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COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

CLIENT: PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD CONTRACTOR: Twin Hills

INCLINATION: -87° DIRECTION: 185° LOCATION: Dalrymple Heights HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m 23117.000.001

SHEET: 1 OF 11 DRILL RIG: TH25

LOGGED: ENGEO DATE: 4/8/23 CHECKED: SF DATE: 11/10/23

				_					
rilling	1	Sampling	_		٦	Field Material Desc	•		
	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBC	MATERIAL DESCRIPTION	MOISTURE	CONSISTENC	STRUCTURE AND ADDITIONAL OBSERVATIONS
0.0-	919.87			7. 7.7 7.7	ML	TOPSOIL: Clayey SILT low liquid limit, dark brown, low plasticity clay	w~ PL	Н	TOPSOIL
0.5 -	919.62	_		× × × × × × × × × × × × × × × × × × ×	ML	Clayey SILT low liquid limit, pale brown, low plasticity clay	w~ PL	Н	RESIDUAL SOIL
	919.27				ML	Clayey SILT with sand pale orange brown, with fine to medium grained. sand, low plasticity			
1.0 -	-			× × × × × × × × × × × × × × × × × × ×					Coring water returns were not recorded.
	-			- X X X X X					
1.5 -	- - -	SPT 1.50-1.95 m 4, 7, 9 N=16		- X- X- X- X- X- X- X-					
2.0 -	- - -			- X- X- X- X- X- X- X- X- X-					
	-			- X - X - X - X - X - X - X - X - X - X					
2.5 -	- - -			× × × × × × × × × × × × × × × × × × ×			w~ PL	VSt	
	- - -			× × × × × × × × × × × × × × × × × × ×					
3.0 -	-	SPT 3.00-3.45 m 3, 7, 9 N=16							
3.5 -	-			(   x   x   x   x   x   x   x   x   x					
				×					
4.0 -	- - -			× × × × × × × × × × × × × × × × × × ×					
	4 50			× × × × × × × × × × × × × × × × × × ×					
4.5 -	915.38	PI = 22% LS = 9.0% ECN = 6 Soil Particle Density (t/m³) = 2.28			ML	Clayey SILT with sand pale red and brown mottled black, low plasticity clay, with fine to medium grained. sand, low plasticity	w~ PL	VSt	
	0.5 - 1.0 - 2.0 - 3.5 -	0.0   919.87   - 0.25   919.62   0.5   - 0.60   919.27   1.0   - 0.60   - 0	FIELD TEST  DEPTH RL  0.0  919.87  - 0.25	0.0 919.87 - 0.25 - 919.62  0.5 - 0.60 - 919.27	1.5 — 919.87 — 0.25 — 919.62 — X — X — X — X — X — X — X — X — X —	0.0 919.87  0.25 919.62  0.60 919.27  1.0	0.0	0.0	1.0



COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

SHEET: 2 OF 11

CLIENT: DRILL RIG: TH25 PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD CONTRACTOR: Twin Hills

INCLINATION: -87° DIRECTION: 185° LOCATION: Dalrymple Heights LOGGED: ENGEO DATE: 4/8/23 HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m JOB NO: 23117.000.001 CHECKED: SF DATE: 11/10/23

D#III:	Consulina				Field Metaviel Deser	rint: -	<u></u>		
Drilling z	Sampling			<del>ا ا</del>	Field Material Desc				
호 8   호 조   호 호   프 호	SAMPLE OR FIELD TEST DEPTH RL	RECOVERED GRAPHIC	507	GROUP SYMBOL	MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
5.0 — 5.5 — 6.0 — 7.0 —	SPT 6.00-6.45 m 3, 5, 8 N=13			ML	Clayey SILT with sand pale red and brown mottled black, low plasticity clay, with fine to medium grained. sand, low plasticity	w~ PL	VSt		
7.5 - 9 - 8.0	7.50 112.38 Soil Particle Density (t/m²) = 2.37 SPT 7.50-7.95 m 2, 4, 4 N=8  SPT 9.00-9.45 m 2, 4, 4 N=8			CI	Silty CLAY with sand medium plasticity, pale red and brown mottled black, with fine to medium grained. sand	w>	St		
10.0	This log must be	e read	in co	nju	nction with accompanying symbols and abbreviations used that been prepared for geotechnical purposes only.	on G	eotec	chnical	



COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

CLIENT: PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD

INCLINATION: -87° DIRECTION: 185° LOCATION: Dalrymple Heights HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m JOB NO: 23117.000.001

SHEET: 3 OF 11 DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23 CHECKED: SF DATE: 11/10/23

		_	ling		Sampling				Field Material Descr			
SUPPORT	PENETRATION RESISTANCE	WATER	LENGTH (metres)	<i>DEPTH</i> RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
SSA			10.0 —		SPT 10.50-10.95 m 3, 4, 6 N=10		× — ×	CI	Sitty CLAY with sand medium plasticity, pale red and brown mottled black, with fine to medium grained. sand			
			11.5 —		SPT 12.00-12.45 m 4, 6, 6 N=12		× × × × × × × × × × × × × × × × × × ×			w> LL	St	
WB			13.0 —	-	LL = 47% PI = 15% LS = 6.5% ECN = 6 Soil Particle Density (½m³) = 2.65 SPT 13.50-13.95 m 2, 4, 7 N=11			ML	Clayey Sandy SILT pale red and brown mottled black, fine to medium grained sand, low plasticity			
										w> LL	St - VSt	



COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

CLIENT: PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD

INCLINATION: -87° DIRECTION: 185° LOCATION: Dalrymple Heights HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m JOB NO: 23117.000.001

SHEET: 4 OF 11 DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23 DATE: 11/10/23 CHECKED: SF

JOB NO:	23117	.000.00	1	HOLE [	DIA:	96/100 mm HOLE DEPTH: 48.27 m	(	CHEC	CKED: SF DATE: 11/10/23	,
	Drilling		Sampling			Field Material Desc				
METHOD / SUPPORT PENETRATION RESISTANCE	WAIEK LENGTH (metres)	<i>DEPTH</i> RL	SAMPLE OR FIELD TEST	RECOVERED GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
	15.0 — - - - - 15.5 —	-	SPT 15.00-15.45 m 3, 5, 6 N=11	× × × × × × × × × × × × × × × × × × ×	ML	Clayey Sandy SILT pale red and brown mottled black, fine to medium grained sand, low plasticity				-
	16.0 —	- - - - -	2, 4, 6 N=10	× × × × × × × × × × × × × × × × × × ×						-
KUJA TULOJJUDA PRIBAT TOJA	- 16.5 — - - -	- - - - -	SPT 16.50-16.95 m 5, 5, 6 N=11	× × × × × × × × -				St - VSt		-
WB	17.0 —	- - - - -		×			w> LL			-
TENETICS REWONANGOLATION	18.0 —	-	SPT 18.00-18.45 m 3, 6, 10 N=16	X						
TAGE TOWER BONDENN - WAS	18.5 —	- - - - -		×				St - VSt		-
WB	19.5 —	-	SPT 19.50-19.95 m 3, 5, 8 N=13	x						
	20.0	1	This log must	be read in C	conju	nction with accompanying symbols and abbreviations used It has been prepared for geotechnical purposes only.	on G	eotec	chnical	$\perp \uparrow$



COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

SHEET: 5 OF 11

CLIENT: DRILL RIG: TH25 PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD CONTRACTOR: Twin Hills

INCLINATION: -87° DIRECTION: 185° LOCATION: Dalrymple Heights LOGGED: ENGEO DATE: 4/8/23 HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m JOB NO: 23117.000.001 CHECKED: SF DATE: 11/10/23

Dr	illing		Sampling				Field Material Desc	riptio	on		
METHOD / SUPPORT PENETRATION RESISTANCE WATER	LENGTH (metres)	<i>DEPTH</i> RL		RECOVERED	GRAPHIC LOG	GROUP SYMBOL			CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
METHOD WB SUPPORT STATES OF THE PROPERTY OF TH	20.0 — 20.0 — 20.5 — 21.5 — 22	DEPTH RL	SAMPLE OR FIELD TEST  LL = 39% PI = 14% LS = 6.5% Soil Particle Density (t/m²) = 2.55 SPT 20.00-20.45 m 3, 4, 9 N=13  SPT 21.50-21.95 m 6, 17, 14 N=31  SPT 22.25-22.70 m 9, 1, 0 N=1	RECOVE		GROUP SY	Clayey Sandy SILT pale red and brown mottled black, fine to medium grained sand, low plasticity  For Continuation Refer to Sheet 6	MUISIOM & LI	THE TOTAL PROPERTY OF	SPT contains single small clast of gravel (crushed) near the base. Dark in colour.  Soft consistency possibly due to increase moisture content above soil/rock boundary	
	24.5 —		This log must be	: rea			nction with accompanying symbols and abbreviations used thas been prepared for geotechnical purposes only.	on G	Geotec	chnical	-



CLIENT: SMEC COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD LOCATION: Dalrymple Heights INCLINATION: -87° DIRECTION: 185°

SHEET: 6 OF 11

DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23
CHECKED: SF DATE: 11/10/23

	_	Drilli				Field Material Description	_					Defect Information	Δ.	/ER	-
SUPPORT	TCR	RQD	ORILLED LENGTH (metres)	DEPTH RL	GRAPHIC LOG	MATERIAL DESCRIPTION	DETAILED WEATHERING	INF STF Iss (AS	ERF REN (MI 61726:2	RED GTH Pa)	MEASURED STRENGTH: UCS & Isto (A.D.L.) (MPa)	DEFECT DESCRIPTION  Mechanical Discontinuities / non-intact defects shown only. See attached De- tailed Defect Log for all recorded discon- tinuities and defects	D SF	EFE PAC (mr	EC CIN m)
			20.5 — 20.5 — 21.0 — 22.5 — - 22.5 —	22.50		Continuation of Sheet 5									
	100	0	-22.5 - - - - 23.0 — -	897.40	+ + + + + + + + + + + + + + + + + + +	MICRODIORITE Fine to medium grained, igneous plutonic. Pale orange-brown and grey. Crystalline, phaneritic Decomposing biotite, FeO rich, stained and discoloured MnO on defects., Mechanical Defects Js; sub horizontal to gentle, (~8-12/m), Pln - Und, Sm - Ro, FeO and MnO Std to Vr. Js; steep to very steep, (1-3/m), Pln - Und, Ro, FeO and MnO Std to Vr.	MW					22.60-22.69 m: J, 75°, Stp, Ro, FeO Std 22.68-22.69 m: J, 5°, Irr, Vro, FeO Std 22.71-22.72 m: J, 5°, Cvd, Ro, FeO Std 22.72-22.75 m: J, 20°, Cvd, Ro 22.78-22.75 m: J, 20°, Cvd, Ro 22.78-22.79 m: J, 10°, Pln, Ro, Std 22.81-22.89 m: J, 5°, Pln, Ro, FeO Std 22.89-22.94 m: J, 0°, Irr, Ro, FeO Std 23.04-23.10 m: J, 85°, Irr, Ro, FeO Std 23.04-23.10 m: J, 85°, Irr, Ro, FeO Std 23.04-23.10 m: J, 5°, Pln, Ro, FeO Std 23.04-23.15 m: J, 25°, Und, Ro, FeO Std, Possible sheared-zone			
201	100		23.5 —		+ + + + + + + + + + + + + + + + + + +		MW HW MW					23.15-23.26 m: J, 85°, Pln, Ro, FeO Std 23.22-23.22 m: J, 0°, Stp, Ro, FeO Std 23.22-23.26 m: J, 35°, Und, Ro, FeO Std 23.26-23.26 m: J, 0°, Pln, Ro, FeO Std 23.35-23.47 m: J, 85°, Pln, Sm, FeO Std 23.45-23.48 m: J, 45°, Cvd, Ro, FeO Std 23.45-23.48 m: J, 45°, Cvd, Ro, FeO Std 23.49-23.60 m: J, 10°, Pln, Ro, FeO Std 23.49-23.60 m: J, 70°, Pln, Sm, Std, Appears to the state of			



COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD LOCATION: Dalrymple Heights INCLINATION: -87° DIRECTION: 185°

JOB NO: 23117 000 001 HOLE DIA: 96/100 mm HOLE DEPTH: 48.3

SHEET: 7 OF 11

DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23
CHECKED: SE DATE: 11/10/23

30	B NC	):		17.000.	001		HOLE DIA: 96/100 mm HOLE DEPT	H: 4	8.27 m			E: 11/10/23
SUPPORT	WATER	TCR	Rab	DRILLED LENGTH (metres)	<i>DEPTH</i> RL	GRAPHIC LOG	Field Material Description  MATERIAL DESCRIPTION	DETAILED WEATHERING	INFERRED STRENGTH Is® (MPa) (AS1726:2017)	MEASURED STRENGTH: UCS & Is:00 (A.D.L) (MPa)	Defect Information  DEFECT DESCRIPTION  Mechanical Discontinuities / non-intact defects shown only. See attached Detailed Defect Log for all recorded discontinuities and defects	AVERAGE DEFECTION (mm) (ISO14689:20
		100	67	25.0 — - -		+ + - + + + - +		SW			24.49-27.44 m: J, 35°, Und, Ro, Cn 24.54-24.63 m: J, 50°, Cvd, Vro, FeO Std 24.76-24.78 m: J, 15°, Pln, Ro, FeO Std 24.80-24.80 m: J, 0°, Pln, Ro, FeO Std 25.17-25.22 m: J, 50°, Pln, Vro, FeO Std	
		100	55	25.5 —	26.20 893.70	+>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous plutonic Pale grey with minor orange-brown-grey zones. Crystalline, porphyritic, anhedral to subhedral feldspar and biotite. Indistinct foliation Grain size and texture gradually varies throughout, likely fractionation driven. Dark minerals comprise ~20%, and are typically finer grained than lighter minerals. Patchy pale green propylitic (?) alteration throughout, mainly as thin 'selvedges' or 'halos' around veins/ veinletts, Integral Discontinuities Vn/veinletts; gentle to moderate, (4-8/m) some // to FOL, some discordant, <1 mm - 5 mm wide. Mechanical Defects Js; sub horizontal to gentle, (2-4/m) Pln - Und, Sm - Ro, some MnO Std, most Cn. 26.20 - 26.73 m: Vein; very steep to sub vertical, irregular, 2 mm - 5 mm wide, quartz FL, intact due to quartz bridging, some voids <4 mm observed along its length.	HW		I <sub>50</sub> (A)>5.35	25.53-25.55 m: J, 15°, Pln, Ro, Cn  25.73-25.73 m: J, 0°, Und, Vro, FeO Std 25.74-25.75 m: J, 10°, Stp, Ro, FeO Std 25.76-25.81 m: J, 30°, Und, Ro, FeO Std 25.85-25.86 m: J, 10°, Und, Ro, FeO Std 25.85-25.91 m: J, 60°, Pln, Sm, FeO Std 25.85-25.91 m: J, 60°, Pln, Sm, FeO Std 25.85-25.91 m: J, 40°, Pln, Sm, FeO Std 25.86-25.91 m: J, 40°, Pln, Ro, FeO Std 25.89-25.92 m: J, 30°, Und, Ro, FeO Std 25.93-25.93 m: J, 26°, Pln, Ro, FeO Std 25.93-25.93 m: J, 60°, Pln, Ro, FeO Std 25.93-25.93 m: J, 26°, Pln, Ro, FeO Std 25.93-25.93 m: J, 26°, Pln, Ro, FeO Std 25.93-25.93 m: J, 26°, Pln, Ro, FeO Std 25.93-25.90 m: J, 40°, Pln, Ro, FeO Std 26.03-26.03 m: J, 45°, Und, Vro, FeO Std 26.03-26.03 m: J, 45°, Und, Vro, FeO Std 26.03-26.07 m: J, 45°, Und, Vro, FeO Std	
HQ3		100	92	27.0 —						UCS=184	26.16-26.17 m: J, 10°, Und, Ro, FeO Std 26.20-26.22 m: J, 25°, Pln, Ro 26.30-26.55 m: J, 75°, Pln, Ro, FeO Std 26.33-26.37 m: J, 45°, Pln, Ro, FeO Std 26.37-26.67 m: J, 45°, Pln, Ro, FeO Std 26.57-26.67 m: J, 10°, Pln, Ro, FeO Std 26.68-26.70 m: J, 10°, Pln, Ro, Cn 26.74-26.75 m: J, 10°, Pln, Ro, Cn 26.74-26.75 m: J, 30°, Pln, Sm, Cn 27.03-27.07 m: J, 30°, Pln, Sm, Cn	
		100	100	- - 28.5 —		/					28.43-28.43 m: J, 0°, Pln, Ro, Std	
		100	68	29.0 — - - - - - 29.5 —	29.27 890.64 890.64 29.50 890.41		29.27 m - 29.30 m and 29.74 m - 29.83 m: 'earthy' - soil infill on defects, (silty CLAY to clayey SILT with fine to coarse sand. 29.27 m - 29.55 m and 29.73 m - 29.86 m: Becomes	MW - HW			29.26-29.27 m: J, 10°, Pln, Ro 29.30-29.34 m: Cs, 0°, Pln, Crushed gravel wi clay veneer between faces. 29.39-29.39 m: J, 0°, Pln, Ro, FeO Std 29.41-29.45 m: J, 50°, Pln, Sm, FeO	th
		100	82	- - - - 30.0 —	30.00	/	orange-brown with FeO and MnO on joints (MW-HW), more heavily fractured than less weathered rock.  29.50 m: VWP installed 07/08/23	SA			29.43-29.49 m: Cs, 45°, Pln 29.49-29.51 m: J, 30°, Pln, Sm, FeO Std 29.67-29.73 m: J, 45°, Pln, Ro, FeO Std 29.68-29.79 m: J, 60°, Pln, Ro, FeO Std 29.73-29.74 m: J, 20°, Pln, Ro, FeO Std 29.78-29.87 m: Cs, 20°, Pln 29.87-29.88 m: J, 20°, Pln, Sm, FeO Std	X



CLIENT:

# **BOREHOLE: BHUB-09**

COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD LOCATION: Dalrymple Heights INCLINATION: -87° DIRECTION: 185° JOB NO: 23117.000.001 HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m

SHEET: 8 OF 11 DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23 CHECKED: SF DATE: 11/10/23

SUPPORT	WATER	TCR	Rab	DRILLED LENGTH (metres)	<i>DEPTH</i> RL	GRAPHIC LOG	Field Material Description  MATERIAL DESCRIPTION	DETAILED WEATHERING	INI ST Is (As	FERF RENG So (MF S1726:2	RED GTH Pa) 2017)	MEASURED STRENGTH: UCS & Is50 (A,D,L) (MPa)	Defect Information  DEFECT DESCRIPTION  Mechanical Discontinuities / non-intact defects shown only. See attached Detailed Defect Log for all recorded discontinuities and defects	AVERAGI DEFECT SPACING (mm) (ISO14689:201'
		100	82	30.0 —	889.91	<pre>&lt;&lt;&lt;&lt;&lt;&lt;&lt;&lt;&lt;&lt;&lt;&lt;&gt;</pre> <<<<<<<<	ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous plutonic Pale grey with minor orange-brown-grey zones. Crystalline, porphyritic, anhedral to subhedral feldspar and biotite. Indistinct foliation Grain size and texture gradually varies throughout, likely fractionation driven. Dark minerals comprise ~20%, and are typically finer grained than lighter minerals. Patchy pale green propylitic (?) alteration throughout, mainly as thin 'selvedges' or 'halos' around veins/ veinletts., Integral Discontinuities Vn/veinletts; gentle to moderate, (4-8/m) some // to FOL, some discordant, <1 mm - 5 mm wide. Mechanical Defects Js; sub horizontal to gentle, (2-4/m) Pln - Und, Sm - Ro, some MnO Std, most Cn. 30.00m: Becomes relatively equigranular, subhedral crystals, pale grey and dark grey, minor pale green (propylitic alteration).	SA				I <sub>50</sub> (D)>5.89		
TQ3		100	95	31.5 — 32.0 — 32.5 — -	32.15 887.76		32.15 m - 32.29 m: MICRODYKE (?); fine grained, pale green-brown (propylitic alteration), <12 mm wide at ~60°, sharp upper contact, diffuse lower contact.					l <sub>50</sub> (A)>5.06		ì
		100	94	33.0 —	<u>33.15</u> 886.76		33.15 m - 33.27 m: MICRODYKE (?); fine grained, pale green-brown (propylitic alteration), <12 mm wide at ~60°, sharp upper contact, diffuse lower contact.					UCS=37.3 PLI(D)>5.89 PLI(A)=3.22		
		100	82	34.5 —	<u>34.48</u> 885.44	<pre>&gt;</pre>	34.48 m - 34.90 m: Vein, undulating, 3 mm - 6 mm wide, infilled with quartz and adularia (?). Intact / infilled - broken by drilling.							



