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BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES
Location: Netherdale/Dalrymple Heights
Client: Queensland Hydro
Job No.: PS138693

Position: Upper Reservoir
Coords: 657695.2 m E 7667656.5 m N MGA2020-55
Surface RL: 899.5 m AHD
Contractor: Twin Hills Engineering & Drilling Drill Rig: Hanjin D&B-8D(D)
Inclination: -89°

Sheet 1 of 14
Date Started: 28/10/2023
Date Completed: 30/11/2023
Logged: DD/JRC

Drilling				Sampling		Field Material Description									
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION		MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS		
ADV			0	0.15	U50 1.00-1.14 m PB-BHUA-09-001 PP 1.14 m >600 kPa			MH	TOPSOIL Clayey SILT: high plasticity, brown-orange.	w<PL	VSt	TOPSOIL			
			899.36	MH				Clayey SILT: high plasticity, red-brown.			RESIDUAL SOIL				
			1												
			2												
			2.55					SPT 2.50-2.95 m 4,10,12 N=22 D 2.50-2.95 m PB-BHUA-09-002		SC	Clayey SAND: fine to medium grained, grey and pale red-brown, clay is medium to high plasticity; trace fine gravel; visible relict rock structure.	M	MD	EXTREMELY WEATHERED MATERIAL	
			2.96												
			3.30							MH	Clayey SILT: high plasticity, red-brown, trace fine to medium grained sand.			RESIDUAL SOIL	
			3.96												
			4					SPT 4.00-4.45 m 3,7,8 N=15 D 4.00-4.45 m PB-BHUA-09-003							
			5												
WB	H	100% Water Return	6		U50 5.50-5.90 m PB-BHUA-09-004 PP 5.90 m =300-350 kPa					w<PL	VSt - H				
			7		SPT 7.00-7.45 m 3,5,7 N=12 D 7.00-7.45 m PB-BHUA-09-005										
			8												
			8.50		SPT 8.50-8.77 m 1,8/120 mm HB D 8.50-8.77 m PB-BHUA-09-006				SC	Clayey SAND: fine to coarse grained, pale brown, clay is medium to high plasticity; with fine grained gravel.	D - M	VD	EXTREMELY WEATHERED MATERIAL		
		70% Water Return	9	9.05					Continued as Cored Borehole						
			10												
Comments														Checked	GEM
														Date	20/10/2024



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Sheet 2 OF 14
Date Started: 28/10/2023
Date Completed: 30/11/2023
Logged: DD/JRC

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
				0									
				1									
				2									
				3									
				4									
				5									
				6									
				7									
				8									
				9	9.05		Continuation from non-cored borehole						
HQ3	0-70% Water Return	96	54	890.46			METAGRANITE: coarse grained, white, grey, and black, crystalline, altered granodiorite, pink alteration, fabric shows metamorphic crystal reorientation, orange staining around defects.	MW		9.11: J, 90°, ph or and bk SN, PR, RF 9.14: J, 20°, bk SN, PR, RF 9.17: J, 60°, ph or and bk SN, PR, SM 9.23: J, 60°, SN, UN, SM 9.44: J, 10°, SN, PR, SM 9.49: J, 30°, SN, PR, SM 9.78: J, 70°, bk SN, ST, SM			
Comments										Checked GEM Date 20/10/2024			

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BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 3 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling					Field Material Description					Defect Information				
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)			AVERAGE DEFECT SPACING (mm)	

Comments

Checked GEM
Date 20/10/2024



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 4 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling					Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)
									VL VL-2 L L-2 M M-2 H H-2 VH VH-2 EH			
HQ3	0% Water Return	16/10/2024, VWP1	100	98	20		METAGRANITE: coarse grained, grey, white and black, crystalline, altered granodiorite, pink, orange and grey alteration, fabric shows metamorphic crystal reorientation.	FR		20.04: J, 40°, SN, UN, RF		
			100	100								
			100	100								
			100	100								
			100	90								
			100	95								
			100	95								
			100	100								
			100	100								
			100	100								

Comments

Checked GEM
Date 20/10/2024

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BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 5 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description				Defect Information						
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)				
								VL J M H VH EH	2 5 10 20 40 60 80 100			10 30 100 300 1000 3000				
HQ3	0% Water Return		100	100	30			FR								
					30.25											
					869.26											
					30.47		BASALT: fine grained, dark grey to black, crystalline, massive.			30.23: J, 55°, CN, PR, RF, possible DB						
					869.04		LAMPROPHYRE: fine to medium grained, dark grey, white, and black, porphyritic, massive, pale yellow alteration around defects.									
					30.91											
					868.60		BASALT: fine grained, dark grey to black, crystalline, massive.									
					32											
					32.12											
					867.39		LAMPROPHYRE: fine to medium grained, dark grey, white, and black, porphyritic, massive.									
					32.64											
					866.87		BASALT: fine grained, dark grey to black, crystalline, massive.			32.64-32.94: PLT(A) Is50 = 7.0MPa (W) : PLT(D) Is50 = 8.4MPa (M)						
					32.93											
					866.59		LAMPROPHYRE: fine to medium grained, dark grey, white, and black, porphyritic, massive.									
					34											
					34.40											
					865.12		BASALT: fine grained, dark grey to black, crystalline, massive.			34.37-34.40: S, 45°, PR						
					34.70											
					864.82		LAMPROPHYRE: fine to medium grained, grey, white, and black, porphyritic, massive, with black phenocrysts to 2 mm diameter.									
			100	98	35					35.13: J, 5°, CN, PR, RF 35.15: J, 15°, CN, PR, RF						
					36					36.11: J, 20°, SN, UN, RF 36.24-36.29: Jsx2, 75°, SN, UN, RF, 40 mm spacing						
					37					36.56-36.63: Vsx2, 45°, PR 36.64-36.69: Vsx2, 35°, PR						
					38					37.13-37.28: Jsx5, 60°, CN, UN, RF, very closely spaced 37.47-37.53: Jsx2, 35°, CN, PR, RF						
					39					38.00-38.29: PLT(A) Is50 = 13.0MPa (M) : PLT(D) Is50 = 7.8MPa (M) 38.28: J, 35°, CN, PR, RF						
			100	100	39.10					39.00: J, 20°, CN, UN, RF						
					860.42		METAGRANITE: medium to coarse grained, grey, black and white, crystalline, altered granite, pink, yellow, grey alteration, fabric shows metamorphic crystal reorientation.									
Comments																
										Checked GEM						
										Date 20/10/2024						

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BOREHOLE: BHUA-09

Project:	Pioneer-Burdekin PHES	Position:	Upper Reservoir	Sheet	6 OF 14
Location:	Netherdale/Dalrymple Heights	Coords:	657695.2 m E 7667656.5 m N MGA2020-55	Date Started:	28/10/2023
Client:	Queensland Hydro	Surface RL:	899.5 m AHD	Date Completed:	30/11/2023
Job No.:	PS138693	Contractor:	Twin Hills Engineering & Drilling Drill Rig: Hanjin D&B-8D(D)	Logged:	DD/JRC
		Inclination:	-89°		

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
									VL-2 J 2 J 4 M 20 H 40 VH 200 EH	■ - UCS		10 30 100 300 1000 3000	
HQ3	0% Water Return	100	100	40	40.35 859.17		METAGRANITE: medium to coarse grained, grey, black and white, crystalline, altered granite, pink, yellow, grey alteration, fabric shows metamorphic crystal reorientation. Grey alteration.	FR		40.08: J, 50°, CN, CU, RF			
					40.93: J, 50°, CN, PR, RF 41.17: J, 25°, CN, PR, RF								
		100	100	41						41.48: J, 75°, CN, ST, RF 41.59: J, 30°, rd and gr mi CT, PR, RF			
				42									
		100	100	43									
		100	100	44									
		100	100	45	45.00 854.52					Coarse grained, pink, yellow, grey alteration.	44.81: J, 70°, CN, PR, RF		
		100	92	46						45.05-45.64: Js, 65 - 80°, gr CT, UN, 5 mm spacing 45.54: J, 65°, CN, PR, RF			
				47						45.75-45.86: Js, 65°, gr CT, PR, 3 mm 45.91: J, 50°, CN, PR, RF 45.94: J, 60°, CN, ST, RF 45.97: J, 50°, CN, UN, RF 46.09: J, 50°, CN, CU, RF 46.28: J, 50°, CN, ST, RF 46.31: J, 50°, CN, PR, RF 46.10-46.55: Js, 40 - 50°, gr and yl VN, PR, 10 mm spacing 46.74: J, 50°, CN, UN, RF 46.79: J, 40°, gr SN, PR, RF 46.86: J, 50°, CN, PR, RF 46.98: J, 50°, CN, PR, RF 47.21: J, 50°, CN, PR, RF 47.29: J, 20°, CN, PR, RF 47.34: J, 30°, CN, PR, RF 47.35: J, 65°, CN, PR, RF 47.44: J, 50°, CN, PR, RF 47.55: J, 70°, CN, PR, RF 47.56: J, 20°, gr VN, PR, RF 47.73: J, 50°, CN, PR, RF 47.76: J, 50°, gr SN, PR, RF 47.91: J, 55°, CN, PR, RF 47.95: J, 50°, gr SN, PR, RF 46.61-49.34: Js, 45 - 50°, bk VN, PR, <2 mm, 5 mm spacing 48.05: J, 0°, CN, UN, RF 48.19: J, 0°, CN, PR, RF 48.21: J, 40°, bk SN, PR, RF 48.22: J, 50°, CN, UN, RF 48.40: J, 65°, CN, UN, RF 48.57: J, 50°, CN, PR, RF 48.97: J, 50°, CN, PR, RF 49.14: J, 60°, CN, ST, RF 49.23: J, 50°, CN, ST, RF 49.42: J, 0°, CN, ST, RF 49.48: J, 30°, CN, PR, RF			
		100	86	49									
		100	100	50	50.00								
Comments											Checked GEM Date 20/10/2024		



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 7 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description			Defect Information		
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)
								VL J M H VH EH	2 4 8 16 32 64 128 256 512 1024 2048		10 30 100 300 1000 3000
HQ3	0% Water Return	100	100	50	849.52		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granite, pink, yellow, grey alteration, fabric shows metamorphic crystal reorientation.	FR		49.73: J, 10°, CN, PR, RF 49.87: J, 60°, CN, ST, RF 49.88-49.99: Js, 50 - 60°, gr VN, UN 50.17: J, 0°, CN, ST, RF 50.11-50.36: AZ, 0 - 70°, gr mi 50.38: J, 25°, gr VN, UN, RF	
				51	847.91		LAMPROPHYRE: fine to medium grained, dark grey and black, porphyritic, massive, dark grey rounded to sub-rounded phenocrysts, to 5mm in diameter.			50.89: J, 10°, gr SN, PR, RF 50.94: J, 75°, gr VN, UN, RF 50.49-51.57: AZ, 45°, gr mi, IR 51.30: J, 0°, CN, PR, RF 51.48: J, 0°, CN, UN, RF 51.57: J, 50°, CN, PR, RF 51.59: J, 65°, SN, PR, RF	
		100	100	52	846.74		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink yellow green and grey alteration, fabric shows metamorphic crystal reorientation.			53.11-53.21: AZ, 40 - 90°, gr and wh mi, UN	
				53	844.39		LAMPROPHYRE: fine to medium grained, dark grey, porphyritic, massive.			53.63-54.08: AZ, 40 - 90°, gr and wh mi, IR	
		100	100	54	843.27		METAGRANITE: coarse grained, dark grey, pale grey, and white, crystalline, altered granodiorite, pink, pale grey to white alteration, fabric shows metamorphic crystal reorientation.			54.16-54.47: AZ, 0 - 90°, gr mi, UN	
				55	843.04		Pink and yellow alteration.			55.06-55.14: AZ, 0 - 90°, gr mi, IR 55.24: J, 0 - 60°, CN, IR, RF	
		100	96	56	842.52		Dark grey, green pink alteration.			55.69-56.02: Js, 50 - 70°, gr-yl, 10 mm spacing	
				57	841.52		Pink yellow green and grey alteration.			56.16-56.49: Js, 40 - 80°, gr CT, UN, 5 mm spacing	
		100	98	58	840.00		Dark grey, green, yellow pink alteration.			57.20: J, 60°, gr VN, UN, RF 57.24-57.59: AZ, 10 - 90°, gr mi, UN 57.54: J, 70°, CN, UN, RF 57.04-58.15: Js, 40 - 55°, bk VN, PR, 7 mm spacing	
				59	838.00					59.30: J, 40°, CN, UN, RF 58.15-60.76: AZ, 50 - 90°, bk and gr mi, UN	
		100	100	60	836.00						

Comments

Checked GEM
Date 20/10/2024

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BOREHOLE: BHUA-09

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Inclination: -89°

Sheet 8 OF 14

Date Started: 28/10/2023

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Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)		
								VL-2 J M H VH-200 EH	■ - UCS		10 30 100 300 1000 3000		
HQ3	0% Water Return		100	85	60		METAGRANITE: coarse grained, dark grey, pale grey, and white, crystalline, altered granodiorite, pink, dark grey, green, yellow, pink alteration, fabric shows metamorphic crystal reorientation.	FR		60.03: J, 30°, CN, UN, RF 60.07: J, 10°, CN, UN, RF 60.16: J, 35°, CN, UN, RF			
					61					61.70-61.78: Js, 35 - 55°, bk VN, UN 61.64-62.19: Js, 70 - 90°, bk and gr VN, UN			
			100	95	62					62.14: J, 35°, CN, UN, RF 62.21-62.49: Js, 60 - 75°, bk and gr, 8 mm spacing			
			100	100	63					62.68-63.00: PLT(A) Is50 = 13.0MPa (M) : PLT(D) Is50 = 16.0MPa (M) 62.48-62.98: AZ, 10 - 90°, bk and gr mi, UN			
			100	100	64					63.38: J, 60°, CN, ST, RF			
			100	100	65					64.12: J, 0°, CN, UN, RF 64.60-64.72: Js, 50 - 65°, gr SN, UN, 4 mm spacing 64.86: J, 65°, CN, UN, RF			
			100	100	66					65.02-65.39: AZ, 45 - 70°, gr mi, UN			
			100	88	68					67.61: J, 0°, CN, ST, RF 67.63: J, 10°, CN, UN, RF 67.68: J, 30°, CN, PR, RF 67.77: J, 80°, gr VN, ST, RF 67.90: J, 30°, CN, PR, RF 67.95: J, 90°, bk SN, UN, RF			
			100	100	69					68.80-69.00: AZ, 30 - 90°, bk and gr mi, UN			
					70					69.37: J, 50°, CN, PR, RF 69.38: J, 80°, gr SN, UN, RF 69.46: J, 0°, gr SN, UN, RF 69.23-70.00: AZ, 10 - 80°, bk and gr mi, UN 69.61-69.81: AZ, 10 - 60°, bk and gr mi, IR			

Comments

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Job No.: PS138693

Position: Upper Reservoir

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Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 9 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description			Defect Information		
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)
								VL J M H VH EH	2 4 8 16 32 64 128 256 512 1024 2048		10 30 100 300 1000 3000
HQ3	0% Water Return	100	100	70	829.52		METAGRANITE: coarse grained, dark grey, pale grey, and white, crystalline, altered granodiorite, pink, red brown, green, dark grey alteration, fabric shows metamorphic crystal reorientation.	FR		69.81-70.00: AZ, 10 - 90°, bk and gr mi, UN 69.92: J, 0°, CN, ST, RF 69.94-70.00: Js, 15°, gr SN, PR, 3 mm spacing 70.13: J, 35°, CN, ST, RF	
		100	68	71						70.55-70.59: CS, 0 - 10°, fragmented rock <20mm dia, UN, RF, 30 mm 70.00-71.72: Js, 0 - 15°, bk VN, PR, 3 mm spacing 70.93: J, 35°, CN, UN, RF 70.98: J, 55°, CN, UN, RF	
					71.72					71.26: J, 20°, CN, ST, RF 71.28: J, 60°, gr VN, ST, RF 71.30: J, 70°, CN, ST, RF 71.32: J, 20°, bk SN, UN, RF 71.39: J, 70°, CN, UN, RF 71.40: J, 40°, CN, PR, RF 71.42: J, 35°, CN, ST, RF 71.45: J, 50°, CN, UN, RF 71.72: J, 10°, gr VN, UN, SM 71.90: J, 10°, gr VN, ST, RF 71.92: J, 75°, bk SN, PR 71.95: J, 0°, CN, ST, RF 71.98: J, 0°, gr SN, UN, SM	
					71.90		Brecciated, yellow green red-brown alteration.			71.84-72.18: AZ, 20 - 80°, bk and gr mi, UN 72.51: J, 20°, CN, UN, RF, 1 mm wh alt halo 72.48-72.92: Js, 50°, bk and gr VN, UN, 3 mm spacing 72.00-73.50: Js, 10°, bk VN, UN, 3 mm spacing 72.79: J, 90°, CN, UN, RF 72.81: J, 20°, CN, ST, RF 72.95: J, 70°, CN, UN, RF	
					827.62		Pink, red-brown, green, dark grey alteration.			73.16-73.26: AZ, 20 - 90°, gr mi 73.43: J, 0°, CN, PR, RF 73.71: J, 55°, gr mi VN, PR, RF	
		100	100		72.68					74.36: J, 35°, CN, UN, RF	
					826.80		LAMPROPHYRE: fine to medium grained, dark grey and black, porphyritic, massive.			74.96-75.06: AZ, 30 - 85°, gr mi, UN	
					73		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, dark grey alteration, fabric shows metamorphic crystal reorientation.			75.83: J, 50°, gr mi SN, UN, RF	
		100	96							76.22: J, 75°, wh mi SN, UN, RF 76.29: J, 10°, wh mi SN, UN, RF 76.30: J, 80°, CN, PR, RF	
					74.00		Green alteration.			76.76: J, 30°, gr mi CT, UN, RF	
					74.16		Pink, dark grey alteration.			77.68: J, 35°, gr mi CT, UN, RF	
		100	99		825.36					77.94: J, 40°, gr mi SN, PR, SM 77.95: J, 10°, gr mi CT, PR, RF	
HQ3	0% Water Return	100	100	75						78.74: J, 70°, gr mi VN, UN, RF 78.80-78.87: AZ, 20 - 90°, gr mi	
										79.24: J, 80°, CN, UN, RF	
										79.46: J, 70°, CN, ST, RF 79.55: J, 40°, gr mi VN, PR, RF	
										79.81: J, 20°, CN, IR, RF	
		100	100	76							
		100	94	77							
		100	100	78							
		100	100	79							
		100	82	80	80.00						

Comments

Checked GEM
Date 20/10/2024



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES Position: Upper Reservoir Sheet 10 OF 14
Location: Netherdale/Dalrymple Heights Coords: 657695.2 m E 7667656.5 m N MGA2020-55
Client: Queensland Hydro Surface RL: 899.5 m AHD Date Started: 28/10/2023
Job No.: PS138693 Contractor: Twin Hills Engineering & Drilling Drill Rig: Hanjin D&B-8D(D) Date Completed: 30/11/2023
Inclination: -89° Logged: DD/JRC

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)		
								VL-2 J M H VH-200 EH	■ - UCS		10	30	100
HQ3	0% Water Return	100	82	80	819.52		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, dark grey alteration, fabric shows metamorphic crystal reorientation.	FR		79.82: J, 60°, CN, UN, RF 79.50-80.36: AZ, 0 - 90°, bk and gr mi, IR 80.01: J, 50°, gr mi VN, PR, SM 80.21: J, 5°, CN, PR, RF 80.28: J, 65°, gr mi VN, PR, RF 80.48: J, 55°, CN, UN, RF 80.59-80.78: AZ, 20 - 80°, gr mi, IR 80.79: J, 45°, bleached wh SN, PR, RF 80.82: SS, fragmented rock <30mm dia, bleached wh SN, PR, RF, <20 mm angular fragments 80.79-80.85: J, 65°, bleached wh SN, ST, RF 80.99: J, 35°, gr mi VN, PR, RF 81.00: J, 40°, gr mi CT, PR, SM 81.31: J, 40°, gr mi SN, UN, RF 81.33: J, 40°, gr mi VN, UN, RF 81.41: J, 20°, gr mi CT, UN, RF 81.43: J, 30°, gr mi VN, CU, RF 81.48: J, 35°, gr mi VN, PR, RF 81.60: J, gr mi SN, PR, RF 81.61: J, 30°, bk and gr mi VN, PR, RF 81.81: J, 40°, gr mi VN, ST, RF 81.82: J, 90°, CN, UN, RF 81.83: J, 30°, pl rd mi VN, UN, RF 81.84: J, 50°, pl rd mi VN, PR, SM 81.95: J, gr mi VN, IR, RF 82.00-82.38: PLT(A) Is50 = 4.6MPa (M) : PLT(D) Is50 = 9.7MPa (W) 82.41: J, 35°, gr mi VN, UN, RF 81.16-84.00: AZ, 0 - 90°, gr mi, IR 82.81: J, 30°, gr mi SN, ST, RF 82.91: J, 10°, gr mi SN, UN, RF 82.92: J, 20°, gr mi SN, ST, RF 83.45: J, 60°, CN, UN, RF 83.78: J, 45°, CN, ST, RF 83.93: J, 45°, CN, UN, RF			
		100	88	81	811.13		Pink, red-brown, green alteration.			84.54: J, 50°, CN, PR, SM 84.61: J, 25°, CN, PR, SM 84.65-84.73: AZ, 10 - 90°, gr mi, IR			
		100	71	82	818.39					85.19: J, 60°, gr and rd-br mi VN, UN, SM			
		100	93	83	823.36		Red and green alteration.			85.20-85.82: SZ, 40 - 60°, fragmented rock <30mm dia, significant			
		100	97	84	827.41		LAMPROPHYRE: fine to medium grained, dark grey, porphyritic, massive, yellow alteration around defects.			85.83: J, 50°, CN, PR, SM 85.91: J, 60°, CN, PR, SM 85.95: J, 50°, wh mi CT, PR, RF 85.97: J, 80°, wh mi VN, UN, SM 86.02: J, 45°, CN, UN, RF 86.06: J, 60°, wh and or-br mi VN, UN, SM 86.07: J, 70°, wh and or-br mi VN, UN, RF 86.10: J, 20°, CN, UN, RF 86.11-86.32: SZ, fragmented rock <20mm dia CT, significant 86.82: J, 20°, CN, UN, RF 86.83: J, 15°, CN, UN, RF 86.86: J, 70°, CN, ST, RF 86.87: J, 65°, CN, UN, RF 86.88: J, 25°, CN, ST, RF 86.89: J, 45°, CN, UN, RF 86.74-87.06: AZ, 0 - 90°, gr mi, IR 86.91: J, 80°, CN, UN, RF 86.98: J, 70°, CN, UN, RF 87.24: J, 40°, CN, UN, RF 87.83: J, 45°, CN, PR, RF 88.20-88.49: PLT(A) Is50 = 5.8MPa (M) 88.24: J, 30°, CN, UN, RF			
		100	95	85	832.23		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, grey, green alteration, fabric shows metamorphic crystal reorientation.			88.51: J, 30°, gr and rd-br mi VN, UN, RF			
		100	99	86	836.69		Dark grey, pale grey, white, and pale red alteration.			88.83: J, 40°, gr mi SN, ST, RF 88.85: J, 20°, CN, ST, RF 88.76-88.99: AZ, 10 - 60°, gr mi 89.17: J, 25°, rd and bk mi CT, UN, RF			
		100	99	87	841.53		BASALT: fine grained, dark grey, crystalline, massive.			89.40: J, CN, IR, RF 89.41: J, 10°, CN, IR, RF 89.67: J, 20°, rd mi SN, UN, RF 89.26-90.19: AZ, 0 - 90°, gr mi, IR, healed			
		100	99	88	846.67		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, grey, green alteration, fabric shows metamorphic crystal reorientation.						
		100	99	89	851.85								
		100	99	90	855.17		LAMPROPHYRE: fine to medium grained, dark grey, porphyritic, massive, black phenocrysts to 2mm in diameter, brecciated.						
		100	99	91	861.35								
		100	99	92	866.37		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, grey, green, red-brown and white alteration, brecciated.						
		100	99	93	871.15								
		100	99	94	876.88		Red and green alteration.						
		100	99	95	882.64								
		100	99	96	887.95		Dark grey, pale grey, white, and pale red alteration.						
		100	99	97	891.57								
		100	99	98	897.95								
		100	99	99	901.57								
Comments											Checked	GEM	
											Date	20/10/2024	



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 11 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
									VL 2 J 4 M 20 H 40 VH 200 EH			10 30 100 300 1000 3000	
HQ3	0% Water Return	100	77	90	90.19 809.33		LAMPROPHYRE: fine to medium grained, dark grey, porphyritic, massive, black phenocrysts to 2mm in diameter, green alteration, with numerous healed microfractures. Dark grey, fine grained, phenocrysts up to 2mm diameter.	FR		90.18: J, CN, UN, RF 90.21: J, 70°, gr mi CT, ST, RF 90.30: J, 20°, wh mi VN, PR, RF 90.47: J, 20°, or-br mi SN, PR, SM 90.52-90.80: PLT(A) Is50 = 0.52MPa (W) : PLT(D) Is50 = 3.9MPa (W) 90.49: J, 40°, gr mi CT, UN, RF 90.61: J, 30°, CN, UN, RF 90.82: J, 20°, or-br mi SN, UN, SM 90.83: J, 50°, wh and or-br mi VN, UN, RF 90.96: J, 20°, CN, PR, RF 90.98: J, 75°, wh mi VN, UN, SM 91.18: J, 50°, wh mi VN, UN, RF 91.28: J, 20°, bk and gr mi SN, UN, RF 91.33: J, CN, ST, RF 91.46: J, 40°, wh mi VN, PR, RF 91.65: J, 45°, rd-br mi VN, PR, RF 91.67: J, 25°, CN, PR, RF 91.90: J, 20°, CN, UN, RF 92.03: J, 40°, or-br and gr mi SN, ST, RF 92.12: J, 80°, gr mi SN, UN, RF 92.25: J, 60°, CN, UN, RF			
				91	91.20 808.32		Crystalline, black and white phenocrysts, with healed microfractures with white infill.			92.88: J, 60°, CN, UN, RF 93.05: J, 40°, CN, UN, RF 93.07: J, 50°, CN, UN, RF 93.35: J, 60°, bk mi SN, UN, RF			
				92	91.98 807.54		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, pale red, grey, alteration, fabric shows metamorphic crystal reorientation.			93.63: J, 60°, CN, ST, RF 93.65: J, CN, PR, RF 93.77: J, 40°, CN, PR, RF			
				93						94.07: J, 25°, CN, PR, RF 94.08: J, 40°, CN, PR, RF 94.17: J, 55°, gr and rd-br mi VN, UN, RF			
				94	94.07 94.19 805.33		LAMPROPHYRE: fine to medium grained, dark grey, porphyritic, massive, sub-rounded to sub-angular black phenocrysts up to 3 mm.			94.85: J, 30°, PR 94.93-94.97: AZ, 45°, gr mi, IR 94.95: J, 40°, CN, UN, RF 94.98: J, 85°, CN, UN, RF			
				95	94.91 804.61		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, dark grey, alteration, fabric shows metamorphic crystal reorientation.			95.48: J, 65°, CT, CU, RF 95.66: J, 5°, CT, UN 95.51-95.87: J, 70°, CT, IR 95.87: J, 5°, SN, PR, RF 95.89: J, 50°, CN, PR, RF, possible DB 95.99: Jsx2, 85°, SN, UN, RF 96.07: J, 5°, CN, CU, RF 96.14: J, 10°, VN, UN 96.37: SS, 60 - 75°, fragmented rock <30mm dia, PR, RF, 40 mm, along contact, significant			
				96	96.28 803.24		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, red-brown, dark grey, alteration, fabric shows metamorphic crystal reorientation.			96.73: J, 65°, CN, UN, RF 96.81: J, 70°, SN, PR, RF			
				97						97.05: J, 45°, SN, UN, RF 97.11: J, 55°, SN, PR, RF 97.24: J, 55°, SN, ST, RF 97.49: J, 60°, SN, PR, RF			
				98						98.06: J, 70°, SN, PR, RF 98.09-98.33: J, 80°, SN, UN 98.23: J, 60°, SN, PR, RF 98.22-98.49: J, 80°, SN, UN 98.58: J, 55°, SN, PR, RF 98.63: J, 70°, SN, PR 98.81: J, 40°, SN, UN, RF 98.84: J, 50°, SN, PR, RF 98.96: J, 50°, VN, PR, RF 99.06: J, 40°, SN, PR, RF			
				99						99.33: J, 50°, SN, UN, RF 99.34: J, 30°, SN, UN, RF 99.43: J, 40°, SN, CU, RF 99.49: J, 75°, CN, CU, RF 99.50: J, 25°, SN, PR 99.56: J, 35°, SN, IR, RF			
100	100.00												
Comments													
											Checked	GEM	
											Date	20/10/2024	



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Inclination: -89°

Sheet 12 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling					Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)
HQ3	0% Water Return	100	64	799.53	799.13		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, pink, red-brown, dark grey, alteration, fabric shows metamorphic crystal reorientation. Red-brown alteration.	FR		99.65-99.69: Jsx2, 45°, SN, PR, RF 99.83: J, 40°, CN, PR, RF 99.95: J, 25°, CN, PR, RF 100.19: J, 55°, CN, PR, RF, possible DB 100.20: J, 40°, CN, UN, RF 100.39: J, 50°, CN, UN, RF 100.40-100.70: SS, 50°, fragmented rock <20mm dia, PR, RF, significant 100.91: J, 10°, SN, PR, RF 101.01: J, 45°, SN, PR, RF 101.05: J, 85°, SN, UN 101.12: J, 50°, SN, UN 101.23: J, 25°, SN, UN 101.36: J, 55°, CN, PR, RF 101.48: J, 75°, SN, UN 101.54: J, 35°, CN, PR, RF 101.79-101.88: Vs, 60°, UN 101.86: J, CN, CU, RF 102.28: J, 10°, CN, PR, RF 102.52: J, 65°, CN, CU, RF 102.46-102.59: J, 70°, CN, UN, RF 102.54-102.62: J, 50°, CN, PR, RF 102.58-102.68: J, 60°, SN, PR, RF 102.75: J, 65°, SN, PR, RF 102.75-102.76: Jsx2, 10°, SN, PR 102.72-102.83: J, 75°, SN, PR 102.78: J, 85°, SN, CU 102.86: J, 45°, CN, UN, RF 102.98: J, 25°, SN, PR, RF 103.05: J, 40°, SN, PR, RF 103.06-103.08: Jsx2, 50°, SN, PR, RF, 20 mm spacing 103.12: J, 35°, CN, PR, RF 103.12-103.19: J, 50°, CN, CU, RF 103.36-103.39: SS, 75°, fragmented rock <30mm dia SN, PR, RF, 50 mm 103.44: J, 50°, SN, PR, RF 103.60: SS, 45 - 60°, fine to medium gravel SN, PR, <10 mm 103.71: J, 80°, CN, PR, RF 103.77: J, 55°, CN, PR, RF 104.03: J, 70°, CN, UN, RF 104.00-104.23: J, 70°, CN, UN, RF, possible DB 104.13: J, 40°, CN, PR, RF, possible DB 104.16: J, 45°, CN, PR, RF, possible DB 104.26: J, 60°, SN, PR 104.40: J, 75°, CN, UN, RF, possible DB 104.46: J, 25°, CN, PR, RF 104.64-104.65: Jsx2, 60°, CN, UN, RF 105.22: J, 50°, SN, PR, RF 105.28: J, 60°, SN, PR, RF 105.36: J, 30°, CN, UN, RF, possible DB 105.37: J, 55°, CN, UN, RF, possible DB 105.63: J, 50°, SN, PR 105.64: J, 50°, CN, IR, RF 105.71-105.80: J, 60°, SN, PR 105.85: J, 55°, SN, PR 105.89: J, 55°, SN, PR, RF 106.18: J, 55°, CN, PR, RF, <5 mm, SAND spaced, infilled with sand 106.36: J, 25°, CN, PR, RF 106.49: J, 65°, CN, PR, RF, possible DB 106.97: J, 55°, CN, PR 107.03: J, 40°, CN, PR, RF 107.08-107.21: J, 70°, VN, PR, RF 107.15: J, 30°, CN, PR, RF 107.21: J, 50°, CN, UN, RF 107.29: J, 60°, CN, UN, RF 107.32: J, 25°, CN, IR, RF 107.37: J, 55°, CN, PR, RF 107.46: J, 40°, SN, CU 107.52: J, CN, PR, RF 107.93: J, 60°, CN, PR, RF 108.42: J, 55°, SN, UN, RF 108.57: J, 65°, SN, PR, RF 108.71: J, 55°, SN, UN, RF 108.81: J, 15°, CN, PR, RF, possible DB 108.85: J, 55°, SN, PR 109.14: J, 45°, SN, UN, RF 109.22: J, 55°, VN, PR, RF 109.29: J, 40°, CN, UN, RF 109.37: J, 40°, CN, PR, RF, possible DB		
		100	69	101								
		100	69	102								
		100	69	103								
		100	84	104								
		100	95	105								
		100	95	106								
		100	86	107								
		100	91	108								
		100	91	109								
				1009.50	790.03		Dark grey alteration.			109.14: J, 45°, SN, UN, RF 109.22: J, 55°, VN, PR, RF 109.29: J, 40°, CN, UN, RF 109.37: J, 40°, CN, PR, RF, possible DB		
				1100.00								

