

APPENDIX O

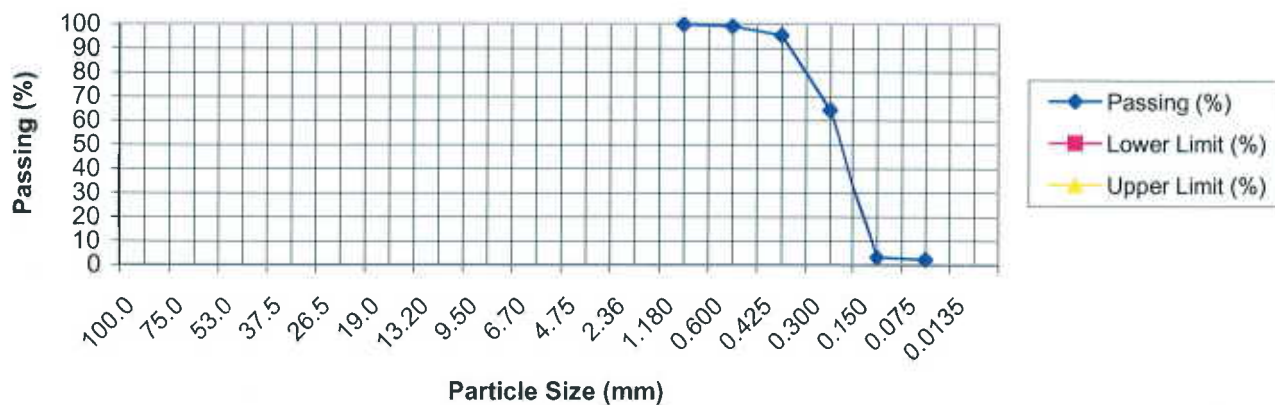
Particle Size Distribution Report

Particle Size Distribution Report

Client: Ardill Payne & Partners	Project No: 044-513	Project: Lot 32 Newrybar Swamp Rd, Lennox Hd
Test Methods: AS1289.3.6.1	Report no: 044-513-001	Date Sampled: 9/5/11

Lab No: 13708

Sieve Size (mm)	Passing (%)	Lower Limit (%)	Upper Limit (%)
100.0			
75.0			
53.0			
37.5			
26.5			
19.0			
13.20			
9.50			
6.70			
4.75			
2.36			
1.180	100		
0.600	99		
0.425	95		
0.300	64		
0.150	3		
0.075	2		
0.0135			
A Ratio			
B Ratio			
C Ratio			

Date Tested: 11/5/11**Sampled By:** ASCT P/L**Sample Location:** Piezometer 2**Sampling Method:** AS1289.1.2.1.6.5.3**Sample Preparation:** Oven Dried AS1289.1.1**Sample Description:** Sand: Brown

This document is issued in accordance
with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.

Signed: *Brian Dick*
Brian Dick
(Approved Signatory)

Date: 13/5/11

BOREHOLE LOG – PIEZOMETER

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13708	Piezo No: 1	Page: Of:


Piezo Information

Diameter (mm): 50	Sump (m): 0.95	Slotted (m): 3.0	Depth in ground (m): 8.3	Stick-up (m): 0.4
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Bore Information

Piezometer Inclination: 90°	Piezometer Direction: Vertical	Date Installed: 9/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Piezometer Location: P1 (see plan attached)		

Bore Log

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter and clay, loose, wet.	- 0.0		SM	L	None
SILTY SAND: dark grey, low plastic, low dry strength, fine sand, trace of clay, loose, wet.	- 0.3		SM/SC	L	
SAND: brown, non-plastic, no dry strength, fine sand, loose to medium dense, wet.	- 1.0		SP	L-MD	
SAND: pale grey to white, non-plastic, no dry strength, fine to medium sand, medium dense to dense, wet.	- 1.7		SP	MD-D	
SAND: pale brown-grey to brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 2.7		SP	MD-D	
	- 6.5		SP	MD-D	
Stopped – No Change.	- 8.3				

AUSTRALIAN SOIL AND CONCRETE TESTING P/L A.B.N. 49 050 539 930

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ASCT Doc. W40 Rev. No. 03-30/4/08 BH

