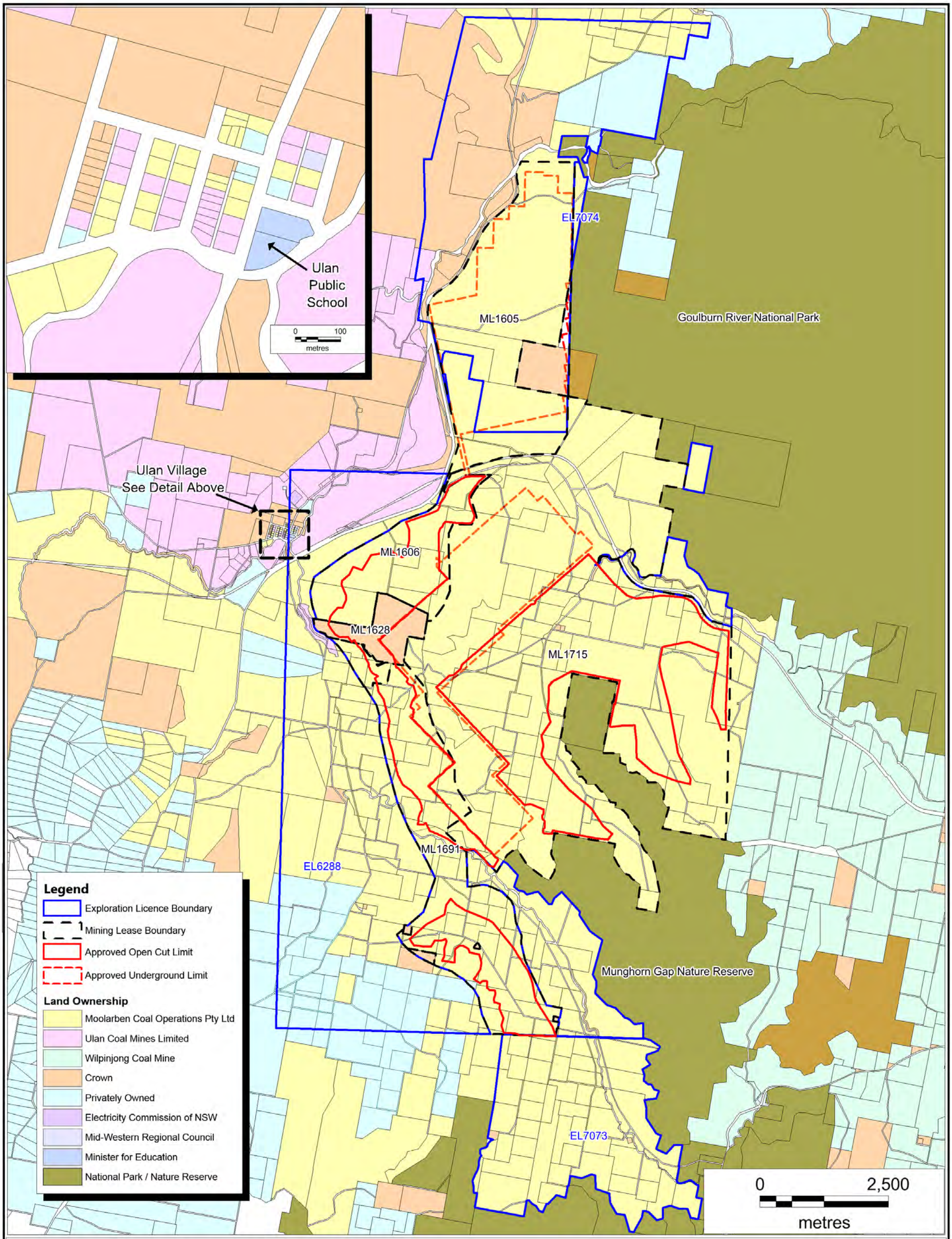
# LIST OF APPENDICES

# LIST OF APPENDICES FIGURES

# APPENDIX 1. LAND OWNERSHIP

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N

# Figure 1A
# Land Ownership

Date: 29/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)



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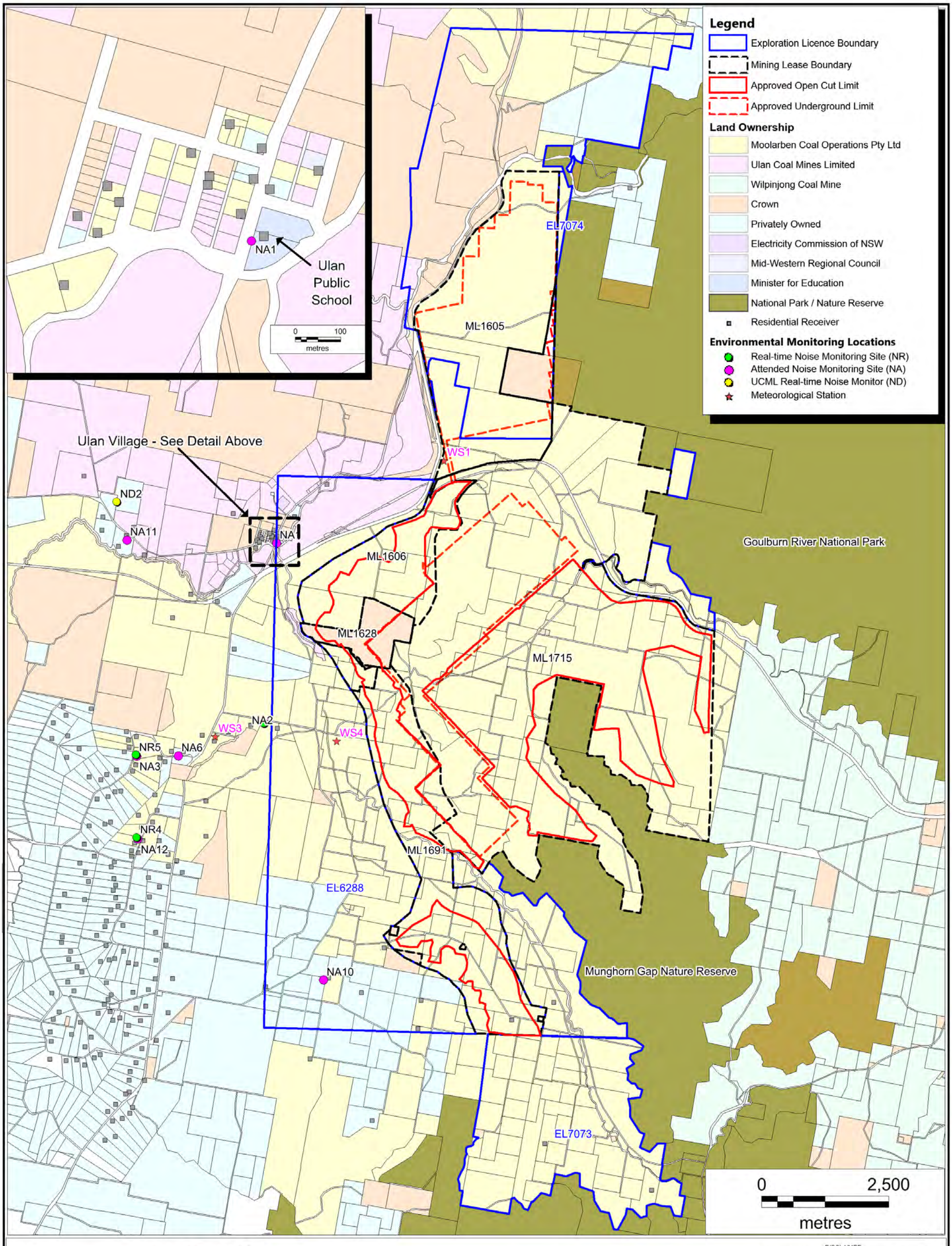
# APPENDIX 2. MONITORING LOCATIONS

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File: O:\7.0 Reporting\7.2 External\AR\2016\Figures\Maps\3 Workspaces\03 Noise Monitoring.wor

**Figure 2A**
**Noise Monitoring Locations**

| | |
|---|---|
| Date: | 30/03/2017 |
| Produced By: | Craig Hawkins |
| Map Size: | A3 Portrait |
| Coordinate System: | MGA94 Zone 55 |
| Revision | 0 |
| Data Source | |
| Land and Property Information (2014) | |
| Moolarben Coal Operations Pty Ltd (2017) | |

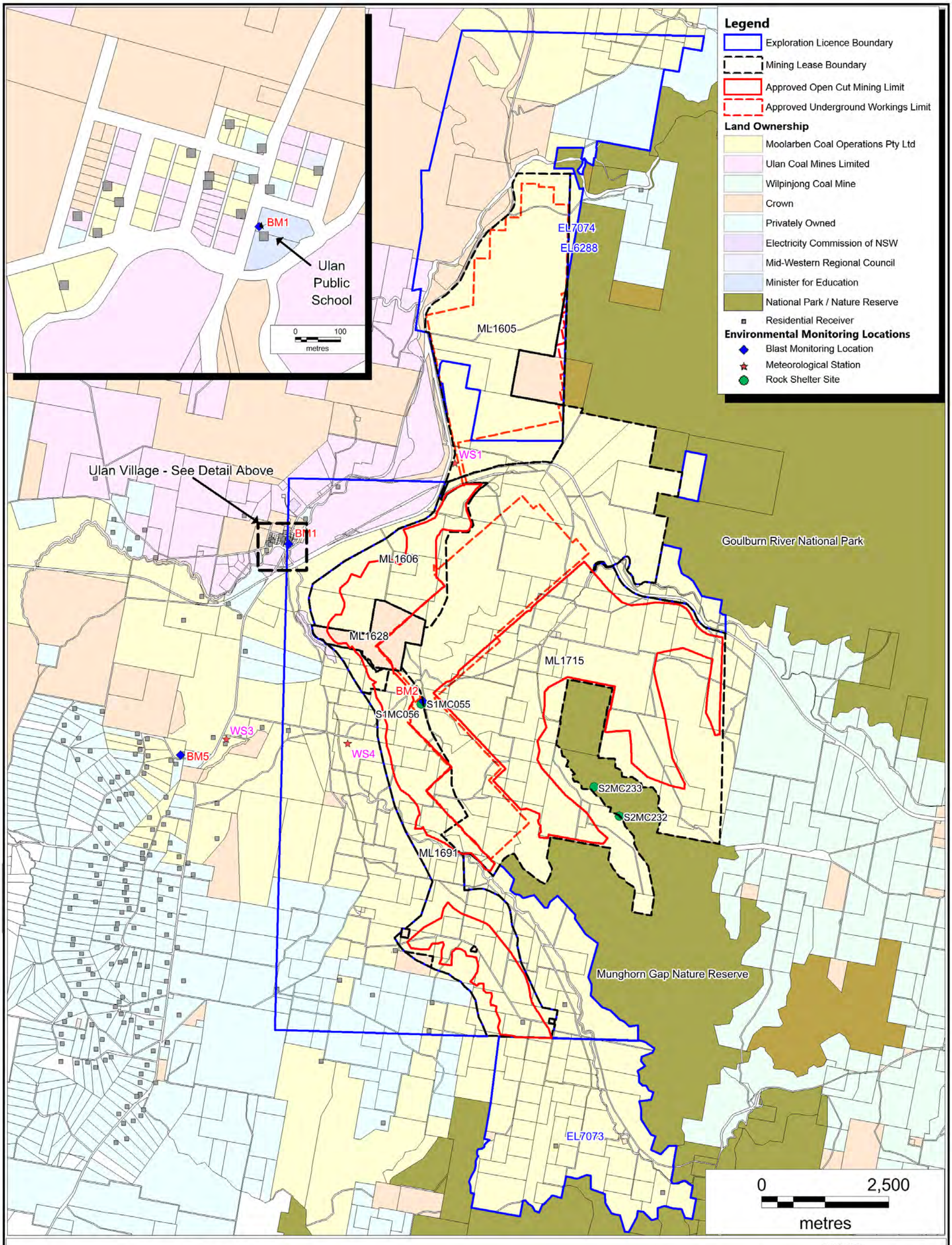


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**Figure 2B**
**Blast Monitoring Locations**

| | |
|---|---|
| Date: | 22/03/2017 |
| Produced By: | Craig Hawkins |
| Map Size: | A3 Portrait |
| Coordinate System: | MGA94 Zone 55 |
| Revision | 0 |
| Data Source | |
| Land and Property Information (2014) | |
| Moolarben Coal Operations Pty Ltd (2017) | |


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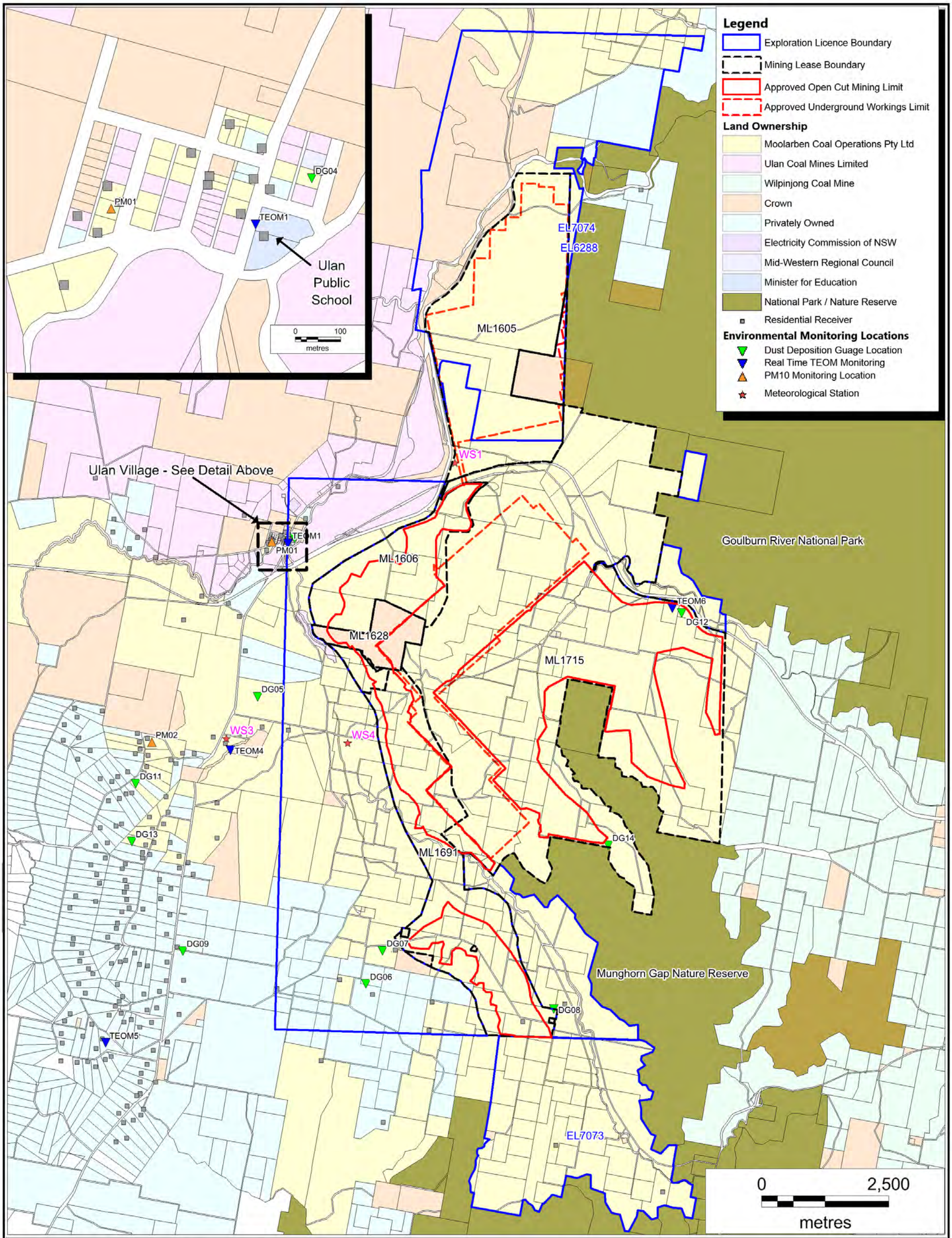


**Figure 2C**
**Dust Monitoring Locations**

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| | |
|---|---|
| Date: | 22/03/2017 |
| Produced By: | Craig Hawkins |
| Map Size: | A3 Portrait |
| Coordinate System: | MGA94 Zone 55 |
| Revision | 0 |
| Data Source | |
| Land and Property Information (2014) | |
| Moolarben Coal Operations Pty Ltd (2017) | |

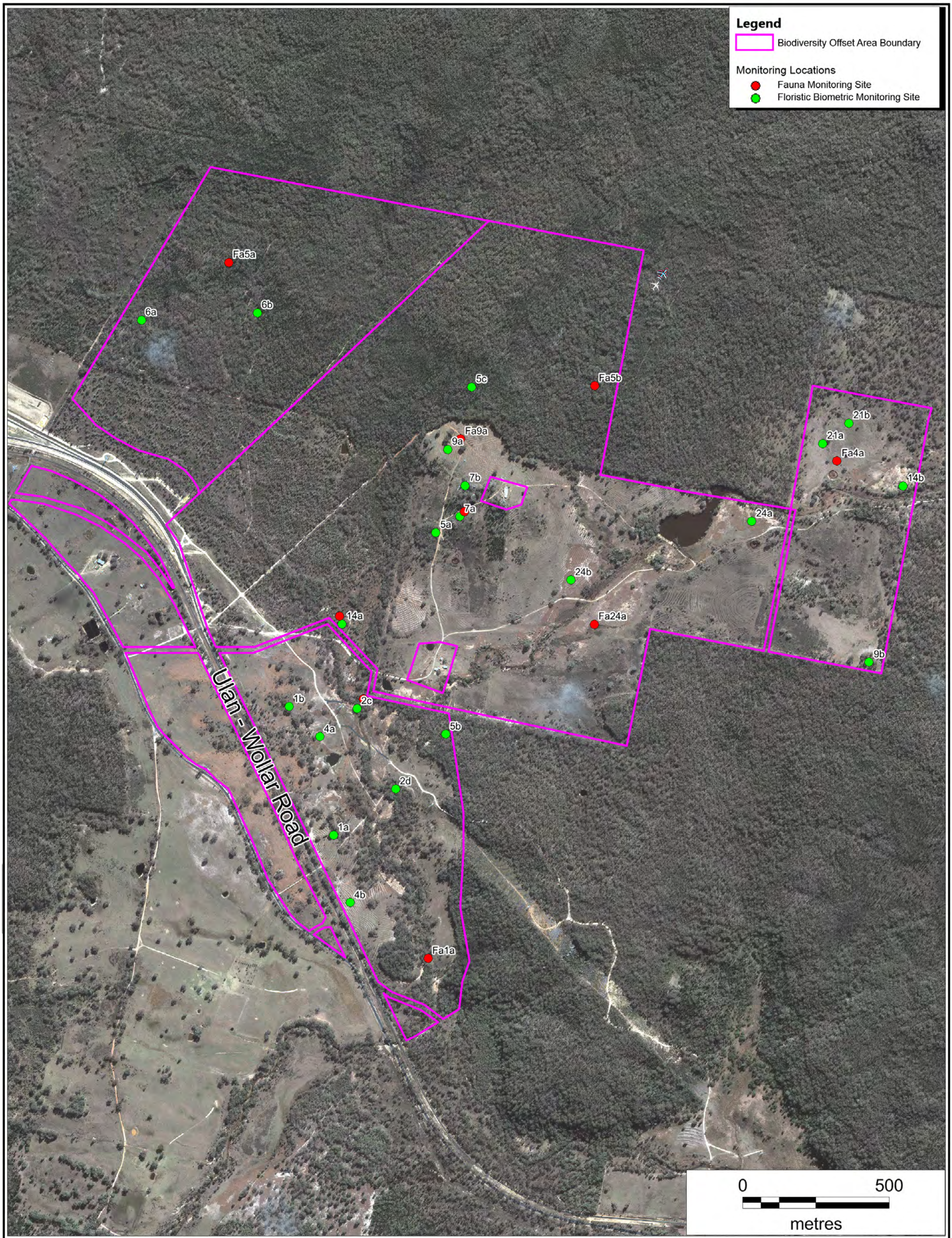


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**Figure 2D**
**Stage 1 Offset Area 1**
**Flora and Fauna Monitoring Locations**

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

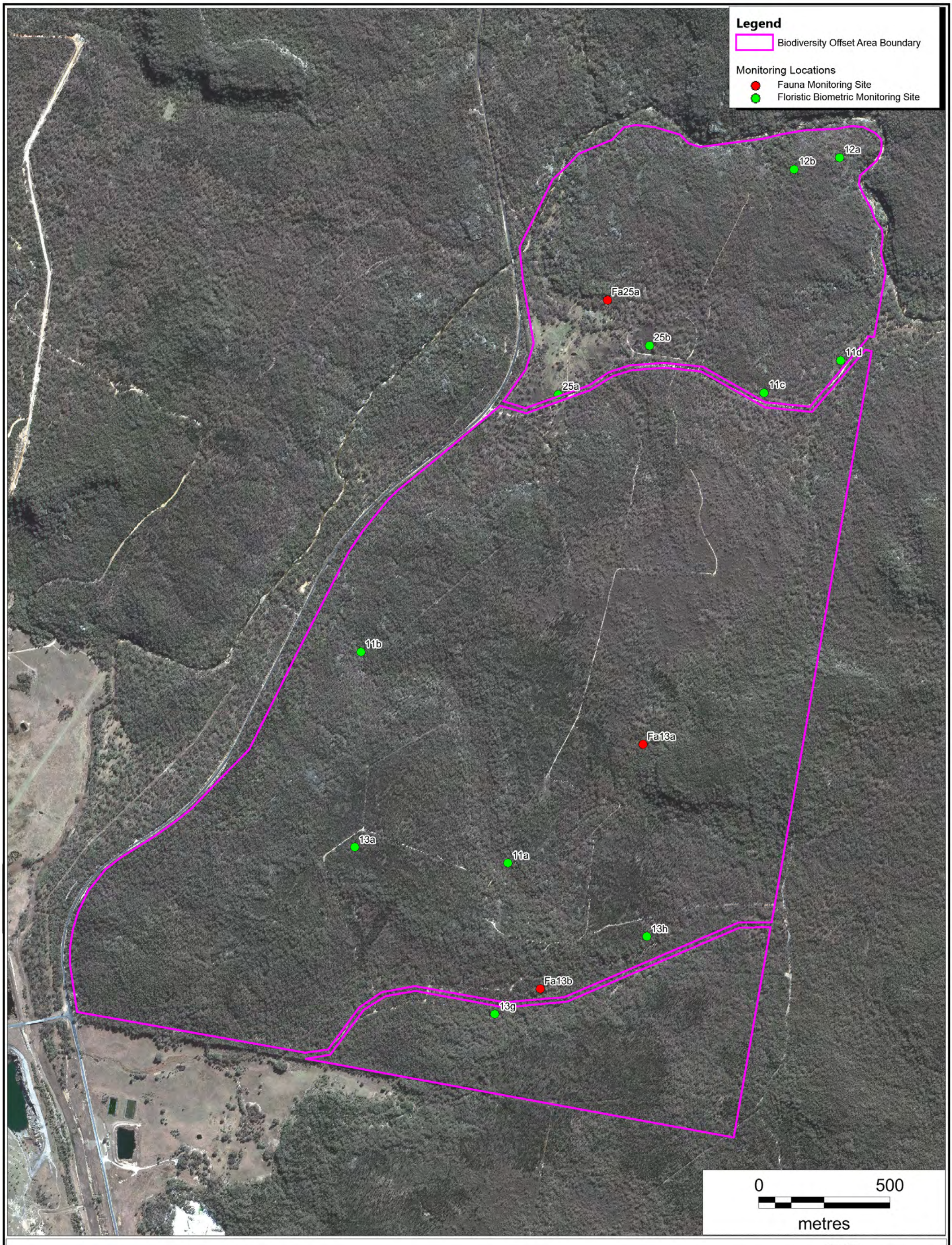


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**Figure 2E**
**Stage 1 Offset Area 2**
**Flora and Fauna Monitoring Locations**

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

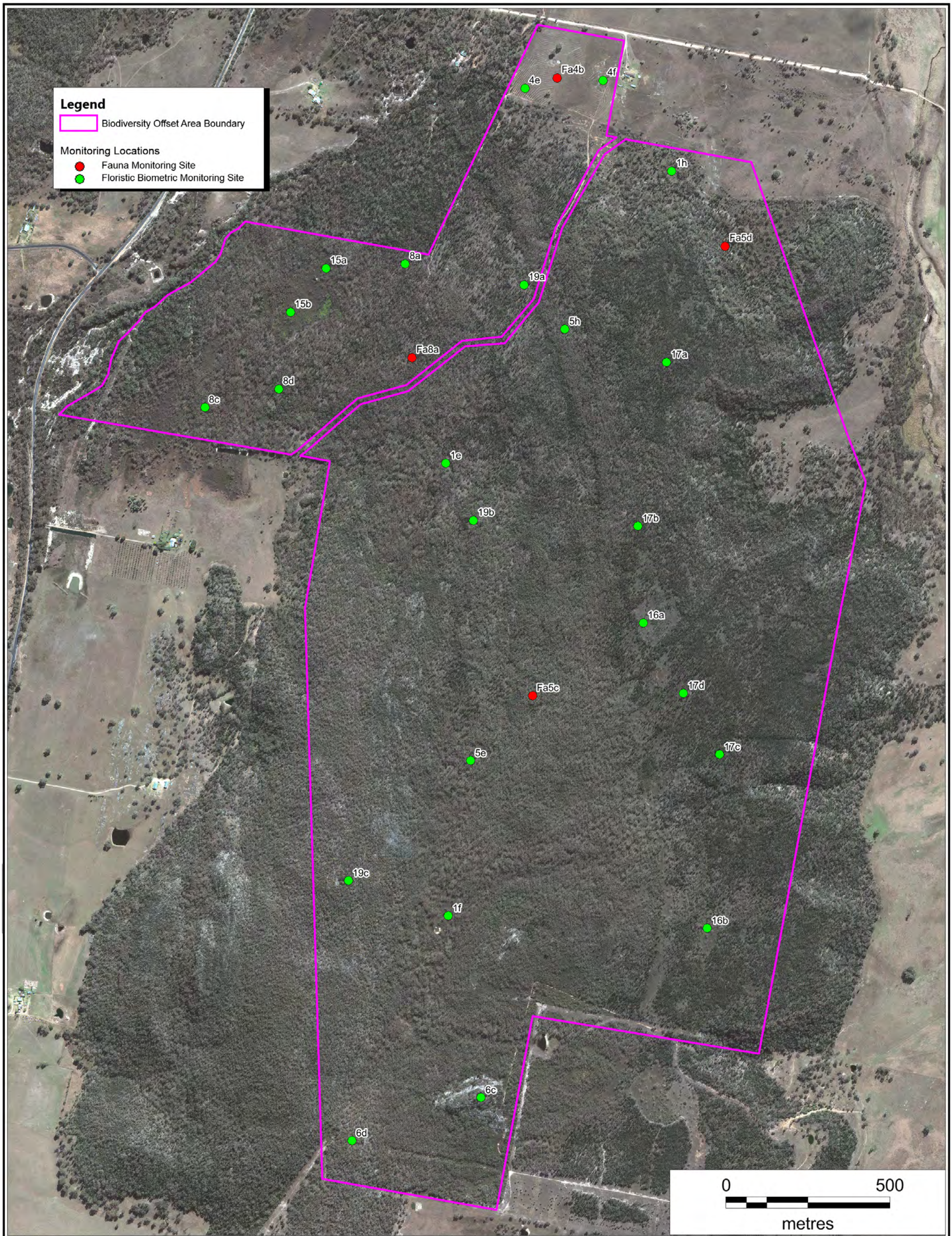


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**Figure 2F**
**Stage 1 Offset Area 3**
**Flora and Fauna Monitoring Locations**

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

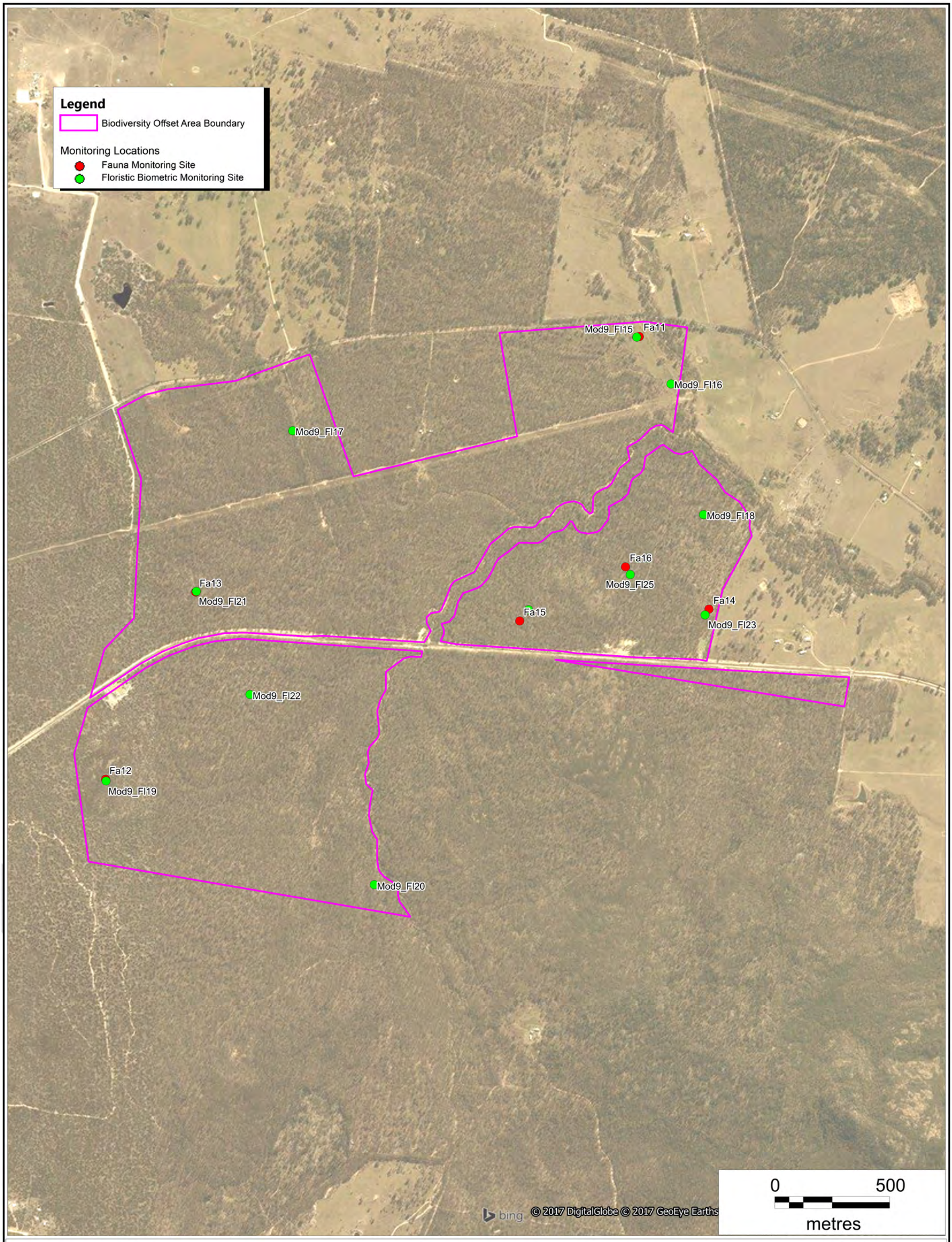


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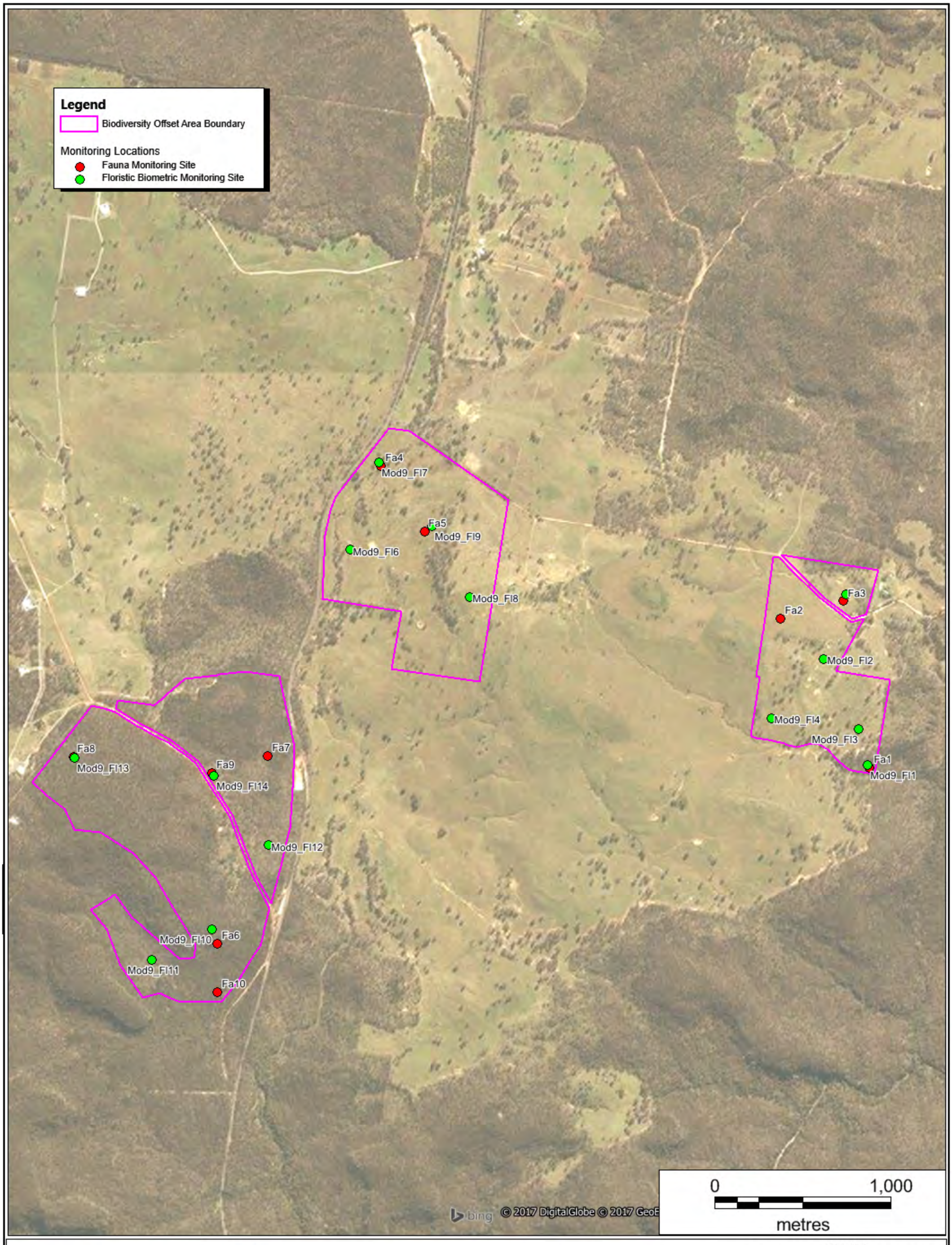
**Figure 2G**
**Clarks and Clifford Offset**
**Flora and Fauna Monitoring Locations**

| | |
|---|---|
| Date: | 30/03/2017 |
| Produced By: | Craig Hawkins |
| Map Size: | A3 Portrait |
| Coordinate System: | MGA94 Zone 55 |
| Revision | 0 |
| Data Source | |
| Land and Property Information (2014) | |
| Moolarben Coal Operations Pty Ltd (2017) | |

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# Figure 2H
# Bobadeen and Elwards Offset
# Flora and Fauna Monitoring Locations

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

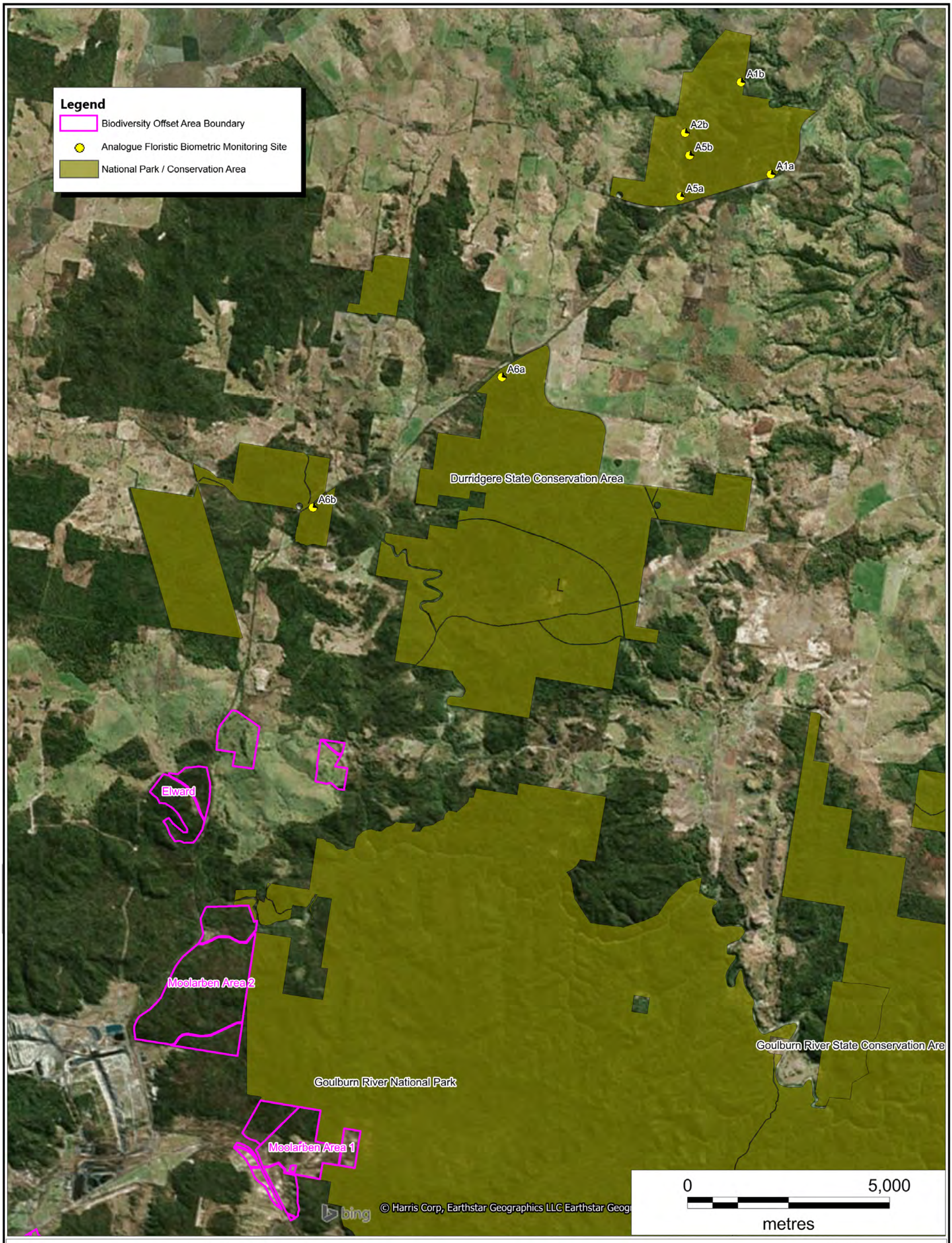


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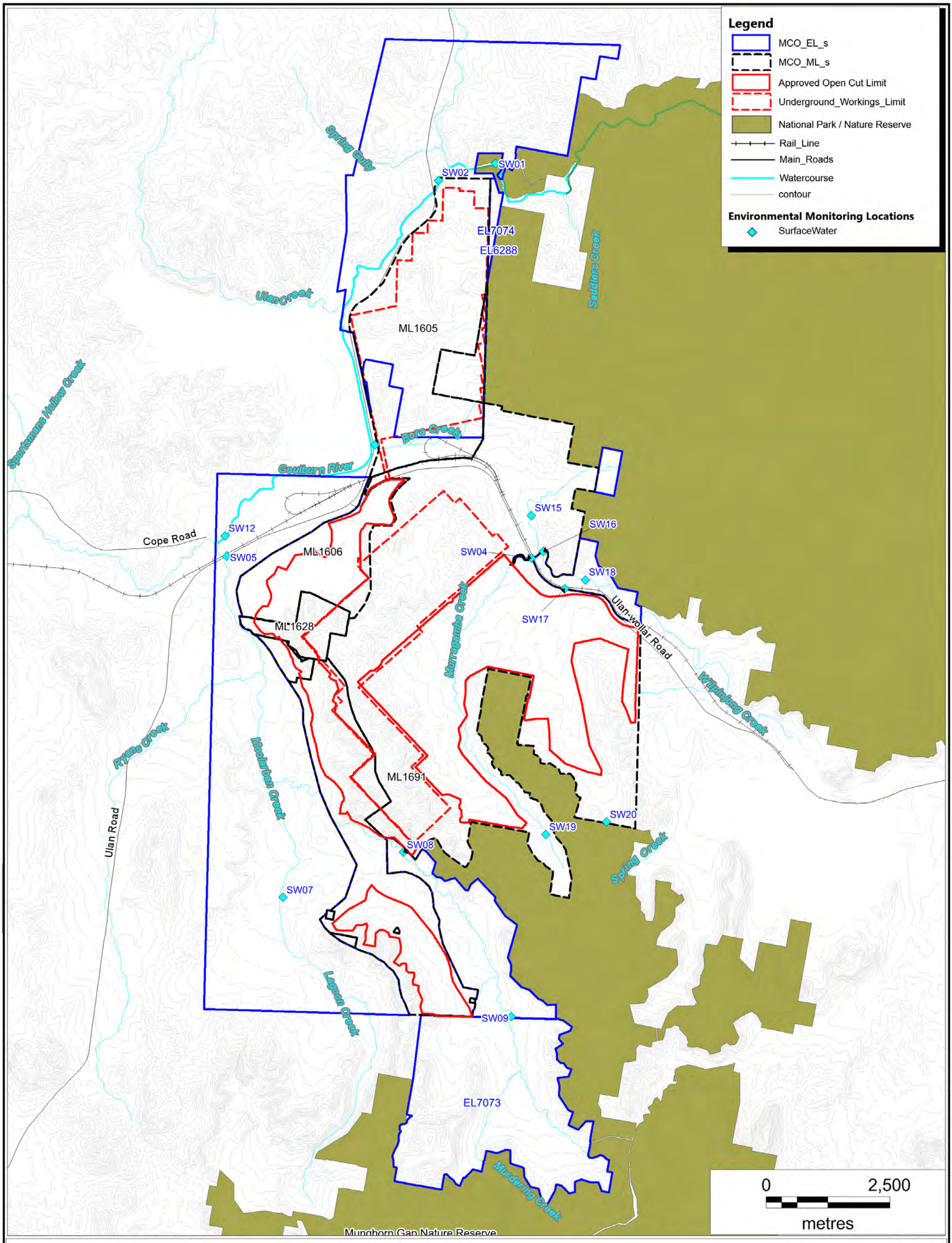
**Figure 2h**
**Stage 1 Analogue Monitoring Locations**

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

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## Figure 2I
## Surface Water Monitoring Locations

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

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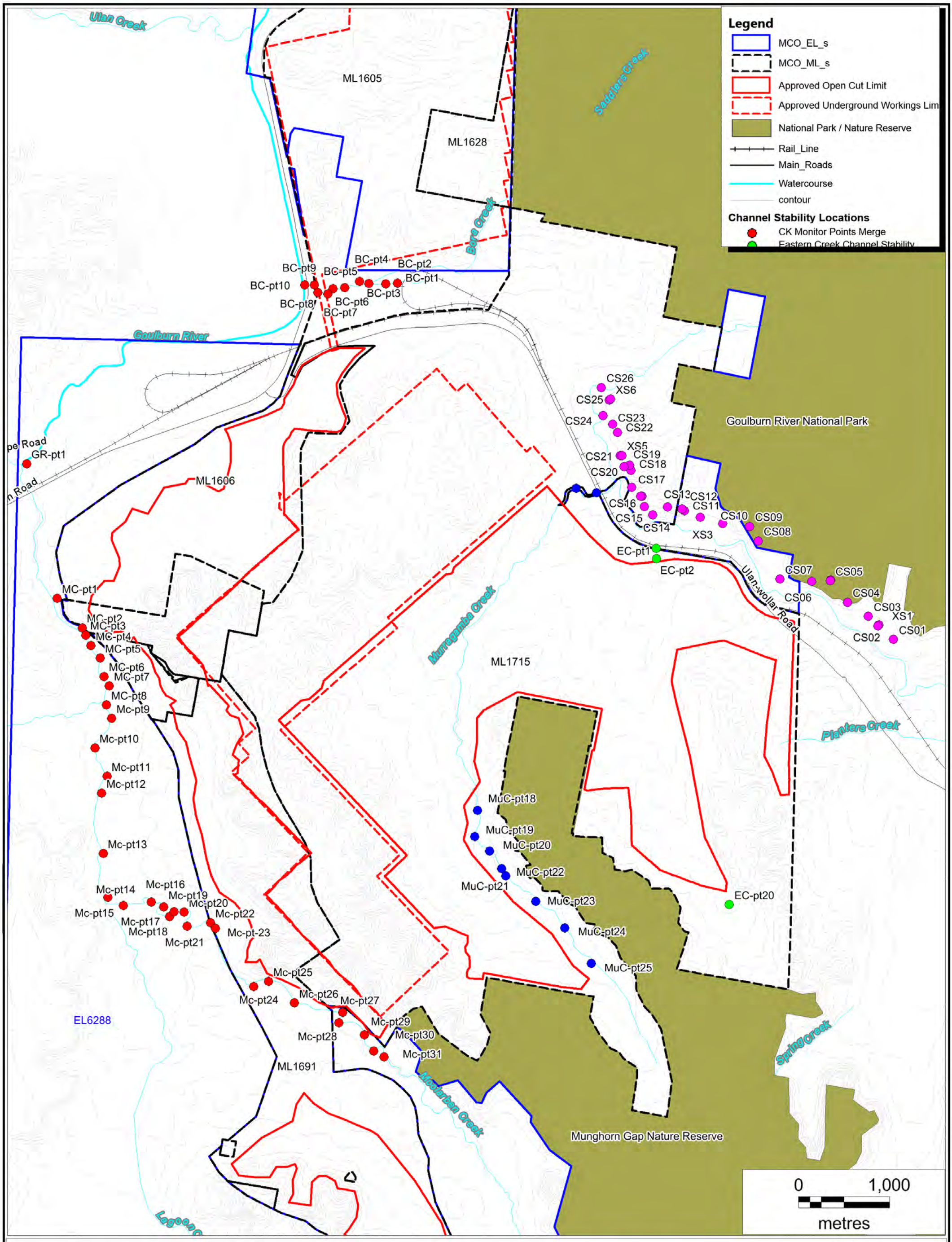


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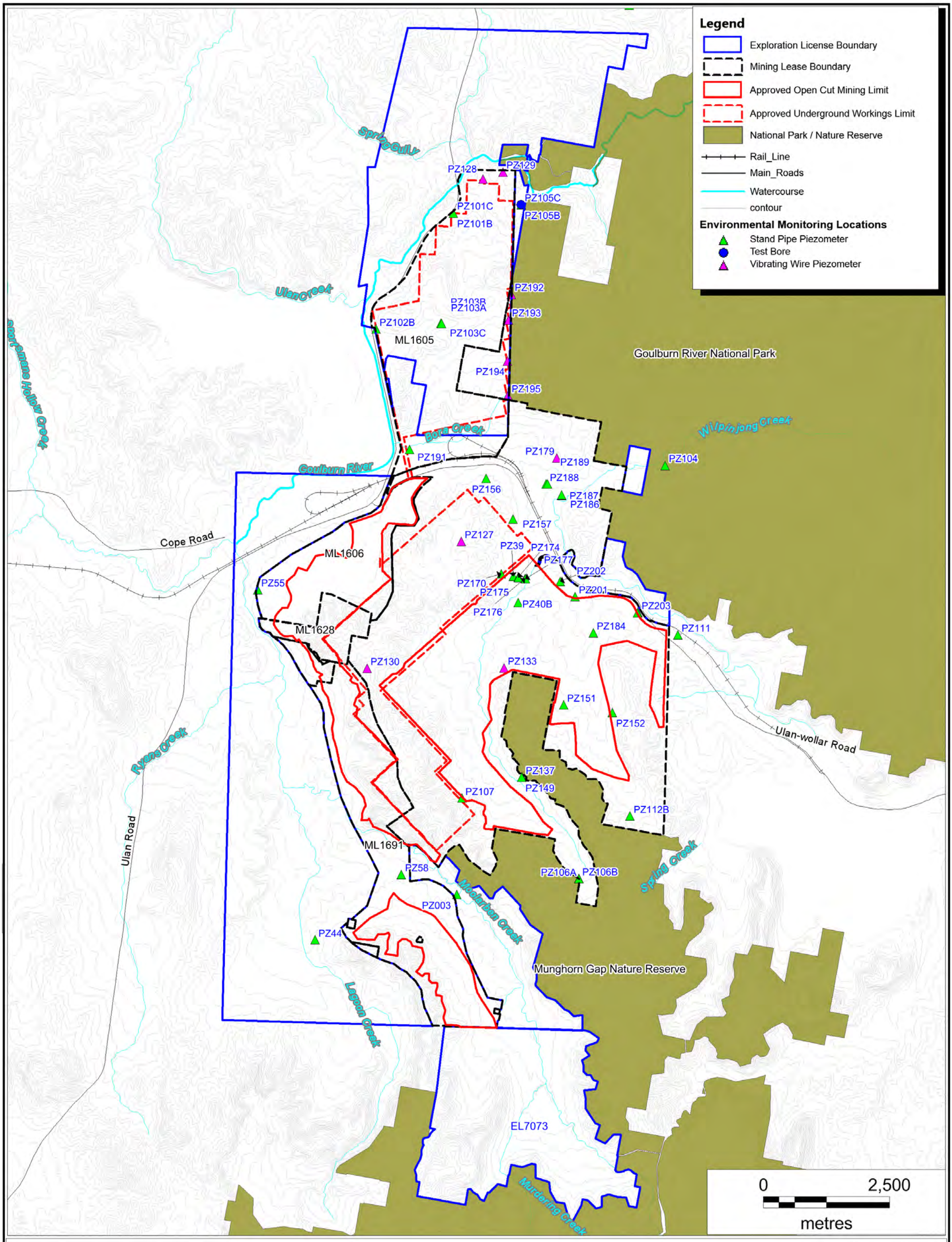
**Figure 2J**
**Channel Stability Monitoring Locations**

