| -670                                  |  |                                       |   | P       |
|---------------------------------------|--|---------------------------------------|---|---------|
| 7                                     |  | 111 10 : · · ·                        | At Mary Call                                    | -       |
| 8                                     | College in the Co                            | A A A A A A A A A A A A A A A A A A A | A TANK AND AND AND                              | 7       |
| 9                                     |  | Carls Mile Manager                    |   |         |
| .10                                   | former i sell                                | 1-1-1- The second                     |   |         |
|                                       |  | Real Providence and the               | A Contraction of the second                     |         |
|                                       |  |                                       |   |         |
|                                       |  |                                       |   |         |
| Date:                                 | 1/05/2012 Title:                             | FP_BH3 Four Points 6.0m to 11.0m      | CONSULTING                                      |         |
| Prepared by:<br>Checked by:<br>Scale: | M. Pickett<br>D. Lowe CES Project ID:<br>NTS | CES111206-CA                          | Suite 3, Level 1,<br>55 Grandview Street        |         |
| Size:                                 | A4 Client:                                   | Cadence Australia                     | Pymble NSW 2073<br>ph: 02 8569 2200 fax: 02 998 | 33 0582 |

|   |  | EN      | DOF BOREHOLE                      |                   |
|---|--|---------|-----------------------------------|-------------------|
| Dranarad by: M. Dickett   | Date: 1/05/2012<br>Prepared by: M. Pickett |         | FP_BH3 Four Points 11.0m to 15.2m |                   |
| Checked by: D. Lowe CES Project ID: CES111206-CA Suite 3, Level 1,                    | Checked by: D. Lowe                        |         | CES111206-CA                      | Suite 3. Level 1. |
| Scale:NTS55 Grandview Street<br>Pymble NSW 2073<br>ph: 02 8569 2200 fax: 02 9983 0582 |  | Client: | Cadence Australia                 | Pymble NSW 2073   |

| Clie<br>Pro  | oject<br>ent:<br>oject:<br>catio |  |       | CES11<br>Cadenc<br>Four Po<br>Wheat  | e Aus<br>oints H | tralia   |  |                          | 55 Grandview S<br>PH: (02) 8569 220<br>www | EART<br>SCIEN<br>Street, Pym | <b>ITIS TS</b><br>Suite 3, Level 1   | F   | <b>G ID:</b><br><b>P_BH4</b><br>Sheet: 1 of 3 |
|--------------|----------------------------------|--|-------|--------------------------------------|------------------|--|--|--------------------------|--|------------------------------|--|---|---|
| Y-C          | Coord<br>Coord                   | :  |       | 333765<br>625085<br>( <b>R.L</b> ) : | 4                | GDA 94 MGA 56<br>m AHD   | Date Con<br>Date Con<br>Hole Diay  | npleted                  |  |                              |  | ed by:<br>ked by:                           | MTP<br>MTP                                    |
|              |                                  | forma  |       | ( <b>K.</b> L) .                     | 1.90             | LITHOLOGY  |  |                          |  |                              | Tests  |   |   |
| Depth (mBGL) | R.L. (m)                         | Method (Support)   | Water | Symbol                               | USCS Symbol      | Description SOIL TYPE: plasticity or particle colour, moisture, secondary and m  | characteristics  | Consistency /<br>Density | Samples<br>CI aldung                       | Type                         | Las  | 100 Pocket<br>200 Penetrometer<br>400 (kPa) | Well<br>Installation<br>Detail                |
|              | -1<br>-0<br>                     | $-$ BB $\rightarrow$ $\land$ $\rightarrow$ $\rightarrow$ $\land$ $\rightarrow$ |       |                                      | SM               | <ul> <li>FILL: Brick Footpath (5)</li> <li>FILL: sand, fine to medipale grey/brown, dry. W fine to coarse, angular gr consisting of blue metal concrete.</li> <li>At -1.2m becoming dark grey/brownish.</li> <li>At -1.7m with some woof fragments.</li> <li>FILL: sand, medium gragfrey/brown, wet. With scoarse angular gravel co sandstone and ironstone.</li> <li>SILTY SAND: fine to m grained, pale grey, wet.</li> <li>SILTY SAND: fine to m grained, grey to dark gre some clay and shell frag to coarse, angular).</li> <li>SANDY CLAY: low pla brownish with red mottle Sand is fine grained.</li> </ul> | ium grained,<br>ium grained,<br>iined, some<br>ravel<br>and<br>and<br>and<br>and<br>and<br>and<br>and<br>and | VL<br>S to<br>F          | Jar  |                              | 2,1,5 N=6<br>4,4,2 N=6<br>3,1,2 N=3<br>0,1,1 N=2<br>2,2,2 N=4<br>2,2,1 N=3 |   |   |
|              |                                  | npan<br>Typ  |       | Macquar<br>350                       | ie Dril          | i grained, pale grey, with<br>clay. Extremely weather<br>ling Pty Ltd <b>Opera</b>   | some grey  | <br>ce No.:              | Ray Dudek                                  |                              |  |   | 10<br>Standard Sheets<br>of abbreviations     |

| Cli<br>Pro   | oject<br>ent:<br>oject: | :                |              | CES11<br>Cadenc<br>Four Po | e Aust<br>oints H | tralia  |                          |                          | 55 0       | Grandview S         | EARTH<br>SCIEN<br>Su<br>treet, Pymb | TIS TS<br>lite 3, Level 1<br>le NSW 2073 |   | G ID:<br>P_BH4   |
|--|-------------------------|------------------|--------------|----------------------------|-------------------|---|--------------------------|--------------------------|------------|---------------------|-------------------------------------|--|---|--|
| Lo   | catio                   | n:               |              | Wheat                      | Road              |   |                          |                          | PH: (0     | 02) 8569 220<br>wwv | 0 FAX: (0<br>v.consulting           | 2) 9983 0582<br>earth.com.au             |   | Sheet: 2 of 3  |
|  | Coord                   |                  |              | 333765                     |                   | GDA 94 MGA 56   | Date Con                 |                          |            | 2/05/201            |                                     |  | ed by:                                      | MTP  |
|  | Coord                   |                  | tion         | 625085<br>( <b>R.L</b> ) : |                   | m AHD   | Date Con<br>Hole Diar    | -                        |            | 2/05/201            | 2                                   | Chec                                     | ked by:                                     | MTP  |
|  |                         | nforma           |              | ( <b>K.L</b> ) :           | 1.90              |   |                          |                          |            | amples              |                                     | Tests                                    |   |  |
|  |                         |                  |              |                            |                   |   | L                        |                          | 6          | samples             |                                     | 1 0505                                   |   |  |
| Depth (mBGL)                                       | R.L. (m)                | Method (Support) | Water        | Symbol                     | USCS Symbol       | Description<br>SOIL TYPE: plasticity or particle<br>colour, moisture, secondary and m |                          | Consistency /<br>Density | Sample ID  |                     | Type                                | SPT                                      | 100 Pocket<br>200 Penetrometer<br>400 (kPa) | Well<br>Installation<br>Detail   |
| 10   | l                       | $ \downarrow $   | 1            |                            |                   | strength.   |                          |                          |            |                     |                                     |  |   | 10   |
| 11<br>12<br>13<br>14<br>15<br>16<br>16<br>17<br>18 |                         |                  |              |                            |                   | Begin Core Drilling. End of Borehole.   |                          |                          |            |                     |                                     |  |   |  |
| 19   |                         |                  |              |                            |                   |   |                          |                          |            |                     |                                     |  |   | 19—<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
|  |                         |                  |              |                            |                   |   |                          |                          | <b>P</b> – |                     |                                     |  |   |  |
|  |                         | mpan<br>e Type   | y: 1<br>e: 1 | Macquar<br>E50             | ie Drill          |   | tor Name:<br>tors Licenc | e No.:                   | Ray Di     | udek                |                                     |  |   | Standard Sheets of abbreviations   |

