Field Log - Cored Borehole

Borehole: BH070

Sheet 1 of 2

~~Client~~: INCLINATION - 61' DIRECTION 339°	COORDS: 333718.3 m E	Job No.
Project: LUNA PARK FAULT ZONE CORE	6252116.3 m	Date started: / /
Borehole Location: LUNA PARK CORE	BARANGAROO -	Date completed: / /
(40.16 - 40.43) STICK 1	CROSS OVER CAVERN	Logged by: EMILY BENJAMIN

rock substance				rock mass defects				
depth metres	substance description rock type: grain characteristics, colour, structure, minor components	weathering alteration	est. strength	case lift/ RQD %	defect spacing mm	depth	defect description type, inclination, planarity, roughness, coating, thickness particular	general
	PALE GREY							
40.15								
	~~Distinctly~~ weathered Arenite ~~INDISTINCT - DISTINCT FABRIC~~ laminated → Bedding fairly clear especially with change in composition occurring during deposition and/or during deformation	DW FeSN ↓			10 40		JT, PL *BPT JT.BP Fault top 95N? *Fault zone.	FeSN ↓
40.20	→ grain size = medium grained sand clasts to coarse grained → Bedding (grey) planes weaker, defects associated ↳ weathering erased some distinct bedding on one side of the core					BPT	~~Fracture running~~ subparallel (JT?) PT on Bedding plane → 1.5cm spacing before same on other side of fracture running through ↳ hard to see evidence of fault	
40.25						BPT		
40.30	(on this stick)							
	Beginning of darker bedding - change in comp/alteration of comp, occurs w/ varying range of width → between 1mm and 2mm						RO - VR, PL, ST SECOND FAULT	
40.35	Darker bedding layers occur with shorter distances between occurrence				80		zone of deformation ↳	
40.40	- zone of deformation not clearly fractured through core → roughness one side specific						Bedding PL - ST ↳ seems to be slight wobble in bedding marked by darker layer	
40.45	▽ can see original • rock colour on fault surface on base of core						same direction Fault I ↙B Fault B ↘	
40.50	*WEATHERING POST CORE RECOVERY - IRON RICH RUN HAS OXIDATED (CORE RECOVERED IN 2016)						BASE OF CORE SHOWS LAYER ↳ BEDDING? ↳ WARPED/BENDY	
40.55								

Borehole completion details:

weathering		strength		defect type		planarity		roughness		coating	
Fr	fresh	VL	very low	JT	joint	PL	planar	VR	very rough	CN	clean
SW	slightly	L	low	PT	parting	CU	curved	RO	rough	SN	stained
DW	distinctly	M	medium	SM	seam	UN	undulating	SO	smooth	CO	coating
XW	extremely	H	high	SZ	sheared zone	ST	stepped				
		VH	very high	SS	sheared surface	IR	irregular				
		EH	extremely high	CS	crushed seam						

FeSN = Iron Stain


40-16 (TOP)
POTENTIAL DISPLACEMENT
BEDDING NOT AS WELL DEFINED HERE
ANOTHER FRACTURED ZONE
BEDDING MORE DEFINED WITH DARKER MATERIAL
BEDDING
FRACTURED ZONE
Chunk Missing
POTENTIAL DISPLACEMENT
40-43 (BOTTOM)

PARTING AT BEDDING PLANE

DARK MATERIAL

FRACTURES - FAULT ZONES

LINES AT THIS ORIENTATION ARE MARKING BEDDING PLANE (RELATIVE TO POSITIONING) ALSO

50

770

360

45 3

315

21

BOTTOM FAULT DIPPING @ 75°?

Field Log - Cored Borehole

Borehole: BH070

Sheet 2 of 2

Client: INCL. -61° DIR. 339°

Job No.

Project: LUNA PARK FAULT ZONE CORE

Date started: / /

Borehole Location: LUNA PARK (40.72 - 40.82)

Date completed: / /

Logged by:

rock substance				rock mass defects				
depth metres	substance description: rock type: grain characteristics, colour, structure, minor components	weathering alteration	est. strength	case lift/ RQD %	defect spacing mm	defect description: type, inclination, planarity, roughness, coating, thickness — depth	particular	general
40.55								
40.60								
40.65								
40.70								
40.75	~~Distinctly weathered Arenite~~ DISTINCT FABRIC, bedding clear, thinly bedded w/ dark layers as exception, medium grained sand clasts	DW ↓					10cm zone of deformation bands • 3mm displacement • bands ~10mm • JT - not parallel	
	] dark bedding band							
40.80	] Dark bedding band				785		JT, 110°/0 (fracture)? FCSN, PT Bedding	
10cm	] Dark bedding band							
40.85	→ Darker layer exposed on fault surface → fine grained (not visible w/ eye or hand lens) → metallic ↳* only smear w/ hand lens → fault product (temperature + stress)							
40.90								
40.95								