File: O:\7.0 Reporting\7.2 External\AR\2016\Figures\MapInfo Workspaces\2J Channel stability Monitoring.wor

Date: 30/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

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# Figure 2K
# Groundwater Monitoring Locations

Date: 31/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

File: O:\7.0 Reporting\7.2 External\AR\2016\Figures\Mapinfo Workspaces\2k GW Monitoring wor


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# Figure 2L
# Floristic and Fauna Monitoring Sites

Date: 31/03/2017
Produced By: Craig Hawkins
Map Size: A3 Portrait
Coordinate System: MGA94 Zone 55
Revision 0
Data Source
Land and Property Information (2014)
Moolarben Coal Operations Pty Ltd (2017)

# APPENDIX 3. MONITORING DATA

## APPENDIX 3A. METEOROLOGICAL DATA (WS03)

| Date | Temperature (2m) ($^0$C) | | Temperature (10m) ($^0$C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 01/01/16 | 15.8 | 30.3 | 15.7 | 29.5 | 51.2 | 0.0 |
| 02/01/16 | 16.0 | 26.2 | 16.1 | 25.8 | 58.7 | 0.0 |
| 03/01/16 | 14.9 | 20.5 | 15.0 | 20.5 | 82.9 | 3.4 |
| 04/01/16 | 15.7 | 22.3 | 15.5 | 21.6 | 79.3 | 1.0 |
| 05/01/16 | 15.5 | 21.6 | 15.8 | 21.2 | 84.1 | 1.2 |
| 06/01/16 | 9.7 | 23.9 | 10.7 | 23.6 | 72.1 | 0.0 |
| 07/01/16 | 10.1 | 26.2 | 11.5 | 25.6 | 64.1 | 0.0 |
| 08/01/16 | 13.6 | 29.0 | 14.8 | 28.7 | 57.6 | 0.0 |
| 09/01/16 | 13.9 | 31.2 | 15.3 | 30.1 | 62.0 | 0.0 |
| 10/01/16 | 14.6 | 33.8 | 15.8 | 33.0 | 59.5 | 0.0 |
| 11/01/16 | 17.2 | 36.6 | 18.9 | 35.7 | 49.0 | 0.0 |
| 12/01/16 | 18.5 | 36.6 | 18.7 | 35.4 | 52.3 | 0.0 |
| 13/01/16 | 19.0 | 36.9 | 19.2 | 36.7 | 60.4 | 0.0 |
| 14/01/16 | 13.9 | 37.8 | 13.9 | 36.9 | 62.6 | 33.8 |
| 15/01/16 | 11.7 | 19.1 | 11.5 | 19.2 | 76.2 | 8.6 |
| 16/01/16 | 12.0 | 22.5 | 13.1 | 21.9 | 67.2 | 0.0 |
| 17/01/16 | 11.2 | 24.0 | 12.3 | 23.2 | 70.4 | 0.0 |
| 18/01/16 | 11.5 | 28.7 | 12.6 | 27.9 | 66.1 | 0.0 |
| 19/01/16 | 13.2 | 32.6 | 14.4 | 31.9 | 55.0 | 0.0 |
| 20/01/16 | 17.8 | 35.1 | 17.9 | 34.3 | 46.1 | 0.0 |
| 21/01/16 | 20.4 | 36.0 | 20.6 | 35.1 | 64.1 | 3.2 |
| 22/01/16 | 20.5 | 33.6 | 20.8 | 32.6 | 85.0 | 27.4 |
| 23/01/16 | 16.9 | 29.3 | 17.3 | 28.9 | 69.4 | 0.0 |
| 24/01/16 | 18.5 | 30.4 | 18.4 | 28.6 | 71.1 | 0.0 |
| 25/01/16 | 17.6 | 28.0 | 18.2 | 27.4 | 71.1 | 2.2 |
| 26/01/16 | 17.6 | 28.0 | 17.6 | 28.0 | 68.7 | 0.0 |
| 27/01/16 | 17.0 | 19.6 | 16.8 | 19.3 | 92.6 | 24.6 |
| 28/01/16 | 18.3 | 29.5 | 18.3 | 28.9 | 81.6 | 0.2 |
| 29/01/16 | 14.0 | 26.4 | 14.9 | 25.4 | 86.2 | 6.2 |
| 30/01/16 | 11.8 | 32.1 | 12.6 | 31.1 | 54.7 | 0.0 |
| 31/01/16 | 12.9 | 26.3 | 14.3 | 25.2 | 48.5 | 0.0 |
| 01/02/16 | 9.0 | 27.5 | 9.8 | 26.6 | 61.4 | 0.0 |
| 02/02/16 | 13.7 | 28.3 | 12.4 | 27.8 | 57.9 | 0.0 |
| 03/02/16 | 17.0 | 30.2 | 17.4 | 29.8 | 72.5 | 5.4 |
| 04/02/16 | 12.6 | 23.5 | 14.2 | 23.3 | 69.6 | 0.2 |
| 05/02/16 | 16.1 | 22.4 | 15.6 | 22.2 | 65.8 | 0.0 |
| 06/02/16 | 14.5 | 23.8 | 15.4 | 23.5 | 71.7 | 0.0 |
| 07/02/16 | 11.1 | 26.1 | 12.5 | 26.1 | 69.7 | 0.0 |
| 08/02/16 | 12.8 | 28.1 | 14.0 | 28.0 | 67.0 | 0.0 |
| 09/02/16 | 12.1 | 28.0 | 13.3 | 27.6 | 67.2 | 0.0 |
| 10/02/16 | 14.1 | 31.2 | 14.5 | 30.1 | 65.8 | 0.0 |
| 11/02/16 | 14.4 | 31.9 | 15.8 | 30.7 | 64.8 | 0.2 |
| 12/02/16 | 13.9 | 30.1 | 15.3 | 29.7 | 65.7 | 0.0 |
| 13/02/16 | 13.5 | 32.9 | 14.8 | 32.0 | 62.3 | 0.0 |
| 14/02/16 | 16.2 | 35.6 | 15.7 | 35.1 | 51.0 | 0.0 |
| 15/02/16 | 11.0 | 35.0 | 12.9 | 34.2 | 49.3 | 0.0 |
| 16/02/16 | 13.2 | 29.6 | 13.6 | 28.7 | 49.7 | 0.0 |
| 17/02/16 | 10.2 | 28.8 | 11.7 | 28.1 | 53.1 | 0.0 |
| 18/02/16 | 13.0 | 30.3 | 14.1 | 29.6 | 65.7 | 0.0 |
| 19/02/16 | 13.7 | 33.3 | 15.1 | 32.4 | 55.3 | 0.0 |
| 20/02/16 | 15.1 | 31.5 | 15.5 | 30.2 | 65.6 | 0.4 |
| 21/02/16 | 17.5 | 30.6 | 18.2 | 29.9 | 65.7 | 0.0 |
| 22/02/16 | 13.1 | 31.6 | 14.1 | 30.8 | 61.0 | 0.0 |
| 23/02/16 | 13.3 | 33.6 | 15.0 | 32.7 | 52.2 | 0.0 |

| Date | Temperature (2m) (°C) | | Temperature (10m) (°C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 24/02/16 | 14.0 | 36.3 | 15.4 | 35.0 | 48.7 | 0.0 |
| 25/02/16 | 15.4 | 36.8 | 16.4 | 35.9 | 41.9 | 0.0 |
| 26/02/16 | 17.2 | 37.5 | 17.5 | 36.3 | 54.0 | 0.0 |
| 27/02/16 | 13.9 | 27.2 | 15.1 | 26.3 | 68.1 | 0.0 |
| 28/02/16 | 15.0 | 32.4 | 15.6 | 31.5 | 60.5 | 0.0 |
| 29/02/16 | 16.2 | 28.9 | 16.8 | 28.2 | 50.1 | 0.0 |
| 01/03/16 | 13.6 | 30.1 | 14.5 | 29.3 | 59.6 | 0.0 |
| 02/03/16 | 14.2 | 34.6 | 15.1 | 32.9 | 52.7 | 0.0 |
| 03/03/16 | 15.1 | 35.8 | 16.1 | 34.3 | 53.7 | 0.0 |
| 04/03/16 | 13.7 | 31.0 | 15.2 | 30.3 | 66.6 | 0.0 |
| 05/03/16 | 12.0 | 34.2 | 13.5 | 33.0 | 62.6 | 0.0 |
| 06/03/16 | 12.8 | 32.4 | 14.2 | 31.7 | 59.7 | 0.0 |
| 07/03/16 | 14.9 | 34.7 | 16.7 | 33.5 | 56.9 | 0.0 |
| 08/03/16 | 18.7 | 31.0 | 18.8 | 30.2 | 63.3 | 0.0 |
| 09/03/16 | 17.8 | 33.9 | 18.9 | 32.3 | 60.1 | 0.0 |
| 10/03/16 | 18.2 | 33.4 | 19.0 | 32.6 | 67.1 | 0.2 |
| 11/03/16 | 15.4 | 33.9 | 16.2 | 33.2 | 77.1 | 1.8 |
| 12/03/16 | 15.5 | 32.7 | 16.3 | 32.4 | 73.5 | 0.8 |
| 13/03/16 | 16.0 | 32.9 | 17.3 | 32.1 | 66.9 | 0.0 |
| 14/03/16 | 16.7 | 29.6 | 18.0 | 28.1 | 79.9 | 2.6 |
| 15/03/16 | 17.1 | 27.0 | 17.8 | 25.9 | 71.8 | 0.0 |
| 16/03/16 | 14.0 | 23.6 | 15.6 | 23.2 | 76.1 | 0.0 |
| 17/03/16 | 15.0 | 25.6 | 16.2 | 24.6 | 74.4 | 0.0 |
| 18/03/16 | 6.4 | 26.9 | 7.3 | 25.7 | 86.0 | 13.0 |
| 19/03/16 | 6.5 | 23.8 | 7.8 | 22.7 | 60.8 | 0.0 |
| 20/03/16 | 8.1 | 21.8 | 9.6 | 21.2 | 68.6 | 0.0 |
| 21/03/16 | 6.8 | 21.3 | 8.2 | 21.0 | 73.0 | 0.0 |
| 22/03/16 | 6.8 | 24.3 | 8.3 | 23.7 | 69.7 | 0.0 |
| 23/03/16 | 7.0 | 26.8 | 8.6 | 26.1 | 56.5 | 0.0 |
| 24/03/16 | 9.2 | 29.5 | 10.5 | 28.9 | 51.3 | 0.0 |
| 25/03/16 | 9.5 | 25.8 | 10.3 | 25.3 | 51.3 | 0.2 |
| 26/03/16 | 9.5 | 25.8 | 9.5 | 25.8 | 63.6 | 0.0 |
| 27/03/16 | 10.0 | 30.5 | 11.1 | 29.9 | 63.9 | 0.0 |
| 28/03/16 | 12.5 | 30.0 | 13.7 | 28.8 | 56.2 | 1.0 |
| 29/03/16 | 12.5 | 25.9 | 13.6 | 25.0 | 60.6 | 0.0 |
| 30/03/16 | 5.2 | 23.7 | 5.9 | 22.8 | 58.5 | 0.0 |
| 31/03/16 | 5.3 | 25.9 | 6.5 | 25.2 | 50.4 | 0.0 |
| 01/04/16 | 7.0 | 28.5 | 8.4 | 27.7 | 54.6 | 0.0 |
| 02/04/16 | 8.1 | 29.4 | 9.7 | 28.7 | 38.4 | 0.0 |
| 03/04/16 | 6.8 | 27.8 | 8.1 | 27.2 | 53.9 | 0.0 |
| 04/04/16 | 12.8 | 29.1 | 14.4 | 28.4 | 67.3 | 0.0 |
| 05/04/16 | 12.8 | 31.1 | 14.4 | 29.8 | 65.6 | 0.0 |
| 06/04/16 | 11.5 | 32.6 | 13.4 | 31.9 | 52.5 | 0.0 |
| 07/04/16 | 12.9 | 30.3 | 14.4 | 29.4 | 56.4 | 0.0 |
| 08/04/16 | 12.5 | 23.2 | 14.3 | 22.7 | 74.2 | 0.0 |
| 09/04/16 | 8.6 | 28.7 | 9.5 | 27.7 | 63.0 | 0.0 |
| 10/04/16 | 8.6 | 27.8 | 10.0 | 27.0 | 50.9 | 0.0 |
| 11/04/16 | 8.4 | 24.6 | 9.7 | 24.2 | 50.0 | 0.0 |
| 12/04/16 | 7.9 | 24.5 | 10.0 | 23.9 | 67.3 | 0.0 |
| 13/04/16 | 9.2 | 23.7 | 11.0 | 23.1 | 68.7 | 0.0 |
| 14/04/16 | 12.3 | 25.7 | 13.9 | 25.1 | 69.3 | 0.0 |
| 15/04/16 | 10.0 | 27.0 | 11.8 | 26.2 | 70.8 | 0.0 |
| 16/04/16 | 8.3 | 26.7 | 9.3 | 26.1 | 58.2 | 0.0 |
| 17/04/16 | 9.1 | 23.7 | 10.6 | 23.3 | 69.2 | 0.0 |
| 18/04/16 | 10.5 | 21.0 | 12.0 | 20.8 | 83.3 | 3.2 |
| 19/04/16 | 8.6 | 24.6 | 9.9 | 24.3 | 73.7 | 0.2 |
| 20/04/16 | 7.5 | 26.0 | 9.3 | 25.4 | 73.8 | 0.0 |
| 21/04/16 | 9.6 | 26.5 | 11.3 | 25.8 | 66.1 | 0.0 |
| 22/04/16 | 7.2 | 25.4 | 8.2 | 24.7 | 75.3 | 1.4 |

| Date | Temperature (2m) (°C) | | Temperature (10m) (°C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 23/04/16 | 8.4 | 21.1 | 9.6 | 20.9 | 73.5 | 0.0 |
| 24/04/16 | 7.0 | 21.1 | 8.3 | 20.8 | 65.4 | 0.0 |
| 25/04/16 | 8.1 | 21.8 | 10.4 | 21.2 | 67.4 | 0.0 |
| 26/04/16 | 6.9 | 22.5 | 8.7 | 21.9 | 74.6 | 0.0 |
| 27/04/16 | 7.2 | 24.3 | 8.9 | 23.5 | 69.4 | 0.0 |
| 28/04/16 | 7.7 | 25.8 | 9.0 | 25.2 | 69.7 | 0.0 |
| 29/04/16 | 6.8 | 25.8 | 8.2 | 24.7 | 70.3 | 0.0 |
| 30/04/16 | 11.8 | 19.4 | 13.9 | 19.2 | 91.1 | 21.0 |
| 01/05/16 | 13.2 | 21.7 | 13.8 | 21.2 | 90.0 | 20.8 |
| 02/05/16 | 9.3 | 21.5 | 9.8 | 20.4 | 82.9 | 10.8 |
| 03/05/16 | 9.8 | 20.8 | 12.2 | 20.1 | 77.0 | 3.8 |
| 04/05/16 | 8.0 | 21.9 | 9.7 | 21.3 | 74.0 | 0.0 |
| 05/05/16 | 5.6 | 22.2 | 6.7 | 21.6 | 76.5 | 0.0 |
| 06/05/16 | 6.1 | 24.2 | 7.0 | 23.9 | 76.9 | 0.0 |
| 07/05/16 | 5.7 | 23.8 | 6.6 | 23.9 | 76.7 | 0.0 |
| 08/05/16 | 12.6 | 21.6 | 13.6 | 21.2 | 81.7 | 0.4 |
| 09/05/16 | 14.9 | 18.6 | 15.2 | 18.3 | 93.7 | 13.8 |
| 10/05/16 | 11.1 | 17.8 | 11.2 | 17.2 | 80.4 | 0.2 |
| 11/05/16 | 7.4 | 15.6 | 7.9 | 15.2 | 68.5 | 0.0 |
| 12/05/16 | 9.0 | 17.1 | 9.2 | 16.5 | 73.2 | 0.0 |
| 13/05/16 | 6.6 | 20.9 | 7.8 | 20.5 | 76.8 | 0.0 |
| 14/05/16 | 2.8 | 24.9 | 4.3 | 24.5 | 72.2 | 0.0 |
| 15/05/16 | 3.0 | 21.2 | 4.5 | 20.8 | 72.1 | 0.0 |
| 16/05/16 | 5.1 | 22.1 | 6.3 | 21.9 | 77.3 | 0.0 |
| 17/05/16 | 6.5 | 22.6 | 7.9 | 22.2 | 76.8 | 0.2 |
| 18/05/16 | 5.3 | 18.4 | 6.5 | 18.0 | 76.0 | 0.0 |
| 19/05/16 | 2.9 | 17.3 | 3.6 | 17.0 | 76.4 | 0.0 |
| 20/05/16 | 5.2 | 20.9 | 6.4 | 20.4 | 72.7 | 0.0 |
| 21/05/16 | 4.2 | 17.8 | 5.9 | 17.8 | 86.4 | 0.0 |
| 22/05/16 | 6.8 | 23.6 | 8.0 | 23.1 | 82.2 | 0.2 |
| 23/05/16 | 2.3 | 21.2 | 4.2 | 20.7 | 70.7 | 0.0 |
| 24/05/16 | 0.7 | 15.5 | 2.8 | 15.4 | 71.6 | 0.0 |
| 25/05/16 | -0.7 | 17.2 | 0.6 | 16.8 | 71.6 | 0.0 |
| 26/05/16 | -0.7 | 17.2 | -0.7 | 17.2 | 86.7 | 9.6 |
| 27/05/16 | 4.6 | 12.7 | 6.3 | 12.4 | 72.8 | 0.0 |
| 28/05/16 | 2.3 | 10.2 | 3.5 | 10.1 | 88.8 | 4.6 |
| 29/05/16 | -0.9 | 12.6 | 0.3 | 12.3 | 83.2 | 0.4 |
| 30/05/16 | -4.1 | 13.2 | -3.6 | 13.4 | 79.6 | 0.2 |
| 31/05/16 | -1.2 | 15.8 | -0.5 | 16.0 | 79.5 | 0.0 |
| 01/06/16 | 3.9 | 15.5 | 5.9 | 15.6 | 83.2 | 0.0 |
| 02/06/16 | 4.8 | 14.8 | 5.8 | 14.5 | 86.8 | 0.0 |
| 03/06/16 | 9.9 | 13.8 | 10.4 | 14.0 | 89.5 | 3.6 |
| 04/06/16 | 12.0 | 14.9 | 12.1 | 14.8 | 95.5 | 23.6 |
| 05/06/16 | 10.0 | 13.1 | 10.0 | 13.1 | 91.1 | 0.4 |
| 06/06/16 | 6.9 | 11.9 | 7.2 | 11.5 | 80.1 | 0.8 |
| 07/06/16 | 8.1 | 12.4 | 8.3 | 11.9 | 87.1 | 1.4 |
| 08/06/16 | 7.5 | 15.7 | 8.0 | 15.1 | 80.1 | 0.0 |
| 09/06/16 | 10.4 | 15.5 | 10.6 | 14.9 | 85.7 | 11.8 |
| 10/06/16 | 8.8 | 13.5 | 9.0 | 13.0 | 84.1 | 3.0 |
| 11/06/16 | 2.6 | 12.4 | 3.8 | 12.1 | 71.3 | 0.0 |
| 12/06/16 | -0.9 | 13.5 | 0.1 | 13.6 | 79.5 | 0.2 |
| 13/06/16 | 0.0 | 15.5 | 1.1 | 15.5 | 85.0 | 0.0 |
| 14/06/16 | 1.5 | 17.2 | 2.4 | 17.0 | 85.2 | 0.2 |
| 15/06/16 | -0.1 | 16.0 | 0.6 | 16.0 | 86.6 | 0.0 |
| 16/06/16 | 2.2 | 17.9 | 3.3 | 17.2 | 84.5 | 0.2 |
| 17/06/16 | 4.5 | 14.6 | 5.6 | 14.4 | 94.5 | 4.2 |
| 18/06/16 | 8.4 | 16.1 | 9.5 | 15.7 | 95.7 | 7.8 |
| 19/06/16 | 8.7 | 13.7 | 9.4 | 13.8 | 97.1 | 17.0 |
| 20/06/16 | 8.4 | 12.0 | 8.5 | 12.1 | 95.3 | 18.6 |

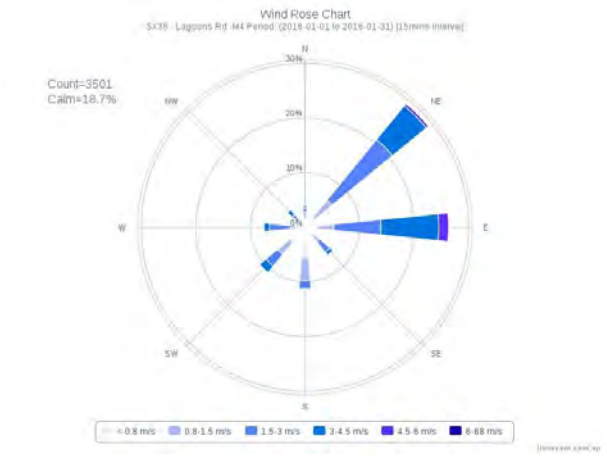
| Date | Temperature (2m) (°C) | | Temperature (10m) (°C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 21/06/16 | 7.8 | 11.0 | 7.9 | 10.5 | 83.6 | 2.6 |
| 22/06/16 | 5.8 | 13.6 | 6.3 | 13.2 | 85.1 | 11.4 |
| 23/06/16 | 2.0 | 13.3 | 2.4 | 12.6 | 88.8 | 3.2 |
| 24/06/16 | 4.3 | 11.2 | 4.4 | 11.3 | 81.1 | 3.8 |
| 25/06/16 | -1.1 | 8.3 | 0.7 | 8.1 | 76.8 | 0.0 |
| 26/06/16 | -3.1 | 9.8 | -2.5 | 9.2 | 80.9 | 0.2 |
| 27/06/16 | 3.9 | 6.2 | 3.7 | 6.1 | 83.1 | 0.4 |
| 28/06/16 | -1.0 | 10.9 | 0.0 | 10.5 | 72.9 | 0.2 |
| 29/06/16 | -3.6 | 14.8 | -2.8 | 14.7 | 84.5 | 0.0 |
| 30/06/16 | -3.7 | 12.0 | -2.8 | 11.3 | 81.8 | 0.0 |
| 01/07/16 | 5.5 | 9.3 | 5.7 | 8.8 | 78.1 | 0.4 |
| 02/07/16 | 0.7 | 13.3 | 2.2 | 13.1 | 80 | 0.0 |
| 03/07/16 | -2.4 | 12.8 | -1.5 | 12.6 | 84.8 | 0.0 |
| 04/07/16 | -2.8 | 14.7 | -2.6 | 14.0 | 86.5 | 0.0 |
| 05/07/16 | 5.1 | 11.5 | 5.2 | 10.9 | 92.8 | 28.0 |
| 06/07/16 | 5.1 | 9.3 | 5.0 | 9.4 | 92 | 3.0 |
| 07/07/16 | 7.4 | 16.3 | 7.7 | 16.2 | 87.5 | 0.2 |
| 08/07/16 | 3.5 | 14.1 | 4.3 | 13.7 | 93.5 | 14.4 |
| 09/07/16 | 1.0 | 14.4 | 1.4 | 14.2 | 90.3 | 0.2 |
| 10/07/16 | 1.7 | 16.2 | 2.4 | 15.3 | 88.3 | 0.0 |
| 11/07/16 | 4.6 | 18.0 | 5.4 | 17.4 | 89 | 3.6 |
| 12/07/16 | 8.6 | 14.2 | 8.9 | 13.6 | 68.8 | 0.0 |
| 13/07/16 | -1.0 | 9.2 | -0.4 | 8.9 | 65.8 | 0.0 |
| 14/07/16 | -1.3 | 12.0 | 0.2 | 11.7 | 75.9 | 0.0 |
| 15/07/16 | -4.1 | 13.4 | -3.4 | 13.0 | 76.4 | 0.2 |
| 16/07/16 | -1.5 | 15.5 | -0.9 | 15.5 | 83.5 | 0.0 |
| 17/07/16 | 5.9 | 15.8 | 8.4 | 15.7 | 88 | 0.0 |
| 18/07/16 | 8.1 | 20.3 | 9.5 | 19.6 | 87.2 | 0.0 |
| 19/07/16 | 8.2 | 19.7 | 9.8 | 19.2 | 92.6 | 4.6 |
| 20/07/16 | 9.6 | 16.3 | 10.5 | 16.1 | 98 | 38.6 |
| 21/07/16 | 6.8 | 16.5 | 7.2 | 16.6 | 94.1 | 0.0 |
| 22/07/16 | 10.9 | 20.9 | 11.2 | 20.4 | 86.1 | 0.2 |
| 23/07/16 | 5.1 | 19.6 | 5.4 | 19.9 | 63.9 | 0.0 |
| 24/07/16 | -0.9 | 9.4 | -0.5 | 8.8 | 75.6 | 0.0 |
| 25/07/16 | 4.1 | 11.5 | 4.4 | 10.9 | 75.8 | 0.6 |
| 26/07/16 | 3.9 | 13.7 | 4.3 | 13.3 | 74.2 | 0.0 |
| 27/07/16 | 5.3 | 12.9 | 5.8 | 12.6 | 75 | 1.6 |
| 28/07/16 | 2.7 | 13.4 | 4.1 | 13.1 | 80.8 | 0.2 |
| 29/07/16 | -1.1 | 11.4 | -0.2 | 11.1 | 84.1 | 0.0 |
| 30/07/16 | -1.4 | 15.1 | -1.0 | 15.1 | 81.9 | 0.0 |
| 31/07/16 | 0.5 | 15.6 | 1.4 | 15.1 | 82.1 | 0.0 |
| 01/08/16 | 3.8 | 15.3 | 4.6 | 15.1 | 84.5 | 0.0 |
| 02/08/16 | 3.9 | 15.0 | 5.0 | 15.0 | 87 | 12.0 |
| 03/08/16 | 6.5 | 12.9 | 7.6 | 12.9 | 78 | 5.6 |
| 04/08/16 | 3.1 | 13.8 | 5.0 | 13.9 | 71.3 | 0.0 |
| 05/08/16 | 0.0 | 13.8 | 1.1 | 13.6 | 80.6 | 0.2 |
| 06/08/16 | 2.4 | 14.4 | 3.9 | 14.4 | 77.5 | 0.0 |
| 07/08/16 | 6.7 | 14.1 | 7.5 | 14.1 | 84.9 | 0.0 |
| 08/08/16 | 2.0 | 16.4 | 3.0 | 16.3 | 78.6 | 0.0 |
| 09/08/16 | 0.6 | 17.2 | 1.4 | 16.4 | 77 | 0.0 |
| 10/08/16 | 4.1 | 21.3 | 5.4 | 20.8 | 77.9 | 0.8 |
| 11/08/16 | 2.1 | 15.3 | 3.7 | 14.6 | 75.3 | 0.2 |
| 12/08/16 | -2.6 | 12.8 | -2.2 | 11.9 | 75.1 | 0.0 |
| 13/08/16 | -0.8 | 15.4 | 0.0 | 15.0 | 77.4 | 0.0 |
| 14/08/16 | 1.1 | 17.0 | 2.0 | 16.8 | 73.9 | 0.2 |
| 15/08/16 | 1.3 | 19.1 | 2.2 | 18.8 | 75.6 | 0.0 |
| 16/08/16 | 1.3 | 19.7 | 2.2 | 19.6 | 78 | 0.2 |
| 17/08/16 | 1.2 | 18.9 | 2.3 | 18.4 | 75.8 | 0.0 |
| 18/08/16 | 0.8 | 20.4 | 2.0 | 19.6 | 72.7 | 0.2 |

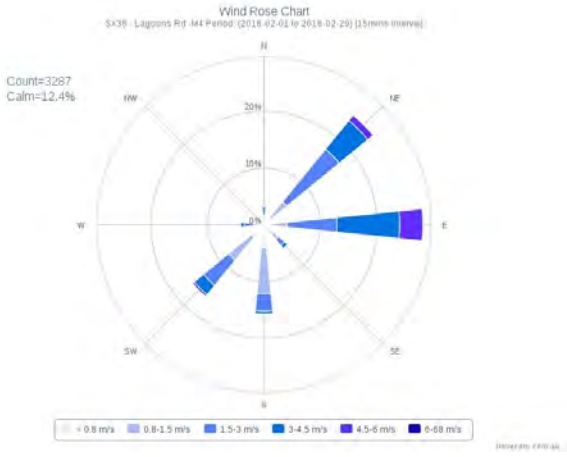
| Date | Temperature (2m) (°C) | | Temperature (10m) (°C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 19/08/16 | 1.4 | 17.3 | 2.5 | 16.6 | 75.4 | 2.2 |
| 20/08/16 | 1.3 | 11.8 | 3.3 | 11.1 | 80 | 5.6 |
| 21/08/16 | -2.1 | 15.1 | -1.7 | 14.8 | 79.7 | 0.0 |
| 22/08/16 | 1.3 | 9.0 | 2.4 | 8.4 | 96.2 | 11.2 |
| 23/08/16 | 7.2 | 12.9 | 7.1 | 12.3 | 85.7 | 0.4 |
| 24/08/16 | 7.7 | 11.4 | 7.8 | 11.2 | 90.3 | 9.0 |
| 25/08/16 | 1.8 | 12.6 | 3.4 | 12.1 | 78.6 | 0.4 |
| 26/08/16 | -0.1 | 13.6 | 1.5 | 13.5 | 72.6 | 0.0 |
| 27/08/16 | -1.7 | 15.3 | -1.2 | 14.9 | 72.4 | 0.2 |
| 28/08/16 | -2.2 | 15.4 | -1.8 | 15.0 | 75.8 | 0.0 |
| 29/08/16 | -0.7 | 18.3 | 0.3 | 17.6 | 71.4 | 0.0 |
| 30/08/16 | 2.1 | 21.2 | 3.5 | 20.4 | 77.8 | 0.0 |
| 31/08/16 | 9.7 | 16.8 | 11.1 | 16.5 | 89.4 | 14.4 |
| 01/09/16 | 8.0 | 19.5 | 8.9 | 18.9 | 84.5 | 9.8 |
| 02/09/16 | 11.7 | 14.9 | 11.7 | 14.9 | 96.4 | 46.0 |
| 03/09/16 | 7.4 | 13.3 | 7.9 | 13.2 | 77.9 | 4.0 |
| 04/09/16 | 4.0 | 14.4 | 5.1 | 14.1 | 76.2 | 0.4 |
| 05/09/16 | 0.1 | 19.5 | 0.8 | 18.8 | 73.7 | 0.0 |
| 06/09/16 | 2.0 | 19.8 | 2.6 | 19.1 | 75.2 | 0.0 |
| 07/09/16 | 3.8 | 20.2 | 4.9 | 20.1 | 76 | 0.0 |
| 08/09/16 | 6.8 | 20.6 | 8.3 | 19.7 | 76.5 | 0.0 |
| 09/09/16 | 6.8 | 19.9 | 8.4 | 18.9 | 82.3 | 9.0 |
| 10/09/16 | 8.4 | 15.8 | 8.5 | 15.2 | 80.3 | 6.2 |
| 11/09/16 | 5.3 | 16.6 | 6.9 | 16.2 | 75.4 | 0.0 |
| 12/09/16 | 2.6 | 20.2 | 3.4 | 19.5 | 73.7 | 0.0 |
| 13/09/16 | 5.0 | 20.0 | 5.9 | 18.9 | 84.7 | 7.8 |
| 14/09/16 | 12.0 | 18.7 | 12.0 | 17.9 | 91.5 | 21.2 |
| 15/09/16 | 8.1 | 15.7 | 8.2 | 14.9 | 69.7 | 0.0 |
| 16/09/16 | 5.4 | 16.9 | 6.1 | 16.2 | 80 | 1.0 |
| 17/09/16 | 3.5 | 18.1 | 4.3 | 17.5 | 78.8 | 0.2 |
| 18/09/16 | 9.6 | 14.4 | 9.6 | 14.4 | 95.8 | 42.0 |
| 19/09/16 | 3.3 | 12.7 | 5.5 | 12.1 | 83.9 | 0.2 |
| 20/09/16 | 0.6 | 16.5 | 1.2 | 16.1 | 78.5 | 0.2 |
| 21/09/16 | 9.8 | 17.1 | 9.8 | 16.8 | 86.7 | 10.4 |
| 22/09/16 | 9.8 | 14.7 | 9.8 | 14.2 | 76.1 | 0.4 |
| 23/09/16 | 7.5 | 19.9 | 8.0 | 19.3 | 73.1 | 0.0 |
| 24/09/16 | 5.2 | 21.0 | 6.1 | 20.1 | 73.7 | 0.0 |
| 25/09/16 | 8.5 | 16.3 | 9.0 | 16.0 | 83.3 | 13.0 |
| 26/09/16 | 3.9 | 15.5 | 4.5 | 14.8 | 75.7 | 0.2 |
| 27/09/16 | 1.6 | 17.9 | 2.1 | 17.3 | 68.9 | 0.0 |
| 28/09/16 | 1.0 | 20.0 | 1.8 | 19.4 | 65.6 | 0.0 |
| 29/09/16 | 7.7 | 16.6 | 8.7 | 15.8 | 70.5 | 13.4 |
| 30/09/16 | 5.6 | 10.1 | 5.4 | 10.3 | 75.2 | 9.8 |
| 01/10/16 | 6.0 | 16.7 | 7.2 | 16.2 | 71.3 | 0.4 |
| 02/10/16 | 3.2 | 23.0 | 4.2 | 22.0 | 65.2 | 0.0 |
| 03/10/16 | 9.8 | 16.6 | 10.4 | 16.9 | 64.4 | 2.0 |
| 04/10/16 | 5.2 | 17.8 | 5.7 | 17.3 | 61.9 | 0.8 |
| 05/10/16 | 6.1 | 16.4 | 6.4 | 15.7 | 57.2 | 0.2 |
| 06/10/16 | 6.8 | 22.3 | 7.7 | 21.7 | 60.2 | 0.0 |
| 07/10/16 | 5.6 | 24.7 | 6.5 | 24.2 | 66.7 | 0.0 |
| 08/10/16 | 9.5 | 25.4 | 10.7 | 24.8 | 62.2 | 0.0 |
| 09/10/16 | 11.7 | 22.5 | 11.7 | 22.0 | 67.9 | 0.0 |
| 10/10/16 | 9.3 | 27.4 | 10.5 | 26.9 | 63.4 | 0.0 |
| 11/10/16 | 4.0 | 14.2 | 4.8 | 13.7 | 64.7 | 1.4 |
| 12/10/16 | 1.2 | 16.3 | 1.9 | 15.9 | 68.7 | 0.0 |
| 13/10/16 | 2.8 | 17.1 | 3.4 | 16.9 | 69.8 | 0.2 |
| 14/10/16 | 2.1 | 19.8 | 3.1 | 19.2 | 68.9 | 0.0 |
| 15/10/16 | 2.2 | 22.0 | 3.2 | 21.3 | 68.0 | 0.0 |
| 16/10/16 | 4.5 | 24.5 | 5.5 | 23.5 | 60.8 | 0.0 |

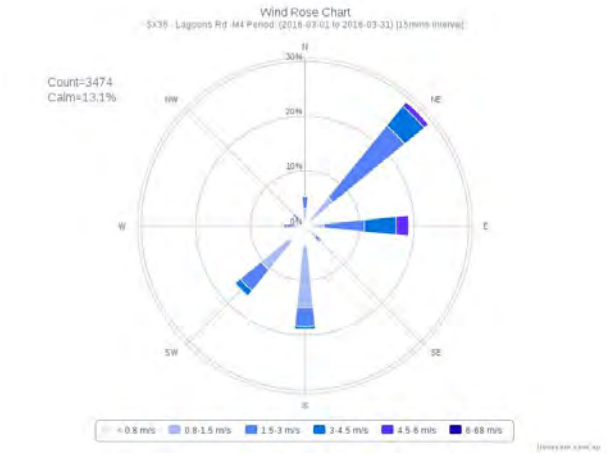
| Date | Temperature (2m) (°C) | | Temperature (10m) (°C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 17/10/16 | 7.2 | 19.1 | 8.3 | 19.5 | 81.4 | 19.0 |
| 18/10/16 | 3.1 | 19.3 | 4.1 | 18.5 | 68.4 | 0.2 |
| 19/10/16 | 4.8 | 18.2 | 5.8 | 17.5 | 64.0 | 0.0 |
| 20/10/16 | 4.2 | 23.1 | 5.3 | 21.7 | 66.3 | 0.0 |
| 21/10/16 | 5.2 | 26.1 | 6.2 | 24.8 | 76.9 | 4.6 |
| 22/10/16 | 3.2 | 17.1 | 4.7 | 17.4 | 78.4 | 36.2 |
| 23/10/16 | 2.3 | 17.4 | 3.8 | 16.8 | 62.1 | 0.0 |
| 24/10/16 | 1.2 | 18.3 | 1.8 | 17.9 | 66.5 | 0.0 |
| 25/10/16 | 3.4 | 22.0 | 4.2 | 21.3 | 66.5 | 0.0 |
| 26/10/16 | 5.7 | 25.9 | 6.5 | 25.2 | 61.7 | 0.0 |
| 27/10/16 | 8.4 | 28.8 | 10.4 | 28.3 | 60.8 | 0.0 |
| 28/10/16 | 14.2 | 22.1 | 14.2 | 22.2 | 76.0 | 0.0 |
| 29/10/16 | 14.2 | 27.6 | 14.9 | 26.6 | 69.6 | 0.0 |
| 30/10/16 | 14.2 | 26.4 | 15.0 | 25.2 | 81.6 | 6.2 |
| 31/10/16 | 8.0 | 17.7 | 9.0 | 17.9 | 54.0 | 0.0 |
| 01/11/16 | 3.6 | 20.1 | 5.2 | 19.6 | 59.6 | 0.0 |
| 02/11/16 | 3.2 | 20.6 | 4.0 | 20.3 | 60.3 | 0.0 |
| 03/11/16 | 5.0 | 23.9 | 6.3 | 23.3 | 61.2 | 0.0 |
| 04/11/16 | 5.0 | 25.0 | 6.5 | 24.6 | 53.8 | 0.0 |
| 05/11/16 | 9.0 | 19.8 | 10.7 | 19.2 | 49.9 | 0.0 |
| 06/11/16 | 3.9 | 21.5 | 5.0 | 21.1 | 56.4 | 0.0 |
| 07/11/16 | 5.6 | 28.9 | 7.0 | 28.0 | 52.6 | 0.0 |
| 08/11/16 | 8.7 | 33.0 | 10.8 | 31.9 | 64.7 | 2.6 |
| 09/11/16 | 9.9 | 22.3 | 11.0 | 21.5 | 85.3 | 4.8 |
| 10/11/16 | 9.4 | 26.3 | 10.1 | 25.6 | 70.3 | 0.0 |
| 11/11/16 | 10.2 | 30.3 | 11.9 | 29.4 | 67.9 | 0.0 |
| 12/11/16 | 13.8 | 29.8 | 15.0 | 29.2 | 75.0 | 43.0 |
| 13/11/16 | 9.4 | 24.0 | 10.2 | 22.9 | 51.7 | 0.0 |
| 14/11/16 | 10.4 | 16.0 | 10.4 | 15.3 | 81.8 | 2.6 |
| 15/11/16 | 8.8 | 22.5 | 9.3 | 21.5 | 66.1 | 0.0 |
| 16/11/16 | 6.5 | 27.8 | 7.4 | 27.1 | 57.3 | 0.0 |
| 17/11/16 | 11.7 | 26.9 | 12.1 | 26.0 | 69.8 | 0.0 |
| 18/11/16 | 9.5 | 30.6 | 10.4 | 30.1 | 59.5 | 0.0 |
| 19/11/16 | 12.1 | 32.2 | 13.7 | 31.6 | 56.2 | 0.0 |
| 20/11/16 | 15.5 | 31.5 | 15.7 | 30.6 | 64.8 | 0.0 |
| 21/11/16 | 16.1 | 32.2 | 17.2 | 31.4 | 57.0 | 0.0 |
| 22/11/16 | 12.8 | 31.5 | 14.0 | 30.8 | 52.2 | 0.0 |
| 23/11/16 | 11.6 | 30.4 | 12.5 | 29.6 | 56.9 | 0.0 |
| 24/11/16 | 6.6 | 23.3 | 7.6 | 22.5 | 55.1 | 0.0 |
| 25/11/16 | 5.8 | 24.7 | 6.8 | 23.8 | 53.2 | 0.0 |
| 26/11/16 | 6.2 | 27.6 | 7.9 | 26.7 | 51.2 | 0.0 |
| 27/11/16 | 6.9 | 29.8 | 8.7 | 28.8 | 60.6 | 0.0 |
| 28/11/16 | 13.4 | 30.4 | 14.8 | 29.5 | 53.3 | 0.0 |
| 29/11/16 | 9.1 | 30.3 | 10.5 | 29.4 | 52.4 | 0.0 |
| 30/11/16 | 16.1 | 31.6 | 16.7 | 31.1 | 45.3 | 0.0 |
| 01/12/16 | 11.9 | 32.7 | 12.8 | 31.4 | 49.8 | 0.0 |
| 02/12/16 | 10.5 | 33.3 | 11.7 | 32.5 | 46.0 | 0.0 |
| 03/12/16 | 12.8 | 35.8 | 14.2 | 34.7 | 51.4 | 0.0 |
| 04/12/16 | 15.9 | 35.2 | 16.2 | 35.0 | 60.7 | 0.0 |
| 05/12/16 | 21.0 | 36.1 | 22.3 | 35.3 | 49.4 | 0.0 |
| 06/12/16 | 18.0 | 30.5 | 18.2 | 29.5 | 68.0 | 0.8 |
| 07/12/16 | 15.2 | 30.0 | 15.7 | 27.9 | 67.6 | 0.4 |
| 08/12/16 | 14.2 | 34.7 | 15.2 | 33.6 | 60.9 | 0.0 |
| 09/12/16 | 11.0 | 22.2 | 11.6 | 21.2 | 49.4 | 0.0 |
| 10/12/16 | 6.2 | 29.9 | 7.7 | 28.7 | 51.8 | 0.0 |
| 11/12/16 | 10.2 | 31.5 | 11.1 | 30.3 | 59.3 | 0.0 |
| 12/12/16 | 16.4 | 33.3 | 17.2 | 32.0 | 55.8 | 0.0 |
| 13/12/16 | 14.5 | 34.9 | 16.0 | 33.3 | 45.7 | 0.0 |
| 14/12/16 | 14.8 | 35.4 | 16.3 | 34.1 | 42.4 | 0.0 |

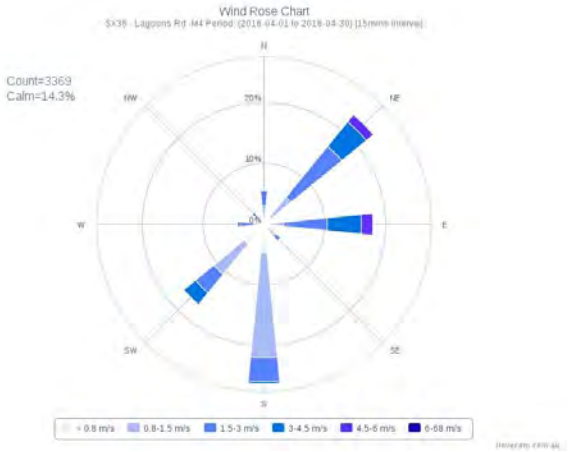
| Date | Temperature (2m) ($^0$C) | | Temperature (10m) ($^0$C) | | Humidity | RAIN |
|---|---|---|---|---|---|---|
| | Min | Max | Minimum | Maximum | Average | (mm) |
| 15/12/16 | 14.9 | 23.3 | 14.9 | 23.5 | 84.2 | 7.8 |
| 16/12/16 | 14.9 | 21.7 | 14.9 | 21.1 | 94.9 | 9.4 |
| 17/12/16 | 17.5 | 29.4 | 17.7 | 28.9 | 66.8 | 4.0 |
| 18/12/16 | 11.5 | 27.0 | 13.1 | 25.8 | 60.0 | 0.0 |
| 19/12/16 | 4.3 | 27.9 | 9.5 | 32.6 | 57.4 | 1.0 |
| 20/12/16 | 12.4 | 32.4 | 13.3 | 31.8 | 58.2 | 0.0 |
| 21/12/16 | 15.7 | 31.7 | 17.2 | 30.9 | 45.8 | 0.0 |
| 22/12/16 | 16.6 | 28.0 | 16.8 | 27.3 | 63.7 | 0.0 |
| 23/12/16 | 13.9 | 32.3 | 14.4 | 31.5 | 62.2 | 2.4 |
| 24/12/16 | 16.5 | 31.1 | 16.7 | 29.9 | 61.9 | 3.4 |
| 25/12/16 | 13.9 | 28.5 | 14.6 | 28.0 | 61.9 | 0.0 |
| 26/12/16 | 15.5 | 31.8 | 16.4 | 30.1 | 64.9 | 0.0 |
| 27/12/16 | 16.2 | 34.6 | 17.2 | 32.9 | 55.6 | 0.0 |
| 28/12/16 | 16.9 | 35.3 | 18.3 | 33.8 | 53.2 | 0.0 |
| 29/12/16 | 15.3 | 37.4 | 17.0 | 36.2 | 45.5 | 0.0 |
| 30/12/16 | 17.4 | 36.9 | 18.6 | 35.8 | 40.5 | 0.0 |

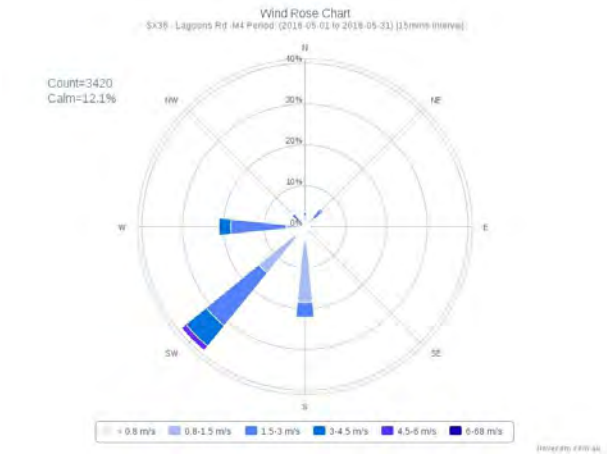
**Figure 3-a Monthly Wind Rose**

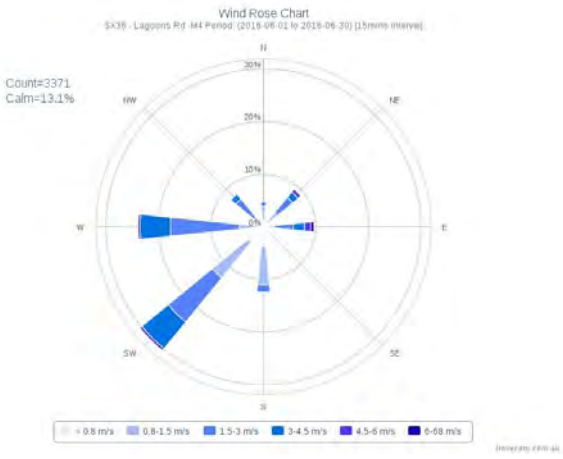


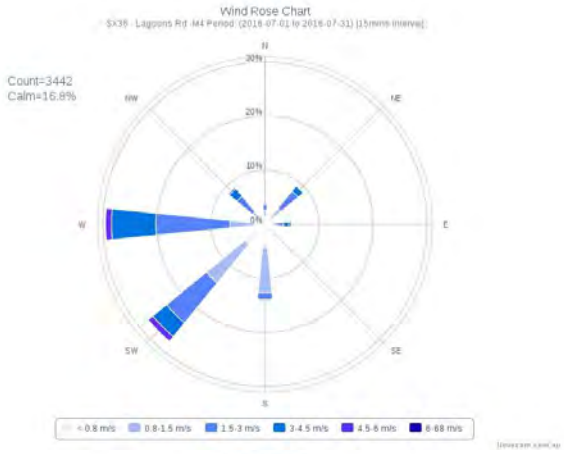



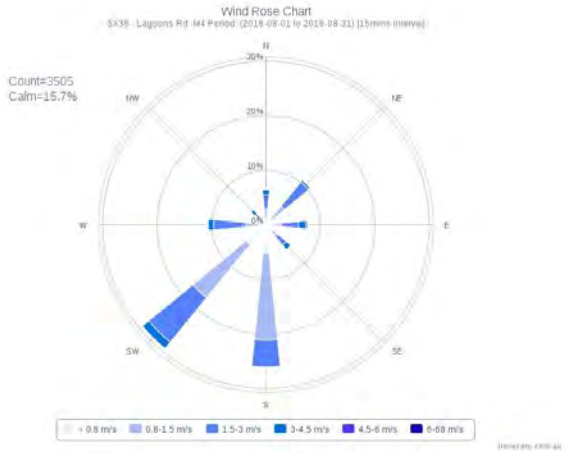



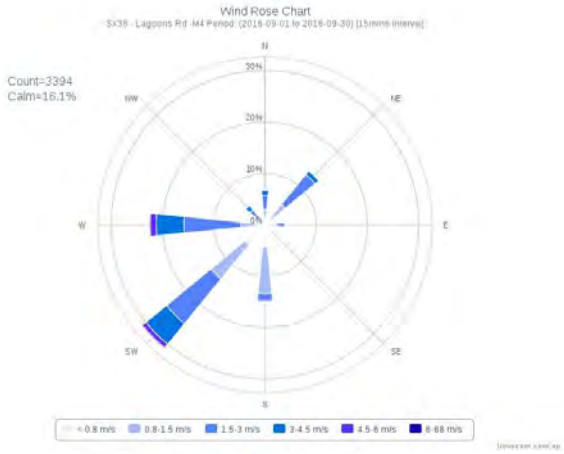



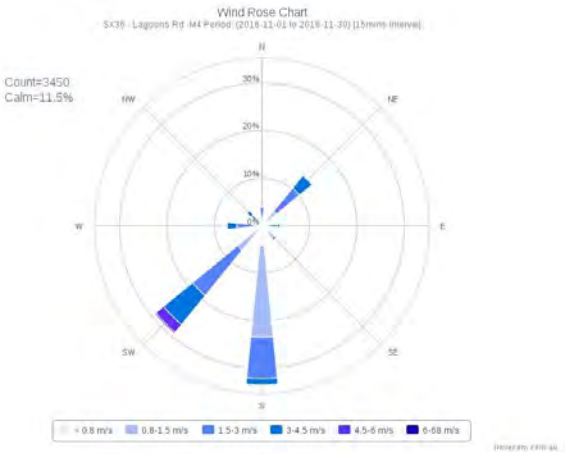



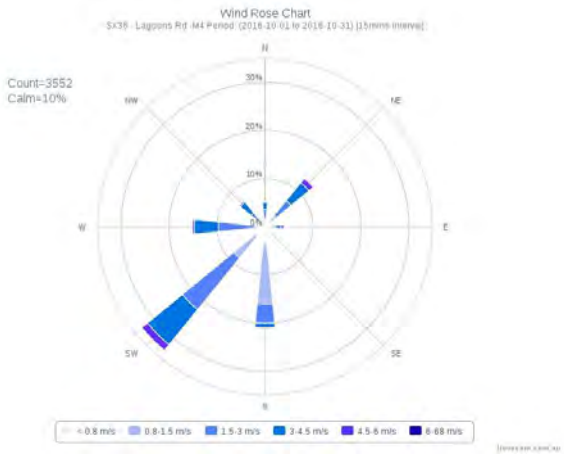



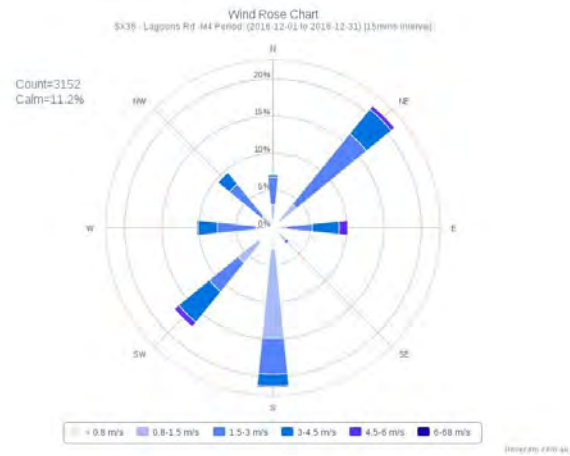

Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-07-01 to 2016-07-31) [15mins interval]
Count=3442
Calm=16.8%
N
NE
E
SE
S
SW
W
NW
20%
10%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s


Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-08-01 to 2016-08-31) [15mins interval]
Count=3505
Calm=15.7%
N
NE
E
SE
S
SW
W
NW
20%
10%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s


Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-09-01 to 2016-09-30) [15mins interval]
Count=3394
Calm=16.1%
N
NE
E
SE
S
SW
W
NW
30%
20%
10%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s


Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-11-01 to 2016-11-30) [15mins interval]
Count=3450
Calm=11.5%
N
NE
E
SE
S
SW
W
NW
30%
20%
10%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s


Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-10-01 to 2016-10-31) [15mins interval]
Count=3552
Calm=10%
N
NE
E
SE
S
SW
W
NW
30%
20%
10%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s


Wind Rose Chart
SX38 - Lagoons Rd -M4 Period: (2016-12-01 to 2016-12-31) [15mins interval]
Count=3152
Calm=11.2%
N
NE
E
SE
S
SW
W
NW
20%
15%
10%
5%
0%
< 0.8 m/s
0.8-1.5 m/s
1.5-3 m/s
3-4.5 m/s
4.5-6 m/s
6-68 m/s

# APPENDIX 3B. NOISE COMPLIANCE REPORT

# *Moolarben Coal Operations*

*Environmental Noise Monitoring*

*Annual Report*

*1 January to 31 December 2016*

*Prepared for*

*Moolarben Coal Operations Pty Ltd*

Global Acoustics

Noise and Vibration Analysis and Solutions

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ABN 94 094 985 734

# Moolarben Coal Operations

## Environmental Noise Monitoring
## Annual Report – 1 January to 31 December 2016

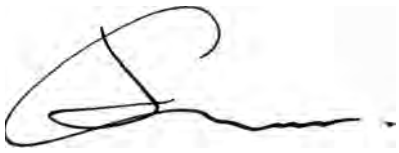
Reference: 17023_R02
Report date: 29 March 2017

### Prepared for

Moolarben Coal Operations
4250 Ulan Road
Ulan NSW 2850

### Prepared by

Global Acoustics Pty Ltd
PO Box 3115
Thornton NSW 2322



| | | | |
|---|---|---|---|
| Prepared: | Joel Curran<br>Chemical Engineer (Acoustics) | QA Review: | Katie Weekes<br>Environmental Scientist (Acoustics) |

*Global Acoustics Pty Ltd ~ Environmental noise modelling and impact assessment ~ Sound power testing ~ Noise control advice ~ Noise and vibration monitoring ~ OHS noise monitoring and advice ~ Expert evidence in Land and Environment and Compensation Courts ~ Architectural acoustics ~ Blasting assessments and monitoring ~ Noise management plans (NMP) ~ Sound level meter and noise logger sales and hire*

# *EXECUTIVE SUMMARY*

Global Acoustics was engaged by Moolarben Coal Operations Pty Ltd (MCO) to provide a summary of operational environmental noise surveys conducted around Moolarben Coal Complex (MCC) from 1 January to 31 December 2016.