| Cli<br>Pro  | oject<br>ent:<br>oject:<br>catio |                  | Ca<br>Fo                                     | denc<br>ur Po                  | 1206-C<br>e Austr<br>pints Ho<br>Road | alia   |            | 55 Grandview St<br>PH: (02) 8569 2200<br>www   | EAR<br>SCIE      | NTIS 1<br>uite 3, Lo<br>le NSW<br>02) 9983 | evel 1<br>2073<br>0582 | <b>FP_BH4</b><br>Sheet: 3 of 3                               |
|---|----------------------------------|------------------|--|--------------------------------|---------------------------------------|--|------------|--|------------------|--|------------------------|--|
| Y-(   | Coord<br>Coord<br>face I         | :                |  | 52508<br>33376<br><b>R.L):</b> | 65                                    | m AHD Date Commer  | ed:        | 02/05/2012<br>02/05/2012<br>0: NMLC  |                  |  | Logged by<br>Checked b |  |
| Dri   | lling I                          | nform            | ation  |                                |                                       | LITHOLOGY  | 1          | I  | 1                |  | Natura                 | Defects  |
| Depth (mBGL)  | R.L. (m)                         | Method (Support) | % Coreloss                                   | Water                          | Symbol                                | Rock Description<br>ROCK TYPE: grain characteristics, colour<br>structure, minor components  | Weathering | Estimated<br>Strength<br>MPa<br>$\stackrel{0}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{\stackrel{\circ}{$ | Is (50)<br>MPa   | RQD %                                      | Spacing<br>(mm)        | Description  |
| 10  |                                  |                  | 1  |                                |                                       |  |            |  |                  |  |                        | 10   |
| 11  |                                  |                  | $\leftarrow 0^{0/6} \longrightarrow 0^{0/6}$ |                                |                                       | SANDSTONE: fine to medium grained,<br>pale grey with some orange iron staining.<br>Distinctly cross-bedded at 0 to 20 degrees.<br>SANDSTONE: medium to coarse grained,<br>pale grey/pinkish with some orange iron<br>staining. Distinctly cross-bedded at 10 to<br>20 degrees. | MW         |  |                  | $\leftarrow 100\% \rightarrow 100\%$       |                        | BP, 0 to 30 degrees, PR, RF, CN<br>to Sn Fe.<br>11 –         |
| 12  |                                  | - NMLC           |  |                                |                                       |  |            | -  | D=1.26<br>A=1.73 |  |                        | вр<br>12-<br>ВР<br>ВР<br>ВР                                  |
| 13 _  |                                  |                  | - 0%0  |                                |                                       | SANDSTONE: fine to medium grained,<br>pale grey with a trace of orange iron<br>staining. Distinctly cross-bedded at 10 to<br>20 degrees.   | SW         |  | D=0.69<br>A=0.76 | - 97%                                      |                        | вр<br>вр   |
| 14  |                                  | $\checkmark$     | $\checkmark$                                 |                                |                                       | End of Borehole.   |            |  |                  | $\downarrow$                               |                        | SM, near horizontal, grey clay,<br>50mm thick, PP=180kPa. 14 |
| 15  |                                  |                  |  |                                |                                       |  |            |  |                  |  |                        | - 15-  |
| 16  | -14                              |                  |  |                                |                                       |  |            |  |                  |  |                        | - 16-  |
| -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                                  |                  |  |                                |                                       |  |            |  |                  |  |                        | 17 -   |
| 18  |                                  |                  |  |                                |                                       |  |            |  |                  |  |                        | 18 -   |
| 19  | -17                              |                  |  |                                |                                       |  |            |  |                  |  |                        | - 19 -   |
|   |                                  | npany<br>Type    |  |                                | arie Dril                             | ling Pty Ltd <b>Operator Name:</b>   | R          | ay Dudek   |                  |  |                        | 20<br>o Standard Sheets<br>ls of abbreviations               |

| 10   | ES111206-CA  | A FP_BH4                          | START | CORING AT   | 102  |
|--|--|-----------------------------------|-------|---|------|
| 12<br>13                                       |  |                                   |       |   | ECH  |
| Date:  | 2/05/2012 Title:   | FP_BH4 Four Points 10.2m to 14    | .0m   | CONSUL  | TING |
| Prepared by:<br>Checked by:<br>Scale:<br>Size: | M. Pickett<br>D. Lowe CES Project ID:<br>NTS<br>A4 Client: | CES111206-CA<br>Cadence Australia |       | Suite 3, Level 1,<br>55 Grandview Street<br>Pymble NSW 2073<br>ph: 02 8569 2200 fax |      |