PROJECT: Pioneer Burdekin PHES GI

23117.000.001

LOCATION: Dalrymple Heights

CLIENT:

## **BOREHOLE: BHUB-09**

COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

SURFACE RL: 919.87 m DATUM: AHD INCLINATION: -87° DIRECTION: 185°

SHEET: 9 OF 11 DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23

HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m CHECKED: SF DATE: 11/10/23

					1								
	1	Drill				Field Material Description		T			o	Defect Information	AVERAGE
SUPPORT	TCR	RQD	DRILLED LENGTH (metres)	<i>DEPTH</i> RL	GRAPHIC LOG	MATERIAL DESCRIPTION	DETAILED	INF STF Is: (AS	REN 50 (MI 51726:2	RED GTH Pa) 2017)	EASU TREN JCS &	DEFECT DESCRIPTION  Mechanical Discontinuities / non-intact defects shown only. See attached De- tailed Defect Log for all recorded discon- tinuities and defects	DEFECT SPACING (mm) (ISO14689:2017)
	100	82	35.0 —			ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous plutonic Pale grey with minor orange-brown-grey zones. Crystalline, porphyritic, anhedral to subhedral feldspar and biotite. Indistinct foliation Grain size and texture gradually varies throughout, likely fractionation driven. Dark minerals comprise ~20%, and are typically finer grained than lighter minerals. Patchy pale green propylitic (?) alteration throughout, mainly as thin 'selvedges' or 'halos' around veins/ veinletts, Integral Discontinuities Vn/veinletts; gentle to moderate, (4-8/m) some // to FOL, some discordant, <1 mm - 5 mm wide. Mechanical Defects Js; sub horizontal to gentle, (2-4/m) Pln - Und, Sm - Ro, some MnO Std, most Cn.	SA						
	100	100	36.5 —	36.40 883.52		36.40 m - 36.76 m: Noticeable alteration to feldspar.							l
HQ3			37.5	37.10 882.82	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ALTERED MICROGRANITE Fine grained groundmass with medium grained phenocrysts, igneous plutonic. Dark green-grey and dark grey. Crystalline, porphyritic, subhedral feldspar phenocrysts. Poorly developed foliation, indistinct, at 50° - 60°, defined by, segregation and elongation of lighter minerals. Homblende and biotite abundant with <30% feldspar. Diffuse / gradational upper and lower contacts., Propylitic alteration common adjacent to healed veins, with feldspar to green-pink, commonly lower side more altered, quartz in veins 0.5 mm - 2.0 mm.	SA	-			UCS=184		Į
	100	81	38.5 —	37.95 881.97 881.97	+	ALTERED QUARTZ MONZONITE with ALTERED MICROGRANITE BANDS Fine grained groundmass with medium grained phenocrysts, igneous plutonic. Dark green-grey and dark grey. Crystalline, porphyritic, subhedral feldspar phenocrysts. Poorly developed foliation, indistinct, at 50° - 60°, defined by, segregation and elongation of lighter minerals. Feldspar becoming more abundant. Diffuse / gradational upper and lower contacts., Propylitic alteration common adjacent to healed veins, with feldspar to green-pink, commonly lower side more altered, quartz in veins 0.5 mm - 2.0 mm. 37.95 m - 37.97 m: Sub horizontal vein, quartz and apatite (?), fine grained to cryptocrystalline, siliceous, pale grey to grey.	SA				I <sub>50</sub> (D)>5.89 I <sub>50</sub> (A)=3.22		· · · · · · · · · · · · · · · · · · ·
	100	100	39.5	39.25 880.67		ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous intrusive. Dark grey and pale green-grey. Crystalline, anhedral to subhedral. Poorly developed, indistinct foliation. Moderately strong, pervasive pale green propylitic (?) alteration.	SA	-					8
			40.0		<u></u>		<u>                                     </u>	Ш			hander.	and an Onetanhuira!	
					This I	og must be read in conjunction with accompanying Logs. It has been prepared for g	-					sed on Geotechnical	



PROJECT: Pioneer Burdekin PHES GI

23117.000.001

LOCATION: Dalrymple Heights

CLIENT:

JOB NO:

## **BOREHOLE: BHUB-09**

COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

SURFACE RL: 919.87 m DATUM: AHD INCLINATION: -87° DIRECTION: 185°

SHEET: 10 OF 11 DRILL RIG: TH25

CONTRACTOR: Twin Hills

LOGGED: ENGEO DATE: 4/8/23

HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m CHECKED: SF DATE: 11/10/23

		Drill	ina			Field Material Description					Defect Information	
$\top$	Т	ווווטט		Τ		Field Material Description		INIT		Ω÷ια	Defect Information  DEFECT DESCRIPTION	AVERAGE
SUPPORT	TCR	RQD	DRILLED LENGTH (metres)	<i>DEPTH</i> RL	GRAPHIC LOG	MATERIAL DESCRIPTION	DETAILED WEATHERING	STR Is <sub>50</sub> (AS1	ERRED ENGTH (MPa) 726:2017)	EASURE TRENGT JCS & Ist	Mechanical Discontinuities / non-intact defects shown only. See attached De- tailed Defect Log for all recorded discon- tinuities and defects	DEFECT SPACING (mm) (ISO14689:2017
	100	100	40.5	40.25 879.67	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous intrusive. Dark grey and pale green-grey. Crystalline, anhedral to subhedral. Poorly developed, indistinct foliation. Moderately strong, pervasive pale green propylitic (?) alteration. 40.25 m - 40.53 m: Joint partially filled with quartz with minor FeO staining. Minor candlestick quartz indicating growth into void.	SA					
	100	92	41.0 —	879.20	/	ALTERED MICROGRANITE Medium grained, igneous plutonic Dark grey and grey. Crystalline, subhedral feldspar with interstitial quartz and dark minerals (biotite and hornblende), relatively equigranular. Poorly developed, indistinct foliation., Patchy, propylitic alteration (?) adjacent to healed veins and joints. Integral Discontinuities Vn/veinletts; gentle to moderate (5-10/m), most // to FOL, <1 mm - 2 mm wide, intact, quartz FL.	SA - FR			I <sub>50</sub> (A)=5.82		
			42.0		+ + - + - + + + - + - + + + - + - +							ļ
	100	95	42.5 —	43.00 876.93	+ + + + - + + + - + - + - + - +	43.00 m - 43.35 m: Intense pervasive potassic (?) alteration, fine grained, pale brown.	SA					Ĭ
			43.5	43.35 876.58 846.456 876.47 876.46	- + + + + + + + + + + + + + + + + + + +	43.35m to 47.70m: Frequent zones of intense propylitic (?) alteration Below 43.37 m: Orthoclase altered pink to orange-pink. 43.46 m - 43.55 m: ALTERED SHEARED / FAULT ZONE (?); appears plastically deformed, strong propylitic alteration. 43.47 m - 44.17 m: Intense pale green propylitic alteration zone up to 40 mm wide, associated with steep brecciated (?) fracture, healed and annealed,						ļ
	100	92	44.5	44.75	+ + + + - + + + - + - + + + - + + +	apatite (?) rich.						ļ
			45.0	875.18	- + + + - + + +	44.75 m - 45.18 m: Intense pale green propylitic alteration zone up to 40 mm wide, associated with steep brecciated (?) fracture, healed and annealed, apatite (?) rich.						ĥ



49.0

49.5

50.0

#### **BOREHOLE: BHUB-09**

COORDS: 660681.1 m 7668389.2 m GDA 2020 MGA Zone 55

SHEET: 11 OF 11 DRILL RIG: TH25

CLIENT: PROJECT: Pioneer Burdekin PHES GI SURFACE RL: 919.87 m DATUM: AHD CONTRACTOR: Twin Hills LOCATION: Dalrymple Heights INCLINATION: -87° DIRECTION: 185° LOGGED: ENGEO DATE: 4/8/23 JOB NO: 23117.000.001 HOLE DIA: 96/100 mm HOLE DEPTH: 48.27 m CHECKED: SF DATE: 11/10/23 Drilling Field Material Description **Defect Information** INFERRED STRENGTH Sign (MPa) (AS1726:2017) (MPa) (AS1726:2017) (MPa) (AS1726:2017) (MPa) (AS1726:2017) (MPa) AVFRAGE DEFECT DESCRIPTION LENGT DEFECT SPACING GRAPHIC LOG Mechanical Discontinuities / non-intact METHOD SUPPORT MATERIAL DESCRIPTION (mm) (ISO14689:2017) WATER DRILLED defects shown only. See attached De-, 2000; RQD **TCR** DEPTH RL tailed Defect Log for all recorded discontinuities and defects 45.0 ALTERED MICROGRANITE SA I<sub>50</sub>(D)>5.89 100 92 Medium grained, igneous plutonic
Dark grey and grey.
Crystalline, subhedral feldspar with interstitial quartz I<sub>50</sub>(A)>5.44 and dark minerals (biotite and hornblende), relatively equigranular.

Poorly developed, indistinct foliation., 45.40 874.53 Poorty developed, indistinct foliation., Patchy, propylitic alteration (?) adjacent to healed veins and joints. Integral Discontinuities Vn/veinletts; gentle to moderate (5-10/m), most // to FOL, <1 mm - 2 mm wide, intact, quartz FL. 45.40 m - 47.71 m: Healed Breccia, quartz (?) cement, pale green propylitic alteration, angular clasts 1 mm - 7 mm wide, becoming increasingly silicious and thick with depth, very steep to sub vertical at 75° to 85°. 45.5 100 100 46.0 <<Drawng File>> 20/11/2024 17:04 10:03.00.09 Datgel Tools 46.5 47.0 100 100 47.5 **47.71** 872.22 ENGEO 2.00.2.2 LIB.GLB LOG ENGEO CORED BOREHOLE PIONEER BURDEKIN -MASTERBHT03 REWORK-AUSLAPTOP008.GPJ ALTERED QUARTZ MONZODIORITE Fine to medium grained, igneous intrusive. Dark grey and pale pink-grey. Crystalline, phaneritic, subhedral feldspar. Poorly developed, indistinct foliation. 48.0 Patchy pale green propylitic (?) alteration. I<sub>50</sub>(A)>5.32 END OF BOREHOLE @ 48.27 m VIBRATING WIRE PIEZOMETER INSTALLED, SINGLE SENSOR AT 29.50 M DEPTH 48.5 Bearing is approximate only

This log must be read in conjunction with accompanying symbols and abbreviations used on Geotechnical Logs. It has been prepared for geotechnical purposes only.

