

# Charles Sturt University

IT: Macquarie Gold (Challenger Mines)

ACT: Brett Hampel/Ramon Atayde

ADDRESS: 65 Golden Gully Road  
Maddalong NSW 2729

ABN:

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**ANALYTES REQUIRED** Complete & tick as required

| SAMPLE IDENTIFICATION   | NATURE OF SAMPLE | DATE SAMPLED | TIME SAMPLED | CONTAINER TYPE | NUMBER OF CONTAINERS | Alkalinity, BOD, CN, EC, pH | Hardness, SAR | TSS, Turbidity | Al, As, B, Cd, Ca, Cr, Co, Cu | Fe, Pb, Mg, Mn, Hg, Mo, Ni, F | K, Se, Na, S, Zn | Oil & Grease | Cl, F |  |  |  |  |  |  |
|-------------------------|------------------|--------------|--------------|----------------|----------------------|-----------------------------|---------------|----------------|-------------------------------|-------------------------------|------------------|--------------|-------|--|--|--|--|--|--|
| #3 Goodwin Dam Spillway | Water            | 15/10/15     |              | Plastic/glass  | 2                    |                             |               |                |                               |                               |                  |              |       |  |  |  |  |  |  |
| #3 Goodwin Dam Spillway | Water            | 15/10/15     |              | Plastic/glass  | 2                    |                             |               |                |                               |                               |                  |              |       |  |  |  |  |  |  |
| #7 Decline Discharge    | Water            | 15/10/15     |              | Plastic        | 1                    |                             |               |                |                               |                               |                  |              |       |  |  |  |  |  |  |
| #7 Decline Discharge    | Water +          | 15/10/15     |              | Glass          | 1                    |                             |               |                |                               |                               |                  |              |       |  |  |  |  |  |  |

supply a brown glass O&G bottle if Oil and grease is required as well as a 1L plastic

| ACQUIRED BY:                     | NAME           | SIGNATURE             | ORGANISATION     | DATE     | TIN |
|----------------------------------|----------------|-----------------------|------------------|----------|-----|
|                                  | Sandra Burgess | <i>Sandra Burgess</i> | Challenger Mines | 15/10/15 |     |
| of Transport                     | Pack & Send    |                       |                  |          |     |
| Consignment Note # if applicable |                |                       |                  |          |     |
| DELIVERED BY:                    |                |                       |                  |          |     |

Macquarie Gold Ltd  
c/- 'Willowie' Delegate Road  
Bombala NSW 2632  
Attention: Mike Walcott

Tuesday, October 27, 2015



NATA Accredited Laboratory  
Number: 9597

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## LABORATORY ANALYSIS REPORT

Report Number: 1510-0080

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*For all enquiries related to this report please quote document number: 1510-0080*

| <u>Facility:</u>   | <u>Order #</u>      | <u>Date Received</u> |
|--------------------|---------------------|----------------------|
| <u>Sample Type</u> | <u>Collected By</u> |                      |
| Water              | Sandra Burgess      | 19-October-2015      |

