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# ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C29  
SHEET 1 of 3  
REFERENCE No H11119

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C  
LOCATION Cut 8 COORDINATES 472039.9 E; 7093677.4 N  
PROJECT No FG5799 SURFACE R.L. 87.10m PLUNGE \_\_\_\_\_ DATE STARTED 19/07/11 GRID DATUM MGA94  
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 19/07/11 DRILLER Cairns Drilling Contract

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	87.10											
0.5	86.90				TOPSOIL: Brown, silt.						Based on Driller's logs only	
0.5	86.40				Silty SAND: Brown, fine grained.		(SM)					
1.0				A	SANDSTONE (HW): Grey/brown, fine grained.		HW				22,27,30/100mm N>50	SPT
1.5	85.50		(36)		SANDSTONE (HW): Red/brown, massive, medium grained, medium strength.						J, 70°, Pl, S, O, Clnf, 5mm	
2.0					Defects: -Joint at 10° (3/m) -Joint at 40°-50° (3-4/m) -Joint at 70° (1-2/m)						J, 10°, Pl, O, Clnf, 20mm Is(50) = 0.48MPa Is(50) = 0.36MPa	x o
3.0			100 (23)		Defect spacing is close to medium. Defect surfaces are planar, open or tight, smooth, clay infilled.		HW					
4.0					Pebbles sizing up to 6mm, subrounded.						CLy seam	
5.0			100 (61)									
6.0	81.75				SANDSTONE (MW): Light brown, massive, fine to medium grained, high strength, indurated and/or slightly metamorphosed.						DD = 2.37/m³; MC = 2.5%; UCS=12.3MPa	x o
6.5			100 (47)		Defects: -Joints at 30-40° (4/m) -Joints at 50-60° (1-2/m) -Joints at 70° (1/m)							
7.0					Defect spacing is medium. Defect surfaces are planar, open, smooth, clay infilled, iron stained.		MW					
7.5			100 (74)									
8.0												
9.0	78.10				SANDSTONE (SW): Grey, fine grained, bedded or massive, mainly high strength, indurated and/or slightly metamorphosed. Bedding dips at 70°.		SW					
9.5			100 (72)		(See over)						Is(50) = 1.82MPa Is(50) = 1.65MPa	x o
10.0												

REMARKS \_\_\_\_\_

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# ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C29  
SHEET 2 of 3  
REFERENCE No H11119

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C  
LOCATION Cut 8 COORDINATES 472039.9 E; 7093677.4 N  
PROJECT No FG5799 SURFACE R.L. 87.10m PLUNGE \_\_\_\_\_ DATE STARTED 19/07/11 GRID DATUM MGA94  
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 19/07/11 DRILLER Cairns Drilling Contract

DEPTH (m)	R.L. (m)	LOGGING WASH BORING CORE DRILLING	RQD (%)	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	77.10											
11			100 (95)		<b>SANDSTONE (SW): Cont'd</b>  Defects: -Joints at 10° (2/m) -Joints at 30°-40° (2-3/m) -Bedding parting at 70° (1/m)  Defect spacing is generally medium to wide. Defect surfaces are generally planar, smooth, open or tight, iron stained, thinly clay infilled.						Is(50) = 0.33MPa Is(50) = 0.19MPa	x o
12			100 (84)		Occasional siltstone interbeds up to 700mm.							
13			100 (40)									
14			100 (80)									
15			100 (80)			SW					Is(50) = 2.58MPa Is(50) = 1.48MPa	x o
16												
17											Is(50) = 0.34MPa Is(50) = 1.18MPa	x o
18			100 (67)								DD = 2.64t/m <sup>3</sup> , MC = 0.5%; UCS=78.2MPa	UCS
19											Is(50) = 3.91MPa Is(50) = 4.36MPa	x o
20			100 (20)								HW Siltstone interbeds, bedding at 60°-70°	

REMARKS \_\_\_\_\_

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# ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No BH C29  
SHEET 3 of 3  
REFERENCE No H11119

PROJECT Bruce Highway Upgrade (Cooroy to Curra) Section C  
LOCATION Cut 8 COORDINATES 472039.9 E: 7093677.4 N  
PROJECT No FG5799 SURFACE R.L. 87.10m PLUNGE \_\_\_\_\_ DATE STARTED 19/07/11 GRID DATUM MGA94  
JOB No 232/10A/2 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 19/07/11 DRILLER Cairns Drilling Contract

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH (MPa)	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
20	67.10					SANDSTONE (SW): Cont'd							
21	66.10		100			Borehole terminated at 21m							
22													
23													
24													
25													
26													
27													
28													
29													
30													

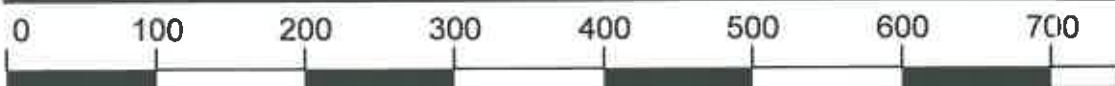
REMARKS \_\_\_\_\_

LOGGED BY  
JA/DC



## CORE PHOTO LOG - BH C29

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	06/09/2011
Details:	Cut 8	Start Depth (m):	1.60
Reference No.:	H11119	Finish Depth (m):	21.00



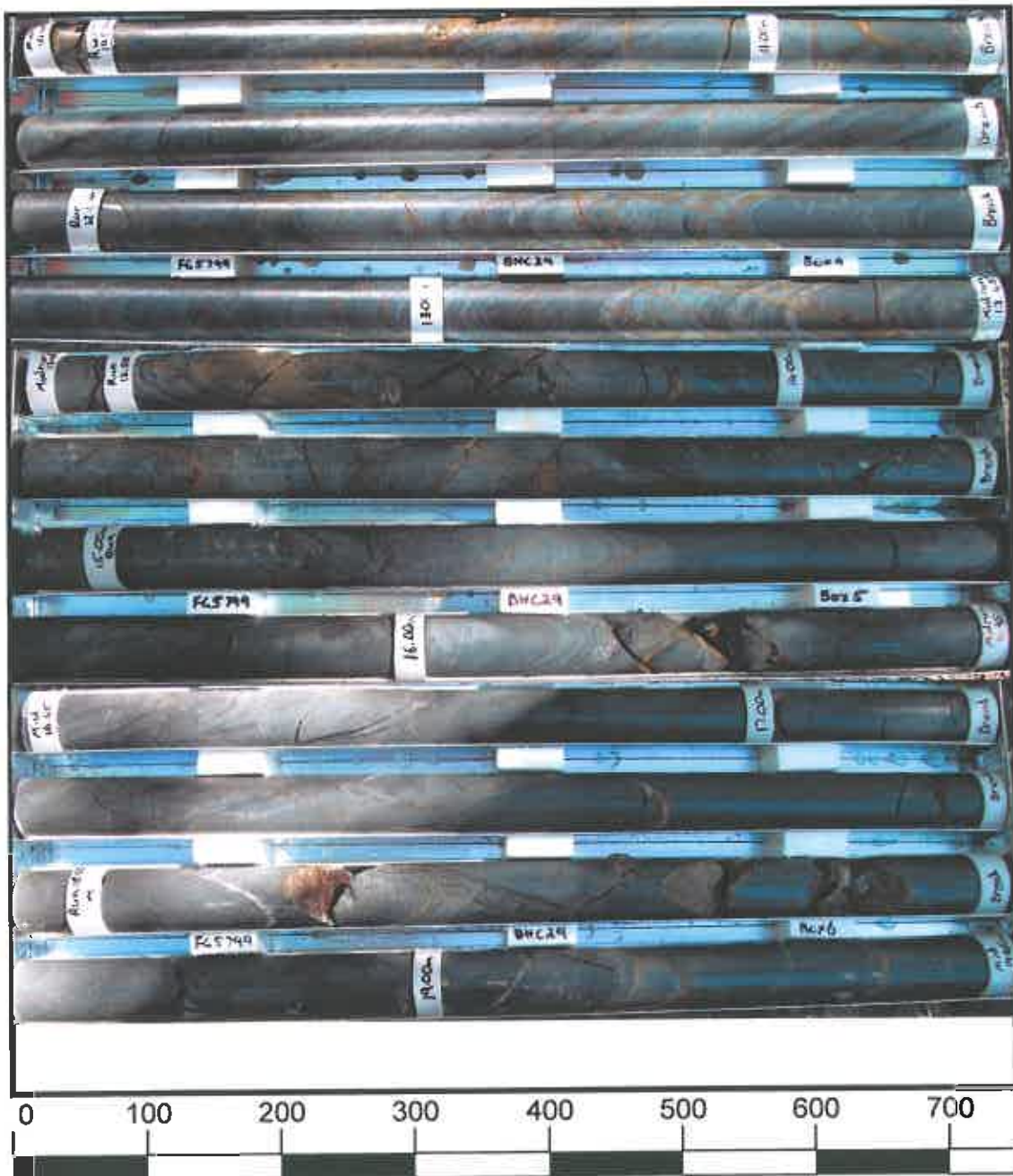
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## CORE PHOTO LOG - BH C29

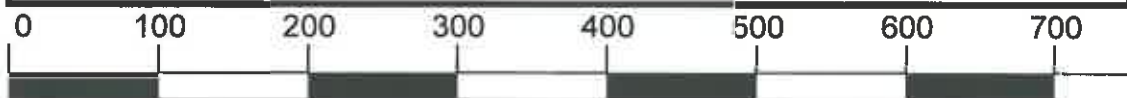
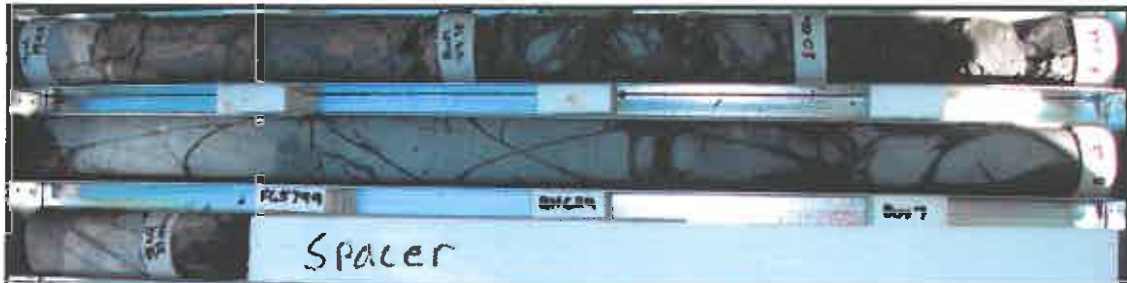
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Project No.:	FG5799	Date:	06/09/2011
Details:	Cut 8	Start Depth (m):	1.60
Reference No.:	H11119	Finish Depth (m):	21.00



SCALE 1:5

CORE PHOTO LOG - BH C29

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	06/09/2011
Details:	Cut 8	Start Depth (m):	1.60
Reference No.:	H11119	Finish Depth (m):	21.00



SCALE 1:5

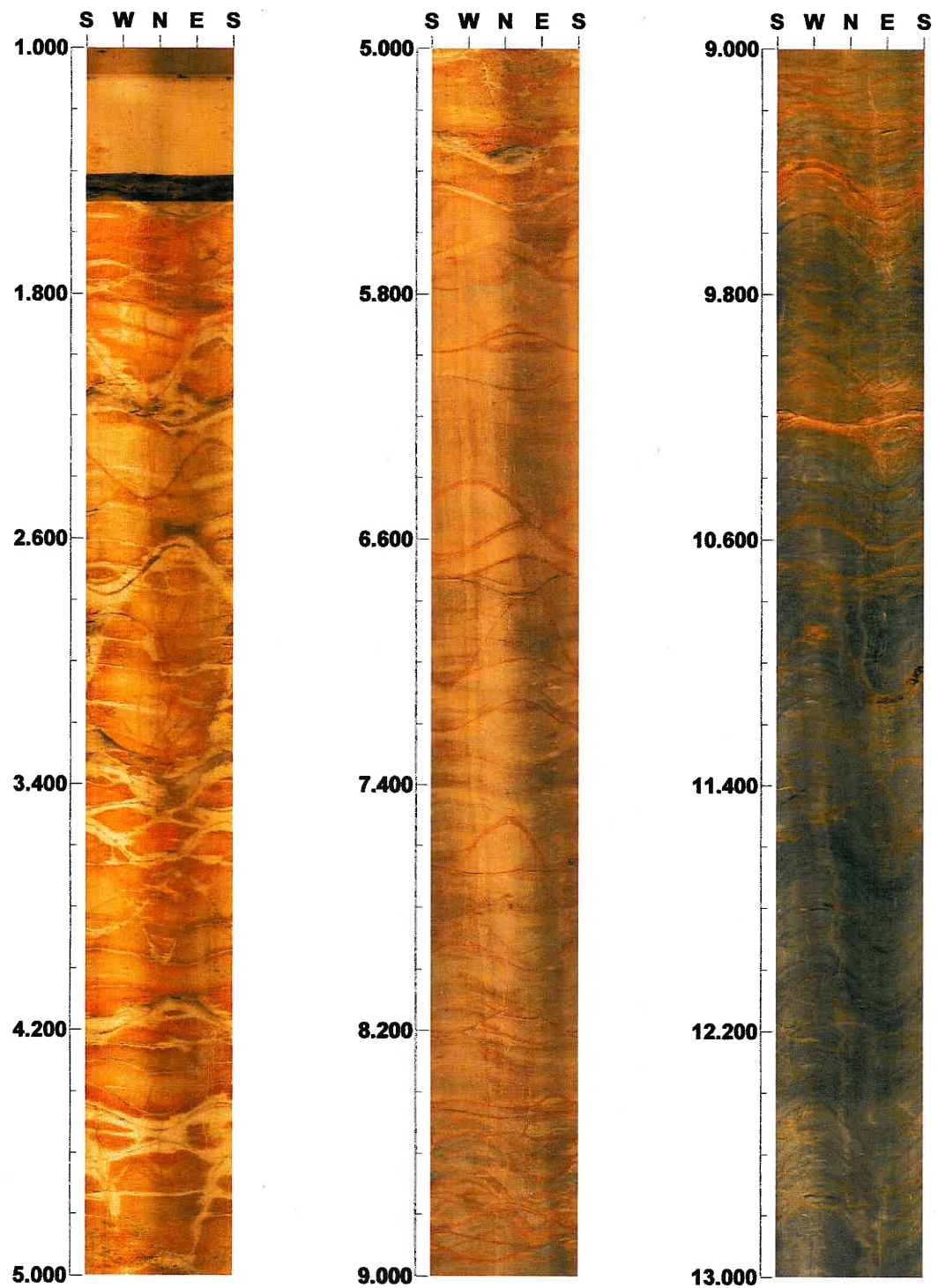
**Project name: BRUCE HIGHWAY UPGRADE SECTION C**

