



Box: 5 of 9 - Depth: 12.90m to 15.50m of 27.00m
 Date Drilled 20/01/2022 to 24/01/2022 - Date Photographed: 21/01/2022



Box: 6 of 9 - Depth: 15.50m to 18.75m of 27.00m
 Date Drilled 20/01/2022 to 24/01/2022 - Date Photographed: 21/01/2022



Box: 7 of 9 - Depth: 18.75m to 21.60m of 27.00m

Date Drilled 20/01/2022 to 24/01/2022 - Date Photographed: 24/01/2022



Box: 8 of 9 - Depth: 21.60m to 24.85m of 27.00m

Date Drilled 20/01/2022 to 24/01/2022 - Date Photographed: 24/01/2022

Project Eastern Busway
Location Reserve: 23R Kenwick Place

HOLE IDENTIFICATION **DH322_P**



Box: 9 of 9 - Depth: 24.85m to 27.00m of 27.00m

Date Drilled 20/01/2022 to 24/01/2022 - Date Photographed: 24/01/2022

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412459.80mE 794673.53mN
 Orientation -90° Elevation 6.81m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).</small>	Test Records <small>Shear Vane/ SPT N Values</small>	Drilling Method <small>Casing remarks</small>	Core Loss/Lift <small>0 - 100%</small>	Relative Strength <small>MS VS W VW EW</small>	Rock Weathering <small>SW MW HW CW</small>	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, subordinate information, etc</small>	Instrumentation
										DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>	
0.0m: FILL.						1		100		0.0m: Fine sandy SILT with some rootlets; brown. Soft, dry, low plasticity.	
1.5m: ALLUVIUM comprising clay, silt, sand and peat.	SS 1,1,1, 2,1,0 N=4	SPT				2		100		0.2m: Fine sandy SILT with some clay; grey with orange staining. Soft, dry, low plasticity.	1.65
		HQ3						100		1.5m: Silty fine to medium SAND with minor clay; grey with orange staining/mottling. Dense, moist, poorly graded. (Pumice).	2.44
		PT						100			
	SS 1,0,0, 1,1,2 N=4	SPT	HWT			3		100		2.75m: Silty fine to coarse SAND with some clay and trace fine gravel; Dark grey. Medium dense, moist, well graded.	
		HQ3						100		3.0m: 114mm diameter HWT casing to 3.0m.	
		HQ3				4		100		3.6m: Silty CLAY; bluish grey. Firm, moist, high plasticity.	
		SPT				5		100			
	SS 0,0,0, 0,0,0 N=0 SUOW	SPT						100		4.95m: Spongy PEAT; black. Firm, moist, high plasticity.	
		HQ3				6		100			
SS 0,1,2, 1,2,2 N=7	SPT						100		6.0m: Silty CLAY with some fine micaceous sand and trace organics; bluish grey. Stiff, moist, high plasticity.		
	HQ3				7		100		6.25m: Sand becomes minor, organics cease.		
SS 99/10, 0,1,1, 1,2,2 N=6	SPT						100		7.7m: Silty fine micaceous SAND with minor clay; bluish grey. Dense, moist, uniformly graded.		
	HQ3				8		100		8.1m: Silty CLAY with some fine micaceous sand and trace organics; bluish grey. Firm, moist, high plasticity.		
	SPT						100		8.1 to 8.6m: Stiff.		
SS 44/3, 0,0,0, 0,1,0 N=1	SPT						100		8.9m: Wood chunk.		
	HQ3				9		100				

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)			
Date Time	Drilled Depth	Casing Depth	Fluid Depth
18/01/2022 16:15	10.95	3.0	2.44
19/01/2022 07:45	10.95	3.0	1.65
20/01/2022 11:50	25.50	3.0	-0.82

RELATIVE STRENGTH	WEATHERING
VS - Very strong	UW - Unweathered
S - Strong	SW - Slightly weathered
MS - Moderately strong	MW - Moderately weathered
W - Weak	HW - Highly weathered
VW - Very weak	CW - Completely weathered
EW - Extremely weak	

Date logged 14/02/2022
 Logged SK
 Checked GP

Driller McMillan
 Started 18/01/2022
 Finished 19/01/2022
 Drill Rig N119
 Core Boxes 8

Remarks
 Artesian water noted (indicated by negative reading in fluid depth and drilling progress table). Telemetered vibrating wire piezometer installed with tips at 5.65m (SN: S8176) and 12.15m (SN: S8175).

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016

Hand Held Shear Vane
 DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22
 vane shear strength per NZGS guideline

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412459.80mE 794673.53mN
 Orientation -90° Elevation 6.81m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).</small>	Test Records		Drilling Method <small>Casing remarks</small>	Core Loss/Lift	Relative Strength	Rock Weathering	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, subordinate information, etc</small>	Instrumentation
	Shear Vane/ SPT	SPT N Values									DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>	
TAURANGA GROUP	23/0	0 - 50	PT						100		8.1m: Silty CLAY with some fine micaceous sand and trace organics; bluish grey. Firm, moist, high plasticity. (continued)	
	SS 0,0,0 0,0,0 N=0 SUOW		SPT				11		100		11.55m: Silty fine to coarse SAND; grey. Medium dense.	
			HQ3						100		12.25m: Clayey SILT; grey. Very stiff.	
	SS 4,6,8 6,6,7 N=27		SPT				12		100		12.6 to 12.7m: Fine to coarse SAND. Calcified bands.	
			HQ3						100		13.55m: Silty fine to coarse SAND; grey. Dense.	
	SS 4,7,8 9,12,13 N=42		SPT				13		100		14.1m: Clayey SILT; grey. Very stiff.	
			HQ3						100		14.55m: Silty fine to coarse SAND; grey. Dense.	
	SS 5,7,10 11,10,10 N=41		SPT				14		100		15.25m: Clayey SILT; grey. Very stiff.	
			HQ3						100		16.9m: Silty fine to coarse SAND; grey. Dense.	
	SS 3,4,6 8,10,12 N=36		SPT				15		100		17.5m: Clayey SILT; grey. Very stiff.	
EAST COAST BAYS FORMATION			HQ3						76		18.5m: J, 45°, Ud, Sm, N, Cc	
	SS 5,6,10 8,12,13 N=43		SPT				16		100			
			HQ3						71 [71]			
	SS 6,8,10 11,14,15 N=50		SPT				17		100			
		HQ3										
		SPT										

