Queensland Government
Department of Main Roads

ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

BOREHOLE No BH017
SHEET 1 of 2
REFERENCE No H10578

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 10 COORDINATES 486793.0 E; 7080824.5 N
PROJECT No FG5825 SURFACE R.L. 138.90m PLUNGE DATE STARTED 20/7/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING DATE COMPLETED 20/7/09 DRILLER Geodrill

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES / TESTS
0	138.90												
	138.60				**TOPSOIL** Pale brown, soft to firm, sandy clay.		(Cl)						
				A	**Clayey SILT (RESIDUAL)** Light brown to slightly green, moist, firm to very stiff, quartz gravels throughout up to 10mm.							3,3,3 N=6	SPT
1					Rock fabric visible in parts, intermediate plasticity.		(MI)						
				B	Becoming very stiff and more silty with depth.							5,6,10 N=16	SPT
2	136.40												
				C	**PHYLLITE (XW):** Generally exhibits the engineering properties of moist, hard, clayey silt. Low plasticity, rock fabric visible in parts.		XW					15,20,19 N=39	SPT
3	135.40												
				D	**PHYLLITE (HW):** Pale grey to slightly green, fine grained, foliated.							16,21,30/130 N>50	SPT
4			(0)		Foliations dip at ~20°. Occasional XW clayey gravel seams. Major core loss, possibly due to poor drilling technique.								
5			87 (0)				HW				Crushed zone Clay seam		
											7/10/09		
6					**Detailed defect descriptions are shown on Form GEOT533/8 attached.**						Crushed zone		
7	131.80		30 (0)		**PHYLLITE (MW):** Pale grey, fine grained, foliated. Foliations dip at 20°.						Crushed zone Clay seam		
8			100 (0)		Defects are generally very close to closely spaced. Prominent defect set parallel to foliation. Defect surfaces are typically iron stained.		MW				Broken zone		
	130.34				**PHYLLITE (HW):** Lost core - assumed to be HW Phyllite as described above.								
9							HW						
10			31										

REMARKS **Detailed defect descriptions are shown on Form GEOT533/8 attached.** Standpipe piezometer installed at base of hole.

LOGGED BY JA

QLD_DMR_LIB_01.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5825 BRUCE HWY COOROY-CURRA SECTION A BHS.GPJ DWG95012.GDW Datgel CPT Tool gINt Add-In 12/05/2010 10:29

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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

BOREHOLE No BH017
SHEET 2 of 2
REFERENCE No H10578

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 10 COORDINATES 486793.0 E; 7080824.5 N
PROJECT No FG5825 SURFACE R.L. 138.90m PLUNGE DATE STARTED 20/7/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING DATE COMPLETED 20/7/09 DRILLER Geodrill

DEPTH (m)	R.L. (m)	MATERIAL DESCRIPTION	USC	WEATHERING	RQD ( )% / CORE REC %	SAMPLE	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
10	128.90	**PHYLLITE (HW):** (Cont'd)		HW	(0)		Quartz vein		
	128.58	**PHYLLITE (MW):** Pale grey, fine grained, foliated. Foliations dip at 20°. Defects are generally very close to closely spaced. Prominent defect set parallel to foliation. Defect surfaces are typically ironstained. Occasional quartz veins up to 60mm thick. **Detailed defect descriptions are shown on Form GEOT533/8 attached.**		MW	100		Broken zone Sheared zone		
11					100		Quartz vein Broken zone		
12					100		Quartz vein Clay seam		
13					100		Clay seam Quartz vein Quartz vein		
14		13.9 - 14.3m: HW clayey zone.			100		Crushed zone Clay seam Quartz vein	Is(50) = 8.84MPa	x
15					100			Is(50) = 0.54MPa Is(50) = 2.92MPa	o o
16		15.6 - 15.8m: HW clayey zone.			100		Broken zone Multiple quartz veins Broken zone		
	122.62	**PHYLLITE (SW):** Light grey, fine grained, foliated. Foliations dip at 20°. Defect spacing is generally medium. Prominent defect set parallel to foiliation. Defect surfaces are typically clean. Most foliation partings are probably drilling-induced. **Detailed defect descriptions are shown on Form GEOT533/8 attached.**		SW	100			Is(50) = 0.82MPa Is(50) = 0.99MPa	x o
17					100			Is(50) = 0.75MPa Is(50) = 0.62MPa Is(50) = 1.42MPa	o x o
18					100				
19					100		Broken zone		
20	118.90	Borehole terminated at 20m			100			Is(50) = 0.08MPa	x

REMARKS **Detailed defect descriptions are shown on Form GEOT533/8 attached.** Standpipe piezometer installed at base of hole.