Borehole completion details:

weathering
- Fr fresh
- SW slightly
- DW distinctly
- XW extremely

strength
- VL very low
- L low
- M medium
- H high
- VH very high
- EH extremely high

defect type
- JT joint
- PT parting
- SM seam
- SZ sheared zone
- SS sheared surface
- CS crushed seam

planarity
- PL planar
- CU curved
- UN undulating
- ST stepped
- IR irregular

roughness
- VR very rough
- RO rough
- SO smooth

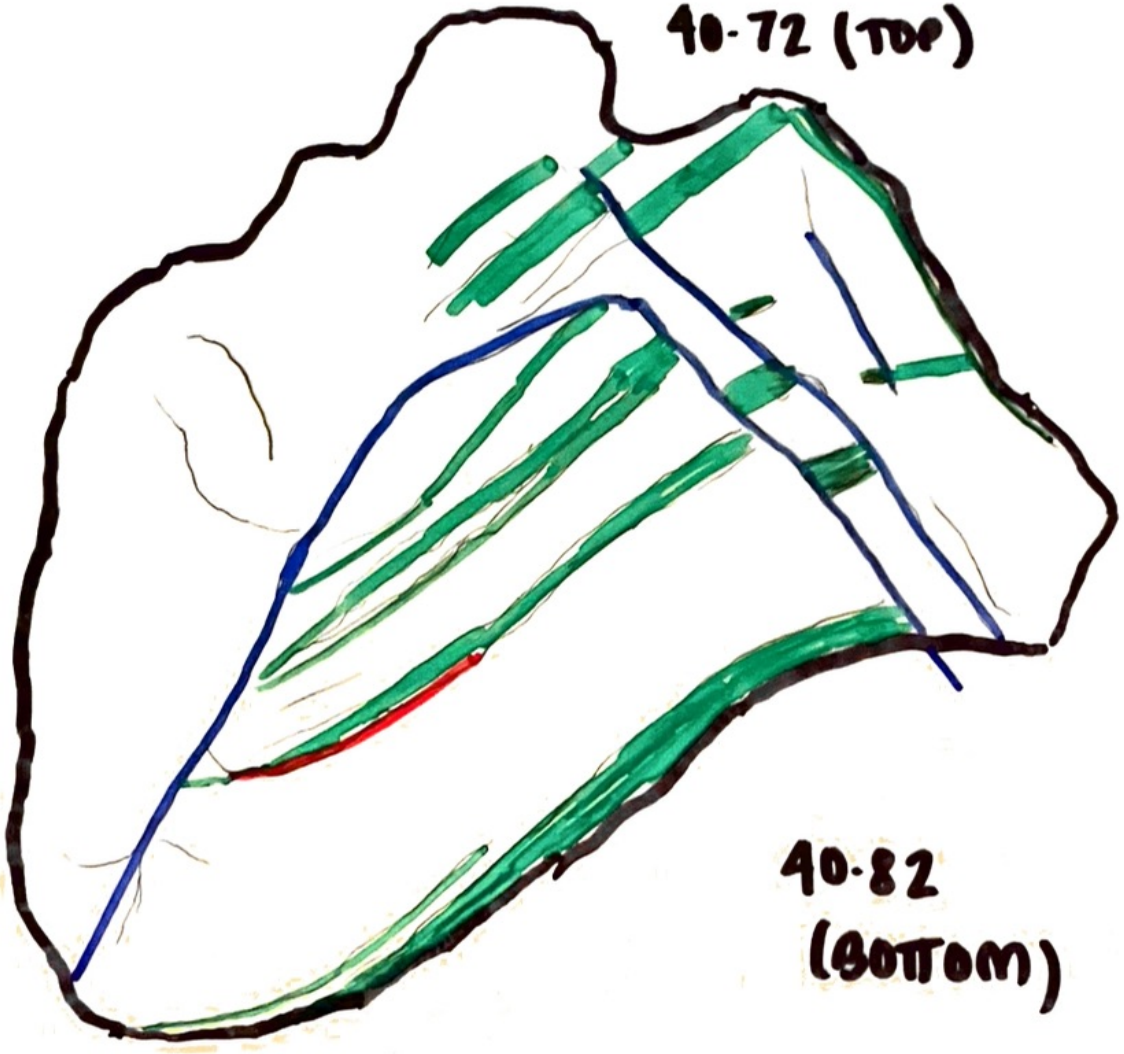
coating
- CN clean
- SN stained
- CO coating

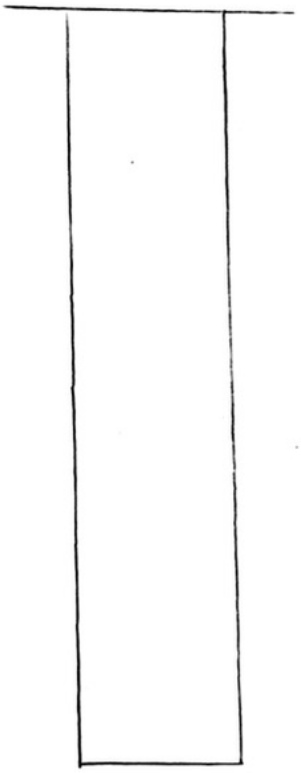
* ASSUMING CORE WAS DRILLED AT 000°

PARTING AT BEDDING PLANE

FRACTURES - FAULT

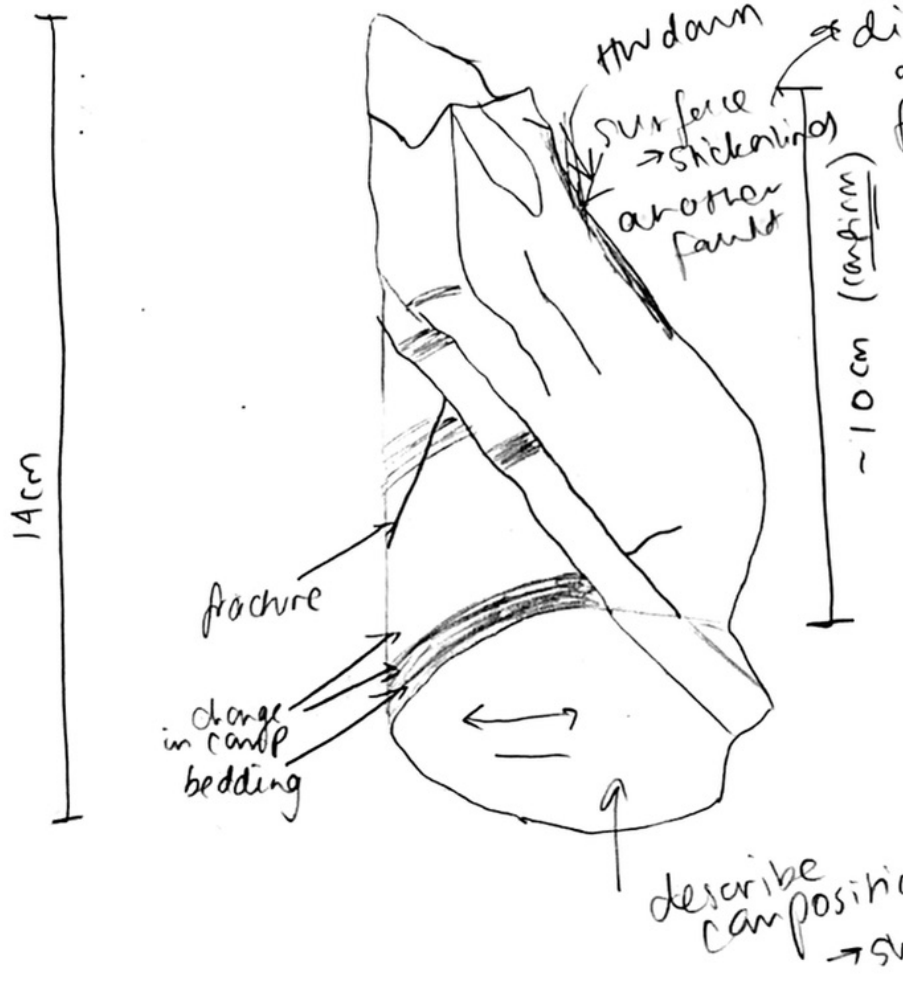
DARK MATERIALS





Two planes each w/ different slip events or different surfaces
↳ different time

Tubing says 40.72 to 40.82 (10cm) — I measure longest as 14cm



orientation of fault relative to carb bedding plane

displacement of 3mm same on other side

→ how did fault slip

Field Log - Cored Borehole

Borehole: BH070

Sheet 1 of 2

Client: INCL. - 61° DIR. 339°

Project: LUNA PARK FAULT ZONE

Borehole Location: LUNA PARK (25.3 - 25.95(!))