2021 EB DRILLHOLE LOG 2022-04-13 SBS MASTER.GPJ BASE.GDT 13/04/22

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)
 Date Time Drilled Depth Casing Depth Fluid Depth

Hand Held Shear Vane
 DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22
 vane shear strength per NZGS guideline

RELATIVE STRENGTH
 VS - Very strong
 S - Strong
 MS - Moderately strong
 W - Weak
 VW - Very weak
 EW - Extremely weak

WEATHERING
 UW - Unweathered
 SW - Slightly weathered
 MW - Moderately weathered
 HW - Highly weathered
 CW - Completely weathered

Remarks
 Artesian water noted (indicated by negative reading in fluid depth and drilling progress table). Telemetered vibrating wire piezometer installed with tips at 5.65m (SN: S8176) and 12.15m (SN: S8175).

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden
 2000 / New Zealand Vertical Datum 2016

Date logged 14/02/2022
 Logged SK
 Checked GP

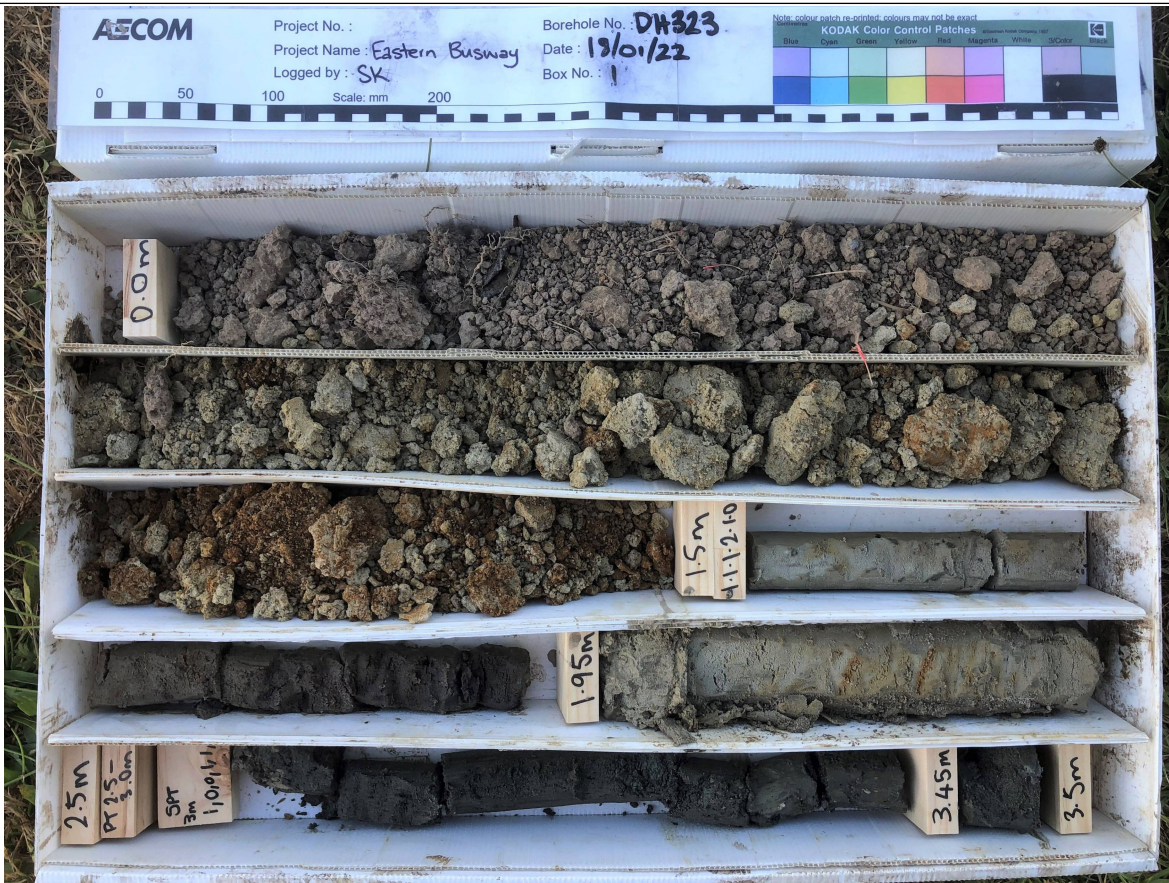
Driller McMillan
 Started 18/01/2022
 Finished 19/01/2022
 Drill Rig N119
 Core Boxes 8
 Page 2 of 7

