ATTACHMENT A2
TEST PIT LOGS AND PHOTOGRAPHS

Pells Sullivan Meynink Pty Ltd

Engineering Consultants
Rock-Soil-Water

A.C.N. 061447621

Excavation Log

Pit No: **TP1**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Hard standing below crusher plant

pit commenced: 11-Oct-06
pit complete: 11-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 6.1mL x 1.4mW x 5.5mD

R.L. surface: 154.25mAHD
location: 6269547.5N,323033.3E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.0		GW	FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.	D			
				1.0		SM	FILL: Yellow-brown, slightly clayey silty SAND with some fine gravel; unit varies in thickness from 100mm to 800mm	D			
				1.8		GC	FILL: Yellow-brown and dark grey silty gravelly SAND with some cobbles and boulders; gravel, cobbles and boulders predominantly subangular to angular dolerite and volcanic breccia, also occasional boulders up to 1.0m of subangular sandstone.	D			Sidewalls collapsing in this unit
			Bulk sample at 3.0m	3.0							PSD, pH = 8.1, Sulphate = 280mg/kg
				4.0		GP	FILL: Dark grey sandy GRAVEL with some subangular to angular dolerite and volcanic breccia cobbles and boulders.	D			Sidewalls collapsing in this unit
				5.5			End of pit at 5.5m (machine limitation)				

North face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
Vl	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP1: Sidewall

TP1: Spoil

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Excavation Log

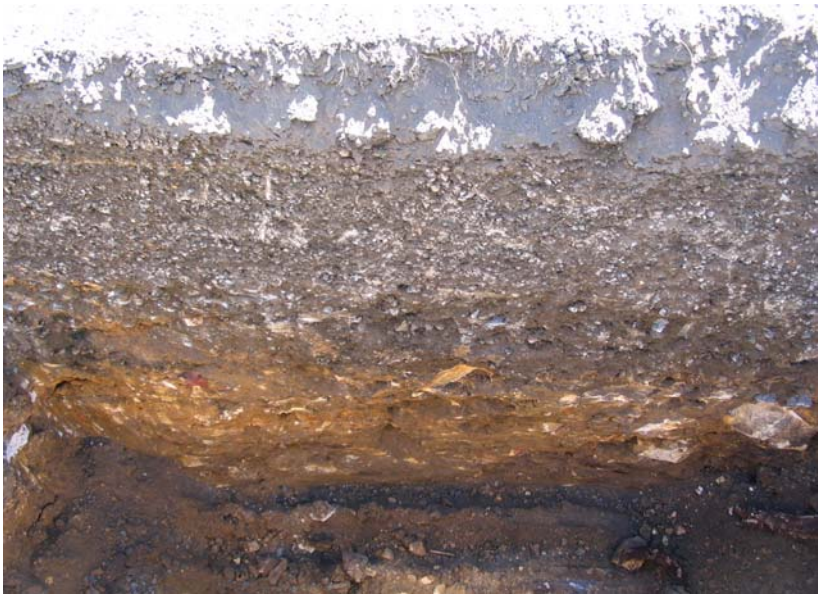
Pit No: **TP2**

Sheet 1 of 1

Job No: PSM1059

		pit commenced:	11-Oct-06
		pit complete:	11-Oct-06
project:	Redevelopment of Hornsby Quarry	supervised by:	PC
pit location:	Hard standing below crusher plant	checked by:	DA
equipment type and model:	Komatsu PC200	R.L. surface:	152.9mAHD
excavation dimensions:	5.2mL x 1.4mW x 2.5mD	datum:	6269525.7N, 323086.6E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.0		GW	FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.	D			at 0.5m depth, rusty steel waterpipe intersected in eastern side of pit; water seeping out of pipe joint at a rate of about 5ml/sec; pipe connected to crusher plant.
				1.0							
				1.2		GC	FILL: Yellow-brown and dark grey silty gravelly SAND with some cobbles and boulders; gravel, cobbles and boulders predominantly subangular to angular dolerite and volcanic breccia, also occasional boulders up to 0.7m of subangular sandstone.	D			
				2.0							
				2.3							
				2.5			SANDSTONE: Light orange-yellow, highly weathered, very low to low strength.	D			
							End of pit at 2.5m; refusal on sandstone.				
				3.0							
				4.0							



