

## EPL - Pollution Monitoring Data

Environment Protection Licence Number:

Licensee:

Premises:

Link to full Environment Protection Licence:

Sampling Period:

Date Last Data Obtained During Period:

Date Published:

5042

Pasminco Cockle Creek Smelter Pty Ltd

Pasminco Cockle Creek Smelter & Incitec

Main Road

Boolaroo NSW 2284

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January 2016 to December 2016

22/03/2017

### Concentration Limits

| EPA Point ID                           | Pollutant                                  | Type of Monitoring Point       | Unit of Measure                  | Monitoring Frequency Required by Licence | Sampling method       | No. of times measured during year | Min Value | Mean value* | Median value* | Max Value |
|--|--|--------------------------------|----------------------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 51 Groundwater Monitoring (BH62) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | 27        | 36          | 37            | 47        |
|  | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.15      | 0.19        | 0.19          | 0.23      |
|  | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 27.0      | 35.6        | 37.0          | 47.0      |
|  | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.0002    | 0.0008      | 0.0016        | 0.0029    |
|  | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 6         | 6           | 6             |           |
|  | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 69        | 69          | 69            |           |
|  | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 649       | 1,156       | 1,354         | 2,059     |
|  | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.1       | 0.1         | 0.1           | 0.1       |
|  | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.001     | 0.002       | 0.004         | 0.006     |
|  | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 23        | 23          | 23            |           |
|  | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.008     | 0.011       | 0.012         | 0.015     |
|  | Oxidation Reduction Potential <sup>†</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | 206.7     | 213.9       | 214.1         | 221.4     |
|  | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 5.6       | 5.8         | 5.8           | 5.9       |
|  | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 21        | 21          | 21            |           |
|  | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 380       | 380         | 380           |           |
|  | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 4.96      | 5.06        | 5.07          | 5.17      |
|  | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 79        | 79          | 79            |           |
|  | Temperature                                | Water and / or land monitoring | degrees Celsius                  | Every 6 months                           | Probe                 | 2                                 | 20.8      | 21.2        | 21.3          | 21.7      |
| Total dissolved solids                 | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 1,290                             | 1,363     | 1,365       | 1,440         |           |
| Zinc                                   | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 0.062                             | 0.146     | 0.203       | 0.343         |           |

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### Concentration Limits

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|--|--|--------------------------------|----------------------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 52 Groundwater Monitoring (BH63) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | 4         | 5           | 6             | 7         |
|  | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.03      | 0.04        | 0.04          | 0.05      |
|  | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 4.0       | 5.3         | 5.5           | 7.0       |
|  | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.0001   | 0.0001      | 0.0001        | 0.0001    |
|  | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1         | 1           | 1             |           |
|  | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 66        | 66          | 66            |           |
|  | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 372       | 443         | 450           | 527       |
|  | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.1      | 0.1         | 0.1           | <0.1      |
|  | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.001         | 0.001     |
|  | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1         | 1           | 1             |           |
|  | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.002       | 0.002         | 0.002     |
|  | Oxidation Reduction Potential <sup>1</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | 674.0     | 693.4       | 693.7         | 713.3     |
|  | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 4.9       | 5.1         | 5.1           | 5.3       |
|  | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1         | 1           | 1             |           |
|  | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 105       | 105         | 105           |           |
|  | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 7.38      | 7.50        | 7.51          | 7.63      |
|  | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 56        | 56          | 56            |           |
|  | Temperature                                | Water and / or land monitoring | degrees Celsius                  | Every 6 months                           | Probe                 | 2                                 | 18.8      | 20.3        | 20.4          | 21.9      |
| Total dissolved solids                 | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 530                               | 746       | 790         | 1,050         |           |
| Zinc                                   | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 0.007                             | 0.012     | 0.014       | 0.021         |           |