Comments

Checked GEM
Date 20/10/2024

PPHES LIB REV:GLB Log IS AU CORED BOREHOLE 3 BHUA-09_241009.GPJ <-DrawingFile>> 21/10/2024 18:02 10.03.00.09 Digilog Lab and In Situ Tool - DGD | Lib: WSP 5.07.2 2023-10-30 Proj: WSP 5.04.1 2023-06-14



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Drill Rig: Hanjin D&B-8D(D)

Inclination: -89°

Sheet 13 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description				Defect Information													
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)											
									■ - UCS														
HQ3	0% Water Return	100	93	110	789.53		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, dark grey alteration, fabric shows metamorphic crystal reorientation.	FR			110.64: J, 45°, SN, UN, RF 110.69: J, 30°, SN, PR, RF 110.71: J, 40°, SN, PR 111.01: J, 15°, CN, CU, RF 111.16: J, 50°, SN, PR, RF 111.18: J, 65°, CN, UN, RF 111.54: J, 45°, CN, PR, RF 111.59: J, 45°, SN, PR, RF 111.83: J, 50°, SN, PR, RF 111.89: J, 15°, CN, UN, RF, possible DB 112.28: J, 25°, SN, PR, RF, possible DB 112.56: J, 60°, SN, PR, RF 112.64: J, 70°, SN, PR, RF 112.77: J, 60°, SN, PR, RF, possible DB 112.86: J, 45°, CN, PR, RF 112.91-113.02: Js, 45°, VN, PR, RF, 5-10 mm spacing 113.08: J, 50°, CN, UN, RF 113.17: J, 45°, CN, PR, RF 113.39: J, 45°, CN, PR, RF 113.44: J, 15°, SN, PR, RF, possible DB 113.53: J, 55°, SN, PR, RF 113.63: J, 30°, SN, CU, RF 113.69: J, 35°, SN, PR, RF 113.71-113.82: J, 60°, CN, PR 113.79: J, 20°, SN, CU, RF 114.02: J, 30°, CN, CU, RF 114.15: Js, 25°, CN, PR, RF 114.27-114.38: J, 65°, CN, UN, RF 114.47: J, 20°, CN, PR, RF 115.00: J, 25°, CN, CU, RF 115.00-115.11: J, 75°, CN, UN, RF 115.07: J, 20°, CN, PR, RF 115.55: J, 60°, CN, PR, RF 115.70: J, 1°, CN, PR, RF 116.31: J, 10°, CN, UN, RF 116.45: J, 45°, SN, PR, 2 mm, quartz infill 116.48: J, 25°, SN, PR 116.53-116.54: Js, 50°, SN, PR, RF 116.67: J, 40°, SN, PR, RF 116.69: J, 50°, SN, PR, RF 116.79: J, 45°, VN, PR, RF 116.89-116.90: J, 75°, SN, UN, RF 116.80: J, 50°, SN, PR, RF 116.89-116.96: Jsx2, 45°, CN, ST, RF, 70 mm spacing 117.03: J, 20°, CN, PR, RF 117.04: J, 45°, CN, PR, RF 117.13: J, 20°, CN, PR, RF 117.39: J, 20°, CN, PR, RF 117.52: J, 35°, CN, UN, RF 117.70: J, 20°, CN, PR, RF 118.08: J, 25°, CN, PR, RF 118.14: J, 25°, CN, PR, RF 118.15: J, 10°, CN, PR, RF 118.19: J, 60°, SN, PR, RF 118.28: J, 25°, CN, PR, RF, possible DB 118.37: J, 20°, CN, UN, RF 118.90: J, 20°, CN, UN, RF 119.25: J, 40°, CN, PR, RF 119.57: J, 45°, CN, UN, RF 119.79: J, 20°, CN, PR												
				111	788.53		Dark grey, red-brown and pink alteration.																
				112	787.53		Dark grey, red-brown and pink alteration.																
				113																			
				114																			
				115																			
				116																			
				117																			
				118																			
				119																			
				120																			
				Comments																			
																Checked	GEM						
																Date	20/10/2024						



BOREHOLE: BHUA-09

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 657695.2 m E 7667656.5 m N MGA2020-55

Surface RL: 899.5 m AHD

Contractor: Twin Hills Engineering & Drilling

Drill Rig: Hanjin D&B-8D(D)

Inclination: -89°

Sheet 14 OF 14

Date Started: 28/10/2023

Date Completed: 30/11/2023

Logged: DD/JRC

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
									1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130				
HQ3	0% Water Return	100	92	120	779.53		METAGRANITE: coarse grained, grey, black and white, crystalline, altered granodiorite, dark grey, red-brown and pink alteration, fabric shows metamorphic crystal reorientation.	FR		120.07: J, 10°, CN, PR, RF, possible DB 120.08-120.12: Js, 20 - 40°, UN, very closely spaced 120.22-120.32: Js, 60°, UN, very closely spaced 120.53-120.57: Jx2, 25°, SN, PR, RF, very closely spaced 121.00-121.31: PLT(A) Is50 = 8.0MPa (M) : PLT(D) Is50 = 6.8MPa (W) 121.30: J, 50°, SN, PR, RF 121.36: J, 60°, SN, PR 121.48: J, 20°, CN, PR, RF 121.84: J, 60°, SN, ST, RF 121.85-122.00: J, 85°, SN, UN, RF			
		100	100	122	122.20 777.33								
				123			Hole Terminated at 122.20 m Target depth. Vibrating Wire Piezometers Installed.						
				124									
				125									
				126									
				127									
				128									
				129									
				130									

Comments

Checked GEM

Date 20/10/2024



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHUA-09 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	9.11				J		90		ph or and bk	SN	PR	RF					
BHUA-09	9.14				J		20		bk	SN	PR	RF					
BHUA-09	9.17				J		60		ph or and bk	SN	PR	SM					
BHUA-09	9.23				J		60			SN	UN	SM					
BHUA-09	9.34				hJ		50				PR						
BHUA-09	9.37				hJ		50				PR						
BHUA-09	9.44				J		10			SN	PR	SM					
BHUA-09	9.49				J		30			SN	PR	SM					
BHUA-09	9.51				hJ		10				PR						
BHUA-09	9.54				hJ		20				PR						
BHUA-09	9.57				hJ		30				PR						
BHUA-09	9.69				hJ		50				PR						
BHUA-09	9.76				hJ		40		gr mi		PR						
BHUA-09	9.78				J		70		bk	SN	ST	SM					
BHUA-09	9.94				J		30			SN	ST	SM					
BHUA-09	9.97				J		70			SN	PR	SM					
BHUA-09	10.00				J		0			CN	UN	RF					
BHUA-09	10.02				J		90			CN	IR	RF					
BHUA-09	10.11				J		20			SN	PR	SM					
BHUA-09	10.13				J		60			SN	PR	SM					
BHUA-09	10.14				J		15			SN	PR						
BHUA-09	10.16				hJ		0				PR	SM					
BHUA-09	10.18				J		90			SN	UN	SM					
BHUA-09	10.24				J		5			SN	PR						
BHUA-09	10.25				hJ		5				PR						
BHUA-09	10.27				J		0			CN	PR	SM					
BHUA-09	10.29				J		10			SN	PR	SM					
BHUA-09	10.30				hJ		40				PR						
BHUA-09	10.31				J		80			SN	PR	SM					
BHUA-09	10.38				J		0		bk	SN	UN	SM					
BHUA-09	10.40				hJ		50				PR						
BHUA-09	10.43				hJ		30				PR						
BHUA-09	10.44				J		10		bk mi	VN	PR	SM					
BHUA-09	10.46				J		5			CN	PR	RF					
BHUA-09	10.50				AZ		70		bk mi		IR						
BHUA-09	10.52				hJ		50				IR						
BHUA-09	10.56				hJ		40				IR						
BHUA-09	10.58				hJ		30				PR						
BHUA-09	10.60				hJ		50				PR						
BHUA-09	10.61				hJ		0				PR						
BHUA-09	10.64				hJ		70		bk mi		PR						
BHUA-09	10.69				hJ		70		bk mi		PR						
BHUA-09	10.71				hJ		40		pl gr mi		PR						
BHUA-09	10.74				hJ		70		bk and wh mi		PR						
BHUA-09	10.75				hJ		50				PR						
BHUA-09	10.76				hJ		50		or	SN	PR						
BHUA-09	10.77				hJ		50		pl gr mi		PR						
BHUA-09	10.78				hJ		60		pl gr mi		PR						
BHUA-09	10.79				V		40		pl gr mi		PR						
BHUA-09	10.82				hJ		70		bk mi		PR						
BHUA-09	10.84				hJ		5		bk mi		PR						
BHUA-09	10.90				J		50		bk	SN	ST	SM					
BHUA-09	10.92				J		50		bk	SN	ST	SM					
BHUA-09	10.97				hJ		70		bk		PR						
BHUA-09	11.01				V		50		bk and gy mi		PR						
BHUA-09	11.02				V		50		bk and gy mi		PR						
BHUA-09	11.10				J		55		bk ph mi	VN	PR	SM					ph or SN
BHUA-09	11.15				hJ		70		bk mi		PR						
BHUA-09	11.20				J		5		bk	SN	PR	SM					
BHUA-09	11.27				hJ		25		pl gr mi		PR						
BHUA-09	11.38				J		50		bk and or	SN	PR	SM					
BHUA-09	11.80	11.84			DB		0							40			fragmented rock, drilling induced
BHUA-09	11.84				J		65		bk	VN	IR	RF					
BHUA-09	11.85	12.03												180			fragmented core, likely drilling induced
BHUA-09	11.93				hJ		70				UN						
BHUA-09	12.04				hJ		85		bk mi		PR						
BHUA-09	12.08				hJ		60		yl-gr mi		UN						
BHUA-09	12.10				hJ		35		yl-gr mi		PR						
BHUA-09	12.12				hJ		15		yl-gr mi		PR						
BHUA-09	12.16				hJ		15		yl-gr mi		PR						
BHUA-09	12.17				hJ		20		yl-gr mi		PR						
BHUA-09	12.18				hJ		65		yl-gr mi		PR						
BHUA-09	12.29				hJ		30		yl-gr mi		PR						
BHUA-09	12.31				hJ		25		yl-gr mi		PR						
BHUA-09	12.35				hJ		20		yl-gr mi		PR						
BHUA-09	12.36				J		20		ph or	VN	PR	SM					ph or SN
BHUA-09	12.40				hJ		75		yl-gr mi		IR						
BHUA-09	12.48				hJ		20		yl-gr mi		PR						
BHUA-09	12.51				hJ		20		yl-gr mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	12.54				J		5		yl and or	CT	PR	SM					ph dk br VN
BHUA-09	12.55				J		5		dk br	VN	PR	SM					
BHUA-09	12.64				DB		0										
BHUA-09	12.70				hJ		40		yl-gr mi		P						
BHUA-09	12.71				hJ		55		yl-gr mi		P						
BHUA-09	12.75				hJ		5		ph yl-gr and wh mi		P						
BHUA-09	12.80				hJ		20		yl-gr mi		P						
BHUA-09	12.85				hJ		70		yl-gr mi		P						
BHUA-09	12.89				hJ		25		yl-gr mi		P						
BHUA-09	12.91				hJ		65		yl-gr mi		P						
BHUA-09	12.93				hJ		80		yl-gr mi		IR						
BHUA-09	13.00				MB		0										
BHUA-09	13.01				hJ		5		yl-gr mi		IR						
BHUA-09	13.02				J		10		pl yl-gr and wh	CT	PR	SM					ph or SN
BHUA-09	13.03				hJ		30		yl-gr mi		PR						
BHUA-09	13.04				hJ		10		yl-gr mi		PR						
BHUA-09	13.05				hJ		75		yl-gr mi		IR						
BHUA-09	13.08				hJ		5		yl-gr mi		PR						
BHUA-09	13.12				J		60		ph or	SN	PR	SM					
BHUA-09	13.20				hJ		60				PR						
BHUA-09	13.23				hJ		5		yl-gr mi		PR						
BHUA-09	13.24				J		90		ph bk	CT	IR	SM					ph or SN
BHUA-09	13.27				J		65		ph or-br	VN	PR	SM					
BHUA-09	13.28				hJ		65		bk mi		PR						
BHUA-09	13.28				hJ		85		wh mi		PR						
BHUA-09	13.31				V		65		yl-gr mi		PR						
BHUA-09	13.35				hJ		5		yl-gr mi		IR						
BHUA-09	13.37				DB		0										
BHUA-09	13.39				J		65		ph or-br	VN	ST	SM					
BHUA-09	13.41				hJ		70				IR						
BHUA-09	13.46				hJ		60				PR						
BHUA-09	13.47				hJ		65				PR						
BHUA-09	13.51				hJ		10		yl-gr mi		PR						
BHUA-09	13.53				hJ		10		yl-gr mi		PR						
BHUA-09	13.57				J		10		ph yl-gr	CT	PR	SM					
BHUA-09	13.62				J		60		ph bk	VN	PR	RF					ph or SN
BHUA-09	13.68				J		20			SN	PR	RF		20			possibly drilling induced
BHUA-09	14.00				MB		0										
BHUA-09	14.35				J		15		ph yl-gr and wh	CT	IR	RF					
BHUA-09	14.39				hJ		20		yl-gr		PR						
BHUA-09	14.46				hJ		5		yl-gr		PR						
BHUA-09	14.48				hJ		0		yl-gr		IR						
BHUA-09	14.52				hJ		20		yl-gr		PR						
BHUA-09	14.53				hJ		5		yl-gr		PR						
BHUA-09	14.55				hJ		55		yl-gr		PR						
BHUA-09	14.66				hJ		15		yl-gr		UN						
BHUA-09	14.68				V		15		gy and yl-gr		PR						
BHUA-09	14.71				DB		0										
BHUA-09	14.72				hJ		5		yl-gr		IR						
BHUA-09	14.73				hJ		10		yl-gr		PR						
BHUA-09	14.75				hJ		60		yl-gr		PR						
BHUA-09	14.76				hJ		15		yl-gr		PR						
BHUA-09	14.79				hJ		50				PR						
BHUA-09	14.81				DB		0										
BHUA-09	14.85				hJ		60		gy mi		PR						
BHUA-09	14.86				hJ		20		yl mi		PR						
BHUA-09	14.88				hJ		20		yl mi		PR						
BHUA-09	14.90				hJ		30		yl mi		PR						
BHUA-09	15.00				MB		0										
BHUA-09	15.10	122.20															numerous healed microfractures throughout the rock mass, typically radomly oriented and spacing 5-25mm
BHUA-09	15.30				hJ		70				PR						
BHUA-09	15.33				hJ		70		yl mi		CU						
BHUA-09	15.70				hJ		15		yl mi		PR						
BHUA-09	15.73				hJ		65		yl mi		CU						
BHUA-09	15.80				hJ		85		bk and yl mi		PR						
BHUA-09	15.85				hJ		30		yl mi		PR						
BHUA-09	15.88				J		15		yl-gr mi	CT	ST	SM					
BHUA-09	15.90				hJ		85		yl mi		PR						
BHUA-09	15.91				hJ		15		yl mi		PR						
BHUA-09	15.95				hJ		90		yl mi		UN						
BHUA-09	15.97				J		15		dk or-br to black	SN	IR	SM					
BHUA-09	15.98				DB		0										
BHUA-09	16.00				MB		0										
BHUA-09	16.08				hJ		85		yl mi		IR						
BHUA-09	16.12				hJ		50		yl mi		CU						
BHUA-09	16.13				hJ		10		yl mi		PR						
BHUA-09	16.15				hJ		20		yl mi		PR						
BHUA-09	16.22				J		5		dk or-br	SN	IR	SM					



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BHUA-09	16.24	16.28			hJs	x2	20				PR						
BHUA-09	16.33				hJ		80				PR						
BHUA-09	16.35				hJ		50				PR						
BHUA-09	16.36				hJ		85				PR						
BHUA-09	16.40				hJ		50				PR						
BHUA-09	16.42				hJ		75				PR						
BHUA-09	16.47				hJs	x2	70				PR						
BHUA-09	16.48				J		55			SN	PR	RF					
BHUA-09	16.53				hJ		0				PR						
BHUA-09	16.54	16.56			hJs	x3	60				PR						
BHUA-09	16.59				J		45			SN	PR	RF					possible DB
BHUA-09	16.65	16.83			hJs	x5	15				PR						
BHUA-09	16.65	16.66			hJs		90				IR						
BHUA-09	16.67				hJ		60				PR						
BHUA-09	16.69				hJs		80				PR						
BHUA-09	16.78	16.83			hJs		70				CU						
BHUA-09	16.85				hJ		85				PR						
BHUA-09	16.87				hJ		75				PR						
BHUA-09	16.88				J		50			CN	PR	RF					
BHUA-09	16.90	16.91			hJs	x3	5				PR						
BHUA-09	17.00				MB		0										
BHUA-09	17.02				hJ		15				PR						
BHUA-09	17.04				J		30			SN	UN	RF					
BHUA-09	17.08	17.12			hJs	x2	20				PR						
BHUA-09	17.17				hJ		80				PR						
BHUA-09	17.19				hJ		50				PR						
BHUA-09	17.20				hJ		85				PR						
BHUA-09	17.22	17.25			Js	x2	15			SN	CU	RF					
BHUA-09	17.24				hJ		50				PR						
BHUA-09	17.26				hJ		75				PR						
BHUA-09	17.28	17.38			J		55			SN	PR	RF					
BHUA-09	17.30				J		10			SN	UN	RF					
BHUA-09	17.31				hJs	x2	70				PR						
BHUA-09	17.34				J		30			SN	UN	RF					
BHUA-09	17.35				J		20			SN	PR	RF					
BHUA-09	17.37				hJ						PR						
BHUA-09	17.38	17.40			hJs	x3	60				PR						
BHUA-09	17.39				hJ		10				PR						
BHUA-09	17.40	17.46			J		45			SN	PR	RF					possible DB
BHUA-09	17.40				J		10			SN	PR	RF					
BHUA-09	17.44				hJ		30				PR						
BHUA-09	17.46				hJ		30				PR						
BHUA-09	17.47				J		20			SN	PR	RF					
BHUA-09	17.49	17.67			hJs	x5	15				PR						
BHUA-09	17.49	17.50			hJs		90				IR						
BHUA-09	17.51				hJ		60				PR						
BHUA-09	17.53				hJ		80				PR						
BHUA-09	17.55				hJ		60				PR						
BHUA-09	17.56				hJ		15				PR						
BHUA-09	17.57				hJ		45				PR						
BHUA-09	17.64				hJ		35				PR						
BHUA-09	17.65				hJ		85				PR						
BHUA-09	17.68	17.76			J		50			CN	PR	RF					possible DB
BHUA-09	17.68				J		35			SN	PR	RF					
BHUA-09	17.69				hJ		85				PR						
BHUA-09	17.69	17.70			hJs	x2	25				CU						
BHUA-09	17.71				hJ		75				PR						
BHUA-09	17.72				hJ		15				UN						
BHUA-09	17.74	17.75			hJs	x3	5				PR						
BHUA-09	17.74				hJ		25				CU						
BHUA-09	17.75				hJ		35				CU						
BHUA-09	17.77	17.97			hJ		80				UN						
BHUA-09	17.85				hJ		40				PR						
BHUA-09	17.92						10				PR						
BHUA-09	18.00				MB		0										
BHUA-09	18.06				hJ		80				UN						
BHUA-09	18.11				hJ		0				PR						
BHUA-09	18.22				hJ		20				ST						
BHUA-09	18.23				hJ		70				PR						
BHUA-09	18.27	18.29			hJs		20				IR						
BHUA-09	18.32				hJ		5				UN						
BHUA-09	18.35				hJ		40				UN						
BHUA-09	18.51				hJ		40				PR						
BHUA-09	18.53	18.65			hJs		75				UN						
BHUA-09	18.60	19.00			hJ		80				CU						
BHUA-09	18.62	18.67			hJs		70				CU						
BHUA-09	18.63				hJ		40				PR						
BHUA-09	18.72	18.77			hJs		60				UN						
BHUA-09	18.82				hJ		20				PR						



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BHUA-09	18.84				hJ		90				UN						
BHUA-09	18.88				J		50			SN	PR	RF					
BHUA-09	18.92				J		10			SN	PR	RF					
BHUA-09	18.98				Js	x2	40			SN	UN	RF					
BHUA-09	19.00				MB		0										
BHUA-09	19.01				hJ		0				PR						
BHUA-09	19.02				hJ		15				CU						
BHUA-09	19.11	19.12			hJs	x2	15				CU						
BHUA-09	19.14				hJs	x2	80				PR						
BHUA-09	19.16				hJ		20				CU						
BHUA-09	19.25				hJ		55				PR						
BHUA-09	19.26				hJ		65				PR						
BHUA-09	19.27				hJ		20				CU						
BHUA-09	19.29				J		20			SN	PR	RF					
BHUA-09	19.43				hJ		60				UN						
BHUA-09	19.47				DB		0										
BHUA-09	19.47	19.57			hJ		70				UN						
BHUA-09	19.50				hJ		45				CU						
BHUA-09	19.61				hJ		65				PR						
BHUA-09	19.63				hJ		30				CU						
BHUA-09	19.70				hJ		35				UN						
BHUA-09	19.73				J		15			CN	UN	RF					possible DB
BHUA-09	19.74				hJ		55				UN						
BHUA-09	19.86	19.87			hJs	x2	5				PR						
BHUA-09	19.88				hJ		25				PR						
BHUA-09	19.90				J		10			SN	PR	RF					
BHUA-09	20.00				MB		0										
BHUA-09	20.04				J		40			SN	UN	RF					
BHUA-09	20.09				hJ		25				UN						
BHUA-09	20.14				hJ		20				PR						
BHUA-09	20.21				hJ		20				CU						
BHUA-09	20.22				hJ		50				PR						
BHUA-09	20.29				hJ		35				PR						
BHUA-09	20.33				hJ		55				UN						
BHUA-09	20.40				hJ		60				PR						
BHUA-09	20.50				hJ		0				PR						
BHUA-09	20.51	20.52			hJs	x3	0				PR						
BHUA-09	20.52				hJ		30				UN						
BHUA-09	20.53				hJ		65				PR						
BHUA-09	20.58	20.59			hJs		68				UN						
BHUA-09	20.67	20.79			J		70			SN	UN	RF					possible DB
BHUA-09	20.79				J		15			SN	PR	RF					possible DB
BHUA-09	20.84				hJs		70				PR						
BHUA-09	20.85				hJ		20				UN						
BHUA-09	20.87				hJ		60				PR						
BHUA-09	20.90				hJ		25				CU						
BHUA-09	20.91				hJ		60				CU						
BHUA-09	20.93				hJ		10				UN						
BHUA-09	20.98				J		40			SN	PR	RF					
BHUA-09	21.00				MB		0										
BHUA-09	21.03				hJ		15				PR						
BHUA-09	21.05				hJ		0				UN						
BHUA-09	21.07	21.09			hJs	x2	65				PR						
BHUA-09	21.16				hJ		0				PR						
BHUA-09	21.20				hJ		50				PR						
BHUA-09	21.27				hJ		10				UN						
BHUA-09	21.32				hJ		80				UN						
BHUA-09	21.36				J		55			CN	PR	RF					
BHUA-09	21.38				hJ		55				ST						
BHUA-09	21.39				hJ		0				PR						
BHUA-09	21.41				hJ		70				UN						
BHUA-09	21.43				hJ		85				UN						
BHUA-09	21.51				hJ		12				UN						
BHUA-09	21.62				hJ		75				CU						
BHUA-09	21.69				hJ		50				UN						
BHUA-09	21.75				CO		60				PR						
BHUA-09	21.91				J		70			CN	PR	RF					
BHUA-09	21.93				hJ		25				PR						
BHUA-09	21.98				J		50			CN	PR	RF					
BHUA-09	22.00				MB		0										
BHUA-09	22.02				hJ		30				UN						
BHUA-09	22.04				hJ		40				PR						
BHUA-09	22.07				hJ		25				PR						
BHUA-09	22.10	22.11			hJs	x2	20				UN						
BHUA-09	22.12				CO		10				UN						
BHUA-09	22.15				CO		15				UN						
BHUA-09	22.16	22.18			hJs		28				PR						
BHUA-09	22.20				hJ		55				UN						
BHUA-09	22.23				hJ		5				PR						



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BHUA-09	22.25				hJ		10				PR						
BHUA-09	22.31				hJ		50				ST						
BHUA-09	22.39	22.48			hJs		20				IR						
BHUA-09	22.58	22.63			hJs	x3	55				PR						
BHUA-09	22.67				hJ		80				UN						
BHUA-09	22.70				hJ		50				UN						
BHUA-09	22.76				J		25			CN	UN	RF					
BHUA-09	22.89	22.94			SS		28			SN	PR	RF					
BHUA-09	22.97	23.04			HBs	x2	0										
BHUA-09	23.00				CO		50				PR						
BHUA-09	23.09	23.11			hJs	x3	5				PR						
BHUA-09	23.11				hJ		80				CU						
BHUA-09	23.16				hJ		22				UN						
BHUA-09	23.20				hJ		20				PR						
BHUA-09	23.21				hJ		70				PR						
BHUA-09	23.22	23.24			hJs	x2	5				PR						
BHUA-09	23.29				hJ		20				PR						
BHUA-09	23.35	23.39			hJs	x3	45				PR						
BHUA-09	23.39				J		75			CN	UN	RF					
BHUA-09	23.44	23.51			hJs	x4	10				PR						
BHUA-09	23.52				hJ		25				UN						
BHUA-09	23.56	23.60			hJs	x3	10				CU						
BHUA-09	23.63				hJ		5				UN						
BHUA-09	23.66	23.67			hJs	x2	15				CU						
BHUA-09	23.71				hJ		40				PR						
BHUA-09	23.74				hJ		15				PR						
BHUA-09	23.85	23.86			hJs	x3	85				UN						
BHUA-09	23.89				hJ		30				PR						
BHUA-09	23.95				hJ		80				UN						
BHUA-09	24.00				MB		0										
BHUA-09	24.02				J		20			SN	PR	RF					
BHUA-09	24.04				hJ		20				PR						
BHUA-09	24.09				hJ		50		bk mi		PR						
BHUA-09	24.13				hJ		60				PR						
BHUA-09	24.18				J		25			CN	ST	RF					
BHUA-09	24.20				hJ		30				CU						
BHUA-09	24.23				hJ		20				PR						
BHUA-09	24.24				J		30			CN	PR	RF					
BHUA-09	24.24	24.37			hJ		75				UN						
BHUA-09	24.25				hJ		70				PR						
BHUA-09	24.36				CO		20				PR						
BHUA-09	24.44	24.45			hJ		60				PR						
BHUA-09	24.48	24.53			hJs		15				PR						
BHUA-09	24.51				J		30			SN	PR	RF					
BHUA-09	24.57				hJ		50				PR						
BHUA-09	24.59				HB		0										
BHUA-09	24.72	24.74			hJs	x2	40				PR						
BHUA-09	24.80				hJ		25				PR						
BHUA-09	25.01				hJ		20				UN						
BHUA-09	25.04				hJ		20				PR						
BHUA-09	25.11				hJ		30				PR						
BHUA-09	25.12				hJ		30				ST						
BHUA-09	25.14				hJ		15				UN						
BHUA-09	25.20				hJ		10				UN						
BHUA-09	25.21				hJ		0				UN						
BHUA-09	25.22				hJ		5				PR						
BHUA-09	25.25				hJ		30				PR						
BHUA-09	25.26				hJ		20				UN						
BHUA-09	25.36				hJs	x2	5				UN						
BHUA-09	25.65				hJ		60				CU						
BHUA-09	25.68				hJ		15				PR						
BHUA-09	25.75	25.81			hJs	x2	60				PR						
BHUA-09	26.00				MB		0										
BHUA-09	26.08				hJ		15				PR						
BHUA-09	26.35				J		15			CN	UN	RF					possible DB
BHUA-09	26.51				hJ		5				PR						
BHUA-09	26.52	26.72			hJ		70				UN						
BHUA-09	26.70				hJ		15				PR						
BHUA-09	26.81				hJ		70				PR						
BHUA-09	26.83				hJ		0				PR						
BHUA-09	27.23				hJ		50				PR						
BHUA-09	27.24				hJ		30				PR						
BHUA-09	27.26				hJ		50				PR						
BHUA-09	27.66	27.69			hJs	x2	15				PR						
BHUA-09	27.67	27.76			hJs	x2	70				IR						
BHUA-09	27.75				hJ		10				PR						
BHUA-09	27.79				hJ		0				UN						
BHUA-09	27.82	27.89			hJs	x2	10				UN						
BHUA-09	27.82				HB		0										



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	27.82	27.84			hJ		70				PR						
BHUA-09	28.00				MB		0										
BHUA-09	28.03				hJ		40				PR						
BHUA-09	28.05				hJ		25				PR						
BHUA-09	28.08				hJ		25				PR						
BHUA-09	28.09				hJ		20				PR						
BHUA-09	28.19				hJ		55				UN						
BHUA-09	28.20				hJ		15				PR						
BHUA-09	28.21				hJ		85				UN						
BHUA-09	28.26				hJ		40				PR						
BHUA-09	28.50	28.60			V		65				PR						
BHUA-09	28.72	28.76			hJs	x2	35				UN						
BHUA-09	28.82				hJ		20				PR						
BHUA-09	28.99				hJ		35				PR						
BHUA-09	29.00				MB		0										
BHUA-09	29.01				hJ		15				PR						
BHUA-09	29.39				hJ		50				UN						
BHUA-09	29.41				hJ		15				UN						
BHUA-09	29.49				hJ		15				UN						
BHUA-09	29.52				hJ		15				PR						
BHUA-09	29.52				hJ		90				PR						
BHUA-09	29.53				hJ		25				PR						
BHUA-09	29.59				hJ		60				ST						
BHUA-09	29.60				hJ		20				PR						
BHUA-09	29.61	29.64			hJs	x3	30				UN						
BHUA-09	29.67				hJ		25				PR						
BHUA-09	29.71				hJ		50				PR						
BHUA-09	29.75				hJ		5				PR						
BHUA-09	29.77				hJ		80				PR						
BHUA-09	29.84				DB		0										
BHUA-09	29.85				hJ		40				PR						
BHUA-09	29.93				HB		0										
BHUA-09	30.00				MB		0										
BHUA-09	30.22				hJ		60				PR						
BHUA-09	30.23				J		55			CN	PR	RF					possible DB
BHUA-09	30.25				hJ		45										
BHUA-09	30.29	30.31			hJs	x3	35				PR						
BHUA-09	30.32				hJ		30				PR						
BHUA-09	30.38				hJ		10				PR						
BHUA-09	30.41				hJ		40				PR						
BHUA-09	30.46				hJ		15										
BHUA-09	30.47				CO		15				UN						
BHUA-09	30.66				hJ		40										
BHUA-09	30.67				hJ		40				CU						
BHUA-09	30.90				hJ		5										
BHUA-09	30.91				CO		5				UN						
BHUA-09	30.94				hJ		45				PR						
BHUA-09	30.97				hJ		35										
BHUA-09	30.98	30.99			hJs	x2	40				CU						
BHUA-09	31.00				MB		0										
BHUA-09	31.01				hJ		10				UN						
BHUA-09	31.04	31.06			hJs	x4	50				UN						
BHUA-09	31.07				hJ		35				UN						
BHUA-09	31.08				hJ		85				UN						
BHUA-09	31.09				hJ		35				UN						
BHUA-09	31.19				hJ		35				UN						
BHUA-09	31.22				hJ		35										
BHUA-09	31.24				hJ		40										
BHUA-09	31.29				hJ		10				PR						
BHUA-09	31.30				hJ		10										
BHUA-09	31.32	31.36			hJs		10				ST						
BHUA-09	31.34				hJ		80				UN						
BHUA-09	31.35				hJ		80										
BHUA-09	31.36				hJ		10										
BHUA-09	31.42				hJ		85				CU						
BHUA-09	31.46				hJ		50				PR						
BHUA-09	31.53				hJ		5										
BHUA-09	31.55				hJ		5				UN						
BHUA-09	31.56				hJ		75				CU						
BHUA-09	31.57				hJ		75										
BHUA-09	31.59				hJ		15				ST						
BHUA-09	31.60				hJ		25				UN						
BHUA-09	31.63				hJ		20										
BHUA-09	31.64				hJ		20										
BHUA-09	31.68				hJ		10				CU						
BHUA-09	31.69				hJ		20				CU						
BHUA-09	31.71	31.79			hJs	x3	15				UN						
BHUA-09	31.73				hJ		30				PR						
BHUA-09	31.77				hJ		25										