During the 2016 reporting period, attended environmental noise monitoring described in this report was conducted monthly. Quarterly attended monitoring was conducted throughout the reporting period in accordance with Project Approvals 05_0117 and 08_0135, the MCO Noise Management Plan (NMP) and EPL 12932. More detail regarding monitoring locations and timing of monitoring during 2016 is provided in Section 1.2 of this report.

Attended noise monitoring was carried out during 2016 to quantify and describe the existing acoustic environment around MCO and compare the results with relevant limits.

**January to December 2016 Compliance**

MCO complied with the project specific criteria at all monitoring sites during attended noise monitoring undertaken between January and December 2016.

**EIS Comparison**

Predicted noise levels from Year 2016 of the OC4 South West Haul Road Modification (Stage 1 MOD 11 and Stage 2 Modification 1) were compared against actual noise levels during 2016. Results indicated that MCO was generally well under the predicted levels where meteorological conditions were relevant and there are no systemic issues as a result of the operation.

Measured $L_{A1,1minute}$ noise levels were greater than predicted levels on two occasions, once at NA6 and once at NA12). The model (Year 2016 of the OC4 South West Haul Road Modification) predicts that there will be no exceedances of the criterion for the indicative scenarios and at no point were measured levels greater than the relevant criterion for each location.

**Global Acoustics Pty Ltd**

# Table of Contents

## Appendices

# 1 INTRODUCTION

## 1.1 Background

Global Acoustics was engaged by Moolarben Coal Operations Pty Ltd (MCO) to provide a summary of operational environmental noise surveys conducted around Moolarben Coal Complex (MCC) from 1 January to 31 December 2016.

The MCC is located on Ulan Road, approximately 40 kilometres north east of Mudgee. Stage 1 of the mine consists of the construction and operation of three separate open cut mines (OC1, OC2 and OC3), an underground mine (UG4), the coal handling and preparation plant (CHPP) and mining infrastructure area (MIA). Stage 2 includes the construction and operation of Open Cut 4 (OC4), Underground Mine (UG1 and UG2) and a ROM coal facility in OC4.

During this reporting period, major activities included:

- The operation of OC1, MOD9 areas, OC2 and OC4;
- The operation of the CHPP and rail load-out facilities;
- Vegetation clearing, topsoil stripping, drilling, overburden removal, coaling and rehabilitation activities in OC1, OC2 and OC4; and
- Construction activities in OC4, Underground (MIA and Boxcut), CHPP, south west haul road, conveyor trace and Open Cut Admin/Workshop mine infrastructure areas.

Attended noise monitoring was carried out during 2016 in accordance with the approved "Moolarben Coal Complex Noise Management Plan" as required by EPL condition M9 to quantify and describe the existing acoustic environment around MCO and compare the results with relevant limits.

## 1.2 Monitoring Locations and Timing

### 1.2.1 January to December 2016, Monthly

There were six monthly attended monitoring locations between January and December 2016 as detailed in Table 1.1 and shown on Figure 1. Monitoring during this period was undertaken monthly. It should be noted that this figure shows the actual monitoring position, not the location of residences.

*Table 1.1: ATTENDED NOISE MONITORING LOCATIONS – JANUARY TO DECEMBER 2016, MONTHLY*

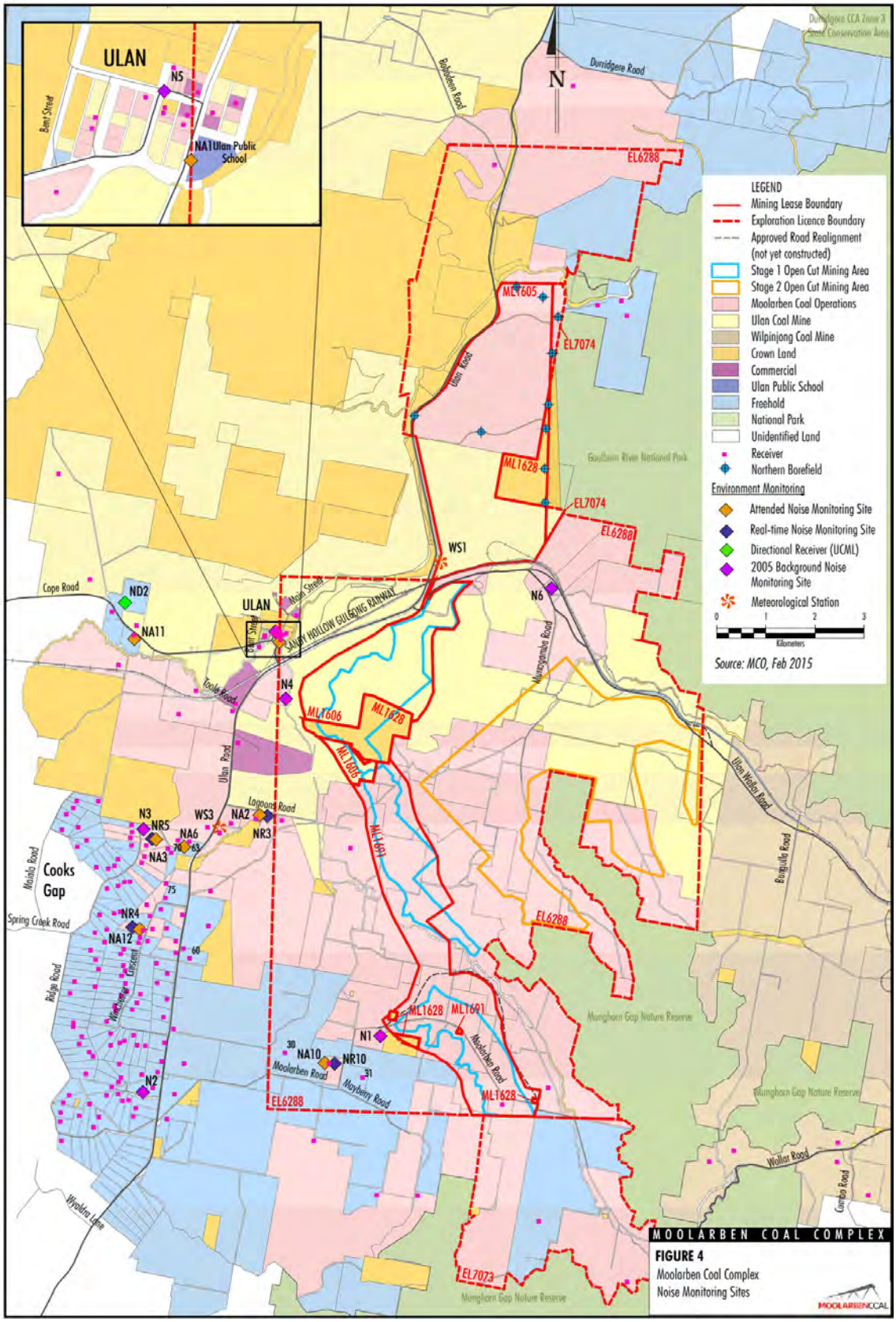
| Report Descriptor | Monitoring Location | Location Purpose | Monitoring Period |
|---|---|---|---|
| NA1 | Ulan Public School, Ulan Village | Compliance | Day |
| NA2 | Lagoons Road, Ulan | Validation | Night |
| NA3 | Upper Ridge Road, Cooks Gap | Validation | Night |
| NA6 | Lower Ridge Road, Cooks Gap | Compliance | Night |
| NA10 | Moolarben Road, Moolarben | Validation | Night |
| NA12 | Winchester Crescent, Cooks Gap | Compliance/Validation | Night |

### 1.2.2 January to December 2016, Quarterly

In addition to the monthly monitoring locations detailed in Table 1.1, quarterly surveys were completed at these additional attended monitoring locations (conducted in February, May, August and November 2016). These are detailed in Table 1.2 and shown in Figure 1 and Figure 2. It should be noted that the figures show the actual monitoring position, not the location of residences.

*Table 1.2: ATTENDED NOISE MONITORING LOCATIONS – JANUARY TO DECEMBER 2016, QUARTERLY*

| Report Descriptor | Monitoring Location | Location Purpose | Monitoring Period |
|---|---|---|---|
| NA11 | Cope Road (Receiver 258), Ulan | Management | Night |
| GRNP | Goulburn River National Park | Compliance | Night |
| MGNR | Munghorn Gap Nature Reserve | Compliance | Night |




*Source: Moolarben Coal Operations Pty Ltd*

**Figure 1: MCO Attended Noise Monitoring Sites, January to December 2016**


**Figure 2: MCO Quarterly Attended Monitoring Locations, January to December 2016**

## 1.3 Terminology & Abbreviations

Some definitions of terms and abbreviations, which may be used in this report, are provided in Table 1.3.

*Table 1.3: TERMINOLOGY & ABBREVIATIONS*

| Descriptor | Definition |
|---|---|
| $L_A$ | The A-weighted root mean squared (RMS) noise level at any instant |
| $L_{Amax}$ | The maximum A-weighted noise level over a time period or for an event |
| $L_{A1}$ | The noise level which is exceeded for 1 per cent of the time |
| $L_{A10}$ | The noise level which is exceeded for 10 percent of the time, which is approximately the average of the maximum noise levels |
| $L_{A50}$ | The noise level which is exceeded for 50 per cent of the time |
| $L_{A90}$ | The level exceeded for 90 percent of the time, which is approximately the average of the minimum noise levels. The $L_{A90}$ level is often referred to as the "background" noise level and is commonly used to determine noise criteria for assessment purposes |
| $L_{Amin}$ | The minimum A-weighted noise level over a time period or for an event |
| $L_{Aeq}$ | The average noise energy during a measurement period |
| dB(A) | Noise level measurement units are decibels (dB). The "A" weighting scale is used to describe human response to noise |
| SPL | Sound pressure level (SPL), fluctuations in pressure measured as 10 times a logarithmic scale, the reference pressure being 20 micropascals |
| Hertz (Hz) | Cycles per second, the frequency of fluctuations in pressure, sound is usually a combination of many frequencies together |
| VTG | Vertical temperature gradient in degrees Celsius per 100 metres altitude. Estimated from wind speed and sigma theta data |
| IA | Inaudible. When site only noise is noted as IA, there was no noise from the source of interest audible at the monitoring location |
| NM | Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified |
| Day | This is the period 7:00am to 6:00pm |
| Evening | This is the period 6:00pm to 10:00pm |
| Night | This is the period 10:00pm to 7:00am |

# 2 PROJECT APPROVAL AND CRITERIA

## 2.1 Project Approval

Current mining operations at the Moolarben Coal Complex are undertaken in accordance with the requirements of NSW Project Approval 05_0117 (as modified) and the requirements of NSW Project Approval 08_0135 (as modified). The relevant noise conditions from the most recent consolidated approvals can be viewed on the MCO website.

## 2.2 Environmental Protection Licence

MCO holds Environmental Protection Licence (EPL) No. 12932 for Moolarben mine. The licence was originally approved in August 2008. The most recent license revision was issued on 26 May 2016. Section L5 of the licence outlines noise limits and can be viewed on the MCO website.

## 2.3 Noise Management Plan

The Noise Management Plan (NMP) was originally approved in March 2010, and more recently in July 2015, to address noise impacts associated with the operation of the entire Moolarben Coal Complex, including Stage 1 and Stage 2 of the operation. Section 4 details criteria and Section 6 details the noise monitoring program, including monitoring locations and methodology. The NMP can be viewed on the MCO website.

## 2.4 Noise Criteria

### 2.4.1 Impact Assessment

Impact assessment criteria for MCO between January and December 2016 are detailed in Table 2.1. The criteria are based on the NMP, which is consistent with the consolidated approval and the EPL.

*Table 2.1: MCO NOISE IMPACT ASSESSMENT CRITERIA, dB*

| NMP Descriptor | Monitoring Location | Day $L_{Aeq,15minute}$ | Evening [1] $L_{Aeq,15minute}$ | Night [1] $L_{Aeq,15minute}$/ $L_{A1,1minute}$ |
|---|---|---|---|---|
| NA1[2] | Ulan Public School – internal | 35 | NA | NA/NA |
| | Ulan Public School – external[3] | 43 | NA | NA/NA |
| NA6 | Lower Ridge Road | 37 | 37 | 37/45 |
| NA12 | Winchester Crescent | 35 | 35 | 35/45 |
| GRNP[4] | Goulburn River National Park | 50 | 50 | 50/NA |
| MGNR[4] | Munghorn Gap Nature Reserve | 50 | 50 | 50/NA |

*Notes:*

1. *NA indicates criteria are not applicable at this location during this time period;*
2. *Criteria for Ulan Public School apply `when in use`;*
3. *A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP; and*
4. *Monitoring at these locations undertaken quarterly in accordance with the NMP.*

Appendix 6 of the project approval states that noise levels apply under all meteorological conditions except for the following:

- *Wind speeds greater than 3 metres/second at 10 metres above ground level; or*
- *Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or*
- *Stability category G temperature inversion conditions.*

### 2.4.2 Noise Mitigation Criteria

As detailed in Condition 4 of Schedule 3 of the project approval, mitigation criteria for MCO are to consider noise in respect to criteria detailed in Table 2.2 at any residence on privately-owned land.

*Table 2.2: MCO MITIGATION CRITERIA, dB[1]*

| NMP Descriptor | Monitoring Location | Day/Evening/Night $L_{Aeq,15minute}$ |
|---|---|---|
| NA6 | Lower Ridge Road | 37/37/37 |
| NA12 | Winchester Crescent | 37/37/37 |

*Notes:*

1. *From consolidated project approval.*

### 2.4.3 Land Acquisition Criteria

As detailed in Condition 2 of Schedule 3 of the project approval, acquisition criteria for MCO are to consider noise in respect to criteria detailed in Table 2.3 at any residence on privately-owned land.

*Table 2.3: MCO LAND ACQUISITION CRITERIA, dB[1]*

| NMP Descriptor | Monitoring Location | Day/Evening/Night $L_{Aeq,15minute}$ |
|---|---|---|
| NA6 | Lower Ridge Road | 40/40/40 |
| NA12 | Winchester Crescent | 40/40/40 |

*Notes:*

1. *From consolidated project approval.*

## 2.5 INP Modifying Factors

Noise monitoring and reporting is carried out generally in accordance with Environment Protection Authority (EPA) *Industrial Noise Policy* (INP). Chapter 4 of the INP deals specifically with modifying factors that may apply to industrial noise. The most common modifying factors are addressed in detail below.

As detailed in the notes below condition 18 of the development consent:

> *The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied where applicable.*

### 2.5.1 Tonality, Intermittent and Impulsive Noise

As defined in the Industrial Noise Policy:

> *Tonal noise contains a prominent frequency and is characterised by a definite pitch.*
>
> *Impulsive noise has high peaks of short duration or a sequence of such peaks.*
>
> *Intermittent noise is characterised by the level suddenly dropping to the background noise levels several times during a measurement, with a noticeable change in noise level of at least 5 dB. Intermittent noise applies to night-time only.*

Years of monitoring have indicated that noise levels from mining operations, particularly those levels measured at significant distances from the source are relatively continuous. Given this, noise levels from MCO at the monitoring locations are unlikely to be intermittent. In addition, there is no equipment on site that is likely to generate tonal or impulsive noise as defined in the INP.

### 2.5.2 Low Frequency

As defined in the Industrial Noise Policy:

> *Low frequency noise contains major components within the low frequency range (20 Hz to 250 Hz) of the frequency spectrum.*

As detailed in Chapter 4 of the INP, low frequency noise should be assessed by measuring the C-weighted and A-weighted level over the same time period. A correction/penalty of 5 dB is triggered *if the difference between the two levels is 15 dB or more.*

Low frequency noise can also be assessed against levels specified in the paper "A Simple Method for Low Frequency Noise Emission Assessment" (Broner JLFNV Vol29-1 pp1-14 2010). If the total predicted C – weighted noise level at a receptor exceeds the relevant criterion, a 5 dB penalty (modifying factor) is triggered and added to measured levels.

Low frequency assessment methods are detailed in Table 2.4.

*Table 2.4: LOW FREQUENCY ASSESSMENT METHODS AND MODIFICATION FACTOR TRIGGERS*

| Assessment Method | Calculation Method | Night Period Modifying Factor Trigger | Day Period Modifying Factor Trigger |
|---|---|---|---|
| Broner, 2010 | Site only $L_{Ceq}$ | >60 | >65 |
| INP, total | Site only $L_{Ceq}$ minus site only $L_{Aeq}$ | >=15 | >=15 |

The EPA is currently undertaking a review of the assessment of low frequency noise. While a Draft Industrial Noise Guideline (ING) was released in September 2015, low frequency noise results from MCO have been compared to the assessment methods and modifying factor triggers presented above. The applicability of these triggers have been considering when applying low frequency modifying factor corrections.

# 3 METHODOLOGY

## 3.1 Overview

All noise monitoring was conducted at the nearest residences in accordance with the Environment Protection Authority (EPA) 'Industrial Noise Policy' (INP) guidelines and Australian Standard AS 1055 'Acoustics, Description and Measurement of Environmental Noise' and the MCO NMP. Atmospheric condition measurement was also undertaken during attended monitoring.

## 3.2 Attended Noise Monitoring

Attended noise monitoring was conducted monthly during 2016, during the night period. At NA1 (Ulan Public School) monitoring was only undertaken during the day period, within the hours of use. The duration of all measurements was 15 minutes.

A measurement of $L_{A1,1minute}$ corresponds to the highest noise level generated for 0.6 of a second during one minute in the night period. In practical terms this is the highest noise level emitted from a MCO noise source during the entire measurement period (i.e. the highest level of the worst minute during the 15-minute measurement).

In most cases, monitoring near the residence facade is impractical due to barking dogs or issues with obtaining access. In all cases, measurements for this survey were undertaken at a suitable and representative location.

As indicated in Appendix 6 of Project Approvals 05_0117 and 08_0135, modifying factors should be considered where applicable. Low frequency noise from MCO was assessed by analysis of the measured spectrum.

The terms "Inaudible" (IA), "Not measurable" (NM) or "Less than 25 dB" (<25 dB) have been used in this report. When site noise is noted as IA then there was no site noise audible at the monitoring location. However, if site noise is noted as NM or <25 dB, this means some noise was audible but could not be quantified. In the case of very low site levels, we do not consider it necessary to attempt to accurately quantify site noise as it would be significantly less than any criterion and most unlikely to cause annoyance (and in many cases, to be even noticed).

If site noise were not measurable due to masking, methods as per the INP (e.g. measure closer and back calculate) are employed to determine a value for reporting if deemed necessary. All site values NM or <25 dB in this report are due to low absolute values.

## 3.3 Log of Operation

MCO personnel have provided a log of operations that confirms operations were in progress during each monthly survey period in 2016.

## 3.4 Modification Factors

Years of attended noise monitoring have indicated that noise levels from mining operations, particularly those levels measured at significant distances from the source are relatively continuous. Given this, noise levels from MCO at the monitoring locations are unlikely to be intermittent. In addition, there is no equipment on site at MCO that would generate impulsive noise as defined in the INP. However, low frequency noise from MCO has been addressed.

## 3.5 Meteorological Conditions

Meteorological data was obtained from the MCO weather station (WS03) located off Ulan Road and shown in Figure 1. This data allowed correlation of atmospheric parameters and measured noise levels as per EPL 12932 condition L5.4.

# 4 RESULTS

## 4.1 January 2016

Table 4.1 compares MCO levels during January 2016 against impact assessment criteria detailed in the project approval.

*Table 4.1: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – JANUARY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 20/01/2016 12:22 | 54 | 2.3 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 19/01/2016 22:09 | 32 | 1.3 | E | 37 | 29 | Yes | Nil | 45 | 40 | Yes | Nil |
| NA12 | 19/01/2016 22:30 | 37 | 1.7 | E | 35 | 23 | Yes | Nil | 45 | 25 | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.2 compares MCO levels during January 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.2: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – JANUARY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 23/07/2015 22:00 | 32 | 1.3 | E | 40 | 42 | 29 | Yes | Nil | Nil |
| NA12 | 23/07/2015 23:00 | 37 | 1.7 | E | 37 | 40 | 23 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.2 February/Quarter 1 2016

Table 4.3 compares MCO levels during February 2016 against impact assessment criteria detailed in the project approval. In accordance with the NMP (approved July 2015) additional sites are required to be monitored on a quarterly basis and include GRNP and MGNP.

*Table 4.3: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – FEBRUARY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 18/02/2016 12:18 | 42 | 1.3 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 17/02/2016 22:00 | 28 | 1.2 | D | 37 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| NA12 | 17/02/2016 22:30 | 37 | 0.7 | F | 35 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| GRNP[7] | 17/02/2016 23:08 | 36 | 1.3 | E | 50 | 33 | Yes | Nil | NA | NA | NA | NA |
| MGNR[7] | 18/02/2016 01:53 | 20 | 1.3 | E | 50 | IA | Yes | Nil | NA | NA | NA | NA |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use);*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.4 compares MCO levels during February 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.4: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – FEBRUARY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 17/02/2016 22:00 | 28 | 1.2 | D | 40 | 42 | IA | Yes | Nil | Nil |
| NA12 | 17/02/2016 22:30 | 37 | 0.7 | F | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.3 March 2016

Table 4.5 compares MCO levels during March 2016 against impact assessment criteria detailed in the project approval.

*Table 4.5: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – MARCH 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 03/03/2016 10:54 | 44 | 1.7 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 02/03/2016 22:00 | 34 | 1.6 | F | 37 | 31 | Yes | Nil | 45 | 42 | Yes | Nil |
| NA12 | 02/03/2016 22:30 | 36 | 2.2 | E | 35 | 29 | Yes | Nil | 45 | 33 | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.6 compares MCO levels during March 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.6: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – MARCH 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 02/03/2016 22:00 | 34 | 1.6 | F | 40 | 42 | 31 | Yes | Nil | Nil |
| NA12 | 02/03/2016 22:30 | 36 | 2.2 | E | 37 | 40 | 29 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.4 April 2016

Table 4.7 compares MCO levels during April 2016 against impact assessment criteria detailed in the project approval.

*Table 4.7: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – APRIL 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 28/04/2016 10:09 | 40 | 1.5 | A | 43 [8] | 30 | Yes | Nil | NA | NA | NA | NA |
| NA6 | 27/04/2016 22:00 | 32 | 1.0 | D | 37 | 32 | Yes | Nil | 45 | 40 | Yes | Nil |
| NA12 | 27/04/2016 22:30 | 32 | 0.8 | F | 35 | 30 | Yes | Nil | 45 | 39 | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   - *Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   - *Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   - *Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.8 compares MCO levels during April 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.8: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – APRIL 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 27/04/2016 22:00 | 32 | 1.0 | D | 40 | 42 | 32 | Yes | Nil | Nil |
| NA12 | 27/04/2016 22:30 | 32 | 0.8 | F | 37 | 40 | 30 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.5 May/Quarter 2 2016

Table 4.9 compares MCO levels during May 2016 against impact assessment criteria detailed in the project approval. In accordance with the NMP (approved July 2015) additional sites are required to be monitored on a quarterly basis and include GRNP and MGNP.

*Table 4.9: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – MAY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 18/05/2016 14:14 | 47 | 2.2 | B | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 17/05/2016 22:00 | 26 | 0.8 | F | 37 | <25 | Yes | Nil | 45 | 35 | Yes | Nil |
| NA12 | 17/05/2016 22:30 | 35 | 1.1 | F | 35 | <25 | Yes | Nil | 45 | 30 | Yes | Nil |
| GRNP[7] | 17/05/2016 23:04 | 34 | 1.4 | D | 50 | 29 | Yes | Nil | NA | NA | NA | NA |
| MGNR[7] | 18/05/2016 01:49 | 19 | 0.7 | F | 50 | <20 | Yes | Nil | NA | NA | NA | NA |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use);*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.10 compares MCO levels during May 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.10: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – MAY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 17/05/2016 22:00 | 26 | 0.8 | F | 40 | 42 | <25 | Yes | Nil | Nil |
| NA12 | 17/05/2016 22:30 | 35 | 1.1 | F | 37 | 40 | <25 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.6 June 2016

Table 4.11 compares MCO levels during June 2016 against impact assessment criteria detailed in the project approval.

*Table 4.11: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – JUNE 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 23/06/2016 11:28 | 41 | 2.2 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 22/06/2016 22:00 | 27 | 1.9 | E | 37 | <25 | Yes | Nil | 45 | 24 | Yes | Nil |
| NA12 | 22/06/2016 22:30 | 29 | 1.8 | E | 35 | <20 | Yes | Nil | 45 | <20 | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.12 compares MCO levels during June 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.12: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – JUNE 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 22/06/2016 22:00 | 27 | 1.9 | E | 40 | 42 | <25 | Yes | Nil | Nil |
| NA12 | 22/06/2016 22:30 | 29 | 1.8 | E | 37 | 40 | <20 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.7 July 2016

Table 4.13 compares MCO levels during July 2016 against impact assessment criteria detailed in the project approval.

*Table 4.13: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – JULY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 15/07/2016 11:29 | 38 | 1.6 | A | 43 [8] | <30 | Yes | Nil | NA | NA | NA | NA |
| NA6 | 14/07/2016 22:00 | 32 | 0.7 | F | 37 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| NA12 | 14/07/2016 22:45 | 35 | 0.8 | F | 35 | IA | Yes | Nil | 45 | IA | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.14 compares MCO levels during July 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.14: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – JULY 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 14/07/2016 22:00 | 32 | 0.7 | F | 40 | 42 | IA | Yes | Nil | Nil |
| NA12 | 14/07/2016 22:45 | 35 | 0.8 | F | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.8 August/Quarter 3 2016

Table 4.15 compares MCO levels during August 2016 against impact assessment criteria detailed in the project approval. In accordance with the NMP (approved July 2015) additional sites are required to be monitored on a quarterly basis and include GRNP and MGNP.

*Table 4.15: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – AUGUST 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 12/08/2016 13:16 | 45 | 2.0 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 11/08/2016 22:24 | 30 | 1.5 | G | 37 | <20 | No | NA | 45 | 35 | <20 | NA |
| NA12 | 11/08/2016 22:00 | 32 | 1.4 | E | 35 | IA | Yes | Nil | 45 | 30 | IA | Nil |
| GRNP[7] | 11/08/2016 22:58 | 36 | 1.2 | G | 50 | 33 | No | NA | NA | NA | NA | NA |
| MGNR[7] | 12/08/2016 1:42 | 23 | 0.9 | G | 50 | IA | No | Nil | NA | NA | NA | NA |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use);*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.16 compares MCO levels during August 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.16: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – AUGUST 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 11/08/2016 22:24 | 30 | 1.5 | G | 40 | 42 | <20 | No | Nil | NA |
| NA12 | 11/08/2016 22:00 | 32 | 1.4 | E | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.9 September 2016

Table 4.17 compares MCO levels during September 2016 against impact assessment criteria detailed in the project approval.

*Table 4.17: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – SEPTEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 13/09/2016 11:57 | 44 | 2.6 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 12/09/2016 22:00 | 35 | 0.7 | F | 37 | 32 | Yes | Nil | 45 | 43 | Yes | Nil |
| NA12 | 12/09/2016 22:45 | 47 | 1.5 | D | 35 | <30 | Yes | Nil | 45 | <30 | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   - *Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   - *Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   - *Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.18 compares MCO levels during September 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.18: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – SEPTEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 12/09/2016 22:00 | 35 | 0.7 | F | 40 | 42 | 32 | Yes | Nil | Nil |
| NA12 | 12/09/2016 22:45 | 47 | 1.5 | D | 37 | 40 | <30 | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.10 October 2016

Table 4.19 compares MCO levels during October 2016 against impact assessment criteria detailed in the project approval.

*Table 4.19: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – OCTOBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 07/10/2016 11:07 | 43 | 2.1 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 06/10/2016 22:00 | 37 | 1.7 | E | 37 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| NA12 | 06/10/2016 22:30 | 34 | 0.5 | F | 35 | IA | Yes | Nil | 45 | IA | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.20 compares MCO levels during October 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.20: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – OCTOBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 06/10/2016 22:00 | 37 | 1.7 | E | 40 | 42 | IA | Yes | Nil | Nil |
| NA12 | 06/10/2016 22:30 | 34 | 0.5 | F | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.11 November/Quarter 4 2016

Table 4.21 compares MCO levels during November 2016 against impact assessment criteria detailed in the project approval. In accordance with the NMP (approved July 2015) additional sites are required to be monitored on a quarterly basis and include GRNP and MGNP.

*Table 4.21: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – NOVEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 04/11/2016 10:35 | 48 | 2.9 | A | 43 [8] | IA | Yes | Nil | NA | NA | NA | NA |
| NA6 | 03/11/2016 22:00 | 41 | 0.8 | E | 37 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| NA12 | 03/11/2016 22:30 | 31 | 1.4 | D | 35 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| GRNP[7] | 03/11/2016 23:09 | 32 | 1.7 | E | 50 | 32 | Yes | Nil | NA | NA | Yes | Nil |
| MGNR[7] | 04/11/2016 01:48 | 26 | 0.5 | D | 50 | IA | Yes | Nil | NA | NA | NA | NA |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use);*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.22 compares MCO levels during November 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.22: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – NOVEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 03/11/2016 22:00 | 41 | 0.8 | E | 40 | 42 | IA | Yes | Nil | Nil |
| NA12 | 03/11/2016 22:30 | 31 | 1.4 | D | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.12 December 2016

Table 4.23 compares MCO levels during December 2016 against impact assessment criteria detailed in the project approval.

*Table 4.23: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL IMPACT ASSESSMENT CRITERIA – DECEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Impact Assess. $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{Aeq}$ Criterion [3] | $L_{A1,1min}$ Criterion dB | MCO $L_{A1,1min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of $L_{A1,1min}$ Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1[6,7] | 14/12/2016 12:42 | 50 | 3.5 | A | 43 [8] | IA | No | Nil | NA | NA | NA | NA |
| NA6 | 13/12/2016 22:16 | 39 | 1.1 | D | 37 | IA | Yes | Nil | 45 | IA | Yes | Nil |
| NA12 | 13/12/2016 22:45 | 39 | 0.9 | D | 35 | IA | Yes | Nil | 45 | IA | Yes | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   - *Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   - *Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   - *Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ or $L_{A1,1minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station;*
6. *Criterion applies under all weather conditions at this location (when in use); and*
7. *Night measurements not undertaken at NA1 as outside hours of use and criterion not applicable; and*
8. *External criterion. A difference of 8 dB between internal and external criteria has been adopted at NA1 for consistency with previous versions of the NMP.*

Table 4.24 compares MCO levels during December 2016 against land acquisition and mitigation criteria detailed in the project approval.

*Table 4.24: NOISE LEVELS GENERATED BY MCO AGAINST PROJECT APPROVAL MITIGATION AND LAND ACQUISITION CRITERIA – DECEMBER 2016*

| Location | Start Date and Time | Total $L_{Aeq}$ dB | Wind Speed m/s[5] | SC[5] | Mitigation $L_{Aeq}$ Criterion dB | Land Acquisition $L_{Aeq}$ Criterion dB | MCO $L_{Aeq,15min}$ dB[2,4] | Criterion Applies?[1] | Exceedance of Mitigation Criterion [3] | Exceedance of Land Acquisition Criterion [3] |
|---|---|---|---|---|---|---|---|---|---|---|
| NA6 | 13/12/2016 22:16 | 39 | 1.1 | D | 40 | 42 | IA | Yes | Nil | Nil |
| NA12 | 13/12/2016 22:45 | 39 | 0.9 | D | 37 | 40 | IA | Yes | Nil | Nil |

*Notes:*

1. *In accordance with the project approval, the noise criteria are to apply under all meteorological conditions except the following:*
   *- Wind speeds greater than 3 m/s at 10 metres above ground level; or*
   *- Stability class F temperature inversion conditions, and wind speeds greater than 2 m/s at 10 metres above ground level; or*
   *-Stability class G temperature inversions;*
2. *Estimated or measured $L_{Aeq,15minute}$ attributed to MCO;*
3. *NA in exceedance column means atmospheric conditions outside conditions specified in approval and so criterion is not applicable;*
4. *Bolded results in red indicate exceedance of criteria;*
5. *Atmospheric data is sourced from the MCO meteorological station; and*
6. *Land acquisition and mitigation criteria only applicable at privately owned residences. NA1 has not been assessed.*

## 4.13 Summary of Operational Results

### 4.13.1 Day

A summary of MCO daytime operational $L_{Aeq,15minute}$ results from 2016 is presented in Table 4.25.

*Table 4.25: 2016 MCO OPERATIONAL $L_{Aeq,15minute}$ SUMMARY - DAY*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1 Ulan School | IA | IA | IA | 30 | IA | IA | <30 | IA | IA | IA | IA | IA |

### 4.13.2 Night

A summary of MCO night operational $L_{Aeq,15minute}$ results from 2016 is presented in Table 4.26.

*Table 4.26: 2016 MCO OPERATIONAL $L_{Aeq,15minute}$ SUMMARY – NIGHT*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA6 Lower Ridge Road | 29 | IA | 31 | 32 | <25 | <25 | IA | <20 | 32 | IA | IA | IA |
| NA12 Winchester Crescent | 23 | IA | 29 | 30 | <25 | <20 | IA | IA | <30 | IA | IA | IA |
| GRNP | - | 33 | - | - | 29 | - | - | 33 | - | - | 32 | - |
| MGNR | - | IA | - | - | <20 | - | - | IA | - | - | IA | - |

*Notes:*

1. *GRNP and MGNR locations monitored quarterly.*

A summary of MCO night operational $L_{A1,1minute}$ results from 2016 is presented in Table 4.27.

*Table 4.27: 2016 MCO OPERATIONAL $L_{A1,1minute}$ SUMMARY – NIGHT*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA6 Lower Ridge Road | 40 | IA | 42 | 40 | 35 | 24 | IA | <20 | 43 | IA | IA | IA |
| NA12 Winchester Crescent | 25 | IA | 33 | 39 | 30 | <20 | IA | IA | <30 | IA | IA | IA |

## 4.14 Comparison with Environmental Assessment Predictions

Predicted Year 2016 operational noise levels are provided in OC4 South-West Modification Noise Assessment by SLR (April 2015). The noise assessment was prepared for Stage 1 Modification 11/Stage 2 Modification 1.

Table 9 of the South-West Modification report details different modelling parameters for different periods. Of particular relevance in this comparison exercise is the meteorological parameters (wind speed and direction and temperature gradient) for day (NA1 only) and night. Table 9 has been reproduced below. Monitoring was not undertaken during the evening period during 2016 and therefore no comparison has been made with these predictions.

**Table 9 Calm (Neutral) and Noise Enhancing Meteorological Modelling Parameters**

| Period | Meteorological Parameter | Air Temperature | Relative Humidity | Wind Velocity | Temperature Gradient |
|---|---|---|---|---|---|
| Daytime | Calm | 18°C | 55% | 0 m/s | 0°C/100 m |
| | Wind only | 19°C | 55% | WSW and W 3 m/s | 0°C/100 m |
| Evening | Calm | 16°C | 66% | 0 m/s | 0°C/100 m |
| | Wind only | 16°C | 65% | ENE, SSW, SW, WSW and W 3 m/s | 0°C/100 m |
| Night-time | Calm | 12°C | 75% | 0 m/s | 0°C/100 m |
| | Wind only | 12°C | 75% | ENE, E, SSW, SW and WSW 3 m/s | 0°C/100 m |
| | Strong Inversion | 6°C | 70% | 0 m/s | 5.2°C/100 m |
| | Strong Inversion plus Drainage | 6°C | 70% | ENE 1.0 m/s | 5.2°C/100 m |

Predicted Year 2016 and 2018 operational noise levels from Table 22 of the modification report are summarised in Table 4.28 for comparison with attended monitoring results, with the exception of NA1 as predicted $L_{Aeq,15minute}$ levels were not provided. However, Table 23 of the modification report details $L_{Aeq,period}$ amenity levels for NA1 (Ulan School). While it is not strictly correct to compare $L_{Aeq,15minute}$ with $L_{Aeq,period}$, results for these parameters (when predicted) are usually similar (within 2 to 3 dB), and, in the case of NA1, the predicted $L_{Aeq,period}$ is very low. Notwithstanding that it is also not possible to directly compare atmospheric condition results for NA1, it is assumed that if measured $L_{Aeq,15minute}$ values are less than 30 dB then this approximately correlates with the predicted $L_{Aeq,period}$.

*Table 4.28: MCO OPERATIONAL PREDICTIONS, YEAR 2016 - dB*

| Location | $L_{Aeq,period}$ | $L_{Aeq,15minute}$ Calm | $L_{Aeq,15minute}$ Wind or Inversion | $L_{A1,1minute}$ Wind or Inversion |
|---|---|---|---|---|
| NA1 Ulan School[1,2] | 27 | NA | NA | NA |
| NA6 Lower Ridge Road[3] | NA | 21 | 37 | 40 |
| NA8 South Ridge Road[4] | NA | 13 | 21 | 24 |
| NA9 Winchester Cres[5] | NA | 16 | 32 | 35 |
| NA12 Winchester Cres[6] | NA | 17 | 34 | 37 |

*Source: MCO OC4 South-West Modification Noise Assessment (SLR, April 2015).*

*Notes:*

1. *$L_{Aeq,period}$ result for worst case atmospheric condition;*
2. *Day result only for this location corresponding to period of use;*
3. *Predicted levels for 70 – DJ & A Coventry;*
4. *Predicted levels for 171 – AD & SA McGregor;*
5. *Predicted levels for 83 – CF & CR Wall; and*
6. *Predicted levels for 238 – B Powell; and*
7. *NA is not applicable at this location.*

### 4.14.1 2016 Comparison

Table 4.29 to Table 4.31 in this report compare the measured operational levels to the predicted levels for Year 2016 in the modification report for the relevant meteorological conditions. The difference against predicted levels for all relevant meteorological parameters as detailed in Table 9 of the modification report (shown above) have been included.

In the tables below, a positive difference is where the measured level is greater than the predicted level and a negative difference is where the measured levels are less than the predicted level. Notation used in the tables to denote differences is irrespective of the integer value sign. For example, the notation >-17 means the values are more than 17 dB less than the predicted level.

Where the meteorological conditions (primarily wind direction and temperature gradient) during the attended monitoring do not correspond with those that are modelled, no further analysis is undertaken.

### 4.14.2 Day Comparison

Detailed analysis of meteorological conditions which were present during 2016 attended day monitoring show that the following conditions did not occur:

- Calm.

Table 4.29 provides the difference between measured and predicted levels during the day period.

*Table 4.29: 2016 MCO OPERATIONAL $L_{Aeq,period}$ dB DIFFERENCE AGAINST PREDICTED WIND CONDITIONS - DAY, YEAR 2016 [1,2,3]*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA1 Ulan School | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR | NR | IA |

*Notes:*

1. *NR denotes met conditions not relevant, IA denotes conditions relevant but MCO inaudible during monitoring;*
2. *Wind conditions assumes winds at speeds between 0.1 and 3 m/s during monitoring; and*
3. *Assumes the following possible predicted wind directions: WSW from 236.25 to 258.75 degrees; W from 258.75 to 281.25 degrees.*

### 4.14.3 Night Comparison

Detailed analysis of meteorological conditions which were present during 2016 attended night monitoring show that the following conditions did not occur:

- Calm; and
- strong inversion plus ENE drainage.

Table 4.30 provides the difference between measured and predicted levels for ENE, E, SSW, SW or WSW winds during the night for $L_{Aeq,15minute}$ levels. As the reported model results are the highest predicted noise level (without specifying the actual meteorological condition responsible) it is not possible to determine which conditions match specifically.

*Table 4.30: 2016 MCO OPERATIONAL $L_{Aeq,15minute}$ dB DIFFERENCE AGAINST PREDICTED WIND CONDITIONS - NIGHT, YEAR 2016[2,4]*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA6 Lower Ridge Road | -8[4] | NR | NR | -5 | NR | >-12[4] | IA | >-17[5] | -5[4] | NR | IA[4] | NR |
| NA12 Winchester Cres | -11[4] | IA | -5[4] | -4[4] | >-9[4] | >-14[4] | IA[4] | NR | >-4 | IA[4] | NR | NR |

*Notes:*

1. *NR denotes met conditions not relevant, NA denotes not applicable, IA denotes conditions relevant but MCO inaudible during monitoring, NM denotes conditions relevant but MCO not measurable during monitoring;*
2. *Wind conditions assumes winds at speeds between 0.1 and 3 m/s during monitoring;*
3. *Assumes the following possible predicted wind directions: ENE from 56.25 to 78.75 degrees, E from 78.75 to 101.25 degrees, SSW from 191.25 to 213.75 degrees, SW from 213.75 to 236.25 degrees and WSW from 236.25 to 258.75 degrees;*
4. *Conditions relevant, however, temperature gradient greater than 0 degrees C per 100 metres during monitoring; and*
5. *Strong Inversion.*

Table 4.31 provides the difference between measured and predicted levels for ENE, E, SSW, SW or WSW winds during the night for $L_{A1,1minute}$ levels.

*Table 4.31: 2016 MCO OPERATIONAL $L_{A1,1minute}$ dB DIFFERENCE AGAINST PREDICTED WIND CONDITIONS - NIGHT, YEAR 2016[2]*

| Location | Jan 16 | Feb 16 | Mar 16 | Apr 16 | May 16 | Jun 16 | Jul 16 | Aug 16 | Sep 16 | Oct 16 | Nov 16 | Dec 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NA6 Lower Ridge Road | 0[4] | NR | NR | 0 | NR | -16[4] | IA | >-20[5] | +3[4] | NR | IA[4] | NR |
| NA12 Winchester Cres | -12[4] | IA | -4[4] | +2[4] | -7[4] | <-17[4] | IA[4] | NR | >-7 | IA[4] | NR | NR |

*Notes:*

1. *NR denotes met conditions not relevant, NA denotes not applicable, IA denotes conditions relevant but MCO inaudible during monitoring, NM denotes conditions relevant but MCO not measurable during monitoring;*
2. *Wind conditions assumes winds at speeds between 0.1 and 3 m/s during monitoring;*
3. *Assumes the following wind directions: ENE from 56.25 to 78.75 degrees, E from 78.75 to 101.25 degrees, SSW from 191.25 to 213.75 degrees, SW from 213.75 to 236.25 degrees and WSW from 236.25 to 258.75 degrees;*
4. *Conditions relevant, however, temperature gradient greater than 0 degrees C per 100 metres during monitoring; and*
5. *Strong inversion.*

As shown above, a comparison of predicted and measured levels from MCO Year 2016 OC4 South-West operation varies greatly. This comparison does not take into account operational activities at the time of monitoring compared to predicted scenarios.

# 5 SUMMARY OF COMPLIANCE

During the 2016 reporting period, attended environmental noise monitoring described in this report was conducted monthly. More detail regarding monitoring locations and timing of monitoring during 2016 is provided in Section 1.2 of this report.

Attended noise monitoring was carried out during 2016 to quantify and describe the existing acoustic environment around MCO and compare the results with relevant limits.

## 5.1 January to December 2016 Compliance

MCO complied with the project specific criteria at all monitoring sites during attended noise monitoring undertaken between January and December 2016.

