

CLIENT: Stamford Property Services Pty Ltd

PROJECT: Macquarie Village

LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 75 AHD

EASTING: NORTHING: DIP/AZIMUTH: 90°/-- **BORE No: 108** PROJECT No: 72138 **DATE:** 20/12/2010 SHEET 1 OF 2

			Description	Degree of Weathering	U	Rock	Fracture	Discontinuities	s	ampl	ina &	In Situ Testing
귐		epth (m)	of	vveatnenn	aphi	Strength Nater Water Water	Spacing (m)	B - Bedding J - Joint	+			····
-82	ľ	,	Strata	MW MW SW SW	<u> ق</u> آ	Ex Low Very Low Low Medium High Ex High Ex High O.01	0.05	S - Shear F - Fault	Type	S S	Rg-	& Comments
-		0.05 0.2	∖ASPHALT - 50mm		XX				A/E			
Ė			FILLING (ROADBASE) - blue metal gravel									
}			SILTY CLAY - red brown, silty clay						A/E			
-4	- - - 1						11 11	Note: Unless otherwise stated, rock is fractured	A/E			10/100mm
		1.1	LAMINITE - extremely low to very low strength, light grey siltstone					along rough planar bedding planes dipping	S	1		refusal
			iow ducingui, light grey siltstone					between 0°- 10°				
}												
F.P.	-2	1.93	LAMINITE - medium strength,			+ 1	###	1.8m: CORE LOSS: 130mm 1.93-2.07m: dib				
ĖĖ			moderately to highly weathered, unbroken, grey and red brown, fine					1.93-2.07m: dib				DI (A) = 0.4
-			grained laminite					2.53-2.80m; dib	С	90	92	PL(A) = 0.4
FF								2.00-2.00m, dib				
12	.3							2.96-3.05m: dib				
 												
F								>				PL(A) = 0.9
-2-	4											
	7											
F F					::::		11 11		С	100	97	PL(A) = 0.5
ŧŧ		4.71	SANDSTONE - high strength,				ii ii l					
[5		highly and moderately weathered									
Į į			then slightly weathered, slightly fractured, red brown and light									
ŧŧ			orange, medium to coarse grained sandstone									PL(A) = 1
F							i i r Ji i					
F8F (6											
 						┆┇╅╅┩┆┆┆┆	++					
f f				1 1 1 1								PL(A) = 1.6
F				i i L , i i								. 20.0
F8-7	7								С	100	98	
+ +												
F F						†						
<u> </u>						1	11 11					PL(A) = 1.2
-6-1	,											
ţ ţ				 			┇┇ ┍┛ ┇┇	Am: IEE' al f-				PL(A) = 0.8
<u> </u>								3.4m: J55°, pl, ro, fe				
- 8 - 9				i i L , i i i								
ŧ Ė										100	00	
 									C	100	96	DI (A) = 4
F F												PL(A) = 1
<u>t</u>		_										

RIG: Bobcat **DRILLER: SS** LOGGED: PGH CASING: HW to 1.50m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.50m; Rotary (water) to 1.80m; NMLC-Coring to 17.55m

WATER OBSERVATIONS: No free groundwater observed whilst augering **REMARKS:**

A Auger sample
B Bulk sample
BLK Block sample
C Core drilling
D Disturbed sample
E Environmental sample

SAMPLING & IN SITU TESTING LEGEND

G Gas sample Piston sample PL(A) Point load axial test Is(50) (MPa)

U, Tube sample (x mm dia.) PL(D) Point load diametral test Is(50) (MPa)

P Ocket penetrometer (kPa)

Water seep S Standard penetration test

Water level V Shear vane (kPa)



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Macquarie Village

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SURFACE LEVEL: 75 AHD

EASTING:

NORTHING: DIP/AZIMUTH: 90°/-- **BORE No: 108** PROJECT No: 72138 **DATE:** 20/12/2010

SHEET 2 OF 2

	Ī	Depth	Description	Degree of Weathering	.je	Rock Strength	5	Fracture Spacing	Discontinuities	Sa			In Situ Testing
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		(m)	of Strata	Degree of Weathering	Grap	Ex Low Very Low Low Medium High Very High Ex High	Water	(m)	B - Bedding J - Joint S - Shear F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
		-11	SANDSTONE - high strength, highly and moderately weathered then slightly weathered, slightly fractured, red brown and light orange, medium to coarse grained sandstone (continued)						10.38m: B3°, pl, ro, cly	С	100	96	PL(A) = 1.3
63		12											PL(A) = 1.1
62		13											PL(A) = 1.3
61		13.5	SANDSTONE - medium strength, fresh, slightly fractured, light grey, medium to coarse grained sandstone							С	100	100	PL(A) = 1.2
1								اللباا	14.34m: Cz				
60	- - 1 -	15											PL(A) = 0.9
59	- 1	16							15.4m: J25°, pl, ro, fe				PL(A) = 0.8
58	-1	7							19.34III. 05, TOTHIII	С	100	100	PL(A) = 0.9
		17.65											PL(A) = 0.9
57	- 18		Bore discontinued at 17.55m										
95	-19	9											

