CLIENT: Stamford Property Services Pty Ltd PROJECT: Macquarie Village LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 72.3 AHD EASTING: NORTHING: DIP/AZIMUTH: 90°/--

BORE No: 103 PROJECT No: 72138 DATE: 14/12/2010 SHEET 1 OF 2

	Donth	Description	Degree of Weathering	hic	Ro Strer	ck ngth	LD LD	Fracture Spacing	Discontinuities	Sa		·	In Situ Testing
R	Depth (m)	of Strata	EW MW SSW FR	Grap		High I	Wat	(m)	B - Bedding J - Joint S - Shear F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
71 72 72		ASPHALT - 50mm FILLING (ROADBASE) - grey blue metal gravel filling SANDSTONE - extremely low strength, extremely weathered, orange and grey sandstone							Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E A/E A/E S			11,17,22 N = 39
69	1.61 .2 1.95 2.4 ·3 3.3 -	SANDSTONE - very low to low strength, highly weathered, slightly fractured, orange, medium grained sandstone SANDSTONE - medium strength, fresh and moderately weathered, slightly fractured, light grey, medium grained sandstone with distinct laminations SANDSTONE - high strength, slightly and moderately weathered then fresh, slightly fractured and unbroken, light orange and light grey, medium grained sandstone							1.5m: CORE LOSS: 110mm 2.38m: Cs, 10mm 2.52m: J70°- 85°, pl, ro, cln 2.84m: J55°, pl, ro, he 2.95m: Cs, 20mm	с	96		PL(A) = 0.6 PL(A) = 0.9
63	6	- siltstone laminations from 3.3 to 4.0m							5.85m: J70°, pl, ro, fe	С	100		PL(A) = 1.3 PL(A) = 1.8 PL(A) = 1.8
	8								7.81m: Cs, 8mm	с	100		PL(A) = 1.6 PL(A) = 1.1
RIG	TER OF	CORING: Solid flight auger (TC-bit) SERVATIONS: No free groundwat Standpipe installed to 14.0m; Gro 22/12/10 and 4.6m on 11/1/11	er observed undwater me	while	st auger	to 14 ing	.08n		CASING: HV				PL(A) = 1.5
BLK C D	Auger sam Bulk samp Block sam Core drillin Disturbed Environme	le P Piston sample ple U _x Tube sample (x mm dia.) I g W Water sample sample D Water seep S	LEGEND PID Photo ionisa PL(A) Point load a PL(D) Point load d DP Pocket pend S Standard pe / Shear vane	ixial tes liametra etromel enetrati	it Is(50) (MF al test Is(50 ter (kPa)	Pa)		$\mathbf{\Phi}$	Douglas Geotechnics I Envi	i ron	Pa men	ar t 1	tners Groundwate

Stamford Property Services Pty Ltd CLIENT: PROJECT: Macquarie Village LOCATION: 110-114 Herring Road, Macquarie Park SURFACE LEVEL: 72.3 AHD EASTING: NORTHING: DIP/AZIMUTH: 90°/--

BORE No: 103 PROJECT No: 72138 DATE: 14/12/2010 SHEET 2 OF 2

Π		Description	Degree of Weathering ﷺ ≩ ≩ ⊗ ஜ ლ	. <u>0</u>	F	Rock	th	-	Fracture	Discontinuities	Sa	ampli	ng &	In Situ Testing
RL	Depth (m)	of		Sraph Log			IEI E	Wate	Spacing (m)	B - Bedding J - Joint	Type	c. %	RQD %	Test Results &
		Strata SANDSTONE - high strength,	MH M S S S S S S S S S S S S S S S S S S		<u> </u>		اۋا ا	5	0.01	S - Shear F - Fault		ပည္ဆ	R	Comments
	- 11	slightly and moderately weathered then fresh, slightly fractured and unbroken, light orange and light grey, medium grained sandstone (continued)										100		PL(A) = 2 PL(A) = 1.4
	- 12										c	100		PL(A) = 1.5
	- 13													
	-14 14.08-										С	100		PL(A) = 1.5
58	14.08	Bore discontinued at 14.08m		* • • •										
	15													
29														
26	16													
	17													
222 · · · · · · · · · · · · · · · · · ·														
54	18													
53	19													
RIG	: DT 10	D0 DRILL	ER: SY						ED: PGH	CASING: HV	 V to 1	.50m		
TYF WA	PE OF E TER OE	BORING: Solid flight auger (TC-bit) BSERVATIONS: No free groundwat Standpipe installed to 14.0m; Gro	to 1.50m; N er observed	whils	st aug	erin	o 14 g	.08	n					