## 5.2 EIS Comparison

Predicted noise levels from Year 2016 of the OC4 South West Haul Road Modification (Stage 1 MOD 11 and Stage 2 Modification 1) were compared against actual noise levels during 2016. Results indicated that MCO was generally well under the predicted levels where meteorological conditions were relevant and there are no systemic issues as a result of the operation.

Measured $L_{A1,1minute}$ noise levels were greater than predicted levels on two occasions, once at each location (NA6 and NA12). The model (Year 2016 of the OC4 South West Haul Road Modification) predicts that there will be no exceedances of the criterion for the indicative scenarios and at no point were measured levels greater than the relevant criterion for each location.

**Global Acoustics Pty Ltd**

# APPENDIX 3C. BLAST MONITORING DATA

| Date | Time | BM1 Ulan School | | BM5 Ridge Road | |
|---|---|---|---|---|---|
| | | Ground Vibration (mm/s) | Blast Overpressure (dBL) | Ground Vibration (mm/s) | Blast Overpressure (dBL) |
| 05/01/16 | 12:13 | 0.25 | 97.5 | 0.02 | 97.5 |
| 08/01/16 | 11:59 | 0.29 | 97.5 | 0.02 | 104.9 |
| 12/01/16 | 16:05 | 0.32 | 101.0 | 0.03 | 97.5 |
| 21/01/16 | 15:19 | 0.39 | 88.0 | 0.03 | 88 |
| 22/01/16 | 12:00 | 0.23 | 94.0 | | |
| 29/01/16 | 16:52 | 0.48 | 94.0 | 0.06 | 98.8 |
| 01/02/16 | 12:05 | 0.12 | 91.5 | 0.01 | 91.5 |
| 06/02/16 | 12:11 | 0.39 | 104.2 | 0.51 | 110.9 |
| 08/02/16 | 12:06 | 0.17 | 100.0 | 0.34 | 106.5 |
| 10/02/16 | 12:03 | 0.15 | 95.9 | 0.32 | 102.8 |
| 15/02/16 | 12:03 | 0.28 | 97.5 | 0.94 | 102.8 |
| 17/02/16 | 12:15 | 0.10 | 81.9 | 0.09 | 91.5 |
| 18/02/16 | 12:12 | 0.80 | 106.0 | 0.27 | 94 |
| 22/02/16 | 12:18 | 0.54 | 95.9 | 0.33 | 94 |
| 23/02/16 | 12:04 | 0.21 | 103.5 | 0.16 | 97.5 |
| 25/02/16 | 14:49 | 1.22 | 95.9 | 0.81 | 102.8 |
| 01/03/16 | 16:10 | 0.26 | 97.5 | 0.81 | 101.9 |
| 09/03/16 | 12:07 | 0.27 | 91.5 | 0.47 | 101 |
| 09/03/16 | 12:18 | 0.41 | 91.5 | 0.48 | 97.5 |
| 14/03/16 | 12:51 | 0.23 | 81.9 | 0.18 | 91.5 |
| 18/03/16 | 14:50 | 0.09 | 95.9 | 0.32 | 108.8 |
| 18/03/16 | 14:56 | 0.50 | 100.0 | 0.94 | 106 |
| 21/03/16 | 12:01 | 0.28 | 101.9 | 0.38 | -* |
| 24/03/16 | 12:28 | 0.34 | 109.9 | 0.19 | 95.9 |
| 24/03/16 | 12:33 | 0.21 | 105.5 | 0.49 | 110.6 |
| 30/03/16 | 12:05 | 0.26 | 98.8 | 0.42 | 91.5 |
| 02/04/16 | 12:05 | 0.24 | 97.5 | 0.16 | 97.5 |
| 05/04/16 | 11:59 | 0.33 | 116.1 | 0.24 | 103.5 |
| 05/04/16 | 12:07 | 0.27 | 88.0 | 0.4 | 91.5 |
| 06/04/16 | 15:59 | 0.20 | 81.9 | 0.22 | 110.6 |
| 11/04/16 | 15:57 | 0.42 | 88.0 | 0.45 | 91.5 |
| 15/04/16 | 12:46 | 0.44 | 101.0 | 0.43 | 91.5 |
| 18/04/16 | 12:03 | 0.23 | 101.0 | 0.2 | 94 |
| 23/04/16 | 15:58 | 0.21 | 101.9 | 0.46 | 101.9 |
| 23/04/16 | 16:03 | 0.66 | 100.0 | 0.56 | 98.8 |
| 26/04/16 | 12:19 | 0.22 | 111.8 | 0.54 | 102.8 |
| 02/05/16 | 12:02 | 0.14 | 94.0 | 0.28 | 103.5 |
| 02/05/16 | 12:13 | 0.72 | 88.0 | 1.21 | 103.5 |
| 06/05/16 | 12:11 | 0.13 | 94.0 | 0.25 | 95.9 |
| 06/05/16 | 12:15 | 0.15 | 97.5 | 0.28 | 103.5 |
| 14/05/16 | 12:01 | 0.40 | 88.0 | 0.53 | 97.5 |
| 17/05/16 | 12:13 | 0.94 | 95.9 | 0.57 | 100 |

| Date | Time | BM1 Ulan School | | BM5 Ridge Road | |
|---|---|---|---|---|---|
| | | Ground Vibration (mm/s) | Blast Overpressure (dBL) | Ground Vibration (mm/s) | Blast Overpressure (dBL) |
| 20/05/16 | 13:07 | 0.79 | 88.0 | 0.54 | 94 |
| 20/05/16 | 13:13 | 0.36 | 98.8 | 0.33 | 101.9 |
| 24/05/16 | 12:02 | 0.13 | 94.0 | 0.34 | 98.8 |
| 24/05/16 | 12:05 | 0.13 | 91.5 | 0.14 | 102.8 |
| 25/05/16 | 13:03 | 0.15 | 94.0 | 0.35 | 98.8 |
| 28/05/16 | 12:28 | 0.18 | 97.5 | 0.26 | 95.9 |
| 31/05/16 | 12:01 | 0.40 | 97.5 | 0.68 | 101.9 |
| 04/06/16 | 15:58 | 0.14 | 91.5 | 0.53 | 106 |
| 06/06/16 | 12:08 | 0.20 | 97.5 | 0.17 | 108.4 |
| 06/06/16 | 12:12 | 0.22 | 88.0 | 0.67 | 97.5 |
| 10/06/16 | 12:16 | 0.36 | 91.5 | 0.45 | 95.9 |
| 10/06/16 | 12:21 | 0.53 | 94.0 | 0.42 | 95.9 |
| 14/06/16 | 13:03 | 0.23 | 98.8 | 0.55 | 98.8 |
| 18/06/16 | 13:01 | 0.46 | 95.9 | 0.59 | 104.2 |
| 20/06/16 | 12:02 | 0.11 | 113.8 | 0.17 | 95.9 |
| 24/06/16 | 12:08 | 1.55 | 97.5 | 0.67 | 101.9 |
| 25/06/16 | 11:58 | 0.35 | 103.5 | 0.19 | 98.8 |
| 02/07/16 | 16:09 | 0.78 | 101.9 | 0.63 | 101.9 |
| 04/07/16 | 12:03 | 0.26 | 88.0 | 0.51 | 98.8 |
| 08/07/16 | 12:32 | 0.26 | 91.5 | 0.18 | 91.5 |
| 11/07/16 | 12:00 | 0.64 | 95.9 | 0.32 | 94 |
| 12/07/16 | 12:04 | 0.34 | 100.0 | 0.11 | 95.9 |
| 15/07/16 | 16:05 | 0.20 | 95.9 | 0.23 | 101 |
| 18/07/16 | 16:43 | 0.50 | 91.5 | 0.37 | 102.8 |
| 21/07/16 | 12:10 | 0.08 | 88.0 | 0.18 | 97.5 |
| 23/07/16 | 12:00 | 0.16 | 101.0 | 0.14 | 102.8 |
| 26/07/16 | 13:20 | 0.49 | 100.0 | 0.24 | 98.8 |
| 30/07/16 | 12:16 | 0.29 | 97.5 | 0.28 | 95.9 |
| 02/08/16 | 16:11 | 0.69 | 111.2 | 0.47 | 114 |
| 08/08/16 | 12:16 | 1.08 | 94.0 | 0.89 | 101.9 |
| 10/08/16 | 11:58 | 0.38 | 103.5 | 0.13 | 91.5 |
| 15/08/16 | 12:01 | 0.31 | 95.9 | 1.08 | 104.2 |
| 17/08/16 | 12:05 | 1.02 | 94.0 | 1.21 | 100 |
| 22/08/16 | 12:00 | 0.57 | 101.0 | 0.42 | 108 |
| 26/08/16 | 13:01 | 0.47 | 101.0 | 0.1 | 95.9 |
| 27/08/16 | 11:59 | 0.60 | 95.9 | 0.37 | 94 |
| 30/08/16 | 12:00 | 0.96 | 95.9 | 0.77 | 106.5 |
| 31/08/16 | 13:21 | 0.37 | 101.0 | 0.19 | 94 |
| 03/09/16 | 16:25 | 0.60 | 91.5 | 0.23 | 91.5 |
| 07/09/16 | 12:05 | 0.93 | 95.9 | 0.46 | 95.9 |
| 07/09/16 | 12:26 | 0.59 | 115.4 | 0.57 | 103.5 |
| 10/09/16 | 12:05 | 0.89 | 88.0 | 0.49 | 98 |
| 14/09/16 | 12:11 | 1.58 | 91.5 | 0.91 | 103.5 |
| 20/09/16 | 12:02 | 1.41 | 91.5 | 0.72 | 101.9 |
| 20/09/16 | 13:11 | 0.30 | 95.9 | 0.38 | 104.9 |

| Date | Time | BM1 Ulan School | | BM5 Ridge Road | |
|---|---|---|---|---|---|
| | | Ground Vibration (mm/s) | Blast Overpressure (dBL) | Ground Vibration (mm/s) | Blast Overpressure (dBL) |
| 26/09/16 | 12:04 | 0.24 | 94.0 | 0.28 | 95.9 |
| 30/09/16 | 12:04 | 0.17 | 91.5 | 0.27 | 95.9 |
| 06/10/16 | 12:11 | 0.61 | 101.0 | 0.68 | 101 |
| 11/10/16 | 12:23 | 0.61 | 101.0 | 0.61 | 101 |
| 13/10/16 | 16:05 | 0.12 | 98.8 | 0.18 | 104.2 |
| 17/10/16 | 16:06 | 0.19 | 94.0 | 0.08 | 95.9 |
| 17/10/16 | 16:10 | 0.17 | 97.5 | 0.11 | 94 |
| 24/10/16 | 16:07 | 0.28 | 94.0 | 0.3 | 95.9 |
| 25/10/16 | 16:04 | 0.19 | 91.5 | 0.12 | 94 |
| 28/10/16 | 16:17 | 0.24 | 94.0 | 0.25 | 101.9 |
| 29/10/16 | 16:07 | 0.14 | 97.5 | 0.03 | 88 |
| 02/11/16 | 12:21 | 0.18 | 94.0 | 0.15 | 95.9 |
| 14/11/16 | 15:14 | 0.37 | 102.8 | 0.24 | * |
| 17/11/16 | 16:01 | 0.18 | 94.0 | 0.17 | 103.5 |
| 19/11/16 | 12:03 | 0.11 | 88.0 | 0.14 | 91.5 |
| 21/11/16 | 11:59 | 0.73 | 81.9 | 0.58 | 100 |
| 23/11/16 | 12:01 | 0.24 | 102.8 | 0.14 | 98.8 |
| 24/11/16 | 12:02 | 0.18 | 94.0 | 0.13 | 100 |
| 28/11/16 | 12:04 | 0.30 | 88.0 | 0.35 | 95.9 |
| 28/11/16 | 16:29 | 0.70 | 97.5 | 0.27 | 97.5 |
| 07/12/16 | 12:17 | 0.27 | 88.0 | 0.29 | 94.5 |
| 09/12/16 | 12:04 | 0.27 | 100.0 | 0.2 | 101.9 |
| 12/12/16 | 12:01 | 0.13 | 94.0 | 0.22 | 97.5 |
| 16/12/16 | 12:11 | 0.41 | 94.0 | 0.47 | 102.8 |
| 23/12/16 | 12:06 | 0.34 | 94.0 | 0.32 | 104.2 |
| 28/12/16 | 16:02 | 0.14 | 88.0 | 0.12 | 95.9 |
| 30/12/16 | 16:00 | 0.12 | 91.5 | 0.05 | 91.5 |
| 30/12/16 | 16:05 | 0.50 | 88.0 | 0.33 | 94 |
| | | | | | |
| Min | | 0.08 | 81.90 | 0.01 | 88.00 |
| Max | | 1.58 | 116.10 | 1.21 | 116.30 |

*Environmental influenced

# APPENDIX 3D. AIR QUALITY DATA

**Table A : Summary of the MCO Air Quality-Monitoring Program**

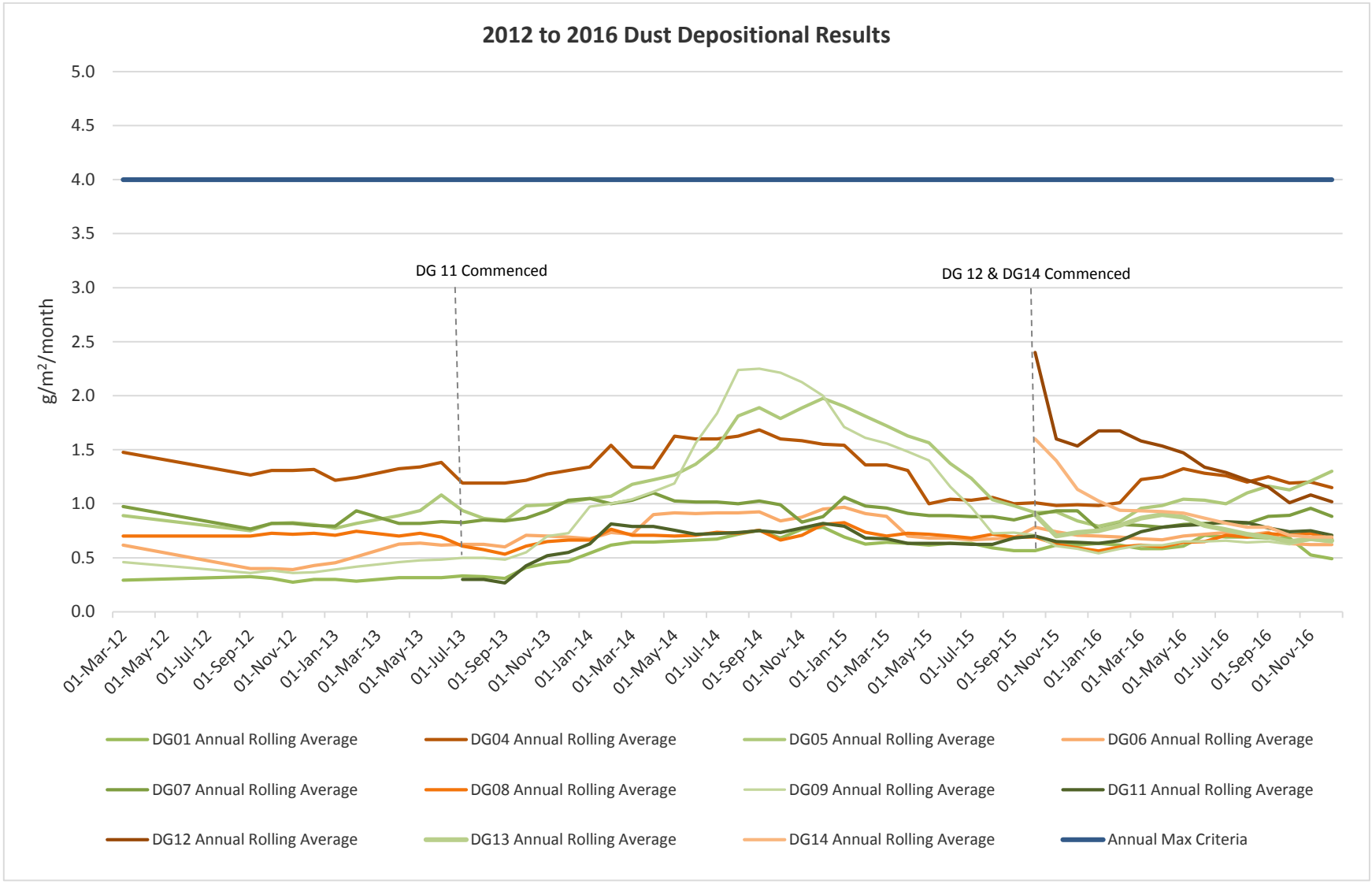
| Monitoring Parameter | Monitoring Location | Frequency | Justification |
|---|---|---|---|
| Dust Deposition | DG01 – Bobadeen | Every 30 days ± 2 days | Background monitoring north of the Moolarben Coal Complex. |
| | DG04 – Ulan Village | Every 30 days ± 2 days | Representative of nearest non-mine owned residences to the north-west of the Moolarben Coal Complex. |
| | DG05 – Glenmoor | Every 30 days ± 2 days | Representative of nearest non-mine owned residences to the south-west and west of the Moolarben Coal Complex. |
| | DG06 – Barcoo | Every 30 days ± 2 days | Representative of non-mine owned residences to the south, south-west and west of the Moolarben Coal Complex. |
| | DG07 – Hillside | Every 30 days ± 2 days | Representative of non-mine owned residences to the south of the Moolarben Coal Complex. Due to its close proximity to OC3, DG07 will be discontinued prior to mining OC3 and an alternative location will be investigated. |
| | DG08 – Croydon | Every 30 days ± 2 days | Representative of non-mine owned residences to the south of the Moolarben Coal Complex. Due to its close proximity to OC3, DG08 will be discontinued prior to mining OC3 and an alternative location will be investigated. |
| | DG09 – Wilga | Every 30 days ± 2 days | Representative of non-mine owned residences to the south-west and west of the Moolarben Coal Complex. |
| | DG11 – Ridge Road | Every 30 days ± 2 days | Representative of non-mine owned residences to the south-west and west of the Moolarben Coal Complex. |
| | DG12 – Ulan-Wollar Rd | Every 30 days ± 2 days | Representative of mine owned land east of the Moolarben Coal Complex. |
| | DG 13 – Winchester Cres | Every 30 days ± 2 days | Representative of mine owned land south of the southwest and south of the Moolarben Coal Complex |
| HVAS – PM10 | PM01 (Ulan Village) | Every 6 days | Indicative of potential impacts to nearest non-mine owned residences to the north-west of the Moolarben Coal Complex. |
| | PM02 (Ridge Road) | Every 6 days | Background monitoring south-west west of the Moolarben Coal Complex. |
| Real Time $PM_{10}$ | TEOM 01 (Ulan School) | Real Time $PM_{10}$ | Real time monitoring at Ulan Public School. |
| | TEOM 04 (Ulan Road) | Real Time $PM_{10}$ | Real-time monitoring representative of nearest non-mine owned residences to the south-west and west of the Moolarben Coal Complex. |
| | TEOM 05 (Southern Ridge Road) | Real Time $PM_{10}$ | Real time monitoring representative of non-mine owned residences to the south-west of and west of the Moolarben Coal Complex. Relocation in progress. |
| | TEOM06 (Ulan-Wollar Rd) | Real Time $PM_{10}$ | Real time monitoring representative of mine owned land to the east of Moolarben Coal Complex and indicator of background air quality. (Note there are no residences on private or mine owned land in the vicinity of the monitor). |

**Table B : Summary of the MCO Air Quality-Monitoring Program – Dust Deposition**

| Dust Gauge | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG1 | 0.6 | 0.2 | 0.4 | 0.4 | 0.5 | 1.6 | 0.2 | 0.2 | 0.2 | 0.5 | 0.6 | 0.5 |
| DG4 | 1.1 | 1.6 | 3.4 | 0.8 | 1.7 | 0.7 | 0.4 | 0.5 | 1.3 | 0.4 | 1.5 | 0.4 |
| DG5 | 0.7 | 1.5 | 2.6 | 1 | 1.2 | 0.5 | 0.4 | 2 | C | 0.5 | 1.9 | 2 |
| DG6 | 0.8 | 0.7 | 0.6 | 0.5 | 0.8 | 0.5 | 0.4 | 0.2 | C | C | C | 1.1 |
| DG7 | 0.6 | 1.3 | 0.8 | 0.5 | 0.6 | 0.3 | 0.3 | 0.3 | 1.1 | 1.5 | 2.1 | 1.2 |
| DG8 | 0.5 | 1 | 0.9 | 0.5 | 0.8 | 0.3 | 1 | 0.3 | 0.7 | 0.3 | 0.9 | 0.9 |
| DG9 | 0.5 | 1.2 | 1.1 | 0.7 | 0.9 | 0.3 | 0.3 | 0.3 | 0.6 | 0.4 | 1 | 0.4 |
| DG11 | 2.1 | C | 1.2 | 1.3 | 1.1 | 0.4 | 0.9 | 0.6 | 0.5 | 0.8 | 1.6 | 0.7 |
| DG12 | 0.7 | 1.1 | 1.5 | 0.8 | 0.6 | 0.4 | 0.6 | 0.3 | 0.5 | 0.5 | 0.9 | 0.6 |
| DG13 | 0.8 | 1 | 1.2 | 1.1 | 0.7 | 0.2 | 0.4 | 0.3 | 0.4 | 0.4 | 0.8 | 0.6 |
| DG14 | 0.7 | 0.6 | 0.9 | 0.9 | 0.8 | 0.5 | 0.4 | 0.4 | A | A | 1 | 0.6 |

*C – Dust gauge deemed contaminated after analysis of influencing factors. These factors include an ash residue result of <50%, the presence of bird droppings or other contaminants such as insects in the dust gauge and analysis of historical results from the dust gauge.
A - No Access

**Figure 3-b** 2012 to 2016 Dust Depositional Results



## Table 3: TEOM Monitoring Data

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 1/01/2016 | 11.1 | 13.5 | 7.9 | 9.9 | |
| 2/01/2016 | 11.5 | 15.8 | 10.5 | 7.7 | |
| 3/01/2016 | 8.4 | 9.9 | 7.3 | 5.6 | |
| 4/01/2016 | 4.0 | 5.1 | 4.4 | 3.5 | |
| 5/01/2016 | 0.0 | 0.9 | 0.1 | 0.0 | |
| 6/01/2016 | 0.1 | 1.2 | 0.9 | 0.0 | |
| 7/01/2016 | 3.8 | 12.9 | 1.8 | 2.9 | |
| 8/01/2016 | 9.7 | 15.3 | 9.0 | 7.1 | |
| 9/01/2016 | 15.4 | 18.3 | 15.2 | 13.5 | |
| 10/01/2016 | 17.6 | 22.6 | 16.8 | 16.2 | |
| 11/01/2016 | 12.7 | 23.3 | 16.5 | 8.6 | |
| 12/01/2016 | 19.8 | 37.7 | 24.2 | 12.0 | |
| 13/01/2016 | 24.7 | 27.6 | 23.8 | 20.3 | |
| 14/01/2016 | 20.1 | 37.4 | 27.0 | 14.8 | |
| 15/01/2016 | 3.7 | 4.3 | 1.2 | 3.7 | |
| 16/01/2016 | 8.7 | 2.3 | 7.9 | 6.7 | |
| 17/01/2016 | 5.8 | 7.3 | 3.2 | 3.4 | |
| 18/01/2016 | 8.8 | 24.7 | 4.6 | 7.4 | |
| 19/01/2016 | 15.1 | 26.4 | 10.2 | 9.9 | |
| 20/01/2016 | 21.6 | 41.8 | 14.1 | 9.0 | |
| 21/01/2016 | 23.1 | 34.6 | 19.3 | 13.0 | |
| 22/01/2016 | 7.3 | 16.1 | 0.2 | 6.9 | |
| 23/01/2016 | 3.1 | 12.7 | 2.5 | 3.7 | |
| 24/01/2016 | 13.6 | 17.1 | 13.0 | 12.9 | |
| 25/01/2016 | 22.1 | 3.0 | 21.3 | 21.1 | |
| 26/01/2016 | 10.9 | 14.1 | 9.3 | 9.6 | |
| 27/01/2016 | 7.9 | 9.9 | 7.5 | 5.7 | |
| 28/01/2016 | 7.3 | 23.2 | 7.0 | 5.5 | |
| 29/01/2016 | 8.4 | 22.1 | 7.1 | 5.2 | |
| 30/01/2016 | 14.2 | 19.7 | 10.9 | 12.7 | |
| 31/01/2016 | 14.3 | 20.3 | 18.2 | 13.4 | |
| 1/02/2016 | 7.9 | 26.8 | 14.4 | 7.7 | |
| 2/02/2016 | 8.0 | 24.3 | 11.6 | 7.2 | |
| 3/02/2016 | 15.5 | 20.7 | 15.1 | 15.4 | |
| 4/02/2016 | 6.3 | 13.9 | 6.2 | 6.5 | |
| 5/02/2016 | 10.4 | 24.4 | 11.4 | 10.1 | |
| 6/02/2016 | 10.4 | 13.8 | 8.8 | 7.5 | |
| 7/02/2016 | 16.9 | 17.8 | 13.7 | 14.3 | |
| 8/02/2016 | 10.6 | 15.7 | 7.8 | 7.1 | |
| 9/02/2016 | 16.2 | 9.6 | 9.8 | 10.1 | |
| 10/02/2016 | 20.4 | 34.4 | 11.5 | 15.0 | |
| 11/02/2016 | 16.1 | 31.3 | 13.4 | 12.7 | |
| 12/02/2016 | 16.2 | 31.4 | 10.6 | 10.1 | |
| 13/02/2016 | 15.7 | 30.0 | 8.8 | 11.0 | |
| 14/02/2016 | 16.3 | 33.5 | 23.6 | 12.9 | |
| 15/02/2016 | 23.5 | 39.1 | 38.4 | 23.2 | |
| 16/02/2016 | 25.9 | 35.2 | 32.8 | 20.0 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 17/02/2016 | 22.1 | 24.0 | 23.6 | 24.6 | |
| 18/02/2016 | 29.7 | 34.9 | 25.7 | 28.6 | |
| 19/02/2016 | 18.3 | 21.5 | 15.5 | 19.9 | |
| 20/02/2016 | 22.5 | 27.0 | 30.2 | 23.0 | |
| 21/02/2016 | 13.1 | 9.1 | 10.2 | 11.0 | |
| 22/02/2016 | 14.2 | 15.8 | 9.6 | 12.6 | |
| 23/02/2016 | 18.5 | 18.3 | 7.9 | 11.1 | |
| 24/02/2016 | 24.1 | 24.1 | 16.4 | 27.2 | |
| 25/02/2016 | 23.7 | 23.2 | 25.4 | 24.1 | |
| 26/02/2016 | 23.9 | 26.3 | 34.4 | 25.7 | |
| 27/02/2016 | 18.2 | 23.7 | 14.8 | 14.4 | |
| 28/02/2016 | 14.6 | 21.0 | 12.0 | 12.8 | |
| 29/02/2016 | 13.3 | 15.6 | 4.7 | 8.9 | |
| 1/03/2016 | 12.5 | 18.0 | 7.3 | 8.9 | |
| 2/03/2016 | 17.6 | 27.7 | 13.4 | 15.0 | |
| 3/03/2016 | 27.4 | 38.7 | 18.7 | 20.5 | |
| 4/03/2016 | 14.2 | 25.7 | 10.5 | 13.3 | |
| 5/03/2016 | 14.2 | 14.3 | 8.7 | 11.0 | |
| 6/03/2016 | 17.9 | 17.7 | 12.6 | 11.8 | |
| 7/03/2016 | 14.7 | 13.4 | 9.2 | 12.2 | |
| 8/03/2016 | 18.9 | 26.5 | 14.5 | 14.9 | |
| 9/03/2016 | 15.8 | 14.1 | 6.6 | 8.8 | |
| 10/03/2016 | 15.7 | 33.2 | 21.9 | 11.7 | |
| 11/03/2016 | 12.9 | 19.7 | 14.8 | 11.6 | |
| 12/03/2016 | 14.8 | 18.1 | 11.7 | 11.3 | |
| 13/03/2016 | 2.3 | 20.7 | 11.7 | 13.0 | |
| 14/03/2016 | 11.1 | 17.7 | 11.5 | 9.4 | |
| 15/03/2016 | 8.6 | 12.0 | 8.6 | 6.2 | |
| 16/03/2016 | 5.3 | 7.6 | 1.9 | 1.8 | |
| 17/03/2016 | 9.0 | 10.8 | 4.4 | 7.4 | |
| 18/03/2016 | 6.1 | 8.4 | 1.6 | 4.4 | |
| 19/03/2016 | 5.4 | 7.6 | 6.4 | 5.3 | |
| 20/03/2016 | 10.6 | 10.3 | 6.6 | 7.4 | |
| 21/03/2016 | 5.9 | 6.3 | 1.7 | 1.7 | |
| 22/03/2016 | 9.6 | 10.7 | 3.6 | 1.1 | |
| 23/03/2016 | 10.1 | 13.5 | 8.1 | 11.2 | |
| 24/03/2016 | 21.7 | 24.8 | 18.6 | 17.7 | |
| 25/03/2016 | 15.4 | 17.9 | 15.3 | 11.5 | |
| 26/03/2016 | 14.0 | 15.5 | 14.7 | 12.2 | |
| 27/03/2016 | 19.2 | 20.7 | 19.8 | 17.3 | |
| 28/03/2016 | 13.6 | 16.2 | 13.3 | 11.2 | |
| 29/03/2016 | 17.4 | 21.0 | 22.2 | 18.2 | |
| 30/03/2016 | 8.8 | 14.1 | 13.0 | 14.2 | |
| 31/03/2016 | 18.7 | 17.5 | 22.8 | 21.4 | |
| 1/04/2016 | 23.7 | 23.5 | 26.4 | 17.2 | |
| 2/04/2016 | 20.2 | 17.5 | 31.1 | 17.5 | Bushfires in region |
| 3/04/2016 | 29.2 | 28.9 | 32.7 | 25.6 | Bushfires in region |
| 4/04/2016 | 18.7 | 22.6 | 16.3 | 19.3 | |
| 5/04/2016 | 10.7 | 21.7 | 18.3 | 20.7 | |
| 6/04/2016 | 13.4 | 24.2 | 24.0 | 19.0 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 7/04/2016 | 14.7 | 37.8 | 33.3 | 31.3 | |
| 8/04/2016 | 19.0 | 18.7 | 16.3 | 14.9 | |
| 9/04/2016 | 15.0 | 15.8 | 21.5 | 9.0 | |
| 10/04/2016 | 16.1 | 18.6 | 27.3 | 14.6 | |
| 11/04/2016 | 16.1 | 15.2 | 23.6 | 16.6 | |
| 12/04/2016 | 28.4 | 25.9 | 22.6 | 27.7 | |
| 13/04/2016 | 18.7 | 20.2 | 9.2 | 12.8 | |
| 14/04/2016 | 8.4 | 9.9 | 5.6 | 7.5 | |
| 15/04/2016 | 19.7 | 14.7 | 13.8 | 16.9 | |
| 16/04/2016 | 27.1 | 26.4 | 23.1 | 13.2 | |
| 17/04/2016 | 25.6 | 34.8 | 29.7 | 18.2 | |
| 18/04/2016 | 11.9 | 10.8 | 10.7 | 9.3 | |
| 19/04/2016 | 17.0 | 13.4 | 15.7 | 8.0 | |
| 20/04/2016 | 17.1 | 14.6 | 15.1 | 12.5 | |
| 21/04/2016 | 17.8 | 12.9 | 14.4 | 11.3 | |
| 22/04/2016 | 11.8 | 13.9 | 22.2 | 11.4 | |
| 23/04/2016 | 8.9 | 17.4 | 13.5 | 4.2 | |
| 24/04/2016 | 10.9 | 15.8 | 23.2 | 8.9 | |
| 25/04/2016 | 14.6 | 19.9 | 24.5 | 10.2 | |
| 26/04/2016 | 13.6 | 17.8 | 39.1 | 8.0 | |
| 27/04/2016 | 23.5 | 17.9 | 26.1 | 7.6 | Hazard Reduction Burn: GRNP |
| 28/04/2016 | 34.8 | 34.1 | 71.2 | 8.1 | Hazard Reduction Burn: GRNP |
| 29/04/2016 | 24.3 | 30.4 | 55.7 | 17.4 | Hazard Reduction Burn: GRNP |
| 30/04/2016 | 13.6 | 16.3 | 18.4 | 9.0 | |
| 1/05/2016 | 5.9 | 2.0 | 3.4 | 1.9 | |
| 2/05/2016 | 7.1 | 9.6 | 9.3 | 5.9 | |
| 3/05/2016 | 3.1 | 5.2 | 4.4 | 3.4 | |
| 4/05/2016 | 13.2 | 14.1 | 11.2 | 7.5 | |
| 5/05/2016 | 8.0 | 11.1 | 10.2 | 7.0 | |
| 6/05/2016 | 9.0 | 9.5 | 12.1 | 8.2 | |
| 7/05/2016 | 18.5 | 17.3 | 14.3 | 21.2 | |
| 8/05/2016 | 22.4 | 24.1 | 25.5 | 13.9 | |
| 9/05/2016 | 5.8 | 7.3 | 10.3 | 5.2 | |
| 10/05/2016 | 3.1 | 4.8 | 3.8 | 2.8 | |
| 11/05/2016 | 7.3 | 9.1 | 9.8 | 7.3 | |
| 12/05/2016 | 4.2 | 6.5 | 8.3 | 4.3 | |
| 13/05/2016 | 3.7 | 7.2 | 8.4 | 3.8 | |
| 14/05/2016 | 8.9 | 7.4 | 11.5 | 4.3 | |
| 15/05/2016 | 5.6 | 7.6 | 12.5 | 5.3 | |
| 16/05/2016 | 14.4 | 12.6 | 8.3 | 10.0 | |
| 17/05/2016 | 7.0 | 11.8 | 14.8 | 6.8 | |
| 18/05/2016 | 7.6 | 9.5 | 15.5 | 6.7 | |
| 19/05/2016 | 13.2 | 15.8 | 18.6 | 15.7 | |
| 20/05/2016 | 10.6 | 11.0 | 13.1 | 10.4 | |
| 21/05/2016 | 24.7 | 20.2 | 19.1 | 18.4 | |
| 22/05/2016 | 21.9 | 17.3 | 17.7 | 17.6 | |
| 23/05/2016 | 9.9 | 10.3 | 15.5 | 9.2 | |
| 24/05/2016 | 6.9 | 12.0 | 15.8 | 4.3 | |
| 25/05/2016 | 9.7 | 12.7 | 14.4 | 8.3 | |
| 26/05/2016 | 6.9 | 6.7 | 9.5 | 4.9 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 27/05/2016 | 2.6 | 3.9 | 6.7 | 2.4 | |
| 28/05/2016 | 2.0 | 3.1 | 3.2 | 1.5 | |
| 29/05/2016 | 3.6 | 2.9 | 3.4 | 1.7 | |
| 30/05/2016 | 5.7 | 7.4 | 4.2 | 3.4 | |
| 31/05/2016 | 9.9 | 13.4 | 10.2 | 6.8 | |
| 1/06/2016 | 8.5 | 12.6 | 9.0 | 4.6 | |
| 2/06/2016 | 19.8 | 12.4 | 16.2 | 4.9 | |
| 3/06/2016 | 11.7 | 6.2 | 6.2 | 3.9 | |
| 4/06/2016 | 2.0 | 1.5 | 1.9 | 0.7 | |
| 5/06/2016 | NA* | NA* | NA* | NA* | |
| 6/06/2016 | 4.7 | 5.5 | 5.7 | 4.4 | |
| 7/06/2016 | 3.1 | 3.1 | 3.3 | 2.3 | |
| 8/06/2016 | 3.8 | 6.7 | 4.7 | 2.5 | |
| 9/06/2016 | 2.8 | 3.2 | 5.1 | 2.8 | |
| 10/06/2016 | 2.0 | 2.8 | 4.4 | 1.6 | |
| 11/06/2016 | 3.5 | 3.3 | 3.9 | 7.5 | |
| 12/06/2016 | 6.5 | 8.3 | 5.2 | 5.3 | |
| 13/06/2016 | 5.9 | 9.7 | 7.2 | 5.3 | |
| 14/06/2016 | 6.1 | 6.9 | 9.1 | 3.4 | |
| 15/06/2016 | 8.9 | 12.0 | 7.5 | 5.7 | |
| 16/06/2016 | 7.3 | 13.1 | 12.4 | 4.0 | |
| 17/06/2016 | 5.9 | 12.5 | 8.4 | 5.1 | |
| 18/06/2016 | 4.4 | 3.9 | 3.2 | 2.5 | |
| 19/06/2016 | 0.4 | 3.2 | 0.4 | 1.7 | |
| 20/06/2016 | 0.3 | 0.2 | 0.1 | NA* | |
| 21/06/2016 | 1.9 | 2.6 | 2.4 | 1.3 | |
| 22/06/2016 | 2.0 | 3.8 | 2.6 | 1.7 | |
| 23/06/2016 | 3.5 | 6.5 | 4.7 | 2.1 | |
| 24/06/2016 | 0.9 | 1.9 | 0.9 | 0.8 | |
| 25/06/2016 | 3.6 | 3.7 | 3.9 | 1.6 | |
| 26/06/2016 | 4.1 | 6.1 | 4.2 | 2.2 | |
| 27/06/2016 | 2.1 | 3.2 | 3.5 | 2.0 | |
| 28/06/2016 | 4.0 | 9.1 | 4.5 | 2.8 | |
| 29/06/2016 | 8.6 | 10.7 | 3.9 | 3.6 | |
| 30/06/2016 | 3.8 | 9.7 | 8.3 | 1.9 | |
| 1/07/2016 | 2.3 | 4.3 | 7.6 | 2.4 | |
| 2/07/2016 | 4.2 | 3.4 | 5.9 | 3.2 | |
| 3/07/2016 | 2.8 | 4.4 | 7.1 | 2.3 | |
| 4/07/2016 | 5.3 | 12.3 | 8.7 | 4.1 | |
| 5/07/2016 | 2.2 | 2.9 | 2.5 | 1.2 | |
| 6/07/2016 | 1.4 | 1.9 | 2.1 | 0.9 | |
| 7/07/2016 | 4.9 | 9.0 | 4.9 | 2.6 | |
| 8/07/2016 | 3.1 | 5.2 | 2.1 | 1.5 | |
| 9/07/2016 | 5.2 | 5.8 | 4.5 | 3.0 | |
| 10/07/2016 | 7.9 | 7.2 | 5.5 | 4.4 | |
| 11/07/2016 | 6.0 | 9.5 | 8.4 | 5.7 | |
| 12/07/2016 | 2.2 | 3.5 | 2.3 | 1.3 | |
| 13/07/2016 | 5.8 | 6.6 | 13.4 | 4.8 | |
| 14/07/2016 | 3.7 | 6.5 | 8.3 | 4.1 | |
| 15/07/2016 | 7.7 | 9.3 | 4.4 | 4.9 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 16/07/2016 | 8.8 | 15.5 | 8.0 | 5.4 | |
| 17/07/2016 | 5.5 | 5.7 | 4.2 | 4.1 | |
| 18/07/2016 | 6.5 | 8.9 | 8.9 | 3.9 | |
| 19/07/2016 | 4.8 | 8.8 | 11.0 | 3.1 | |
| 20/07/2016 | 1.2 | 1.1 | 0.9 | 0.6 | |
| 21/07/2016 | 4.9 | 5.8 | 1.3 | 1.5 | |
| 22/07/2016 | 3.6 | 6.7 | 8.7 | 2.7 | |
| 23/07/2016 | 3.8 | 3.6 | Power Failure | 2.2 | |
| 24/07/2016 | 4.9 | 5.5 | 5.7 | 5.1 | |
| 25/07/2016 | 4.2 | 5.5 | 5.8 | 4.4 | |
| 26/07/2016 | 4.0 | 7.2 | 5.5 | 3.5 | |
| 27/07/2016 | 4.0 | 5.7 | 8.4 | 3.7 | |
| 28/07/2016 | 1.7 | 0.8 | 5.1 | 2.1 | |
| 29/07/2016 | 0.5 | 2.0 | 0.8 | Routine Maintenance | |
| 30/07/2016 | 6.3 | 5.9 | 1.4 | 1.7 | |
| 31/07/2016 | 3.1 | 5.8 | 8.8 | 1.7 | |
| 1/08/2016 | 2.5 | 10.0 | 12.6 | 2.5 | |
| 2/08/2016 | 5.7 | 12.0 | 7.3 | 2.1 | |
| 3/08/2016 | 1.8 | 4.0 | 2.3 | 1.8 | |
| 4/08/2016 | 3.1 | 7.1 | 4.8 | 3.6 | |
| 5/08/2016 | 5.5 | 9.4 | 3.3 | 4.6 | |
| 6/08/2016 | 5.0 | 8.9 | 3.4 | 2.1 | |
| 7/08/2016 | 7.8 | 9.4 | 5.9 | 3.4 | |
| 8/08/2016 | 9.6 | 11.4 | 7.3 | 5.4 | |
| 9/08/2016 | 7.5 | 12.9 | 9.3 | 5.6 | |
| 10/08/2016 | 6.5 | 11.6 | 8.9 | 6.2 | |
| 11/08/2016 | 3.5 | 8.8 | 6.3 | 3.3 | |
| 12/08/2016 | 4.4 | 7.1 | 7.2 | 4.2 | |
| 13/08/2016 | 5.4 | 7.2 | 14.0 | 5.2 | |
| 14/08/2016 | 13.1 | 11.9 | 8.4 | 6.3 | |
| 15/08/2016 | 16.1 | 16.2 | 10.8 | 12.2 | |
| 16/08/2016 | 14.9 | 12.4 | 13.7 | 9.7 | |
| 17/08/2016 | 12.7 | 13.7 | 11.8 | 7.9 | |
| 18/08/2016 | 17.3 | 14.3 | 10.3 | 9.5 | |
| 19/08/2016 | 9.2 | 16.7 | 11.1 | 8.5 | |
| 20/08/2016 | 2.5 | 2.7 | 5.6 | 1.7 | |
| 21/08/2016 | 3.7 | 5.4 | 5.8 | 4.0 | |
| 22/08/2016 | 5.0 | 6.3 | 7.9 | 3.6 | |
| 23/08/2016 | 2.3 | 9.4 | 2.4 | 0.7 | |
| 24/08/2016 | 3.4 | 3.1 | 2.4 | 1.5 | |
| 25/08/2016 | 2.3 | 4.5 | 4.3 | 1.5 | |
| 26/08/2016 | 2.7 | 5.1 | 5.0 | 1.7 | |
| 27/08/2016 | 3.9 | 5.3 | 7.7 | 2.7 | |
| 28/08/2016 | 5.0 | 5.4 | 8.8 | 3.2 | |
| 29/08/2016 | 9.3 | 13.1 | 8.7 | 4.9 | |
| 30/08/2016 | 18.1 | 21.6 | 12.8 | 16.8 | |
| 31/08/2016 | 7.7 | 11.0 | 9.3 | 6.6 | |
| 1/09/2016 | 2.9 | 4.2 | 2.4 | 2.4 | |
| 2/09/2016 | 1.9 | 2.5 | 1.5 | 1.4 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 3/09/2016 | Unit Failure | 3.1 | 4.3 | 2.5 | |
| 4/09/2016 | Unit Failure | 3.1 | 5.3 | 2.2 | |
| 5/09/2016 | Unit Failure | 6.1 | 5.8 | 2.4 | |
| 6/09/2016 | Unit Failure | 10.6 | 8.1 | 5.2 | |
| 7/09/2016 | Unit Failure | 12.3 | 12.8 | 11.4 | |
| 8/09/2016 | 0.2 | 18.8 | 11.1 | 9.9 | |
| 9/09/2016 | 9.3 | 18.6 | 10.4 | 8.7 | |
| 10/09/2016 | 4.7 | 2.0 | 3.3 | 1.6 | |
| 11/09/2016 | 4.3 | 5.1 | 8.4 | 3.9 | |
| 12/09/2016 | 6.3 | 12.6 | 7.9 | 5.2 | |
| 13/09/2016 | 13.6 | 13.5 | 12.6 | 11.2 | |
| 14/09/2016 | 2.5 | 3.2 | 2.5 | 1.0 | |
| 15/09/2016 | 8.1 | 4.0 | 3.1 | 1.0 | |
| 16/09/2016 | 2.7 | 4.0 | 4.6 | 1.9 | |
| 17/09/2016 | Unit Failure | 5.6 | 5.5 | 2.9 | |
| 18/09/2016 | Unit Failure | 4.8 | 4.8 | 2.3 | |
| 19/09/2016 | 6.4 | 4.0 | 3.6 | 1.3 | |
| 20/09/2016 | Unit Failure | 8.5 | 6.3 | 3.5 | |
| 21/09/2016 | Unit Failure | 5.3 | 5.5 | 2.1 | |
| 22/09/2016 | Unit Failure | 5.5 | 7.5 | 3.9 | |
| 23/09/2016 | 4.0 | 6.2 | 7.7 | 2.8 | |
| 24/09/2016 | 2.6 | 4.8 | 7.4 | 3.0 | |
| 25/09/2016 | 3.1 | 2.3 | 4.3 | 1.6 | |
| 26/09/2016 | Unit Failure | 7.1 | 8.0 | 3.4 | |
| 27/09/2016 | Unit Failure | 8.7 | 13.2 | 4.5 | |
| 28/09/2016 | Unit Failure | 9.0 | 5.8 | 6.6 | |
| 29/09/2016 | Unit Failure | 15.4 | 18.0 | 13.1 | |
| 30/09/2016 | 7.0 | 7.9 | 8.0 | 6.5 | TEOM4 replacement delivered |
| 1/10/2016 | 4.0 | 4.5 | 6.4 | 2.9 | |
| 2/10/2016 | 4.6 | 4.9 | 4.5 | 2.9 | |
| 3/10/2016 | 5.3 | 4.1 | 5.3 | 3.7 | |
| 4/10/2016 | 6.4 | 5.7 | 7.3 | 4.4 | |
| 5/10/2016 | 9.6 | 7.8 | 11.1 | 6.2 | |
| 6/10/2016 | 10.7 | 5.1 | 14.4 | 7.4 | |
| 7/10/2016 | 10.8 | 9.4 | 13.4 | 7.1 | |
| 8/10/2016 | 12.2 | 11.5 | 15.2 | 8.4 | |
| 9/10/2016 | 21.1 | 17.8 | 12.9 | 13.1 | |
| 10/10/2016 | 15.2 | 18.9 | 13.9 | 11.0 | |
| 11/10/2016 | 7.5 | 11.0 | 5.8 | 3.7 | |
| 12/10/2016 | 7.4 | 6.8 | 6.9 | 5.0 | |
| 13/10/2016 | 10.0 | 9.5 | 5.9 | 4.8 | |
| 14/10/2016 | 14.2 | 10.2 | 7.9 | 10.1 | |
| 15/10/2016 | 15.5 | 10.1 | 11.1 | 9.1 | |
| 16/10/2016 | 13.9 | 15.3 | 12.6 | 10.9 | |
| 17/10/2016 | 8.9 | 6.4 | 6.2 | 5.1 | |
| 18/10/2016 | 5.9 | 5.8 | 5.0 | 2.2 | |
| 19/10/2016 | 8.7 | 7.8 | 8.4 | 4.1 | |
| 20/10/2016 | 10.2 | 11.4 | 4.0 | 8.0 | |
| 21/10/2016 | 9.7 | 18.0 | 15.5 | 13.0 | |
| 22/10/2016 | 5.1 | 3.1 | 4.2 | 1.8 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 23/10/2016 | 3.5 | 3.4 | 3.6 | 2.4 | |
| 24/10/2016 | 5.7 | 6.0 | 8.2 | 4.2 | |
| 25/10/2016 | 10.0 | 7.7 | 9.4 | 5.6 | |
| 26/10/2016 | 11.2 | 8.5 | 13.0 | 5.8 | |
| 27/10/2016 | 15.8 | 15.9 | 16.8 | 10.4 | |
| 28/10/2016 | 14.0 | 13.8 | 9.2 | 9.4 | |
| 29/10/2016 | 18.2 | 14.1 | 11.1 | 11.0 | |
| 30/10/2016 | 17.0 | 14.0 | 11.4 | 10.8 | |
| 31/10/2016 | 12.1 | 7.9 | 9.7 | 4.8 | |
| 1/11/2016 | 9.6 | 4.9 | 3.3 | 4.0 | |
| 2/11/2016 | 12.1 | 5.0 | 7.3 | 3.9 | |
| 3/11/2016 | 12.8 | 7.2 | 11.4 | 5.1 | |
| 4/11/2016 | 17.3 | 9.6 | 16.0 | 9.6 | |
| 5/11/2016 | 17.3 | 13.8 | 23.8 | 12.5 | |
| 6/11/2016 | 13.6 | 10.7 | 17.8 | 10.6 | |
| 7/11/2016 | 18.2 | 9.9 | 16.6 | 14.5 | |
| 8/11/2016 | 24.0 | 23.5 | 22.4 | 14.1 | |
| 9/11/2016 | 12.0 | 10.3 | 8.6 | 8.5 | |
| 10/11/2016 | 9.8 | 7.6 | 14.4 | 4.5 | |
| 11/11/2016 | 21.6 | 16.2 | 19.1 | 13.3 | |
| 12/11/2016 | 10.7 | 7.6 | 9.3 | 4.8 | |
| 13/11/2016 | 12.0 | 8.7 | 19.7 | 8.9 | |
| 14/11/2016 | 7.9 | 4.8 | 12.9 | 3.9 | |
| 15/11/2016 | 9.0 | 3.9 | 13.5 | 5.2 | |
| 16/11/2016 | 15.7 | 14.0 | 11.2 | 7.5 | |
| 17/11/2016 | 24.1 | 15.1 | 11.3 | 11.8 | |
| 18/11/2016 | 22.4 | 15.1 | 16.7 | 12.4 | |
| 19/11/2016 | 22.0 | 20.2 | 25.1 | 13.9 | |
| 20/11/2016 | 30.0 | 25.3 | 22.6 | 20.1 | |
| 21/11/2016 | 23.0 | 15.8 | 13.8 | 10.8 | |
| 22/11/2016 | 26.0 | 23.9 | 16.9 | 14.0 | |
| 23/11/2016 | 17.5 | 17.2 | 23.3 | 14.6 | |
| 24/11/2016 | 8.4 | 5.6 | 11.0 | 5.1 | |
| 25/11/2016 | 12.7 | 9.5 | 16.0 | 8.8 | |
| 26/11/2016 | 18.1 | 15.8 | 16.9 | 9.6 | |
| 27/11/2016 | 28.0 | 22.9 | 21.9 | 17.0 | |
| 28/11/2016 | 28.1 | 20.2 | 18.4 | 18.2 | |
| 29/11/2016 | 23.1 | 18.2 | 23.3 | 16.5 | |
| 30/11/2016 | 22.6 | 21.5 | 15.5 | 15.1 | |
| 1/12/2016 | 20.9 | 14.6 | 15.7 | 14.0 | |
| 2/12/2016 | 25.6 | 16.2 | 26.9 | 17.8 | |
| 3/12/2016 | 31.1 | 24.9 | 25.5 | 20.8 | |
| 4/12/2016 | 29.1 | 26.5 | 20.7 | 20.1 | |
| 5/12/2016 | 28.1 | 26.9 | 23.8 | 21.4 | |
| 6/12/2016 | 17.9 | 16.2 | 13.0 | 11.8 | |
| 7/12/2016 | 13.1 | 12.0 | 5.9 | 6.7 | |
| 8/12/2016 | 18.6 | 12.3 | 15.6 | 9.1 | |
| 9/12/2016 | 12.7 | 8.2 | 13.3 | 6.9 | |
| 10/12/2016 | 22.5 | 19.7 | 17.1 | 13.9 | |
| 11/12/2016 | 26.2 | 21.4 | 17.7 | 18.8 | |

| Date | Lagoons Road TEOM04 | Ulan School TEOM01 EPL 17 | Ulan-Wollar Road TEOM06 EPL15 | Ridge Road TEOM05 EPL27 | Comment |
|---|---|---|---|---|---|
| | Daily Result (24hr Average Limit = 50µg/m³)) | | | | |
| 12/12/2016 | 17.9 | 15.4 | 14.0 | 11.9 | |
| 13/12/2016 | 18.4 | 27.5 | 23.5 | 13.1 | |
| 14/12/2016 | 19.0 | 22.7 | 20.4 | 14.6 | |
| 15/12/2016 | 12.0 | 8.3 | 5.5 | 4.1 | |
| 16/12/2016 | 9.1 | 5.4 | 4.7 | 4.6 | |
| 17/12/2016 | 7.7 | 4.7 | 6.5 | 4.4 | |
| 18/12/2016 | 25.4 | 21.7 | 20.3 | 19.2 | |
| 19/12/2016 | 22.7 | 19.4 | 1.6 | 13.8 | |
| 20/12/2016 | 17.6 | 14.9 | 14.2 | 16.0 | |
| 21/12/2016 | 17.7 | 17.2 | 20.8 | 17.8 | |
| 22/12/2016 | 24.6 | 20.0 | 14.6 | 14.8 | |
| 23/12/2016 | 22.2 | 18.4 | 3.3 | 14.5 | |
| 24/12/2016 | 7.9 | 4.6 | 5.9 | 3.4 | |
| 25/12/2016 | 8.0 | 5.8 | 4.5 | 4.3 | |
| 26/12/2016 | 9.8 | 5.9 | 5.2 | 4.9 | |
| 27/12/2016 | 18.3 | 12.4 | 14.4 | 10.9 | |
| 28/12/2016 | 17.7 | 13.4 | 12.1 | 10.9 | |
| 29/12/2016 | 14.6 | 10.3 | 19.2 | 9.4 | |
| 30/12/2016 | 15.3 | 13.8 | 17.5 | 11.4 | |
| 31/12/2016 | 12.9 | 9.4 | 12.5 | 8.3 | |