South face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

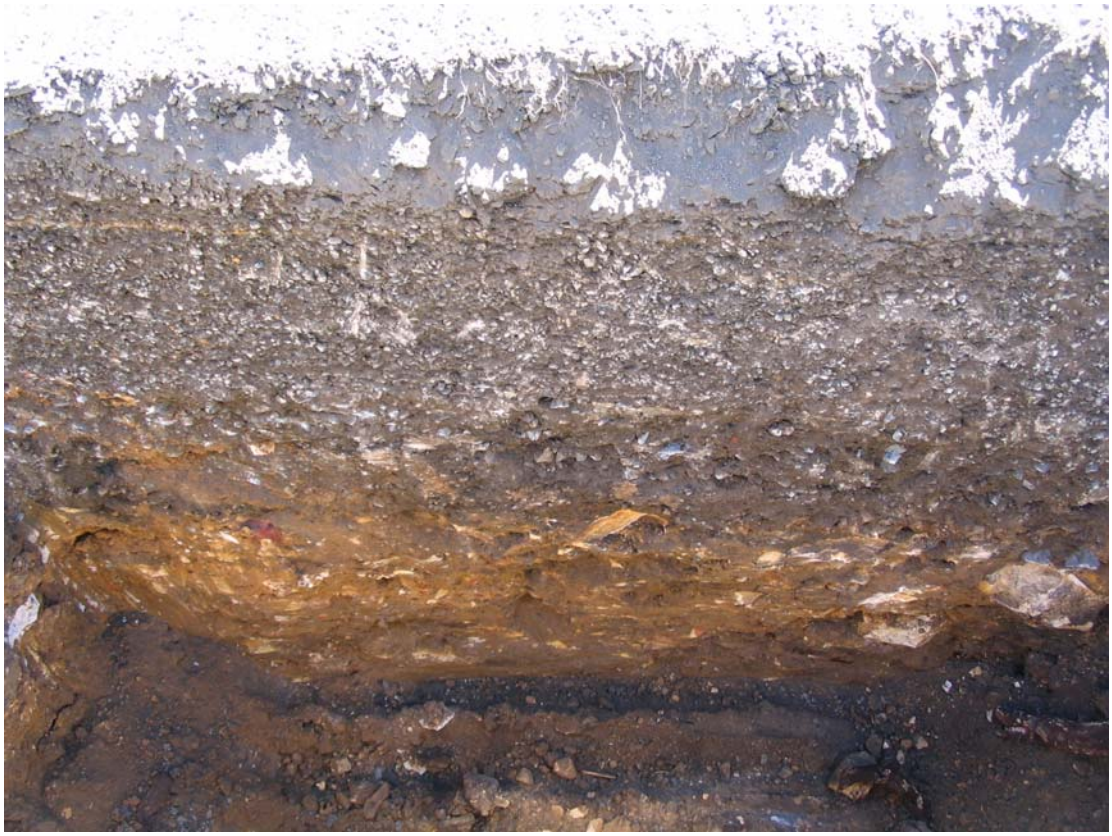
4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
Vl	very loose
L	loose
MD	medium dense
D	dense
VD	very dense



TP2: Sidewall

TP2: Spoil

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Excavation Log

Pit No: **TP3**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Hard standing below crusher plant

pit commenced: 11-Oct-06
pit complete: 11-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.5mL x 1.5mW x 4.0mD

R.L. surface: 153.5mAHD
datum: 6269509.8N, 323130.7E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	at 3.5m bulk sample	0.7		GW	FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.	D			
				1.0		GC	FILL: Yellow-brown and dark grey clayey sandy GRAVEL with some cobbles and boulders; gravel, cobbles and boulders predominantly subangular to angular HW-MW dolerite and volcanic breccia up to 0.7m.	D			Sidewalls collapsing in this unit
				2.0							
				3.0							PSD and Atterberg Limits pH = 8.2, sulphate = 430mg/kg
				4.0			End of pit at 4.0m; Pit terminated because of collapsing sidewalls.				

Photo of northern pit face; note the collapsing sidewalls.

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP3: Pit – note sidewalls collapsing

TP3: Spoil

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Excavation Log

Pit No: **TP4**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: South western fill area

pit commenced: 11-Oct-06
pit complete: 11-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.1mL x 1.4mW x 4.5mD

R.L. surface: 114.0mAHD
datum: 6269586.8N, 322871.2E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.4		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
			at 2.6m bulk sample	1.0		GC	FILL: Yellow-brown and dark grey clayey sandy cobbly GRAVEL with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 0.7m.	D			Sidewalls collapsing between 1.0m and 2.5m.
				2.0							PSD and Atterburg Limits pH = 8.0, sulphate = 160mg/kg
				3.0							
				4.0							
				4.5			End of pit at 4.5m; refusal on a large boulder				

Photo of south face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
Vl	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP4: Sidewall

