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## ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

| BOREHOLE No  | <u>BH22</u>                  |
|--------------|------------------------------|
| SHEET        | _ <u>1</u> _ of _ <u>2</u> _ |
| REFERENCE No | H9722                        |

| PRO  |             |   |                               |        |   |                   |                    |              | 20696 6 E: 147202 9 N |  |                       |
|--|-------------|---|-------------------------------|--------|---|-------------------|--------------------|--------------|-----------------------|--|-----------------------|
|  |             |   |                               |        | A, Approximate Chainage 67m, 7m right of control MC81. COORDINA  SURFACE R.L27.40 DATE STARTED _01/09/05  |                   |                    |              |                       | OORDINATES 29686.6 E; 147202.8 N                         |                       |
|  |             |   | 17 <u>A</u> /57_              |        |   |                   | E COMPLETE         |              |                       | DATUM <u>Ipswich Motorwa</u><br>DRILLER <u>Drillsure</u> |                       |
| JOB  |             |   | DOD                           |        | DATUM <u>AHD</u>  | TI                | INTACT             | DEFECT       | <u>/05</u> _          | DRILLER DIIIISUIE  |                       |
| o DEPTH (m)  | R.L.<br>(m) | AUGEK<br>CASING<br>WASH BORING<br>CORE DRILLING | RQD<br>( ) %<br>CORE<br>REC % | SAMPLE | MATERIAL<br>DESCRIPTION   | USC<br>WEATHERING | STRENGTH           |              | GRAPHIC LOG           | ADDITIONAL DATA  AND  TEST RESULTS                       | SAMPLES<br>TESTS      |
| -  | 27.40       |   | TILO 70                       |        | SILT and GRAVEL - Topsoil   | - -               |                    |              |                       |  | <u> </u>              |
| -1   | 25.90       |   |                               |        | Grey, loose. Contains gravel 50 - 100mm size. Based on Drillers logs only.  |                   |                    |              |                       |  |                       |
|  | 20.00       |   |                               |        | SILTY CLAYSTONE   |                   |                    |              |                       | 3,7,8  | SPT -                 |
| -2   | 24.90       |   |                               |        | Pale grey, mottled with orange-red iron stains, gritty, slightly moist. Engineering properties of a medium dense Silty Clay and Gravel.                             |                   |                    |              |                       | N=15   | -<br>-<br>-<br>-<br>- |
| -<br>-<br>-3<br>-  |             |   |                               |        | SANDSTONE  Pale grey, fine grained, friable, dry. Minor silt and clay throughout. Engineering properties of medium dense Silty Sand.                                |                   |                    |              |                       | 5,8,13<br>N=21   | SPT :                 |
| -<br>-<br>-<br>-<br>-<br>-4                                    | 23.90       |   |                               |        | CLAYEY SILTSTONE  Grey with orange-brown iron staining, moist. Faint subhorizontal structure visible. Engineering   |                   |                    |              |                       | 10,19,22   | -<br>-<br>-<br>-<br>- |
| -5   | 22.10       |   |                               |        | properties of hard Silty Clay or Clayey Silt.   |                   |                    |              |                       | N=41   | SPT :                 |
| -  |             |   |                               |        | CLAYSTONE   |                   |                    |              |                       |  | -                     |
| NN ROADS.GDT 17/11/05  | 20.60       |   |                               |        | Pale grey, minor iron staining, moist. Trace silt throughout. Relict sub orizontal and vertical structure visible. Engineering properties of very stiff Silty Clay. | xw                |                    |              |                       | 9,9,13<br>N=22   | SPT                   |
| <b>≱</b> }<br>9-7  | 20.00       |   |                               |        | SANDSTONE   | 1                 | : : : : : <u> </u> |              |                       | 04.00/00   |                       |
| 404 - BOREHOLES.GPJ C  |             |   |                               |        | Pale grey, minor orange iron staining, fine to medium grained, friable, moist. Engineering properties of very dense Sand.   |                   |                    |              |                       | 21,30/90mm<br>N>50                                       | SPT :                 |
| ENGINEERING BOREHOLE FGS404 - BOREHOLES.GPJ QLD MAIN ROADS.GDT | 17.40       |   |                               |        | Fine grained. Engineering properties of very dense Clayey Sand.   |                   |                    |              |                       | 16,19,30/120mm<br>N>50                                   | SPT -                 |
|  | MARKS       | See a   | attached                      | photo  | ograph for visual assessment of material. No groundwa   | ter rep           | orted during o     | drilling. Se | e Add                 | ditional LOGGED BY                                       |                       |
| Descriptive Coding sheet for abbreviations.                    |             |   |                               |        |   | JML               |                    |              |                       |  |                       |