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412459.80mE 794673.53mN
 Orientation -90° Elevation 6.81m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc.)</small>	Test Records		Drilling Method <small>Casing remarks</small>	Core Loss/Lift	Relative Strength	Rock Weathering	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc</small>	Instrumentation
	Shear Vane/ SPT	SPT N Values										
EAST COAST BAYS FORMATION 18.85m: Moderately weathered, grey, SILTSTONE. Very weak. Bedding imperceptible. (continued) 22.05m: Moderately weathered, grey, fine to medium SANDSTONE. Very weak. Bedding imperceptible.			HQ3						100 [100]		19.93 to 21.0m: Drilling breaks: 0°, at 20.08, 20.52 & 20.76m. 21.45 to 22.5m: Drilling breaks: 0°, at 21.65, 22.13, 22.22, 22.34 & 22.43m. 21.76m: J, 45°, Ud, Sm, NF 22.95 to 24.0m: Drilling breaks: 0°, at 23.14, 23.23, 23.32 & 23.35m. 23.4 to 24.0m: Core Loss: 24.45 to 25.5m: Drilling breaks: 0°, at 24.72 & 24.9m. 24.77 to 24.88m: J, 65°, Ud, Sm, NF 25.04 to 25.2m: J, 60°, Ud, Sm, Cc 25.2 to 25.5m: Core Loss: DH323_P terminated at 25.5m Depth Criteria Achieved	
	ss 5.5,9,13,12,13 N=47		SPT						100			
			HQ3						100 [100]			
	ss 7,7,10,12,13,15 N=50		SPT						100			
			HQ3						43 [43]			
	ss 6,9,10,12,12,16 N=50		SPT						100			
			HQ3						76 [76]			
For explanation of symbols and observations, see key sheet					RELATIVE STRENGTH		WEATHERING			Date logged 14/02/2022	Driller McMillan Started 18/01/2022 Finished 19/01/2022 Drill Rig N119 Core Boxes 8	
FLUID DEPTHS AND DRILLING PROGRESS (m) Date Time Drilled Depth Casing Depth Fluid Depth					VS - Very strong S - Strong MS - Moderately strong W - Weak VW - Very weak EW - Extremely weak		UW - Unweathered SW - Slightly weathered MW - Moderately weathered HW - Highly weathered CW - Completely weathered			Logged SK Checked GP		
Hand Held Shear Vane DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22 vane shear strength per NZGS guideline					Remarks Artesian water noted (indicated by negative reading in fluid depth and drilling progress table). Telemetered vibrating wire piezometer installed with tips at 5.65m (SN: S8176) and 12.15m (SN: S8175).		Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016			Page 3 of 7		

2021 EB DRILLHOLE LOG 2022-04-13 SBS MASTER.GPJ BASE.GDT 13/04/22



Box: 1 of 8 - Depth: 00.00m to 03.50m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 18/01/2022



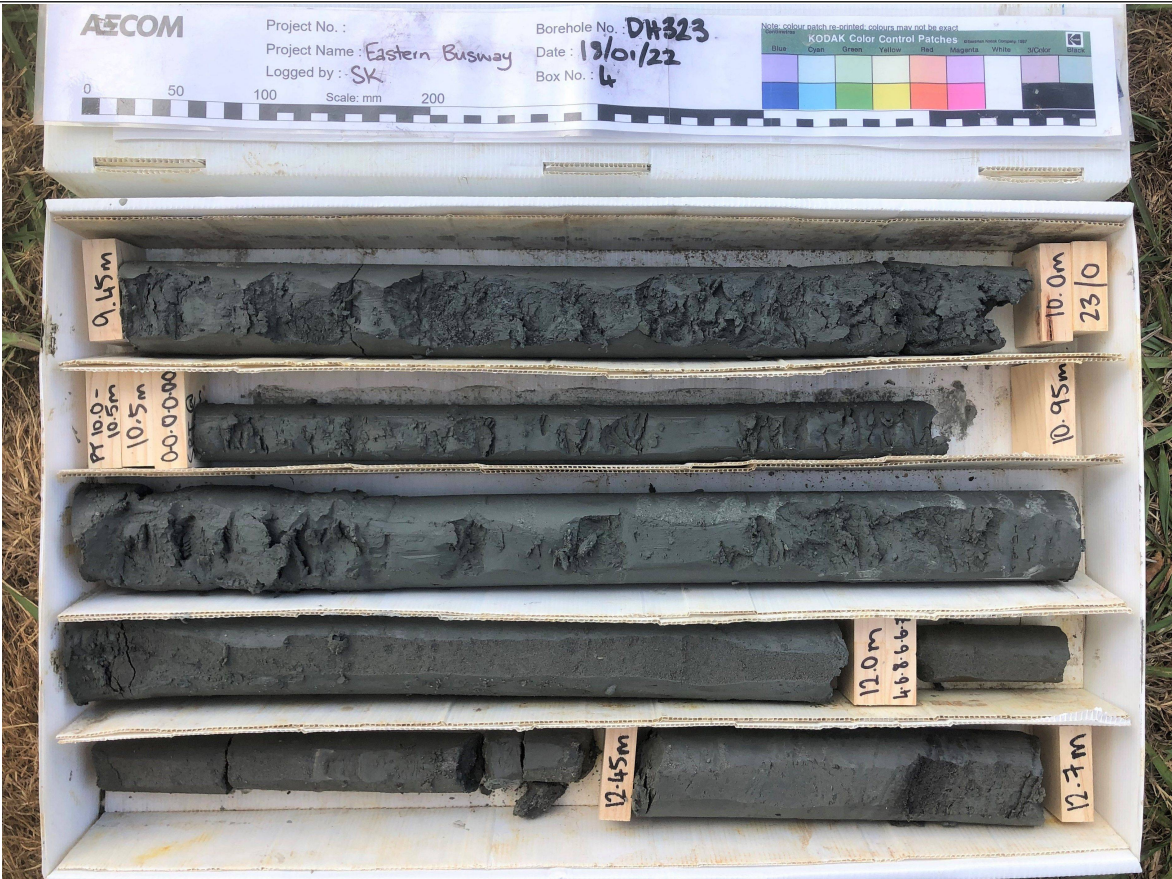
Box: 2 of 8 - Depth: 03.50m to 06.70m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 18/01/2022



Box: 3 of 8 - Depth: 06.70m to 09.45m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 18/01/2022