REMARKS: Standpipe installed to 14.0m; Groundwater measured at 4.3m on 20/12/10, 4.7 on 22/12/10 and 4.6m on 11/1/11 SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
в	Bulk sample	Р	Piston sample		Point load axial test Is(50) (MPa)
BLK	Block sample	U,	Tube sample (x mm dia.)		Point load diametral test (s(50) (MPa)
C	Core drilling	Ŵ	Water sample	pp`	Pocket penetrometer (kPa)
D	Disturbed sample	⊳	Water seep	S	Standard penetration test
E	Environmental sample	ž	Water level	v	Shear vane (kPa)

SURVEY DATUM:









CLIENT: Stamford Property Services Pty Ltd PROJECT: Macquarie Village LOCATION: 110-114 Herring Road, Macquarie Park SURFACE LEVEL: 73.6 AHD EASTING: NORTHING:

DIP/AZIMUTH: 90°/--

BORE No: 104 PROJECT No: 72138 DATE: 20/12/2010 SHEET 1 OF 2

	Depth	Description	Degree of Weathering	hic	Rock Strength	acture bacing	Discontinuities	Sa	ampli	ng &	In Situ Testing
비	(m)	of Strata		Grap	Nock Fr Strength jan Jan jan	(m)	B - Bedding J - Joint S - Shear F - Fault	Type	Core Rec. %	åD %	Test Results &
+	0.05		M H M S R H	Ŭ		100 - 100 			02	œ	Comments
E		FILLING - roadbase gravel filling		\boxtimes		1 11		A/E			
· · · · · · · · ·		SANDSTONE - extremely low strength, red grey sandstone with clay					Note: Unless otherwise stated, rock is fractured	A/E			
	1						along rough planar bedding planes dipping between 0°- 10°	A/E S			10,16,21 N = 37
	1.6 2	CLAY - apparently very stiff, grey clay with some sand									
	2.1	SANDSTONE - medium to high strength, highly and moderately weathered, fractured, grey and purple red, medium to coarse grained sandstone with distinct laminations				;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;		с	100	71	PL(A) = 0.9 PL(A) = 1.9
	3.1	SANDSTONE - medium to high strength, highly and moderately weathered, fractured then slightly fractured, grey and purple red, medium to coarse grained sandstone					3.45m: Cs, 9mm				PL(A) = 1.3
- 4	4	SANDSTONE - high strength, highly and slightly weathered then fresh, slightly fractured and unbroken, red purple then light grey, medium to coarse sandstone									PL(A) = 1.5
- £	5		<mark> </mark> <mark> </mark> 								PL(A) = 1.4
e	6	- siltstone laminations from 5.7m to 7.4m					5.68m: Cs, 20mm	с	100	91	PL(A) = 1
- 7	7	6.55-6.6m: very low strength, black carbonaceous band					6.65m: J85°, pl, ro, fe				PL(A) = 1
		7.30-7.35m: very low strength, black carbonaceous band					7.72m: J82°, pl, ro, cln				PL(A) = 0.1
- 8	3							с	100	98	PL(A) = 1
9)										PL(A) = 1.4

RIG: DT 100

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

DRILLER: SS

LOGGED: PGH

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; Rotary (water) to 1.5m; NMLC-Coring to 14.70m

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

SURVEY DATUM: Geotechnics | Environment | Groundwater



CASING:

SURFACE LEVEL: 73.6 AHD EASTING: NORTHING:

DIP/AZIMUTH: 90°/--

BORE No: 104 PROJECT No: 72138 DATE: 20/12/2010 SHEET 2 OF 2

		· · · · · · · · · · · · · · · · · · ·	Degree of	Rock	T-T						
	Depth	Description	Degree of Weathering	Rock Strength	je Fra	acture acing	Discontinuities	<u> </u>		_	In Situ Testing
RL	(m)	of	Srap	Strength Strength Strength International International International International Intern	. Nat	(m) ¯	B - Bedding J - Joint	Type	0.0 0.0	RQD %	Test Results &
Ц		Strata	M T M O L L		0.05	0.10	S - Shear F - Fault	 	0 %	ι Υ	Comments
62 63 63	-11	SANDSTONE - high strength, highly and slightly weathered then fresh, slightly fractured and unbroken, red purple then light grey, medium to coarse sandstone (continued)						с	100	99	PL(A) = 1.1 PL(A) = 2.2
61	- 13	12.72-12.74m: very low strength, laminite band									PL(A) = 3.2
	- 14							С	100	100	PL(A) = 2.2
-8-	14.7	Bore discontinued at 14.7m				╞──┼╁┛┼					
· · · · · · · · · · · · · · · · · · ·	- 15 - 16										
ĒĒ											
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	17										
2011 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18										
54 55 55 55	19										
· -											

RIG: DT 100

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

CLIENT:

PROJECT:

Stamford Property Services Pty Ltd

Macquarie Village

LOCATION: 110-114 Herring Road, Macquarie Park

DRILLER: SS

LOGGED: PGH

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; Rotary (water) to 1.5m; NMLC-Coring to 14.70m

WATER OBSERVATIONS: No free groundwater observed whilst augering REMARKS:

SAMPLING & IN SITU TESTING LEGEND

Gas sample Piston sample Tube sample (x mm dia.) Water sample Water seep Water level

G P U, W

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SURVEY DATUM:



CASING:







Stamford Property Services Pty Ltd

 PROJECT:
 Macquarie Village

 LOCATION:
 110-114 Herring Road, Macquarie Park

CLIENT:

SURFACE LEVEL: 73.9 AHD EASTING: NORTHING:

DIP/AZIMUTH: 90°/--

BORE No: 105 PROJECT No: 72138 DATE: 14/12/2010 SHEET 1 OF 2

	Description	Degree of	<u>ں</u>	Rock Strength		Fracture	Discontinuities	Sa	ampli	ng &	In Situ Testing
Depth (m)	of	Weathering	Log	Strength	Vater	Spacing (m)	B - Bedding J - Joint	Type		RQD %	Test Results &
	Strata	₩¥₩°°££	σ	EX LONG			S - Shear F - Fault			Ж°	Comments
0.04 0.2			\mathbb{P}				Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E A/E A/E			
2 2 2 2 2 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4	clay with some high strength ironstone bands										
₹ 2.44 ~-3 	LAMINITE - high strength, highly to slightly weathered, slightly fractured, light grey and red, medium to coarse grained sandstone						3.45m: Cs, 10mm	C	100	51	PL(A) = 1.5 PL(A) = 1.6
2.0 2.4	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light grey, medium to coarse grained sandstone										
	- siltstone laminations from 6.7m to 7.8m						6.18m: Ds, 10mm 6.43m: Cs, 10mm	с	100	93	PL(A) = 1.3 PL(A) = 1.5 PL(A) = 1.4
								С	100	100	PL(A) = 2.7 PL(A) = 1.5
5-		╹╹ ╹╹┍╪╪╪╪ ╸╷ ╵╹┛╵╵╵╵╵╵									PL(A) = 3
ATER OF	BORING: Solid flight auger (TC-bit) f BSERVATIONS: No free groundwat			Coring to 15.0		ED: PGH	CASING: HW	/ to 1	.0m	I	
EMARKS	SAMPLING & IN SITU TESTING L			·······			SURVEY DA	rum:	:		