| Clie<br>Pro      | oject<br>ent:<br>oject:<br>catio | :  |                  | CES11<br>Cadenc<br>Four Po<br>Wheat  | e Aus<br>oints H | tralia   |                                   |                          | F   | 55 Grandview S<br>PH: (02) 8569 220<br>WWW | EART<br>SCIEN<br>Street, Pyml<br>0 FAX: ( | uite 3, Level 1<br>ble NSW 2073 | F   | <b>G ID:</b><br><b>P_BH5</b><br>Sheet: 1 of 4 |
|------------------|----------------------------------|--|------------------|--------------------------------------|------------------|--|-----------------------------------|--------------------------|-----|--|---|---------------------------------|---|---|
| Y-0              | Coord<br>Coord                   | l:   |                  | 333776<br>625072<br>( <b>R.L</b> ) : | 3                | GDA 94 MGA 56<br>m AHD   | Date Con<br>Date Con<br>Hole Diai | npletee                  | d:  | 27/04/201<br>27/04/201                     |   |                                 | ed by:<br>ked by:                           | MTP<br>MTP                                    |
|                  |                                  | forma  |                  | ( <b>K.</b> L) .                     | 5.50             | LITHOLOGY  |                                   | neter                    |     | Samples                                    |   | Tests                           |   |   |
| Driii            | ing in                           | -  | luon             |                                      |                  |  | Ľ                                 |                          |     | Samples                                    |   | Tests                           |   |   |
| Depth (mBGL)     | R.L. (m)                         | Method (Support)                                 | Water            | Symbol                               | USCS Symbol      | Description<br>SOIL TYPE: plasticity or particle<br>colour, moisture, secondary and m  |                                   | Consistency /<br>Density |     | Sample ID                                  | Type                                      | SPT                             | 100 Pocket<br>200 Penetrometer<br>400 (kPa) | Well<br>Installation<br>Detail                |
| 0                |                                  |  |                  |                                      |                  |  |                                   |                          |     |  |   |                                 |   | 0   |
|                  | —3                               | $\left  \begin{array}{c} \\ \end{array} \right $ |                  |                                      |                  | CONCRETE: consisting<br>slabs, each 200mm thick  | :.<br>^                           |                          |     |  |   |                                 |   |   |
| 1                |                                  |  |                  |                                      |                  | FILL: clayey sand, fine t<br>grained, brown, dry. Wit<br>to coarse, subangular to a<br>gravel consisting of conc<br>sandstone. | h some fine<br>angular            |                          | Jar | /  |   |                                 |   |   |
| 2                | —2<br>—1                         |  |                  |                                      |                  | FILL: sand, fine to medi<br>dark brown, dry. With a<br>clay and subangular to a<br>gravel consiting of brick<br>and glass.     | trace of<br>ngular<br>, concrete  |                          | Jar | /  |   | 3,2,2 N=4                       |   |   |
| 3-               |                                  | ADTC (Casing)                                    | $\bigtriangleup$ |                                      | SP               | SAND: coarse grained, p<br>wet. With a trace of silt a<br>grained sand.  | bale brown,                       | N                        | Jar | /  |   | 3,1,5 N=6                       |   | 31  |
| 4                | —0<br>—-1                        | ADT  |                  |                                      | SM               | SILTY SAND: medium<br>grained, dark grey, wet. '<br>shell fragments (fine to c<br>angular).                                    | with some                         | MD                       | -   |  |   |                                 |   |   |
| 5                |                                  |  |                  |                                      |                  |  |                                   |                          | Jar | /  |   | 2,1,10/50mm<br>N=R              |   | 5   |
| 6-               | —-3                              | ~  |                  |                                      |                  | SANDSTONE: fine to n<br>grained, pale grey, with s<br>clay. Extremely weather<br>strength.                                     | some grey                         |                          |     |  |   | 6,5/100mm<br>N=R                |   | 6-  |
| 7                | —-4                              |  |                  |                                      |                  | Begin Core Drilling.   |                                   |                          |     |  |   |                                 |   |   |
| 8                | —-5                              |  |                  |                                      |                  |  |                                   |                          |     |  |   |                                 |   |   |
| 9                |                                  |  |                  |                                      |                  |  |                                   |                          |     |  |   |                                 |   |   |
| 10<br>Dril<br>Ma | ll Cor<br>chine                  | mpan<br>e Type                                   |                  | Macquar<br>E50                       | ie Dril          | ling Pty Ltd Opera<br>Opera  | tor Name:<br>tors Licenc          | e No.:                   |     | y Dudek                                    |   |                                 |   | 10<br>Standard Sheets<br>of abbreviations     |

| Clie<br>Pro                   | oject<br>ent:<br>oject:<br>catio | :                |       | CES11<br>Cadenc<br>Four Po<br>Wheat | e Aus<br>oints H | tralia  |                          |                          | 55 Grandview S<br>PH: (02) 8569 22<br>ww | EART<br>SCIEN<br>Street, Pymb<br>00 FAX: (1 | uite 3, Level 1<br>ble NSW 2073 | F   | <b>OG ID:</b><br><b>P_BH5</b><br>Sheet: 2 of 4 |
|-------------------------------|----------------------------------|------------------|-------|-------------------------------------|------------------|---|--------------------------|--------------------------|--|---|---------------------------------|---|--|
|                               | Coord<br>Coord                   |                  |       | 333776<br>625072                    |                  | GDA 94 MGA 56   | Date Con<br>Date Con     |                          |  |   |                                 | ed by:<br>ked by:   | MTP<br>MTP                                     |
|                               |                                  |                  |       | ( <b>R.L</b> ) :                    |                  | m AHD   |                          | -                        | <b>mm):</b> 100mm                        | 12  | Chee                            | Keu by.   |  |
| Drilli                        | ing In                           | forma            | tion  |                                     | 1                | LITHOLOGY   | Y                        |                          | Samples                                  | 1   | Tests                           |   |  |
| Depth (mBGL)                  | R.L. (m)                         | Method (Support) | Water | Symbol                              | USCS Symbol      | Description<br>SOIL TYPE: plasticity or particle<br>colour, moisture, secondary and n |                          | Consistency /<br>Density | Sample ID                                | Type  | SPT                             | <ul> <li>Pocket</li> <li>Pocket</li> <li>Penetrometer</li> <li>(kPa)</li> </ul> | Well<br>Installation<br>Detail                 |
| 10                            |                                  |                  | 1     | 1                                   | 1                | 1   |                          | 1 1                      |  | 1   | 1                               |   | <u>10</u>                                      |
| 11                            | 7<br>                            |                  |       |                                     |                  |   |                          |                          |  |   |                                 |   |  |
| 15                            |                                  |                  |       |                                     |                  | End of Borehole.  |                          |                          |  |   |                                 |   | ······   |
| 16                            |                                  |                  |       |                                     |                  |   |                          |                          |  |   |                                 |   | 16   |
| 17                            |                                  |                  |       |                                     |                  |   |                          |                          |  |   |                                 |   | 17   |
| 18                            |                                  |                  |       |                                     |                  |   |                          |                          |  |   |                                 |   | 18   |
| 19                            |                                  |                  |       |                                     |                  |   |                          |                          |  |   |                                 |   | 19   |
| 20 <sup>⊥</sup><br>Dril<br>Ma | ll Cor                           | npan<br>e Type   |       | Macquar<br>E50                      | ie Dril          | ling Pty Ltd Opera<br>Opera   | tor Name:<br>tors Licenc | ce No.:                  | Ray Dudek                                |   |                                 |   | 20<br>Standard Sheets<br>of abbreviations      |