Job No.

Date started / /

Date completed / /

Logged by:

rock substance | **rock mass defects**

depth metres	substance description: rock type; grain characteristics, colour, structure, minor components	weathering alteration	est. strength	case lift/ RQD %	defect spacing mm	defect description: depth	type, inclination, planarity, roughness, coating, thickness: particular	general
25.30	Pale grey Arenite → medium to coarse grained sand grains						COMP DIP ANGLE	
25.35	* CORE LOG "indistinctly cross bedded" 25.3 - 25.7 Joints ~~FAULT~~ occuring in the CZ but don't appear to be along the bedding plane → orientation of bedding plane						~~BEDDING~~ SZ, VR Brecciated zone → crushed sandstone in matrix - black clay → PT on bedding plan occurs	
25.40								
25.45	Blocky, ~~fault~~ breccia up to 120mm length vertically, → Black clay → smaller chunks of breccia, → ~~clay hard to distinguish~~						Black lines (fluid) vertical – PT on bedding plane – FRACTURE	
25.50							– PT on bedding plane UN	
25.55							– PT on bedding plane	
25.6	Dense bedding comparatively ↳ black bands ~1mm thick w/ 2+ mm between						– FAULT PT	
25.65	Half rock faulted, other half shows bedding						CLEAR FRACTURE (FAULT) – bedding measured FAULT DIP	
25.70								

Borehole completion details:

weathering

Fr	fresh
SW	slightly
DW	distinctly
XW	extremely

strength

VL	very low
L	low
M	medium
H	high
VH	very high
EH	extremely high

defect type

JT	joint
PT	parting
SM	seam
SZ	sheared zone
SS	sheared surface
CS	crushed seam

planarity

PL	planar
CU	curved
UN	undulating
ST	stepped
IR	irregular

roughness

VR	very rough
RO	rough
SO	smooth

coating

CN	clean
SN	stained
CO	coating

Field Log - Cored Borehole

Borehole: BH070

Sheet 2 of 2

Client: INCL. -61° DIR 339°

Job No.

Project: LUNA PARK FAULT ZONE

Date started: / /

Borehole Location: LUNA PARK

Date completed: / /

(25.3 – 25.95 (?))

Logged by:

rock substance | **rock mass defects**

depth metres	substance description: rock type: grain characteristics, colour, structure, minor components	weathering alteration	est. strength	case lift/ RQD %	defect spacing mm	defect description: depth	type, inclination, planarity, roughness, coating, thickness: particular	general
25.70								
4							– Bedding plane	
25.75							FT	
							– JT → FAULT SURFACE	
6								
25.80							– Plane of weakness faulted below the furthermost extension of the fault → BEDDING	
	– compositional difference almost marked by fault							
25.85	→ bits w/ compositional difference marks bedding plane							
25.90								
	base not infrequent at site present blocks mineralogical * differences consistent comp w/ split core at 25.64 m to here (~30 cm)							
25.95								
26.0								
26.05	7							
26.10	8							

Borehole completion details:

weathering

Fr	fresh
SW	slightly
DW	distinctly
XW	extremely

strength

VL	very low
L	low
M	medium
H	high
VH	very high
EH	extremely high

defect type

JT	joint
PT	parting
SM	seam
SZ	sheared zone
SS	sheared surface
CS	crushed seam

planarity

PL	planar
CU	curved
UN	undulating
ST	stepped
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roughness

VR	very rough
RO	rough
SO	smooth

coating

CN	clean
SN	stained
CO	coating

5cm from top

(25.35m)

Bedding plane

25.44m

black material

↳ fluid?