TP4: Spoil

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Excavation Log

Pit No: **TP5**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: South western fill area

pit commenced: 11-Oct-06
pit complete: 11-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.2mL x 1.4mW x 3.8mD

R.L. surface: 111.4mAHD
datum: 6269621.2N, 322867.4E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.3		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		GC	FILL: Yellow-brown and dark grey clayey sandy cobbly GRAVEL with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 1.0m.	D			steel cables in fill (refer to photo below)
			at 3.6m Bulk sample (not tested)	2.0							
				3.0							
				3.8							
				4.0			End of pit at 3.8m; refusal on large dolerite boulder				

Photo of eastern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP5: Sidewall

TP5: Spoil

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Excavation Log

Pit No: **TP6**

Sheet 1 of 1

Job No: PSM1059

pit commenced: 11-Oct-06
pit complete: 11-Oct-06
supervised by: PC
checked by: DA

project: Redevelopment of Hornsby Quarry
pit location: Fill slope on southern bank of Old Mans Creek

equipment type and model: Komatsu PC200
excavation dimensions: 5.3mL x 1.4mW x 4.7mD

R.L. surface: 97.7mAHD
datum: 6269661.7N, 322824.1E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.3		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		GC	FILL: Orange-brown and dark grey clayey gravelly cobbly SAND with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 0.5m. Numerous articles of rubbish found in pit including an old air conditioner unit, car seat, old timber, scrap metal, old beer cans (with ring tab).	D			Side walls collapsing slightly
			at 2.5m Bulk Sample	2.0							PSD, pH = 7.7, sulphate = <100mg/kg
				3.0							
				4.0							
				4.7			End of pit at 4.7m (machine limitation).				

Photo of northern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP6: Sidewall

TP6: Spoil – note the rubbish

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Excavation Log

Pit No: **TP7**

Sheet 1 of 1

Job No: PSM1059

		pit commenced:	11-Oct-06
		pit complete:	11-Oct-06
project:	Redevelopment of Hornsby Quarry	supervised by:	PC
pit location:	Fill slope on southern bank of Old Mans Creek	checked by:	DA
equipment type and model:	Komatsu PC200	R.L. surface:	93.1mAHD
excavation dimensions:	5.1mL x 1.5mW x 3.0mD	datum:	6269668.6N, 322811.4E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	at 2.5m Bulk Sample (not tested)	0.3		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		GC	FILL: Orange-brown and dark grey clayey gravelly cobbly SAND with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 0.5m.	D			Side walls collapsing slightly No man-made items seen in the fill
				2.0		GC	FILL: As above, but boulders predominantly FR, very strong, angular dolerite boulders up to 0.75m.				
				3.0							
				4.0			End of pit at 3.0m; refusal on large boulders				

Photo of northern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP7: Sidewall

TP7: Spoil

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A.C.N. 061447621

Excavation Log

Pit No: **TP8**

Sheet 1 of 1

Job No: PSM1059

pit commenced: 11-Oct-06
pit complete: 11-Oct-06

project: Redevelopment of Hornsby Quarry
pit location: Fill in Old Mans Creek, near former quarry workshops

supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.3mL x 1.4mW x 3.0mD

R.L. surface: 91.0mAHD
datum: 6269752.5N, 322860.0E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	at 2.5m Bulk Sample	0.0		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel.	D			
				1.0		GC	FILL: Brown clayey gravelly SAND with some cobbles and boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 0.3m.	D			Interpreted to be predominantly reworked alluvium Northern sidewall collapsing; minor collapsing on the southern pit wall.
				2.0							PSD, pH = 7.9, sulphate = 200mg/kg
				3.0			End of pit at 3.0m; pit terminated when the Old mans Creek concrete diversion pipe was intercepted.				
				4.0							

Photo of southern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
VI	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP8: Sidewall – note the concrete diversion drain.

TP8: Spoil

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Excavation Log

Pit No: **TP9**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Eastern Fill area

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.2mL x 1.4mW x 3.5mD

R.L. surface: 131.6mAHD
datum: 6269587.1N, 323393.4E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.3		OL	TOPSOIL(FILL) : Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		SM	SANDSTONE: Orange and grey with occasional red-orange streaks, dense, residual silty SAND.	D			Pit walls self supporting
				2.0		SM	Change to orange with grey streaks, very dense, extremely weathered silty SAND.	D			
				3.0			SANDSTONE: Grey with occasional black streaks, very dense, highly weathered silty SAND grading to SANDSTONE.	D			
				3.5							
				4.0			End of pit at 3.5m (refusal)				

Photo of eastern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
VI	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP9: Sidewall