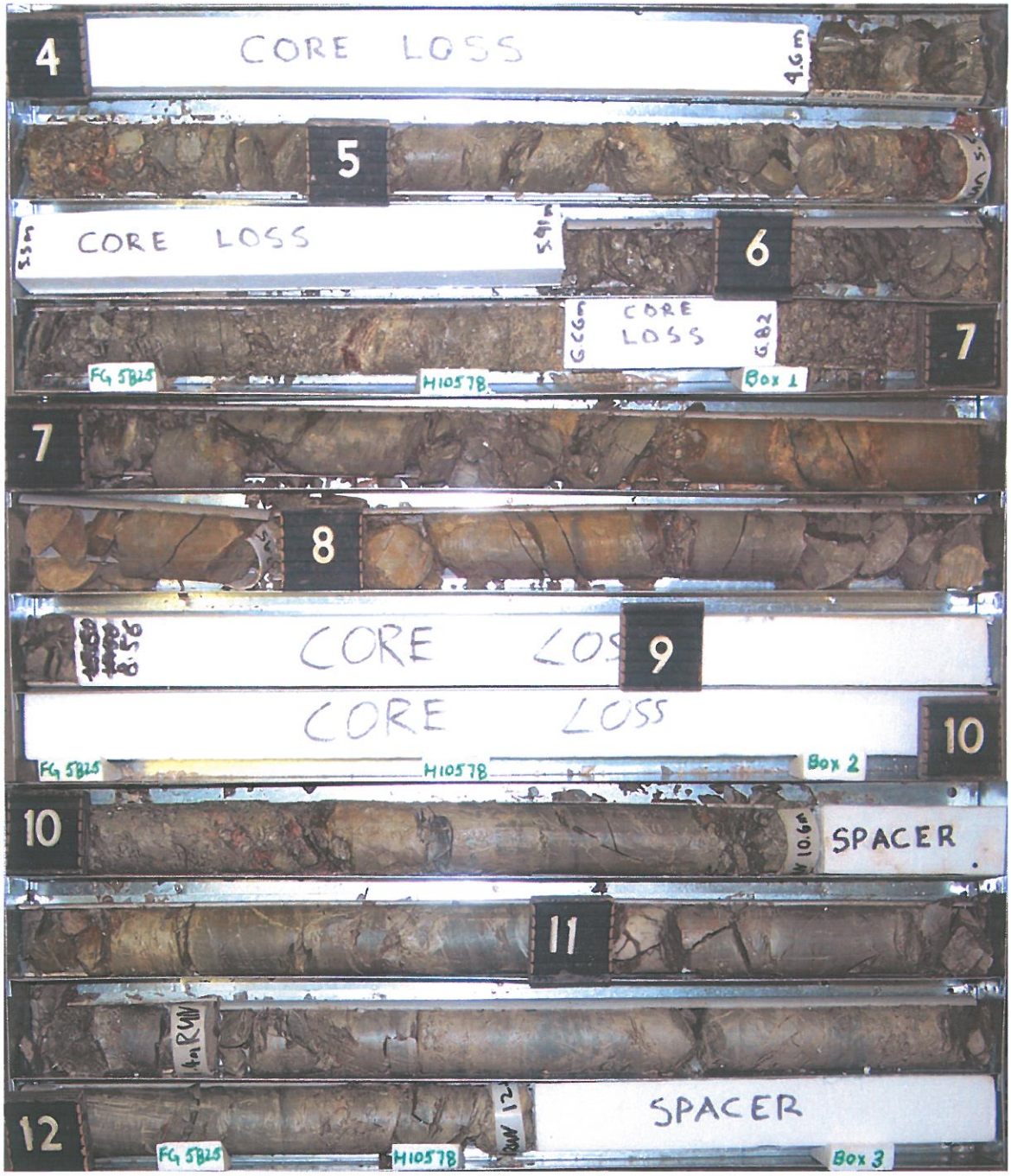
LOGGED BY JA

QLD_DMR_LIB_01.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY FG5825 BRUCE HWY COOROY-CURRA SECTION A BHS.GPJ DWG995012.GDW Datgel CPT Tool gINt Add-In 12/05/2010 10:29

Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**

Borehole No: **BH17**

Start Depth: 4.00m
Finish Depth: 20.00m
Project No: FG5825
H No: 10578



0 100 200 300 400 500 600mm

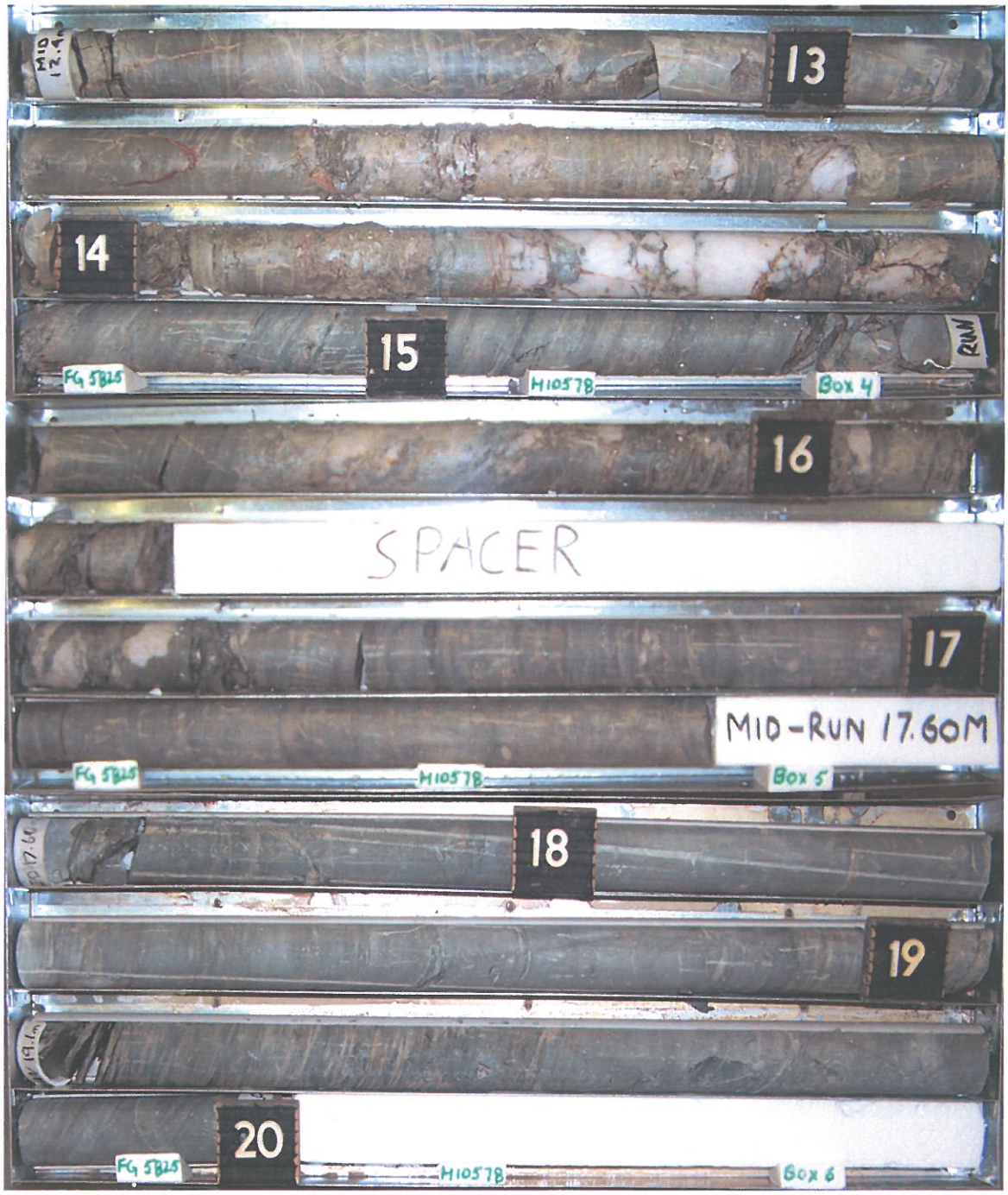
SCALE 1:5

F:GEOT043/1

Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**

Borehole No: **BH17**

Start Depth: 4.00m
Finish Depth: 20.00m
Project No: FG5825
H No: 10578



0 100 200 300 400 500 600mm

SCALE 1:5

F:GEOT043/1

GEOTECHNICAL BRANCH LABORATORY
Materials Services - Brisbane
35 Butterfield Street, HERSTON Q 4006
Phone: (07) 3115 3035 Fax: (07) 3115 3011