JOB No.:	30032772
Client:	Queensland Hydro
Site:	Pioneer-Burdekin

Borehole ID:	BHUB-09	
Termination Depth:		48.27

	Depth (m)		Туре	Angle (°)	Roughness	Shape	Infill	Weathering	Nature	Comments
From	То	Midpoint		Aligle ( )	Workliness	Snape		_	ivature	
. 22.50	22.65		Sheared - Zone					Highly Weathered		Recovered as medium to coarse gravel.
22.60 22.68	22.69 22.69				Rough Very Rough	Stepped	FeO FeO		Stained Stained	
22.08	22.69	22.69			Rough	Irregular Curved	FeO	Moderately Weathered Moderately Weathered	Stained	
22.72	22.72	22.72			Rough	Curved	160	Widderately Weathered	Stamed	
22.78	22.79	22.79				Planar			Stained	
22.81	22.82				Rough	Planar			Stained	
22.82	22.89				Rough	Planar	FeO		Stained	
22.89	22.94	22.92	Joint	0	Rough	Irregular	FeO		Stained	
23.04	23.05				Rough	Planar	FeO		Stained	
23.04	23.10				Rough	Irregular	FeO		Stained	
23.12	23.15				Rough	Undulating	FeO .		Stained	Possible sheared-zone
23.15	23.26				Rough		FeO	Extremely Weathered	Stained	
23.22	23.22 23.26	23.22 23.25			Rough Rough	Stepped Undulating	FeO FeO	Extremely Weathered	Stained Stained	
23.23	23.26				Rough	Planar	FeO		Stained	
23.35	23.47	23.41			Smooth	Planar	FeO	Extremely Weathered	Coated	
23.42	23.45	23.44			Rough	Planar	FeO		Stained	
23.45	23.48	23.47			Rough	Curved	FeO		Stained	
23.49	23.49	23.49			Rough	Planar	FeO	T	Stained	
23.49	23.60	23.55	Joint	10	Smooth	Planar		Moderately Weathered	Stained	Appears to have white infill.
23.51	23.54			70	Rough	Curved	FeO	Extremely Weathered	Stained	
23.56	23.62	23.59			Smooth	Planar	FeO	• ,	Stained	
23.59	23.61	23.60			Smooth	Planar	FeO	Moderately Weathered	Stained	
23.63	23.74	23.69			Rough	Planar	FeO	Moderately Weathered	Vein	
23.64	23.68 23.73			45	Polished	Irregular Planar	FeO FeO	Highly Weathered	Stained	
23.69	23.73	23.71 23.76			Smooth Smooth	Planar Curved	FeO	Moderately Weathered	Stained	Closed.
23.77	23.80				Rough	Planar	FeO	Highly Weathered	Stained	Closed.
23.82	23.86		Crushed Seam	30	Rough	Planar	FeO		Stained	
23.83	23.83	23.83		5	Smooth	Planar	FeO		Stained	
23.87	23.89				Smooth	Stepped	Calcite	Moderately Weathered	Coated	
23.90	24.00	23.95	Joint	70	Rough	Undulating	FeO	Moderately Weathered	Stained	
24.09	24.15	24.12			Rough	Undulating	FeO	Highly Weathered	Stained	
24.37	24.40				Rough	Undulating	FeO		Stained	
24.48	24.48				Rough	Planar	FeO .	0 ,	Stained	
24.49	24.53				Rough	Stepped	FeO	Highly Weathered	Stained	
24.49 24.54	27.44 24.63	25.97 24.59			Rough	Undulating Curved	FeO	Highly Magabassad	Clean Stained	
24.54	24.63				Very Rough Rough	Planar	FeO	Highly Weathered Highly Weathered	Stained	
24.80	24.80				Rough	Planar	FeO	Highly Weathered	Stained	
25.17	25.22				Very Rough	Planar	FeO	Highly Weathered	Stained	
25.53	25.55				Rough	Planar		_ ·	Clean	
25.73	25.73	25.73	Joint		Very Rough	Undulating	FeO	Highly Weathered	Stained	
25.74	25.75	25.75		10	Rough	Stepped	FeO	Highly Weathered	Stained	
25.76	25.81	25.79			Rough	Undulating	FeO	Highly Weathered	Stained	
25.85	25.86				Rough	Undulating	FeO	Highly Weathered	Stained	
25.85	25.91	25.88			Smooth	Planar	FeO	• ,	Stained	Half closed.
25.86 25.89	25.90 25.92	25.88 25.91			Smooth	Planar Undulating	FeO FeO	Highly Weathered	Stained Stained	
25.89	25.92 25.93	25.91			Rough Rough	Planar	FeO	Highly Weathered Highly Weathered	Stained	
25.93	25.98				Very Rough	Stepped	FeO	Highly Weathered	Stained	
25.96					Very Rough	Curved	FeO		Stained	
26.03	26.03				Rough	Planar	FeO	Highly Weathered	Stained	
26.03	26.07	26.05			Very Rough	Undulating	FeO		Stained	
26.09	26.10	26.10			Rough	Undulating	FeO	Highly Weathered	Stained	
26.16	26.17	26.17			Rough	Undulating	FeO	Highly Weathered	Stained	
26.20	26.22						FeO			Closed.
26.30	26.55	26.43	Joint	75	Rough	Planar	FeO	Highly Weathered	Stained	l l

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		Depth (m)		Time	Anala (%)	Davishass	Chana	1-611	March original	Natura	C
From	То		Midpoint	Туре	Angle (°)	Roughness	Shape	Infill	Weathering	Nature	Comments
	26.33	26.37	26.35					FeO	· ,	Stained	
1	26.57	26.67			45	Rough		FeO	· ,	Stained	
1	26.62	26.72						FeO		Stained	Half closed.
)	26.68	26.70				Rough		FeO	Highly Weathered	Stained	
-	26.72	26.73					Planar			Clean	
	26.74	26.75				~	Planar	•		Clean	
	26.88	26.93					Planar			Clean	
	27.03 27.60	27.07 27.64					Planar Planar		1	Clean	Pale grey/white mineral.
	27.80	27.64 27.87	27.85				Planar Planar		1		Pale grey/white mineral.
1	28.43	28.43	28.43				Planar		Moderately Weathered	Stained	one Bress mineral.
1	29.26	29.27					Planar		l same ca		Closed.
	29.30	29.34			0	1	Planar		1		Crushed gravel with clay veneer between faces.
	29.39	29.39	29.39		0	Rough		FeO	Highly Weathered	Stained	·
1	29.41	29.45	29.43					FeO	Highly Weathered	¶ 1	
	29.43	29.49		Crushed Seam	45		Planar		<b>[</b>	¶ 1	
	29.49	29.51			30	Smooth	Planar	FeO	Highly Weathered	Stained	
	29.55	29.63		Crushed Seam		<u>'</u>	1	L	L	¶	
1	29.67	29.73	29.70					FeO		Stained	
1	29.68	29.79	29.74			~		FeO	· ,	Stained	
	29.73	29.74 29.87			20		Planar Planar	FeO	Highly Weathered	Stained	
1	29.78 29.87	29.87 29.88	29.83 29.88		20 20			FeO	Highly Weathered	Stained	
	30.07	29.88 30.19		Joint Alteration Zone	20 70		Planar Undulating	FeO Ep		Stained Intact	
1	30.07	30.19			10		-	ер Quartz	Slightly Altered	Infilled	
1	30.45	30.49			31	1	Planar	l	Highly Altered	Infilled	Propylitic alteration.
	30.48	30.51	30.50		24	'	Planar	1	Highly Altered	Infilled	Propylitic alteration.
	30.49	30.54			51		Undulating	1	Highly Altered		Propylitic alteration.
	30.56	30.56	30.56	Vein	0		Planar	1	Highly Altered	Infilled	Propylitic alteration.
5	30.57	30.58	30.58	Vein	0		Undulating	1	Highly Altered	Infilled	Propylitic alteration.
1	30.63	30.64			3		Planar	L	Highly Altered		Propylitic alteration.
	30.67	30.73	30.70		5			Quartz	L		V x3, 5°, Pln, Qz, 2 mm aperture
	30.92	30.94	30.93		12			Quartz	Moderately Altered		Propylitic alteration.
1	31.00	31.10			60		Planar	1	Highly Altered	Infilled	Propylitic alteration.
	31.00 31.32	31.20 31.44			71 69		Planar Planar	1	Highly Altered Highly Altered	Infilled Infilled	Propylitic alteration. Chlorite altetation.
	31.32	31.44			20		Planar Planar	1	Highly Altered Highly Altered		Propylitic alteration.
	31.34	31.56		Vein	86			Quartz	Moderately Altered	Infilled	
	31.46	31.51			25			Quartz	Moderately Altered	Infilled	
	31.60	31.62			4		Planar	1	Highly Altered		Propylitic alteration.
l	31.71	31.74	31.73		30			Quartz	Moderately Altered	Infilled	Propylitic alteration.
	31.78	31.79	31.79	Vein	3	1	Undulating	Quartz	Moderately Altered	Infilled	Propylitic alteration.
	31.80	31.90		Alteration Zone	80	'		Quartz	Moderately Weathered	Intact	
	31.81	31.85	31.83		28			Quartz	Slightly Altered	Infilled	
1	31.84	31.94	31.89		5			Quartz	LUC-LA CO		V x3, 5°, Pln, Qz, 1 mm aperture
	32.12	32.25		Alteration Zone	59		Undulating	O	Highly Altered	Intact	
, [	32.20	32.31			9			Quartz	Highly Altered	Infilled	Paracitor with 1 mm hale
ì	32.22 32.25	32.35 32.37	32.29 32.31		82 82			Quartz Quartz	Moderately Altered Moderately Altered	Infilled Intact	Parasites with 1 mm halo
,	32.25 32.33	32.37 32.35	32.31 32.34		82 26			Quartz Quartz	Moderately Altered Moderately Altered	Intact Infilled	
, [	32.33	32.43		Vein	26		Planar	Quartz	ouchately Altered		V x2, 26°, Pln, Qz, 3-5 mm aperture
	32.46	32.50			34			Quartz	Slightly Altered	Healed	, . , ,
	32.51	32.52			5			Quartz	Slightly Altered	Infilled	
1	32.55	32.72		Alteration Zone	61		Planar	1	Highly Altered	Intact	
1	32.61	32.67	32.64	Alteration Zone	73		Planar	1	Highly Altered	Intact	
1	32.62	36.63	34.63	Vein	4			Quartz	Moderately Altered	Infilled	
	32.73	32.77	32.75		56			Quartz	Moderately Altered	Infilled	
	32.79	32.83			71	'		Quartz	Moderately Altered	Intact	
	32.88	32.90		Vein	23	1	Undulating	Quartz	Moderately Altered	Infilled	
1	33.20	33.26		Alteration Zone	48			Quartz	Highly Altered	Intact	
	33.32	33.39	33.36		42		Undulating	Ouarta	Moderately Altered	Infilled	
1	33.62 33.76	33.72 34.00	33.67 33.88		55 90			Quartz		Healed Infilled	
1	33./6	34.00	33.88	veni	90	1 1	ondulating	Quartz	ongituy weathered	mmea	I I

