

Appendix A

Finalised Contractor's Logs for Ground Investigation Stations
(in CD ROM)



DRILLHOLE RECORD

HOLE No.
DH 5

CONTRACT No. GE/2006/02

SHEET 1 of 2

PROJECT Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction

METHOD Rotary

CO-ORDINATES

WORKS ORDER No. **GE/2006/02.88**

MACHINE & No. 20-116

E 813196.48
N 816988.67

DATE from 28/03/2008 to 01/04/2008

FLUSHING MEDIUM AIR FOAM

ORIENTATION **Vertical**

GROUND LEVEL + 22.80 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
28/03/2008	PX	08:00										22.80	0.00			Brown (10YR 5/4), silty fine to medium SAND with some subangular fine to coarse gravel sized rock fragments. (COLLUVIUM)
				100					A	0.45		22.30	0.50			
				59					B	0.50		22.10	0.70			Grey (N6), mottled brown, COBBLE of moderately strong tuff. (COLLUVIUM)
			70						HMLC	0.65						Dark grey (N3), COBBLE and BOULDER of moderately strong tuff. (COLLUVIUM)
									HMLC	1.06						
28/03/2008		Dry at 18:00		100					HMLC	1.86		20.94	1.86			Brown (10YR 5/4), subangular and subrounded coarse GRAVEL and COBBLE of moderately strong tuff in silty sandy matrix. (COLLUVIUM)
29/03/2008		Dry at 08:00		78					HMLC	2.10						
	PX 2.90 HX			0					HMLC	2.90		19.90	2.90			Light brown (7.5YR 6/4) and dark grey (N3), subangular coarse GRAVEL sized rock fragments in silty sandy matrix. (COLLUVIUM)
									1	3.70		19.00	3.80			Reddish orange (2.5YR 6/8), mottled brown, silty fine to medium SAND with occasional angular fine gravel sized rock fragments. (COLLUVIUM)
				100					2	3.80						
									3	4.80		17.90	4.90			Light grey (N7), mottled light yellowish brown, angular fine to coarse GRAVEL sized rock fragments in sandy matrix. (COLLUVIUM)
				100					4	4.90						
									5	5.60		17.10	5.70			Light grey (N7), spotted brown, COBBLE of moderately weak tuff. (COLLUVIUM)
			60						6	5.70		16.70	6.10			
									HMLC	6.00		16.49	6.31			Brownish red (10R 4/6) and brown (10YR 5/4), subangular and subrounded coarse GRAVEL sized rock fragments. (COLLUVIUM)
				90	0	17.2			HMLC	6.60						Moderately strong, light pink (2.5YR 7/6) and light brown (7.5YR 6/4), moderately decomposed coarse ash crystal TUFF. Joints are very closely spaced, rough planar, extremely to very narrow, silty sand infilled, iron and manganese stained, dipping 60°-70° and 80°-90°.
29/03/2008		6.60m at 18:00							HMLC	6.98		15.82	6.98			6.98 - 7.40m: No recovery. Inferred as completely decomposed TUFF.
31/03/2008	HX 7.40	Dry at 08:00		100	28	11	>20		HMLC	7.40		15.40	7.40			Moderately strong, light pinkish grey (5YR 7/2) and light brown (7.5YR 6/4), moderately decomposed coarse ash crystal TUFF. Joints are closely to very closely, locally medium, locally closely spaced, rough and smooth planar, extremely narrow, kaolin coated, iron and manganese stained, dipping 0°-10°, 30°-40°, 60°-70° and 80°-90°.
							>20		T2101	8.30		14.20	8.60			7.40 - 8.60m: Weak, highly decomposed.
				100	0	0			T2101	9.00						
					54	50	9.3		T2101	9.90						
							>20		T2101	9.90		12.80	10.00			

- Small disturbed sample
- ▲ Water sample
- Large disturbed sample
- Piezometer / standpipe tip
- ⊥ SPT liner sample
- ⊥ Standard penetration test
- ▨ U76 undisturbed sample
- ⊥ Water absorption (Packer) test
- ▩ U100 undisturbed sample
- ⊥ Permeability test
- ▨ Mazier sample
- ⊥ Impression packer test
- ▨ Piston sample
- ∇ In-situ vane shear test

LOGGED **W K SIU**

DATE **02/04/2008**

CHECKED **KEN MA**

DATE **03/04/2008**

REMARKS

- No inspection pit was dug since no utilities were present as indicated by the utility checks.
- Piezometer was installed at 7.30m depth.



DRILLHOLE RECORD

HOLE No.
DH 5

CONTRACT No. GE/2006/02

SHEET 2 of 2

PROJECT Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction

METHOD Rotary

CO-ORDINATES

WORKS ORDER No. **GE/2006/02.88**

MACHINE & No. 20-116

E 813196.48
N 816988.67

DATE from 28/03/2008 to 01/04/2008

FLUSHING MEDIUM AIR FOAM

ORIENTATION **Vertical**

GROUND LEVEL + 22.80 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples			Legend	Grade	Description
									No.	Type	Depth			
				97	51	51	6.0						III	As sheet 1 of 2.
							>20							
							9.9							
				100	35	21			T2101	11.12	11.84 - 10.96 11.65 - 11.15		III	10.96 - 11.15m: Brecciated zone.
							N.I.		T2101	11.30	11.50		IV	11.50 - 11.90m: Weak, highly decomposed.
				100	100	82	4.4		T2101	11.90	10.90 - 11.90		III	
				100	75	68	8.7		T2101	12.40				
			60						T2101	9.60	13.20		II	Strong, dark grey (N3), spotted pink, slightly decomposed coarse ash crystal TUFF. Joints are medium, locally closely spaced, rough planar, extremely narrow, iron stained, dipping 0°-10° and 60°-70°.
				100	99	99	3.0		T2101	13.50				
				100	67	59			T2101	14.47				
		6.50m at 18:00 7.30m at 08:00		100	71	71			T2101	15.46				
							>20		T2101	6.61	16.19		III	Moderately strong, greyish brown (5YR 5/2), dappled pink, moderately decomposed coarse ash crystal TUFF. Joints are very closely spaced, rough planar, extremely to very narrow, iron and manganese stained, dipping 30°-40° and 60°-70°. (Brecciated zone)
		5.90m at 12:00		100	0	0			T2101	16.46				End of hole at 17.00m depth.
									T2101	17.00	5.80 - 17.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- ▨ U76 undisturbed sample
- U100 undisturbed sample
- ▩ Mazier sample
- ▧ Piston sample
- ▲ Water sample
- Piezometer / standpipe tip
- ↓ Standard penetration test
- ⊥ Water absorption (Packer) test
- ⊥ Permeability test
- ⊥ Impression packer test
- ∇ In-situ vane shear test

LOGGED **W K SIU**

DATE **02/04/2008**

CHECKED **KEN MA**

DATE **03/04/2008**

REMARKS



Gammon

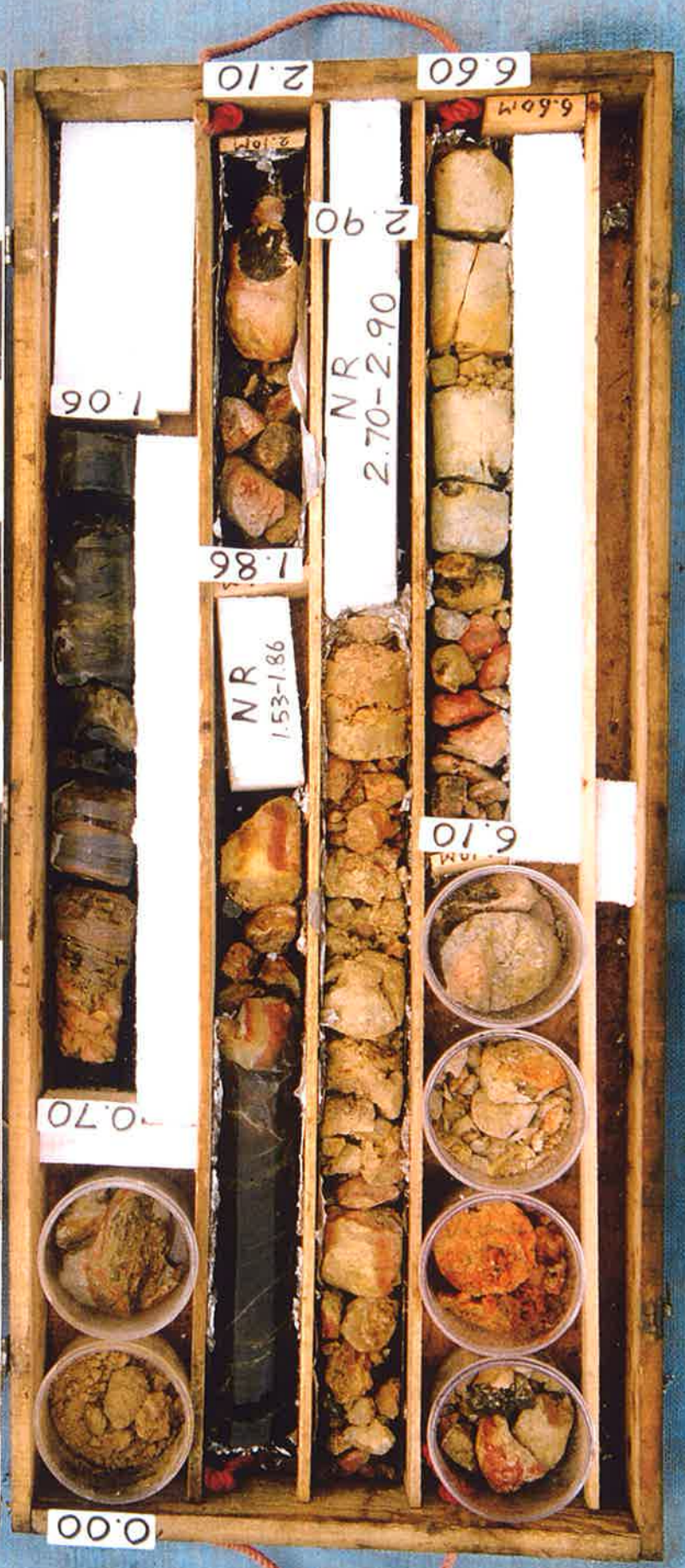


Civil Engineering
And Development Department

Hole No. : DH5 Box No.: 1 Of 4 Contract No. GE/2006/02
 Depth : 0.00 m. To 6.60 m. Ground Investigation - New Territories
 Works Order No. : GE/2006/02.88 West
 Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
 North Lantau Expressway

and Yu Tung Road

Date of Photograph : 2/4/2008





Hole No. : DH5 Box No.: 2 Of 4 Contract No. GE/2006/02
 Depth : 6.60 m. To 9.90 m. Ground Investigation - New Territories
 Works Order No. : GE/2006/02.88 West
 Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
 North Lantau Expressway



Date of Photograph : 2/4/2008





Gammon



Civil Engineering
And Development Department

Hole No. : DH5 Box No.: **3 Of 4** Contract No. GE/2006/02
 Depth : **9.90** m. To **13.50** m. Ground Investigation - New Territories
 Works Order No. : GE/2006/02.88 West
 Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
 North Lantau Expressway
 and Yu Tung Road

Date of Photograph : 2/4/2008





Gammon



Civil Engineering
And Development Department

Hole No. : DH5 Box No.: 4 Of 4

Depth : 13.50 m. To 17.00 m.

Works Order No. : GE/2006/02.88

Job Title : Agreement No. CE 9/2007(GE)

North Lantau Expressway
and Yu Tung Road

Contract No. GE/2006/02
Ground Investigation - New Territories

West

(Term Contract)



Date of Photograph : 2/4/2008





DRILLHOLE RECORD

HOLE No.
DH13

CONTRACT No. GE/2006/02

SHEET 2 of 4

PROJECT Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction

METHOD Rotary

CO-ORDINATES

WORKS ORDER No. **GE/2006/02.88**

MACHINE & No. 20-103

E 812372.86
N 816404.23

DATE from 08/04/2008 to 16/04/2008

FLUSHING MEDIUM AIR FOAM

ORIENTATION **Vertical**

GROUND LEVEL + 43.47 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
				100											V	As sheet 1 of 4.
				88					8		10.70					
									9		10.80					
		2.50m at 18:00														
10/04/2008		11.50m at 08:00		100					10		11.80					
11/04/2008									11		11.90					
				100					12		12.90					
									13		13.00					
				100					14		14.00					
									15		14.10					
				100					16		15.10					
									17		15.20	28.27	15.20		V	Extremely weak, light reddish brown (5YR 6/4), mottled white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)
				78					18		16.20					
									19		16.30					
				100					20		17.30					
									21		17.40	26.07	17.40		V	Extremely weak, yellowish brown (10YR 5/8), mottled brownish red and spotted white, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)
				100					22		18.40					
									23		18.50	24.97	18.50		V	Extremely weak, pinkish red (10R 4/8), spotted white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)
				100					24		19.50					
									25		19.60	23.87	19.60		V	Extremely weak, light pinkish brown (5YR 6/3), mottled light brown and spotted white,

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- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- ▨ U76 undisturbed sample
- U100 undisturbed sample
- ▩ Mazier sample
- ▧ Piston sample
- ▲ Water sample
- Piezometer / standpipe tip
- ↓ Standard penetration test
- ┆ Water absorption (Packer) test
- ┆ Permeability test
- ┆ Impression packer test
- ∨ In-situ vane shear test

LOGGED W K SIU

DATE 17/04/2008

CHECKED KEN MA

DATE 18/04/2008

REMARKS



DRILLHOLE RECORD

HOLE No.
DH13

CONTRACT No. GE/2006/02

SHEET 3 of 4

PROJECT Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction

METHOD Rotary CO-ORDINATES WORKS ORDER No. **GE/2006/02.88**

MACHINE & No. 20-103 E 812372.86 N 816404.23 DATE from 08/04/2008 to 16/04/2008

FLUSHING MEDIUM AIR FOAM ORIENTATION Vertical GROUND LEVEL + 43.47 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11/04/2008 12/04/2008		1.85m at 18:00 19.80m at 08:00		100					26	U76	20.60	22.77	20.70	V	completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				100					27	U76	20.70			V	Extremely weak, pinkish red (10R 4/8), spotted grey and white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				100					28	U76	21.70	21.67	21.80	V	Extremely weak, light brown (7.5YR 6/4), mottled white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				100					29	U76	21.80			V	Extremely weak, light brown (7.5YR 6/4), mottled white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				100					30	U76	22.80	20.57	22.90	V	Extremely weak, brown (10YR 5/4), mottled light pink and white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				100					31	U76	22.90			V	Extremely weak, brown (10YR 5/4), mottled light pink and white, completely decomposed feldsparphyric RHYOLITE. (Sitff, sandy SILT)	
				83					32	U76	23.90	19.47	24.00	V	Extremely weak, light pink (2.5YR 7/6), mottled white and spotted light grey, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
			60	0					33	U76	24.00			V	Extremely weak, light pink (2.5YR 7/6), mottled white and spotted light grey, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
				0					34	U76	25.00	18.37	25.10	IV	Weak, brown (10YR 5/4) and dark grey (N3), dappled pink, highly decomposed feldsparphyric RHYOLITE. (Angular fine to coarse GRAVEL sized rock fragments)	
				90					35	U76	26.10	17.27	26.20	V	Extremely weak, yellowish brown (10YR 5/8), mottled light pink and white, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
12/04/2008 14/04/2008		2.15m at 18:00 20.07m at 13:00		83					36	U76	26.20			V	Extremely weak, yellowish brown (10YR 5/8), mottled light pink and white, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
				83					37	U76	27.20	16.17	27.30	V	Extremely weak, light grey (N7), striped black, spotted light pink and white, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
				83					38	U76	27.30			V	Extremely weak, light grey (N7), striped black, spotted light pink and white, completely decomposed feldsparphyric RHYOLITE. (Silty fine to medium SAND)	
				83					39	U76	28.30	15.07	28.40	IV	Weak, light grey (N7), spotted black, light pink and white, highly decomposed feldsparphyric RHYOLITE. (COBBLE of moderately weak feldsparphyric rhyolite)	
				83					40	U76	28.40			IV	Weak, light grey (N7), spotted black, light pink and white, highly decomposed feldsparphyric RHYOLITE. (COBBLE of moderately weak feldsparphyric rhyolite)	
14/04/2008 15/04/2008		4.25m at 18:00		0					41	U76	29.40	13.97	29.50	V	No sample recovered. Inferred as completely decomposed feldsparphyric RHYOLITE.	
	HX 29.85	21.50m at 08:00		0					42	U76	29.75	13.62	29.85	V	Moderately strong, pinkish brown (10R 5/4),	

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- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- ▨ U76 undisturbed sample
- ▩ U100 undisturbed sample
- ▧ Mazier sample
- ▦ Piston sample
- ▲ Water sample
- Piezometer / standpipe tip
- ↓ Standard penetration test
- ⊥ Water absorption (Packer) test
- ⊥ Permeability test
- ⊥ Impression packer test
- ∇ In-situ vane shear test

LOGGED **W K SIU**

DATE **17/04/2008**

CHECKED **KEN MA**

DATE **18/04/2008**

REMARKS



DRILLHOLE RECORD

HOLE No.

DH13

CONTRACT No. GE/2006/02

SHEET 4 of 4

PROJECT Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction

METHOD Rotary

CO-ORDINATES

WORKS ORDER No. **GE/2006/02.88**

MACHINE & No. 20-103

E 812372.86
N 816404.23

DATE from 08/04/2008 to 16/04/2008

FLUSHING MEDIUM AIR FOAM

ORIENTATION **Vertical**

GROUND LEVEL + 43.47 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples			Legend	Grade	Description
									No.	Type	Depth			
15/04/2008 16/04/2008	8.50m at 18:00 27.50m at 08:00	60	100	100	98	36	13.8		T2101		13.47	30.00	III	dappled pink and spotted dark grey, moderately decomposed feldsparphyric RHYOLITE. Joints are closely spaced, rough planar, extremely narrow, iron stained, dipping 10°-20°, 60°-70° and 80°-90°. 30.50 - 30.75m: Brecciated zone. Moderately strong, grey (N6), dappled light pink and spotted light green, moderately decomposed feldsparphyric RHYOLITE. Joints are closely, locally very closely spaced, rough and smooth planar, extremely narrow, calcite and chlorite coated, dipping 0°-10°, 10°-20°, 60°-70° and 80°-90°.
				100	83	66		12.97	30.50	III				
				100	78	78		12.72	30.75					
				100	56	28	6.4							
				100	46	0	15.6							
				100	69	11	12.9							
				100	46	0	>20							
				100	69	11	14.3							
16/04/2008	18:00								T2101		34.98	34.98		End of hole at 34.98m depth.

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- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- ▨ U76 undisturbed sample
- U100 undisturbed sample
- ▩ Mazier sample
- ▧ Piston sample
- ▲ Water sample
- Piezometer / standpipe tip
- ↓ Standard penetration test
- ⊥ Water absorption (Packer) test
- ⊥ Permeability test
- ⊥ Impression packer test
- ∨ In-situ vane shear test

LOGGED W K SIU
DATE 17/04/2008
CHECKED KEN MA
DATE 18/04/2008

REMARKS



CEDD Civil Engineering
And Development Department

Hole No.: **DH13** Box No.: **1 Of 4** Contract No. **GE/2006/02**
 Depth : **0.00** m. To **(5.33)** m. Ground Investigation - New Territories
 Works Order No. : **GE/2006/02.88** West
 Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
 North Lantau Expressway

and Yu Tung Road

Date of Photograph : **16/4/2008**





Civil Engineering
And Development Department

Hole No. : DH13 Box No.: 2 Of 4 Contract No. GE/2006/02
Depth : (5.33) m. To 24.00 m. Ground Investigation - New Territories

Works Order No. : GE/2006/02.88 West
Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
North Lantau Expressway

and Yu Tung Road

Date of Photograph : 16/4/2008





Gammon



Civil Engineering
And Development Department

Hole No. : DH13 Box No.: 3 Of 4 Contract No. GE/2006/02
 Depth : 24.00 m. To 32.28 m. Ground Investigation - New Territories
 Works Order No. : GE/2006/02.88 West
 Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
 North Lantau Expressway
 and Yu Tung Road

Date of Photograph : 16/4/2008





Civil Engineering
CEDD
And Development Department

Hole No. : DH13 Box No.: 4 Of 4 Contract No. GE/2006/02
Depth : 32.28 m. To 34.98 m. Ground Investigation - New Territories
Works Order No. : GE/2006/02.88 West
Job Title : Agreement No. CE 9/2007(GE) (Term Contract)
North Lantau Expressway

and Yu Tung Road
Date of Photograph : 16/4/2008



Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
1 ↓	0.5		0.30		<p>Firm, moist, dark grey (7.5YR 4/1), clayey, sandy SILT with some angular to subangular fine to coarse gravel and cobble sized rock fragments and some rootlets. (OLD TOP SOIL)</p> <p>Soft, moist, yellowish brown (10YR 5/8) mottled and dappled dark yellow, clayey, sandy SILT with much angular to subangular fine to coarse gravel, cobble and boulder (generally 0.25m x 0.40m in size) sized moderately strong and strong tuff fragments. (COLLUVIUM)</p>	<p>Firm, moist, orangish brown (10YR 3/6) mottled and dappled, clayey, sandy SILT with much subangular to subrounded fine to coarse gravel and occasional boulders (generally 0.25m x 0.30m with maximum size 0.60m x 1.10m) sized moderately strong and strong rock fragments. (COLLUVIUM)</p> <p>Trial pit terminated at 2.40m depth.</p>
2 ↓	1.0		2.40			
3 ↓	1.5		2.5			
4 ↓	2.0		3.0			
5 ↓	2.5		3.5			
	3.0		4.0			
	3.5		4.5			
	4.0		5.0			
	4.5		5.5			
	5.0		6.0			
	5.5					
	6.0					

Notes:
 1. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m and 2.00m depths.
 2. Undisturbed horizontal sample (U100) was taken at 1.70m depth.

SYMBOLS		REMARKS		PLAN (net to scale)	
↓	Small Disturbed Sample	Ground Water	No Groundwater		
↑	Large Disturbed Sample	Plant Used	Hand dug		
↓	Undisturbed Vertical Sample	Shoring	Timber shoring over full height	SECTION	
—	Undisturbed Horizontal Sample	Stability	Collapse	Depth at pit centre	
■	Block Sample	Others	2.30m	NI	
U	In situ Density Test				
▲	Water Sample				
↘	Water Seepage				

PROJECT		TRIAL PIT NO.	
Agreement No. CE 72/2000 Landslip Investigation Consultancy Landslide Age-dating for Landslide on Natural Hillside above Tung Chung East, Ground Investigation		TP1	
Sheet	1 of 1	Date excavated	29/07/2002 to 19/08/2002
Date Reinstated	24/08/2002 to 27/08/2002		
GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT			

Contract No. :	GE/2001/14
Works Order No. :	GE/2001/14.46
Co-ordinates :	E 813177.39 N 816947.82
Ground Level :	28.61 mPD
Logged by :	K.M. To
Date logged :	20/08/2002
Checked by :	James Lu
Date Checked :	21/08/2002





GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE 2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT NO. CE TA/2000 LANDS OF INVESTIGATION
CONSULTANCY LANDSIDE ARE OBTAIN FOR LANDSIDE ON
SITE NATURAL WALLS ABOVE TAIKI CHUNG EAST - S1
W.D. NO. GE/2001/14 DATE 19/8/02
T.P. T.I. NO. TP 1
FACE B UPPER



GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE 2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT NO. CE TA/2000 LANDS OF INVESTIGATION
CONSULTANCY LANDSIDE ARE OBTAIN FOR LANDSIDE ON
SITE NATURAL WALLS ABOVE TAIKI CHUNG EAST - S1
W.D. NO. GE/2001/14 DATE 19/8/02
T.P. T.I. NO. TP 1
FACE B LOWER





TRIAL PIT RECORD

Gammon		Contract No. GE/2006/02		Works Order No.: GE/2006/02.88		Logged by: W K STU Date: 28/02/2008 Checked by: KEN MA Date: 29/02/2008		Co-ordinates: E 813329.37 N 817115.70 Ground Level: + 13.58 mPD		Excavation Dates: 27/02/2008 to 27/02/2008 Backfill Dates: 14/04/2008		TRIAL PIT No. TP 2	
PROJECT: Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and YU Tung Road Near Tung Chung Eastern Interchange Design and Construction													
Sketch													
Sample & Tests	Depth (m)	Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m	Depth (m)	Legend	Grade	Description				
1	0.10					0.10			Firm, wet, dark grey (N3), sandy SILT with much rootlets. (COLLUVIUM)				
2	1.00					1.00			Firm to stiff, wet, greyish brown (10YR 5/2), mottled brown, sandy SILT with much subangular fine to coarse gravel, cobble and boulder of moderately strong tuff. (COLLUVIUM)				
3	2.00								End of the trial pit at 1.00m depth. (maximum)				
4	3.00												
	4.00												

SYMBOL		PLAN		SECTION (X-X)		REMARKS	
<ul style="list-style-type: none"> Small disturbed sample Large disturbed sample Undisturbed vertical sample Undisturbed horizontal sample 	<ul style="list-style-type: none"> Block sample In-situ density test Water sample Water seepage N - Schmidt Hammer Test 					Shoring: No Stable: No Water Seepage: No Maximum Depth: 1.00m Average Depth: 0.95m 1. Large disturbed sample was taken at 0.95m depth. 2. U100 (horizontal) sample was taken at 0.80m (from Face A) depth.	





Gammon
Contract No. GE/2006/02 Ground Investigation - N. T. West (Term Contract)
Works Order No. : GE/2006/02.88
Trial Pit No. : TP 2 Face : C
Job Title : Agreement No. CE 9/2007(GE) North Lantau Expressway and Yu Tung Road
Date of Photograph : 25/3/2008

7
6
5
4
3
2
1



Gammon
Contract No. GE/2006/02 Ground Investigation - N. T. West (Term Contract)
Works Order No. : GE/2006/02.88
Trial Pit No. : TP 2 Face : D
Job Title : Agreement No. CE 9/2007(GE) North Lantau Expressway and Yu Tung Road
Date of Photograph : 25/3/2008

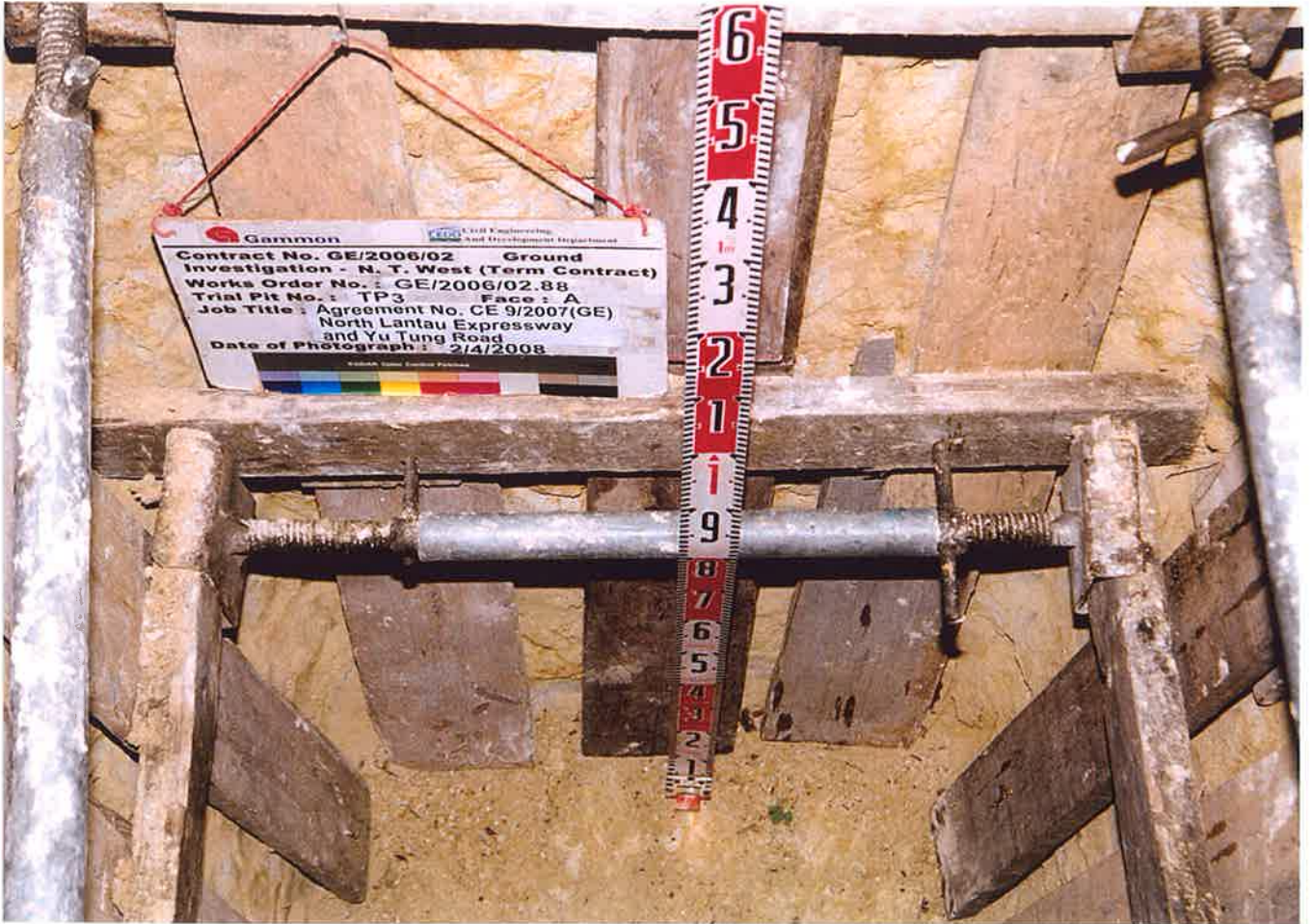
7
6
5
4
3
2
1

TRIAL PIT RECORD

		Contract No. GE/2006/02		Works Order No.: GE/2006/02.88		Logged by: W K SU Date: 28/03/2008 Checked by: KEN MA Date: 29/03/2008		Co-ordinates: E 813255.52 N 817011.84 Ground Level: + 24.78 mPD		Excavation Dates: 25/03/2008 to 27/03/2008 Backfill Dates: 10/04/2008		TRIAL PIT No. TP 3	
		PROJECT: Agreement No. CE 9/2007 (GE) Natural Terrain Hazard Mitigation Works at North Lantau Expressway and Yu Tung Road Near Tung Chung Eastern Interchange Design and Construction											
Sample & Tests 1 2 3 4 5 6 9 10	Depth (m) 1.00 2.00 3.00 4.00	Sketch Face A 1.50 m Face B 1.50 m Face C 1.50 m Face D 1.50 m						Depth (m) 0.30 1.60 3.50	Legend V	Grade	Description		
											Stiff, moist, greyish brown (10YR 5/2), sandy SILT with some rootlets. (COLLUVIUM) Stiff, moist, light brown (7.5YR 6/4), sandy SILT with some subangular coarse gravel and cobble of weak tuff. (COLLUVIUM) Extremely weak, moist, light yellowish brown (10YR 6/4), dappled white, completely decomposed TUFF. (Silty fine to medium SAND with some subangular and subrounded cobble of weak tuff)		
End of trial pit at 3.50m depth. (maximum)													

SYMBOL		PLAN		SECTION (X-X)		REMARKS	
● Small disturbed sample ↑ Large disturbed sample ▬ Undisturbed vertical sample ▬ Undisturbed horizontal sample	□ Block sample ∩ In-situ density test ▲ Water sample ~ Water seepage N - Schmidt Hammer Test					Shoring: Yes Water Seepage: No Stability: Stable Maximum Depth: 3.50m Average Depth: 3.00m 1. Large disturbed sample was taken at 3.00m depth. 2. U100 (horizontal) samples were taken at 1.00m (from Face D) and 1.50m (from Face A) depths.	





Gammon Soil Engineering and Development Department
Contract No. GE/2006/02 **Ground Investigation - N. T. West (Term Contract)**
Works Order No. : GE/2006/02.88
Trial Pit No. : TP3 **Face : A**
Job Title : Agreement No. CE 9/2007(GE)
North Lantau Expressway and Yu Tung Road
Date of Photograph : 2/4/2008









Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade	
1 ↓	0.5		0.17		<p>Firm, moist, dark greyish brown (2.5Y 4/2), sandy SILT with much rootlets some angular to subangular fine to coarse gravel and occasional cobbles sized highly decomposed and moderately decomposed tuff fragments. (TOP SOIL)</p> <p>Stiff, moist, yellowish brown (10YR 5/8) mottled and dappled reddish brown and light grey, slightly clayey, sandy SILT with some rootlets and much angular to subangular fine to coarse gravel, cobbles and some boulder sized completely decomposed, highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)</p> <p>Very stiff, moist, yellowish brown (10YR 5/8) to light pinkish brown mottled and dappled reddish brown and light grey, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel, cobbles and some boulder sized completely decomposed, highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)</p>	<p>Trial pit terminated at an average depth of 2.70m.</p> <p>Note:</p> <p>1. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m, 2.00m and 2.50m depths.</p> <p>2. Undisturbed horizontal samples (U100) were taken at depths 1.00m (Face B) and 1.70m (Face A).</p>	
6 —	1.0		0.5				
7 —	1.5		1.0				1.40
	2.0		1.5				2.0
	2.5		2.0				2.5
	3.0		2.5				2.83
	3.5		3.0				3.0
	4.0		3.5				3.5
	4.5		4.0				4.0
	5.0		4.5				4.5
	5.5		5.0				5.0
	6.0		5.5				5.5
			6.0				6.0

SYMBOLS		REMARKS		PLAN		SECTION	
↓	Small Disturbed Sample	Ground Water	No water seepage	(not to scale)			
↑	Large Disturbed Sample	Plant Used	Hand dug				
—	Undisturbed Vertical Sample	Shoring	Timber shoring over full height				
—	Undisturbed Horizontal Sample	Stability	Stable				
■	Block Sample	Depth at pit centre	2.70m				
U	In situ Density Test	Others	Nil				
▲	Water Sample						
↓	Water Seepage						
<p>Contract No. : GE/2001/14</p> <p>Works Order No. : GE/2001/14.31</p> <p>Co-ordinates : E 812063.81 N 815860.00</p> <p>Ground Level : 47.33 mPD</p> <p>Logged by : D.Y. Yip</p> <p>Date logged : 04/09/2002</p> <p>Checked by : James Lu</p> <p>Date Checked : 05/09/2002</p>		<p>PROJECT</p> <p>Agreement No. CE 72/2000 Landslide Investigation Consultancy for Landslides Reported within Kowloon and the New Territories between April 2001 and the End of 2002 Landslide Age-dating for Landslide on Natural Hillside above Tung Chung Road & Wong Lung Hang Ground Investigation</p>		<p>Sheet 1 of 1</p> <p>Date excavated 29/08/2002 to 03/09/2002</p> <p>Date Reinstated 18/09/2002 to 19/09/2002</p>		<p>TRIAL PIT NO.</p> <p>TP5</p>	
		<p>GEOTECHNICS & CONCRETE ENGG.</p> <p>(HONG KONG) LIMITED</p>		<p>GROUND INVESTIGATION DEPARTMENT</p>			





GEOTECHNICS & CONCRETE ENGG (Pvt) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION
NEW TERRITORIES WEST
(TERM CONTRACT)
ADDRESS: 1, No. 24, 1st Floor, Lumbini Investigation
Contract Office, Lumbini, New Territories, Hong Kong
CONTACT: Mr. S. H. CHAN
TEL: 2700 1431
FAX: 2700 1432
DATE: 5/9/02

W.O. NO. GE/2001/14-31
TP. T.E. NO. TPS
FACE BOTTOM









TRIAL PIT RECORD

TRIAL PIT No.
SW-TP 5

Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
	0.50					0.30		Loose, moist, brown, angular fine gravelly silty fine to coarse SAND with occasional gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM) Loose to medium dense, moist, slightly silty fine to coarse SAND with some angular gravel and cobble sized tuff fragments. (COLLUVIUM) (A) Greyish brown, angular coarse BOULDER of moderately decomposed tuff fragments. (COLLUVIUM)	
	0.80								
	1.00								
	1.10								
	1.50								
	1.60		2.30					Bottom of pit at 2.30m.	

