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PROJECT

ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No ___BH1 _1_ of _2_ SHEET H9550 REFERENCE No

GATEWAY UPGRADE PROJECT - GATEWAY BRIDGE FOUNDATION INVESTIGATION ABUTMENT A LOCATION COORDINATES 10589.7 E; 167274.4 N PROJECT No FG5388 SURFACE R.L. _ 7.78 __. DATE STARTED _23/4/05 DATUM SETP JOB No 0405 DATE COMPLETED 23/4/05 DATUM _AHD _ DRILLER GEOTECH DRILLING R.L RQD INTACT DEFECT (m) ()% STRENGTH SPACING ADDITIONAL DATA Ξ MATERIAL (mm) DEPTH -ITHOLOGY AND SAMPLES DESCRIPTION AUGER CASIN WASH CORE SAMPL TESTS CORE TEST RESULTS REC % 0 7.78 RESIDUAL SILTY GRAVEL Grey and brown, moist. GC 6.98 SANDSTONE XW MEDIUM TO COARSE GRAINED (100)LAMINATED TO MASSIVE POORLY CEMENTED SEDIMENTARY ROCK VL strength clayey band. As above. Is(50)=0.51 MPa LP, 20°, PL, SM, CN.Is(50)=0.54 MPa MW: Pale grey to orange, laminated to o massive, medium to coarse grained, mainly JT, T, subvertical, iron stained. medium to high strength. Massive Minor orange iron stained bands and SW Is(50)=0.51 MPa carbonaceous interlaminations parallel to 0 04.GDT 31/8/05 bedding in parts. Is(50)=0.32 MPa x Is(50)=0.41 MPa o Defects: Bedding/lamiantion partings (55) mainly 10-20°, occasionally 30°. Is(50)=1.59 MPa ENGINEERING BOREHOLE 09_ 4.78 ls(50)=0.91 MPa 0 - 3 Defects are mostly lamination partings parallel to bedding.
INTERBEDDED SANDSTONE & HW JT, 70°, PL, SM, 5mm Clay infill MUDSTONE (MUDSTONE DOMINANT) JTs, 70°, PL, SM, clay coat, 3mm infill SW: Grey and dark grey, fine grained low Multiple JTs, 70°, PL SM, CN. HW clayey zone, EL Is(50)=0.31 MPa 3.91 Contains some HW soft clayey bands in strength. -4 JT, T, 80°, 2mm vert.ls(50)=2.05 MPa parts. Defects: Bedding <20° Occasional fractured/sheared zones. displacement Is(50)=1.85 MPa 0 JT, 70°, PL-SR, CN Defects mostly parallel to bedding or SW Is(50)=0.77 MPa х 60-70°, PL, SM with thin clayey fill or infill SOUTHERN APPROACH PIERS AND ABUT A.GPJ 2 intersecting JTs Is(50)=0.61 MPa o up to 3mm thick. 60 & 80° PL-Cu, SR, thin clayey film 50 & 50 PL - 50, 51, 11 JT, 70°, PL , SR, CN LP, 10°, PL, SM, CN Is(50)=2.26 MPa LP, 30°, PL, SM, CN Is(50)=0.99 MPa 2.94 SANDSTONE (100)SW: Pale grey, medium grained, medium to high strength. (s(50)=0.73 MPa 0 JT, 70°, PL, SM, ls(50)=1.04 MPa Trace carbonaceous interlaminations and thin clayey cont. ripup clasts. Defects mostly 70°, PL-Cu, SW SR. Defect surfaces generally clean, or with a thin slightly clayey film.

INTERBEDDED MUDSTONE & Is(50)=0.50 MPa ls(50)=0.78 MPa SANDSTONE (MUDSTONE DOMINANT) 1,58 SW: Grey and dark grey, fine grained, Is(50)=2.60 MPa medium to high strength. ls(50)=1.88 MPa 0 JT, 70°, PL. SR, LN JT, 80°, Cu, SR, CN SW Defects: Bedding/lamination partings <10°. 0.68 Joints @ 60°-70° (100) Defects mostly 10° (often partings) and ls(50)=1.32 MPa 0 BORELOGS Is(50)=0.81 MPa defect surfaces are mostly PL, SM, LN or JT, 70°, PL, SM, T occasional 60-70° PL, SM with thin clayey Is(50)=0.85 MPa coat. SANDSTONE Is(50)=2.44 MPa 0 LP, 10°, PL, SM & CN (50)=0.81 MPa 2005-SW SW: Pale grey, medium grained, (100)Is(50)=1.95 MPa 0 laminated to massive, mainly high strength. 24.5 Minor carbonaceous laminations parallel to bedding. BOREHOLE WITH LITHOLOGY Is(50)=1.34 MPa -0.82 Defects: Bedding 10-20°. Occasional defects 70° or JT, 30°, St, SR, CN, Tight subvertical ls(50)=1.22 MPa Defect surfaces are PL-Cu, SR, CN. 2 Intersecting, JTs, 70°, PL, SR, CN is(50)=2.38 MPa 0 MUDSTONE SW: Dark grey & grey, fine grained, thinly SW Is(50)=1.11 MPa laminated, medium to high strength. Mudstone band with Is(50)=1.47 MPa fine grained Is(50)=0.58 MPa Thin fine grained sandstone interbands х sandstone interbeds Is(50)=1.55 MPa ô throughout. Defects: Lamination partings<10°. -2.22 REMARKS LOGGED BY J. LESTER & A. DISSANAYAKE (DIS



ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/2-2004

BOREHOLE No BH1

SHEET _ 2 _ of _ 2

REFERENCE No H9550

GATEWAY UPGRADE PROJECT - GATEWAY BRIDGE FOUNDATION INVESTIGATION PROJECT ABUTMENT A LOCATION COORDINATES 10589.7 E; 167274.4 N PROJECT No FG5388 SURFACE R.L. _ 7.78_ _. DATE STARTED 23/4/05 DATUM SETP _____ JOB No 0405 DATE COMPLETED 23/4/05 DRILLER GEOTECH DRILLING DATUM _AHD __ R.L. RQD INTACT DEFECT (m) ()% STRENGTH SPACING ADDITIONAL DATA DEPTH (m) MATERIAL AND SAMPLES DESCRIPTION SAMPL TESTS CORE TEST RESULTS REC % -2 22 10 Listabetata Occasional joints @ 70° JT, 20°, Un, SM, CN Is(50)=0.79 MPa Defects mostly parallel to bedding (often lamination partings) or occassional 70°, PL (100)SW ls(50)=1.98 MPa 0 -2,75 SM, CN. SANDSTONE SW: Pale grey to pale grey brown, medium Is(50)=1.11 MPa Is(50)=1.23 MPa grained, laminated, medium to mainly high Bedding 20° (LP?) o strength. Minor mudstone interbands in parts. ls(50)=1.25 MPa Is(50)=1.16 MPa 0 Defects: Bedding partings - 10-20° INTERBEDDED SILTSTONE, MUDSTONE & SANDSTONE SW ls(50)=1.02 MPa ls(50)=1.24 MPa 12 SW: Pale grey to dark grey, laminated, 0 medium to high strength. Is(50)=1.18 MPa 04.GDT SW: Pale grey, lamianted, medium to Bedding 20° (LP?) Is(50)=1.14 MPa 0 mainly high strength. Medium to coarse grained in parts. Minor BOREHOLE 09 thin siltstone interbands in parts. ls(50)=1.39 MPa ls(50)=1.14 MPa - 13 -5.44 n Defects: Bedding partings - mainty 10-20 occasionally 30° Borehole terminated at 13.22m ENGINEERING - 14 A.GPJ - 15 APPROACH P ₩-17 BORELOGS 18 24.5 BOREHOLE WITH LITHOLOGY - 19 REMARKS LOGGED BY J. LESTER & A. DISSANAYAKE (DIS

Gateway Upgrade Project - Gateway Bridge Project:

Borehole No: BH 1 1.00m Start Depth:

Finish Depth: Project No:

13.22m FG 5388

H No: 9550



Project: Gateway Upgrade Project - Gateway Bridge

Borehole No: BH 1
Start Depth: 1.00m
Finish Depth: 13.22m

Project No: FG 5388 H No: 9550