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|---|--|--------------------------------|----------------------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 53 Groundwater Monitoring (BH64D) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | 538       | 545         | 545           | 552       |
|   | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.35      | 0.35        | 0.36          | 0.36      |
|   | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 538.0     | 545.0       | 545.0         | 552.0     |
|   | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.0001   | 0.0001      | 0.0001        | 0.0001    |
|   | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 275       | 275         | 275           |           |
|   | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1690      | 1690        | 1690          |           |
|   | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 6,144     | 7,257       | 7,358         | 8,571     |
|   | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.4       | 0.5         | 0.5           | 0.6       |
|   | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.001         | <0.001    |
|   | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 152       | 152         | 152           |           |
|   | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.002         | 0.002     |
|   | Oxidation Reduction Potential <sup>1</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | -12.0     | #NUM!       | 17.4          | 46.8      |
|   | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 6.9       | 7.2         | 7.2           | 7.5       |
|   | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 24        | 24          | 24            |           |
|   | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1380      | 1380        | 1380          |           |
|   | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 6.70      | 6.77        | 6.77          | 6.84      |
|   | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 217       | 217         | 217           |           |
|   | Temperature                                | Water and / or land monitoring | degrees Celsius                  | Every 6 months                           | Probe                 | 2                                 | 18.7      | 19.5        | 19.6          | 20.4      |
| Total dissolved solids                  | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 5,090                             | 5,179     | 5,180       | 5,270         |           |
| Zinc                                    | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | <0.005                            | 0.012     | 0.017       | 0.028         |           |

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|---|--|--------------------------------|----------------------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 54 Groundwater Monitoring (BH655) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | <1        | 1           | 1             | <1        |
|   | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.12      | 0.14        | 0.14          | 0.16      |
|   | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <1        | 1.0         | 1.0           | <1        |
|   | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.0024    | 0.0081      | 0.0149        | 0.0274    |
|   | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 17        | 17          | 17            |           |
|   | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1390      | 1390        | 1390          |           |
|   | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 5,252     | 5,664       | 5,680         | 6,108     |
|   | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.6       | 0.6         | 0.6           | 0.6       |
|   | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.003     | 0.008       | 0.014         | 0.024     |
|   | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 135       | 135         | 135           |           |
|   | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.012     | 0.014       | 0.015         | 0.017     |
|   | Oxidation Reduction Potential <sup>†</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | 478.2     | 577.2       | 587.4         | 696.6     |
|   | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 3.9       | 4.0         | 4.0           | 4.2       |
|   | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 7         | 7           | 7             |           |
|   | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1000      | 1000        | 1000          |           |
|   | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 6.34      | 6.39        | 6.40          | 6.45      |
|   | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 411       | 411         | 411           |           |
|   | Temperature                                | Water and / or land monitoring | degrees Celsius                  | Every 6 months                           | Probe                 | 2                                 | 18.2      | 19.1        | 19.1          | 20.0      |
| Total dissolved solids                  | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 3,720                             | 3,896     | 3,900       | 4,080         |           |
| Zinc                                    | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 0.229                             | 0.353     | 0.387       | 0.545         |           |

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|---|--|--------------------------------|----------------------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 55 Groundwater Monitoring (BH65D) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | 7         | 11          | 12            | 17        |
|   | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.78      | 0.81        | 0.82          | 0.85      |
|   | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 3.0       | 4.6         | 5.0           | 7.0       |
|   | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.0001   | 0.0001      | 0.0001        | 0.0001    |
|   | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 172       | 172         | 172           |           |
|   | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1430      | 1430        | 1430          |           |
|   | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 3,795     | 4,506       | 4,573         | 5,350     |
|   | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.1       | 0.1         | 0.2           | 0.2       |
|   | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.001         | 0.001     |
|   | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 18        | 18          | 18            |           |
|   | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.001         | 0.001     |
|   | Oxidation Reduction Potential <sup>†</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | 18.8      | 36.2        | 44.2          | 69.6      |
|   | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 10.0      | 10.0        | 10.0          | 10.1      |
|   | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 16        | 16          | 16            |           |
|   | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 915       | 915         | 915           |           |
|   | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 5.83      | 5.88        | 5.89          | 5.94      |
|   | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 229       | 229         | 229           |           |
|   | Temperature                                | Water and / or land monitoring | degrees Celsius                  | Every 6 months                           | Probe                 | 2                                 | 18.6      | 19.7        | 19.8          | 20.9      |
| Total dissolved solids                  | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 2,970                             | 3,150     | 3,155       | 3,340         |           |
| Zinc                                    | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | <0.005                            | 0.005     | 0.005       | 0.005         |           |