**Bore hole No.: C-29**

**Azimuth: 0**

**Inclination: -90**

**Depth range: 1.000 - 13.000 m**



**Scale: 1/20**

**Aspect ratio: 200 %**



**Project name: BRUCE HIGHWAY UPGRADE SECTION C**

**Bore hole No.: C-29**

**Azimuth: 0**

**Inclination: -90**

**Depth range: 13.000 - 19.947 m**



**Scale: 1/20      Aspect ratio: 200 %**

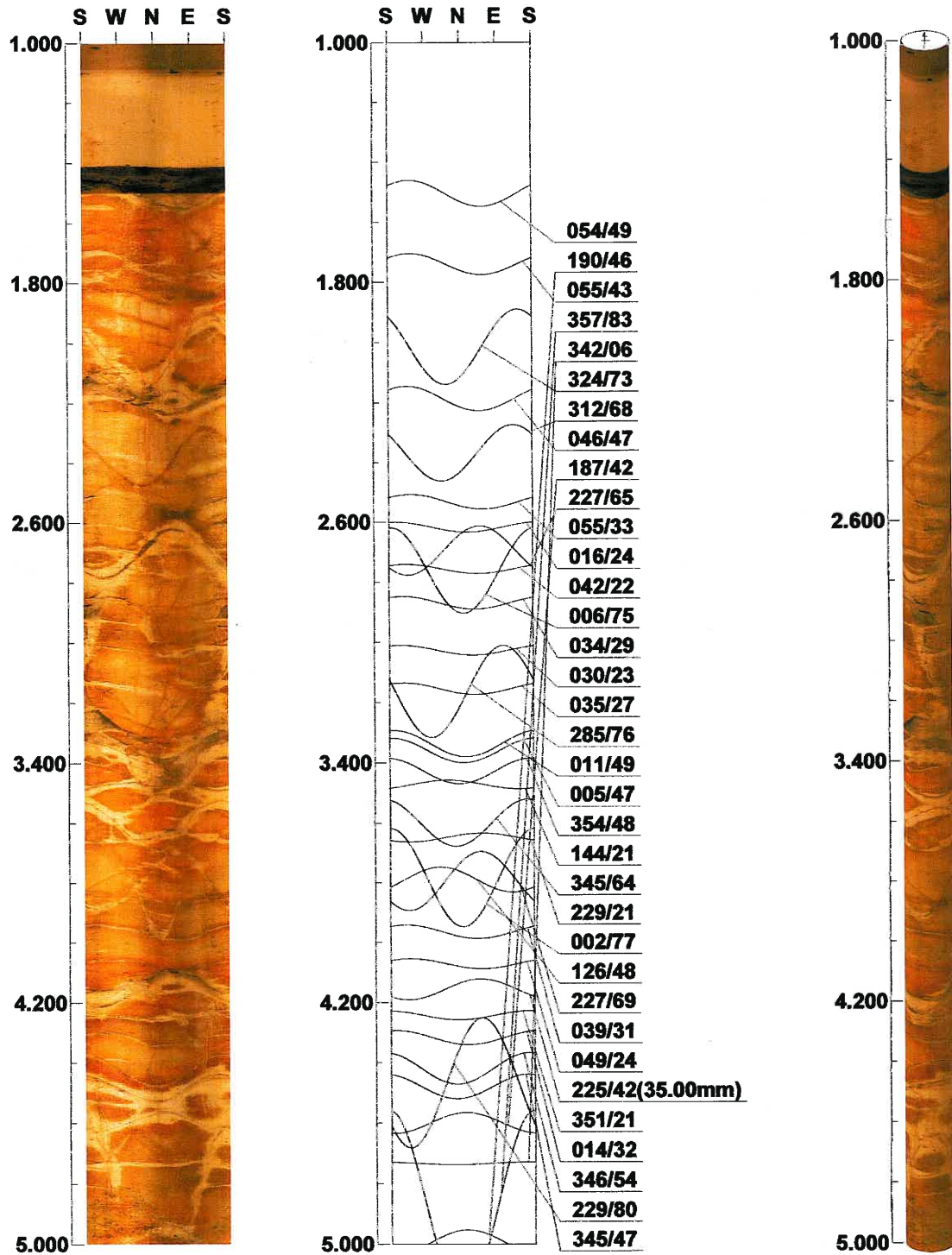
Project name: BRUCE HIGHWAY UPGRADE SECTION C

Bore hole No.: C-29

Azimuth: 0

Inclination: -90

Depth range: 1.000 - 5.000 m



Scale: 1/20

Aspect ratio: 200 %

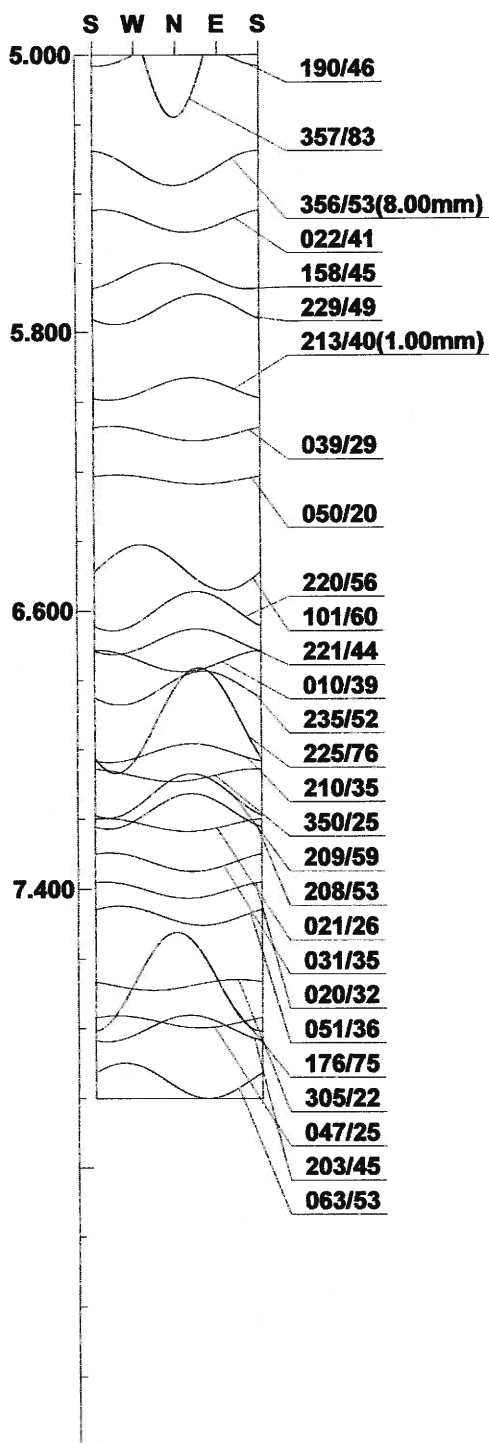
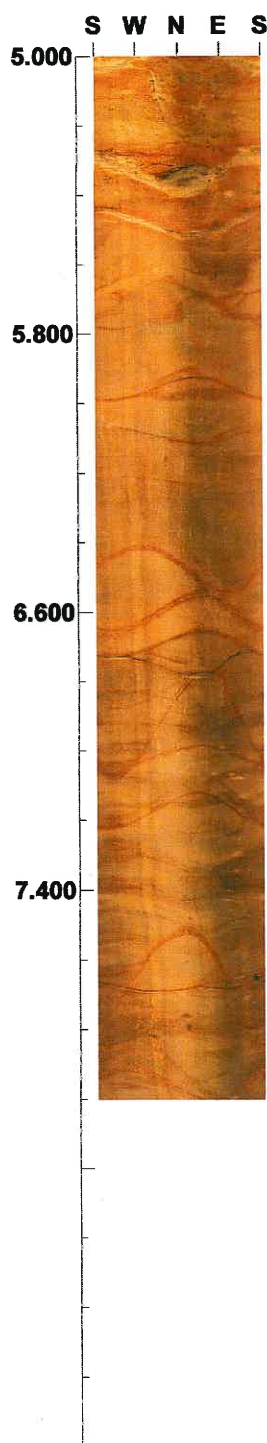
Project name: BRUCE HIGHWAY UPGRADE SECTION C

Bore hole No.: C-29

Azimuth: 0

Inclination: -90

Depth range: 5.000 - 8.000 m



Scale: 1/20

Aspect ratio: 200 %

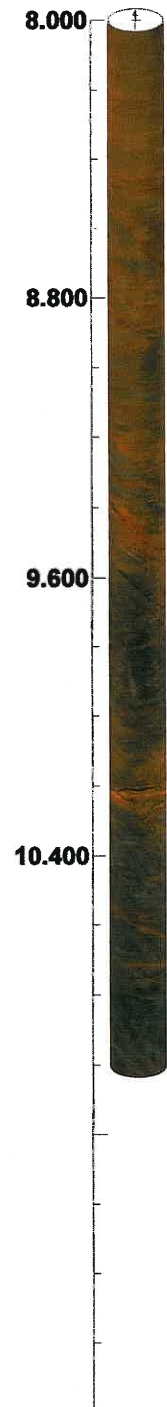
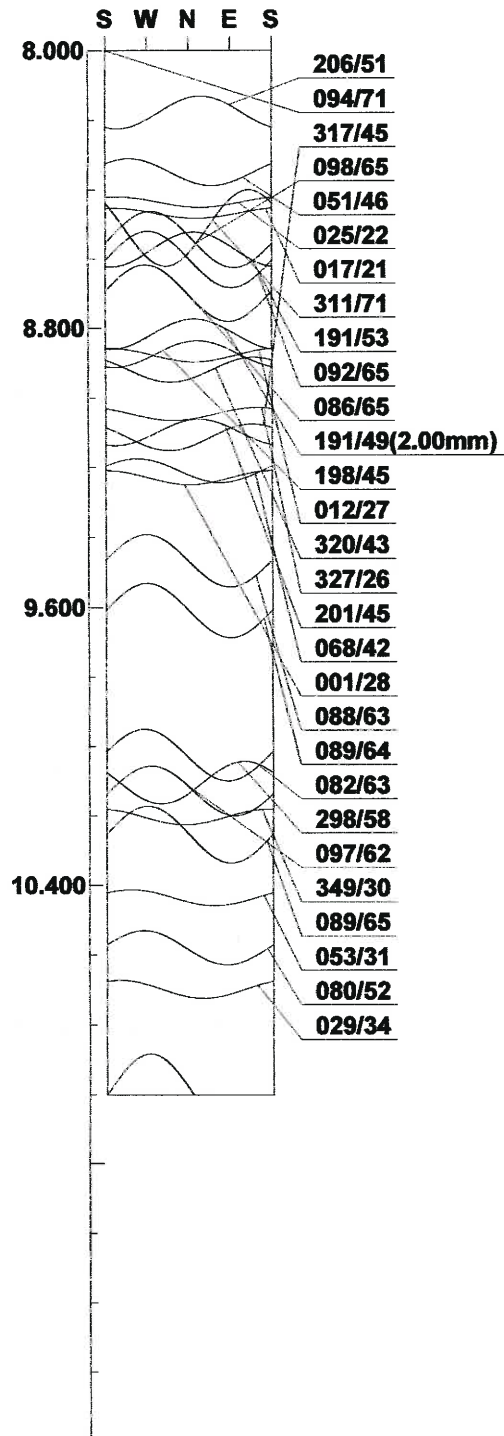
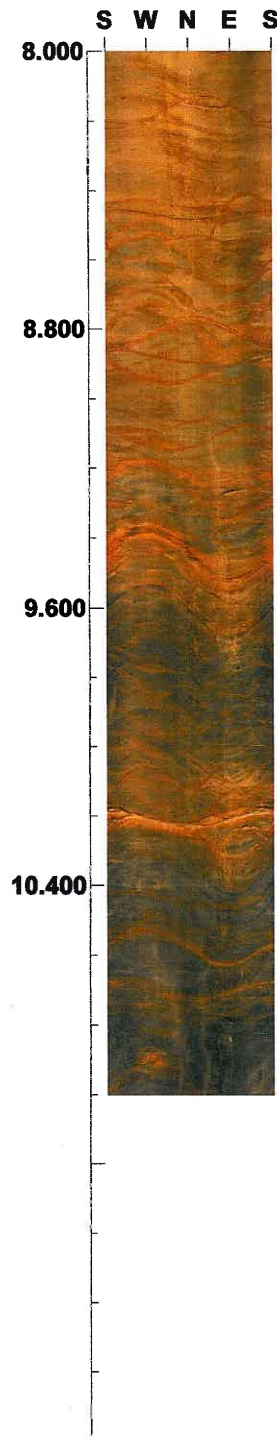
Project name: BRUCE HIGHWAY UPGRADE SECTION C