RIG: Bobcat

DRILLER: SS

LOGGED: PGH

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WATER OBSERVATIONS: No free groundwater observed whilst augering

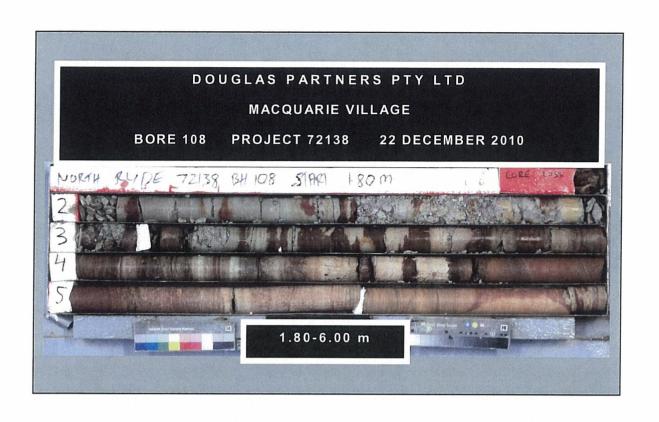
REMARKS:

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

G Gas sample Piston sample PL(A) Point load axial test is(50) (MPa)
U, Tube sample (x mm dia.) PL(D) Point load diametral test is(50) (MPa)
PL(D) Point load diametral test is(50) (MPa)
PL(D) Point load diametral test is(50) (MPa)
PCoket penetrometer (kPa)

Water seep S Standard penetration test
Water level V Shear vane (kPa) A Auger sample
B Bulk sample
BLK Block sample
C Core drilling
D Disturbed sample
E Environmental sample **Douglas Partners** Geotechnics | Environment | Groundwater









CLIENT: Stamford Property Services Pty Ltd

PROJECT: Macquarie Village

LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.6 AHD

BORE No: 109 EASTING: PROJECT No: 72138

NORTHING: DATE: 20/12/2010 DIP/AZIMUTH: 90°/--SHEET 1 OF 2

		Description	De We	egree o eatherin	f g :≧	Ro Stre	ock ength		Fracture	Discontinuities	Sa	ampl	ing &	In Situ Testing
R	Depth (m)	of			Log		ngth	Nate	Spacing (m)	B - Bedding J - Joint	Туре	ore %	RQD %	Test Results &
		<u> </u>	≧≧	™ S FS FS	ξ (O	Ÿ ĕ ĕ ï			0.05	S - Shear F - Fault	Ţ	O &	E 8	Comments
}	- о.	ASPHALT & ROADBASE - 200mm		1 1 							A/E			
ŧ	0.	FILLING - gravelly sandy clay filling- FILLING - crushed sandstone			XX	111								
12		gravel filling with some clay			\otimes	111	1 1 1				A/E			
}	<u> </u>				\bowtie				 	Note: Unless otherwise				
Ė	-1 [İ	1 1 	\bowtie				!	stated, rock is fractured along rough planar	A/E S	1		9,10/30mm refusal
[1.:	SANDSTONE - extremely low			\sim					bedding planes dipping between 0°- 10°		1		reiusai
-22	-	strength, extremely weathered sandstone	i			liii	iii			between 0 - 10				
Ē	1.8		4	<u> </u>			111	\perp			-	-	-	
ŀ	-2	clay			7-7	Tii								
ŀ				 	[-]				┡═┉╁┧ ┆ ┆		С	100	11	PL(A) = 0.1
-	2.4	LAMMINITE - very low strength,	ij		::::	Ŋij	ijij							. ,
7	2.73	(grey, meaning to obtained gramed	#			##	#	1		2.63m: CORE LOSS:				
-	- 3	\laminite \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					Hii			100mm				
		SANDSTONE - medium to high and high strength, highly to slightly							╎╏┸┩					PL(A) = 0.9
<u> </u>	-	weathered, slightly fractured, purple red to light orange, medium							7-11	3.38m: J85°, pl, ro, he				
12	-	to coarse grained sandstone	ij			1 1			╎╏┪╎╎					
-	- 4	- very high strength from 3.9-4.0m							 					PL(A) = 5
	-		ijį			Tii	Tii		- ii [ii]	4.05m: Cs, 5mm	С	97	82	
E														PL(A) = 0.9
-8			įĻ	, i i i										
	-5		ij	li i i		<u> </u>	l i i		_ <u> </u>					PL(A) = 1
			1 1						╏					
-88							l i i		إطننا		ļ			
														DI (A) = 0.0
 	-6		11											PL(A) = 0.8
F			11					l						
				4										
"			Ιì	ili i			hii i	ľ						PL(A) = 1.2
 	-7						<u> </u>							1 L(\(\cappa\) = 1.2
E			ijį			ili		li			С	100	98	
														PL(A) = 0.7
-8			ij	اللما		iji		i						
[[-8					1 1 1			╎╏┲╼┩╎					
;	8.2	CANDSTONE	11	ili i			i i	ļ						PL(A) = 1
ŧ ‡		strength, slightly weathered and	11						1					. = , , = ,
[-8]		fresh, slightly fractured to unbroken, light orange and grey,						Į.	 					
;		medium to coarse grained				1 1								
EĖ	-9	sandstone		╁┦┆┆										
 											С	100	100	PL(A) = 0.5
-2				<u>L</u>			$[\ \ \]$							
ĒĒ								¦						
				444	<u> </u>	$\perp \perp \perp$	$oldsymbol{\sqcup}oldsymbol{\sqcup}oldsymbol{\sqcup}$				L			

