APPENDIX K COMPILATION OF BOREHOLE LOGS



Coffey & Partners Pty. Ltd.



borehole no:

sheet **1** of 3

engineering log borehole

Sydney 6063 office and job no hote commenced: 11th May 1978 TAYLOR THOMSON WHITTING 12th May 1978 hale completed: DEPARTMENT OF PUBLIC WORKS HAYMARKET REDEVELOPMENT project: supervised by: **RJL** borehole location: S.W. CORNER, NO. 6 MARKET log checked by: **JPM** drill model and mounting: Gemco + Truck slope: deg. R.L. surface: m hole diameter: mm 100 bearing: deg. datum: hand penetro-meter classification penetration notes consistency rel. density material structure and condition method water symbol graphic ! samples. soil type: plasticity or particle characteristics, additional observations tests, etc colour, secondary and minor components. depth آت k Pa metres 5886 FLOOR SLAB Δ. CONCRETE GRAVELLY SANDY CLAY, high plasticity, СН SC GRAVELLY CLAYEY SAND, fine to FUL medium grained, mottled orange, grey and black, gravel of ash fragments СН 3, 7, 5 N* = 12 GRAVELLY CLAY, high plasticity, red, white May mottled, gravel to 10 mm of strongly iron-cemented shale — FILL VSt/ < PL - FILL н × 400 kPa 2 12th Y MARINE & ESTUARINE DEPOSITS SANDY CLAY, high plasticity, black, occasional layers of shell fragments S 3 1, 0, 2 N* = 2 CLAY, high plasticity, black, trace of sand U50 CLAY, high plasticity, yellow-grey mottled No sample U50 R No sample 6 U50 St 250 kPa key classification symbols and soil description support samples and tests consistency/relative density method VS S F St VSt casing - very soft - soft U50 undisturbed sample 50 mm diameter auger screwing auger drilling roller/tricone washloten mud based on unified classification system - firm penetration D disturbed sample stiff moisture -very stiff -hard -friable standard penetration test:figure = result no resistance T cable tool
If clie tube
bit shown by suffix:
blank bit
"V" bit - dry βŦ ranging to refusal - moi: moist SPT + semple -- very loose
-- loose
-- moderately dense
-- dense 8 V T

10 Oct, 73 water level

on date shown water inflow

Nc

cone penetrometer

MD O VO

- very dense

Š

TC bit

ADT

Coffey & Partners Pty. Ltd.,

project:



Sydney 6063 11th May 1978

12th May 1978

borehole no:

5

sheet 2 of **3**

engineering log borehole

office and job no: hale commenced: TAYLOR THOMSON WHITTING hole completed:

DEPARTMENT OF PUBLIC WORKS supervised by: HAYMARKET REDEVELOPMENT

RJL borehole location: **JPM** log checked by: S.W. CORNER, NO. 6 MARKET

| drill model and | _ | : Ge | emco + T | ruck slope: 90 deg | | | m |
|--|----------------------------------|---------------------|---|--|--|---------------------------|---|
| method L penetration Support water | notes samples, tests, etc. | -i depth ⊄metres | graphic log classification symbol | material soil type: plasticity or particle characteri colour, secondary and minor component | moisture | consistency, rel. density | structure and additional observations |
| T D MATER | | 8 | СН | CLAY, as above | M < PL | St | MARINE & ESTUARINE DEPOSITS |
| M M M | | | sc | CLAYEY SAND, fine to medium graine | | MD | RESIDUAL SOIL E.W. SANDSTONE |
| | | 9 | | CONTINUED ON SHEET 3 | | | |
| Method AS auger scr. AD auger dri R roller/tric W washbore CT cable too * bit shown by s | cone | M mu | on resistance nging to | notes — samples and tests U50 — undisturbed sample 50 mm diameter D — disturbed sample N — standard penetration test:figure = result N* — SPT + sample | based on u classificati moisture | inified on system | consistency/relative density VS - very soft S - soft F - firm St - stiff VSt - very stiff H - hard Fb - friable VL - very loose |

* bit shown by suffix;

B — blank bit
V — "V" bit
T — TC bit

10 Oct, 73 water level on date shown water inflow water outflow

cone penetrometer

No

-- dry -- moist -- wet

H --hard
Fb --friable
VL --very loose
L --loose
MD --moderately dense
D --dense
VD --very dense

ADT

borehole no:

sheet 3 3 of

engineering log cored borehole

office and job no:

Sydney 6063 hole commenced: 11th May 1978 TAYLOR THOMSON WHITTING hole completed: 12th May 1978 **DEPARTMENT OF PUBLIC WORKS** project: supervised by: RJL HAYMARKET REDEVELOPMENT log checked by: borehole location: **JPM** S.W. CORNER, NO. 6 MARKET Gemco + Truck 90 drill model and mounting: slope: dea. R.L. surface: m fluid Water bearing: deg. datum: barrel type and length: T.T. 3.0 m drilling information rock substance rock mass defects defect pressure strength Is (50) defect description SSO substance description method test weather spacing water thickness, type, inclination, planarity Casej depth rock type: grain characteristics, ՠՠջ lugeons COLE roughness, coating a metres colour, structure, minor components. particular ్లాల్లో **CONTINUED FROM SHEET 3** NO CORE 0.24 m SANDSTONE, medium to coarse HW Joint and vesicle grained, brown-white, poorly developed bedding 9 Defects are joints 0°- planar, rough, coating EW rock NMLC 10 SANDSTONE, as above, but white MW Decomposed seam 000 20° planar, EW rock, clay to 10 mm Soil properties Berting Berting Berting SHALE, fine grained, dark grey, well developed laminations at 00 Joint, 45⁰, planar smooth ect Soil Properties SANDSTONE, as above NO CORE 0.11 m MW Clayey Sand very stiff to hard Defects are j 12 Decomposed seam 00, planar, clay to 5 mm SANDSTONE, medium grained, white, poorly developed bedding, occasional flakes of mudstone SW joints rough 13. END OF HOLE AT 13.20 m 14 15 ase-lift strength (indirect tensile strength) key pressure test weathering casing used method (350) maximum fresh EL effective pressure in test (kPa) extremely low L barrel withdrawn SW slightly ΔS auger screwing VL AD weathered very low auger drilling moderately weathered roller/tricons MW low 10 Oct, 73 water level raphic log/core loss washbore М date shown medium core recovered NMLC NMLC core highly weathered HW water inflow н high (hatching indi-cates material) drilling VΗ very high

EW

no core

recovered

extremely

weathered

EH

- extremely high

partial drilling water loss

complete drilling water loss

20.01 Expressions of Interest and Associated Documents > 20.01.11 Concept Plan Geotechnical Desk Study.pdf

174-



7 sheet 1 or 3

engineering log borehole

office and job no Sydney \$6269

| | oject rehole | loca | ition | НА | | KET F | REDEV | PRKS, NSW PELOPMENT, PARKING STATION 11-1 | hole o | ommen omplet used by ecked b | ed 2 | 18th June 1979 19th June 1979 GS RJL |
|-------------------------------|--|---|---|----------------------------|-------------------|-----------------------|--|--|------------------|---------------------------------------|--|---|
| | II mod le dian | | | unting 10 | | o 210 |)A + T | ruck slope 90 deg. bearing — deg. | R.L s | urface. | | 1.459 m AHD |
| method | Spenetration S | support | sar | otes nples, ts, etc. | ے depth metres | graphic log | classification symbol | material soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture | consistency, ref. density | 100 x hand 200 x hand 300 x penetro 400 meter | structure and additional observations |
| AS V | 7 | 179 | | | | | SC | ASPHALTIC CONCRETE CLAYEY GRAVELLY SAND, coarse grained yellow, fines of medium plasticity, gravel is coarse grained | м | L | | FILL RIPPED SANDSTONE |
| A D T | | 1979 June 1979 | 1 N° | = O | 1 - | | SP | GRAVELLY SAND, medium grained, brown and yellow mottled. Some concrete, asphalt and sandstone fragments | | VL | THE STATE OF THE S | SPT fell 0.70m under own weight |
| A S V | | С | | | | | СН | SANDY CLAY, high plasticity, dark grey, fine grained sand, some organic matter | w | vs | | ESTUARINE SEDIMENTS & - SLOPEWASH |
| | | | 1. < N* | <1,0 = 1 | 3 _ | | SC | CLAYEY SAND, medium grained, grey-yello fines of low plasticity | ~ , | VL | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| | | | | | 4 _ | | СН | CLAY, high plasticity, dark grey, trace of fine grained sand | | St | | |
| | | | 2,4 | | 5 – | | | SANDY CLAY, high plasticity, yellow-brown mottled, some fine grained sand | | | | No SPT sample recovered |
| | | | N= | 10 | 6 _ | | sc | CLAYEY SAND, fine grained, yellow, fines o medium to high plasticity | f | MD | -D.I. | ,] |
| | | | | | | | СН | CLAY, high plasticity, grey, trace fine grained sand | | VSt | × | |
| | | | 3, 4 N* | , 7 - 11 | 7 _ | | sc | CLAYEY SAND, fine grained, grey and yello mottled, fines of high plasticity CLAY, high plasticity, yellow brown mottled | | MD | | |
| key met AS | hod | ger s | crewin | g* | suppo C M | casir | | notes — samples and tests | classificand soi | VSt descri on unification s | ymbols ption ed | consistency/relative density VS - very soft S - soft F - firm |
| AD R W CT bi B | aud rol wa cat it shov bla ''V | ger d ler/t shbc ole to yn b ink b ''' bi | rilling ricone ore ool y suffi oit | F | 123 | rang refus Oct, | esistand ing to sal 73 wati on d | N* - SPT + sample | moistu D – d | re ry noist | , | St stiff VSt very stiff H hard Fb friable VL very loose L loose MD moderately dense D dense VD very dense |

20.01 Expressions of Interest and Associated Documents > 20.01.11 Concept Plan Geotechnical Desk Study.pdf

borehole no 7 sheet 2_{of} 3

engineering log borehole

office and job no

Sydney S6269

| | | | DE | PT. OF PUBL | IC WO | RKS, NSW | hole co | | | 28th June 1979 29th June 1979 |
|--|---|---|----------------------------------|---------------------------------------|---|---|--|---|---|--|
| project boreho | | ocati | | YMARKET F | | ELOPMENT, PARKING STATION 11–1 | supervi | ised by | : (| GS RJL |
| drill mo | | | mounting | Gemco 210 |)A + T | ruck slope 90 deg. bearing: — deg. | R.L. su | | | 1.459 m AHD |
| method 1 2 penetration | support | water | notes samples, tests, etc. | R.L. depth depth graphic log | classification symbol | material soil type, plasticity or particle characteristics, colour, secondary and minor components | moisture | consistency, rel. density | 100 x hand 200 x hand 300 penetro- 400 meter | structure and additional observations |
| A S | Ī | | | * 1// | СН | CLAY, as above, trace fine grained sand | | VSt | x | ESTUARINE SEDIMENTS & SLOPEWASH |
| | С | | 4,6,8 N* = 14 | 9 — | SC+ CH | CLAYEY SAND, medium grained, yellow and brown. Layers of SANDY CLAY, sand fine grained | M > PL | MD/D | | |
| | | | | 10 - | СН | CLAY, high plasticity, dark grey, some organic matter | | ∨St | X. | - trace shells |
| | | | 4,9,>7 N*>16 | 11 | sc | SANDY CLAY, high plasticity, grey brown mottled, sand fine grained | | MD/D | | RESIDUAL SOIL SPT bouncing after 350mm |
| The content of the co | | | | 12 - | | Refusal at 11.40m — continued on Sheet 3 | | | | |
| AD ad R row W W CT carbon bit sho B - bit V - T - T | ugei ollei vash able own lank V'' | r dril r/tric bore too by : c bit bit it | l suffix: | | esistanding to sal 73 water on differences | U50 — undisturbed sample 50 mm diameter D — disturbed sample N — standard penetration test:figure = result N* — SPT + sample | elassifica assed or elassifica noisture 0 — dr M — ma V — we | descrip n unification si e y oist | ed | consistency/relative density VS - very soft S - soft F - firm St - stiff VSt - very stiff H - hard Fb - friable VL - very loose L - loose MD - moderately dense D - dense VD - very dense |



Coffey & Partners Piy, Ltd.