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DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

[CHARACTERISATION OF DEFECTS ARE IN ACCORDANCE WITH ISRM SUGGESTED METHODS (1981)]

BOREHOLE NO.:	BH17
SHEET:	1 of 3
REFERENCE NO.:	H10578

PROJECT: Bruce Highway (Cooroy – Curra) Section A Geotechnical Investigation

LOCATION: Cut 10

PROJECT NO.: FG5825 **SURFACE R.L.:** 138.89 **DRILLER:** GeoDrill

JOB NO.: 128/10A/901 **DATUM:** AHD **DATE DRILLED:** 20/07/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
5.1	J	20°	Pl	S	O		Cl
5.15	J	20°	Pl	S	O	FeSt	
5.18	J	20°	Pl	S	O		Cn
5.21	J	20°	Pl	S	O		Cn
6.4	J	10°	Pl	S	O		Cn
7.18	J	60°	Pl	SR	O	FeSt	
7.23	J	30°	Pl	S	O	FeSt	
7.64	J	20°	Pl	S	O		Cl
7.66	J	20°	Pl	S	O		Cl
7.9	J	45°	Pl	S	O	FeSt	
7.95	J	45°	Pl	S	O	FeSt	
8.11	J	20°	Pl	S	O		Cn
8.16	J	20°	Pl	S	O		Cn
8.19	J	20°	Pl	S	O		Cn
8.25	J	20°	Pl	S	O		Cn
8.33	J	20°	Pl	S	O		Cn
8.37	J	20°	Pl	S	O		Cn
10.4	J	30°	Pl	S	O		Cl

Abbreviations *(as per F: GEOT 017/5 – 2009)*

ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER	
R	Rough	FeSt	Iron Stained	J, Js	Joint, Joints	Cl	Clay Infill
Sr	Slightly Rough	W	Weathered	B	Bedding	CLy	Clayey
S	Smooth	Smn	Secondary Mineralisation	BP	Bedding Parting	Co	Coal Seam
SL	Slickensided	Cn	Clean	FP	Foliation Parting	Carb	Carbonaceous
PO	Polished	MnSt	Manganese Stained	LP	Lamination Parting	Sl	Sand Infill
PLANARITY		**APERTURE**		CLV	Cleavage	QZ	Quartz
Pl	Planar	C	Closed	Fr	Fracture	CA	Calcite
St	Stepped	O	Open	SZ	Sheared Zone	Chl	Chlorite
Un	Undulating	F	Filled	CZ	Crushed Zone	In	Incipient
Cu	Curved	T	Tight	BZ	Broken Zone	Int	Intersecting
Ir	Irregular			HFZ	Highly Fractured Zone	Lam (s)	Lamination (s)
				WS	Weathered Seam	Di	Drilling Induced
				Vn	Vein	H	Horizontal
						V	Vertical

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog. Defect angles were measured with respect to horizontal plane.