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample ⊠ Large disturbed sample ▴ Undisturbed vertical sample ▬ Undisturbed horizontal sample □ Block sample ⊥ In-situ density test ▲ Water sample ⋈ Water seepage ⤵ N-Schmidt Hammer 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 2.30m depth. 3. Average depth of trial pit was 2.20m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 1.50m at Face C.









CONTRACTOR  **TYSAN FOUNDATION LIMITED**
CONTRACT NO. : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard (Sham Wat)
W.O. NO. : GE/2009/24/GI/SW01
TP / SS NO. : SW-TPO5
FACE : BOTTOM
DATE : 06-07-2010



TRIAL PIT RECORD

TRIAL PIT No.
SW-TP14

Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
1	0.50					0.30		Loose, moist, brown, angular fine gravelly silty fine to coarse SAND with occasional gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM) Loose to medium dense, brown and light brown, silty fine to coarse SAND with occasional to some angular gravel and cobble sized rock fragments. (COLLUVIUM) Moderately weak to moderately strong, light greyish brown and greyish yellow, moderately decomposed meta-SANDSTONE. Joint sets: 1. 80°/258° 2. 65°/160° 3. 70°/340° Bottom of pit at 2.00m.	
2	0.70								
	0.80								
	0.95								
	1.00								
	1.10				1.30		III		
					2.00				

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample □ Large disturbed sample ▲ Undisturbed vertical sample ■ Undisturbed horizontal sample □ Block sample ┌ In-situ density test ▲ Water sample ┌ Water seepage ┌ N-Schmidt Hammer 			1. No seepage observed. 2. Shoring installed to 2.00m depth. 3. Average depth of trial pit was 1.80m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 0.70m at Face A.







TRIAL PIT RECORD

Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description			
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m							
1	0.50					0.40		Loose, moist, brown, angular fine gravelly silty fine to coarse SAND with occasional gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM)				
	0.80											
	0.90											
	1.00											
	1.10											
						1.20			Loose to medium dense, brown and light brown, silty fine to coarse SAND with occasional to some angular gravel and cobble sized rock fragments. (COLLUVIUM)			
						1.80	III		Moderately weak to moderately strong, light greyish brown and greyish yellow, moderately decomposed meta-SANDSTONE. Joint sets : 1. 45°/160° 2. 80°/150° Bottom of pit at 1.80m.			

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample ↑ Large disturbed sample ▬ Undisturbed vertical sample ▬ Undisturbed horizontal sample □ Block sample ┌ In-situ density test ▲ Water sample ⤴ Water seepage ⤵ N-Schmidt Hammer 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 1.80m depth. 3. Average depth of trial pit was 1.50m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 0.80m at Face A.









TRIAL PIT RECORD

TRIAL PIT No.
SW-TP 1

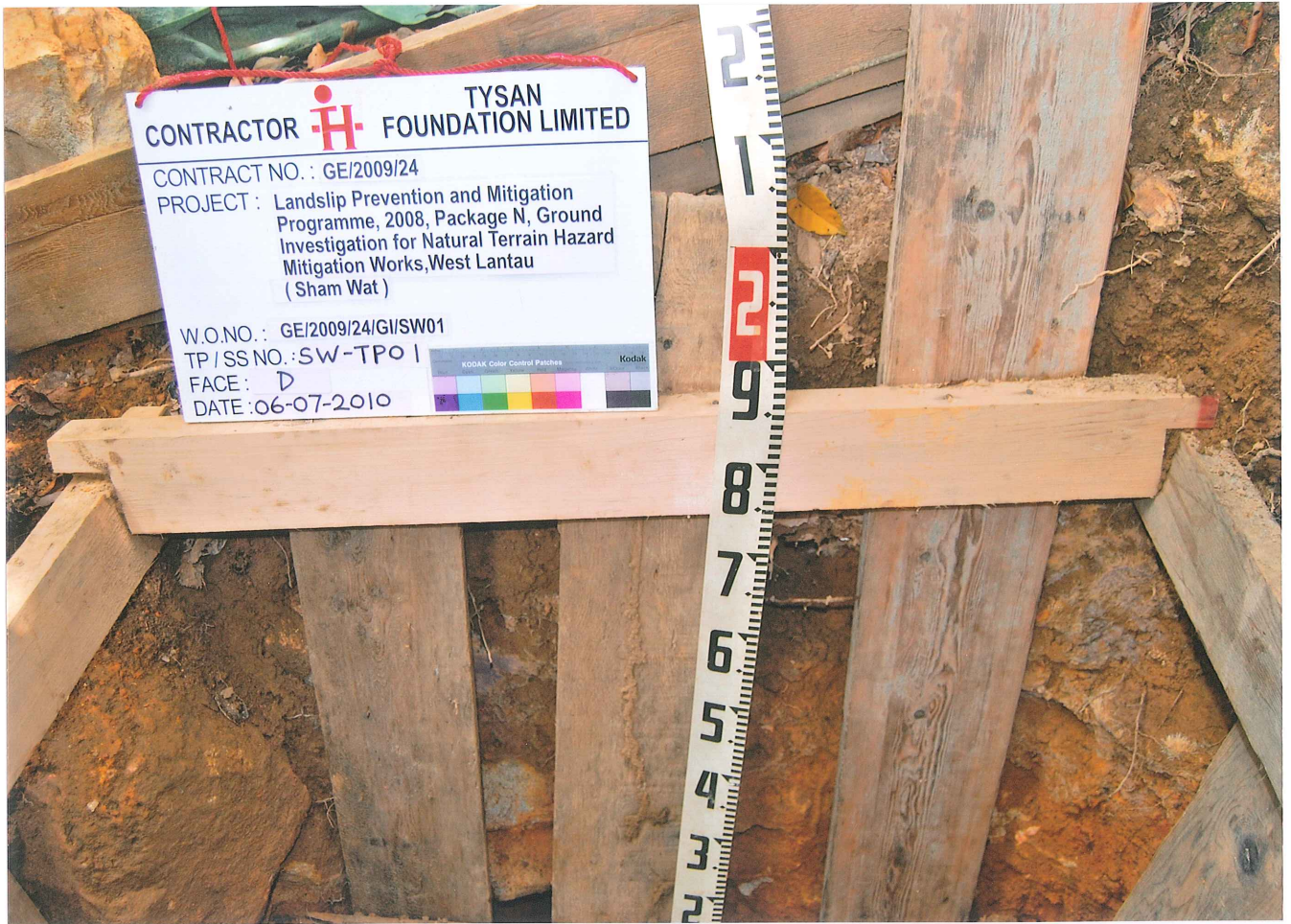
Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
	0.50					0.40			Loose, moist, brown, angular fine gravelly silty fine to coarse SAND with occasional gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM)
	0.80					1.30			Firm to stiff, light brown and light reddish brown, angular gravelly sandy clayey SILT with occasional to some angular cobble and boulder sized tuff fragments. (COLLUVIUM)
	1.00					1.60		V/IV	Extremely weak, light pinkish grey and yellowish brown, completely to highly decomposed fine ash TUFF. (Slightly sandy SILT / CLAY)
	1.10								Bottom of pit at 1.60m.

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> Small disturbed sample Large disturbed sample Undisturbed vertical sample Undisturbed horizontal sample Block sample In-situ density test Water sample Water seepage N-Schmidt Hammer 			<ol style="list-style-type: none"> No seepage observed. Shoring installed to 1.60m depth. Average depth of trial pit was 1.40m depth. Trial pit was stable during excavation. Additional horizontal U100 sample was taken at 0.80m at Face A.











CONTRACTOR  TYSAN FOUNDATION LIMITED
CONTRACT NO.: GE/2009/24
PROJECT: Landslip Prevention and Mitigation Programme 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Sham Wat)
W.O.NO.: GE/2009/24/GI/SW01
TP/SS NO.: SW-TPO1
FACE: BOTTOM
DATE: 06-07-2010



TRIAL PIT RECORD

TRIAL PIT No.
SW-TP10

Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
1	0.50					0.40		Loose, moist, brown, angular fine gravelly silty fine to coarse SAND with occasional gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM) Loose to medium dense, brown and light brown, silty fine to coarse SAND with occasional to some angular gravel and cobble sized rock fragments. (COLLUVIUM) Moderately weak to moderately strong, light greyish brown and greyish yellow, moderately decomposed meta-SANDSTONE. Joint sets: 1. 80°/352° 2. 82°/224° 3. 30°/153° 4. 78°/142° 5. 50°/230° Bottom of pit at 1.80m.	
2	0.70						III		
	0.80								
	0.95								
	1.00								
	1.10				1.40				
					1.80				

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample ⊠ Large disturbed sample ▲ Undisturbed vertical sample ▬ Undisturbed horizontal sample □ Block sample ┌ In-situ density test ▲ Water sample ⤴ Water seepage └ N-Schmidt Hammer 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 1.80m depth. 3. Average depth of trial pit was 1.50m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 0.70m at Face A.

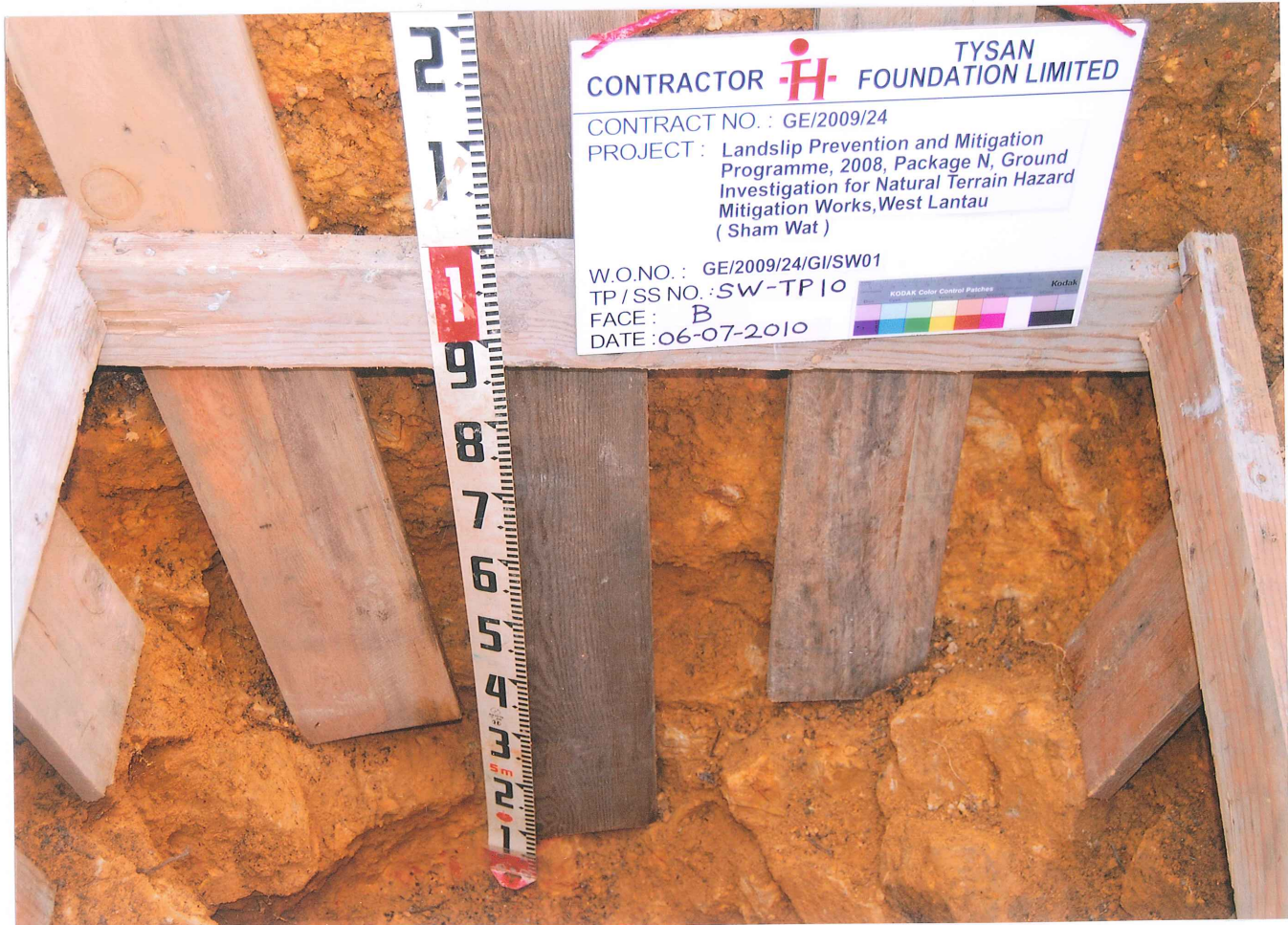




CONTRACTOR  **TYSAN FOUNDATION LIMITED**

CONTRACT NO. : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Sham Wat)

W.O.NO. : GE/2009/24/GI/SW01
TP/SS NO. : SW-TP10
FACE : B
DATE : 06-07-2010



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

CONTRACT NO. : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Sham Wat)

W.O.NO. : GE/2009/24/GI/SW01
TP/SS NO. : SW-TP10
FACE : B
DATE : 06-07-2010





CONTRACTOR  TYSAN FOUNDATION LIMITED

CONTRACT NO. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Sham Wat)

W.O. NO. : GE/2009/24/GI/SW01

TP / SS NO. : SW-TP 10

FACE : C

DATE : 06-07-2010







CONTRACTOR  **TYSAN FOUNDATION LIMITED**
CONTRACT NO.: GE/2009/24
PROJECT: Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Mitigation Works, West Lantau (Sham Wat)
W.O. NO.: GE/2009/24/GI/SW01
TP / SS NO.: SW-TP 10
FACE: BOTTOM
DATE: 06-07-2010

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade	
5	0.5	<p>1 : Cobble sized moderately decomposed tuff of maximum exposed size 0.18m x 0.15m. 2 : Boulder sized moderately decomposed tuff of maximum exposed size 0.75m x 0.63m. 3 : Boulder sized moderately decomposed tuff of maximum exposed size 1.50m x 1.40m. 4 : Boulder sized moderately decomposed tuff of maximum exposed size 0.55m x 0.34m. 5 : Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.15m. 6 : Boulder sized moderately decomposed tuff of maximum exposed size 0.39m x 0.32m. 7 : Boulder sized moderately decomposed tuff of maximum exposed size 0.23m x 0.15m. 8 : Boulder sized moderately decomposed tuff of maximum exposed size 0.84m x 0.50m. 9 : Boulder sized moderately decomposed tuff of maximum exposed size 0.29m x 0.22m. 10 : Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.15m. 11 : Boulder sized moderately decomposed tuff of maximum exposed size 0.52m x 0.17m. 12 : Boulder sized moderately decomposed tuff of maximum exposed size 0.23m x 0.20m. 13 : Boulder sized moderately decomposed tuff of maximum exposed size 0.39m x 0.35m. 14 : Boulder sized moderately decomposed tuff of maximum exposed size 0.38m x 0.28m. 15 : Boulder sized highly decomposed tuff of maximum exposed size 0.40m x 0.17m.</p>	0.35	C1	Firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and occasional angular to subangular fine to coarse gravel sized moderately decomposed tuff fragments. (TOP SOIL)		
6	0.5			0.5	C2	Stiff, moist, yellowish brown (10YR 5/8), slightly clayey, sandy SILT with some rootlets and occasional angular to subangular fine to coarse gravel and boulder sized moderately decomposed tuff fragments. (COLLUVIUM)	
7	1.0			0.89		Dense, moist, yellowish brown (10YR 5/8) to light reddish brown, clayey silty fine to coarse SAND with occasional rootlets and much angular to subrounded fine to coarse gravel and some cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
8	1.5			1.5		Dense, moist, brownish grey (2.5Y 5/2), angular to subrounded BOULDER with occasional rootlets and much fine to coarse gravel and cobble sized moderately decomposed tuff fragments in a dense, yellowish brown, clayey silty fine to coarse sand matrix. (COLLUVIUM)	
	1.64			1.64			
	2.0			2.0			
	2.27			2.27			
	2.5			2.5			
	3.0			3.0			
	3.5			3.5			
	4.0			4.0			
	4.5			4.5			
	5.0			5.0			
	5.5			5.5			
	6.0			6.0			
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m		

SYMBOLS 	REMARKS Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 2.07m Others Nil	PLAN (not to scale) 	Contract No. : GE/2001/14	PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sal Tso Wan and Tai O, Lantau Ground Investigation	
			Works Order No. : GE/2001/14.32		
			Co-ordinates : E 806766.38 N 813751.21	Sheet 1 of 1	TRIAL PIT NO. TP4
			Ground Level : 33.86 mPD	Date excavated 28/09/2002 to 04/10/2002	
Logged by : D.Y. Yip	Date Reinstated 12/10/2002 to 12/10/2002			GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	
Date logged : 04/10/2002					
Checked by : James Lu					
Date Checked : 05/10/2002					



GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING - SAI TSO
SITE WAN AND TAI O., LANTAU G.I.
W.O NO GE/2001/14.32, DATE 5/10/02
T.P. T.I. NO TP4
FACE A UPPER

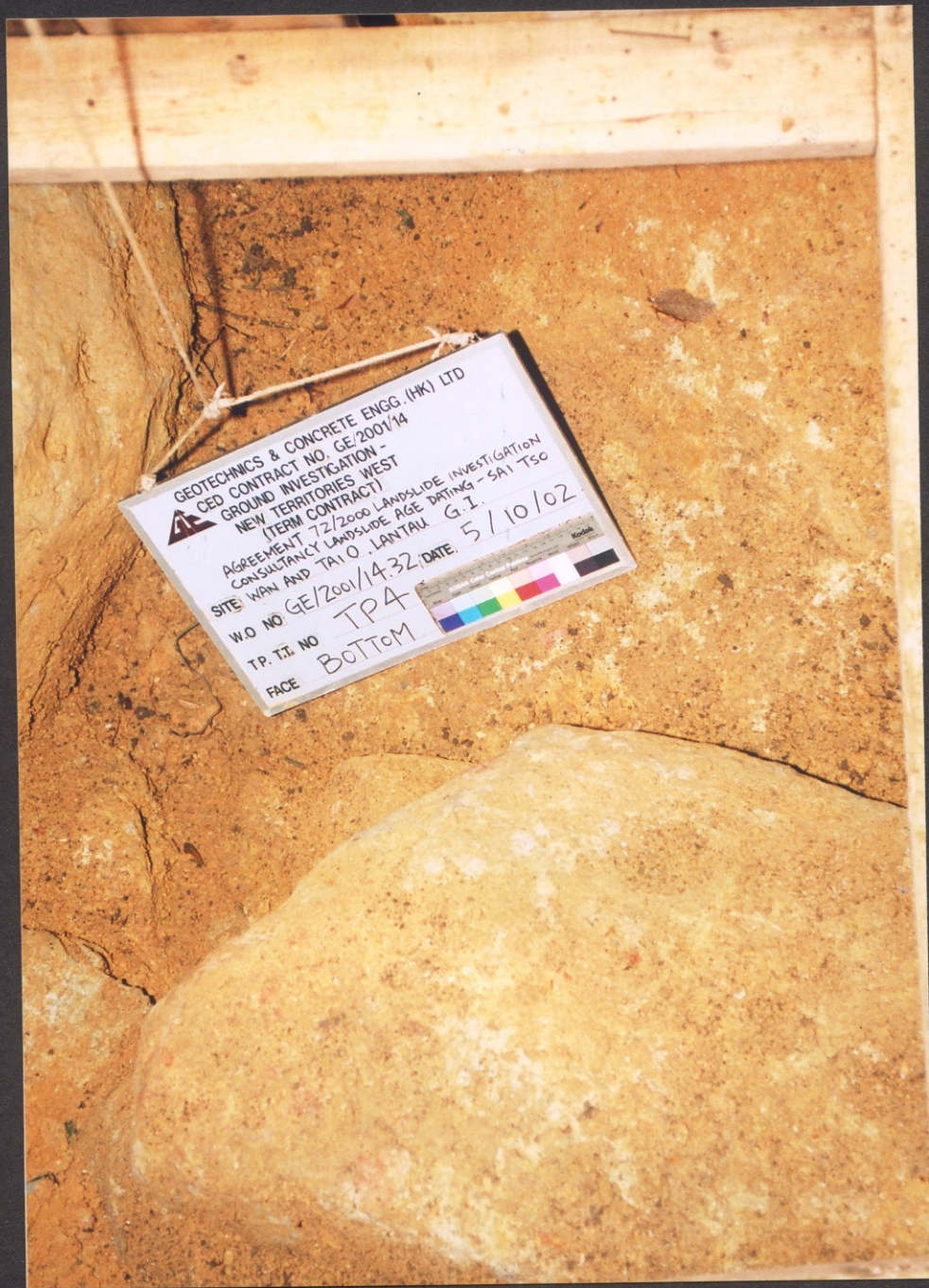


GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING - SAI TSO
SITE WAN AND TAI O., LANTAU G.I.
W.O NO GE/2001/14.32, DATE 5/10/02
T.P. T.I. NO TP4
FACE A LOWER









GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING - SAI TSO
SITE WAN AND TAI O LANTAU G.I.
W.O. NO. GE/2001/14.32 DATE: 5/10/02
TP. T.I. NO. TPA
FACE BOTTOM

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	0.5		0.17		Soft to firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and some angular to subangular fine to coarse gravel and occasional boulder sized moderately decomposed tuff fragments. (TOP SOIL)	
	1.0		0.64		Stiff, moist, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with some rootlets and occasional angular to subangular fine to coarse gravel sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.5		1.5		Loose to dense, moist, yellowish brown (10YR 5/8) to light pinkish brown mottled and dappled reddish brown and light grey, occasionally mottled light greyish brown, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with occasional rootlets and some cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	2.0		1.92		Trial pit terminated at an average depth of 1.80m.	
	2.5		2.5			
	3.0		3.0			
	3.5		3.5			
	4.0		4.0			
	4.5		4.5			
	5.0		5.0			
	5.5		5.5			
	6.0		6.0			
	6.5		6.5			
	8.0		8.0			
		1 : Boulder sized moderately decomposed tuff of maximum exposed size 0.26m x 0.13m. 2 : Boulder sized moderately decomposed tuff of maximum exposed size 0.70m x 0.65m. 3 : Boulder sized moderately decomposed tuff of maximum exposed size 0.25m x 0.20m. 4 : Boulder sized moderately decomposed tuff of maximum exposed size 0.35m x 0.32m. 5 : Boulder sized moderately decomposed tuff of maximum exposed size 0.52m x 0.40m. 6 : Boulder sized moderately decomposed tuff of maximum exposed size 0.21m x 0.17m. 7 : Cobble sized moderately decomposed tuff of maximum exposed size 0.18m x 0.15m. 8 : Boulder sized moderately decomposed tuff of maximum exposed size 0.25m x 0.16m. 9 : Boulder sized moderately decomposed tuff of maximum exposed size 1.05m x 0.70m.				
		FACE A: 1.50 m FACE B: 1.50 m FACE C: 1.50 m FACE D: 1.50 m				

SYMBOLS Small Disturbed Sample Large Disturbed Sample Undisturbed Vertical Sample Undisturbed Horizontal Sample Block Sample Insitu Density Test Water Sample Water Seepage	REMARKS Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 1.54m Others Nil	PLAN (not to scale)	Contract No. : GE/2001/14	PROJECT	
			Works Order No. : GE/2001/14.32	Agreement No. 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau, Ground Investigation	
			Co-ordinates : E 805490.88 N 814511.61	Sheet 1 of 1	TRIAL PIT NO. TP5
			Ground Level : 27.47 mPD	Date excavated 18/09/2002 to 26/09/2002	
			Logged by : D.Y. Yip	Date Reinstated 11/10/2002 to 11/10/2002	
			Date logged : 27/09/2002		
			Checked by : James Lu		
			Date Checked : 28/09/2002		
				GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	







GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT T2/2000 LANDSLIDE INVESTIGATION
CONSULTANT LANDSLIDE AND DATING G.I.
SITE SAI TSO WYM AND TAI O. LANTAU G.I.
W.D. NO. GE/2001/14-32, DATE 27/9/02
TP. T2 NO. TP5
FACE BOTTOM

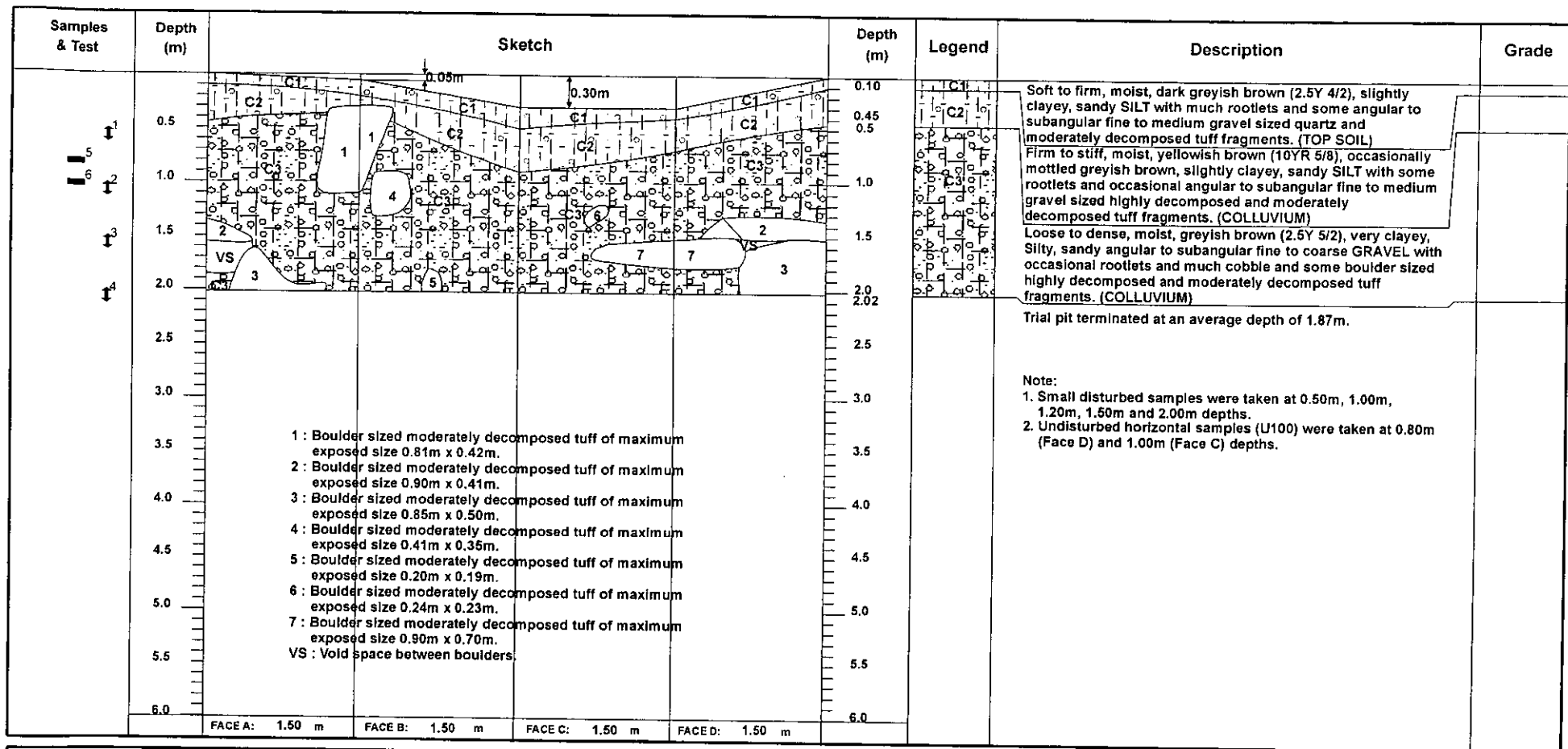
Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
<ul style="list-style-type: none"> 1 5 6 7 	0.5		0.10		Firm, moist, greyish brown (2.5Y 5/2), slightly clayey, sandy SILT with much rootlets and occasional angular to subangular fine to coarse gravel sized moderately decomposed tuff fragments. (COLLUVIUM)	
	1.0		Loose, moist, yellowish brown (10YR 5/8), slightly clayey, silty fine to coarse SAND with much rootlets and some angular to subangular fine to medium gravel sized quartz and rock fragments. (COLLUVIUM)			
	1.5		Firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and occasional angular to subangular fine to coarse gravel sized moderately decomposed tuff fragments. (COLLUVIUM)			
	2.0		Dense, moist, greyish brown (2.5Y 5/2), slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with occasional rootlets and some cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)			
	2.5		Dense, moist, yellowish brown (10YR 5/8) mottled and dappled reddish brown, occasionally mottled light grey, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with occasional rootlets and some cobble and occasional boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)			
	3.0		Moderately strong, dry, brownish grey dappled reddish brown, moderately decomposed, SILTSTONE.			
	4.0		Trial pit terminated at an average depth of 1.30m.			
	4.5					
	5.0					
	5.5					
	6.0					
			<p>1: Boulder sized moderately decomposed tuff of maximum exposed size 0.27m x 0.20m.</p> <p>2: Boulder sized moderately decomposed tuff of maximum exposed size 0.51m x 0.44m.</p> <p>3: Boulder sized moderately decomposed tuff of maximum exposed size 0.25m x 0.18m.</p> <p>4: Boulder sized moderately decomposed tuff of maximum exposed size 0.85m x 0.72m.</p> <p>5: Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.23m.</p> <p>6: Boulder sized moderately decomposed tuff of maximum exposed size 0.45m x 0.42m.</p> <p>7: Boulder sized moderately decomposed tuff of maximum exposed size 0.47m x 0.35m.</p> <p>8: Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.30m.</p> <p>9: Boulder sized moderately decomposed tuff of maximum exposed size 0.99m x 0.42m.</p> <p>10: Boulder sized moderately decomposed tuff of maximum exposed size 0.35m x 0.33m.</p> <p>11: Boulder sized moderately decomposed tuff of maximum exposed size 0.60m x 0.32m.</p> <p>12: Boulder sized moderately decomposed tuff of maximum exposed size 0.27m x 0.21m.</p>			
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m	

SYMBOLS <ul style="list-style-type: none"> Small Disturbed Sample Large Disturbed Sample Undisturbed Vertical Sample Undisturbed Horizontal Sample Block Sample In situ Density Test Water Sample Water Seepage 	REMARKS Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 1.30m Others Nil	PLAN (not to scale) 	Contract No. : GE/2001/14	PROJECT		
			Works Order No. : GE/2001/14.32			Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation Sheet 1 of 1
			Co-ordinates : E 805537.38 N 814558.94	Date excavated 24/09/2002 to 02/10/2002 Date Reinstated 11/10/2002 to 11/10/2002		
			Ground Level : 19.03 mPD			GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT
Logged by : D.Y. Yip	Date logged : 02/10/2002 Checked by : James Lu Date Checked : 03/10/2002					





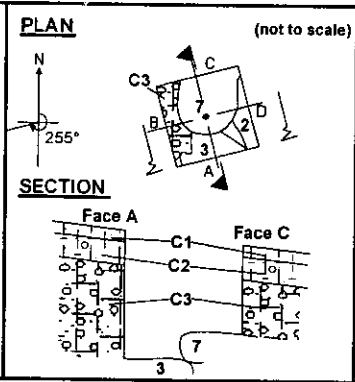




Note:
 1. Small disturbed samples were taken at 0.50m, 1.00m, 1.20m, 1.50m and 2.00m depths.
 2. Undisturbed horizontal samples (U100) were taken at 0.80m (Face D) and 1.00m (Face C) depths.