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	31.83				hJ		10				PR						
BHUA-09	31.84				hJ		50				PR						
BHUA-09	31.85				hJ		20										
BHUA-09	31.86				hJ		20				PR						
BHUA-09	31.89				hJ		50				PR						
BHUA-09	31.93				hJ		25				CU						
BHUA-09	31.96				hJ		40				PR						
BHUA-09	31.99				hJ		15				UN						
BHUA-09	32.02				hJ		15										
BHUA-09	32.08	32.10			hJs		15				UN						
BHUA-09	32.09				hJ		20										
BHUA-09	32.18				hJ		20				PR						
BHUA-09	32.25				hJ		20				PR						
BHUA-09	32.26				hJ		30				PR						
BHUA-09	32.55				hJ		60										
BHUA-09	32.60				hJ		20				PR						
BHUA-09	32.63				hJ		40										
BHUA-09	32.64				V		35				PR						
BHUA-09	32.65				hJ		30				UN						
BHUA-09	32.66				hJ		55										
BHUA-09	32.69				hJ		55				PR						
BHUA-09	32.72				hJ		80				PR						
BHUA-09	32.77				hJ		15				PR						
BHUA-09	32.78				hJ		0				PR						
BHUA-09	32.80				hJ		45										
BHUA-09	32.82				hJ		40				PR						
BHUA-09	32.83				hJ		50				PR						
BHUA-09	32.88				hJ		45				PR						
BHUA-09	32.90				hJ		45				PR						
BHUA-09	32.91				hJ		75										
BHUA-09	32.93				CO		35				PR						
BHUA-09	33.07	33.08			hJs	x2	20				PR						
BHUA-09	33.19				hJ		50				PR						
BHUA-09	33.27	33.31			hJs	x2	70				PR						
BHUA-09	33.54				hJ		90				IR						
BHUA-09	33.84				hJ		70				CU						
BHUA-09	34.00	34.46			hJ		60	70									
BHUA-09	34.05	34.50			V		85				IR						
BHUA-09	34.13				hJ		65				IR						
BHUA-09	34.16				hJ		75				CU						
BHUA-09	34.22				hJ		15				PR						
BHUA-09	34.23				hJ		15										
BHUA-09	34.25				hJ		30				PR						
BHUA-09	34.29				hJ		15				UN						
BHUA-09	34.30				hJ		20										
BHUA-09	34.31				hJ		20				PR						
BHUA-09	34.37	34.40			S		45				PR						
BHUA-09	34.42				hJ		45										
BHUA-09	34.50	34.65			hJ	X3	55	65									
BHUA-09	34.51				V		20				UN						
BHUA-09	34.54	34.78			hJs	x6	65				PR						
BHUA-09	34.59				hJ		25				PR						
BHUA-09	34.70	34.80			CO		70	80			UN						
BHUA-09	34.80				hJ		35				PR						
BHUA-09	34.85	35.00			hJ	X4	10	15									
BHUA-09	35.00				MB		0										
BHUA-09	35.06				hJ		45										
BHUA-09	35.13				J		5			CN	PR	RF					
BHUA-09	35.15				J		15			CN	PR	RF					
BHUA-09	35.25				hJ		10				UN						
BHUA-09	35.33				hJ		40										
BHUA-09	35.35	35.45			hJ	X 3	10	15									
BHUA-09	35.36				V		20				PR						
BHUA-09	35.37				V		70				IR						
BHUA-09	35.38				hJ		5				PR						
BHUA-09	35.44				hJ		15				UN						
BHUA-09	35.61				hJ		50				PR						
BHUA-09	35.67				hJ		65				UN						
BHUA-09	35.82				V		50				PR						
BHUA-09	35.85				hJ		25				UN						
BHUA-09	35.85	36.00			hJ	X 3	5	15									
BHUA-09	35.86				hJ		30				ST						
BHUA-09	35.87				hJ		50				UN						
BHUA-09	35.89	38.92			hJ		20				PR						
BHUA-09	36.00				MB		0										
BHUA-09	36.06				hJ		10										
BHUA-09	36.11				J		20			SN	UN	RF					
BHUA-09	36.16	36.22			V		85				UN						
BHUA-09	36.24	36.29			Js	x2	75			SN	UN	RF					40 mm spacing



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BHUA-09	36.26				HB		0										
BHUA-09	36.38				hJ		65				PR						
BHUA-09	36.47				hJ		35				PR						
BHUA-09	36.50				hJ		70										
BHUA-09	36.51				hJ		40				PR						
BHUA-09	36.52				V		75				UN						
BHUA-09	36.56	36.63			Vs	x2	45				PR						
BHUA-09	36.57				hJ		45				UN						
BHUA-09	36.61				V		70				UN						
BHUA-09	36.62				hJ		40										
BHUA-09	36.64	36.69			Vs	x2	35				PR						
BHUA-09	36.65	37.00			hJ	X6	10	20									
BHUA-09	36.68				V		85				UN						
BHUA-09	36.70				V		85				UN						
BHUA-09	36.84				V		70				UN						
BHUA-09	36.85				V		70				UN						
BHUA-09	36.85	37.00			hJ		85	90									
BHUA-09	36.88				V		85				UN						
BHUA-09	36.90				V		30				UN						
BHUA-09	36.90				V		30				UN						
BHUA-09	36.97				V		45				UN						
BHUA-09	37.00				hJ		55										
BHUA-09	37.00	37.22			V		85				UN						
BHUA-09	37.13	37.28			Js	x5	60			CN	UN	RF				very closely	
BHUA-09	37.37				hJ		40										
BHUA-09	37.44				hJ		35			IN	UN						
BHUA-09	37.47	37.53			Js	x2	35			CN	PR	RF					
BHUA-09	37.60				hJ		75										
BHUA-09	37.70				hJ		50										
BHUA-09	37.72				hJ		65				UN						
BHUA-09	37.74				hJ		10				CU						
BHUA-09	37.78				hJ		30				CU						
BHUA-09	37.78	38.00			hJ		85				UN						
BHUA-09	37.82	37.85			hJs	x2	5				PR						
BHUA-09	37.90				hJ		55				PR						
BHUA-09	37.97				hJ		70				UN						
BHUA-09	37.98				hJ		40				PR						
BHUA-09	37.99				hJ		20				UN						
BHUA-09	38.00				MB		0										
BHUA-09	38.03				hJ		70				PR						
BHUA-09	38.04				hJ		65										
BHUA-09	38.04	38.22			hJ		80				UN						
BHUA-09	38.08				hJ		35				PR						
BHUA-09	38.12				hJ		15				PR						
BHUA-09	38.16	38.17			hJs	x2	20				PR						
BHUA-09	38.19				hJ		50				CU						
BHUA-09	38.21				hJs	x2	55				PR						
BHUA-09	38.24				hJ		20				PR						
BHUA-09	38.26				hJ		60				UN						
BHUA-09	38.28				J		35			CN	PR	RF					
BHUA-09	38.32	38.34			hJs	x2	35				CU						
BHUA-09	38.38				hJ		25				PR						
BHUA-09	38.40	38.80			hJs		30	40			UN						
BHUA-09	38.83				HB		0										
BHUA-09	38.85	39.00			hJs		0										
BHUA-09	39.00				J		20			CN	UN	RF					
BHUA-09	39.03				hJ		10				IR						
BHUA-09	39.04				hJ		55				UN						
BHUA-09	39.11				hJ		70				CU						
BHUA-09	39.12				hJ		45				ST						
BHUA-09	39.14				hJ		70				UN						
BHUA-09	39.54				hJ		80				PR						
BHUA-09	39.56				hJ		70				PR						
BHUA-09	39.56				hJ		75				PR						
BHUA-09	39.95				hJ		90				PR						
BHUA-09	40.00				MB		0										
BHUA-09	40.04				hJ		60				PR						
BHUA-09	40.08				J		50			CN	CU	RF					
BHUA-09	40.11				hJ		0				PR						
BHUA-09	40.15				hJ		85				ST						
BHUA-09	40.53				hJ		45				UN						
BHUA-09	40.59				hJ		55				PR						
BHUA-09	40.85				hJ		30				ST						
BHUA-09	40.87				hJ		70				PR						
BHUA-09	40.89				hJ		70				PR						
BHUA-09	40.93				J		50			CN	PR	RF					
BHUA-09	40.97				hJ		55				PR						
BHUA-09	41.00				MB		0										
BHUA-09	41.03	41.19			hJ		75				PR						



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BHUA-09	41.17				J		25			CN	PR	RF					
BHUA-09	41.20				hJ		50				PR						
BHUA-09	41.27				hJ		25				IR						
BHUA-09	41.29				hJ		70				CU						
BHUA-09	41.42				hJ		60				PR						
BHUA-09	41.45				hJ		40				PR						
BHUA-09	41.46				hJ		0				UN						
BHUA-09	41.48				J		75			CN	ST	RF					
BHUA-09	41.52				hJ		70				CU						
BHUA-09	41.58				hJ		30				PR						
BHUA-09	41.59				J		30		rd and gr mi	CT	PR	RF					
BHUA-09	41.68				hJ		30				UN						
BHUA-09	41.77				hJ		40				PR						
BHUA-09	41.77	41.97			hJ		70				PR						
BHUA-09	41.90				hJ		75				UN						
BHUA-09	41.93				hJ		45				PR						
BHUA-09	41.98				hJ		65				PR						
BHUA-09	42.00				MB		0										
BHUA-09	42.06				hJ		55				PR						
BHUA-09	42.09				hJ		60				PR						
BHUA-09	42.10				hJ		85				UN						
BHUA-09	42.16				hJ		30				PR						
BHUA-09	42.19				hJ		70				PR						
BHUA-09	42.22				hJ		0				PR						
BHUA-09	42.32				hJ		78				PR						
BHUA-09	42.36				hJ		40				PR						
BHUA-09	42.40				hJ		45				PR						
BHUA-09	42.42	42.44			hJs		60				UN						
BHUA-09	42.50				hJ		75				CU						
BHUA-09	42.76				hJ		70				UN						
BHUA-09	42.77				hJ		75				PR						
BHUA-09	42.87				hJ		25				PR						
BHUA-09	42.96				hJ		50				PR						
BHUA-09	42.98				hJ		60				ST						
BHUA-09	43.07				hJ		80				UN						
BHUA-09	43.09				hJ		55				PR						
BHUA-09	43.10				hJ		75				UN						
BHUA-09	43.13				hJ		70				PR						
BHUA-09	43.14	43.31			hJs		50	70			UN						
BHUA-09	43.30				hJ		45				PR						
BHUA-09	43.38				hJ		35				PR						
BHUA-09	43.46				hJ		60				UN						
BHUA-09	43.55	43.75			hJs	x5	65				PR						
BHUA-09	43.83				hJ		45				UN						
BHUA-09	43.84				hJ		70				UN						
BHUA-09	43.85				hJ		70				PR						
BHUA-09	43.93	43.95			hJs		65				PR						
BHUA-09	43.96				hJ		60				CU						
BHUA-09	44.00				MB		0										
BHUA-09	44.03				hJ		70				PR						
BHUA-09	44.07				hJ		65				PR						
BHUA-09	44.08				hJ		70				PR						
BHUA-09	44.13				hJ		50				CU						
BHUA-09	44.15	44.19			hJs		65				UN						
BHUA-09	44.26				hJ		60				PR						
BHUA-09	44.27				hJ		75				UN						
BHUA-09	44.37				hJ		45				PR						
BHUA-09	44.42				hJ		50				UN						
BHUA-09	44.44				hJ		70				PR						
BHUA-09	44.53	44.68			hJs		60	75			IR						
BHUA-09	44.77	44.78			hJs	x3	75				UN						
BHUA-09	44.81				J		70			CN	PR	RF					
BHUA-09	44.83				hJ		60				PR						
BHUA-09	44.87				hJ		60				PR						
BHUA-09	44.94				hJ		75				PR						
BHUA-09	44.96				hJ		70				PR						
BHUA-09	44.97				hJ		50				CU						
BHUA-09	45.05	45.64			Js		65	80	gr	CT	UN						5 mm spacing
BHUA-09	45.54				J		65			CN	PR	RF					
BHUA-09	45.75	45.86			Js		65		gr	CT	PR			3			
BHUA-09	45.91				J		50			CN	PR	RF					
BHUA-09	45.94				J		60			CN	ST	RF					
BHUA-09	45.97				J		50			CN	UN	RF					
BHUA-09	46.02				hJ		70		bk mi		PR						
BHUA-09	46.03				hJ		85		br and wh mi		UN						
BHUA-09	46.05				hJ		70		bk and wh mi		PR						
BHUA-09	46.07				hJ		45		wh mi		PR						
BHUA-09	46.07				hJ		10		wh mi		PR						
BHUA-09	46.09				J		50			CN	CU	RF					



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHUA-09 Defects List

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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	46.10	46.55			Js		40	50	gr and yl	VN	PR						10 mm spacing
BHUA-09	46.28				J		50			CN	ST	RF					
BHUA-09	46.31				J		50			CN	PR	RF					
BHUA-09	46.39				V		55		gr-yl mi		UN						
BHUA-09	46.54				hJ		90		bk mi		UN						
BHUA-09	46.55				hJ		30		bk mi		PR						
BHUA-09	46.56				hJ		30		bk mi		PR						
BHUA-09	46.61	49.34			Js		45	50	bk	VN	PR		<	2			5 mm spacing
BHUA-09	46.65				hJ		60		wh mi		PR						
BHUA-09	46.74				J		50			CN	UN	RF					
BHUA-09	46.79				J		40		gr	SN	PR	RF					
BHUA-09	46.86				J		50			CN	PR	RF					
BHUA-09	46.98				J		50			CN	PR	RF					
BHUA-09	47.21				J		50			CN	PR	RF					
BHUA-09	47.29				J		20			CN	PR	RF					
BHUA-09	47.34				J		30			CN	PR	RF					
BHUA-09	47.35				J		65			CN	PR	RF					
BHUA-09	47.44				J		50			CN	PR	RF					
BHUA-09	47.55				J		70			CN	PR	RF					
BHUA-09	47.56				J		20		gr	VN	PR	RF					
BHUA-09	47.60				hJ		20		br mi		UN						
BHUA-09	47.62				hJ		25		br mi		UN						
BHUA-09	47.66				V		75		gr mi		UN						
BHUA-09	47.67				hJ		80		bk mi		UN						
BHUA-09	47.73				J		50			CN	PR	RF					
BHUA-09	47.76				J		50		gr	SN	PR	RF					
BHUA-09	47.91				J		55			CN	PR	RF					
BHUA-09	47.95				J		50		gr	SN	PR	RF					
BHUA-09	48.05				J		0			CN	UN	RF					
BHUA-09	48.19				J		0			CN	PR	RF					
BHUA-09	48.21				J		40		bk	SN	PR	RF					
BHUA-09	48.22				J		50			CN	UN	RF					
BHUA-09	48.40				J		65			CN	UN	RF					
BHUA-09	48.57				J		50			CN	PR	RF					
BHUA-09	48.97				J		50			CN	PR	RF					
BHUA-09	49.14				J		60			CN	ST	RF					
BHUA-09	49.23				J		50			CN	ST	RF					
BHUA-09	49.42				J		0			CN	ST	RF					
BHUA-09	49.43				V		75		gr mi		UN	RF		2			
BHUA-09	49.47				hJ		0		bk mi		PR						
BHUA-09	49.48				J		30			CN	PR	RF					
BHUA-09	49.52				hJ		40		gy mi		PR						
BHUA-09	49.54				hJ		50		gy mi		PR						
BHUA-09	49.55				hJ		45		bk mi		UN						
BHUA-09	49.56				hJ		70		gr mi		PR						
BHUA-09	49.58				hJ		15		gy mi		PR						
BHUA-09	49.61				V		25		gr mi		PR						
BHUA-09	49.62				hJ		70		bk mi		UN						
BHUA-09	49.63				hJ		50		gr mi		UN						
BHUA-09	49.67				hJ		0		br mi		PR						
BHUA-09	49.69				hJ		10		gr mi		UN						
BHUA-09	49.71				hJ		55		br and gr mi		UN						
BHUA-09	49.73				J		10			CN	PR	RF					
BHUA-09	49.76				hJ		50		bk mi		PR						
BHUA-09	49.77				hJ		50		gy mi		PR						
BHUA-09	49.79				hJ		70		gr and br mi		ST						
BHUA-09	49.82				hJ		20		gr mi		PR						
BHUA-09	49.82				hJ		20		gr mi		PR						
BHUA-09	49.84				hJ		70		mi		PR						
BHUA-09	49.85				hJ		50		bk mi		PR						
BHUA-09	49.86				hJ		10		gr mi		PR						
BHUA-09	49.87				J		60			CN	ST	RF					
BHUA-09	49.88	49.99			Js		50	60	gr	VN	UN						
BHUA-09	50.01				hJ		40		gr mi		PR						
BHUA-09	50.02				V		40		bk mi		UN						
BHUA-09	50.05				hJ		60		bk and gr mi		UN						
BHUA-09	50.08				hJ		55		gr mi		PR						
BHUA-09	50.09				hJ		50		gr mi		PR						
BHUA-09	50.10				V		40		bk and gr mi		PR						
BHUA-09	50.11	50.36			AZ		0	70	gr mi								
BHUA-09	50.17				J		0			CN	ST	RF					
BHUA-09	50.20				hJ		65		gr mi		UN						
BHUA-09	50.22				hJ		65		gr mi		UN						
BHUA-09	50.34				hJ		85		gr mi		UN						
BHUA-09	50.35				hJ		70		gr mi		UN						
BHUA-09	50.38				J		25		gr	VN	UN	RF					
BHUA-09	50.41				V		0		wh mi		UN						
BHUA-09	50.46				hJ		40		gr and wh mi		PR						
BHUA-09	50.49	51.57			AZ		45		gr mi		IR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	50.52				hJ		75		gr mi		UN						
BHUA-09	50.75				hJ		70		gr mi		UN						
BHUA-09	50.89				J		10		gr	SN	PR	RF					
BHUA-09	50.94				J		75		gr	VN	UN	RF					
BHUA-09	51.02				hJ		70		bk mi		PR						
BHUA-09	51.10				hJ		55		bk mi		PR						
BHUA-09	51.17				hJ		60		wh mi		UN						
BHUA-09	51.20				hJ		25		wh mi		UN						
BHUA-09	51.30				J		0			CN	PR	RF					
BHUA-09	51.34				hJ		40		wh mi		UN						
BHUA-09	51.48				J		0			CN	UN	RF					
BHUA-09	51.57				J		50			CN	PR	RF					
BHUA-09	51.59				J		65			SN	PR	RF					
BHUA-09	51.61				hJ		40		wh mi		PR						
BHUA-09	51.68				hJ		45		wh mi		PR						
BHUA-09	51.84				hJ		55		wh mi		UN						
BHUA-09	51.88				hJ		45		wh mi		PR						
BHUA-09	51.95				hJ		40		wh mi		PR						
BHUA-09	51.95				hJ		60										
BHUA-09	51.96				hJ		10		mi		PR						
BHUA-09	51.97				V		45		wh mi		PR						
BHUA-09	52.19				hJ		25		wh mi		PR						
BHUA-09	52.23				hJ		20										
BHUA-09	52.24				hJ		0		wh mi		PR						
BHUA-09	52.31				hJ		50		gr mi		UN						
BHUA-09	52.32				hJ		65		wh mi		UN						
BHUA-09	52.33				hJ		45										
BHUA-09	52.34				hJ		65		wh mi		UN						
BHUA-09	52.43				hJ		30										
BHUA-09	52.47				V		45		gr and wh mi		UN						
BHUA-09	52.49				hJ		30		wh mi		PR						
BHUA-09	52.50				DB												
BHUA-09	52.52				hJ		55		wh mi		UN						
BHUA-09	52.64				hJ		40		gr mi		PR						
BHUA-09	52.65				V		48		gr mi		PR						
BHUA-09	52.67				hJ		40		gr mi		PR						
BHUA-09	52.69				hJ		48		gr mi		PR						
BHUA-09	52.71				hJ		40		gr mi		PR						
BHUA-09	52.74				hJ		50		gr mi		PR						
BHUA-09	52.77				hJ		50		wh mi		PR						
BHUA-09	52.79				hJ		40		gr mi		PR						
BHUA-09	52.80				hJ		48		gr mi		PR						
BHUA-09	52.89				hJ		30		wh mi		UN						
BHUA-09	52.90				hJ		65		gr mi		UN						
BHUA-09	52.95				hJ		65		gr mi		PR						
BHUA-09	52.98				hJ		30		wh mi		PR						
BHUA-09	53.00				CO		60										
BHUA-09	53.01				hJ		40		wh mi		PR						
BHUA-09	53.02				hJ		45		gr mi		PR						
BHUA-09	53.04				hJ		50		gr mi		PR						
BHUA-09	53.05				hJ		10		wh mi		ST						
BHUA-09	53.07				hJ		50		gr mi		PR						
BHUA-09	53.11	53.21			AZ		40	90	gr and wh mi		UN						
BHUA-09	53.26				V		65		wh mi		IR						
BHUA-09	53.27				hJ		80		gr mi		PR						
BHUA-09	53.32				hJ		78		wh mi		PR						
BHUA-09	53.34				hJ		30		wh mi		PR						
BHUA-09	53.39				hJ		45		wh mi		UN						
BHUA-09	53.41				V		55		yl mi		IR						
BHUA-09	53.43				V		60		wh mi		UN						
BHUA-09	53.45				hJ		30		gr mi		UN						
BHUA-09	53.46				hJ		45		wh mi		UN						
BHUA-09	53.47				hJ		50		gr mi		UN						
BHUA-09	53.52				V		70		wh mi		UN						
BHUA-09	53.53				hJ		40		wh mi		PR						
BHUA-09	53.54				hJ		40		gr mi		UN						
BHUA-09	53.55				V		75		wh mi		IR						
BHUA-09	53.63	54.08			AZ		40	90	gr and wh mi		IR						
BHUA-09	53.65				V		50		gr mi		PR						
BHUA-09	53.67				hJ		65		wh mi		PR	RF					
BHUA-09	53.69				hJ		90		gr mi		UN						
BHUA-09	53.74				hJ		50		bk and gr mi		UN						
BHUA-09	53.80	54.00			hJ	X3	45										
BHUA-09	53.82				V		45		gr and wh mi		PR						
BHUA-09	53.88				V		50		gr and wh mi		UN						
BHUA-09	54.04				V		80		bk and gr mi		UN						
BHUA-09	54.09				V		60		gr mi		PR						
BHUA-09	54.10				DB												
BHUA-09	54.13				hJ		50		wh mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	54.14				hJ		50		wh mi		PR						
BHUA-09	54.14				hJ		70		mi		PR						
BHUA-09	54.16	54.47			AZ		0	90	gr mi		UN						
BHUA-09	54.17				hJ		35		wh mi		UN						
BHUA-09	54.18				hJ		90		gr mi		UN						
BHUA-09	54.19				hJ		30		wh mi		UN						
BHUA-09	54.20				hJ		30		wh mi		PR						
BHUA-09	54.20	54.40			hJ		80	90									
BHUA-09	54.23				V		60		gr mi		UN						
BHUA-09	54.27				V		50		gr mi		UN						
BHUA-09	54.28				V		90		bk and gr mi		UN						
BHUA-09	54.30				hJ		40		gr mi		PR						
BHUA-09	54.51				V		65		bk and gr mi		PR						
BHUA-09	54.52				hJ		65		gr mi		PR						
BHUA-09	54.55				hJ		55		wh mi		UN						
BHUA-09	54.57				hJ		55		gr and wh mi		UN						
BHUA-09	54.58				hJ		80		gr and wh mi		UN						
BHUA-09	54.63				hJ		45		bk and gr mi		UN						
BHUA-09	54.63				hJ		10		gr mi		UN						
BHUA-09	54.65				hJ		20		gr and wh mi		UN						
BHUA-09	54.70				hJ		60										
BHUA-09	54.74				hJ		65		bk mi		UN						
BHUA-09	54.76				hJ		50		bk and gr mi		UN						
BHUA-09	54.90				V		60		bk and gr mi		UN						
BHUA-09	54.93				hJ		40		wh mi		PR						
BHUA-09	54.95				hJ		55		gr mi		UN						
BHUA-09	55.00				hJ		55		gr mi		UN						
BHUA-09	55.02				hJ		20		gr mi		UN						
BHUA-09	55.03				hJ		25		gr mi		PR						
BHUA-09	55.04				hJ		40		bk mi		PR						
BHUA-09	55.06	55.14			AZ		0	90	gr mi		IR						
BHUA-09	55.18				hJ		25		bk and gr mi		UN						
BHUA-09	55.18				hJ		35		gr mi		PR						
BHUA-09	55.20				hJ		90		gr mi		PR						
BHUA-09	55.21				hJ		15		bk mi		PR						
BHUA-09	55.24				J		0	60		CN	IR	RF					
BHUA-09	55.25				hJ		40										
BHUA-09	55.29				hJ		90		bk and gr mi		UN						
BHUA-09	55.38				V		70		gr and wh mi		UN						
BHUA-09	55.40				hJ		25		gr mi		UN						
BHUA-09	55.44				hJ		30		gr mi		UN						
BHUA-09	55.49				hJ		55		gr mi		PR						
BHUA-09	55.50				V		45		bk mi		PR						
BHUA-09	55.56				DB												
BHUA-09	55.66				hJ		50		gr mi		UN						
BHUA-09	55.69	56.02			Js		50	70	gr-yl								10 mm spacing
BHUA-09	55.85				hJ		40										
BHUA-09	55.96				hJ		75		gr mi		ST						
BHUA-09	56.01				hJ		80		gr mi		UN						
BHUA-09	56.02				hJ		90		gr mi		UN						
BHUA-09	56.03				hJ		80		gr mi		UN						
BHUA-09	56.16	56.49			Js		40	80	gr	CT	UN						5 mm spacing
BHUA-09	56.20	56.30			hJ		50	65									
BHUA-09	56.40				hJ		65										
BHUA-09	56.66				hJ		60		bk mi		PR						
BHUA-09	56.67				hJ		50										
BHUA-09	56.68				hJ		50		bk mi		PR						
BHUA-09	56.70				hJ		80										
BHUA-09	56.80				hJ		80										
BHUA-09	56.92				hJ		0		gr mi		UN						
BHUA-09	56.97				hJ		55		gr mi		UN						
BHUA-09	57.03				hJ		60		bk mi		PR						
BHUA-09	57.04	58.15			Js		40	55	bk	VN	PR						7 mm spacing
BHUA-09	57.05				hJ		60		bk mi		PR						
BHUA-09	57.11				hJ		60		bk mi		PR						
BHUA-09	57.14				hJ		75		bk mi		PR						
BHUA-09	57.19				hJ		20		or-br mi		UN						
BHUA-09	57.20				J		60		gr	VN	UN	RF					
BHUA-09	57.24	57.59			AZ		10	90	gr mi		UN						
BHUA-09	57.30				hJ		50		gr mi		PR						
BHUA-09	57.33				hJ		80		wh mi		UN						
BHUA-09	57.36				hJ		35		gr mi		PR						
BHUA-09	57.54				J		70			CN	UN	RF					
BHUA-09	57.57				V		40		gr mi		UN						
BHUA-09	57.60				hJ		40		gr mi		PR						
BHUA-09	57.63				hJ		40		gr mi		PR						
BHUA-09	57.76				hJ		40		gr mi		UN						
BHUA-09	57.78				hJ		25		gr mi		PR						
BHUA-09	57.82				hJ		25		gr mi		UN						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	57.84				hJ		25		gr mi		UN						
BHUA-09	57.90				hJ		30		gr mi		UN						
BHUA-09	57.96				hJ		20		gr mi		UN						
BHUA-09	58.00				hJ		25		gr mi		PR						
BHUA-09	58.03				hJ		40		gr mi		PR						
BHUA-09	58.09				hJ		40		gr mi		PR						
BHUA-09	58.10				hJ		40		gr mi		PR						
BHUA-09	58.15	60.76			AZ		50	90	bk and gr mi		UN						
BHUA-09	58.27				hJ		70		gr mi		UN						
BHUA-09	58.31				hJ		30		gr mi		PR						
BHUA-09	58.33				hJ		35		gr mi		UN						
BHUA-09	58.34				hJ		50		gr mi		PR						
BHUA-09	58.35				hJ		15		gr mi		PR						
BHUA-09	58.44				V		40		gr mi		UN						
BHUA-09	58.47				V		45		gr mi		UN						
BHUA-09	58.49				hJ		30		gr mi		UN						
BHUA-09	58.51				hJ		10		gr mi		UN						
BHUA-09	58.55				hJ		55		gr mi		PR						
BHUA-09	58.59				V		68		gr mi		UN						
BHUA-09	58.61				hJ		20		gr mi		UN						
BHUA-09	58.74				hJ		15		gr mi		PR						
BHUA-09	58.75				hJ		20		gr mi		PR						
BHUA-09	58.79				hJ		20		gr mi		UN						
BHUA-09	58.81				hJ		75		gr mi		UN						
BHUA-09	58.82				hJ		70		gr mi		PR						
BHUA-09	58.90				hJ		70		gr mi		UN						
BHUA-09	58.97				hJ		30		gr mi		UN						
BHUA-09	58.98				hJ		15		gr mi		PR						
BHUA-09	59.08				V		70		gr mi		UN						
BHUA-09	59.12				V		40		gr mi		UN						
BHUA-09	59.27				hJ		20		gr mi		UN						
BHUA-09	59.30				J		40			CN	UN	RF					
BHUA-09	59.37				hJ		20		gr mi		PR						
BHUA-09	59.38				hJ		30		wh mi		PR						
BHUA-09	59.46				V		80		gr mi		IR						
BHUA-09	59.62				V		60		gr mi		PR						
BHUA-09	59.63				hJ		25		gr mi		PR						
BHUA-09	59.71				hJ		60		gr mi		PR						
BHUA-09	59.72				hJ		45		gr mi		UN						
BHUA-09	59.76				hJ		20		gr mi		UN						
BHUA-09	59.81				hJ		40		gr mi		UN						
BHUA-09	59.85				hJ		60		gr mi		UN						
BHUA-09	59.93				hJ		60		gr mi		ST						
BHUA-09	60.01				hJ		20		bk mi		PR						
BHUA-09	60.03				J		30			CN	UN	RF					
BHUA-09	60.07				J		10			CN	UN	RF					
BHUA-09	60.16				J		35			CN	UN	RF					
BHUA-09	60.57				hJ		20		bk mi		PR						
BHUA-09	60.68				hJ		60		gr mi		UN						
BHUA-09	60.77				hJ		50		gr mi		UN						
BHUA-09	60.83				hJ		70		bk mi		UN						
BHUA-09	60.87				hJ		75		bk mi		UN						
BHUA-09	60.89				hJ		65		gr mi		PR						
BHUA-09	60.90				hJ		25		gr mi		PR						
BHUA-09	60.95				V		70		bk mi		PR						
BHUA-09	61.01				hJ		60		gr mi		UN						
BHUA-09	61.03				hJ		60		bk mi		UN						
BHUA-09	61.04				hJ		90		gr mi		PR						
BHUA-09	61.05				hJ		70		bk mi		PR						
BHUA-09	61.08				hJ		70		bk mi		PR						
BHUA-09	61.09				hJ		60		bk mi		PR						
BHUA-09	61.17				hJ		30		bk mi		PR						
BHUA-09	61.19				hJ		90		bk and wh mi		UN						
BHUA-09	61.21				hJ		30		bk mi		PR						
BHUA-09	61.26				V		70		bk mi		UN						
BHUA-09	61.31				V		50		bk mi		PR						
BHUA-09	61.35				hJ		90		gr mi		PR						
BHUA-09	61.36				V		50		bk mi		PR						
BHUA-09	61.42				hJ		50		gr mi		UN						
BHUA-09	61.44				hJ		50		gr mi		UN						
BHUA-09	61.45				V		60		gr mi		UN						
BHUA-09	61.46				hJ		55		gr mi		PR						
BHUA-09	61.49				hJ		70		gr mi		UN						
BHUA-09	61.59				hJ		58		gr mi		PR						
BHUA-09	61.64	62.19			Js		70	90	bk and gr	VN	UN						
BHUA-09	61.70	61.78			Js		35	55	bk	VN	UN						
BHUA-09	62.00				hJ		30		wh mi		PR						
BHUA-09	62.03				hJ		55		gr mi		PR						
BHUA-09	62.05				V		0		gr mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	62.07				hJ		55		gr mi		PR						
BHUA-09	62.10				V		30		gr mi		PR						
BHUA-09	62.13				hJ		30		bk mi		PR						
BHUA-09	62.14				J		35			CN	UN	RF					
BHUA-09	62.15				hJ		10		bk mi		PR						
BHUA-09	62.17				hJ		35		bk mi		ST						
BHUA-09	62.21	62.49			Js		60	75	bk and gr								8 mm spacing
BHUA-09	62.39				V		20		gr mi		PR						
BHUA-09	62.48	62.98			AZ		10	90	bk and gr mi		UN						
BHUA-09	62.67				hJ		0		mi		PR						
BHUA-09	63.01				hJ		60		bk mi		PR						
BHUA-09	63.02				hJ		65		bk mi		PR						
BHUA-09	63.04				hJ		20		bk mi		UN						
BHUA-09	63.05				hJ		70		bk mi		PR						
BHUA-09	63.09				hJ		60		bk and gr mi		PR						
BHUA-09	63.17				hJ		70		bk mi		UN						
BHUA-09	63.22				hJ		80		bk mi		UN						
BHUA-09	63.25				hJ		65		bk mi		PR						
BHUA-09	63.32				V		60		bk and gr mi		PR						
BHUA-09	63.38				J		60			CN	ST	RF					
BHUA-09	63.43				hJ		45		bk mi		PR						
BHUA-09	63.52				V		65		gr mi		IR						
BHUA-09	63.54				hJ		40		bk mi		PR						
BHUA-09	63.59				hJ		35		bk mi		PR						
BHUA-09	63.60				hJ		35		bk mi		UN						
BHUA-09	63.63				hJ		45		gr mi		UN						
BHUA-09	63.64				hJ		60		gr mi		PR						
BHUA-09	63.72				hJ		60		bk mi		UN						
BHUA-09	63.73				hJ		60		bk mi		PR						
BHUA-09	63.75				V		55		bk mi		PR						
BHUA-09	63.86				hJ		50		gr mi		UN						
BHUA-09	63.91				DB		0			CN	PR	RF					
BHUA-09	63.96				V		55		gr mi		UN						
BHUA-09	63.97				V		40		gr mi		UN						
BHUA-09	63.98				V		30		gr mi		UN						
BHUA-09	64.07				hJ		70		gr mi		UN						
BHUA-09	64.10				hJ		70		bk mi		PR						
BHUA-09	64.11				hJ		70		bk mi		PR						
BHUA-09	64.12				J		0			CN	UN	RF					
BHUA-09	64.15				hJ		60		bk and wh mi		PR						
BHUA-09	64.16				hJ		60		bk mi		UN						
BHUA-09	64.23				hJ		50		gr mi		UN						
BHUA-09	64.27				hJ		55		gr mi		UN						
BHUA-09	64.31				hJ		60		gr mi		PR						
BHUA-09	64.32				hJ		60		gr mi		UN						
BHUA-09	64.33				hJ		65		bk mi		UN						
BHUA-09	64.34				hJ		30		bk mi		PR						
BHUA-09	64.35				DB		35			CN	UN	RF					
BHUA-09	64.37				V		50		bk and gr mi		UN						
BHUA-09	64.39				hJ		30		bk and gr mi		UN						
BHUA-09	64.41				hJ		60		bk and wh mi		UN						
BHUA-09	64.42				hJ		60		wh mi		PR						
BHUA-09	64.46				hJ		45		bk mi		UN						
BHUA-09	64.48				hJ		50		bk mi		UN						
BHUA-09	64.50				hJ		50		bk mi		UN						
BHUA-09	64.52				hJ		60		gr mi		UN						
BHUA-09	64.53				hJ		80		wh mi		PR						
BHUA-09	64.54				hJ		45		gr mi		UN						
BHUA-09	64.55				hJ		50		gr mi		PR						
BHUA-09	64.56				hJ		50		gr mi		UN						
BHUA-09	64.57				hJ		85		bk mi		PR						
BHUA-09	64.59				hJ		45		bk mi		UN						
BHUA-09	64.59				hJ		70		bk mi		UN						
BHUA-09	64.60	64.72			Js		50	65	gr	SN	UN						4 mm spacing
BHUA-09	64.80				hJ		65		bk mi		PR						
BHUA-09	64.82				hJ		60		gr mi		UN						
BHUA-09	64.86				hJ		30		gr mi		PR						
BHUA-09	64.86				J		65			CN	UN	RF					
BHUA-09	64.87				hJ		50		wh mi		PR						
BHUA-09	64.88				hJ		35		gr mi		PR						
BHUA-09	64.93				hJ		40		bk mi		PR						
BHUA-09	64.93				hJ		70		bk mi		PR						
BHUA-09	64.94				hJ		35		bk and wh mi		UN						
BHUA-09	64.96				hJ		60		bk and wh mi		UN						
BHUA-09	64.98				hJ		95		bk mi		PR						
BHUA-09	64.98				hJ		60		bk mi		PR						
BHUA-09	65.01				hJ		60		gr mi		PR						
BHUA-09	65.02	65.39			AZ		45	70	gr mi		UN						
BHUA-09	65.42				hJ		50		gr mi		CU						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	65.46				hJ		35		gr mi		UN						
BHUA-09	65.46				hJ		70		gr mi		UN						
BHUA-09	65.50				hJ		75		bk mi		UN						
BHUA-09	65.51				hJ		85		bk mi		UN						
BHUA-09	65.51				hJ		70		gr mi		UN						
BHUA-09	65.65				hJ		75		gr mi		UN						
BHUA-09	65.72				hJ		70		bk and gr mi		UN						
BHUA-09	65.75				hJ		60		bk mi		PR						
BHUA-09	65.78				hJ		60		bk and gr mi		PR						
BHUA-09	65.81				V		50		bk and gr mi		UN						
BHUA-09	65.86				hJ		70		bk mi		PR						
BHUA-09	65.87				hJ		70		bk mi		PR						
BHUA-09	65.91				hJ		80		bk mi		UN						
BHUA-09	65.94				hJ		70		bk mi		UN						
BHUA-09	65.95				hJ		70		bk mi		UN						
BHUA-09	65.95				hJ		30		bk mi		PR						
BHUA-09	65.98				hJ		90		bk mi		UN						
BHUA-09	65.98				hJ		65		bk mi		PR						
BHUA-09	66.01				hJ		68		gr mi		PR						
BHUA-09	66.02				hJ		60		bk mi		PR						
BHUA-09	66.07				hJ		25		bk mi		PR						
BHUA-09	66.08				hJ		40		bk mi		PR						
BHUA-09	66.11				hJ		40		bk mi		PR						
BHUA-09	66.14				hJ		45		bk and gr mi		UN						
BHUA-09	66.18				hJ		65		gr mi		PR						
BHUA-09	66.19				hJ		75		gr mi		PR						
BHUA-09	66.22				hJ		10		bk mi		PR						
BHUA-09	66.23				V		70		gr mi		UN						
BHUA-09	66.29				hJ		30		gr mi		UN						
BHUA-09	66.30				hJ		65		gr mi		PR						
BHUA-09	66.46				hJ		45		bk and gr mi		PR						
BHUA-09	66.48				hJ		40		bk mi		ST						
BHUA-09	66.50				hJ		45		bk mi		UN						
BHUA-09	66.55				hJ		45		bk mi		UN						
BHUA-09	66.56				hJ		45		wh mi		PR						
BHUA-09	66.61				hJ		70		gr mi		UN						
BHUA-09	66.62				hJ		65		bk and gr mi		UN						
BHUA-09	66.66				hJ		65		bk mi		UN						
BHUA-09	66.68				hJ		65		bk and gr mi		UN						
BHUA-09	66.74				hJ		65		bk mi		UN						
BHUA-09	66.77				hJ		35		bk mi		PR						
BHUA-09	66.78				hJ		60		bk mi		PR						
BHUA-09	66.82				hJ		70		bk mi		PR						
BHUA-09	66.87				hJ		65		bk mi		CU						
BHUA-09	66.94				hJ		75		bk and gr mi		UN						
BHUA-09	66.98				hJ		60		gr mi		UN						
BHUA-09	67.02				hJ		65		bk and gr mi		PR						
BHUA-09	67.03				hJ		25		bk mi		UN						
BHUA-09	67.09				hJ		65		bk mi		UN						
BHUA-09	67.09				hJ		50		wh mi		UN						
BHUA-09	67.14				hJ		35		mi		PR						
BHUA-09	67.16				hJ		80		gr and wh mi		UN						
BHUA-09	67.22				hJ		60		bk and wh mi		PR						
BHUA-09	67.24				hJ		60		bk mi		PR						
BHUA-09	67.27				hJ		60		bk and gr mi		UN						
BHUA-09	67.29				hJ		80		gr mi		UN						
BHUA-09	67.35				hJ		70		gr mi		UN						
BHUA-09	67.39				hJ		35		bk mi		PR						
BHUA-09	67.41				hJ		30		bk mi		PR						
BHUA-09	67.42				hJ		20		bk mi		UN						
BHUA-09	67.44				hJ		85		bk mi		UN						
BHUA-09	67.47				hJ		10		bk mi		UN						
BHUA-09	67.53				hJ		90		bk mi		PR						
BHUA-09	67.59				hJ		40		wh mi		UN						
BHUA-09	67.61				J		0			CN	ST	RF					
BHUA-09	67.63				J		10			CN	UN	RF					
BHUA-09	67.68				J		30			CN	PR	RF					
BHUA-09	67.69				hJ		85		bk and gr mi		ST						
BHUA-09	67.75				hJ		75		bk mi		PR						
BHUA-09	67.77				J		80		gr	VN	ST	RF					
BHUA-09	67.80				hJ		35		bk mi		PR						
BHUA-09	67.82				hJ		60		bk mi		UN						
BHUA-09	67.87				hJ		90		wh mi		UN						
BHUA-09	67.90				J		30			CN	PR	RF					
BHUA-09	67.93				hJ		75		bk mi		UN						
BHUA-09	67.94				hJ		55		bk mi		UN						
BHUA-09	67.95				J		90		bk	SN	UN	RF					
BHUA-09	67.97				hJ		40		wh mi		PR						
BHUA-09	67.99				hJ		50		bk and wh mi		PR						