| <u>EAL ID</u> | <u>Client ID.</u><br>Date/Time sample taken | <u>Test</u>                   | <u>Result (units)</u> | <u>Method Reference</u>                         | <u>Limit of Reporting</u> |
|---------------|---|-------------------------------|-----------------------|---|---------------------------|
| 15Oct-0352    | #3 Goodwin Dam Spillway<br>15.10.15         | Alkalinity, Total as CaCO3    | 101 mg/L              | APHA 2320 B                                     | 2                         |
|               |   | Aluminium (acid extractable)  | 0.61 mg/L             | APHA 3030 E/3120 B                              | 0.03                      |
|               |   | Arsenic (acid extractable)    | <0.02 mg/L            | APHA 3030 E/3120 B                              | 0.02                      |
|               |   | Biochemical Oxygen Demand     | <2 mg/L               | APHA 5210 B/4500-O G                            | 2                         |
|               |   | Boron (acid extractable)      | 0.15 mg/L             | * APHA 3030 E/3120 B                            | 0.02                      |
|               |   | Cadmium (acid extractable)    | <0.002 mg/L           | APHA 3030 E/3120 B                              | 0.002                     |
|               |   | Calcium (acid extractable)    | 41.7 mg/L             | APHA 3030 E/3120 B                              | 0.03                      |
|               |   | Chloride                      | 5.4 mg/L              | APHA 4110 B                                     | 0.1                       |
|               |   | Chromium (acid extractable)   | <0.002 mg/L           | APHA 3030 E/3120 B                              | 0.002                     |
|               |   | Cobalt (acid extractable)     | <0.003 mg/L           | * APHA 3030 E/3120 B                            | 0.003                     |
|               |   | Copper (acid extractable)     | <0.002 mg/L           | APHA 3030 E/3120 B                              | 0.002                     |
|               |   | Cyanide                       | 0.002 mg/L            | * APHA 4500-CN E                                | 0.002                     |
|               |   | Conductivity                  | 449 µS/cm             | APHA 2510 B                                     | 1                         |
|               |   | Fluoride                      | 0.4 mg/L              | APHA 4110 B                                     | 0.1                       |
|               |   | Total Hardness as CaCO3       | 163 mg/L              | APHA 2340 B                                     | 2                         |
|               |   | Iron (acid extractable)       | 0.24 mg/L             | APHA 3030 E/3120 B                              | 0.01                      |
|               |   | Lead (acid extractable)       | <0.01 mg/L            | APHA 3030 E/3120 B                              | 0.01                      |
|               |   | Magnesium (acid extractable)  | 14.3 mg/L             | APHA 3030 E/3120 B                              | 0.02                      |
|               |   | Manganese (acid extractable)  | 0.022 mg/L            | APHA 3030 E/3120 B                              | 0.001                     |
|               |   | Mercury                       | <0.001 mg/L           | Analysis by Ecovise, Melbourne<br>(acc no: 992) |                           |
|               |   | Molybdenum (acid extractable) | <0.01 mg/L            | * APHA 3030 E/3120 B                            | 0.01                      |
|               |   | Nickel (acid extractable)     | <0.01 mg/L            | APHA 3030 E/3120 B                              | 0.01                      |

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| Water              | Sandra Burgess      | 19-October-2015      |

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|---------------|---|--|-----------------------|-------------------------|---------------------------|
| 15Oct-0352    | #3 Goodwin Dam Spillway<br>15.10.15         | Oil & Grease                           | 2 mg/L                | APHA 5520 D             | 1                         |
|               |   | Phosphorus                             | <0.02 mg/L            | APHA 3030 E/3120 B      | 0.02                      |
|               |   | pH                                     | 8.8 pH units          | APHA 4500-H+ B          |                           |
|               |   | Potassium (acid extractable)           | 2.7 mg/L              | APHA 3030 E/3120 B      | 0.2                       |
|               |   | Sodium Adsorption Ratio                | 1 Ratio               | LTM-W-039               |                           |
|               |   | Selenium (acid extractable)            | <0.02 mg/L            | APHA 3030 E/3120 B      | 0.02                      |
|               |   | Sodium (acid extractable)              | 17.4 mg/L             | APHA 3030 E/3120 B      | 0.05                      |
|               |   | Sulphur (acid extractable)             | 33.1 mg/L             | * APHA 3030 E/3120 B    | 0.06                      |
|               |   | Total Suspended Solids                 | 6 mg/L                | APHA 2540 D             | 2                         |
|               |   | Turbidity                              | 4 NTU                 | APHA 2130 B             | 1                         |
|               |   | Zinc (acid extractable)                | <0.002 mg/L           | APHA 3030 E/3120 B      | 0.002                     |
| 15Oct-0353    | #7 Decline Discharge<br>15.10.15            | Alkalinity, Total as CaCO <sub>3</sub> | 211 mg/L              | APHA 2320 B             | 2                         |
|               |   | Aluminium (acid extractable)           | 0.44 mg/L             | APHA 3030 E/3120 B      | 0.03                      |
|               |   | Arsenic (acid extractable)             | <0.02 mg/L            | APHA 3030 E/3120 B      | 0.02                      |
|               |   | Biochemical Oxygen Demand              | <2 mg/L               | APHA 5210 B/4500-O G    | 2                         |
|               |   | Boron (acid extractable)               | 0.17 mg/L             | * APHA 3030 E/3120 B    | 0.02                      |
|               |   | Cadmium (acid extractable)             | <0.002 mg/L           | APHA 3030 E/3120 B      | 0.002                     |
|               |   | Calcium (acid extractable)             | 92.8 mg/L             | APHA 3030 E/3120 B      | 0.03                      |
|               |   | Chloride                               | 7.6 mg/L              | APHA 4110 B             | 0.1                       |
|               |   | Chromium (acid extractable)            | <0.002 mg/L           | APHA 3030 E/3120 B      | 0.002                     |
|               |   | Cobalt (acid extractable)              | <0.003 mg/L           | * APHA 3030 E/3120 B    | 0.003                     |

