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GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 18/03/2016

BH257

Sheet 1 of 4

BOREHOLE No

REFERENCE No

H12266

| PROJE | СТ | N | lack | kay Ring | g Rc | ad | | | | | | | | |
|---|--|-----------------|-------------|----------------------------|------------------------------------|---|------------|--------------------|----------------------------|-------------|-----------------|--|-----------------------------------|------------------|
| LOCATION Pioneer | | eer Rive | er B | ridge, Pier 18 (RHS) | OORDINATES 721376.3 E; 7660627.8 N | | | | | | | | | |
| PROJECT No | | F | FG6184 | | | SURFACE RL 5.53m | plunge 90° | | DATE STARTED 13/07/2015 | | GRID DATUM | GRID DATUM GDA 94 / MGA Z55 | | |
| JOB No | | 24 | 42/ | 10G/90 | 6 | HEIGHT DATUM A.H.D. | BEAF | RING_ | | DATE COMPLE | ETED 15/07/2015 | DRILLER S | axon Drill | ing |
| DEPTH (m) | R.L. (m) | AUGER CASING | WASH BURING | RQD ()% CORE REC% | SAMPLE | MATERIAL DESCRIPTION | LITHOLOGY | USCS WEATHERING | INTACT STRENGTH 표준구구 | | , | ADDITIONAL DATA AND TEST RESULTS | | SAMPLES TESTS |
| - 1 | 5.33 | | | | A | Clayey Sandy SILT (Topsoil) Park brown, moist, soft. Silty SAND (Alluvium) Pale brown, moist, very loose. Fine grained sand, trace rootlets. 1.00m: becomes clayey silty sand. Medium to high plasticity. | | (SM) | | | | | 1, 2, 2 N=4 | SPT |
| - 2 | 3.63 | - | | | В | SAND trace clay and silt (Alluvium) Orange grey and brown, dry to moist, loose. Medium grained sand. | | | | | | | 2, 2, 2 N=4 | SPT |
| - 3 | | | | | С | Becoming very loose. | | (SP) | | | | | 1, 1, 1 N=2 | SPT |
| - - - - - - - - - - - - - - - - - - - | 0.93 | | | | E | SAND (Alluvium) Orange grey brown, wet, medium dense. Fine to coarse grained sand. 5.50m: trace fine to medium grained gravel, rounded grains. | | (SP) | | | | | 2, 3, 3 N=6 3, 5, 7 N=12 | SPT |
| - - - - - - - - - - - - - - - - - - - | -1.07 | - | | | F | Gravelly SAND (Alluvium) Orange grey brown, wet, medium | | | | | | | 7, 7, 8 N=15 | SPT |
| | 0.07 | | | | G | dense. Medium to coarse grained sand, fine to medium grained gravel, subrounded grains. | | (SP) | | | | | 8, 13, 13 N=26 | SPT |
| - - - - - - - - - - - - - - - - - - - | -2.67 | | | | Н | Silty Clayey SAND trace gravel (Alluvium) Pale grey and orange grey, moist, medium dense. Fine grained sand, fine grained | | (SC) | | | | | 8, 11, 13 N=24 | SPT |
| - - - - - - - - - - - | -4.47 | | | | I | gravel, rounded grains, medium plasticity. Continued on next sheet | | () | | | | | 2, 4, 8 N=12 | SPT |
| RI | EMAR | KS: | K | (gwu = | - W | /undaru Granodiorite | | | | | | LOGGED BY | REVIE | WED BY |
| | | | | - | | | | | | | - | C.Boyes | | Foley |
| | TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI | | | | | | | | | | | , | | |

| Queensland Government |
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GEOTECHNICAL BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND YMBOLS REFER FORM F:GEOT 017/8-2014 FINAL 18/03/2016

BH257

Sheet 2 of 4

BOREHOLE No

H12266

| Markary Ring Road Conconsult 2/12/02/14 Conconsult 2/12/02/14 <th< th=""><th>AUTOAN AN</th><th></th><th></th><th>SYI</th><th>MBOLS</th><th>REFER FORM F:GEO</th><th>Г 017/8-2014</th><th></th><th>REFERENCE No</th><th>н.</th><th>2266</th></th<> | AUTOAN AN | | | SYI | MBOLS | REFER FORM F:GEO | Г 017/8-2014 | | REFERENCE No | н. | 2266 |
|---|--------------------|-----------------------------------|--|---|--------------------|------------------|---------------|-------------------------|----------------------|------------------|------------------|
| Mark Train Total A Learn S 25 m Private S 25 m | PROJECT | Mackay Ring | Road | | | | | | | | |
| Bit No. 14/1/DS/MOS HELET DEVIA (A.H.). DUMBER ONT COMPUTE 15/07/2015 DUMLA SMOOD DIFFING 00 0 | OCATION | Pioneer Rive | r Bridge, Pier 18 (RHS) | | | | | _ | COORDINATES 721376.3 | E; 766062 | 27.8 N |
| Image: Section of the sectio | ROJECT No | ROJECT No FG6184 SURFACE RL 5.53m | | | | 90° | DATE STARTE | ED 13/07/201 | .5 GRID DATUM | GDA 94 / N | /IGA Z55 |
| 1 1 Chapty SAND trace grave (Alluvium) Processor of Control | OB No | 242/10G/90 | 6 HEIGHT DATUM A.H | I.D. BEAR | RING _ | | DATE COMPLETE | _{ED} 15/07/201 | .5 DRILLER | Saxon Drill | ing |
| 1 | (m) R.L. (m) | % () % | 비 요즘 MATERIAL DESCRIPT 양 | TION | USCS WEATHERING | STRENGTH | | | AND | | SAMPLES TESTS |
| 7.07 Image: Control of the control | | | J Pale grey and orange gre medium dense. Fine grained sand, fine gr gravel, rounded to subro grains. | y, moist, rained | | | - | | | N=20 8, 7, 16 | |
| - 3 - | | | L | reasing | - | | - | | | | SPT |
| - 9.27 - 9.27 - 15 - 15 - 16 - 16 - 17 - 17 - 17 - 17 - 18 - 18 - 17 - 18 - 19 - 10 | - 13 | | XW: Recovered as pink, b and dark grey, moist, der silty clay. Fine to medium sand, angular grains, med | nse, sandy n grained dium | xw | | - | | | | SPT |
| - 15 - 16 - 18 - 10 - 18 | | | N | + + + + + + + | | | - | | | | SPT |
| - 17 - 18 - 19 - 18 - 18 - 18 - 18 - 18 - 18 - 19 - 19 - 19 - 19 - 19 - 19 - 10 | - 15 | | O HW: Recovered as pink, g dark grey, moist, very der sand. Fine to medium gra | grey and nse, silty ained. | | | - | | 21, 2 | 8, 30/125mm | SPT |
| - 18 R 18.00m: becomes pale green grey. + | - 16 | | P | + + + + + + + + + + | | | - | | | 30/145mm | SPT |
| - <td>- 17</td> <td></td> <td>Q</td> <td> + + + + + </td> <td>нw</td> <td></td> <td>-</td> <td></td> <td></td> <td>30/110mm</td> <td>SPT</td> | - 17 | | Q | + + + + + | нw | | - | | | 30/110mm | SPT |
| Image: Continued on next sheet Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite | - 18 | | R 18.00m: becomes pale g dark grey and pink. | reen grey, | | | - | | | 23, 30/70mm | SPT |
| Continued on next sheet REMARKS: Kgwu = Wundaru Granodiorite LOGGED BY REVIEWED B | | | 5 | + + + + + + + | | | - | | | 30/110mm | SPT |
| | | | Continued on next sl | heet | | | | | | | |
| C.Boyes S.Folev | REMAR | KS: Kgwu = | Wundaru Granodiorite | ! | | | | | LOGGED BY | REVIE | WED BY |
| | | | | | | | | | C.Boyes | S.I | oley |

| | | | | | | | | | _ | | FINAL 1 | .8/03/2016 |
|------------------------------|---|-------------------------------------|--|----------|--------------|--------------------|--|--|------------------------|-----------------------|-------------------------------------|----------------------------|
| A A A | | | | | | GE | OTECHN | ICAL | | BOREHOLE No | В | H257 |
| | | | ensland | | BOREHOLE LOG | | | | | Sheet 3 of 4 | | |
| 18 ye | KI G | iove | ernment | | SYM | | GEOTECHNICAL TER REFER FORM F:GEO | | | REFERENCE No | н | 12266 |
| PROJECT | Mackay F | Ring Ro | bad | | | | | | | | | |
| LOCATION | Pioneer I | Pioneer River Bridge, Pier 18 (RHS) | | | | | | | | COORDINATES 721376.3 | E; 76606 | 27.8 N |
| PROJECT No | FG6184 | | SURFACE RL 5.53m | | PLUN | IGE 9 | 0° | DATE STAF | RTED 13/07/2015 | GRID DATUM | GDA 94 / I | MGA Z55 |
| JOB No | 242/10G | /906 | HEIGHT DATUM A.H.D. | E | BEARI | NG | | DATE COMPLE | TED 15/07/2015 | DRILLER | Saxon Dril | ling |
| | RC | QD | | | | U | | | | ADDITIONAL DATA | | |
| (iii) HL R.L. (m) G | () CASING WASH BORING CORE DRILLING CORE DRILLING | THE RE | MATERIAL DESCRIPTION | I | LITHOLOGY | USCS WEATHERING | INTACT STRENGTH | DEFECT SPACING | | AND TEST RESULTS | | SAMPLES TESTS |
| | | | GRANODIORITE | | + - | ^ | ਜ਼ੵੑੑੑੑ _ੑ ਸ਼ੑੑੑੑੑੑਸ਼ੑਖ਼ ੑੑੑੑ | ű , , , , , , , , , , , , , , , , , , , | | | 30/80mm | SPT |
| - | | | HW: (Cont'd) | | + | | | | | | 50,001111 | - |
| - | | | | | + | | | - | | | | - |
| - - - 21 | | U | | | ++ | | | - - | | | | - - |
| | | | 21.00m: becomes fine to me grained sand. Clay content | dium | + | | | | | | 30/50mm | |
| - | | | increasing. | | + | | | | | | hb | - |
| - | | | | | + | | | | | | | - |
| 22 | | V | | | + | | | - | | | 30/80mm | SPT |
| - | | | | | ++ | | | _ | | | hb | |
| - | | | | | ÷ | | | | 22.70m: Total water | ю | | - |
| - 23 | | W | | | + | | | | | | | SPT |
| | | | | | + | | | | | | 30/80mm hb | - |
| E | | | | | ++ | | + | | | | | - |
| 24 | | × | 24.00m: clay content decrea | sina | + | | | | == 24.00m-24.03m: No | sample | | SPT |
| | | | | g | + | | | | recovered | | 30/30mm hb | - |
| | | | | | + | | | - | | | | - |
| - | | v | | | + | | + | | | | | - - - |
| | (0 |)) | GRANODIORITE HW: Pink, grey and dark gre | v. | • + | xw | EELC | | | | 30/20mm | |
| - | 10 18 | | medium to coarse grained, I | ow to | | MW XW | | | | | hb | A (25.62m) |
| - | (19 | 9) | high strength. Calcite veining throughout <10mm thick. | | + | | | | | | 50)=0.88 MPa 50)=0.74 MPa | |
| -26 | | | Js: 5° to 10°; (<2/m); PI/Sm-I CD; Cn or CA Vr/Ct; | Ro; OP- | + | HW | H-VH | vc-c | | | | |
| | | | Js: 70° to 80°; (<2/m); PI/Sm | ; OP-CD; | + | | F | | | | | - |
| | 10 | | ¢n or CA Vr/Ct; GRANODIORITE | /[| ++ | | | vc | 26.62m-26.78m: BZ | | | |
| - 27 | (73 | 3) | MW: Pink, grey and dark gre medium to coarse grained, h | | ÷ | MW | н | с | 26.94m-27.12m: AZ | ; | 50)=1.50 MPa | D (27.10m) |
| | | | strength. Js: 5° to 10°; (3/m); Pl/Sm-Ro | - | + | | | vc-c | | | | |
| 22.05 | | | CD; Cn or CA Vr; | ſ | + | | | | CD; Cly; 27.68m: DI | | 50)=9.60 MPa | A (27.70m) |
| - 28 | 10 | | ls: 70° to 80°; (1/m); Pl/Sm; Vr; | OP; CA | + | | | | 27.76m: DI; | Is(5 | 0)=11.00 MPa | D (27.85m)- |
| F | | <i>,</i> | GRANODIORITE SW: Pink, grey and dark grey | , | + | | | | | | | |
| | | | medium grained, mainly ver | y high 🕴 | ÷- | | | | | UC | S=91.80 MPa E=67 GPa v= 0.048 | (28.40m) <u>-</u> - |
| | | | strength. Some calcite veinir throughout. | ng | | SW | VH-EH | | | | | |
| - 29 | | | Js: 5° to 10°; (1/m); PI/Sm; C Cn or CA Vr; | P-CD; | + | | | | ━ 29.14m-29.16m: AZ | ; green grey Is(5) | 0)=11.00 MPa | D (29.24m) |
| | | | Js: 70° to 80°; (<1/m); Pl/Sm | ; OP; Cn | + | | | | | | 50)=7.60 MPa | A (29.35m) |
| | | | or CA Vr; | | + | | | | | | | |
| | | | Continued on next sheet | | + | | | | L | | | |
| REMAR | KS: Kgw | u = N | /undaru Granodiorite | | | | | | | LOGGED BY | REVII | EWED BY |
| | | | | | | | | | | C.Boyes | S. | Foley |
| | | | | TMR GEO | DTECHN | IICAL BO | DREHOLE LOG - CREATED WI | TH HOLEBASE SI | | 1 | I | |

| | | | | | | _ | | FINAL 1 | 8/03/2016 |
|---|--|---|---|------------------------------------|----------------------------|--|--|---------------------------------------|--|
| | | | GE | OTECHN | IICAL | | BOREHOLE No | В | H257 |
| | Queenslan | d | BO | REHOLE | LOG | Sheet 4 of 4 | | | |
| | Governmen | IT | | GEOTECHNICAL TE REFER FORM F:GE | | | REFERENCE No | H: | 12266 |
| PROJECT | Mackay Ring Road | | | | | | | | |
| LOCATION | Pioneer River Bridge, Pier 18 (| (RHS) | | | | | COORDINATES 721376.3 | E; 76606 | 27.8 N |
| PROJECT No | FG6184 su | RFACE RL 5.53m | PLUNGE 9 | 0° | DATE STA | RTED 13/07/2015 | GRID DATUM | GDA 94 / I | MGA Z55 |
| JOB No | 242/10G/906 HEIGH | t datum A.H.D. | BEARING | | DATE COMPL | ETED 15/07/2015 | DRILLER S | axon Dril | ing |
| (m) RLL. (m) DEPTH (m) | ROD ()% U BUILS SWIRDER SWIRDE | RIAL DESCRIPTION | LITHOLOGY USCS WEATHERING | INTACT STRENGTH 프_거_다_ㅋ_거리 | DEFECT SPACING | | ADDITIONAL DATA AND TEST RESULTS | | SAMPLES TESTS |
| | GRANODIORI \$W: (Cont'd) 30.15m: bec grey. | TE omes grey and dark | <u>+ + + + + + + + + + + + + + + + + </u> | | | | | 50)=1.60 MPa 50)=3.40 MPa | A (30.12m) D (30.22m) |
| 31 | (96) 31.00m: | | ++ | | | | ls(5 |)=10.00 MPa | – D (31.06m)– |
| | Js: 70° to 85 Js: 5° to 20°; OP; Cn; | ; (<1/m); ; (1/m); Pl/Sm-Ro; TI- | * + + * + * + * + | | м | | is(! | 50)=4.10 MPa | A (31.35m) |
| - 32 - 32 | | | • + + • + • + | | | | UCS | =127.00 MPa | (32.00m) |
| - - - - - - - - - - - - - - - - - - - | 32.53m: bec and grey | omes pink, dark grey | +++++++++++++++++++++++++++++++++++++++ | | | 32.62m-32.66m: BZ; 32.85m-33.00m: AZ; grey; | -// | 50)=2.20 MPa | A (32.80m) |
| - - - - - - - - - - - - - - - - - - - | <u>100</u> (99) | | * sw * sw * * | VH | c | 33.38m-33.56m: Cal along defect surface | s <1mm thick. | 50)=4.20 MPa | - - - D (33.78m)- - - - - - |
| | 34.55 to 35.0 grey | 00m: Becomes Green | · + + + + + + + + + + + + + + + + + + + | | w | 35.02m: Dl 35.08m: J: 75°; Un/S 35.18m: J: 75°; Un/S | ls(50 m; CD; CA Vr; | 50)=9.70 MPa))=12.00 MPa | A (34.68m)– D (34.74m) |
| - - - - - - - - - - - - - - - - - - - | | | + + + + + + + + + + + + + + + + + + + | | C M | | UCS | =199.00 MPa E=59.9 GPa v= 0.087 | - (35.74m) - - - - - - - - - - - - - - - - - - - |
| | | completed at 36.80m | ** ** | | | | Is(| 50)=6.90 MPa | A (36.78m)– – – – |
| - - - - - - - - - - - - - - - - - - - | | | | | | | | | |
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| - - - - - - - - - | | | | - - - - - | - - - - - - | | | | |
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| RENVAD | KS: Kgwu = Wundaru Gra | nodiorite | | | | | | 00.00 | |
| I NEWIAK | . _{NS} wu – wunudiu u did | noulonie | | | | | LOGGED BY C.Boyes | | Foley |
| | | TMR | GEOTECHNICAL BO | REHOLE LOG - CREATED V | VITH HOLEBASE SI | | C.DOYES | | |

CORE PHOTO LOG

DEPARTMENT OF TRANSPORT AND MAIN ROADS Geotechnical Section 35 Butterfield Street, Herston Qld 4006 Phone 07 3066 3336



| Project Name Mackay – Ring Road (Stage 2) | | | | | | | | | | |
|---|--|-----------------------|--|-------------|--|--|--|--|--|--|
| Project No. | FG6184 | | Date | 13/07/15 | | | | | | |
| Borehole No. | BH 257 | | TMR H No. | H12266 | | | | | | |
| Location | Pioneer River Bridge | | Start Depth (m) | 25.02 | | | | | | |
| Detail | Pier 18, RHS | | Finish Depth (m) | 36.80 | | | | | | |
| Chainage | | | Submitted By | M.Ensor | | | | | | |
| Remarks | | | 00000000 | | | | | | | |
| | FG6184 14107 | 115 | BH257 | ROX | | | | | | |
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CORE PHOTO LOG

DEPARTMENT OF TRANSPORT AND MAIN ROADS Geotechnical Section 35 Butterfield Street, Herston Qld 4006 Phone 07 3066 3336



| Droject Name | Mackay Ding Dead (St | 200.2) | | |
|-----------------------------|---|--------------------|-------------------|--|
| Project Name Project No. | Mackay – Ring Road (St FG6184 | ay e 2j | Date | 13/07/15 |
| Borehole No. | BH 257 | | TMR H No. | H12266 |
| Location | | | | 25.02 |
| | Pioneer River Bridge | | Start Depth (m) | |
| Detail | Pier 18, RHS | | Finish Depth (m) | 36.80 |
| Chainage Remarks | | | Submitted By | M.Ensor |
| | | | | |
| FG6184 | | BH7 57 | | BOXH |
| 1.0.39 . 3. | | Conta Mari | Harden Alexand | |
| Carterenter | | | | |
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