SYMBOLS	
	Small Disturbed Sample
	Large Disturbed Sample
	Undisturbed Vertical Sample
	Undisturbed Horizontal Sample
	Block Sample
	Insitu Density Test
	Water Sample
	Water Seepage

REMARKS	
Ground Water	No water seepage
Plant Used	Hand dug
Shoring	Timber shoring over full height
Stability	Stable
Depth at pit centre	1.20m
Others	Nil



Contract No. :	GE/2001/14
Works Order No. :	GE/2001/14.32
Co-ordinates :	E 805606.46 N 814423.87
Ground Level :	56.26 mPD
Logged by :	D.Y. Yip
Date logged :	27/09/2002
Checked by :	James Lu
Date Checked :	28/09/2002

PROJECT	
Agreement No. 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau, Ground Investigation	
Sheet	1 of 1
Date excavated	13/09/2002 to 26/09/2002
Date Reinstated	11/10/2002 to 11/10/2002

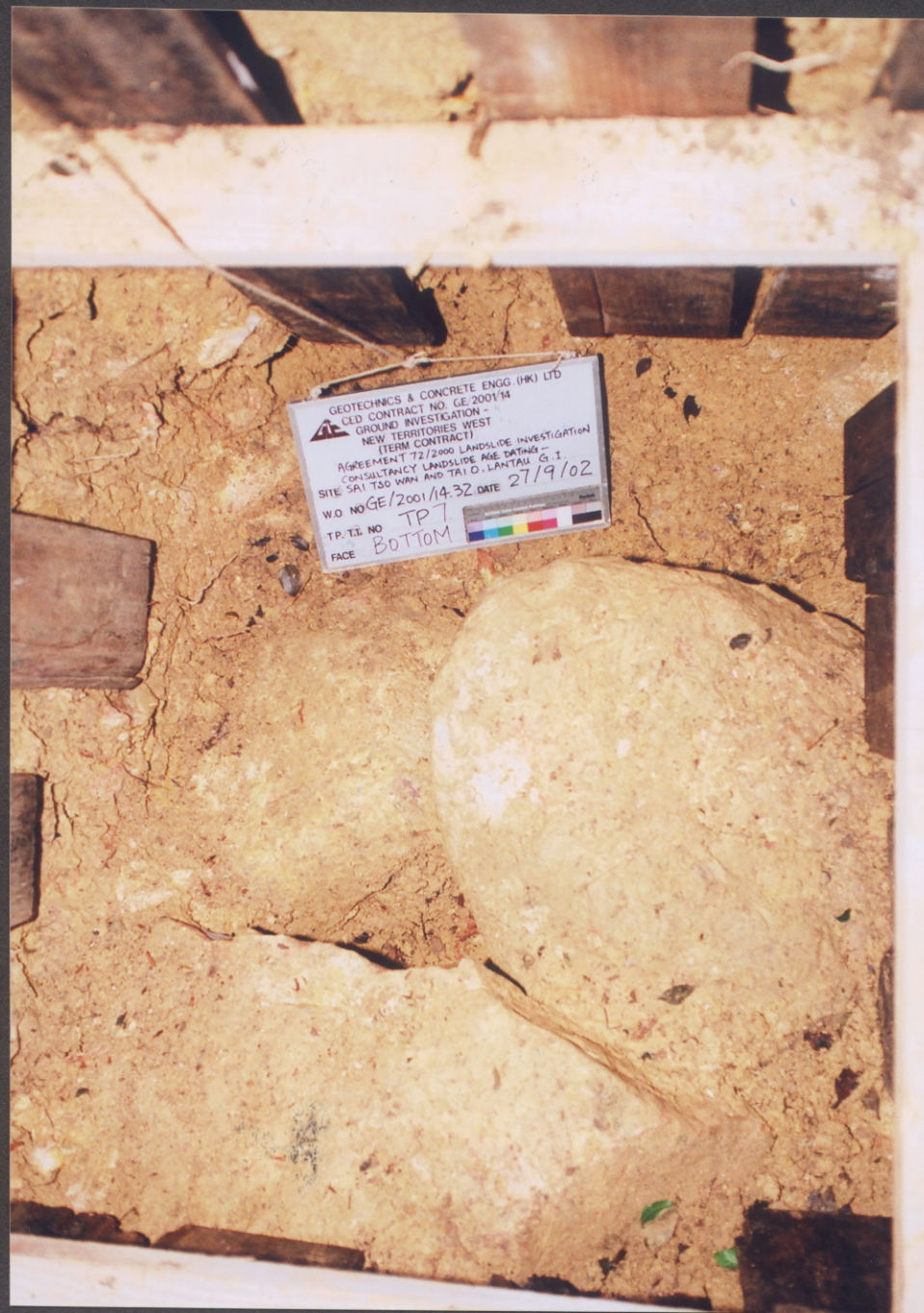
TRIAL PIT NO.	
TP7	



GEOTECHNICS & CONCRETE ENGG.
 (HONG KONG) LIMITED
 GROUND INVESTIGATION DEPARTMENT







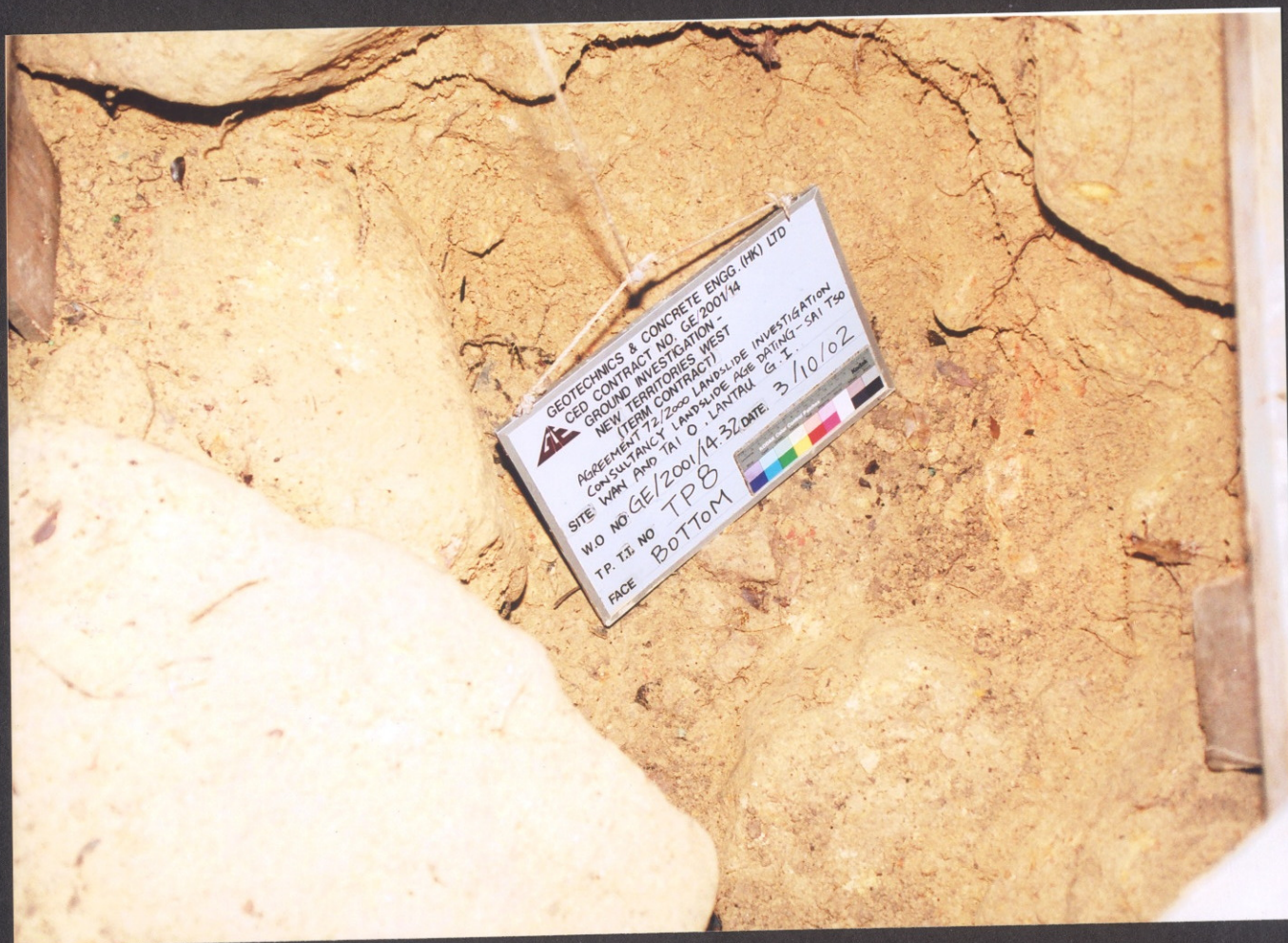
GEOTECHNICS & CONCRETE ENGG. (HK) LTD
C/D CONTRACT NO. GE 2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING -
SITE SAI TSO WAK AND TAI O. LANTAU G.I.
W/O NO GE/2001/14.32 DATE 27/9/02
T.P. I.I. NO TP1
FACE BOTTOM

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	0.5		0.18		<p>Firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and occasional angular to subangular fine to coarse gravel and occasional boulder sized moderately decomposed tuff fragments. (TOP SOIL)</p> <p>Firm to stiff, moist, yellowish brown (10YR 5/8), slightly clayey, sandy SILT with some rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized moderately decomposed tuff fragments. (COLLUVIUM)</p> <p>At bottom of layer C2: With much rootlets.</p> <p>Dense, moist, yellowish brown (10YR 5/8), angular to subangular fine to coarse GRAVEL with occasional rootlets and much cobble and boulder sized moderately decomposed tuff in a slightly clayey, sandy silt matrix. (COLLUVIUM)</p>	
5	1.0		1.03			
6	1.5		1.5			
7	2.0		1.93			
8	2.5		2.0			
9	3.0		2.5			
10	3.5		3.0			
11	4.0		3.5			
12	4.5		4.0			
13	5.0		5.0			
	5.5					
	6.0		6.0			
		<p>1: Boulder sized moderately decomposed tuff of maximum exposed size 0.49m x 0.44m.</p> <p>2: Boulder sized moderately decomposed tuff of maximum exposed size 0.65m x 0.28m.</p> <p>3: Boulder sized moderately decomposed tuff of maximum exposed size 0.31m x 0.15m.</p> <p>4: Boulder sized moderately decomposed tuff of maximum exposed size 0.17m x 0.09m.</p> <p>5: Boulder sized moderately decomposed tuff of maximum exposed size 0.22m x 0.10m.</p> <p>6: Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.06m.</p> <p>7: Boulder sized moderately decomposed tuff of maximum exposed size 0.53m x 0.30m.</p> <p>8: Boulder sized moderately decomposed tuff of maximum exposed size 0.56m x 0.42m.</p> <p>9: Boulder sized moderately decomposed tuff of maximum exposed size 0.45m x 0.32m.</p> <p>10: Boulder sized moderately decomposed tuff of maximum exposed size 0.52m x 0.48m.</p> <p>11: Boulder sized moderately decomposed tuff of maximum exposed size 0.44m x 0.41m.</p> <p>12: Boulder sized moderately decomposed tuff of maximum exposed size 0.27m x 0.20m.</p> <p>13: Boulder sized moderately decomposed tuff of maximum exposed size 0.46m x 0.25m.</p> <p>14: Boulder sized moderately decomposed tuff of maximum exposed size 0.59m x 0.54m.</p> <p>15: Boulder sized moderately decomposed tuff of maximum exposed size 0.20m x 0.13m.</p> <p>16: Boulder sized moderately decomposed tuff of maximum exposed size 0.19m x 0.14m.</p> <p>17: Boulder sized moderately decomposed tuff of maximum exposed size 0.89m x 0.50m.</p> <p>18: Boulder sized moderately decomposed tuff of maximum exposed size 0.40m x 0.16m.</p> <p>19: Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.20m.</p> <p>20: Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.25m.</p>				
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m	

SYMBOLS		REMARKS		PLAN (not to scale)		Contract No. : GE/2001/14		PROJECT	
<ul style="list-style-type: none"> Small Disturbed Sample Large Disturbed Sample Undisturbed Vertical Sample Undisturbed Horizontal Sample Block Sample Instu Density Test Water Sample Water Seepage 	<ul style="list-style-type: none"> Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 1.67m Others Nil 		<ul style="list-style-type: none"> Works Order No. : GE/2001/14.32 Co-ordinates : E 805560.37 N 814280.08 Ground Level : 97.18 mPD Logged by : D.Y. Yip Date logged : 03/10/2002 Checked by : James Lu Date Checked : 04/10/2002 	<p>Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation</p> <p>Sheet 1 of 1</p> <p>Date excavated 24/09/2002 to 02/10/2002</p> <p>Date Reinstated 12/10/2002 to 12/10/2002</p>	<p>TRIAL PIT NO.</p> <p>TP8</p>		<p>GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED</p> <p>GROUND INVESTIGATION DEPARTMENT</p>		







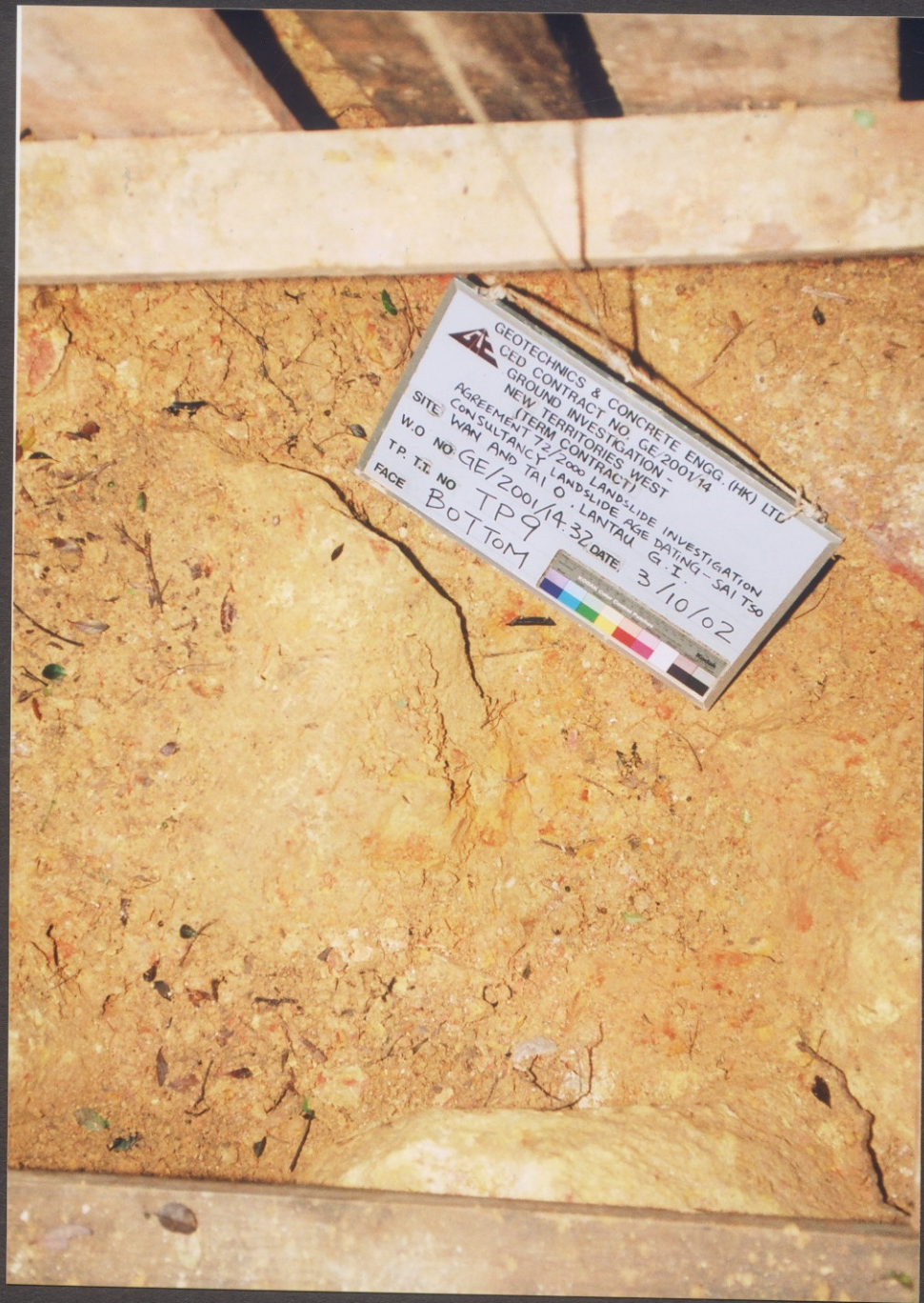
GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE 2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
TERM CONTRACT
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY, LANDSLIDE AGE DATING - SAI TSO
SITE WAN AND TAI O LANTAU
G.I.
W.O. NO. GE/2001/14.32 DATE 3/10/02
T.P. T.I. NO. TP8
FACE BOTTOM

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade	
	0.5		0.48		Firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and some angular to subangular fine to coarse gravel, cobble and occasional boulder sized highly decomposed and moderately decomposed tuff fragments. (TOP SOIL)		
	1.0		1.0		Firm to stiff, moist, yellowish brown (10YR 5/8) mottled and dappled reddish brown, occasionally dappled light grey, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel, cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)		
	1.5		1.5	1.5			
	2.0		2.0	2.0			
	2.15		2.15	2.15			
	2.5		2.5	2.5		Trial pit terminated at an average depth of 1.96m.	
	3.0		3.0	3.0		Note: 1. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m and 2.00m depths. 2. 2 nos of undisturbed horizontal samples (U100) were taken at 0.60m (Face A and Face D) depth.	
	3.5		3.5	3.5			
	4.0		4.0	4.0			
	4.5		4.5	4.5			
	5.0		5.0	5.0			
	5.5		5.5	5.5			
	6.0		6.0	6.0			
			FACE A: 1.60 m FACE B: 1.60 m FACE C: 1.60 m FACE D: 1.60 m				

SYMBOLS		REMARKS		PLAN (not to scale)		Contract No. : GE/2001/14		PROJECT			
↓	Small Disturbed Sample	Ground Water	No water seepage			Works Order No. : GE/2001/14.32		Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sal Tso Wan and Tai O, Lantau Ground Investigation			
↑	Large Disturbed Sample	Plant Used	Hand dug			Co-ordinates : E 805591.74 N 814255.51		Sheet 1 of 1		TRIAL PIT NO. TP9	
↓	Undisturbed Vertical Sample	Shoring	Timber shoring over full height	Ground Level : 103.58 mPD		Date excavated 25/09/2002 to 02/10/2002					
—	Undisturbed Horizontal Sample	Stability	Stable			Logged by : D.Y. Yip		Date Reinstated 12/10/2002 to 12/10/2002			
■	Block Sample	Depth at pit centre	1.96m	Face A Face C		Date logged : 03/10/2002					
U	In situ Density Test	Others	Nil			Checked by : James Lu				GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT	
▲	Water Sample					Date Checked : 04/10/2002					
↓	Water Seepage										







GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE 2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT CONSULTANCY 2000
(LANDSLIDE INVESTIGATION)
SITE: WAN AND TAI O LANTAU G.I.
TP. T.I. NO. GE/2001/14.32
DATE: 3/10/02
FACE: TP9
BOTTOM

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
7 1 2 3 4 5 6	0.5		0.16	C1	Soft to firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and some angular to subangular fine to coarse gravel sized rock fragments. (TOP SOIL)	
	1.0		1.0		Stiff, moist, reddish brown (5YR 5/4) mottled red and brownish grey, slightly clayey, sandy SILT with some rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized highly decomposed and moderately decomposed tuff and sandstone fragments. (COLLUVIUM)	
8 4 5 6	2.0		2.0	C2	Stiff, moist, light reddish brown (5YR 6/4) to yellowish brown mottled red, slightly clayey, sandy SILT with occasional rootlets and some angular to subangular fine to coarse gravel sized highly decomposed sandstone fragments. (COLLUVIUM) Trial pit terminated at an average depth of 3.00m.	
	3.0		3.07	C3		
	3.5		3.5			
	4.0		4.0			
	4.5		4.5			
	5.0		5.0			
	5.5		5.5			
	6.0		6.0			
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m	

- 1 : Boulder sized moderately decomposed tuff of maximum exposed size 0.30m x 0.16m.
 2 : Boulder sized moderately decomposed tuff of maximum exposed size 0.32m x 0.29m.
 3 : Boulder sized moderately decomposed tuff of maximum exposed size 0.48m x 0.29m.
 4 : Boulder sized highly and moderately decomposed tuff of maximum exposed size 1.00m x 0.93m.
 5 : Boulder sized moderately decomposed tuff of maximum exposed size 0.85m x 0.34m.
 6 : Boulder sized moderately decomposed tuff of maximum exposed size 0.36m x 0.28m.
 7 : Boulder sized moderately decomposed tuff of maximum exposed size 0.20m x 0.16m.

- Note:
 1. Small disturbed sample were taken at 0.50m, 1.00m, 1.50m, 2.00m, 2.50m and 3.00m depths.
 2. Undisturbed horizontal samples (U100) were taken at 0.80m (Face D) and 2.10m (Face D) depths.

SYMBOLS	REMARKS	PLAN (not to scale)	Contract No. : GE/2001/14	PROJECT
<ul style="list-style-type: none"> Small Disturbed Sample Large Disturbed Sample Undisturbed Vertical Sample Undisturbed Horizontal Sample Block Sample In situ Density Test Water Sample Water Seepage 	Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 3.00m Others Nil		Works Order No. : GE/2001/14.32 Co-ordinates : E 806001.72 N 814541.05 Ground Level : 20.98 mPD Logged by : D.Y. Yip Date logged : 27/09/2002 Checked by : James Lu Date Checked : 28/09/2002	Agreement No. 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau, Ground Investigation Sheet 1 of 1 Date excavated 13/09/2002 to 26/09/2002 Date Reinstated 11/10/2002 to 11/10/2002
				TRIAL PIT NO. TP10 GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT











GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING & I.
SITE SAI TSO WAN AND TAI O. LANTAU G.I.
W.O NO GE/2001/14.32 DATE 27/9/02
TP./T.I. NO TP10
FACE BOTTOM

Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	0.5		0.29		Soft to firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and some angular to subangular fine to coarse gravel sized rock fragments. (TOP SOIL)	
	1.0		1.0		Dense, moist, reddish brown (5YR 5/4) mottled and dappled light grey and yellowish brown, very clayey, silty, sandy angular to subangular fine to coarse GRAVEL with occasional rootlets and much cobble and some boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.5		1.5			
	2.0		2.0			
	2.5		2.5			
	3.0		3.0			
	3.20		3.20			
	3.5		3.5		Trial pit terminated at an average depth of 3.00m.	
	4.0		4.0			
	4.5		4.5			
	5.0		5.0			
	5.5		5.5			
	6.0		6.0			
		1: Boulder sized moderately decomposed tuff of maximum exposed size 0.40m x 0.25m. 2: Boulder sized moderately decomposed tuff of maximum exposed size 0.21m x 0.15m. 3: Boulder sized moderately decomposed tuff of maximum exposed size 0.25m x 0.24m. 4: Boulder sized moderately decomposed tuff of maximum exposed size 0.32m x 0.25m. 5: Boulder sized moderately decomposed tuff of maximum exposed size 0.45m x 0.32m. 6: Boulder sized moderately decomposed tuff of maximum exposed size 0.23m x 0.19m.				
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m	

SYMBOLS Small Disturbed Sample Large Disturbed Sample Undisturbed Vertical Sample Undisturbed Horizontal Sample Block Sample Insitu Density Test Water Sample Water Seepage	REMARKS Ground Water No water seepage Plant Used Hand dug Shoring Timber shoring over full height Stability Stable Depth at pit centre 3.00m Others Nil	PLAN (not to scale) SECTION 	Contract No. : GE/2001/14 Works Order No. : GE/2001/14.32 Co-ordinates : E 806099.28 N 814546.65 Ground Level : 15.97 mPD Logged by : D.Y. Yip Date logged : 27/09/2002 Checked by : James Lu Date Checked : 28/09/2002	PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation Sheet 1 of 1 Date excavated 13/09/2002 to 26/09/2002 Date Reinstated 11/10/2002 to 11/10/2002	TRIAL PIT NO. TP11	
						GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT





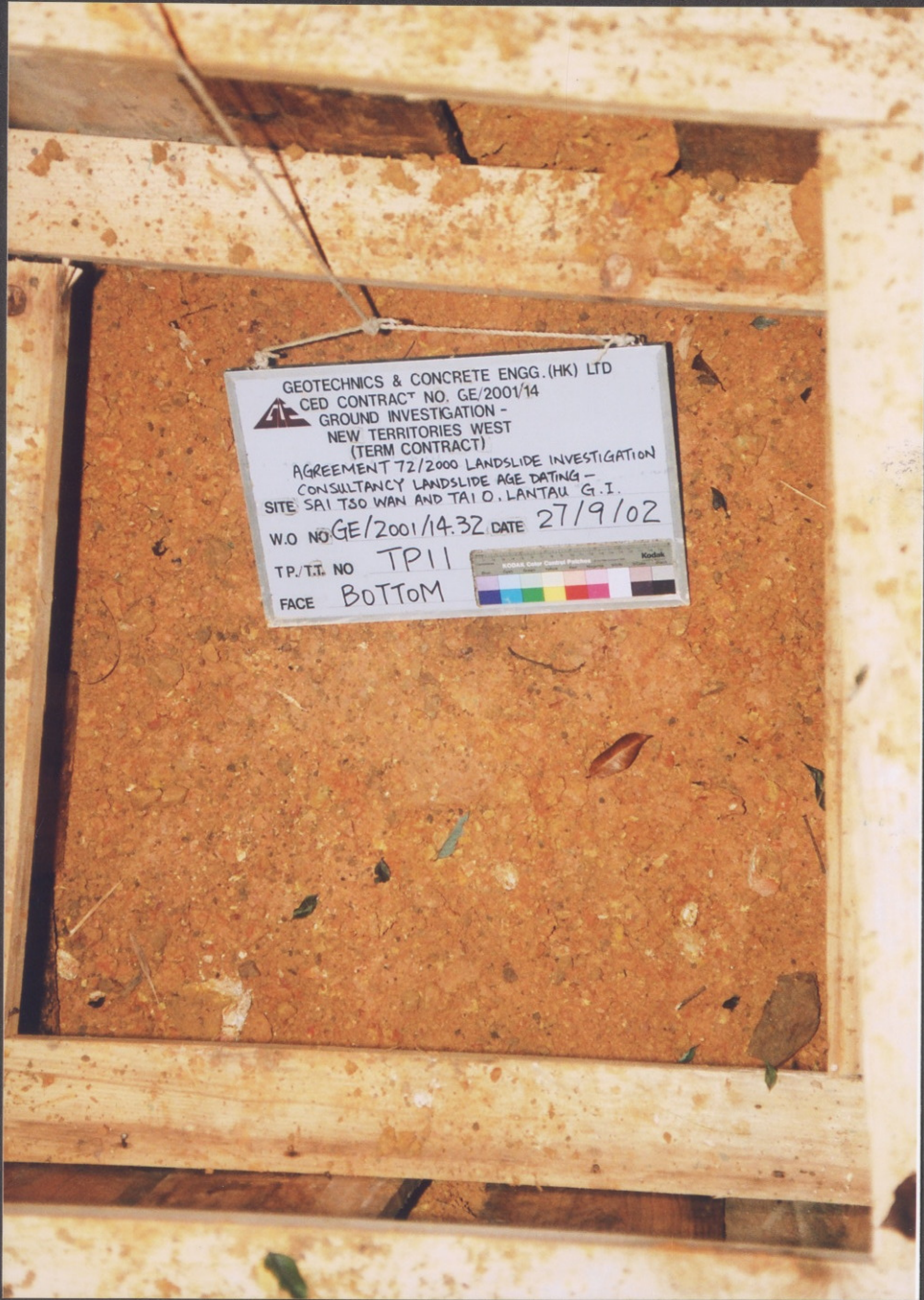


GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING -
SITE SAI TSO WAN AND TAI O, LANTAU G. I.
W.O NO GE/2001/14.32 DATE 27/9/02
T.P./T.I. NO TP11
FACE C UPPER



GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING -
SITE SAI TSO WAN AND TAI O, LANTAU G. I.
W.O NO GE/2001/14.32 DATE 27/9/02
T.P./T.I. NO TP11
FACE C LOWER





GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING -
SITE SAI TSO WAN AND TAI O. LANTAU G.I.
W.O NO GE/2001/14.32 DATE 27/9/02
T.P./T.I. NO TP11
FACE BOTTOM





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH4**
 SHEET 1 of 2

DRILLHOLE RECORD

CONTRACT NO. GE/2001/14

PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

METHOD Rotary Cored

CO-ORDINATES
E 805524.03
N 814594.29

Works Order No. **GE/2001/14.32**

MACHINE & No. DR129

DATE from **16/09/2002** to **19/09/2002**

FLUSHING MEDIUM Air-Foam

ORIENTATION Vertical

GROUND LEVEL **10.13 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
16/09/2002	SX		86				69 bits	1	10.13	0.00			Firm, dark greyish brown (2.5Y 4/2) mottled yellowish brown, slightly clayey, sandy SILT with occasional rootlets and angular to subangular fine to medium gravel sized rock fragments. (TOP SOIL)
			80				30 bits	2	9.78	0.35			Brownish grey (2.5Y 5/2) dappled yellowish brown and reddish brown, angular COBBLE with occasional coarse gravel and boulder sized moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 0.54m to 0.65m : Boulder sized slightly decomposed tuff.
			89					3	9.48	0.65			
		Dry at 18:00	100					4	9.03	1.10			Firm, yellowish brown (10YR 5/8) mottled and dappled reddish brown, dappled dark greyish brown, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel sized rock fragments. (COLLUVIUM)
16/09/2002 17/09/2002		Dry at 08:00	96					4C-MLC		1.35			
			100					4C-MLC	8.08	2.05			Light brownish grey (10YR 6/2) dappled reddish brown, angular to subangular BOULDER with some cobble and occasional medium to coarse gravel sized moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 1.35m to 1.65m : Boulder sized slightly decomposed tuff. From 1.82m to 2.05m : Boulder sized slightly decomposed tuff.
			78					4C-MLC		2.18			
		Dry at 18:00	79					4C-MLC	7.33	2.80			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel and some cobble sized rock fragments. (COLLUVIUM)
17/09/2002 18/09/2002		Dry at 08:00	85					4C-MLC	6.94	3.19			
			88					4C-MLC		3.68			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 3.68m to 3.94m : Boulder sized slightly decomposed tuff.
			89					4C-MLC		4.27			
			100					4C-MLC		4.54			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 3.68m to 3.94m : Boulder sized slightly decomposed tuff.
			90					4C-MLC	5.22	4.91			
		Dry at 18:00	93					4C-MLC	4.54	5.02			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 3.68m to 3.94m : Boulder sized slightly decomposed tuff.
18/09/2002 19/09/2002		Dry at 08:00	88					4C-MLC		5.83			
			100					4C-MLC		6.24			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 3.68m to 3.94m : Boulder sized slightly decomposed tuff.
			97					4C-MLC	2.77	7.36			
			100					4C-MLC		7.46			Firm, yellowish brown (10YR 5/8), occasionally mottled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM) From 3.68m to 3.94m : Boulder sized slightly decomposed tuff.
			94					4C-MLC	1.90	8.23			
			100					4C-MLC		8.36			Firm, yellowish brown (10YR 5/8) mottled and dappled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and some cobble and occasional boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM) From 6.02m to 6.24m : Boulder sized moderately decomposed tuff.
			100					4C-MLC	1.12	9.01			
			100					4C-MLC		9.41			

- SMALL DISTURBED SAMPLE
- ▲ WATER SAMPLE
- ↑ LARGE DISTURBED SAMPLE
- ▲ PIEZOMETER TIP
- SPT LINER SAMPLE
- STANDPIPE
- ▨ U76 UNDISTURBED SAMPLE
- ▨ STANDARD PENETRATION TEST
- ▨ U100 UNDISTURBED SAMPLE
- ▨ PERMEABILITY TEST
- ▨ MAZIER SAMPLE
- ▨ IMPRESSION PACKER TEST
- ▨ PISTON SAMPLE
- ▨ IN-SITU VANE SHEAR TEST
- ▨ PACKER TEST

LOGGED **D.Y. Yip**
 DATE **20/09/2002**
 CHECKED **James Lu**
 DATE **23/09/2002**

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH4**
 SHEET **2** of **2**

DRILLHOLE RECORD

CONTRACT NO. GE/2001/14

PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tao Wan and Tai O, Lantau Ground Investigation

METHOD **Rotary Cored**

CO-ORDINATES
E 805524.03
N 814594.29

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR129**

DATE from **16/09/2002** to **19/09/2002**

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **10.13 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10	SX		100	38	25	10.2		4C-MLC	0.03	10.13		IV	<p>Grey (7.5YR 6/1), occasionally reddish brown spotted and striped dark grey, BOULDER sized slightly decomposed eutaxitic tuff. (COLLUVIUM)</p> <p>Firm, reddish brown (5YR 5/4) mottled and dappled yellowish brown, slightly clayey, sandy SILT with some angular to subangular fine to coarse gravel and occasional cobble sized rock fragments. (COLLUVIUM)</p> <p>Firm, reddish brown (5YR 5/4) mottled and dappled yellowish brown, occasionally mottled light grey, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel and occasional cobble sized highly decomposed siltstone fragments. (COLLUVIUM)</p> <p>Weak to moderately weak, brownish grey spotted dark grey and dappled reddish brown, highly decomposed, SILTSTONE with occasional kaolin veins (<1mm thick) dipping at 30° to 40° and 50° to 60°.</p> <p>Joints are very closely to closely spaced, occasionally medium spaced, smooth planar and stepped, occasionally rough stepped and undulating, extremely narrow, occasionally very narrow, stained by iron oxide and occasionally manganese oxide, occasionally kaolin (<1mm thick) infilled, dipping at 30° to 40° and 50° to 60°, occasionally 70° to 80°.</p> <p>Hole completed at 12.11m.</p>
11	SX 11.31		100	34	21	6.2		4C-MLC		11.31			
12		Dry at 18:00				>20			-1.98	12.11			
13													
14													
15													
16													
17													
18													
19													
20													

- SMALL DISTURBED SAMPLE △ WATER SAMPLE
- LARGE DISTURBED SAMPLE ▲ PIEZOMETER TIP
- SPT LINER SAMPLE ▽ STANDPIPE
- ▨ U76 UNDISTURBED SAMPLE ↓ STANDARD PENETRATION TEST
- U100 UNDISTURBED SAMPLE ⊥ PERMEABILITY TEST
- ▩ MAZIER SAMPLE ⊏ IMPRESSION PACKER TEST
- ▨ PISTON SAMPLE ∇ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **D.Y. Yip**

DATE **20/09/2002**

CHECKED **James Lu**

DATE **23/09/2002**

REMARKS



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

DEPTH : 0.00 M TO 3.28 M

HOLE NO. : BH 4

DATE : 25-9-2002

BOX 1 OF 5

0.0m

0.5m

1.0m



0.00



0.35



0.65



1.10



1.35



1.82



2.18



2.86



3.28



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 4

DEPTH : 3.28 M TO 5.83 M

DATE : 25-9-2002

BOX 2 OF 5





GEOTECHNICS & CONCRETE ENGG (HK) LTD **CED CONTRACT NO. GE/2001/14**
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