barehole no:

sheet 3 of 3

engineering log - cored borehole

office and job no: Sydney \$6269 DEPT. OF PUBLIC WORKS, NSW hole commenced: 28th June 1979 hole completed: 29th June 1979 project: HAYMARKET REDEVELOPMENT, PARKING STATION supervised by: GS borehole location: Refer to Drawing 6269/1-1 log checked by: drill model and mounting: Gemco 210A + Truck 90 deg. 1.459 R.L. surface: barrel type and length: T.T. 3.0m fluid Water bearing: deg. datum: AHD drilling information rock substance rock mass defects pressure strength Is (50) defect defect description substance description test water graphic l core los spacing case-li depth thickness, type, inclination, planarity roughness, coating lugeons rock type: grain characteristics, mm 25000 colour, structure, minor components. ~588 particular general Continued from Sheet 2 Note change in depth scale MW SANDSTONE, medium to coarse HW decomposed seam, 0°, 30mm clayey sand grained, grey, massive to poorly bedde 12 crushed zone, 00, iron stained, clay coated. Joint, 80°, planar, rough, clay coated. MUDSTONE, fine grained, dark grey NO CORE 0.20m SANDSTONE, medium to coarse Joint, 750, planar, rough, HW grained, yellow-white, massive limonite staining Joint, 50--80⁰, planar, rough, limonite staining Joint, coating of clay 5m ò 14 "planar, rough, Joint, 80°, planar, rough, limonite & clay cover 15 clean, unless noted otherwise Partings, 5°, planar, rough, clay infilled MW 16 clay inclusion. Joint, 85⁰, planar, rough, clean. HW Decomposed zone, 20°, 100mm sandy clay 17 MW End of Borehole 7 at 17.60m 18 key ase-lift pressure test strength (indirect tensile strength) weathering casing used method (350) maximum effective pressure in test (kPa) AS H barrel withdrawn auger screwing slightly weathered EL extremely low SW auger drilling very low roller/tricone 10 Oct, 73 MW moderately weathered water level L aphic log/core loss low washbore NMLC M NMLC core COTE recovered water inflow HW highly drilling (hatching indihigh partial drilling water loss cates material) VH very high EW extremely weathered по соге complete drilling water loss EΗ extremely high

recovered



Borehole No. BH5

Engineering Log - Borehole

Sheet 1 of 4
GEOTLCOV24303AA

Client: Sydney Harbour Foreshore Authority Date started: 14.6.2011

Principal: Date completed: 15.6.2011

Project: Sydney International Convention & Entertainment Centre Logged by: LJG

| _ | nodel | _ | _ | | _ | | treet, Haymarket, NSW 4000 Truck Easting: slope: -90° | | | | | | Checked by: SS R.L. Surface: 2.4 | | | |
|-------------------------------------|---------------|--|--|---------------------------------------|---------------|-----------------|--|--------------------------|---|---|--|-------------------------------|-----------------------------------|--|--|--|
| | diame | | | • | 100 m | | | | Northing bearing | | | | | datum: mAHD | | |
| | lling i | | rma | | . 50 111 | | mate | erial su | bstance | 19/73 | | | ua | datum. IIIAND | | |
| method | 2 penetration | support | | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle characteri colour, secondary and minor compone | | moisture condition | consistency/ density index | 200 × pocket 300 v penetro- | a | | |
| | | C | | SPT 8,4,4 N*=8 | _1 | 1 2 | | | FILL: SAND: Coarse sand, brown, trace of 0.3m - Medium to coarse sand with some clof gravel. 0.5m - Brown, yellow. FILL: Clayey SAND: Medium to coarse, brown the yellow, medium to high plasticity claysome fine gravel. FILL: CLAY: Medium to high plasticity, palered brown, trace of fine rounded ironstone grand. (shale fill) 2.0m - Red brown mottled pale grey, grey. | own , with grey, ravel and | D | | | FILL | | |
| | | | • | 1,2,5 N*=7 | 1 | <u>3</u> | | SM | FILL: Sandy CLAY: Low to medium plastic grey, brown, coarse sand, trace of gravel. Sitty SAND: Coarse grained, black with so shells. Clayey SAND: Coarse grained, brown, me plasticity clay, trace of shells and fine gravel | me dium | W | L | | ALLUVIUM | | |
| | | | | 2,1,2 N*=3 SPT 2,1,2 N*=3 | 2 | 5 | | CL-CH | Sandy CLAY: Low to medium plasticity, da to dark grey, fine to medium sand, with som fiberous materials. | | >Wp | S-F | | 5.6m - Organic material in SPT sulphur odour | | |
| | | | | SPT 7,8,12 N*=20 | 4 5 | 7 | | SC | Clayey SAND: Coarse grained, dark brown black, low plasticity clay, trace of fine gravel. CLAY: High plasticity, red brown, pale grey ironstone and sand. 7.20m - Yellow, brown mottled. 7.40m - Pale grey with some fine sand. | | >Wp | VSt-H | ×× | * | | |
| neth S D R V T IA | od | au rol wa ca ha dia bla V | iger d ller/tri ashbo able to and au atube ank b bit C bit | re ool uger | M C per | ter 10/1/9 | n no resista ranging to refusal 8 water i e shown | level | notes, samples, tests U ₅₀ undisturbed sample 50mm diameter D disturbed sample 63mm diameter D disturbed sample 63mm diameter disturbed sample N standard penetration test (SPT) N' SPT - sample recovered Nc SPT with solid cone ∨ vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal | soil des based o system moistur D d M n W w | eation sy cription n unified e ry noist et dastic limit | dassifica | | consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense | | |

Engineering Log - Borehole

water outflow

Sydney Harbour Foreshore Authority

Principal: Sydney International Convention & Entertainment Centre Project:

Borehole No. BH5

Sheet

GEOTLCOV24303AA Project No:

VD

Date started: 14.6.2011 15.6.2011

Logged by: **LJG**

Date completed:

SS Borehole Location: Lackey Street, Haymarket, NSW Checked by: drill model and mounting: Ausroc 4000 Truck slope: -90° R.L. Surface: hole diameter: 100 mm bearing: N/A datum: mAHD drilling information material substance pocket penetro-meter classification symbol consistency/ density index notes penetratic material structure and samples, moisture condition support tests, etc water kPa soil type: plasticity or particle characteristics, depth metres RL colour, secondary and minor components. 5888 123 VSt-I 图 Sandy CLAY: Low to medium plasticity, pale grey, medium sand, with some silt. CS 4,6,6 N*=12 VSI-H CH CLAY: High plasticity, dark grey, trace of silt. 10 -8 11 -9 L-MD Clayey SAND: Medium to coarse, brown, grey, 11.50m - No sample recovered 12 -10 13 13.0m - Fine to coarse, dark grey, grey, trace of SPT 4,7,14 N*=21 14 Silty CLAY: Low plasticity, dark brown, black, with >Wp St some organic material (wood), very light. -12 SPT 3,5,9 N*=14 Clayey SAND: Coarse grained, pale grey, dark L-MD 15 grey, low plasticity clay, trace of silt. _-13 WEATHERED BEDROCK suppor auger screwing⁴ M mud undisturbed sample 50mm diameter soll description VS very soft AD based on unified classification soft auger drilling undisturbed sample 63mm diameter casing disturbed sample syslem RR W roller/tricon firm netration stiff washbore standard penetration test (SPT) St СТ SPT - sample recovered VSI cable tool HA DT hand augei No SPT with solid cone dry hard moist vane shear (kPa) blank bit pressureme VL very loose 10/1/98 water level plaștic limit V bit Bs Wp on date shown bulk sample TC bit liquid limit MD medium dense *bit shown by suffix refusal dense

BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.1



Engineering Log - Borehole

Sydney Harbour Foreshore Authority

Principal: Project:

Client:

Sydney International Convention & Entertainment Centre

Borehole Location: Lackey Street Haymarket NSW

Borehole No. BH5

Sheet 3 of 4

Project No: **GEOTLCOV24303AA**

LJG

Date started: **14.6.2011**

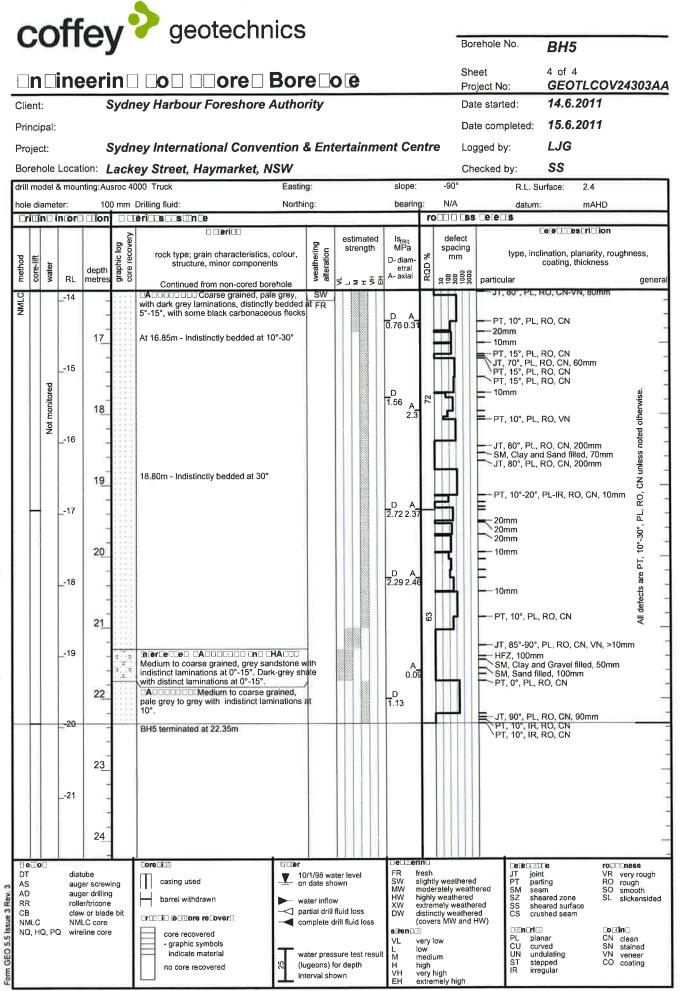
Date completed: 15.6.2011

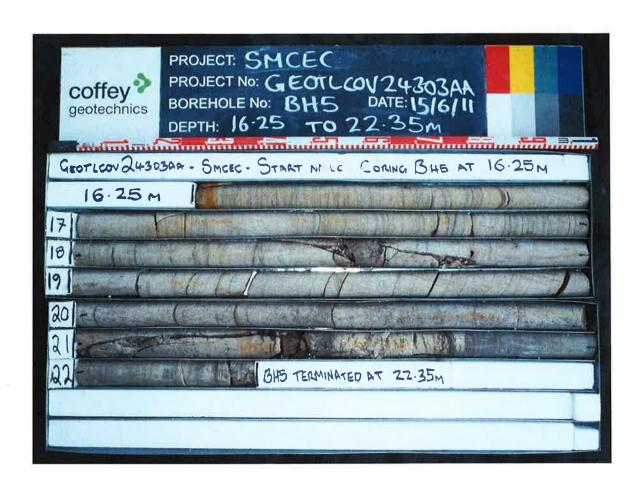
hecked by: SS

Logged by:

| Bor | reho | le Lo | ocatio | on: <i>Lack</i> | rey . | Stree | t, Ha | ayma | rket, NSW | | | C | Checke | ed by: | | SS | |
|---|------------|--|---|---------------------------------|--------------|----------------------------|---|--------------------------|--|---|------------|--------------------------------|-------------------------------|--|----------|--|---|
| drill | mode | el an | mou | nting: / | Ausro | 4000 | Truck | | Easting: | slope: | -90° | | | R | .L. Surf | ace: | 2.4 |
| _ | dian | | | ~ - | 00 m | m . | | | Northing | bearing: | N/A | | | d | atum: | | mAHD |
| dri | illing | j inf | orma | tion | | | mate | erial su | ıbstance | | | | | | | | |
| method | noiteation | 115 | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | | aterial particle characteristics and minor components. | s, | moisture condition | consistency/ density index | 100 pocket 200 opposetro- 300 opposetro- | | str additior | ructure and nal observations |
| ΝB | П | П | | | | | | | SANDSTONE: Extremel | y weathered, pale grey | <i>'</i> : | | | Ш | | | |
| WE | | | | | 15 16 | 17 18 19 20 21 | | | SANDS UNIE: brown, coarse grained, et strength, remoulds to SAI Borehole BH5 continued | stimated to be very low ND. (continued) | | | | | | | |
| | | | | | 20 | 23 | | | | | | | | | | | |
| meti AS AD RR W CT HA DT B V T *bits | hod | i N O D D S S S S S S S S S S S S S S S S S | oller/tr vashbo able to and a liatube blank b / bit | ore ool uger | M C pe | Ц, | no resista anging to efusal 3 water e shown | level | | ple 50mm diameter ple 63mm diameter ition test (SPT) covered ne | W we | cription unified unified | classifica | | _ | consistence VS S F St VSt H H F D VV L L MD D VV D | y/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense |

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4,8,11





| drawn | DB |
|---------------|------------|
| approved | ss |
| date | 23.6.11 |
| scale | NTS |
| original size | A 4 |



| client: | Sydney Harbou | r Foreshore Authority |
|------------|---------------------------|----------------------------------|
| project: | Sydney International Conv | rention and Entertainment Centre |
| title: | CORE P | PHOTOGRAPH |
| project no | o.: GEOTLCOV24303AA | figure no.: BH5 – 1 OF 1 |

geotechnics

Borehole No. BH₆

Sheet Project No:

GEOTLCOV24303AA

Date started: 9.6.2011

9.6.2011 Date completed:

| | cipai | • | | Sud | 2017 | Into | natio | anal (| Convention & Entertainment Contra | | | ate co | | | a: 9.0.2 LJG | .077 | |
|---|-------------|--|---|---------------------------------|--------------|---|--|--------------------------|--|-----------------|--------------------------------|-------------------------------|-------------|-----|---|---|--|
| Proj | | . I o | aatia | _ | _ | | | | Convention & Entertainment Centre | 5 | Logged by: LJG Checked by: SS | | | | | | |
| | nodel | _ | | | _ | пои : | | Sya | ney Entertainment Centre Easting: slope: -90 | 0 | | песке | a by | _ | Surface: | 2.6 | |
| | diame | | .,,, | | 100 m | | Track | | Northing bearing: N// | | | | | | | | |
| | lling | | rma | | 100 111 | " | mate | rial e | ibstance | ` | | | | uai | tum: | mAHD | |
| | | Т | | | | | | | | T | 7 | _ × | 9 | 5 | | | |
| method | penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle characteristics, colour, secondary and minor components. | noisture | condition | consistency/ density index | 200 Spocket | °a | | structure and tional observations | |
| | 123 | C C | $\stackrel{-}{-}$ | | IXC | metres | , J | | FILL: ASPHALT: Dark grey, 0.02m | _ | 5 | - | 2 % | N 4 | PAVEMEN | T | |
| DT ADT | | 0 | | | _2 | 5 % 4 4 | | | FILL: GRAVEL: Medium to coarse, subangular to subrounded, black, grey, trace of sand and clay. FILL: CONCRETE: Grey, 0.08m FILL: GRAVEL: Medium to coarse grained, angular to subangular, grey-brown, trace of fine gravel and | | 5 | | | | | | |
| ADT | | | | | | 1 ==================================== | | | sand. FILL: CONCRETE: Grey, 0.16m FILL: GRAVEL: Medium to coarse grained, angular to subrounded, trace of fine gravel and cobbles. | 1 | O Np | | | | FILL | | |
| | | | | SPT 2,3,3 N*=6 | 1 | 2 | | | FILL: SANDSTONE BOULDER: Coarse grained, lyellow/orange, rounded. FILL: CLAY: High plasticity, mottled, red-brown, pale-grey, and grey, trace of fine gravel, ironstone an shale. (shale fill) 1.80m - Grey, with some fine shale angular gravel. | j d | и | | | | | | |
| | | | 1 | | _0 | 3 | | | FILL: SAND: Coarse grained, grey-brown, trace of silt and rubber. | - | N | | | | | | |
| | | | | SPT 5,2,2 N*=4 | -1 | | | | | | | | | | | | |
| × | | | | SPT 0,2,3 N*=5 | 2 | 5 | | SC CL | Clayey SAND: Coarse grained, brown-grey, low plasticity clay. Sandy CLAY: Low plasticity, brown-black, coarse sand, trace of silt. CLAY: Low to medium plasticity, red-brown, with | - | 3 | F | | | ALLUVIU | v | |
| | | | | | 3 | 6 | | СН | Sandy CLAY: High plasticity, red, brown, pale grey, medium to coarse sand. | | | St | | | | | |
| | | | | SPT 5,3,5 N*=8 | 4 | 7 | | SC CL CH | Clayey SAND: Coarse grained, pale grey, red-brown, medium plasticity clay. Sandy CLAY: Low to medium plasticity, pale grey. CLAY: High plasticity, red-brown, pale grey, micaceous. | | | St VSt | × | • | | | |
| | | | | | 5 | 1 1 1 1 1 | | CL-CH | Sandy CLAY: Medium to high plasticity, grey, pale grey, coarse grained sand. | | | | | | | | |
| meth AS AD RR W CT HA DT B V T *bit si e.g. | hown It | au rol wa ca ha dia bla V TO | iger diller/tridashbo ashbe to and au atube ank bi bit bit bit | re ol ger | M C pe | ter 10/1/9 | n resista ranging lo refusal 8 water i e shown | evel | U ₅₀ undisturbed sample 50mm diameter soil d | escrip on un | tion ified o | nbols ar | | | consist VS S F St VSI H Fb VL L MD D VD | ency/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense | |



Engineering Log - Borehole

Borehole No. BH6

Sheet 2 of 4

Project No: GEOTLCOV24303AA

Date started:

9.6.2011

Sydney Harbour Foreshore Authority

Date completed:

9.6.2011

Principal:

Logged by:

LJG

Principal Project:

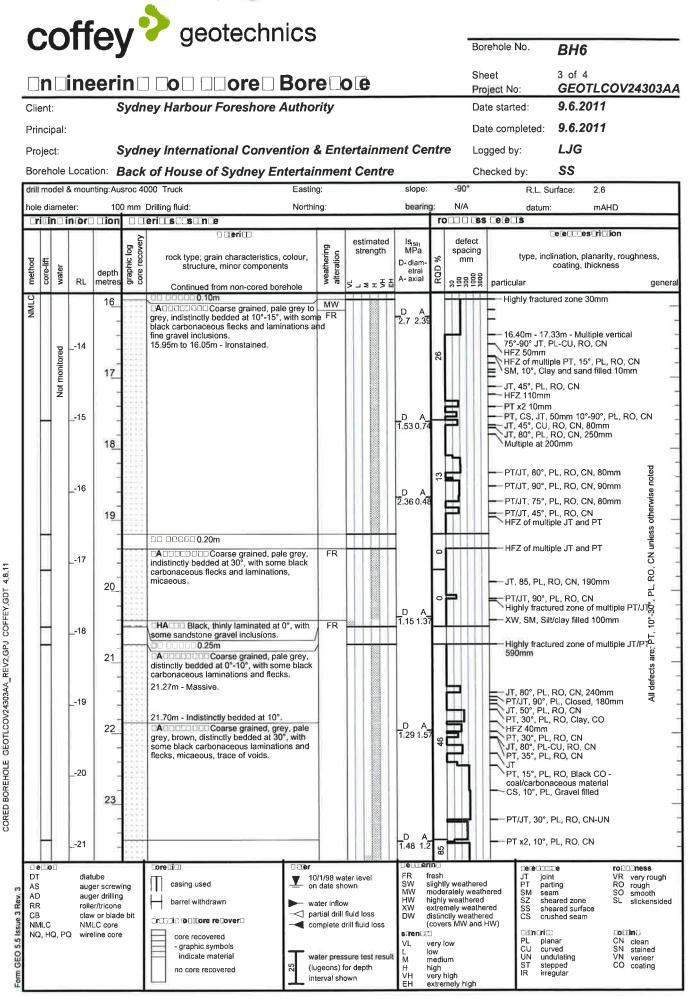
Sydney International Convention & Entertainment Centre

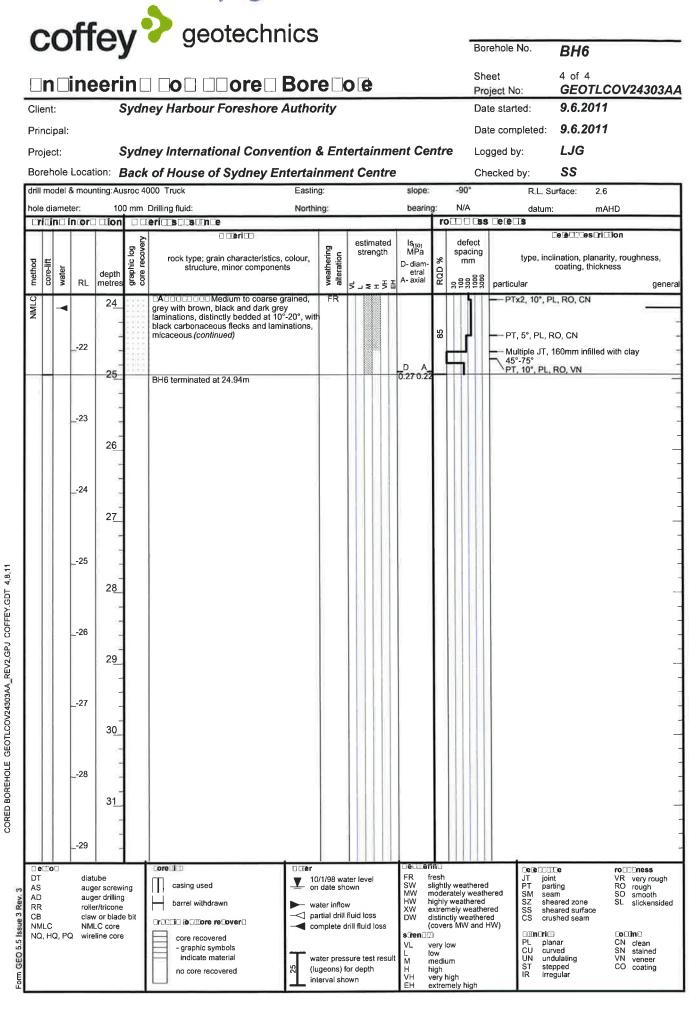
Checked by:

SS

Borehole Location: Back of House of Sydney Entertainment Centre

| _ | | _ | | | | | | | Oyu | ney Entertainment Centre | 000 | | Checke | | 33 | |
|---|--------|------------|--|--|---|-------------------|-----------------|---|--------------------------|---|--|-----------------------|-------------------------------|---|---|--|
| | | | | mour | | | 4000 | Truck | | Easting: slope: | -90° | | | | Surface: | 2.6 |
| | e dia | | | ober - ' | | 100 m | m | | alat . | Northing bearin | g: N/A | | | dat | um: | mAHD |
| | rillin | _ | ITO | mai | uon | | \vdash | mate | | bstance | | | | 1 | | |
| method | 1 2 | o benenano | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle character colour, secondary and minor compon | ents. | moisture condition | consistency/ density index | 100 pocket 200 penetro- 300 meter | s additio | tructure and onal observations |
| 3 | | | С | | U ₅₀ | | | | CL-CH | Sandy CLAY: Medium to high plasticity, gr grey, coarse grained sand. (continued) | ey, pale | W | VSt | | | |
| | | | | | SPT 0,4,5 N*=9 | 6 | 9 | | SC | Clayey SAND: Medium to coarse grained, pale grey. | grey, | | MD | | | 3 3 5 |
| | | | | | SPT 5,6,9 N*=15 | 7 | 1 <u>0</u> | | СН | CLAY: High plasticity, red-brown, pale gre trace of coarse sand and fine grained. | /, grey, | | VSt-H | × | × | 3 3 4 4 |
| | | | | | SPT | 8 | 11_ | | СН | Silty CLAY: High plasticity, dark grey, brownicaeous. | wn, black, | | VSt-H | * | | : : |
| | | | | | 5,6,7 N*=13 | 9 | 1 <u>2</u> | | SP | SAND: Coarse grained, grey, dark grey, w | ith some | | MD | × | | 2 2 3 2 3 |
| | | | | | SPT 5,8,10 N*=18 | 10 | 13 | | | clay. | | | | | | 9 3 3 3 |
| | | | | | SPT 0,5,7 N*=12 | 11 | 1 <u>4</u> | | | 14m - Dark grey, black, trace of organics. | | | | | | 3 |
| | | | | | N -12 | 12 | 15 | | | 15m - With some silt and organic material. | | | | | RESIDUAL | SOIL? |
| | | | | | SPT 9,R N*=R | -13 | 52 | | | SANDSTONE: Extremely weathered, coa grained, black, dark grey, estimated low str some organic matter. | | | | | WEATHER | ED BEDROCK |
| AS AD RR W CT HA DT B V | t show | vn by | rol wa ca ha dia bla V I | ger di ler/trid shboi ble to nd au ilube ink bil bit bit | crewing* rilling* cone re ol ger | M C pe 1 | iter 10/1/9 | n no resista anging to refusal B water l e shown | evel | Burbis of Diffective aued as cored hole Use undisturbed sample 50mm diameter Use undisturbed sample 63mm diameter Use disturbed sample N standard penetration test (SPT) N* SPT - sample recovered NC SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal | soil des based of system moistur D d M n W w Wp p | cription n unified | | | consister VS S F St VSt H Fb VL L MD D VD | very soft soft firm sliff very stiff hard friable very loose loose medium dense dense very dense |







| drawn | DB |
|---------------|---------|
| approved | SS |
| date | 23.6.11 |
| scale | NTS |
| original size | A4 |



| client: | Sydney Harbou | r Foreshore Authority |
|------------|---------------------------|---------------------------------|
| project: | Sydney International Conv | ention and Entertainment Centre |
| title: | CORE P | HOTOGRAPH |
| project no | .: GEOTLCOV24303AA | figure no.: BH6 – 1 OF 1 |