Bore hole No.: C-29

Azimuth: 0

Inclination: -90

Depth range: 8.000 - 11.000 m



Scale: 1/20

Aspect ratio: 200 %

Tab. Table of Discontinuity ( 1 / 3 )

File name: C-29.STR  
[ ]

No.	Depth (m)	Dir/Dip	Sort	Aperture (mm)	Form	Condition	Remark
1	1.505	054/49	Joint	0.5	Planar	Smooth	Open
2	1.740	055/43	Joint	0.3	Planar	Smooth	Open
3	2.015	324/73	Joint	0.5	Planar	Smooth	Open
4	2.186	046/47	ShearZone	13.0	Planar	Brec/crus'd	Open/loose
5	2.368	312/68	Joint	0.5	Planar	Smooth	Open
6	2.532	055/33	Joint	0.3	Planar	Smooth	Open
7	2.617	016/24	Joint	0.5	Planar	Smooth	Open
8	2.695	227/65	Joint	2.0	Planar	Minerl'zd	Open
9	2.756	042/22	Joint	0.3	Planar	Smooth	Open
10	2.761	006/75	Joint	0.3	Planar	Smooth	Open
11	2.868	034/29	Joint	0.3	Planar	Smooth	Open
12	3.026	030/23	Joint	0.5	Planar	Smooth	Open
13	3.154	035/27	Joint	0.3	Planar	Smooth	Open
14	3.163	285/76	Joint	0.3	Planar	Smooth	Open
15	3.336	011/49	Joint	0.5	Planar	Smooth	Open
16	3.359	005/47	Joint	0.5	Planar	Smooth	Open
17	3.427	354/48	Joint	0.5	Planar	Rough	Open
18	3.472	144/21	Joint	1.0	Planar	Smooth	Open
19	3.599	345/64	Joint	1.0	Planar	Rough	Open
20	3.648	229/21	Joint	0.5	Planar	Smooth	Open
21	3.783	002/77	Joint	0.3	Planar	Rough	Open
22	3.789	126/48	Joint	0.3	Planar	Smooth	Open
23	3.794	227/69	Joint	0.5	Planar	Smooth	Open
24	3.964	039/31	Joint	0.5	Planar	Smooth	Open
25	4.071	049/24	Joint	0.5	Planar	Smooth	Open
26	4.156	225/42	Joint	35.0	Planar	Weathered	Open
27	4.242	351/21	Joint	0.5	Planar	Smooth	Open
28	4.316	014/32	Joint	0.5	Planar	Offset	Open
29	4.419	346/54	Joint	0.5	Planar	Smooth	Open
30	4.466	229/80	Joint	0.3	Planar	Rough	Open
31	4.479	345/47	Joint	7.0	Planar	Brec/crus'd	Open
32	4.600	187/42	Joint	0.5	Planar	Smooth	Open
33	4.733	342/06	Joint	0.5	Planar	Rough	Open
34	4.870	357/83	Joint	0.5	Planar	Rough	Open
35	4.993	190/46	Joint	0.5	Planar	Brec/crus'd	Open
36	5.326	356/53	ShearZone	8.0	Planar	Brec/crus'd	Open/loose
37	5.479	022/41	ShearZone	10.0	Planar	Rough	Open
38	5.638	158/45	Joint	0.3	Planar	Rough	Open
39	5.734	229/40	Joint	0.3	Planar	Smooth	Open
40	5.963	213/40	Joint	1.0	Planar	Smooth	Open/fil'd
41	6.090	039/29	Joint	0.5	Planar	Smooth	Open
42	6.222	050/20	Joint	0.3	Planar	Smooth	Open
43	6.475	101/60	Joint	1.0	Planar	Smooth	Open/fil'd
44	6.600	220/56	Joint	2.0	Planar	Smooth	Open/fil'd
45	6.688	221/44	Joint	0.5	Planar	Smooth	Open
46	6.744	010/39	Joint	1.0	Planar	Smooth	Open/fil'd
47	6.822	235/52	Joint	0.3	Planar	Smooth	Open
48	6.916	225/76	Joint	0.3	Planar	Smooth	Open
49	7.010	210/35	Joint	0.3	Planar	Smooth	Open
50	7.074	350/25	Joint	0.3	Planar	Smooth	Open



Tab. Table of Discontinuity ( 2 / 3 )

File name: C-29.STR  
[ ]

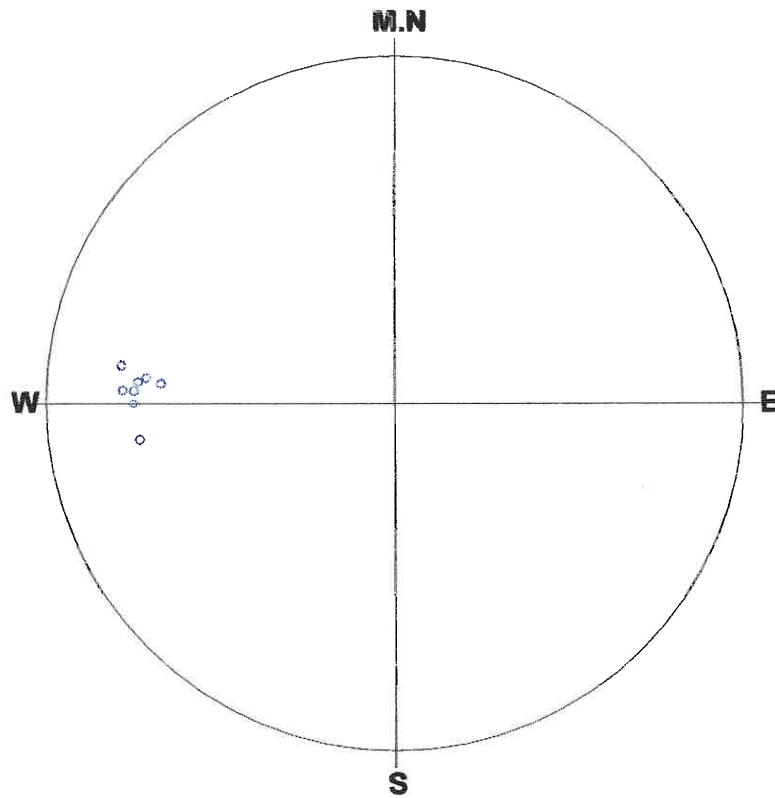
No.	Depth (m)	Dir/Dip	Sort	Aperture (mm)	Form	Condition	Remark
51	7.133	209/59	Joint	0.3	Planar	Smooth	Open
52	7.177	208/53	Joint	0.5	Planar	Smooth	Open
53	7.216	021/26	Joint	0.3	Planar	Smooth	Tight
54	7.322	031/35	Joint	0.3	Planar	Smooth	Open
55	7.402	020/32	Joint	0.5	Planar	Smooth	Open
56	7.475	051/36	Joint	0.3	Planar	Rough	Open
57	7.665	176/75	Joint	0.5	Planar	Offset	Open
58	7.674	305/22	Joint	0.5	Planar	Smooth	Open/fil'd
59	7.780	047/25	Joint	0.3	Planar	Smooth	Tight
60	7.799	203/45	Joint	0.3	Planar	Smooth	Open
61	7.949	063/53	Joint	0.5	Planar	Rough	Open
62	8.177	206/51	Fault	1.0	Planar	Smooth	Open
63	8.349	051/46	Joint	0.3	Planar	Smooth	Tight
64	8.436	025/22	Joint	0.5	Planar	Rough	Open
65	8.468	017/21	Joint	1.0	Planar	Brec/crus'd	Open
66	8.511	311/71	Joint	0.3	Planar	Smooth	Open
67	8.544	098/65	Joint	0.3	Planar	Smooth	Open
68	8.573	191/53	Joint	0.5	Planar	Smooth	Open
69	8.602	092/65	Joint	0.5	Planar	Smooth	Open
70	8.699	086/65	Joint	0.5	Planar	Smooth	Open
71	8.817	191/49	Joint	2.0	Planar	Brec/crus'd	Open/fil'd
72	8.874	198/45	Joint	0.3	Planar	Smooth	Open
73	8.877	012/27	Joint	0.5	Planar	Smooth	Open
74	8.919	320/43	Joint	0.5	Planar	Smooth	Open
75	9.046	327/26	Joint	0.5	Planar	Smooth	Open
76	9.099	201/45	Joint	0.5	Planar	Smooth	Open
77	9.113	317/45	Joint	0.5	Planar	Smooth	Open
78	9.209	068/42	Joint	0.5	Planar	Rough	Open
79	9.229	000/28	Joint	0.5	Planar	Smooth	Open
80	9.466	088/63	ShearZone	10.0	Planar	Brec/crus'd	Open/loose
81	9.608	090/64	Foliation	0.0	Planar	Smooth	Tight
82	10.025	082/63	Foliation	0.0	Planar	Smooth	Tight
83	10.104	298/58	Joint	0.3	Planar	Smooth	Open
84	10.128	097/62	Joint	0.3	Planar	Smooth	Open
85	10.203	349/30	ShearZone	18.0	Planar	Brec/crus'd	Open/loose
86	10.254	090/65	Joint	0.5	Planar	Smooth	Open
87	10.435	053/31	Joint	0.3	Planar	Smooth	Open
88	10.579	080/52	Joint	0.3	Planar	Smooth	Open
89	10.698	029/34	Joint	0.3	Planar	Smooth	Open
90	10.992	094/71	Joint	0.3	Planar	Rough	Open
91	11.111	013/34	Joint	0.3	Planar	Rough	Open
92	11.415	308/70	Joint	0.3	Planar	Rough	Open
93	11.453	212/71	Joint	0.3	Planar	Rough	Tight
94	11.482	095/63	Foliation	0.0	Planar	Rough	Tight
95	11.576	048/24	Joint	0.3	Planar	Smooth	Tight
96	12.063	223/74	Joint	0.5	Planar	Smooth	Open
97	12.191	160/21	Joint	0.3	Planar	Rough	Open
98	12.290	279/65	Joint	0.3	Planar	Smooth	Open
99	12.437	183/50	Joint	0.3	Planar	Rough	Open
100	12.650	285/60	Joint	0.3	Planar	Rough	Open

Tab. Table of Discontinuity ( 3 / 3 )

File name: C-29.STR  
[ ]