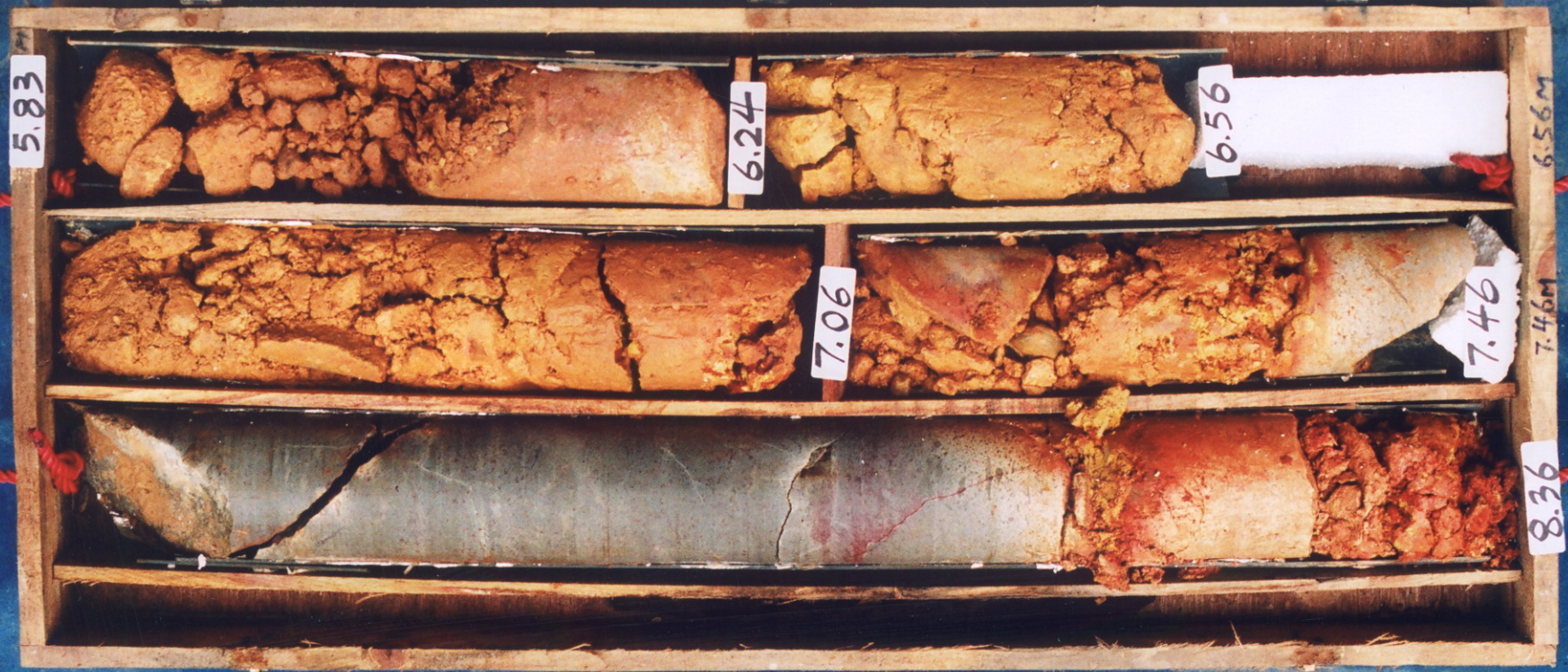
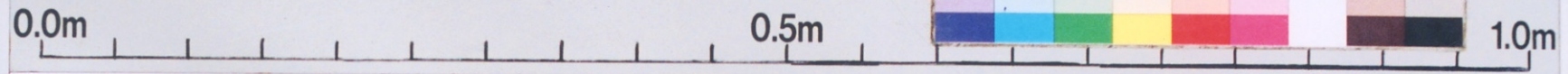
W.O. NO. : GE/2001/14.32

HOLE NO. : BH 4

DEPTH : 5.83 M TO 8.36 M

DATE : 25-9-2002

BOX 3 OF 5





GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide
SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

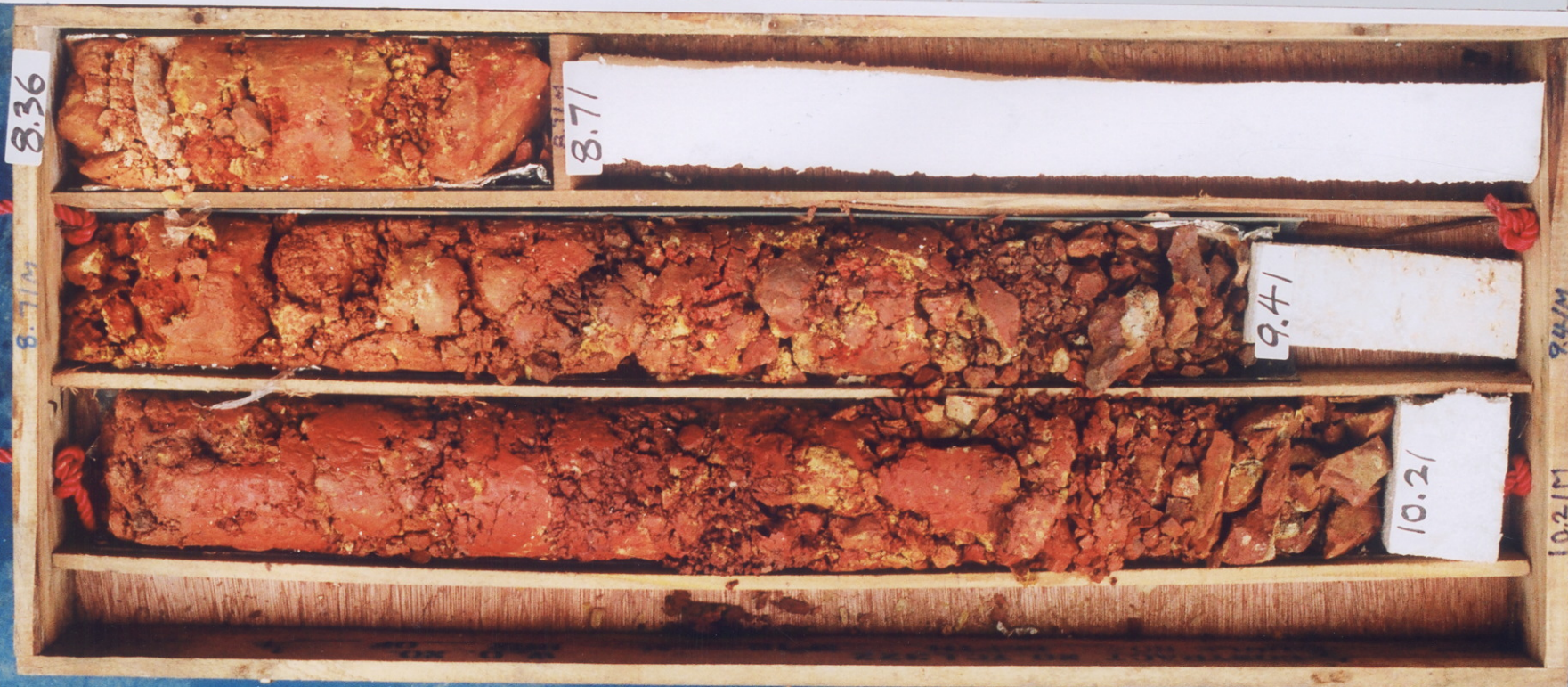
W.O. NO.: GE/2001/14.32

HOLE NO.: BH 4

DEPTH: 8.36 M TO 10.21 M

DATE: 25-9-2002

BOX 4 OF 5





GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 4

DEPTH : 10.21 M TO 12.11 M

DATE : 25-9-2002

BOX 5 OF 5

0.0m

0.5m



1.0m



TRIAL PIT RECORD

TRIAL PIT No.
NC-TP19

Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
<ul style="list-style-type: none"> ● Small disturbed sample ↑ Large disturbed sample ▬ Undisturbed vertical sample ▬ Undisturbed horizontal sample 	0.50 0.60 1.00 1.10 1.50 1.60 1.90 2.00 2.10 2.20					0.60 1.90 2.20	<ul style="list-style-type: none"> ▬ TOPSOIL / FILL ▬ FILL ▬ COLLUVIUM 	<p>Soft to firm, dark brown, slightly sandy SILT with some angular to subangular medium to coarse gravel occasional cobble sized rock fragments. (TOPSOIL / FILL)</p> <p>Firm, dark brown, slightly sandy SILT with many angular to subangular gravel, cobble and boulder sized rock fragments. (FILL) Poorly compacted</p> <p>Firm, dark brown, slightly sandy SILT with many angular to subangular gravel, cobble and boulder sized rock fragments. (COLLUVIUM)</p> <p>Bottom of pit at 2.20m encountered COBBLE and BOULDER.</p>	

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> □ Block sample ┌ In-situ density test ▲ Water sample ↗ Water seepage N-Schmidt Hammer 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 2.30m depth. 3. Average depth of trial pit was 2.30m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 1.50m at Face B.











CONTRACTOR  **TYSAN FOUNDATION LIMITED**

CONTRACT NO. : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Nam Chung)

W.O.NO. : GE/2009/24/GI/NC01
TP / SS NO. : NC-TP19
FACE : BOTToM
DATE : 09-10-2010



TRIAL PIT RECORD

TRIAL PIT No.
NC-TP26

Sample & Tests	Depth (m)	Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m	Depth (m)	Legend	Grade	Description		
	0.50					0.40		Soft to firm, dark brown, slightly sandy SILT with some angular to subangular coarse gravel and cobble sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM)			
	0.60										Firm, reddish brown, slightly sandy SILT with much angular to subangular gravel, cobble and boulder sized rock fragments. (COLLUVIUM)
	1.00										
	1.10										
	1.20										
	1.30										
	1.40										
	1.40										
	1.50										
	1.60										
								Bottom of pit at 1.50m encountered BOULDER sized rock fragments.			
								No. of boulders increase gradely downward.			
								Boulders: B1 : 0.58m x 0.38m x 0.30m B2 : 0.28m x 0.30m x 0.20m B3 : 0.20m x 0.25m x 0.15m B4 : 0.24m x 0.23m x 0.10m			

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample ↑ Large disturbed sample ▬ Undisturbed vertical sample ▬ Undisturbed horizontal sample □ Block sample ┌ In-situ density test ▲ Water sample ☼ Water seepage N-Schmidt Hammer 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 1.50m depth. 3. Average depth of trial pit was 1.40m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 1.20m at Face D.







CONTRACTOR  **TYSAN FOUNDATION LIMITED**
CONTRACT NO.: GE/2009/24
PROJECT: Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Nam Chung)
W.O. NO.: GE/2009/24/GI/NC01
TP/SS NO.: NC-TP26
FACE: BOTTOM
DATE: 29-09-2010

TRIAL PIT RECORD

TRIAL PIT No.
NC-TP32


Sample & Tests	Depth (m)	Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m	Depth (m)	Legend	Grade	Description			
	0.50					0.10	VI	Soft to firm, greyish brown and brown sandy SILT with occasional angular to sub-angular fine to coarse gravel and cobble-sized rock fragment and rootlets. (TOPSOIL / COLLUVIUM)				
	0.60									VI	Firm orangish brown and brown slightly sandy SILT with occasional angular to sub-angular fine to coarse gravel, cobble and boulder sized rock fragment. (COLLUVIUM)	
	0.90									IV/III	Bottom of pit at 1.5m. BOULDERS of highly to moderately decomposed tuff-fragment with locally sandy silt matrix.	
	1.00											
	1.10											
	1.30											

SYMBOL	PLAN	SECTION	REMARKS
<ul style="list-style-type: none"> ● Small disturbed sample ↑ Large disturbed sample ▬ Undisturbed vertical sample ▬ Undisturbed horizontal sample □ Block sample ┌ In-situ density test ▲ Water sample ☁ Water seepage 			<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 1.40m depth. 3. Average depth of trial pit was 1.40m depth. 4. Trial pit was stable during excavation. 5. Additional horizontal U100 sample was taken at 0.90m at Face C.



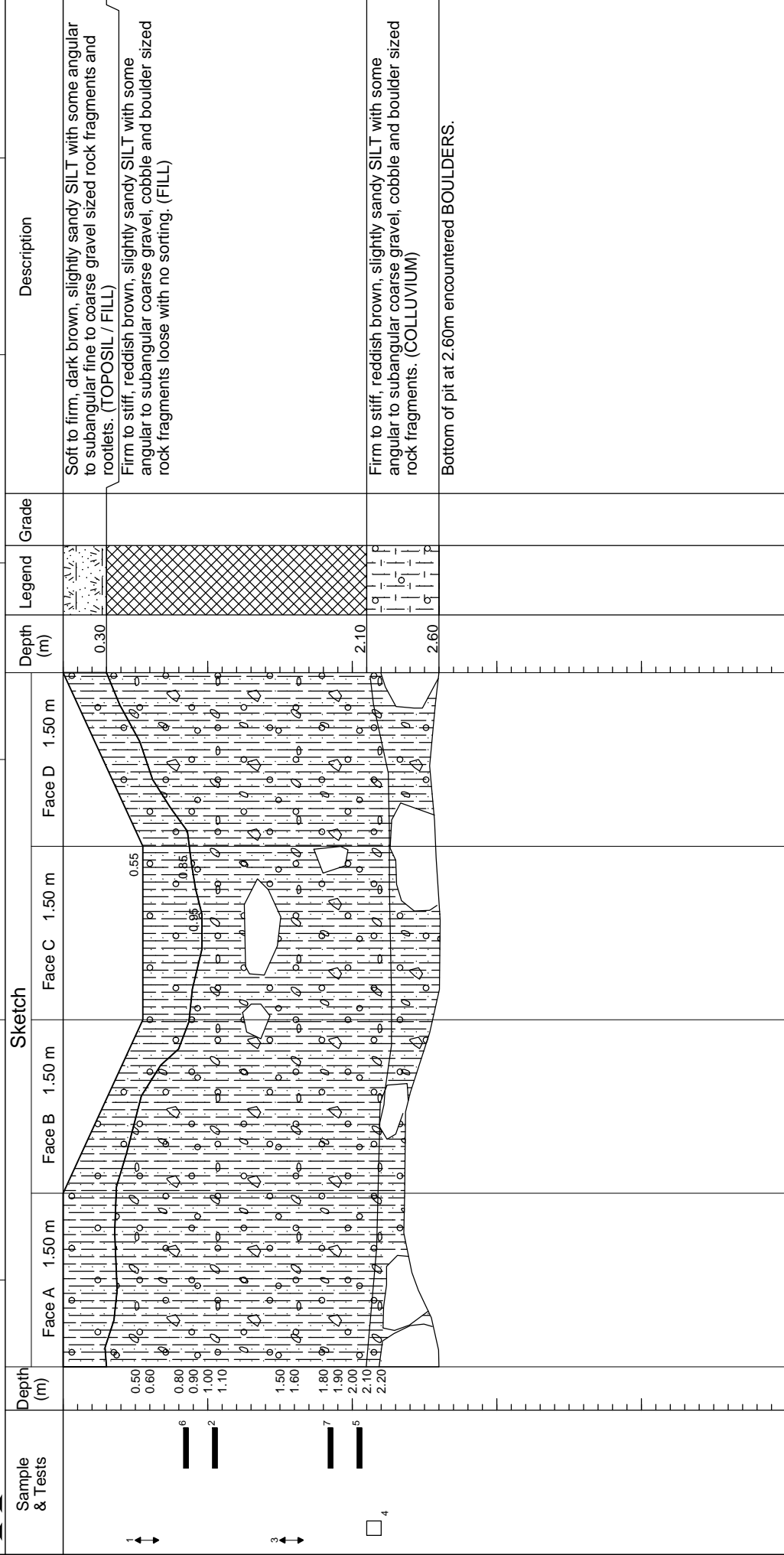




CONTRACTOR  TYSAN FOUNDATION LIMITED
CONTRACT NO.: GE/2009/24
PROJECT: Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Nam Chung)
W.O. NO.: GE/2009/24/G/INC01
TP/SS NO.: NC-TP 32
FACE: BOTTOM
DATE: 09-09-2010

TRIAL PIT RECORD

TRIAL PIT No.
NC-TP34



Description

Soft to firm, dark brown, slightly sandy SILT with some angular to subangular fine to coarse gravel sized rock fragments and rootlets. (TOPOSIL / FILL)

Firm to stiff, reddish brown, slightly sandy SILT with some angular to subangular coarse gravel, cobble and boulder sized rock fragments loose with no sorting. (FILL)

Firm to stiff, reddish brown, slightly sandy SILT with some angular to subangular coarse gravel, cobble and boulder sized rock fragments. (COLLUVIUM)

Bottom of pit at 2.60m encountered BOULDERS.

Legend

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

Face D 1.50 m

Sketch

Depth (m)

Face A 1.50 m

Face B 1.50 m

Face C 1.50 m

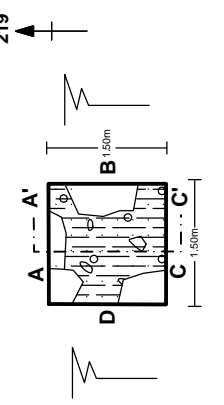
Face D 1.50 m

Sketch

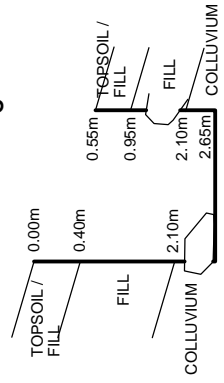
SYMBOL

- Small disturbed sample
- Block sample
- ↑ Large disturbed sample
- ↕ Undisturbed vertical sample
- ▬ Undisturbed horizontal sample
- ⊥ In-situ density test
- ▲ Water sample
- ☁ Water seepage
- N-Schmidt Hammer

PLAN



SECTION



REMARKS

1. No seepage observed.
2. Shoring installed to 2.60m depth.
3. Average depth of trial pit was 2.35m depth.
4. Trial pit was stable during excavation.
5. Additional horizontal U100 samples were taken at 0.80m and 1.80m at Face A.









CONTRACTOR  **TYSAN FOUNDATION LIMITED**

CONTRACT NO. : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Nam Chung)

W.O.NO. : GE/2009/24/GI/NC01
TP / SS NO. : NC-TP34
FACE : BOTTOM
DATE : 09-10-2010



Report No.



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO.

BH1

SHEET 1 of 2

DRILLHOLE RECORD

CONTRACT NO. GE/2001/14

PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tao Wan and Tai O, Lantau Ground Investigation

METHOD **Rotary Cored**

CO-ORDINATES

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR115**

E 804646.25

DATE from **30/08/2002** to **06/09/2002**

N 812887.19

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **17.02 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
30/08/2002	SX	Dry at 18:00	56				147 bits	1	17.02	0.00			Firm, greyish brown (2.5Y 5/2), sandy SILT with occasional rootlets and some angular to subangular fine to coarse gravel and occasional cobble sized rock fragments. (COLLUVIUM)
30/08/2002		Dry at 08:00	100					2	16.57	0.45			Grey (7.5YR 6/1) striped and streaked red, BOULDER sized slightly decomposed tuff. (COLLUVIUM)
31/08/2002		Dry at 18:00	100					TC131	16.17	0.85			Light brownish grey (10YR 6/2), angular to subangular fine to coarse GRAVEL with occasional rootlets and cobble sized rock fragments in a yellowish brown, slightly clayey, silty fine to coarse sand matrix. (COLLUVIUM)
31/08/2002		Dry at 18:00	80					4C-MLC	15.83	1.19			Grey (7.5YR 6/1) spotted white and mottled yellowish brown, BOULDER sized slightly decomposed tuff. (COLLUVIUM)
02/09/2002		Dry at 08:00	10					4C-MLC	15.38	1.64			Brownish grey (2.5Y 5/2), angular to subangular fine to coarse GRAVEL with occasional rootlets and cobble sized rock fragments in a yellowish brown, slightly clayey, silty fine to coarse sand matrix. (COLLUVIUM)
								4C-MLC	15.22	1.80			Grey (7.5YR 6/1) spotted white and mottled yellowish brown, BOULDER sized slightly decomposed tuff. (COLLUVIUM)
								4C-MLC	14.59	2.40			Brownish grey (2.5Y 5/2), angular to subangular fine to coarse GRAVEL with occasional rootlets and cobble sized rock fragments in a yellowish brown, slightly clayey, silty fine to coarse sand matrix. (COLLUVIUM)
								4C-MLC	14.29	2.73			Light greenish grey (GLE1 7/1) dappled reddish brown, BOULDER sized slightly decomposed tuff. (COLLUVIUM)
		Dry at 18:00	93					4C-MLC		2.86			From 2.20m to 2.22m : Yellowish brown, slightly clayey, silty sandy angular to subangular fine to medium gravel sized rock fragments.
								4C-MLC		4.13			Yellowish brown (10YR 5/8), slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with occasional cobble sized rock fragments. (COLLUVIUM)
02/09/2002		Dry at 18:00	71					4C-MLC		5.34			Light grey (7.5YR 7/1), locally brownish grey, dappled and streaked reddish brown, locally spotted white, BOULDER with occasional coarse gravel and cobble sized moderately decomposed and slightly decomposed tuff. (COLLUVIUM)
03/09/2002		Dry at 08:00	77					4C-MLC		5.50			From 4.47m to 4.86m : Yellowish brown mottled and dappled light grey and reddish brown, slightly clayey, silty fine to coarse sand with occasional rootlets and some angular to subangular fine to coarse gravel and occasional cobble sized rock fragments.
04/09/2002		Dry at 18:00	100					4C-MLC		5.78			Grey (7.5YR 6/1), locally brownish grey, angular to subangular fine to coarse GRAVEL with some cobble and boulder sized highly decomposed, moderately and slightly decomposed tuff in a yellowish brown dappled reddish brown, slightly clayey, silty fine to coarse sand matrix. (COLLUVIUM)
		Dry at 08:00	100					4C-MLC		6.34			From 6.05m to 6.34m : Boulder sized moderately decomposed and slightly decomposed tuff.
			100					4C-MLC		6.64			From 6.96m to 7.23m : Boulder sized moderately decomposed and slightly decomposed tuff.
			100					4C-MLC	9.79	7.23			Yellowish brown (10YR 5/8) dappled reddish brown and light grey, slightly clayey, silty fine to coarse SAND with much angular to subangular fine to coarse gravel, cobble and some boulder sized highly decomposed, moderately decomposed and slightly decomposed tuff
			100					4C-MLC		7.31			
			100					4C-MLC		7.76			
			100					4C-MLC		8.33			
			100					4C-MLC		8.67			
			100					4C-MLC		9.10			
			100					4C-MLC		9.56			

- SMALL DISTURBED SAMPLE
- ▲ WATER SAMPLE
- ⬇️ LARGE DISTURBED SAMPLE
- ▲ PIEZOMETER TIP
- SPT LINER SAMPLE
- STANDPIPE
- ▨ 1/76 UNDISTURBED SAMPLE
- ⊥ STANDARD PENETRATION TEST
- ▨ U100 UNDISTURBED SAMPLE
- ⊥ PERMEABILITY TEST
- ▨ MAZIER SAMPLE
- ⊥ IMPRESSION PACKER TEST
- ▨ PISTON SAMPLE
- ⊥ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **D.Y. Yip**

DATE **07/09/2002**

CHECKED **James Lu**

DATE **08/09/2002**

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH1**
 SHEET **2** of **2**

DRILLHOLE RECORD

CONTRACT NO. GE/2001/14

PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tao Wan and Tai O, Lantau Ground Investigation

METHOD **Rotary Cored**

CO-ORDINATES

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR115**

E 804646.25

DATE from **30/08/2002** to **06/09/2002**

N 812887.19

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **17.02 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10	SX	Dry at 18:00	100					4C-MLC		10.00			fragments. (COLLUVIUM) From 8.06m to 8.33m : Boulder sized moderately decomposed and slightly decomposed tuff. From 9.20m to 9.49m : Boulder sized moderately decomposed and slightly decomposed tuff. From 10.00m to 10.24m : Boulder sized moderately decomposed and slightly decomposed tuff. From 10.58m to 10.83m : Boulder sized slightly decomposed tuff. Light grey (7.5YR 7/1) dappled reddish brown, BOULDER sized slightly decomposed tuff. (COLLUVIUM) Reddish brown (5YR 5/4), slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL sized rock fragments. (COLLUVIUM) Extremely weak, occasionally very weak, reddish brown (5YR 5/4) mottled light grey and yellowish brown, completely decomposed, slightly eutaxitic, coarse ash TUFF with relict kaolin infilled joints and kaolin veins of maximum thickness 5mm dipping at 80° to 90°. (Very stiff, sandy SILT with occasional angular to subangular fine to coarse gravel sized rock fragments) Hole completed at 14.78m.
11		5.70m at 08:00	100					4C-MLC		10.41			
12			100					4C-MLC		11.07			
13			100					4C-MLC		11.39			
14			100					4C-MLC		11.86			
15			100					4C-MLC	4.69	12.33			
16			100					4C-MLC		12.86			
17		5.80m at 18:00	100					4C-MLC	3.32	13.06			
18	SX	5.75m at 08:00	100	0	0	NI		4C-MLC	3.11	13.91		V	
19		5.85m at 18:00	100	0	0			4C-MLC		14.28			
20								4C-MLC	2.24	14.78			

- SMALL DISTURBED SAMPLE
- ⬇️ LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U75 UNDISTURBED SAMPLE
- ▩ U100 UNDISTURBED SAMPLE
- ▧ MAZIER SAMPLE
- ▦ PISTON SAMPLE
- △ WATER SAMPLE
- ▲ PIEZOMETER TIP
- ⊙ STANDPIPE
- ⊥ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∨ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **D.Y. Yip**
 DATE **07/09/2002**
 CHECKED **James Lu**
 DATE **08/09/2002**

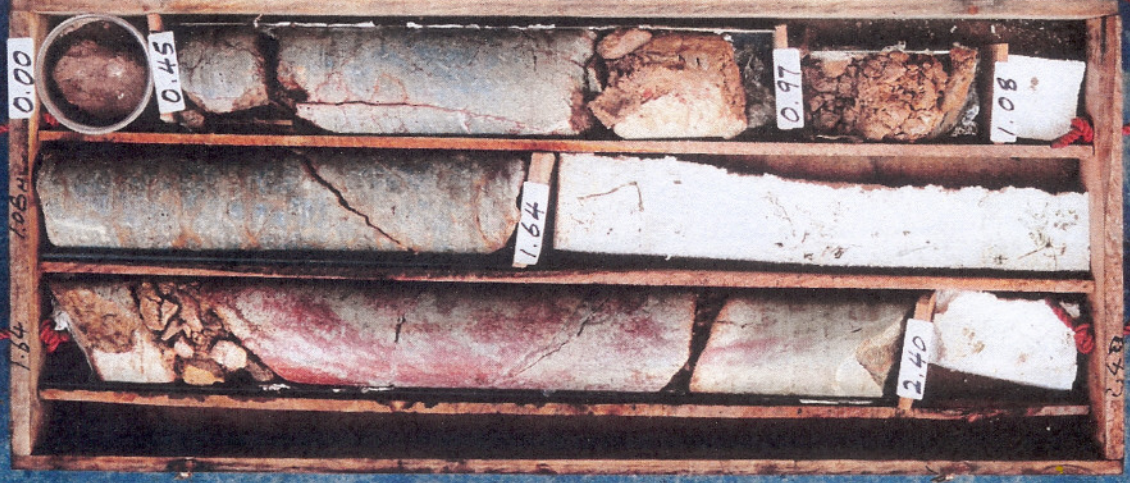
REMARKS

GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation
 W.O. NO. : GE/2001/14.32 HOLE NO. : BH1
 DEPTH : 0.00 M TO 2.40 M DATE : 18-9-2002
 BOX 1 OF 7

0.0m 0.5m 1.0m

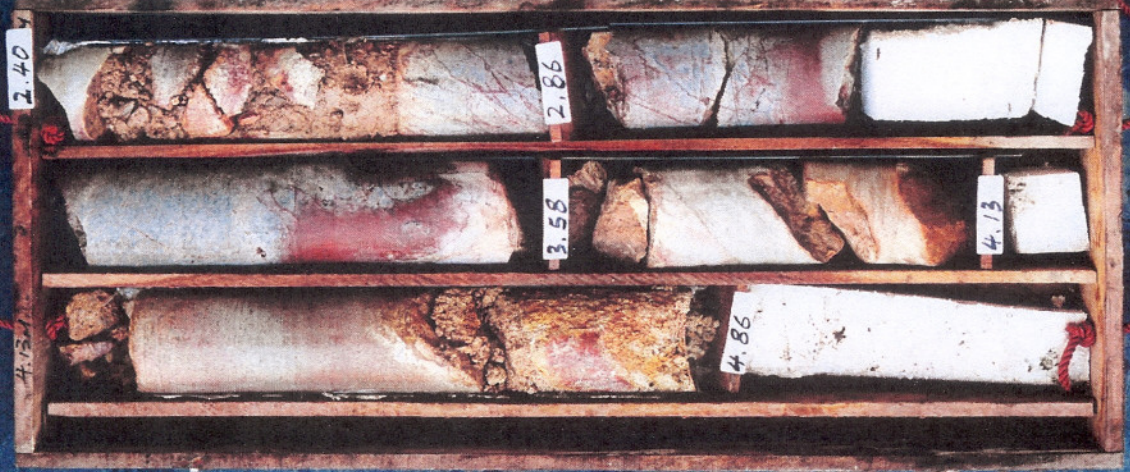


GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation
 W.O. NO. : GE/2001/14.32 HOLE NO. : BH1
 DEPTH : 2.40 M TO 4.86 M DATE : 18-9-2002
 BOX 2 OF 7

0.0m 0.5m 1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH1

DEPTH : 4.86 M TO 7.31 M

DATE : 18-9-2002

BOX 3 OF 7

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH1

DEPTH : 7.31 M TO 9.56 M

DATE : 18-9-2002

BOX 4 OF 7

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -
SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

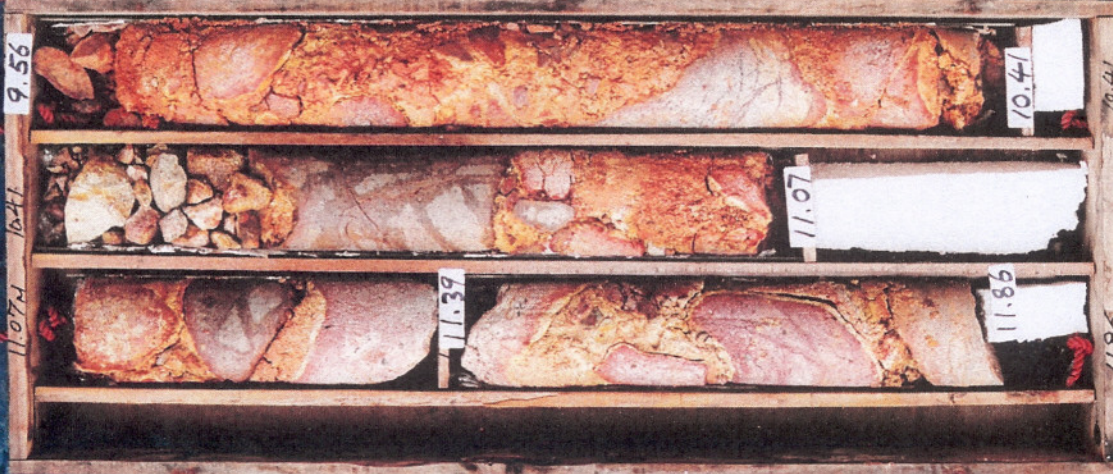
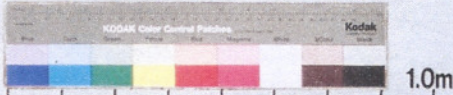
HOLE NO. : BH1

DEPTH : 9.56 M TO 11.86 M

DATE : 18-9-2002

BOX 5 OF 7

0.0m 0.5m 1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -
SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

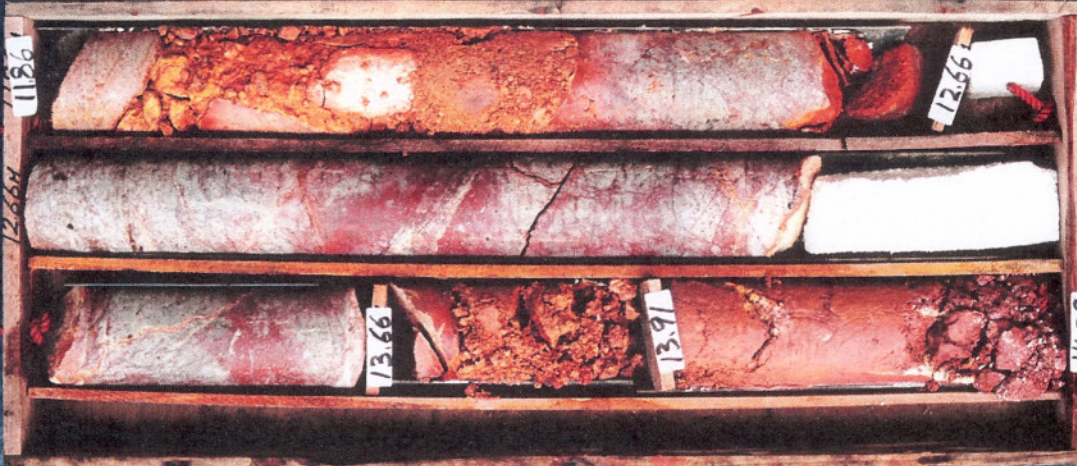
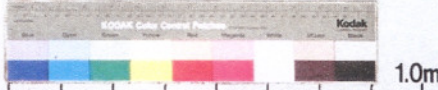
HOLE NO. : BH1

DEPTH : 11.86 M TO 14.28 M

DATE : 18-9-2002

BOX 6 OF 7

0.0m 0.5m 1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

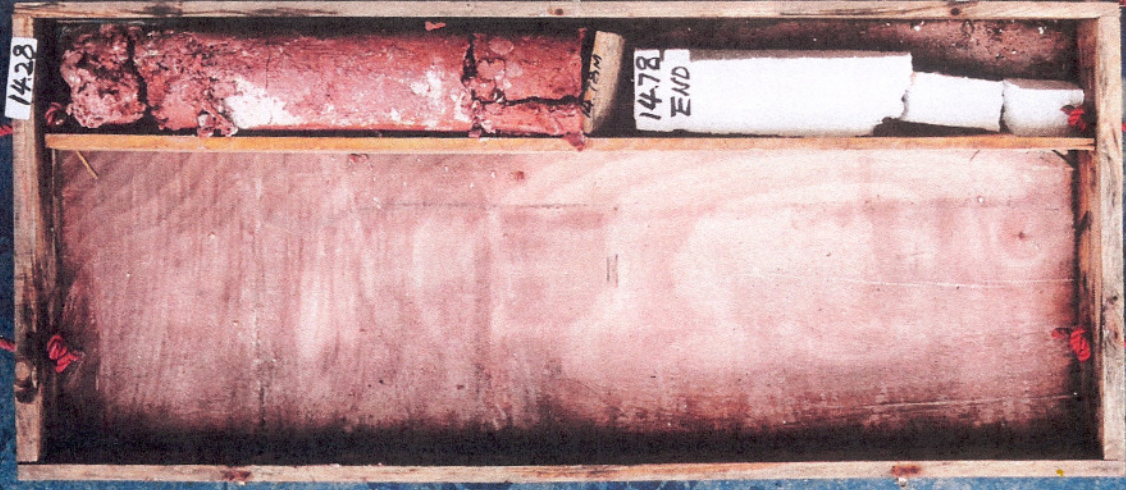
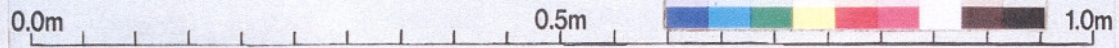
W.O. NO. : GE/2001/14.32

HOLE NO. : BH1

DEPTH : 14.28 M TO 14.78 M

DATE : 18-9-2002

BOX 7 OF 7





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH2**
 SHEET **1** of **2**

DRILLHOLE RECORD

CONTRACT NO. **GE/2001/14**

PROJECT **Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation**

METHOD **Rotary Cored**

CO-ORDINATES
E 804589.84
N 812731.37

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR115**

DATE from **11/09/2002** to **16/09/2002**

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **2.83 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11/09/2002	SX		73				14 bits	1	2.83	0.00			Greyish brown (2.5Y 5/2), silty fine to coarse SAND with occasional angular to subangular fine to medium gravel sized rock fragments. (FILL)
			76				9 bits	2	2.38	0.45			Firm, yellowish brown (10YR 5/8) spotted reddish brown and dappled dark greyish brown, slightly clayey, sandy SILT with occasional angular to subangular fine gravel sized rock fragments and pockets of dark greyish brown, slightly clayey, sandy silt with occasional shell fragments. (FILL)
			56				80 bits	3					
11/09/2002		Dry at 18:00	76				82 bits	4	1.93	0.90			
12/09/2002		0.15m at 08:00	76					5	1.58	1.25			
			84					6		1.35			
			84					7	1.03	1.80			Yellowish brown (10YR 5/8) dappled reddish brown, slightly clayey, sandy SILT with much angular to subangular fine to coarse gravel sized rock fragments. (FILL)
			84					8	0.90	1.90			Greyish brown (2.5Y 5/2), slightly clayey, silty fine to coarse SAND with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
			84							2.37			Greyish brown (2.5Y 5/2) dappled yellowish brown and reddish brown, slightly sandy angular to subangular medium to coarse GRAVEL sized rock fragments. (FILL)
		0.25m at 18:00	85							2.88			Dark grey (7.5YR 4/1) spotted light grey, organic, slightly clayey, silty fine to coarse SAND with occasional black decayed wood pieces and angular to subangular fine gravel sized quartz fragments. (ALLUVIUM)
12/09/2002		2.28m at 08:00	80							3.28			Light grey (7.5YR 7/1) dappled yellowish brown and reddish brown, angular to subangular medium to coarse GRAVEL with some cobble and boulder sized moderately decomposed and slightly decomposed tuff fragments. (COLLUVIUM)
13/09/2002			100							-0.69	3.52		From 1.93m to 2.33m : Boulder sized slightly decomposed tuff. From 3.05m to 3.28m : Boulder sized slightly decomposed tuff.
			100							3.73			Very stiff, yellowish brown (10YR 5/8) dappled reddish brown and light grey, slightly clayey, sandy SILT with occasional angular to subangular fine to coarse gravel sized rock fragments. (COLLUVIUM)
			100							4.13			Stiff, reddish brown (5YR 5/4) spotted, mottled and dappled light grey and yellowish brown, sandy SILT with occasional angular to subangular fine to coarse gravel sized rock fragments. (COLLUVIUM)
			100							4.39			Extremely weak, reddish brown (5YR 5/4) spotted, mottled and dappled light grey and yellowish brown, spotted and mottled dark grey and black, completely decomposed, eutaxitic, coarse ash TUFF with relict iron and manganese oxide stained and kaolin infilled joints. (Very stiff, sandy SILT)
			100							4.58			
			100							4.90			
			100							5.29			
			100							6.20			
			100							6.20			
			100							7.10			
			100							7.45			
			100							7.85			
			100							-5.27	6.10		
			100	0	0	NI				6.67			
13/09/2002		2.52m at 18:00	100	0	0					8.67			
14/09/2002		1.40m at 08:00	100	0	0					9.53			
			100	0	0					9.81			

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- ▩ MAZIER SAMPLE
- ▨ PISTON SAMPLE
- △ WATER SAMPLE
- ▲ PIEZOMETER TIP
- ▲ STANDPIPE
- ⊥ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ⊥ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **D.Y. Yip**
 DATE **17/09/2002**
 CHECKED **James Lu**
 DATE **18/09/2002**

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH2**
 SHEET **2** of **2**

DRILLHOLE RECORD

CONTRACT NO. **GE/2001/14**

PROJECT **Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation**

METHOD **Rotary Cored**

CO-ORDINATES

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR115**

E 804589.84
N 812731.37

DATE from **11/09/2002** to **16/09/2002**

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **2.83 mPD**

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
	SX		100	0	0			4C-MLC		10.00			See sheet 1 of 2 for details.
			100	0	0			4C-MLC		10.41			
			100	0	0			4C-MLC		11.15			
	SX 12.10		100	0	0			4C-MLC		11.80			
			100	0	0			4C-MLC	-9.37	12.20			
		1.65m at 18.00						4C-MLC	-10.07	12.90		V	Extremely weak, occasionally very weak, yellowish brown (10YR 5/8) dappled white, light grey and reddish brown, completely decomposed, eutaxitic, coarse ash TUFF with relict iron and manganese oxide stained and kaolin infilled joints. (Very stiff, sandy SILT with occasional angular to subangular fine to medium gravel sized rock fragments) Hole completed at 12.90m.