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| Point 56 Groundwater Monitoring (BH645) | Alkalinity (as calcium carbonate)          | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 2                                 | 133       | 142         | 143           | 152       |
|   | Ammonia                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.01     | 0.02        | 0.02          | 0.02      |
|   | Bicarbonate                                | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 133.0     | 142.2       | 142.5         | 152.0     |
|   | Cadmium                                    | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.0006    | 0.0015      | 0.0021        | 0.0036    |
|   | Calcium                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 116       | 116         | 116           |           |
|   | Chloride                                   | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 756       | 756         | 756           |           |
|   | Conductivity                               | Water and / or land monitoring | Microsiemens per centimetre      | Every 6 months                           | Representative sample | 2                                 | 5,407     | 6,830       | 7,017         | 8,627     |
|   | Fluoride                                   | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.8       | 0.8         | 0.8           | 0.8       |
|   | Lead                                       | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | <0.001    | 0.001       | 0.001         | <0.001    |
|   | Magnesium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 244       | 244         | 244           |           |
|   | Nickel                                     | Water and / or land monitoring | Milligrams per litre             | Every 6 months                           | Representative sample | 2                                 | 0.018     | 0.023       | 0.024         | 0.030     |
|   | Oxidation Reduction Potential <sup>†</sup> | Water and / or land monitoring | Millivolts                       | Every 6 months                           | Probe                 | 2                                 | 289.0     | 307.5       | 308.1         | 327.1     |
|   | pH   | Water and / or land monitoring | pH                               | Every 6 months                           | Probe                 | 2                                 | 5.9       | 6.0         | 6.0           | 6.1       |
|   | Potassium                                  | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 16        | 16          | 16            |           |
|   | Sodium                                     | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 1490      | 1490        | 1490          |           |
|   | Standing Water Level                       | Water and / or land monitoring | Metres (Australian Height Datum) | Every 6 months                           | In situ               | 2                                 | 5.92      | 5.97        | 5.97          | 6.02      |
|   | Sulfate                                    | Water and / or land monitoring | Milligrams per litre             | Yearly                                   | Representative sample | 1                                 | 485       | 485         | 485           |           |
| Temperature                             | Water and / or land monitoring             | degrees Celsius                | Every 6 months                   | Probe                                    | 2                     | 18.3                              | 19.1      | 19.1        | 19.9          |           |
| Total dissolved solids                  | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 4,900                             | 5,125     | 5,130       | 5,360         |           |
| Zinc                                    | Water and / or land monitoring             | Milligrams per litre           | Every 6 months                   | Representative sample                    | 2                     | 0.036                             | 0.036     | 0.037       | 0.037         |           |

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January 2016 to December 2016