No.	Depth (m)	Dir/Dip	Sort	Aperture (mm)	Form	Condition	Remark
101	12.692	049/37	Joint	0.3	Planar	Smooth	Open
102	12.759	346/19	Joint	0.3	Planar	Rough	Open
103	13.085	287/65	Joint	0.3	Planar	Smooth	Open
104	13.214	288/59	Joint	0.3	Planar	Smooth	Open
105	13.262	260/50	Joint	0.3	Planar	Smooth	Open
106	13.293	258/50	Joint	0.3	Planar	Smooth	Open
107	13.543	321/74	Joint	0.3	Planar	Rough	Open
108	13.582	093/67	Foliation	0.0	Planar	Smooth	Tight
109	13.648	158/06	Joint	0.3	Planar	Smooth	Tight
110	13.802	233/43	Joint	0.3	Planar	Smooth	Open
111	13.838	096/61	Foliation	0.0	Planar	Smooth	Tight
112	13.936	200/45	Joint	0.5	Planar	Smooth	Open
113	13.991	335/65	Joint	0.5	Planar	Rough	Open
114	14.034	323/72	Joint	0.3	Planar	Smooth	Open
115	14.072	209/57	Joint	1.0	Planar	Smooth	Open
116	14.112	218/53	Joint	0.5	Planar	Smooth	Open
117	14.203	336/59	Joint	0.3	Planar	Smooth	Open
118	14.267	334/72	Joint	0.5	Planar	Rough	Open
119	14.327	095/57	Foliation	0.0	Planar	Smooth	Tight
120	14.448	321/60	Joint	0.3	Planar	Rough	Open
121	14.546	333/72	Joint	0.5	Planar	Rough	Open
122	14.754	333/13	Joint	0.5	Planar	Smooth	Open
123	14.767	345/80	Joint	0.5	Planar	Rough	Open
124	14.780	215/40	Joint	0.5	Planar	Smooth	Open
125	14.833	240/46	Joint	0.5	Planar	Smooth	Open
126	14.880	003/79	Joint	0.5	Planar	Smooth	Open
127	14.907	354/12	Joint	0.5	Planar	Smooth	Open
128	15.013	093/64	Foliation	0.0	Planar	Smooth	Tight
129	15.063	344/68	Joint	0.3	Planar	Smooth	Open
130	15.161	248/44	Joint	0.5	Planar	Smooth	Open
131	15.382	334/65	Joint	0.3	Planar	Rough	Tight
132	15.449	337/72	Joint	0.3	Planar	Rough	Tight/fil'd
133	15.462	098/71	Joint	0.3	Planar	Rough	Tight/fil'd
134	16.142	329/76	Joint	0.3	Planar	Smooth	Tight/fil'd
135	16.233	330/74	Joint	0.3	Planar	Smooth	Tight/fil'd
136	16.536	208/54	Joint	2.0	Planar	Smooth	Open/loose
137	16.683	098/68	Foliation	0.0	Planar	Smooth	Tight
138	17.959	217/57	Joint	2.0	Planar	Smooth	Open
139	18.413	099/68	Joint	1.0	Planar	Smooth	Open
140	18.600	093/67	Joint	0.5	Planar	Smooth	Open
141	18.692	281/81	Joint	0.5	Planar	Rough	Open/fil'd
142	19.328	265/44	Joint	1.0	Planar	Smooth	Open
143	19.394	338/65	Joint	0.5	Planar	Smooth	Open
144	19.787	025/25	Joint	1.0	Planar	Smooth	Open

**C-29.STR**  
**<<FOLIATION>>**



**Number of Data : 8/144**

**<Legend>**

○:Foliation	--	8	+ :Mineralban-	0
◇:Joint	--	0		
□:Parting	--	0		
△:Fault	--	0		
▽:ShearZone-		0		
×:Vein	--	0		

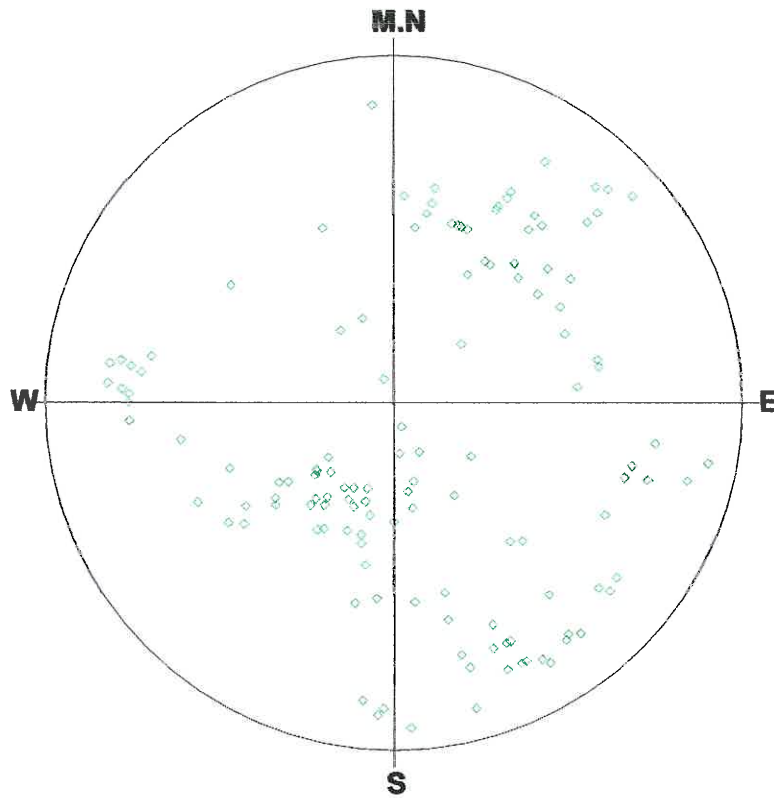
**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**

**<<JOINT>>**



**Number of Data : 130/144**

**<Legend>**

○:Foliation	--	0	+ :Mineralban	--	0
◇:Joint	--	130			
□:Parting	--	0			
△:Fault	--	0			
▽:ShearZone	--	0			
×:Vein	--	0			

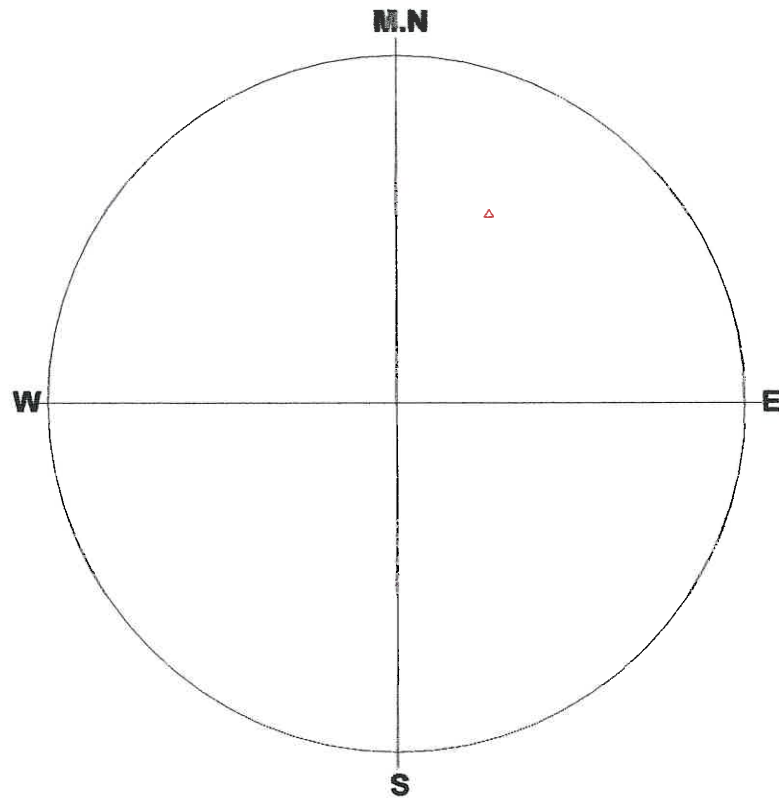
**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**





**C-29.STR**

**<<FAULT>>**



**Number of Data : 1/144**

**<Legend>**

 :Foliation	--	0	 :Mineralbar-	0
 :Joint	--	0		
 :Parting	--	0		
 :Fault	--	1		
 :ShearZone-		0		
 :Vein	--	0		

**Schmidt (L.H)**

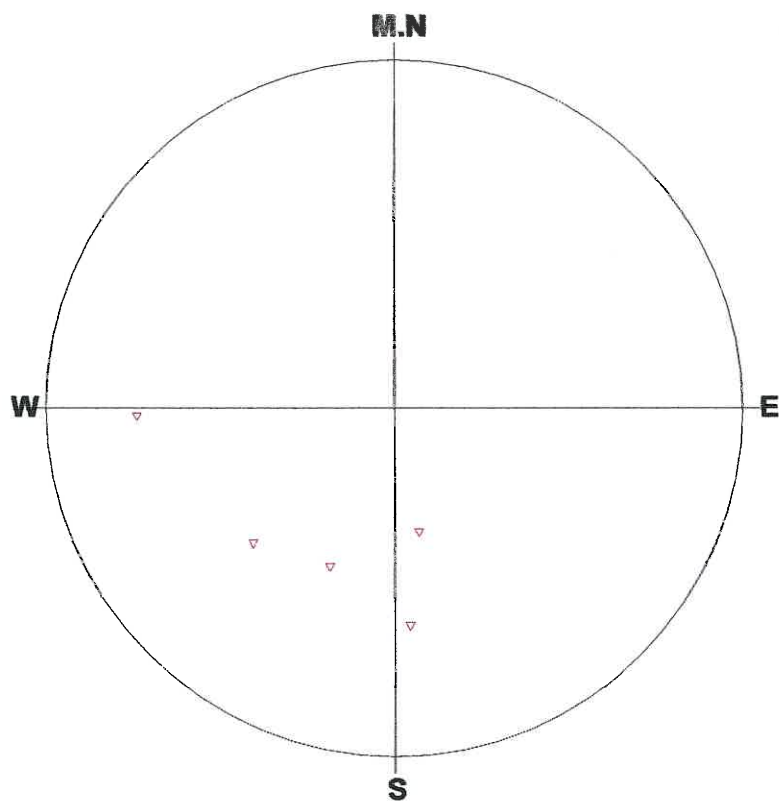
**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**



## C-29.STR

<<SHEAR ZONE>>



Number of Data : 5/144

### <Legend>

○:Foliation	--	0	+ :Mineralban-	0
◇:Joint	--	0		
□:Parting	--	0		
△:Fault	--	0		
▽:ShearZone-		5		
×:Vein	--	0		

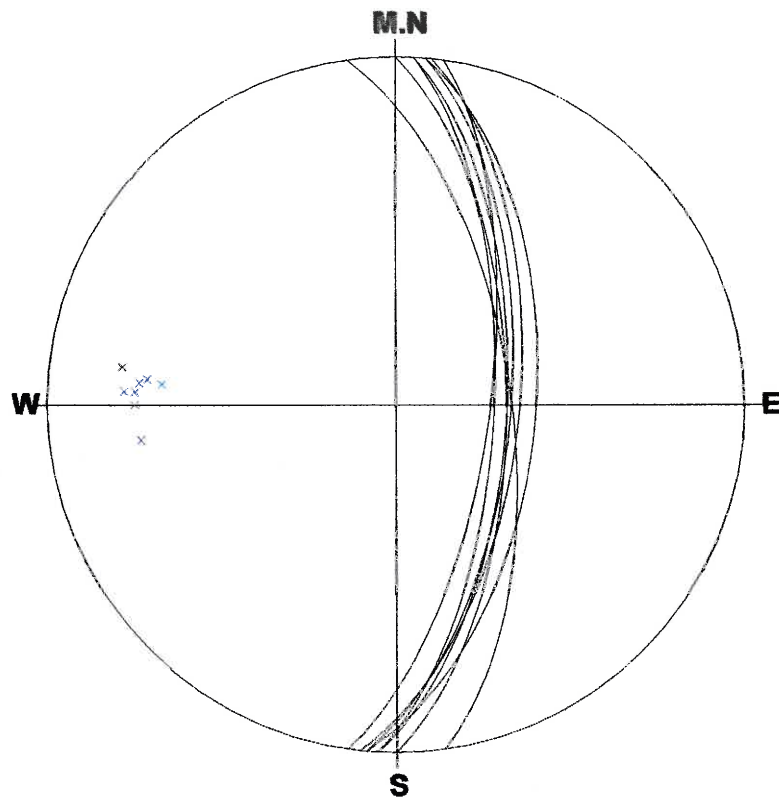
Schmidt (L.H)

