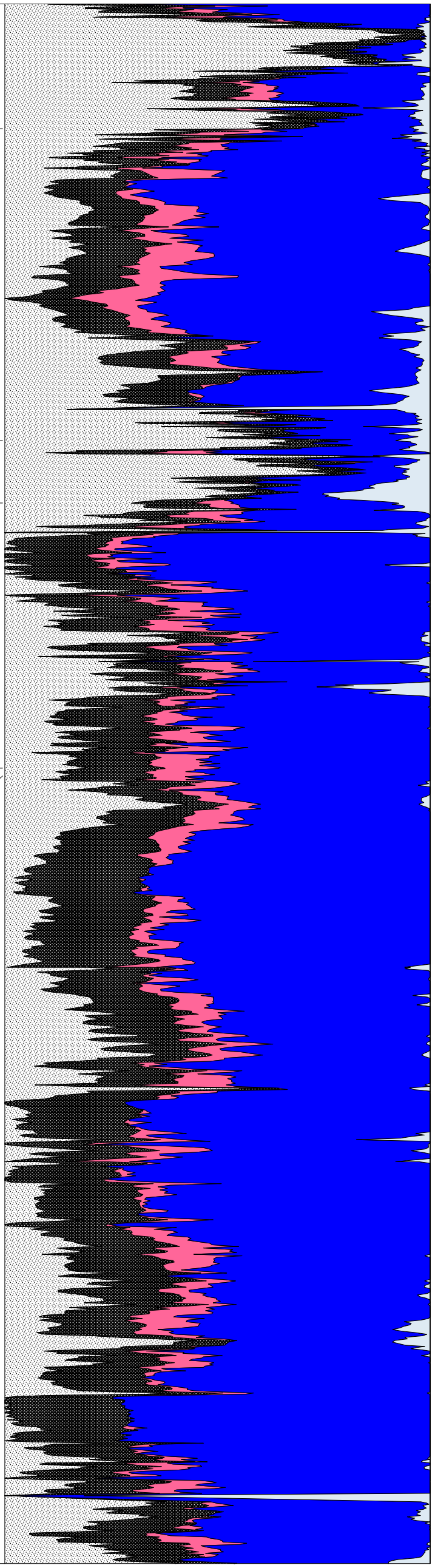
Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
200			
201			FINE SAND: medium grey brown fine sand
202			
203			FINE SAND: pale grey
204			SILT: pale brown grey
205			IRONSTONE: Cemented ferruginous interval (~5cm)
206			
207			
208			
209			
210			SILT: pale brown grey





Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

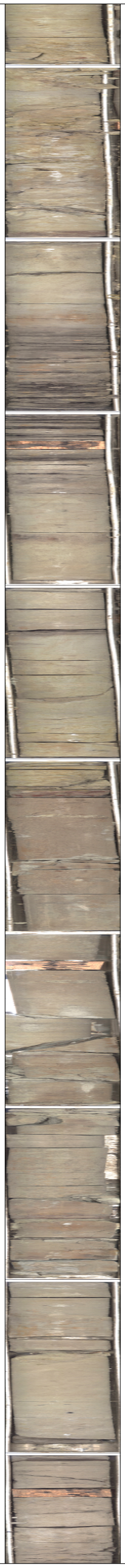
Depth log	Hylogger Image	Lithology	Description
210			
211			
212			
213			
214			
215			
216			MEDIUM SAND: pale brown grey fine to medium sand
217			SILT: pale brown grey
218			LOOSE SAND: loose sand possibly associated with core loss?
219			NO CORE
220			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
220			SILT: pale-medium grey silt/clay
221			FINE SAND: pale- medium grey
222			
223			SILTY FINE SAND: dark grey carbonaceous silty fine sand
224			VERY FINE SAND: medium grey very fine sand with mottles above ferruginous interval
225			
226			IRONSTONE: Cemented ferruginous interval (~5cm)
227			VERY FINE SAND: medium grey very fine sand with silty intervals and minor plant material
228			
229			
230			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
230 – 232			VERY FINE SAND: medium grey very fine sand with silty intervals and minor plant material in irregular orientation
232 – 236			SILT: grading upward pale- medium grey silt to fine sand no carbonaceous material
236 – 240			FINE SAND: medium grey

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
240			
241			
242			
243			FINE SAND: medium grey fine sand with intervals of carbonaceous material (<20%, dark)
244			FINE SAND: fine sand with subvertical laminations parallel ?slump horizon
245			FINE SAND: formerly saturated? Fine sand slump horizon? Formerly saturated was a slurry, irregular shape SILT: black carbonaceous silt with mm laminated (fissile) lignite
246			FINE/MEDIUM SAND: medium grey fine to medium sand with irregularly spaced ~1cm subhorizontal plant material
247			IRONSTONE: Cemented ferruginous interval (~10cm)
248			
249			FINE/MEDIUM SAND: medium grey fine to medium sand with irregularly spaced ~1cm subhorizontal plant material
250			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