BOREHOLE LOG – PIEZOMETER

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13708	Piezo No: 2	Page: Of:


Piezo Information

Diameter (mm): 50	Sump (m): 0.7	Slotted (m): 3.0	Depth in ground (m): 11.1	Stick-up (m): 0.4
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Bore Information

Piezometer Inclination: 90°	Piezometer Direction: Vertical	Date Installed: 9/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Piezometer Location: P2 (see plan attached)		

Bore Log

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SAND TOPSOIL: dark grey, non-plastic, no dry strength, fine to medium sand, some organic matter, very loose, very moist.	- 0.0		SP	VL	None
SAND: grey, non-plastic, no dry strength, fine to medium sand, loose, very moist.	- 0.2		SP	L	
SAND: dark brown to brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 0.7		SP	MD-D	
Water Table @ 0.8m	- 0.8				
	- 5.0		SP	MD-D	
SAND: grey brown, non-plastic, no dry strength, fine to medium sand, medium dense to dense, wet.	- 6.6		SP	D-VD	
SAND: dark brown, indurated, non-plastic, no dry strength, fine sand, trace of silt, dense to very dense, wet	- 10.2		SP	D	
SAND: brown, non-plastic, no dry strength, fine sand, dense, wet.	- 11.1				
Stopped – No Change.					

BOREHOLE LOG – PIEZOMETER

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Piezo No: 3	Page: Of:

Piezo Information

Diameter (mm): 50	Sump (m): 0.5	Slotted (m): 3.0	Depth in ground (m): 9.1	Stick-up (m): 0.4
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Bore Information

Piezometer Inclination: 90°	Piezometer Direction: Vertical	Date Installed: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Piezometer Location: P3 (see plan attached)		

Bore Log

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
CLAYEY SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter, very soft, moist.	- 0.0		SC	VS	None
CLAYEY SILTY SAND: dark grey, low plastic, low dry strength, fine sand, soft, moist to wet. Water Table @ 0.9m	- 0.4		SC	S	
SAND: grey, non-plastic, low dry strength, fine sand, trace of silt and clay, loose to medium dense, wet.	- 0.9		SP	L-MD	
SAND: brown, non-plastic, no dry strength, fine sand, loose to medium dense, wet.	- 1.4		SP	L-MD	
SAND: pale grey to white, non-plastic, no dry strength, fine sand, medium dense, wet.	- 1.8		SP	MD	
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 2.3		SP	MD-D	
	- 9.7		SP	D-VD	
Stopped – No Change.	- 10.5				

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BOREHOLE LOG – PIEZOMETER

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Piezo No: 4	Page: Of:

Piezo Information

Diameter (mm): 50	Sump (m): 0.5	Slotted (m): 3.0	Depth in ground (m): 10.6	Stick-up (m): 0.4
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Bore Information

Piezometer Inclination: 90°	Piezometer Direction: Vertical	Date Installed: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Piezometer Location: P4 (see plan attached)		

Bore Log

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/ Strength	Sample
SILTY SAND TOPSOIL: black, non-plastic, no dry strength, fine sand, some organic matter, loose, moist.	- 0.0		SM	L	None
SAND: grey, non-plastic, no dry strength, fine sand, loose, moist to very moist.	- 0.2		SP	L	
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 1.2		SP	MD-D	
Water Table @ 1.2m					
	- 7.8		SP	D-VD	
SAND: dark brown, indurated, non-plastic, no dry strength, fine sand, dense to very dense, wet.	- 8.3		SP	D-VD	
SAND: dark brown, partly indurated (some indurated bands), non-plastic, no dry strength, fine sand, dense to very dense, wet.					
	- 10.6				
Stopped – No Change.					



Figure 1: Plan of the proposed sand pit development site at Lot 32 Newrybar Swamp Road, Lennox Head, showing the piezometer locations (installed 9/511 – 10/511).