| Cl<br>Pr                               | oject<br>ient:<br>oject<br>ocatio | :   | Ca<br>Fo   | idenc<br>our Po                | 1206-C<br>e Austr<br>oints Ho<br>Road | alia  |            | 55 Grandview Stre<br>PH: (02) 8569 2200<br>WWW.0  | EAR1<br>SCIEI<br>Su<br>et, Pymbl<br>FAX: (0 | NTISTS<br>uite 3, Level 1<br>le NSW 2073 |                  | <b>FP_BH5</b><br>Sheet: 3 of 4   |
|--|-----------------------------------|---|--|--------------------------------|---------------------------------------|---|------------|---|---|--|------------------|--|
| Y-                                     | Coord<br>Coord<br>rface           |   | 3  | 52507<br>33377<br><b>R.L):</b> | 76                                    | m AHD Date Comme  | ted:       | 27/04/2012<br>27/04/2012<br>): NMLC   |   |  | ged by<br>sked b | : MTP<br>y: MTP  |
| Depth (mBGL)                           | B.T. (m) R.L. (m)                 | Method (Support)  | w Coreloss   | Water                          | Symbol                                | LITHOLOGY<br>Rock Description<br>ROCK TYPE: grain characteristics, colour<br>structure, minor components  | Weathering | Estimated<br>Strength<br>MPa<br>$\stackrel{\text{Eod}}{=} \stackrel{\text{Eod}}{=} \text{Eo$ | Is (50)<br>MPa                              | Spa<br>% (n                              |                  | Defects Description  |
| 0_<br>1-<br>2-<br>3-<br>4-<br>5-<br>6- |                                   | ADTC — |  |                                |                                       |   |            |   |   |  |                  | 0<br>1-<br>1-<br>2-<br>3-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-<br>5-  |
| 8-<br>9-                               |                                   |   | $\left  \begin{array}{c} & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & & \\ & $ |                                |                                       | SANDSTONE: fine to medium grained,<br>pale grey/orangish. Distinctly cross-<br>bedded at 0 to 20 degrees. Iron stained<br>throughout.<br>SANDSTONE: medium to coarse grained,<br>pale grey with some orange iron staining.<br>Distinctly cross-bedded at 0 to 20 degrees. |            |   | D=0.40<br>A=0.90<br>D=1.05<br>A=1.23        | 8%                                       |                  | BP<br>BP<br>BP<br>BP<br>BP<br>SM, near horizontal, pale grey<br>clay, 5mm thick.<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP<br>BP |
|  |                                   | mpany<br>e Type   |  |                                | arie Dril                             | ling Pty Ltd <b>Operator Name:</b>  | F          | Ray Dudek   |   |  |                  | o Standard Sheets<br>ls of abbreviations   |

| Cli<br>Pro             | oject<br>ent:<br>oject:<br>catio | :                | Ca<br>Fo       | denc<br>ur Po                | 1206-C<br>e Austr<br>oints Ho<br>Road | alia  |            | E   | X: (02) 998  | <b>TS</b><br>Level 1<br>/ 2073<br>3 0582 |        | <b>FP_BH5</b><br>Sheet: 4 of 4                             |
|------------------------|----------------------------------|------------------|----------------|------------------------------|---------------------------------------|---|------------|---|--------------|--|--------|--|
| Y-(                    | Coord<br>Coord<br>face I         | l:               |                | 2507<br>3377<br><b>R.L):</b> | 6                                     | m AHD Date Comme<br>Mole Diamete  | ted:       | 27/04/2012<br>27/04/2012<br>): NMLC   |              | Logge<br>Checl                           |        | : MTP<br>y: MTP  |
| Dri                    | lling I                          | nform            | ation          |                              |                                       | LITHOLOGY   |            | 1 1   |              | Na                                       | atural | Defects  |
| Depth (mBGL)           | R.L. (m)                         | Method (Support) | % Coreloss     | Water                        | Symbol                                | Rock Description<br>ROCK TYPE: grain characteristics, colour<br>structure, minor components | Weathering | $ \begin{array}{c} \text{Estimated} \\ \text{Strength} \\ MPa \\ {}^{\text{EOO}} \\ {}^{\text{FO}} \\ $ | MPa<br>RQD % | Space<br>(m:                             | m)     | Description  |
| 10                     |                                  |                  |                |                              |                                       |   |            |   |              |  |        | 10   |
| 11<br>12               |                                  | NMLC             |                |                              |                                       |   |            | D=1.<br>A=2.  |              | -  |        | SM, near horizontal, pale grey<br>clay, 5mm thick.<br>BP   |
| 13                     | -10                              |                  | - 0%0          |                              |                                       |   |            | D=1.<br>A=1.  | 65<br>57     |  |        | 13—<br>вр  |
| 14                     |                                  |                  | 00%            |                              |                                       | SANDSTONE: fine grained, pale grey.<br>Distinctly cross-bedded at 0 to 20 degrees.          | SW         |   | 100%         |  |        | 14 –<br>SM, near horizontal, pale grey<br>clay, 5mm thick. |
| 15 —<br>-<br>-<br>16 — |                                  |                  |                |                              |                                       | End of Borehole.  |            |   |              |  |        |  |
| 17 —                   |                                  |                  |                |                              |                                       |   |            |   |              |  |        |  |
|                        |                                  |                  |                |                              |                                       |   |            |   |              |  |        | 17 –   |
| 18                     |                                  |                  |                |                              |                                       |   |            |   |              |  |        | 18-  |
| 19                     |                                  |                  |                |                              |                                       |   |            |   |              |  |        | 19-  |
| 20<br>                 |                                  |                  |                |                              |                                       | ling Dty I td   |            | Dov Dudol:  |              |  |        | 20   |
|                        |                                  | mpan<br>e Type   | y: Ma<br>e: E5 | acqua<br>0                   |                                       | ling Pty Ltd <b>Operator Name:</b>  | F          | Ray Dudek   |              |  |        | o Standard Sheets<br>s of abbreviations                    |

| 6789                        | CESIIIZOG-CA                          |                                  | NG AT 64m                              |
|-----------------------------|---------------------------------------|----------------------------------|--|
| Date:                       | 27/04/2012 Title:                     | FP_BH5 Four Points 6.4m to 10.0m |  |
| Prepared by:<br>Checked by: | M. Pickett<br>D. Lowe CES Project ID: | CES111206-CA                     | SCIENTISTS<br>Suite 3, Level 1,        |
| Scale:                      | NTS                                   |                                  | 55 Grandview Street<br>Pymble NSW 2073 |
|                             | A4 Client:                            |                                  |  |