	Depth (m)		Туре	Angle (°)	Roughness	Shape	Infill	Weathering	Nature	Comments
From		Midpoint	**	Angle ( )	Kougnness	Snape	Inilli	weathering		Comments
34.00	34.16	34.08		90		Undulating	Quartz	Moderately Weathered	Infilled	
34.07	34.11	34.09		39		Planar	Quartz	Moderately Altered	Infilled	
34.11 34.54	34.13	34.12		29		Planar	Quartz	Moderately Weathered	Infilled Infilled	Data sein alta seina
34.54 34.77	35.90 34.79	35.22 34.78		90 35		Undulating Planar	Quartz	Highly Altered	Infilled	Potassic altertion.
34.77	34.79 34.86	34.78 34.83		62		Planar	Quartz Quartz	Moderately Altered Moderately Altered	Infilled	
35.09	35.35	35.22		48		Planar	Quartz	Highly Altered	iiiiileu	V x3, 48°, Pln, Qz, 4mm aperture
35.42	35.47		Alteration Zone	49		Planar	Quartz	Highly Altered	Intact	v x3, 46 , rm, q2, 4mm aperture
35.47	35.52		Alteration Zone	45		Planar		Highly Altered	Intact	
35.64	35.73	35.69		89		Planar	Quartz	Slightly Weathered	Infilled	Propylitic alteration.
35.78	35.81	35.80	Alteration Zone	20		Planar		Highly Weathered	Intact	
35.94	35.95	35.95	Vein	8		Planar	Quartz	Moderately Altered	Infilled	
36.00	36.14		Alteration Zone	72		Planar		Highly Altered	Intact	
36.12	36.37	36.25		89		Undulating	Quartz	Highly Altered	Infilled	
36.37	36.54	36.46		19		Planar	Quartz			V x5, 19°, Pln, Qz, 5 mm aperture
36.57	36.58	36.58		4		Planar	Quartz	Moderately Altered	Intact	
36.63	36.75	36.69		68		Planar	Quartz	Moderately Altered		
36.78	36.81	36.80		24		Planar	Quartz	Highly Altered	Infilled	
37.22 37.59	37.26 37.63	37.24 37.61		17 48		Planar Planar	Quartz Quartz	Highly Altered	Healed Healed	
37.59 37.73	37.63 37.75	37.61 37.74		48 13		Planar Planar	Quartz Quartz	Highly Altered Highly Altered	Healed Infilled	
37.73 37.77	37.75 37.78	37.74 37.78		13		Planar Planar	Quartz Quartz	Highly Altered Highly Altered	Healed	
37.92	37.78 37.93	37.78		8		Planar	Quartz	Moderately Altered	Intact	
37.95	37.97	37.96		5		Planar	Quartz	Moderately Weathered	Infilled	
38.05	38.11	38.08		42			Quartz	Moderately Altered	Infilled	
38.14	38.15	38.15		14		Undulating	Quartz	Moderately Altered	Infilled	
38.25	38.34	38.30	Vein	61		Undulating	Quartz	· ·		V x3, 61°, Und, Qz, 1mm aperture
38.38	38.39	38.39	Alteration Zone	1		Planar		Highly Altered	Intact	
38.51	38.57	38.54		51		Planar	Quartz	Moderately Altered	Infilled	
38.60	38.68	38.64		51		Undulating	Quartz	Highly Altered	Infilled	
38.69	38.71	38.70		29		Planar	Quartz	Moderately Altered	Infilled	
38.70	38.78		Alteration Zone	56		Undulating		Highly Altered	Intact	Propylitic alteration.
39.00	39.22	39.11		78		_	Quartz	Slightly Altered	Infilled	
39.23 39.31	39.35 39.37	39.29 39.34		65 90		Planar Undulating	Quartz Quartz	Moderately Altered	Infilled Infilled	
39.57	39.81	39.69		56		Undulating	Quartz	Slightly Altered	Infilled	V x5, 56°, Undd, Qz, IF, 1 mm aperture
39.87	40.05	39.96		73		Planar	Quartz	Moderately Altered	Infilled	Propylitic alteration.
40.12	40.15	40.14		26		Planar	Quartz	Slightly Altered	Infilled	
40.25	40.90	40.58		88		Undulating	Quartz	Slightly Altered	Infilled	
40.40	40.52	40.46	Vein	90		Undulating	Quartz	Slightly Altered	Infilled	
40.69	40.71	40.70	Vein	19		Planar	Quartz	Slightly Altered	Infilled	
41.30	41.52		Alteration Zone	81		Planar		Highly Altered	Healed	
41.75	41.76	41.76		11		Undulating	Quartz	Moderately Altered	Infilled	
41.80	41.82		Alteration Zone	37		Planar	l.	Highly Altered	Intact	
41.84	41.86	41.85		27		Planar	Quartz	Moderately Altered	Infilled	
42.11 42.18	42.17 42.22	42.14		54 40		Undulating Planar	Quartz	Slightly Altered	Healed Intact	
42.18 42.34	42.22 42.38	42.20 42.36		40 27		Planar Undulating	Quartz Quartz	Slightly Altered	Intact Healed	Parasites with 1 mm halo
42.34 42.47	42.38 42.48	42.48		27		Planar	Quartz	Moderately Altered Moderately Altered	Infilled	r arabiteb with a mini malu
42.76	42.46	42.76				Undulating	Quartz	Slightly Altered	Healed	
43.13	43.35		Alteration Zone	54		Irregular	I	Highly Altered	Intact	Potassic alteration.
43.46	43.48	43.47		20		Undulating	Quartz	Moderately Altered	Infilled	
43.47	45.38		Alteration Zone	90		Irregular	ĺ	Highly Altered	Intact	Half round of core is altered.
44.06	44.07	44.07	Vein	18		Planar	Quartz	Slightly Altered	Infilled	
44.13	44.14	44.14		11		Planar	Quartz	Slightly Altered	Infilled	
44.23	44.27	44.25		5		Irregular	Quartz	Highly Altered	Infilled	
44.48	44.63	44.56		74		Undulating	Quartz	Highly Altered	Infilled	
44.59	44.59	44.59		11		Planar	Quartz	Slightly Altered	Infilled	
44.63	44.72	44.68		64		Planar	Quartz	Slightly Altered	Infilled	
44.77	44.82	44.80		61		Planar	Quartz	Slightly Altered	Infilled	
45.00 45.26	45.25 45.34	45.13 45.30		90 52		Undulating Irregular	Quartz	Moderately Altered Highly Altered	Infilled Intact	V x2, 52°, Irr, IT
45.26 45.41			Alteration Zone	88		Irregular	ĺ		Intact	Propylitic alteration and Potassic alteration.
1 73.41	47.03	-0.55	, att. attom Zone		1	caulai	1	g, Attered		1. opping archaeon and rotable differention.

		Depth (m)		Timo	Anglo (°)	Roughness	Shape	Infill	Weathering	Nature	Comments
F	om	То	Midpoint	Type	Angle (°)	Kougilless	Sliape	1111111	weathering	Nature	Confinents
Г	45.79	45.9	9 45.89	Vein	19		Planar	Quartz		Intact	V x3, 19°, Pln, Qz, IT, 1 mm aperture
	46.00	46.00 46.39 46.20		Alteration Zone	80		Undulating		Highly Altered	Intact	Propylitic alteration.
.:	47.13	47.1	4 47.14	Vein	10		Planar	Quartz	Moderately Altered	Infilled	
<u>ا</u>	47.82	47.9	9 47.91	Vein	44		Undulating			Intact	V x6, 44°, Undd, IT, 2 mm aperture
Z L	48.15	48.2	48.20	Vein	37		Planar			Intact	V x2, 37°, Pln, IT, 1 mm aperture





























#### **COMPOSITE LOG**





BHUB\_09 Drill Depth Logging Unit Field EUNGELLA Bit Size 9.6CM Collar Easting 660566m DAMON HOSKING 05/08/23 ROB CAINE Log Date Casing Type STEEL Collar Northing 7668213m Client Representative PIONEER-BURDEKIN Casing Depth 22.5m Reduced Level Service Type Televiewer Interpretation FEATURES & TADPOLES TELEVIEWER LOGS STRUCTURAL LOGS ATV Amplitude Image Amplitude Apparent Dip Feature Picks DIPA TT-CENT Centralised ATV Travel Time Image (Sinusoid Presentation) Partially Open Fracture Closed Fracture Foliation/Banding/Bedding Healed Fracture/Vein 3D TV LOG 3D Televiewer Image True Dip Feature Picks DIPT Acoustic Travel Time Caliper Caliper TT-CENT (Tadpole Presentation) Rose Diagram - Strike Open Fract. OTV Picture Optical Televiewer Image RD - STRIKE (Arrows represent Mean Vector) FULL WAVFORM SONIC LOG & MECHANICAL PROPERTIES Polar Projection - Dip (Schmidt) STC-MP Monopole Slowness-Time-Coherence Project (Lower Hemisphere) DTC STRUCTURAL ANALYSIS LOGS COMMENTS DTS VP Shear wave slowness RQD Rock Quality Designation Compressional wave velocity Image and azimuth data are presented oriented to True north. The magnetic declination correction is +8.12 degrees vs Shear wave velocity AFD VPVS

(Partial) Open Apparent Fracture Density (Partial) Open True Fracture Density TFD RHI Rock Hardness Index GEOPHYSICAL AND VERTICALITY LOGS

Density Log

Hole Azimuth

Mechanical Calipe

Natural Gamma Ray

Hole Inclination (0 = Vertical Down)

Density

GAMMA

Δzimuth

CALIPER

Tilt

Rock Quality Designation (RQD) is the (Sum of length of image interval sections of more than 10 cm length unaffected by open fractures, faults & breakouts) divided by the (Total length of the interval) times (100%). RQD has been calculated for one meter intervals.

The STC-MP track was produced by processing the RX1-1A (60 cm), RX2-1A (80 cm), RX3-1A (100 cm) and RX4-1A (120 cm) receiver data after applying a moving average filter, stacking and a frequency filter.

Uniaxial Compressive Strength (UCS) was calculated using an exponential trendline between DTC and UCS (McNally, 1987): UCS = 1200 \* exp(-0.036 \* DTC), with UCS in MPa and DTC in µs/m units. Poisson's Ratio was calculated from DTC, DTS & Density estimated as  $\rho$  = 0.31.Vp exp(1/4)

The following interpretations are opinions based upon inferences from borehole logs,

IMPORTANT NOTE

ucs

Poisson's Ratio

**Bulk Modulus** 

Young's Modulus

Compressional to Shear wave velocity ratio

Uniaxial (Unconfined) Compressive Strengt

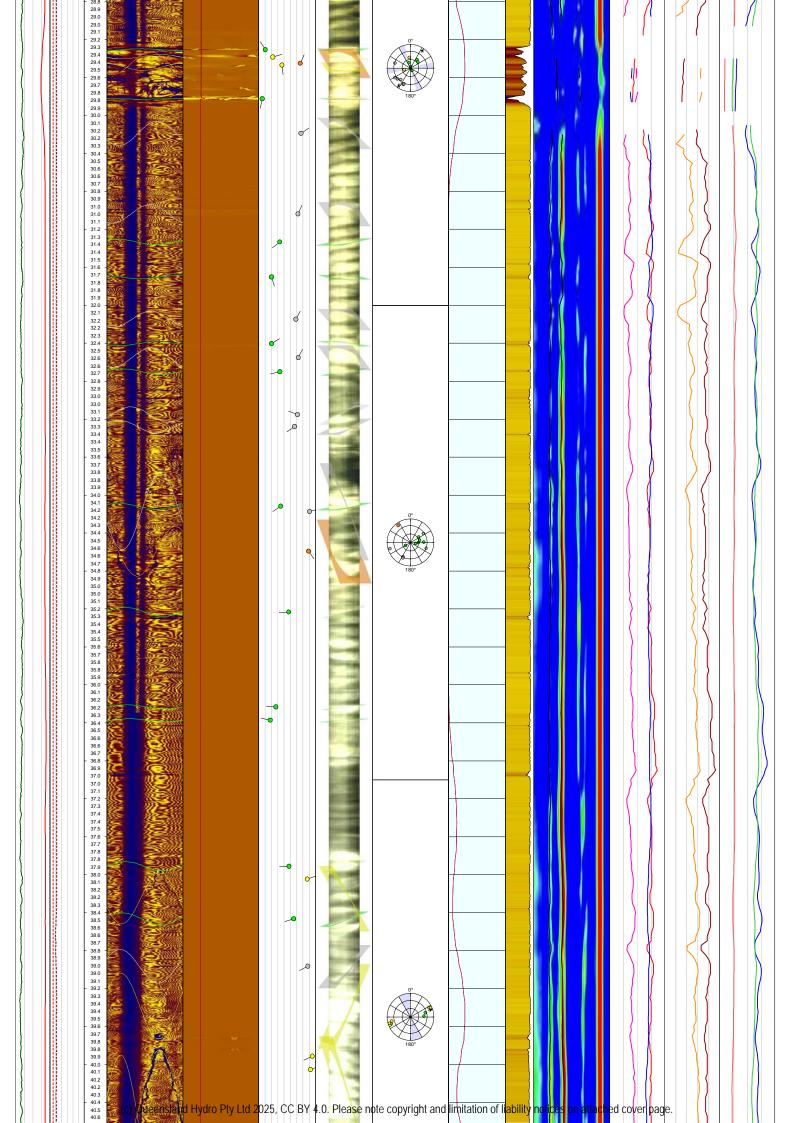
Indicator of material elastic deformation