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13708	Borehole No: 2.1	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 9/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.1 (see plan attached)		

TEST DATA


Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter and clay, loose, wet.	- 0.0		SM	L	ASS Topsoil
	- 0.3		SM/SC	L	ASS 0.0-0.5m
SILTY SAND: dark grey, low plastic, low dry strength, fine sand, trace of clay, loose, wet.					
Water Table @ 1.0m					
	- 1.0		SP	L-MD	ASS 0.5-1.0m
ND: brown, non-plastic, no dry strength, fine sand, loose to medium dense, wet.					
	- 1.7		SP	MD-D	ASS 1.0-1.5m
SAND: pale grey to white, non-plastic, no dry strength, fine to medium sand, medium dense to dense, wet.					
	- 2.7		SP	MD-D	ASS 1.5-2.0m
SAND: pale brown-grey to brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet					
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
	- 6.5		SP	MD-D	ASS 5.5-6.0m
SAND: grey, non-plastic, no dry strength, fine sand, medium dense to dense, wet.					ASS 6.0-6.5m
					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.3				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Borehole No: 2.2	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.2 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, loose, very moist.	- 0.0		SM	L	ASS Topsoil
	- 0.2		SM	L-MD	ASS 0.0-0.5m
	- 0.8		SP	MD	ASS 0.5-1.0m
ND: pale brown grey, non-plastic, no dry strength, fine sand, medium dense, wet.	- 1.0				ASS 1.0-1.5m
Water Table @ 1.0m					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
	- 7.1		SP	D	ASS 6.0-6.5m
SAND: dark brown, partly indurated, non-plastic, no dry strength, fine sand, dense, wet.					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Borehole No: 2.3	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.3 (see plan attached)		

TEST DATA


Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, very loose, wet.	- 0.0		SM	VL	ASS Topsoil
CLAYEY SILTY SAND: dark brown grey, low plastic, low dry strength, fine sand, very soft to firm, wet.	- 0.25		SC/SM	VS-F	ASS 0.0-0.5m
Water Table @ 1.0m	- 1.0				ASS 0.5-1.0m
	- 1.5		SP	L-D	ASS 1.0-1.5m
SAND: brown, non-plastic, no dry strength, fine sand, loose to dense, wet.	- 1.5				ASS 1.5-2.0m
	- 2.0				ASS 2.0-2.5m
	- 2.5				ASS 2.5-3.0m
	- 3.0				ASS 3.0-3.5m
	- 3.5				ASS 3.5-4.0m
	- 4.0				ASS 4.0-4.5m
SAND: grey, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 5.1		SP	MD-D	ASS 4.5-5.0m
	- 5.5				ASS 5.0-5.5m
	- 6.0				ASS 5.5-6.0m
	- 6.5				ASS 6.0-6.5m
SAND: dark brown, partly indurated, non-plastic, no dry strength, fine sand, dense, wet	- 7.1		SP	D	ASS 6.5-7.0m
	- 7.5				ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13708	Borehole No: 2.4	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 9/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.4 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter and clay, very loose/very soft, wet.	- 0.0		SM/SC	VL/VS	ASS Topsoil ASS 0.0-0.5m
	- 0.3		SM	L-MD	
SILTY SAND: dark brown, low plastic, low dry strength, fine sand, trace of clay, loose to medium dense, wet.	- 0.9		SP	MD-D	ASS 0.5-1.0m
Water Table @ 0.9m	- 1.0				ASS 1.0-1.5m
ND: brown to dark brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
					ASS 6.0-6.5m
					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Borehole No: 2.5	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.5 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, loose, moist.	- 0.0		SM	L	ASS Topsoil
	- 0.3		SM	L	ASS 0.0-0.5m
	- 0.5				ASS 0.5-1.0m
	- 0.8		SP	MD	ASS 1.0-1.5m
	- 1.0				ASS 1.5-2.0m
	- 1.5				ASS 2.0-2.5m
	- 2.0				ASS 2.5-3.0m
	- 2.5				ASS 3.0-3.5m
	- 3.0				ASS 3.5-4.0m
	- 3.5				ASS 4.0-4.5m
	- 4.0				
	- 4.5		SP	MD-D	ASS 4.5-5.0m
	- 5.0				ASS 5.0-5.5m
	- 5.5				ASS 5.5-6.0m
	- 6.0				ASS 6.0-6.5m
	- 6.5		SP	D-VD	ASS 6.5-7.0m
	- 7.0				ASS 7.0-7.5m
	- 7.5				ASS 7.5-8.0m
Stopped – No Change.	- 8.0				