NA* = negative value - Likely humidity related

**Figure 3-c** 2012 to 2016 TEOM Rolling Average

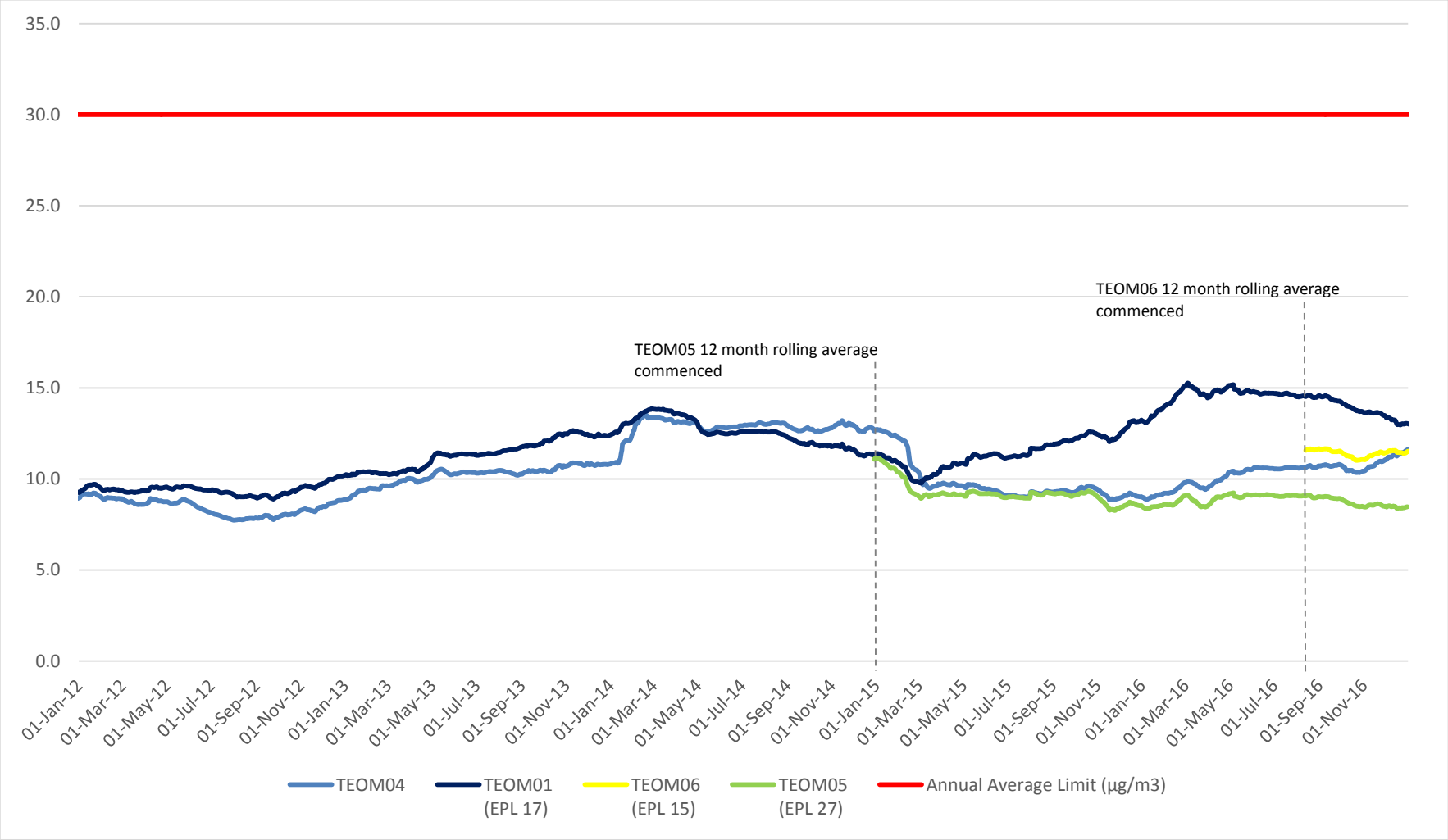
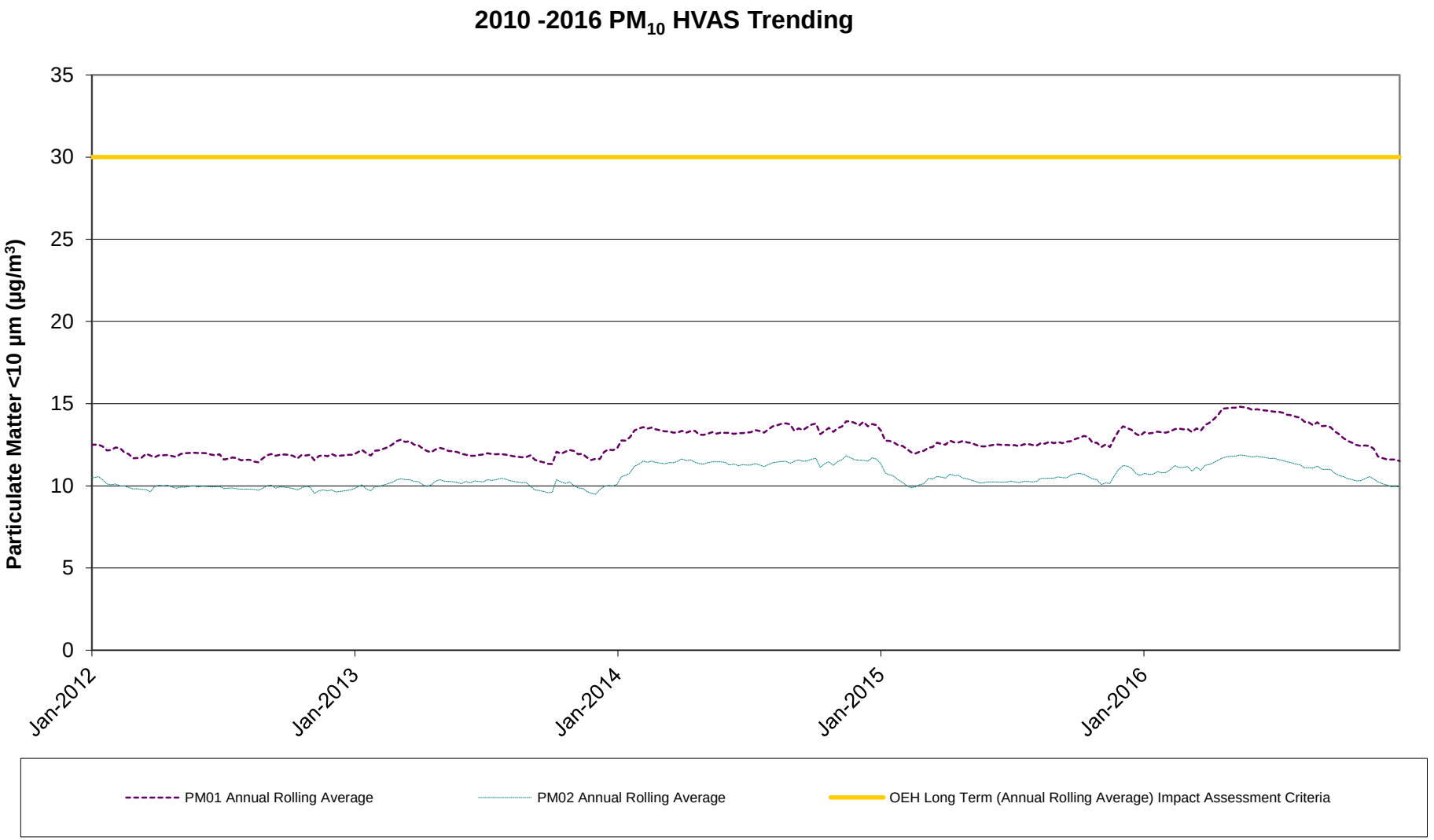


**Table 4: HVAS monitoring results**

| Sample Location | Sampling Date | Particulate Matter <10 µm µg/m³ | Sample Location | Sampling Date | Particulate Matter <10 µm µg/m³ |
|---|---|---|---|---|---|
| PM01 | 05-Jan-15 | 12 | PM02 | 4-Jul-15 | 6 |
| PM02 | 05-Jan-15 | 10 | PM01 | 10-Jul-15 | 7 |
| PM01 | 11-Jan-15 | 12 | PM02 | 10-Jul-15 | 6 |
| PM02 | 11-Jan-15 | 11 | PM01 | 16-Jul-15 | <1 |
| PM01 | 17-Jan-15 | 14 | PM02 | 16-Jul-15 | <1 |
| PM02 | 17-Jan-15 | 13 | PM01 | 22-Jul-15 | 7 |
| PM01 | 23-Jan-15 | 18 | PM02 | 22-Jul-15 | 6 |
| PM02 | 23-Jan-15 | 15 | PM01 | 28-Jul-15 | 8 |
| PM01 | 29-Jan-15 | 12 | PM02 | 28-Jul-15 | 6 |
| PM02 | 29-Jan-15 | 8 | PM01 | 3-Aug-15 | 5 |
| PM01 | 04-Feb-15 | 21 | PM02 | 3-Aug-15 | 4 |
| PM02 | 04-Feb-15 | 15 | PM01 | 9-Aug-15 | 11 |
| PM01 | 10-Feb-15 | 24 | PM02 | 9-Aug-15 | 9 |
| PM02 | 10-Feb-15 | 15 | PM01 | 15-Aug-15 | 13 |
| PM01 | 16-Feb-15 | 15 | PM02 | 15-Aug-15 | 11 |
| PM02 | 16-Feb-15 | 13 | PM01 | 21-Aug-15 | 17 |
| PM01 | 22-Feb-15 | 6 | PM02 | 21-Aug-15 | 15 |
| PM02 | 22-Feb-15 | 4 | PM01 | 27-Aug-15 | 5 |
| PM01 | 28-Feb-15 | 15 | PM02 | 27-Aug-15 | 3 |
| PM02 | 28-Feb-15 | 20 | PM01 | 02-Sep-15 | 13 |
| PM01 | 06-Mar-15 | 20 | PM02 | 02-Sep-15 | 6 |
| PM02 | 06-Mar-15 | 17 | PM01 | 08-Sep-15 | 4 |
| PM01 | 12-Mar-15 | 17 | PM02 | 08-Sep-15 | 4 |
| PM02 | 12-Mar-15 | 16 | PM01 | 14-Sep-15 | 15 |
| PM01 | 18-Mar-15 | 19 | PM02 | 14-Sep-15 | 13 |
| PM02 | 18-Mar-15 | 28 | PM01 | 20-Sep-15 | 6 |
| PM01 | 24-Mar-15 | 12 | PM02 | 20-Sep-15 | 4 |
| PM02 | 24-Mar-15 | 11 | PM01 | 26-Sep-15 | 2 |
| PM01 | 30-Mar-15 | 21 | PM02 | 26-Sep-15 | 8 |
| PM02 | 30-Mar-15 | 14 | PM01 | 02-Oct-15 | 19 |
| PM01 | 05-Apr-15 | 6 | PM02 | 02-Oct-15 | 17 |
| PM02 | 05-Apr-15 | 7 | PM01 | 08-Oct-15 | 20 |
| PM01 | 11-Apr-15 | 11 | PM02 | 08-Oct-15 | 16 |
| PM02 | 11-Apr-15 | 13 | PM01 | 14-Oct-15 | 22 |
| PM01 | 17-Apr-15 | 23 | PM02 | 14-Oct-15 | 16 |
| PM02 | 17-Apr-15 | 21 | PM01 | 20-Oct-15 | 18 |
| PM01 | 23-Apr-15 | 4 | PM02 | 20-Oct-15 | 14 |
| PM02 | 23-Apr-15 | 3 | PM01 | 26-Oct-15 | 14 |
| PM01 | 29-Apr-15 | 8 | PM02 | 26-Oct-15 | 10 |
| PM02 | 29-Apr-15 | 5 | PM01 | 01-Nov-15 | 13 |
| PM01 | 05-May-15 | 9 | PM02 | 01-Nov-15 | 11 |
| PM02 | 05-May-15 | 5 | PM01 | 07-Nov-15 | 14 |
| PM01 | 11-May-15 | 8 | PM02 | 07-Nov-15 | 8 |
| PM02 | 11-May-15 | 7 | PM01 | 13-Nov-15 | 8 |
| PM01 | 17-May-15 | 8 | PM02 | 13-Nov-15 | 2 |
| PM02 | 17-May-15 | 4 | PM01 | 19-Nov-15 | 20 |
| PM01 | 23-May-15 | 5 | PM02 | 19-Nov-15 | 15 |
| PM02 | 23-May-15 | 4 | PM01 | 25-Nov-15 | 19 |

| Sample Location | Sampling Date | Particulate Matter <10 µm µg/m³ | Sample Location | Sampling Date | Particulate Matter <10 µm µg/m³ |
|---|---|---|---|---|---|
| PM01 | 29-May-15 | 3 | PM02 | 25-Nov-15 | 19 |
| PM02 | 29-May-15 | 2 | PM01 | 01-Dec-15 | 45 |
| PM01 | 4-Jun-15 | 5 | PM02 | 01-Dec-15 | 29 |
| PM02 | 4-Jun-15 | 5 | PM01 | 07-Dec-15 | 30 |
| PM01 | 10-Jun-15 | 7 | PM02 | 07-Dec-15 | 24 |
| PM02 | 10-Jun-15 | 4 | PM01 | 13-Dec-15 | 26 |
| PM01 | 16-Jun-15 | 4 | PM02 | 13-Dec-15 | 23 |
| PM02 | 16-Jun-15 | 1 | PM01 | 19-Dec-15 | 24 |
| PM01 | 22-Jun-15 | 5 | PM02 | 19-Dec-15 | 27 |
| PM02 | 22-Jun-15 | 4 | PM01 | 25-Dec-15 | 8 |
| PM01 | 28-Jun-15 | 4 | PM02 | 25-Dec-15 | 7 |
| PM02 | 28-Jun-15 | 5 | PM01 | 31-Dec-15 | 17 |
| PM01 | 4-Jul-15 | 6 | PM02 | 31-Dec-15 | 13 |

**Figure 3-d** 2012 to 2016 HVAS Trending



# APPENDIX 3E. BIODIVERSITY MONITORING DATA

**Table 5: Threatened fauna recorded during 2016**

| Scientific Name | Species | TSC Act | EPBC Act | Location |
|---|---|---|---|---|
| **Birds** | | | | |
| *Calyptorhynchus lathami* | Glossy Black-Cockatoo | V | - | Fa5a, BOA1 |
| *Climacteris picumnus victoriae* | Brown Treecreeper (eastern subspecies) | V | - | Fa1a, Fa5b |
| *Merops ornatus* | Rainbow Bee-eater | - | M | Fa14, Fa14a, Fa1a, Fa24a, Fa4a, Fa7a, Fa9a, BOA1 |
| *Daphoenositta chrysoptera* | Varied Sittella | V | - | Fa5c, Fa8a, Fa9 |
| *Glossopsitta pusilla* | Little Lorikeet | V | - | Fa10, Fa12 |
| *Grantiella picta* | Painted Honeyeater | V | - | Fa4a |
| *Hieraaetus morphnoides* | Little Eagle | V | - | BOA3 |
| *Melanodryas cucullata cucullata* | Hooded Robin (south-eastern form) | V | - | Fa13b, Fa24a, Fa4b, Fa9a |
| *Artamus cyanopterus* | Dusky Woodswallow | V | - | Fa14a, Fa3, Fa4, Fa4a, Fa5b |
| *Pomatostomus temporalis temporalis* | Grey-crowned Babbler (eastern subspecies) | V | - | Fa3 |
| *Pyrrholaemus sagittatus* | Speckled Warbler | V | - | Fa1, Fa24a, Fa7, Fa9a, Elward |
| *Stagonopleura guttata* | Diamond Firetail | V | - | Fa14a |
| **Mammals** | | | | |
| *Chalinolobus dwyeri* | Large-eared Pied Bat | V | V | Fa2b, Fa13b, Fa25a, Fa5d. Fa3, Fa4, Fa5, Fa15, Fa16 |
| *Miniopterus schreibersii oceanensis* | Eastern Bentwing-bat | V | - | All except for Fa8a, Fa4a |
| *Myotis macropus* | Large-footed Myotis | V | - | Fa13a, Fa13b, Fa14, Fa18 |
| *Saccolaimus flaviventris* | Yellow-bellied Sheath-tailed Bat | V | - | Fa14a |
| *Mormopterus (Setirostris) eleryi* | Hairy-nosed Freetail Bat | E | - | Fa3, Fa5 |
| *Falsistrellus tasmaniensis** | Eastern False Pipistrelle | V | - | Fa1 |
| *Scoteanax rueppellii** | Greater Broad-nosed Bat | V | - | Fa1 |

**Table 6: BioMetric baseline monitoring results, spring 2016**

| Biometric Vegetation Type | Site No. | NSD | NTC (%) | NMC (%) | NGC (out of 300%) | Exotic cover (%) | # HBTs | LWD (m) | Regen Y/N |
|---|---|---|---|---|---|---|---|---|---|
| HU515 Blakely's Red Gum – Yellow Box Grassy Open Forest | Mod9_Fl12 | 31 | 9 | 0 | 58 | 2 | 2 | 78 | Y |
| | Mod9_Fl24 | 40 | 17 | 0 | 22 | 0 | 1 | 10 | Y |
| HU537 Dwyer's Red Gum Low Woodland | Mod9_Fl10 | 39 | 23 | 11.8 | 12 | 0 | 66 | 4 | Y |
| | Mod9_Fl19 | 37 | 16 | 0 | 8 | 0 | 1 | 20 | Y |
| HU551 Grey Box – Narrow-leaved Ironbark Shrubby Woodland | Mod9_Fl18 | 26 | 21 | 5 | 24 | 2 | 0 | 35 | Y |
| HU552 Grey Gum – Narrow-leaved Stringybark – Ironbark Woodland | Mod9_Fl13 | 35 | 18.5 | 0 | 0 | 0 | 2 | 121 | Y |
| HU574 Narrow-leaved Ironbark – Grey Gum Shrubby Woodland | Mod9_Fl25 | 38 | 13.5 | 5.1 | 20 | 0 | 3 | 33 | Y |
| HU575 Narrow-leaved Ironbark Shrubby Open Forest | Mod9_Fl17 | 38 | 22.5 | 1 | 24 | 0 | 0 | 8 | Y |
| | Mod9_Fl21 | 29 | 12.5 | 0 | 48 | 4 | 0 | 1 | Y |
| | Mod9_Fl22 | 32 | 17 | 0 | 14 | 0 | 0 | 11 | Y |
| HU603 Rough-barked Apple – Silvertop Stringybark – Red Stringybark Grassy Open Forest | Mod9_Fl1 | 53 | 17.5 | 0 | 56 | 8 | 2 | 70 | Y |
| | Mod9_Fl28 | 64 | 19.5 | 0.5 | 66 | 10 | 2 | 173 | Y |
| HU608 Scribbly Gum – Brown Bloodwood Woodland | Mod9_Fl20 | 38 | 16 | 0.5 | 18 | 0 | 2 | 45 | Y |
| HU647 Tea-tree Shrubland of Drainage Areas | Mod9_Fl11 | 41 | 1.5 | 19.2 | 34 | 18 | 0 | 11 | Y |

# Appendix 3F. SURFACE WATER MONITORING DATA

**Table 7: Surface Water Quality –Sampling Summary**

| Site | Results Data Range (pH) | | | Data Range (µS/cm) | | | Data Range (TSS) | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | Background | Previous Period | 2016 | Background | Previous Period | 2016 | Background[1] | Previous Period | 2016 | |
| SW01 | 5.4 – 8.1 | 5.7 – 8.6 | 7.6-8.3 | 300 – 1,500 | 563 – 888 | 467-866 | <2 – 310 | <5 – 12 | <5-12 | Generally Consistent with previous monitoring. |
| SW02 | 4.4 – 7.9 | 6.2 – 8.6 | 7.7-8.3 | 200 – 1,560 | 590 – 857 | 641-833 | <2 – 844 | <5 – 12 | <5-6 | Generally Consistent with previous monitoring. |
| SW04 | 5.1 – 7.8 | 6.4 – 8.8 | 6.7-8.0 | 60 – 2,260 | 127 – 1,986 | 343-1,820 | 4 – 440 | <5 – 284 | 7-188 | Generally Consistent with previous monitoring. |
| SW05 | 5.3 – 7.7 | 6.6– 8.7 | 7.4-7.8 | 290 – 1,590 | 168 – 1,018 | 672-1,117 | <2 – 2,600 | <5 – 70 | <5-13 | Generally Consistent with previous monitoring. |
| SW07 | 5.3 – 8.0 | 5.8 – 7.8 | 7.4-8.2 | 750 – 6,540 | 795 – 5,680 | 1,206-5,390 | <2 – 64 | <5 – 46 | <5-46 | Generally Consistent with previous monitoring. Slight increase in pH observed. |
| SW08 | 4.5 – 7.6 | 6.1 – 7.5 | 6.9-7.9 | 2,060 – 6,990 | 2360 – 4,800 | 1,960-5,380 | <2 – 510 | <5 – 36 | <5-63 | Generally Consistent with previous monitoring. Slight increase in pH observed. |
| SW09 | 5.2 – 7.9 | 6.6 – 8.0 | 6.7-7.8 | 490 – 5,750 | 3480 – 6,040 | 1,437-5,040 | 2 – 140 | <5 – 404 | <5-43 | Generally Consistent with previous monitoring. |
| SW10 | Dry - no samples collected | 7.5 | 5.7-6.6 | Dry - no samples collected | 93 | 79-85 | Dry - no samples collected | 24 | <5-28 | Generally Consistent with previous monitoring. |
| SW11 | 5.5 – 7.2 | 6.1 – 8.7 | 6.5-7.9 | 40 – 150 | 122-844 | 199-351 | 13 – 66 | <5 – 63 | <5-46 | Generally Consistent with previous monitoring. |
| SW12 | 6.0 – 7.0 | 6.7 – 8.7 | 6.5-7.8 | 50 – 670 | 193 – 837 | 120-734 | <2 – 564 | <5 – 40 | <5-25 | Generally Consistent with previous monitoring. |
| SW15# | 6.0 – 7.8 | 6.0 – 7.8 | 6.2-7.3 | 143 – 609 | 143 - 549 | 192-472 | 5 – 920 | <5 - 920 | <5-183 | Site include in program in 2015, generally Consistent with previous monitoring. |
| SW16# | 6.1 – 7.7 | 6.1 – 7.7 | 6.6-7.6 | 231 – 1,431 | 286 – 1,431 | 229-856 | 5 – 572 | <5 – 572 | 6-42 | Site include in program in 2015, generally Consistent with previous monitoring. |
| SW17# | 4.4 – 7.6 | 4.4 – 7.6 | 4.7-7.3 | 60.5 – 725 | 72 – 687 | 50-845 | 5 – 59 | <5 - 59 | 9-40 | Site include in program in 2015, generally Consistent with previous monitoring. |
| SW18# | 3.4 – 7.4 | 3.4 – 6.3 | 4.3-7.3 | 18.5 - 1654 | 20 – 1654 | 411-544 | 8 – 52 | 8 – 46 | <5-18 | Site include in program in 2015, generally Consistent with previous monitoring. |
| SW19# | NA** | 6.1 | 5.9-7.0 | NA** | 36 | 640-915 | NA** | 13 | <5-27 | Site include in program in 2015, generally Consistent with previous monitoring. |
| SW20# | Dry - no samples collected** | Dry - no samples collected | 7.4 | Dry - no samples collected** | Dry - no samples collected | 703 | Dry - no samples collected** | Dry - no samples collected | 17 | Site include in program in 2015 Site was dry for all but one monthly sampling events. |

* Monitoring program commenced in 2015 period.** Background to be revised when sufficient data is available. # Current monitoring contributing to background. [1] Limit of reporting <2 for background limit of reporting is now <5