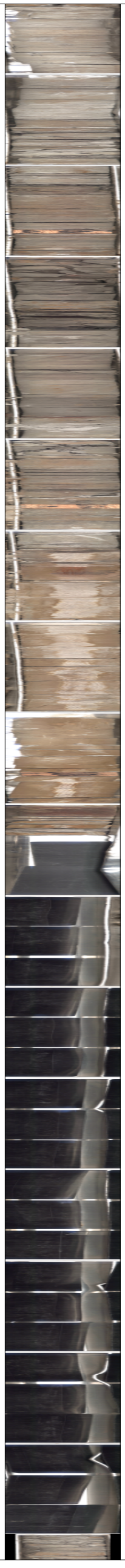
Depth log	Hylogger Image	Lithology	Description
250			
251			
252			
253			
254			SILT: medium grey silt with intervals of fine sand
255			
256			
257			IRONSTONE: Cemented ferruginous interval (~10cm)
			SILT: medium grey silt with intervals of fine sand
258			FINE/MEDIUM SAND: pale grey fine to medium sand (<3% plant material)
			IRONSTONE: Cemented ferruginous interval (~10cm)
259			
260			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
260			FINE/MEDIUM SAND: pale grey fine to medium sand with regularly spaced intervals plant material (<3%)
261			
262			
263			SILT: medium grey silt with minor plant material (~10%)
264			FINE SAND: pale to medium grey
265			SILT: medium grey silt, ~1 cm cemented ferruginous material at contact - ironstone/ferricrete
266			
267			
268			FINE SAND: pale grey fine sand with minor plant material, interval of coarse sand at 271, gradational boundary
269			
270			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
270			
271			
272			SILT: medium grey (up silt, down organic) mm laminated very fine sand
273			SILT: black carbonaceous silt mm laminated (fissile) plant material, gradational contact. ?Lignite
274			
275			SILT: grading upwards
276			
277			IRONSTONE: Cemented ferruginous interval, ironstone/ferricrete
			VERY FINE SAND: pale grey
278			SILT: black carbonaceous silt mm laminated (fissile) intervals of pale silt up to 10cm plant material. ?Lignite
279			
280			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
280			SILT: pale grey
281			
282			VERY FINE SAND: very fine sand grey/white
283			SAND: Gradational boundary from coarse to fine sand.
284			COARSE SAND: (mud matrix) with lignite intervals (2-4cm)
285			LIGNITE
286			
287			SILT: black carbonaceous silt mm laminated fissile subhorizontal fabric plant material varying amounts of mud vs.carbonaceous material. ?Lignite
288			
289			
290			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
290			
291			
292			CONGLOMERATE: granule/small pebble conglomerate in mud matrix (basal conglomerate, some mud clasts) clast supported near top, plus bottom matrix supported in centre. Sharp boundary with underlying dolerite
293			DOLERITE: sharp upper boundary, highly weathered gradational lower boundary. Completely weathered (kaolinitic) dolerite
294			
295			DOLERITE: completely weathered dolerite, with slightly weathered core stones up to 80cm
296			
297			DOLERITE: sharp upper boundary, resinous green with slickensides, weathered (Fe smectites?) completely weathered dolerite
298			
299			
300			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

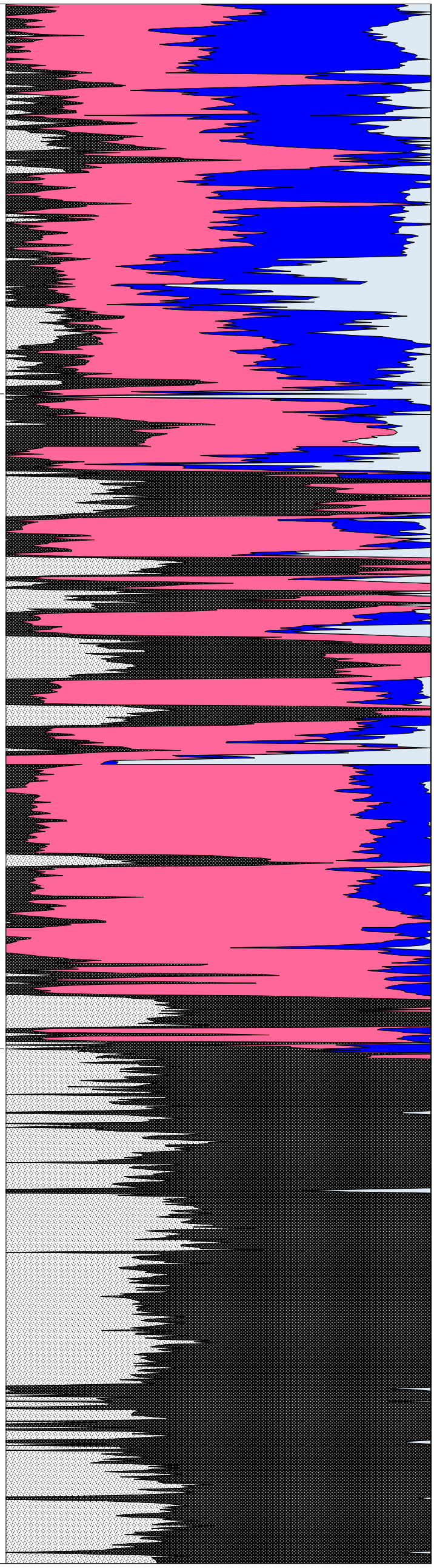
Depth log | Hylogger Image | Lithology | Description



300
301
302
303
304
305
306
307
308
309
310

DOLERITE: highly weathered dolerite upper and lower boundaries gradational

DOLERITE: slightly weathered dolerite



Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
310			DOLERITE: slightly weathered dolerite. ~4cm highly weathered joint at base
311			
312			
313			
314			
315			
316			
317			
318			DOLERITE: slightly weathered. ~10cm highly weathered joint at base
319			
320			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
320			
321			
322			
323			
324			DOLERITE: slightly weathered dolerite
325			
326			
327			
328			
329			
330			

Hylogger Analysis

Hole Identifier: 13968

Hylogger Mineralogy (TIR method)

NULL
SILICA_TIR
PLAGIOCLASE_TIR
KAOLIN_TIR
SMECTITE_TIR
CARBONATE_TIR

Depth log	Hylogger Image	Lithology	Description
330–340			DOLERITE: slightly weathered dolerite with occasional weathered joints. Isolated crystalline veins of ?calcite