- SMALL DISTURBED SAMPLE
- ⬆ LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U76 UNDISTURBED SAMPLE
- ▩ U100 UNDISTURBED SAMPLE
- ▧ MAZIER SAMPLE
- ▦ PISTON SAMPLE
- △ WATER SAMPLE
- PIEZOMETER TIP
- STANDPIPE
- ⊥ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∨ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED **D.Y. Yip**
 DATE **17/09/2002**
 CHECKED **James Lu**
 DATE **18/09/2002**

REMARKS

GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 2

DEPTH : 0.00 M TO 3.73 M

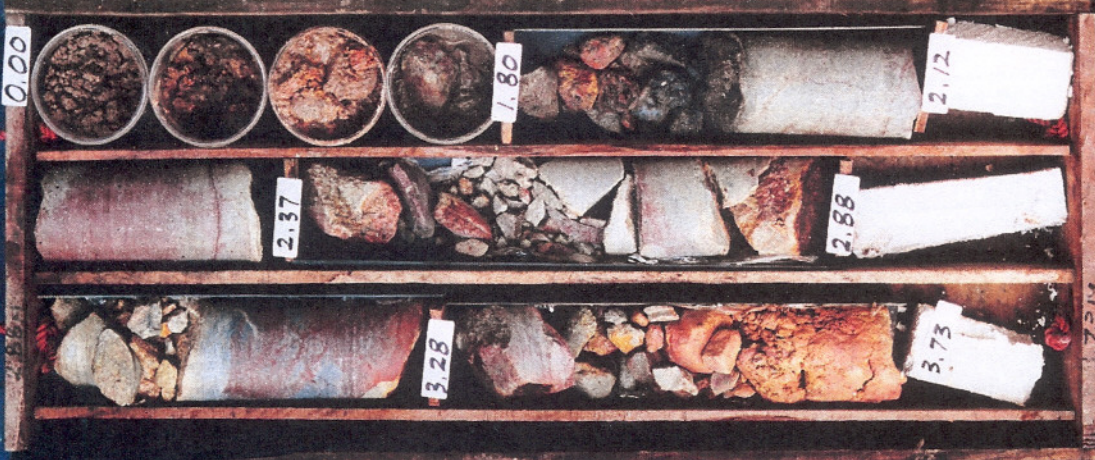
DATE : 18-9-2002

BOX 1 OF 5

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 2

DEPTH : 3.73 M TO 6.20 M

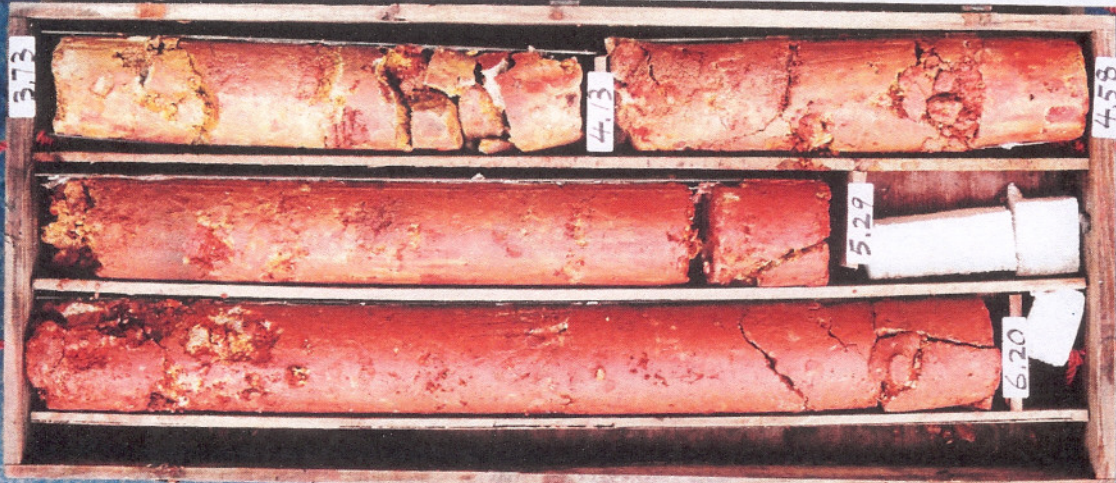
DATE : 18-9-2002

BOX 2 OF 5

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 2

DEPTH : 6.20 M TO 8.67 M

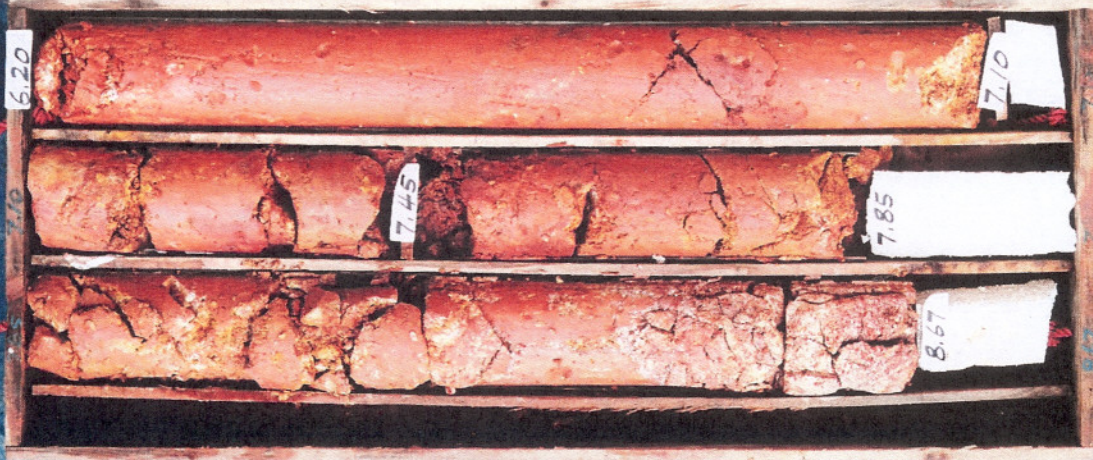
DATE : 18-9-2002

BOX 3 OF 5

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 2

DEPTH : 8.67 M TO 11.15 M

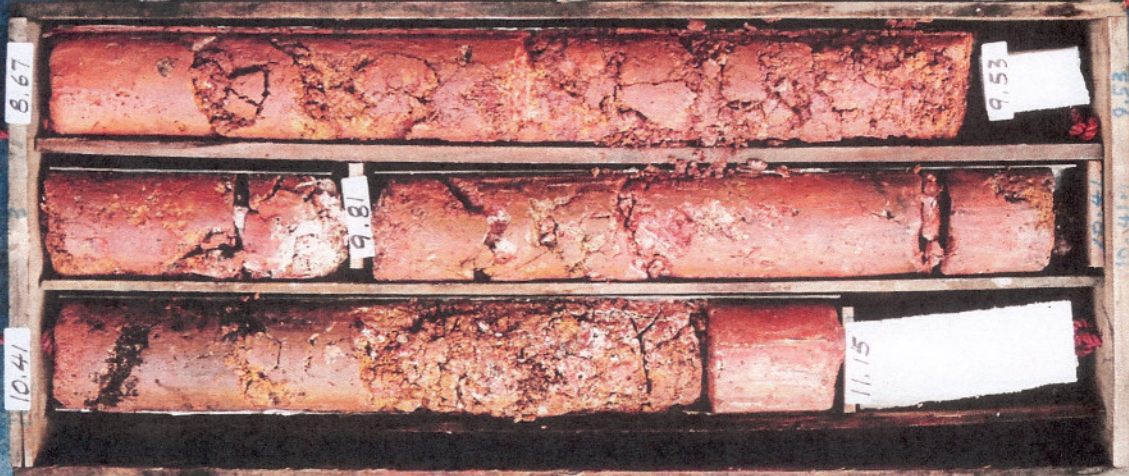
DATE : 18-9-2002

BOX 4 OF 5

0.0m

0.5m

1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating -

SITE : Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH 2

DEPTH : 11.15 M TO 12.90 M

DATE : 18-9-2002

BOX 5 OF 5

0.0m

0.5m

1.0m





GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH3**
 SHEET 1 of 2

DRILLHOLE RECORD

CONTRACT NO. GE/2001/14

PROJECT Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

METHOD	Rotary Cored	CO-ORDINATES	Works Order No.
MACHINE & No.	DR129	E 804600.21 N 812575.49	GE/2001/14.32
FLUSHING MEDIUM	Air-Foam	ORIENTATION	DATE from 29/08/2002 to 02/09/2002
		Vertical	GROUND LEVEL 5.22 mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
29/08/2002	SX		89				28 bis	1		0.00			Firm, dark yellowish brown (10YR 3/6) mottled and dappled light grey and occasionally reddish brown, silty fine to coarse SAND with occasional rootlets and much angular to subangular fine to coarse gravel and occasionally cobble sized rock fragments. (FILL)
			89				30 bis	2		0.45			
			89				151 bis	3		0.90			
			89				124 bis	4		0.90			
			90					5	3.87	1.35			
			90					6	3.72	1.50			Pinkish brown (7.5YR 7/4), silty fine to coarse SAND with occasional rootlets and some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
			90					7	3.11	2.11			Light greenish grey (GLE1 7/1) dappled red and spotted dark grey, angular BOULDER sized slightly decomposed tuff. (FILL)
			90					8	2.84	2.38			Yellowish brown (10YR 5/8), slightly clayey, silty fine to coarse SAND with occasional rootlets and angular to subangular fine to coarse gravel and cobble sized rock fragments. (COLLUVIUM)
29/08/2002		Dry at 18:00	100				63 bis	9	2.37	2.78			Light yellowish brown (10YR 6/4) dappled light grey and reddish brown, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with some cobble sized rock fragments. (COLLUVIUM)
30/08/2002		2.20m at 08:00	86				42 bis	10	1.94	3.28			Grey (7.5YR 6/1) dappled red and spotted light grey, BOULDER sized slightly decomposed tuff. (COLLUVIUM)
			84				49 bis	11					Brownish grey (2.5Y 5/2) mottled light grey, organic, slightly clayey, silty fine to coarse SAND with some dark brown to black decayed wood pieces and angular to subangular fine to coarse gravel sized rock fragments. (ALLUVIUM)
			84				69 bis	12					Greyish brown (10YR 5/2), slightly silty fine to coarse SAND with much angular medium to coarse gravel and occasional cobble sized rock fragments. (ALLUVIUM)
			84				74 bis	13	0.59	4.63			Yellowish brown (10YR 5/8) mottled and dappled red and light grey, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with some cobble sized rock fragments. (COLLUVIUM)
			84					14	0.14	5.08			From 6.04m to 6.20m : Firm, reddish brown mottled light grey and yellowish brown, slightly clayey, sandy silt with some angular to subangular fine to coarse gravel sized rock fragments.
			84					15					Light brownish grey (10YR 6/2), angular to subangular medium to coarse GRAVEL sized rock fragments. (COLLUVIUM)
			84					16					Yellowish brown (10YR 5/8), slightly clayey, silty fine to coarse SAND with occasional angular to subangular fine to coarse gravel sized rock fragments. (COLLUVIUM)
			84					17					Reddish brown (5YR 5/4) mottled and dappled yellowish brown, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with some cobble sized rock fragments. (COLLUVIUM)
30/08/2002		2.55m at 18:00	100					18	-1.11	6.33			
31/08/2002		3.20m at 08:00	100					19	-1.41	6.63			
			100					20	-1.55	6.77			
			100					21		7.08			
			100					22		7.33			
			100					23		7.63			
			100					24		8.05			
			100					25		8.25			
			100					26		8.77			
31/08/2002		4.00m at 18:00	100					27	-3.80	9.02			
02/09/2002		2.70m at 08:00	100					28		9.42			
			90					29					

- SMALL DISTURBED SAMPLE
- ▲ LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- ▨ U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- ▩ MAZIER SAMPLE
- ▤ PISTON SAMPLE
- ▲ WATER SAMPLE
- ▲ PIEZOMETER TIP
- ▲ STANDPIPE
- ↓ STANDARD PENETRATION TEST
- ⊥ PERMEABILITY TEST
- ⊥ IMPRESSION PACKER TEST
- ∇ IN-SITU VANE SHEAR TEST
- ⊥ PACKER TEST

LOGGED D.Y. Yip
 DATE 03/09/2002
 CHECKED James Lu
 DATE 04/09/2002

REMARKS



GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **BH3**
 SHEET **2** of **2**

DRILLHOLE RECORD

CONTRACT NO. **GE/2001/14**

PROJECT **Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tao Wan and Tai O, Lantau Ground Investigation**

METHOD **Rotary Cored**

CO-ORDINATES
E 804600.21
N 812575.49

Works Order No. **GE/2001/14.32**

MACHINE & No. **DR129**

DATE from **29/08/2002** to **02/09/2002**

FLUSHING MEDIUM **Air-Foam**

ORIENTATION **Vertical**

GROUND LEVEL **5.22** mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10	SX		91					T2101		10.00	○		Yellowish brown (10YR 5/8) dappled light brownish grey, occasionally mottled reddish brown, slightly clayey, silty sandy angular to subangular fine to coarse GRAVEL with occasional cobble and boulder sized rock fragments. (COLLUVIUM) From 9.42m to 10.02m : Boulder sized highly and moderately decomposed tuff.
11			75				T2101		10.47	○			
			95					T2101		10.67	○		
			95					T2101		10.87	○		
			100					T2101		11.20	○		
			100	49	20	15.7		T2101	-6.57	11.50	○		
12	SX	3.00m at 12.30						T2101	-7.06	11.79	○	III	Moderately strong, brownish grey spotted dark grey and striped grey, moderately decomposed, eutaxitic, coarse ash crystal TUFF. Joints are very closely to closely spaced, rough stepped and undulating, extremely narrow, stained by iron and manganese oxide, dipping at 10° to 20°, 50° to 60° and 80° to 90°. Hole completed at 12.30m.
13										12.30	○		

- SMALL DISTURBED SAMPLE ▲ WATER SAMPLE
- ▬ LARGE DISTURBED SAMPLE ▲ PIEZOMETER TIP
- SPT LINER SAMPLE ▲ STANDPIPE
- ▨ U/78 UNDISTURBED SAMPLE ↓ STANDARD PENETRATION TEST
- ▩ U/100 UNDISTURBED SAMPLE ↓ PERMEABILITY TEST
- ▧ MAZIER SAMPLE II IMPRESSION PACKER TEST
- ▩ PISTON SAMPLE V IN-SITU VANE SHEAR TEST
- ↓ PACKER TEST

LOGGED **D.Y. Yip**
 DATE **03/09/2002**
 CHECKED **James Lu**
 DATE **04/09/2002**

REMARKS

GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide
 SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

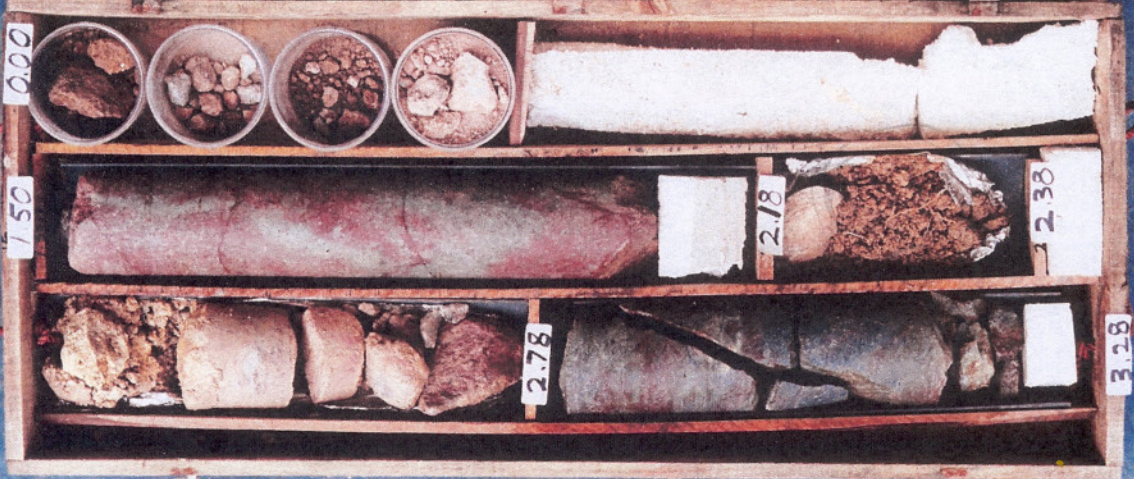
HOLE NO. : BH3

DEPTH : 0.00 M TO 3.28 M

DATE : 6-9-2002

BOX 1 OF 5

0.0m 0.5m 1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide
 SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

W.O. NO. : GE/2001/14.32

HOLE NO. : BH3

DEPTH : 3.28 M TO 7.33 M

DATE : 6-9-2002

BOX 2 OF 5

0.0m 0.5m 1.0m



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

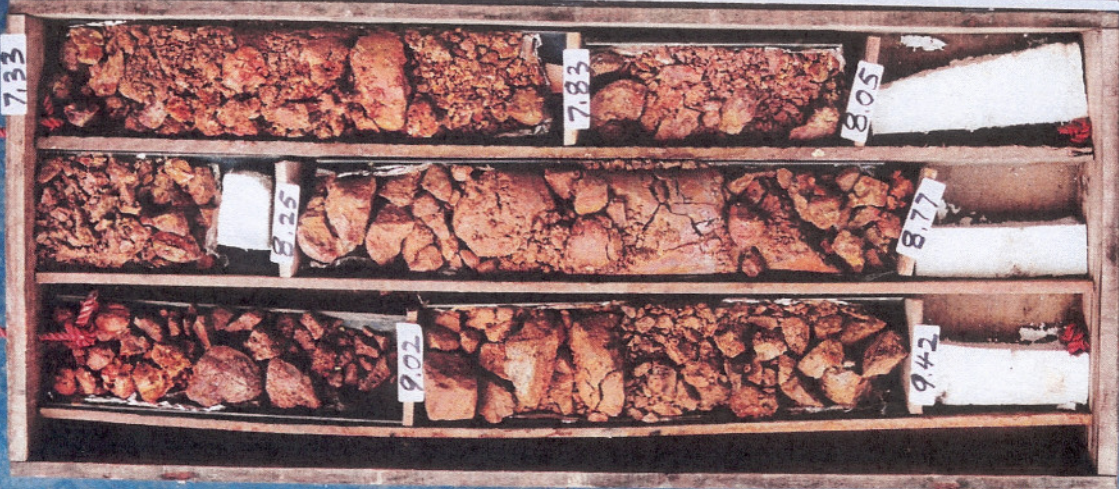
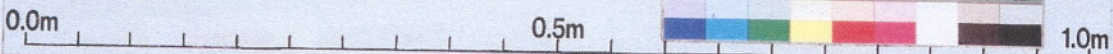
W.O. NO. : GE/2001/14.32

HOLE NO. : BH 3

DEPTH : 7.33 M TO 9.42 M

DATE : 6-9-2002

BOX 3 OF 5



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide

SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation

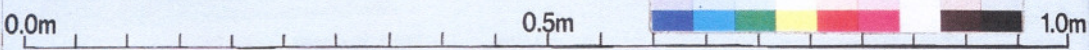
W.O. NO. : GE/2001/14.32

HOLE NO. : BH 3

DEPTH : 9.42 M TO 11.50 M

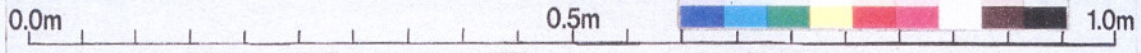
DATE : 6-9-2002

BOX 4 OF 5



GEOTECHNICS & CONCRETE ENGG (HK) LTD CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION - NEW TERRITORIES WEST
(TERM CONTRACT)

Agreement 72/2000 Landslide Investigation Consultancy Landslide
SITE : Age Dating - Sai Tso Wan and Tai O, Lantau Ground Investigation
W.O. NO. : GE/2001/14.32 HOLE NO. : BH3
DEPTH : 11.50 M TO 12.30 M DATE : 6-9-2002
BOX 5 OF 5



Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	0.5		0.10		Soft to firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and angular to subrounded fine to coarse gravel and occasional boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.0		0.53		Soft to firm, moist, greyish brown (2.5Y 5/2), slightly clayey, sandy SILT with some rootlets and much angular to subangular fine to coarse gravel and occasional cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.5		1.0		Loose to dense, moist, greyish brown (2.5Y 5/2), locally dappled reddish brown, angular to subangular fine to coarse GRAVEL, COBBLE and BOULDER sized highly decomposed and moderately decomposed tuff fragments with occasional rootlets in a yellowish brown slightly clayey, silty fine to coarse sand matrix. (COLLUVIUM)	
	2.0		1.5			
	2.5		2.0			
	3.0		2.5			
	3.5	3.0				
	4.0	3.5				
	4.5	4.0				
	5.0	4.5				
	5.5	5.0				
	6.0	5.5				
		6.0				
		<p>1 : Boulder sized moderately decomposed tuff of maximum exposed size 0.49m x 0.27m. 2 : Boulder sized moderately decomposed tuff of maximum exposed size 1.50m x 0.82m. 3 : Boulder sized moderately decomposed tuff of maximum exposed size 0.88m x 0.56m. 4 : Boulder sized moderately decomposed tuff of maximum exposed size 0.81m x 0.80m. 5 : Boulder sized moderately decomposed tuff of maximum exposed size 0.99m x 0.83m. 6 : Boulder sized moderately decomposed tuff of maximum exposed size 0.24m x 0.18m. 7 : Boulder sized moderately decomposed tuff of maximum exposed size 0.47m x 0.30m. 8 : Boulder sized moderately decomposed tuff of maximum exposed size 0.88m x 0.50m. 9 : Boulder sized moderately decomposed tuff of maximum exposed size 0.47m x 0.30m. 10 : Boulder sized moderately decomposed tuff of maximum exposed size 1.85m x 0.94m. 11 : Boulder sized moderately decomposed tuff of maximum exposed size 0.36m x 0.32m. 12 : Boulder sized moderately decomposed tuff of maximum exposed size 0.20m x 0.14m. 13 : Boulder sized moderately decomposed tuff of maximum exposed size 0.33m x 0.27m. 14 : Boulder sized moderately decomposed tuff of maximum exposed size 0.50m x 0.29m. 15 : Boulder sized moderately decomposed tuff of maximum exposed size 0.27m x 0.25m. 16 : Boulder sized moderately decomposed tuff of maximum exposed size 0.39m x 0.27m. 17 : Boulder sized moderately decomposed tuff of maximum exposed size 0.35m x 0.20m.</p>		<p>Trial pit terminated at an average depth of 1.50m.</p> <p>Note: 1. Small disturbed samples were taken at 0.50m, 1.00m and 1.50m depths. 2. 2 nos. of undisturbed horizontal samples (U100) were taken at 0.80m (Face A and Face C) depth.</p>		
		FACE A: 1.85 m	FACE B: 1.50 m	FACE C: 1.85 m	FACE D: 1.50 m	

SYMBOLS	REMARKS	PLAN	Contract No. :	PROJECT
<ul style="list-style-type: none"> ↕ Small Disturbed Sample ↕ Large Disturbed Sample ⊥ Undisturbed Vertical Sample — Undisturbed Horizontal Sample ■ Block Sample ⊥ In situ Density Test ▲ Water Sample ↓ Water Seepage 	<p>Ground Water No water seepage</p> <p>Plant Used Hand dug</p> <p>Shoring No shoring</p> <p>Stability Stable</p> <p>Depth at pit centre 1.50m</p> <p>Others Nil</p>	<p>(not to scale)</p> <p>SECTION</p>	<p>GE/2001/14</p> <p>Works Order No. : GE/2001/14.32</p> <p>Co-ordinates : E 804676.30 N 812905.29</p> <p>Ground Level : 25.35 mPD</p> <p>Logged by : D.Y. Yip</p> <p>Date logged : 09/09/2002</p> <p>Checked by : James Lu</p> <p>Date Checked : 10/09/2002</p>	<p>Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau, Ground Investigation</p> <p>Sheet 1 of 1</p> <p>TRIAL PIT NO. TP1</p> <p>GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED</p> <p>GROUND INVESTIGATION DEPARTMENT</p>







Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade	
	0.13m		0.12		Firm, moist, dark greyish brown (2.5Y 4/2), sandy SILT with much rootlets and some angular to subangular fine to medium and occasional cobble sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)		
	0.5			0.5		Firm to stiff, moist, yellowish brown (10YR 5/8), occasionally mottled light grey and reddish brown, slightly clayey, sandy SILT with occasional rootlets and some angular to subangular fine to coarse gravel, cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.0			0.97		Firm to stiff, moist, yellowish brown (10YR 5/8), occasionally mottled light grey and reddish brown, slightly clayey, sandy SILT with occasional rootlets and some angular to subangular fine to coarse gravel, cobble and boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	1.5			1.36		Soft to firm, moist, greyish brown (2.5Y 5/2), occasionally mottled yellowish brown, slightly clayey, sandy SILT with occasional rootlets and angular to subangular fine to coarse gravel sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	2.0			1.6		Soft to firm, moist, greyish brown (2.5Y 5/2), occasionally mottled yellowish brown, slightly clayey, sandy SILT with occasional rootlets and angular to subangular fine to coarse gravel sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	2.6			2.0		Firm to stiff, moist, yellowish brown (10YR 5/8), occasionally mottled light grey and reddish brown, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	3.0			2.6		Firm to stiff, moist, yellowish brown (10YR 5/8), occasionally mottled light grey and reddish brown, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	3.5			2.80		Firm to stiff, moist, yellowish brown (10YR 5/8), occasionally mottled light grey and reddish brown, slightly clayey, sandy SILT with occasional rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized highly decomposed and moderately decomposed tuff fragments. (COLLUVIUM)	
	4.0			3.0		Trial pit terminated at an average depth of 2.73m.	
	4.5			3.5		Note: 1. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m, 2.00m and 2.50m depths. 2. Undisturbed horizontal samples (U100) were taken at 0.60m (Face A), 0.9m (Face A), 1.10m (Face A), 1.20m (Face D) and 2.30m (Face D) depths.	
	5.0			4.0			
	5.5			4.5			
	6.0			5.0			
	6.0			5.5			
	6.0			6.0			
		FACE A: 1.50 m	FACE B: 1.50 m	FACE C: 1.50 m	FACE D: 1.50 m		

SYMBOLS		REMARKS		PLAN (not to scale)		Contract No. : GE/2001/14		PROJECT	
Small Disturbed Sample	Large Disturbed Sample	Ground Water	No water seepage			Works Order No. : GE/2001/14.32	Agreement 72/2000 Landslide Investigation Consultancy Landslide Age Dating - Sai Tso Wan and Tai O, Lantau, Ground Investigation		
Undisturbed Vertical Sample	Undisturbed Horizontal Sample	Plant Used	Hand dug			Co-ordinates	Sheet 1 of 1	TRIAL PIT NO. TP2	
Block Sample	In situ Density Test	Shoring	Timber shoring to 0.85m depth below ground level	Ground Level : 40.02 mPD	Date excavated	03/09/2002	to	07/09/2002	
Water Sample	Water Seepage	Stability	Stable	Logged by : D.Y. Yip	Date Reinstated	07/10/2002	to	07/10/2002	
		Depth at pit centre	2.73m	Date logged : 09/09/2002			GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED		
		Others	Nil	Checked by : James Lu			GROUND INVESTIGATION DEPARTMENT		
				Date Checked : 10/09/2002					









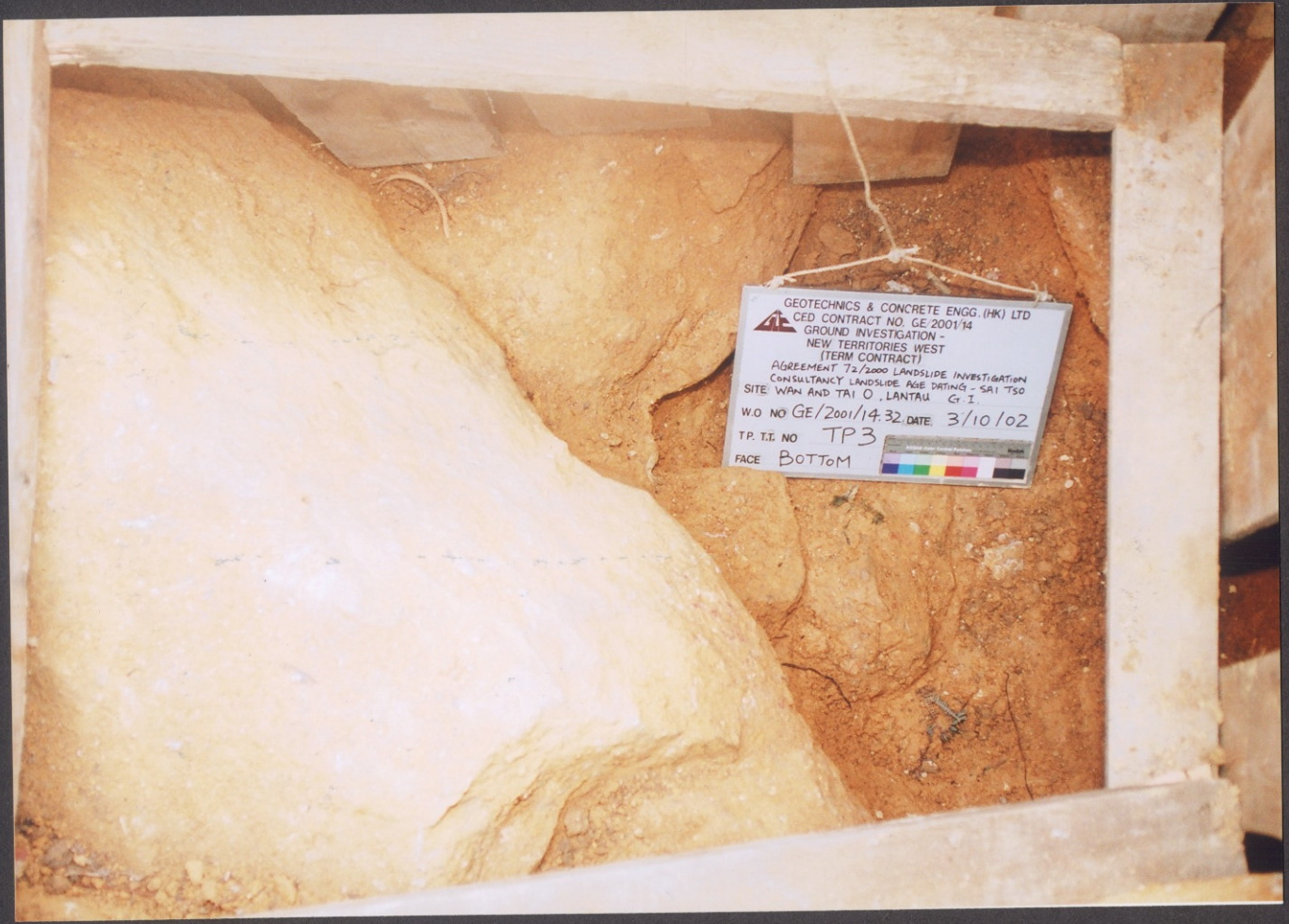


Samples & Test	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade	
	0.5		0.5		<p>Firm, moist, dark greyish brown (2.5Y 4/2), slightly clayey, sandy SILT with much rootlets and angular to subangular fine to coarse gravel and some cobble sized moderately decomposed tuff fragments. (TOP SOIL) At bottom of layer C1: With much rootlets.</p> <p>Firm, moist, yellowish brown (10YR 5/8), slightly clayey, sandy SILT with some rootlets and much angular to subangular fine to coarse gravel, cobble and some boulder sized moderately decomposed tuff fragments. (COLLUVIUM)</p>		
	1.0		2.5				<p>Trial pit terminated at an average depths of 1.90m.</p> <p>Notes :</p> <p>1. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m and 2.00m depths.</p> <p>2. Undisturbed horizontal samples (U100) were taken at 0.90m (Face D) and 1.00m (Face B) depths.</p>
	1.5		3.0	3.0			
	2.0		3.5	3.5			
	2.5		4.0	4.0			
	3.0		4.5	4.5			
	3.5		5.0	5.0			
	4.0		5.5	5.5			
	4.5		6.0	6.0			
	5.0						
	5.5						
	6.0						
			<p>1: Boulder sized moderately decomposed tuff of maximum exposed size 1.40m x 0.80m.</p> <p>2: Boulder sized moderately decomposed tuff of maximum exposed size 0.25m x 0.20m.</p> <p>3: Boulder sized moderately decomposed tuff of maximum exposed size 0.55m x 0.30m.</p> <p>4: Boulder sized moderately decomposed tuff of maximum exposed size 0.90m x 0.45m.</p> <p>5: Boulder sized moderately decomposed tuff of maximum exposed size 0.31m x 0.25m.</p> <p>6: Boulder sized moderately decomposed tuff of maximum exposed size 0.65m x 0.30m.</p> <p>7: Boulder sized moderately decomposed tuff of maximum exposed size 0.41m x 0.20m.</p> <p>8: Boulder sized moderately decomposed tuff of maximum exposed size 0.53m x 0.14m.</p> <p>9: Boulder sized moderately decomposed tuff of maximum exposed size 0.53m x 0.15m.</p> <p>10: Boulder sized moderately decomposed tuff of maximum exposed size 0.28m x 0.14m.</p> <p>11: Boulder sized moderately decomposed tuff of maximum exposed size 0.97m x 0.70m.</p> <p>12: Boulder sized moderately decomposed tuff of maximum exposed size 0.20m x 0.07m.</p> <p>13: Boulder sized moderately decomposed tuff of maximum exposed size 0.60m x 0.40m.</p>				
		<p>FACE A: 1.50 m FACE B: 1.50 m FACE C: 1.50 m FACE D: 1.50 m</p>					