Sheet 1 of 6

GEOTLCOV24303AA Project No:

15.6.2011 Date started:

Date completed: 17.6.2011

Logged by: RC

| III MO | idei a | ind | moui | nting: H | Hydrap | ower S | scout i | ruck | Easting: | slope: | -60° | | | R.L | . Surface: | 2.6 |
|---------|--------------------|------------------------------|--|---------------------------------|---------------|------------------------------------|-------------|--------------------------|---|--|---|--------------------|-------------------------------|---|---|---|
| le dia | | | | | 00 mr | n | | | Northing | bearing: | 213.5° | | | dati | um: | mAHD |
| Irillir | _ | nfo | rma | tion | | _ | mate | | ubstance | | | _ | _ | | | |
| | လ penetration ယ | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | materi soil type: plasticity or par colour, secondary and r | ticle characteristics | g, gid | condition | consistency/ density index | 100 pocket 200 d penetro- 300 m meter | | structure and onal observations |
| | П | С | | | | | | | FILL: ASPHALT: Dark grey, medium to coarse grained, br | 70mm, overlying | | 5 | | | PAVEMEN | T |
| | | | | D | _2 | 1 | | | Gravel. FILL: Gravelly SAND: Fine to brown, fine to coarse gravel, t | to medium grained | 1 | | | | FILL - | |
| | | | | D | _1 | <u>2</u> | | | FILL: Gravelly CLAY: Low porange-brown. | lasticity, brown, | | Wp | | | | |
| | | | • | D | _0 | 3 | | CL | Silty CLAY: Low plasticity, d white shells. SAND: Medium grained, gre | | | w | S | i. | ALLUVIUN | |
| | Ш | С | | | 1 | 4_ | | Ç. | Grand Industry grantos, gra | y, mor obmo day. | | | _ | | | |
| | | | | U ₅₀ | 2 | 5 | | CH | SILTY CLAY: High plasticity and plant fibres with some sa | grey, trace of she ndy bands. | ils > | Wp | F | × | | |
| | | С | | | 3 | 7 | | | 6.5m - Becoming mottled bro | wn and pale grey. | | | | | | |
| ethod | | | | | 4 sut | 8 oport | | | notes, samples, tests | | classification | on symi | bols at | 1d | consiste | ncy/density Index |
| | | rol wa ca ha dia | ger d ler/tri shbo ble to nd au atube ank bi | re ol ger | M C per | mud casing netratio 2 3 4 | | | U ₅₀ undisturbed sample 5 U ₅₁ undisturbed sample 6 D disturbed sample N standard penetration N* SPT - sample recover Nc SPT with solid cone V vane shear (kPa) P pressuremeter | Omm diameter Gmm diameter test (SPT) | soll descrip based on us system moisture D dry M mois W wet | tion nified cla | | | VS S F St VSt H Fb VL L | very soft soft firm stiff very stiff hard friable very loose |



Borehole No. BH7

2 of 6 Sheet **Engineering Log - Borehole** GEOTLCOV24303AA Project No:

Sydney Harbour Foreshore Authority 15.6.2011 Date started: 17.6.2011 Principal: Date completed:

| Project: | | | | Entertainment Ce | entre | Logged by: | RC SS |
|---|---|---|---|--|--|-------------------------------|--|
| Borehole Location | | Scout Truck | Easting: | slope: | -60° | Checked by: | Surface: 2.6 |
| hole diameter: | 100 mm | | Northing | bearing: | 213.5° | | tum: mAHD |
| drilling information | on | material s | | | | | |
| 1 7 1 W 1 P 1 | notes samples, lests, etc dept RL metri | graphic log classification symbol | | material ity or particle characteristics ary and minor components | | consistency/ density index | |
| | 5 | CH CH | colour, second CLAY: High plastici pale grey, with some | ary and minor components by, red brown, orange brown | >Wp | | |
| method AS auger scri AD auger drill RR roller/trico W washbore CT cable tool HA hand aug DT diatube B blank bit V V bit T TC bit | er C casin penetrat 1 2 3 4 water 10/1 | N nil | grey to white, extrem weathered. notes, samples, tests U ₅₀ undisturbed U ₆₃ undisturbed of disturbed sa N standard pe | sample 50mm diameter sample 63mm diameter ample entertation test (SPT) le recovered lid cone (kPa) | classification soil description based on unifie system moisture D dry M moist W wet Wp plastic lin Wp liquid lim | n nd classification | Consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense |



Engineering Log - Borehole

Sydney Harbour Foreshore Authority

Principal:

Borehole No. BH7

3 of 6

Sheet GEOTLCOV24303AA Project No:

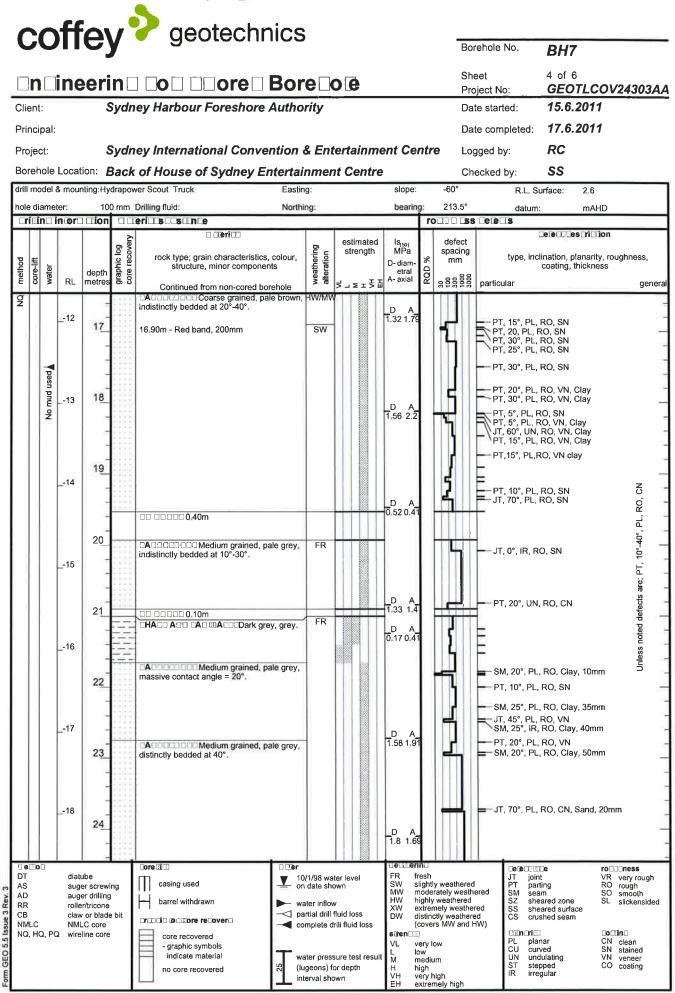
Date started:

15.6.2011

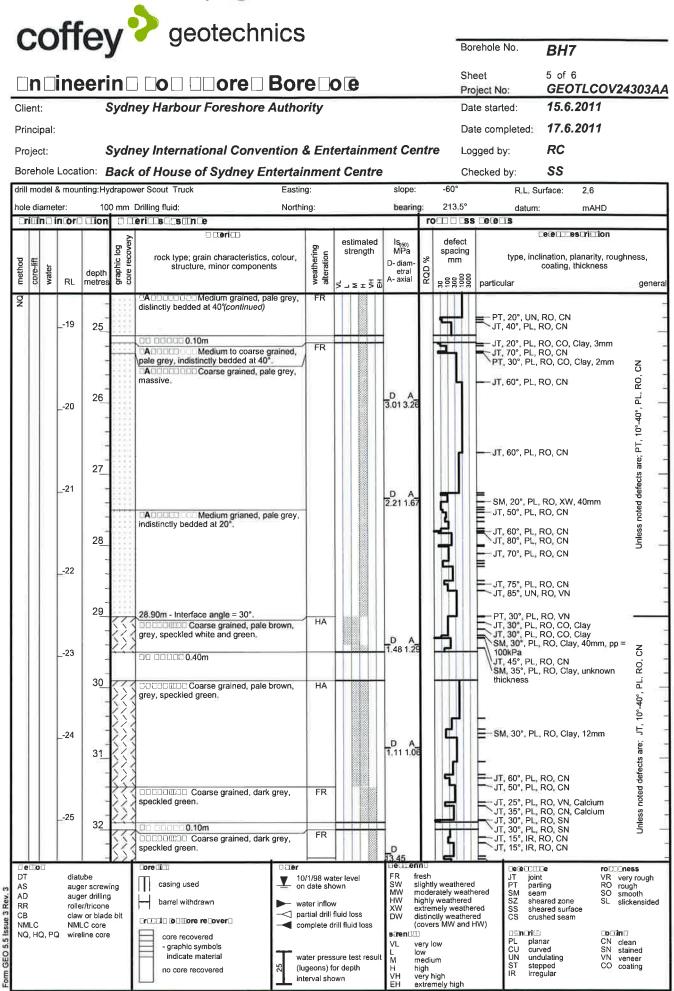
17 6 2011

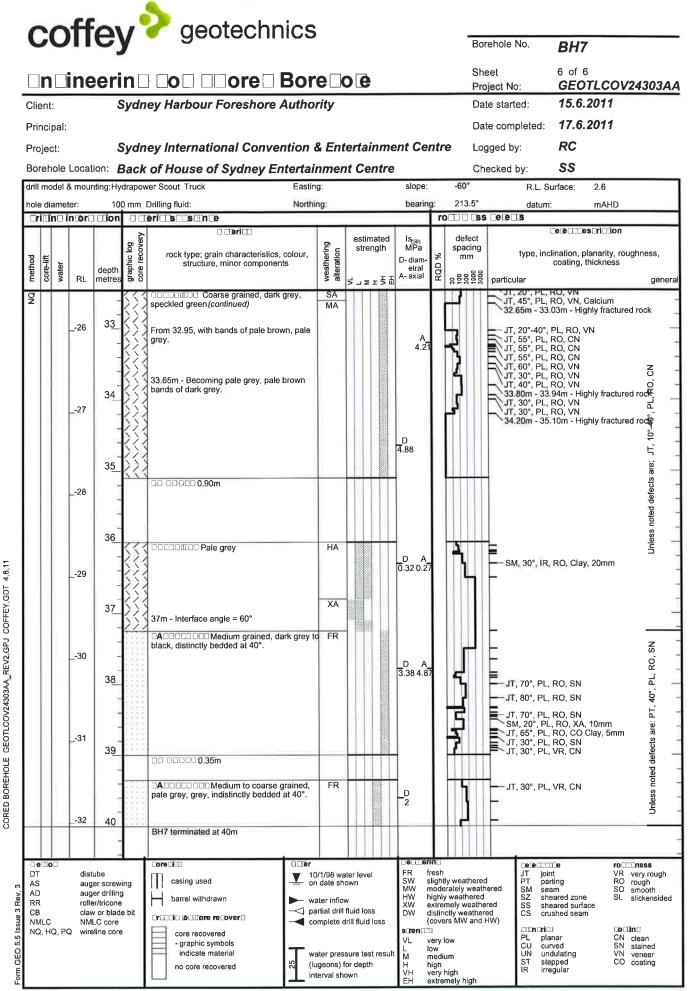
| Principa | al: | | | | | | | | | [| Date co | omple | ted: | 17.6. | 2011 |
|--------------------|--------|--------------------|---------------------------------|----------|------------------------|---------------------|--------------------------|---|-------------------------------------|-------------------------|-------------------------------|--|---------|----------|--|
| Project | t: | | Sydi | ney | Inter | natio | onal | Convention & Entertainment Ce | ntre | ι | ogge | by: | | RC | |
| Boreho | ole L | .ocati | on: <i>Bacl</i> | k of | Hous | se o | F Syd | Iney Entertainment Centre | | (| Checke | ed by: | | SS | |
| drill mod | lel ar | nd mou | ınting: l | lydra | oower S | Scout | Truck | Easting: slope: | -60° | | | - | R.L. Su | rface: | 2.6 |
| hole diar | | | | 100 m | m | | | Northing bearing: | 213.5 | 0 | | | datum: | | mAHD |
| drilling | _ | forma | ation | | | mate | | ubstance | 1 | | , u | | _ | | |
| method 1 | _ | support water | notes samples, tests, etc | RL | depth metresi | graphic log | classification symbol | material soil type: plasticity or particle characteristics colour, secondary and minor components. | S | moisture | consistency/ density index | 100 pocket 200 pocket 300 pocket | 1 | | structure and onal observations |
| WRR | _ | c | | | \ \cdot \ | | | SANDSTONE: Medium to coarse grained, pale grey to white, extremely weathered to highly weathered. (continued) | | | | | Ì | | |
| | 39 | 1 | | | 1- | | | Borehole BH7 continued as cored hole | | | | Ш | # | | |
| | | | | 12 | 17 | | | | | | | | | | 9 |
| | | | | | :- | | | | | | | | | | |
| | | | | 13 | 18 | | | | | | | | | | |
| | | | | | 3= | | | | | | | | | | - |
| | | | | | - | | | | | | | | | | |
| | | | | 14 | 19_ | | | | | | | | | | a |
| | | | | | ;= | | | | | | | | | | |
| | | | | | 2 <u>0</u> | | | | | | | | | | 20 |
| | | | | 15 | - | | | | | | | | | | |
| | | | | | 21 | | | | | | | | | | |
| | | | | | 25 | | | | | | | | | | 18 |
| | | | | 16 | | | | | | | | | | | |
| | | | | | 22_ | | | | | | | | | | 9 |
| | | | | 17 | 9 | | | | | | | | | | |
| | | | | | 2 <u>3</u> | | | | | | | | | | |
| | | | | | - 5 | | | | | | | | | | |
| | | | | 18 | 24 | | | | | | | | | | |
| method AS AD | | auger | screwing* drilling* | M C | pport mud casing | | nil | U ₆₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter | classifica soil desc based on | ription | | | | VS S | ncy/density index very soft soft |
| RR W | | roller/ti washb | оге | per 1 | netration 2 3 4 | no resista | ance | N standard penetration test (SPT) | system | _ | | | - | F St | firm stiff |
| CT HA | | cable t | uger | | | anging to efusal |) | Nc SPT with solid cone | molsture D dry | / | | | | VSI H | very stiff hard |
| DT B | | diatube blank t | | wa | | 8 water | | P pressuremeter | W we | | | | | Fb VL | friable very toose |
| V T | | V bit TC bit | | - | on date | e show | | E environmental sample | | astic limi uid limit | | | | L MD | loose medium dense |
| *bit show e.g. | | suffix ADT | | | water i | | | R refusal | | | | | | D VD | dense very dense |