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BHUA-09	68.01				hJ		30		wh mi		PR						
BHUA-09	68.09				hJ		40		gr mi		PR						
BHUA-09	68.10				hJ		30		gr mi		PR						
BHUA-09	68.11				hJ		25		gr mi		PR						
BHUA-09	68.12				hJ		90		bk mi		PR						
BHUA-09	68.15				hJ		45		gr mi		PR						
BHUA-09	68.15				hJ		55		bk mi		UN						
BHUA-09	68.22				hJ		90		bk mi		PR						
BHUA-09	68.25				hJ		80		bk mi		PR						
BHUA-09	68.28				hJ		75		bk mi		UN						
BHUA-09	68.31				hJ		50		bk and wh mi		ST						
BHUA-09	68.35				hJ		45		gr mi		UN						
BHUA-09	68.36				hJ		35		bk mi		PR						
BHUA-09	68.39				hJ		30		bk mi		UN						
BHUA-09	68.41				hJ		30		gr mi		UN						
BHUA-09	68.44				V		45		gr mi		UN						
BHUA-09	68.48				hJ		25		bk mi		UN						
BHUA-09	68.49				hJ		30		bk mi		PR						
BHUA-09	68.51				hJ		70		bk mi		PR						
BHUA-09	68.54				hJ		60		bk mi		PR						
BHUA-09	68.55				hJ		78		bk mi		PR						
BHUA-09	68.57				hJ		40		gr mi		UN						
BHUA-09	68.60				hJ		70		bk and wh mi		UN						
BHUA-09	68.68				hJ		50		bk mi		UN						
BHUA-09	68.70				hJ		45		bk mi		PR						
BHUA-09	68.71				hJ		60		mi		PR						
BHUA-09	68.80	69.00			AZ		30	90	bk and gr mi		UN						
BHUA-09	69.03				hJ		0		bk and wh mi		PR						
BHUA-09	69.04				hJ		10		bk mi		PR						
BHUA-09	69.05				hJ		55		mi		PR						
BHUA-09	69.07				hJ		30		gr mi		UN						
BHUA-09	69.09				hJ		50		gr mi		UN						
BHUA-09	69.11				hJ		50		gr mi		UN						
BHUA-09	69.13				hJ		35		gr mi		PR						
BHUA-09	69.16				hJ		90		bk and gr mi		UN						
BHUA-09	69.19				hJ		55		bk mi		PR						
BHUA-09	69.21				V		20		bk and gr mi		UN						
BHUA-09	69.22				hJ		25		gr mi		PR						
BHUA-09	69.23	70.00			AZ		10	80	bk and gr mi		UN						
BHUA-09	69.37				J		50			CN	PR	RF					
BHUA-09	69.38				J		80		gr	SN	UN	RF					
BHUA-09	69.46				J		0		gr	SN	UN	RF					
BHUA-09	69.52				hJ		80		bk mi		UN						
BHUA-09	69.53				hJ		75		mi		UN						
BHUA-09	69.56				hJ		25		wh mi		PR						
BHUA-09	69.58				hJ		55		bk and wh mi		PR						
BHUA-09	69.61	69.81			AZ		10	60	bk and gr mi		IR						
BHUA-09	69.67				hJ		20		gr mi		PR						
BHUA-09	69.68				hJ		55		gr mi		PR	RF					
BHUA-09	69.72				hJ		55		bk mi		UN						
BHUA-09	69.81	70.00			AZ		10	90	bk and gr mi		UN						
BHUA-09	69.83				hJ		70		gr mi		UN						
BHUA-09	69.92				J		0			CN	ST	RF					
BHUA-09	69.94	70.00			Js		15		gr	SN	PR						3 mm spacing
BHUA-09	70.00	71.72			Js		0	15	bk	VN	PR						3 mm spacing
BHUA-09	70.13				J		35			CN	ST	RF					
BHUA-09	70.18				hJ		60		bk mi		PR						
BHUA-09	70.19				hJ		10		gr mi		PR						
BHUA-09	70.26				hJ		25		bk mi		PR						
BHUA-09	70.29				hJ		40		gr mi		PR						
BHUA-09	70.30				hJ		30		bk and gr mi		PR						
BHUA-09	70.31				hJ		75		wh mi		UN						
BHUA-09	70.35				V		10		gr mi		IR						
BHUA-09	70.42				V		60		gr mi		PR						
BHUA-09	70.43				hJ		80		bk and wh mi		UN						
BHUA-09	70.46				hJ		50		wh mi		UN						
BHUA-09	70.48				hJ		40		bk and wh mi		UN						
BHUA-09	70.49				hJ		65		bk mi		UN						
BHUA-09	70.50				hJ		90		bk and wh mi		UN						
BHUA-09	70.52				hJ		20		wh mi		UN						
BHUA-09	70.55	70.59			CS		0	10	fragmented rock <20mm dia		UN	RF		30			
BHUA-09	70.60				hJ		40		gr mi		PR						
BHUA-09	70.62				hJ		40		gr mi		UN						
BHUA-09	70.66				hJ		50		bk mi		PR						
BHUA-09	70.72				hJ		30		gr mi		UN						
BHUA-09	70.74				hJ		40		bk and wh mi		UN						
BHUA-09	70.74				hJ		35		gr mi		PR						
BHUA-09	70.77				hJ		75		bk mi		UN						
BHUA-09	70.83				hJ		75		wh mi		UN						



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BHUA-09	70.84				V		70		gr mi		UN						
BHUA-09	70.88				hJ				gr mi		UN						
BHUA-09	70.93				hJ		60		bk mi		UN						
BHUA-09	70.93				J		35			CN	UN	RF					
BHUA-09	70.94				hJ		45		wh mi		UN						
BHUA-09	70.95				hJ		40		bk and wh mi		PR						
BHUA-09	70.98				hJ		70		bk mi		PR						
BHUA-09	70.98				J		55			CN	UN	RF					
BHUA-09	71.04				hJ		50		bk and gr mi		UN						
BHUA-09	71.07				hJ		30		bk mi		PR						
BHUA-09	71.12				hJ		60		bk mi		PR						
BHUA-09	71.16				hJ		60		bk mi		ST						
BHUA-09	71.17				hJ		30		gr mi		UN						
BHUA-09	71.20				hJ		40		gr mi		PR						
BHUA-09	71.20				hJ		65		bk mi		UN						
BHUA-09	71.22				hJ		50		bk mi		UN						
BHUA-09	71.26				J		20			CN	ST	RF					
BHUA-09	71.28				J		60		gr	VN	ST	RF					
BHUA-09	71.30				J		70			CN	ST	RF					
BHUA-09	71.32				J		20		bk	SN	UN	RF					
BHUA-09	71.33				hJ		65		bk mi		UN						
BHUA-09	71.35				hJ		60		bk mi		PR						
BHUA-09	71.36				hJ		65		bk and wh mi		PR						
BHUA-09	71.38				hJ		25		gr mi		PR						
BHUA-09	71.39				J		70			CN	UN	RF					
BHUA-09	71.40				J		40			CN	PR	RF					
BHUA-09	71.41				hJ		50		gr mi		UN						
BHUA-09	71.42				J		35			CN	ST	RF					
BHUA-09	71.44				V		35		bk mi		UN						
BHUA-09	71.45				J		50			CN	UN	RF					
BHUA-09	71.47				hJ		15		gr mi		UN						
BHUA-09	71.49				hJ		60		gr mi		PR						
BHUA-09	71.50				hJ		60		wh mi		ST						
BHUA-09	71.51				hJ		35		gr mi		PR						
BHUA-09	71.54				hJ		60		bk and wh mi		UN						
BHUA-09	71.56				hJ		15		bk and wh mi		UN						
BHUA-09	71.57				hJ		50		gr mi		PR						
BHUA-09	71.58				V		15		bk and gr mi		PR						
BHUA-09	71.59				hJ		40		gr mi		PR						
BHUA-09	71.62				hJ		70		bk mi		UN						
BHUA-09	71.64				hJ		60		bk mi		UN						
BHUA-09	71.66				hJ		60		wh mi		UN						
BHUA-09	71.67				hJ		50		gr mi		UN						
BHUA-09	71.70				hJ		30		gr mi		PR						
BHUA-09	71.72				J		10		gr	VN	UN	SM					
BHUA-09	71.73				V		50		gr mi		PR	SM		5			
BHUA-09	71.79				hJ		50		gr mi		PR						
BHUA-09	71.81				hJ		65		bk mi		UN						
BHUA-09	71.84				hJ		75		bk mi		UN						
BHUA-09	71.84	72.18			AZ		20	80	bk and gr mi		UN						
BHUA-09	71.90				J		10		gr	VN	ST	RF					
BHUA-09	71.92				J		75		bk	SN	PR						
BHUA-09	71.94				hJ		60		gr mi		UN						
BHUA-09	71.95				J		0			CN	ST	RF					
BHUA-09	71.96				hJ		80		bk and wh mi		PR						
BHUA-09	71.98				hJ		40		gr mi		PR						
BHUA-09	71.98				J		0		gr	SN	UN	SM					
BHUA-09	72.00	73.50			Js		10		bk	VN	UN						3 mm spacing
BHUA-09	72.03				hJ		90		gr mi		UN						
BHUA-09	72.06				hJ		75		gr mi		PR						
BHUA-09	72.19				hJ		55		gr mi		UN						
BHUA-09	72.20				hJ		45		bk mi		PR						
BHUA-09	72.22				hJ		90		gr mi		PR						
BHUA-09	72.23				hJ		30		wh mi		PR						
BHUA-09	72.24				hJ		50		bk mi		UN						
BHUA-09	72.26				hJ		25		gr mi		PR						
BHUA-09	72.27				hJ		20		gr mi		PR						
BHUA-09	72.28				hJ		65		bk mi		PR						
BHUA-09	72.30				hJ		30		gr mi		PR						
BHUA-09	72.32				hJ		30		gr mi		PR						
BHUA-09	72.35				hJ		70		gr mi		PR						
BHUA-09	72.36				hJ		30		wh mi		PR						
BHUA-09	72.41				hJ		55		bk mi		UN						
BHUA-09	72.42				hJ		30		gr mi		PR						
BHUA-09	72.47				hJ		20		gr mi		PR						
BHUA-09	72.48	72.92			Js		50		bk and gr	VN	UN						3 mm spacing
BHUA-09	72.50				hJ		25		bk and gr mi		UN						
BHUA-09	72.51				J		20			CN	UN	RF					1 mm wh alt halo
BHUA-09	72.67				hJ		85		bk mi		ST						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	72.74				hJ		60		mi		UN						
BHUA-09	72.77				hJ		70		wh mi		PR						
BHUA-09	72.79				J		90			CN	UN	RF					
BHUA-09	72.81				J		20			CN	ST	RF					
BHUA-09	72.95				J		70			CN	UN	RF					
BHUA-09	73.03				hJ		60		gr mi		UN						
BHUA-09	73.04				V		45		gr mi		PR						
BHUA-09	73.05				hJ		60		gr mi		UN						
BHUA-09	73.09				hJ		60		gy mi		PR						
BHUA-09	73.11				hJ		65		bk mi		PR						
BHUA-09	73.12				hJ		35		gr mi		PR						
BHUA-09	73.14				hJ		35		gr mi		PR						
BHUA-09	73.16	73.26			AZ		20	90	gr mi								
BHUA-09	73.22				hJ		25		bk mi		UN						
BHUA-09	73.36				hJ		40		gr mi		UN						
BHUA-09	73.39				hJ		45		gr mi		UN						
BHUA-09	73.43				J		0			CN	PR	RF					
BHUA-09	73.44				hJ		45		gr mi		UN						
BHUA-09	73.49				hJ		55		gr mi		PR						
BHUA-09	73.51				hJ		45		gr mi		UN						
BHUA-09	73.53	76.50			hJs		0	15	bk mi		UN						
BHUA-09	73.53				hJ		40		gr mi		UN						
BHUA-09	73.56				hJ		20		gr mi		UN						
BHUA-09	73.57				hJ		30		gr mi		UN						
BHUA-09	73.58				hJ		30				UN						
BHUA-09	73.59				hJ		30		gr mi		UN						
BHUA-09	73.60				hJ		35				UN						
BHUA-09	73.61				hJ		30		gr mi		PR						
BHUA-09	73.62				hJ		25		gr mi		PR						
BHUA-09	73.63				hJ		10		gr mi		PR						
BHUA-09	73.64				hJ				gr mi		UN						
BHUA-09	73.65				hJ		60		gr mi		UN						
BHUA-09	73.66				hJ		90		gr mi		UN						
BHUA-09	73.68				hJ		40		gr mi		UN						
BHUA-09	73.71				J		55		gr mi	VN	PR	RF					
BHUA-09	73.74				hJ		40		gr mi		UN						
BHUA-09	73.78				hJ		25		gr mi		PR						
BHUA-09	73.82				V		40		gr mi		PR						
BHUA-09	73.83				hJ		80		gr mi		UN						
BHUA-09	73.85				V		20		gr mi		UN						
BHUA-09	73.86				hJ		55		gr mi		UN						
BHUA-09	73.88				hJ		20		gr mi		UN						
BHUA-09	73.89				V		20		gr mi		PR						
BHUA-09	73.92				hJ		90		gr mi		UN						
BHUA-09	73.93				hJ		80		gr mi		UN						
BHUA-09	73.97				hJ		55		gr mi		UN						
BHUA-09	73.99				hJ		40		gr mi		PR						
BHUA-09	74.00	74.15			hJs		20	40	gr mi		UN						
BHUA-09	74.11				hJ		58		gr mi		UN						
BHUA-09	74.13				hJ		35		gr mi		PR						
BHUA-09	74.15				hJ		25		gr mi		PR						
BHUA-09	74.17				hJ		25		gr mi		UN						
BHUA-09	74.19				hJ		55		bk and wh mi		PR						
BHUA-09	74.19				hJ		55		bk and wh mi		UN						
BHUA-09	74.21				hJ		30		gr mi		PR						
BHUA-09	74.22				hJ		55		gr mi		UN						
BHUA-09	74.25				hJ		50		gr mi		PR						
BHUA-09	74.26				hJ		50		gr mi		PR						
BHUA-09	74.28				hJ		50		gr mi		PR						
BHUA-09	74.28				hJ		30		gr mi		UN						
BHUA-09	74.29				V		55		gr mi		UN						
BHUA-09	74.33	74.45			hJs		65		gr mi		UN						
BHUA-09	74.36				J		35			CN	UN	RF					
BHUA-09	74.38				hJ		25		gr mi		PR						
BHUA-09	74.39				hJ		25		gr mi		PR						
BHUA-09	74.47				hJ		35		gr mi		UN						
BHUA-09	74.53				hJ		50		gr mi		PR						
BHUA-09	74.62				hJ		25		gr mi		UN						
BHUA-09	74.65				V		60		gr mi		PR						
BHUA-09	74.68				V		80		gr mi		PR						
BHUA-09	74.70				hJ		30		gr mi		PR						
BHUA-09	74.71				hJ		60		bk mi		PR						
BHUA-09	74.73				hJ		30		gr mi		PR						
BHUA-09	74.75				hJ		60		bk mi		UN						
BHUA-09	74.75				hJ		35		gr mi		PR						
BHUA-09	74.76				hJ		45		gr mi		UN						
BHUA-09	74.79				hJ		45		bk and gr mi		PR						
BHUA-09	74.80				hJ		60		bk mi		UN						
BHUA-09	74.83				hJ		75		bk mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	74.85				hJ		65		gr mi		UN						
BHUA-09	74.88				hJ		65		gr mi		UN						
BHUA-09	74.89				hJ		25		gr mi		UN						
BHUA-09	74.96	75.06			AZ		30	85	gr mi		UN						
BHUA-09	75.14	75.27			hJs		30	60	gr mi		UN						
BHUA-09	75.29				hJ		40		gr mi		PR						
BHUA-09	75.31				hJ		30		gr mi		PR						
BHUA-09	75.32				hJ		80		gr mi		UN						
BHUA-09	75.34				hJ		50		gr mi		UN						
BHUA-09	75.35				hJ		30		gr mi		PR						
BHUA-09	75.39				hJ		55		gr mi		UN						
BHUA-09	75.41				hJ		50		gr mi		UN						
BHUA-09	75.43				hJ		65		gr mi		UN						
BHUA-09	75.44				hJ		55		gr mi		UN						
BHUA-09	75.50				hJ		30		gr mi		UN						
BHUA-09	75.51				V		55		bk and gr mi		UN						
BHUA-09	75.52				hJ		55		bk and gr mi		PR						
BHUA-09	75.53				V		55		gr mi		UN						
BHUA-09	75.57				hJ		65		gr mi		UN						
BHUA-09	75.58				hJ		80				UN						
BHUA-09	75.59				hJ		90		bk and wh mi		UN						
BHUA-09	75.61				hJ		25		gr mi		CU						
BHUA-09	75.62				hJ		30		gr mi		UN						
BHUA-09	75.65				hJ		10		gr mi		PR						
BHUA-09	75.67				hJ		90		gr mi		PR						
BHUA-09	75.68				hJ		80		bk and gr mi		UN						
BHUA-09	75.72				hJ		70		bk and gr mi		UN						
BHUA-09	75.73				hJ		55		gr mi		UN						
BHUA-09	75.74				V		65		bk and gr mi		UN						
BHUA-09	75.75				V		45		bk and gr mi		UN						
BHUA-09	75.80				hJ		60		bk mi		PR						
BHUA-09	75.83				J		50		gr mi	SN	UN	RF					
BHUA-09	75.84				hJ		30		gr mi		UN						
BHUA-09	75.93				hJ		55		gr and wh mi		UN						
BHUA-09	75.94				hJ		60		bk and wh mi		PR						
BHUA-09	75.95				hJ		70		bk mi		UN						
BHUA-09	75.96				hJ		55		pl gy mi		UN						
BHUA-09	75.97				hJ		55		gr mi		PR						
BHUA-09	75.98				hJ		90		gr mi		UN						
BHUA-09	76.02				hJ		45		gr mi		UN						
BHUA-09	76.03				hJ		70		gr mi		UN						
BHUA-09	76.04				hJ		70		gr mi		UN						
BHUA-09	76.06				hJ		55		gr mi		PR						
BHUA-09	76.07				hJ		15		gr mi		UN						
BHUA-09	76.08				hJ		10		gr mi		UN						
BHUA-09	76.10				hJ		15		gr mi		PR						
BHUA-09	76.14				hJ		80		bk mi		PR						
BHUA-09	76.16				hJ		35		gr mi		UN						
BHUA-09	76.17				V		75		gr mi		UN						
BHUA-09	76.19				hJ		40		gr mi		PR						
BHUA-09	76.22				J		75		wh mi	SN	UN	RF					
BHUA-09	76.24				hJ		60		gr mi		PR						
BHUA-09	76.28				V		35		gr mi		PR						
BHUA-09	76.29				J		10		wh mi	SN	UN	RF					
BHUA-09	76.30				J		80			CN	PR	RF					
BHUA-09	76.32				hJ		40		gr mi		UN						
BHUA-09	76.33				hJ		55		gr mi		PR						
BHUA-09	76.34				V		25		gr mi		UN						
BHUA-09	76.37				hJ		70		gr mi		PR						
BHUA-09	76.38				hJ		30		gr mi		UN						
BHUA-09	76.39				hJ		65		gr mi		UN						
BHUA-09	76.41				hJ		15		gr mi		UN						
BHUA-09	76.42				hJ		25		gr mi		PR						
BHUA-09	76.43				hJ		60		gr mi		PR						
BHUA-09	76.46				hJ		60		bk mi		PR						
BHUA-09	76.47				hJ		70		gr mi		UN						
BHUA-09	76.48				hJ		10		gr mi		CU						
BHUA-09	76.49				hJ		70		gr mi		UN						
BHUA-09	76.55				hJ		20		gr mi		PR						
BHUA-09	76.56				hJ		50		gr mi		PR						
BHUA-09	76.59				hJ		45		gr mi		PR						
BHUA-09	76.60				hJ		80		gr mi		UN						
BHUA-09	76.62				hJ		35		gr mi		UN						
BHUA-09	76.63				hJ		45		gr mi		UN						
BHUA-09	76.64				hJ		64		gr mi		UN						
BHUA-09	76.65				hJ		90		bk and gr mi		UN						
BHUA-09	76.67				hJ		50		gr mi		UN						
BHUA-09	76.68				hJ		40		gr mi		PR						
BHUA-09	76.69				hJ		80		gr mi		UN						



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BHUA-09	76.70				hJ		70		gr mi		PR						
BHUA-09	76.71				hJ		35		gr mi		PR						
BHUA-09	76.72				hJ		70		bk and gr mi		UN						
BHUA-09	76.74				hJ		30		gr mi		PR						
BHUA-09	76.75	76.78			V		15		gr mi		PR						
BHUA-09	76.76				J		30		gr mi	CT	UN	RF					
BHUA-09	76.81				hJ		10		gr mi		PR						
BHUA-09	76.82				hJ		68		gr mi		UN						
BHUA-09	76.83				V		70		gr mi		UN						
BHUA-09	76.86				V		40		gr mi		UN						
BHUA-09	76.95				hJ		45		gr mi		PR						
BHUA-09	76.96				hJ		45		gr mi		UN						
BHUA-09	76.98				hJ		90		gr mi		UN						
BHUA-09	77.02				hJ		50		gr mi		PR						
BHUA-09	77.05				hJ		40		gr mi		UN						
BHUA-09	77.06				hJ		70		gr mi		UN						
BHUA-09	77.07				hJ		60		gr mi		UN						
BHUA-09	77.08				hJ		60		gr mi		UN						
BHUA-09	77.14				hJ		30		gr mi		PR						
BHUA-09	77.16				hJ		80		bk and gr mi		UN						
BHUA-09	77.18				hJ		55		gr mi		UN						
BHUA-09	77.19				hJ		55		gr mi		UN						
BHUA-09	77.24				hJ				gr mi		PR						
BHUA-09	77.26				hJ		50		gr mi		PR						
BHUA-09	77.27				hJ		30		gr mi		PR						
BHUA-09	77.28				V		50		bk mi		PR						
BHUA-09	77.29				V		75		bk and gr mi		UN						
BHUA-09	77.35				hJ		60		gr mi		PR						
BHUA-09	77.39				V		30		gr mi		UN						
BHUA-09	77.42				hJ		65		bk mi		UN						
BHUA-09	77.43				hJ		65		gr mi		UN						
BHUA-09	77.44				hJ		80		gr mi		UN						
BHUA-09	77.45				hJ		10		gr mi		PR						
BHUA-09	77.47				hJ		55		gr mi		UN						
BHUA-09	77.49				hJ		70		gr mi		UN						
BHUA-09	77.51				hJ		90		bk and gr mi		UN						
BHUA-09	77.54				V		40		gr mi		UN						
BHUA-09	77.57				hJ		50		gr mi		PR						
BHUA-09	77.58				hJ		20		gr mi		PR						
BHUA-09	77.62				hJ		40		gr mi		PR						
BHUA-09	77.63				hJ		70		gr mi		UN						
BHUA-09	77.64				hJ		20		gr mi		PR						
BHUA-09	77.66	77.69			V		35		gr mi		IR						
BHUA-09	77.68				J		35		gr mi	CT	UN	RF					
BHUA-09	77.71				V		25		gr mi		PR						
BHUA-09	77.72				hJ		30		gr mi		PR						
BHUA-09	77.74				hJ		50		gr mi		UN						
BHUA-09	77.76				hJ		65		gr mi		UN						
BHUA-09	77.77				V		30		gr and wh mi		UN						
BHUA-09	77.81				hJ		20		gr mi		PR						
BHUA-09	77.83				hJ		75		rd-br mi		UN						
BHUA-09	77.88				V		35		bk and gr mi		PR						
BHUA-09	77.90				hJ		30		gr mi		PR						
BHUA-09	77.92				hJ		40		gr mi		PR						
BHUA-09	77.93	77.95			V		40		gr mi		PR						
BHUA-09	77.94				J		40		gr mi	SN	PR	SM					
BHUA-09	77.95				J		10		gr mi	CT	PR	RF					
BHUA-09	77.96				hJ		70		bk and gr mi		UN						
BHUA-09	77.98				hJ		35		bk and gr mi		UN						
BHUA-09	78.00				hJ		35		bk mi		PR						
BHUA-09	78.02				hJ		40		bk mi		PR						
BHUA-09	78.04				hJ		20		bk mi		UN						
BHUA-09	78.05				hJ		90		bk mi		UN						
BHUA-09	78.06				hJ		65		wh mi		UN						
BHUA-09	78.07				hJ		78		bk mi		UN						
BHUA-09	78.11				hJ		70		bk mi		PR						
BHUA-09	78.16				hJ		45		gr mi		PR						
BHUA-09	78.17				V		30		bk and gr mi		UN						
BHUA-09	78.18				hJ		50		gr mi		UN						
BHUA-09	78.21				hJ		30		gr mi		UN						
BHUA-09	78.22				hJ		65		bk mi		UN						
BHUA-09	78.23				hJ		60		gr mi		PR						
BHUA-09	78.25				V		40		bk mi		PR						
BHUA-09	78.28				V		35		gr mi		UN						
BHUA-09	78.31				V		60		bk and gr mi		UN						
BHUA-09	78.34				hJ		30		gr mi		PR						
BHUA-09	78.41				hJ		65		gr mi		PR						
BHUA-09	78.42				hJ		65		gr mi		UN						
BHUA-09	78.43				hJ		25		gr mi		PR						