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 01 | 13/01/2016 9:45 | | | | | | | | | | | | | | | | | | | 746 | 751 | 8.12 | 7.89 | 18.9 | 594 | <5 | 1.57 | |
| Surface Water 01 | 16/01/2016 11:45 | | | | | | | | 0.47 | | | | | | | | | | <0.005 | 740 | 754 | 8.5 | | | 414 | 5 | 4.68 | |
| Surface Water 01 | 23/01/2016 11:45 | | | | | | | | 0.71 | | | | | | | | | | <0.005 | 705 | 707 | 8.3 | | | 454 | <5 | 4.45 | |
| Surface Water 01 | 10/02/2016 10:45 | | | | | | | | | | | | | | | | | | | 826 | 816 | 8.36 | 7.97 | 19.4 | 416 | <5 | 0.79 | |
| Surface Water 01 | 8/03/2016 9:45 | | | | | | | | | | | | | | | | | | | 800 | 866 | 8.25 | 7.56 | 17.5 | 498 | <5 | 2.6 | |
| Surface Water 01 | 11/04/2016 10:40 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 9 | <0.05 | | <0.001 | 0.1 | <0.001 | 0.003 | 0.01 | <0.01 | 0.204 | 0.1 | <0.005 | | 720 | 773 | 7.7 | 7.76 | 13.4 | 489 | 12 | 2.55 | 0.4 |
| Surface Water 01 | 1/05/2016 10:55 | | | | | | | | 0.2 | | | | | | | | | | <0.005 | 731 | 735.0 | 8.0 | | | 420 | <5 | 2.86 | |
| Surface Water 01 | 10/05/2016 17:30 | | | | | | | | | | | | | | | | | | | 806 | 785 | 8.39 | 8.26 | 19.3 | 439 | <5 | 1.42 | |
| Surface Water 01 | 9/06/2016 14:20 | | | | | | | | | | | | | | | | | | | 754 | 757 | 8.31 | 8.07 | 12.7 | 488 | 6 | 1.09 | |
| Surface Water 01 | 13/07/2016 13:45 | | | | | | | | | | | | | | | | | | | 725 | 706 | 8.3 | 7.9 | 8.7 | 437 | 9 | 11.4 | |
| Surface Water 01 | 21/07/2016 17:00 | | | | | | | | 3.0 | | | | | | | | | | 0 | 546 | 542.0 | 7.6 | | | 384 | 18 | 103 | |
| Surface Water 01 | 15/08/2016 10:40 | | | | | | | | | | | | | | | | | | | 728 | 746 | 8 | 7.88 | 9.7 | 491 | <5 | 3 | |
| Surface Water 01 | 3/09/2016 14:55 | | | | | | | | 5.22 | | | | | | | | | | 0 | 110 | 106 | 8 | | | 187 | 43 | 69 | |
| Surface Water 01 | 14/09/2016 14:20 | | | | | | | | | | | | | | | | | | | 470 | 467 | 7.99 | 7.56 | 15.7 | 320 | <5 | 35.9 | |
| Surface Water 01 | 19/09/2016 13:15 | | | | | | | | 3.25 | | | | | | | | | | 0 | 230 | 220 | 7.2 | | | 171 | 18 | 138 | |
| Surface Water 01 | 12/10/2016 13:05 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 9.16 | 0.28 | | <0.001 | 0.1 | 0.046 | 0.005 | 0.01 | <0.01 | 0.196 | 0.4 | <0.005 | | 741 | 668 | 8.12 | 8.2 | 15.4 | 396 | <5 | 4.08 | 4.5 |
| Surface Water 01 | 22/10/2016 10:25 | | | | | | | | 0.5 | | | | | | | | | | <0.005 | 590 | 582.0 | 7.9 | | | 385 | <5 | 3.67 | |
| Surface Water 01 | 13/11/2016 15:40 | | | | | | | | 1.9 | | | | | | | | | | 0 | 422 | 445.0 | 7.9 | | | 304 | <5 | 30 | |
| Surface Water 01 | 17/11/2016 9:00 | | | | | | | | | | | | | | | | | | | 685 | 739 | 8.08 | 7.75 | 16.5 | 365 | <5 | 4.51 | |
| Surface Water 01 | 9/12/2016 11:45 | | | | | | | | | | | | | | | | | | | 741 | 768 | 8.08 | 7.86 | 24.5 | 424 | 6 | 1.74 | |
| Surface Water 02 | 13/01/2016 10:10 | | | | | | | | | | | | | | | | | | | 810 | 818 | 8.23 | 7.99 | 18.5 | 592 | <5 | 1.92 | |
| Surface Water 02 | 16/01/2016 12:00 | | | | | | | | 0.47 | | | | | | | | | | <0.005 | 725 | 749 | 8.4 | | | 422 | <5 | 4.3 | |
| Surface Water 02 | 23/01/2016 12:00 | | | | | | | | 0.77 | | | | | | | | | | <0.005 | 701 | 699 | 8.4 | | | 468 | <5 | 5.39 | |
| Surface Water 02 | 10/02/2016 11:00 | | | | | | | | | | | | | | | | | | | 830 | 833 | 8.59 | 8.08 | 19.4 | 470 | <5 | 1.67 | |
| Surface Water 02 | 8/03/2016 10:10 | | | | | | | | | | | | | | | | | | | 803 | 817 | 8.43 | 7.71 | 17.9 | 522 | 6 | 1.19 | |
| Surface Water 02 | 11/04/2016 11:00 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 9.12 | <0.05 | | <0.001 | 0.1 | <0.001 | 0.003 | 0.02 | <0.01 | 0.207 | <0.1 | <0.005 | | 720 | 792 | 7.8 | 7.85 | 13.8 | 469 | <5 | 2.17 | 0.6 |
| Surface Water 02 | 1/05/2016 11:05 | | | | | | | | 0.1 | | | | | | | | | | <0.005 | 752 | 747.0 | 8.1 | | | 462 | 5 | 2.37 | |
| Surface Water 02 | 10/05/2016 17:20 | | | | | | | | | | | | | | | | | | | 815 | 768 | 7.65 | 8.25 | 19.1 | 452 | <5 | 2.37 | |
| Surface Water 02 | 9/06/2016 14:25 | | | | | | | | | | | | | | | | | | | 758 | 767 | 8.29 | 8.07 | 13.1 | 429 | 6 | 1.15 | |
| Surface Water 02 | 13/07/2016 13:55 | | | | | | | | | | | | | | | | | | | 750 | 712 | 8.32 | 8.12 | 9.3 | 446 | <5 | 11.39 | |
| Surface Water 02 | 21/07/2016 16:50 | | | | | | | | 3.2 | | | | | | | | | | 0 | 528 | 527.0 | 7.4 | | | 286 | 22 | 122 | |
| Surface Water 02 | 15/08/2016 10:55 | | | | | | | | | | | | | | | | | | | 737 | 744 | 8.07 | 7.76 | 9 | 456 | <5 | 3 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 02 | 3/09/2016 14:35 | | | | | | | | 2.81 | | | | | | | | | | 0 | 321 | 326 | 8 | | | 292 | 38 | 60 | |
| Surface Water 02 | 14/09/2016 14:10 | | | | | | | | | | | | | | | | | | | 641 | 641 | 8.1 | 7.67 | 15.8 | 399 | <5 | 12.12 | |
| Surface Water 02 | 19/09/2016 13:00 | | | | | | | | 2.71 | | | | | | | | | | 0 | 248 | 244 | 7 | | | 256 | 25 | 160 | |
| Surface Water 02 | 12/10/2016 12:55 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 9.08 | 0.2 | | <0.001 | 0.1 | 0.021 | 0.005 | <0.01 | <0.01 | 0.194 | 0.4 | <0.005 | | 741 | 648 | 8.02 | 7.78 | 16.7 | 406 | <5 | 4.22 | 4.8 |
| Surface Water 02 | 22/10/2016 10:45 | | | | | | | | 0.4 | | | | | | | | | | <0.005 | 590 | 579.0 | 7.8 | | | 362 | <5 | 3.39 | |
| Surface Water 02 | 13/11/2016 15:30 | | | | | | | | 3.2 | | | | | | | | | | 0 | 445 | 459.0 | 7.6 | | | 386 | <5 | 83.9 | |
| Surface Water 02 | 17/11/2016 9:10 | | | | | | | | | | | | | | | | | | | 682 | 746 | 7.95 | 7.8 | 16.6 | 416 | <5 | 2.81 | |
| Surface Water 02 | 9/12/2016 12:00 | | | | | | | | | | | | | | | | | | | 725 | 766 | 8.03 | 8.01 | 24.8 | 386 | <5 | 1.5 | |
| Surface Water 04 | 13/01/2016 12:50 | | | | | | | | | | | | | | | | | | | 733 | 753 | 7.93 | 7.99 | 26.7 | 503 | 8 | 14.03 | |
| Surface Water 04 | 16/01/2016 15:50 | | | | | | | | 6.14 | | | | | | | | | | 0 | 846 | 865 | 6.9 | | | 614 | 70 | 304 | |
| Surface Water 04 | 23/01/2016 15:30 | | | | | | | | 14.1 | | | | | | | | | | 0 | 618 | 608 | 6.6 | | | 1070 | 220 | 955 | |
| Surface Water 04 | 10/02/2016 16:22 | | | | | | | | | | | | | | | | | | | 953 | 964 | 8.38 | 7.97 | 29.5 | 484 | 15 | 37.9 | |
| Surface Water 04 | 8/03/2016 16:16 | | | | | | | | | | | | | | | | | | | 1260 | 1294 | 8.37 | 7.96 | 28.7 | 740 | 39 | 37.5 | |
| Surface Water 04 | 11/04/2016 13:50 | 0.0 | 0 | <0.0001 | <0.001 | <0.001 | 11.56 | 0.19 | | <0.001 | 0.0 | 0.287 | 0.004 | 0.2 | <0.01 | 0.27 | 3 | <0.005 | | 1670 | 1820 | 9.1 | 7.25 | 24.6 | 1020 | 188 | 11.4 | 156 |
| Surface Water 04 | 1/05/2016 12:55 | | | | | | | | 0.7 | | | | | | | | | | 0 | 406 | 570.0 | 7.2 | | | 300 | 28 | 74.4 | |
| Surface Water 04 | 10/05/2016 14:20 | | | | | | | | | | | | | | | | | | | 1120 | 1161 | 7.52 | 7.7 | 19.3 | 634 | 18 | 35 | |
| Surface Water 04 | 9/06/2016 13:40 | | | | | | | | | | | | | | | | | | | 389 | 407 | 7.2 | 7.29 | 13.7 | 272 | 34 | 66.7 | |
| Surface Water 04 | 13/07/2016 9:40 | | | | | | | | | | | | | | | | | | | 588 | 566 | 6.22 | 6.67 | 7.3 | 508 | 15 | 196 | |
| Surface Water 04 | 21/07/2016 12:30 | | | | | | | | 3.8 | | | | | | | | | | 0 | 192 | 179.0 | 6.6 | | | 260 | 21 | 188 | |
| Surface Water 04 | 15/08/2016 15:05 | | | | | | | | | | | | | | | | | | | 723 | 726 | 6.43 | 6.94 | 11.3 | 454 | 12 | 32.9 | |
| Surface Water 04 | 3/09/2016 12:10 | | | | | | | | 1.36 | | | | | | | | | | 0 | 122 | 110 | 7 | | | 154 | 14 | 59 | |
| Surface Water 04 | 14/09/2016 9:40 | | | | | | | | | | | | | | | | | | | 352 | 343 | 6.81 | 7.13 | 14 | 324 | 32 | 109 | |
| Surface Water 04 | 19/09/2016 11:25 | | | | | | | | 2.09 | | | | | | | | | | 0 | 158 | 148 | 6.8 | | | 204 | <5 | 99.9 | |
| Surface Water 04 | 12/10/2016 16:25 | 0.0 | 0 | <0.0001 | <0.001 | 0.001 | 5.88 | 0.75 | | <0.001 | 0.0 | 0.523 | 0.01 | 0.01 | <0.01 | 0.148 | 1 | <0.005 | | 599 | 553 | 6.82 | 7.7 | 17.8 | 324 | 7 | 14.61 | 16.4 |
| Surface Water 04 | 22/10/2016 14:05 | | | | | | | | 5.0 | | | | | | | | | | 0 | 145 | 119.2 | 7.4 | | | 279 | 60 | 165 | |
| Surface Water 04 | 13/11/2016 12:50 | | | | | | | | 5.2 | | | | | | | | | | 0 | 217 | 209.0 | 7.2 | | | 269 | 14 | 127 | |
| Surface Water 04 | 17/11/2016 15:35 | | | | | | | | | | | | | | | | | | | 338 | 362 | 6.94 | 7.25 | 27.8 | 188 | 34 | 39.4 | |
| Surface Water 04 | 9/12/2016 11:10 | | | | | | | | | | | | | | | | | | | 523 | 530 | 7.36 | 7.81 | 25.6 | 306 | 10 | 8.63 | |
| Surface Water 05 | 13/01/2016 11:17 | | | | | | | | | | | | | | | | | | | 755 | 760 | 7.33 | 7.77 | 18.9 | 510 | <5 | 2.99 | |
| Surface Water 05 | 16/01/2016 12:30 | | | | | | | | 0.54 | | | | | | | | | | <0.005 | 746 | 775 | 7.2 | | | 420 | 11 | 6.62 | |
| Surface Water 05 | 23/01/2016 12:30 | | | | | | | | 0.68 | | | | | | | | | | <0.005 | 755 | 843 | 7.3 | | | 489 | 27 | 10.22 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 05 | 10/02/2016 11:20 | | | | | | | | | | | | | | | | | | | 849 | 851 | 8.16 | 7.76 | 19.1 | 442 | <5 | 2.86 | |
| Surface Water 05 | 8/03/2016 10:45 | | | | | | | | | | | | | | | | | | | 859 | 887 | 7.57 | 7.72 | 18.2 | 542 | <5 | 0.17 | |
| Surface Water 05 | 11/04/2016 11:27 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 4.9 | 0.05 | | <0.001 | 0.0 | 0.08 | <0.001 | 0.01 | <0.01 | 0.24 | 0.6 | <0.005 | | 789 | 855 | 7.8 | 7.81 | 12.7 | 489 | <5 | 2.8 | 1.4 |
| Surface Water 05 | 1/05/2016 14:55 | | | | | | | | 0.6 | | | | | | | | | | 0 | 710 | 740.0 | 7.1 | | | 436 | 10 | 30.7 | |
| Surface Water 05 | 10/05/2016 16:55 | | | | | | | | | | | | | | | | | | | 774 | 730 | 7.23 | 7.52 | 19.3 | 423 | <5 | 14.61 | |
| Surface Water 05 | 9/06/2016 9:15 | | | | | | | | | | | | | | | | | | | 634 | 672 | 7.78 | 7.36 | 12.8 | 432 | 11 | 18.29 | |
| Surface Water 05 | 13/07/2016 16:25 | | | | | | | | | | | | | | | | | | | 777 | 744 | 7.36 | 7.36 | 7.8 | 536 | 13 | 33.5 | |
| Surface Water 05 | 21/07/2016 10:20 | | | | | | | | 1.7 | | | | | | | | | | 0 | 496 | 504.0 | 7.3 | | | 316 | 18 | 59.1 | |
| Surface Water 05 | 15/08/2016 16:15 | | | | | | | | | | | | | | | | | | | 913 | 920 | 7.67 | 7.58 | 9 | 526 | <5 | 6.9 | |
| Surface Water 05 | 3/09/2016 11:55 | | | | | | | | 1.43 | | | | | | | | | | 0 | 296 | 287 | 7.1 | | | 262 | 12 | 31.62 | |
| Surface Water 05 | 14/09/2016 15:15 | | | | | | | | | | | | | | | | | | | 1010 | 997 | 7.75 | 7.46 | 15.2 | 636 | <5 | 18.04 | |
| Surface Water 05 | 19/09/2016 13:40 | | | | | | | | 2.23 | | | | | | | | | | 0 | 264 | 256 | 7.3 | | | 243 | 15 | 99 | |
| Surface Water 05 | 12/10/2016 12:40 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 8.96 | 0.13 | | <0.001 | 0.0 | 0.032 | 0.003 | <0.01 | <0.01 | 0.328 | 0.9 | <0.005 | | 966 | 942 | 7.79 | 7.8 | 16.9 | 564 | 6 | 5.39 | 4.9 |
| Surface Water 05 | 22/10/2016 12:45 | | | | | | | | 1.3 | | | | | | | | | | <0.005 | 1,060 | 1069.0 | 7.8 | | | 650 | 16 | 12.84 | |
| Surface Water 05 | 13/11/2016 13:25 | | | | | | | | 2.2 | | | | | | | | | | 0 | 831 | 890.0 | 7.3 | | | 602 | 19 | 52.8 | |
| Surface Water 05 | 17/11/2016 11:10 | | | | | | | | | | | | | | | | | | | 1020 | 1117 | 7.54 | 7.6 | 19.8 | 655 | 11 | 11.65 | |
| Surface Water 05 | 9/12/2016 14:05 | <0.001 | | <0.0001 | <0.001 | <0.001 | | 0.2 | | <0.001 | | 0.116 | 0.002 | <0.01 | <0.01 | | 0.9 | <0.005 | | 714 | 742 | 7.29 | 7.4 | 25.3 | 416 | 6 | 4.76 | |
| Surface Water 07 | 13/01/2016 19:24 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 07 | 16/01/2016 13:55 | | | | | | | | 0.39 | | | | | | | | | | 0 | 2,190 | 2241 | 6.7 | | | 1440 | 12 | 4.46 | |
| Surface Water 07 | 23/01/2016 13:25 | | | | | | | | 0.25 | | | | | | | | | | 0 | 2,570 | 2580 | 8.1 | | | 1780 | 31 | 12.07 | |
| Surface Water 07 | 10/02/2016 19:10 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 07 | 8/03/2016 19:00 | | | | | | | | | | | | | | | | | | | 3720 | 3870 | 7.98 | 8.03 | 26.1 | 2250 | 33 | 19.57 | |
| Surface Water 07 | 11/04/2016 18:40 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 07 | 1/05/2016 15:25 | | | | | | | | 0.1 | | | | | | | | | | <0.005 | 4,240 | 4420.0 | 7.7 | | | 2830 | 6 | 5.39 | |
| Surface Water 07 | 10/05/2016 15:40 | | | | | | | | | | | | | | | | | | | 4060 | 4340 | 7.66 | 7.84 | 19.3 | 2910 | <5 | 4.59 | |
| Surface Water 07 | 9/06/2016 8:30 | | | | | | | | | | | | | | | | | | | 4920 | 5390 | 7.84 | 7.9 | 12.9 | 3200 | 16 | 4.37 | |
| Surface Water 07 | 13/07/2016 17:15 | | | | | | | | | | | | | | | | | | | 1620 | 1534 | 8.13 | 8.03 | 7.7 | 992 | 46 | 7.86 | |
| Surface Water 07 | 21/07/2016 10:55 | | | | | | | | 0.4 | | | | | | | | | | 0 | 871 | 882.0 | 7.4 | | | 528 | <5 | 10.46 | |
| Surface Water 07 | 15/08/2016 16:40 | | | | | | | | | | | | | | | | | | | 1500 | 1475 | 8.06 | 7.9 | 8.7 | 766 | <5 | 7.82 | |
| Surface Water 07 | 3/09/2016 9:40 | | | | | | | | 0.85 | | | | | | | | | | 0 | 453 | 448 | 7.3 | | | 295 | 10 | 13.34 | |
| Surface Water 07 | 14/09/2016 16:50 | | | | | | | | | | | | | | | | | | | 1250 | 1292 | 7.68 | 7.41 | 15.3 | 782 | <5 | 6.17 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 07 | 19/09/2016 14:25 | | | | | | | | 0.61 | | | | | | | | | | 0 | 591 | 568 | 7.5 | | | 362 | <5 | 16.04 | |
| Surface Water 07 | 12/10/2016 11:55 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 8.39 | 0.14 | | <0.001 | 0.0 | 0.05 | 0.004 | <0.01 | <0.01 | 0.347 | 1.1 | <0.005 | | 1280 | 1206 | 7.83 | 8.1 | 14 | 708 | 9 | 1.29 | 1.6 |
| Surface Water 07 | 22/10/2016 11:50 | | | | | | | | 0.4 | | | | | | | | | | 0 | 827 | 836.0 | 7.5 | | | 492 | <5 | 3.22 | |
| Surface Water 07 | 13/11/2016 14:45 | | | | | | | | 0.2 | | | | | | | | | | 0 | 958 | 1035.0 | 7.8 | | | 644 | <5 | 11.3 | |
| Surface Water 07 | 17/11/2016 12:45 | | | | | | | | | | | | | | | | | | | 1550 | 1699 | 8.23 | 8.12 | 27.7 | 944 | <5 | 0.89 | |
| Surface Water 07 | 9/12/2016 15:55 | | | | | | | | | | | | | | | | | | | 1970 | 2083 | 8.26 | 8.22 | 31.2 | 1030 | 10 | 5.38 | |
| Surface Water 08 | 13/01/2016 18:43 | | | | | | | | | | | | | | | | | | | 4940 | 4950 | 7.07 | 7.57 | 29.2 | 3540 | 63 | 27.2 | |
| Surface Water 08 | 16/01/2016 13:30 | | | | | | | | 5.69 | | | | | | | | | | <0.005 | 4,200 | 4270 | 7 | | | 2420 | 49 | 70 | |
| Surface Water 08 | 23/01/2016 13:10 | | | | | | | | 6.63 | | | | | | | | | | 0 | 3,580 | 3640 | 6.7 | | | 2660 | 46 | 54.5 | |
| Surface Water 08 | 10/02/2016 18:44 | | | | | | | | | | | | | | | | | | | 4660 | 4640 | 7.16 | 7.39 | 14.1 | 2390 | 7 | 31.9 | |
| Surface Water 08 | 8/03/2016 19:05 | | | | | | | | | | | | | | | | | | | 5150 | 5310 | 7.2 | 7.44 | 23.7 | 3030 | 18 | 21.4 | |
| Surface Water 08 | 11/04/2016 19:10 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 6.71 | <0.05 | | <0.001 | 0.0 | 0.269 | 0.005 | 0.05 | <0.01 | 0.98 | 0.4 | <0.005 | | 5120 | 5380 | 7.1 | 7.51 | 16.3 | 3000 | <5 | 40.9 | 21.5 |
| Surface Water 08 | 1/05/2016 15:50 | | | | | | | | 1.2 | | | | | | | | | | 0 | 4,870 | 4540.0 | 6.7 | | | 2680 | 31 | 63.3 | |
| Surface Water 08 | 10/05/2016 8:05 | | | | | | | | | | | | | | | | | | | 4560 | 4770 | 6.92 | 7.11 | 18.7 | 2870 | <5 | 25.8 | |
| Surface Water 08 | 9/06/2016 7:55 | | | | | | | | | | | | | | | | | | | 4630 | 4620 | 6.72 | 6.93 | 11.1 | 2860 | 10 | 18.59 | |
| Surface Water 08 | 13/07/2016 16:55 | | | | | | | | | | | | | | | | | | | 2020 | 1960 | 7.05 | 7.39 | 6.6 | 1210 | <5 | 3.09 | |
| Surface Water 08 | 21/07/2016 11:10 | Site inaccessible at time of sampling | | | | | | | | | | | | | | | | | | | | No Access - due to weather | | | | | | |
| Surface Water 08 | 15/08/2016 16:50 | | | | | | | | | | | | | | | | | | | 3510 | 3550 | 7.38 | 7.43 | 8.8 | 1860 | <5 | 0.83 | |
| Surface Water 08 | 3/09/2016 10:05 | | | | | | | | 1.75 | | | | | | | | | | 0 | 296 | 318 | 7.4 | | | 278 | 18 | 34.74 | |
| Surface Water 08 | 14/09/2016 16:05 | | | | | | | | | | | | | | | | | | | 2700 | 2730 | 7.55 | 7.6 | 14.7 | 1710 | <5 | 4.18 | |
| Surface Water 08 | 19/09/2016 14:55 | | | | | | | | 1.61 | | | | | | | | | | 0 | 753 | 726 | 7.5 | | | 456 | <5 | 27.5 | |
| Surface Water 08 | 12/10/2016 11:20 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 9.04 | 0.28 | | <0.001 | 0.0 | 0.303 | 0.008 | <0.01 | <0.01 | 0.65 | 1 | <0.005 | | 2350 | 2270 | 7.27 | 7.93 | 11.4 | 1280 | 6 | 2.09 | 2.7 |
| Surface Water 08 | 22/10/2016 11:25 | | | | | | | | 1.1 | | | | | | | | | | <0.005 | 678 | 677.0 | 7.6 | | | 411 | 21 | 21.51 | |
| Surface Water 08 | 13/11/2016 14:00 | | | | | | | | 1.6 | | | | | | | | | | <0.005 | 1,060 | 1155.0 | 7.3 | | | 696 | <5 | 19.4 | |
| Surface Water 08 | 17/11/2016 12:20 | | | | | | | | | | | | | | | | | | | 2160 | 2330 | 7.25 | 7.64 | 24 | 1160 | <5 | 2.29 | |
| Surface Water 08 | 9/12/2016 15:30 | | | | | | | | | | | | | | | | | | | 2910 | 2830 | 6.67 | 7.11 | 22.4 | 1590 | 8 | 10.02 | |
| Surface Water 09 | 13/01/2016 17:50 | | | | | | | | | | | | | | | | | | | 4580 | 4590 | 6.67 | 7.45 | 30.5 | 2760 | 11 | 25.1 | |
| Surface Water 09 | 16/01/2016 13:10 | | | | | | | | 5.03 | | | | | | | | | | 0 | 4,370 | 4460 | 6.7 | | | 2480 | 24 | 16.26 | |
| Surface Water 09 | 23/01/2016 12:55 | | | | | | | | 13.7 | | | | | | | | | | 0 | 4,580 | 4570 | 6.5 | | | 3160 | 40 | 111 | |
| Surface Water 09 | 10/02/2016 18:30 | | | | | | | | | | | | | | | | | | | 4820 | 4820 | 6.8 | 7.16 | 14.4 | 2420 | 16 | 3.68 | |
| Surface Water 09 | 8/03/2016 19:15 | | | | | | | | | | | | | | | | | | | 4860 | 5040 | 7.06 | 7.53 | 25 | 3040 | 25 | 28.6 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 09 | 11/04/2016 18:55 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 5.86 | <0.05 | | <0.001 | 0.0 | 1.72 | 0.002 | 0.02 | <0.01 | 1.32 | 0.5 | 0.013 | | 4580 | 4820 | 7.1 | 7.71 | 18.4 | 2680 | <5 | 15.42 | 9.6 |
| Surface Water 09 | 1/05/2016 16:05 | | | | | | | | 0.9 | | | | | | | | | | 0 | 6,360 | 5530.0 | 6.6 | | | 3630 | 14 | 6.57 | |
| Surface Water 09 | 10/05/2016 7:35 | | | | | | | | | | | | | | | | | | | 5000 | 4570 | 6.57 | 6.87 | 17.5 | 2950 | 25 | 5.02 | |
| Surface Water 09 | 9/06/2016 7:30 | | | | | | | | | | | | | | | | | | | 4950 | 4950 | 6.53 | 6.71 | 12.7 | 3120 | 43 | 10.09 | |
| Surface Water 09 | 13/07/2016 17:00 | | | | | | | | | | | | | | | | | | | 4390 | 4250 | 6.84 | 7.17 | 7 | 2870 | 18 | 47.2 | |
| Surface Water 09 | 21/07/2016 11:20 | | | | | | | | 1.5 | | | | | | | | | | 0 | 1,810 | 1834.0 | 7.0 | | | 1010 | 6 | 22.8 | |
| Surface Water 09 | 15/08/2016 17:30 | | | | | | | | | | | | | | | | | | | 4060 | 4120 | 7.37 | 7.3 | 9.2 | 2520 | 8 | 1.49 | |
| Surface Water 09 | 3/09/2016 10:30 | | | | | | | | 2.33 | | | | | | | | | | 0 | 421 | 419 | 7.3 | | | 308 | 14 | 27.98 | |
| Surface Water 09 | 14/09/2016 16:25 | | | | | | | | | | | | | | | | | | | 1430 | 1437 | 7.35 | 7.36 | 15.7 | 902 | <5 | 13.92 | |
| Surface Water 09 | 19/09/2016 15:20 | | | | | | | | 2.6 | | | | | | | | | | 0 | 527 | 529 | 7.3 | | | 379 | <5 | 38.6 | |
| Surface Water 09 | 12/10/2016 11:00 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 8.19 | 0.35 | | <0.001 | 0.0 | 0.723 | 0.013 | 0.04 | <0.01 | 0.37 | 1.7 | <0.005 | | 1740 | 1620 | 6.97 | 7.84 | 14 | 853 | 22 | 10.29 | 12.9 |
| Surface Water 09 | 22/10/2016 11:15 | | | | | | | | 4.5 | | | | | | | | | | 0 | 543 | 538.0 | 7.5 | | | 332 | 25 | 51 | |
| Surface Water 09 | 13/11/2016 14:10 | | | | | | | | 2.2 | | | | | | | | | | <0.005 | 905 | 953.0 | 7.4 | | | 608 | <5 | 10.9 | |
| Surface Water 09 | 17/11/2016 11:30 | | | | | | | | | | | | | | | | | | | 1870 | 2220 | 7.69 | 7.66 | 24.8 | 1130 | <5 | 4.03 | |
| Surface Water 09 | 9/12/2016 14:50 | | | | | | | | | | | | | | | | | | | 3690 | 3720 | 6.84 | 7.6 | 27.3 | 1880 | 12 | 13.04 | |
| Surface Water 10 (EPA04) | 13/01/2016 10:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 16/01/2016 15:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 23/01/2016 14:40 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 10/02/2016 17:47 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 8/03/2016 17:35 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 11/04/2016 16:45 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 1/05/2016 12:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 10/05/2016 14:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 9/06/2016 11:15 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 13/07/2016 11:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 21/07/2016 15:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 15/08/2016 15:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 10 (EPA04) | 3/09/2016 14:00 | | | | | | | | 1.5 | | | | | | | | | | 0 | 122 | 117 | 7.5 | | | 189 | 10 | 55 | |
| Surface Water 10 (EPA04) | 14/09/2016 11:55 | | | | | | | | | | | | | | | | | | | 86 | 79.4 | 5.3 | 5.73 | 14.9 | 54 | 5 | 6.27 | |
| Surface Water 10 (EPA04) | 19/09/2016 12:25 | | | | | | | | 0.19 | | | | | | | | | | <0.005 | 85 | 76.2 | 5.7 | | | 88 | <5 | 2.23 | |
| Surface Water 10 (EPA04) | 12/10/2016 13:40 | <0.001 | 0 | <0.0001 | 0.001 | <0.001 | 7.64 | 0.3 | | <0.001 | 0.0 | 0.044 | 0.002 | 0.05 | <0.01 | 0.005 | 1.1 | <0.005 | | 94 | 83 | 6.64 | 6.59 | 19 | 75 | 28 | 3.73 | 3.1 |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 10 (EPA04) | 22/10/2016 15:00 | | | | | | | | 0.5 | | | | | | | | | | <0.005 | 80 | 69.1 | 6.6 | | | 76 | <5 | 0.02 | |
| Surface Water 10 (EPA04) | 13/11/2016 10:40 | | | | | | | | 1.3 | | | | | | | | | | 0 | 87 | 116.0 | 7.5 | | | 94 | <5 | 3.3 | |
| Surface Water 10 (EPA04) | 17/11/2016 13:55 | | | | | | | | | | | | | | | | | | | 90 | 85 | 6.92 | 6.38 | 28 | 86 | 7 | 2.29 | |
| Surface Water 10 (EPA04) | 9/12/2016 12:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 11 (EPA03) | 13/01/2016 10:31 | | | | | | | | | | | | | | | | | | | 356 | 351 | 7.93 | 7.92 | 26.1 | 308 | <5 | 12.41 | |
| Surface Water 11 (EPA03) | 16/01/2016 14:30 | | | | | | | | 5.7 | | | | | | | | | | 0 | 179 | 181 | 6.7 | | | 298 | 16 | 214 | |
| Surface Water 11 (EPA03) | 23/01/2016 14:05 | | | | | | | | 8.21 | | | | | | | | | | 0 | 282 | 285 | 7.3 | | | 522 | 20 | 386 | |
| Surface Water 11 (EPA03) | 10/02/2016 11:45 | | | | | | | | | | | | | | | | | | | 317 | 338 | 8.02 | 7.45 | 18.9 | 201 | 6 | 11.95 | |
| Surface Water 11 (EPA03) | 8/03/2016 10:25 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 11 (EPA03) | 11/04/2016 11:19 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 11 (EPA03) | 1/05/2016 11:40 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 11 (EPA03) | 10/05/2016 15:15 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 11 (EPA03) | 9/06/2016 9:30 | | | | | | | | | | | | | | | | | | | 240 | 229 | 7.42 | 6.49 | 12.9 | 274 | 9 | 96 | |
| Surface Water 11 (EPA03) | 13/07/2016 13:25 | | | | | | | | | | | | | | | | | | | 258 | 245 | 6.78 | 6.82 | 10.2 | 223 | 7 | 53.7 | |
| Surface Water 11 (EPA03) | 21/07/2016 15:45 | | | | | | | | 1.7 | | | | | | | | | | 0 | 208 | 191.0 | 7.2 | | | 196 | 6 | 86.8 | |
| Surface Water 11 (EPA03) | 15/08/2016 11:10 | | | | | | | | | | | | | | | | | | | 257 | 241 | 6.76 | 6.8 | 9.5 | 187 | <5 | 37.8 | |
| Surface Water 11 (EPA03) | 3/09/2016 14:20 | | | | | | | | 1.71 | | | | | | | | | | 0 | 130 | 118 | 7.6 | | | 264 | 17 | 102 | |
| Surface Water 11 (EPA03) | 14/09/2016 14:35 | | | | | | | | | | | | | | | | | | | 207 | 198.5 | 7.13 | 7.29 | 15.8 | 216 | <5 | 109 | |
| Surface Water 11 (EPA03) | 19/09/2016 12:40 | | | | | | | | 1.19 | | | | | | | | | | 0 | 121 | 110 | 6.7 | | | 169 | <5 | 72.5 | |
| Surface Water 11 (EPA03) | 12/10/2016 13:25 | 0.0 | 0 | <0.0001 | 0.002 | 0.003 | 5.45 | 1.92 | | <0.001 | 0.0 | 0.193 | 0.027 | 0.06 | <0.01 | 0.058 | 1.2 | 0.009 | | 187 | 211 | 7.19 | 7.39 | 18.4 | 221 | 15 | 41 | 45.3 |
| Surface Water 11 (EPA03) | 22/10/2016 14:45 | | | | | | | | 2.8 | | | | | | | | | | 0 | 85 | 72.9 | 7.3 | | | 193 | 43 | 131 | |
| Surface Water 11 (EPA03) | 13/11/2016 15:15 | | | | | | | | 2.4 | | | | | | | | | | 0 | 132 | 116.0 | 7.9 | | | 185 | <5 | 71.3 | |
| Surface Water 11 (EPA03) | 17/11/2016 13:15 | | | | | | | | | | | | | | | | | | | 203 | 220 | 6.76 | 6.9 | 23.7 | 186 | 18 | 37.9 | |
| Surface Water 11 (EPA03) | 9/12/2016 12:10 | | | | | | | | | | | | | | | | | | | 322 | 327 | 7.07 | 7.47 | 25.8 | 245 | 46 | 34.7 | |
| Surface Water 12 | 13/01/2016 11:23 | | | | | | | | | | | | | | | | | | | 586 | 587 | 7.44 | 7.78 | 17.7 | 417 | <5 | 5.83 | |
| Surface Water 12 | 16/01/2016 12:40 | | | | | | | | 2.66 | | | | | | | | | | <0.005 | 259 | 265 | 7.1 | | | 184 | 8 | 27.3 | |
| Surface Water 12 | 23/01/2016 12:40 | | | | | | | | 3.27 | | | | | | | | | | <0.005 | 253 | 250 | 6.9 | | | 246 | 9 | 48.9 | |
| Surface Water 12 | 10/02/2016 11:30 | | | | | | | | | | | | | | | | | | | 596 | 620 | 8.07 | 7.65 | 19 | 329 | <5 | 11.6 | |
| Surface Water 12 | 8/03/2016 10:58 | | | | | | | | | | | | | | | | | | | 718 | 734 | 7.34 | 7.61 | 17 | 397 | 12 | 6.2 | |
| Surface Water 12 | 11/04/2016 11:45 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 5.76 | 0.11 | | <0.001 | 0.0 | 0.18 | <0.001 | 0.01 | <0.01 | 0.198 | 0.5 | <0.005 | | 654 | 716 | 7.6 | 7.76 | 12.1 | 425 | <5 | 4.1 | 3.5 |
| Surface Water 12 | 1/05/2016 16:35 | | | | | | | | 1.0 | | | | | | | | | | <0.005 | 442 | 494.0 | 7.1 | | | 379 | 8 | 44.1 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 12 | 10/05/2016 9:50 | | | | | | | | | | | | | | | | | | | 438 | 422 | 7.22 | 7.42 | 19.4 | 265 | <5 | 16.39 | |
| Surface Water 12 | 9/06/2016 9:05 | | | | | | | | | | | | | | | | | | | 446 | 442 | 8.32 | 7.24 | 13.3 | 314 | 10 | 24.2 | |
| Surface Water 12 | 13/07/2016 16:30 | | | | | | | | | | | | | | | | | | | 490 | 461 | 7.17 | 7.13 | 8.1 | 409 | 8 | 68.8 | |
| Surface Water 12 | 21/07/2016 11:50 | | | | | | | | 5.8 | | | | | | | | | | 0 | 100 | 91.0 | 6.7 | | | 268 | 40 | 238 | |
| Surface Water 12 | 15/08/2016 16:20 | | | | | | | | | | | | | | | | | | | 567 | 558 | 7.54 | 7.39 | 8.9 | 355 | <5 | 28.4 | |
| Surface Water 12 | 3/09/2016 11:40 | | | | | | | | 2.97 | | | | | | | | | | 0 | 85 | 161 | 7.2 | | | 226 | 40 | 57 | |
| Surface Water 12 | 14/09/2016 15:30 | | | | | | | | | | | | | | | | | | | 133 | 120.1 | 7.1 | 6.53 | 14.7 | 268 | 25 | 155 | |
| Surface Water 12 | 19/09/2016 13:45 | | | | | | | | 2.73 | | | | | | | | | | 0 | 178 | 170 | 7 | | | 255 | 11 | 103 | |
| Surface Water 12 | 12/10/2016 12:30 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 8.55 | 0.42 | | <0.001 | 0.0 | 0.058 | 0.002 | 0.02 | <0.01 | 0.202 | 0.9 | <0.005 | | 633 | 566 | 7.78 | 7.79 | 17.8 | 352 | 8 | 17.25 | 17.4 |
| Surface Water 12 | 22/10/2016 12:20 | | | | | | | | 7.0 | | | | | | | | | | 0 | 153 | 139.2 | 6.7 | | | 313 | 83 | 169 | |
| Surface Water 12 | 13/11/2016 13:35 | | | | | | | | 3.4 | | | | | | | | | | 0 | 636 | 659.0 | 7.3 | | | 490 | 20 | 68.7 | |
| Surface Water 12 | 17/11/2016 13:05 | | | | | | | | | | | | | | | | | | | 574 | 636 | 7.45 | 7.44 | 26.7 | 382 | 6 | 18.31 | |
| Surface Water 12 | 9/12/2016 14:18 | | | | | | | | | | | | | | | | | | | 534 | 551 | 7.21 | 7.63 | 28.4 | 304 | 5 | 6.68 | |
| Surface Water 15 | 13/01/2016 14:30 | | | | | | | | | | | | | | | | | | | 425 | 424 | 6.92 | 7.31 | 21.9 | 307 | 10 | 50.5 | |
| Surface Water 15 | 16/01/2016 15:20 | | | | | | | | 10.4 | | | | | | | | | | 0 | 375 | 386 | 6.5 | | | 210 | 18 | 45.7 | |
| Surface Water 15 | 23/01/2016 14:55 | | | | | | | | 4.6 | | | | | | | | | | <0.005 | 335 | 328 | 6.6 | | | 238 | 10 | 15.62 | |
| Surface Water 15 | 10/02/2016 16:37 | | | | | | | | | | | | | | | | | | | 410 | 443 | 6.74 | 7.18 | 25.2 | 241 | 34 | 75.7 | |
| Surface Water 15 | 8/03/2016 17:07 | | | | | | | | | | | | | | | | | | | 448 | 472 | 7.95 | 7.15 | 24.4 | 306 | 42 | 91 | |
| Surface Water 15 | 11/04/2016 14:50 | 0.0 | 0 | <0.0001 | <0.001 | <0.001 | 1.85 | 2.76 | | <0.001 | 0.0 | 0.752 | 0.006 | 0.38 | <0.01 | 0.105 | 3.8 | <0.005 | | 434 | 451 | 7.1 | 7.25 | 17.9 | 290 | 183 | 265 | 234 |
| Surface Water 15 | 1/05/2016 12:15 | | | | | | | | 10.9 | | | | | | | | | | 0 | 452 | 452.0 | 6.9 | | | 288 | 39 | 72.6 | |
| Surface Water 15 | 10/05/2016 14:30 | | | | | | | | | | | | | | | | | | | 403 | 437 | 6.95 | 7.17 | 24.2 | 298 | <5 | 37.5 | |
| Surface Water 15 | 9/06/2016 12:30 | | | | | | | | | | | | | | | | | | | 365 | 358 | 7.28 | 7.08 | 13.1 | 247 | 10 | 24.7 | |
| Surface Water 15 | 13/07/2016 10:05 | | | | | | | | | | | | | | | | | | | 243 | 221 | 5.91 | 6.2 | 7.8 | 207 | 8 | 69 | |
| Surface Water 15 | 21/07/2016 12:40 | | | | | | | | 2.9 | | | | | | | | | | 0 | 168 | 154.0 | 6.3 | | | 158 | 8 | 102 | |
| Surface Water 15 | 15/08/2016 15:40 | | | | | | | | | | | | | | | | | | | 303 | 302 | 6.4 | 6.37 | 9.6 | 209 | <5 | 23.2 | |
| Surface Water 15 | 3/09/2016 12:45 | | | | | | | | 1.48 | | | | | | | | | | 0 | 90 | 81 | 7.2 | | | 136 | 7 | 23.92 | |
| Surface Water 15 | 14/09/2016 10:45 | | | | | | | | | | | | | | | | | | | 203 | 191.8 | 6.45 | 6.41 | 14 | 218 | <5 | 65.3 | |
| Surface Water 15 | 19/09/2016 12:10 | | | | | | | | 2.2 | | | | | | | | | | 0 | 109 | 101 | 6.4 | | | 157 | <5 | 48.3 | |
| Surface Water 15 | 12/10/2016 15:30 | <0.001 | 0 | <0.0001 | 0.002 | <0.001 | 6.11 | 2.42 | | <0.001 | 0.0 | 0.132 | 0.01 | 0.03 | <0.01 | 0.059 | 0.8 | <0.005 | | 283 | 288 | 6.67 | 6.91 | 16.7 | 214 | <5 | 26.3 | 31.2 |
| Surface Water 15 | 22/10/2016 14:20 | | | | | | | | 6.0 | | | | | | | | | | 0 | 136 | 124.1 | 7.2 | | | 219 | 22 | 100 | |
| Surface Water 15 | 13/11/2016 13:10 | | | | | | | | 7.3 | | | | | | | | | | 0 | 160 | 145.0 | 7.0 | | | 193 | 10 | 52.9 | |

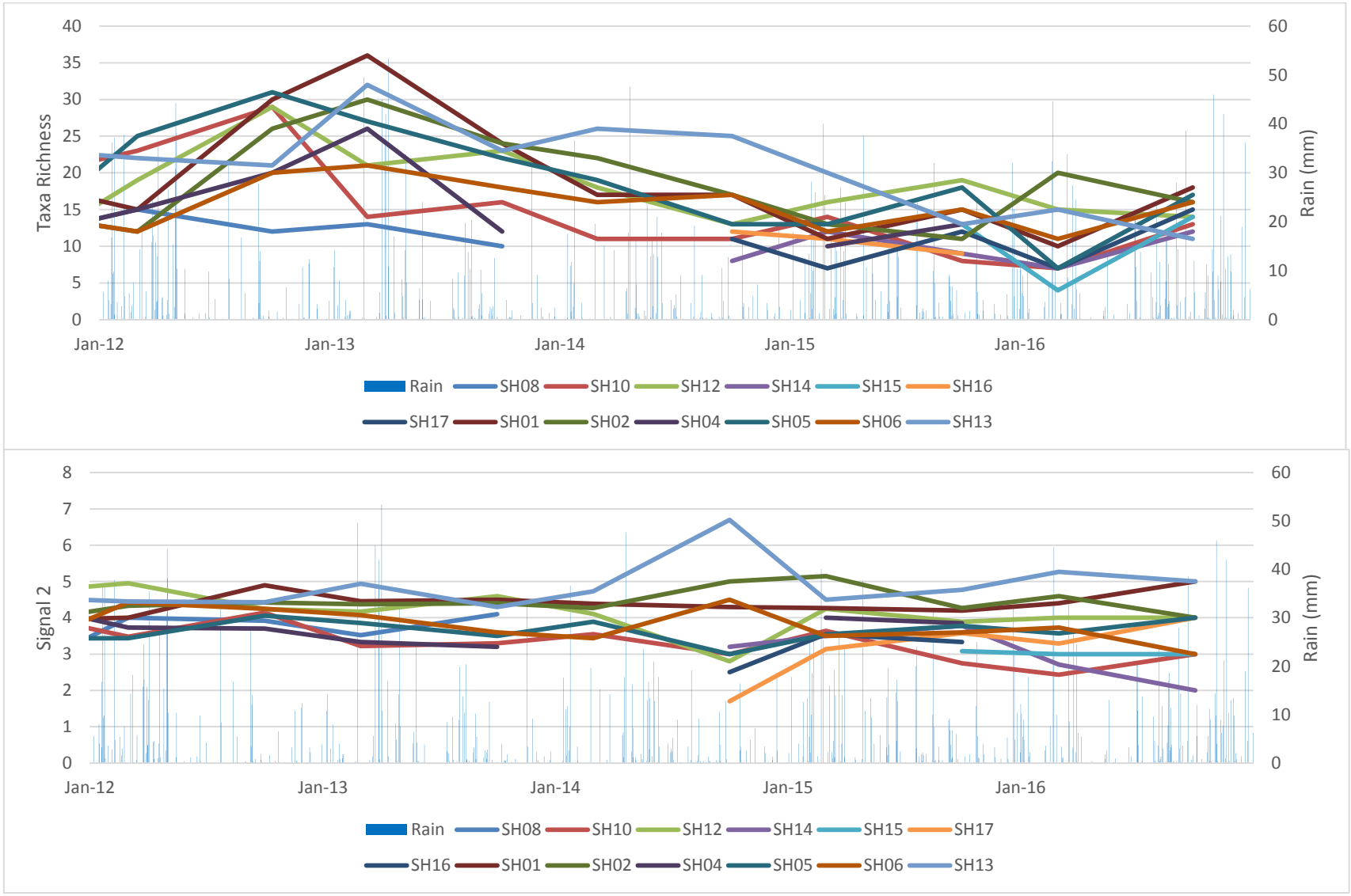
| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 15 | 17/11/2016 14:45 | | | | | | | | | | | | | | | | | | | 197 | 221 | 6.55 | 6.74 | 23.8 | 164 | 29 | 20.6 | |
| Surface Water 15 | 9/12/2016 13:35 | | | | | | | | | | | | | | | | | | | 277 | 313 | 6.58 | 6.83 | 24.8 | 207 | 42 | 51.7 | |
| Surface Water 16 | 13/01/2016 14:00 | | | | | | | | | | | | | | | | | | | 619 | 624 | 6.9 | 7.51 | 24.4 | 325 | 16 | 30.6 | |
| Surface Water 16 | 16/01/2016 15:30 | | | | | | | | 1.92 | | | | | | | | | | 0 | 560 | 581 | 7.1 | | | 340 | 17 | 48.4 | |
| Surface Water 16 | 23/01/2016 15:10 | | | | | | | | 8.61 | | | | | | | | | | 0 | 705 | 694 | 6.9 | | | 790 | 54 | 530 | |
| Surface Water 16 | 10/02/2016 16:42 | | | | | | | | | | | | | | | | | | | 750 | 779 | 7.24 | 7.57 | 24.8 | 446 | 8 | 17.01 | |
| Surface Water 16 | 8/03/2016 17:17 | | | | | | | | | | | | | | | | | | | 811 | 842 | 7.79 | 7.47 | 23.5 | 482 | 31 | 42.6 | |
| Surface Water 16 | 11/04/2016 15:00 | <0.001 | 0 | <0.0001 | <0.001 | <0.001 | 5.73 | 0.05 | | <0.001 | 0.0 | 0.004 | 0.005 | 0.1 | <0.01 | 0.157 | 1.5 | <0.005 | | 799 | 856 | 6.7 | 7.31 | 17.2 | 505 | 42 | 61.5 | 36.4 |
| Surface Water 16 | 1/05/2016 12:30 | | | | | | | | 2.5 | | | | | | | | | | 0 | 672 | 809.0 | 6.8 | | | 493 | 54 | 83.7 | |
| Surface Water 16 | 10/05/2016 14:55 | | | | | | | | | | | | | | | | | | | 686 | 796 | 6.77 | 7 | 18.8 | 434 | 30 | 59.1 | |
| Surface Water 16 | 9/06/2016 12:50 | | | | | | | | | | | | | | | | | | | 652 | 665 | 7.12 | 6.75 | 12.3 | 422 | 23 | 45.4 | |
| Surface Water 16 | 13/07/2016 9:50 | | | | | | | | | | | | | | | | | | | 490 | 459 | 6.35 | 6.55 | 7 | 432 | 10 | 163 | |
| Surface Water 16 | 21/07/2016 13:00 | | | | | | | | 3.6 | | | | | | | | | | 0 | 187 | 172.0 | 6.7 | | | 271 | 26 | 187 | |
| Surface Water 16 | 15/08/2016 15:30 | | | | | | | | | | | | | | | | | | | 449 | 436 | 6.54 | 6.58 | 9.1 | 280 | 6 | 21.8 | |
| Surface Water 16 | 3/09/2016 12:25 | | | | | | | | 2.37 | | | | | | | | | | 0 | 114 | 99 | 7.1 | | | 188 | 19 | 51 | |
| Surface Water 16 | 14/09/2016 10:30 | | | | | | | | | | | | | | | | | | | 310 | 304 | 6.99 | 6.98 | 14.4 | 264 | 16 | 102 | |
| Surface Water 16 | 19/09/2016 11:55 | | | | | | | | 1.98 | | | | | | | | | | 0 | 127 | 138 | 7 | | | 200 | 8 | 92.7 | |
| Surface Water 16 | 12/10/2016 15:40 | 0.0 | 0 | <0.0001 | 0.002 | 0.002 | 8.01 | 2.17 | | <0.001 | 0.0 | 0.188 | 0.012 | 0.02 | <0.01 | 0.093 | 1 | <0.005 | | 421 | 389 | 7 | 7.4 | 17.9 | 258 | 6 | 19.83 | 22.3 |
| Surface Water 16 | 22/10/2016 14:30 | | | | | | | | 6.6 | | | | | | | | | | 0 | 155 | 142.9 | 7.1 | | | 253 | 59 | 188 | |
| Surface Water 16 | 13/11/2016 13:00 | | | | | | | | 5.5 | | | | | | | | | | 0 | 197 | 190.0 | 7.3 | | | 215 | 9 | 129 | |
| Surface Water 16 | 17/11/2016 14:55 | | | | | | | | | | | | | | | | | | | 225 | 229 | 6.86 | 6.98 | 24.8 | 170 | 8 | 22.9 | |
| Surface Water 16 | 9/12/2016 13:45 | | | | | | | | | | | | | | | | | | | 338 | 362 | 7.06 | 7.32 | 25.7 | 264 | 15 | 6.86 | |
| Surface Water 17 | 13/01/2016 13:03 | | | | | | | | | | | | | | | | | | | 386 | 414 | 6.96 | 7.29 | 25.5 | 193 | 16 | 18.57 | |
| Surface Water 17 | 16/01/2016 16:00 | | | | | | | | 2.84 | | | | | | | | | | 0 | 77 | 94 | 6.7 | | | 119 | 36 | 71 | |
| Surface Water 17 | 23/01/2016 15:40 | | | | | | | | 7.64 | | | | | | | | | | 0 | 270 | 280 | 4.9 | | | 465 | 22 | 263 | |
| Surface Water 17 | 10/02/2016 16:07 | | | | | | | | | | | | | | | | | | | 414 | 451 | 6.44 | 6.78 | 26.3 | 348 | 22 | 56.1 | |
| Surface Water 17 | 8/03/2016 16:04 | | | | | | | | | | | | | | | | | | | 497 | 503 | 7.34 | 7.24 | 28.3 | 372 | 23 | 17.92 | |
| Surface Water 17 | 11/04/2016 13:40 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 17 | 1/05/2016 13:10 | | | | | | | | 1.1 | | | | | | | | | | 0 | 70 | 57.0 | 6.8 | | | 100 | 66 | 109 | |
| Surface Water 17 | 10/05/2016 14:15 | | | | | | | | | | | | | | | | | | | 167 | 203 | 5.76 | 6.03 | 19.3 | 205 | 13 | 99.9 | |
| Surface Water 17 | 9/06/2016 13:20 | | | | | | | | | | | | | | | | | | | 63 | 50 | 7.83 | 6.6 | 14 | 150 | 24 | 163 | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 17 | 13/07/2016 9:30 | | | | | | | | | | | | | | | | | | | 486 | 487 | 5.38 | 5.38 | 8.2 | 324 | 9 | 21.7 | |
| Surface Water 17 | 21/07/2016 12:20 | | | | | | | | 1.0 | | | | | | | | | | 0 | 402 | 401.0 | 6.0 | | | 254 | <5 | 34.8 | |
| Surface Water 17 | 15/08/2016 15:00 | | | | | | | | | | | | | | | | | | | 563 | 552 | 4.96 | 4.7 | 13.1 | 371 | 20 | 47.9 | |
| Surface Water 17 | 3/09/2016 13:00 | | | | | | | | 1.11 | | | | | | | | | | 0 | 194 | 201 | 7.3 | | | 209 | 32 | 26.82 | |
| Surface Water 17 | 14/09/2016 9:30 | | | | | | | | | | | | | | | | | | | 329 | 323 | 6.47 | 6.43 | 14.3 | 250 | 21 | 52 | |
| Surface Water 17 | 19/09/2016 11:20 | | | | | | | | 1.15 | | | | | | | | | | 0 | 307 | 293 | 6.7 | | | 251 | <5 | 31.2 | |
| Surface Water 17 | 12/10/2016 15:55 | 0.0 | 0 | <0.0001 | 0.004 | 0.002 | 2.82 | 10.3 | | <0.001 | 0.0 | 1.67 | 0.088 | 0.06 | <0.01 | 0.125 | 2.3 | 0.015 | | 779 | 729 | 6.31 | 6.87 | 19.1 | 477 | 36 | 23.5 | 32.8 |
| Surface Water 17 | 22/10/2016 13:55 | | | | | | | | 2.0 | | | | | | | | | | 0 | 406 | 396.0 | 7.4 | | | 201 | 52 | 45.52 | |
| Surface Water 17 | 13/11/2016 12:45 | | | | | | | | 4.0 | | | | | | | | | | 0 | 583 | 618.0 | 6.5 | | | 439 | <5 | 33.5 | |
| Surface Water 17 | 17/11/2016 15:30 | | | | | | | | | | | | | | | | | | | 641 | 711 | 6.13 | 6.39 | 28.1 | 448 | 40 | 76.3 | |
| Surface Water 17 | 9/12/2016 11:05 | | | | | | | | | | | | | | | | | | | 792 | 845 | 6.88 | 7.15 | 22.5 | 513 | 31 | 41.7 | |
| Surface Water 18 | 13/01/2016 13:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 16/01/2016 16:10 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 23/01/2016 15:55 | | | | | | | | 2.33 | | | | | | | | | | 0 | 483 | 478 | 6.6 | | | 388 | 12 | 69.7 | |
| Surface Water 18 | 10/02/2016 16:02 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 8/03/2016 16:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 11/04/2016 13:33 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 1/05/2016 13:25 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 10/05/2016 14:10 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 9/06/2016 13:15 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 18 | 13/07/2016 9:20 | | | | | | | | | | | | | | | | | | | 460 | 436 | 5.09 | 5.06 | 8.4 | 329 | 8 | 61.2 | |
| Surface Water 18 | 21/07/2016 12:10 | | | | | | | | 3.2 | | | | | | | | | | 0 | 215 | 205.0 | 7.0 | | | 239 | 22 | 164 | |
| Surface Water 18 | 15/08/2016 14:50 | | | | | | | | | | | | | | | | | | | 536 | 544 | 4.44 | 4.27 | 13.1 | 308 | <5 | 6.21 | |
| Surface Water 18 | 3/09/2016 13:20 | | | | | | | | 1.95 | | | | | | | | | | 0 | 133 | 122 | 7.5 | | | 189 | 27 | 49.13 | |
| Surface Water 18 | 14/09/2016 9:25 | | | | | | | | | | | | | | | | | | | 403 | 411 | 6.35 | 6.86 | 14.4 | 289 | 18 | 84.4 | |
| Surface Water 18 | 19/09/2016 10:40 | | | | | | | | 1.87 | | | | | | | | | | 0 | 178 | 172 | 6.5 | | | 208 | <5 | 85 | |
| Surface Water 18 | 12/10/2016 7:55 | <0.001 | 0 | <0.0001 | 0.001 | 0.002 | 7.21 | 1.08 | | <0.001 | 0.0 | 0.277 | 0.026 | 0.01 | <0.01 | 0.101 | 1 | 0.015 | | 512 | 456 | 6.51 | 7.3 | 9.7 | 285 | <5 | 17.07 | 19.4 |
| Surface Water 18 | 22/10/2016 13:20 | | | | | | | | 6.9 | | | | | | | | | | 0 | 297 | 292.0 | 7.5 | | | 340 | 162 | 210 | |
| Surface Water 18 | 13/11/2016 12:35 | | | | | | | | 6.4 | | | | | | | | | | 0 | 225 | 220.0 | 7.0 | | | 277 | 21 | 151 | |
| Surface Water 18 | 17/11/2016 15:15 | | | | | | | | | | | | | | | | | | | 400 | 436 | 6.64 | 6.99 | 29.7 | 264 | 12 | 33.9 | |
| Surface Water 18 | 9/12/2016 10:55 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 19 | 13/01/2016 15:03 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 16/01/2016 16:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 23/01/2016 16:20 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 10/02/2016 14:35 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 8/03/2016 14:24 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 11/04/2016 12:59 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 1/05/2016 14:20 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 10/05/2016 12:40 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 9/06/2016 14:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 13/07/2016 15:00 | | | | | | | | | | | | | | | | | | | 6 | | | 5.87 | | <10 | 27 | | |
| Surface Water 19 | 21/07/2016 14:30 | | | | | | | | 0.8 | | | | | | | | | | 0 | 35 | 31.0 | 6.0 | | | 54 | 10 | 43.1 | |
| Surface Water 19 | 15/08/2016 14:05 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 3/09/2016 13:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 14/09/2016 9:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 19 | 19/09/2016 16:10 | | | | | | | | 1.88 | | | | | | | | | | 0 | 151 | 142 | 7.2 | | | 205 | 5 | 70.5 | |
| Surface Water 19 | 12/10/2016 9:35 | 0.0 | 0 | <0.0001 | 0.002 | 0.002 | 7.52 | 2.18 | | <0.001 | <0.001 | 2.89 | 0.016 | 0.09 | <0.01 | 0.185 | 2.7 | 0.018 | | 966 | 884 | 6.84 | 6.98 | 19.5 | 584 | 10 | 11.07 | 9.6 |
| Surface Water 19 | 22/10/2016 13:10 | | | | | | | | 7.6 | | | | | | | | | | 0 | 166 | 154.9 | 7.8 | | | 329 | 167 | 225 | |
| Surface Water 19 | 13/11/2016 11:55 | | | | | | | | 4.4 | | | | | | | | | | 0 | 162 | 359.0 | 6.5 | | | 143 | <5 | 26.2 | |
| Surface Water 19 | 17/11/2016 16:05 | | | | | | | | | | | | | | | | | | | 851 | 915 | 6.85 | 6.71 | 29.2 | 602 | 7 | 4.96 | |
| Surface Water 19 | 9/12/2016 10:05 | Sample Collected from Self Sampler | | | | | | | | | | | | | | | | | | 622 | 640 | 6.23 | 6.51 | 25.7 | 350 | <5 | 29.8 | |
| Surface Water 20 | 13/01/2016 15:29 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 16/01/2016 16:45 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 23/01/2016 16:45 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 10/02/2016 15:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 8/03/2016 15:33 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 11/04/2016 12:39 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 1/05/2016 13:45 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 10/05/2016 13:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 9/06/2016 14:15 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 13/07/2016 15:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 21/07/2016 15:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Sample Point | Date | Arsenic - Dissolved (mg/L) | Barium - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Dissolved Oxygen (mg/L) | Iron - Dissolved (mg/L) | Iron - Total (mg/L) | Lead - Dissolved (mg/L) | Lithium Total (mg/L) | Manganese - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Strontium Total (mg/L) | Total Kjeldahl Nitrogen as N (mg/L) | Zinc - Dissolved (mg/L) | Zinc - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Electrical Conductivity -Field (µS/cm) | pH (Field) (Unit) | pH Lab (Unit) | Temperature (°C) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Turbidity - Field (NTU) | Turbidity - Lab (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Water 20 | 15/08/2016 14:35 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 3/09/2016 13:30 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 14/09/2016 9:00 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 19/09/2016 11:00 | | | | | | | | 0.56 | | | | | | | | | | 0 | 149 | 140 | 6.9 | | | 140 | <5 | 14.8 | |
| Surface Water 20 | 12/10/2016 9:10 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 22/10/2016 13:35 | Site inaccessible at time of sampling | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surface Water 20 | 13/11/2016 11:20 | | | | | | | | 1.0 | | | | | | | | | | 0 | 586 | 613.0 | 7.2 | | | 400 | <5 | 22.1 | |
| Surface Water 20 | 17/11/2016 16:40 | | | | | | | | | | | | | | | | | | | 652 | 703 | 7.52 | 7.42 | 30.5 | 394 | 17 | 16.85 | |
| Surface Water 20 | 9/12/2016 8:50 | No sample was collected as the site was to low to sample | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Underlined data indicates rain event sampling | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Figure 3-e** Stream Health Trending data and rainfall



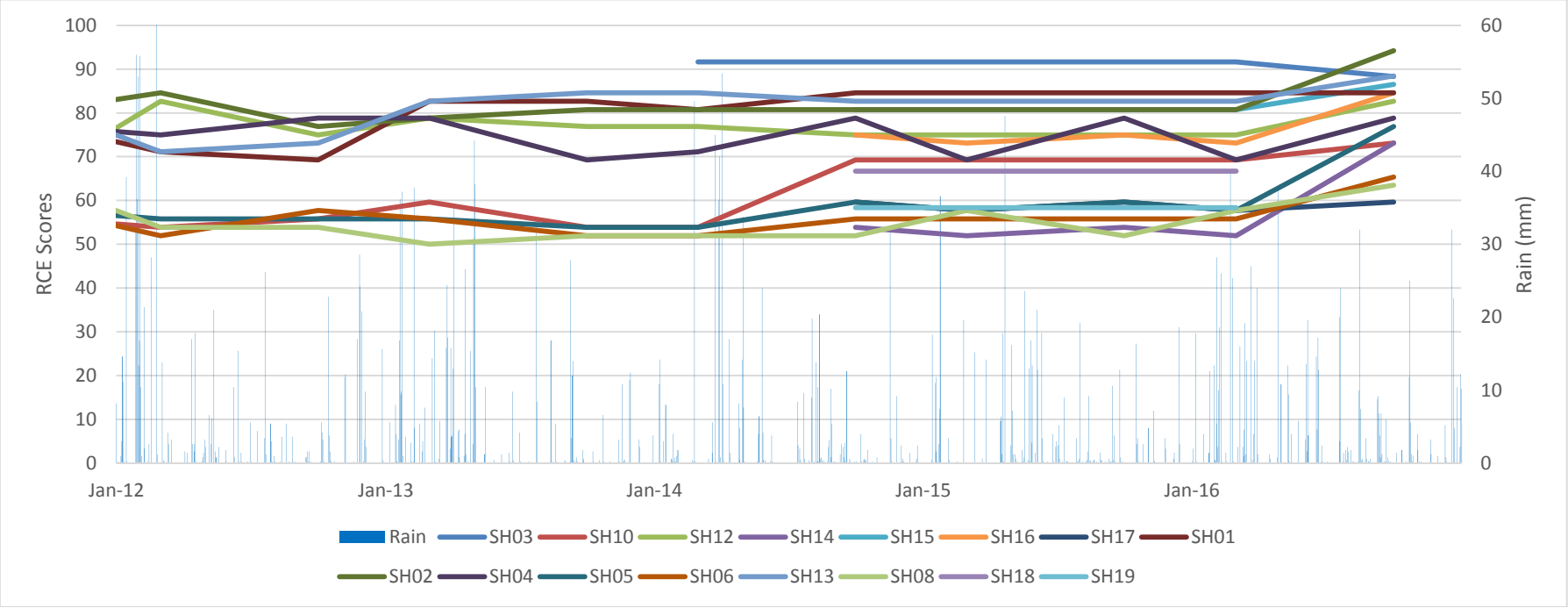
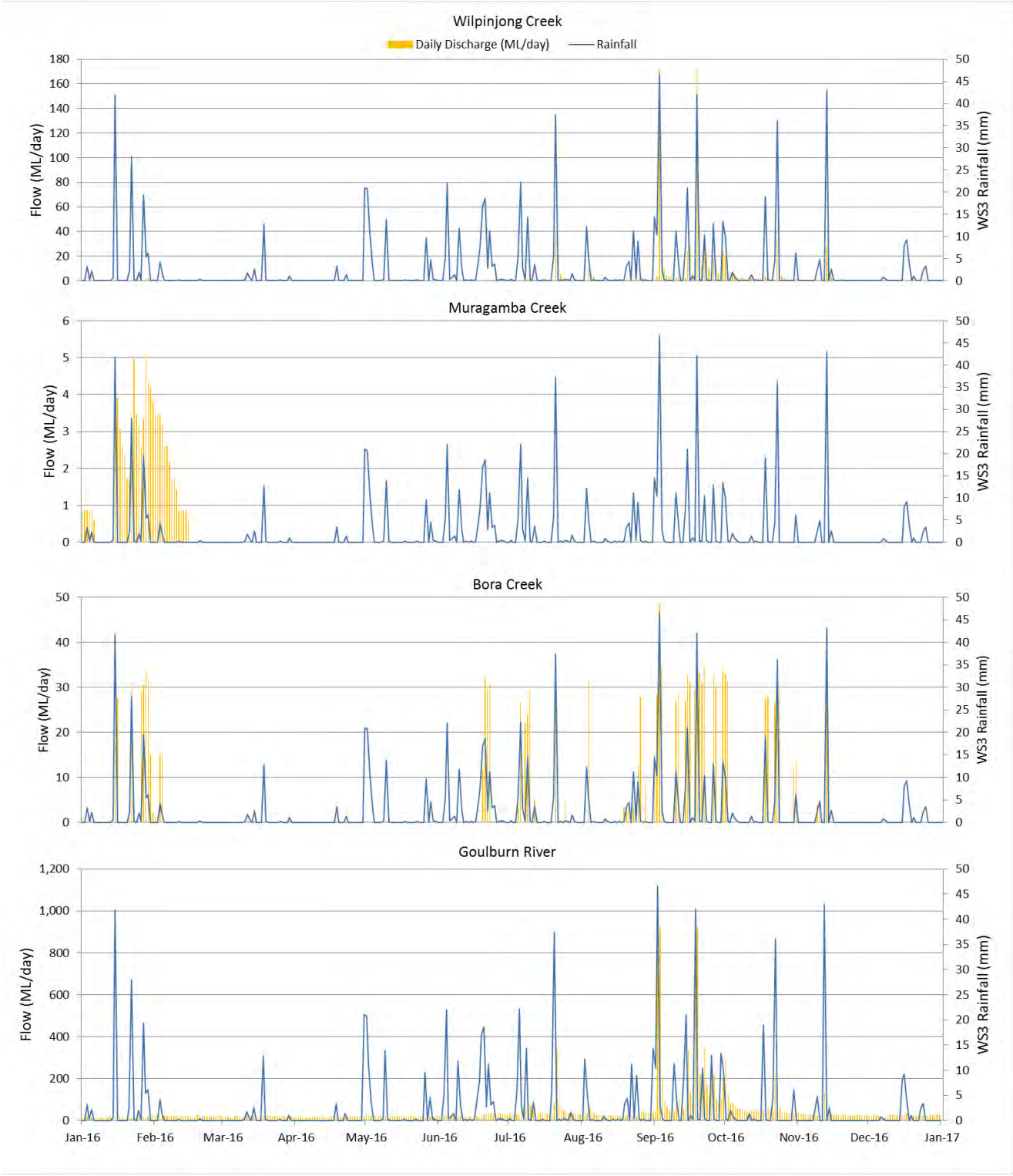

RCE Scores
Rain (mm)
100
90
80
70
60
50
40
30
20
10
0
60
50
40
30
20
10
0
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Rain
SH03
SH10
SH12
SH14
SH15
SH16
SH17
SH01
SH02
SH04
SH05
SH06
SH13
SH08
SH18
SH19

**Table 8: Effluent Discharge Quality**

| Sample Location | Sample Date | Biological Oxygen Demand (mg/L) | Total Nitrogen (mg/L) | Oil & Grease (mg/L) | Total Phosphorus (mg/L) | pH | Total Suspended Solids (mg/L) |
|---|---|---|---|---|---|---|---|
| Administration | 10-Feb-16 | <2 | 84.8 | <5 | 18.1 | 4.7 | 34 |
| CHPP | 10-Feb-16 | 12 | 5.5 | <5 | 0.42 | 7.5 | 8 |
| Open Cut | 10-Feb-16 | 20 | 13.6 | 6 | 0.58 | 6.9 | 72 |
| Administration | 09-May-16 | <2 | 93.6 | <5 | 14.2 | 4.1 | 30 |
| CHPP | 09-May-16 | 28 | 4.1 | 15 | 0.39 | 7.8 | 28 |
| Open Cut | 09-May-16 | 5 | 7.2 | <5 | 0.78 | 7.3 | 40 |
| UG | 13-July-16 | 42 | 13.4 | 19 | 0.51 | 7.6 | 22 |
| Administration | 31-Aug-16 | 3 | 5.4 | <5 | 1.14 | 7.3 | 21 |
| CHPP | 31-Aug-16 | 30 | 10.6 | 10 | 0.77 | 7.2 | 30 |
| Open Cut | 15-Aug-16 | 3 | 211 | <5 | 23.2 | 6.9 | 18 |
| UG | 30-Aug-16 | 11 | 0.6 | <5 | 0.54 | 7.2 | 57 |
| Administration | 15-Nov-16 | 39 | 197 | <5 | 26.7 | 8.2 | 64 |
| CHPP | 15-Nov-16 | 9 | 4.6 | <5 | 0.6 | 7.6 | 39 |
| Open Cut | 15-Nov-16 | 6 | 22.9 | <5 | 3.16 | 7.5 | 27 |
| UG | 15-Nov-16 | 34 | 7.5 | 9 | 1.71 | 7.7 | 44 |