|                          |  |                             | /                          |                |                        |  |   |     |
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|                          |  |                             |                            |                |                        |  |   |     |
| ate:<br>epared by:       | 27/04/2012 Ti<br>M. Pickett  | tle:                        | FP_BH5 Four Points 10      | 0.0m to 15.0m  |                        |  | CONSULTING<br>EARTH                             |     |
| epared by:<br>necked by: |  | ES Project ID:              | CES111206-CA               |                |                        |  | SCIENTISTS                                      |     |
| ale:                     | NTS  |                             | ~                          |                |                        | Suite 3, Le<br>55 Grandvi<br>Pymble NS | iew Street<br>SW 2073<br>9 2200 fax: 02 9983 05 |     |
| ze:                      | A4 Cl  | ient:                       | Cadence Australia          |                |                        | ph: 02 856                             | 9 2200 fax: 02 9983 05                          | 82  |



## **APPENDIX B**

**Geotechnical Laboratory Test Results** 



Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 enquiries@envirolabservices.com.au www.envirolabservices.com.au

### CERTIFICATE OF ANALYSIS

72707

Client: Consulting Earth Scientists Pty Ltd Suite 3, Level 1 55 Grandview Street Pymble NSW 2073

Attention: Mark Pickett

#### Sample log in details:

| Your Reference:   | CES111206-C | A Four Points |
|---|-------------|---------------|
| No. of samples:   | 14 soils    |               |
| Date samples received / completed instructions received | 02/05/12    | / 04/05/12    |

### Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data. Samples were analysed as received from the client. Results relate specifically to the samples as received. Results are reported on a dry weight basis for solids and on an as received basis for other matrices. *Please refer to the last page of this report for any comments relating to the results.* 

#### **Report Details:**

 Date results requested by: / Issue Date:
 11/05/12
 / 11/05/12

 Date of Preliminary Report:
 Not issued

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 Accredited for compliance with ISO/IEC 17025.

 Tests not covered by NATA are denoted with \*.

### **Results Approved By:**

Rhian Morgan Reporting Supervisor

Nick Sarlamis Inorganics Supervisor

Jeremy Faircloth Chemist

Envirolab Reference: 72707 Revision No: R 00 ACCREDITED FOR TECHNICAL COMPETENCE

### **Client Reference:**

### CES111206-CA Four Points

| Miscellaneous Inorg - soil   |          |            |            |
|------------------------------|----------|------------|------------|
| Our Reference:               | UNITS    | 72707-7    | 72707-11   |
| Your Reference               |          | FP-BH4     | FP-BH5     |
| Depth                        |          | 6.0        | 4.5        |
| Date Sampled                 |          | 26/04/2012 | 26/04/2012 |
| Type of sample               |          | soil       | soil       |
| Date prepared                | -        | 11/05/2012 | 11/05/2012 |
| Date analysed                | -        | 11/05/2012 | 11/05/2012 |
| pH 1:5 soil:water            | pH Units | 8.4        | 8.2        |
| Chloride, Cl 1:5 soil:water  | mg/kg    | 520        | 810        |
| Sulphate, SO4 1:5 soil:water | mg/kg    | 76         | 110        |

### Client Reference: CES111206-CA Four Points

| MethodID               | Methodology Summary  |
|------------------------|--|
| Org-016                | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.<br>Water samples are analysed directly by purge and trap GC-MS. |
| Org-003                | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.  |
| Org-012 subset         | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.   |
| Org-005                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.  |
| Org-008                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.  |
| Org-006                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.  |
| Metals-020 ICP-<br>AES | Determination of various metals by ICP-AES.  |
| Metals-021 CV-<br>AAS  | Determination of Mercury by Cold Vapour AAS.   |
| Inorg-001              | pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+.   |
| Inorg-081              | Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 21st ED, 4110<br>-B.  |
| Inorg-008              | Moisture content determined by heating at 105 deg C for a minimum of 4 hours.  |

| Client Reference: CES111206-CA Four Points |          |     |                       |                |                  |  |                  |                     |
|--|----------|-----|-----------------------|----------------|------------------|--|------------------|---------------------|
| QUALITY CONTROL<br>Acid Extractable metals | UNITS    | PQL | METHOD                | Blank          | Duplicate Sm#    | Duplicate results<br>Base II Duplicate II %RPD | Spike Sm#        | Spike %<br>Recovery |
| in soil                                    |          |     |                       |                |                  |  |                  |                     |
| Nickel                                     | mg/kg    | 1   | Metals-020<br>ICP-AES | <1             | 72707-1          | 120  110  RPD:9                                | LCS-1            | 88%                 |
| Zinc                                       | mg/kg    | 1   | Metals-020<br>ICP-AES | <1             | 72707-1          | 45  42  RPD: 7                                 | LCS-1            | 87%                 |
| QUALITYCONTROL                             | UNITS    | PQL | METHOD                | Blank          | Duplicate Sm#    | Duplicate results                              | Spike Sm#        | Spike %<br>Recovery |
| Miscellaneous Inorg - soil                 |          |     |                       |                |                  | Base II Duplicate II % RPD                     |                  |                     |
| Date prepared                              | -        |     |                       | 11/05/2<br>012 | [NT]             | [NT]   | LCS-1            | 11/05/2012          |
| Date analysed                              | -        |     |                       | 11/05/2<br>012 | [NT]             | [NT]   | LCS-1            | 11/05/2012          |
| pH 1:5 soil:water                          | pH Units |     | Inorg-001             | [NT]           | [NT]             | [NT]   | LCS-1            | 100%                |
| Chloride, Cl 1:5<br>soil:water             | mg/kg    | 2   | Inorg-081             | ~2             | [NT]             | [NT]   | LCS-1            | 94%                 |
| Sulphate, SO4 1:5<br>soil:water            | mg/kg    | 2   | Inorg-081             | ~2             | [NT]             | [NT]   | LCS-1            | 116%                |
| QUALITY CONTROL                            | UNITS    | PQL | METHOD                | Blank          |                  |  |                  | -                   |
| Moisture                                   |          |     |                       |                | 4                |  |                  |                     |
| Date prepared                              | -        |     |                       | [NT]           |                  |  |                  |                     |
| Date analysed                              | -        |     |                       | [NT]           |                  |  |                  |                     |
| Moisture                                   | %        | 0.1 | Inorg-008             | [NT]           |                  |  |                  |                     |
| QUALITYCONTROL                             | UNITS    | 6   | Dup.Sm#               |                | Duplicate        | Spike Sm#                                      | Spike % Recovery |                     |
| vTRH&BTEX in Soil                          |          |     |                       | Base+I         | Duplicate + %RPD |  |                  |                     |
| Date extracted                             | -        |     | [NT]                  |                | [NT]             | 72707-2  | 07/05/2012       |                     |
| Date analysed                              | -        |     | [NT]                  |                | [NT]             | 72707-2  | 08/05/2012       |                     |
| vTRHC6 - C9                                | mg/kę    | 9   | [NT]                  | [NT]           |                  | 72707-2  | 98%              |                     |
| Benzene                                    | mg/kę    | 9   | [NT]                  | [NT]           |                  | 72707-2  | 98%              |                     |
| Toluene                                    | mg/kę    | 9   | [NT]                  | [NT]           |                  | 72707-2  | 97%              |                     |
| Ethylbenzene                               | mg/kę    | 9   | [NT]                  | [NT]           |                  | 72707-2  | 95%              |                     |
| m+p-xylene                                 | mg/kę    | 9   | [NT]                  |                | [NT]             | 72707-2  | 99%              |                     |
| o-Xylene                                   | mg/kę    | 9   | [NT]                  |                | [NT]             | 72707-2  | 100%             |                     |
| <i>Surrogate</i> aaa-<br>Trifluorotoluene  | %        |     | [NT]                  |                | [NT]             | 72707-2  | 100%             |                     |