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BHUA-09	78.46				V		40		gr mi		PR						
BHUA-09	78.48				V		80		gr mi		UN						
BHUA-09	78.52				V		85		gr mi		UN						
BHUA-09	78.55				hJ		90		gr mi		UN						
BHUA-09	78.59				V		60		gr mi		PR						
BHUA-09	78.62				V		50		gr mi		UN						
BHUA-09	78.64				hJ		20		gr mi		UN						
BHUA-09	78.67				V		60		gr mi		UN						
BHUA-09	78.67				hJ		40		gr mi		PR						
BHUA-09	78.71				hJ		80		gr mi		PR						
BHUA-09	78.73				hJ		30		gr mi		UN						
BHUA-09	78.74				J		70		gr mi	VN	UN	RF					
BHUA-09	78.76				V		50		gr mi		PR						
BHUA-09	78.80	78.87			AZ		20	90	gr mi								
BHUA-09	78.89				hJ		75		bk mi		UN						
BHUA-09	78.90				hJ		35		bk mi		PR						
BHUA-09	78.92				hJ		70		wh mi		PR						
BHUA-09	78.93				hJ		78		gr mi		PR						
BHUA-09	78.94				hJ		90		bk and gr mi		UN						
BHUA-09	78.94				hJ		70		wh mi		UN						
BHUA-09	78.96				V		90		bk mi		UN						
BHUA-09	78.97				hJ		65		gr mi		UN						
BHUA-09	78.98				hJ		70		wh mi		PR						
BHUA-09	79.01	79.16			hJs		30		gr mi		PR						
BHUA-09	79.06				V		50		bk mi		PR						
BHUA-09	79.17				hJ		20		gr mi		UN						
BHUA-09	79.18				hJ		20		gr mi		PR						
BHUA-09	79.19				hJ		70		gr mi		PR						
BHUA-09	79.21				hJ		65		bk mi		UN						
BHUA-09	79.23				hJ				wh mi		UN						
BHUA-09	79.24				J		80			CN	UN	RF					
BHUA-09	79.26				hJ		80		wh mi		UN						
BHUA-09	79.28				hJ		30		gr mi		PR						
BHUA-09	79.29				hJ		20		gr mi		ST						
BHUA-09	79.32				hJ		20		bk and gr mi		UN						
BHUA-09	79.33				hJ		20		gr mi		PR						
BHUA-09	79.34				hJ		25		gr mi		UN						
BHUA-09	79.37				V		45		bk and gr mi		UN						
BHUA-09	79.39				hJ		15		gr mi		PR						
BHUA-09	79.40				hJ		35		gr mi		PR						
BHUA-09	79.41				hJ		30		gr mi		ST						
BHUA-09	79.44				hJ		30		gr mi		PR						
BHUA-09	79.45				hJ		35		gr mi		PR						
BHUA-09	79.46				J		70			CN	ST	RF					
BHUA-09	79.47				V		45		gr mi		PR						
BHUA-09	79.50	80.36			AZ		0	90	bk and gr mi		IR						
BHUA-09	79.55				J		40		gr mi	VN	PR	RF					
BHUA-09	79.75				hJ		20		gr mi		PR						
BHUA-09	79.76				V		30		pl gy-wh mi		PR						
BHUA-09	79.79				hJ		60		bk and gr mi		UN						
BHUA-09	79.81				J		20			CN	IR	RF					
BHUA-09	79.82				J		60			CN	UN	RF					
BHUA-09	79.83				V		95		pl gy mi		PR						
BHUA-09	79.92				V		60		pl gy mi		PR						
BHUA-09	79.94				hJ		80		wh mi		UN						
BHUA-09	80.01				J		50		gr mi	VN	PR	SM					
BHUA-09	80.03				hJ		85		gr mi		UN						
BHUA-09	80.06				hJ		45		gr mi		PR						
BHUA-09	80.07				hJ		15		gr mi		PR						
BHUA-09	80.12				hJ		10		gr mi		UN						
BHUA-09	80.16				V		65		wh and pl rd mi		UN						
BHUA-09	80.21				J		5			CN	PR	RF					
BHUA-09	80.24				V		60		wh and pl rd mi		UN	RF		2			
BHUA-09	80.25				hJ		35		gr mi		UN						
BHUA-09	80.28				J		65		gr mi	VN	PR	RF					
BHUA-09	80.31				hJ		60		pl rd mi		PR						
BHUA-09	80.33				V		60		gr mi		PR						
BHUA-09	80.35				hJ		80		gr mi		UN						
BHUA-09	80.39				hJ		60		wh mi		PR						
BHUA-09	80.42				hJ		60		wh mi		PR						
BHUA-09	80.43				hJ		10		gr mi		PR						
BHUA-09	80.45				hJ		65		bk mi		PR						
BHUA-09	80.46				hJ		50		bk mi		PR						
BHUA-09	80.48				J		55			CN	UN	RF					
BHUA-09	80.50				V		55		gr mi		PR						
BHUA-09	80.51				hJ		20		gr mi		PR						
BHUA-09	80.55				V		65		bk and gr mi		PR						
BHUA-09	80.59	80.78			AZ		20	80	gr mi		IR						
BHUA-09	80.63				V		60		gr mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	80.66				hJ		25		gr mi		PR						
BHUA-09	80.68				V		60		pl gy mi		UN						
BHUA-09	80.70				hJ		40		gr mi		UN						
BHUA-09	80.72				hJ		25		pl gy mi		UN						
BHUA-09	80.79				J		45		bleached wh	SN	PR	RF					
BHUA-09	80.79	80.85			J		65		bleached wh	SN	ST	RF					
BHUA-09	80.82				SS				fragmented rock <30mm dia, bleached wh	SN	PR	RF					<20 mm angular fragments
BHUA-09	80.86				V		15		gr mi		UN						
BHUA-09	80.88				hJ		40		bk mi		UN						
BHUA-09	80.89				hJ		50		bk mi		PR						
BHUA-09	80.92				hJ		70		gr mi		UN						
BHUA-09	80.93				hJ		70		wh mi		UN						
BHUA-09	80.94				hJ		60		wh mi		UN						
BHUA-09	80.97				hJ		25		bk and gr mi		PR						
BHUA-09	80.99				J		35		gr mi	VN	PR	RF					
BHUA-09	81.00				J		40		gr mi	CT	PR	SM					
BHUA-09	81.01				hJ		40		gr mi		PR						
BHUA-09	81.04				hJ		70		bk mi		UN						
BHUA-09	81.05				hJ		20		gr mi		UN						
BHUA-09	81.06				hJ				bk and gr mi		UN						
BHUA-09	81.07				hJ		90		bk mi		PR						
BHUA-09	81.11				hJ		45		gr mi		PR						
BHUA-09	81.12				hJ		80		gr mi		UN						
BHUA-09	81.14				hJ		45		bk and gr mi		PR						
BHUA-09	81.16	84.00			AZ		0	90	gr mi		IR						
BHUA-09	81.22				hJ		15		gr mi		UN						
BHUA-09	81.26				hJ				gr mi		UN						
BHUA-09	81.28				hJ		15		gr mi		UN						
BHUA-09	81.29				hJ		50		bk and gr mi		PR						
BHUA-09	81.31				J		40		gr mi	SN	UN	RF					
BHUA-09	81.33				J		40		gr mi	VN	UN	RF					
BHUA-09	81.35				hJ		30		gr mi		PR						
BHUA-09	81.36				hJ		70		rd-br mi		ST						
BHUA-09	81.39				hJ		35		gr mi		PR						
BHUA-09	81.41				J		20		gr mi	CT	UN	RF					
BHUA-09	81.43				J		30		gr mi	VN	CU	RF					
BHUA-09	81.46				hJ		35		gr mi		UN						
BHUA-09	81.48				J		35		gr mi	VN	PR	RF					
BHUA-09	81.53				V		30		gr mi		UN						
BHUA-09	81.54				hJ		65		gr mi		UN						
BHUA-09	81.58				hJ		40		bk mi		UN						
BHUA-09	81.60				J				gr mi	SN	PR	RF					
BHUA-09	81.61				J		30		bk and gr mi	VN	PR	RF					
BHUA-09	81.63				hJ		50		wh mi		PR						
BHUA-09	81.65				hJ		55		pl gy mi		UN						
BHUA-09	81.70				hJ		40		gr mi		UN						
BHUA-09	81.79				hJ		60		gr mi		UN						
BHUA-09	81.80				hJ		90		bk and gr mi		UN						
BHUA-09	81.81				J		40		gr mi	VN	ST	RF					
BHUA-09	81.82				J		90			CN	UN	RF					
BHUA-09	81.83				J		30		pl rd mi	VN	UN	RF					
BHUA-09	81.84				J		50		pl rd mi	VN	PR	SM					
BHUA-09	81.88				V		60		bk mi		UN						
BHUA-09	81.89				V		60		gr mi		UN						
BHUA-09	81.92				hJ		45		bk mi		UN						
BHUA-09	81.93				hJ		30		gr mi		UN						
BHUA-09	81.95				J				gr mi	VN	IR	RF					
BHUA-09	82.04				hJ		6		gr mi		UN						
BHUA-09	82.08				hJ		35		gr mi		UN						
BHUA-09	82.11				hJ		30		gr mi		UN						
BHUA-09	82.13				hJ		55				PR						
BHUA-09	82.14				hJ		30		gr mi		UN						
BHUA-09	82.29				hJ		40		gr mi		UN						
BHUA-09	82.41				J		35		gr mi	VN	UN	RF					
BHUA-09	82.44				hJ		20		bk mi		PR						
BHUA-09	82.46				hJ		90		bk mi		UN						
BHUA-09	82.48				hJ		10		bk mi		ST						
BHUA-09	82.52				V		55		gr mi		UN						
BHUA-09	82.53				V		55		gr mi		UN						
BHUA-09	82.56				V		55		gr mi		UN						
BHUA-09	82.69				V		40		gr mi		UN						
BHUA-09	82.78				hJ		10		gr mi		UN						
BHUA-09	82.81				J		30		gr mi	SN	ST	RF					
BHUA-09	82.90				V		45		gr mi		PR						
BHUA-09	82.91				J		10		gr mi	SN	UN	RF					
BHUA-09	82.92				J		20		gr mi	SN	ST	RF					
BHUA-09	82.96				hJ		60		rd-br mi		UN						
BHUA-09	82.97				V		70		gr mi		PR						
BHUA-09	82.99				hJ		75		gr mi		PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	83.02				hJ		60		rd-br mi		UN						
BHUA-09	83.08				hJ		65		rd-br mi		UN						
BHUA-09	83.14				hJ		60		rd-br mi		UN						
BHUA-09	83.18				hJ		65		rd-br mi		ST						
BHUA-09	83.23				hJ		25		rd-br mi		PR						
BHUA-09	83.26				hJ		40		gr mi		PR						
BHUA-09	83.30				hJ		20		pl gy mi		UN						
BHUA-09	83.31				hJ		10		gr mi		UN						
BHUA-09	83.34				hJ		10		gr mi		UN						
BHUA-09	83.36				hJ		10		gr mi		UN						
BHUA-09	83.38				hJ		50		gr mi		UN						
BHUA-09	83.45				J		60			CN	UN	RF					
BHUA-09	83.47				hJ		10		gr mi		UN						
BHUA-09	83.51				hJ		90		bk mi		UN						
BHUA-09	83.55				V		20		gr mi		UN						
BHUA-09	83.59				hJ		50		dk gy mi		UN						
BHUA-09	83.61				hJ		40		gr mi		PR						
BHUA-09	83.63				hJ		85		gr and wh mi		UN						
BHUA-09	83.66				hJ		20		gr mi		UN						
BHUA-09	83.71				hJ		40		bk mi		PR						
BHUA-09	83.72				hJ		40		wh mi		UN						
BHUA-09	83.78				J		45			CN	ST	RF					
BHUA-09	83.81				hJ		50		gr mi		PR						
BHUA-09	83.82				hJ		90		bk mi		UN						
BHUA-09	83.85				hJ		30		gr mi		PR						
BHUA-09	83.86				hJ		55		bk mi		UN						
BHUA-09	83.88				hJ		40		gr mi		UN						
BHUA-09	83.89				hJ		45		gr mi		PR						
BHUA-09	83.90				hJ		60		bk mi		UN						
BHUA-09	83.93				J		45			CN	UN	RF					
BHUA-09	83.95				hJ		45		bk and gr mi		PR						
BHUA-09	83.96				hJ		40		bk mi		PR						
BHUA-09	83.97				hJ		60		wh mi		UN						
BHUA-09	83.98				hJ		45		wh mi		PR						
BHUA-09	84.04				hJ		30		wh mi		UN						
BHUA-09	84.05				hJ		60		bk mi		PR						
BHUA-09	84.06				hJ		70		bk mi		ST						
BHUA-09	84.07				hJ		70		bk mi		UN						
BHUA-09	84.08	84.27			hJs		50	60	gr mi		UN						
BHUA-09	84.28				hJ		60		gr mi		UN						
BHUA-09	84.29				hJ		40		bk and gr mi		PR						
BHUA-09	84.30				hJ		48		bk mi		ST						
BHUA-09	84.31				hJ		35		bk and gr mi		PR						
BHUA-09	84.33				hJ		40		bk mi		PR						
BHUA-09	84.35				hJ		35		gr mi		UN						
BHUA-09	84.39				hJ		30		bk mi		PR						
BHUA-09	84.42				hJ		40		gr mi		UN						
BHUA-09	84.43				hJ		40		rd-br mi		CU						
BHUA-09	84.44				hJ		35		rd-br mi		UN						
BHUA-09	84.45				hJ		60		rd-br mi		UN						
BHUA-09	84.46				V		35		gr mi		PR						
BHUA-09	84.48				hJ		65		wh and rd-br mi		UN						
BHUA-09	84.51				hJ		75		rd-br mi		PR						
BHUA-09	84.54				J		50			CN	PR	SM					
BHUA-09	84.58				hJ						UN						
BHUA-09	84.60				hJ		60				UN						
BHUA-09	84.61				J		25			CN	PR	SM					
BHUA-09	84.65	84.73			AZ		10	90	gr mi		IR						
BHUA-09	84.75				hJ		70		gr mi		UN						
BHUA-09	84.76				hJ		60		bk and gr mi		UN						
BHUA-09	84.77	84.91			hJs		35	40	bk and gr mi		UN						
BHUA-09	84.86				hJ		75		gr mi		PR						
BHUA-09	84.91				hJ		78		gr mi		UN						
BHUA-09	84.92				hJ		20		gr mi		UN						
BHUA-09	84.93				hJ		50		bk and gr mi		UN						
BHUA-09	84.95				hJ		45		bk and gr mi		PR						
BHUA-09	84.96				hJ		50		gr mi		PR						
BHUA-09	84.97				hJ		30		gr mi		PR						
BHUA-09	84.98				hJ		50		gr mi		PR						
BHUA-09	84.99				hJ		50		gr mi		PR						
BHUA-09	85.19				J		60		gr and rd-br mi	VN	UN	SM					
BHUA-09	85.20	85.82			SZ		40	60	fragmented rock <30mm dia								significant
BHUA-09	85.83				J		50			CN	PR	SM					
BHUA-09	85.86				hJ		20		wh mi		UN						
BHUA-09	85.89				hJ		20		wh mi		UN						
BHUA-09	85.91				J		60			CN	PR	SM					
BHUA-09	85.92				hJ		50		wh mi		ST						
BHUA-09	85.93				hJ				wh mi		ST						
BHUA-09	85.95				J		50		wh mi	CT	PR	RF					



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BHUA-09	85.97				J		80		wh mi	VN	UN	SM					
BHUA-09	86.02				J		45			CN	UN	RF					
BHUA-09	86.03				hJ		20		wh mi		UN						
BHUA-09	86.04				hJ		50		wh mi		UN						
BHUA-09	86.06				J		60		wh and or-br mi	VN	UN	SM					
BHUA-09	86.07				J		70		wh and or-br mi	VN	UN	RF					
BHUA-09	86.10				J		20			CN	UN	RF					
BHUA-09	86.11	86.32			SZ				fragmented rock <20mm dia	CT							significant
BHUA-09	86.34				hJ		80		bk mi		IR						
BHUA-09	86.45				CO		90		bk mi	SN	UN						
BHUA-09	86.56				hJ		90		bk mi		PR						
BHUA-09	86.57				hJ		85		bk mi		UN						
BHUA-09	86.58				CO		90		bk mi	VN	UN						
BHUA-09	86.61				CO		50		rd-br mi	VN	UN						
BHUA-09	86.71				CO		90		rd-br mi	SN	UN						
BHUA-09	86.74	87.06			AZ		0	90	gr mi		IR						
BHUA-09	86.81				hJ		20		gr mi		PR						
BHUA-09	86.82				J		20			CN	UN	RF					
BHUA-09	86.83				J		15			CN	UN	RF					
BHUA-09	86.86				J		70			CN	ST	RF					
BHUA-09	86.87				J		65			CN	UN	RF					
BHUA-09	86.88				J		25			CN	ST	RF					
BHUA-09	86.89				J		45			CN	UN	RF					
BHUA-09	86.91				J		80			CN	UN	RF					
BHUA-09	86.93				hJ		65		bk and wh mi		UN						
BHUA-09	86.98				J		70			CN	UN	RF					
BHUA-09	87.05				hJ		5		gr mi		UN						
BHUA-09	87.08				hJ		15		bk and gr mi		UN						
BHUA-09	87.11				V		45		bk mi		UN						
BHUA-09	87.13				V		45		wh mi		PR						
BHUA-09	87.17				hJ				bk mi		PR						
BHUA-09	87.19				hJ		30		gr mi		UN						
BHUA-09	87.21				V		55		gr mi		ST						
BHUA-09	87.24				J		40			CN	UN	RF					
BHUA-09	87.32				hJ		55		gr mi		UN						
BHUA-09	87.34	87.63			hJs		40	50	gr mi		PR						
BHUA-09	87.37				hJ		30		gr mi		UN						
BHUA-09	87.39				hJ		25		gr mi		UN						
BHUA-09	87.42				hJ		50		bk and gr mi		PR						
BHUA-09	87.44				hJ		50		gr mi		PR						
BHUA-09	87.51				hJ		35		gr mi		PR						
BHUA-09	87.52				hJ		65		gr mi		PR						
BHUA-09	87.54				hJ		40		gr mi		PR						
BHUA-09	87.60				hJ		45		wh mi		UN						
BHUA-09	87.61				hJ		70		bk mi		UN						
BHUA-09	87.66				hJ		35		gr mi		PR						
BHUA-09	87.68				hJ		25		gr mi		PR						
BHUA-09	87.69				hJ		20		gr mi		UN						
BHUA-09	87.71				hJ		15		bk mi		UN						
BHUA-09	87.72				hJ		5		gr mi		UN						
BHUA-09	87.74				V		80		bk mi		UN						
BHUA-09	87.76				V		60		bk and gr mi		UN						
BHUA-09	87.77				hJ		50		bk and gr mi		PR						
BHUA-09	87.82				hJ		55		bk mi		UN						
BHUA-09	87.83				J		45			CN	PR	RF					
BHUA-09	87.88				hJ		45		gr mi		PR						
BHUA-09	87.90				hJ		35		gr mi		ST						
BHUA-09	87.93				hJ		30		gr mi		UN						
BHUA-09	87.95				hJ		45		gr mi		PR						
BHUA-09	88.07				hJ		45		wh mi		UN						
BHUA-09	88.14				hJ		70		bk and wh mi		UN						
BHUA-09	88.18				hJ		85		bk mi		UN						
BHUA-09	88.20				hJ		70		wh mi		UN						
BHUA-09	88.22				hJ		40		gr mi		UN						
BHUA-09	88.24				J		30			CN	UN	RF					
BHUA-09	88.26				hJ		20		wh mi		PR						
BHUA-09	88.29				hJ		60		bk and wh mi		PR						
BHUA-09	88.36				hJ		70		gr mi		UN						
BHUA-09	88.38				hJ		80		bk and gr mi		UN						
BHUA-09	88.39				hJ		30		gr mi		UN						
BHUA-09	88.41				hJ		40		gr mi		UN						
BHUA-09	88.45				hJ		40		gr mi		PR						
BHUA-09	88.48				hJ		40		gr mi		UN						
BHUA-09	88.49				hJ		40		gr mi		PR						
BHUA-09	88.50				hJ		90		gr mi		UN						
BHUA-09	88.51				J		30		gr and rd-br mi	VN	UN	RF					
BHUA-09	88.53				hJ		30		gr mi		UN						
BHUA-09	88.57				hJ		30		gr mi		PR						
BHUA-09	88.64				hJ		35		gr mi		PR						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHUA-09 Defects List

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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	88.66				hJ		70		gr mi		UN						
BHUA-09	88.69				hJ		70		bk mi		UN						
BHUA-09	88.72				hJ		20		bk mi		UN						
BHUA-09	88.73				hJ		70		bk and gr mi		UN						
BHUA-09	88.75				V		25		gr mi		UN						
BHUA-09	88.76	88.99			AZ		10	60	gr mi								
BHUA-09	88.83				J		40		gr mi	SN	ST	RF					
BHUA-09	88.85				J		20			CN	ST	RF					
BHUA-09	88.91				V		25		gr and wh mi		UN						
BHUA-09	88.96				hJ		25		gr mi		UN						
BHUA-09	88.99				hJ		50		wh mi		UN						
BHUA-09	89.02				hJ		20		gr mi		UN						
BHUA-09	89.03				V		30		gr mi		PR						
BHUA-09	89.07				hJ		80		gr mi		UN						
BHUA-09	89.09				hJ		20		gr mi		UN						
BHUA-09	89.11				hJ		20		gr mi		PR						
BHUA-09	89.14				hJ		90		wh mi		UN						
BHUA-09	89.15				hJ		30		gr mi		PR						
BHUA-09	89.17				J		25		rd and bk mi	CT	UN	RF					
BHUA-09	89.21				hJ		25		wh mi		UN						
BHUA-09	89.22				hJ		90		bk mi		UN						
BHUA-09	89.23				hJ		80		bk mi		UN						
BHUA-09	89.26	90.19			AZ		0	90	gr mi		IR						healed
BHUA-09	89.34				hJ		50		bk and gr mi		UN						
BHUA-09	89.38				hJ		40		gr mi		UN						
BHUA-09	89.40				J					CN	IR	RF					
BHUA-09	89.41				J		10			CN	IR	RF					
BHUA-09	89.42				hJ		55		gr mi		UN						
BHUA-09	89.53				hJ		80		wh and rd mi		UN						
BHUA-09	89.54				hJ		78		gr mi		UN						
BHUA-09	89.58				hJ		80		bk and wh mi		UN						
BHUA-09	89.67				J		20		rd mi	SN	UN	RF					
BHUA-09	89.80				hJ		20		pl gy mi		UN						
BHUA-09	89.84				V		25		rd-br mi		UN	RF		4			
BHUA-09	90.17				V		60		wh and pl rd mi		UN						
BHUA-09	90.18				J					CN	UN	RF					
BHUA-09	90.21				J		70		gr mi	CT	ST	RF					
BHUA-09	90.30				J		20		wh mi	VN	PR	RF					
BHUA-09	90.31				hJ		50		gr mi		PR						
BHUA-09	90.34				hJ		40		wh mi		UN						
BHUA-09	90.35				hJ		20		bk mi		PR						
BHUA-09	90.37				V		55		gr and wh mi		UN						
BHUA-09	90.38				hJ		40		gr mi		PR						
BHUA-09	90.44				hJ		80		bk mi		UN						
BHUA-09	90.45				hJ		50		bk mi		PR						
BHUA-09	90.47				J		20		or-br mi	SN	PR	SM					
BHUA-09	90.49				J		40		gr mi	CT	UN	RF					
BHUA-09	90.55				hJ		20		bk mi		UN						
BHUA-09	90.57				hJ		60		wh mi		PR						
BHUA-09	90.61				J		30			CN	UN	RF					
BHUA-09	90.71				hJ		20		wh mi		UN						
BHUA-09	90.73				hJ		70		bk and gr mi		UN						
BHUA-09	90.77				hJ		90		wh mi		UN						
BHUA-09	90.79				V		50		wh mi		UN						
BHUA-09	90.82				J		20		or-br mi	SN	UN	SM					
BHUA-09	90.83				J		50		wh and or-br mi	VN	UN	RF					
BHUA-09	90.86				hJ		65		wh mi		UN						
BHUA-09	90.87				hJ		70		wh mi		UN						
BHUA-09	90.92				hJ						ST						
BHUA-09	90.94				hJ		75				ST						
BHUA-09	90.96				J		20			CN	PR	RF					
BHUA-09	90.98				J		75		wh mi	VN	UN	SM					
BHUA-09	90.99				hJ		40		wh mi		UN						
BHUA-09	91.04				hJ		10		wh mi		UN						
BHUA-09	91.07				hJ		15		wh mi		UN						
BHUA-09	91.12				hJ		80		wh mi		UN						
BHUA-09	91.18				J		50		wh mi	VN	UN	RF					
BHUA-09	91.28				J		20		bk and gr mi	SN	UN	RF					
BHUA-09	91.33				J					CN	ST	RF					
BHUA-09	91.34				hJ		40		wh mi		UN						
BHUA-09	91.39				hJ		60		wh mi		PR						
BHUA-09	91.41				hJ		60		wh mi		PR						
BHUA-09	91.42				hJ		45		wh mi		UN						
BHUA-09	91.43				hJ		40		wh mi		PR						
BHUA-09	91.46				J		40		wh mi	VN	PR	RF					
BHUA-09	91.56				hJ		60		wh mi		UN						
BHUA-09	91.60				hJ		60		wh mi		UN						
BHUA-09	91.62				hJ		60		wh mi		UN						
BHUA-09	91.64				V		70		wh mi		UN						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	91.65				J		45		rd-br mi	VN	PR	RF					
BHUA-09	91.67				J		25			CN	PR	RF					
BHUA-09	91.71				hJ		65		wh mi		UN						
BHUA-09	91.78				hJ		65		wh mi		UN						
BHUA-09	91.81				hJ		50				UN						
BHUA-09	91.90				J		20			CN	UN	RF					
BHUA-09	91.91				hJ		50		gr mi		PR						
BHUA-09	91.92				hJ		20		wh mi		UN						
BHUA-09	91.94				V		70		wh mi		PR	RF		2			
BHUA-09	91.98				hJ		60		bk and gr mi		UN						
BHUA-09	92.03				J		40		gr-br and gr mi	SN	ST	RF					
BHUA-09	92.04				hJ		45		gr mi		UN						
BHUA-09	92.05				hJ		25		gr mi		PR						
BHUA-09	92.12				J		80		gr mi	SN	UN	RF					
BHUA-09	92.16				hJ		20		wh mi		PR						
BHUA-09	92.17				hJ		90		gr mi		UN						
BHUA-09	92.19				hJ		50		gr mi		UN						
BHUA-09	92.21				hJ		25		wh mi		UN						
BHUA-09	92.25				J		60			CN	UN	RF					
BHUA-09	92.30				hJ		60		gr mi		UN						
BHUA-09	92.31				hJ		80		gr mi		UN						
BHUA-09	92.35				hJ		20		gr mi		PR						
BHUA-09	92.36				hJ		70		gr mi		UN						
BHUA-09	92.37				hJ		80				UN						
BHUA-09	92.38				hJ		85		gr mi		UN						
BHUA-09	92.39				hJ		50		gr mi		UN						
BHUA-09	92.41				hJ		20		gr mi		UN						
BHUA-09	92.43				V		30		gr and wh mi		PR						
BHUA-09	92.48				hJ		90		bk and gr mi		UN						
BHUA-09	92.55				hJ		10		bk and gr mi		UN						
BHUA-09	92.56				hJ		65		gr mi		UN						
BHUA-09	92.58				hJ		90		bk and gr mi		UN						
BHUA-09	92.59				hJ		10		gr mi		UN						
BHUA-09	92.62				hJ		30		gr mi		UN						
BHUA-09	92.64				hJ		60		wh mi		UN						
BHUA-09	92.71				hJ		50		gr and wh mi		PR						
BHUA-09	92.72				hJ		90		gr mi		UN						
BHUA-09	92.73				hJ		30		gr mi		UN						
BHUA-09	92.74				hJ		70		gr mi		UN						
BHUA-09	92.76				hJ		45		gr mi		PR						
BHUA-09	92.80				hJ		80		bk and gr mi		PR						
BHUA-09	92.81				hJ		75		wh mi		PR						
BHUA-09	92.82				hJ		80		gr mi		UN						
BHUA-09	92.83				hJ		40		gr mi		UN						
BHUA-09	92.87				hJ		50		gr mi		PR						
BHUA-09	92.88				J		60			CN	UN	RF					
BHUA-09	92.90				hJ		55		wh mi		UN						
BHUA-09	92.93				hJ		80		gr mi		UN						
BHUA-09	92.94				hJ		90		gr mi		UN						
BHUA-09	92.95				hJ		85		bk mi		UN						
BHUA-09	92.96				hJ		85		bk and wh mi		UN						
BHUA-09	92.97				hJ		90		bk and wh mi		UN						
BHUA-09	93.03				hJ		90		bk and gr mi		UN						
BHUA-09	93.04				hJ		45		bk mi		UN						
BHUA-09	93.05				J		40			CN	UN	RF					
BHUA-09	93.07				J		50			CN	UN	RF					
BHUA-09	93.08				hJ		40		gr mi		UN						
BHUA-09	93.19				hJ		45		gr mi		UN						
BHUA-09	93.20				hJ		45		wh mi		PR						
BHUA-09	93.24				hJ		55		bk mi		UN						
BHUA-09	93.35				J		60		bk mi	SN	UN	RF					
BHUA-09	93.44				hJ		30		gr mi		UN						
BHUA-09	93.45				hJ		92		gr mi		UN						
BHUA-09	93.46				hJ		90		gr mi		UN						
BHUA-09	93.49				V		45		gr mi		PR						
BHUA-09	93.51				hJ		50		bk mi		UN						
BHUA-09	93.54				hJ		50		gr mi		UN						
BHUA-09	93.55				hJ		55		bk mi		UN						
BHUA-09	93.58				hJ		70		gr mi		PR						
BHUA-09	93.59				hJ		40		wh mi		UN						
BHUA-09	93.63				J		60			CN	ST	RF					
BHUA-09	93.64				hJ		45		gr mi		PR						
BHUA-09	93.65				J					CN	PR	RF					
BHUA-09	93.66				hJ		30		gr mi		PR						
BHUA-09	93.68				hJ		40		gr mi		PR						
BHUA-09	93.70				hJ		40		gr mi		PR						
BHUA-09	93.71				hJ		40		gr mi		PR						
BHUA-09	93.73				hJ		25		gr mi		PR						
BHUA-09	93.77				J		40			CN	PR	RF					