BOREHOLE NO.:	BH17
SHEET:	2 of 3
REFERENCE NO.:	H10578

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
10.45	J	70°	Pl	S	O		Cn
10.76	J	10°	Pl	S	O	FeSt	
10.8	J	10°	Pl	S	O		Cn
10.83	J	45°	Pl	S	O		Cl
10.88	J	60°	Pl	S	O		Cl
11.11	J	10°/70°	Pl	S	O		Intersecting
11.14	J	10°	Pl	S	O		Cl
11.17	J	45°	Pl		C		
11.22	J	45°	Pl	S	O		Cn
11.48	J	70°	Pl	S	O		Cl
11.55	J	10°	Pl	S	O		Cn
11.6	J	10°	Pl				Cn
11.63	J	10°	Pl				Cn
11.68	J	10°	Pl				Cn
11.7	J	80°	Pl		C		
11.77	J	20°	Pl	S	O		Cn
11.82	J	60°	Pl		C		Cl
11.93	J	30°	Pl	S	O		Cl
12.05	J	45°	Pl		C		
12.09	J	70°	Pl		C		
12.16	J	30°	Pl	S	O	FeSt	
12.25	J	20°	Pl		C		
12.3	J	20°	Pl		C		
12.32	J	20°	Pl		C		
12.41	J	20°	Pl	S	O		Cn
12.43	J	80°	Pl		C	FeSt	
12.45	J	10°	Pl	S	O		Cn
12.47	J	10°	Pl	S	O		Cn
12.5	J	80°	Pl		C	FeSt	
12.56	J	30°	Pl	S	O	FeSt	
12.81	J	20°	Pl		C		Cl
12.88	J	10°	Pl	S	O	FeSt	
12.92	J	10°	Pl		C		
13.04	J	10°	Pl	S	O		Cn
13.16	J	20°	Pl		C		
13.29	J	80°	Pl		C	FeSt	
13.38	J	20°	Pl		C		Cl
13.62	J	20°	Pl		C	FeSt	
13.86	J	70°	Pl		C	FeSt	
14.3	J	20°	Pl		C		Cl
14.49	J	30°	Pl	SR	O	FeSt	
14.52	J	30°	Ir	R	O	FeSt	
14.57	J	Subvertical	Pl	SR	O	FeSt	
14.66	J	30°	Pl	SR	O	FeSt	
14.71	J	30°	Pl	S	O		Cn
14.74	J	10°	Pl		C		Cn
14.8	J	60°	Pl		C	FeSt	
14.83	J	30°	Pl	S	O	FeSt	
14.92	J	30°	Pl	S	O	FeSt	
14.97	J	30°	Pl	S	O	FeSt	
15.02	J	30°	Pl	S	O	FeSt	
15.04	J	30°	Pl	S	O	FeSt	
15.07	J	30°	Pl	S	O	FeSt	
15.09	J	30°	Pl	S	O	FeSt	
15.13	J	30°	Pl	S	O	FeSt	
15.15	J	30°	Pl	S	O	FeSt	
15.19	J	30°	Pl	S	O	FeSt	

BOREHOLE NO.:	BH17
SHEET:	3 of 3
REFERENCE NO.:	H10578

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
15.22	J	30°	Pl	S	O	FeSt	
15.26	J	30°	Pl	S	O	FeSt	
15.41	J	20°	Pl	S	O		Cn
15.44	J	20°	Pl	S	O		Cn
15.45	J	20°	Pl	S	O		Cn
15.52	J	20°	Pl	S	O		Cn
15.55	J	20°	Pl	S	O		Cn
16.52	J	10°	Pl	S	O		Cn
16.59	J	10°	Pl	S	O		Cn
16.72	J	10°	Pl	S	O		Cn
16.73	J	10°	Pl	S	O		Cn
16.77	J	20°	Pl		C		
16.78	J	10°	Pl	S	O		Cn
16.81	J	10°	Pl	S	O		Cn
16.84	J	20°	Pl	S	O		Cn
16.92	J	20°	Pl	S	O		Cn
17.1	J	10°	Pl	S	O		Cn
17.16	J	20°	Pl	S	O		Cn
17.2	J	20°	Pl	S	O		Cn
17.27	J	10°	Pl	S	O		Cn
17.35	J	20°	Pl	S	O		Cn
17.48	J	20°	Pl	S	O		Cn
17.73	J	10°	Pl	S	O		Cn
17.79	J	10°	Pl	S	O		Cn
17.83	J	45°	Pl		C		Cl
17.88	J	20°	Pl	S	O		Cn
17.95	J	10°	Pl	S	O		Cn
18.2	J	20°	Pl	S	O		Cn
18.23	J	20°	Pl	S	O		Cn
18.32	J	20°	Pl	S	O		Cn
18.5	J	20°	Pl	S	O		Cl
18.56	J	10°	Pl	S	O		Cn
18.65	J	10°	Pl	S	O		Cn
18.76	J	20°	Pl	S	O		Cn
18.89	J	20°	Pl	S	O		Cn
19.03	J	20°	Pl	S	O		Cn
19.04	J	20°	Pl	S	O		Cn
19.08	J	20°	Pl	S	O		Cn
19.09	J	20°	Pl	S	O		Cn
19.21	J	20°	Pl	S	O		Cn
19.36	J	20°	Pl	S	O		Cn
19.46	J	20°	Pl	S	O		Cn
19.56	J	20°	Pl	S	O		Cn
19.64	J	20°	Pl	S	O		Cn
19.69	J	20°	Pl		C		Cl
19.74	J	60°	Pl		C		
19.79	J	30°	Pl		C		
19.9	J	30°	Pl		C		