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Borehole No: 2.6	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.6 (see plan attached)		

TEST DATA


Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter, trace of clay, very loose, wet.	- 0.0		SM	VL	ASS Topsoil
	- 0.25		SM	L	ASS 0.0-0.5m
	- 0.8				ASS 0.5-1.0m
	- 1.2		SP	L-D	ASS 1.0-1.5m
					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
	- 5.2		SP	MD-D	ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
					ASS 6.0-6.5m
	- 7.2		SP	D-VD	ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.	
Lab No: 13708	Borehole No: 2.7	Page:	Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 9/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.7 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/ Strength	Sample
SAND TOPSOIL: dark grey, non-plastic, no dry strength, fine to medium sand, some organic matter, very loose, very moist.	- 0.0		SP	VL	ASS Topsoil
	- 0.2		SP	L	ASS 0.0-0.5m
SAND: grey, non-plastic, no dry strength, fine to medium sand, loose, very moist.	-				ASS 0.5-1.0m
	- 0.7		SP	MD-D	ASS 1.0-1.5m
SAND: dark brown to brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet. Water Table @ 0.8m	- 0.8				ASS 1.5-2.0m
	-				ASS 2.0-2.5m
	-				ASS 2.5-3.0m
	-				ASS 3.0-3.5m
	-				ASS 3.5-4.0m
	- 5.0			SP	MD-D
SAND: grey brown, non-plastic, no dry strength, fine to medium sand, medium dense to dense, wet.	-				ASS 4.5-5.0m
	-				ASS 5.0-5.5m
SAND: dark brown, indurated, non-plastic, no dry strength, fine sand, trace of silt, dense to very dense, wet	- 6.6		SP	D-VD	ASS 5.5-6.0m
	-				ASS 6.0-6.5m
	-				ASS 6.5-7.0m
	-				ASS 7.0-7.5m
	-				ASS 7.5-8.0m
	- 10.2		SP	D	
SAND: brown, non-plastic, no dry strength, fine sand, dense, wet.	-				
	- 11.1				
Stopped – No Change.	-				

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13712	Borehole No: 2.8	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 10/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.8 (see plan attached)		

TEST DATA


Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: black, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, loose, very moist.	- 0.0		SM	L	ASS Topsoil
	- 0.3		SP	L	ASS 0.0-0.5m
SAND: dark grey, non-plastic, no dry strength, fine sand, loose, very moist to wet.	- 0.7		SP	L-D	ASS 0.5-1.0m
Water Table @ 0.7m	- 0.8				ASS 1.0-1.5m
					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
	- 7.0		SP	D	ASS 6.0-6.5m
SAND: dark brown, partly indurated, non-plastic, no dry strength, fine sand, dense, wet.					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13700	Borehole No: 2.9	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 6/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.9 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, very loose, wet.	- 0.0		SM	VL	ASS Topsoil
SILTY SAND: brown, non-plastic, low dry strength, fine sand, trace of clay, loose, very moist.	- 0.25		SM	L	ASS 0.0-0.5m
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 0.6		SP	MD-D	ASS 0.5-1.0m
Water Table @ 0.8m	- 0.8				ASS 1.0-1.5m
					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
Stopped – No Change.	- 6.0				