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| Water              | Sandra Burgess      | 19-October-2015      |

| <u>EAL ID</u> | <u>Client ID.</u><br>Date/Time sample taken | <u>Test</u>                   | <u>Result (units)</u> | <u>Method Reference</u>                         | <u>Limit of Reporting</u> |
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| 15Oct-0353    | #7 Decline Discharge<br>15.10.15            | Copper (acid extractable)     | 0.013 mg/L            | APHA 3030 E/3120 B                              | 0.002                     |
|               |   | Cyanide                       | 0.007 mg/L            | * APHA 4500-CN E                                | 0.002                     |
|               |   | Conductivity                  | 733 µS/cm             | APHA 2510 B                                     | 1                         |
|               |   | Fluoride                      | 0.9 mg/L              | APHA 4110 B                                     | 0.1                       |
|               |   | Total Hardness as CaCO3       | 296 mg/L              | APHA 2340 B                                     | 2                         |
|               |   | Iron (acid extractable)       | 2.12 mg/L             | APHA 3030 E/3120 B                              | 0.01                      |
|               |   | Lead (acid extractable)       | <0.01 mg/L            | APHA 3030 E/3120 B                              | 0.01                      |
|               |   | Magnesium (acid extractable)  | 15.5 mg/L             | APHA 3030 E/3120 B                              | 0.02                      |
|               |   | Manganese (acid extractable)  | 0.811 mg/L            | APHA 3030 E/3120 B                              | 0.001                     |
|               |   | Mercury                       | <0.001 mg/L           | Analysis by Ecowise, Melbourne<br>(acc no: 992) |                           |
|               |   | Molybdenum (acid extractable) | <0.01 mg/L            | * APHA 3030 E/3120 B                            | 0.01                      |
|               |   | Nickel (acid extractable)     | <0.01 mg/L            | APHA 3030 E/3120 B                              | 0.01                      |
|               |   | Oil & Grease                  | 3 mg/L                | APHA 5520 D                                     | 1                         |
|               |   | Phosphorus                    | <0.02 mg/L            | APHA 3030 E/3120 B                              | 0.02                      |
|               |   | pH                            | 7.3 pH units          | APHA 4500-H+ B                                  |                           |
|               |   | Potassium (acid extractable)  | 4.9 mg/L              | APHA 3030 E/3120 B                              | 0.2                       |
|               |   | Sodium Adsorption Ratio       | <1 Ratio              | LTM-W-039                                       |                           |
|               |   | Selenium (acid extractable)   | <0.02 mg/L            | APHA 3030 E/3120 B                              | 0.02                      |
|               |   | Sodium (acid extractable)     | 17.4 mg/L             | APHA 3030 E/3120 B                              | 0.05                      |
|               |   | Sulphur (acid extractable)    | 47.1 mg/L             | * APHA 3030 E/3120 B                            | 0.06                      |
|               |   | Total Suspended Solids        | 9 mg/L                | APHA 2540 D                                     | 2                         |
|               |   | Turbidity                     | 24 NTU                | APHA 2130 B                                     | 1                         |

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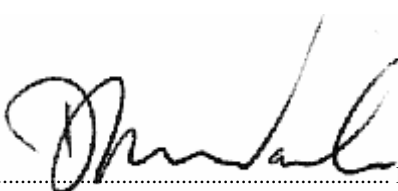
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|---------------|---|-------------------------|-----------------------|-------------------------|---------------------------|
| 15Oct-0353    | #7 Decline Discharge<br>15.10.15            | Zinc (acid extractable) | 0.030 mg/L            | APHA 3030 E/3120 B      | 0.002                     |

*Note:*

*NATA accreditation not held for tests marked with \**

Signed  David Wade, Laboratory Manager.

*All samples analysed as received.  
All soil results are reported on a dry basis.  
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