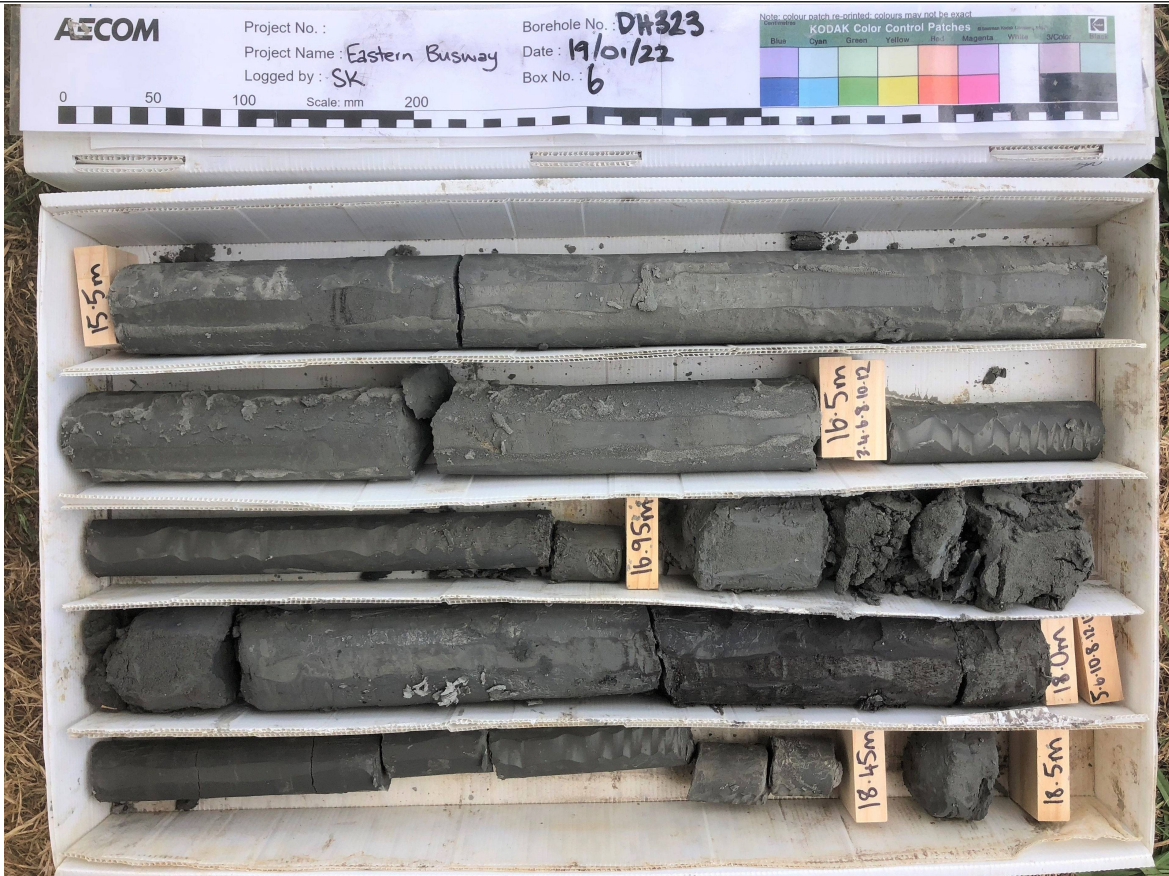
Box: 4 of 8 - Depth: 09.45m to 12.70m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 18/01/2022



Box: 5 of 8 - Depth: 12.70m to 15.50m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 19/01/2022



Box: 6 of 8 - Depth: 15.50m to 18.50m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 19/01/2022



Box: 7 of 8 - Depth: 18.50m to 21.65m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 19/01/2022



Box: 8 of 8 - Depth: 21.65m to 25.50m of 25.50m

Date Drilled 18/01/2022 to 19/01/2022 - Date Photographed: 19/01/2022

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412529.92mE 794646.59mN
 Orientation -90° Elevation 7.73m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION		Test Records		Drilling Method		Relative Strength		Rock Weathering		Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES		Instrumentation	
Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).		Shear Vane/ SPT	SPT N Values	Casing remarks		Core Loss/Lift		MS VS W- WW SW MW HW						DEFECT DESCRIPTION			Subordinate MAJOR minor: colour, structure. Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc
FILL	0.0m: TOPSOIL													0.0m: Silty CLAY with minor fine sand and rootlets; brown. Stiff, moist, moderate plasticity.		1.00	
	0.22m: FILL													0.22m: Silty fine SAND with minor clay and trace rootlets; light greyish brown. Loosely packed, dry.			
	0.7m: ALLUVIUM comprising clay, silt and sand.				HA							67		0.7m: Silty fine SAND with minor clay; light grey mottled orange. Dense, moist.			
			1.1, 2.2, 2.2	N=8	SPT							100					
					HQ3								100		1.95m: Silty CLAY with minor fine sand and trace indistinct organics; light grey mottled orange and speckled black. Very stiff, moist, high plasticity. 2.2 to 2.5m: Some fine sand.		
					PT								100				
			0.0, 0.0, 1.1, 1.1	N=3	SPT								100		2.75m: Silty fine SAND; light grey speckled brown. Tightly packed, moist.		
					HQ3								95		3.0m: CLAY with trace indistinct organics; dark grey speckled black. Stiff, moist, high plasticity. 3.1 to 3.4m: Minor fine sand.		
					PT								100		4.15 to 4.4m: Minor indistinct organics 4.4 to 4.5m: Some highly decomposed wood fragments.		
	57/60	1.0, 1.1, 1.2	N=5	SPT							100		5.0 to 6.45m: Trace fine sand lenses and indistinct organics. Speckled light grey and black.				
TAURANGA GROUP				HQ3							100		6.45m: Fine sandy CLAY; light grey. Stiff, moist, moderate plasticity. Micaceous.		3.00		
				PT							100						
		81/19	0.0, 0.0, 0.2	N=2	SPT							100		7.6m: Silty CLAY with trace fine micaceous sand and indistinct organics; grey. Stiff, moist, high plasticity.			
				HQ3							100						
		69/21	0.0, 0.0, 0.1	N=1	SPT						100						

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)			
Date Time	Drilled Depth	Casing Depth	Fluid Depth
17/01/2022 08:00	06.00	-	3.05
17/01/2022 17:00	22.50	-	1.00
18/01/2022 08:00	22.50	-	3.06

RELATIVE STRENGTH	WEATHERING
VS - Very strong	UW - Unweathered
S - Strong	SW - Slightly weathered
MS - Moderately strong	MW - Moderately weathered
W - Weak	HW - Highly weathered
VW - Very weak	CW - Completely weathered
EW - Extremely weak	

Date logged 18/01/2022
 Logged EE
 Checked GP

Driller McMillan
 Started 14/01/2022
 Finished 18/01/2022
 Drill Rig N119
 Core Boxes 8

Remarks
 Hole backfilled with grout upon completion.