### **Report Comments:**

Asbestos ID was analysed by Approved Identifier: Asbestos ID was authorised by Approved Signatory: Not applicable for this job Not applicable for this job

| INS: Insufficient sample for this test | PQL: Practical Quantitation Limit | NT: N  |
|--|-----------------------------------|--------|
| NA: Test not required                  | RPD: Relative Percent Difference  | NA: To |
| <: Less than                           | >: Greater than                   | LCS: I |

NT: Not tested NA: Test not required LCS: Laboratory Control Sample

#### **Quality Control Definitions**

**Blank**: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

**Surrogate Spike:** Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

#### Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



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## **POINT LOAD STRENGTH INDEX**

### CLIENT: Consulting Earth Scientists

Suite 55 Upper Level Jones Bay Wharf 26-32 Pirrama Road Pyrmont NSW 2009

### PROJECT: Four Points CES111206-CA

| LAB.    | SAMPLE                                   | LITHOLOGY             |           | ATEN             | TEST                               | POINT            | POINT                    | Туре          |
|---------|--|-----------------------|-----------|------------------|------------------------------------|------------------|--------------------------|---------------|
| NO.     | SOURCE                                   |                       | DIAM      | RATION<br>HEIGHT | ORIENTATION                        | LOAD<br>STRENGTH | LOAD<br>STRENGTH         | OF<br>FAILURE |
|         |  |                       | (mm)      | (mm)             |                                    | Is (MPa)         | Is <sub>(50)</sub> (MPa) | FAILURE       |
| 70150   |  | Canadatana            | . ,       | ()               | Diamatual                          | . ,              |                          | 500           |
| 72158   | FP_BH1<br>9.10 - 9.45m                   | Sandstone             | 51.5      | 31.1             | Diametral<br>Axial                 | 1.52<br>2.21     | 1.54<br>2.11             | FOB<br>FOB    |
|         | 5.10 5.45m                               |                       |           | 51.1             | Axiai                              | 2.21             | 2.11                     | FOB           |
| 72159   | FP BH1                                   | Sandstone             | 50.5      |                  | Diametral                          | 1.94             | 1.95                     | FOB           |
|         | 10.2 - 10.4m                             |                       |           | 30.9             | Axial                              | 1.93             | 1.84                     | FOB           |
| 72160   | FP_BH1                                   | Sandstone             | 51.5      |                  | Diametral                          | 2.72             | 2.76                     | FOB           |
| 72100   | 13.7 - 14.0m                             | Gandstone             | 51.5      | 39.2             | Axial                              | 2.01             | 2.02                     | FOB           |
|         |  |                       |           |                  |                                    |                  |                          |               |
| 72161   | FP_BH1                                   | Sandstone             | 51.5      |                  | Diametral                          | 1.76             | 1.79                     | FOB           |
|         | 14.7 - 15.0m                             |                       |           | 31.6             | Axial                              | 2.11             | 2.03                     | FOB           |
| 72163   | FP BH3                                   | Sandstone             | 51.4      |                  | Diametral                          | 0.77             | 0.78                     | FOB           |
|         | 7.42 - 7.62m                             |                       |           | 33.1             | Axial                              | 0.85             | 0.82                     | FOB           |
| 70101   |  |                       |           |                  |                                    |                  |                          |               |
| 72164   | FP_BH3<br>10.38 -                        | Sandstone             | 51.7      | 29.5             | Diametral<br>Axial                 | 1.24<br>1.39     | 1.26<br>1.31             | FOB<br>FOB    |
|         | 10.6m                                    |                       |           | 23.5             | / Kiai                             | 1.00             | 1.01                     | 100           |
| 72165   | FP_BH3                                   | Sandstone             | 51.6      |                  | Diametral                          | 1.28             | 1.30                     | FOB           |
|         | 13.0 -                                   |                       |           | 31.5             | Axial                              | 1.52             | 1.45                     | FOB           |
|         | 13.24m                                   |                       |           |                  |                                    |                  |                          |               |
| 72166   | FP_BH3<br>14.65 -                        | Sandstone             | 51.6      | 00.0             | Diametral<br>Axial                 | 0.93             | 0.94                     | FOB           |
|         | 14.05 -<br>14.95m                        |                       |           | 30.9             | Axiai                              | 1.16             | 1.11                     | FOB           |
| NOTES   | TO TESTING                               |                       |           |                  |                                    |                  |                          |               |
| Testing | Device                                   | ELE Point Load Tester | Failure 7 | Гуре             |                                    |                  |                          |               |
|         |  |                       | FOB       |                  | through fabric of s                |                  | ique to beddii           | ng            |
| Sample  | History                                  | Unsoaked              | FB        |                  | enced by weak pla<br>along bedding | nes              |                          |               |
| Sample  | d By:                                    | Client                | FIP       |                  | influenced by pre-                 | -existing plan   | e, microfractu           | ıre,          |
|         |  | 100 100               | 055       |                  | mical alteration                   |                  |                          |               |
| Job Nu  | mper:                                    | 133-100               | CPF       | Unip or p        | artial fracture                    |                  |                          |               |
| Date Te | ested:                                   | 07.05.12              |           |                  |                                    |                  |                          |               |
| Test Me | ethod:                                   | AS 4133.4.1 2007      |           |                  |                                    |                  | Page 1 of                | 2             |
| Appro   | ved Signatory:                           | Chris Lloyd           |           |                  | Date: 08                           | 3.05.12          |                          |               |
|         | an a |                       |           |                  |                                    |                  |                          |               |