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT



CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT









| drawn | DB |
|---------------|------------|
| approved | SS |
| date | 23.6.11 |
| scale | NTS |
| original size | A 4 |



| client: | Sydney Harbou | r Foreshore Authority | | | | | | | | |
|------------|--|----------------------------------|--|--|--|--|--|--|--|--|
| project: | Sydney International Conv | rention and Entertainment Centre | | | | | | | | |
| title: | CORE P | HOTOGRAPH | | | | | | | | |
| project no | project no.: GEOTLCOV24303AA figure no.: BH 7 – 1 OF 3 | | | | | | | | | |





| drawn | DB |
|---------------|---------|
| approved | SS |
| date | 23.6.11 |
| scale | NTS |
| original size | A4 |



| client: | Sydney Harbou | r Foreshore Authority |
|------------|---------------------------|----------------------------------|
| project: | Sydney International Conv | rention and Entertainment Centre |
| title: | CORE P | HOTOGRAPH |
| project no | o.: GEOTLCOV24303AA | figure no.: BH7 - 2 OF 3 |



| drawn | DB |
|---------------|---------|
| approved | SS |
| date | 23.6.11 |
| scale | NTS |
| original size | A4 |



| client: | Sydney Harbou | r Foreshore Authority | | | | | | | |
|------------|--|------------------------|--|--|--|--|--|--|--|
| project: | | | | | | | | | |
| | Sydney International Convention and Entertainment Centre | | | | | | | | |
| title: | CORE P | PHOTOGRAPH | | | | | | | |
| project no | o.: GEOTLCOV24303AA | figure no.: BH7-3 OF 3 | | | | | | | |



Borehole No. BH8

Engineering Log - Borehole
Sheet 1 of 1
GEOTLCOV24303AA

Client: Sydney Harbour Foreshore Authority Date started: 14.6.2011
Principal: Date completed: 14.6.2011

| ill mode | | mour | | | oower S | Scout T | ruck | Easting: | slope: | -90° | | | | Surface: 2.5 | | |
|-------------|-----------------|--|--|---------------|--|-------------|---|--|--|-----------|------------------------------------|--------------------|---|--------------------------------------|--|--|
| le diam | | rmat | | 00 mi | m | mate | Northing bearing: N/A aterial substance | | | | | dat | :um: | mAHD | | |
| penetration | upport | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | r soil type: plasticity | material or particle characteristics | 3, | moisture | 2 2 | 100 pocket 200 pocket 300 v penetro- 400 meter | | structure and tional observations | |
| 123 | | | FILL: ASPHALT: Dark grey, 70mm thickness sandy gravel: medium grained, grey sand, fine grained, grey gravel FILL: SAND: Fine to medium grained, dark brow with some clay and fine gravel. FILL: ASPHALT: Dark grey, 250mm. FILL: CONCRETE: Pale grey, 410mm. 1m - With some dark grey gravel aggregate and s VOID: | | | | | wn, | D M | | 7. | PAVEMENT 1m - TC B | | | | |
| | | | | 1 | 3 4 5 | | | Borehole BH8 terminate | ed at 3m | | | | | BH6 was obstruction | terminated at 3m, d ns. | |
| thod | au rol wa | ger so ger di ler/tric s/hboi | one e | M C per | 8 8 poport mud casing retration | | nil | U ₆₃ undisturbed sa D disturbed samp | mple 50mm diameter mple 63mm diameter ble tration test (SPT) | soil desc | tion symb ription unified da | | | consist VS S F St VSt | ency/density index very soft soft firm sliff very stiff | |



Engineering Log - Borehole

Borehole No. BH9

1 of 1 Sheet

GEOTLCOV24303AA Project No:

Date started: 15.6.2011

15.6.2011 Date completed:

RC Logged by:

Sydney Harbour Foreshore Authority

Principal: Project:

Client:

Sydney International Convention & Entertainment Centre

Borehole Location: Back of House of Sydney Entertainment Centre

Checked by: SS

| 130 | reh | ole | Lo | catio | n: Baci | cot | Hous | se oi | Sya | ney Entertainment Centre | | | Checke | d by | : | SS |
|---|--------|---------------|--|--|---------------------------------|--------------|-----------------|--|--------------------------|---|--|---|-------------------------------|--------------|------|--|
| drill | l mod | del | and | mou | nting: H | lydra | ower S | Scout T | ruck | Easting: slope: | -90° | | | | R.L | , Surface: 2.75 |
| | e dia | | | | | 00 m | m | | | Northing bearing | g: N/A | | | | datı | um: mAHD |
| di | _ | _ | nfo | rma | tion | | _ | mate | rial sı | ubstance | | | | | | |
| method | | o penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle character colour, secondary and minor compon | | moisture condition | consistency/ density index | 200 Topocket | а | structure and additional observations |
| TDA | | | | Not Observed | | _2 | 1 | | | FILL: ASPHALT: Dark grey 70mm, overly gravel, medium grained, brown sand, dark (gravel. FILL: SAND: Medium to coarse grained, y with some fine to coarse sandstone gravel. 0.60m - Becoming brown, with some coarse gravel. FILL: ASPHALT: Grey. 150mm FILL: CONCRETE: Pale grey, 50mm. | grey ellow, | D | | | | PAVEMENT SUB BASE FILL PREVIOUS PAVEMENT BH9 was terminated at shallow depth due to obstructions after many attempts. |
| | | | | | | _1 | 2 | | | Borehole BH9 terminated at 0.85m | | | | | | |
| | | | | | | _0 | 3 | | | | | | | | | |
| | | | | | | 1 | 4 | | | | | | | | | 3 7= 3 |
| | | | | | | 2 | <u>5</u> | | | | | | | | | |
| | | | | | | 3 | 6 | | | | | | | | | |
| | | | | | | 4 | 7. | | | | | | | | | - |
| AS AD RR W CT HA DT B V | t show | | au ro wa ca ha di bl V To y sui | iger of fler/tri ashbo able to and a atube ank b bit C bit | ne ool uger | M C pe | iter 10/1/9 | n resista ranging to refusal 8 water e shown | level | notes, samples, tests Use undisturbed sample 50mm diameter Use undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal | soil des based of system moistu D of M r W w | cation sy scription on unified re dry noist wet plastic limit iquid limit | dassifica | | | consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense |

water outflow

Borehole No. **BH11**

Engineering Log - Borehole

Sheet 1 of 3 GEOTLCOV24303AA Project No:

Sydney Harbour Foreshore Authority

1.6.2011 Date started:

Principal:

Date completed:

Project:

Sydney International Convention & Entertainment Centre

RH Logged by:

Borehole Location: Sydney Entertainment Centre, Haymarket, NSW

SS Checked by:

1.6.2011

| drill mo | | | | | | 4000 | | men | Easting: | slope: | -90° | | hecke | <u> </u> | L. Surface: 2.9 |
|--|---------------|---------------------------------|---|---------------------------------|---------------|---|---|--------------------------|---|--|-------------------|-------------------------------------|-------------------------------|--------------------------------|--|
| hole dia | amete | er. | | | 100 m | m | 40 | | Northing t | earing: | N/A | | | da | itum: mAHD |
| drillir | ng ir | ıfo | rma | tion | | | mate | rial s | ubstance | | | | | | |
| <u>ب</u> ا | s penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle cha colour, secondary and minor co | | | moisture condition | consistency/ density index | 200 × pocket 300 v penetro- | |
| ADV | П | С | | D | | | *** | | FILL: SAND: Medium to coarse grain | | \neg | М | | Ш | FILL |
| A | | | | D | _2 | 1 | | | FILL: SAND: Fine to coarse grained, black, with some fine to medium lithic sandstone. FILL: SANDSTONE BOULDER: Pale white FILL: SAND: Fine to coarse grained, black, with some fine to medium lithic gravel. | dark brown gravels an yellow and | nd d n, | | | | 0.70m distinct bitumen odour 0.80m SPT1 moved from 1.0m to 1.50m due to sandstone boulder. |
| | | | - | 13,5,3 N*=8 | _1 | 2 | | CL | 1.40m colour becoming brown Silty CLAY: Low plasticity, pale grey r Clayey SAND: Fine to medium graine | d, dark gre | | W | F | | ALLUVIUM |
| | | | | U _{so} | _0 | 3 | | | clay rich and sand rich layers through | out _ | | | | | 3.00m distinct organic odour |
| | | | | | 1 | 4_ | | СН | CLAY: High plasticily, dark grey, brow | | | | S-F | | |
| | | | | SPT 3,4,10 N*=14 | 2 | <u>5</u> | | CL | Silty CLAY: Low plasticity, pale grey rorange iron stained, with some red clathroughout. | | | | VSt | ××× | RESIDUAL SOIL |
| | | | | SPT 7,8,9 N*=17 | 3 | <u>6</u> | | | 5.70m increased iron staining | | | | | ** | |
| | | | | SPT | 4 | 7 | | | SANDSTONE: Extremely weathered, | | | | | | WEATHERED BEDROCK |
| | | | 3 | 5,30/120m N*=R | n 5 | 8 | | | grained, pale grey, white, estimated to strength. | , De very lo | UW | | | | |
| method AS AD RR W CT HA OT B | | roll wa cal hai dia | ger di er/tric shboi ole to nd au tube nk bit | re ol ger | M C per | mud casing netration 2 3 4 ter 10/1/99 | n o resistar anging to efusal 8 water le e shown | | notes, samples, tests U ₅₀ undisturbed sample 50mm diar U ₆₁ undisturbed sample 63mm diar D disturbed sample N standard penetration test (SPT. N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample | meter s | | ription unified of unified of | classifica | | consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense |

Project:



BH11 Sheet

2 of 3 **Engineering Log - Borehole** GEOTLCOV24303AA Project No:

Borehole No.