Depth : 1.505 - 19.787 m

Aperture : 0.0 - 35.0 mm

**C-29.STR**

**<<FOLIATION>>**



**Number of Data:8/144**

**1 : 090/64(81)**

**6 : 095/57(119)**

**2 : 082/63(82)**

**7 : 093/64(128)**

**3 : 095/63(94)**

**8 : 098/68(137)**

**4 : 093/67(108)**

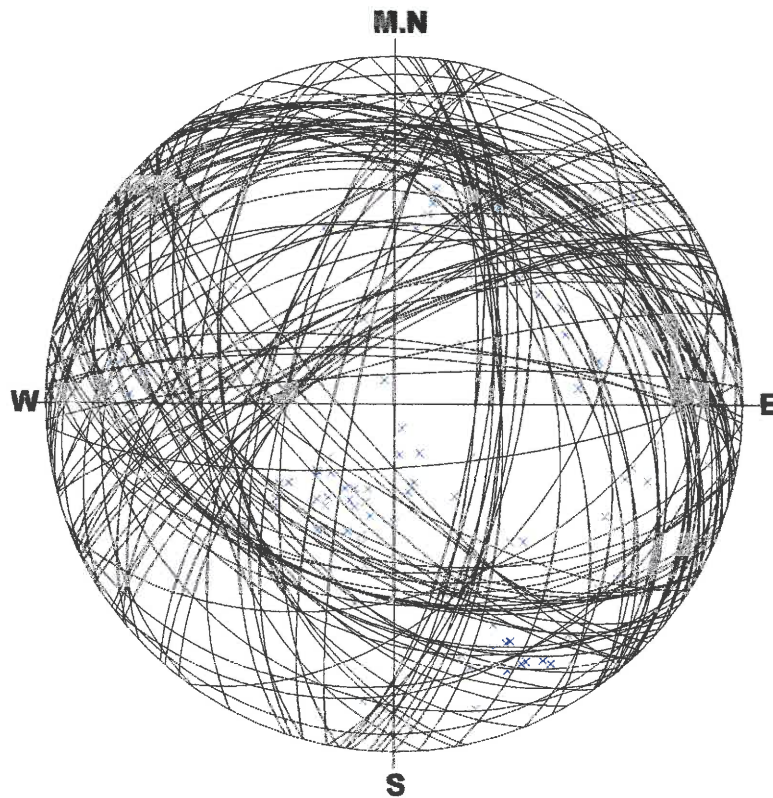
**5 : 096/61(111)**

**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**  
**<<JOINT>>**



**Number of Data:130/144**

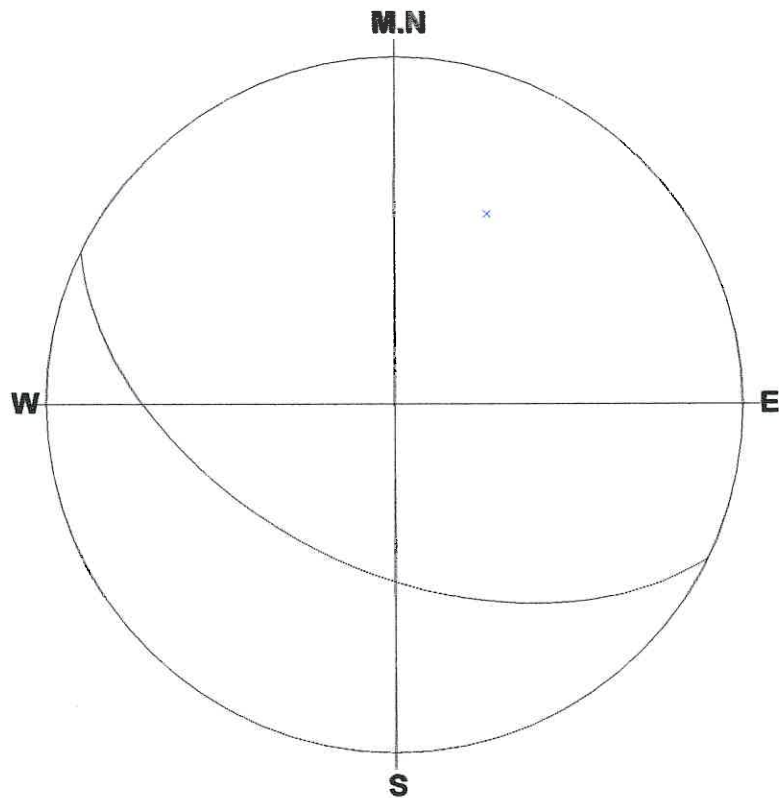
<b>1 : 054/49(1)</b>	<b>6 : 016/24(7)</b>
<b>2 : 055/43(2)</b>	<b>7 : 227/65(8)</b>
<b>3 : 324/73(3)</b>	<b>8 : 042/22(9)</b>
<b>4 : 312/68(5)</b>	<b>9 : 006/75(10)</b>
<b>5 : 055/33(6)</b>	<b>10 : 034/29(11)</b>

**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**  
**<<FAULT>>**



**Number of Data:1/144**

**1 : 206/51(62)**

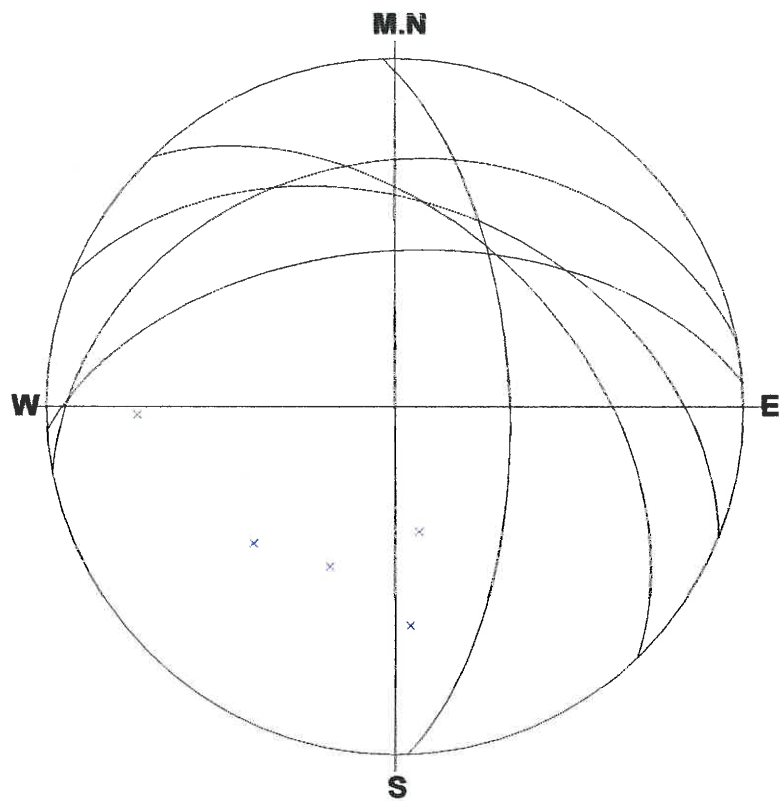
**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**

**<<SHEAR ZONE>>**



**Number of Data:5/144**

**1 : 046/47(4)**

**2 : 356/53(36)**

**3 : 022/41(37)**

**4 : 088/63(80)**

**5 : 349/30(85)**

**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

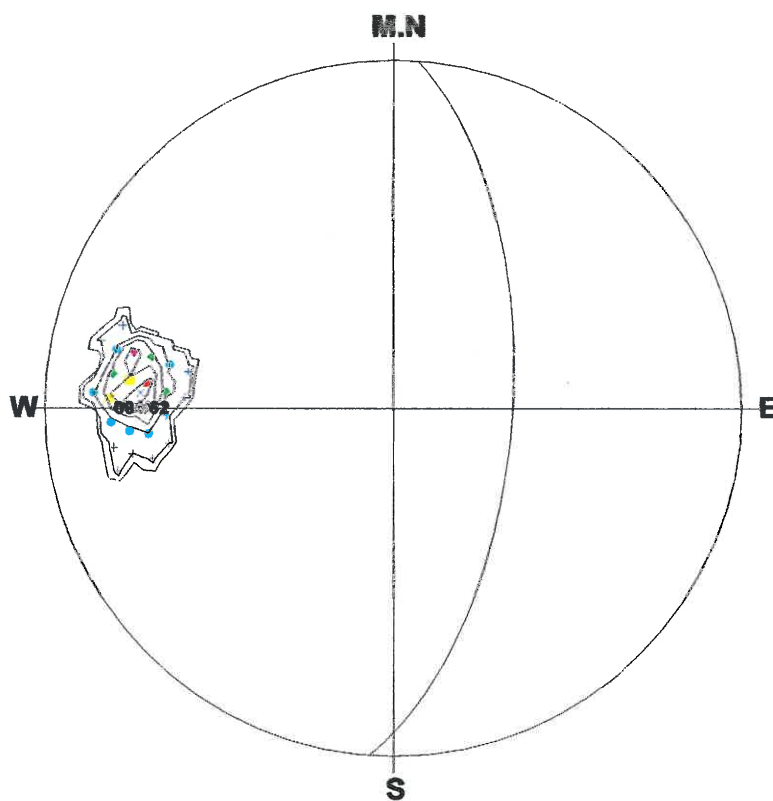
**Aperture : 0.0 - 35.0 mm**



C-29.STR

<<FOLIATION>>

\*\*\*\*\* % Diagram \*\*\*\*\*



Number of Data : 8

<Legend> Sym. (%)

- ▲ : 87
- ▼ : 70 - 87
- : 52 - 70
- ◆ : 35 - 52
- : 17 - 35
- ✚ : 0 - 17

Contour Value (%)

- Contour 1 : 0
- Contour 2 : 17
- Contour 3 : 35
- Contour 4 : 52
- Contour 5 : 70
- Contour 6 : 87



Schmidt (L.H)

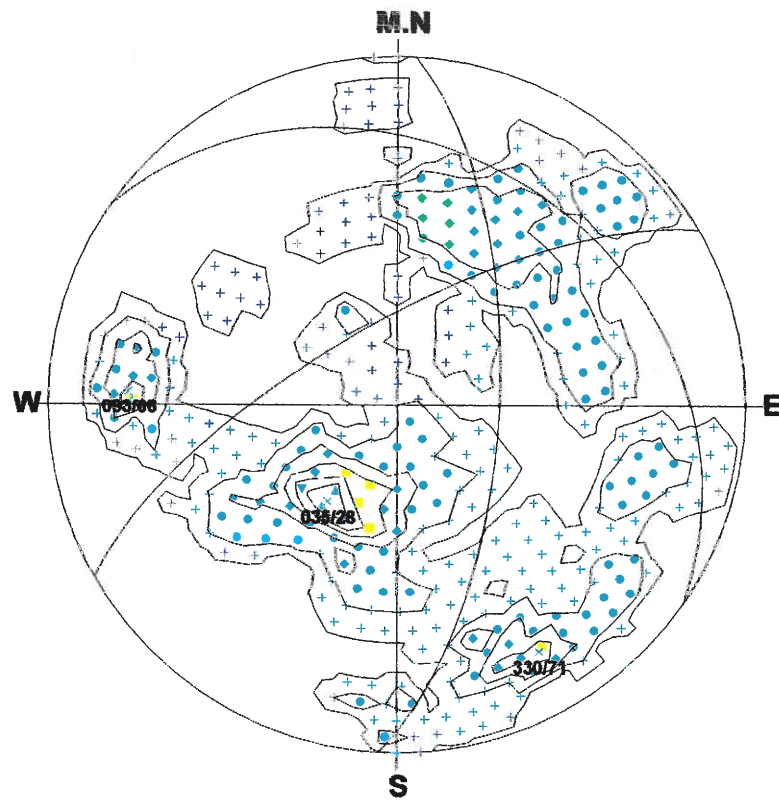
Depth : 1.505 - 19.787 m

Aperture : 0.0 - 35.0 mm

C-29.STR

<<JOINT>>

\*\*\*\*\* % Diagram \*\*\*\*\*



Number of Data : 130

<Legend> Sym. (%)

- ▲ : 10
- ▼ : 8 - 10
- : 6 - 8
- ◆ : 4 - 6
- : 2 - 4
- + : 0 - 2

Contour Value (%)

- Contour 1 : 0
- Contour 2 : 2
- Contour 3 : 4
- Contour 4 : 6
- Contour 5 : 8
- Contour 6 : 10



Schmidt (L.H)

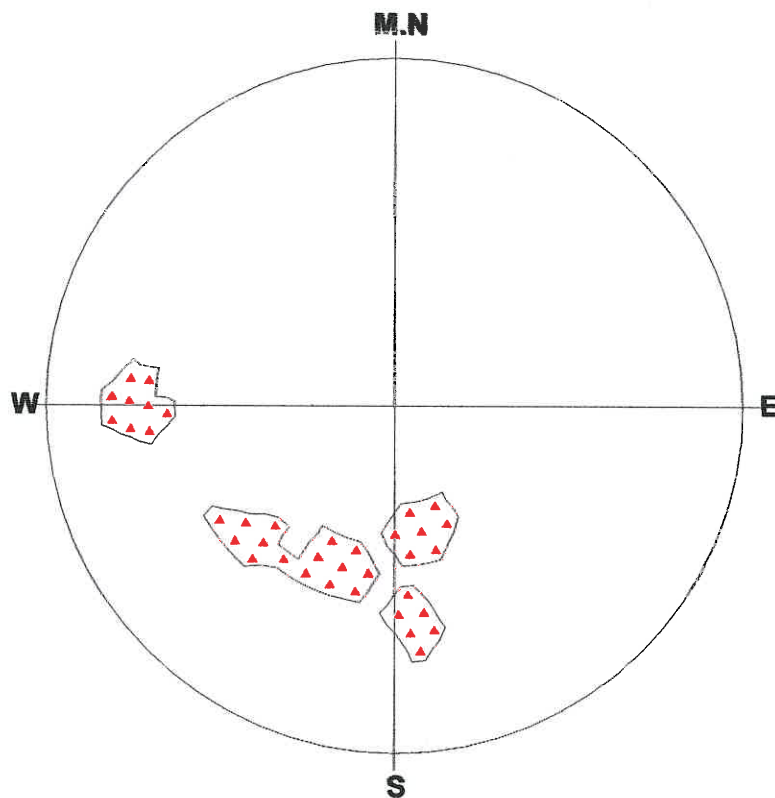
Depth : 1.505 - 19.787 m

Aperture : 0.0 - 35.0 mm

**C-29.STR**

**<<SHEAR ZONE>>**

**\*\*\*\*\* % Diagram \*\*\*\*\***



**Number of Data : 5**

**<Legend> Sym. (%)**

- ▲ : 20**
- ▼ : 16 - 20**
- : 12 - 16**
- ◆ : 8 - 12**
- : 4 - 8**
- ⊕ : 0 - 4**

**Contour Value (%)**

- Contour 1 : 0**
- Contour 2 : 4**
- Contour 3 : 8**
- Contour 4 : 12**
- Contour 5 : 16**
- Contour 6 : 20**