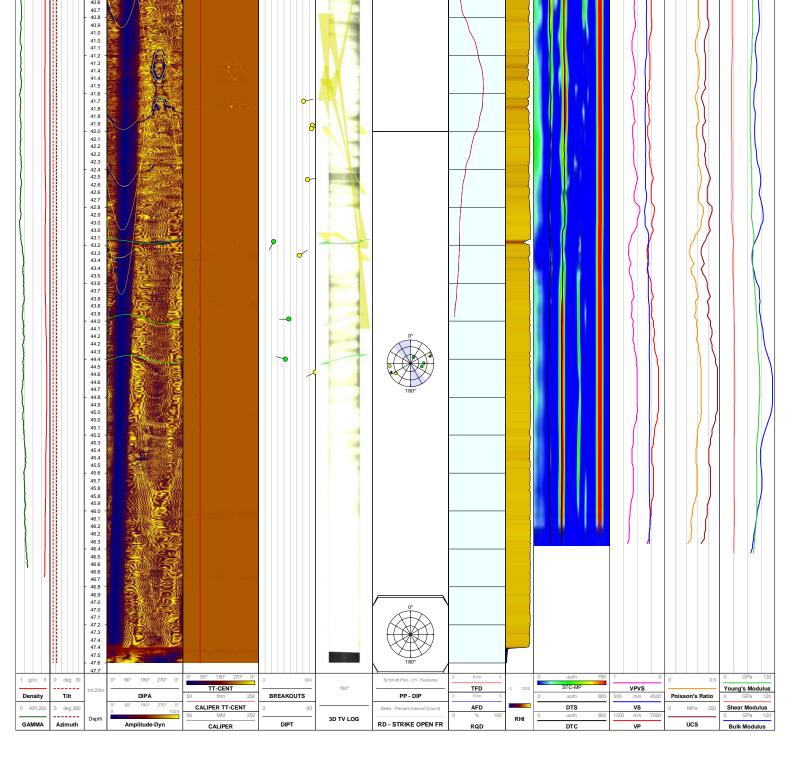
Material length change by applied stress

Change in material volume by applied stres

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CALIPER RQD DTC Bulk Modulus GAMMA Azimuth Amplitude-Dyn DIPT RD - STRIKE OPEN FR Depth 3D TV LOG RHI CALIPER TT-CENT AFD DTS vs Shear Modulus Density Tilt DIPA BREAKOUTS PP - DIP Poisson's Ratio TT-CENT TFD VPVS 22.1 22.2 22.2 22.3 22.4 22.5 22.6 22.6 22.7 22.8 22.9 23.0 23.0 23.1 23.2 23.3 23.4 23.4 23.5 23.6 23.7 23.8 23.9 24.0 24.1 24.2 24.2 24.3 24.6 24.6 24.7 25.0 25.0 25.1 25.2 25.3 25.4 25.5 25.6 25.7 25.8 25.8 25.9 26.0 26.1 26.2 26.2 26.3 26.4 26.5 26.6 26.7 26.8 26.9 27.0 27.0 27.1 27.2 27.3 27.4 27.5 27.6 27.7 27.8 27.9 28.0 28.1 28.2 28.2 28.3 28.4 28.6 28.6 28.6 0 stand Hydro Pty Ltd 2025, CC BY 4.0. Please note copyright and limitation of liability ed cover **d**age.





#### **BHUB 09 TV Structures**

BHUB_09 TV Str				·	<b>.</b>		
Feature Depth	Depth	Azimuth	Dip	Aperture	Visible Azimuth Ranges	Type	Features
m	m	deg	deg	mm	deg		
22.95	22.95	29.08	31.53	0		5	Healed Fracture/Vein
23	23.12	172.86	72.34	0	346.76-47.96	2	Partially Open Fracture
23.22	23.22	199.53	45.01	0	39.49-303.19	2	Partially Open Fracture
23.26	23.28	190.82	44.78	0	267.44-343.94	2	Partially Open Fracture
23.43	23.37	263.25	56	0	213.28-323.98	2	Partially Open Fracture
23.55	23.55	267.84	79.02	0		5	Healed Fracture/Vein
23.95	23.95	209.41	39.51	0		4	Foliation/Banding/Bedding
24.19	24.19	202.85	41.78	0		4	Foliation/Banding/Bedding
24.42	24.42	337.79	34.4	0		5	Healed Fracture/Vein
24.49	24.49	324.01	87.3	0		2	Partially Open Fracture
24.63	24.63	296.3	52.31	0		5	Healed Fracture/Vein
24.82	24.82	117.09	8.83	0		4	Foliation/Banding/Bedding
24.9		32.58		0			Foliation/Banding/Bedding
24.94		218.4	3.39	0		<del>                                     </del>	Foliation/Banding/Bedding
25.93	26	8.6	68.34	0	107.99-257.39		Partially Open Fracture
26.3		261.99		0			Healed Fracture/Vein
26.86			79.18	0			Closed Fracture
27.61		108.3	58.34			-	Healed Fracture/Vein
27.84			37.77	0			Foliation/Banding/Bedding
28.36			61.52	0		+	Healed Fracture/Vein
28.71		39.9	53.93			-	Healed Fracture/Vein
29.31		329.08	-			1	Foliation/Banding/Bedding
29.38			22.19		305.53-57.13		Partially Open Fracture
29.45				0	000.00 07.10		Closed Fracture
29.47					274.55-10.85	<b>!</b>	Partially Open Fracture
29.82			5.72	0	274.00 10.00		Foliation/Banding/Bedding
	30.19		66.79				Healed Fracture/Vein
31.04							Healed Fracture/Vein
31.04			33.39				Foliation/Banding/Bedding
31.33		163.39					Foliation/Banding/Bedding
32.15							Healed Fracture/Vein
32.13			20.46				Foliation/Banding/Bedding
32.4						_	Healed Fracture/Vein
						<del>                                     </del>	
32.7		256.28				+	Foliation/Banding/Bedding
33.15						-	Healed Fracture/Vein
33.28						<b>+</b>	Healed Fracture/Vein
34.12				0			Foliation/Banding/Bedding
34.17		73.34				-	Healed Fracture/Vein
34.59			78.79				Closed Fracture
35.23			47.48			+	Foliation/Banding/Bedding
36.23			27.32	0			Foliation/Banding/Bedding
36.37		282.27	18.3	0		-	Foliation/Banding/Bedding
37.91		267.35	48	0			Foliation/Banding/Bedding
38.05			76.92		231.30-267.30		Partially Open Fracture
38.47	38.47	254.05	55.41	0		4	Foliation/Banding/Bedding

Feature Depth	Depth	Azimuth	Dip	Aperture	Visible Azimuth Ranges	Туре	Features
m	m	deg	deg	mm	deg		
38.97	38.97	243.05	77.82	0		5	Healed Fracture/Vein
39.91	39.38	245.11	85.01	0	228.63-266.43	2	Partially Open Fracture
40.05	40.38	70.07	81.91	0	224.13-266.43	2	Partially Open Fracture
41.68	41.81	76.98	70.99	0	227.81-274.61	2	Partially Open Fracture
41.93	42.42	67.65	84.88	0	211.50-278.10	2	Partially Open Fracture
41.97	42.34	73.47	83.27	0	216.92-282.62	2	Partially Open Fracture
42.51	42.3	82.03	77.35	0	64.03-106.33	2	Partially Open Fracture
43.16	43.16	206.91	23.78	0		4	Foliation/Banding/Bedding
43.31	43.22	55.91	64.6	0	14.99-87.89	2	Partially Open Fracture
43.98	43.98	269.82	47.8	0		4	Foliation/Banding/Bedding
44.4	44.4	285.83	42.35	0		4	Foliation/Banding/Bedding
44.54	40.68	244.44	89.36	0	210.61-281.71	2	Partially Open Fracture



# **BHUB\_09**

# **SMEC - Pioneer-Burdekin**

Acoustic and Optical Televiewer image log Schmidt Stereonet evaluation for interpreted log interval

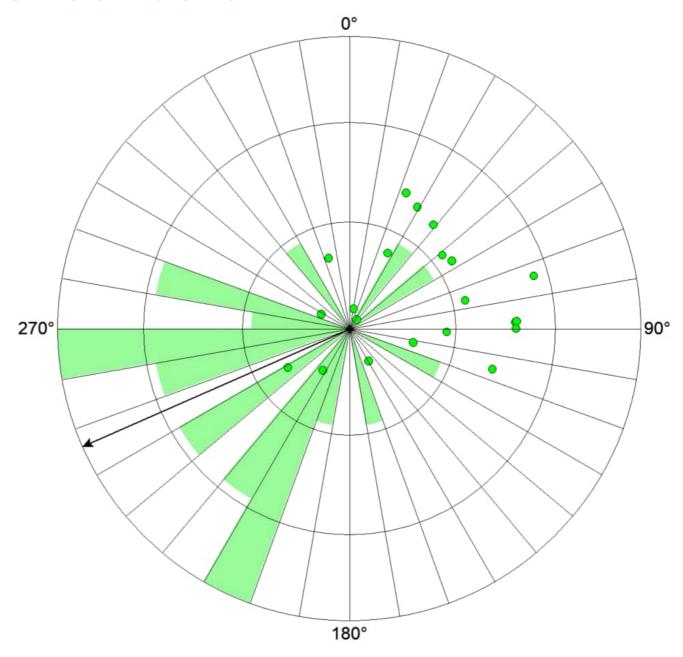
Log Date: 5 August 2023

#### **IMPORTANT NOTE**

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# **FOLIATIONS - 22.0 TO 47.6 M**

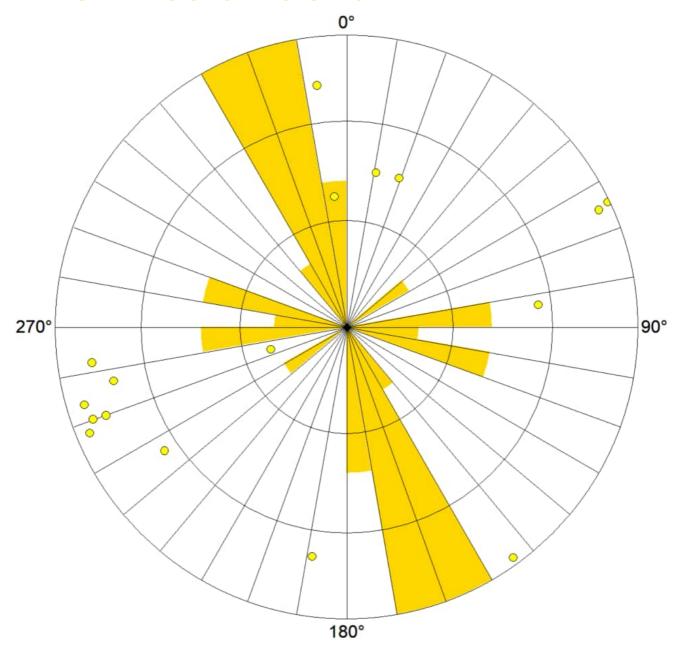


	Counts	Dip [deg]	Azimuth [deg]	Strike [deg]
Mean	21	22.20	246.17	156.17 - 336.17

Foliations: Scattered dip azimuth directions with a broad preference in the SSW to W dip azimuth directions