22/03/2017

### Concentration Limits

| EPA Point ID      | Pollutant                         | Type of Monitoring Point       | Unit of Measure      | Monitoring Frequency Required by Licence | Sampling method       | No. of times measured during year | Min Value | Mean value* | Median value* | Max Value |
|-------------------|-----------------------------------|--------------------------------|----------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 58 (Sump A) | Alkalinity (as calcium carbonate) | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 2                                 | 32        | 32          | 32            |           |
|                   | Cadmium                           | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.0001   | 0.007       | 0.001         | 0.027     |
|                   | Calcium                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 50        | 50          | 50            |           |
|                   | Chloride                          | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 79        | 79          | 79            |           |
|                   | Lead                              | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.001    | 0.003       | 0.003         | 0.005     |
|                   | Magnesium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 53        | 53          | 53            |           |
|                   | Nickel                            | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.003     | 0.014       | 0.009         | 0.034     |
|                   | Potassium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 25        | 25          | 25            |           |
|                   | Sodium                            | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 256       | 256         | 256           |           |
|                   | Sulfate                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 84        | 84          | 84            |           |
| Zinc              | Water and / or land monitoring    | Milligrams per litre           | Quarterly            | Representative sample                    | 4                     | 0.020                             | 1.646     | 0.558       | 5.450         |           |
| Point 59 (Sump B) | Alkalinity (as calcium carbonate) | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 101       | 101         | 101           |           |
|                   | Cadmium                           | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.006     | 0.012       | 0.012         | 0.018     |
|                   | Calcium                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 59        | 59          | 59            |           |
|                   | Chloride                          | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 209       | 209         | 209           |           |
|                   | Lead                              | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.001    | 0.002       | 0.003         | 0.003     |
|                   | Magnesium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 34        | 34          | 34            |           |
|                   | Nickel                            | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.013     | 0.057       | 0.029         | 0.156     |
|                   | Potassium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 38        | 38          | 38            |           |
|                   | Sodium                            | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 215       | 215         | 215           |           |
|                   | Sulfate                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 253       | 253         | 253           |           |
| Zinc              | Water and / or land monitoring    | Milligrams per litre           | Quarterly            | Representative sample                    | 4                     | 2.200                             | 9.513     | 5.175       | 25.500        |           |

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January 2016 to December 2016

22/03/2017

### Concentration Limits

| EPA Point ID      | Pollutant                         | Type of Monitoring Point       | Unit of Measure      | Monitoring Frequency Required by Licence | Sampling method       | No. of times measured during year | Min Value | Mean value* | Median value* | Max Value |
|-------------------|-----------------------------------|--------------------------------|----------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 60 (Sump C) | Alkalinity (as calcium carbonate) | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 60        | 60          | 60            |           |
|                   | Cadmium                           | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.001     | 0.017       | 0.029         | 0.037     |
|                   | Calcium                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 38        | 38          | 38            |           |
|                   | Chloride                          | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 303       | 303         | 303           |           |
|                   | Lead                              | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.001    | 0.021       | 0.029         | 0.034     |
|                   | Magnesium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 78        | 78          | 78            |           |
|                   | Nickel                            | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.010     | 0.029       | 0.034         | 0.043     |
|                   | Potassium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 10        | 10          | 10            |           |
|                   | Sodium                            | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 684       | 684         | 684           |           |
|                   | Sulfate                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 288       | 288         | 288           |           |
| Zinc              | Water and / or land monitoring    | Milligrams per litre           | Quarterly            | Representative sample                    | 4                     | 0.647                             | 1.782     | 2.170       | 2.530         |           |
| Point 61 (Sump D) | Alkalinity (as calcium carbonate) | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 54        | 54          | 54            |           |
|                   | Cadmium                           | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.004     | 0.019       | 0.020         | 0.034     |
|                   | Calcium                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 35        | 35          | 35            |           |
|                   | Chloride                          | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 164       | 164         | 164           |           |
|                   | Lead                              | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.001    | 0.001       | 0.001         | <0.001    |
|                   | Magnesium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 58        | 58          | 58            |           |
|                   | Nickel                            | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.026     | 0.030       | 0.029         | 0.038     |
|                   | Potassium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 14        | 14          | 14            |           |
|                   | Sodium                            | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 495       | 495         | 495           |           |
|                   | Sulfate                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 248       | 248         | 248           |           |
| Zinc              | Water and / or land monitoring    | Milligrams per litre           | Quarterly            | Representative sample                    | 4                     | 0.196                             | 2.184     | 2.065       | 4.410         |           |

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January 2016 to December 2016