SYMBOLS	REMARKS	PLAN (not to scale)	Contract No. :	PROJECT	
			<p>Small Disturbed Sample</p> <p>Large Disturbed Sample</p> <p>Undisturbed Vertical Sample</p> <p>Undisturbed Horizontal Sample</p> <p>Block Sample</p> <p>In situ Density Test</p> <p>Water Sample</p> <p>Water Seepage</p>	<p>No water seepage</p> <p>Plant Used Hand dug</p> <p>Shoring Timber shoring over full height</p> <p>Stability Stable</p> <p>Depth at pit centre 1.37m</p> <p>Others Nil</p>	
			Works Order No. :	Sheet 1 of 1	
			Co-ordinates :	Date excavated 20/09/2002 to 02/10/2002	
			E 804690.37 N 812542.42	Date Reinstated 07/10/2002 to 07/10/2002	
			Ground Level :	<p>GEOTECHNICS & CONCRETE ENGG. (HONG KONG) LIMITED GROUND INVESTIGATION DEPARTMENT</p>	
			Logged by :		
			Date logged :		
			Checked by :		
			Face A Face C	Date Checked : 04/10/2002	
				TRIAL PIT NO. TP3	







GEOTECHNICS & CONCRETE ENGG. (HK) LTD
CED CONTRACT NO. GE/2001/14
GROUND INVESTIGATION -
NEW TERRITORIES WEST
(TERM CONTRACT)
AGREEMENT 72/2000 LANDSLIDE INVESTIGATION
CONSULTANCY LANDSLIDE AGE DATING - SAI TSO
SITE WAN AND TAI O, LANTAU, CT. I
W.O. NO. GE/2001/14.32, DATE 3/10/02
T.P. T.I. NO. TP3
FACE BOTTOM



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH10**

SHEET 1 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. CCL4

E 804,695.54
N 812,919.57

DATE from 25.05.11 to 04.06.11

FLUSHING MEDIUM WATER

ORIENTATION Vertical

GROUND LEVEL +31.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.05.11	SW			100						4C-MLC	+31.36	0.28			Soft to firm, brown, slightly clayey sandy SILT with occasional angular to subangular coarse gravel sized rock fragments. (TOPSOIL)
		Dry at 18:00		99						4C-MLC	+30.74	0.90			Pinkish grey to pale grey, angular to subangular COBBLE and BOULDER of moderately decomposed tuff fragments. (COLLUVIUM)
25.05.11										4C-MLC		1.40			Brownish grey to brown, angular to subangular coarse GRAVEL of rock fragments with slightly silty sand matrix. (COLLUVIUM)
26.05.11		Dry at 08:00		85						4C-MLC	+29.64	2.00			
		Dry at 18:00		90						4C-MLC		2.32			Brownish grey to yellowish brown, angular to subangular coarse GRAVEL and COBBLE of rock fragments. (COLLUVIUM)
26.05.11				100						4C-MLC	+28.85	2.79			
26.05.11		Dry at 08:00		88						4C-MLC	+28.57	3.07			Stiff, yellowish brown to greyish brown, sandy clayey SILT with much angular to subangular coarse gravel, cobble and boulder sized rock fragments. (COLLUVIUM) 2.79- 3.07m: Boulder.
27.05.11				96						4C-MLC	+27.94	3.70			
		Dry at 18:00		95						4C-MLC	+27.69	3.95			3.70- 3.95m: Boulder.
27.05.11	5.06 SW									4C-MLC		4.45			6.31- 6.51m: Boulder.
28.05.11		Dry at 08:00		82						4C-MLC	+25.33	6.31			
				80						4C-MLC	+25.13	6.51			
		5.81m at 18:00		93						4C-MLC		7.36			Moderately strong to moderately weak locally very weak to weak, grey to dark grey and brownish white, moderately decomposed quartz crystal bearing fine ash TUFF. * Varying weathered grades along joints and between highly silicified (III) and non-silicified zones. 7.36- 7.46m: Very weak, reddish brown, completely decomposed fine ash TUFF with quartz crystal bearing fine ash TUFF. (Stiff, slightly clayey sandy SILT with some angular to subangular coarse gravels)
28.05.11				91						4C-MLC	+24.28	7.36			
30.05.11		Dry at 08:00		92						4C-MLC	+24.18	7.46			
				92						4C-MLC	+24.00	7.64			
		5.85m at 18:00		92						4C-MLC	+23.64	8.00			
30.05.11				96						4C-MLC	+23.36	8.28			
31.05.11		8.00m at 08:00		96						4C-MLC	+23.11	8.53			
				96						4C-MLC	+22.44	9.20			
				96						4C-MLC	+22.25	9.39			
				96						4C-MLC	+22.02	9.62			
				96						4C-MLC	+21.64	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- ▨ U76 Undisturbed Sample
- ▩ U100 Undisturbed Sample
- ▧ Mazier Sample
- ▦ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- ∨ In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
07.06.11

CHECKED
EDWARD CHENG
DATE
08.06.11

REMARKS
1. Inspection pit excavated from 0.00m-0.28m.
2. A piezometer tip was installed at 17.00m depth.
3. A standpipe installed to 13.50m depth.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT_16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH10**

SHEET 2 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. CCL4

E 804,695.54
N 812,919.57

DATE from 25.05.11 to 04.06.11

FLUSHING MEDIUM WATER

ORIENTATION Vertical

GROUND LEVEL +31.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				98						4C-MLC				III	crystal)
	11.02 PW			95						4C-MLC				IV	8.00- 8.28m: Very weak, reddish brown, completely decomposed fine ash TUFF with quartz crystal bearing fine ash TUFF. (Stiff, slightly clayey sandy SILT with some angular to subangular coarse gravels)
				88						4C-MLC		11.35		III	8.28- 8.53m: Weak, reddish brown to yellowish brown, highly decomposed quartz crystal bearing fine ash TUFF. (Stiff, sandy SILT with some quartz crystal)
				93						4C-MLC		12.34		V	9.20- 9.39m: Very weak, reddish brown, completely decomposed fine ash TUFF with quartz crystal bearing fine ash TUFF. (Stiff, slightly clayey sandy SILT with some angular to subangular coarse gravels)
		5.96m at 18:00		93						4C-MLC	+18.73	12.91		IV	9.39- 9.62m: Weak, reddish brown to yellowish brown, highly decomposed quartz crystal bearing fine ash TUFF. (Stiff, sandy SILT with some quartz crystal)
		9.45m at 08:00		92				13.50	▲	4C-MLC	+18.54	13.10		III	9.39- 9.62m: Weak, reddish brown to yellowish brown, highly decomposed quartz crystal bearing fine ash TUFF. (Stiff, sandy SILT with some quartz crystal)
				92						4C-MLC	+18.27	13.37		IV	Moderately strong to moderately weak, locally weak to moderately weak, purplish brown to purplish grey, moderately decomposed quartz crystal bearing fine ash TUFF. Joints are closely spaced, narrow to very narrow, rough undulating, limonite and clay mineral stained, dipping at 10°-20°, 30°-40° and subvertical from 14.95-15.25m.
				93						4C-MLC	+17.77	13.87		III	* tuff highly altered along fissures causing preferential weathering.
				74						4C-MLC	+17.54	14.10		IV	13.10- 13.37m: Highly decomposed.
				90						4C-MLC	+17.40	14.24		III	13.87- 14.10m: Highly decomposed.
		9.89m at 18:00		90				17.00	▲	4C-MLC				IV	14.24- 18.21m: Highly decomposed.
		10.21m at 08:00		87						4C-MLC					
		10.32m at 18:00		99	0	0		18.21	▲	4C-MLC					
	18.21 HW			99	0	0				T2101	+13.43	18.21		III	Moderately weak to moderately strong, pinkish grey, moderately decomposed coarse ash TUFF. Joints are closely locally medium spaced, very narrow to narrow, rough planar to undulating, limonite and kaolin stained, dipping at 80°-90°.
				100	0	0				T2101					
				97	0	0				T2101					
										T210T	+11.64	20.00			

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazer Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
07.06.11

CHECKED
EDWARD CHENG
DATE
08.06.11

REMARKS

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH10**

SHEET 3 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. CCL4

E 804,695.54
N 812,919.57

DATE from 25.05.11 to 04.06.11

FLUSHING MEDIUM WATER

ORIENTATION Vertical

GROUND LEVEL +31.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
			100	0	0			20.01							As Sheet 2 of 3.
		9.27m at 18:00	100	0	0		11.4			T2101					
03.06.11			100	0	0			20.87		T2101					
04.06.11		10.27m at 08:00	100	0	0		>20	21.15		T2101			III		
			100	0	0			21.50		T2101					
			100	0	0		12.5	22.00		T2101					
		10.07m at 18:00	100	49	49		4.6	22.64		T2101	+9.00	22.64		III	Moderately strong to strong, pale grey to pinkish brown, moderately decomposed highly silicified coarse ash TUFF. Joints are medium, locally very closely spaced, very narrow to narrow, rough undulating, kaolin and limonite stained, dipping at 20°-30° and 40°-50°. End of drillhole at 23.36m.
04.06.11							>20	23.08		T2101	+8.28	23.36			
								23.36							

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- ▨ U76 Undisturbed Sample
- ▩ U100 Undisturbed Sample
- ▧ Mazier Sample
- ▦ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
07.06.11

CHECKED
EDWARD CHENG
DATE
08.06.11

REMARKS

CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10 BOX NO. : 1 OF 9

DEPTH : 0.00 m TO 2.32 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10 BOX NO. : 2 OF 9

DEPTH : 2.32 m TO 4.45 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10

BOX NO. : 3 OF 9

DEPTH : 4.45 m TO 7.36 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10

BOX NO. : 4 OF 9

DEPTH : 7.36 m TO 10.32 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10

BOX NO. :

5

OF

9

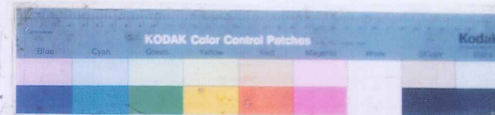
DEPTH :

10.32 m

TO

13.37 m

DATE OF PHOTOGRAPH : 04-06-2011



0.0m

0.5m

1.0m



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10

BOX NO. :

6

OF

9

DEPTH :

13.37 m

TO

16.20 m

DATE OF PHOTOGRAPH : 04-06-2011



0.0m

0.5m

1.0m

13.37



14.33



15.25



16.20



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

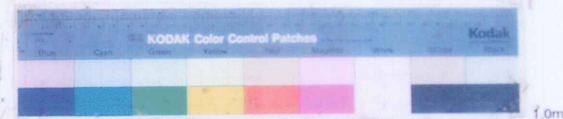
Contract No. GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10 BOX NO. : 7 OF 9

DEPTH : 16.20 m TO 19.21 m

DATE OF PHOTOGRAPH : 04-06-2011



0.0m 0.5m 1.0m



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10 **BOX NO. :** 8 **OF** 9

DEPTH : 19.21 m TO 22.64 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. **GE/2009/24**

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH10 **BOX NO. :** 9 **OF** 9

DEPTH : 22.64 m TO 23.36 m

DATE OF PHOTOGRAPH : 04-06-2011





TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH12**

SHEET 1 of 4

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,653.67
N 812,926.53

DATE from 11.04.11 to 03.05.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +23.38 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.04.11	SW	Dry at 18:00													Soft to firm, pale grey, slightly sandy clayey SILT with some angular to subangular fine to medium gravel sized rock fragments and rootlets. (TOPSOIL / COLLUVIUM)
11.04.11		Dry at 08:00								INSPECTION PIT A 0.45 0.50	+22.48	0.90			Pale grey streaked red, angular to subangular BOULDER of moderately decomposed tuff fragments. (COLLUVIUM)
12.04.11		0.90m at 18:00	85							B 0.85 0.90 4C-MLC					
12.04.11		Dry at 08:00	100							4C-MLC 1.34					
13.04.11		Dry at 08:00	100							4C-MLC 1.55 4C-MLC 1.87 1.99					
13.04.11		1.70m at 18:00	100							4C-MLC +20.69	2.69	2.69			Yellowish brown, angular to subangular GRAVEL sized rock fragments with silty sand matrix. (COLLUVIUM)
13.04.11		Dry at 08:00	96							4C-MLC 3.28	+20.10	3.28			Subangular locally subrounded to rounded coarse GRAVEL and COBBLE sized rock fragments with sand matrix. (ALLUVIUM)
14.04.11		Dry at 08:00	90							4C-MLC 3.96					Pale grey to yellowish brown, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments with clayey sand matrix. (COLLUVIUM)
14.04.11		4.90m at 18:00	94							4C-MLC 4.26	+18.65	4.73			
14.04.11		Dry at 08:00	100							4C-MLC 5.27					
15.04.11		Dry at 08:00	100							4C-MLC 6.09					
15.04.11	7.00 SW PW		100							4C-MLC 6.92	+16.46	6.92			Stiff, yellowish brown to reddish brown, slightly clayey sandy SILT with occasional fine to medium gravel, cobble and boulder sized highly to moderately decomposed tuff fragments. (COLLUVIUM)
15.04.11		7.50m at 18:00	100							4C-MLC 7.57					Pale grey spotted black and white streaked red, angular to subangular BOULDER of moderately to slightly decomposed tuff fragments. (COLLUVIUM)
15.04.11		Dry at 08:00	100							4C-MLC 8.71	+14.39	8.99			
18.04.11	9.00 PW HW		100							4C-MLC 8.99					
			100							4C-MLC +13.38		10.00			

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ⊥ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▨ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazier Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- ⊥ In-situ Vane Shear Test
- ⊥ Point Load Test

LOGGED
S.O. CHAN
DATE
18.05.11

CHECKED
EDWARD CHENG
DATE
19.05.11

REMARKS
1. Inspection pit excavated from 0.00m-0.90m.
2. A piezometer tip was installed at 15.50m depth.
3. A standpipe installed to 10.50m depth.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH12**

SHEET **2** of **4**

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,653.67
N 812,926.53

DATE from 11.04.11 to 03.05.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +23.38 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test	Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
			100	100	100				10.50	□	4C-MLC	10.19	+12.95	10.43		As Sheet 1 of 4.
			100	100	100				10.50	□	4C-MLC	10.19	+12.59	10.79	V	Stiff, yellowish brown to reddish brown, slightly gravelly sandy SILT with much medium to coarse gravel sized rock fragments. (COLLUVIUM)
			100	100	100				10.50	□	4C-MLC	10.79	+12.18	11.20	V	Reddish brown to pinkish grey, angular to subangular BOULDER of rock fragments with sandy silt matrix. (COLLUVIUM)
			100	100	100				11.20		4C-MLC	11.20	+11.48	11.90	III	11.20- 11.90m: Boulders
			100	100	100				11.90		4C-MLC	11.90	+11.23	12.15	VI	
			100	100	100				12.15		4C-MLC	12.15	+10.48	12.90	III	12.15- 12.90m: Boulders
			100	100	100				12.90		4C-MLC	12.90	+10.28	13.10	VI	
			98	98	98				13.10		4C-MLC	13.10	+9.68	13.70	III	13.10- 13.70m: Boulders
			98	98	98				13.70		4C-MLC	13.70	+9.38	14.00	V	
			98	98	98				14.00		4C-MLC	14.00	+9.17	14.21	III	14.00- 14.21m: Boulders
			100	100	100				14.21		4C-MLC	14.21	14.78	V		
			100	100	100				14.78		4C-MLC	14.78	+7.78	15.60	III	15.60- 16.10m: Boulders
			100	100	100				15.60		4C-MLC	15.60	+7.28	16.10	III	
			95	95	95				16.10		4C-MLC	16.10	16.28	IV		
			95	95	95				16.28		4C-MLC	16.28	16.65	IV		
			97	29	17			5.4	16.90		4C-MLC	16.90	+6.48	16.90	III	Intermittent grade III to V crystal bearing fine ash TUFF with occasional grade VI which is seen along joints as deeper weathered.
			97	29	17			NA	17.27		4C-MLC	17.27	+6.32	17.06	III	
			97	29	17			NA	17.60		4C-MLC	17.60	+6.11	17.27	V	Weak to moderately weak, purplish grey, moderately decomposed fine sandy matrix supported CONGLOMERATE.
			100	33	33			>20	18.22		4C-MLC	18.22	+5.78	17.60	V	Extremely weak to very weak, reddish brown, completely decomposed SANDSTONE. (Medium dense, slightly silty fine to coarse SAND with much angular to subangular coarse gravel sized rock fragments)
			100	0	0			NA	18.75		4C-MLC	18.75	+4.63	18.75	III	
			100	0	0			NA	19.38		4C-MLC	19.38	+4.00	19.38	V	Moderately weak to weak, yellowish grey to pinkish grey, moderately decomposed SANDSTONE. Joints are closely to medium spaced, rough planar to undulating, very narrow, limonite stained, dipping at 20°-30° and 50°-60°.
			100	31	31			13.9	19.38		4C-MLC	19.38	+3.38	20.00	III	Weak to moderately weak, purplish grey streaked

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazier Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
18.05.11

CHECKED
EDWARD CHENG
DATE
19.05.11

REMARKS

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH2-DH12**

SHEET 4 of 4

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,653.67
N 812,926.53

DATE from 11.04.11 to 03.05.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +23.38 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29.04.11 30.04.11	32.60 HW	9.90m at 18:00 12.00m at 08:00	100	100	0					14 30.05 15 16 31.05 31.15 17 18 32.15 32.25 19 32.50 32.60	-6.67	30.05		III	As Sheet 3 of 4. Moderately weak to moderately strong, purplish black, moderately decomposed SILTSTONE.
			100	0	0	>20		32.60		T2101				III	Moderately weak to weak, black to purplish black, moderately decomposed SILTSTONE, highly fractured. Joints are closely to very closely spaced, extremely narrow to narrow, clayey infilled, dipping at 20°-30°, 40°-50° and 80°-90°.
			100	0	0			33.32		T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	11	11	>20		34.40	14.8	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		34.69	11.1	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		35.14	>20	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		35.30	12.9	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		35.61	>20	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		35.76	>20	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	8	8	>20		36.20	9.1	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
30.04.11 03.05.11		9.70m at 18:00 12.30m at 08:00	100	0	0	>20		36.20		T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
			100	0	0	>20		37.86	9.5	T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
03.05.11		11.80m at 18:00	100	0	0	>20		38.49		T2101				III	Moderately weak to weak, purplish brown to purplish black, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, narrow, limonite stained, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and 80°-90°.
															End of drillhole at 38.49m.

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazier Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- ∠ In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
18.05.11

CHECKED
EDWARD CHENG
DATE
19.05.11

REMARKS

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11

CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12 **BOX NO. :** 1 **OF** 11

DEPTH : 0.00 m TO 3.28 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2- DH12

BOX NO. : 2 OF 11

DEPTH : 3.28 m TO 6.09 m

DATE OF PHOTOGRAPH : 04-06-2011



0.0m

0.5m

1.0m



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12 **BOX NO. :** 3 **OF** 11

DEPTH : 6.09 m TO 8.71 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12 **BOX NO. :** 4 **OF** 11

DEPTH : 8.71 m TO 10.79 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12

BOX NO. :

5

OF

11

DEPTH :

10.79 m

TO

13.10 m

DATE OF PHOTOGRAPH : 04-06-2011



0.0m

0.5m

1.0m



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12

BOX NO. : 6 OF 11

DEPTH : 13.10 m TO 15.77 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

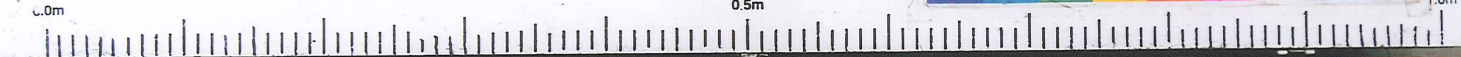
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2- DH12 BOX NO. : 7 OF 11

DEPTH : 15.77 m TO 18.49 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12

BOX NO. :

8

OF

11

DEPTH :

18.49

m TO

24.00

m

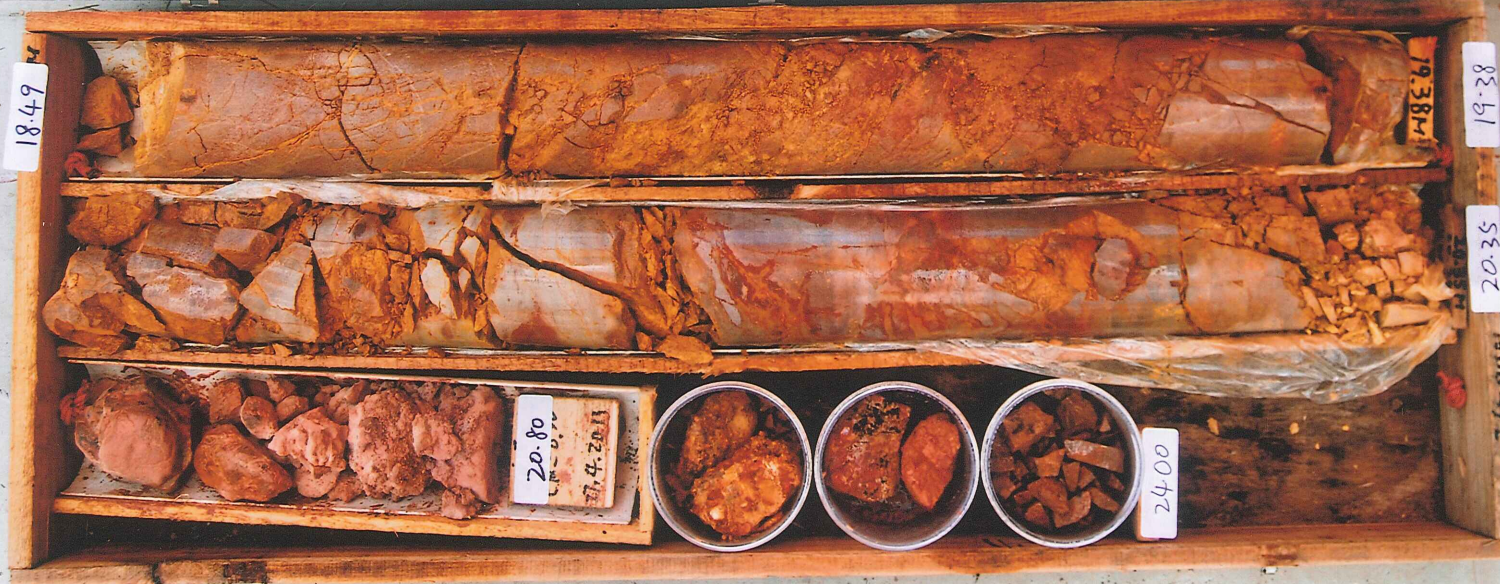
DATE OF PHOTOGRAPH : 04-06-2011



0.0m

0.5m

1.0m



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12

BOX NO. : 9 OF 11

DEPTH : 24.00 m TO 32.60 m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

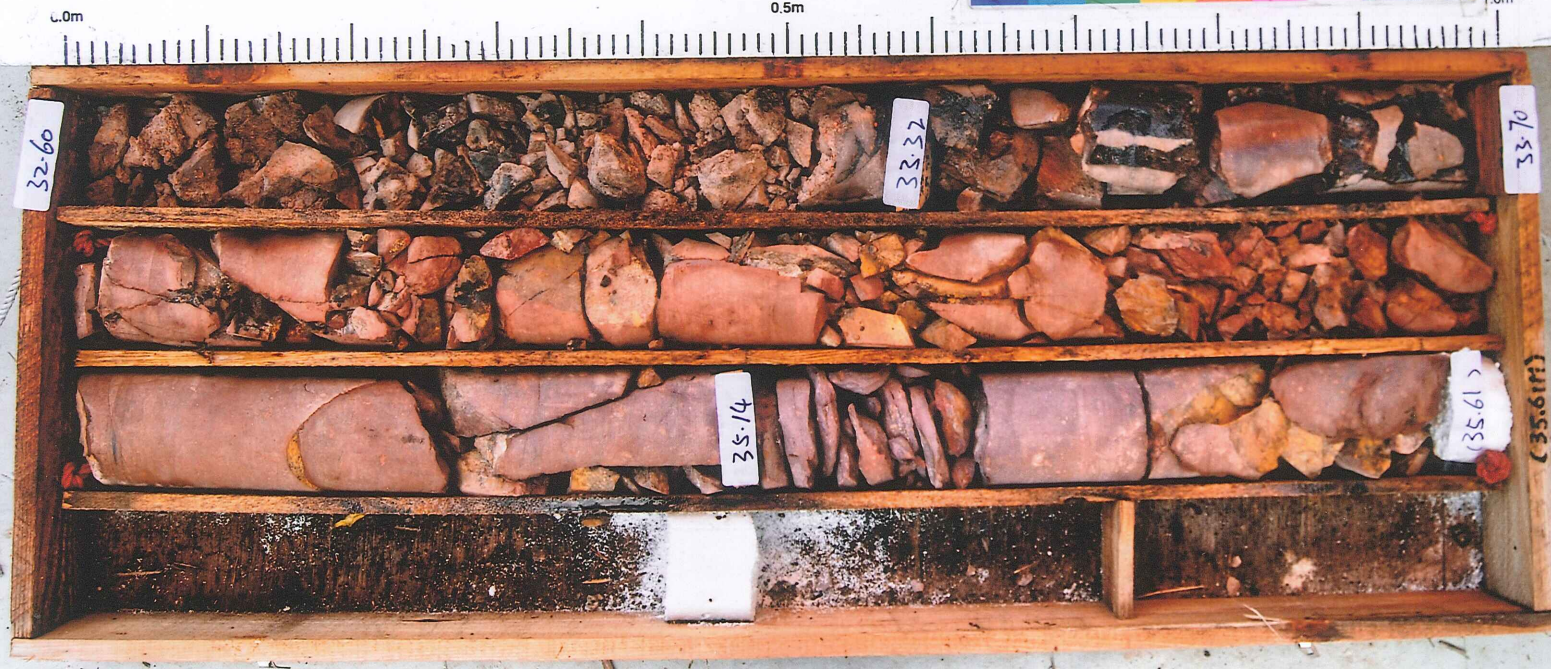
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12 **BOX NO. :** 10 **OF** 11

DEPTH : 32.60 m TO (35.61) m

DATE OF PHOTOGRAPH : 04-06-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH2-DH12 **BOX NO. :** 11 **OF** 11

DEPTH : (35.61) m TO 38.49 m

DATE OF PHOTOGRAPH : 04-06-2011





TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH5-DH 2**

SHEET 1 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC CO-ORDINATES W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17 E 804,651.67 N 812,551.79 DATE from 10.01.11 to 19.01.11

FLUSHING MEDIUM AIR FOAMS ORIENTATION Vertical GROUND LEVEL +15.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test	Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.01.11	SW										A 0.45 B 0.50 C 0.95 1.00					Soft to firm, brown, slightly clayey SILT with some medium to coarse gravel sized rock fragments and rootlets. (TOPSOIL)
10.01.11		Dry at 18:00										+14.12	1.50			Brownish grey to reddish grey, angular to subangular COBBLE sized rock fragments. (COLLUVIUM)
11.01.11		Dry at 08:00		62							4C-MLC	+13.52	2.10			Reddish grey to brownish grey spotted black and white with streaked red, angular to subangular COBBLE and BOULDER sized rock fragments with matrix of yellowish brown, slightly clayey sand silt. (COLLUVIUM)
11.01.11		Dry at 18:00		100							4C-MLC					
12.01.11	3.50 SW PW	Dry at 18:00		100							4C-MLC					
12.01.11		Dry at 08:00		100							4C-MLC					
14.01.11		Dry at 18:00		100							4C-MLC					
14.01.11		Dry at 08:00		100							4C-MLC					
14.01.11		4.40m at 18:00		100							4C-MLC	+10.27	5.35			Firm to stiff, moist, yellowish brown to greyish brown, slightly clayey sandy SILT with much medium to coarse gravel sized rock fragments. (COLLUVIUM)
15.01.11		4.90m at 08:00		98							4C-MLC	+10.11	5.51			Reddish brown to reddish brown, angular to subangular COBBLE and BOULDER sized moderately decomposed tuff fragments. (COLLUVIUM)
				100							4C-MLC	+9.37	6.25			Stiff to firm, yellowish brown to reddish brown, slightly clayey sandy SILT with much coarse gravel and occasional cobble sized rock fragments. (COLLUVIUM)
				97					7.00		4C-MLC	+8.11	7.51			Reddish brown to grey, angular to subangular COBBLE and BOULDER sized rock fragments with matrix slightly clayey sand silt. (COLLUVIUM)
	8.01 PW HW			100							4C-MLC	+7.24	8.38			Firm to soft, yellowish brown to reddish brown, slightly clayey sandy SILT with some medium to coarse gravel sized rock fragments. (COLLUVIUM)
				85							4C-MLC	+6.12	9.50			Firm to soft, yellowish brown, clayey sandy SILT with much medium to coarse gravel sized rock fragments. (COLLUVIUM)
											4C-MLC	+5.62	10.00			

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ⊥ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▨ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazer Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- ⊥ In-situ Vane Shear Test
- ⊥ Point Load Test

LOGGED S.O. CHAN
DATE 01.02.11
CHECKED EDWARD CHENG
DATE 02.02.11

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.
2. A piezometer tip was installed at 10.50m depth.
3. A standpipe installed to 7.00m depth.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH5-DH 2**

SHEET 3 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,651.67
N 812,551.79

DATE from 10.01.11 to 19.01.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +15.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test	Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.01.11 19.01.11	5.10m at 18:00	19.00m at 08:00	100	0	0	NA	NA	>20	21.05		T2101	-5.43	21.05	IV	IV	Very weak to weak, brownish grey, highly decomposed fine ash TUFF, highly fractured. (Stiff to firm, slightly clayey sandy SILT)
			100	15	0			>20	21.96		T2101					Moderately strong to moderately weak, brownish grey with streaked red, moderately decomposed fine ash TUFF. Joints are extremely closely to closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 20°-30°, 50°-60°, 60°-70° and 80°-90°.
			100	0	0			>20	22.50		T2101				III	
			100	0	0			>20	22.93		T2101					
			100	58	41			10.2	23.35		T2101					
								NA	23.53							
19.01.11	8.10m at 18:00							NA	24.71			-9.09	24.71		IV	Very weak to extremely weak, reddish brown to brownish grey, highly decomposed fine ash TUFF, highly fractured.
								NA	25.07			-9.45	25.07			End of drillhole at 25.07m.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- ▨ U76 Undisturbed Sample
- ▩ U100 Undisturbed Sample
- ▧ Mazier Sample
- ▦ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
01.02.11

CHECKED
EDWARD CHENG
DATE
02.02.11

REMARKS

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. :

1

OF

9

DEPTH :

0.00 m TO

(4.20) m

DATE OF PHOTOGRAPH : 25-01-2011



0.0m

0.5m

1.0m

0.00



1.50



2.10



2.30



2.30



3.17



3.27



4.05



(4.20)

(4.20)

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. :

2

OF

9

DEPTH :

(4.20) m

TO

6.52 m

DATE OF PHOTOGRAPH : 25-01-2011



0.0m

0.5m

1.0m

(4.20)

5.17

5.56

5.79

6.52



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2 **BOX NO. :** 3 **OF** 9

DEPTH : 6.52 m TO (10.20) m

DATE OF PHOTOGRAPH : 25-01-2011



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. :

4

OF

9

DEPTH :

(10.20) m

TO

12.51 m

DATE OF PHOTOGRAPH : 25-01-2011



0.0m

0.5m

1.0m

(10.20)

11.00

12.51



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. :

5

OF

9

DEPTH :

12.51 m TO

15.43 m

DATE OF PHOTOGRAPH : 25-01-2011



c.0m

0.5m

1.0m

12.51

13.99

15.43M

15.43



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. : 6 OF 9

DEPTH : 15.43 m TO (18.33) m

DATE OF PHOTOGRAPH : 25-01-2011



0.0m

0.5m

1.0m

15.43

16.39

17.09

(18.33)



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. : 7 OF 9

DEPTH : (18.33) m TO (21.21) m

DATE OF PHOTOGRAPH : 25-01-2011



c.0m

0.5m

1.0m

(18.33)

18.64

20.13

(21.21)



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. : 8 OF 9

DEPTH : (21.21) m TO 23.53 m

DATE OF PHOTOGRAPH : 25-01-2011



c.0m

0.5m

1.0m

(21.21)

21.50

22.73

23.53



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH2

BOX NO. :

9

OF

9

DEPTH :