TP9: Spoil

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Excavation Log

Pit No: **TP10**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Eastern Fill area

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 4.8mL x 1.4mW x 2.8mD

R.L. surface: 131.0mAHD
datum: 6269604.7N, 323372.3E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	At 1.5m Bulk sample	0.3		OL	TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		GC	FILL: Grey-brown clayey sandy GRAVEL with some cobbles and occasional boulders; gravel, cobbles and boulders predominantly subrounded to angular FR dolerite and volcanic breccia; layers of roots every 300-400mm throughout (may represent buried soil horizons as the level of fill has risen over time).	D			Sidewalls collapsing slightly in fill PSD, pH = 7.7, sulphate = 410mg/kg
				2.0							
				2.2		OL	TOPSOIL: Dark brown to black, sandy SILT with some gravel, (represents a buried topsoil horizon).				
				2.5		SM	SANDSTONE: Orange and grey with occasional red-orange streaks, dense, residual silty SAND.	D			
				2.8		SM	Change to light orange-grey, very dense, extremely weathered silty SAND.	D			
				3.0							
				4.0							

Photo of eastern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP10: Sidewall

TP10: Spoil

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A.C.N. 061447621

Excavation Log

Pit No: **TP11**

Sheet 1 of 1

Job No: PSM1059

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
project: Redevelopment of Hornsby Quarry
supervised by: PC
pit location: Eastern Fill area
checked by: DA

equipment type and model: Komatsu PC200
R.L. surface: 131.7
excavation dimensions: 15.5mL x 1.5mW x 0.9m-1.8mD
datum: 6269591.8N, 323378.6E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.0		OL	TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			Pit dug to find the contact between residual sandstone and fill
				1.0			FILL to west, SANDSTONE to east: FILL: Grey-brown clayey sandy gravel with some cobbles and boulders and occasional scrap metal, cables and wood; layers of roots buried every 300-400mm throughout. SANDSTONE: Orange and grey with occasional red-orange streaks, dense, residual silty SAND (sandstone also underlies the fill in the west).				
				1.8							
				2.0			End of Pit at 0.9m at the eastern end and 1.8m at the western end.				
				3.0							
				4.0							

Longitudinal photo of pit; residual sandstone below topsoil in foreground (east); fill below topsoil in background (west).

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP11: Trench showing sandstone at surface in foreground and fill at surface at opposite end of pit.

TP11: Spoil

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Excavation Log

Pit No: **TP12**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Eastern Fill area - into Western Bund

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 7.2mL x 1.5mW x 5.5mD

R.L. surface: 132.5mAHD
datum: 6269626.0N, 323345.7E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.0		OL	TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			Pit starts near the top of the bund in the west and finishes in the fill area to the east.
				0.5		GC	FILL: Orange-brown and grey, GRAVEL with some clay, sand, cobbles and occasional boulders; cobbles and boulders are mainly blue-grey, fresh (some HW-MW), subangular to angular volcanic breccia and dolerite up to 0.75m.	D			
				1.0							
				2.0			Change in fill to …..with many boulders	M			At 1.8m, 2 boulders 1m x0.75m x >0.75m in a row; possibly forming the core of the bund. Boulders just seen in the left of the photo.
			at 2.5m Bulk Sample								PSD, pH = 7.7, sulphate = <100mg/kg
				3.0				M			
				4.0				M			
							End of pit at 5.5m (machine limitation)				

Photo of northern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
VI	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP12: Sidewall

TP12: Spoil

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Excavation Log

Pit No: **TP13**

Sheet 1 of 1

Job No: PSM1059

project: Redevelopment of Hornsby Quarry
pit location: Western extent of Eastern Fill area

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.8mL x 1.4mW x 3.7mD

R.L. surface: 103.3mAHD
datum: 6269766.4N, 323287.4E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	at 2.5m Bulk Sample (not tested)	0.3		OL	TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles and boulders.	D			
				1.0		GC	FILL: Orange-brown and grey, clayey, sandy GRAVEL with some cobbles and occasional boulders; cobbles and boulders are mainly blue-grey, fresh (some HW-MW), subangular to angular volcanic breccia and dolerite up to 0.5m.				Sidewalls self supporting
				1.4							
				2.0		CI	RESIDUAL VOLCANIC BRECCIA: Grey with orange streaks, intermediate plasticity sandy silty CLAY; remnant volcanic breccia structure observed.	D	St		
				3.0					Vst		
				3.2			VOLCANIC BRECCIA: Grey and orange with black streaks, extremely weathered, extremely low strength rock.	D			
				3.7			End of pit at 3.7m at refusal				
				4.0							