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	93.81				hJ		50		wh mi		UN						
BHUA-09	93.84				hJ		20		gr mi		UN						
BHUA-09	93.85				hJ		40		bk and gr mi		PR						
BHUA-09	93.93				hJ		30		bk and gr mi		PR						
BHUA-09	93.95				hJ		65		gr mi		PR						
BHUA-09	93.98				hJ		25		gr mi		PR						
BHUA-09	94.02				hJ		55		wh mi		PR						
BHUA-09	94.03				hJ		65		bk mi		UN						
BHUA-09	94.05				hJ		70		bk mi		UN						
BHUA-09	94.07				J		25			CN	PR	RF					
BHUA-09	94.08				J		40			CN	PR	RF					
BHUA-09	94.10				hJ		60		wh mi		PR						
BHUA-09	94.12				hJ		55		wh mi		UN						
BHUA-09	94.13				hJ		55		gr-br mi		UN						
BHUA-09	94.17				J		55		gr and rd-br mi	VN	UN	RF					
BHUA-09	94.20				hJ		40		gr mi		UN						
BHUA-09	94.21				hJ				gr mi		PR						
BHUA-09	94.22				hJ		55		gr mi		UN						
BHUA-09	94.23				hJ				gr mi		UN						
BHUA-09	94.24				hJ		55		bk and gr mi		UN						
BHUA-09	94.27				hJ		60				UN						
BHUA-09	94.31				hJ		40		wh mi		UN						
BHUA-09	94.34				hJ		80		gr mi		UN						
BHUA-09	94.35				hJ		30		gr mi		UN						
BHUA-09	94.36				hJ		40		gr mi		PR						
BHUA-09	94.37				hJ		90		gr mi		UN						
BHUA-09	94.40				hJ		10		gr mi		UN						
BHUA-09	94.42				hJ		50		wh mi		PR						
BHUA-09	94.48				hJ		45		bk and gr mi		UN						
BHUA-09	94.62				hJ		45				UN						
BHUA-09	94.65				hJ		30				UN						
BHUA-09	94.67				hJ		25				PR						
BHUA-09	94.73				hJ		50				UN						
BHUA-09	94.76				hJ		20				PR						
BHUA-09	94.78				hJ		35				PR						
BHUA-09	94.79				hJ		70				UN						
BHUA-09	94.85				J		30				PR						
BHUA-09	94.86				hJ		25				ST						
BHUA-09	94.87				hJ		45				UN						
BHUA-09	94.89				hJ		10				PR						
BHUA-09	94.93	94.97			AZ		45		gr mi		IR						
BHUA-09	94.95				J		40			CN	UN	RF					
BHUA-09	94.98				J		85			CN	UN	RF					
BHUA-09	95.00				MB												
BHUA-09	95.07				HB												
BHUA-09	95.21				hJ		80				UN						
BHUA-09	95.22	95.98			hJ		85				CU						
BHUA-09	95.24				DB												
BHUA-09	95.30				hJ		35				UN						
BHUA-09	95.34				hJ		20				UN						
BHUA-09	95.40				hJ		25				PR						
BHUA-09	95.47				hJ		10				PR						
BHUA-09	95.48				J		65			CT	CU	RF					
BHUA-09	95.51	95.87			J		70			CT	IR						
BHUA-09	95.57				hJ		70				IR						
BHUA-09	95.66				J		5			CT	UN						
BHUA-09	95.86				hJ		70				PR						
BHUA-09	95.87				J		5			SN	PR	RF					
BHUA-09	95.89				J		50			CN	PR	RF					possible DB
BHUA-09	95.99				Js	x2	85			SN	UN	RF					
BHUA-09	96.00				MB												
BHUA-09	96.07				J		5			CN	CU	RF					
BHUA-09	96.14				J		10			VN	UN						
BHUA-09	96.20				hJ		20				CU						
BHUA-09	96.22				hJ		45				UN						
BHUA-09	96.27				hJ		45				PR						
BHUA-09	96.37				SS		60	75	fragmented rock <30mm dia		PR	RF		40			along contact, significant
BHUA-09	96.63				hJ		85				PR						
BHUA-09	96.65				hJ		50				CU						
BHUA-09	96.70				hJ		55				PR						
BHUA-09	96.73				J		65			CN	UN	RF					
BHUA-09	96.80				hJ		10				PR						
BHUA-09	96.81				J		70			SN	PR	RF					
BHUA-09	96.85				hJ		55				UN						
BHUA-09	97.00				MB												
BHUA-09	97.05				J		45			SN	UN	RF					
BHUA-09	97.11				J		55			SN	PR	RF					
BHUA-09	97.14				hJ		30				UN						
BHUA-09	97.23				hJ		60				PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	97.24				J		55			SN	ST	RF					
BHUA-09	97.27				hJ		55				PR						
BHUA-09	97.31	97.33			hJs	x2					PR						
BHUA-09	97.38				hJ		45				PR						
BHUA-09	97.41				hJ		60				PR						
BHUA-09	97.44				hJ		25				PR						
BHUA-09	97.49				J		60			SN	PR	RF					
BHUA-09	97.64	97.65			hJs	x2	70				UN						
BHUA-09	97.67				hJ		40				CU						
BHUA-09	97.70	97.96			hJs	x6	65				UN						
BHUA-09	98.00				MB												
BHUA-09	98.04				hJ		65				UN						
BHUA-09	98.06				J		70			SN	PR	RF					
BHUA-09	98.09	98.33			J		80			SN	UN						
BHUA-09	98.11				hJ		35				PR						
BHUA-09	98.13				hJ		45				UN						
BHUA-09	98.15				hJ		45				UN						
BHUA-09	98.17				hJ		35				PR						
BHUA-09	98.22	98.49			J		80			SN	UN						
BHUA-09	98.23				J		60			SN	PR	RF					
BHUA-09	98.33				hJ		70				UN						
BHUA-09	98.50				hJ		60				PR						
BHUA-09	98.58				J		55			SN	PR	RF					
BHUA-09	98.63				J		70			SN	PR						
BHUA-09	98.78				hJ		70				UN						
BHUA-09	98.81				J		40			SN	UN	RF					
BHUA-09	98.84				J		50			SN	PR	RF					
BHUA-09	98.87	98.94			hJs		50	60			UN						
BHUA-09	98.96				J		50			VN	PR	RF					
BHUA-09	99.01	99.07			hJs	x3	30				UN						
BHUA-09	99.05				HB												
BHUA-09	99.06				J		40			SN	PR	RF					
BHUA-09	99.16	99.23			hJs		55	60			UN						
BHUA-09	99.29				hJ		60				IR						
BHUA-09	99.30				hJ		55				CU						
BHUA-09	99.33				J		50			SN	UN	RF					
BHUA-09	99.34				J		30			SN	UN	RF					
BHUA-09	99.41				hJ		40				PR						
BHUA-09	99.43				J		40			SN	CU	RF					
BHUA-09	99.47				hJ		50				UN						
BHUA-09	99.49				J		75			CN	CU	RF					
BHUA-09	99.50				J		25			SN	PR						
BHUA-09	99.56				J		35			SN	IR	RF					
BHUA-09	99.62				hJ		45				PR						
BHUA-09	99.65	99.69			Js	x2	45			SN	PR	RF					
BHUA-09	99.67	100.00			hJ		85				UN						
BHUA-09	99.72				hJ		60				PR						
BHUA-09	99.75				hJ		25				UN						
BHUA-09	99.77				hJ		35				UN						
BHUA-09	99.83				J		40			CN	PR	RF					
BHUA-09	99.86				hJ		25				CU						
BHUA-09	99.87				hJ		70				PR						
BHUA-09	99.91				hJ						UN						
BHUA-09	99.95				J		25			CN	PR	RF					
BHUA-09	100.00				MB												
BHUA-09	100.07				hJ		60				UN						
BHUA-09	100.08				hJ		55				UN						
BHUA-09	100.12				hJ		20				PR						
BHUA-09	100.13				hJ		25				UN						
BHUA-09	100.17				hJ		30				PR						
BHUA-09	100.19				J		55			CN	PR	RF					possible DB
BHUA-09	100.20				J		40			CN	UN	RF					
BHUA-09	100.22				hJ		55				UN						
BHUA-09	100.23				hJs		10				UN						
BHUA-09	100.26				hJ		50				UN						
BHUA-09	100.29				hJ		60				UN						
BHUA-09	100.33				hJ		40				UN						
BHUA-09	100.38				hJ		50				PR						
BHUA-09	100.39				J		50			CN	UN	RF					
BHUA-09	100.40	100.70			SS		50		fragmented rock <20mm dia		PR	RF			40		significant
BHUA-09	100.82				hJ		25				ST						
BHUA-09	100.86				hJ		60				PR						
BHUA-09	100.88				hJ		20				CU						
BHUA-09	100.91				J		10			SN	PR	RF					
BHUA-09	100.93				hJ		10				UN						
BHUA-09	101.00				MB												
BHUA-09	101.01				J		45			SN	PR	RF					
BHUA-09	101.04				hJ		55				PR						
BHUA-09	101.05				J		85			SN	UN						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	101.12				J		50			SN	UN						
BHUA-09	101.12	101.24			V		55				UN						
BHUA-09	101.13				hJ		25				PR						
BHUA-09	101.23				J		25			SN	UN						
BHUA-09	101.29				hJ		60				UN						
BHUA-09	101.36				J		55			CN	PR	RF					
BHUA-09	101.39	101.49			V		60				UN						
BHUA-09	101.40				hJ		60				PR						
BHUA-09	101.48				J		75			SN	UN						
BHUA-09	101.54				J		35			CN	PR	RF					
BHUA-09	101.61				hJ		35				UN						
BHUA-09	101.62				hJ		45				UN						
BHUA-09	101.63				hJ		30				UN						
BHUA-09	101.65				hJ		45				PR						
BHUA-09	101.79	101.88			Vs		60				UN						
BHUA-09	101.84				hJ		20				PR						
BHUA-09	101.86				J					CN	CU	RF					
BHUA-09	101.91				hJ		65				PR						
BHUA-09	102.00				MB												
BHUA-09	102.02				hJ		50				PR						
BHUA-09	102.08				hJ		35				PR						
BHUA-09	102.10				hJ		5				UN						
BHUA-09	102.17				hJ		60				UN						
BHUA-09	102.20				hJ		85				UN						
BHUA-09	102.22				hJ		70				UN						
BHUA-09	102.24				hJ		60				UN						
BHUA-09	102.25	102.27			hJs	x2	5				UN						
BHUA-09	102.28				J		10			CN	PR	RF					
BHUA-09	102.31	102.33			hJs	x2	5				UN						
BHUA-09	102.32	102.34			V		40										
BHUA-09	102.34				hJ		25				UN						
BHUA-09	102.34	102.56			hJ		90				PR						
BHUA-09	102.46	102.59			J		70			CN	UN	RF					
BHUA-09	102.52				J		65			CN	CU	RF					
BHUA-09	102.54	102.62			J		50			CN	PR	RF					
BHUA-09	102.58	102.68			J		60			SN	PR	RF					
BHUA-09	102.68	102.73			HB												
BHUA-09	102.72	102.83			J		75			SN	PR						
BHUA-09	102.75				J		65			SN	PR	RF					
BHUA-09	102.75	102.76			Js	x2	10			SN	PR						
BHUA-09	102.78				J		85			SN	CU						
BHUA-09	102.83				hJ		40				PR						
BHUA-09	102.84	102.94			V		60				PR						
BHUA-09	102.86				J		45			CN	UN	RF					
BHUA-09	102.89				hJ		20				CU						
BHUA-09	102.92				hJ		25				UN						
BHUA-09	102.94				hJ		30				CU						
BHUA-09	102.98				J		25			SN	PR	RF					
BHUA-09	103.00				MB												
BHUA-09	103.03				hJ		40				CU						
BHUA-09	103.05				J		40			SN	PR	RF					
BHUA-09	103.06	103.08			Js	x2	50			SN	PR	RF					20 mm spacing
BHUA-09	103.12				J		35			CN	PR	RF					
BHUA-09	103.12	103.19			J		50			CN	CU	RF					
BHUA-09	103.23				hJ		35				UN						
BHUA-09	103.25	103.36			hJ		70				PR						
BHUA-09	103.27				hJ		25				UN						
BHUA-09	103.36	103.39			SS		75		fragmented rock <30mm dia	SN	PR	RF		50			
BHUA-09	103.39				hJ		40				UN						
BHUA-09	103.44				J		50			SN	PR	RF					
BHUA-09	103.47	103.48			hJs		65	70			PR						
BHUA-09	103.48				hJ		80				IR						
BHUA-09	103.51				hJ		90				PR						
BHUA-09	103.53				hJ		45				PR						
BHUA-09	103.55	103.59			hJs	x4	50				PR						
BHUA-09	103.60				SS		45	60	fine to medium gravel	SN	PR		<	10			
BHUA-09	103.64	103.76			hJ		80				UN						
BHUA-09	103.66	103.67			hJs	x2	65				PR						
BHUA-09	103.71				J		80			CN	PR	RF					
BHUA-09	103.74	103.93			hJ		90				UN						
BHUA-09	103.77				J		55			CN	PR	RF					
BHUA-09	103.79				hJ		55				PR						
BHUA-09	103.80	103.93			hJ		70				PR						
BHUA-09	103.83	103.88			hJs	x3	45				PR						
BHUA-09	103.94				hJ		50				CU						
BHUA-09	103.95				hJ		65				UN						
BHUA-09	104.00				MB												
BHUA-09	104.00	104.23			J		70			CN	UN	RF					possible DB
BHUA-09	104.03				J		70			CN	UN	RF					



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	104.07				hJ		70				UN						
BHUA-09	104.13				J		40			CN	PR	RF					possible DB
BHUA-09	104.16				J		45			CN	PR	RF					possible DB
BHUA-09	104.26				J		60			SN	PR						
BHUA-09	104.27	104.28			hJs	x2	75				PR						
BHUA-09	104.30				hJ		45				PR						
BHUA-09	104.31				hJ		30				CU						
BHUA-09	104.33				hJ		65				PR						
BHUA-09	104.37				hJ		50				PR						
BHUA-09	104.38	104.42			hJs	x2	55				PR						
BHUA-09	104.40				J		75			CN	UN	RF					possible DB
BHUA-09	104.44				hJ		40				PR						
BHUA-09	104.46				J		25			CN	PR	RF					
BHUA-09	104.49				hJ		50				PR						
BHUA-09	104.58	104.59			hJs	x2	70				UN						
BHUA-09	104.60				hJ		70				UN						
BHUA-09	104.64	104.65			Js	x2	60			CN	UN	RF					
BHUA-09	104.74	104.76			hJs	x2	45				PR						
BHUA-09	104.77	104.78			hJs	x2	70				UN						
BHUA-09	104.84	105.00			hJ		90				CU						
BHUA-09	104.86				hJ		45				CU						
BHUA-09	104.96				hJ		70				CU						
BHUA-09	105.04				hJ		60				CU						
BHUA-09	105.05				hJ		50				CU						
BHUA-09	105.06	105.20			hJ		85				UN						
BHUA-09	105.11	105.12			hJs	x2	15				CU						
BHUA-09	105.16				hJ		75				UN						
BHUA-09	105.22				J		50			SN	PR	RF					
BHUA-09	105.23	105.28			hJs	x3	35				PR						
BHUA-09	105.24	105.58			hJ		80				UN						
BHUA-09	105.28				J		60			SN	PR	RF					
BHUA-09	105.36				J		30			CN	UN	RF					possible DB
BHUA-09	105.37				J		55			CN	UN	RF					possible DB
BHUA-09	105.38				V		45				UN						
BHUA-09	105.44				hJ		80				UN						
BHUA-09	105.53				hJ		35				PR						
BHUA-09	105.53	105.68			hJ		85				CU						
BHUA-09	105.54				hJ		20				PR						
BHUA-09	105.63				J		50			SN	PR						
BHUA-09	105.64				J		50			CN	IR	RF					
BHUA-09	105.71	105.80			J		60			SN	PR						
BHUA-09	105.76	105.79			hJs	x3	55				UN						
BHUA-09	105.81				hJ		35				PR						
BHUA-09	105.85				J		55			SN	PR						
BHUA-09	105.89				J		55			SN	PR	RF					
BHUA-09	105.94				hJ		40				UN						
BHUA-09	106.00				MB												
BHUA-09	106.04				hJ		30				PR						
BHUA-09	106.06	106.13			hJs	x3	30				PR						
BHUA-09	106.18				J		55			CN	PR	RF	<	5		SAND	infilled with sand
BHUA-09	106.26				hJ		70				CU						
BHUA-09	106.29				hJ		80				UN						
BHUA-09	106.33				hJ		65				PR						
BHUA-09	106.36				J		25			CN	PR	RF					
BHUA-09	106.46				hJ		55				UN						
BHUA-09	106.49				J		65			CN	PR	RF					possible DB
BHUA-09	106.50				hJ		35				CU						
BHUA-09	106.55				DB												
BHUA-09	106.58				hJ		75				PR						
BHUA-09	106.59				hJ		60				PR						
BHUA-09	106.60				hJ		45				PR						
BHUA-09	106.65				hJ		85				UN						
BHUA-09	106.68				hJ		40				UN						
BHUA-09	106.71	106.80			hJ		50				PR						
BHUA-09	106.72				hJ		60				PR						
BHUA-09	106.75				hJ						PR						
BHUA-09	106.79				hJ		40				PR						
BHUA-09	106.97				J		55			CN	PR						
BHUA-09	106.99				hJ		35				PR						
BHUA-09	107.00				MB												
BHUA-09	107.03				J		40			CN	PR	RF					
BHUA-09	107.08	107.21			J		70			VN	PR	RF					
BHUA-09	107.15				J		30			CN	PR	RF					
BHUA-09	107.21				J		50			CN	UN	RF					
BHUA-09	107.29				J		60			CN	UN	RF					
BHUA-09	107.32				J		25			CN	IR	RF					
BHUA-09	107.37				J		55			CN	PR	RF					
BHUA-09	107.38	107.40			hJs	x2	60				UN						
BHUA-09	107.43				hJ		60				UN						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	107.46				J		40			SN	CU						
BHUA-09	107.48				hJ		25				UN						
BHUA-09	107.50				hJ		55				PR						
BHUA-09	107.52				J					CN	PR	RF					
BHUA-09	107.66				hJ		50				UN						
BHUA-09	107.69				hJ		50				UN						
BHUA-09	107.70				hJ		15				PR						
BHUA-09	107.74				hJ		20				UN						
BHUA-09	107.79				hJ		65				PR						
BHUA-09	107.83				hJ		60				PR						
BHUA-09	107.84	107.86			hJs	x2	65				UN						
BHUA-09	107.86	108.00			hJ		75				UN						
BHUA-09	107.93				J		60			CN	PR	RF					
BHUA-09	108.00				MB												
BHUA-09	108.02				hJ		65				PR						
BHUA-09	108.03				hJ		75				PR						
BHUA-09	108.04	108.12			hJ		65				CU						
BHUA-09	108.07				hJ		60				CU						
BHUA-09	108.09				HB												
BHUA-09	108.13				hJs	x2	15				PR						
BHUA-09	108.14				hJs	x2	60				UN						
BHUA-09	108.16	108.26			hJ		80				UN						
BHUA-09	108.19				hJ		20				PR						
BHUA-09	108.20	108.37			hJ		80				UN						
BHUA-09	108.23	108.24			V		10	25			UN						
BHUA-09	108.34				V		25				PR						
BHUA-09	108.35				hJ		30				PR						
BHUA-09	108.39				hJs	x3	15				PR						
BHUA-09	108.42				J		55			SN	UN	RF					
BHUA-09	108.43				hJ		20				PR						
BHUA-09	108.44				hJs	x2	25				PR						
BHUA-09	108.45				hJ		35				CU						
BHUA-09	108.50	108.54			hJs	x3	40				PR						
BHUA-09	108.57				J		65			SN	PR	RF					
BHUA-09	108.60	108.73			hJs		20	25			PR						
BHUA-09	108.69				hJ		55				PR						
BHUA-09	108.71				J		55			SN	UN	RF					
BHUA-09	108.71	108.73			hJs	x2	20				PR						
BHUA-09	108.77				hJ		80				UN						
BHUA-09	108.81				J		15			CN	PR	RF					possible DB
BHUA-09	108.84				hJ		5				UN						
BHUA-09	108.85				J		55			SN	PR						
BHUA-09	108.87				hJ		60				PR						
BHUA-09	108.87	108.89			hJs	x3	60				PR						
BHUA-09	108.93				hJ		50				PR						
BHUA-09	108.94				hJ		65				UN						
BHUA-09	108.98				hJ		55				PR						
BHUA-09	109.00				MB												
BHUA-09	109.02				hJ		40				CU						
BHUA-09	109.03				hJ		30				PR						
BHUA-09	109.08				hJ		60				UN						
BHUA-09	109.09				V		70				UN						
BHUA-09	109.11				V		60				UN						
BHUA-09	109.14				J		45			SN	UN	RF					
BHUA-09	109.16				hJ		45				CU						
BHUA-09	109.17				hJ		75				UN						
BHUA-09	109.20	109.25			hJs	x3	55				UN						
BHUA-09	109.22				J		55			VN	PR	RF					
BHUA-09	109.29				J		40			CN	UN	RF					
BHUA-09	109.31	109.32			hJs	x3	60				PR						
BHUA-09	109.33				hJ		40				PR						
BHUA-09	109.36				hJ		30				PR						
BHUA-09	109.37				J		40			CN	PR	RF					possible DB
BHUA-09	109.40	109.41			hJs	x3	30				PR						
BHUA-09	109.45				hJ		20				PR						
BHUA-09	109.46				hJ		25				UN						
BHUA-09	109.48				hJ		40				UN						
BHUA-09	109.52				hJ		30				ST						
BHUA-09	109.55				hJ		15				PR						
BHUA-09	109.59				hJ		70				UN						
BHUA-09	109.60	109.71			hJ		60				UN						
BHUA-09	109.61	109.70			hJ		70				ST						
BHUA-09	109.62				hJ		45				PR						
BHUA-09	109.69				hJ		80				PR						
BHUA-09	109.70	110.00			hJs	x2	80				PR						
BHUA-09	109.74	109.88			V		60				UN						
BHUA-09	109.74	110.00			V		80				UN						
BHUA-09	109.75				hJ		25				UN						
BHUA-09	109.79				hJ		70				UN						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	109.92				hJ		15				PR						
BHUA-09	109.93				V		65				UN						
BHUA-09	109.96				hJ		70				PR						
BHUA-09	109.97				hJ		15				UN						
BHUA-09	110.00				MB												
BHUA-09	110.00	110.08			hJs	x2					PR						
BHUA-09	110.03				hJ		25				UN						
BHUA-09	110.12				hJs	x2	28				PR						
BHUA-09	110.19				hJ		25				PR						
BHUA-09	110.25	110.45			hJs	x7	25				PR						
BHUA-09	110.42				hJ		50				PR						
BHUA-09	110.46	110.58			hJs	x5	75				PR						
BHUA-09	110.60	110.61			hJs	x2	20				PR						
BHUA-09	110.63				hJ		10				PR						
BHUA-09	110.64				J		45			SN	UN	RF					
BHUA-09	110.65				hJ		80				UN						
BHUA-09	110.69				J		30			SN	PR	RF					
BHUA-09	110.71				J		40			SN	PR						
BHUA-09	110.72	110.77			hJ		35				PR						
BHUA-09	110.73	110.81			hJ		70				UN						
BHUA-09	110.78				hJs	x2	45				PR						
BHUA-09	110.86				HB												
BHUA-09	110.86	111.00			hJs	x2	80				UN						
BHUA-09	110.87	110.91			hJs	x5	40				PR						
BHUA-09	110.94				hJ		50				CU						
BHUA-09	110.95				hJ		60				PR						
BHUA-09	111.01				J		15			CN	CU	RF					
BHUA-09	111.09				hJ		50				UN						
BHUA-09	111.10				hJ		50				UN						
BHUA-09	111.12				hJ		70				UN						
BHUA-09	111.16				J		50			SN	PR	RF					
BHUA-09	111.18				J		65			CN	UN	RF					
BHUA-09	111.22				hJ		65				UN						
BHUA-09	111.23				hJ		50				PR						
BHUA-09	111.26				hJ		65				PR						
BHUA-09	111.31				hJ		40				PR						
BHUA-09	111.34				hJ		35				PR						
BHUA-09	111.37				hJ		50				PR						
BHUA-09	111.42				hJ		70				PR						
BHUA-09	111.42	111.58			hJ		70				UN						
BHUA-09	111.46				hJ		40				PR						
BHUA-09	111.51				hJ		30				PR						
BHUA-09	111.52				hJ		65				CU						
BHUA-09	111.53				hJ		50				CU						
BHUA-09	111.54				J		45			CN	PR	RF					
BHUA-09	111.59				J		45			SN	PR	RF					
BHUA-09	111.70				hJ		35				PR						
BHUA-09	111.74				hJs	x2	20				PR						
BHUA-09	111.83				J		50			SN	PR	RF					
BHUA-09	111.85				hJ		65				UN						
BHUA-09	111.85	111.96			hJ		55				UN						
BHUA-09	111.89				J		15			CN	UN	RF					possible DB
BHUA-09	111.92				hJ		35				PR						
BHUA-09	111.95	111.98			hJs	x2	30				PR						
BHUA-09	112.00				MB												
BHUA-09	112.00	112.54			hJ		85				UN						
BHUA-09	112.00	112.28			hJ		90				UN						
BHUA-09	112.02				hJ		40				PR						
BHUA-09	112.03				hJ		50				PR						
BHUA-09	112.08				hJ		35				PR						
BHUA-09	112.10				hJ		20				PR						
BHUA-09	112.17				hJs	x2	20				PR						
BHUA-09	112.19	112.25			hJs	x3	20				PR						
BHUA-09	112.28				J		25			SN	PR	RF					possible DB
BHUA-09	112.30				hJ	x2	10				PR						
BHUA-09	112.40				hJ		15				PR						
BHUA-09	112.40	112.60			hJ		85				UN						
BHUA-09	112.43	112.49			hJs		15				PR						
BHUA-09	112.56				J		60			SN	PR	RF					
BHUA-09	112.64				J		70			SN	PR	RF					
BHUA-09	112.65	112.79			hJ		75				UN						
BHUA-09	112.66				hJ		5				PR						
BHUA-09	112.72				hJ		45				CU						
BHUA-09	112.77				J		60			SN	PR	RF					possible DB
BHUA-09	112.81				hJ		15				PR						
BHUA-09	112.82				hJ		35				PR						
BHUA-09	112.83	112.85				x2	40				CU						
BHUA-09	112.86				J		45			CN	PR	RF					
BHUA-09	112.89				hJ		50				PR						



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PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	112.91	113.02			Js		45			VN	PR	RF					5-10 mm spacing
BHUA-09	113.00				MB												
BHUA-09	113.02				hJ		45				IR						
BHUA-09	113.04				hJ		65				CU						
BHUA-09	113.08				J		50			CN	UN	RF					
BHUA-09	113.10	113.13			hJs	x2	45				PR						
BHUA-09	113.12				hJ		20				PR						
BHUA-09	113.17				J		45			CN	PR	RF					
BHUA-09	113.22				hJ		30				PR						
BHUA-09	113.29				hJs	x3	45				PR						
BHUA-09	113.31				V		20				PR						
BHUA-09	113.33	113.44			hJ		60				CU						
BHUA-09	113.34	113.35			hJs	x2	45				PR	RF					
BHUA-09	113.36				hJ		50				PR						
BHUA-09	113.38				hJ		30				PR						
BHUA-09	113.39				J		45			CN	PR	RF					
BHUA-09	113.41				hJ		40				CU						
BHUA-09	113.44				J		15			SN	PR	RF					possible DB
BHUA-09	113.49				hJ		55				PR						
BHUA-09	113.50				hJ		40				CU						
BHUA-09	113.53				J		55			SN	PR	RF					
BHUA-09	113.54				hJ		45				UN						
BHUA-09	113.55				hJs	x2	20				CU						
BHUA-09	113.56				hJ		50				PR						
BHUA-09	113.58				hJ		25				CU						
BHUA-09	113.60				hJ		30				CU						
BHUA-09	113.63				J		30			SN	CU	RF					
BHUA-09	113.66	113.78			hJ		60				PR						
BHUA-09	113.69				J		35			SN	PR	RF					
BHUA-09	113.70				hJ		40				PR						
BHUA-09	113.71	113.82			J		60			CN	PR						
BHUA-09	113.73	113.75			hJs	x3	40				PR						
BHUA-09	113.74	113.88			hJ		70				UN						
BHUA-09	113.79				J		20			SN	CU	RF					
BHUA-09	113.80				hJ		25				ST						
BHUA-09	113.83				hJ		45				UN						
BHUA-09	113.90				hJ		20				PR						
BHUA-09	113.92	113.94			hJs		80				PR						
BHUA-09	113.95	113.97			hJs	x2	25				PR						
BHUA-09	113.99				hJ		20				PR						
BHUA-09	114.02				J		30			CN	CU	RF					
BHUA-09	114.03				hJ		50				PR						
BHUA-09	114.04				hJs	x2	5				PR						
BHUA-09	114.06	114.24			hJ		65				UN						
BHUA-09	114.07	114.18			hJ		80				UN						
BHUA-09	114.12				hJ		40				PR						
BHUA-09	114.15				Js		25			CN	PR	RF					
BHUA-09	114.17				hJ		40				PR						
BHUA-09	114.23	114.48			hJ		75				UN						
BHUA-09	114.27	114.38			J		65			CN	UN	RF					
BHUA-09	114.34				hJ		30				PR						
BHUA-09	114.39	114.53			hJ		65				CU						
BHUA-09	114.40				hJ		35				PR						
BHUA-09	114.42				hJ		40				PR						
BHUA-09	114.43				hJ		40				PR						
BHUA-09	114.47				J		20			CN	PR	RF					
BHUA-09	114.50	114.70			hJ		85				UN						
BHUA-09	114.51				hJ		70				PR						
BHUA-09	114.53	114.88			hJ		75				UN						
BHUA-09	114.54				hJ		75				CU						
BHUA-09	114.55				hJ		30				PR						
BHUA-09	114.56	114.68			hJ		75				UN						
BHUA-09	114.59				hJ		20				CU						
BHUA-09	114.64				hJ		30				PR						
BHUA-09	114.66	114.74			hJ		55				PR						
BHUA-09	114.74				hJ		20				PR						
BHUA-09	114.77				hJ		20				PR						
BHUA-09	114.79				hJ		40				PR						
BHUA-09	114.80				hJ		15				CU						
BHUA-09	114.84	114.96			V		70				UN						
BHUA-09	114.88				hJ		55				PR						
BHUA-09	114.90	115.00			hJs	x5	90				UN						
BHUA-09	115.00				J		25			CN	CU	RF					
BHUA-09	115.00	115.11			J		75			CN	UN	RF					
BHUA-09	115.05				hJ		35				PR						
BHUA-09	115.07				J		20			CN	PR	RF					
BHUA-09	115.07	115.18			hJ		70				CU						
BHUA-09	115.10				hJ		25				PR						
BHUA-09	115.10	115.40			hJ		85				UN						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHUA-09 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	115.11				hJ		15				PR						
BHUA-09	115.16				hJ		25				UN						
BHUA-09	115.20				HB												
BHUA-09	115.23	115.40			hJ		75				UN						
BHUA-09	115.27	115.35			hJ		70				PR						
BHUA-09	115.30	115.44			hJ		70				UN						
BHUA-09	115.42				hJ		35				PR						
BHUA-09	115.46				hJ		75				UN						
BHUA-09	115.55				J		60			CN	PR	RF					
BHUA-09	115.59	115.70			hJ		60				UN						
BHUA-09	115.62				hJ		55				PR						
BHUA-09	115.63				hJ		5				PR						
BHUA-09	115.64	115.83			hJ		85				UN						
BHUA-09	115.70				J		1			CN	PR	RF					
BHUA-09	115.73				hJ		20				PR						
BHUA-09	115.74	115.84			hJ		65				UN						
BHUA-09	115.85				hJ		45				PR						
BHUA-09	115.87				hJ		60				CU						
BHUA-09	115.90	115.91			hJs	x2	55				PR						
BHUA-09	115.98				hJ		50				PR						
BHUA-09	116.00				MB												
BHUA-09	116.00	116.10			hJ		70				UN						
BHUA-09	116.04				hJ		50				PR						
BHUA-09	116.06	116.12			hJ		75				PR						
BHUA-09	116.10	116.30			hJ		75				UN						
BHUA-09	116.16				hJ		65				UN						
BHUA-09	116.17				hJ		50				PR						
BHUA-09	116.27				hJ		55				PR						
BHUA-09	116.28				hJ		50				PR						
BHUA-09	116.29				hJ		45				PR						
BHUA-09	116.31				J		10			CN	UN	RF					
BHUA-09	116.31	116.43			V												
BHUA-09	116.34				hJ		10				CU						
BHUA-09	116.45				J		45			SN	PR			2			quartz infill
BHUA-09	116.48				J		25			SN	PR						
BHUA-09	116.49				hJ		35				UN						
BHUA-09	116.50				hJ		70				UN						
BHUA-09	116.53	116.54			Js		50			SN	PR	RF					
BHUA-09	116.59				hJ		35				CU						
BHUA-09	116.61				hJ		50				CU						
BHUA-09	116.66				hJ		30				UN						
BHUA-09	116.67				J		40			SN	PR	RF					
BHUA-09	116.69				J		50			SN	PR	RF					
BHUA-09	116.69	116.90			J		75			SN	UN	RF					
BHUA-09	116.79				J		45			VN	PR	RF					
BHUA-09	116.80				J		50			SN	PR	RF					
BHUA-09	116.85				hJ		45				PR						
BHUA-09	116.89	116.96			Js	x2	45			CN	ST	RF					70 mm spacing
BHUA-09	117.00	117.15			hJ		70				PR						
BHUA-09	117.03				J		20			CN	PR	RF					
BHUA-09	117.04				J		45			CN	PR	RF					
BHUA-09	117.06				hJ		30				CU						
BHUA-09	117.07				hJ		50				PR						
BHUA-09	117.09				hJ		25				CU						
BHUA-09	117.13				J		20			CN	PR	RF					
BHUA-09	117.16				hJ		15				UN						
BHUA-09	117.25	117.38			hJ						PR						
BHUA-09	117.31				hJ		25				CU						
BHUA-09	117.37				hJ		40				PR						
BHUA-09	117.39				J		20			CN	PR	RF					
BHUA-09	117.40				hJ		55				PR						
BHUA-09	117.52				J		35			CN	UN	RF					
BHUA-09	117.60				hJ		60				PR						
BHUA-09	117.64				hJ		20				PR						
BHUA-09	117.68	117.69			hJs	x2	60				PR						
BHUA-09	117.70				J		20			CN	PR	RF					
BHUA-09	117.83				hJ		45				UN						
BHUA-09	117.85	118.00			hJ		65				PR						
BHUA-09	117.88				hJ		10				UN						
BHUA-09	117.95				hJ		20				PR						
BHUA-09	118.00				MB												
BHUA-09	118.03				hJ		55				PR						
BHUA-09	118.08				J		25			CN	PR	RF					
BHUA-09	118.14				J		25			CN	PR	RF					
BHUA-09	118.15				J		10			CN	PR	RF					
BHUA-09	118.18	118.31			hJ		60				PR						
BHUA-09	118.19				J		60			SN	PR	RF					
BHUA-09	118.22				hJ		20				PR						
BHUA-09	118.28				J		25			CN	PR	RF					possible DB