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### Concentration Limits

| EPA Point ID      | Pollutant                         | Type of Monitoring Point       | Unit of Measure      | Monitoring Frequency Required by Licence | Sampling method       | No. of times measured during year | Min Value | Mean value* | Median value* | Max Value |
|-------------------|-----------------------------------|--------------------------------|----------------------|--|-----------------------|-----------------------------------|-----------|-------------|---------------|-----------|
| Point 62 (Sump E) | Alkalinity (as calcium carbonate) | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 73        | 73          | 73            |           |
|                   | Cadmium                           | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.001     | 0.006       | 0.006         | 0.011     |
|                   | Calcium                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 179       | 179         | 179           |           |
|                   | Chloride                          | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 649       | 649         | 649           |           |
|                   | Lead                              | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | <0.001    | 0.006       | 0.008         | 0.012     |
|                   | Magnesium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 75        | 75          | 75            |           |
|                   | Nickel                            | Water and / or land monitoring | Milligrams per litre | Quarterly                                | Representative sample | 4                                 | 0.004     | 0.007       | 0.007         | 0.011     |
|                   | Potassium                         | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 53        | 53          | 53            |           |
|                   | Sodium                            | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 800       | 800         | 800           |           |
|                   | Sulfate                           | Water and / or land monitoring | Milligrams per litre | Yearly                                   | Representative sample | 1                                 | 969       | 969         | 969           |           |
| Zinc              | Water and / or land monitoring    | Milligrams per litre           | Quarterly            | Representative sample                    | 4                     | 0.012                             | 0.103     | 0.120       | 0.159         |           |

**Notes:**

<sup>†</sup> Oxidation Reduction Potential taken as Eh, converted to Eh from field data by Eh = Er + 199 (mV).

<sup>^</sup> Sump dry at time of some monitoring events.

<sup>\*</sup> Where results are below limit of reporting (LOR), the LOR has been conservatively adopted in the calculation of the mean and median.

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### Concentration Limits

| EPA Point ID | Pollutant | Type of Monitoring Point | Unit of Measure | Monitoring Frequency Required by Licence | Sampling method | No. of times measured during year | Min Value | Mean value* | Median value* | Max Value |
|--------------|-----------|--------------------------|-----------------|--|-----------------|-----------------------------------|-----------|-------------|---------------|-----------|
|--------------|-----------|--------------------------|-----------------|--|-----------------|-----------------------------------|-----------|-------------|---------------|-----------|