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## **POINT LOAD STRENGTH INDEX**

### CLIENT: Consulting Earth Scientists

Suite 55 Upper Level Jones Bay Wharf 26-32 Pirrama Road Pyrmont NSW 2009

### PROJECT: Four Points CES111206-CA

| LAB.<br>NO. | SAMPLE<br>SOURCE           | LITHOLOGY                         |                  | ATEN<br>RATION | TEST<br>ORIENTATION                                     | POINT<br>LOAD  | POINT<br>LOAD            | Type<br>OF |
|-------------|----------------------------|-----------------------------------|------------------|----------------|---|----------------|--------------------------|------------|
| NO.         | SCONCE                     |                                   | DIAM             | HEIGHT         | OHENTATION  | STRENGTH       | STRENGTH                 | FAILURE    |
|             |                            |                                   | (mm)             | (mm)           |   | ls (MPa)       | Is <sub>(50)</sub> (MPa) |            |
| 72168       | FP_BH4<br>12.0 - 12.2m     | Sandstone                         | 51.5             | 31.0           | Diametral<br>Axial                                      | 1.24<br>1.81   | 1.26<br>1.73             | FOB<br>FOB |
| 72169       | FP_BH4<br>13.0 -<br>13.25m | Sandstone                         | 51.5             | 32.4           | Diametral<br>Axial                                      | 0.68<br>0.79   | 0.69<br>0.76             | FOB<br>FOB |
| 72170       | FP_BH5<br>7.0 - 7.3m       | Sandstone                         | 51.7             | 28.7           | Diametral<br>Axial                                      | 0.40<br>0.96   | 0.40<br>0.90             | FOB<br>FOB |
| 72171       | FP_BH5<br>9.1 - 9.33m      | Sandstone                         | 51.6             | 28.7           | Diametral<br>Axial                                      | 1.04<br>1.32   | 1.05<br>1.23             | FOB<br>FOB |
| 72172       | FP_BH5<br>11.7 - 12.0m     | Sandstone                         | 51.6             | 32.5           | Diametral<br>Axial                                      | 1.83<br>2.07   | 1.86<br>2.00             | FOB<br>FOB |
| 72173       | FP_BH5<br>13.0 - 13.3m     | Sandstone                         | 51.5             | 28.6           | Diametral<br>Axial                                      | 1.63<br>1.67   | 1.65<br>1.57             | FOB<br>FOB |
|             |                            |                                   |                  |                |   |                |                          |            |
| NOTES       | TO TESTING                 |                                   |                  |                |   |                |                          |            |
| Testing     |                            | ELE Point Load Tester<br>Unsoaked | Failure 7<br>FOB | Fracture       | through fabric of s<br>nced by weak pla                 |                | ique to beddiı           | ng         |
| Sample      | d By:                      | Client                            | FB<br>FIP        | Fracture       | along bedding<br>influenced by pre-<br>mical alteration | -existing plan | e, microfractu           | ıre,       |
| Job Nui     | mber:                      | 133-100                           | CPF              |                | artial fracture   |                |                          |            |
| Date Te     | ested:                     | 07.05.12                          |                  |                |   |                |                          |            |
| Test Me     | ethod:                     | AS 4133.4.1 2007                  |                  |                |   |                | Page 2 of                | 2          |
| Approv      | ved Signatory:             | Chris Lloyd                       |                  |                | <b>Date:</b> 08   | 8.05.12        |                          |            |
| anter       | - Contraction              | <u> </u>                          |                  |                |   |                |                          | ٦          |



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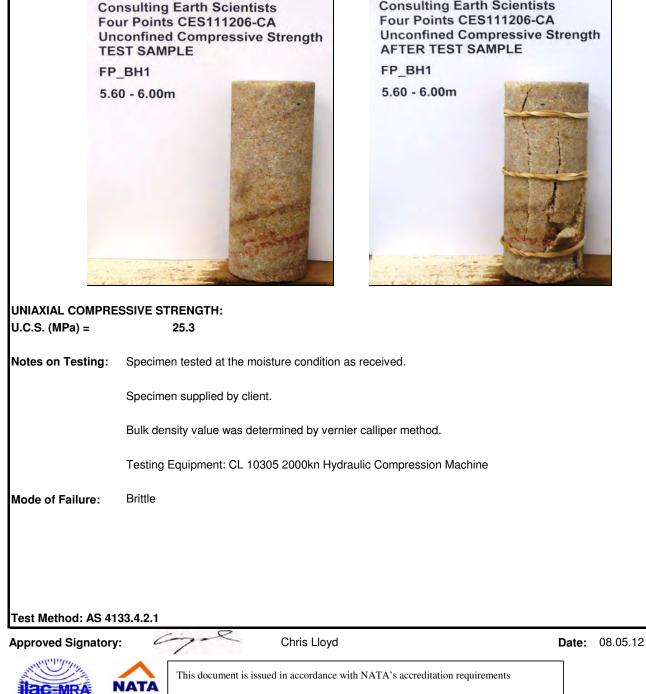


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ime of its intervention only and within the limits of client's action documents. Any unauthorized alteration, forgery or

# **UNIAXIAL COMPRESSIVE STRENGTH**

| CLIENT:<br>PROJECT:              | Consulting Earth Scientists<br>Four Points<br>CES111206-CA | JOB NO.:<br>LAB NO.:<br>Date Tested: | 133-100<br>72157<br>07.05.12            |
|----------------------------------|--|--------------------------------------|---|
| Sample ID:                       | FP_BH1   | Test Type:                           | Compressive Strength                    |
| Sample Length (mm):              | 136.2 Sample Diameter (mm): 51.8                           | Sample Type:                         | Single Individual Rock<br>Core Specimen |
| Length/Diameter Ratio:           | 2.6  | Rock Type:                           | Sandstone                               |
| Dry Density (t/m <sup>3</sup> ): | 2.15   | Depth (m):                           | 5.60 - 6.00m                            |
| Moisture Content (%):            | 5.9  |                                      |   |
| 0                                | ing Forth Onionitist                                       | Conculting Earth S                   | ciontists                               |