Logged by:

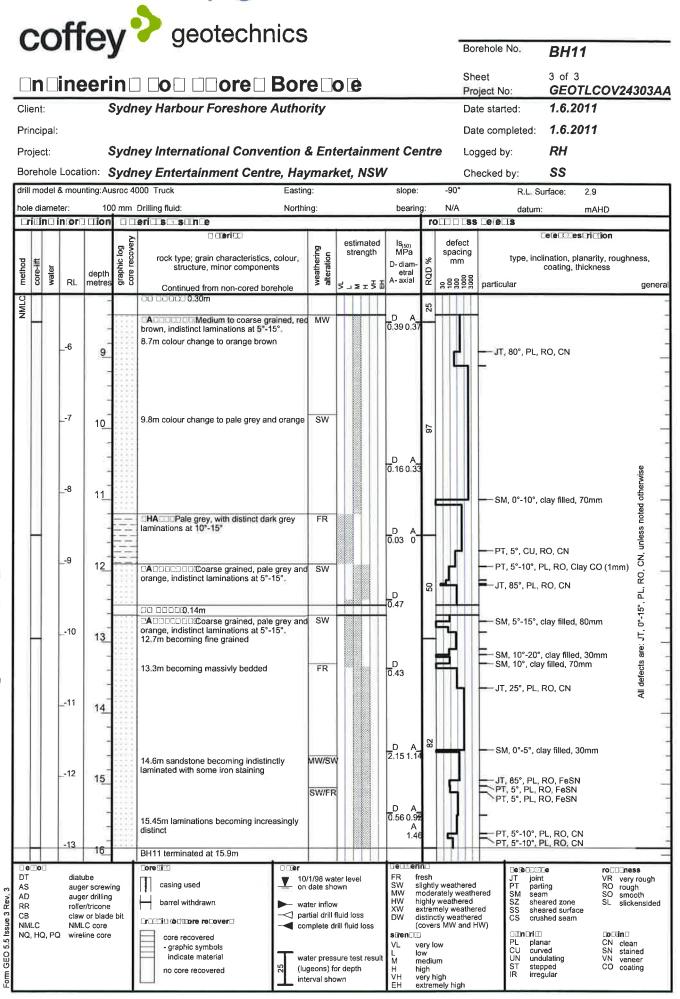
RH

Sydney Harbour Foreshore Authority 1.6.2011 Date started: 1.6.2011 Principal: Date completed:

Sydney International Convention & Entertainment Centre

| drill n | nodel | an | d m | nour | _ | | 4000 | Truck | | Easting: | slope: | -90° | | | R | l.L. Surfac | e: 2. | 9 |
|---------|---------------|-------------------------|-------------------------------------|--|---------------------------------|----------|--------------------|---|--------------------------|--|-------------------|------------------------------|---------------------------------------|-------------------------------|--------------|--|-------|--|
| | diame | | | | | 00 m | m | | | Northing | bearing | j: N/A | | | d | atum: | m | AHD |
| dril | ling | inf | or | mat | ion | | _ | mate | | ıbstance | | | | | | _ | | |
| method | v penetration | todalio | unddns | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | materi soil type: plasticity or par colour, secondary and r | ticle characteris | | moisture condition | consistency/ density index | 200 Denetro- | | | cture and I observations |
| 7 | H | | Ŧ | \exists | | | 74 | | | Borehole BH11 continued as | cored hole | | | | | | | |
| | | | | | | 6 | 9 | | l | | | | | | | | | |
| | | | | | | 7 | 1 <u>0</u> | | | | | | | | | | | |
| | | | | | | 8 | 11_ | 10 | | | | | | | | | | |
| | | | | | | 9 | 12 | | | | | | | | | | | |
| | | | | | | 10 | 13 | | | | | | | | | | | |
| | | | | | | 11 | 14 | | | | | | | | | | | |
| | | | | | | 12 | 1 <u>5</u> | | | | | | | | | | | |
| netho | od | | | | rewing* | М | 16 pport mud | N | nil | notes, samples, tests U ₅₀ undisturbed sample 5 | | | cription | | | VS | | density index very soft |
| | | 1 (4 1 (4 1 | rolle was cabl han dial | er/trice hbor le tod d aug ube uk bit | e bl ger | | | o resista anging to efusal 3 water | level | U ₅₃ undisturbed sample 6: D disturbed sample N standard penetration 1 N* SPT - sample recover Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample | test (SPT) | moistur D d M m W w | e ry noist et lastic limi | | ation | S F St VS H Fb VL L | t | soft firm stiff very sliff hard friable very loose loose |
| / Г | nown b | y s | V bi TC I | t bit | | — | | shown | | | , | Wp p | | | | L MD D VD | | |

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY,GDT



BOREHOLE GEOTLCOV24303AA REV2.GPJ COFFEY,GDT 4.8.1

TC bit

n by suffix ADT

*bit s

water inflow

water outflow

Borehole No. **BH13** Sheet **Engineering Log - Borehole** GEOTLCOV24303AA Project No: Sydney Harbour Foreshore Authority Date started: 9.6.2011 9.6.2011 Principal: Date completed: Sydney International Convention & Entertainment Centre RC Logged by: Project: SS Borehole Location: Sydney Entertainment Centre, Haymarket, NSW Checked by: drill model and mounting: Hydrapower Scout Truck Easting: slope: -90° R.L. Surface: 3.15 hole diameter: 100 mm Northing bearing: N/A datum: mAHD drilling information material substance consistency/ density index classification symbol pocket penetro meter material structure and samples, penetra moisture condition additional observations graphic method poddns tests, etc water kPa soil type: plasticity or particle characteristics, depth RL colour, secondary and minor components. 9889 123 Rectangular, red-brown concrete pavers PAVEMENT PP (50mm) overlying medium grained pale brown sand FILL (50mm) FILL: Sandy GRAVEL: Medium to coarse grained, grey, fine to medium grained gravel. FILL: Gravelly SAND: Fine to medium grained, brown, fine to coarse angular to subrounded gravel. δ M 10,8,2 N*=10 FILL: SAND: Medium grained, pale brown. W 1.8m - With some brown gravel. >Wp ALLUVIUM CH Silty CLAY: High plasticity, dark grey. S ■4m at 12pm on 9/6/2011 1,1,1 N*=2 3 3m - With sulfuric odour U₅₀ 4 F/St 3,6,6 N*=12 5 Sandy CLAY: Low plasticity, pale grey mottled, orange-brown, fine to medium grained sand with SI-VSI -2 some fine to medium grained subangular ironstone 6 -3 6.5m - Becoming red. 6.8m - One rootlet. SPT mples, tests VS auger screwing M mud undisturbed sample 50mm diameter soil description very soft based on unified classification undisturbed sample 63mm diameter auger drilling RR roller/tricone disturbed sample system firm W washbore standard penetration test (SPT) CT HA cable tool SPT - sample recovered VSI very stiff SPT with solid cone hand auger dry DT dialube vane shear (kPa) moist Fb friable VL W B V blank bit pressuremeter wet very loose plastic limit Bs bulk sample on date shown

environmental sample

refusal

MO

VD

medium dense

dense

very dense

liquid limit



Sydney Harbour Foreshore Authority

BH13 Sheet 2 of 3

Engineering Log - Borehole GEOTLCOV24303AA Project No:

Borehole No.

Date started:

9.6.2011

| Proj Bord | | e Lo I and | | on: Sydi nting: H | ney | Ente | rtain | men | Convention & E t Centre, Hayma Easting: Northing | | -90° | L | Date co logged Checke | ed by: | t: 9.6.2 RC SS . Surface: | 3.15 mAHD |
|---|---------------|---------------------------------------|---|---------------------------------|---------------|---------------------|---|--------------------------|---|---|---|----------------------------|-------------------------------|---|--|---|
| dri | lling | ling information material substance | | | | | | | | | | | | | | |
| method | noiteration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | soil type: plasticity | material or particle charactericy y and minor compone | stics, | moisture condition | consistency/ density index | 200 x pocket 200 y penetro- 300 w meter | | structure and ional observations |
| ADV | | | | SPT 4,5,3 N*=8 | 5 6 | 9 | | SP | Sandy CLAY: Low pla orange-brown, fine to r some fine to medium g gravel. (continued) SAND: Medium to congrey, with some high p | nedium grained sand trained subangular iro arse grained, dark gre | with Instone | >Wp | L-MD | * | RESIDUAL | SOIL? |
| NWIC | | | Φ. | SPT R;30/140,R N*=R | 8 9 10 | 11 12 13 14 15 15 1 | | | Borehole BH13 continu | ued as cored hole | | | | | SPT hamm | ner bouncing |
| metin AS AD RR W CT HA DT B V T *bit s e.g. | hod hown I | au ro ca ha di bl V | uger d Iller/trid ashbo able to and au atube ank bi bit C bit | cone re ol uger | M C per | ter 10/1/98 | n no resista anging lo refusal B water I e shown | | U ₆₃ undisturbed sa D disturbed sam | etration test (SPT) recovered cone Pa) r | soil des based of system moisture D di M m W w Wp pl | cription n unified e | mbols ar classifica | | consists VS S F St VSt H Fb VL L MD D VD | ency/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense |

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4,8,11

| | | _ | .cı | - | | geotechn | ice | | | | | | | | | | | |
|----------------------------|-------------------------|-------------------|-----------------------------------|---|------------------------------|---|-----------|--------------------------|---|---|--|---------------------|--------------------------------------|--------------------------------|--|--|------------------------------------|------------------------------------|
| | از | U | | e | / | geotechn | IUS | (| | | | , | Bor | ehole | No. | BH13 | 3 | |
| | | | | | | □ □0 □ □□ore □ E | | | o e | | | | She | eet ject No | 0. | 3 of 3 GEOT | LCOV24 | 1303AA |
| _ | ient: | _ | | | _ | ney Harbour Foreshore A | | | | | | | | te start | | 9.6.20 | | 0007 |
| | | pal: | | | | , | • | | | | | | | | pleted: | 9.6.20 | | |
| | ojec | • | | Ş | Svdr | ney International Conven | ition (| & Ent | ertainme | ent Cei | ntre | e | | ged b | • | RC | | |
| | • | | Loca | | • | ney Entertainment Centre | | | | | | • | | ecked | • | SS | | |
| _ | | | | | | wer Scout Truck | Eastin | | | slope: | _ | -90 | | 70 | R.L. St | | 3,15 | |
| _ | | amet | | | | Drilling fluid: | Northir | ng: | | bearin | _ | N/A | | | datum: | | mAHD | |
| H | 100 | ٨ | n:or | □ □lon | | Ceri: Is Cistin Ce | | | . Una plane | | l'i | | | eee | | e è l'es | □ri⊡ion | |
| method | core-lift | water | RL | depth metres | graphic log core recovery | rock type; grain characteristics, c structure, minor component | | weathering alteration | estimated strength | Is ₍₅₀₎ MPa D- diam- etral A- axial | RQD % | defe space mi | cing m | particu | | lination, pla coating, th | anarity, rough ickness | ness, general |
| \vdash | + | | 5 | | <u> </u> | | | ۲ | 215I2m | | \vdash | <u>0</u> ← W | i ÷ m | partion | IIGI | | | genera |
| | | | 6 | 9 | | | | | | | | | | | | | | |
| | | | 7 | 10_ | | Continued from non-cored bore | ehole | | | | | | | | | | | |
| | | sturn | | - 3 | | SD GC960 0.70 m | | | | | | | | | | | | 9 |
| | | Full water return | 8 | 11_ | | CA COCCED Medium to coarse gr pale grey mottled orange-brown, indi bedded at 5°-15° | istinctly | XW SW | | | 0 | 7,44 | | PT 55 PT ST | , 80°, PL, I , 20°, PL, 30° PL | RO, UN, C RO, VN, CI RO, VN, C RO, VN, CI RO, VN, C | lay lay lav | |
| | | | 9 | 12 | | 12.40m to 13.0m - Distinctly bedded | | SW-MW | | D A 1.382.01 | | [| | JT, SM JT, JT, JT, | , 75, PL, R 4, 35°, PL, , 80°, UN, , 75°, PL, I , 85°, PL, I , 15°, PL, | RO, VN, Cla RO, Clay, RO, SN RO, CN RO, VN RO, SN | ay' 50mm, 50kP 6andy Clay, 2 | - |
| | | | 10 | 13 | | | | | | D A 1.04 1.18 | 47 | [| | PT PT SM = 2 | 「, 15°, PL, 「, 15°, PL, | RO, SN RO, SN , RO, Sand | ly Clay, 12mπ | - |
| | | | 11 | 14 | | 14,43m to 14,50m - with some fine g | jrained | | | D A_ | | | | PT PT PT | .65°-85°, .5°, PL, F .10°, PL, .10°, PL, | CU, RO, S RO, SN RO, SN | Sandy Clay, 1 | mm - |
| | | | 12 | 15 | | BH13 terminated at 14.7m | | | | | | | | | | | | |
| AS AC RF CE NN | S O R S MLC | | aug aug rolle clav NM | tube ger screwinger drilling er/tricone w or blade ILC core eline core | e bit | casing used barrel withdrawn crassic core recovered - graphic symbols indicate material no core recovered | on wa | | own v fluid loss rill fluid loss sure test result or depth | FR fr SW s MW m HW h XW e DW d SiltenCE VL v L k M m H h VH v | noder lighly extrem listing cover ery loo mediu ligh ery h | m | weather eather alhere and H | ered red ed | SS she CS crus IIInIri PL plar CU cun UN und ST step | t ting im eared zone eared surface shed seam in | SL slic | y rough igh ooth skensided an ined |

Borehole No.