ENGINEERING BOREHOLE FG5404 - BOREHOLES.GPJ QLD MAIN ROADS.GDT 17/11/05

## ENGINEERING BOREHOLE

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/3-2005

| BOREHOLE No  | BH22       |
|--------------|------------|
| SHEET        | _2_ of _2_ |
| REFERENCE No | H9722      |

| PROJECT   | <u>IPSV</u>                              | <u>VICH MC</u> | <u>IOTO</u> | RWAY / LOGAN MOTORWAY GEOTECHNICAL  | I <u>N</u> VES | STIGATION  |               |                                    |                                 |
|---|--|----------------|-------------|---|----------------|--|---------------|------------------------------------|---------------------------------|
| LOCATION  | <u>Near</u>                              | <u>Abutme</u>  | nt A        | OORDINATES 29686.6 E; 147202.8 N  | <u> </u>       |  |               |                                    |                                 |
| PROJECT N   | ROJECT No <u>FG5404</u>                  |                |             | SURFACE R.L27.40  | D              | ATE STARTED _01/0                                | 0 <u>9/05</u> | DATUM <u>Ipswich Motor</u>         | way                             |
| JOB No  |  |                |             | DATUM <u>AHD</u>  | DAT            | E COMPLETED _01/0                                | 09/05         | DRILLER <u>Drillsure</u>           |                                 |
| R.L.<br>(m)   | GER<br>SING<br>SH BORING<br>SH BORILLING | RQD<br>()%     | SAMPLE      | MATERIAL<br>DESCRIPTION   | C<br>SATHERING | INTACT DEFECT STRENGTH SPACING (mm)  TTTENTED SO | GRAPHIC LOG   | ADDITIONAL DATA  AND  TEST RESULTS | SAMPLES<br>TESTS                |
| 10 17.40  | ₹888                                     | REC %          | SAI         |   | USC            | 7070   | G. P.         | TEOTINEOULIO                       | SAI                             |
|   |  |                |             | MUDSTONE  Dark grey - black, minor iron staining, moist. Contains some thin bands of fine sand and organic fragments.  Engineering properties of hard Clay of low to intermediate plasticity.  Iron stained rock defects visible ~20-30°. |                |  |               | 9,18,30/120mm                      | SPT -                           |
|   |  |                |             |   |                | ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±            |               | N>50                               | -<br>-<br>-<br>-<br>-<br>-<br>- |
| -14   |  |                |             | Trace iron stains.  | HW             |  |               | 12,30/130mm<br>N>50                | SPT :                           |
| —<br>-<br>-<br>-<br>-<br>- 15   |  |                |             | Trace iron stains.  |                |  |               | 17,30/130mm<br>N>50                | SPT ]                           |
| -   |  |                |             | Contains thin bands of pale grey siltstone throughout. Average spacing 150-200mm.  Bedding ~20°. Local variation to 10°.  |                |  |               | ls(50)=0.08 MPa<br>ls(50)=0.26 MPa | X - 0 -                         |
| - 16<br>-<br>-<br>-<br>-<br>-   |  |                |             | Defects mostly 20°, occasionally 60°. Defect surfaces are mostly PL, SM, C, CN.   |                |  |               | ls(50)=0.13 MPa<br>ls(50)=0.13 MPa | x -<br>o -                      |
| -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-   |  | 100            |             |   |                |  |               | Is(50)=0.17 MPa<br>Is(50)=0.28 MPa | X -<br>X -                      |
|   |  |                |             | Borehole terminated at 17.5m  |                |  |               |                                    |                                 |
| REMARKS See attached photograph for visual assessment of material. No groundwater reported during drilling. See Additional  Descriptive Coding sheet for abbreviations.  LOGGED BY  JML |  |                |             |   |                |  |               |                                    |                                 |

17, 30/130 N=>50 Sample: 14.50-14.78 SPT: 17,30/130 N=> 21, 30/90 N=>50 Sample: **7.00-7.24** SPT: **21, 30/90 N** 12, 30/130 N=>50 9, 9, 13 N=22 Sample: 13.00-13.28 SPT: **5.50-5.95** SPT: Sample: 11.50-11.92 SPT: 9, 18, 30/120 N=>50 10, 19, 22 N=41 Sample: 4.00-4.45 SPT: Sample: **2.50-2.95**SPT: **5, 8, 13 N=21** Semple: 10.00-10.45 SPT: 8, 17, 18 N=35 Sample: 8.50-8.92 SPT: 16, 19, 30/120 N=>50 Sept: 1.50-1.95

Project: <u>Ipswich Motorway / Logan Motorway Interchange</u> Borehole No: <u>BH22</u>

Ipswich N
Broject:

Ipswich N
Broject:

Broze
Start Depth: 1.50m
1.50m
H No:
Project No: FG5404
H No:
P722

Start Depth: 1.50m
1.50m

Sample: 1.50m
1.50m

Sample: 1.50m

S

Project: **Ipswich Motorway / Logan Motorway Interchange** 

Borehole No: BH22
Start Depth: 15.00m
Finish Depth: 17.50m
Project No: FG5404
H No: 9722