23.53 m

TO

25.07 m

DATE OF PHOTOGRAPH : 25-01-2011



0.0m

0.5m

1.0m

23.53



25.07

END





TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH5-DH 3**

SHEET 1 of 4

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,650.94
N 812,541.19

DATE from 25.01.11 to 08.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +16.28 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.01.11	SW									INSPECTION PIT	0.45	0.50			Soft, pale brown, slightly clayey SILT with some subangular medium gravel sized rock fragments and rootlets. (TOPSOIL)
				80						4C-MLC	+15.48	0.80			Pinkish grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (COLLUVIUM)
				80						4C-MLC		1.20			Brownish grey to yellowish brown, angular to subangular GRAVEL and COBBLE sized rock fragments with slightly sandy silt matrix. (COLLUVIUM)
		0.80m at 18:00		100						4C-MLC	+14.59	1.69			Pinkish grey, angular to subangular COBBLE and BOULDER sized rock fragments with slightly sandy silty matrix. (COLLUVIUM)
25.01.11 26.01.11		Dry at 08:00		100						4C-MLC	+13.85	2.43			Reddish grey to brown, angular to subangular COBBLE occasional boulder sized rock fragments with slightly silty fine to coarse sand matrix. (COLLUVIUM)
				100						4C-MLC		3.60			
		3.50m at 18:00		100						4C-MLC	+11.58	4.70			Brown, angular to subangular coarse GRAVEL sized rock fragments with slightly sandy silt matrix. (COLLUVIUM)
26.01.11 27.01.11		Dry at 08:00		100						4C-MLC	+11.08	5.20			Reddish grey to brown, angular to subangular COBBLE occasional boulder sized rock fragments with slightly silty fine to coarse sand matrix. (COLLUVIUM)
	6.09 SW HW			100						4C-MLC	+10.19	6.09			Stiff to firm, brown to greyish brown, sandy SILT with some angular to subangular gravel, cobble and occasional boulder sized rock fragments. (COLLUVIUM)
				100						4C-MLC		6.89			
		5.10m at 18:00		100						4C-MLC	+8.10	8.18			Firm stiff, reddish brown to brownish grey, slightly clayey sandy SILT with some angular to subangular gravel and occasional cobble sized rock fragments. (COLLUVIUM)
27.01.11 29.01.11		8.05m at 08:00		80						4C-MLC					
				28						4C-MLC	+6.28	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- ▨ U76 Undisturbed Sample
- ▩ U100 Undisturbed Sample
- ▧ Mazier Sample
- ▦ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- ∠ In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
15.02.11

CHECKED
EDWARD CHENG
DATE
16.02.11

REMARKS
1. Inspection pit excavated from 0.00m-0.50m.
2. A piezometer tip was installed at 24.00m depth.
3. A standpipe installed to 11.00m depth.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH5-DH 3**

SHEET 2 of 4

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,650.94
N 812,541.19

DATE from 25.01.11 to 08.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +16.28 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				28											As Sheet 1 of 4.
		6.15m at 18:00		33				11.00		4C-MLC	+5.58	10.70			Soft to firm, brown, slightly silty fine to coarse SAND with occasional angular to subangular medium gravel sized rock fragments. (COLLUVIUM)
29.01.11		10.50m at 08:00		80						4C-MLC	+4.98	11.30			Firm, reddish brown to brownish grey, clayey sandy SILT with much gravel occasional cobble sized rock fragments. (COLLUVIUM)
31.01.11				80						4C-MLC	+4.53	11.75			Soft to firm, reddish brown, slightly silty fine to coarse SAND with some angular to subangular gravel sized rock fragments. (COLLUVIUM)
				81						4C-MLC	+3.90	12.38			Soft to firm, reddish brown, slightly clayey fine SAND with some angular to subangular gravel sized rock fragments. (COLLUVIUM)
				100						4C-MLC	+2.78	13.50		V	Extremely weak to very weak, yellowish brown to reddish brown, completely decomposed fine ash TUFF. (Stiff, slightly sandy clayey SILT)
				100						1		14.20		IV	Moderately weak to weak, reddish grey, highly decomposed fine ash TUFF. (Dense, silty angular fine to coarse GRAVEL)
				100						2		14.30			
				100						3		14.70			
				100						4	+1.48	14.80			
				100							+1.31	14.97		III	Moderately strong to moderately weak, pinkish grey, moderately decomposed fine ash TUFF with highly fractured, recovered as gravel sized fragments, manganese stained and some clay mineral infilled.
31.01.11		7.50m at 18:00		97						T2101	+0.62	15.66		V	Extremely weak to very weak, pinkish grey to brown, completely decomposed fine ash TUFF. (Firm to stiff, slightly clayey sandy SILT)
01.02.11		11.07m at 08:00		100						5				V	Extremely weak to very weak, pale grey, completely decomposed fine ash TUFF. (Stiff, sandy SILT)
				100						6	-0.48	16.76			Weak to moderately weak, pinkish grey to pale grey, highly decomposed fine ash TUFF. (Stiff sandy SILT locally recovered as angular fine to coarse GRAVEL sized moderately decomposed rock fragments)
				90						7				IV	
				100						8	-1.58	17.86			Very weak, pinkish brown, completely decomposed fine ash TUFF. (Stiff, sandy SILT)
				100						9					
				100						10		18.86		V	
				100						11		18.96			
											-3.72	20.00			

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazier Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- ∠ In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
15.02.11

CHECKED
EDWARD CHENG
DATE
16.02.11

REMARKS

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH5-DH 3**

SHEET 4 of 4

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,650.94
N 812,541.19

DATE from 25.01.11 to 08.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +16.28 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
08.02.11		at 18:00		100	0	0	>20	30.26		T2101	-13.98	30.26	✓	III	As Sheet 3 of 4.
															End of drillhole at 30.26m.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11

- Small Disturbed Sample
- Large Disturbed Sample
- ▨ SPT Liner Sample
- ▩ U76 Undisturbed Sample
- ▧ U100 Undisturbed Sample
- ▦ Mazier Sample
- ▤ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
15.02.11

CHECKED
EDWARD CHENG
DATE
16.02.11

REMARKS

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. : 1

OF 7

DEPTH : 0.00 m TO (3.32) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

0.00

0.50

1.20

1.55

2.43

(3.32)

(3.32m)

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. :

2

OF

7

DEPTH :

(3.32) m

TO

6.09 m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

(3.32)

3.60

4.70

6.09



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. :

3

OF

7

DEPTH : 6.09 m TO

(8.94) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

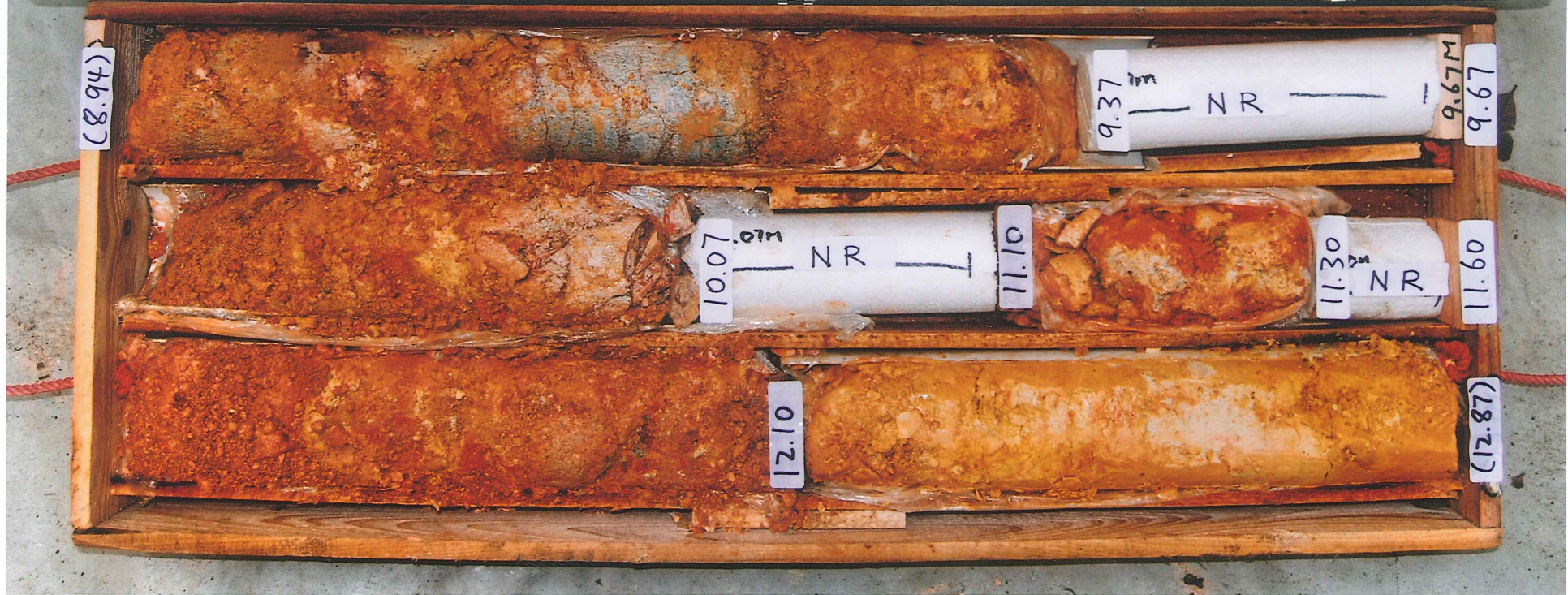
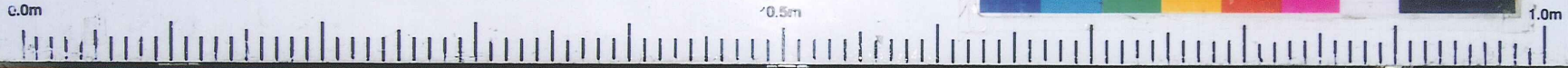
W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. : 4 OF 7

DEPTH : (8.94) m TO (12.87) m

DATE OF PHOTOGRAPH : 22-03-2011



CONTRACTOR TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5-DH3 BOX NO. : 5 OF 7

DEPTH : (12.87) m TO 24.79 m

DATE OF PHOTOGRAPH : 22-03-2011



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. :

6

OF

7

DEPTH :

24.79 m TO

27.67 m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

24.79



26.20



27.15



27.67

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH5 - DH3

BOX NO. :

7

OF

7

DEPTH :

27.67

m TO

30.26

m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

27.67

28.18

28.86

29.86

30.26
END

(END)

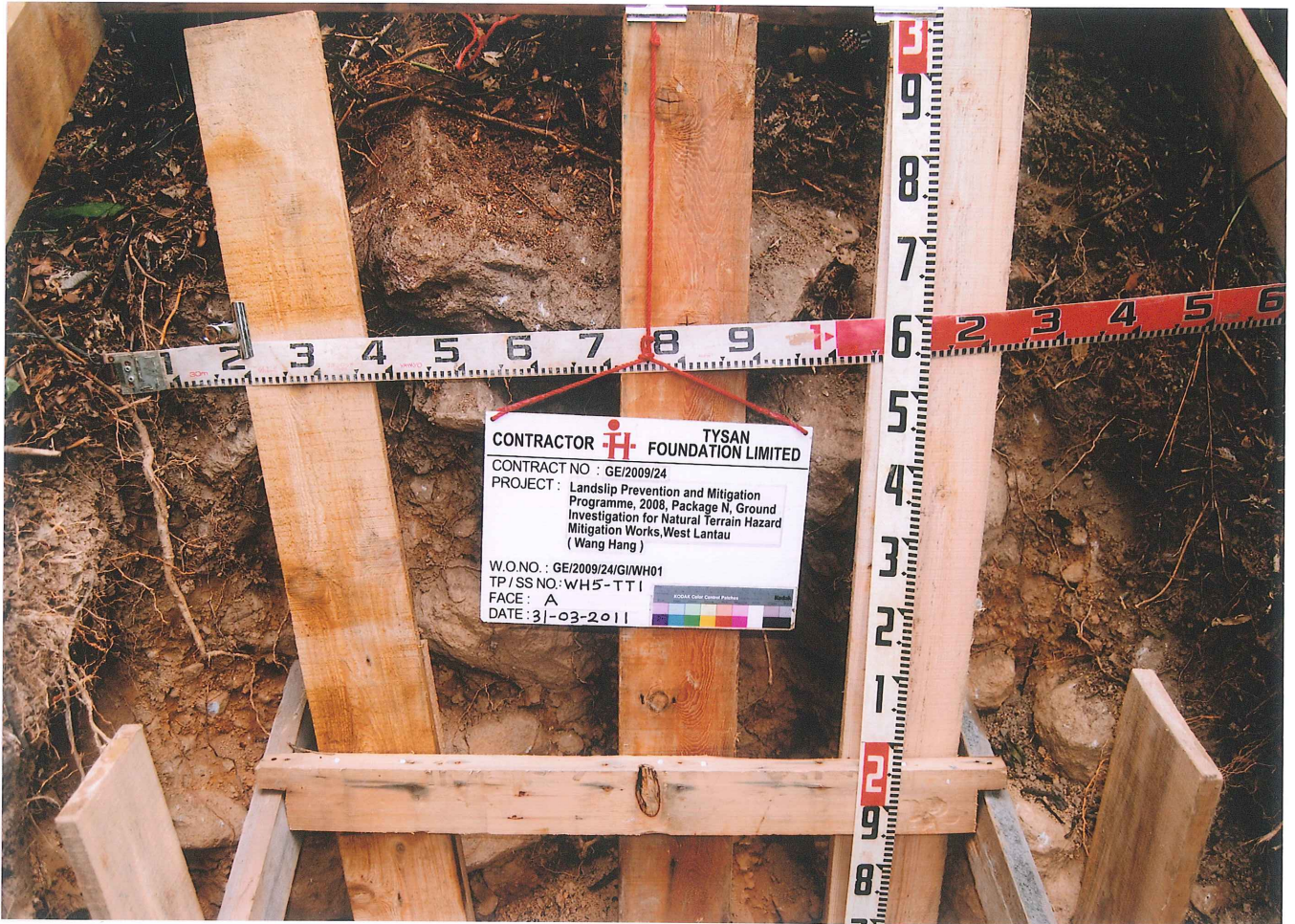


TRIAL TRENCH RECORD

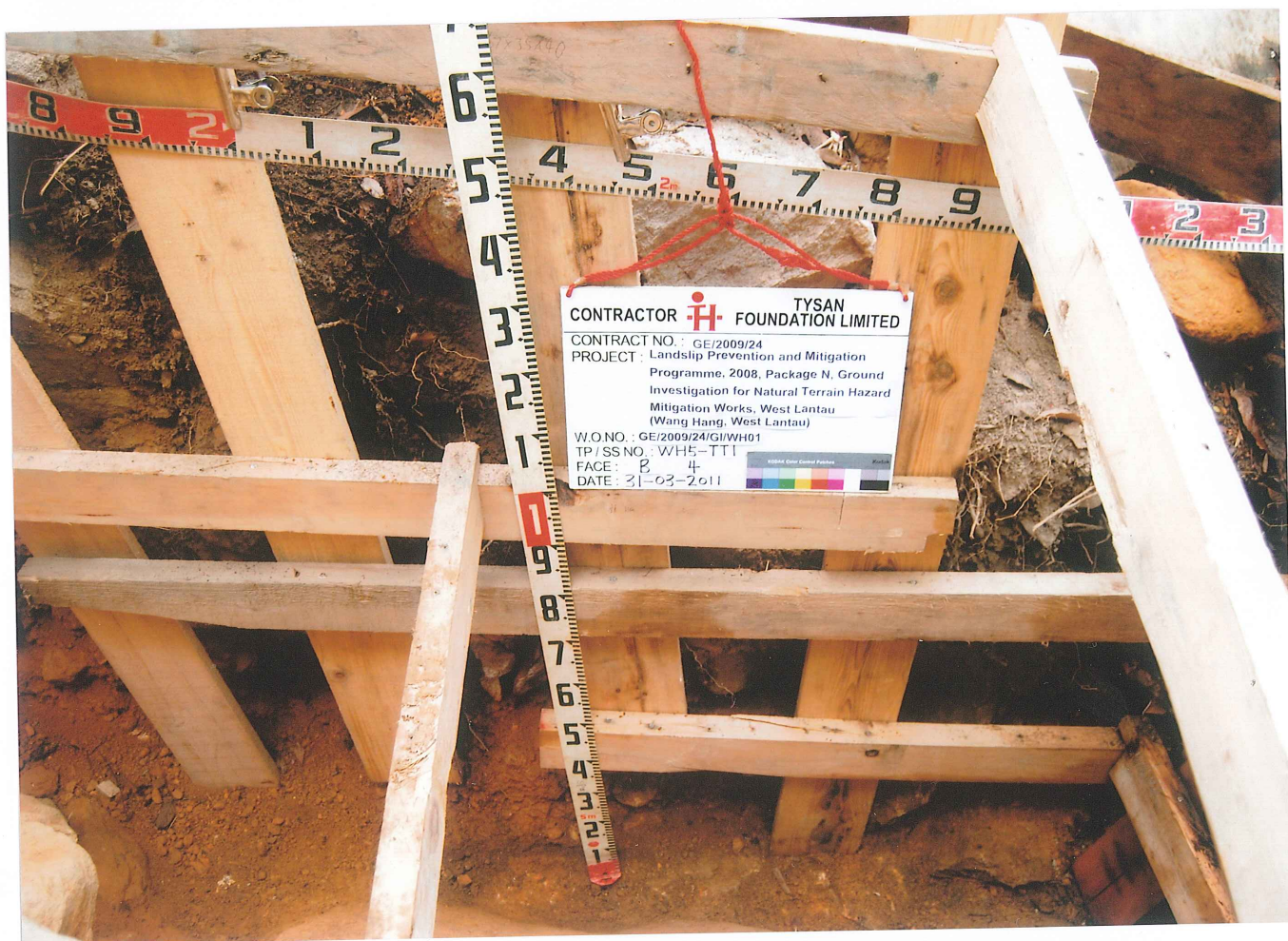
TRIAL TRENCH No.
WH5-TT 1

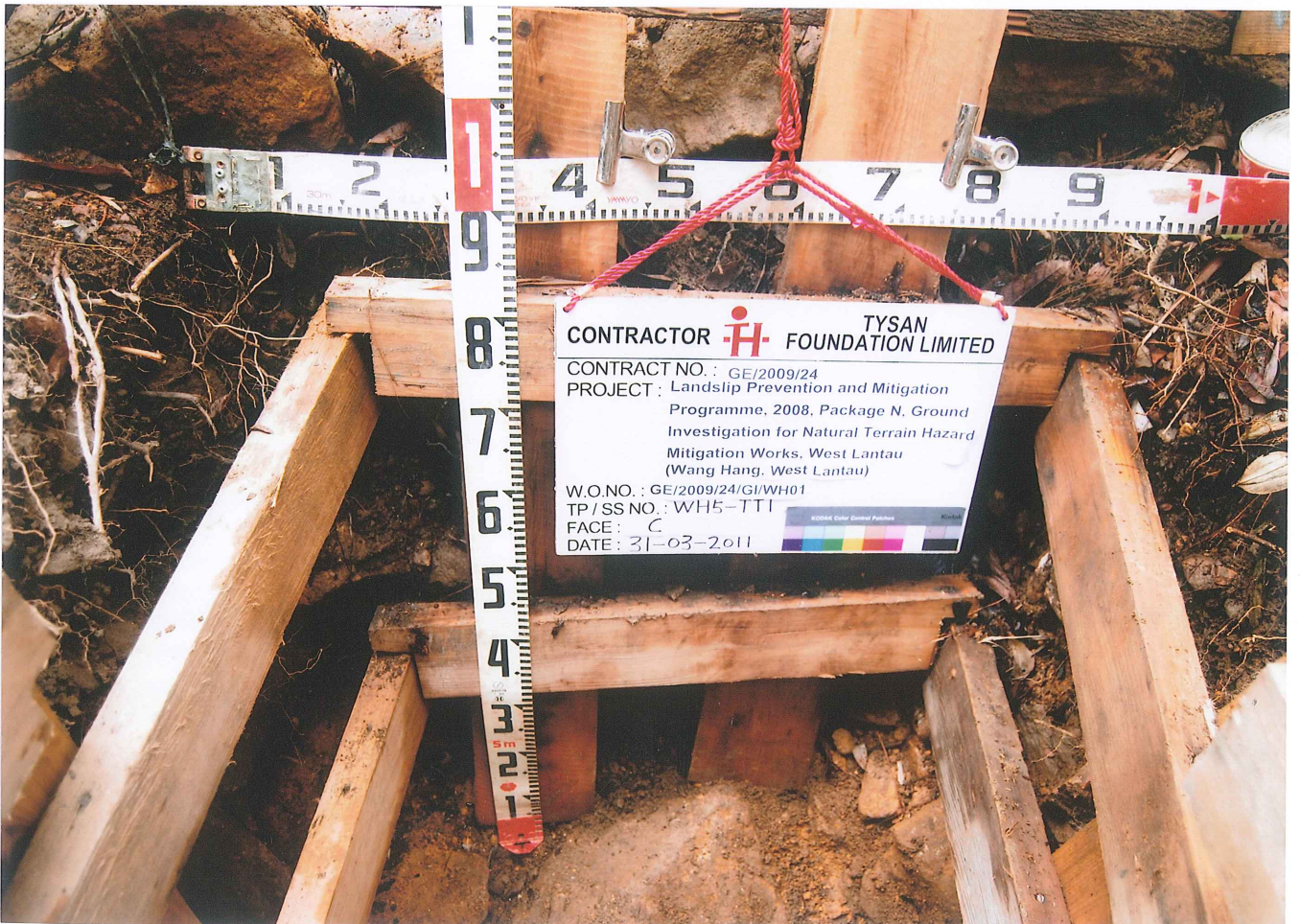
Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Grade	Description
		Face B 3.55 m				As Sheet 1 of 2.
		Face C 1.60 m				
	0.50					
	0.95					
	1.00					
	1.10					
	1.50					
	1.95					
	2.00					
	2.10					
				2.75		

SYMBOL	SECTION	REMARKS
<ul style="list-style-type: none"> Small disturbed sample Large disturbed sample Undisturbed vertical sample Undisturbed horizontal sample Block sample In-situ density test Water sample Water seepage N-Schmidt Hammer 		<ol style="list-style-type: none"> No seepage observed. Shoring installed to 2.85m depth. Average depth of trial pit was 2.00m depth. Trial pit was stable during excavation. Additional horizontal U100 samples were taken at 0.70m and 2.20m at Face B.

















CONTRACTOR  TYSAN FOUNDATION LIMITED

CONTRACT NO.: GE/2009/24
PROJECT: Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Wang Hang, West Lantau)

W.O.NO.: GE/2009/24/GI/WH01
TP/SS NO.: WH5-TT1
FACE: BotToM 3
DATE: 31-03-2011





TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH6-DH 2**

SHEET 1 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,667.43
N 812,524.38

DATE from 15.02.11 to 23.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +18.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test	Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.02.11	SW	Dry at 18:00														Soft, dark brown, slightly sandy SILT with some subangular medium to coarse gravel sized rock fragments and rootlets. (TOPSOIL)
15.02.11		Dry at 18:00		100					0.40		4C-MLC	+17.70	0.45			Brownish grey to dark grey streaked red, subangular COBBLE sized moderately decomposed tuff fragments. (COLLUVIUM)
16.02.11		Dry at 08:00		97					0.80		4C-MLC	+17.35	0.80			
				97					1.96		4C-MLC					Stiff to firm, reddish brown to brownish grey locally dark grey, slightly silty fine to coarse SAND with much gravel and cobble sized moderately decomposed tuff fragments. (COLLUVIUM / LANDSLIDE)
				90					3.11		4C-MLC	+15.04	3.11			Firm, reddish brown to dark grey streaked red, slightly clayey sandy SILT with some gravel, cobble and boulder sized moderately decomposed tuff fragments. (COLLUVIUM / LANDSLIDE) 3.11- 3.48m: Boulder.
		0.90m at 18:00									4C-MLC	+14.67	3.48			
16.02.11		Dry at 18:00		100					4.26		4C-MLC	+13.83	4.32			4.32- 4.60m: Boulder.
17.02.11	5.00 SW PW	Dry at 08:00		100					4.76		4C-MLC	+13.55	4.60			Firm, reddish brown to dark grey, slightly clayey silty fine to coarse SAND with much angular to subangular gravel, cobble and occasional boulder sized of moderately decomposed tuff fragments. (COLLUVIUM) 4.76- 5.16m: Boulder.
				100							4C-MLC	+12.99	5.16			
		2.90m at 18:00									4C-MLC	+12.66	5.49			5.49- 5.83m: Boulder.
17.02.11		Dry at 18:00		100					5.96		4C-MLC	+12.32	5.83			
18.02.11		5.70m at 08:00		100					6.36		4C-MLC	+11.57	6.58			6.58- 6.88m: Boulder.
18.02.11		Dry at 08:00		100							4C-MLC	+11.27	6.88			
				100					7.67		4C-MLC	+10.00	8.15			Medium dense, reddish brown to brownish grey, slightly clayey fine to coarse SAND with some angular to subangular gravel, cobble and boulder sized moderately decomposed tuff fragments. (COLLUVIUM) 8.15- 8.51m: Boulder.
	7.67 PW HW			100							4C-MLC	+9.64	8.51			
		3.50m at 18:00		100					8.98		4C-MLC					
18.02.11		Dry at 18:00		99				9.50	9.58		4C-MLC	+8.15	10.00			
19.02.11		8.10m at														

- Small Disturbed Sample
- ▲ Water Sample
- ▬ Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazer Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- ⊥ In-situ Vane Shear Test
- ⊥ Point Load Test

LOGGED
S.O. CHAN
DATE
24.02.11

CHECKED
EDWARD CHENG
DATE
25.02.11

REMARKS
1. Inspection pit excavated from 0.00m-0.45m.
2. A piezometer tip was installed at 12.00m depth.
3. A standpipe installed to 9.50m depth.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH6-DH 2**

SHEET 2 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,667.43
N 812,524.38

DATE from 15.02.11 to 23.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +18.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
		08:00		99						4C-MLC					As Sheet 1 of 3.
				95						4C-MLC					Extremely weak, reddish brown to yellowish grey mottled red, completely decomposed fine ash TUFF. (Stiff, slightly sandy SILT)
		6.60m at 18:00		100				12.00		1				V	
19.02.11	12.82 HW			0				12.82		2	+5.45	12.70			
21.02.11		11.90m at 08:00		100	54	47	4.1	12.82-13.00	>20	T2101	+5.33	12.82		III	Moderately strong to moderately weak, reddish brown to brownish grey, moderately decomposed fine ash TUFF.
				100										III	Moderately strong to moderately weak, brownish grey, moderately decomposed fine ash TUFF. Joints are medium to closely spaced, narrow, smooth undulating, limonite stained, dipping at 40°-50°, 60°-70° and 80°-90°.
				86	0	0	NA	14.23-14.70	NI	T2101	+3.92	14.23		III	Moderately weak to moderately strong, brownish grey, moderately decomposed fine ash TUFF.
				90	0	0	NI	14.89-15.56	NI	T2101	+3.26	14.89		V	Very weak, reddish brown, completely decomposed fine ash TUFF. (Stiff, slightly sandy SILT)
				90	0	0	NI	16.23-16.23	NI	T2101		15.56		III	Moderately strong to moderately weak, brownish grey, moderately decomposed fine ash TUFF, highly fractured.
				85	0	0	>20	16.23-17.20	>20	T2101	+1.92	16.23		III	Moderately strong, dark grey spotted black and white, moderately decomposed coarse ash TUFF, highly fractured.
		7.10m at 18:00		95	49	49	6.7	17.58-18.18	6.7	T2101	+0.57	17.58		III	Moderately strong to strong, dark grey to brownish grey spotted black and white, moderately decomposed coarse ash TUFF. JOints are medium to closely spaced, narrow, rough undulating, limonite and manganese oxide stained, dipping at 20°-30°, 60°-70° and 80°-90°.
21.02.11		12.05m at 08:00		100	29	20	7.9	18.18-19.06	7.9	T2101	-0.03	18.18		II	17.58- 18.18m: Slightly decomposed.
22.02.11				95	86	81	4.1	19.06-19.28	4.1	T2101		19.28		III	
											-1.85	20.00			

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT 16.8.11

- Small Disturbed Sample
- ▲ Water Sample
- Large Disturbed Sample
- ▼ Water Level
- SPT Liner Sample
- ↓ Standard Penetration Test
- ▨ U76 Undisturbed Sample
- ⊥ Permeability Test
- ▩ U100 Undisturbed Sample
- ⊥ Impression Packer Test
- ▨ Mazier Sample
- ⊥ Standpipe/Piezometer Tip
- Piston Sample
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
24.02.11

CHECKED
EDWARD CHENG
DATE
25.02.11

REMARKS



TYSAN
FOUNDATION LIMITED
泰昇地基工程有限公司

DRILLHOLE RECORD

CONTRACT No. GE/2009/24

HOLE No. **WH6-DH 2**

SHEET 3 of 3

PROJECT Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

METHOD RC

CO-ORDINATES

W.O. No. GE/2009/24/GI/WH01

MACHINE / No. DR17

E 804,667.43
N 812,524.38

DATE from 15.02.11 to 23.02.11

FLUSHING MEDIUM AIR FOAMS

ORIENTATION Vertical

GROUND LEVEL +18.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.02.11 23.02.11		9.30m at 18:00 12.17m at 08:00	95	86	81	4.1				T2101	20.71		III	As Sheet 2 of 3.	
			100	16	10	>20				T2101	-3.55	21.70		II	21.70- 22.57m: Slightly decomposed.
			100	57	49					T2101	-4.42	22.57		III	
23.02.11											-4.94	23.09			End of drillhole at 23.09m.

DRILLHOLE LOG WH01.GPJ TYSAN_25032005.GDT_16.8.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- ▨ U76 Undisturbed Sample
- ▩ U100 Undisturbed Sample
- ▧ Mazier Sample
- ▦ Piston Sample
- ▲ Water Sample
- ▼ Water Level
- ↓ Standard Penetration Test
- ⊥ Permeability Test
- ⊞ Impression Packer Test
- ⊞ Standpipe/Piezometer Tip
- < In-situ Vane Shear Test
- × Point Load Test

LOGGED
S.O. CHAN
DATE
24.02.11

CHECKED
EDWARD CHENG
DATE
25.02.11

REMARKS

CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. : 1 OF 9

DEPTH : 0.00 m TO 3.11 m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

0.00

0.45

0.80

1.96

3.11



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. :

2

OF

9

DEPTH :

3.11 m TO

(5.75) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

3.11

4.26

4.76

(5.75)



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. :

3

OF

9

DEPTH :

(5.75) m TO

(8.15) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. :

4

OF

9

DEPTH :

(8.15)

m TO

10.51

m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2 **BOX NO. :** 5 **OF** 9

DEPTH : 10.51 m TO (14.13) m

DATE OF PHOTOGRAPH : 22-03-2011



c.0m

0.5m

1.0m



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. : 6 OF 9

DEPTH : (14.13) m TO 17.20 m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

(14.13)

14.23

15.56

16.23

17.20



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. : 7 OF 9

DEPTH : 17.20 m TO (19.73) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

17.20

18.02

19.28

(19.73)

(19.73m)



CONTRACTOR



TYSAN FOUNDATION LIMITED

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. : 8 OF 9

DEPTH : (19.73) m TO (22.57) m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

(19.73)

20.71

21.99

(22.57)

(22.57M)



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

Contract No. : GE/2009/24

PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau

W.O. NO. : GE/2009/24/GI/WH01 (Wang Hang)

HOLE NO. : WH6-DH2

BOX NO. : 9 OF 9

DEPTH : (22.57) m TO 23.09 m

DATE OF PHOTOGRAPH : 22-03-2011



0.0m

0.5m

1.0m

(22.57)

23.09
END



TRIAL TRENCH RECORD

TRIAL TRENCH No.
WH6-TT 1

Sample & Tests	Depth (m)	Sketch	Face A 6.85 m	Face B 1.50 m	Depth (m)	Legend	Grade	Description
	3.05	<p>No Excavation Highly Packed Uniform graded pebbles</p>			2.30	[Symbol: Diagonal lines]		Soft to firm, blackish grey, SILT. (OLD TOPSOIL?) Firm to stiff, yellowish brown, gravelly SILT with much subangular to coarse gravels and some angular boulders. (COLLUVIUM)
					2.20	[Symbol: Horizontal lines]		Soft, dark brown, slightly sandy SILT with many subangular to subrounded medium to coarse gravels. (STREAM CHANNEL / OUTWASH DEPOSITS)
					2.00	[Symbol: Vertical lines]		Soft, dark brown, slightly sandy SILT with some angular to subangular cobbles (~15%) and coarse to medium gravels occasional with subangular to subrounded boulders and much rootlets. (STREAM CHANNEL / OUTWASH DEPOSITS)
					0.60	[Symbol: Dotted pattern]		Soft, dark brown, slightly sandy gravelly SILT with some angular to subangular cobbles (~15%) and coarse to medium gravels occasional with subangular to subrounded boulders and much rootlets. (STREAM CHANNEL / OUTWASH DEPOSITS)

SYMBOL	PLAN	REMARKS
<ul style="list-style-type: none"> Small disturbed sample Large disturbed sample Undisturbed vertical sample Undisturbed horizontal sample Block sample In-situ density test Water sample Water seepage N-Schmidt Hammer 		<ol style="list-style-type: none"> No seepage observed. Shoring installed to 3.30m depth. Average depth of trial pit was 3.00m depth. Trial trench was stable during excavation. Additional horizontal U100 sample was taken at 1.70m at Face C. Additional vertical U100 sample was taken at bottom (Near Face D).