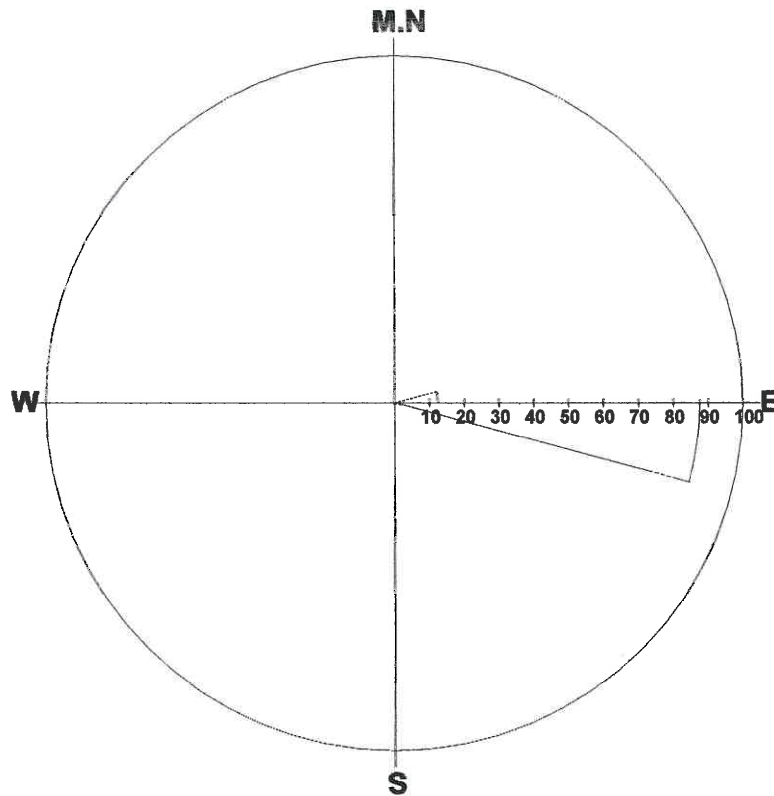


**Schmidt (L.H)**

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**  
**<<FOLIATION>>**



**Number of Data : 8/144**

**Max : 87.5%**

**Grouping Angle : 15 deg**

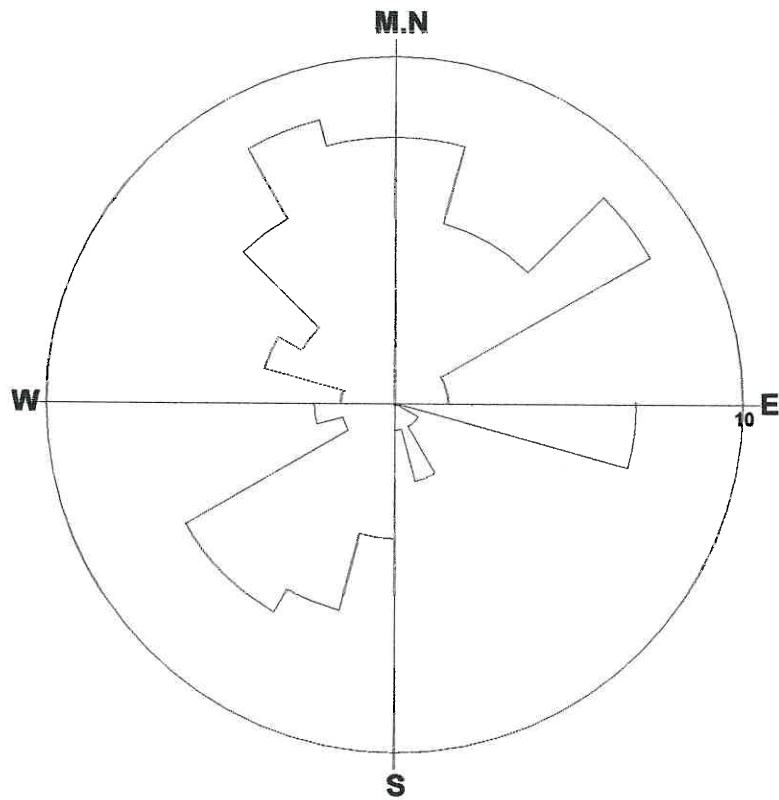
Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	0	150-	0	285-	0
30-	0	165-	0	300-	0
45-	0	180-	0	315-	0
60-	0	195-	0	330-	0
75-	13	210-	0	345-	0
90-	88	225-	0		
105-	0	240-	0		
120-	0	255-	0		

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**

**<<JOINT>>**



**Number of Data : 130/144**

**Max : 8.5%**

**Grouping Angle : 15 deg**

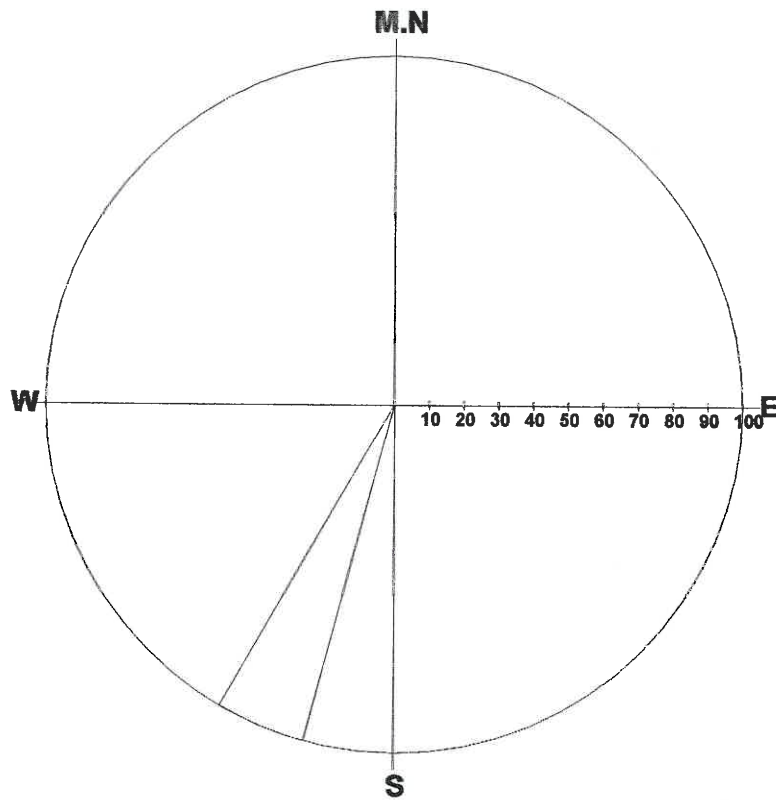
Dir	%	Dir	%	Dir	%
0-	8	135-	1	270-	2
15-	5	150-	2	285-	4
30-	5	165-	1	300-	3
45-	8	180-	4	315-	6
60-	2	195-	6	330-	8
75-	2	210-	7	345-	8
90-	7	225-	7		
105-	0	240-	2		
120-	1	255-	2		

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**



**C-29.STR**  
**<<FAULT>>**



**Number of Data : 1/144**

**Max : 100.0%**

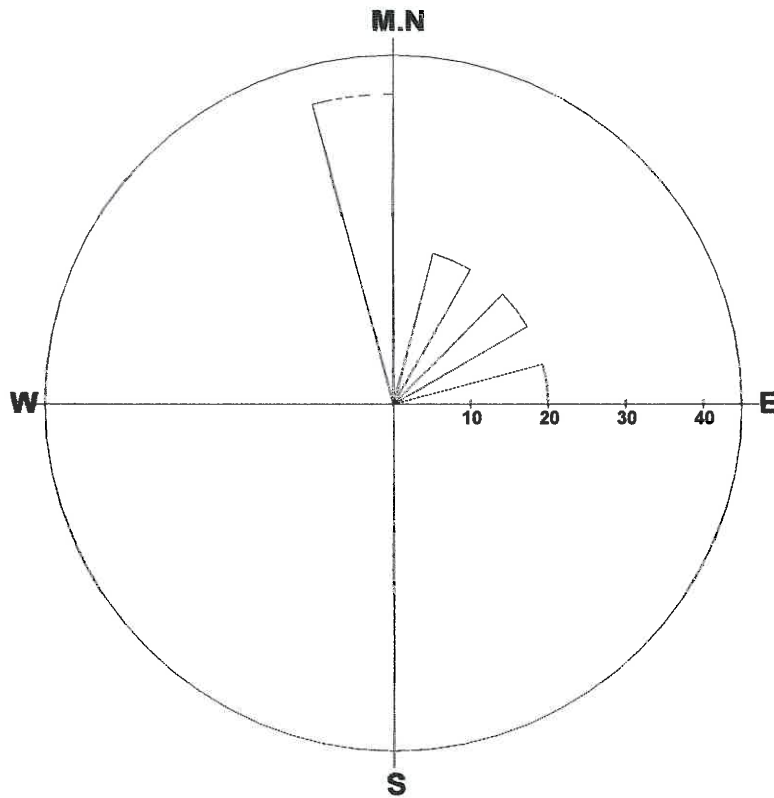
**Grouping Angle : 15 deg**

Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	0	150-	0	285-	0
30-	0	165-	0	300-	0
45-	0	180-	0	315-	0
60-	0	195-	100	330-	0
75-	0	210-	0	345-	0
90-	0	225-	0		
105-	0	240-	0		
120-	0	255-	0		

**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

**C-29.STR**  
**<<SHEAR ZONE>>**



**Number of Data : 5/144**

**Max : 40.0%**

**Grouping Angle : 15 deg**

Dir	%	Dir	%	Dir	%
0-	0	135-	0	270-	0
15-	20	150-	0	285-	0
30-	0	165-	0	300-	0
45-	20	180-	0	315-	0
60-	0	195-	0	330-	0
75-	20	210-	0	345-	40
90-	0	225-	0		
105-	0	240-	0		
120-	0	255-	0		

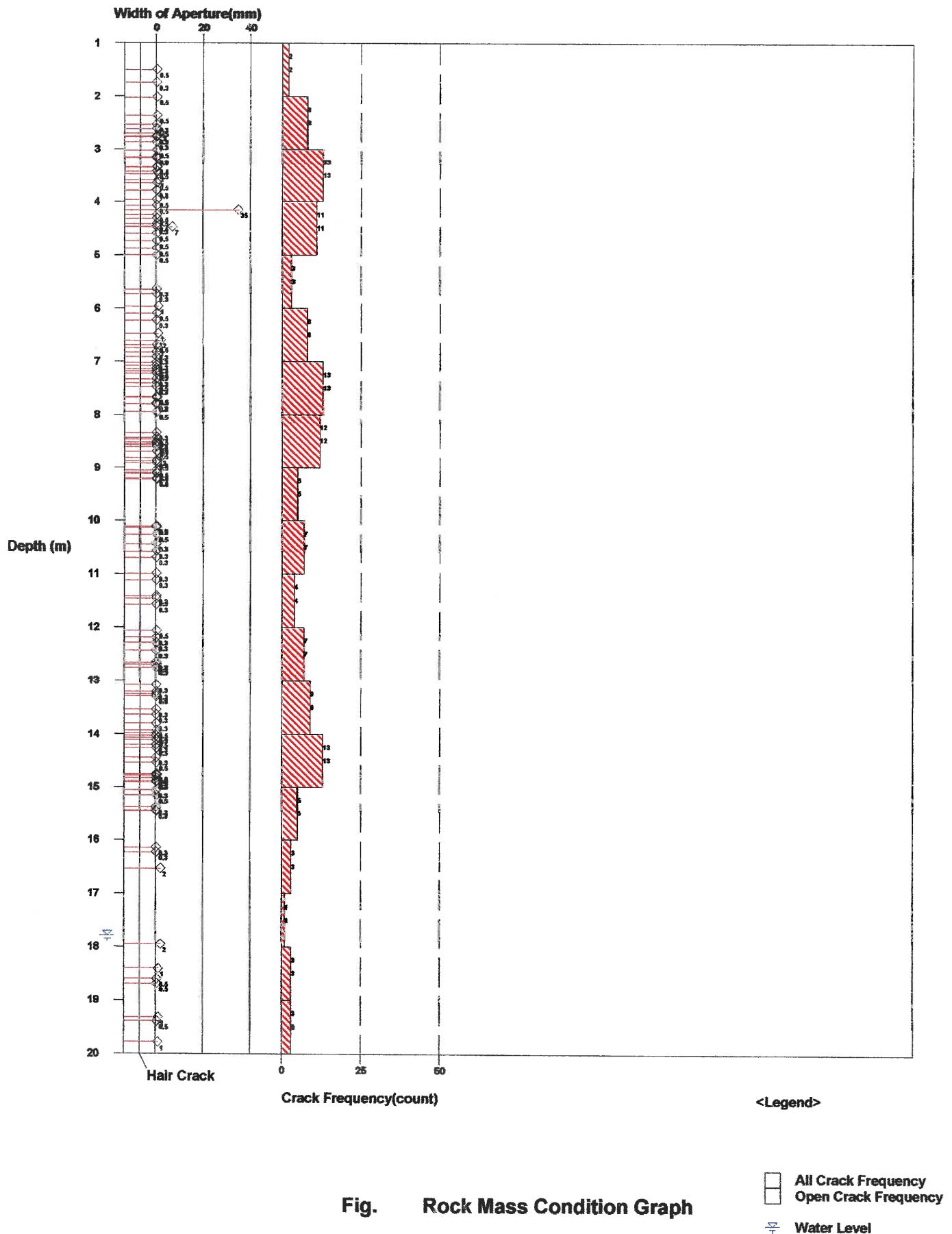
**Depth : 1.505 - 19.787 m**

**Aperture : 0.0 - 35.0 mm**

Title: C-29.STR  
 Comment: JOINT  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