**Figure 3-f** 2016 Stream Flow and rainfall



# APPENDIX 3G. GROUNDWATER MONITORING DATA

| Sample Point | Date | Alkalinity Bicarbonate (mg/L) | Alkalinity Carbonate (mg/L) | Alkalinity Hydroxide (mg/L) | Alkalinity Total (mg/L) | Aluminium - Dissolved (mg/L) | Arsenic - Dissolved (mg/L) | Boron - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Calcium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Cobalt - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Cyanide - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Fluoride - Dissolved (mg/L) | Iron - Dissolved (mg/L) | Lead - Dissolved (mg/L) | Magnesium - Dissolved (mg/L) | Manganese - Dissolved (mg/L) | Mercury - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Nitrate (mg/L) | Nitrite + Nitrate (mg/L) | pH Lab (Unit) | Phosphorus - Total (mg/L) | Potassium - Dissolved (mg/L) | Reactive Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Silver - Dissolved (mg/L) | Sodium - Dissolved (mg/L) | Sulphate - Turbidimetric (mg/L) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Zinc - Dissolved (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Piezometer PZ003 | 11/04/2016 15:00 | 93 | <1 | <1 | 93 | <0.01 | <0.001 | <0.05 | <0.0001 | 11 | <0.001 | <0.001 | <0.001 | <0.004 | 602 | 0.2 | 1.08 | <0.001 | 16 | 0.181 | <0.0001 | <0.001 | 0.1 | 0.1 | 6.55 | 0.14 | 5 | <0.01 | <0.01 | <0.001 | 75 | 45 | 330 | 22 | <0.005 |
| Piezometer PZ003 | 12/10/2016 10:45 | 93 | <1 | <1 | 93 | <0.01 | <0.001 | <0.05 | <0.0001 | 9 | <0.001 | <0.001 | <0.001 | <0.004 | 794 | 0.3 | <0.05 | <0.001 | 19 | 0.005 | <0.0001 | <0.001 | 0.23 | 0.23 | 6.64 | 0.02 | 6 | <0.01 | <0.01 | <0.001 | 107 | 30 | 358 | <5 | <0.005 |
| Piezometer PZ039 | 12/04/2016 15:00 | 25 | <1 | <1 | 25 | <0.01 | <0.001 | <0.05 | <0.0001 | 22 | <0.001 | 0.004 | <0.001 | <0.004 | 565 | 0.1 | 3.47 | <0.001 | 16 | 0.386 | <0.0001 | 0.001 | 0.04 | 0.04 | 6.07 | 0.11 | 9 | <0.01 | <0.01 | <0.001 | 60 | 16 | 373 | 29 | 0.013 |
| Piezometer PZ039 | 11/10/2016 15:55 | 27 | <1 | <1 | 27 | <0.01 | <0.001 | <0.05 | <0.0001 | 24 | <0.001 | 0.003 | <0.001 | <0.004 | 675 | <0.1 | 1.83 | <0.001 | 15 | 0.292 | <0.0001 | 0.001 | 0.05 | 0.05 | 6.07 | 0.02 | 9 | <0.01 | <0.01 | <0.001 | 58 | 15 | 374 | 61 | 0.01 |
| Piezometer PZ040B | 12/04/2016 15:00 | 45 | <1 | <1 | 45 | <0.01 | <0.001 | <0.05 | <0.0001 | 27 | <0.001 | <0.001 | <0.001 | <0.004 | 1060 | 0.1 | <0.05 | <0.001 | 27 | 0.09 | <0.0001 | 0.005 | 0.47 | 0.47 | 6.71 | <0.01 | 13 | <0.01 | <0.01 | <0.001 | 125 | 25 | 630 | 6 | 0.008 |
| Piezometer PZ040B | 11/10/2016 13:45 | 44 | <1 | <1 | 44 | <0.01 | <0.001 | <0.05 | <0.0001 | 34 | <0.001 | 0.001 | <0.001 | <0.004 | 1210 | 0.1 | <0.05 | <0.001 | 29 | 0.148 | <0.0001 | 0.005 | 0.7 | 0.7 | 6.63 | 0.01 | 14 | <0.01 | <0.01 | <0.001 | 128 | 27 | 541 | 30 | 0.006 |
| Piezometer PZ044 | 11/04/2016 15:00 | 420 | <1 | <1 | 420 | 0.01 | 0.002 | <0.05 | 0.0002 | 411 | <0.001 | <0.001 | 0.002 | <0.004 | 2700 | 0.3 | 2.67 | <0.001 | 73 | 0.507 | <0.0001 | <0.001 | 0.03 | 0.03 | 7.01 | 0.23 | 39 | <0.01 | <0.01 | <0.001 | 93 | 830 | 2140 | 5 | 0.01 |
| Piezometer PZ044 | 12/10/2016 11:45 | 392 | <1 | <1 | 392 | 0.01 | 0.002 | <0.05 | <0.0001 | 426 | <0.001 | <0.001 | 0.001 | <0.004 | 2800 | 0.2 | 2.04 | <0.001 | 69 | 0.309 | <0.0001 | <0.001 | 0.24 | 0.24 | 6.95 | 0.04 | 38 | <0.01 | <0.01 | <0.001 | 107 | 820 | 2170 | 13 | 0.011 |
| Piezometer PZ055 | 12/04/2016 15:00 | 37 | <1 | <1 | 37 | 0.03 | <0.001 | <0.05 | <0.0001 | 26 | <0.001 | 0.248 | <0.001 | <0.004 | 2260 | <0.1 | 1.46 | <0.001 | 104 | 5.07 | <0.0001 | 0.063 | 0.01 | 0.01 | 5.67 | <0.01 | 18 | <0.01 | <0.01 | <0.001 | 269 | 345 | 1440 | 16 | 0.06 |
| Piezometer PZ055 | 10/10/2016 13:35 | 38 | <1 | <1 | 38 | 0.03 | <0.001 | <0.05 | <0.0001 | 29 | <0.001 | 0.372 | <0.001 | <0.004 | 2780 | <0.1 | 1.73 | <0.001 | 132 | 6.47 | <0.0001 | 0.081 | 0.09 | 0.09 | 5.77 | <0.01 | 17 | <0.01 | <0.01 | <0.001 | 314 | 440 | 1420 | 33 | 0.065 |
| Piezometer PZ101B | 13/04/2016 15:00 | 340 | <1 | <1 | 340 | <0.01 | 0.006 | <0.05 | <0.0001 | 52 | <0.001 | 0.002 | 0.001 | <0.004 | 740 | 1.1 | 0.27 | <0.001 | 20 | 0.394 | <0.0001 | 0.003 | <0.01 | 0.08 | 7.78 | 1.17 | 18 | <0.01 | <0.01 | <0.001 | 72 | 6 | 422 | 480 | 0.007 |
| Piezometer PZ101B | 11/10/2016 10:50 | 314 | <1 | <1 | 314 | <0.01 | 0.006 | <0.05 | <0.0001 | 55 | <0.001 | <0.001 | <0.001 | <0.004 | 846 | 1.1 | 1.65 | <0.001 | 20 | 0.275 | <0.0001 | <0.001 | <0.01 | 0.06 | 7.77 | 0.16 | 16 | <0.01 | <0.01 | <0.001 | 79 | 4 | 406 | 60 | <0.005 |
| Piezometer PZ102A | 13/04/2016 15:00 | 327 | <1 | <1 | 327 | <0.01 | <0.001 | 0.05 | <0.0001 | 112 | <0.001 | 0.013 | <0.001 | <0.004 | 1920 | 1.8 | 1.43 | <0.001 | 43 | 0.088 | <0.0001 | 0.03 | 0.01 | 0.01 | 7.32 | <0.01 | 30 | <0.01 | <0.01 | <0.001 | 246 | 370 | 1230 | 24 | <0.005 |
| Piezometer PZ102A | 11/10/2016 9:45 | 327 | <1 | <1 | 327 | 0.01 | <0.001 | 0.06 | <0.0001 | 108 | <0.001 | 0.003 | <0.001 | <0.004 | 2060 | 2.2 | 1.46 | <0.001 | 40 | 0.154 | <0.0001 | 0.01 | 0.06 | 0.06 | 7.47 | 0.07 | 28 | <0.01 | <0.01 | <0.001 | 254 | 388 | 1140 | 101 | 0.021 |
| Piezometer PZ102B | 13/04/2016 15:00 | 234 | <1 | <1 | 234 | <0.01 | <0.001 | <0.05 | 0.0002 | 177 | <0.001 | <0.001 | <0.001 | <0.004 | 2320 | 1.4 | 4.01 | <0.001 | 82 | 1.53 | <0.0001 | 0.002 | <0.01 | <0.01 | 7.1 | 0.11 | 31 | <0.01 | <0.01 | <0.001 | 219 | 876 | 1700 | 26 | <0.005 |
| Piezometer PZ102B | 11/10/2016 9:50 | 228 | <1 | <1 | 228 | <0.01 | <0.001 | <0.05 | <0.0001 | 192 | <0.001 | <0.001 | <0.001 | <0.004 | 2500 | 1.5 | 3.5 | <0.001 | 96 | 1.28 | <0.0001 | 0.002 | 0.08 | 0.08 | 7.19 | 0.03 | 32 | <0.01 | <0.01 | <0.001 | 246 | 945 | 1610 | 78 | <0.005 |
| Piezometer PZ103A | 13/04/2016 15:00 | 168 | <1 | <1 | 168 | <0.01 | <0.001 | <0.05 | 0.0001 | 42 | <0.001 | <0.001 | <0.001 | <0.004 | 550 | 0.4 | 3.88 | <0.001 | 18 | 0.099 | <0.0001 | 0.002 | 0.01 | 0.01 | 6.98 | <0.01 | 11 | <0.01 | <0.01 | <0.001 | 34 | 8 | 309 | 5 | 0.012 |
| Piezometer PZ103A | 11/10/2016 8:30 | 148 | <1 | <1 | 148 | <0.01 | <0.001 | <0.05 | <0.0001 | 44 | <0.001 | <0.001 | 0.001 | <0.004 | 628 | 0.5 | <0.05 | <0.001 | 19 | 0.05 | <0.0001 | 0.003 | 0.26 | 0.26 | 7.01 | 0.14 | 11 | <0.01 | <0.01 | <0.001 | 37 | 9 | 305 | 149 | 0.014 |
| Piezometer PZ103B | 13/04/2016 15:00 | 127 | <1 | <1 | 127 | <0.01 | <0.001 | <0.05 | <0.0001 | 33 | <0.001 | 0.002 | <0.001 | <0.004 | 506 | 0.1 | <0.05 | <0.001 | 14 | 0.275 | <0.0001 | 0.008 | 0.06 | 0.06 | 6.69 | 0.07 | 8 | <0.01 | <0.01 | <0.001 | 37 | 16 | 281 | 55 | 0.082 |
| Piezometer PZ103B | 11/10/2016 8:35 | 131 | <1 | <1 | 131 | <0.01 | <0.001 | <0.05 | 0.0006 | 37 | <0.001 | 0.003 | <0.001 | <0.004 | 633 | 0.2 | <0.05 | <0.001 | 14 | 0.261 | <0.0001 | 0.012 | 0.34 | 0.34 | 6.71 | 0.3 | 8 | <0.01 | <0.01 | <0.001 | 42 | 22 | 308 | 190 | 0.872 |
| Piezometer PZ103C | 13/04/2016 15:00 | 15 | <1 | <1 | 15 | 0.02 | <0.001 | <0.05 | <0.0001 | 4 | <0.001 | 0.025 | <0.001 | <0.004 | 294 | <0.1 | 0.26 | <0.001 | 7 | 0.566 | <0.0001 | 0.134 | 0.02 | 0.02 | 5.63 | 0.14 | 6 | <0.01 | <0.01 | <0.001 | 31 | 15 | 177 | 718 | 0.058 |
| Piezometer PZ103C | 11/10/2016 8:25 | 12 | <1 | <1 | 12 | 0.02 | <0.001 | <0.05 | <0.0001 | 5 | <0.001 | 0.023 | <0.001 | <0.004 | 332 | <0.1 | 0.26 | <0.001 | 8 | 0.566 | <0.0001 | 0.145 | 0.07 | 0.07 | 5.69 | 0.4 | 7 | <0.01 | <0.01 | <0.001 | 33 | 18 | 172 | 1040 | 0.047 |
| Piezometer PZ104 | 11/04/2016 15:00 | <1 | 63 | 1830 | 1890 | 0.02 | <0.001 | <0.05 | <0.0001 | 688 | 0.034 | <0.001 | <0.001 | <0.004 | 7650 | 0.2 | <0.05 | <0.001 | <1 | <0.001 | 0.0011 | <0.001 | 0.04 | 0.06 | 12.4 | <0.01 | 6 | <0.01 | <0.01 | <0.001 | 31 | <10 | 1790 | 53 | <0.005 |
| Piezometer PZ104 | 12/10/2016 14:45 | <1 | 50 | 1750 | 1800 | 0.02 | <0.001 | <0.05 | <0.0001 | 766 | 0.035 | <0.001 | 0.002 | <0.004 | 7610 | 0.2 | <0.05 | <0.001 | <1 | <0.001 | <0.0001 | <0.001 | 0.07 | 0.1 | 12.4 | 0.01 | 5 | <0.01 | <0.01 | <0.001 | 32 | 6 | 1840 | 68 | <0.005 |
| Piezometer PZ105A | 13/04/2016 15:00 | 22 | <1 | <1 | 22 | <0.01 | <0.001 | <0.05 | <0.0001 | 7 | <0.001 | 0.009 | 0.005 | <0.004 | 284 | 0.1 | 0.1 | <0.001 | 6 | 0.18 | <0.0001 | 0.084 | 0.17 | 0.17 | 6.23 | <0.01 | 3 | <0.01 | <0.01 | <0.001 | 33 | 4 | 180 | 24 | 0.076 |
| Piezometer PZ105A | 11/10/2016 11:10 | 22 | <1 | <1 | 22 | <0.01 | <0.001 | <0.05 | <0.0001 | 7 | <0.001 | 0.015 | <0.001 | <0.004 | 315 | 0.1 | 3.56 | <0.001 | 6 | 0.239 | <0.0001 | 0.105 | 0.04 | 0.04 | 6.07 | <0.01 | 3 | <0.01 | <0.01 | <0.001 | 31 | 5 | 170 | 22 | 0.029 |

| Sample Point | Date | Alkalinity Bicarbonate (mg/L) | Alkalinity Carbonate (mg/L) | Alkalinity Hydroxide (mg/L) | Alkalinity Total (mg/L) | Aluminium - Dissolved (mg/L) | Arsenic - Dissolved (mg/L) | Boron - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Calcium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Cobalt - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Cyanide - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Fluoride - Dissolved (mg/L) | Iron - Dissolved (mg/L) | Lead - Dissolved (mg/L) | Magnesium - Dissolved (mg/L) | Manganese - Dissolved (mg/L) | Mercury - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Nitrate (mg/L) | Nitrite + Nitrate (mg/L) | pH Lab (Unit) | Phosphorus - Total (mg/L) | Potassium - Dissolved (mg/L) | Reactive Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Silver - Dissolved (mg/L) | Sodium - Dissolved (mg/L) | Sulphate - Turbidimetric (mg/L) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Zinc - Dissolved (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Piezometer PZ105B | 13/04/2016 15:00 | 8 | <1 | <1 | 8 | 0.02 | <0.001 | <0.05 | <0.0001 | 2 | <0.001 | 0.012 | 0.002 | <0.004 | 196 | <0.1 | 0.08 | <0.001 | 4 | 0.11 | <0.0001 | 0.069 | 0.03 | 0.03 | 5.57 | <0.01 | <1 | <0.01 | <0.01 | <0.001 | 25 | <1 | 124 | 20 | 0.046 |
| Piezometer PZ105B | 11/10/2016 11:15 | 7 | <1 | <1 | 7 | 0.02 | 0.001 | <0.05 | <0.0001 | 1 | <0.001 | 0.014 | 0.023 | <0.004 | 205 | <0.1 | 0.07 | <0.001 | 4 | 0.094 | <0.0001 | 0.076 | 0.05 | 0.05 | 5.62 | <0.01 | <1 | <0.01 | <0.01 | <0.001 | 24 | <1 | 106 | 16 | 0.035 |
| Piezometer PZ105C | 13/04/2016 15:00 | 20 | <1 | <1 | 20 | <0.01 | <0.001 | <0.05 | <0.0001 | 6 | <0.001 | <0.001 | 0.004 | <0.004 | 205 | <0.1 | <0.05 | <0.001 | 3 | 0.01 | <0.0001 | 0.008 | 0.28 | 0.28 | 6.53 | 0.01 | 2 | <0.01 | <0.01 | <0.001 | 22 | 5 | 139 | 30 | 0.04 |
| Piezometer PZ105C | 11/10/2016 11:05 | 16 | <1 | <1 | 16 | <0.01 | <0.001 | <0.05 | <0.0001 | 6 | <0.001 | <0.001 | 0.001 | <0.004 | 210 | <0.1 | <0.05 | <0.001 | 4 | 0.068 | <0.0001 | 0.032 | 0.22 | 0.22 | 6.3 | 0.01 | 2 | <0.01 | <0.01 | <0.001 | 22 | 5 | 110 | 19 | 0.044 |
| Piezometer PZ106A | 12/04/2016 15:00 | 34 | 9 | <1 | 43 | 0.64 | <0.001 | <0.05 | <0.0001 | 14 | <0.001 | <0.001 | 0.002 | <0.004 | 661 | 0.1 | <0.05 | <0.001 | 2 | 0.002 | <0.0001 | <0.001 | 0.85 | 0.85 | 9.05 | 0.04 | 18 | <0.01 | <0.01 | <0.001 | 105 | 15 | 340 | 52 | <0.005 |
| Piezometer PZ106A | 11/10/2016 15:10 | 32 | 7 | <1 | 39 | 0.62 | <0.001 | <0.05 | <0.0001 | 19 | <0.001 | <0.001 | <0.001 | <0.004 | 768 | 0.1 | <0.05 | <0.001 | 2 | <0.001 | <0.0001 | <0.001 | 0.91 | 0.91 | 8.87 | 0.04 | 19 | <0.01 | <0.01 | <0.001 | 108 | 14 | 350 | 55 | <0.005 |
| Piezometer PZ106B | 12/04/2016 15:00 | 14 | <1 | <1 | 14 | 0.05 | <0.001 | <0.05 | 0.0009 | 29 | <0.001 | 0.051 | 0.001 | <0.004 | 2050 | <0.1 | <0.05 | <0.001 | 53 | 1.3 | <0.0001 | 0.078 | 0.01 | 0.01 | 5.8 | <0.01 | 9 | <0.01 | <0.01 | <0.001 | 277 | 36 | 1260 | 21 | 0.15 |
| Piezometer PZ106B | 11/10/2016 15:15 | 12 | <1 | <1 | 12 | 0.03 | <0.001 | <0.05 | 0.0007 | 30 | <0.001 | 0.052 | <0.001 | <0.004 | 2120 | <0.1 | <0.05 | <0.001 | 52 | 1.19 | <0.0001 | 0.081 | 0.05 | 0.05 | 5.84 | <0.01 | 9 | <0.01 | <0.01 | <0.001 | 270 | 41 | 1180 | 50 | 0.162 |
| Piezometer PZ107 | 12/04/2016 15:00 | 172 | <1 | <1 | 172 | <0.01 | <0.001 | <0.05 | <0.0001 | 36 | <0.001 | <0.001 | <0.001 | <0.004 | 852 | 0.2 | <0.05 | <0.001 | 29 | 0.009 | <0.0001 | 0.002 | 0.24 | 0.24 | 6.94 | 0.05 | 12 | <0.01 | <0.01 | <0.001 | 94 | 47 | 484 | 18 | 0.08 |
| Piezometer PZ107 | 11/10/2016 14:50 | 149 | <1 | <1 | 149 | <0.01 | <0.001 | <0.05 | <0.0001 | 28 | <0.001 | <0.001 | <0.001 | <0.004 | 743 | 0.2 | <0.05 | <0.001 | 19 | 0.13 | <0.0001 | <0.001 | 0.03 | 0.03 | 6.8 | 0.02 | 9 | <0.01 | <0.01 | <0.001 | 81 | 44 | 332 | 33 | <0.005 |
| Piezometer PZ109 | 13/04/2016 15:00 | 467 | <1 | <1 | 467 | <0.01 | <0.001 | 0.05 | <0.0001 | 44 | <0.001 | <0.001 | <0.001 | <0.004 | 914 | 1.2 | 0.66 | <0.001 | 18 | 0.033 | <0.0001 | 0.002 | 0.02 | 0.02 | 7.64 | <0.01 | 16 | <0.01 | <0.01 | <0.001 | 131 | 3 | 527 | 6 | 0.006 |
| Piezometer PZ109 | 11/10/2016 10:20 | 403 | <1 | <1 | 403 | <0.01 | <0.001 | <0.05 | <0.0001 | 55 | <0.001 | <0.001 | <0.001 | <0.004 | 1060 | 1.1 | 0.46 | <0.001 | 23 | 0.03 | <0.0001 | <0.001 | 0.06 | 0.06 | 7.56 | 0.03 | 13 | <0.01 | <0.01 | <0.001 | 127 | 7 | 530 | 41 | <0.005 |
| Piezometer PZ111 | 11/04/2016 15:00 | 57 | <1 | <1 | 57 | <0.01 | <0.001 | <0.05 | <0.0001 | 37 | <0.001 | 0.02 | <0.001 | <0.004 | 749 | 0.2 | 5.2 | <0.001 | 25 | 0.923 | <0.0001 | 0.055 | 0.4 | 0.4 | 6.3 | <0.05 | 12 | <0.01 | <0.01 | <0.001 | 58 | 12 | 531 | 872 | 0.027 |
| Piezometer PZ111 | 12/10/2016 7:40 | 49 | <1 | <1 | 49 | <0.01 | <0.001 | <0.05 | <0.0001 | 39 | <0.001 | 0.022 | <0.001 | <0.004 | 917 | 0.2 | 11.9 | <0.001 | 26 | 0.96 | <0.0001 | 0.065 | 0.18 | 0.18 | 6.28 | 0.03 | 12 | <0.01 | <0.01 | <0.001 | 63 | 12 | 468 | 1370 | 0.008 |
| Piezometer PZ112B | 12/04/2016 15:00 | 4 | <1 | <1 | 4 | 0.16 | <0.001 | <0.05 | <0.0001 | 2 | <0.001 | 0.023 | 0.003 | <0.004 | 2140 | 0.2 | 0.12 | <0.001 | 26 | 0.068 | <0.0001 | 0.055 | 1.84 | 1.84 | 5.44 | 1.12 | 9 | <0.01 | <0.01 | <0.001 | 423 | 280 | 1780 | 2630 | 0.102 |
| Piezometer PZ112B | 12/10/2016 9:15 | 4 | <1 | <1 | 4 | 0.04 | <0.001 | <0.05 | <0.0001 | <1 | <0.001 | 0.007 | 0.001 | <0.004 | 1110 | 0.1 | <0.05 | <0.001 | 7 | 0.018 | <0.0001 | 0.018 | 0.96 | 0.96 | 5.69 | 0.03 | 4 | <0.01 | <0.01 | <0.001 | 184 | 184 | 668 | 78 | 0.027 |
| Piezometer PZ137 | 12/04/2016 15:00 | 37 | <1 | <1 | 37 | <0.01 | <0.001 | <0.05 | <0.0001 | 42 | <0.001 | 0.003 | 0.001 | <0.004 | 1160 | <0.1 | <0.05 | <0.001 | 38 | 0.687 | <0.0001 | 0.008 | 0.18 | 0.18 | 6.42 | 0.02 | 27 | <0.01 | <0.01 | <0.001 | 99 | 45 | 743 | 53 | 0.033 |
| Piezometer PZ137 | 11/10/2016 14:30 | 32 | <1 | <1 | 32 | 0.02 | <0.001 | <0.05 | <0.0001 | 44 | <0.001 | <0.001 | <0.001 | <0.004 | 1340 | <0.1 | <0.05 | <0.001 | 34 | <0.001 | <0.0001 | <0.001 | 0.18 | 0.18 | 6.24 | <0.01 | 26 | <0.01 | <0.01 | <0.001 | 112 | 66 | 726 | 18 | <0.005 |
| Piezometer PZ149 | 11/10/2016 14:45 | 31 | <1 | <1 | 31 | 0.82 | 0.002 | 0.06 | 0.0007 | 128 | <0.001 | 0.058 | 0.002 | <0.004 | 5130 | 0.2 | 3.41 | 0.001 | 280 | 23.4 | <0.0001 | 0.022 | 2.02 | 2.02 | 5.61 | 0.04 | 38 | <0.01 | <0.01 | <0.001 | 531 | 710 | 3540 | 102 | 0.488 |
| Piezometer PZ151 | 12/04/2016 15:00 | 292 | <1 | <1 | 292 | <0.01 | 0.003 | <0.05 | <0.0001 | 76 | <0.001 | <0.001 | <0.001 | <0.004 | 1420 | 0.3 | 2.07 | <0.001 | 44 | 0.077 | <0.0001 | <0.001 | 0.02 | 0.02 | 7.19 | 0.27 | 20 | <0.01 | <0.01 | <0.001 | 157 | 92 | 867 | 741 | <0.005 |
| Piezometer PZ151 | 12/10/2016 8:45 | 264 | <1 | <1 | 264 | <0.01 | 0.003 | <0.05 | <0.0001 | 85 | <0.001 | <0.001 | <0.001 | <0.004 | 1710 | 0.3 | 3.71 | <0.001 | 46 | 0.11 | <0.0001 | 0.002 | 0.04 | 0.04 | 7.03 | 0.17 | 22 | <0.01 | <0.01 | <0.001 | 169 | 96 | 874 | 970 | 0.009 |
| Piezometer PZ156 | 12/04/2016 15:00 | 31 | <1 | <1 | 31 | 0.04 | <0.001 | <0.05 | <0.0001 | 14 | <0.001 | 0.011 | <0.001 | <0.004 | 499 | 0.1 | 7.51 | <0.001 | 14 | 0.342 | <0.0001 | 0.068 | <0.01 | <0.01 | 6.03 | 0.04 | 7 | <0.01 | <0.01 | <0.001 | 51 | 22 | 293 | 38 | 0.026 |
| Piezometer PZ156 | 11/10/2016 12:10 | 70 | <1 | <1 | 70 | 0.02 | <0.001 | <0.05 | <0.0001 | 19 | <0.001 | 0.008 | <0.001 | <0.004 | 655 | 0.2 | 6.61 | <0.001 | 16 | 0.303 | <0.0001 | 0.05 | 0.04 | 0.04 | 6.38 | 0.02 | 10 | <0.01 | <0.01 | <0.001 | 63 | 22 | 354 | 50 | 0.008 |
| Piezometer PZ156 | 18/11/2016 9:25 | 45 | <1 | <1 | 45 | 0.02 | <0.001 | <0.05 | <0.0001 | 18 | <0.001 | 0.011 | 0.001 | <0.004 | 504 | 0.1 | 4.9 | <0.001 | 15 | 0.325 | <0.0001 | 0.062 | 0.04 | 0.04 | 5.93 | 0.02 | 9 | <0.01 | <0.01 | <0.001 | 57 | 25 | 304 | 20 | 0.087 |
| Piezometer PZ156 | 18/11/2016 10:57 | 140 | <1 | <1 | 140 | 0.01 | <0.001 | <0.05 | <0.0001 | 28 | <0.001 | <0.001 | <0.001 | <0.004 | 703 | 0.3 | 0.24 | <0.001 | 20 | 0.163 | <0.0001 | 0.011 | 0.05 | 0.05 | 6.59 | 0.02 | 13 | <0.01 | <0.01 | <0.001 | 77 | 44 | 428 | 36 | 0.017 |
| Piezometer PZ157 | 12/04/2016 15:00 | 243 | <1 | <1 | 243 | <0.01 | <0.001 | <0.05 | <0.0001 | 51 | <0.001 | <0.001 | <0.001 | <0.004 | 776 | 0.2 | <0.05 | <0.001 | 36 | 0.005 | <0.0001 | 0.007 | 0.18 | 0.18 | 7.2 | 0.09 | 13 | <0.01 | <0.01 | <0.001 | 44 | 16 | 460 | 24 | 0.064 |

| Sample Point | Date | Alkalinity Bicarbonate (mg/L) | Alkalinity Carbonate (mg/L) | Alkalinity Hydroxide (mg/L) | Alkalinity Total (mg/L) | Aluminium - Dissolved (mg/L) | Arsenic - Dissolved (mg/L) | Boron - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Calcium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Cobalt - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Cyanide - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Fluoride - Dissolved (mg/L) | Iron - Dissolved (mg/L) | Lead - Dissolved (mg/L) | Magnesium - Dissolved (mg/L) | Manganese - Dissolved (mg/L) | Mercury - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Nitrate (mg/L) | Nitrite + Nitrate (mg/L) | pH Lab (Unit) | Phosphorus - Total (mg/L) | Potassium - Dissolved (mg/L) | Reactive Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Silver - Dissolved (mg/L) | Sodium - Dissolved (mg/L) | Sulphate - Turbidimetric (mg/L) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Zinc - Dissolved (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Piezometer PZ157 | 11/10/2016 12:40 | 234 | <1 | <1 | 234 | <0.01 | <0.001 | <0.05 | <0.0001 | 59 | <0.001 | <0.001 | <0.001 | <0.004 | 923 | 0.3 | <0.05 | <0.001 | 36 | 0.005 | <0.0001 | 0.006 | 0.37 | 0.37 | 7.11 | 0.02 | 14 | <0.01 | <0.01 | <0.001 | 52 | 20 | 507 | 30 | 0.06 |
| Piezometer PZ157 | 18/11/2016 12:10 | 233 | <1 | <1 | 233 | <0.01 | <0.001 | <0.05 | <0.0001 | 59 | <0.001 | <0.001 | 0.002 | <0.004 | 789 | 0.2 | <0.05 | <0.001 | 36 | 0.008 | <0.0001 | 0.009 | 0.42 | 0.42 | 7.05 | 0.02 | 15 | <0.01 | <0.01 | <0.001 | 51 | 18 | 528 | 16 | 0.068 |
| Piezometer PZ157 | 18/11/2016 13:10 | 314 | <1 | <1 | 314 | <0.01 | <0.001 | <0.05 | <0.0001 | 69 | <0.001 | <0.001 | <0.001 | <0.004 | 804 | 0.4 | 1.66 | <0.001 | 36 | 0.049 | <0.0001 | 0.003 | <0.01 | <0.01 | 7.09 | 0.02 | 19 | <0.01 | <0.01 | <0.001 | 60 | 17 | 471 | 6 | 0.067 |
| Piezometer PZ170 | 12/04/2016 15:00 | 226 | <1 | <1 | 226 | 0.01 | <0.001 | <0.05 | <0.0001 | 159 | <0.001 | <0.001 | <0.001 | <0.004 | 4190 | 0.1 | 7.62 | <0.001 | 189 | 0.42 | <0.0001 | 0.002 | 0.01 | 0.01 | 6.79 | 0.08 | 19 | 0.01 | 0.01 | <0.001 | 350 | 5 | 2840 | 18 | <0.005 |
| Piezometer PZ170 | 11/10/2016 13:20 | 248 | <1 | <1 | 248 | 0.03 | 0.002 | <0.05 | 0.0005 | 348 | <0.001 | 0.015 | 0.001 | <0.004 | 4860 | <0.1 | 0.08 | <0.001 | 200 | 0.014 | <0.0001 | 0.041 | 0.05 | 0.05 | 6.87 | 0.02 | 32 | <0.01 | <0.01 | <0.001 | 297 | 11 | 3000 | 29 | 0.438 |
| Piezometer PZ174 | 12/04/2016 15:00 | 313 | <1 | <1 | 313 | <0.01 | <0.001 | <0.05 | <0.0001 | 172 | <0.001 | 0.14 | 0.003 | <0.004 | 10300 | 0.5 | <0.05 | <0.001 | 540 | 0.849 | <0.0001 | 0.074 | 0.12 | 0.12 | 6.75 | 0.02 | 5 | <0.01 | <0.01 | <0.001 | 1130 | 282 | 6810 | 17 | 0.065 |
| Piezometer PZ174 | 11/10/2016 16:05 | 354 | <1 | <1 | 354 | <0.01 | <0.001 | <0.05 | <0.0001 | 199 | <0.001 | 0.14 | 0.001 | <0.004 | 12200 | 0.6 | 0.21 | <0.001 | 721 | 0.843 | <0.0001 | 0.08 | 0.27 | 0.27 | 6.77 | <0.02 | 5 | <0.01 | <0.01 | <0.001 | 1320 | 375 | 6050 | 11 | 0.067 |
| Piezometer PZ175 | 12/04/2016 15:00 | 308 | <1 | <1 | 308 | <0.01 | <0.001 | <0.05 | <0.0001 | 87 | <0.001 | 0.008 | 0.004 | <0.004 | 7900 | 1.1 | <0.05 | <0.001 | 538 | 0.114 | <0.0001 | 0.005 | 0.1 | 0.1 | 7.12 | 0.03 | 1 | <0.01 | <0.01 | <0.001 | 1230 | 255 | 7820 | 18 | 0.018 |
| Piezometer PZ175 | 11/10/2016 16:15 | 33 | <1 | <1 | 33 | 0.61 | <0.001 | <0.05 | <0.0001 | 4 | 0.005 | 0.006 | 0.01 | <0.004 | 728 | 0.2 | 0.6 | <0.001 | 30 | 0.019 | <0.0001 | 0.013 | 0.18 | 0.18 | 6.7 | 0.1 | 9 | <0.01 | <0.01 | <0.001 | 82 | 34 | 416 | 20 | 0.009 |
| Piezometer PZ176 | 12/04/2016 15:00 | 49 | <1 | <1 | 49 | <0.01 | <0.001 | <0.05 | <0.0001 | 16 | <0.001 | <0.001 | <0.001 | <0.004 | 560 | 0.1 | 12.2 | <0.001 | 19 | 0.304 | <0.0001 | <0.001 | <0.01 | <0.01 | 6.55 | 0.08 | 4 | <0.01 | <0.01 | <0.001 | 56 | <1 | 357 | 29 | 0.006 |
| Piezometer PZ176 | 11/10/2016 16:30 | 42 | <1 | <1 | 42 | <0.01 | <0.001 | <0.05 | <0.0001 | 16 | <0.001 | <0.001 | <0.001 | <0.004 | 642 | 0.1 | <0.05 | <0.001 | 20 | 0.008 | <0.0001 | <0.001 | 0.15 | 0.15 | 6.61 | 0.02 | 4 | <0.01 | <0.01 | <0.001 | 60 | <1 | 342 | 16 | <0.005 |
| Piezometer PZ177 | 12/04/2016 15:00 | 259 | <1 | <1 | 259 | <0.01 | <0.001 | <0.05 | <0.0001 | 25 | <0.001 | 0.01 | <0.001 | <0.004 | 6500 | 0.9 | 0.12 | <0.001 | 148 | 0.015 | <0.0001 | 0.016 | 0.01 | 0.01 | 7.01 | 1.3 | <1 | <0.01 | <0.01 | <0.001 | 1070 | 225 | 4670 | 952 | 0.021 |
| Piezometer PZ177 | 11/10/2016 16:35 | 69 | <1 | <1 | 69 | <0.01 | <0.001 | <0.05 | <0.0001 | 3 | <0.001 | 0.001 | <0.001 | <0.004 | 1180 | 0.5 | 0.63 | <0.001 | 12 | 0.019 | <0.0001 | 0.002 | 0.02 | 0.02 | 6.76 | 0.23 | <1 | <0.01 | <0.01 | <0.001 | 191 | 28 | 1210 | 824 | <0.005 |
| Piezometer PZ184 | 12/04/2016 15:00 | <1 | <1 | <1 | <1 | 36.3 | 0.001 | <0.05 | 0.0012 | 34 | 0.004 | 0.222 | 0.016 | <0.004 | 7790 | 0.1 | 0.95 | 0.017 | 168 | 1.04 | <0.0001 | 0.32 | 0.25 | 0.25 | 3.34 | 0.24 | 5 | <0.01 | <0.01 | <0.001 | 1180 | 476 | 4860 | 1610 | 0.524 |
| Piezometer PZ184 | 12/10/2016 8:25 | <1 | <1 | <1 | <1 | 14.5 | <0.001 | <0.05 | 0.0006 | 24 | 0.002 | 0.161 | 0.009 | <0.004 | 4850 | 0.3 | 1.08 | 0.01 | 100 | 0.815 | <0.0001 | 0.26 | 0.1 | 0.1 | 3.31 | 0.23 | 6 | <0.01 | <0.01 | <0.001 | 771 | 372 | 2840 | 1700 | 0.333 |
| Piezometer PZ186 | 11/04/2016 15:00 | 80 | <1 | <1 | 80 | 0.01 | 0.007 | <0.05 | <0.0001 | 19 | <0.001 | <0.001 | <0.001 | <0.004 | 323 | 0.2 | 7.61 | <0.001 | 11 | 0.205 | <0.0001 | 0.002 | 0.01 | 0.01 | 6.76 | 0.11 | 9 | <0.01 | <0.01 | <0.001 | 24 | <1 | 190 | 32 | <0.005 |
| Piezometer PZ186 | 12/10/2016 14:35 | 78 | <1 | <1 | 78 | <0.01 | 0.006 | <0.05 | <0.0001 | 20 | <0.001 | <0.001 | <0.001 | <0.004 | 369 | 0.2 | 7.95 | <0.001 | 11 | 0.2 | <0.0001 | 0.002 | 0.06 | 0.06 | 6.75 | 0.1 | 10 | <0.01 | <0.01 | <0.001 | 23 | <1 | 192 | 32 | <0.005 |
| Piezometer PZ187 | 11/04/2016 15:00 | 26 | <1 | <1 | 26 | 0.07 | 0.006 | <0.05 | <0.0001 | <1 | <0.001 | <0.001 | <0.001 | <0.004 | 172 | <0.1 | 0.78 | <0.001 | 2 | 0.019 | <0.0001 | 0.002 | 0.07 | 0.07 | 6.21 | 0.07 | <1 | <0.01 | <0.01 | <0.001 | 26 | <1 | 110 | <5 | <0.005 |
| Piezometer PZ187 | 12/10/2016 14:30 | 21 | <1 | <1 | 21 | 0.04 | <0.001 | <0.05 | <0.0001 | 1 | <0.001 | <0.001 | <0.001 | <0.004 | 360 | <0.1 | <0.05 | <0.001 | 3 | 0.007 | <0.0001 | 0.001 | 1.26 | 1.26 | 6.58 | 0.05 | <1 | <0.01 | <0.01 | <0.001 | 62 | 7 | 318 | 11 | <0.005 |
| Piezometer PZ188 | 11/04/2016 15:00 | 12 | <1 | <1 | 12 | <0.01 | <0.001 | <0.05 | <0.0001 | 2 | <0.001 | 0.01 | <0.001 | <0.004 | 200 | <0.1 | <0.05 | <0.001 | 4 | 0.156 | <0.0001 | 0.012 | 0.29 | 0.29 | 5.88 | 0.43 | <1 | <0.01 | <0.01 | <0.001 | 31 | <1 | 131 | 35 | 0.028 |
| Piezometer PZ188 | 12/10/2016 15:10 | 13 | <1 | <1 | 13 | <0.01 | <0.001 | <0.05 | <0.0001 | 2 | <0.001 | 0.007 | 0.003 | <0.004 | 217 | <0.1 | <0.05 | <0.001 | 3 | 0.066 | <0.0001 | 0.012 | 0.35 | 0.35 | 6.2 | 0.1 | <1 | <0.01 | <0.01 | <0.001 | 26 | <1 | 119 | 113 | 0.026 |
| Piezometer PZ189 | 11/04/2016 15:00 | 54 | <1 | <1 | 54 | <0.01 | <0.001 | <0.05 | <0.0001 | 14 | <0.001 | <0.001 | <0.001 | <0.004 | 316 | 0.2 | 0.46 | <0.001 | 9 | 0.057 | <0.0001 | <0.001 | 0.04 | 0.04 | 6.85 | 0.05 | 6 | <0.01 | <0.01 | <0.001 | 28 | <1 | 195 | 40 | 0.017 |
| Piezometer PZ189 | 12/10/2016 15:15 | 60 | <1 | <1 | 60 | <0.01 | <0.001 | <0.05 | <0.0001 | 16 | <0.001 | <0.001 | <0.001 | <0.004 | 384 | 0.2 | 12 | <0.001 | 10 | 0.508 | <0.0001 | 0.004 | 0.06 | 0.06 | 6.49 | 0.07 | 6 | <0.01 | <0.01 | <0.001 | 29 | <1 | 293 | 54 | 0.035 |
| Piezometer PZ191 | 11/04/2016 15:00 | <1 | <1 | <1 | <1 | <0.01 | <0.001 | <0.05 | <0.0001 | 8 | <0.001 | 0.001 | <0.001 | <0.004 | 304 | <0.1 | 25.6 | <0.001 | 6 | 0.352 | <0.0001 | 0.002 | 0.18 | 0.18 | 4.66 | 30.6 | 4 | <0.01 | <0.01 | <0.001 | 40 | 3 | 223 | 300 | 0.013 |
| Piezometer PZ191 | 11/10/2016 7:45 | <1 | <1 | <1 | <1 | 0.01 | <0.001 | <0.05 | <0.0001 | 6 | <0.001 | 0.002 | <0.001 | <0.004 | 387 | 0.1 | 18.8 | <0.001 | 6 | 0.392 | <0.0001 | 0.002 | 0.11 | 0.11 | 3.88 | 1.28 | 4 | <0.01 | <0.01 | <0.001 | 37 | 4 | 201 | 846 | 0.012 |
| Test Bore TB105 | 13/04/2016 15:00 | 291 | <1 | <1 | 291 | <0.01 | <0.001 | 0.06 | <0.0001 | 40 | <0.001 | 0.001 | <0.001 | <0.004 | 626 | 1.5 | <0.05 | <0.001 | 16 | 0.037 | <0.0001 | 0.008 | 0.02 | 0.02 | 7.76 | <0.01 | 18 | <0.01 | <0.01 | <0.001 | 67 | <1 | 341 | 34 | <0.005 |

| Sample Point | Date | Alkalinity Bicarbonate (mg/L) | Alkalinity Carbonate (mg/L) | Alkalinity Hydroxide (mg/L) | Alkalinity Total (mg/L) | Aluminium - Dissolved (mg/L) | Arsenic - Dissolved (mg/L) | Boron - Dissolved (mg/L) | Cadmium - Dissolved (mg/L) | Calcium - Dissolved (mg/L) | Chromium - Dissolved (mg/L) | Cobalt - Dissolved (mg/L) | Copper - Dissolved (mg/L) | Cyanide - Total (mg/L) | Electrical Conductivity - Lab (µS/cm) | Fluoride - Dissolved (mg/L) | Iron - Dissolved (mg/L) | Lead - Dissolved (mg/L) | Magnesium - Dissolved (mg/L) | Manganese - Dissolved (mg/L) | Mercury - Dissolved (mg/L) | Nickel - Dissolved (mg/L) | Nitrate (mg/L) | Nitrite + Nitrate (mg/L) | pH Lab (Unit) | Phosphorus - Total (mg/L) | Potassium - Dissolved (mg/L) | Reactive Phosphorus - Total (mg/L) | Selenium - Dissolved (mg/L) | Silver - Dissolved (mg/L) | Sodium - Dissolved (mg/L) | Sulphate - Turbidimetric (mg/L) | Total Dissolved Solids (mg/L) | Total Suspended Solids (mg/L) | Zinc - Dissolved (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Bore TB105 | 11/10/2016 11:20 | 260 | <1 | <1 | 260 | <0.01 | <0.001 | 0.05 | <0.0001 | 41 | <0.001 | 0.001 | <0.001 | <0.004 | 725 | 1.6 | 0.45 | <0.001 | 16 | 0.044 | <0.0001 | 0.009 | 0.04 | 0.04 | 7.83 | 0.01 | 16 | <0.01 | <0.01 | <0.001 | 74 | <1 | 334 | 21 | <0.005 |
| Piezometer PZ201 | 11/04/2016 15:00 | 63 | <1 | <1 | 63 | <0.01 | 0.001 | <0.05 | 0.0002 | 6 | <0.001 | 0.012 | <0.001 | <0.004 | 281 | 0.1 | 7.7 | <0.001 | 10 | 0.931 | <0.0001 | 0.022 | 0.03 | 0.03 | 6.33 | 0.14 | 6 | <0.01 | <0.01 | <0.001 | 31 | 12 | 178 | 628 | 0.057 |
| Piezometer PZ201 | 12/10/2016 16:05 | 53 | <1 | <1 | 53 | <0.01 | 0.002 | <0.05 | <0.0001 | 7 | <0.001 | 0.014 | <0.001 | <0.004 | 287 | 0.2 | 13.2 | <0.001 | 10 | 1.06 | <0.0001 | 0.029 | 0.07 | 0.07 | 6.31 | 0.02 | 6 | <0.01 | <0.01 | <0.001 | 23 | 9 | 159 | 62 | 0.066 |
| Piezometer PZ202 | 11/04/2016 15:00 | 8 | <1 | <1 | 8 | 0.03 | <0.001 | <0.05 | 0.0001 | <1 | <0.001 | <0.001 | 0.001 | <0.004 | 67 | <0.1 | <0.05 | <0.001 | <1 | 0.01 | <0.0001 | 0.001 | 0.33 | 0.33 | 5.52 | 0.72 | 2 | <0.01 | <0.01 | <0.001 | 12 | 2 | 176 | 4000 | 0.009 |
| Piezometer PZ202 | 12/10/2016 16:15 | 21 | <1 | <1 | 21 | 0.02 | <0.001 | <0.05 | <0.0001 | 2 | <0.001 | 0.004 | 0.001 | <0.004 | 111 | <0.1 | 0.2 | <0.001 | 4 | 0.299 | <0.0001 | 0.008 | 0.06 | 0.06 | 5.75 | 0.17 | 1 | <0.01 | <0.01 | <0.001 | 11 | 10 | 73 | 976 | 0.021 |
| Piezometer PZ203 | 12/04/2016 15:00 | 10 | <1 | <1 | 10 | 0.06 | <0.001 | <0.05 | 0.0002 | 6 | <0.001 | 0.039 | 0.002 | <0.004 | 341 | <0.1 | <0.05 | <0.001 | 7 | 0.237 | <0.0001 | 0.032 | 0.1 | 0.1 | 5.82 | 0.02 | 1 | <0.01 | <0.01 | <0.001 | 66 | 19 | 205 | 28 | 0.044 |
| Piezometer PZ203 | 12/10/2016 8:10 | 9 | <1 | <1 | 9 | 0.01 | <0.001 | <0.05 | <0.0001 | 4 | <0.001 | 0.043 | 0.006 | <0.004 | 370 | <0.1 | <0.05 | <0.001 | 5 | 0.239 | <0.0001 | 0.034 | 0.07 | 0.07 | 6.06 | 0.01 | <1 | <0.01 | <0.01 | <0.001 | 53 | 18 | 203 | 34 | 0.041 |

| BORE | PZ127 - 43m | PZ127 - 68m | PZ127 - 112m | PZ127 - 141m | PZ128 - 20m | PZ128 - 36m | PZ128 - 55m | PZ129 - 35m | PZ129 - 53m | PZ129 - 74m | PZ130 - 38.5m | PZ130 - 64m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jan-16** | 449.47 | 442.33 | 405.43 | 389.06 | 388.87 | 379.59 | 375.52 | 391.25 | 388.82 | 379.28 | 498.37 | 475.77 |
| **Feb-16** | 449.47 | 442.33 | 405.37 | 388.39 | 388.90 | 379.54 | 375.48 | 391.22 | 388.84 | 379.23 | 498.44 | 475.77 |
| **Mar-16** | 449.30 | 442.03 | 405.60 | 388.28 | 388.93 | 379.54 | 375.52 | 391.20 | 389.11 | 379.17 | 498.44 | 475.79 |
| **Apr-16** | 449.24 | 442.27 | 405.31 | 388.39 | 388.91 | 379.59 | 375.43 | 391.16 | 388.23 | 379.12 | 498.46 | 475.74 |
| **May-16** | 449.24 | 442.27 | 405.14 | 388.11 | 388.84 | 379.54 | 375.24 | 391.15 | 388.68 | 379.09 | | |
| **Jun-16** | 449.24 | 442.27 | 405.20 | 387.83 | 388.79 | 379.49 | 375.15 | 391.13 | 387.70 | 379.09 | 498.44 | 475.61 |
| **Jul-16** | 449.24 | 442.27 | 405.20 | 388.67 | 388.93 | 379.50 | 375.20 | 391.11 | 387.94 | 379.31 | 498.37 | 475.57 |
| **Aug-16** | 449.24 | 441.92 | 405.14 | 389.56 | 389.00 | 379.50 | 375.15 | 391.09 | 388.41 | 379.28 | | |
| **Sep-16** | 449.24 | 442.15 | 404.85 | 389.67 | 388.91 | 379.49 | 375.15 | 391.05 | 387.60 | 379.43 | | |
| **Oct-16** | 449.24 | 441.92 | 404.97 | 389.45 | 388.88 | 379.45 | 375.13 | 391.04 | 387.63 | 379.43 | 497.86 | 475.42 |
| **Nov-16** | 449.13 | 442.21 | 404.39 | 389.45 | 388.83 | 379.44 | 375.20 | 391.02 | 387.60 | 379.35 | 497.65 | 474.98 |
| **Dec-16** | 449.18 | 442.21 | 404.05 | 389.61 | 388.83 | 379.44 | 375.15 | 391.00 | 387.51 | 379.17 | 497.60 | 474.75 |
| ***min*** | *449.13* | *441.92* | *404.05* | *387.83* | *388.79* | *379.44* | *375.13* | *391.00* | *387.51* | *379.09* | *497.60* | *474.75* |
| ***max*** | *449.47* | *442.33* | *405.60* | *389.67* | *389.00* | *379.59* | *375.52* | *391.25* | *389.11* | *379.43* | *498.46* | *475.79* |

| BORE | PZ130 - 97m | PZ133 - 31.5m | PZ133 - 43m | PZ133 - 59m | PZ179 - 28m | PZ179 - 33m | PZ179 - 82m | PZ179 - 145m |
|---|---|---|---|---|---|---|---|---|
| **Jan-16** | 449.29 | 428.73 | 427.41 | 386.33 | 417.72 | 417.25 | 439.23 | 373.68 |
| **Feb-16** | 449.61 | 428.74 | 427.41 | 386.33 | 417.72 | 417.25 | 439.46 | 373.74 |
| **Mar-16** | 449.68 | 428.78 | 427.31 | 386.34 | 417.72 | 417.25 | 439.46 | 373.74 |
| **Apr-16** | 449.78 | 428.73 | 427.10 | 386.39 | 417.63 | 417.22 | 439.41 | 373.57 |
| **May-16** | | 428.71 | 427.12 | 387.83 | 417.64 | 417.12 | 439.35 | 373.05 |
| **Jun-16** | 450.05 | 428.68 | 427.02 | 387.81 | 417.60 | 417.04 | 439.41 | 372.71 |
| **Jul-16** | 450.13 | 428.66 | 426.98 | 387.85 | 417.55 | 417.11 | 439.35 | 372.99 |
| **Aug-16** | | 428.73 | 426.98 | 387.85 | 417.58 | 417.17 | 439.69 | 373.28 |
| **Sep-16** | | 428.76 | 426.85 | 387.85 | 417.57 | 417.14 | 439.35 | 372.76 |
| **Oct-16** | 449.91 | 428.86 | 426.88 | 387.81 | 417.53 | 417.09 | 439.23 | 372.42 |
| **Nov-16** | 449.80 | 428.86 | 426.95 | 387.81 | 417.46 | 416.71 | 439.35 | 371.61 |
| **Dec-16** | 449.61 | 428.88 | 426.93 | 387.76 | 417.28 | 416.00 | 439.06 | 370.17 |
| ***min*** | *449.29* | *428.66* | *426.85* | *386.33* | *417.28* | *416.00* | *439.06* | *370.17* |
| ***max*** | *450.13* | *428.88* | *427.41* | *387.85* | *417.72* | *417.25* | *439.69* | *373.74* |

| BORE | PZ192-68m | PZ192-166m | PZ192-178m | PZ193 - 80m | PZ193 - 162m | PZ193 - 184m | PZ194 - 78m | PZ194 - 173m | PZ194 - 196m | PZ195 - 72m | PZ195 - 162m | PZ195 - 175m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jan-16** | | | | | | | | | | | | |
| **Feb-16** | | | | | | | | | | | | |
| **Mar-16** | | | | | | | | | | | | |
| **Apr-16** | 405.12 | 370.22 | 365.18 | 419.28 | 370.56 | 365.17 | | | | | | |
| **May-16** | 405.00 | 369.93 | 364.65 | 419.20 | 369.98 | 364.73 | | | | | | |
| **Jun-16** | 404.91 | 369.81 | 364.21 | 419.17 | 369.58 | 364.46 | | | | | | |
| **Jul-16** | 404.94 | 369.87 | 364.39 | 419.28 | 369.63 | 364.37 | | | | | | |
| **Aug-16** | 404.82 | 369.81 | 365.01 | 419.14 | 369.98 | 364.28 | | | | | | |
| **Sep-16** | 404.68 | 369.21 | 364.15 | 419.01 | 369.79 | 364.06 | | | | | | |
| **Oct-16** | 404.68 | 369.15 | 364.24 | 419.04 | 369.74 | 364.06 | 421.66 | 375.36 | 361.02 | 420.95 | 369.59 | 332.40 |
| **Nov-16** | 404.68 | 368.69 | 363.71 | 419.07 | 369.39 | 363.70 | 421.72 | 375.07 | 360.33 | 420.95 | 369.24 | 331.83 |
| **Dec-16** | 404.65 | 367.46 | 362.39 | 419.04 | 368.11 | 362.37 | 421.69 | 374.09 | 358.25 | 420.95 | 368.10 | 330.74 |
| ***min*** | *404.65* | *367.46* | *362.39* | *419.01* | *368.11* | *362.37* | *421.66* | *374.09* | *358.25* | *420.95* | *368.10* | *330.74* |
| ***max*** | *405.12* | *370.22* | *365.18* | *419.28* | *370.56* | *365.17* | *421.72* | *375.36* | *361.02* | *420.95* | *369.59* | *332.40* |