TRIAL TRENCH RECORD

TRIAL TRENCH No.
WH6-TT 1

TYSAN FOUNDATION LIMITED
蔡昇地基工程有限公司

PROJECT: Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Work, West Lantau (Ground Investigation Works for Wang Hang, West Lantau)

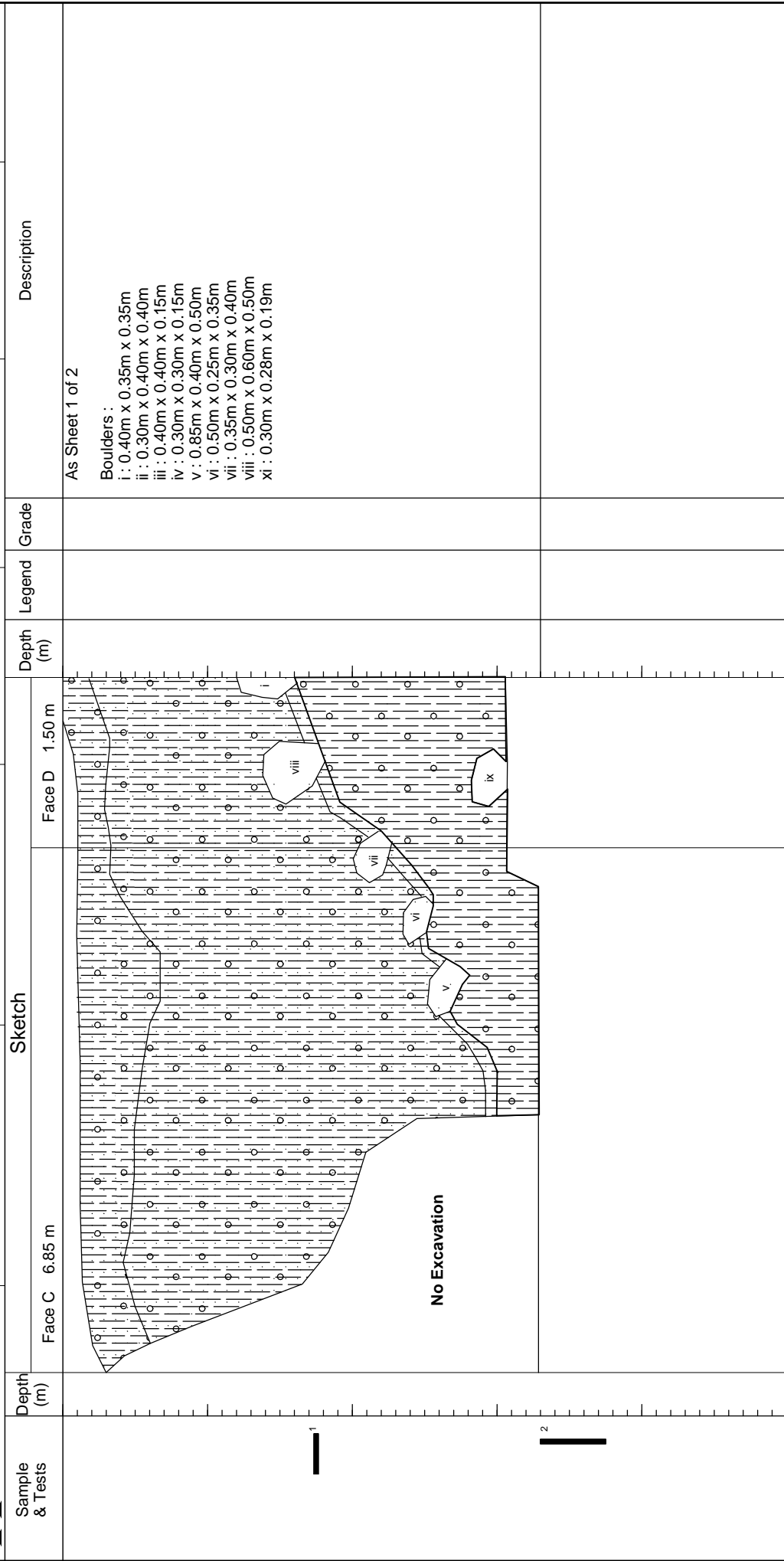
W.O. No. GE/2009/24/GI/WH01 **CONTRACT No. GE/2009/24**

Logged by: S.O. CHAN **Date:** 22/03/2011
Checked by: EDWARD CHENG **Date:** 23/03/2011

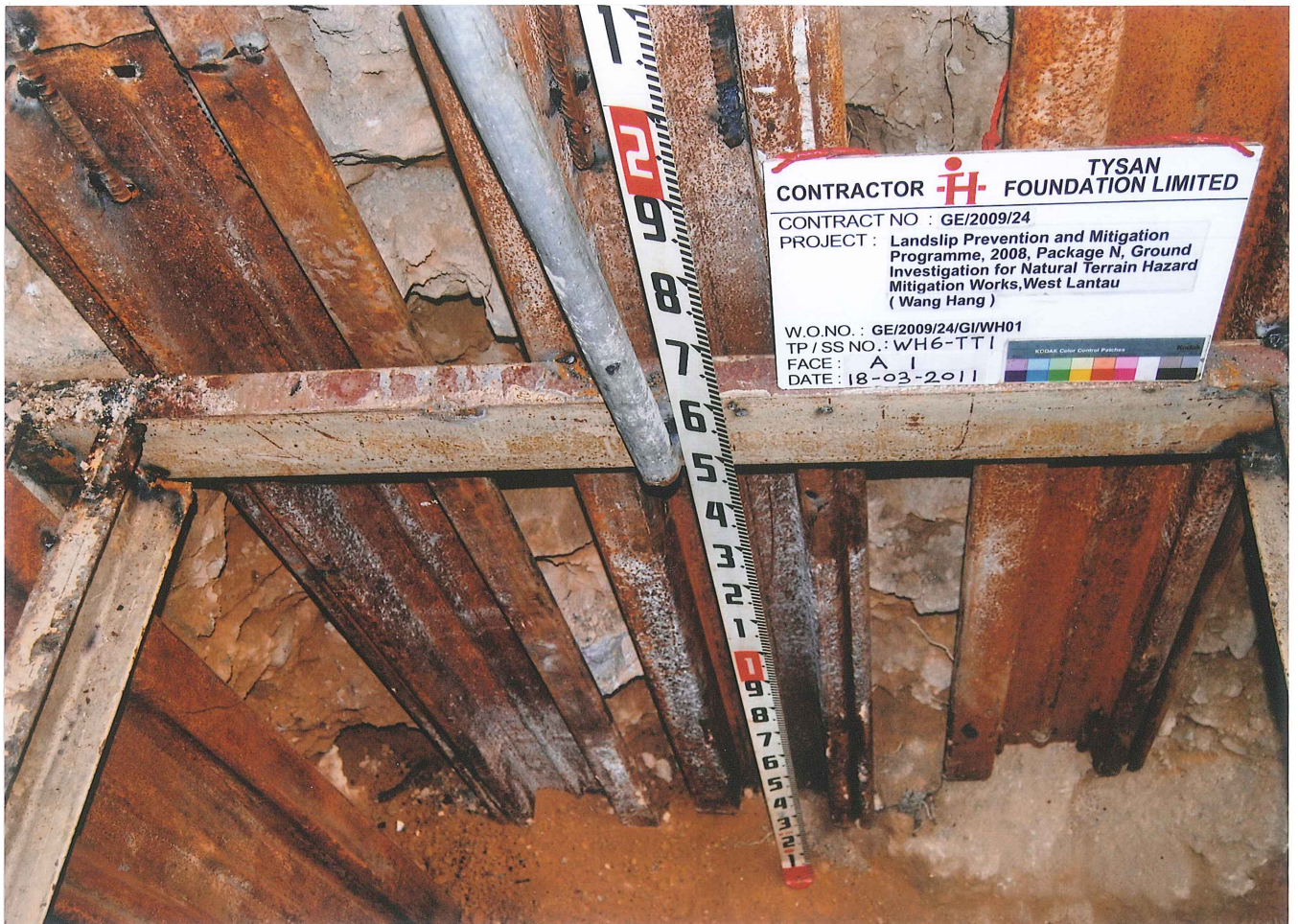
Co-ordinates:
E 804671.61
N 812461.25
Ground Level: +15.80 mPD

Excavation Dates:
01/03/2011 to 15/03/2011
Backfill Dates:
11/04/2011

TRIAL TRENCH No.
WH6-TT 1
(Sheet 2 of 2)



SYMBOL	SECTION	REMARKS
<ul style="list-style-type: none"> Small disturbed sample Large disturbed sample Undisturbed vertical sample Undisturbed horizontal sample Block sample In-situ density test Water sample Water seepage N-Schmidt Hammer 		<ol style="list-style-type: none"> 1. No seepage observed. 2. Shoring installed to 3.30m depth. 3. Average depth of trial pit was 3.00m depth. 4. Trial trench was stable during excavation. 5. Additional horizontal U100 sample was taken at 1.70m at Face C. 6. Additional vertical U100 sample was taken at bottom (Near Face D).



CONTRACTOR  **TYSAN FOUNDATION LIMITED**

CONTRACT NO : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Wang Hang)

W.O.NO. : GE/2009/24/GI/WH01
TP/SS NO. : WH6-TT1
FACE : A 1
DATE : 18-03-2011

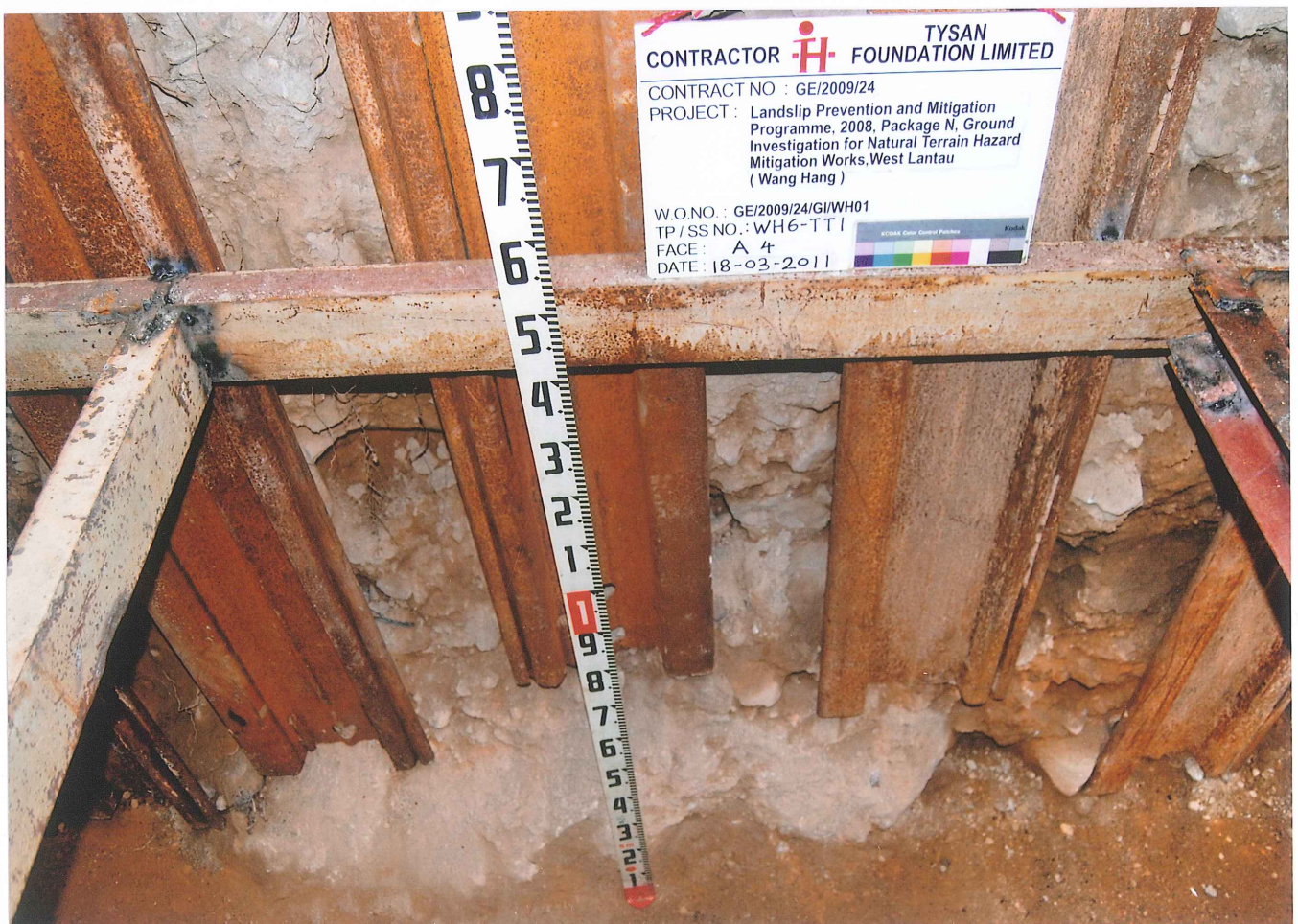
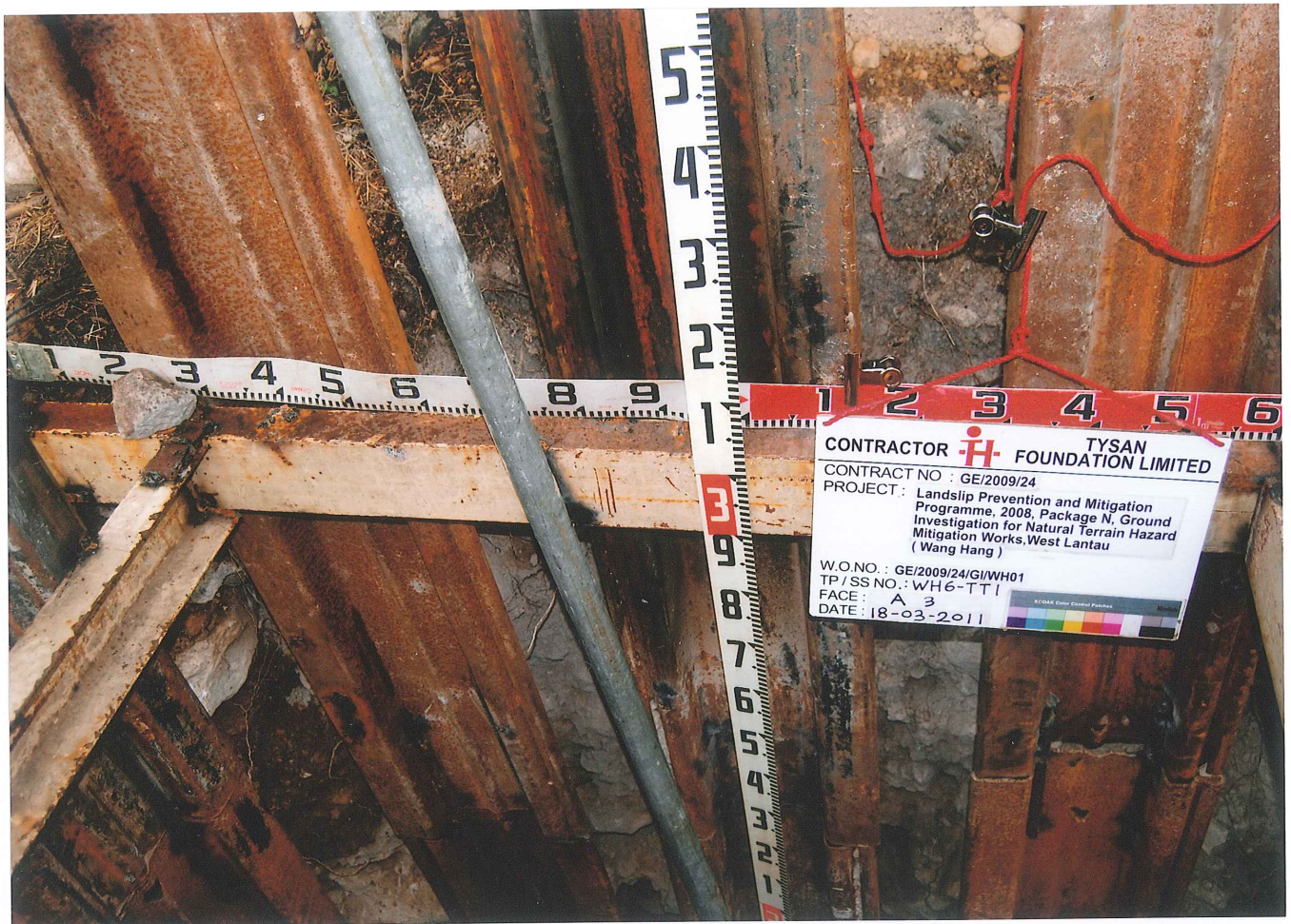


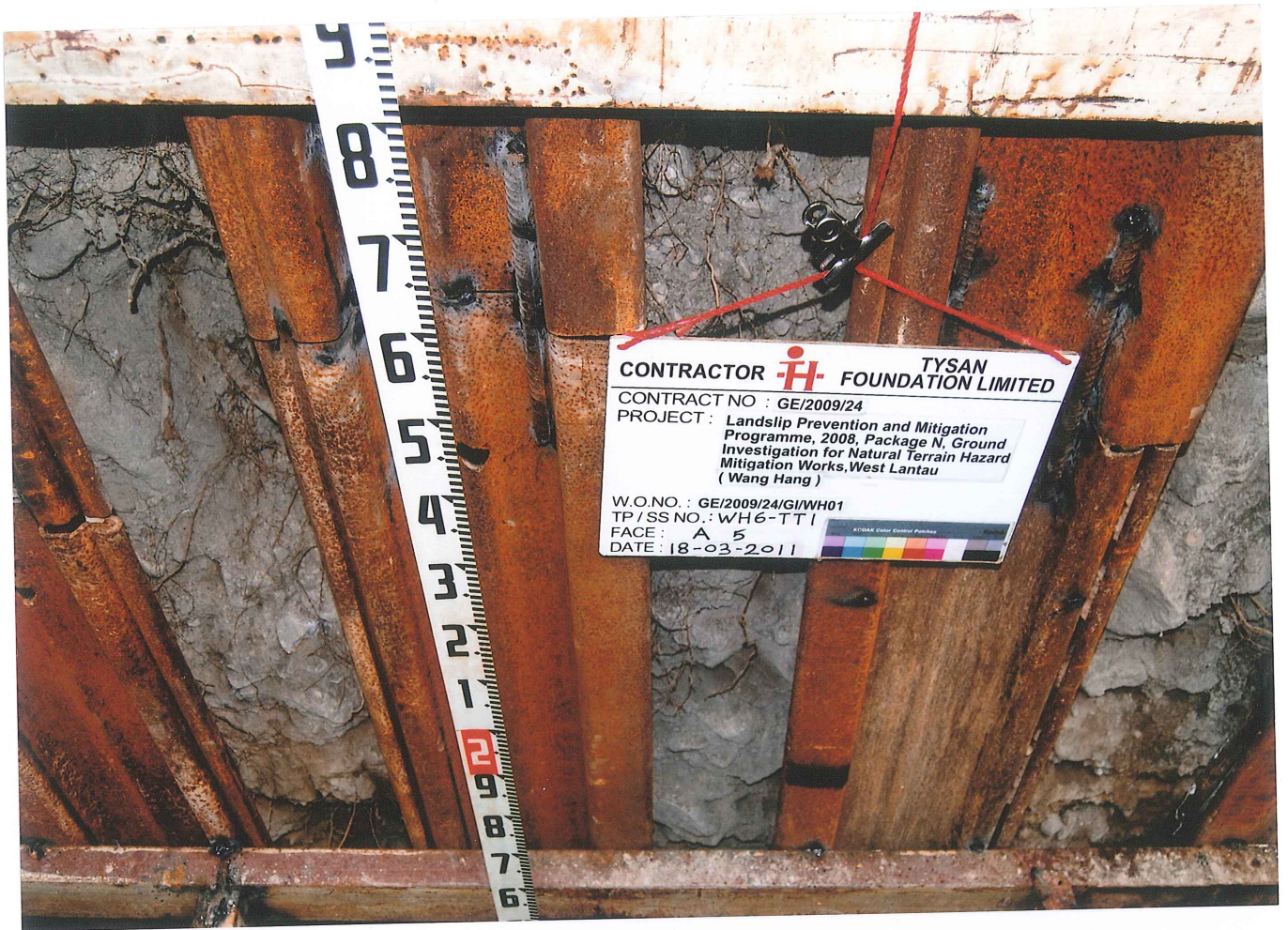
CONTRACTOR  **TYSAN FOUNDATION LIMITED**

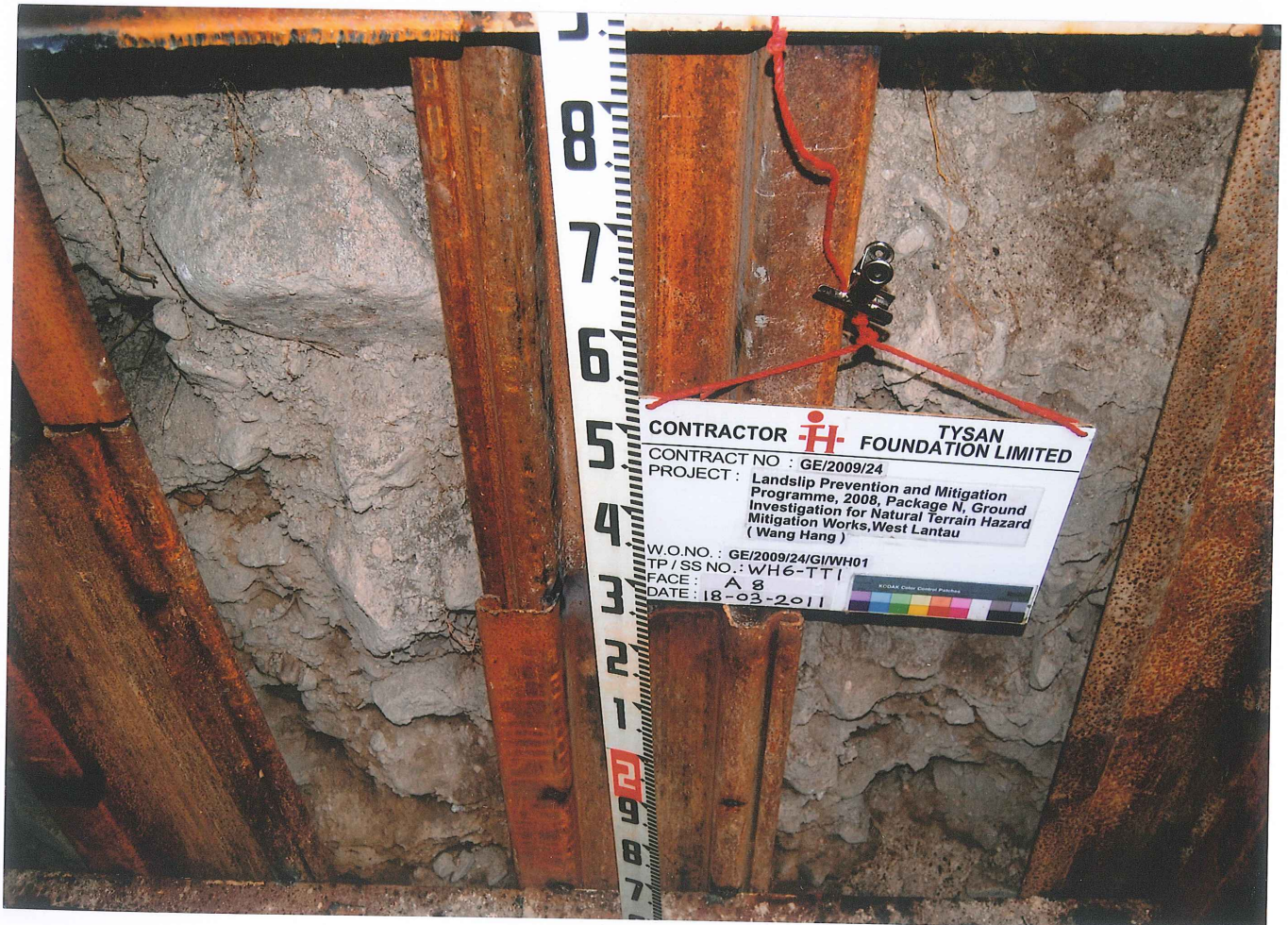
CONTRACT NO : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Wang Hang)

W.O.NO. : GE/2009/24/GI/WH01
TP/SS NO. : WH6-TT1
FACE : A 2
DATE : 18-03-2011

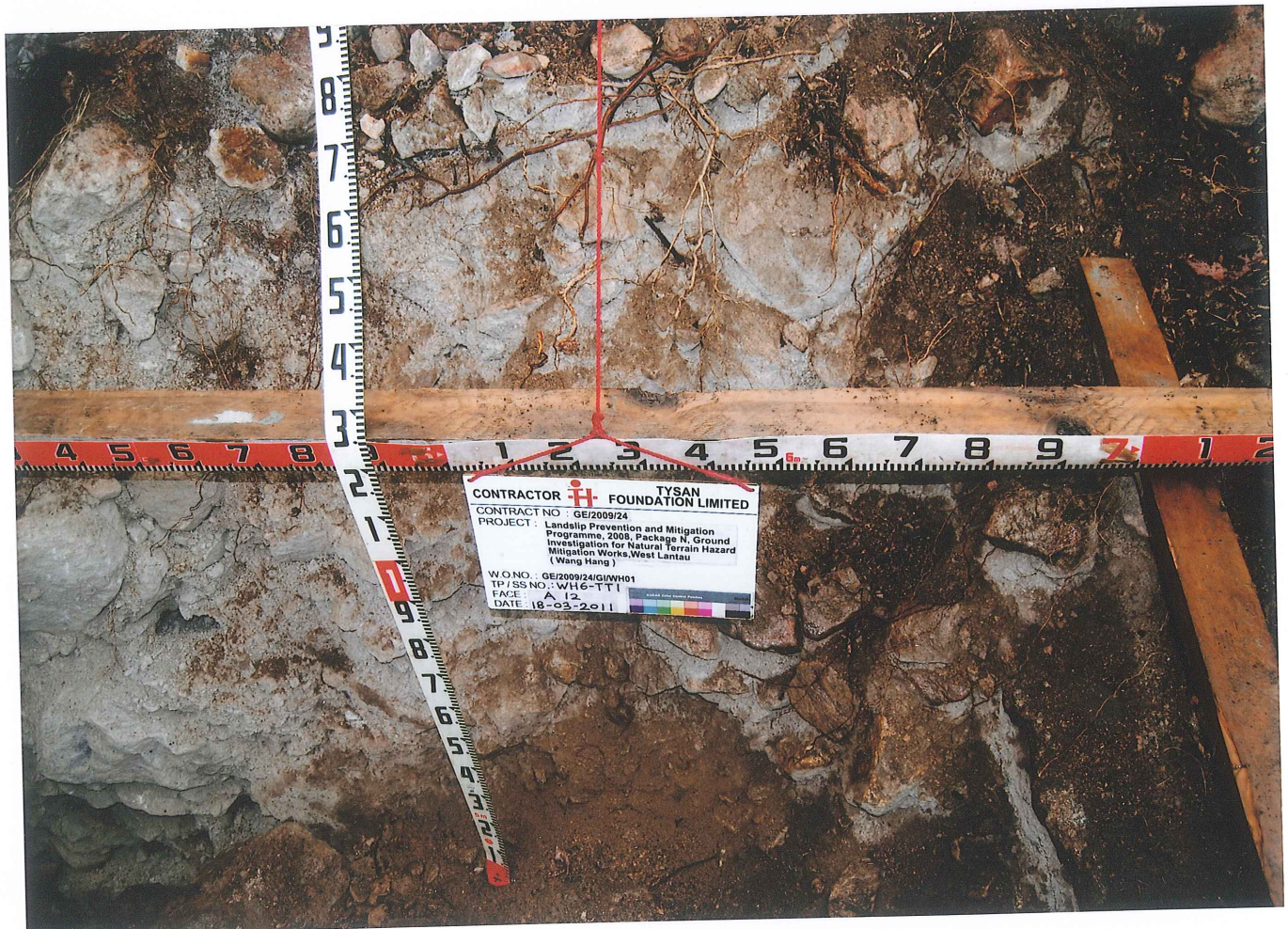
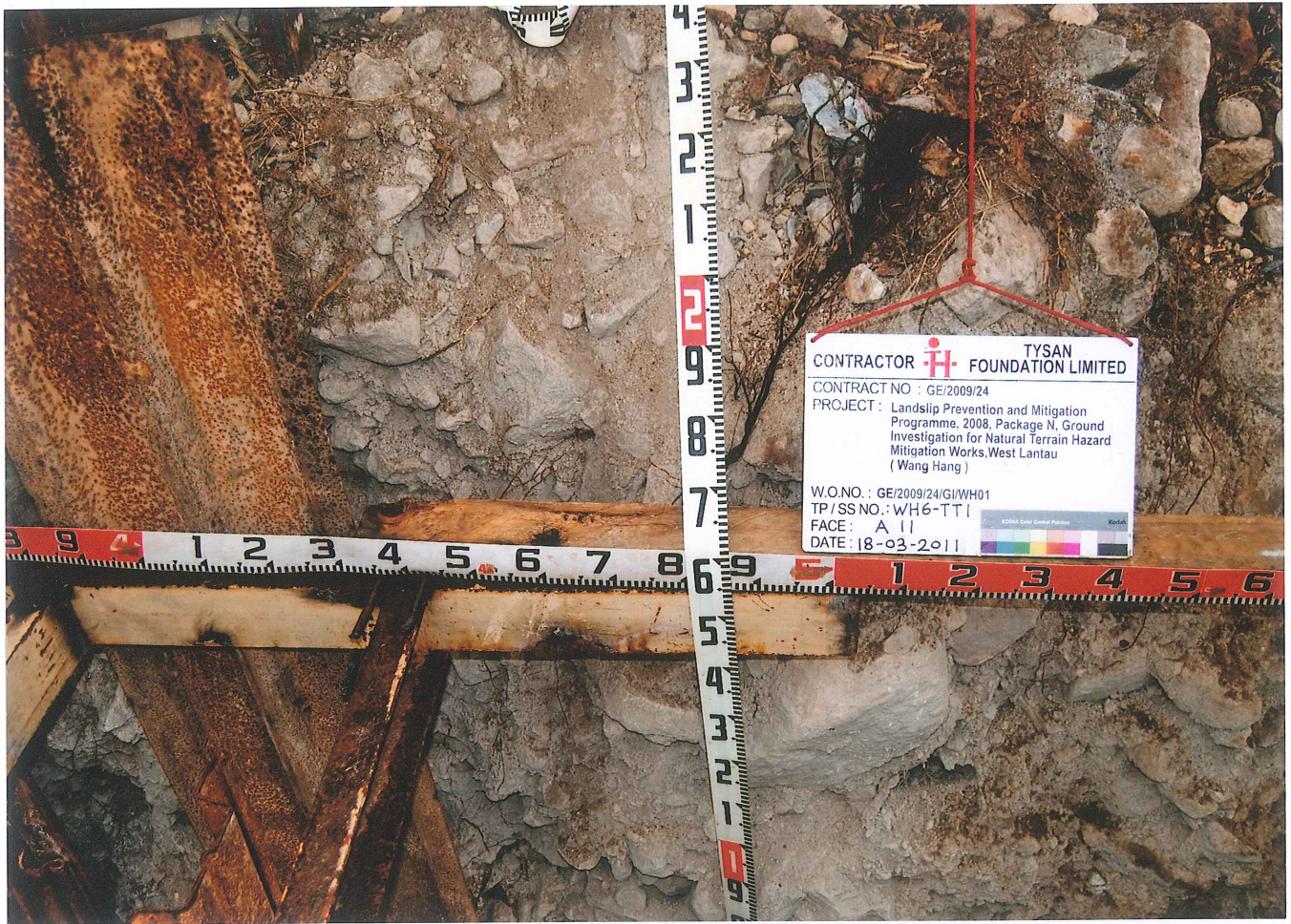




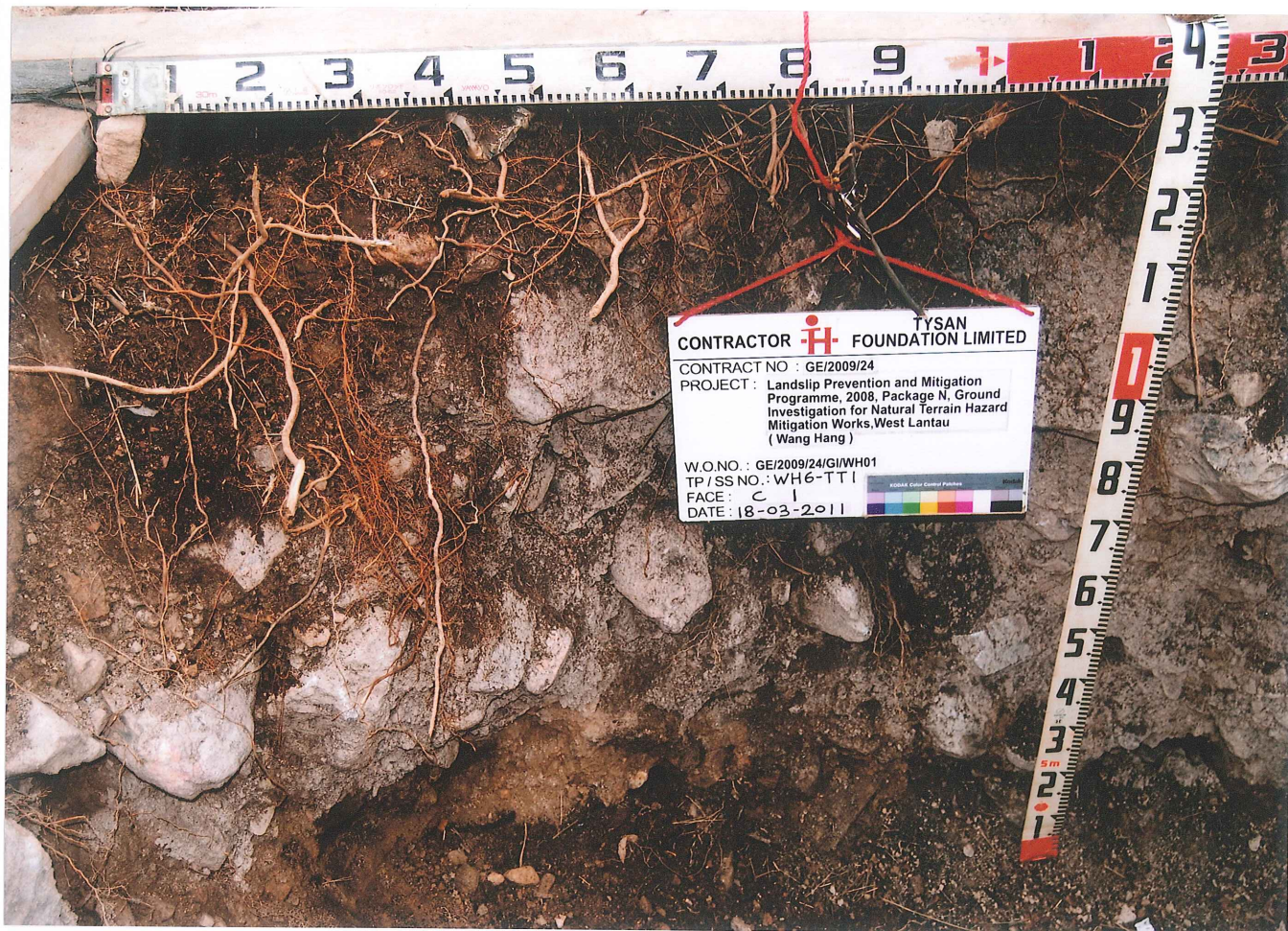














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CONTRACT NO : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Wang Hang)
W.O.NO. : GE/2009/24/GI/WH01
TP/SS NO. : WH6-TT1
FACE : C 3
DATE : 18-03-2011



CONTRACTOR  **TYSAN FOUNDATION LIMITED**
CONTRACT NO : GE/2009/24
PROJECT : Landslip Prevention and Mitigation Programme, 2008, Package N, Ground Investigation for Natural Terrain Hazard Mitigation Works, West Lantau (Wang Hang)
W.O.NO. : GE/2009/24/GI/WH01
TP/SS NO. : WH6-TT1
FACE : C 4
DATE : 18-03-2011