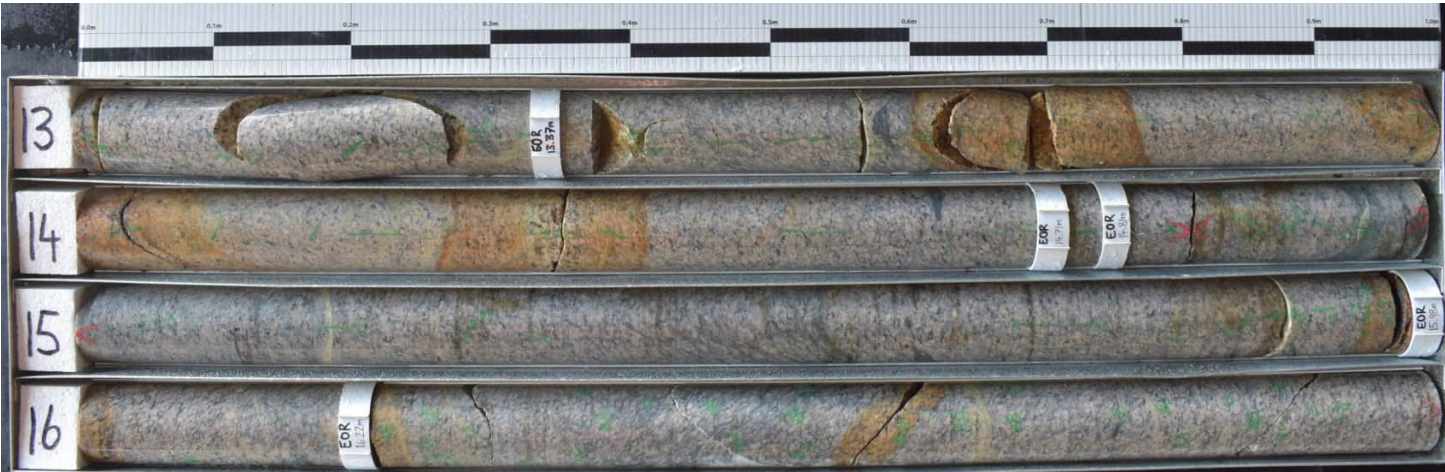
Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHUA-09 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHUA-09	118.29	118.35			hJs	x3	25				PR						
BHUA-09	118.37				J		20			CN	UN	RF					
BHUA-09	118.41				hJ		30				PR						
BHUA-09	118.50				hJ		40				CU						
BHUA-09	118.57	118.70			hJ		70				PR						
BHUA-09	118.58				hJ		80				UN						
BHUA-09	118.65	118.75			hJ		70				UN						
BHUA-09	118.68				hJ		30				PR						
BHUA-09	118.69				hJ		50				PR						
BHUA-09	118.70	118.80			hJ		90				UN						
BHUA-09	118.75				hJ		55				CU						
BHUA-09	118.85				hJ		45				PR						
BHUA-09	118.90				J		20			CN	UN	RF					
BHUA-09	118.90	119.00			hJ		45				UN						
BHUA-09	119.00				MB												
BHUA-09	119.11				hJ		50				CU						
BHUA-09	119.19				hJ		40				PR						
BHUA-09	119.25				J		40			CN	PR	RF					
BHUA-09	119.26	119.40			hJs		40				PR						
BHUA-09	119.38	119.46			hJ		50				CU						
BHUA-09	119.45				hJ		35				CU						
BHUA-09	119.49				hJ		35				PR						
BHUA-09	119.49	120.00			hJ		80				UN						
BHUA-09	119.50				hJ		50				UN						
BHUA-09	119.53				hJ		35				PR						
BHUA-09	119.57				J		45			CN	UN	RF					
BHUA-09	119.62				hJ		35				PR						
BHUA-09	119.70				hJ		45				CU						
BHUA-09	119.71				hJ		40				CU						
BHUA-09	119.75				hJ		55				PR						
BHUA-09	119.77				hJ		40				UN						
BHUA-09	119.78				hJ		30				PR						
BHUA-09	119.79				J		20			CN	PR						
BHUA-09	119.84				hJ		28				PR						
BHUA-09	119.86				hJ		20				PR						
BHUA-09	119.90				hJ		25				PR						
BHUA-09	119.91				HB												
BHUA-09	119.97				hJ		20				PR						
BHUA-09	120.00				MB												
BHUA-09	120.06				hJ		40				PR						
BHUA-09	120.07				J		10	40		CN	PR	RF					possible DB
BHUA-09	120.08	120.12			Js		20				UN					very closely	
BHUA-09	120.22	120.32			Js		60				UN					very closely	
BHUA-09	120.26				hJ		60				CU						
BHUA-09	120.36				hJ		20				PR						
BHUA-09	120.39	120.48			hJ		65				UN						
BHUA-09	120.40				hJ		45				UN						
BHUA-09	120.47				hJ		35				CU						
BHUA-09	120.50				hJ		30				PR						
BHUA-09	120.53	120.57			J	x2	25			SN	PR	RF				very closely	
BHUA-09	120.96				hJ		80				PR						
BHUA-09	120.99				hJ		60				PR						
BHUA-09	121.00				MB												
BHUA-09	121.04				hJ		45				PR						
BHUA-09	121.12				hJ		80				UN						
BHUA-09	121.22				hJ		5				PR						
BHUA-09	121.23				hJ		55				CU						
BHUA-09	121.25				hJ		50				CU						
BHUA-09	121.30				J		50			SN	PR	RF					
BHUA-09	121.34				HB												
BHUA-09	121.36				J		60			SN	PR						
BHUA-09	121.44				hJ		45				CU						
BHUA-09	121.48				J		20			CN	PR	RF					
BHUA-09	121.53				hJ		40				CU						
BHUA-09	121.57				hJ		55				PR						
BHUA-09	121.65	121.79			hJ		70				UN						
BHUA-09	121.69				hJ		60				CU						
BHUA-09	121.84				J		60			SN	ST	RF					
BHUA-09	121.85	122.00			J		85			SN	UN	RF					
BHUA-09	121.91				hJ		20				PR						
BHUA-09	121.97				hJ		25				PR						
BHUA-09	121.99				hJ		15				CU						
BHUA-09	122.00				MB												
BHUA-09	122.04				hJ		55				CU						
BHUA-09	122.05				hJ		70				PR						
BHUA-09	122.06	122.20			hJ		85				UN						
BHUA-09	122.08				hJ		20				PR						
BHUA-09	122.12	122.20			hJ		55				CU						
BHUA-09	122.13				hJ		10				CU						

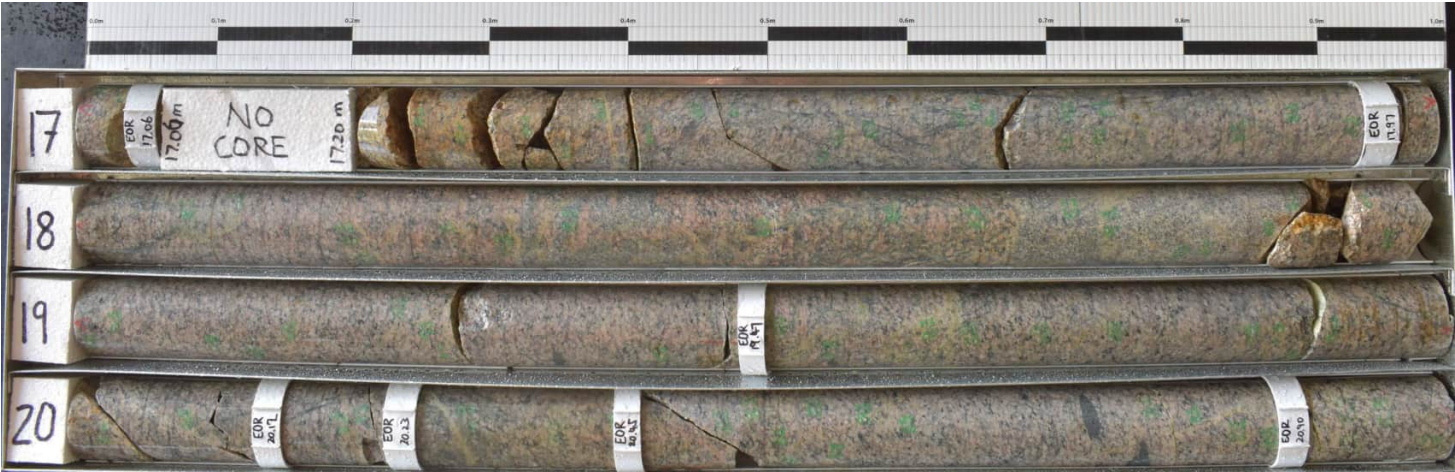


PointID : BHUA-09 Depth Range: 9.05 - 13.00 m

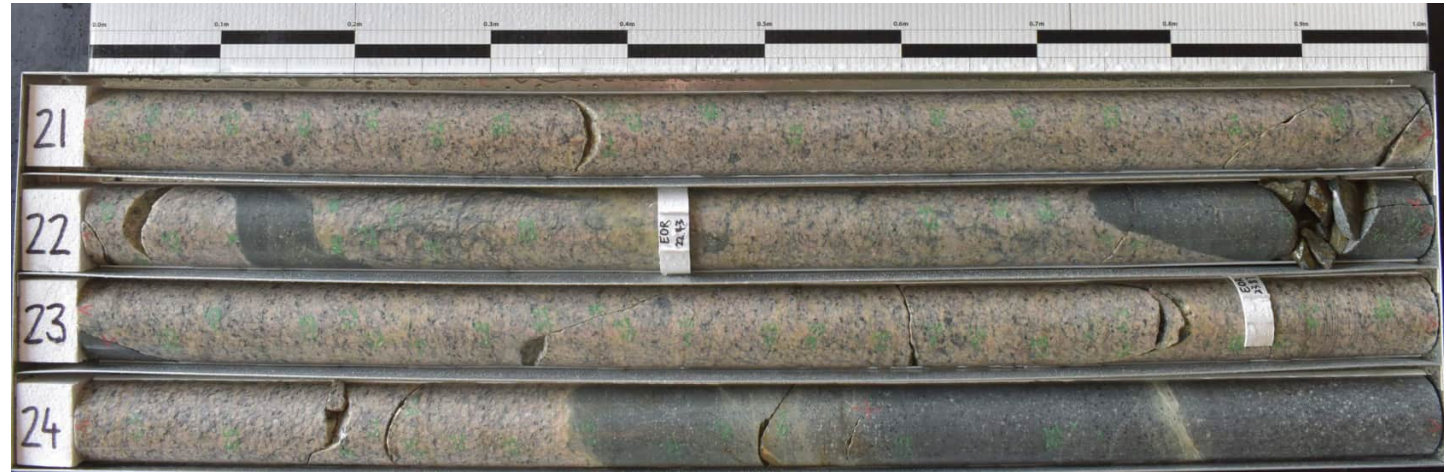


PointID : BHUA-09 Depth Range: 13.00 - 17.00 m

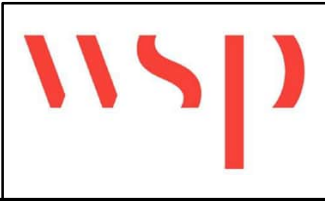
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			CHECKED GEM	DATE 7/10/2024
			SCALE Not To Scale	
			PROJECT No PS138693	FIGURE No 1/15
		A4		



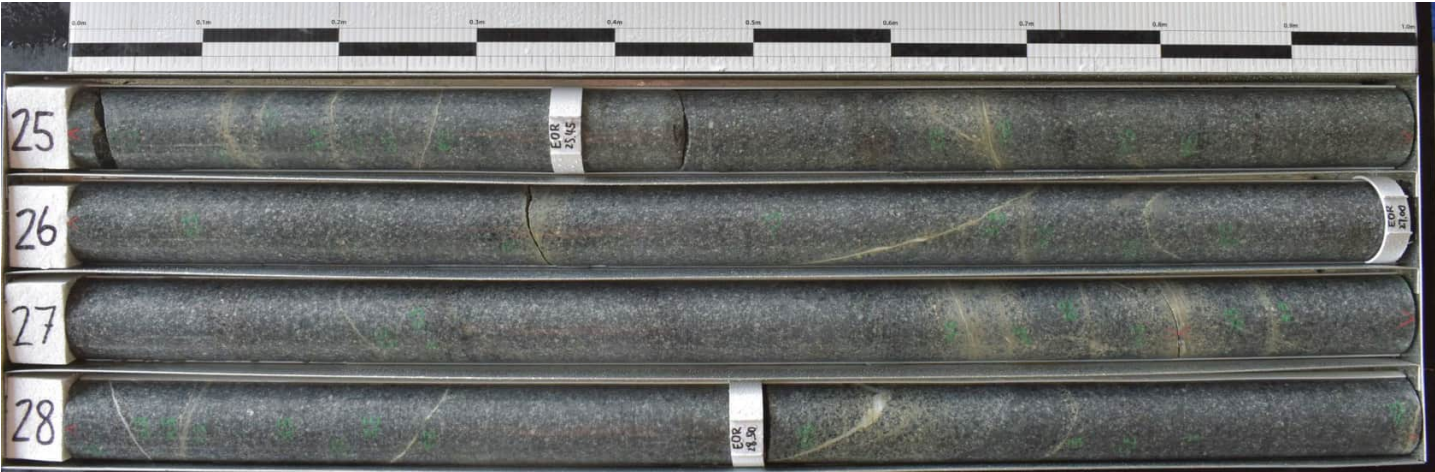
PointID : BHUA-09 Depth Range: 17.00 - 21.00 m



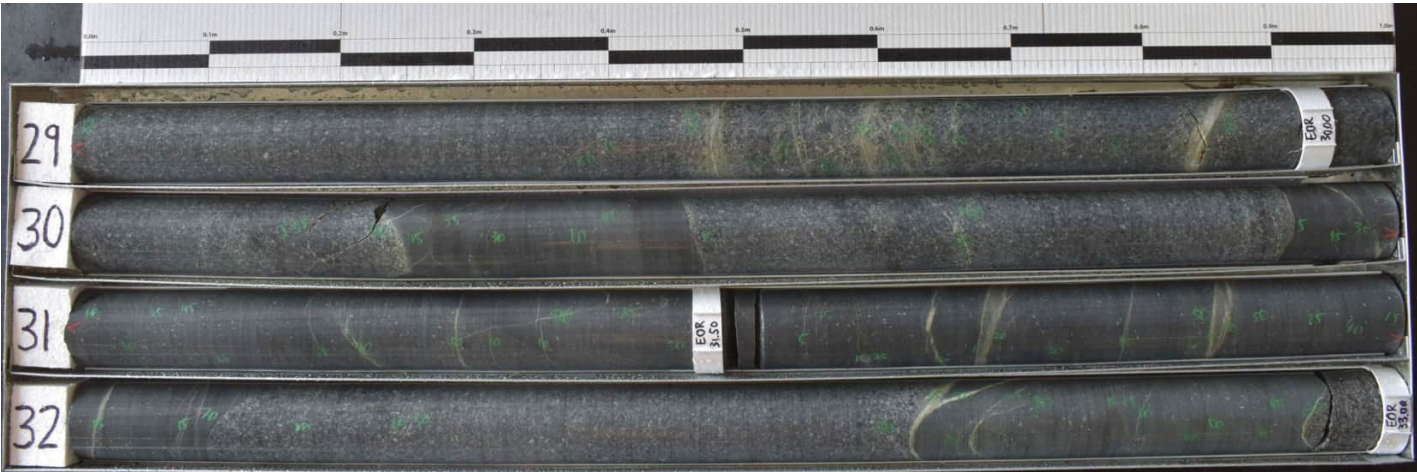
PointID : BHUA-09 Depth Range: 21.00 - 25.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 2/15

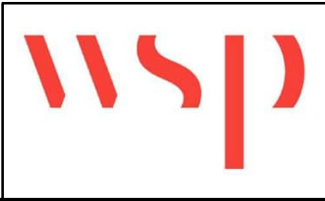
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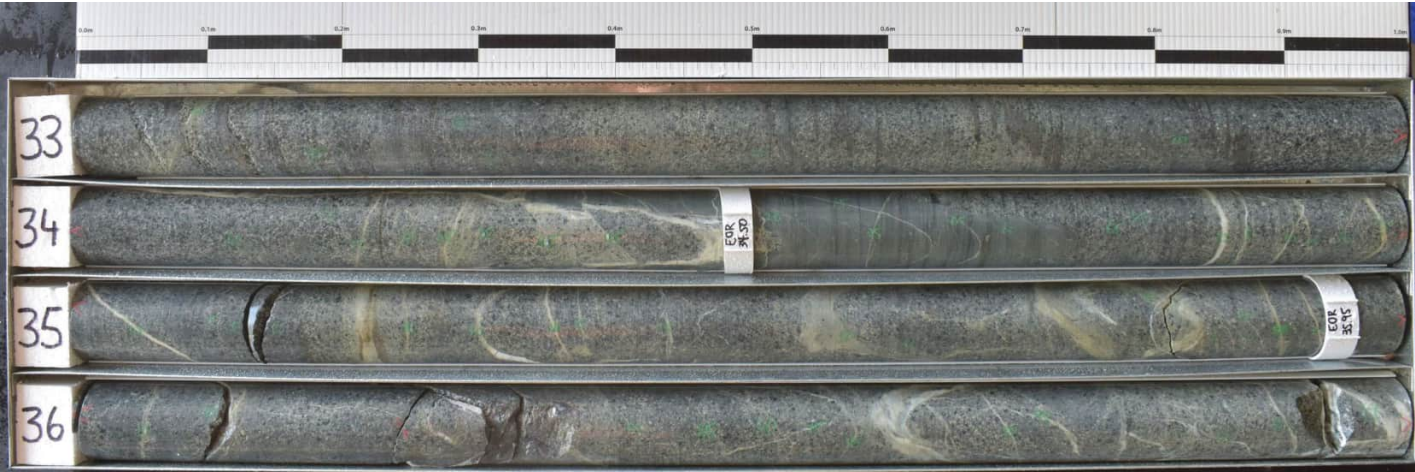
PointID : BHUA-09 Depth Range: 25.00 - 29.00 m



PointID : BHUA-09 Depth Range: 29.00 - 33.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 3/15

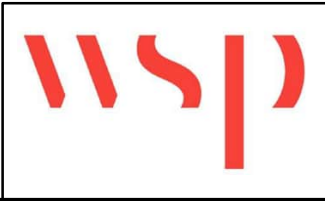
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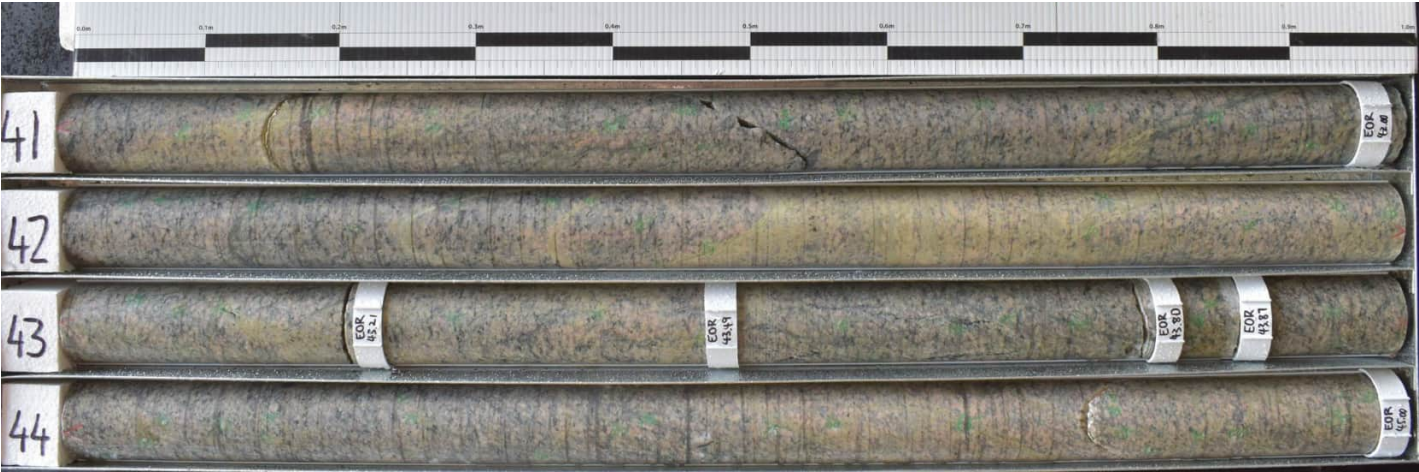
PointID : BHUA-09 Depth Range: 33.00 - 37.00 m



PointID : BHUA-09 Depth Range: 37.00 - 41.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09		DRAWN RC	DATE 2/10/2024
			CHECKED GEM	DATE 7/10/2024
			SCALE Not To Scale	A4
			PROJECT No PS138693	FIGURE No 4/15

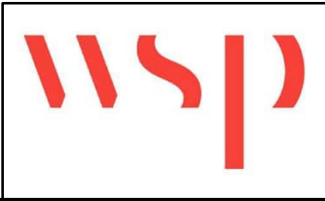
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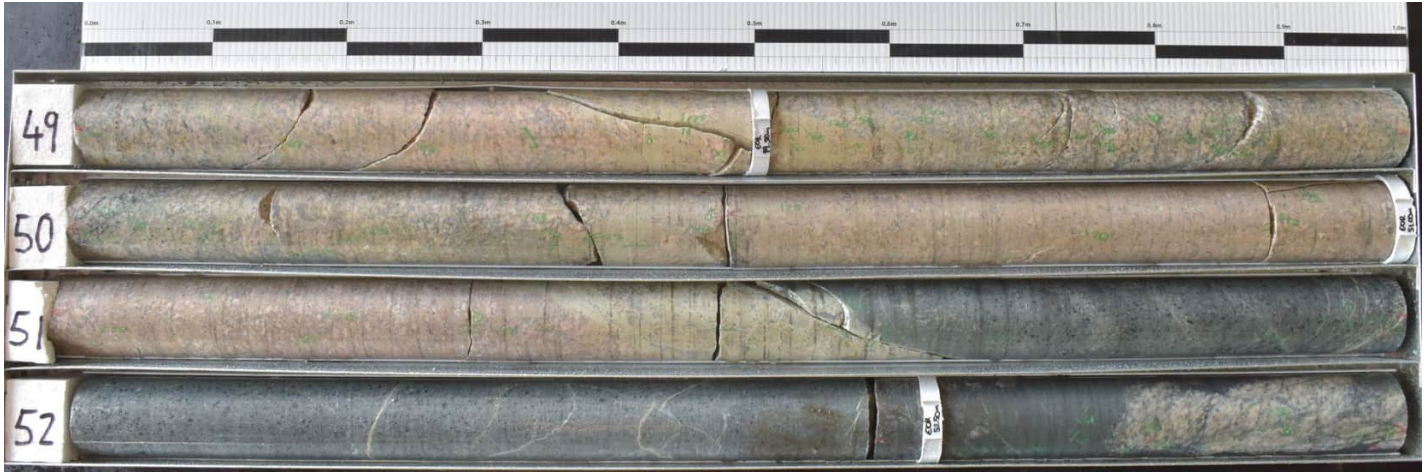
PointID : BHUA-09 Depth Range: 41.00 - 45.00 m



PointID : BHUA-09 Depth Range: 45.00 - 49.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 5/15

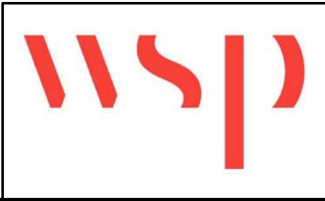
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PointID : BHUA-09 Depth Range: 49.00 - 53.00 m



PointID : BHUA-09 Depth Range: 53.00 - 57.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09		DRAWN RC	DATE 2/10/2024
			CHECKED GEM	DATE 7/10/2024
			SCALE Not To Scale	A4
			PROJECT No PS138693	FIGURE No 6/15

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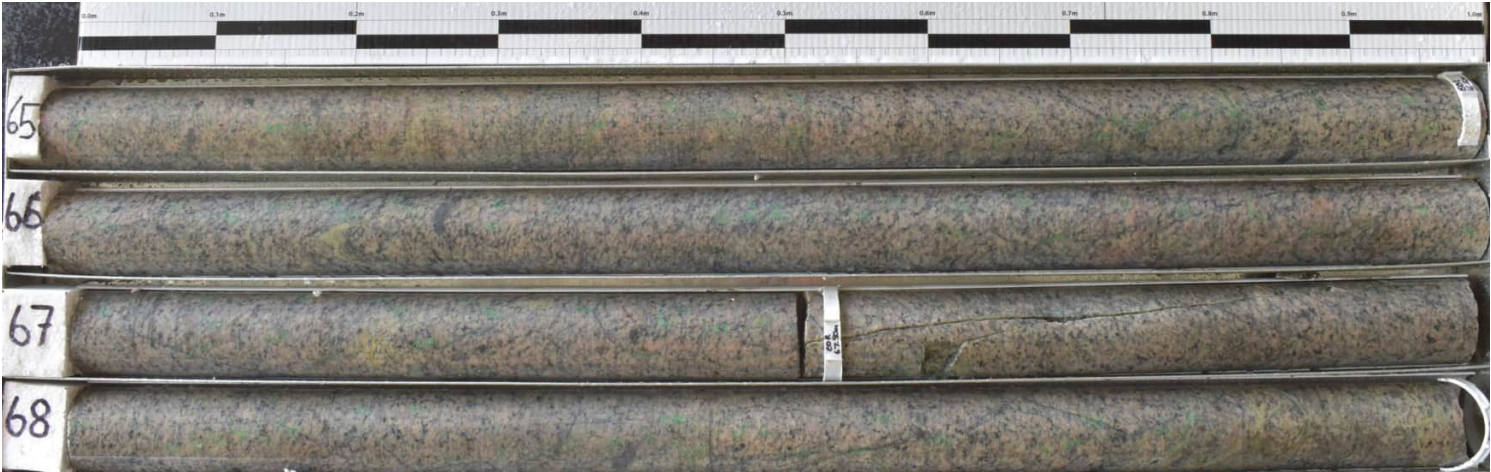
PointID : BHUA-09 Depth Range: 57.00 - 61.00 m



PointID : BHUA-09 Depth Range: 61.00 - 65.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024		
		CHECKED GEM	DATE 7/10/2024		
		SCALE Not To Scale			A4
		PROJECT No PS138693		FIGURE No 7/15	

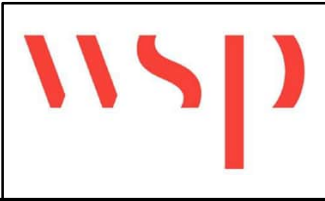
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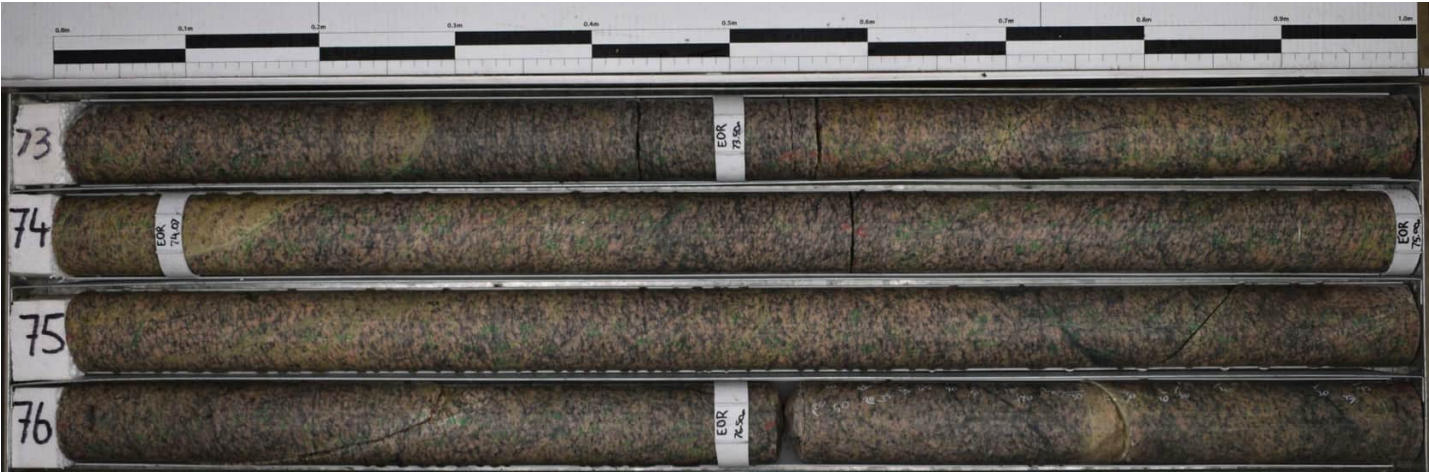


PointID : BHUA-09 Depth Range: 65.00 - 69.00 m



PointID : BHUA-09 Depth Range: 69.00 - 73.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09		DRAWN	RC	DATE	2/10/2024
			CHECKED	GEM	DATE	7/10/2024
			SCALE	Not To Scale		A4
			PROJECT No	PS138693		FIGURE No 8/15



PointID : BHUA-09 Depth Range: 73.00 - 77.00 m



PointID : BHUA-09 Depth Range: 77.00 - 81.00 m

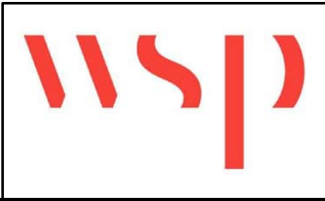
	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 9/15



PointID : BHUA-09 Depth Range: 81.00 - 85.00 m



PointID : BHUA-09 Depth Range: 85.00 - 89.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 10/15

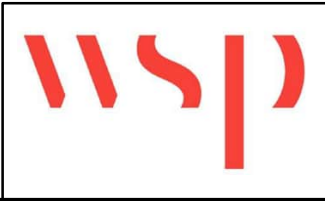
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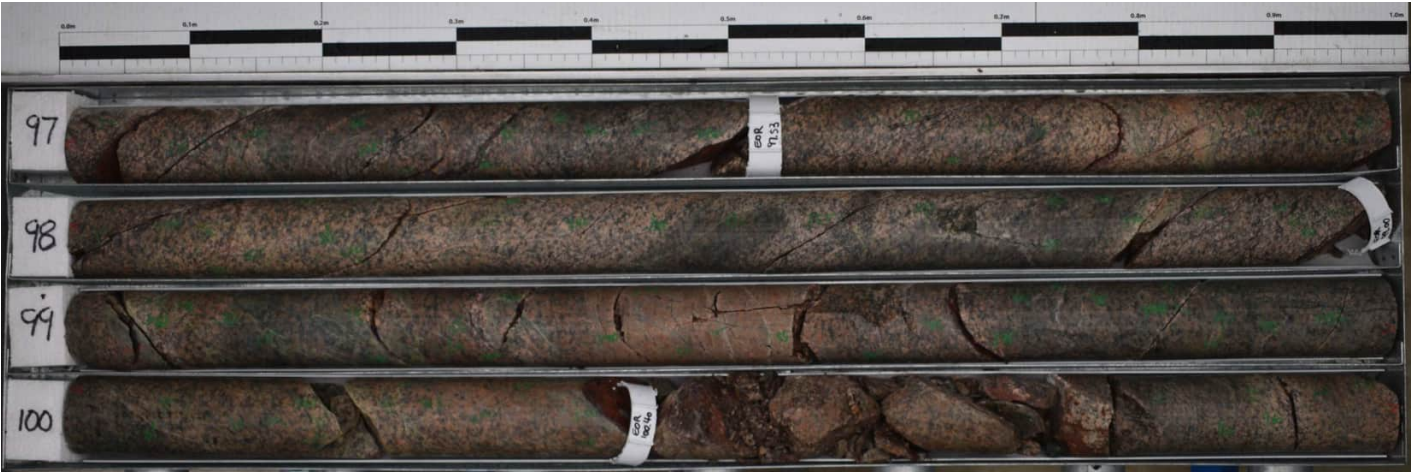
PointID : BHUA-09 Depth Range: 89.00 - 93.00 m