BH17

Sheet

1 of 4

Project No:

GEOTLCOV24303AA

16.6.2011 Date started:

Date completed: 16.6.2011

| | model | | mou | • | | | 000 Truck Easting: slope: -90° | | | | | R.L | | | | |
|--|------------------|------------------------------------|-------|---------------------------------|--------------|-------------------------|---|--------------------------|--|---|-------------------------|-------------------------------|--------|--------------|--|---|
| | diame Iling i | _ | rma | | 100 m | m | materi | ial sı | Northing bea | ing: N/A | | | | dati | um: | mAHD |
| | | | | | | | _ | _ | | | | × | و بيد | ģ | | |
| nomeni | penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle charac | eristics, | moisture condition | consistency/ density index | | 300 pp pener | ac | structure and ditional observations |
| _ | 123 | C | _ | | - | meues | 8888 | - | FILL: BRICK PAVERS: Brown, 0.08m | , i o i o i | _ | H | 77 | H 4 | FILL | |
| - Control of the cont | | | | SPT 6,7,4 N*=11 | _3 | 1 | | | FILL: Clayey Gravelly SAND: Medium grained, brown, grey, fine gravel, medium clay. FILL: SAND: Coarse grained, grey, brored mottled, with some fine sandstone gred. | plasticity | D | | | | | |
| | | | • | SPT 2,0,0 N*=0 | _1 | - | | | FILL: Silty CLAY: Low plasticity, black, organic material, trace of sand and fine g | with some ravel. | w | | | | | |
| | | | | N -U | _0 | 3 | | | 3.10m - With some sand. | | | | | | | |
| | | | | SPT 2,3,5 N*=8 | 1 | 4 | | CH | CLAY: High plasticity, red, brown, grey, grained ironstone gravel. | trace of fine | M | St-VSt | × * | : | ALLUV | IUM |
| | | | | SPT 2,5,6 N*=11 | 2 | <u>5</u> - - 6 | | CH | CLAY: High plasticity, grey, red, brown, some coarse sand, trace of fine to medic sandstone and ironstone gravel. Gravelly CLAY: Low plasticity, brown, compared to the compa | m grained | w | St-VSt | | * | | |
| | | | | SPT 4,7,8 N*=15 | -4 | 7 | | CH | fine angular sandstone and ironstone gradients of the control of t | | | | × * | < | | |
| eth S D R T A | lod | au roi wa ca ha dia | | re ol ger | M C pe | ter | N in no resistance ranging to refusal 8 water lev | æ | notes, samples, tests U ₅₀ undisturbed sample 50mm diamete U ₅₃ undisturbed sample 63mm diamete D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter | r soil de r based o system moistu D o | scription on unified | mbols a | | | Cons VS S F St VSt H Fb VL | sistency/density index very soft soft firm stiff very stiff hard friable very loose |

BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.11

Form GEO 5.3 Issue 3 Rev.2

Project:



Engineering Log - Borehole

Sheet GEOTLCOV24303AA Project No:

Borehole No.

Date started:

Logged by:

BH17

2 of 4

LJG

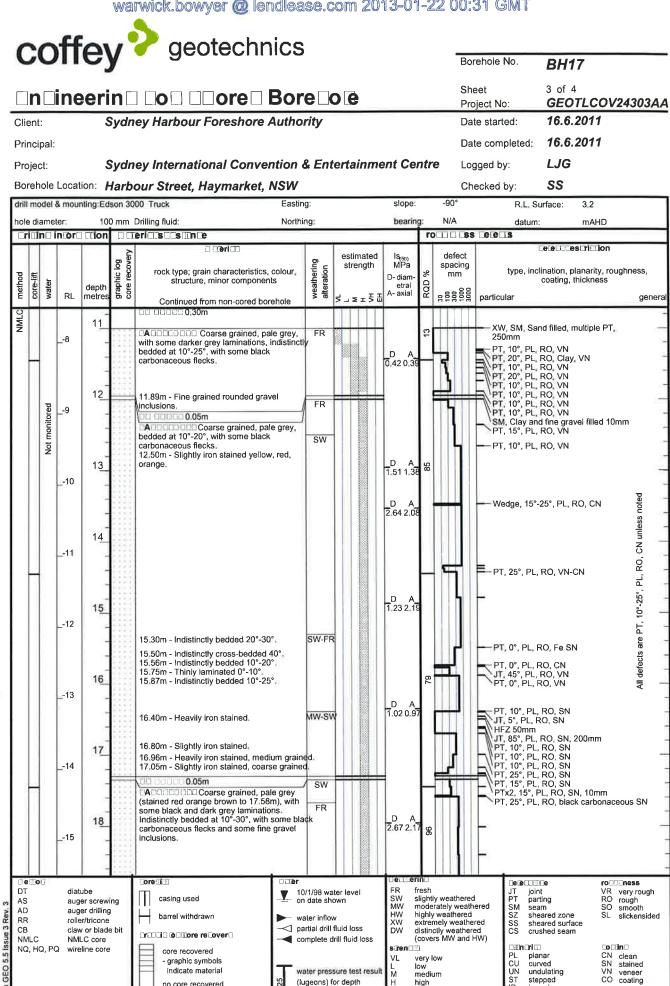
16.6.2011

Sydney Harbour Foreshore Authority Principal: Date completed: 16.6.2011

Sydney International Convention & Entertainment Centre

| Borehol | e Lo | catio | n: <i>Hart</i> | our | Stre | et. F | łavm | arket, NSW | 00//11/0 | | Checke | _ | SS | | |
|---|---|--|--|---------------|-----------------|--|--------------------------|--|---|-----------------------|-------------------------------|---|--|--|--|
| drill mode | | | | | 3000 | | | Easting: slope: | -90° | | | | Surface: 3.2 | | |
| hole diam | eter: | | 1 | 00 m | m | Northing bearing: N/A | | | | | datum: mAHD | | | | |
| drilling | info | rma | tion | | | material substance | | | | | T | | | | |
| method 1 2 penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle character colour, secondary and minor compon | ents. | moisture condition | consistency/ density index | 100 pocket 200 pocket 300 ponetro- 400 meter | | | |
| ADT | C | | SPT 4,12,10 N*=22 SPT 4,16 N*=R | 5 6 | 9 10 | | SC CH | CLAY: High plasticity, pale grey, red brown trace of sand. (continued) 8.10m - With some coarse sand. Clayey SAND: Coarse grained, pale grey, Sandy CLAY: High plasticity clay, grey, pacoarse sand. SANDSTONE: Extremely weathered, coar grained, pale grey, remoulds to a sandy cla 10.30m - Highly weathered. | grey. e grey, | W | MD St-VSt | * | RESIDUAL SOIL WEATHERED BEDROCK | | |
| | | | | 8 9 10 | 11 12 13 14 | | | Borehole BH17 continued as cored hole | | | | | | | |
| method AS AD RR W CT HA DT B V T "bit shown | au rol wa cai ha dia bla V I TC | ger dr er/tric shbor ole too nd au tube nk bit oit bit | re ol ger | M C per | ter 10/1/98 | o resistar anging to efusal 3 water le a shown | evel | notes, samples, tests U ₆₀ undisturbed sample 50mm diameter U ₈₁ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal | soll des based of system moistur D of M r W w | | classifica | | consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense | | |

CORED BOREHOLE GEOTLCOV24303AA_REV2,GPJ COFFEY.GDT



(lugeons) for depth

interval shown

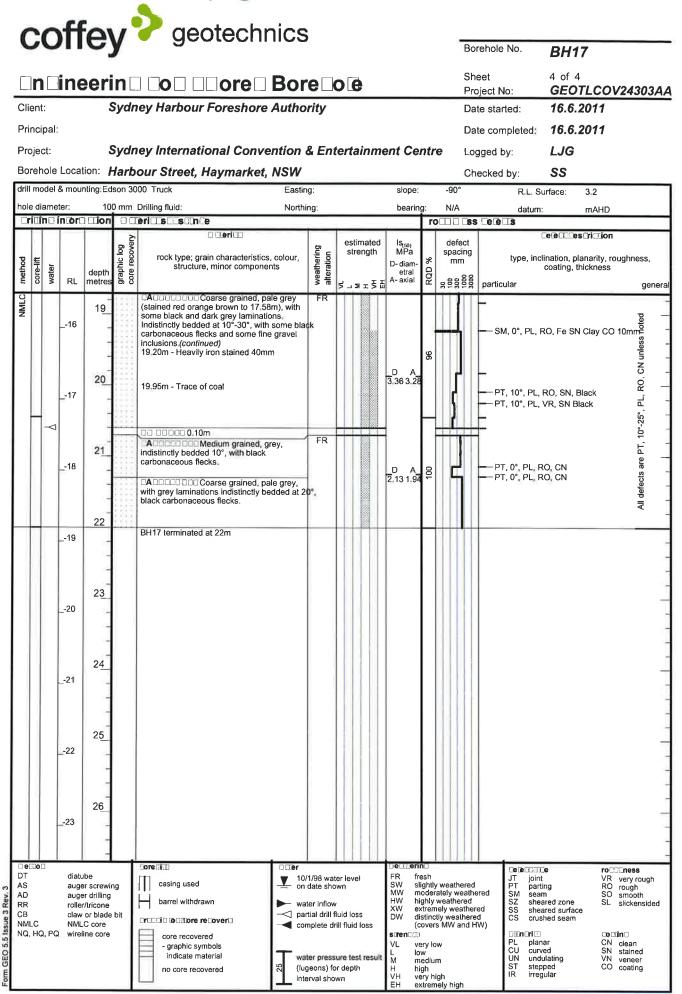
no core recovered

high very high

extremely high

stepped irregular

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT



Coffey & Partners Pty. Ltd.

engineering log borehole



borehole no.:

HY 45 sheet 1 of 3

office and job no: CO-ORDINATES 8657.7 E, 49763.3 N S7769/1 Client: GUTTERIDGE HASKINS & DAVEY PTY. LTD. 25/3/86 hole commenced: hole completed: 25/3/86 DARLING HARBOUR LIGHT MONORAIL - PART A project: supervised by: M.A.B. borehole location: HAY STREET CH. 1222m approx. checked by: P.K.W. drill model and mounting: deg. R.L. surface: MOBILE TRUCK 90 3.14 hole diameter: 100 mm bearing: datum: deg. A.H.D. hand Topenetroclassification symbol consistency/ density index log penetratio moisture condition notes material methoc water structure and graphic samples. soil type: plasticity or particle characteristics additional observations ests,etc. colour, secondary and minor components depth نــ 123 metres A SP S FILL SAND, ranging from coarse D to medium grained, black l۷ 1 D ALLUVIAL SC CLAYEY SAND, fine to med-L ium grained, dark brown, 2 low to medium plasticity S/F clay (≅50-40%) D CLSANDY CLAY, low plasticity F grading to CLAY, dark >PL 3 grey. CLAY, medium plasticity, CLSt light brown & light grey. 4 SP SAND, medium grained, brown 5 CH CLAY, high plasticity, M St light brown & light grey >PL Red streaks occurring at 6m - predominant at 6.4m. 6 D 7 CLAYEY SAND, medium-fine SC F W Residual grained, light grey. consistency/density index C casing M mud 1 2 3 method support samples and tests very soft AS auger screwing
AD auger drilling*
R roller/tricone
W washbore
CT cable tool
*bit shown by suffix:
B blank bit
V "V" bit
T TC bit auger screwing auger drilling roller/tricone U50 undisturbed sample 50 mm diameter soft firm stiff very stiff hard friable very loose loose medium dense dense very dense penetration 1 disturbed sample standard penetration test: figure = result moisture SPT + sample dry ¥ 10 Jan 76 water level on date shown

cone penetrometer

water inflow

moist

wet

MD D VD

Coffey & Partners Pty. Ltd.

engineering log borehole



borehole no.:

2 of 3 sheet

HY 45

CO-ORDINATES 8657.7 E, 49763.3 N

office and job no:

S7769/1 25/3/86

hole commenced: TOCE HASKINS & DAVEY PTY. LTD. hale completed:

25/3/86

| pr | ient: oject: orehole lo | D | | IARBOUR | | VEY _{PT} Y. LTD ONORAIL _ PA approx. | | 8 | nole co supervi checke | sed b | by: | d: 25/3/86 M.A.B. P.K.W. | |
|--------|--|--|---------------------|---|----------------|---|---|-----------------------|---|----------------------------|-----------|---|---|
| dr | | and mounti | ng: MOBII | | | slope: 90 bearing: - | deg. deg. | | R.L. sur latum: | | | 3.14 m A.H.D. | |
| method | ă S | notes samples, | i depth cimetres | graphic log classification symbol | soil type: pla | material sticity or particle ch andary and minor o | naracteristics components | moisture condition | consistency/ density index | 1885 hand 3885 penetro- | 400 meter | structure and additional observations | |
| AD | 123 | | emetres 8 | SL | Clayey | Sand, as abo | ove | | | | | Residual | - |
| V | NIII. | | 10- | | Coring | commenced @ | 8.4m 3 of 3 | | | | | Near V-Bit refusal | |
| | AD R R V CT bit st B V T | d auger screwing auger drilling? roller/tricone washbore cable tool lown by suffix: blank bit "V" bit TC bit ADT | water | M mu | | notes samples and t U50 undisturbed sidiameter D disturbed sam N standard pene figure = result N° SPT + sample Nc cone penetros | ample 50 mm ple stration test: t | and s | dication oil desc don unification dry dry moist wet | ried system | ! | consistency/density index VS very soft S soft F firm St stift VSt very stiff H nard Fb frable VL very loose L loose MD medium dense D dense VD very dense | |

Coffey & Partners Pty. Ltd. Incorporated in Queensland.

engineering log --



borehole no: HY 45

sheet 3 of cored borehole office and job no: CO-ORD 8657.7E , 49763.3 N. \$7769/1 hole commenced: client: GUTTERIDGE HASKINS & DAVEY PTY. LTD. principal: hole completed: 25/3/86 DARLING HARBOUR LIGHT MONORAIL - PART A supervised by: project: M.A.B. HAY STREET - CH. 1223m approx. borehole location: log checked by: P.K.W. R.L. surface: drill model and mounting: MOBILE TRUCK slope: 90 deg. fluid WATER A.H.D. bearing: datum: barrel type and length: deg. rock mass defects drilling information rock substance defect defect description Est. substance description Strength spacing thickness, type, inclination method rock type: grain characteristics (50)al mm planarity, roughness, coating colour, structure, minor components general MPa 8 5 8 5 5 See non cored borehole log. Coring commenced at 8.4m. CORE LOSS 0.6m. SANDSTONE, medium to coarse grained, brown with red stain-ing, massive to very poorly Defects a -HW A=0.2 developed bedding at 5 to 10°. Clayey Sand 15mm H/III Sugary sandstone 30mm parting with clay coating. A-0.9 SST breaks As above, becoming light grey to brown with red staining. Joint 70°, planar, rough, clean Sandy clay pocket, 20mm. ğ Sugary Sandstone, 20mm. bedding CORE LOSS 0.38m SW D=0.75 SANDSTONE, as above partings, A=0.7 Sandy clay, 40mm, slightly SANDSTONE, fine to medium SST grained, light grey, massive to poorly developed bedding at 20°, very thin, black lamincarbonaceous. D=0.33 Completely decomposed to sand unless A=0.28 EW and clayey sand, 160mm. Joint 85-90°, planar, rough & SW irregular, clean. As Above, massive. D=1.8 HY 45 terminated at 13.88m. KEY maximum effective pressure in test (kPa) (350)method casing used slightly weathered auger screwing AS barrel withdrawn -- extremely low auger drilling AD 10 Oct. 63 ٧L -very low moderately MW graphic log/core loss roller/tricone -- low date shown weathered L core recovered M water inflow -medlum washbore highly weathered W HW (hatching indicates –high NMLC core drilling partial drilling water loss NMLC material) VН -very high EW extremely AHQ Wireline core drilling complete drilling water loss NQ,HQ no core weathered -extremely high

Borehole No. NBH27

1 of 1 Sheet **Engineering Log - Borehole** GEOTLCOV24303AC Project No:

Infrastructure NSW 27.4.2012 Date started:

27.4.2012 Principal: Date completed:

| Pro | ject | : | | | SIC | EEP | | | | | | L | .ogged | l by: | ACM | |
|---|---------------|-------|---|--|---------------------------------|--------|--|---|--------------------------|---|--|--|-------------------------------|--|--|--|
| Bor | reho | le | .00 | atic | n: See | Fig | ure 1 | | | 13 | | C | Checke | ed by: | DS | |
| drill | mod | lel a | nd | nou | nting: | XP60 | Truck | | | Easting: slope: | -90° | | | R. | L. Surface: 2.7 | |
| | diar | | _ | | | 100 m | m , | | | Northing bearing: | | datum: AHD | | | | |
| dr | Illin | _ | fo | ma | tion | | _ | mate | | ubstance | - | | - | I | | |
| method | 1 Denetration | - 1 | support | water | notes samples, tests, etc | | depth metres | graphic log | classification symbol | material soil type: plasticity or particle characteristics, colour, secondary and minor components. | | moisture condition | consistency/ density index | 100 pocket 200 penetro- 300 mmeter | | |
| -ADT | | | | | E | _2 | 1 | | | ASPHALT: (0.15m) FILL: Gravelly SAND: Fine grained, dark brown, mottled dark grey, fine to medium grained, subant to angular gravel | gular | M | | | PAVEMENT FILL No Odour | |
| | | | | | SPT 2,2,4 N*=6 | 1 | 2 | 000 | CL | CONCRETE: (0.4m) CLAY: Medium plasticity, pale brown, mottled orange-brown, red-brown | | D <wp< td=""><td>F</td><td></td><td>CONCRETE ALLUVIUM No Odour, PID = 2.1ppm</td></wp<> | F | | CONCRETE ALLUVIUM No Odour, PID = 2.1ppm | |
| | | | | | SPT 2,1,2 | _0 | 3 | | SP | SAND: Coarse grained, dark grey, mottled black with some fine grained, subangular gravel | | М | L | | | |
| | | | | | N*=3 | 1 | <u>4</u> | 7 | sc | Clayey SAND: Fine to medium grained, dark gre mottled black, with some organics | ⊒ y, | W | VL | | No odour, PID = 2.8ppm Organic Odour | |
| | | | | | SPT 3,3,3 N*=6 | 2 | 5 | | СН | CLAY: Medium to high plasticity, pale brown, mottled dark grey | | >Wp | St | | No Odour, PID = 0.4ppm | |
| | | | | | | 3 | 6 | | | Borehole NBH27 terminated at 5m | | | | | | |
| | | | | | | 4 | 7 | | | | | | | | | |
| met | hod | | | | | 5 | - 8 pport | | | notes, samples, tests ci | assifica | tion syr | nbols an | nd . | consistency/density index | |
| AS AD RR W CT HA DT B V T *bit: e.g. | show | n by | rol wa ca ha dia bla VI | ger d ler/tri shbo ble to nd au itube ink bi bit bit | re ol iger | M C pe | mud casing netratio 2 3 4 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | no resista ranging to refusal 8 water e shown | level | U ₅₀ undisturbed sample 50mm diameter be undisturbed sample 63mm diameter be D disturbed sample sy standard penetralion test (SPT) | oil descriptions of the color o | ription unified o | dassifica | | VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense | |

Borehole No. NBH30

Engineering Log - Borehole

Sheet Project No: 1 of 1 GEOTLCOV24303AC

Date started:

27.4.2012

Principal:

Date completed:

27.4.2012

| Pro | ojec | ct: | | | SICE | EP | | | | | L | .ogged | by: | ACM |
|---------------|------|---------------|---------|-----------------|---------------------------------|------------|-----------------|-------------------------------------|--------------------------|---|---|-------------------------------|--------------------------------|--|
| Bor | reh | ole | Lo | catio | n: See | Figu | ıre 1 | | | | (| Checke | d by: | DS |
| drill | mo | dela | and | mou | nting: | KP60 | Truck | | | Easting: slope: -90° | | | R | R.L. Surface: 2.7 |
| _ | _ | ame | | | | 100 m | m | | | Northing bearing: N/A | | | d | atum: AHD |
| dr | - | _ | nfo | rma | tion | _ | _ | mate | _ | bstance | _ | | - | |
| method | 1 | s penetration | support | water | notes samples, tests, etc | RL | depth metres | graphic log | classification symbol | material soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | 200 A pocket 300 B penetro- | 1 |
| FOW | | | N | | E | | _ | *** | | ASPHALTIC CONCRETE: (0.1m) FILL: Clayey GRAVEL: Medium to coarse grained, | M | | | FILL |
| 1- | | | | | | | - | | CL | subangular to angular sandstone, pale brown, imedium plasticity clay fines | D | VS | | No Odour, PID = 0.3ppm |
| | | | | | E | _2 | = | | OL. | FILL: SAND: Fine to medium grained pale grey | <wp< td=""><td> ۷3</td><td></td><td>ALLUVIUM No Odour, Dup 12 + Dup 12a</td></wp<> | ۷3 | | ALLUVIUM No Odour, Dup 12 + Dup 12a |
| | | | | | | | 1 | | | mottled pale brown, cernent stablized Sandy CLAY: Medium to low plasticity, pale brown, | | | | |
| | | | П | | | | | | | mottled orange-brown, fine to medium grained sand | | | | |
| | Ш | | П | | | | - | | | | | | | |
| ADT | | | П | | SPT | | 3 | | СН | Sandy CLAY: Medium to high plasticity, pale brown, mottled red-brown, medium to coarse grained | | | | |
| | | | П | | 1,0,0 N*=0 | | 2 | | | sand | | | | No Odour, PID = 0.9ppm |
| | | | П | | | | _ | | | | | | | - |
| | | | | | | | _ E | | CL | Silty CLAY: Medium plasticity, dark grey, mottled black | | F | | 2 |
| | | | | | | Lo | 2 | | | braun. | | | | |
| | | | | | | ٢ | - | | | | | | | |
| | | | | _ | SPT | | 3 | | | | >Wp | | | 2- |
| | | | | | 1,3,1 N*=4 | | - 5 | | | | | | | No Odour, PID = 1.7ppm |
| | | | | | 14 -4 | | 3 | | | | | | | 3 |
| | | | | | | 1 | _ | | | | | | | |
| | | | | | | | <u>4</u> . | | | | | | Ш | - |
| | | | | | | | = | | | | | | | 3 |
| | | | | | | | 1 | | | | | | Ш | |
| | | | | | SPT 0,0,1 | 2 | | <i>/////</i> | CL | CLAY: Medium plasticity, pale grey | | VS | | No Odour, PID = 1.8ppm |
| | Ш | Щ | Ц | | N*=1 | | 5 | | | | | | $\perp \downarrow \downarrow$ | по осости порри |
| | | | | | | | 2 | | | Borehole NBH30 terminated at 5m | | | | 5 |
| | Ш | Ш | | | | | = | | | | | | Ш | 3 |
| | | П | | | | 3 | ± | | | | | | | 8 |
| | | | | | | | 6 | | | | | | | |
| | | | | | | | 2 | | | | | | | |
| | | | | | | | ¥ | | | | | | | |
| | | | | | | _4 | ÷ | | | | | | | 5 |
| | | | | | | | 7 | | | | | | | |
| | | | | | | | - S | | | | | | | 25 |
| | | | | | | | * | | | | | | | |
| | | | | | | 5 | - | | | | | | | |
| | | | | | | | 8 | | | | | | | 8 |
| | thod | 1 | | | | | port | | _ | | ation syr | mbols an | d | consistency/density index |
| AS AD | | | au | ger d | crewing* rilling* | | mud casing | N | nil | | cription n unified (| classifica | lion | VS very soft S soft |
| RR W CT | | | | ler/tri shbo | | per 1 2 | netration | | | D disturbed sample system N standard penetration test (SPT) | | | | F firm St stiff |
| CT HA | | | ca | ble to | ol | | _ | no resista ranging to refusal | nce | N* SPT - sample recovered moisture | | | | VSt very stiff H hard |
| Z DT | | | dia | atube | | wa | ter | | | V vane shear (kPa) M m | oist | | | Fb friable |
| S B | | | V | | ı | 1 | | B water I e shown | | Bs bulk sample Wp pl | et astic limit | | | VL very loose L loose |
| T *bit s | shov | wn b | | bit lix | | - | water i | nflow | | E environmental sample W _L lic | quid limit | | | MD medium dense D dense |
| e.g. | | | Αſ | | | ⋖ | water o | outflow | | | | | | VD very dense |

BOREHOLE GINTGEOTLCOV24303AC_COMBIN__ WITH AA GINT.GPJ COFFEY.GDT 5.16.12