### Groundwater monitoring

| EPA Point ID / other identifier   | Point ID | Pollutant (or other)   | Type of Monitoring Point | Unit of Measure                  | Monitoring Frequency Required by Licence | No. of times measured during year | Min Value  | Mean value* | Median value* | Max Value |
|---|----------|------------------------|--------------------------|----------------------------------|--|-----------------------------------|--|-------------|---------------|-----------|
| E7.5: Up-gradient and down-gradient groundwater cut off drains  | -        | Height of groundwater  | Groundwater monitoring   | Metres (Australian Height Datum) | Quarterly                                | 3                                 | Water levels in the up-gradient and down-gradient groundwater cut off drains and bores required by conditions E7.1, E7.2 and E7.3 that have been able to be accessed have been measured regularly, however, due to damaged or buried monitoring wells and wells not yet installed, insufficient data could be obtained to assess compliance with condition E8.2 of the EPL. PCCSS have continued to undertake pumping to reduce water levels in the drain, however, the automatic pumping system is not yet operational. |             |               |           |
| E7.6: Bores required by conditions E7.1, E7.2 and E7.3  | -        | Height of groundwater  | Groundwater monitoring   | Metres (Australian Height Datum) | Quarterly                                | 3                                 |  |             |               |           |
| E7.7: Groundwater monitoring bores required by conditions E11.1, E11.2, E11.3 [sic E7.1, E7.2, E7.3] which are outside the up gradient and down gradient cut off drains # | Sump A   | As                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.001   | 0.0014      | 0.0010        | 0.003     |
|   |          | Cd                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | <0.0001  | 0.0071      | 0.0006        | 0.0269    |
|   |          | Pb                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | <0.001   | 0.003       | 0.003         | 0.005     |
|   |          | Hg                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.008  | 0.014       | 0.009         | 0.034     |
|   |          | Selenium               | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.01  | 0.01        | 0.01          | <0.01     |
|   |          | Zn                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.185  | 1.646       | 0.558         | 5.450     |
|   | Sump B   | Nitrate                | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | 1.26   | 0.32        | 1.26          | 2.51      |
|   |          | As                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.001   | 0.002       | 0.003         | 0.004     |
|   |          | Cd                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.0058   | 0.012       | 0.012         | 0.1320    |
|   |          | Pb                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | <0.001   | 0.002       | 0.003         | 0.003     |
|   |          | Hg                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.013  | 0.057       | 0.029         | 0.029     |
|   |          | Selenium               | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.01  | 0.01        | 0.01          | <0.01     |
|   | Sump C   | Zn                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 2.200  | 0.01        | 5.175         | 6.240     |
|   |          | Nitrate                | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | 0.051  | 0.272       | 0.51          | 1.45      |
|   |          | As                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.001   | 0.001       | 0.001         | <0.001    |
|   |          | Cd                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.0290   | 0.017       | 0.029         | 0.0367    |
|   |          | Pb                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.029  | 0.021       | 0.029         | 0.034     |
|   |          | Hg                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.034  | 0.029       | 0.034         | 0.043     |
|   | Sump D   | Selenium               | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.01  | 0.01        | 0.01          | <0.01     |
|   |          | Zn                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 2.170  | 1.782       | 2.170         | 2.530     |
|   |          | Nitrate                | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | 0.55   | 0.416       | 8.655         | 17.3      |
|   |          | As                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.001   | 0.001       | 0.001         | 0.068     |
|   |          | Cd                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.0150   | 0.019       | 0.020         | 0.0336    |
|   |          | Pb                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | <0.001   | 0.001       | 0.001         | <0.001    |
|   | Sump E   | Hg                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.026  | 0.030       | 0.029         | 0.038     |
|   |          | Selenium               | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | <0.01  | 0.01        | 0.01          | 0.01      |
|   |          | Zn                     | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 4                                 | 0.196  | 0.932       | 1.750         | 2.380     |
|   |          | Nitrate                | Groundwater monitoring   | Milligrams per litre             | Every 6 months                           | 2                                 | 0.01   | 2.184       | 2.065         | 14        |
| As  |          | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 2  | 0.005                             | 0.026  | 0.053       | 0.068         |           |
| Cd  |          | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 4  | 0.001                             | 0.006  | 0.006       | 0.0113        |           |
| Sump E  | Pb       | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 4  | <0.001                            | 0.006  | 0.008       | 0.012         |           |
|   | Hg       | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 4  | 0.004                             | 0.007  | 0.007       | 0.011         |           |
|   | Selenium | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 2  | 0.01                              | 0.016  | 0.02        | 0.02          |           |
|   | Zn       | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 4  | 0.012                             | 0.103  | 0.120       | 0.159         |           |
| Sump E  | Nitrate  | Groundwater monitoring | Milligrams per litre     | Every 6 months                   | 2  | 0.03                              | 0.110  | 0.06        | 0.73          |           |

Notes:

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|--------------|-----------|--------------------------|-----------------|--|-----------------|-----------------------------------|-----------|-------------|---------------|-----------|
|--------------|-----------|--------------------------|-----------------|--|-----------------|-----------------------------------|-----------|-------------|---------------|-----------|

\* Water quality samples have been collected from Sumps A to D (located along the upgradient cut-off drain) and Sump E (located along the downgradient cut-off drain) instead of the groundwater monitoring bores required by conditions E11.1, E11.2, E11.3 [sic E7.1, E7.2, E7.3]. Sumps A to E are considered sufficient to characterise groundwater inflow into the drain.

^ Additional samples collected and analysed for analytes (Cd, Pb & Zn) as part of EPL sump sampling for monitoring points 58 - 62 have been included in calculations.

\* Where results are below limit of reporting (LOR), the LOR has been conservatively adopted in the calculation of the mean and median.

### Data correction

| EPA Point ID | Sample Date | Pollutant | Original Data | Corrected Data | Date Corrected | Date Originally Published | Reason |
|--------------|-------------|-----------|---------------|----------------|----------------|---------------------------|--------|
|              |             |           |               |                |                |                           |        |