# PARTIAL OPEN FRACTURES - 22.0 TO 47.6 M

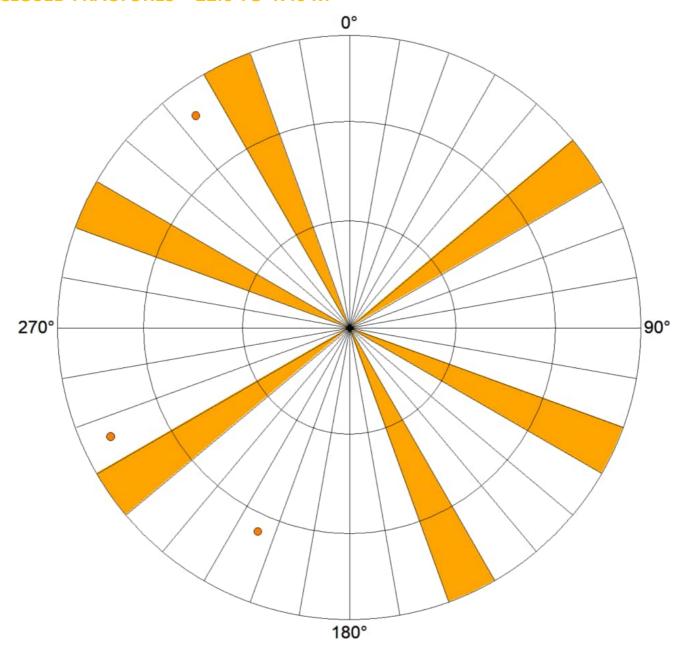


	Counts	Dip [deg]	Azimuth [deg]	Strike [deg]
Mean	17	85.36	64.24	154.24 - 334.24

Partial Open Fractures: Scattered strike directions with a preference in the SSE to NNW strike direction



# **CLOSED FRACTURES – 22.0 TO 47.6 M**

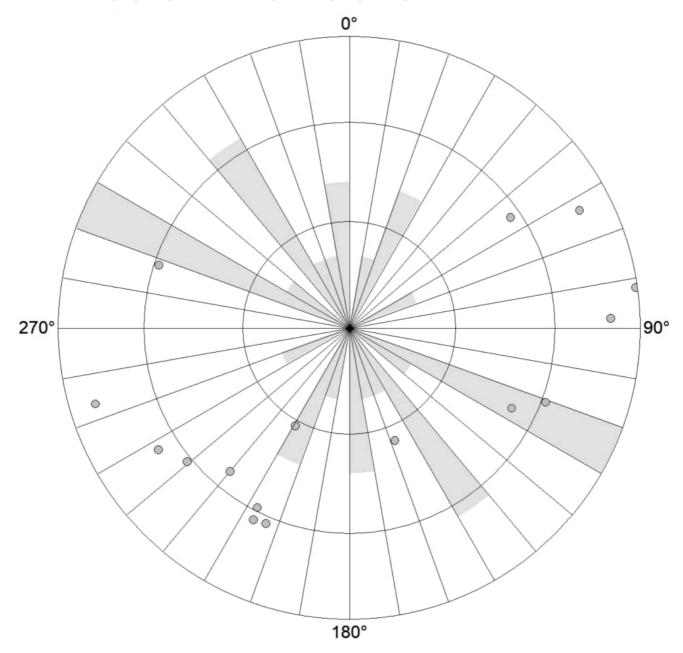


	Counts	Dip [deg]	Azimuth [deg]	Strike [deg]
Mean	3	72.59	38.29	128.29 - 308.29

Open Fractures: Scattered strike directions



# **HEALED FRACTURES AND VEINS – 22.0 TO 47.6 M**



	Counts	Dip [deg]	Azimuth [deg]	Strike [deg]
Mean	16	70.70	56.97	146.97 - 326.97

Healed Fractures and Veins: Scattered strike directions with a preference in the ESE to WNW strike direction



# **MULTI-RES LOG**

# **BHUB\_09**

· -	OM	IPAN L	Υ		IEC UB_09			IELD OCATION	PIONE EUNG	ER-BURI	DEKIN	STATE		RALIA
					LOG ME	ASURED	FROM		GL	- ELEVATIONS:		IONS:	OTHER	SERVICES:
	Z				DRILLING	G MEASU	IRED FF	ROM	GL	КВ			1.	
LA	JRDE	SURDE			PERMAN	IENT DAT	ГИМ			DF			2.	
JNGEL	PIONEER-BURDEKIN		60_	SMEC	PERMAN	IENT DAT	TUM ELI	EVATION		GL	GL		3.	
TION: EI	()				LICEN	LICENSE SECTION				TOWNSHIP		RANGE	MAGNETIC	DECLINATION
LOCA	FIELD:	STATE	STATE: OR WELL: BH COMPANY: BH SECTION							8.	12deg			
DAT	E			04-	08-2023					ORDED B	Υ [	OTH		
TIME	E			10-	42				WIT	NESSED E	3Y			
RUN	NU I	MBEF	₹	1					LOG	GING UNI	T \	/013		
DEP	PH-I	DRILL	.ER	48n	า				RIG	NUMBER				
DEP	PH-I	LOGG	SER	47.9	92m				TOC	DL TYPE	6	6074A		
BIT :	SIZE			96n	nm				TOC	DL SERIAL	NO. 2	2796		
CAS	SING	TYPE	=	STE	EEL				EAS	TING	6	60566		
CAS	SING	ID		101	mm				NOF	RTHING	7	668213		
CAS	SING	вот	ТОМ	22.	50m				SAN	IPLE INT.		01m		
FLU	ID T	YPE		0					LOC	DIRECTION	ON L	J		
TRU	JCK (	CAL N	10.	0.09	9787				FEE	T OR MET	ER N	Л		
WAT	TER	LEVE	L	18.0	)m				SOL	JRCE TYPI	E		SOURCE ID	

#### LOGGER COMMENTS:

1.

2.

3.

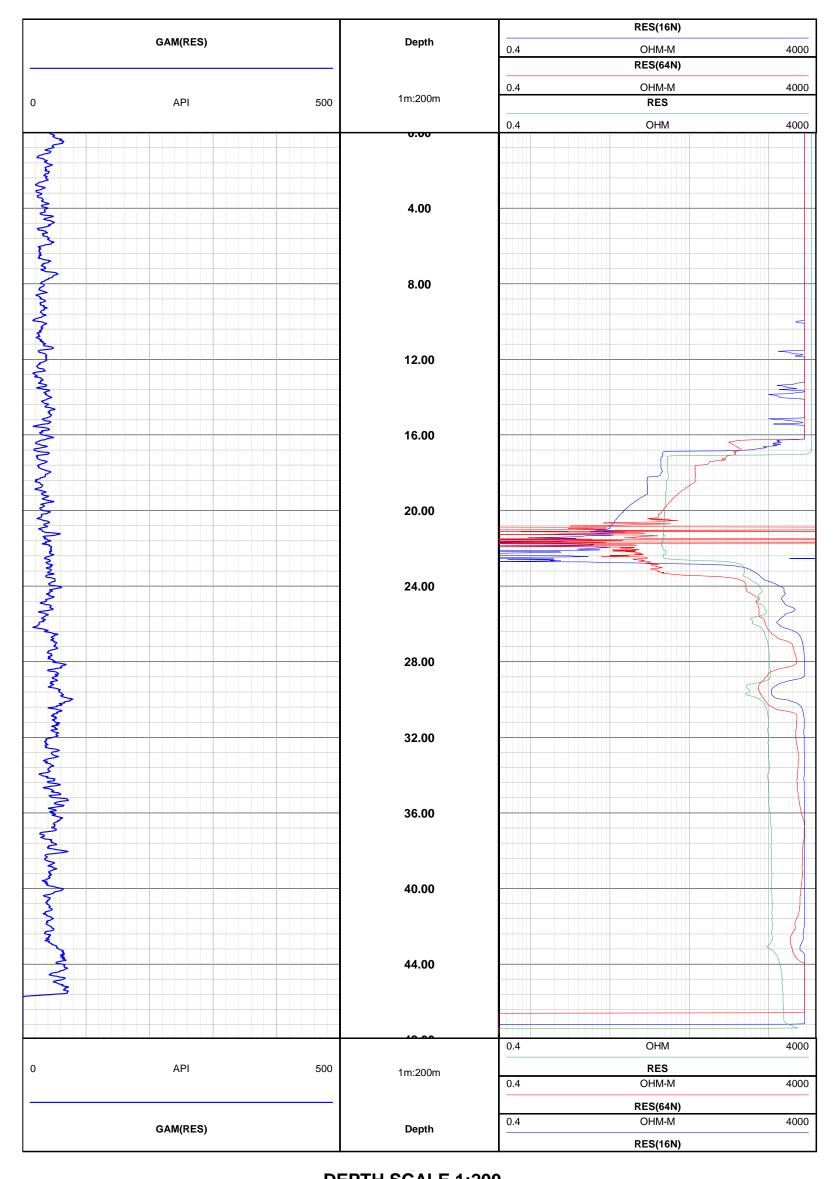
# **MNEMONICS**

GAM(RES) NATURAL GAMMA FROM MULTI-RES TOOL

RES(16N) 16" NORMAL RESISTIVITY
RES(64N) 64" NORMAL RESISTIVITY
RES SINGLE POINT RESISTIVITY

#### **IMPORTANT NOTE**

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# **VERTICALITY ANALYSIS**

# **BHUB\_09**

COMPANY WELL	SMEC BHUB_09		FIELD LOCAT	_	NEER-BURDEK NGELLA	IN STATE	QLD FRY AUSTF	RALIA	
ON: EUNGELLA PIONEER-BURDEKIN QLD BHUB_09 NY: SMEC	PERM LOG M	ANENT DATO ANENT DATO IEASURED F	UM ELEVATION ROM GL	ELEVATION KB  M GL DF			REMARKS: 1.		
LOCATION: E FIELD: PIONE STATE: QLD WELL: BHUB COMPANY: SI	LICENSE D	SECTION	TOWNSHIP	RANGE	MAG DECL. 8.12deg		2.		
DATE	04-08-2023			F	RECORDED BY	DTH			
TIME	11-29				VITNESSED BY				
RUN NUMBER	1				OGGING UNIT	V013			
DEPTH-DRILLER	48m			F	RIG NUMBER				
DEPTH-LOGGER	47.68m			7	OOL TYPE	9057A			
BIT SIZE	96mm			٦	OOL SERIAL NO.	361			
CASING TYPE	STEEL			E	EASTING	660566			
CASING OD	101mm			1	NORTHING	7668213			
CASING BOTTOM	22.50m				SAMPLE INT.	.01m			
FLUID TYPE	0			L	OG DIRECTION	U			
TRUCK CAL NO.	0.09787			F	EET OR METER	M			
WATER LEVEL	18m			5	SOURCE TYPE		SOURCE ID		

# **DEVIATION LIST**

#### **MNEMONIC DESCRIPTORS**

SANGB SAMPLE ANGLE BEARING

SAMPLE SLANT ANGLE (0 DEG = VERTICAL DOWN)