Photo of northern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP13: Sidewall

TP13: Spoil

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Excavation Log

Pit No: **TP14**

Sheet 1 of 1

Job No: PSM1059

		pit commenced:	12-Oct-06
		pit complete:	12-Oct-06
project:	Redevelopment of Hornsby Quarry	supervised by:	PC
pit location:	Northern zone of eastern fill area	checked by:	DA
equipment type and model:	Komatsu PC200	R.L. surface:	124.5mAHD
excavation dimensions:	4.9mL x 1.4mW x 2.2mD	datum:	6269826.7N, 323418.4E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED	at 1.5m bulk sample			OL	TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles.	D			
				1.0		SC	FILL: Grey-brown clayey gravelly SAND with occasional to some cobbles and boulders; gravel, cobbles and boulders predominantly subrounded to angular FR dolerite and volcanic breccia; layers of roots every 300-400mm throughout (may represent buried soil horizons as the level of fill has risen over time).	D			Pit walls self supporting PSD, Atterberg Limits pH = 7.7, sulphate = <100mg/kg
				1.8							
				2.0		CI	RESIDUAL VOLCANIC BRECCIA: Grey with orange streaks, intermediate plasticity sandy silty CLAY.	D			
				2.2			VOLCANIC BRECCIA: Grey and orange with black streaks, extremely weathered, extremely low strength rock.	D			
							End of pit at 2.2m.				
				3.0							
				4.0							

Photo of southern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
VI	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP14: Sidewall

TP14: Spoil

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Excavation Log

Pit No: **TP15**

Sheet 1 of 1

Job No: PSM1059

pit commenced: 12-Oct-06
pit complete: 12-Oct-06

project: Redevelopment of Hornsby Quarry
pit location: Northern zone of eastern fill area

supervised by: PC
checked by: DA

equipment type and model: Komatsu PC200
excavation dimensions: 5.3mL x 1.4mW x 3.5mD

R.L. surface: 125.2mAHD
datum: 6269814.1N, 323443.6E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.7		OL	TOPSOIL: Red-brown, sandy silty clay with some gravel and cobbles, cobbles.	D			Pit walls self supporting.
				1.0		CI	RESIDUAL VOLCANIC BRECCIA: Grey with orange and black streaks, intermediate plasticity very stiff sandy silty CLAY; remnant volcanic breccia structure observed.	D	Vst		
				2.0							
				3.0							
				3.5			End of pit at 3.5m				
				4.0							

Photo of southern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index
- VS very soft
- S soft
- F firm
- St Stiff
- Vst very stiff
- H hard
- Fb Friable
- Vl very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TP15: Sidewall

TP15: Spoil

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Excavation Log

Pit No: **TP16**

Sheet 1 of 1

Job No: PSM1059

pit commenced: 12-Oct-06
pit complete: 12-Oct-06
supervised by: PC
checked by: DA

project: Redevelopment of Hornsby Quarry
pit location: Northern zone of eastern fill area - pit in side of slope

equipment type and model: Komatsu PC200
excavation dimensions: 5.5mL x 1.4mW x 2.5mD

R.L. surface: 129.6mAHD
datum: 6269798.8N, 323494.9E

Method	penetration 1 2 3	support	Notes: Notes samples, tests, etc.	Depth (m)	graphic log	classification symbol	Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/ density index	UCS; hand penetr-ometer (kPa) 100 200 300 400	Structure and additional observations
BACKHOE		UNSUPPORTED		0.3		OL	TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles.	D			
				1.0		GC	FILL: Grey-brown clayey sandy GRAVEL with some cobbles and boulders; gravel, cobbles and boulders predominantly subrounded to angular, residual to fresh dolerite and volcanic breccia.	D			Pit sidewalls collapsing slightly
				2.0							
				2.5			End of pit at 2.5m				
				3.0							
				4.0							

Photo of northern face of pit

Key

1 Method
- N Natural Exposure
- E Existing Excavation
- BH Backhoe bucket
- B Bulldozer Blade
- R Ripper

2 Support
- T Timbering

3 Penetration
- 1 No Resistance
- 2
- 3 Refusal

4 Notes (samples and tests)
- U50 undisturbed sample 50mm diameter
- D disturbed sample
- N standard penetration test figure = result
- N* SPT + sample
- Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
- D dry
- M moist
- W wet

7 Consistency/ density Index

VS	very soft
S	soft
F	firm
St	Stiff
Vst	very stiff
H	hard
Fb	Friable
Vl	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TP16: Sidewall

TP16: Spoil