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016

Hand Held Shear Vane
 DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22
 vane shear strength per NZGS guideline

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412529.92mE 794646.59mN
 Orientation -90° Elevation 7.73m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).</small>	Test Records		Drilling Method <small>Casing remarks</small>	Core Loss/Lift <small>0-100%</small>	Relative Strength <small>MS MS W VW EW</small>	Rock Weathering <small>SW MW HW</small>	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc</small>	Instrumentation	
	Shear Vane/ SPT	SPT N Values <small>0 - 50</small>									DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>		
TAURANGA GROUP		151/33	HQ3						100		7.6m: Silty CLAY with trace fine micaceous sand and indistinct organics; grey. Stiff, moist, high plasticity. (continued) 10.15 to 10.5m: Mottled light grey.		
			PT						100				
			HQ3						100				
	EAST COAST BAYS FORMATION	12.1m: Residual soil.	UTP ss 2,3,3, 5,7,9 N=24	SPT						100			12.1m: Fine sandy SILT with trace carbonaceous fragments; grey speckled black. Hard, moist. 12.3m: Silty fine SAND; grey. Medium dense, moist.
		12.3m: Highly weathered, grey, silty fine SANDSTONE. Extremely weak.		HQ3						100			
			ss 4,6,8, 10,10,15 N=43	SPT						100			
				HQ3						100			
			ss 7,10,15, 23,12 for 45mm N>50	SPT						100			
		15.3m: Moderately weathered, grey, silty fine SANDSTONE. Extremely weak.		HQ3						97			15.42 to 16.5m: DB, 5°, 6 No.
			ss 8,10,13, 17,16,4 for 20mm N>50	SPT						100			16.9 to 17.25m: Returned as silty fine sand.
			HQ3						90		17.25 to 17.53m: Calcareous concretion. Weak. 17.53 to 19.05m: Returned as silty fine sand.		
		ss 10,13,20, 25,5 for 10mm N>50	SPT						100				
		HQ3						88					
19.05m: Moderately weathered, grey SILTSTONE. Very weak. Very thickly bedded.	sc 8,12,18, 20,12 for 50mm	SPT							86		19.35 to 19.5m: Sandy partings.		
For explanation of symbols and observations, see key sheet			RELATIVE STRENGTH		WEATHERING		Date logged 18/01/2022		Driller McMillan				
FLUID DEPTHS AND DRILLING PROGRESS (m) Date Time Drilled Depth Casing Depth Fluid Depth			VS - Very strong S - Strong MS - Moderately strong W - Weak VW - Very weak EW - Extremely weak		UW - Unweathered SW - Slightly weathered MW - Moderately weathered HW - Highly weathered CW - Completely weathered		Logged EE Checked GP		Started 14/01/2022 Finished 18/01/2022 Drill Rig N119 Core Boxes 8				
Hand Held Shear Vane DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22 vane shear strength per NZGS guideline			Remarks Hole backfilled with grout upon completion.		Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016				Page 2 of 7				

2021 EB DRILLHOLE LOG 2022-06-02 MASTER.GPJ BASE.GDT 02/06/22

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412529.92mE 794646.59mN
 Orientation -90° Elevation 7.73m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION		Test Records		Drilling Method Casing remarks	Core Loss/Lift	Relative Strength	Rock Weathering	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES		Instrumentation
Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).		Shear Vane/ SPT	SPT N Values									Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc		
EAST COAST BAYS FORMATION	19.05m: Moderately weathered, grey SILTSTONE. Very weak. Very thickly bedded. (continued)	N>50	0-50	HQ3						100		20.78 to 20.85m: Silty fine SAND; grey. Very dense, moist. 20.85 to 21.9m: DB, 5°, 5 No.		[Patterned Area]
	20.78 to 20.85m: Silty fine SANDSTONE. Extremely weak.	sc 12, 19, 26, 24 for 50mm N>50		SPT				21		0		21.9 to 22.5m: DB, 5°, 2 No.		
				HQ3				22		100		DH324 terminated at 22.5m Depth Criteria Achieved		
								23						
								24						
								25						
								26						
								27						
								28						
								29						

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)
 Date Time Drilled Depth Casing Depth Fluid Depth

RELATIVE STRENGTH

- VS - Very strong
- S - Strong
- MS - Moderately strong
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- VW - Very weak
- EW - Extremely weak

WEATHERING

- UW - Unweathered
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- MW - Moderately weathered
- HW - Highly weathered
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Date logged 18/01/2022