		SAMPLI	NG & IN SITU TESTIN	G LEGEND	
A	Auger sample	(Gas sample	PID Photo ionisation detector (ppm)	
В	Bulk sample	F	Piston sample	PL(A) Point load axial test Is(50) (MPa)	
BLM	Block sample	ι	 Tube sample (x mm dia.) 	 PL(D) Point load diametral test Is(50) (MPa) 	a Principe Dorthore
С	Core drilling	<u>۱</u>	V Water sample	pp Pocket penetrometer (kPa)	Douglas Partners
D	Disturbed sample	e C	 Water seep 	S Standard penetration test	
Е	Environmental sa	mple	Water level	V Shear vane (kPa)	🔄 💶 🖬 Geotechnics I Environment I Groundwater

SURFACE LEVEL: 73.9 AHD EASTING: NORTHING: DIP/AZIMUTH: 90°/-- BORE No: 105 PROJECT No: 72138 DATE: 14/12/2010 SHEET 2 OF 2

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Depth	Description	Degree of Weathering ∰ ∯ ≸ ⊗ ஜ ಱ	.일 Rock Strength	Fracture 고 호 Spacing	Discontinuities	Sa	mpli	ng &	In Situ Testing
Depth (m)	of	_	Loo Billing Loo	m (m)	B - Bedding J - Joint	Type	ore %	0 %	Test Results &
	Strata	шн Ман Ман Ман Ман Ман Ман Ман Ман Ман Ма	Graphic Graphi	0.01 0.10 0.50 1.00	S - Shear F - Fault	ļ ŕ	ပ်နို့	RQD %	Comments
	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light grey, medium to coarse grained sandstone <i>(continued)</i>				11.26m: J45°, pl, ro, cly	с	100		PL(A) = 1.7 PL(A) = 1.6
- 12 - 12 									PL(A) = 1.6
					13.18m: Cs, 3mm	с	100	100	PL(A) = 2
15 15.0-	Bore discontinued at 15.0m								PL(A) = 1.9
-15 - 17									
- 52 - 18 - 18 									
-র্জ- RIG: Scout		ER: RKE		0 GGED : PGH	CASING: HW				

RIG: Scout

CLIENT:

PROJECT:

Stamford Property Services Pty Ltd

Macquarie Village

LOCATION: 110-114 Herring Road, Macquarie Park

DRILLER: RKE

LOGGED: PGH

CASING: HW to 1.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; NMLC-Coring to 15.0m WATER OBSERVATIONS: No free groundwater observed whilst augering REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A
 Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B
 Bulk sample
 P
 Piston sample
 PIL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 U
 Tube sample (x mm dia.)
 PL(A) Point load dametral test Is(50) (MPa)

 C core drilling
 W
 Water sample
 p
 Pocket penetrometer (kPa)

 D Disturbed sample
 V
 Water seep
 S
 Standard penetroin test

 E
 Environmental sample
 §
 Water level
 V
 Shear vane (kPa)

SURVEY DATUM:









CLIENT:

PROJECT: Macquarie Village

Stamford Property Services Pty Ltd

LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.2 AHD EASTING: NORTHING:

DIP/AZIMUTH: 90°/--

BORE No: 106 PROJECT No: 72138 DATE: 16/12/2010 SHEET 1 OF 2

Π	Deall	Description	Degree of Weathering	Li	Rock Strength	Fracture	Discontinuities	Sa			In Situ Testing
RL	Depth (m)	of Strata	Weathering	Graph Log	Strength Very Low Medium High Kery High Ex High Rex High Rex High Medium Medium Medium Nater	Spacing (m)	B - Bedding J - Joint S - Shear F - Fault	Type	Core tec. %	RQD %	Test Results &
2	0.05 0.2	ASPHALT FILLING - crushed sandstone filling with some sand		\sum			Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping	A/E A/E			Comments
	0.7 • 1 1.0	CLAY - red grey clay LAMINITE - extremely low strength, extremely and highly weathered laminite		· · · · · · · · · · · · · · · · · · ·			between 0°- 10°	A/E			
	1.88	LAMINITE - extremely low and very low strength, extremely and highly weathered, slightly fractured, grey laminite with clay bands		· · · · · · · · · · · · · · · · · · ·							
12	-2	LAMINITE - medium to high strength, moderately to highly then slightly weathered, slightly fractured, purple-red and grey, medium to coarse grained laminite					3.38m: B110°, pl, ro, cly	с	100	71	PL(A) = 0.8 PL(A) = 0.9
	3.61 4	SANDSTONE - high strength, moderately to highly weathered, slightly fractured, purple-red and grey, medium to coarse grained sandstone					3.6m: Cz, 10mm				
68	5										PL(A) = 1.5
+. F	6						5.58m: Cz, 30mm	с	100	97	PL(A) = 1.2
<u> </u>	0.01										PL(A) = 1.5
66	6.81- 7	SANDSTONE - medium to high and high strength, moderately and slightly weathered, slightly fractured, orange and light grey, medium to coarse grained sandstone with indistinct cross-beds					6.77m: Cs, 30mm				PL(A) = 0.7
	8							с	100	100	PL(A) = 1.3
9				· · · · · · · · · · · · · · · · · · ·							PL(A) = 1.3
TYF		DRILL ORING: Solid flight auger (TC-bit) SERVATIONS: No free groundwat			Coring to 15.0m	ED: PGH	CASING: HW	/ to 1	.0m		
		: 30% Water loss at 7.30m SAMPLING & IN SITU TESTING L		••••			SURVEY DAT	rum:			
A BBLK D D E	Auger sam Bulk samp Block sam Core drillir Disturbed Environme	ple G Gas sample F le P Piston sample F ple U, Tube sample (xmm dia.) F g W Water sample p	PID Photo ionisa PL(A) Point load a	ametra atromet enetrati	al test Is(50) (MPa) er (kPa)	$\mathbf{\Phi}_{a}$	Douglas Geotechnics I Envi	S	Pa	ar t 1 (tners Groundwater

CLIENT:

PROJECT: Macquarie Village

Stamford Property Services Pty Ltd

LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.2 AHD EASTING: NORTHING: DIP/AZIMUTH: 90°/--

BORE No: 106 PROJECT No: 72138 DATE: 16/12/2010 SHEET 2 OF 2

		Description	Degree of Weathering	Rock Strength	Fracture	Discontinuities	Sa			In Situ Testing
ᆋ	Depth (m)	of	Degree of Weathering	Extrow Very Low Very Low Medium Medium Ex High Ex High Ex High	Spacing (m)	B - Bedding J - Joint	Type	sre %	RQD %	Test Results
	(,	Strata	G FR S & W W W			S - Shear F - Fault	Ţ	ပြင္လ ဗိ	R 0 %	& Comments
62 63	-11	SANDSTONE - medium to high and high strength, moderately and slightly weathered, slightly fractured, orange and light grey, medium to coarse grained sandstone with indistinct cross-beds (continued)				10m: J85°, pl, ro, fe 10.72m: J80°, pl, ro, he 10.87m: J85°, pl, ro, he 11.04m: J75°, pl, ro, fe				PL(A) = 1.2
* * * * * *	11.45- 12	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light orange and grey, medium to coarse grained				^{11.15m:} J85°, pl, ro, fe	с	100	100	PL(A) = 1
10		sandstone				12.14m: B, cly				PL(A) = 1.1
· · · · · · · · · ·	13					12.95m: J80°, pl, ro, fe				PL(A) = 1
	14					13.8m: B, cly	с	100	100	
ŀ	15 15.0-						с	100	100	PL(A) = 1
	16	Bore discontinued at 15.0m								
	17									
- L	18									
	19									

RIG: ScoutDRILLER: KKELOGGED: PGHTYPE OF BORING: Solid flight auger (TC-bit) to 1.0m;NMLC-Coring to 15.0mWATER OBSERVATIONS: No free groundwater observed whilst augeringREMARKS: 30% Water loss at 7.30m

	SAMPLING & IN SITU TESTING LEGEND												
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)								
B	Bulk sample	Р	Piston sample		Point load axial test Is(50) (MPa)								
BLK	Block sample	U,	Tube sample (x mm dia.)	PLÌD	Point load diametral test (s(50) (MPa)								
IC	Core drilling	Ŵ	Water sample	pp	Pocket penetrometer (kPa)								
D	Disturbed sample	⊳	Water seep	Ś	Standard penetration test								
E	Environmental sample	Ŧ	Water level	v	Shear vane (kPa)								

SURVEY DATUM:

