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GEOTECHNICAL BOREHOLE LOG

CRR714 BOREHOLE No

FINAL 02/03/2018

Sheet 1 of 4 FOR GEOTECHNICAL TERMS AND H12940 REFERENCE No SYMBOLS REFER FORM F:GEOT 017/8-2014 Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT COORDINATES 501907.7 E; 6961881.9 N Roma Street Station LOCATION SURFACE RL 13.22m DATE STARTED 25/10/2017 FG6470 PLUNGE 90° GRID DATUM MGA94 PROJECT No HEIGHT DATUM AHD DATE COMPLETED 05/11/2017 DRILLER Schneider JOB No BEARING RQD USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % 0.00m-1.90m: Non destructive drilling. ASPHALT (Fill) 12.92 Silty CLAY (Fill) Trace cobbles 12.12 Silty CLAY (Residual) Brown mottled red grey, moist, very stiff. High plasticity. (CH) 11.22 ARGILLITE (DCf) XW: Recovered as Gravelly SAND (SW); orange yellow, moist, very 30/100mm XW dense. Fine to coarse grained, angular sand. Fine to coarse grained angular gravel. 10.13 (0) ARGILLITE (DCf) HW: Pale orange brown, fine grained, foliated, mainly medium Highly fractured throughout. With HW some quartz bands parallel to Is(50)=0.04 MPa D (4.17m) foliation <5mm thick. Is(50)=0.03 MPa A (4.19m) 100 (0) 100 8.23 (55) MW 4.95m-4.96m: Clay seam 100 ARGILLITE (DCf) (16) MW: Orange brown with grey, fine Is(50)=0.13 MPa D (5.25m) Is(50)=0.00 MPa grained, foliated, medium strength. A (5.27m) = 5.50m-5.53m: Clay seam Frequent quartz bands parallel to foliation, and quartz veins/veinlets at 20°-40°, <12mm thick. (43) -Js: 20°-50° (4/m), Pl-Un/Sm-Ro, Tl-UCS=5.39 MPa (6.28m) CD, FeSt E=2.84 GPa v= 0.053 -FP: 40°-50° (4/m), PI/Sm, TI, FeSt Is(50)=1.10 MPa D (6.67m) Is(50)=0.47 MPa A (6.69m) MW Is(50)=0.22 MPa D (7.53m) A (7.54m) 100 (82) Is(50)=0.11 MPa D (8.64m) A (8.65m) 100 (53) ¬ 9.05m-9.10m: HFZ. XW 9.50m: J: 70°, PI/Ro, TI-OP, some Is(50)=0.18 MPa D (9.82m) Is(50)=0.29 MPa A (9.83m) Continued on next sheet REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** ZC S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

Queensland

GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018 BOREHOLE No **CRR714**

Sheet 2 of 4

| | | 1% | 5 | GO | V | ernment | iya | | GEOTECHNICAL T REFER FORM F:G | | | REFERENCE No | H: | 12940 |
|---|-------------|-------|-------------|---|--------|--|-------------|--------------------|----------------------------------|-------------------|--|---|--|--|
| ROJI | ECT | (| Cro | ss River | Rail | CRR2017 - Additional Geotechn | ical Invest | igatio | on | | | | | |
| DCA. | TION | F | Ron | na Stree | t Sta | ation | | | | | | COORDINATES 501907.7 | E; 696188 | 81.9 N |
| ROJI | ECT No | _ | FG | 6470 | | SURFACE RL 13.22m | PLU | NGE 9 | 0° | DATE STAI | RTED 25/10/2017 | GRID DATUM N | ∕IGA94 | |
| OB N | lo | _ | | | | HEIGHT DATUM AHD | BEAF | RING _ | | DATE COMPL | етер 05/11/2017 | DRILLER S | chneider | |
| DEPTH (m) | R.L. (m) | AUGER | WASH BORING | RQD ()% CORE REC% | SAMPLE | MATERIAL DESCRIPTION | ПТНОГОСУ | USCS WEATHERING | INTACT STRENGTH | DEFECT SPACING | | ADDITIONAL DATA AND TEST RESULTS | | SAMPLES TESTS |
| 11 11 12 13 13 14 15 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18 | -0.47 | | | 100 (0) 38 (30) 100 (85) 100 (100) 100 (90) 100 (91) | CORE | ARGILLITE (DCf) MW: Cont'd. ARGILLITE (DCf) SW: Dark Grey and grey, fine grained, foliated, high strength Frequent quartz bands parallel foliation <5mm thick. -Js: 0°-30° (2/m), PI-Un/Sm-Ro, -Js: 40°-50° (<1/m), PI/Ro, TI-OI some FeSt. -FP: 20°-50° (2/m), PI/Sm, TI, Fe | FeSt P, | MW | M L M | | 18.60m-18.80m: Bra 11.52m-11.60m: HF. | Is(5 Z, XW Z, HW Is(5 Is(5 Is(5 Is(5 Is(5 Is(5 Is(5 Is(| (0)=0.37 MPa (0)=0.40 MPa (0)=0.40 MPa (0)=0.03 MPa (0)=0.15 MPa (0)=0.15 MPa (0)=0.15 MPa (0)=0.17 MPa (0)=0.17 MPa (0)=0.19 MPa (0)=0.19 MPa (0)=0.43 MPa (0)=0.43 MPa | D (13.40m) D (13.75m) A (13.77m) D (14.94m) A (14.95m) (15.32m) D (15.55m) |
| | -6.78 | | Ш | | | Continued on next sheet | W | | | H | | Is(5 | 0)=0.74 MPa 0)=0.21 MPa | D (19.92m) A (19.93m) |
| R | EMA | RKS | : | DCf - N | Ver | anleigh Fernvale Beds. Star | ndpipe p | oiezc | meter insta | alled. | | LOGGED BY | REVIE | WED BY |
| | | | | | | | | | | | | ZC | S. | Foley |
| | | | | | | | | | | | | l | 1 | |

GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018

BOREHOLE No CRR714

Sheet 3 of 4

FOR GEOTECHNICAL TERMS AND H12940 REFERENCE No SYMBOLS REFER FORM F:GEOT 017/8-2014 Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT COORDINATES 501907.7 E; 6961881.9 N Roma Street Station LOCATION FG6470 SURFACE RL 13.22m PLUNGE 90° DATE STARTED 25/10/2017 GRID DATUM MGA94 PROJECT No DRILLER Schneider HEIGHT DATUM AHD DATE COMPLETED 05/11/2017 JOB No BEARING RQD USCS WEATHERING ADDITIONAL DATA INTACT DEFECT SPACING SAMPLES TESTS Ê LITHOLOGY AND TEST RESULTS STRENGTH RΙ DEPTH SAMP MATERIAL DESCRIPTION CORE REC % ᇳᆃᆂᄝᅿᆿᇜᇬᇬᄝᇂᇂᇕ ARGILLITE (DCf) SW: Cont'd. 20.29m-20.36m: HFZ, XW SW 20.75m-20.76m: HW, VL 20.87m-21.04m: HW HW 21.00m-22.85m: SZ 21.04m-21.30m: Recovered as firm XW -8.08 to stiff silty clay with quartz gravel. CORE LOSS -8.7823 22.00m-22.31m: XW, recovered as ARGILLITE (DCf) XW gravelly clay. XW: Dark Grey and grey, fine 22.31m-22.65m: HFZ, MW grained, foliated, varies from MW extremely low to high strength. 100 22.65m-22.85m: HFZ, XW, XW recovered as gravelly silty clay with fine to coarse grained sub rounded 9.63 Occasional quartz veins <150mm. SW Minor iron staining. 23 quartz gravel. Js: 0°-30° (2/m), Pl-Un/Sm-Ro, FeSt Is(50)=0.87 MPa Is(50)=0.23 MPa (84) -FP: 20°-50° (2/m), PI/Sm, FeSt D (23.35m) ARGILLITE (DCf) A (23.36m) D (23.70m) FR: Dark grey, some pale grey, fine Is(50)=0.37 MPa 23.79m-23.91m: CAI=0.64 Is(50)=0.69 MPa A (23.72m) grained, foliated, generally medium 24.00m-24.11m: Slake Durability Is(50)=0.37 MPa D (23.96m) strength. Index Test Frequent quartz bands parallel to UCS=18.90 MPa (24.23m) foliation <5mm thick. v= 0.146 -Js: 0°-40° (2/m), Pl-Un/Sm-Ro, Tl-FR OP. Cn 100 -FP: 40°-75° (2/m), PI/Sm, TI, Cn 25 (88) 100 26 Is(50)=0.23 MPa D (26.96m) 27 Is(50)=0.21 MPa Is(50)=0.06 MPa HW A (26.97m) D (27.20m)-Is(50)=0.20 MPa A (27.21m)_ -14.48 27.70m-32.30m; SZ ARGILLITE (DCf) ΧW (90) XW: Dark grey and grey, fine Is(50)=0.01 MPa D (28.09m)grained, foliated, mainly extremely low to very low strength. 100 Quartz bands throughout <10mm HW 28.54m-29.15m: No core recovered (0) from Sigra test thick. 29 100 29.15m-32.30m: XW, Recovered as (0) XW (0) Continued on next sheet REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** ZC S. Foley TMR GEOTECHNICAL BOREHOLE LOG - CREATED WITH HOLEBASE SI

GEOTECHNICAL BOREHOLE LOG

FINAL 02/03/2018

BOREHOLE No CRR714

Sheet 4 of 4

| | | , G | ١O٧ | 'e | ernment | 1Y2 | | GEOTECHNICAL TE REFER FORM F:GE | | | REFERENCE No | H: | 12940 |
|--------------------|--------------------------------|--|--|------|--|-----------|--------------------|--|---|--|--|--|---|
| ROJECT | Cr | oss Riv | ver Ra | il (| CRR2017 - Additional Geotechnical In | vest | tigatio | on | | | | | |
| OCATION | Ro | ma St | reet S | ita | tion | | | | | (| COORDINATES 501907.7 | E; 696188 | 81.9 N |
| ROJECT No | F | 36470 | | | SURFACE RL 13.22m | PLU | INGE S | 0° | DATE STAF | RTED 25/10/2017 | GRID DATUM N | ЛGA94 | |
| OB No | _ | | | | HEIGHT DATUM AHD | BEAF | RING _ | | DATE COMPLE | ETED 05/11/2017 | DRILLER S | chneider | |
| (B) H.L. (M) | AUGER CASING WASH BORING | h () | QD 1% HIMWAY DRE C % | | MATERIAL DESCRIPTION | LITHOLOGY | USCS WEATHERING | INTACT STRENGTH 프 | DEFECT SPACING | | ADDITIONAL DATA AND TEST RESULTS | | SAMPLES TESTS |
| - 31 | | 11 (10 11 (10 11 (10 11 11 11 11 11 11 11 11 11 11 11 11 1 | 00 00 00 00 00 00 00 00 00 00 00 00 00 | | ARGILLITE (DCf) XW: Cont'd. ARGILLITE (DCf) FR: Dark grey, some pale grey, fine grained, foliated, high strength. Frequent quartz veins <200mm thickJs: 5°-30° (1-2/m), PI-Un/Sm-Ro, TI, Cn -FP: 10°-30° (1/m), PI/Sm, TI, Cn Borehole completed at 34.12m | | S XW | H-VH H-VH | C C E C C C C C C C C C C C C C C C C C | □ 33.18m-33.24m: HF. □ 33.45m-33.64m: HF. □ 33.79m-33.82m: HF. | Is(5 Is(5 Is(5 Is(5 Z Z Z Is(5 Is(5 Is(5) | (a) = 0.09 MPa (b) = 0.04 MPa (c) = 0.09 MPa (d) = 0.04 MPa (e) = 0.015 (e) = | D (30.10m) A (30.11m) D (31.25m) A (31.26m) D (32.95m) A (32.96m) G (33.43m) A (33.44m) D (33.44m) D (33.44m) |
| | | | | | | 1 | | | <u> </u> | | | | _ |
| REMA | RKS: | DCf | - Ne | ra | nleigh Fernvale Beds. Standpi | oe p | oiezo | meter insta | lled. | | LOGGED BY | REVIE | WED BY |
| | | | | | | | | | | | ZC | S. | Foley |



STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR714

Sheet 1 of 4

PIEZOMETER No CRR714

Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT COORDINATES 501907.7 E; 6961881.9 N Roma Street Station LOCATION FG6470 SURFACE RL 13.22m PLUNGE 90° DATE STARTED 25/10/2017 GRID DATUM MGA94 PROJECT No height datum AHD BEARING ° DATE COMPLETED 05/11/2017 DRILLER Schneider JOB No Standpipe Construction Details Ξ LITHOLOG R.L. DEPTH (MATERIAL DESCRIPTION (m) Depth (m) /RL 50mm PVC Class No. 18 **Backfill Details** (AHD) Stick Up = 0.00m ASPHALT(Fill) 12.92 Silty CLAY(Fill) Trace cobbles. 12.12 Silty CLAY(Residual) Brown mottled red grey, moist, very stiff. High plasticity. 11.22 ARGILLITE Recovered as Gravelly SAND (SW); orange yellow, moist, very dense. Fine to coarse grained, angular sand. Fine to coarse grained angular gravel. 10.13 ARGILLITE Pale orange brown, fine grained, foliated, mainly medium strength. Highly fractured throughout. With some quartz bands parallel to foliation <5mm thick. 8.23 ARGILLITE Orange brown with grey, fine grained, foliated, medium strength. Frequent quartz bands parallel to foliation, and quartz veins/veinlets at 20°-40°, <12mm thick. -Js: 20°-50° (4/m), Pl-Un/Sm-Ro, Tl-CD, FeSt -FP: 40°-50° (4/m), PI/Sm, TI, FeSt Continued on next sheet REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** ZC S. Foley TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI



STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR714

Sheet 2 of 4

PIEZOMETER No CRR714

Cross River Rail CRR2017 - Additional Geotechnical Investigation PROJECT COORDINATES 501907.7 E; 6961881.9 N Roma Street Station LOCATION DATE STARTED 25/10/2017 FG6470 SURFACE RL 13.22m PLUNGE 90° GRID DATUM MGA94 PROJECT No DRILLER Schneider HEIGHT DATUM AHD BEARING ° DATE COMPLETED 05/11/2017 JOB No **Standpipe Construction Details** DEPTH (m) LITHOLOG R.L. MATERIAL DESCRIPTION (m) Depth (m) /RL 50mm PVC Class No. 18 **Backfill Details** (AHD) Stick Up = 0.00m ARGILLITE Cont'd. 12 13 -0.47 ARGILLITE Dark Grey and grey, fine grained, foliated, high Frequent quartz bands parallel to foliation <5mm thick. -Js: 0°-30° (2/m), Pl-Un/Sm-Ro, FeSt -Js: 40°-50° (<1/m), PI/Ro, TI-OP, some FeSt. Grout: Cement / Bentonite mix 15 -FP: 20°-50° (2/m), PI/Sm, TI, FeSt 16 17 18 19 Continued on next sheet REMARKS: DCf - Neranleigh Fernvale Beds. Standpipe piezometer installed. **LOGGED BY REVIEWED BY** ZC S. Foley TMR STANDPIPE INSTALLATION LOG - CREATED WITH HOLEBASE SI

STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR714

FINAL 06/03/2018

Sheet 3 of 4

PIEZOMETER No CRR714

| PROJE | СТ | C | Cross River Rail CRR2017 - Additional Geotechnical In | vestigation | | | |
|---|----------------|---|---|-------------------------------------|--|-----------------------------|----------------|
| LOCAT | ION | R | loma Street Station | | CC | OORDINATES <u>501907.7</u> | E; 6961881.9 N |
| PROJE | CT No | _ | FG6470 SURFACE RL 13.22m | PLUNGE 90° | DATE STARTED 25/10/2017 | GRID DATUM | MGA94 |
| IOB N | 0 | | HEIGHT DATUM AHD | BEARING | DATE COMPLETED 05/11/2017 | DRILLER S | Schneider |
| DEPTH (m) | R.L. (m) | LITHOLOGY | MATERIAL DESCRIPTION | Depth (m) /RL (AHD) | Standpipe Construct 50mm PVC Class No. 18 Stick Up = 0.00m | ction Details Backfill D | etails |
| 21 22 23 24 24 25 25 26 26 26 26 26 26 26 26 26 26 26 26 26 | -8.08 -8.78 | *************************************** | ARGILLITE Cont'd. CORE LOSS ARGILLITE Dark Grey and grey, fine grained, foliated, varies from extremely low to high strength. Occasional quartz veins <150mm. Minor iron stainingJs: 0°-30° (2/m), PI-Un/Sm-Ro, FeSt AFP: 20°-50° (2/m), PI/Sm, FeSt ARGILLITE Dark grey, some pale grey, fine grained, foliated, generally medium strength. Frequent quartz bands parallel to foliation <5mm thickJs: 0°-40° (2/m), PI-Un/Sm-Ro, TI-OP, Cn -FP: 40°-75° (2/m), PI/Sm, TI, Cn | 26.12m / -12.90 AHD | | | |
| - - - - - - 27 | | ******* | | 27.12m / -13.90 AHD | | Bentonite | Seal |
| - 28 | -14.48 | ************************************** | ARGILLITE Dark grey and grey, fine grained, foliated, mainly extremely low to very low strength. Quartz bands throughout <10mm thick. | 28.12m / -14.90 AHD | | Top of Slotte | ed Pipe |
| 29 | -16.78 | *************************************** | | | | | |
| D. | | יאכ | Continued on next sheet DCf - Neranleigh Earnyale Reds Standning piezon | natar installed | | | |
| KI | EMAF | KS: | DCf - Neranleigh Fernvale Beds. Standpipe piezon | ieter mstalled. | - | LOGGED BY | REVIEWED BY |
| | | | | | | ZC | S. Foley |
| | | | TMRS | TANDPIPE INSTALLATION LOG - CREATED | WITH HOLEBASE SI | | |



STANDPIPE INSTALLATION LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/8-2014

BOREHOLE No CRR714

Sheet 4 of 4

PIEZOMETER No CRR714

| PROJE | CT | С | ross River Rail CRR2017 - Additional Geotechnical In | vestigation | | | |
|--|-------------|-----------|--|------------------------------------|--|-----------------------------|----------------|
| LOCAT | ION | R | oma Street Station | | | COORDINATES 501907.7 | E; 6961881.9 N |
| PROJE | CT No | _F | G6470 SURFACE RL 13.22m | PLUNGE 90° | DATE STARTED 25/10/2017 | 7 GRID DATUM N | 1GA94 |
| IOB No |) | _ | HEIGHT DATUM AHD | BEARING * | DATE COMPLETED 05/11/2017 | 7 DRILLER S | chneider |
| DEPTH (m) | R.L. (m) | LITHOLOGY | MATERIAL DESCRIPTION | Depth (m) /RL (AHD) | Standpipe Constru 50mm PVC Class No. 18 Stick Up = 0.00m | oction Details Backfill De | etails |
| 33 | -19.08 | | ARGILLITE Cont'd. ARGILLITE Dark grey, some pale grey, fine grained, foliated, high strength. Frequent quartz veins <200mm thickJs: 5°-30° (1-2/m), PI-Un/Sm-Ro, TI, Cn -FP: 10°-30° (1/m), PI/Sm, TI, Cn Borehole completed at 34.12m | 34.12m / -20.90 AHD | | Filter: Washed / G | raded Sand |
| 35 36 37 37 37 37 38 38 39 39 39 39 39 | | | | | | | |
| RE | MAR | KS: | DCf - Neranleigh Fernvale Beds. Standpipe piezom | neter installed. | | LOGGED BY | REVIEWED BY |
| | | | | | | ZC | S. Foley |
| | | | TMR ST | ANDPIPE INSTALLATION LOG - CREATED | WITH HOLEBASE SI | | |



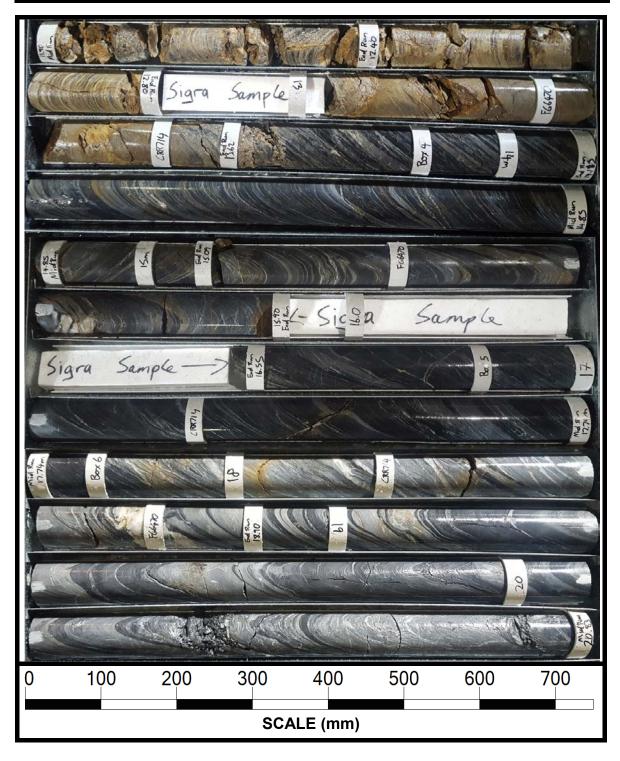
| Project Name | Cross River Rail CRR20 | 17 – Geotechnical Inve | stigation |
|--------------|------------------------|------------------------|------------|
| Project No. | FG6470 | Date | 05/11/2017 |
| Borehole No. | CRR714 | Reference No. | H12940 |
| Location | Roma Street Station | Start Depth (m) | 3.09 |
| Submitted By | M. de Gee | Finish Depth (m) | 34.12 |



1



| Project Name | Cross River Rail CRR20 | 17 – Geotechnical Inve | stigation |
|--------------|------------------------|------------------------|------------|
| Project No. | FG6470 | Date | 05/11/2017 |
| Borehole No. | CRR714 | Reference No. | H12940 |
| Location | Roma Street Station | Start Depth (m) | 3.09 |
| Submitted By | M. de Gee | Finish Depth (m) | 34.12 |





| Project Name | Cross River Rail CRR20 | 17 – Geotechnical Inve | stigation |
|--------------|------------------------|------------------------|------------|
| Project No. | FG6470 | Date | 05/11/2017 |
| Borehole No. | CRR714 | Reference No. | H12940 |
| Location | Roma Street Station | Start Depth (m) | 3.09 |
| Submitted By | M. de Gee | Finish Depth (m) | 34.12 |





| Project Name | Cross River Rail CRR20 | 17 – Geotechnical Inve | stigation |
|--------------|------------------------|------------------------|------------|
| Project No. | FG6470 | Date | 05/11/2017 |
| Borehole No. | CRR714 | Reference No. | H12940 |
| Location | Roma Street Station | Start Depth (m) | 3.09 |
| Submitted By | M. de Gee | Finish Depth (m) | 34.12 |





This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| | | Cross Bive | | .01017/0. | | Dunio at Ni- | EC6470 | | | |
|--------------|------------|--------------|-----------|-----------|-----------|--|-------------------------|-----------------------|----------------|--|
| Project Nar | | Cross Rive | r Hall | | | Project No. FG6470 Surface RL 13.32 | | | | |
| Site ID / Bo | renoie No. | CRR714 | | | | | | | | |
| Geologist | | Z.C. | | | | Date | 25/10/2017 | | T _o | |
| _ | _ | B1 0 / B1 | | | | Page | 1 | of Zones ¹ | 6 | |
| Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | Aperture | Infilling | Zones | Other | |
| Chainage; | | Direction °; | | | Class | | | | | |
| or | LP / | or | | | | CD / | Cn / | SZ / | | |
| Down hole | BP / | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | | |
| depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr / Ct ¹ | HFZ / | | |
| (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct | AZ | | |
| 3.09 | _ | _ | | _ | | | | HFZ | to 4.87 | |
| 4.87 | J | 5 | PI | Sm | VIII | OP | ST | | Fe | |
| 4.94 | _ | | | _ | | | | | Clay 10mm | |
| 5.16 | J | 40 | Un | Ro | IV | OP | ST | | Fe - | |
| 5.32 | FP | 30 | Pl | Sm | VIII | TI | St | | Fe | |
| 5.35 | J | 20 | PI | Ro | VII | TI | St | | Fe | |
| 5.39 | J | 5 | PI | Ro | VII | TI | St | | Fe | |
| 5.43 | J | 20 | PI | Sm | VIII | CD | St | | Fe | |
| 5.50 | Seam, 30mm | 1 | | | 1 | 1 | | | | |
| 5.56 | FP | 20 | PI | Sm | VIII | TI | St | | Fe | |
| 5.63 | J | 60 | PI | Sm | VIII | TI | St | | Fe | |
| 5.69 | FP | 50 | PI | Sm | VIII | TI | St | | Fe | |
| 5.75 | FP | 40 | PI | Sm | VIII | TI | St | | Fe | |
| 5.87 | J | 20 | PI | Sm | VIII | TI | St | | Fe | |
| 5.90 | J | 20 | Un | Ro | IV | TI | St | | Fe | |
| 5.95 | J | 30 | Un | Ro | IV | OP | St | | Fe | |
| 6.10 | J | 30 | PI | Sm | VIII | TI | St | | Fe | |
| 6.15 | J | 30 | PI | Sm | VIII | TI | St | | Clay | |
| 6.40 | FP | 70 | PI | Sm | VIII | TI | St | | Fe | |
| 6.56 | J | 0 | PI | Sm | VIII | TI | St | | Clay | |
| 6.60 | J | 40 | PI | Sm | VIII | TI | St | | Fe | |
| 6.88 | J | 5 | PI | Sm | VIII | TI | St | | Fe | |
| 7.19 | FP | 15 | PI | Sm | VIII | TI | St | | Fe | |
| 7.25 | Seam, 10mm | n, Clay | | | | | | | _ | |
| 7.29 | FP | 70 | PI | Sm | VIII | TI | St | | Fe | |
| 7.50 | J | 50 | PI | Sm | VIII | TI | St | | Fe | |
| 7.68 | J | 20 | Un | Ro | VII | TI | St | | Quartz | |
| 7.77 | FP | 30 | PI | Sm | VIII | TI | St | | Fe | |
| 7.88 | J | 40 | PI | Sm | VIII | TI | St | | Fe | |
| 8.17 | J | 80 | PI | Sm | VIII | TI | St | | Fe,140mm | |
| 8.37 | J | 70 | Un | Ro | VII | TI | St | | Fe | |
| | | | | | | | | | | |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| Project Nan | | Cross Rive | | | | Project No | FG6470 | | |
|--------------|------------|--------------|-----------|-----------|-----------|------------|------------|--------------------|-------|
| Site ID / Bo | | CRR714 | | | | Surface RL | | | |
| Geologist | | Z.C. | | | | Date | 25/10/2017 | | |
| 3 | | _ | | | | Page | 2 | of | 6 |
| Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | | Infilling | Zones ¹ | Other |
| Chainage; | " | Direction °; | | | Class | | | | |
| or | LP / | or | | | | CD/ | Cn / | SZ / | |
| Down hole | BP / | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | |
| depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr / | HFZ / | |
| (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct 1 | AZ | |
| 8.46 | J | 30 | Un | Ro | VII | TI | St | | Fe |
| 8.67 | FP | 50 | PI | Sm | VIII | TI | St | | Fe |
| 8.84 | J | 10 | PI | Sm | VIII | TI | St | | Fe |
| 8.94 | J | 20 | PI | Sm | VIII | TI | St | | Fe |
| 9.05 | | | | | | | | HFZ | 50mm |
| 9.10 | FP | 25 | PI | Ro | VII | TI | St | | Fe |
| 9.18 | Seam, 10mm | n, Clay | | | | • | • | | • |
| 9.21 | J | 20 | PI | Sm | VIII | TI | St | | Fe |
| 9.28 | FP | 30 | PI | Sm | VIII | TI | St | | Fe |
| 9.50 | J | 80 | Pl | Sm | VIII | TI | St | | Fe |
| 9.96 | J | 5 | Pl | Sm | VIII | TI | St | | Fe |
| 10.12 | FP | 35 | PI | Sm | VIII | TI | St | | Fe |
| 10.23 | Fp | 65 | PI | Sm | VIII | TI | St | | Fe |
| 10.53 | J | 30 | PI | Sm | VIII | TI | St | | Fe |
| 10.84 | J | 10 | PI | Sm | VIII | TI | St | | Fe |
| 10.91 | | | | | | | | HFZ | 30mm |
| 11.06 | J | 30 | PI | Sm | VIII | TI | St | | Fe |
| 11.06 | J | 40 | PI | Sm | VIII | TI | St | | Fe |
| 11.19 | J | 15 | Pl | Sm | VIII | TI | St | | Fe |
| 11.52 | | | | | | | | HFZ | 80mm |
| 11.60 | Core Loss | | | | | | | | 300mm |
| 11.90 | | | | | | | | HFZ | 500mm |
| 12.40 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 12.51 | J | 10 | Un | Ro | IV | TI | St | | Fe |
| 12.61 | J | 10 | Un | Ro | IV | TI | St | | Fe |
| 12.67 | FP | 5 | PI | Sm | VIII | TI | St | | Fe |
| 12.78 | FP | 5 | PI | Sm | VIII | TI | St | | Fe |
| 12.80 | J | 10 | Un | Ro | IV | TI | St | | Fe |
| 13.04 | J | 10 | Un | Ro | IV | TI | St | | Fe |
| 13.15 | | | | | | | | HFZ | 90mm |
| 13.24 | J | 20 | Un | Ro | IV | TI | St | | Fe |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| Site D Borehole No. CRR714 Z.C. Date 25/10/2017 Taverse Type Direction*; Or Class | Project Nar | | Cross Rive | | , | | Project No | FG6470 | | |
|--|-------------|--------|--------------|-----------|-----------|-----------|------------|-----------|--------------------|-------|
| Campaign Campaign | | | CRR714 | | | | | | | |
| Traverse | | | • | | | | | ł | | |
| Traverse Chainage; Chainage; Chainage; Chainage; Crown Chainage; Crown Chainage; Crown Chainage; Crown Crown | | | <u> </u> | | | | | ł | | 6 |
| Class CD CD CD CD CD CD CD | Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | | Infilling | Zones ¹ | Other |
| Down hole | Chainage; | | | | | Class | | | | |
| depth (rock core) FP / Indicated (rock core) Un / PI Sil FL / TI Vr / AZ HFZ / AZ 13.38 J 45 PI Sm VIII TI St Fi 13.39 J 50 PI Ro VII TI St Fi 13.44 J 20 Un Ro IV TI St FF 13.59 FP 25 PI Ro VII TI St FF 13.59 J 85 PI Sm VIII TI St FF 13.59 J 85 PI Sm VIII TI St FF 13.59 J 85 PI Sm VIII TI St FF 13.59 J 85 PI Sm VIII TI St FF 13.59 J 85 PI Ro VII TI St FF | or | LP / | or | | | | CD/ | Cn / | SZ / | |
| | Down hole | BP/ | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | |
| 19.38 | depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr/ | HFZ / | |
| 13.39 | (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct 1 | AZ | |
| 13.44 | 13.38 | J | 45 | PI | Sm | VIII | TI | St | | Fe |
| 13.59 | 13.39 | J | 50 | PI | Ro | VII | TI | St | | Fe |
| 13.59 | 13.44 | J | 20 | Un | Ro | IV | TI | St | | Fe |
| 13.69 | 13.59 | FP | 25 | PI | Ro | VII | TI | St | | Fe |
| 13.83 | 13.59 | J | 85 | PI | Sm | VIII | TI | St | | Fe |
| 13.94 | 13.69 | FP | 25 | PI | Ro | VII | TI | St | | Fe |
| 14.12 J 0 PI Sm VIII TI St Fe 14.56 FP 60 PI Sm VIII TI St Fe 15.09 J 5 Un Ro IV TI St Fe 15.66 FP 25 PI Sm VIII TI St Fe 15.75 J 5 PI Sm VIII TI St Fe 15.90 J 30 PI Sm VIII TI St Fe 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16 | 13.83 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 14.56 FP 60 PI Sm VIII TI St Fe 15.09 J 5 Un Ro IV TI St Fe 15.66 FP 25 PI Sm VIII TI St Fe 15.75 J 5 PI Sm VIII TI St Fe 15.90 J 30 PI Sm VIII TI St Fe 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16 | 13.94 | FP | 25 | PI | Ro | VII | TI | St | | Fe |
| 15.09 J 5 Un Ro IV TI St Fe 15.66 FP 25 PI Sm VIII TI St Fe 15.75 J 5 PI Sm VIII TI St Fe 15.90 J 30 PI Sm VIII TI St Fe 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48< | 14.12 | J | 0 | PI | Sm | VIII | TI | St | | Fe |
| 15.66 FP 25 PI Sm VIII TI St Fe 15.75 J 5 PI Sm VIII TI St Fe 15.90 J 30 PI Sm VIII TI St Fe 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 17 | 14.56 | FP | 60 | PI | Sm | VIII | TI | St | | Fe |
| 15.75 J 5 PI Sm VIII TI St Fe 15.90 J 30 PI Sm VIII TI St Fe 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 17.35 J 60 PI Ro VII TI St Fe 17.5 | 15.09 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 15.90 | 15.66 | FP | 25 | PI | Sm | VIII | TI | St | | Fe |
| 16.00 J 20 Un Ro IV TI St Fe 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI St Fe 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI St Fe 1 | 15.75 | J | 5 | PI | Sm | VIII | TI | St | | Fe |
| 16.04 J 20 Un Ro IV TI St Fe 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI St Fe 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI St Fe 18.04 J 30 Stp Ro I TI St Fe 1 | 15.90 | J | 30 | PI | Sm | VIII | TI | St | | Fe |
| 16.20 J 5 Un Ro IV TI St Fe 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI St Fe | 16.00 | J | 20 | Un | Ro | IV | TI | St | | Fe |
| 16.24 J 35 PI Ro VII TI St Fe 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI Cn Cn Fe 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI Cn Cn TI TI St Fe 17.89 J 30 Stp Ro I TI St Fe 18.04 J 30 PI Sm VIII TI St Fe 18.32 J 10 Un Ro < | 16.04 | J | 20 | Un | Ro | IV | TI | St | | Fe |
| 16.32 FP 25 PI Sm VIII TI St Fe 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI Cn Cn Cn Cn Fe 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI Cn Cn </td <td>16.20</td> <td>J</td> <td>5</td> <td>Un</td> <td>Ro</td> <td>IV</td> <td>TI</td> <td>St</td> <td></td> <td>Fe</td> | 16.20 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 16.36 J 5 Un Ro IV TI St Fe 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI Cn Cn Cn Cn Fe 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI Cn | 16.24 | J | 35 | PI | Ro | VII | TI | St | | Fe |
| 16.48 FP 30 PI Sm VIII TI St Fe 16.55 Fp 20 PI Sm VIII TI Cn | 16.32 | FP | 25 | PI | Sm | VIII | TI | St | | Fe |
| 16.55 Fp 20 PI Sm VIII TI Cn 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI Cn Cn TI TI St Fe 17.89 J 30 Stp Ro I TI St Fe 18.04 J 30 PI Sm VIII TI St Fe 18.32 J 10 Un Ro IV TI St Fe 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 16.36 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 17.35 J 60 PI Ro VII TI St Fe 17.51 FP 50 PI Sm VIII TI Cn TI TI Cn TI St Fe | 16.48 | FP | 30 | PI | Sm | VIII | TI | St | | Fe |
| 17.51 FP 50 PI Sm VIII TI Cn 17.89 J 30 Stp Ro I TI St Fe 18.04 J 30 PI Sm VIII TI St Fe 18.32 J 10 Un Ro IV TI St Fe 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 16.55 | Fp | 20 | PI | Sm | VIII | TI | Cn | | |
| 17.89 J 30 Stp Ro I TI St Fe 18.04 J 30 PI Sm VIII TI St Fe 18.32 J 10 Un Ro IV TI St Fe 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 17.35 | J | 60 | PI | Ro | VII | TI | St | | Fe |
| 18.04 J 30 PI Sm VIII TI St Fe 18.32 J 10 Un Ro IV TI St Fe 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 17.51 | FP | 50 | PI | Sm | VIII | TI | Cn | | |
| 18.32 J 10 Un Ro IV TI St Fe 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 17.89 | J | 30 | Stp | Ro | I | TI | St | | Fe |
| 18.58 FP 15 Un Sm IV TI St Fe 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 18.04 | J | 30 | PI | Sm | VIII | TI | St | | Fe |
| 18.79 J 5 Un Ro IV TI St Fe 18.90 J 5 Un Ro IV TI St Fe | 18.32 | J | 10 | Un | Ro | IV | TI | St | | Fe |
| 18.90 J 5 Un Ro IV TI St Fe | 18.58 | FP | 15 | Un | Sm | IV | TI | St | | Fe |
| | 18.79 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| 19.00 J 30 Un Ro IV TI St Fe | 18.90 | J | 5 | Un | Ro | IV | TI | St | | Fe |
| | 19.00 | J | 30 | Un | Ro | IV | TI | St | | Fe |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| Project Nan | | Cross Rive | | • | | Project No. FG6470 | | | | |
|---------------|---------|--------------|-----------|-----------|-----------|--------------------|------------|--------------------|--------------|--|
| Site ID / Bo | | CRR714 | | | | Surface RL | | | | |
| Geologist | | Z.C. | | | | Date | 25/10/2017 | | | |
| | | | | | | Page | 4 | of | 6 | |
| Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | | Infilling | Zones ¹ | Other | |
| Chainage; | | Direction °; | | | Class | | | | | |
| or | LP / | or | | | | CD/ | Cn / | SZ/ | | |
| Down hole | BP/ | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | | |
| depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr/ | HFZ/ | | |
| (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct 1 | AZ | | |
| 19.54 | Fp | 70 | PI | Sm | VIII | TI | Cn | | | |
| 19.59 | J | 10 | PI | Sm | VIII | TI | Cn | | | |
| 19.64 | J | 10 | PI | Sm | VIII | TI | Cn | | | |
| 19.69 | J | 10 | Un | Sm | ٧ | TI | Cn | | | |
| 19.78 | J | 20 | Un | Sm | ٧ | TI | Cn | | | |
| 19.93 | FP | 70 | PI | Sm | VIII | TI | Cn | | | |
| 20.30 | | | | | | | | HFZ | 60mm | |
| 20.36 | J | 10 | Un | Ro | IV | TI | Cn | | Clay, Gravel | |
| 20.48 | FP | 70 | PI | Sm | VIII | TI | Cn | | | |
| 20.55 | J | 5 | PI | Ro | VII | TI | Cn | | | |
| 20.59 | J | 5 | PI | Sm | VIII | TI | Cn | | | |
| 20.78 | FP | 70 | PI | Ro | VII | TI | Cn | | Clay | |
| 20.93 | Fp | 70 | PI | Ro | VII | TI | Cn | | | |
| 21.05 | | | | | | | | HFZ | 250mm | |
| 21.30 - 22.00 | No Core | | | | | | | | | |
| 22.00 | | | | | | | | HFZ | 850mm | |
| 22.85 | FP | 70 | PI | Ro | VII | TI | Cn | | | |
| 22.96 | J | 30 | Un | Sm | ٧ | CD | Cn | | | |
| 23.05 | J | 85 | PI | Ro | VII | TI | Cn | | | |
| 23.21 | FP | 30 | Un | Sm | V | TI | Cn | | | |
| 23.29 | FP | 30 | PI | Sm | VIII | TI | Cn | | | |
| 23.38 | J | 75 | PI | Sm | VIII | TI | Cn | | | |
| 23.55 | FP | 50 | Un | Ro | IV | TI | Cn | | | |
| 23.60 | FP | 70 | Un | Sm | V | TI | Cn | | | |
| 23.62 | J | 5 | PI | Sm | VIII | TI | Cn | | | |
| 23.98 | J | 20 | PI | Sm | VIII | TI | Cn | | | |
| 24.80 | FP | 50 | PI | Ro | VII | TI | Cn | | | |
| 25.00 | J | 5 | PI | Ro | VII | TI | Cn | | | |
| 25.53 | J | 20 | PI | Ro | VII | TI | Cn | | | |
| 25.57 | FP | 30 | PI | Sm | VIII | TI | Cn | | | |
| 25.66 | FP | 20 | Pl | Sm | VIII | TI | Cn | | | |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| Project Name Site ID / Borehole No. Geologist | | Cross Rive | r Rail | | | Project No. FG6470 Surface RL 13.32 | | | | |
|---|---------------|------------------|--------------|-------------|-----------|--|-----------|--------------------|-------|--|
| | | CRR714 | | | | | | | | |
| | | z.c. | | | | Date 25/10/2017 | | | | |
| | | | | | | Page | 5 | of | 6 | |
| Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | Aperture | Infilling | Zones ¹ | Other | |
| Chainage; | | Direction °; | | | Class | | | | | |
| or | LP / | or | | | | CD/ | Cn / | SZ / | | |
| Down hole | BP/ | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | | |
| depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr/ | HFZ / | | |
| (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct 1 | AZ | | |
| 25.79 | J | 30 | Un | Ro | IV | TI | Cn | | | |
| 25.97 | J | 10 | Un | Ro | IV | TI | Cn | | | |
| 26.11 | FP | 40 | PI | Sm | VIII | TI | Cn | | | |
| 26.22 | FP | 20 | PI | Sm | VIII | TI | Cn | | | |
| 26.30 | FP | 10 | PI | Sm | VIII | TI | Cn | | | |
| 26.30 | J | 85 | Un | Ro | IV | TI | Cn | | | |
| 26.40 | FP | 10 | PI | Sm | VIII | TI | Cn | | | |
| 26.53 | J | 15 | Un | Ro | IV | TI | Cn | | | |
| 26.67 | J | 10 | Un | Sm | VIII | TI | Cn | | | |
| 26.76 | J | 70 | Un | Ro | IV | TI | Cn | | | |
| 27.77 | j | 90 | Un | Sm | VIII | TI | Cn | | | |
| 27.09 | J | 10 | Un | Ro | IV | TI | Cn | | | |
| 27.14 | FP | 10 | Un | Ro | IV | TI | Cn | | | |
| 27.31 | FP | 10 | Un | Ro | IV | TI | Cn | | | |
| 27.37 | | | | | | | | HFZ | 90mm | |
| 27.47 | J | 50 | PI | Ro | VII | TI | Cn | | | |
| 27.68 | | | | | | | | HFZ | 220mm | |
| 27.90 | J | 10 | Un | Ro | IV | TI | Cn | | | |
| 28.01 | FP | 20 | PI | Sm | VIII | TI | Cn | | | |
| 28.12 | FP | 30 | PI | Sm | VIII | TI | Cn | | | |
| 28.23 | FP | 30 | PI | Sm | VIII | TI | Cn | | | |
| 28.26 | FP | 50 | PI | Sm | VIII | TI | Cn | | | |
| 28.47 | J | 40 | Un | Ro | IV | TI | Cn | | | |
| 28.54 - 29.15 | No core sigra | a test (core not | competent fo | or testing) | | | | | | |
| 29.15 - 32.30 | Clayey grave | l, brittle | | | | | | | | |
| 32.30 | J | 5 | Un | Sm | V | TI | Cn | | | |
| 32.45 | Fp | 25 | PI | Sm | VIII | TI | Cn | | | |
| 32.88 | J | 10 | Un | Ro | IV | TI | Cn | | | |
| 33.18 | | | | | | | | HFZ | 60mm | |
| 33.24 | J | 5 | Un | Sm | V | TI | Cn | | | |
| 33.30 | J | 30 | Un | Sm | V | TI | Cn | | | |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm)



This form is intended for the detailed description of discontinuities and defects as measured in outcrop by line mapping, or as they occur downhole in drilled rock core. The descriptions and abbreviations used shall be in accordance with Australian Standard AS1726-1993 Geotechnical site investigations and TMR Geotechnical Terms and Symbols Form F:GEOT017/8.

| Project Name Site ID / Borehole No. | | Cross River Rail CRR714 | | | | Project No. | | | | |
|-------------------------------------|--------|-------------------------|-----------|-----------|-----------|-------------|------------|--------------------|-------|--|
| | | | | | | Surface RL | | | | |
| Geologist | | Z.C. | | | | Date | 25/10/2017 | | | |
| | | • | | | | Page | 6 | of | 6 | |
| Traverse | Туре | Dip ° / Dip | Planarity | Roughness | Roughness | Aperture | Infilling | Zones ¹ | Other | |
| Chainage; | | Direction °; | | | Class | | | | | |
| or | LP/ | or | | | | CD/ | Cn / | SZ / | | |
| Down hole | BP/ | Angle ° from | Stp / | Ro / | I to IX | OP / | St / | CZ / | | |
| depth | FP/ | horizontal | Un / | Sm / | | FL/ | Vr / | HFZ / | | |
| (rock core) | J etc. | (rock core) | PI | SI | | TI | Ct 1 | AZ | | |
| 33.45 | | | | | | | | SZ | 190mm | |
| 33.64 | J | 30 | PI | Ro | VII | TI | Cn | | | |
| 33.69 | J | 15 | PI | Sm | VIII | TI | Cn | | | |
| 33.74 | J | 25 | PI | Ro | VII | TI | Cn | | | |
| 33.79 | | | | | | | | SZ | 40mm | |
| 33.89 | J | 15 | Un | Ro | IV | TI | Cn | | | |
| 34.10 | J | 30 | PI | Ro | VII | TI | Cn | | | |

Note: 1. Describe zones and coatings in terms of composition and thickness (mm) $F:GEOT\ 533/9-2014$