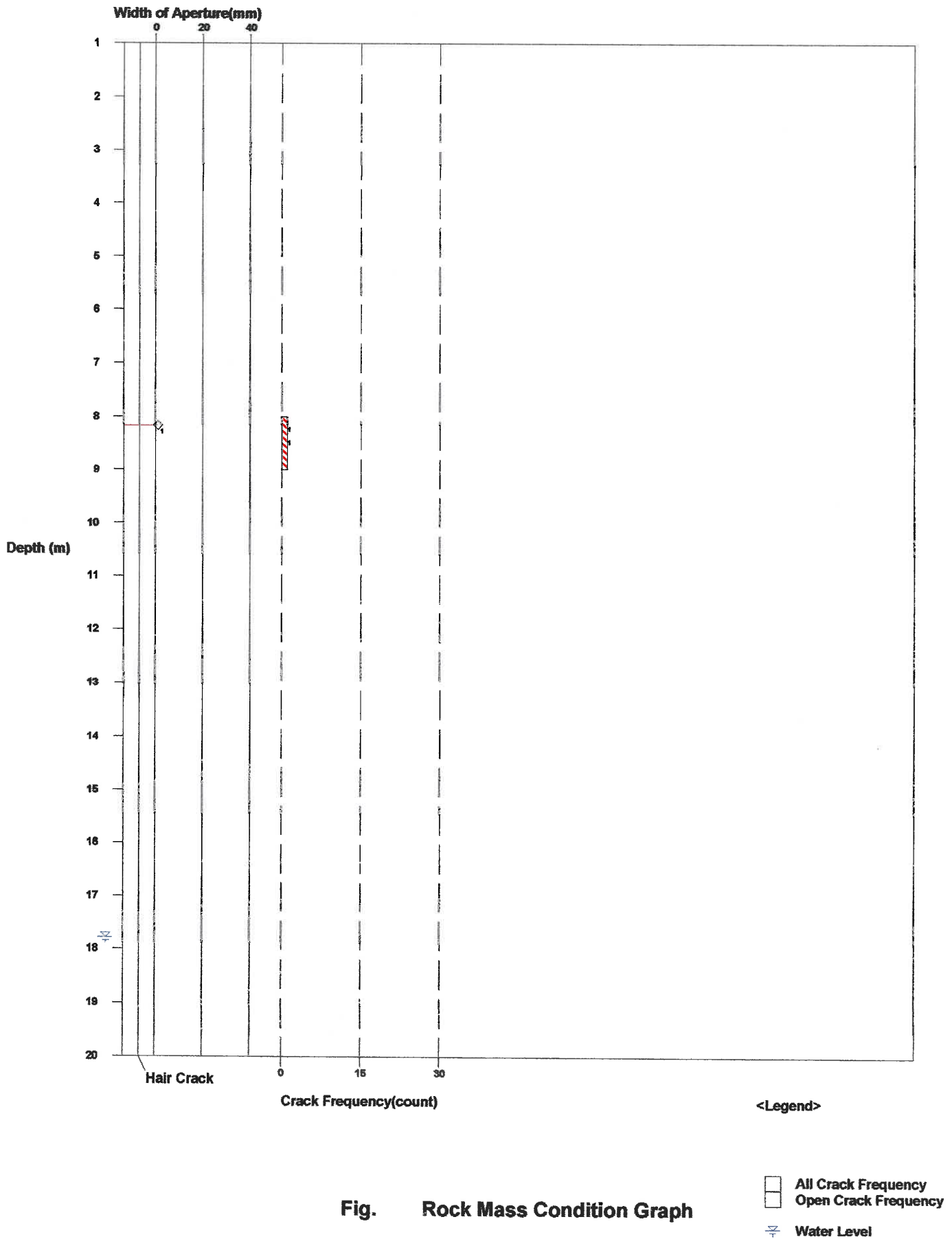
2011/ 8/ 31  
 Elevation: 0.000m  
 Water Level: 17.786m



Title: C-29.STR  
 Comment: FAULT  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

2011/ 8/ 31  
 Elevation: 0.000m  
 Water Level: 17.786m



Title: C-29.STR  
 Comment: SHEAR ZONE  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

2011/ 8/ 31  
 Elevation: 0.000m  
 Water Level: 17.786m

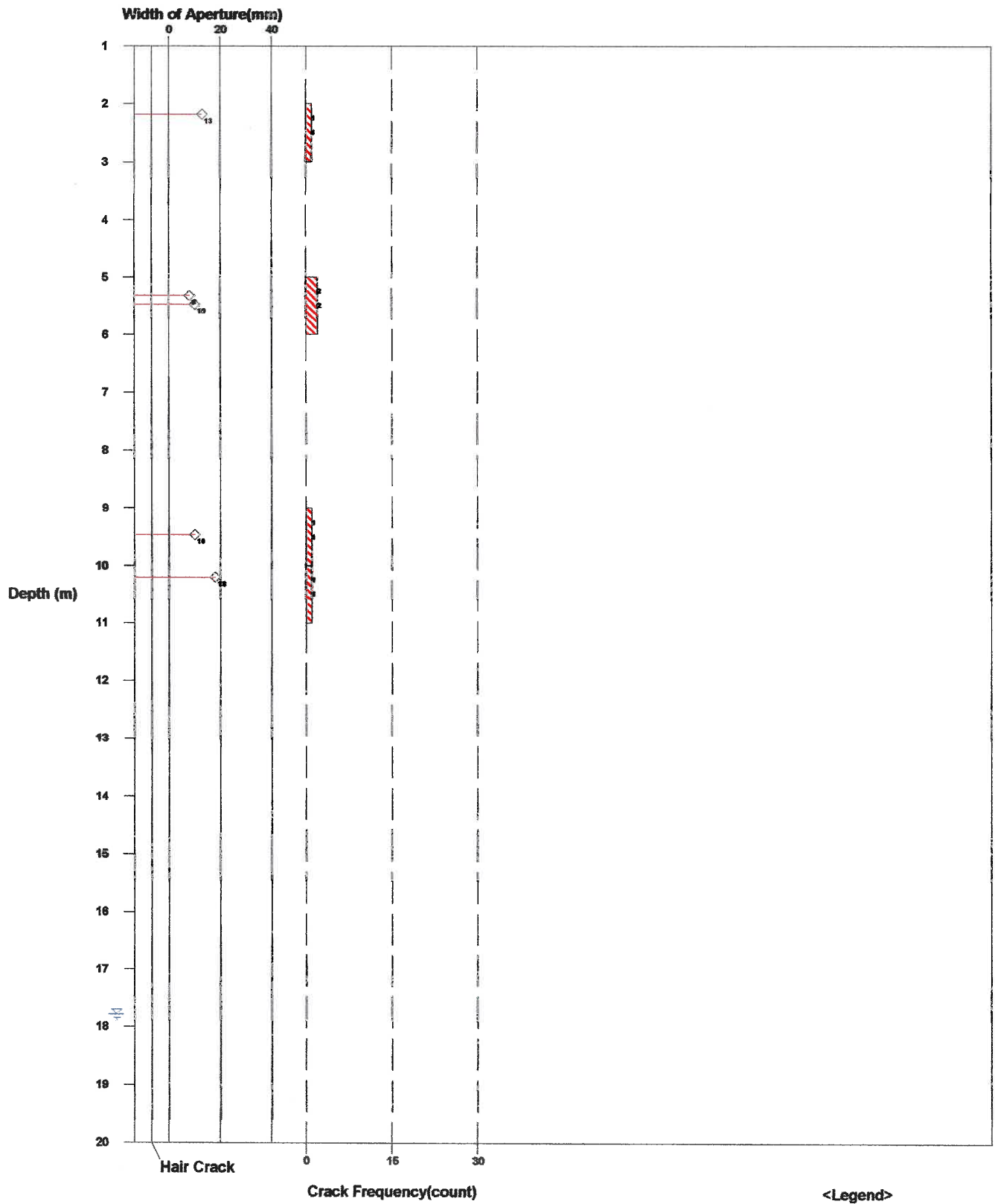


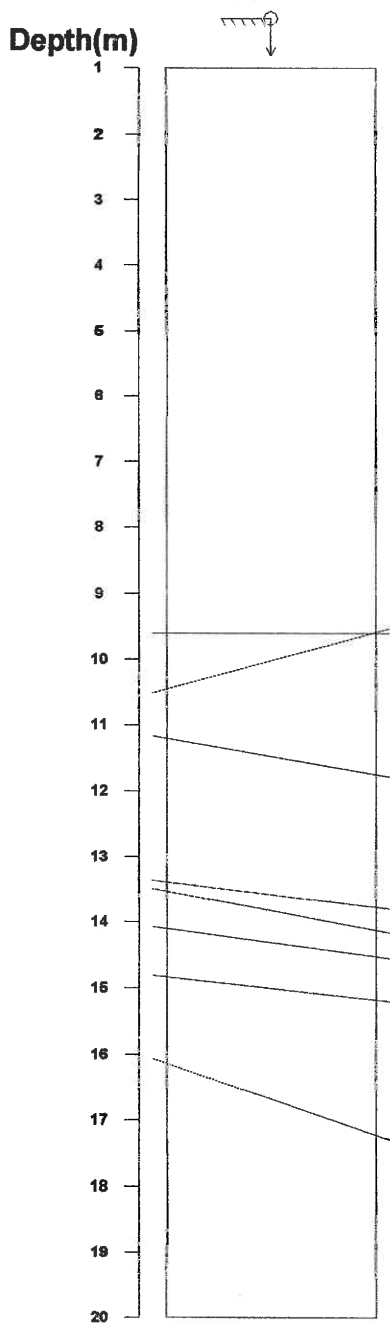
Fig. Rock Mass Condition Graph

☐ All Crack Frequency  
☐ Open Crack Frequency  
 Water Level

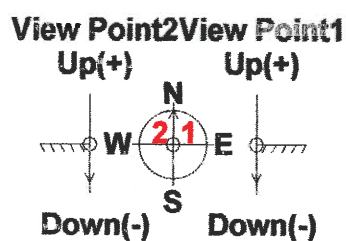
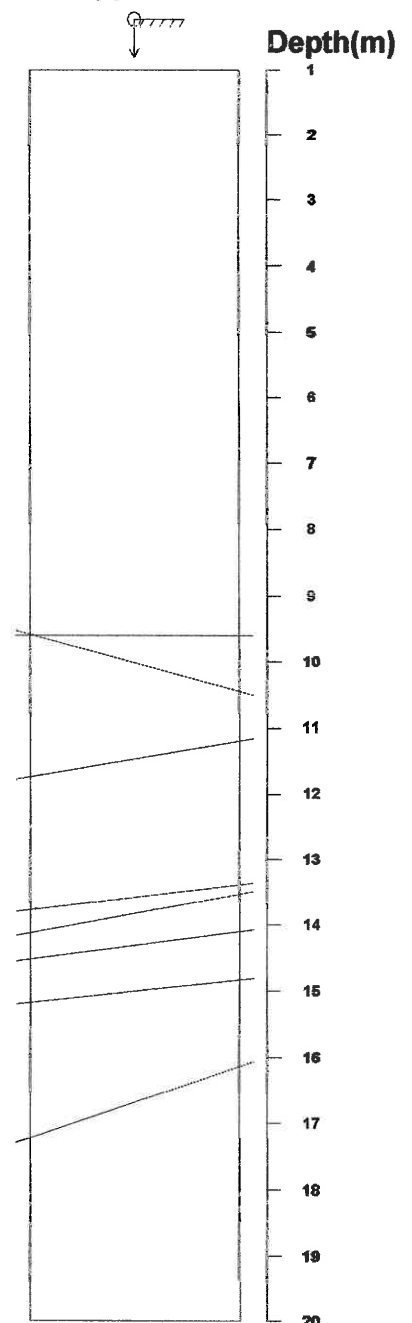
Title: C-29.STR  
 Comment: FOLIATION  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

**View Point 2**  
 Profile of Apparent Borehole



**View Point 1**  
 Profile of Apparent Borehole



Direction: 0 deg  
 Inclination: Vertical(Down)