Logged EE

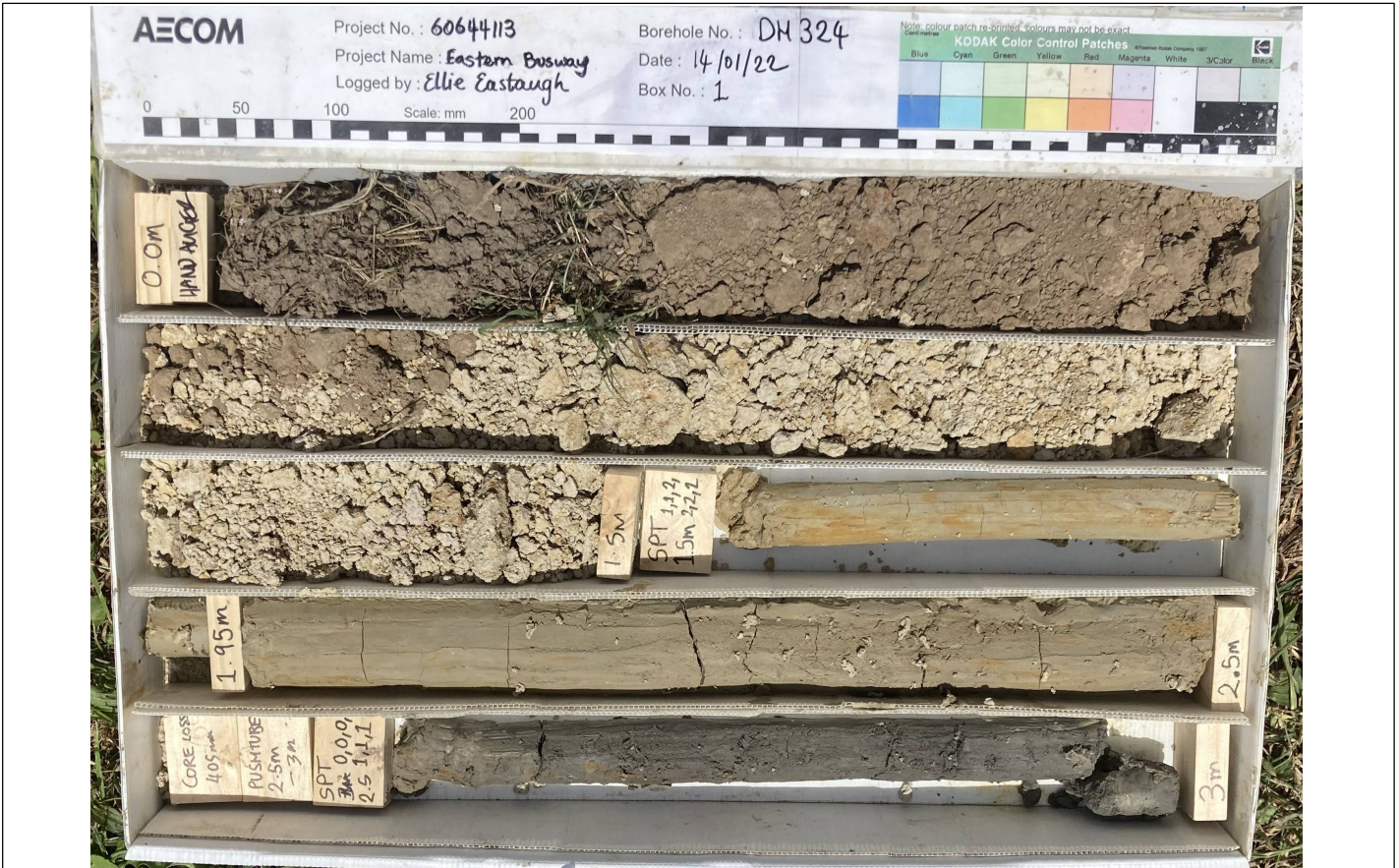
Checked GP

Driller McMillan
 Started 14/01/2022
 Finished 18/01/2022
 Drill Rig N119
 Core Boxes 8

Remarks
 Hole backfilled with grout upon completion.

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016

Hand Held Shear Vane
 DR1980: 19mm (A). Calibrated 28/06/21. CF's: A = 1.781, B = -11.22
 vane shear strength per NZGS guideline



Box: 1 of 8 - Depth: 00.00m to 03.00m of 22.50m

Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 14/01/2022



Box: 2 of 8 - Depth: 03.00m to 06.65m of 22.50m

Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 3 of 8 - Depth: 06.65m to 09.80m of 22.50m
 Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 4 of 8 - Depth: 09.80m to 12.95m of 22.50m
 Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 5 of 8 - Depth: 12.95m to 16.50m of 22.50m

Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 6 of 8 - Depth: 16.50m to 19.35m of 22.50m

Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 7 of 8 - Depth: 19.35m to 21.90m of 22.50m
 Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022



Box: 8 of 8 - Depth: 21.90m to 22.50m of 22.50m
 Date Drilled 14/01/2022 to 18/01/2022 - Date Photographed: 17/01/2022

Client Auckland Transport
 Project Eastern Busway
 Project number 60644113

Co-ordinates 412548.34mE 794609.81mN
 Orientation -90° Elevation 8.64m
 Location Reserve: 23R Kenwick Place
 Feature Retaining Wall

GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).</small>	Test Records		Drilling Method <small>Casing remarks</small>	Core Loss/Lift <small>0-100%</small>	Relative Strength <small>MS MSW VW W</small>	Rock Weathering <small>SW MW HW</small>	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm) <small>400 100 50 10</small>	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc</small>	Instrumentation	
	Shear Vane/ SPT	SPT N Values <small>0-50</small>									DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>		
FILL 0.0m: FILL comprising clay, silt, sand and gravel.			HA				1	[Cross-hatched pattern]	100		0.0m: Silty fine to coarse GRAVEL with some fine sand, minor cobbles and rootlets. Gravel is subangular greywacke and basalt.	1.0	
	TAURANGA GROUP 1.2m: ALLUVIUM comprising silt, clay and sand.	SS 1,1,1, 1,2,1 N=5		SPT				2	[Horizontal dashes pattern]	100		1.2m: Silty CLAY with some medium to coarse lenticular sand and trace roots; light brownish grey mottled orange. Firm, moist, moderate plasticity.	2.3
			HQ3				2	[Horizontal dashes pattern]	100			2.5	
			PT				3	[Horizontal dashes pattern]	100			3.1	
			HWT				3	[Horizontal dashes pattern]			2.75m: Sandy CLAY; light brownish grey mottled orange. Soft, moist, low plasticity. 3.0m: 114mm diameter HWT casing to 3.0m.	3.5	
			HQ3				3	[Horizontal dashes pattern]	100		3.25 to 3.4m: Clayey SAND; light grey speckled orange, homogenous. Loosely packed, moist, moderate plasticity, dilatant.		
			PT				4	[Horizontal dashes pattern]	100				
			HQ3				5	[Horizontal dashes pattern]	100			4.5m: Sandy SILT with some clay; light brownish grey mottled orange and speckled black. Soft, moist, low plasticity. Lenticles of organic peat. 4.98 to 5.01m: Some organics.	
24/7			PT				6	[Horizontal dashes pattern]	100			5.0m: Clayey SILT with lenses of fibrous peat; dark grey mottled blue. Firm, moist, crumbly. Micaceous.	
SS 0,1,1, 2,2,2 N=7			SPT				6	[Horizontal dashes pattern]	100			5.5m: Silty CLAY with trace sand and trace indistinct organics; bluish grey speckled black. Firm, moist, low plasticity. Micaceous.	
		HQ3				7	[Horizontal dashes pattern]	100					
		PT				8	[Horizontal dashes pattern]	100					
		HQ3				9	[Horizontal dashes pattern]	100					
		SPT				9	[Horizontal dashes pattern]	100					
		UTP SS 0,0,0, 0,0,1 N=1									9.5 to 10.95m: Black fibrous organics lensoids.		