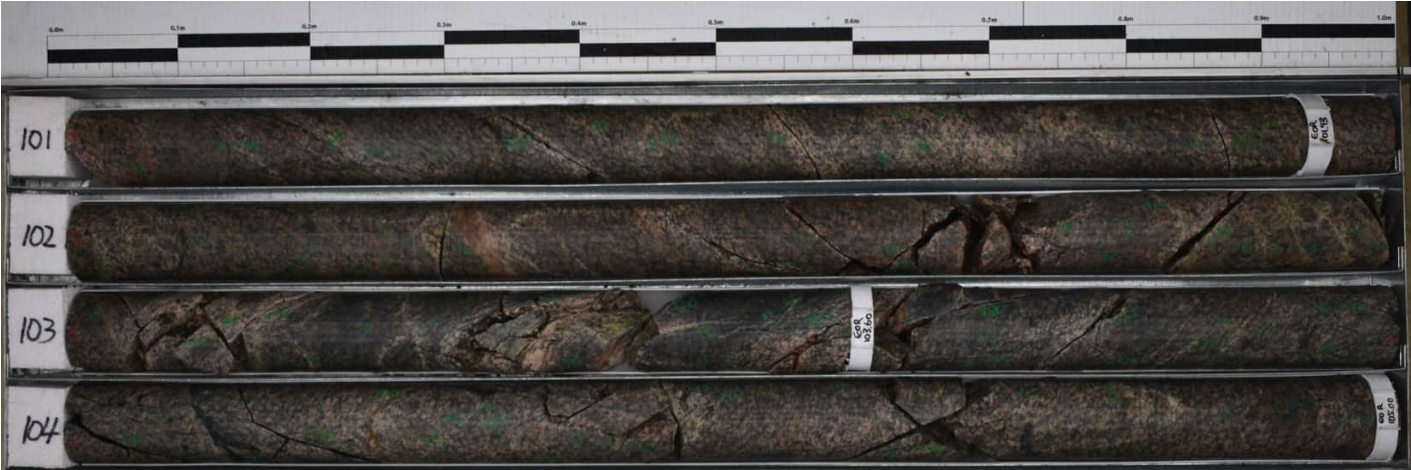
PointID : BHUA-09 Depth Range: 93.00 - 97.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN	RC	DATE	2/10/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 11/15

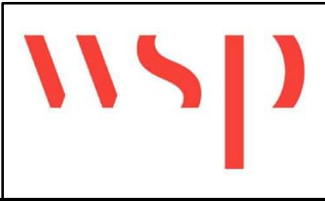
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PointID : BHUA-09 Depth Range: 97.00 - 101.00 m



PointID : BHUA-09 Depth Range: 101.00 - 105.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09		DRAWN RC	DATE 2/10/2024
			CHECKED GEM	DATE 7/10/2024
			SCALE Not To Scale	A4
			PROJECT No PS138693	FIGURE No 12/15

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PointID : BHUA-09 Depth Range: 105.00 - 109.00 m

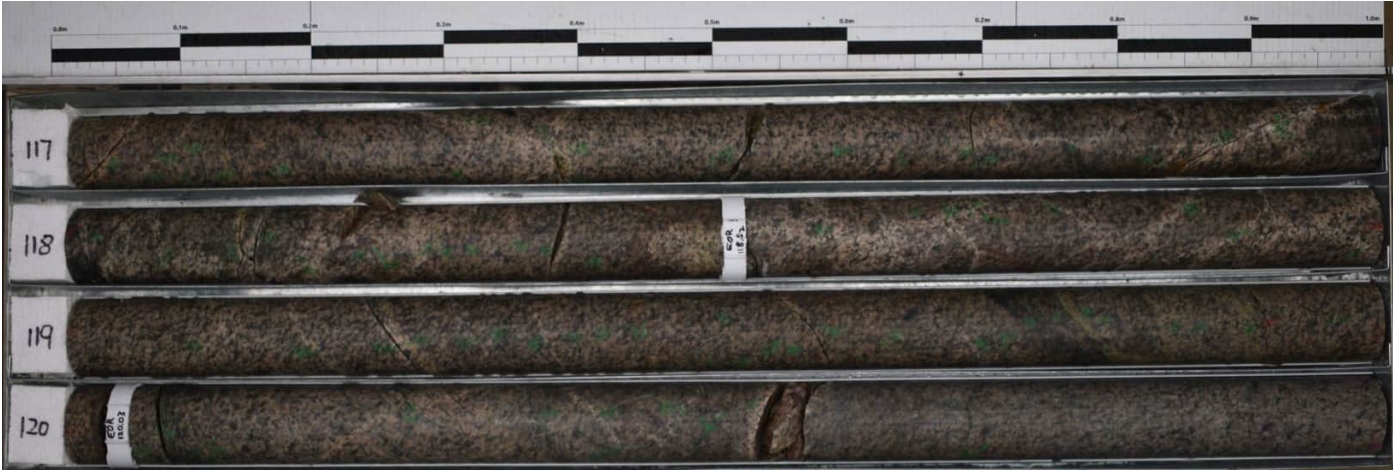


PointID : BHUA-09 Depth Range: 109.00 - 113.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN	RC	DATE	2/10/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 13/15



PointID : BHUA-09 Depth Range: 113.00 - 117.00 m



PointID : BHUA-09 Depth Range: 117.00 - 121.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN RC	DATE 2/10/2024
		CHECKED GEM	DATE 7/10/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 14/15



PointID : BHUA-09 Depth Range: 121.00 - 122.20 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHUA-09	DRAWN	RC	DATE	2/10/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 15/15



BHUA-09 Structural Log



PROJECT:	Pioneer-Burdekin PHES	JOB #	PS138693
CLIENT:	Queensland Hydro	DATE:	17/05/2024

BOREHOLE DEVIATION

BOREHOLE DETAILS

LOCATION:	Upper Reservoir	BH DEPTH:	122.20 m
EASTING:	657695.221 m	BH DIAMETER:	96 mm (HQ)
NORTHING:	7667656.540 m	BH AZIMUTH:	N/A
ELEVATION:	899.51 m	BH PLUNGE:	-89°
COORD SYSTEM:	MGA2020-56	CASING DEPTH:	13.32 m
LOGGING DATUM:	Ground Level	CASING TYPE:	HWT

DOCUMENT DETAILS

LOGGED BY: GH
LOGGED DATE: 04/12/2023
DRAWN BY: GH/SB
REVIEWED BY: GH
FILE: BHUA-09_Struct_RevC
LOGGED DEPTH: 120.90 m

NOTES

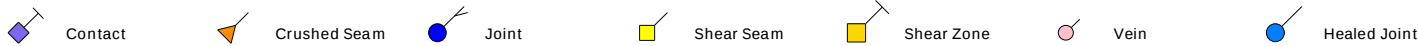
Image logs are oriented relative to borehole magnetic north.

Image and structure orientations are affected by strong magnetic influence throughout the borehole. Structure orientations are indicative only and cannot be individually relied upon for design.

Borehole easting and northing values are also affected by magnetic conditions and cannot be used for borehole deviation plots.

Borehole deviation plots are not available due to magnetic borehole conditions.

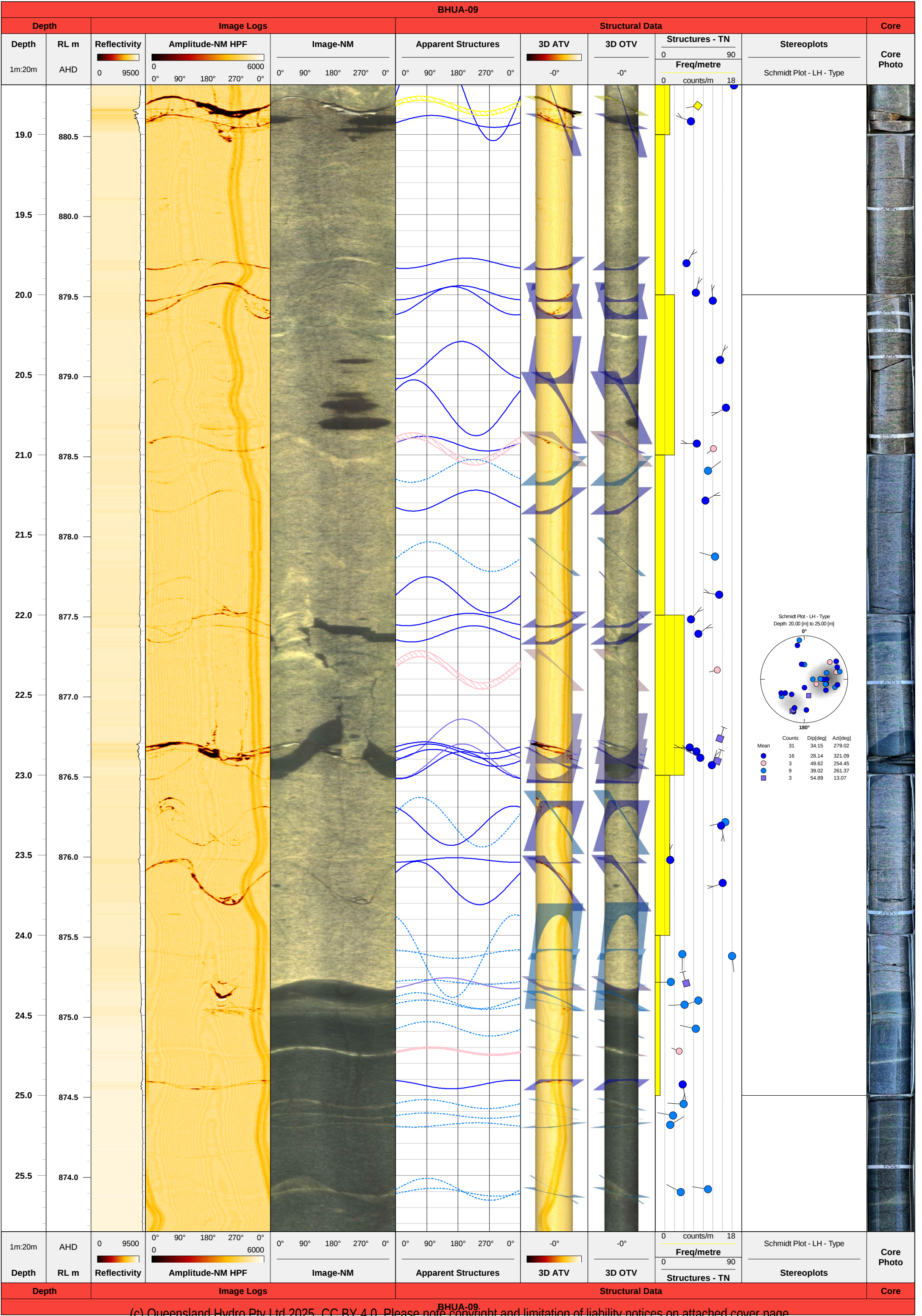
INTERPRETED STRUCTURES



BHUA-09

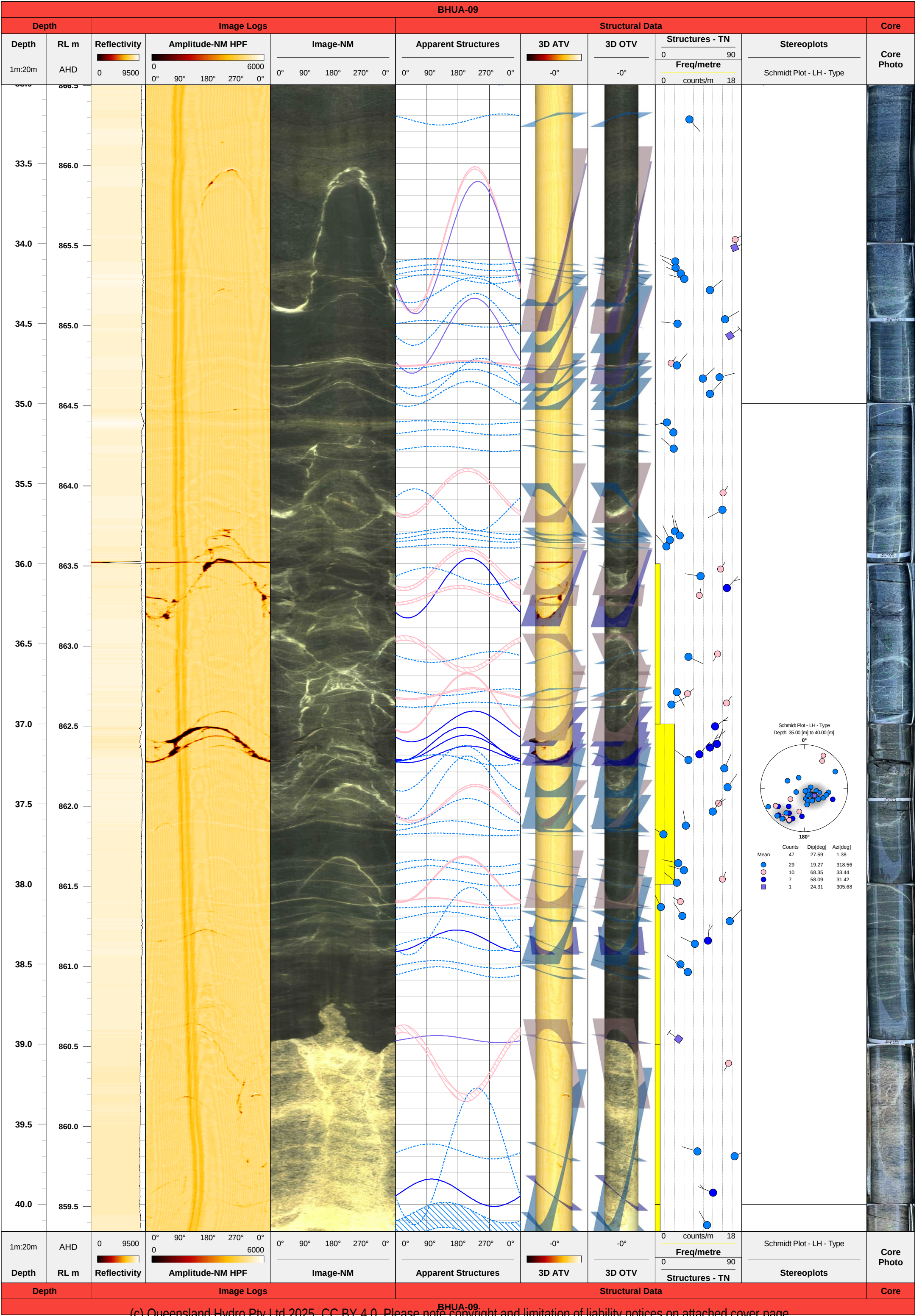
Depth		Image Logs				Structural Data					Core
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN		Stereoplots	Core Photo
								Freq/metre			
								0	90		
1m:20m	AHD	0 9500	0 6000	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	-0°	-0°	0 counts/m	18	Schmidt Plot - LH - Type	
13.0	886.5										
13.5	886.0										
14.0	885.5										
14.5	885.0										
15.0	884.5										
15.5	884.0										
16.0	883.5										
16.5	883.0										
17.0	882.5										
17.5	882.0										
18.0	881.5										
18.5	881.0										
1m:20m	AHD	0 9500	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	-0°	-0°	0 counts/m	18	Schmidt Plot - LH - Type	Core Photo
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN		Stereoplots	Core Photo
Depth		Image Logs				Structural Data					Core

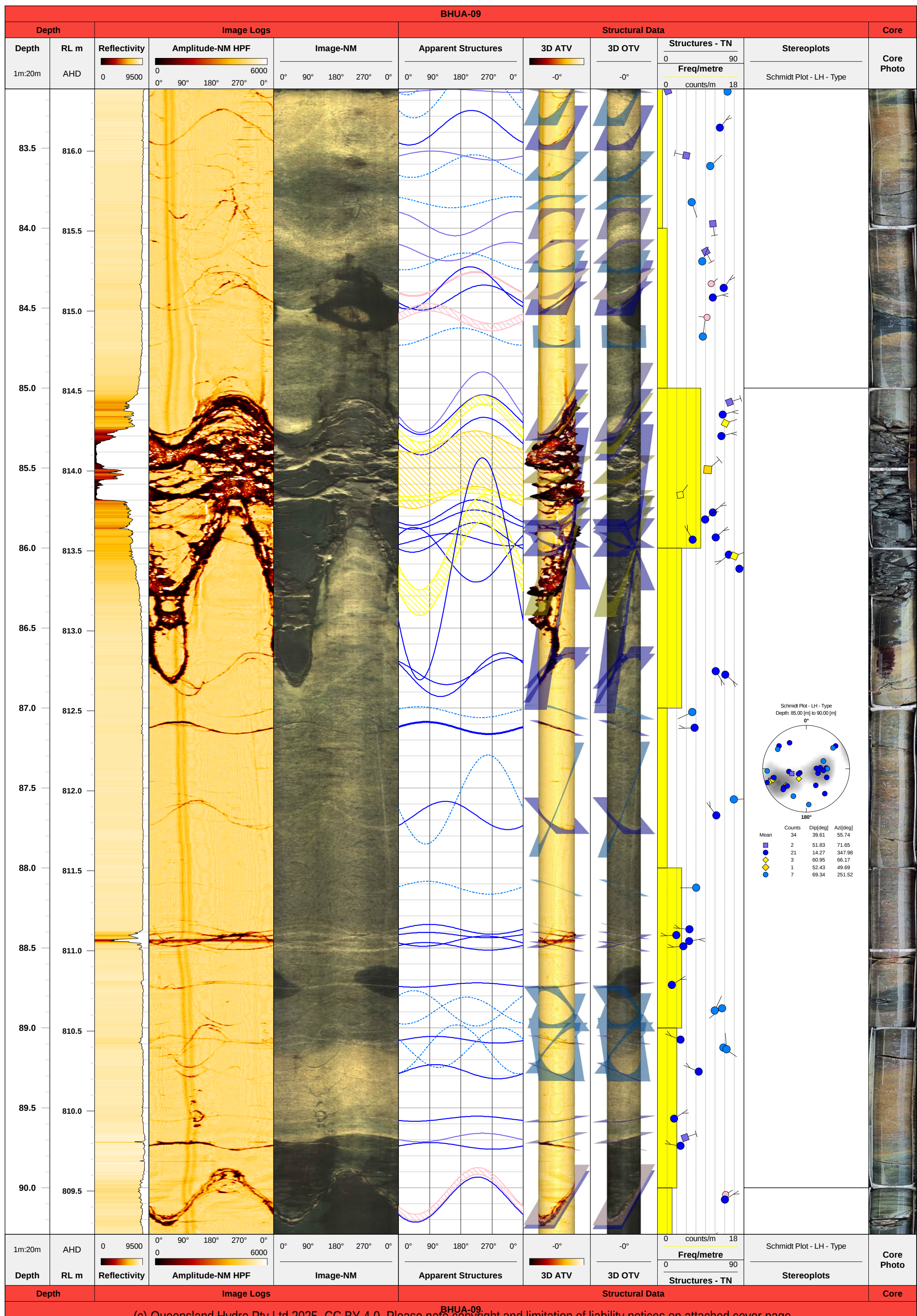
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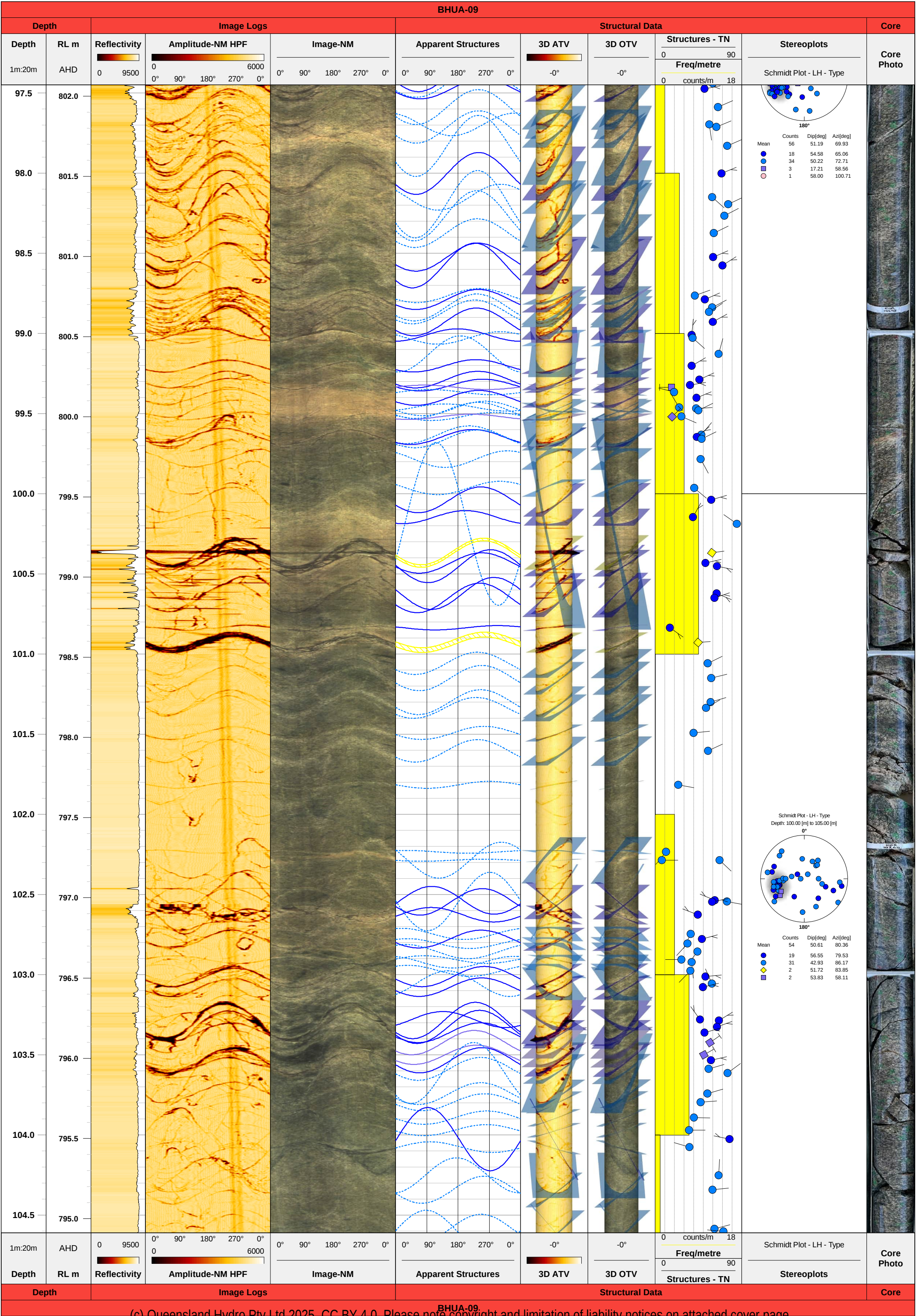
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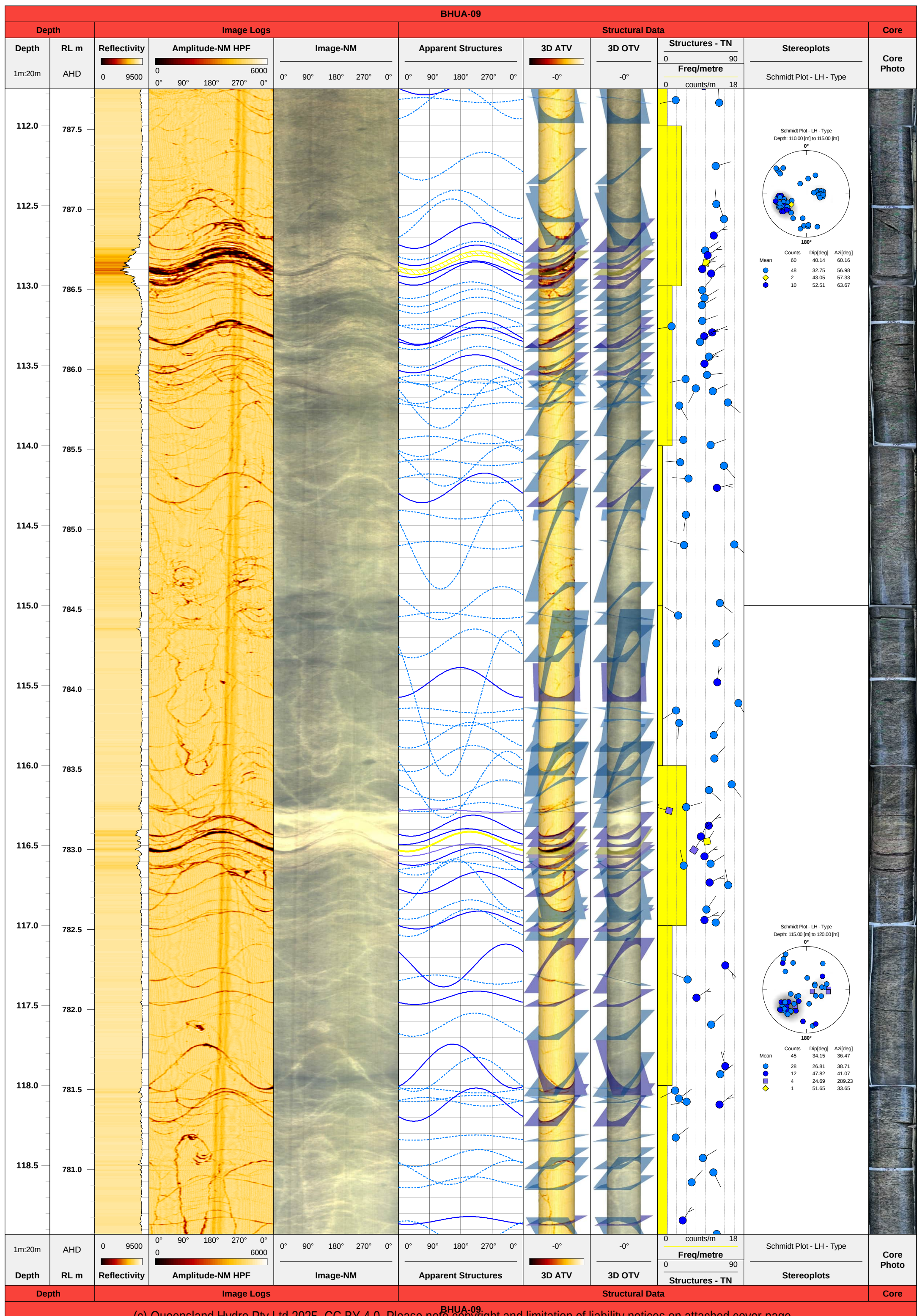
BHUA-09

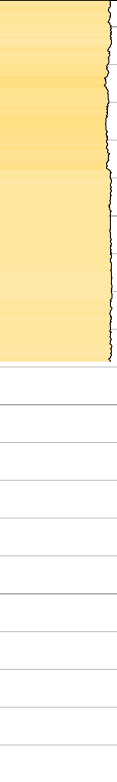
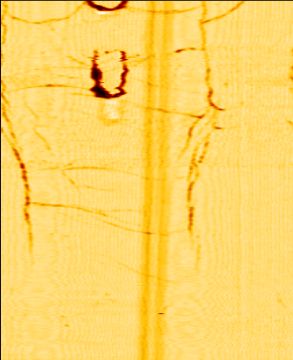
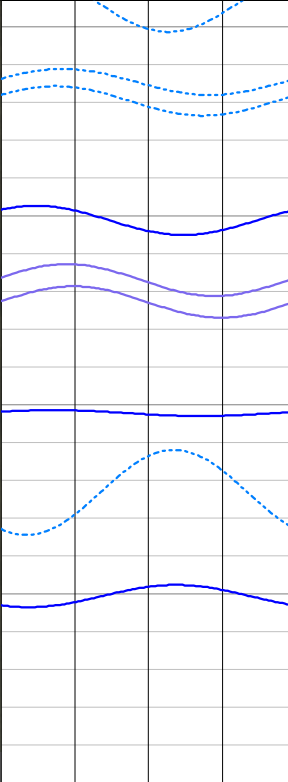
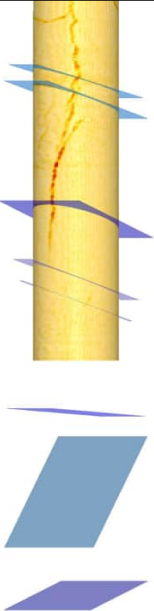
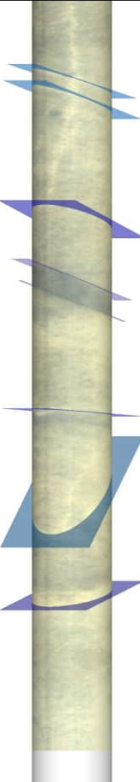
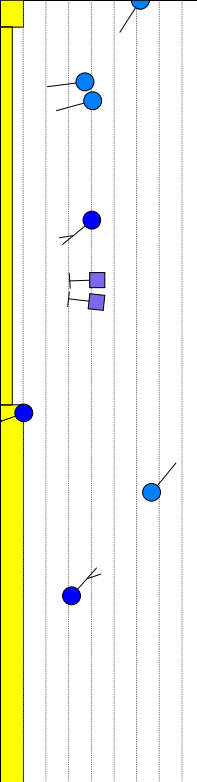




BHUA-09											
Depth		Image Logs			Structural Data						Core
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN	Stereoplots	Core Photo	
1m:20m	AHD	09500	06000	0°90°180°270°0°	0°90°180°270°0°	-0°	-0°	090 Freq/metre 0counts/m18	Schmidt Plot - LH - Type		
90.5	809.0										
91.0	808.5										
91.5	808.0										
92.0	807.5								Schmidt Plot - LH - Type Depth: 90.00 [m] to 95.00 [m]		





BHUA-09										
Depth		Image Logs				Structural Data				Core
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN	Stereoplots	Core Photo
1m:20m	AHD	09500	06000	0°90°180°270°0°	0°90°180°270°0°	-0°	-0°	090 Freq/metre 0counts/m18	Schmidt Plot - LH - Type	
119.0	780.5									
119.5	780.0									
120.0	779.5									
120.5	779.0									
121.0										
1m:20m	AHD	09500	06000	0°90°180°270°0°	0°90°180°270°0°	-0°	-0°	090 Freq/metre 0counts/m18	Schmidt Plot - LH - Type	Core Photo
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN	Stereoplots	Core



BHUA-09 Composite Log

WSP WSP Australia Pty Limited Level 12, 900 Ann Street Fortitude Valley QLD 4006 Australia GEOPHYSICAL RECORD OF BOREHOLE: BHUA-09 PROJECT: Pioneer-Burdekin PHES JOB # PSI38693 CLIENT: Queensland Hydro DATE: 17/05/2024				BOREHOLE DEVIATION								
BOREHOLE DETAILS				DOCUMENT DETAILS		NOTES						
LOCATION: Upper Reservoir BH DEPTH: 122.20 m				LOGGED BY: GH		Image logs are oriented relative to borehole magnetic north. Image and structure orientations are affected by strong magnetic influence throughout the borehole. Structure orientations are indicative only and cannot be individually relied upon for design. Borehole easting and northing values are also affected by magnetic conditions and cannot be used for borehole deviation plots.						
EASTING: 657695.221 m BH DIAMETER: 96 mm (HQ)				LOGGED DATE: 04/12/2023								
NORTHING: 7667656.540 m BH AZIMUTH: N/A				DRAWN BY: GH/SB								
ELEVATION: 899.51 m BH PLUNGE: -89°				REVIEWED BY: GH								
COORD SYSTEM: MGA2020-56 CASING DEPTH: 13.32 m				FILE: BHUA-09_Comp_RevC								
LOGGING DATUM: Ground Level CASING TYPE: HWT				LOGGED DEPTH: 120.90 m		Borehole deviation plots are not available due to magnetic borehole conditions.						
INTERPRETED STRUCTURES												
Contact Crushed Seam Joint Shear Seam Shear Zone Vein Healed Joint												
BHUA-09												
Depth	Image Logs			Calliper	Structural Logs		Sonic Logs	Gamma Logs		Electrical Logs		
Depth	Amplitude-NM HPF	Image-NM	Reflectivity	CAL	Structures - TN	3D ATV	Core	Vs	GR	K	N16	Ma16
	5006000		09000	80mm160	090	-0°		1000m/s7000	0API250	0%10	200Ohm.m20000	0ms50
1m:50m	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	09000	80mm160	Freq/metre	-0°		1000m/s7000		0ppm10	200Ohm.m20000	Ma64
	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°			0counts/m18			1000m/s7000		0ppm40	200Ohm.m20000	0ms50
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
1m:50m	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	09000	80mm160	0counts/m18	-0°		1000m/s7000	0API250	0ppm40	200Ohm.m20000	0ms50
Depth	Amplitude-NM HPF	Image-NM	Reflectivity	CAL	Structures - TN	3D ATV	Core	Vp	GR	Th	N8	Ma64
	5006000		09000	80mm160	Freq/metre	-0°		1000m/s7000		0ppm10	200Ohm.m20000	Ma64
	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°			0counts/m18			1000m/s7000		0%10	200Ohm.m20000	0ms50
					Structures - TN			Vs		K	N16	

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BHUA-09