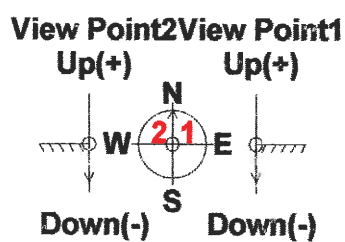
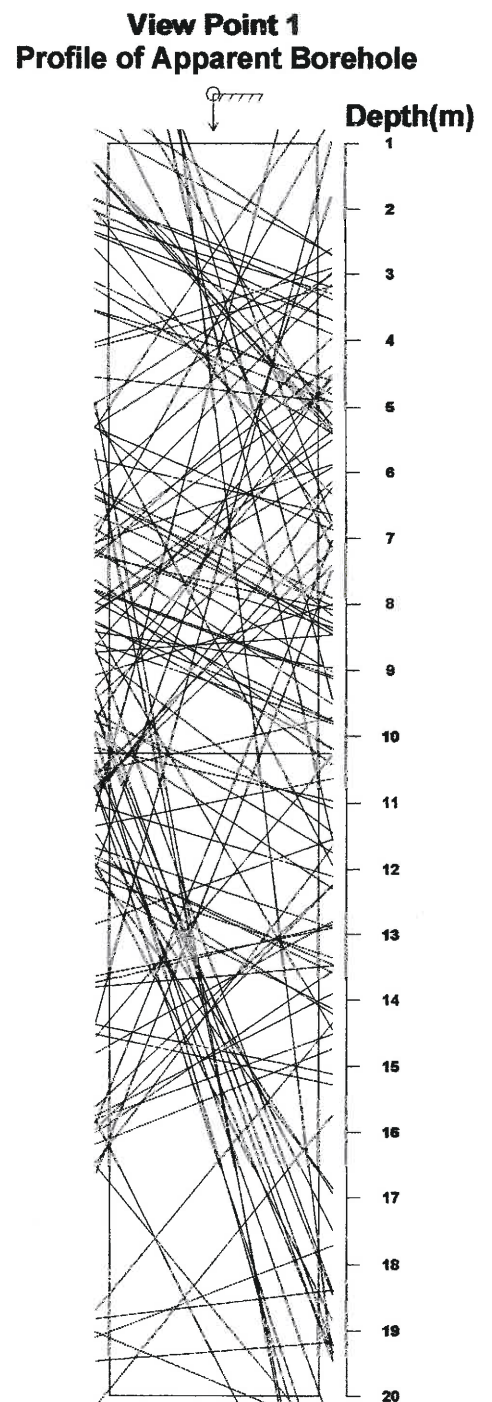
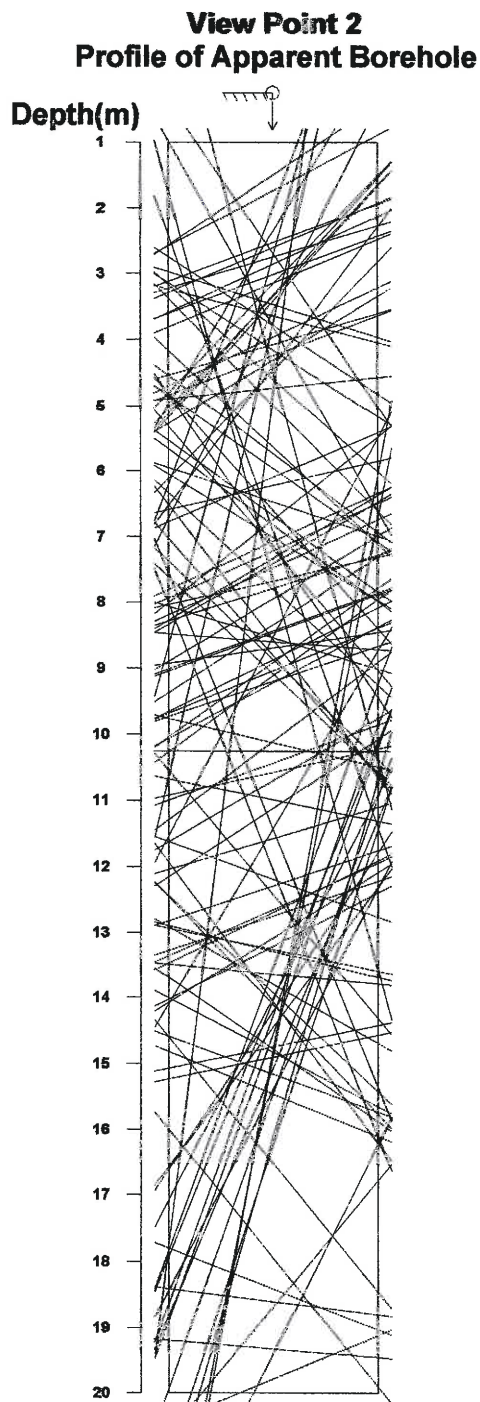
<Legend>  
 Entrance G.L.  
 Bottom

**Fig. Apparent Dip**



Title: C-29.STR  
 Comment: JOINT  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9



Direction: 0 deg  
 Inclination: Vertical(Down)

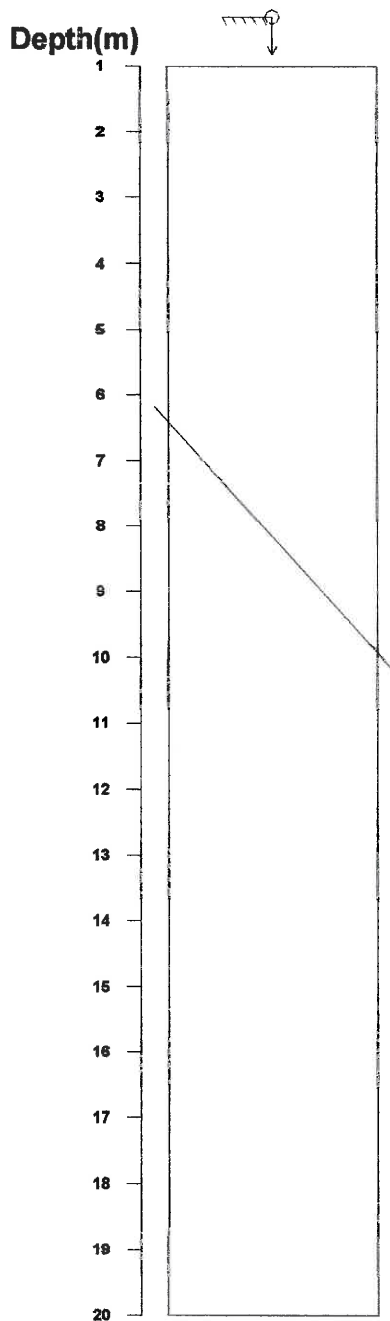
<Legend>  
 Entrance G.L.  
 Bottom

Fig. Apparent Dip

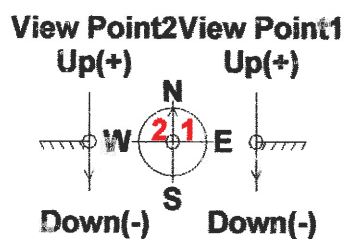
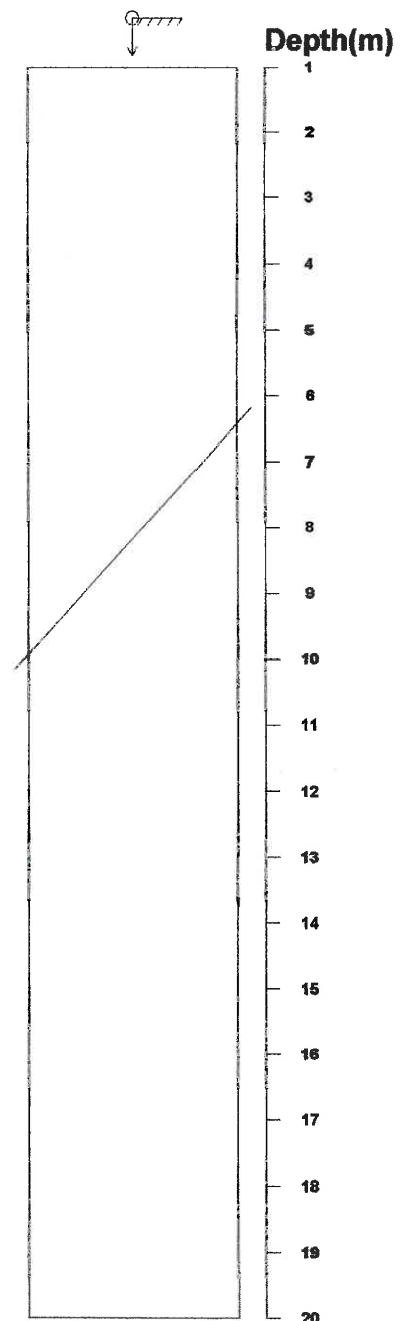
Title: C-29.STR  
 Comment: FAULT  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

**View Point 2**  
 Profile of Apparent Borehole



**View Point 1**  
 Profile of Apparent Borehole



Direction: 0 deg  
 Inclination: Vertical(Down)

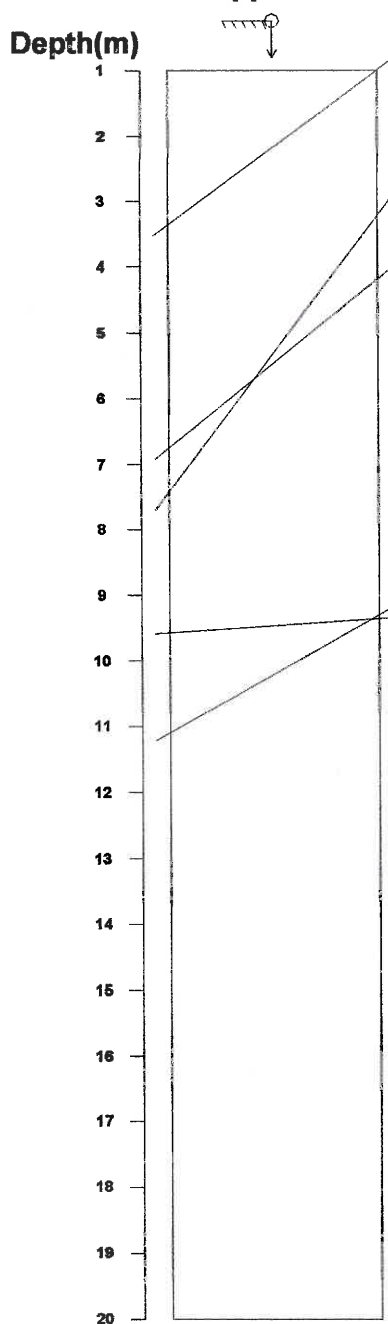
<Legend>  
 Entrance G.L.  
 Bottom Bottom

**Fig. Apparent Dip**

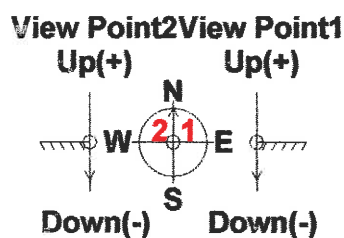
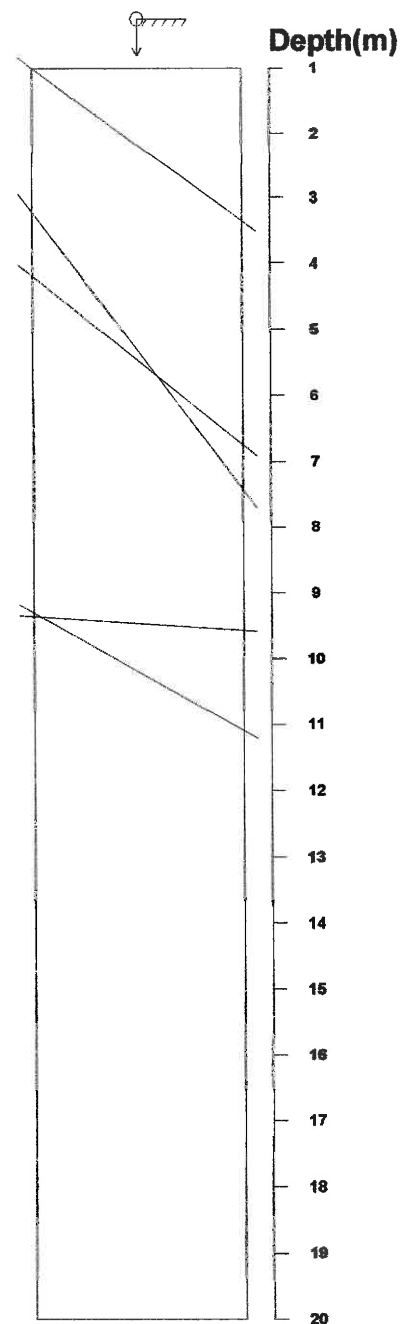
Title: C-29.STR  
 Comment: SHEAR ZONE  
 Depth: 1.505 - 19.787 m  
 Aperture: 0.0 - 35.0 mm

Sort: 1/ 7  
 Form: 5/ 5  
 Condition: 11/11  
 Remark: 9/ 9

**View Point 2**  
 Profile of Apparent Borehole



**View Point 1**  
 Profile of Apparent Borehole



Direction: 0 deg  
 Inclination: Vertical(Down)

<Legend>  
 Entrance G.L  
 Bottom Bottom

**Fig. Apparent Dip**