25.53m looks like breaks along bedding plane (+ different orientation)

dark material in fault zone

Surface chunk missing

↳ because highly brecciat

↳ weaker clay precipitate

red bedding / material

fault fracture

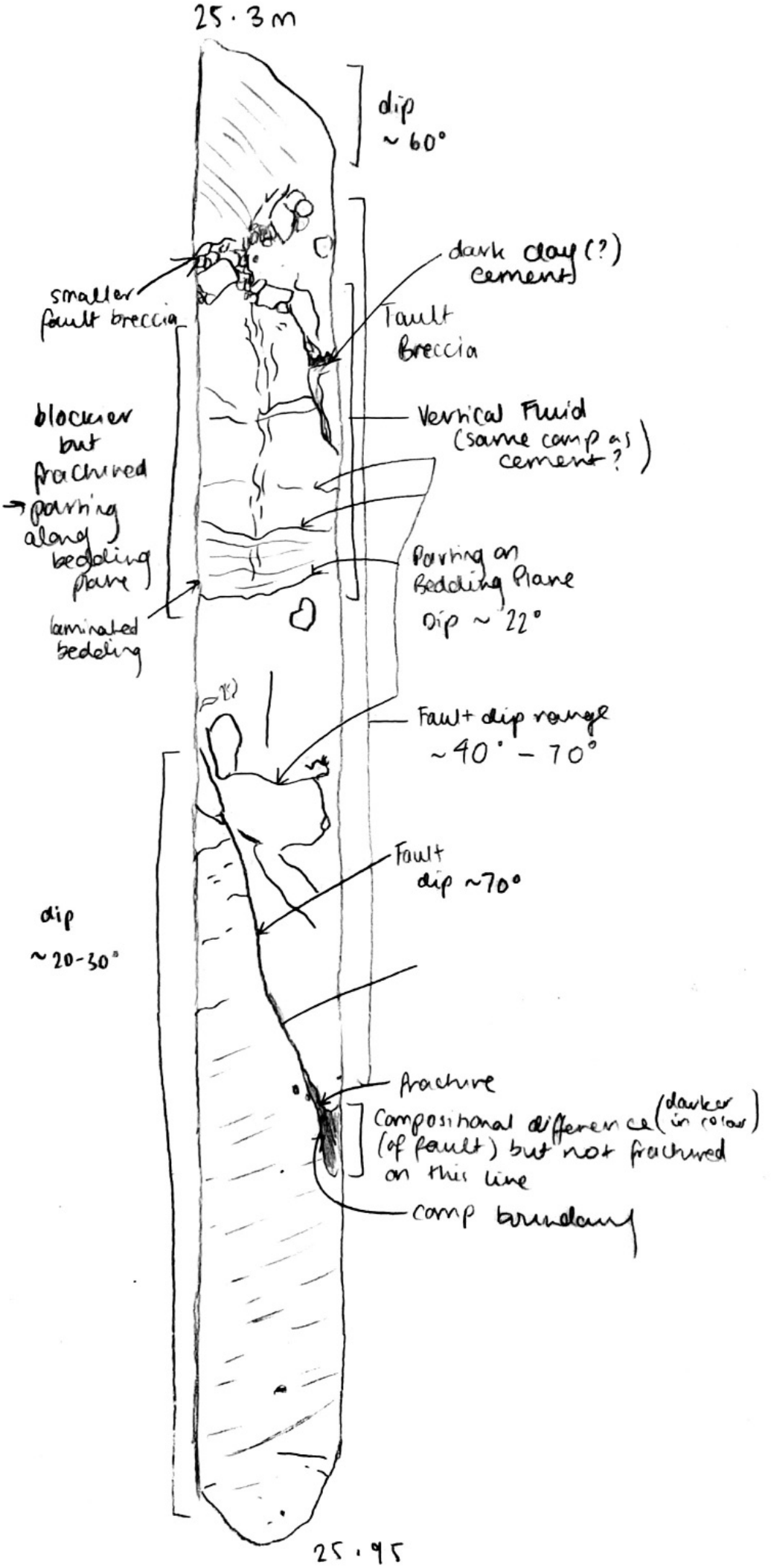
fault

little black marks

↳ bedding plane

42cm long

(25.77m) BOTTOM


25.3m
dip
~60°
dark clay (?)
cement
smaller
fault breccia
Fault
Breccia
blockier
but
fractured
parring
along
bedding
plane
Vertical Fluid
(same comp as
cement?)
laminated
bedding
Parring on
Bedding Plane
dip ~ 22°
Fault dip range
~40° - 70°
Fault
dip ~70°
dip
~20-30°
fracture
Compositional difference (darker in colour)
(of fault) but not fractured
on this line
comp boundary
25.95