RIG: Bobcat DRILLER: SY/SS LOGGED: PGH CASING: HW to 1.40m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.40m; NMLC-Coring to 16.18m WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

G Gas sample PiD Photo ionisation detector (ppm)
P Piston sample PL(A) Point load axial test Is(50) (MPa)
U, Tube sample Photo ionisation detector (ppm)
PL(A) Point load axial test Is(50) (MPa)
PL(D) Point load diametral test Is(50) (MPa)
Photo ionisation detector (ppm)
Photo ionisation detector (ppm)
Photo ionisation detector (ppm)
Photo ionisation detector (ppm)
PL(A) Point load diametral test Is(50) (MPa)
Photo ionisation detector (ppm)
A Auger sample
B Bulk sample
BLK Block sample
C Core drilling
D Disturbed sample
E Environmental sar Environmental sample



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EASTING: PROJECT No: 72138

DATE: 20/12/2010 **NORTHING:** SHEET 2 OF 2 DIP/AZIMUTH: 90°/--

BORE No: 109

		Description	Degree of	్లు	Rock Strength	Fracture	Discontinuities	Sa	ampli	ng &	In Situ Testing
꿉	Depth (m)	of	Degree of Weathering	raph	Ex Low Low Low Low Low Low Low High Very High Ex High Water	Spacing (m)	B - Bedding J - Joint	Туре	ore	RQD %	Test Results &
			W H H H H H H H H H H H H H H H H H H H	Θ	K Kery Kery Kery Kery Kery Kery Kery Ker		S - Shear F - Fault	<u> </u>	2 %	Ж.	Comments
62 63	- -11	SANDSTONE - medium to high strength, slightly weathered and fresh, slightly fractured to unbroken, light orange and grey, medium to coarse grained sandstone (continued)					10.68m: J80°, pl, ro, fe	С	100	100	PL(A) = 0.9 PL(A) = 0.8 PL(A) = 1
	-12										PL(A) = 1
61	-13							С	100	100	PL(A) = 1
. 09	-14						13.4m: Cs, 10mm	_			PL(A) = 0.4
59	-										PL(A) = 0.7
58	-16							С	100	100	PL(A) = 1.2
	16.18	Bore discontinued at 16.18m		• • • • •							
56 57	-17										
[-18										
99	-19										
54											

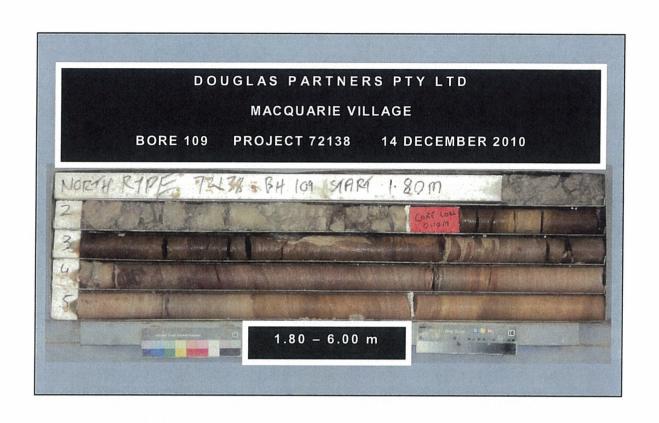
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REMARKS:

SAMPLING & IN SITU TESTING LEGEND A Auger sample
B Bulk sample
BLK Block sample
C Core drilling
D Disturbed sample
E Environmental sample Gas sample PlD Photo ionisation detector (ppm)
Piston sample PL(A) Point load axial test Is(50) (MPa)
Tube sample (x mm dia.)
Water sample (by mm dia.)
Water seep Standard penetration test (kPa)
Water seep Standard penetration test V Shear vane (kPa)









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EASTING:

NORTHING: DIP/AZIMUTH: 90°/-- BORE No: 110 PROJECT No: 72138 DATE: 10/12/2010 SHEET 1 OF 2

	I	Depth	Description	Degree of Weathering	Fracture Spacing	Discontinuities	s			In Situ Testing
2		(m)	of Strata	Meathering Carbin (Corp. Heading) Look (Corp. Headi	(m)	B - Bedding J - Joint S - Shear F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
			FILLING - poorly compacted, brown silty clay filling with organic matter, moist				A/E			
Ė		0.7	CONCRETE - 300mm thick			Note: Unless otherwise stated, rock is fractured along rough planar	A/E			
	-1	1 1.0	LAMINITE - low strength, moderately weathered, brown laminite	-		bedding planes dipping between 0°- 10°	S			
72	-2	1.6	LAMINITE - high strength with low strength, bands, slightly and moderately weathered, fragmented to fractured, purple red and grey laminite							PL(A) = 0.8
71	-3		2.72-3.10m: extremely low strength band with 200mm thick clay seam			2.9m: Cs, 200mm	С	100		PL(A) = 3
70	-4		SANDSTONE - high strength, moderately weathered and fresh, fractured and slightly fractured, orange brown and light grey, medium grained sandstone distinct laminations from 3.1m to 5.2m, 5.9m to 6.2m and 7.3m to			3.54m: J80°- 90°, cu, ro, fe				PL(A) = 1.4
69	- 5		7.7m							PL(A) = 1.4
89	-6						С	100		PL(A) = 1.4
67	7									PL(A) = 1.6
				<u></u>						PL(A) = 1.4
99	8						С	100		PL(A) = 1.9
59	9	9.3				9.09m: J35°, pl, ro, fe				
						9.6m: B20°, pl, ro, cly				PL(A) = 0.6

RIG: Bobcat DRILLER: SS LOGGED: PGH CASING: HW to 0.70m

TYPE OF BORING: Solid flight auger (TC-bit) to 0.70m; NMLC-Coring to 16.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 16.0m; Water level measured at 11.5m on 20/12/10 and 11.7m on 22/12/10



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DIP/AZIMUTH: 90°/--

BORE No: 110 PROJECT No: 72138 DATE: 10/12/2010 SHEET 2 OF 2

Degree of Weathering Rock Description Fracture Discontinuities Sampling & In Situ Testing Strength Depth Spacing 2 of Ex Low Very Low Medium High Very High Ex High Rec. 5 Test Results Core (m) (m) B - Bedding J - Joint Strata S - Shear F - Fault EW HW FS SW HW FS SW HW 0.05 Comments SANDSTONE - medium then low strength with some extremely low C strength zones, fresh then slightly 100 10.27m: Cs, 10mm and moderately weathered, slightly PL(A) = 0.2fractured, light grey and orange 10.63m; Cz. 50mm brown, medium grained sandstone (continued) 11 SANDSTONE - high strength, fresh, slightly fractured, light grey, PL(A) = 1medium grained sandstone Ā 11.46m; Cs. 10mm SANDSTONE - medium strength, 11.66m: Cs, 10mm 11.73m: J35°, pl, ro moderately weathered, slightly -없- 12 fractured, orange brown, medium 100 С grained sandstone 12.5-12.54m: B (x2) 10°, pl, ro, cly PL(A) = 0.313 13,1 SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light orange and PL(A) = 1.1grey, medium grained sandstone 8 - 14 PL(A) = 1C 100 -B- 15 PL(A) = 1.3-- 3 - 16 16.0 Bore discontinued at 16.0m 1 -G-17 ·යි – 18 -없는 19 11 1 1 1 1 1 11 1

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SAMPLING & IN SITU TESTING LEGEND

A Auger sample
B Bulk sample
BLK Block sample
C C Core drilling
D Disturbed sample
E Environmental sample
E Environmental sample

SAMPLING & IN SITU TESTING
G Sas sample
P Piston sample
P Piston sample
D V Water sample (x mm dia.)
W Water sample
V Water sample
Water seep
W