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13700	Borehole No: 2.10	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 6/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.10 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine sand, some organic matter, trace of clay, very loose, very moist.	- 0.0		SM	VL	ASS Topsoil
	- 0.2		SM/SC	L	ASS 0.0-0.5m
	- 0.6		SP	L-MD	ASS 0.5-1.0m
SAND: brown, non-plastic, no dry strength, fine sand, trace of silt and clay, loose to medium dense, wet.	- 1.1		SP	MD-D	ASS 1.0-1.5m
Water Table @ 1.1m	- 1.2				ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
	- 6.0		SP	D-VD	ASS 5.5-6.0m
					ASS 6.0-6.5m
					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13700	Borehole No: 2.11	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 6/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.11 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
CLAYEY SILTY SAND TOPSOIL: black, low plastic, low dry strength, fine sand, some organic matter, very soft, very moist.	- 0.0		SC/SM	VS	ASS 0.0-0.5m
CLAYEY SILTY SAND: dark grey, low plastic, low dry strength, fine sand, loose, very moist to wet.	- 0.25		SC/SM	L	ASS 0.5-1.0m
Water Table @ 1.2m	- 1.2		SP	L-MD	ASS 1.0-1.5m
SAND: grey, non-plastic, no dry strength, fine sand, loose to medium dense, wet.	- 1.8		SP	MD-D	ASS 1.5-2.0m
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 3.5		SP	MD-D	ASS 2.0-2.5m
	- 4.5		SP	MD-D	ASS 2.5-3.0m
SAND: brown, non-plastic, low dry strength, fine sand, trace of silt and clay, medium dense to dense, wet.	- 6.0		SP	MD-D	ASS 3.0-3.5m
	- 7.0		SP	MD-D	ASS 3.5-4.0m
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.	- 8.0		SP	MD-D	ASS 4.0-4.5m
	- 8.5		SP	MD-D	ASS 4.5-5.0m
	- 9.0		SP	MD-D	ASS 5.0-5.5m
	- 9.5		SP	MD-D	ASS 5.5-6.0m
	- 10.0		SP	MD-D	ASS 6.0-6.5m
	- 10.5		SP	MD-D	ASS 6.5-7.0m
	- 11.0		SP	MD-D	ASS 7.0-7.5m
	- 11.5		SP	MD-D	ASS 7.5-8.0m
Stopped – No Change.	- 12.0		SP	MD-D	ASS 8.0-8.5m

BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.		
Lab No: 13700	Borehole No: 2.12	Page:	Of:	

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 6/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.12 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/ Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine to medium sand, some organic matter, very loose, very moist.	- 0.0		SM	VL	ASS Topsoil
SAND: dark brown, non-plastic, no dry strength, fine sand, some thin bands of induration throughout, loose to dense, moist to wet.	- 0.2		SP	L-D	ASS 0.0-0.5m
					ASS 0.5-1.0m
					ASS 1.0-1.5m
					ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
				ASS 4.5-5.0m	
				ASS 5.0-5.5m	
				ASS 5.5-6.0m	
	- 7.0		SP	MD-D	ASS 6.0-6.5m
SAND: brown, non-plastic, no dry strength, fine sand, medium dense to dense, wet.					ASS 6.5-7.0m
					ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
Stopped – No Change.					

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BOREHOLE LOG

Client: Ardill Payne & Partners	Project No: 044-513	Project: Proposed Sand Pit, Lot 32 Newrybar Swamp Road, Lennox Head.
Lab No: 13700	Borehole No: 2.13	Page: Of:

Borehole Inclination: 90°	Borehole Direction: Vertical	Date Drilled: 6/5/11
Surface Elevation: Existing Surface Level	Drilling Method: Explora 85 Drill Rig	Drill Type: 100mm Auger
Borehole Location: 2.13 (see plan attached)		

TEST DATA

Soil Description	Depth (m)	Graphic Symbol	Group Symbol	Consistency/Strength	Sample
SILTY SAND TOPSOIL: dark grey, non-plastic, low dry strength, fine sand, some organic matter, very loose, wet.	- 0.0		SM	VL	ASS Topsoil
	- 0.3		SM	L	ASS 0.0-0.5m
	- 0.5		SP	D	ASS 0.5-1.0m
	- 0.9				ASS 1.0-1.5m
	- 2.0		SP	MD-D	ASS 1.5-2.0m
					ASS 2.0-2.5m
					ASS 2.5-3.0m
					ASS 3.0-3.5m
					ASS 3.5-4.0m
					ASS 4.0-4.5m
					ASS 4.5-5.0m
					ASS 5.0-5.5m
					ASS 5.5-6.0m
					ASS 6.0-6.5m
					ASS 6.5-7.0m
	- 7.6		SP	D-VD	ASS 7.0-7.5m
	- 8.0				ASS 7.5-8.0m
SAND: dark brown, indurated, non-plastic, no dry strength, fine sand, dense to very dense, moist.					
Stopped – No Change.					



Figure 1: Plan of the proposed sand pit development site at Lot 32 Newrybar Swamp Road, Lennox Head, showing the borehole locations for the acid sulfate soil investigation.