PF-(AU)-[IND(MTE)]-(GEN)-RPT-645.VER1.09.02.2011 - Page 1 of 1

Accreditation No. 2418

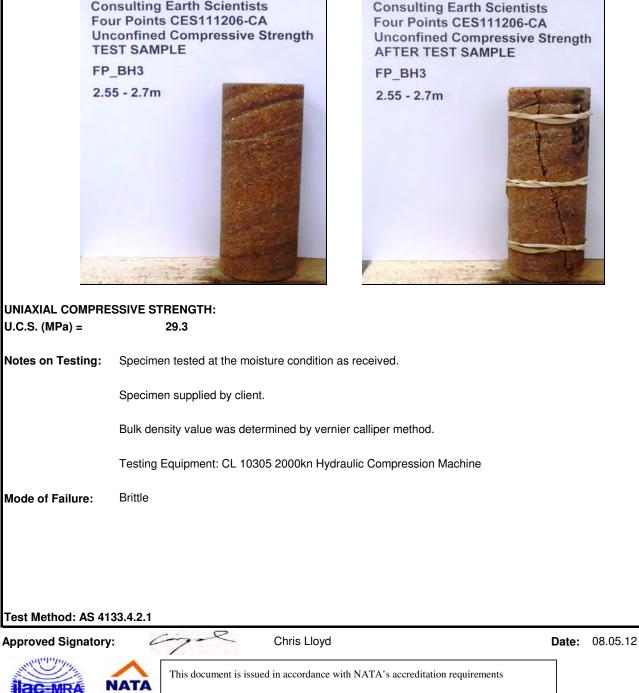


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ne of its intervention only and within the limits of client's ction documents. Any unauthorized alteration, forgery or

# **UNIAXIAL COMPRESSIVE STRENGTH**

| CLIENT:                          | Consulting Earth Scientists      | JOB NO.:           | 133-100                |
|----------------------------------|----------------------------------|--------------------|------------------------|
| PROJECT:                         | Four Points                      | LAB NO.:           | 72162                  |
|                                  | CES111206-CA                     | Date Tested:       | 07.05.12               |
| Sample ID:                       | FP_BH3                           | Test Type:         | Compressive Strength   |
|                                  |                                  | Sample Type:       | Single Individual Rock |
| Sample Length (mm):              | 134.4 Sample Diameter (mm): 51.7 |                    | Core Specimen          |
| Length/Diameter Ratio:           | 2.6                              | Rock Type:         | Sandstone              |
| Dry Density (t/m <sup>3</sup> ): | 2.22                             | Depth (m):         | 2.55 - 2.7m            |
| Moisture Content (%):            | 6.0                              |                    |                        |
|                                  |                                  |                    |                        |
|                                  |                                  |                    |                        |
| Consul                           | ting Earth Scientists            | Consulting Earth S | cientists              |



PF-(AU)-[IND(MTE)]-(GEN)-RPT-645.VER1.09.02.2011 - Page 1 of 1

Accreditation No. 2418



## **TEST CERTIFICATE**

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# **UNIAXIAL COMPRESSIVE STRENGTH**

| CLIENT:<br>PROJECT:              | Consulting Earth Scientists<br>Four Points<br>CES111206-CA | JOB NO.:<br>LAB NO.:<br>Date Tested: | 133-100<br>72167<br>07.05.12 |
|----------------------------------|--|--------------------------------------|------------------------------|
| Sample ID:                       | FP_BH4   | Test Type:                           | Compressive Strength         |
|                                  |  | Sample Type:                         | Single Individual Rock       |
| Sample Length (mm):              | 134.3 Sample Diameter (mm): 51.7                           |                                      | Core Specimen                |
| Length/Diameter Ratio:           | 2.6  | Rock Type:                           | Sandstone                    |
| Dry Density (t/m <sup>3</sup> ): | 2.22   | Depth (m):                           | 11.6 - 11.8m                 |
| Moisture Content (%):            | 6.8  |                                      |                              |
| Consult                          | ing Earth Scientists                                       | Conculting Earth S                   | ciontists                    |

Consulting Earth Scientists Four Points CES111206-CA **Unconfined Compressive Strength TEST SAMPLE** FP\_BH4 11.6 - 11.8m



al issues established therein.

any's findings at the time of its intervention only and within the limits of client's tions under the transaction documents. Any unauthorized alteration, forgery or

#### UNIAXIAL COMPRESSIVE STRENGTH: U.C.S. (MPa) = 25.3

Notes on Testing: Specimen tested at the moisture condition as received.

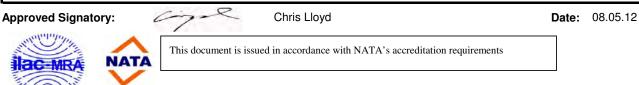
Specimen supplied by client.

Bulk density value was determined by vernier calliper method.

Testing Equipment: CL 10305 2000kn Hydraulic Compression Machine

Brittle Mode of Failure:

Test Method: AS 4133.4.2.1



Infulnit Accreditation No. 2418

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SGS Australia Ptv Ltd Unit 15, 33 Maddox Street (PO Box 6432) Alexandria NSW 2015 Australia

# **UNIAXIAL COMPRESSIVE STRENGTH**

| CLIENT:<br>PROJECT:              | Consulting Earth Scientis   | sts  | JOB NO.:<br>LAB NO.:       | 133-100<br>72174                        |
|----------------------------------|-----------------------------|------|----------------------------|---|
| Sample ID:                       | CES111206-CA<br>FP BH5      |      | Date Tested:<br>Test Type: | 07.05.12<br>Compressive Strength        |
| Sample Length (mm):              | 131.8 Sample Diameter (mm): | 51.6 | Sample Type:               | Single Individual Rock<br>Core Specimen |
| Length/Diameter Ratio:           | 2.6                         | 01.0 | Rock Type:                 | Sandstone                               |
| Dry Density (t/m <sup>3</sup> ): | 2.18                        |      | Depth (m):                 | 14.7 - 15.0m                            |
| Moisture Content (%):            | 6.1                         |      |                            |   |
| Consult                          | ing Earth Scientists        |      | Consulting Earth S         | cientists                               |



**Unconfined Compressive Strength** AFTER TEST SAMPLE FP\_BH5 14.7 - 15.0m

Date:

s findings at the time of its intervention only and within the limits of client's rs under the transaction documents. Any unauthorized alteration, forgery or

#### UNIAXIAL COMPRESSIVE STRENGTH: U.C.S. (MPa) = 27.7

Notes on Testing: Specimen tested at the moisture condition as received.

Specimen supplied by client.

Bulk density value was determined by vernier calliper method.

Testing Equipment: CL 10305 2000kn Hydraulic Compression Machine

NAME

Brittle Mode of Failure:

### Test Method: AS 4133.4.2.1

#### **Approved Signatory:**



This document is issued in accordance with NATA's accreditation requirements

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