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)			
Date Time	Drilled Depth	Casing Depth	Fluid Depth
13/01/2021 16:10	28.50	-	2.5
12/01/2022 16:15	13.50	-	3.1
13/01/2022 08:00	13.50	-	2.37
13/01/2022 11:00	19.50	-	3.5
14/01/2022 08:00	28.50	-	1.0

RELATIVE STRENGTH

VS - Very strong
 S - Strong
 MS - Moderately strong
 W - Weak
 VW - Very weak
 EW - Extremely weak

WEATHERING

UW - Unweathered
 SW - Slightly weathered
 MW - Moderately weathered
 HW - Highly weathered
 CW - Completely weathered

Date logged 14/01/2022

Logged EE
 Checked GP

Driller McMillan
 Started 12/01/2022
 Finished 14/01/2022

Drill Rig N119
 Core Boxes 9

Remarks
 Hole backfilled with grout upon completion.

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016

Hand Held Shear Vane
 DR1980: 19mm (A). Calibrated 28/06/21. CFs: A = 1.781, B = -11.22
 vane shear strength per NZGS guideline

Client Auckland Transport
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 Project number 60644113

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GEOLOGICAL DESCRIPTION <small>Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).</small>	Test Records		Drilling Method <small>Casing remarks</small>	Core Loss/Lift <small>0-100%</small>	Relative Strength <small>MS MSW VW</small>	Rock Weathering <small>SW MW HW</small>	Depth	Graphic Log	TCR [RQD] (%)	Spacing of Natural Defects (mm)	SOIL PROPERTIES <small>Subordinate MAJOR minor: colour, structure, Strength, moisture condition, grading, bedding, plasticity, sensitivity, major fraction description, subordinate fraction description, minor fraction description, additional structures, additional information, etc</small>	Instrumentation
	Shear Vane/ SPT	SPT N Values <small>0-50</small>									DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>	
TAURANGA GROUP		33/10 SS 0,0,1, 2,3,2 N=8	HQ3				11	xxxxxx	100		5.5m: Silty CLAY with trace sand and trace indistinct organics; bluish grey speckled black. Firm, moist, low plasticity. Micaceous. (continued)	
			SPT						100			
			HQ3						100		11.25 to 11.65m: White blotches.	
	12.1m: Residual soil.											
	12.2m: Highly weathered, grey SILTSTONE. Extremely weak.	4,5,8, 7,8,8 N=31	SPT				12		100		11.8m: CLAY with minor fine sand and indistinct organics; bluish grey speckled black. Firm, moist, moderate plasticity.	
	12.83m: Highly weathered, grey, fine SANDSTONE. Extremely weak.										12.1m: Silty fine SAND; grey. Dense, moist.	
			HQ3				13		76		12.2m: Silty CLAY with minor fine sand; grey. Hard, moist, moderate plasticity.	
	13.7m: Highly weathered, grey SILTSTONE. Extremely weak.	5,7,5, 6,7,7 N=25	SPT								12.83m: Silty fine SAND; grey. Dense, moist.	
											13.1 to 13.5m: Core Loss: Infer sand washed away by drilling.	
			HQ3				14		100		13.7m: Silty CLAY; grey. Hard, moist, moderate plasticity.	
EAST COAST BAYS FORMATION												
			HQ3						100			
			SPT				15		100			
			HQ3				16		100		15.9 to 15.91m: DB, 5°	
			SPT				17		100		16.75m: Silty fine SAND; grey. Very dense, moist.	
	16.75m: Moderately weathered, silty, fine SANDSTONE. Extremely weak.	6,9,11, 11,15,13 for 60mm N>50										
			HQ3						99			
		SPT				18		100				
		HQ3				19		93		18.55m: DB, 5°		
		SPT						0		19.74 to 20.16m: Core Loss: Infer sand washed away by drilling.		

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)
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Date logged 14/01/2022

Logged EE

Checked GP

Driller

McMillan

Started

12/01/2022

Finished

14/01/2022

Drill Rig

N119

Core Boxes 9

Remarks

Hole backfilled with grout upon completion.

Horizontal / Vertical Survey Datums: NZGD2000 - Mount Eden 2000 / New Zealand Vertical Datum 2016