TVD TRUE VERTICAL DEPTH

SANG

**EAST BOREHOLE EAST DEVIATION**  NORTH **BOREHOLE NORTH DEVIATION** CDIST DEVIATED CLOSURE DISTANCE

DEVIATED CLOSURE ANGLE BEARING **CANGB** 

ALL CO-ORDINATES ARE PRESENTED ORIENTED TO TRUE NORTH MAGNETIC DECLINATION

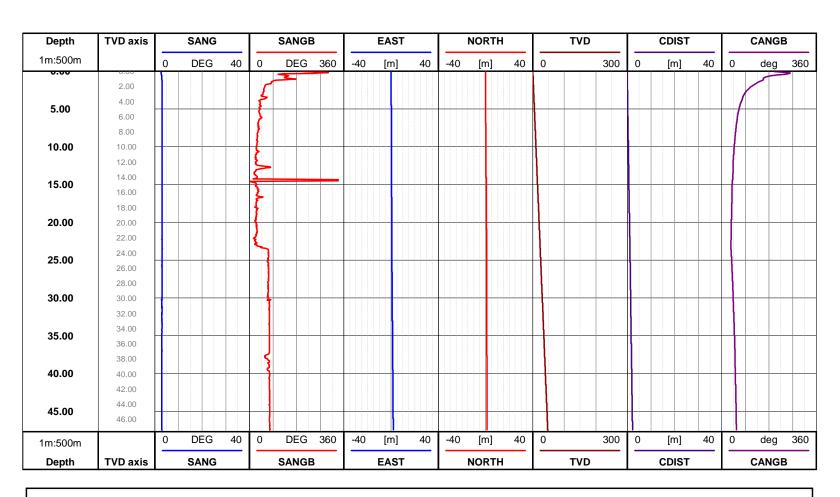
8.12deg

DEPTH	SANG	SANGB	EAST	NORTH	TVD	CDIST	CANGB
m	deg	deg	m	m	m	m	deg
0.00	2.64517	194.86	-999.25	-999.25	0	-999.25	-999.25
1.00	2.8916	156.623	0.0106722	-0.025985	0.99884	0.0280912	157.672
2.00	3.03673	59.5135	0.0555837	-0.0246969	1.99748	0.0608234	113.956
3.00	3.08578	50.7893	0.099494	0.00584151	2.99604	0.0996653	86.6399
4.00	3.07438	38.4216	0.140789	0.0392478	3.99459	0.146157	74.4231
5.00	3.07383	41.3891	0.175781	0.0800615	4.99314	0.193155	65.5126
6.00	3.06182	43.9446	0.209283	0.121781	5.99171	0.242136	59.805
7.00	3.03833	33.1317	0.242047	0.163567	6.99029	0.292132	55.9506
8.00	3.03551	33.7863	0.272104	0.207265	7.98888	0.342052	52.7031
9.00	3.03098	28.9118	0.299235	0.252678	8.98748	0.391648	49.8219
10.00	3.03197	26.3367	0.324712	0.298934	9.98608	0.441361	47.3669
11.00	3.01248	27.4943	0.350071	0.345173	10.9847	0.491624	45.4036
12.00	3.01282	24.6539	0.372591	0.392839	11.9833	0.54143	43.4848
13.00	3.03355	32.0508	0.405929	0.429267	12.9819	0.590803	43.3994
14.00	3.03362	30.6886	0.426801	0.47771	13.9805	0.640598	41.7786
15.00	3.03034	29.0083	0.434871	0.526283	14.9791	0.682705	39.5672
16.00	3.05598	33.3738	0.461568	0.571924	15.9777	0.734944	38.9051
17.00	3.0572	28.0925	0.489944	0.616313	16.9763	0.787329	38.4833
18.00	(c) Queenstand Hydro	Pty Ltd: 20259 CC B	Y 4.0. Pleasemote co	opyright and bimitation	of liability motices of	n attached saver page.	37.7312

20.00       3.02103       22.3772       0.560532       0.758928       19.9721         21.00       2.99188       28.3297       0.584494       0.80538       20.9707         22.00       3.00016       22.9708       0.608121       0.852023       21.9693         23.00       3.04177       29.5757       0.627996       0.900765       22.9679         24.00       3.01643       72.2759       0.671001       0.928087       23.9665         25.00       2.99954       73.1457       0.721153       0.943829       24.9651         26.00       2.99321       72.8566       0.770471       0.960082       25.9638         27.00       2.99204       73.5417       0.82039       0.975436       26.9624         28.00       2.96036       70.1723       0.870248       0.991152       27.961         29.00       2.99033       72.7876       0.919626       1.00764       28.9597         30.00       2.92976       72.9537       0.96889       1.02415       29.9583         31.00       2.91501       76.4394       1.01821       1.03734       30.957	0.943487 0.995123 1.04678 1.09807 1.14525 1.1878 1.23101 1.27456 1.31898 1.3642 1.40983 1.45356	36.449 35.9698 35.5169 34.8835 35.8667 37.3824 38.7472 40.0655 41.2837 42.3854 43.4118
22.00       3.00016       22.9708       0.608121       0.852023       21.9693         23.00       3.04177       29.5757       0.627996       0.900765       22.9679         24.00       3.01643       72.2759       0.671001       0.928087       23.9665         25.00       2.99954       73.1457       0.721153       0.943829       24.9651         26.00       2.99321       72.8566       0.770471       0.960082       25.9638         27.00       2.99204       73.5417       0.82039       0.975436       26.9624         28.00       2.96036       70.1723       0.870248       0.991152       27.961         29.00       2.99033       72.7876       0.919626       1.00764       28.9597         30.00       2.92976       72.9537       0.96889       1.02415       29.9583	1.04678 1.09807 1.14525 1.1878 1.23101 1.27456 1.31898 1.3642 1.40983	35.5169 34.8835 35.8667 37.3824 38.7472 40.0655 41.2837 42.3854
23.00       3.04177       29.5757       0.627996       0.900765       22.9679         24.00       3.01643       72.2759       0.671001       0.928087       23.9665         25.00       2.99954       73.1457       0.721153       0.943829       24.9651         26.00       2.99321       72.8566       0.770471       0.960082       25.9638         27.00       2.99204       73.5417       0.82039       0.975436       26.9624         28.00       2.96036       70.1723       0.870248       0.991152       27.961         29.00       2.99033       72.7876       0.919626       1.00764       28.9597         30.00       2.92976       72.9537       0.96889       1.02415       29.9583	1.09807 1.14525 1.1878 1.23101 1.27456 1.31898 1.3642 1.40983	34.8835 35.8667 37.3824 38.7472 40.0655 41.2837 42.3854
24.00       3.01643       72.2759       0.671001       0.928087       23.9665         25.00       2.99954       73.1457       0.721153       0.943829       24.9651         26.00       2.99321       72.8566       0.770471       0.960082       25.9638         27.00       2.99204       73.5417       0.82039       0.975436       26.9624         28.00       2.96036       70.1723       0.870248       0.991152       27.961         29.00       2.99033       72.7876       0.919626       1.00764       28.9597         30.00       2.92976       72.9537       0.96889       1.02415       29.9583	1.14525 1.1878 1.23101 1.27456 1.31898 1.3642 1.40983	35.8667 37.3824 38.7472 40.0655 41.2837 42.3854
25.00       2.99954       73.1457       0.721153       0.943829       24.9651         26.00       2.99321       72.8566       0.770471       0.960082       25.9638         27.00       2.99204       73.5417       0.82039       0.975436       26.9624         28.00       2.96036       70.1723       0.870248       0.991152       27.961         29.00       2.99033       72.7876       0.919626       1.00764       28.9597         30.00       2.92976       72.9537       0.96889       1.02415       29.9583	1.1878 1.23101 1.27456 1.31898 1.3642 1.40983	37.3824 38.7472 40.0655 41.2837 42.3854
26.00     2.99321     72.8566     0.770471     0.960082     25.9638       27.00     2.99204     73.5417     0.82039     0.975436     26.9624       28.00     2.96036     70.1723     0.870248     0.991152     27.961       29.00     2.99033     72.7876     0.919626     1.00764     28.9597       30.00     2.92976     72.9537     0.96889     1.02415     29.9583	1.23101 1.27456 1.31898 1.3642 1.40983	38.7472 40.0655 41.2837 42.3854
27.00     2.99204     73.5417     0.82039     0.975436     26.9624       28.00     2.96036     70.1723     0.870248     0.991152     27.961       29.00     2.99033     72.7876     0.919626     1.00764     28.9597       30.00     2.92976     72.9537     0.96889     1.02415     29.9583	1.27456 1.31898 1.3642 1.40983	40.0655 41.2837 42.3854
28.00     2.96036     70.1723     0.870248     0.991152     27.961       29.00     2.99033     72.7876     0.919626     1.00764     28.9597       30.00     2.92976     72.9537     0.96889     1.02415     29.9583	1.31898 1.3642 1.40983	41.2837 42.3854
29.00     2.99033     72.7876     0.919626     1.00764     28.9597       30.00     2.92976     72.9537     0.96889     1.02415     29.9583	1.3642 1.40983	42.3854
30.00 2.92976 72.9537 0.96889 1.02415 29.9583	1.40983	
		43 4118
31.00 2.91501 76.4394 1.01821 1.03734 30.957	1,45356	70.7110
		44.4667
32.00 2.95923 76.2338 1.06837 1.04972 31.9557	1.49778	45.5044
33.00 2.95464 76.2347 1.11846 1.06205 32.9543	1.54237	46.4819
34.00 2.97289 76.23 1.16867 1.07457 33.953	1.5876	47.402
35.00 2.94652 76.2446 1.21881 1.08671 34.9517	1.63292	48.2793
36.00 2.93078 76.3324 1.26857 1.09876 35.9504	1.67825	49.1029
37.00 2.94974 76.5933 1.31854 1.11088 36.949	1.72412	49.8856
38.00 2.94619 64.1554 1.36577 1.13004 37.9477	1.77266	50.3957
39.00 2.93235 74.2484 1.41476 1.1449 38.9464	1.81998	51.0183
40.00 2.94324 76.5734 1.46364 1.15966 39.9451	1.86737	51.6098
41.00 2.936 76.9627 1.51357 1.17148 40.9438	1.91397	52.2607
42.00 2.92968 76.41 1.56319 1.18342 41.9425	1.96063	52.8722
43.00 2.92494 77.0396 1.61302 1.1949 42.9412	2.00739	53.4695
44.00 2.92721 77.5037 1.66269 1.20621 43.9399	2.05414	54.0406
45.00     2.92773     77.4206     1.71255     1.21753     44.9386	2.10124	54.5892
46.00 2.90088 76.4088 1.762 1.22884 45.9373	2.14819	55.1076
47.00 2.88171 78.2897 1.81114 1.23984 46.936	2.19486	55.6059

#### **IMPORTANT NOTE**

The following interpretations are opinions based upon inferences from borehole logs, Epiroc Kinetic Logging Services cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore, Epiroc Kinetic Logging Services shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.



#### **NOTES ON VERTICALITY PLOTS**

- 1. The following verticality plots are scaled automatically to obtain the best visual effect within the default page size.

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  2. All co-ordinates are presented oriented to True North.

# **DEVIATION PLOT**