Hand Held Shear Vane

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	Shear Vane/ SPT	SPT N Values <small>0 - 50</small>									DEFECT DESCRIPTION <small>(Joints, Bedding Seams, Shatter, Shear and Crush Zones, Foliation, Schistosity, Attitude, Spacing, continuity, roughness, infilling, etc.)</small>	
EAST COAST BAYS FORMATION 16.75m: Moderately weathered, silty, fine SANDSTONE. Extremely weak. (continued) 21.57m: Slightly weathered, grey SILTSTONE. Very weak. 25.6m: Slightly weathered, grey, silty fine SANDSTONE. Very weak. Trace carbonaceous fragments. 27.2m: Slightly weathered, grey SILTSTONE. Very weak. Trace carbonaceous fragments.	N>50		HQ3						66		16.75m: Silty fine SAND; grey. Very dense, moist. (continued) 20.16 to 20.38m: Calcareous concretion. Weak. 20.25m: J, 45°, Ud, Ro 21.13 to 21.57m: Core Loss: Infer washed away by drilling.	
	sc 23,27 for 50mm N>50		SPT				21		0		21.58 to 22.5m: DB, 5°, 9 No.	
			HQ3				22		68 [68]		22.65 to 22.75m: Silty fine SANDSTONE bed. 22.65 to 24m: DB, 5°, 5 No. 22.98 to 23.15m: Silty fine SANDSTONE bed.	
	sc 15,35 for 70mm N>50		SPT				23		0		23.15m: J, 5°, Ud, Sm, N	
			HQ3				24		87 [87]		23.95 to 24.0m: Carbonaceous laminations. 24.0 to 25.5m: DB, 5°, 5 No.	
		HQ3				25		76 [76]		24.7m: J, 15°, Pl, Ro 25.14 to 25.5m: Core Loss: Infer washed away by drilling. 25.5 to 27m: DB, 5°, 10 No.		
		HQ3				26		83 [77]		26.75 to 27.0m: Core Loss: Infer sand washed away by drilling. 27.0 to 28.5m: DB, 5°, 15 No.		
		HQ3				27					27.85 to 27.95m: Fine SANDSTONE. Carbonaceous laminations. 28.1 to 28.5m: Core Loss: Infer washed away by drilling.	
		HQ3				28		73 [73]			DH325 terminated at 28.5m Depth Criteria Achieved	
						29						

For explanation of symbols and observations, see key sheet

FLUID DEPTHS AND DRILLING PROGRESS (m)
 Date Time Drilled Depth Casing Depth Fluid Depth

RELATIVE STRENGTH

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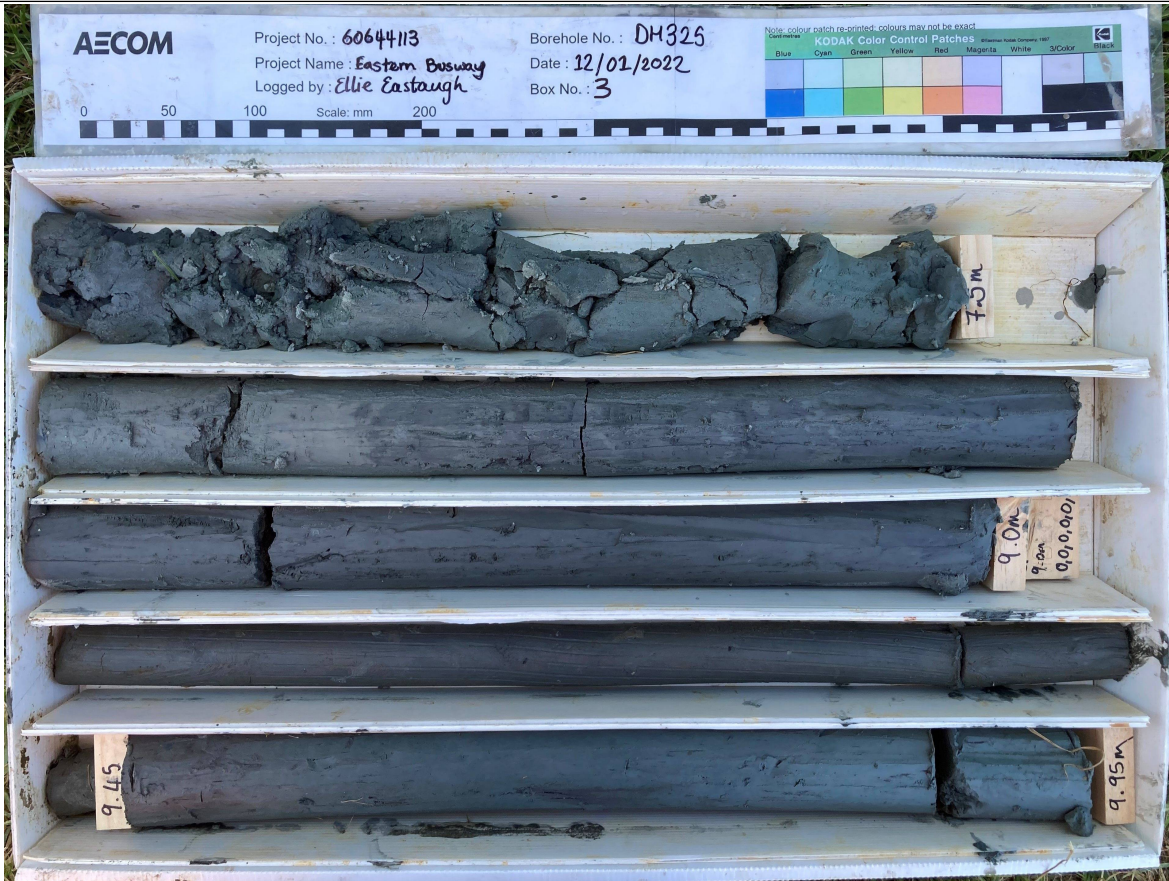
Box: 1 of 9 - Depth: 00.00m to 03.75m of 28.50m

Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 12/01/2022



Box: 2 of 9 - Depth: 03.75m to 07.00m of 28.50m

Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 12/01/2022



Box: 3 of 9 - Depth: 07.00m to 09.95m of 28.50m

Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 12/01/2022



Box: 4 of 9 - Depth: 09.95m to 12.60m of 28.50m

Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 12/01/2022



Box: 5 of 9 - Depth: 12.60m to 15.60m of 28.50m
 Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 13/01/2022



Box: 6 of 9 - Depth: 15.60m to 18.67m of 28.50m
 Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 13/01/2022



Box: 7 of 9 - Depth: 18.67m to 22.50m of 28.50m
 Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 13/01/2022



Box: 8 of 9 - Depth: 22.50m to 25.70m of 28.50m
 Date Drilled 12/01/2022 to 14/01/2022 - Date Photographed: 13/01/2022