GROUNDWATER LEVEL GRAPHS

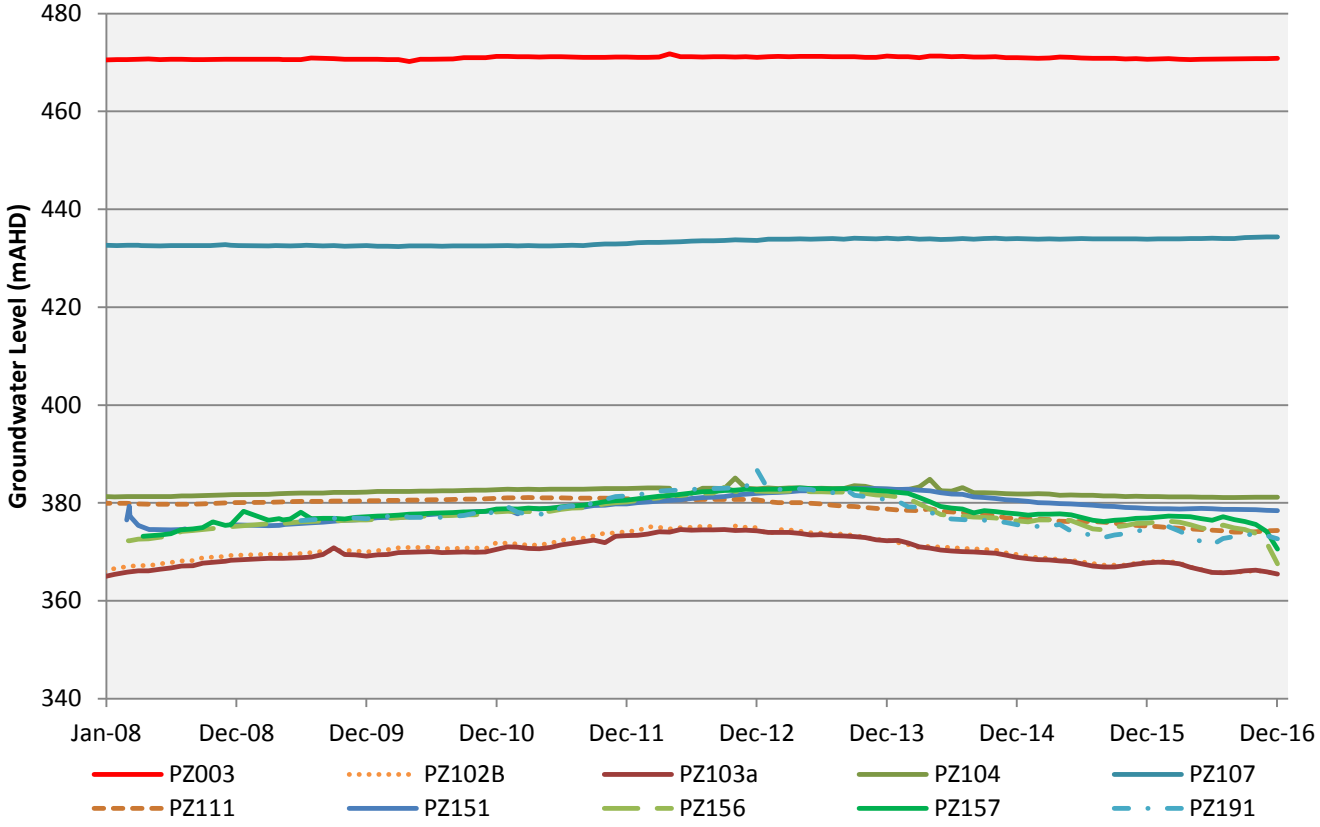



**Figure 3-g: Ulan Seam Composite Hydrograph**

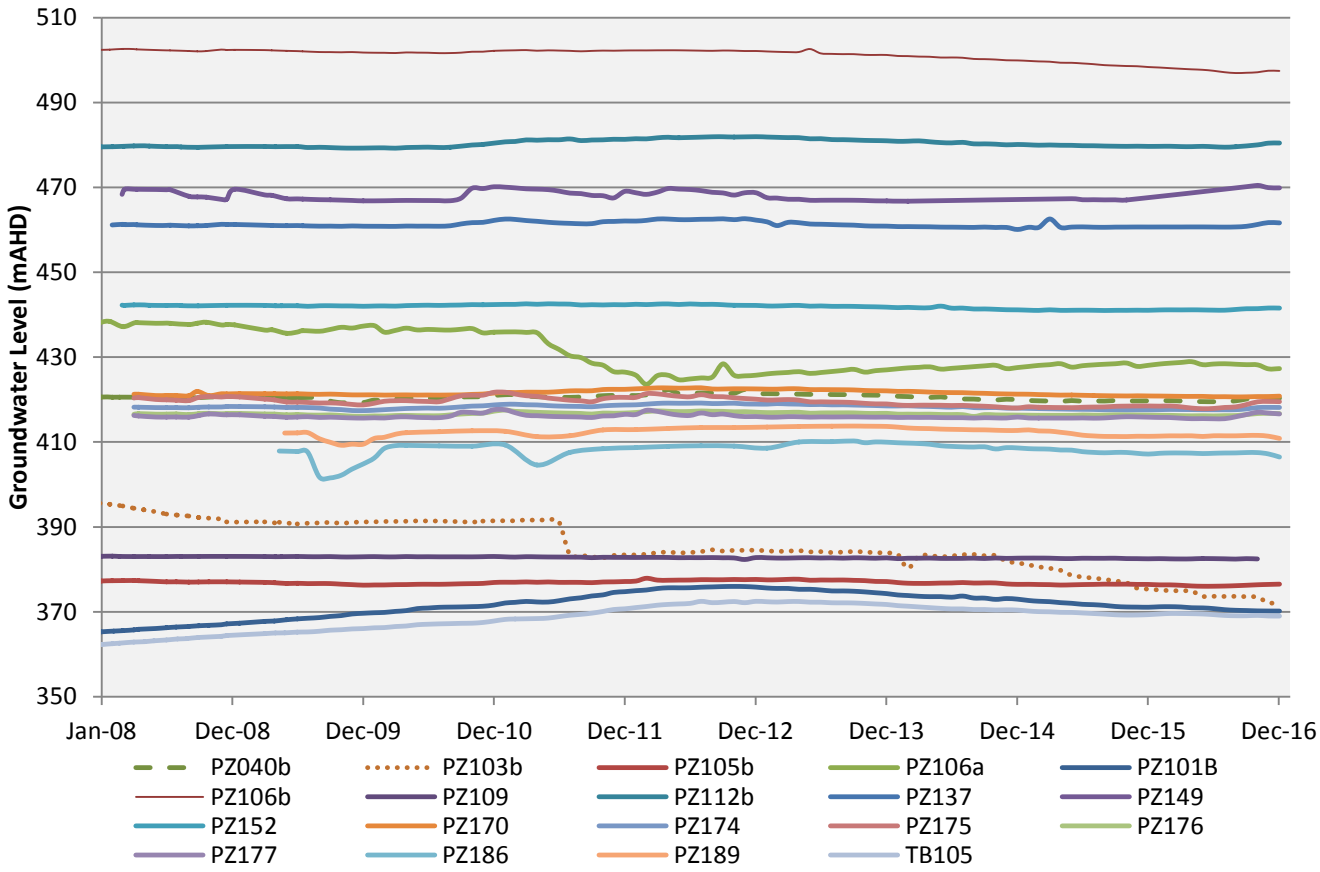



**Figure 3-h: Permian Overburden Composite Hydrograph**

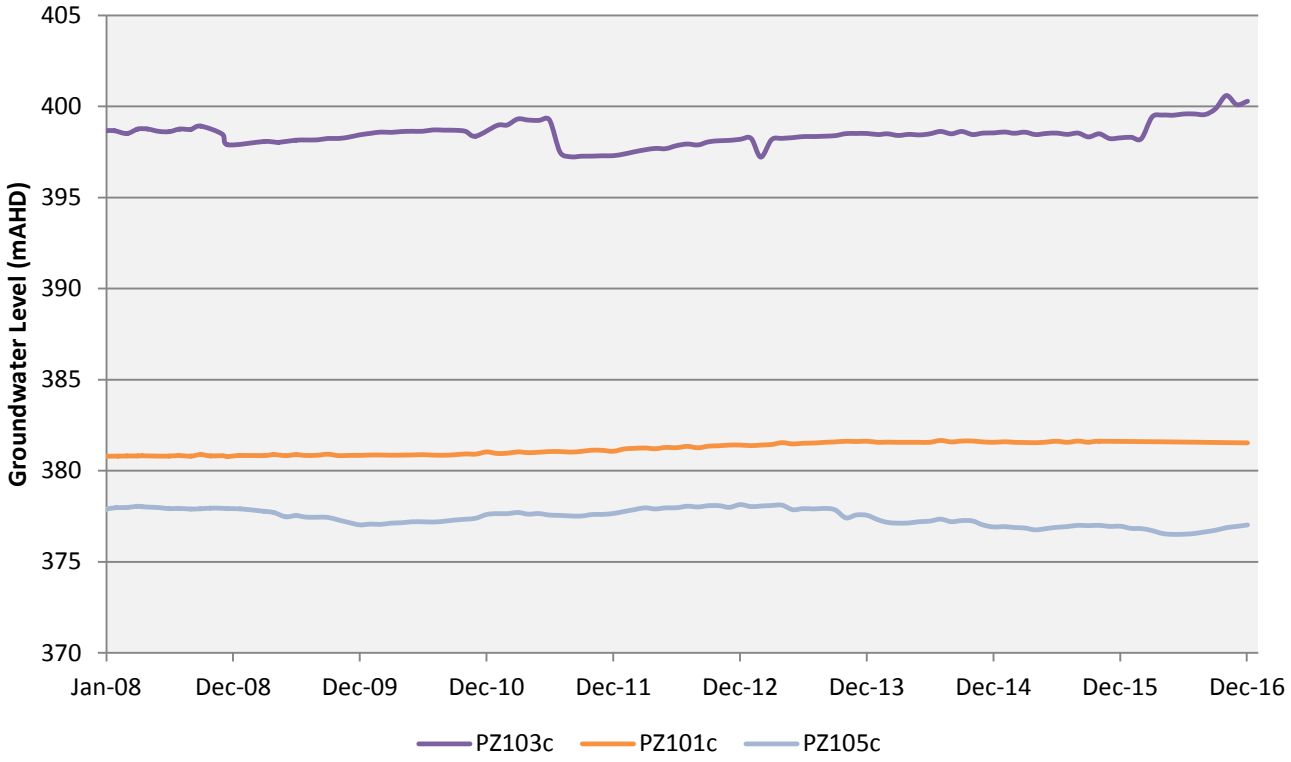



**Figure 3-i: Triassic Composite Hydrograph**

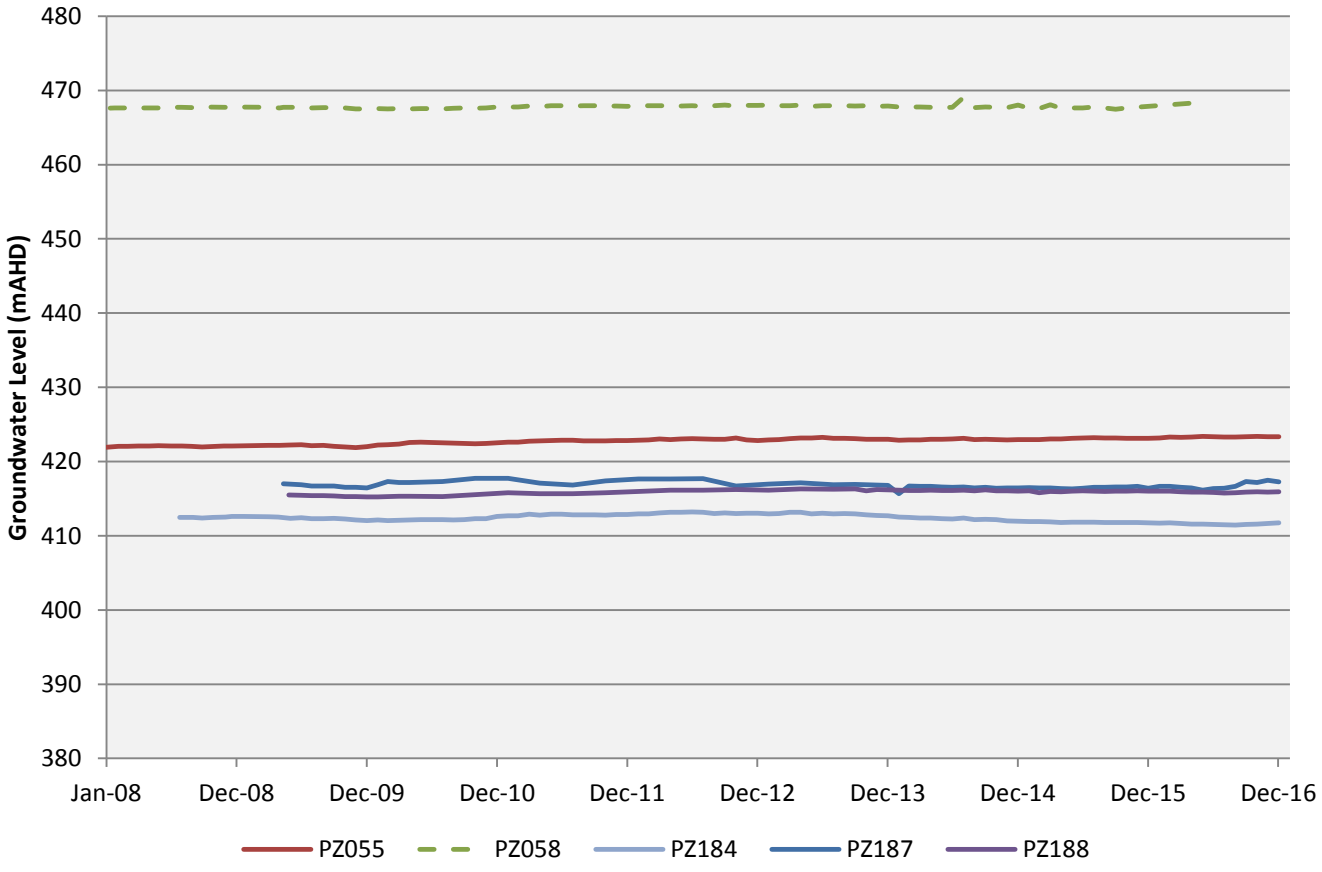



**Figure 3-j: Tertiary/Surficial Composite Hydrograph**

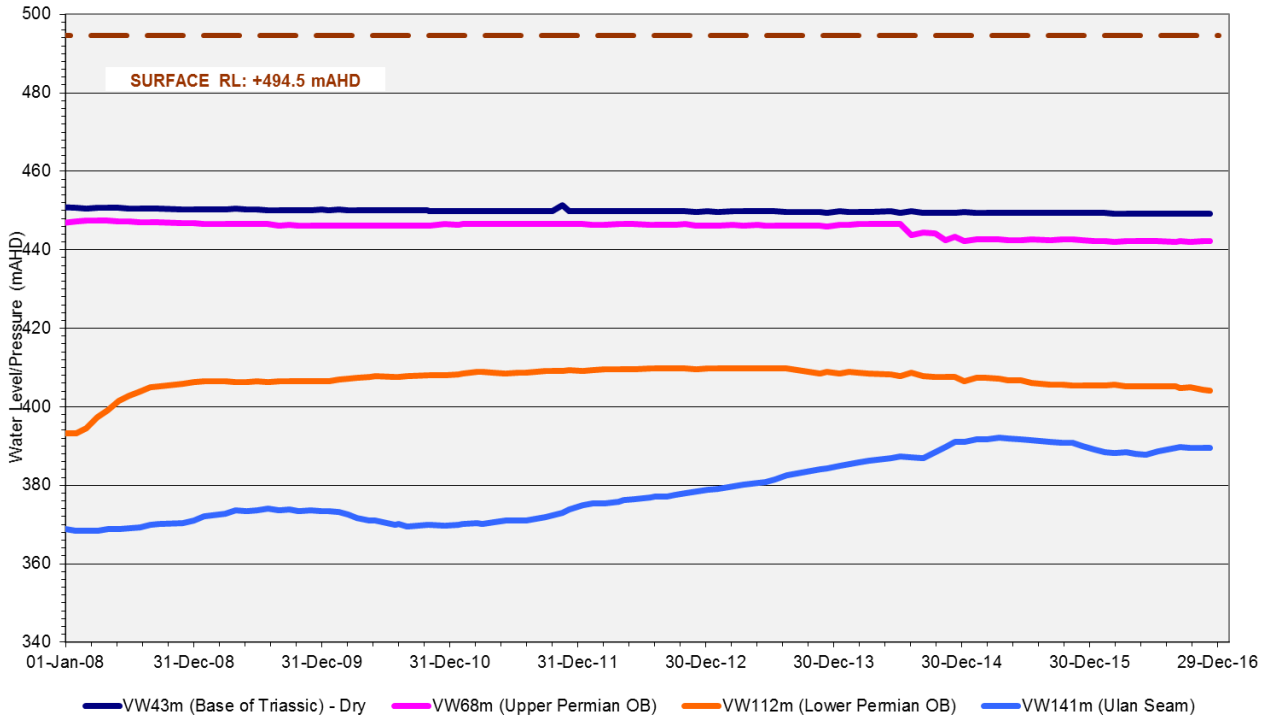



**Figure 3-k PZ127 Composite Hydrograph**

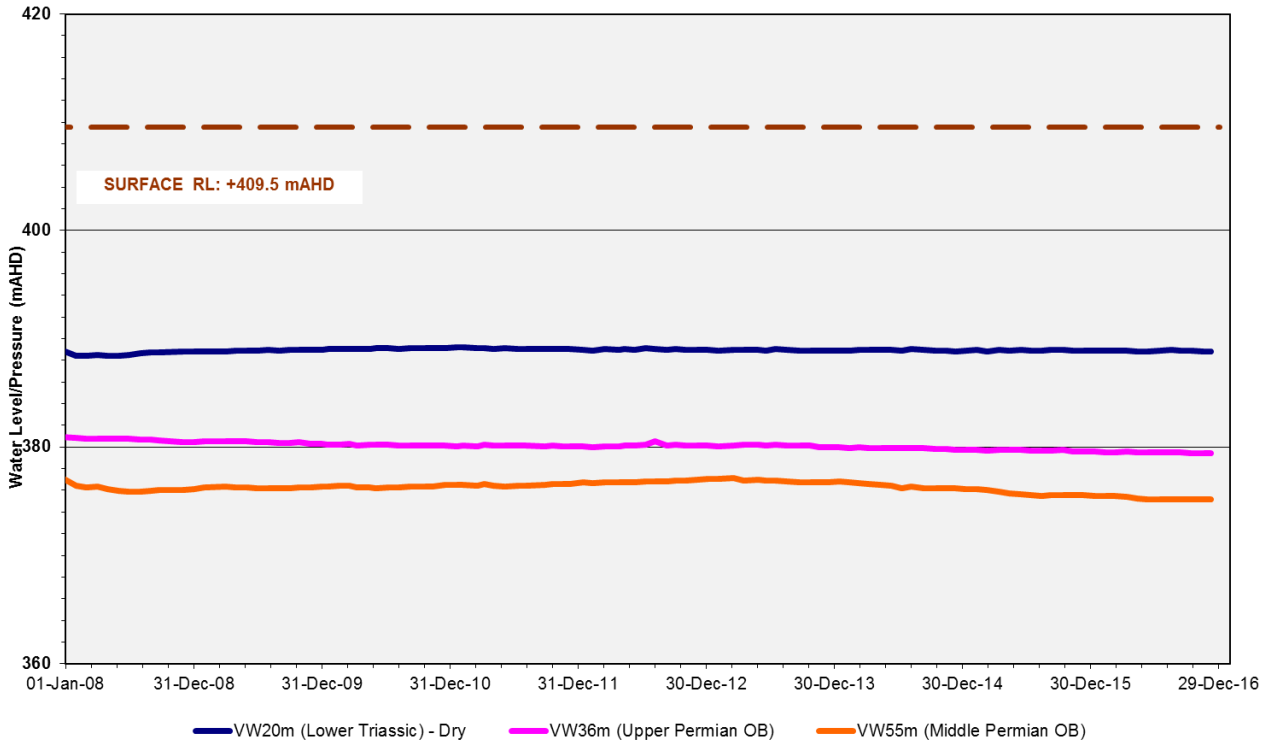



**Figure 3-l PZ128 Composite Hydrograph**

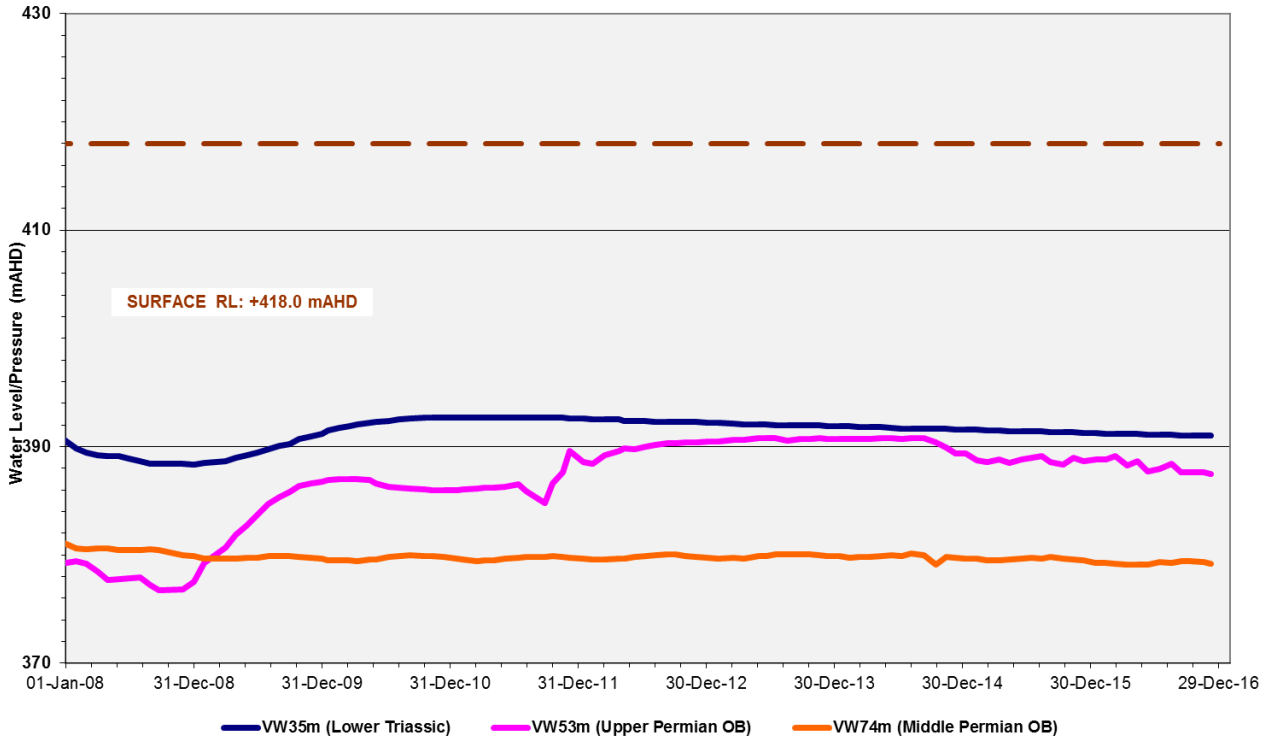



**Figure 3-m PZ129 Composite Hydrograph**

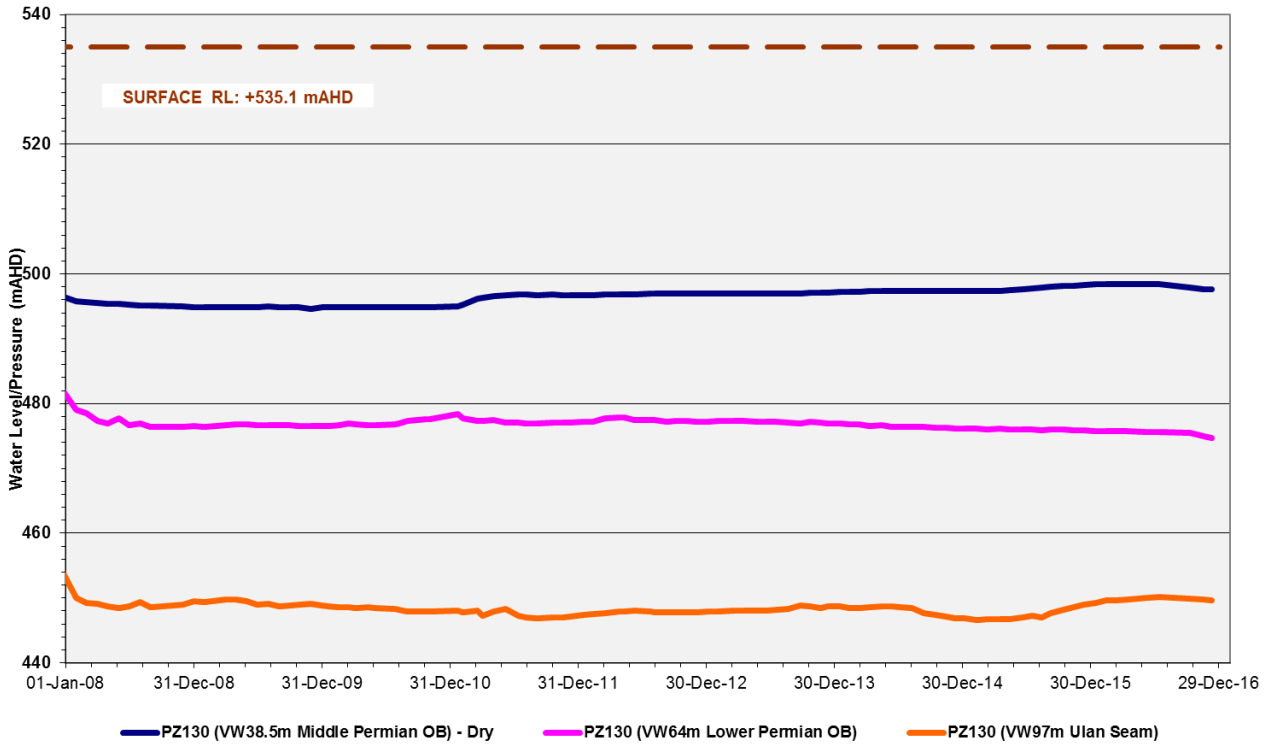



**Figure 3-n PZ130 Composite Hydrograph**

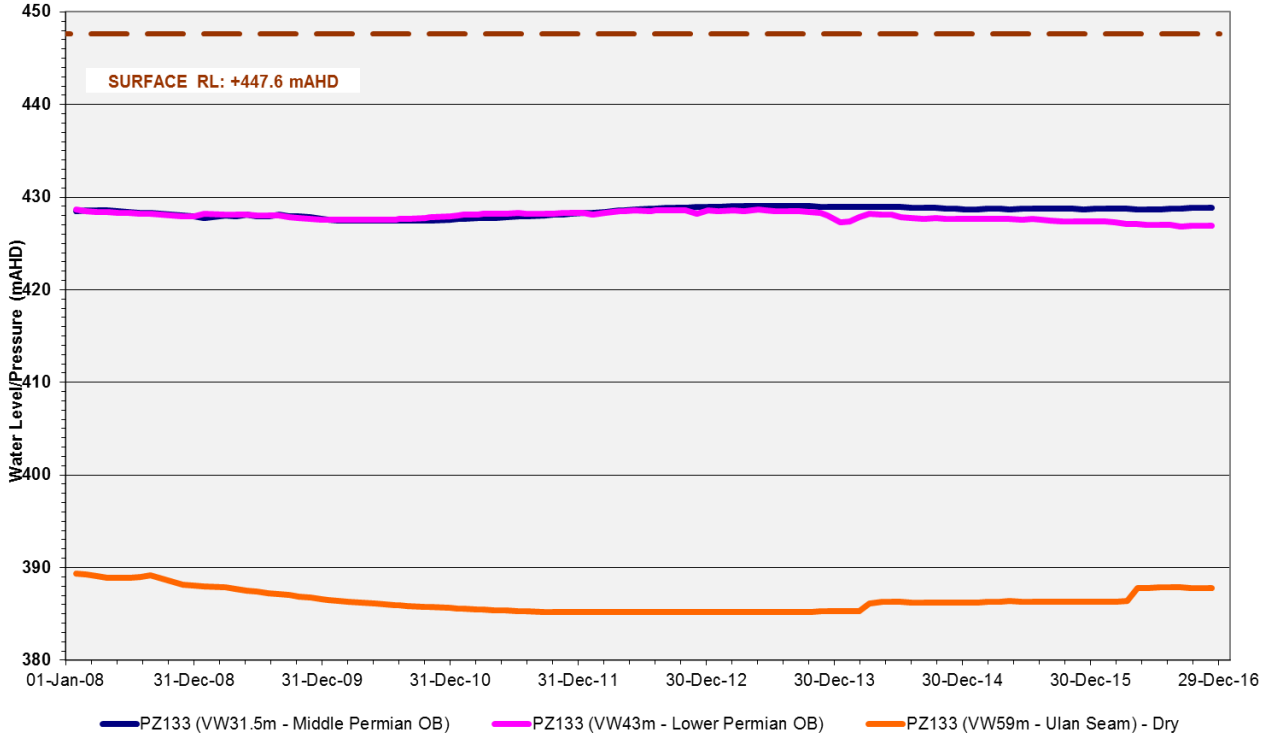



**Figure 3-o PZ133 Composite Hydrograph**

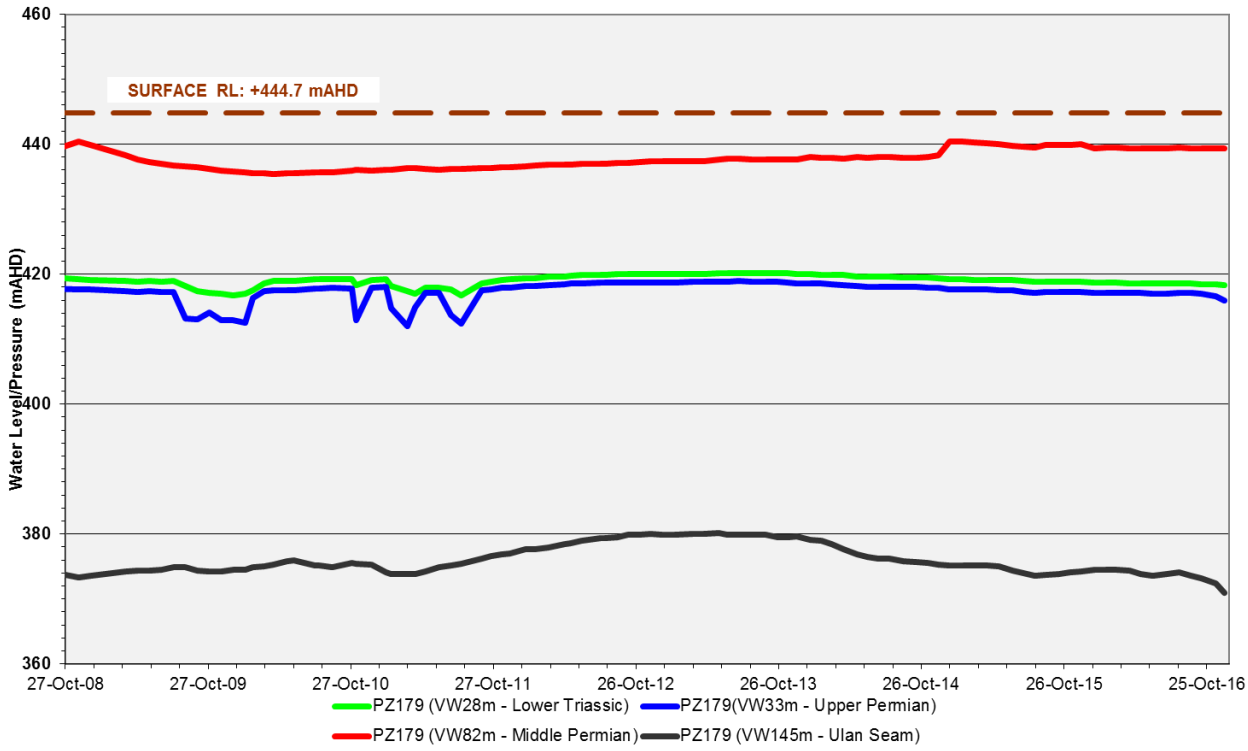



**Figure 3-p PZ179 Composite Hydrograph**

# APPENDIX 4. EPBC COMPLIANCE TABLES (2007/3297) (2008/444) (2013/6926)

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| EPBC 2007/3297 | | | |
| 1 | In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking the action shall make suitable arrangements within 12 months of this approval to:<br>(a) Transfer at least 130 hectares of the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland listed ecological community to the NSW Minister for Climate Change Environment and Water offset, on a " like for like" basis, the 65 hectares that would be cleared by the project at an offset ratio of 2:1; and<br>(b) Provide the NSW Department of Environment and Climate Change (DECC) with funds (which at the discretion of DECC may include an in-kind contribution) to cover any reasonable costs associated with the transfer and ongoing management of this land. | Compliant | Completed prior to period. |
| 2 | In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking the action shall in accordance with the Rehabilitation and Offset Management Plan (See Condition 3 below):<br>(a) Revegetate at least 38 hectares of disturbed land on the "Red Hills" property with Yellow Box-White Box-Blakely's Red Gum vegetation;<br>(b) Revegetate at least 143 hectares of cleared land on the "Red Hills" property with suitable native vegetation to improve wildlife corridor linkages;<br>(c) Conserve and enhance at least 1262 hectares of existing native vegetation onsite; and<br>(d) Make suitable arrangements to protect these offset areas from development in the long term, to the satisfaction of the Minister for the Environment and Water Resources (the Minister). | Compliant | Draft Security Terms provided to NSW Department of Planning and Environment for approval in November 2015. Pending response from the Department. |
| 3 | In order to protect the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed ecological community, the person taking action shall prepare and implement a detailed Rehabilitation and Offsets Management Plan for the project to the satisfaction of the Minister for the Environment and Water Resources. The proponent shall progressively rehabilitate the site to the satisfaction of Minister for the Environment and Water Resources and the NSW Department of Primary Industries, in general accordance with the proposed Rehabilitation and Offset Management Plan. The rehabilitation and Offset Management Plan must include:<br>(a) The rehabilitation objectives for the site, vegetation offsets and landscaping; | Compliant | The Landscape Management Plan was approved 6 September 2011.<br>This report refer Sections 6.5 and 8. |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| | (b) A description of the short, medium and long term measures that would be implemented to:<br>• Rehabilitate the site<br>• Implement the vegetation offsets; and<br>• Landscape the environmental bunds;<br>(c) Performance and completion criteria for the rehabilitation of the site, implementation of the vegetation offsets, and landscaping of the environmental bunds;<br>(d) A detailed description of the measures that would be implemented over the next 3 years including the progressive rehabilitation of mining areas and progressive implementation of the vegetation offset areas referred to in Condition 2.<br>(e) A program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);<br>(f) A description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and<br>(g) Details of who would be responsible for monitoring, reviewing, and implementing the plan.<br>Coal mining operations must not commence until the plan has been approved. The approved plan must be implemented. | | |
| 4 | The person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, by 31 March fort eh preceeding Calendar year. Annual reports must be published until the minister is satisfied that the person taking the action has complied with all conditions of the approval. Documentary evidence providing approval of the date of publication must be provided to the Department at the same time as the compliance report is published. | Compliant | This report. |
| 5 | Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister'. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister | Compliant | Noted. |
| 6 | If the Minster believes that it is necessary or desirable for the better protection of the listed threatened species and ecological communities to do so, the Minister may request that the person taking the action make specified revisions to the plans, reports or management strategies approved pursuant to paragraphs 1, 2 and 3, and submit the revised plan, report or strategy for the Minster's approval. The person taking the action must comply with any such request. The revised approve plan, report or strategy must be implemented. | Compliant | Noted |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| 7 | If at any time after 5 years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of coal mining operations, the action must not thereafter be commenced without the written agreement of the Minister. | Compliant | Noted |
| EPBC 2008/4444 | | | |
| 1 | The approval holder must not clear more than 1, 534 hectares of native vegetation within the defined footprint at Schedule 1. | Compliant | This Report Section 4 |
| 2 | To mitigate the impacts of the proposal on the Large-eared Pied Bat, Southern Long-eared Bat, Regent Honeyeater, Swift Parrot and the Spotted-tail Quoll, the approval holder must prepare and submit, prior to the proposed date of commencement of the action, a mine site Vegetation Clearance Protocol and Landscape Management plan (VCPLMP) for the Minister's written approval. The VCPLMP must;<br>a. Delineate areas to be cleared, describe pre-clearance survey methods, specify actions to minimise fauna impacts and detail vegetation clearance procedures.<br>b. Require collection and stockpiling of habitat features important to threatened fauna species for reinstatement in rehabilitation areas.<br>c. Require use of native, locally sourced seed for propagation for rehabilitation activates.<br>d. Specify a two stage clearing protocol where non-habitat trees are cleared 24 hours prior to any habitat trees are cleared, to encourage fauna to move out of an area.<br>The approval holder must not commence until the VCPLMP is approved by the Minister. The approved VCPLMP must be implemented. | Compliant | VCPLMP prepared and submitted to the Department of Environment with VCPLMP approval granted on **29 May 2015.** |
| 3 | To compensate for the loss of 123.3 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 902 hectares of habitat for EPBC listed threatened species, the approval holder must prepare and submit (within 3 months after the approval), a Biodiversity Offset Management Plan (BOMP) for the proposed EPBC Offset Areas, for the Minister's written approval. The BOMP must;<br>a. Identify those lands described as the Offset Areas at Schedule 2 (Figures 1-7) of this notice that are necessary to achieve the outcomes required by the Environmental Offsets Policy 2012. This must include offset attributes, shapefiles, textile descriptions and maps to clearly define the location and boundaries of the offset area (s).<br>b. Provide a survey and description of the current condition (prior to any management activities) of the offset areas identified in Condition 3a.<br>c. Detail management actions and regeneration and revegetation strategies to be undertaken on the offset areas to improve the ecological quality of these areas, including:<br>I. a description and timeframe of measures that would be implemented to improve the condition of the ecological communities on the site; | Compliant | A Biodiversity Offset Management Plan (BOMP) was submitted to the Department of Environment for approval on **18 August 2015**. Following receipt of the Department of Environments comments, a revised plan was submitted in 2016. Additional feedback has been received and a further revision will be undertaken. |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| | II. Performance and completion criteria for evaluating the management of the offset area, and criteria for triggering remedial action;<br>III. a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;<br>IV. a description of potential risks to the successful implementation of the plan, a description of the measures that will be implemented to mitigate against these risks and a description of the contingency measures that will be implemented if defines triggers arise; and<br>V. details of who would be responsible for monitoring, reviewing, and implementing the plan.<br>The approved BOMP must be published on the approval holder's internet website, within 1 month of being approved and for a period of 5 years thereafter. The approved BOMP must be implemented. | | |
| 4 | To compensate for the loss of 123.3 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 902 hectares of habitat for EPBC listed threatened species, within 24 months of the date of this approval, the approval holder must secure the lands identified as the Offset Areas at Schedule 2 (Figures 1-7) of this notice as a biodiversity offset by a legal instrument under relevant nature conservation legislation on the title of the land. This instrument must:<br>a. Provide for the protection of the land in perpetuity;<br>b. Prevent any future development activities, including mining and mineral extraction;<br>c. Ensure the active management of the land; and<br>d. Be provided to the Department within 3 months of it being issued, as evidence of compliance with this condition. | Compliant | Draft Security Terms provided to NSW Department of Planning and Environment for approval in November 2015. Pending response from the Department. |
| 5 | The approval holder must undertake management and monitoring of water resources in accordance with this project approval for Application Number 08-0135 issued by the NSW Planning Assessment Commission under the Environmental Planning and Assessment Act 1979 (NSW) on 30 January 2015. | Compliant | Moolarben Complex Water Management Plan.<br>This report Section 7 |
| 6 | Upon request, the approval holder shall supply the groundwater monitoring data for the Moolarben Coal Project to the Department, NSW Government agencies, Operators of the Ulan and/or Wilpinjong mines or other adjacent mine operators. A protocol for the supply of the data will be included in the project's Water Management Plan. | Compliant | Moolarben Complex Water Management Plan. |
| 7 | The approval holder must make available for the Minister on request, all plans or programs and any review of plans or programs produced pursuant to Condition 5. | Not Applicable | Noted |
| 8 | Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement. | Compliant | Department of Environment advised **13 August 2015**. |
| 9 | The approval holder must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement the BOMP and | Compliant | Noted. |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| | VCPLMP, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media. | | |
| 10 | The approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the BOMP and VCPLMP as specified in the conditions, by 31 March for the preceeding calendar year. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published. | Compliant | This report. |
| 11 | Non-compliance with any of the conditions of this approval must be reported to the Department within 2 business days of becoming aware of the non-compliance. | Not Applicable | Noted |
| 12 | Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minster. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister. | Not Applicable | Noted |
| 13 | If the approval holder wishes to carry out any activity otherwise than in accordance with the Plans as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of that Plan. The approval holder must not commence the varied activity until the Minster has approved the varied Plan in writing. The Minister will not approve a varied plan unless the revised Plan would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised Plan, that Plan must be implemented in place of the Plan originally approved. | Not Applicable | Noted |
| 14 | If the Minister believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the Minister may request that the approval holder make specified revisions to the Plan specified in the conditions and submit the revised Plan for the Minister's written approval. The approval holder must comply with any such request. The revise approved Plan must be implemented. Unless the Minster has approved the revised Plan then the approval holder must continue to implement the plan originally approved. | Not Applicable | Noted |
| 15 | If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minister. | Complaint | Action commenced **2 August 2014.** |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| EPBC 2013/6926 | | | |
| 1 | The approval holder must not clear more than 171.4 hectares of native vegetation within the defined footprint at Schedule 1, Figures 1 and 2. | Compliant | The extent of clearing to **31 December 2016** is approximately 89ha. |
| 2 | To assist in mitigating the impacts of the proposal on the Large-eared Pied Bat, Southern Long-eared Bat, Regent Honeyeater, Swift Parrot, Potted-tail Quoll and the Koala, the approval holder must prepare and submit a mine site Vegetation Clearance Protocol and Landscape Management Plan (VCPLMP) for the Minister's written approval. The VCPLMP must;<br>a. Delineate areas to be cleared, describe pre-clearance survey methods, specify actions to minim is fauna impacts and details vegetation clearance procedures.<br>b. Require collection and stockpiling of habitat features important to threatened fauna species for reinstatement in rehabilitation areas.<br>c. Require use of native, locally sourced seed for propagation for rehabilitation activities.<br>d. Specify a two stage clearing protocol where non-habitat trees are cleared 24 hours prior to any habitat trees in their proximity being cleared, to encourage fauna to move out of an area.<br>e. Include a revegetation strategy to improve connectivity between isolated vegetation patches (including between Munghorn Gap Nature Reserve, Goulburn River National Park and Dexter Mountain). | Compliant | VCPLMP prepared and submitted to the Department of Environment with VCPLMP approval granted on **17 December 2014**. |
| 3 | The approval holder must not commence until the VCPLMP is approved by the Minister. The approved VCPLMP must be implemented. | Compliant | VCPLMP was approved on **17 December 2014**, prior to commencement on **23 December 2014**. |
| 4 | To compensate for the loss of 16.5 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 171.4 hectares of habitat for EPBC listed threatened species, the approval holder must prepare and submit a Biodiversity Offset Management Plan (BOMP) for the proposed EPBC offset sites, for the Minister's written approval. The BOMP must;<br>a. Identify those lands described as the Offset Areas at Schedule 2 (Figures 1-5) of this notice that are necessary to achieve the outcomes required by the Environmental Offsets Policy 2012 (or subsequent published revisions). This must include offset attributes, shapefiles, textual descriptions and maps clearly define the location and boundaries of the offset area(s).<br>b. Provide a survey and description of the current condition (prior to any management activities) of the offset areas identified in Condition 4a.<br>c. Details management actions and regeneration and revegetation strategies to be undertaken on the offset areas to improve the ecological quality of these areas, including:<br>(i) A description and timeframe of measures that would be implemented to improve the condition of the ecological communities on the site:<br>(ii) Performance and completion criteria for evaluating the management of the offset area, and criteria triggering remedial action;<br>(iii) A program to monitor and report on the effectiveness of these measures, and progress against the | Compliant | A Biodiversity Offset Management Plan (BOMP) prepared and submitted to the Department of Environment with BOMP approval granted on **17 December 2014**. The requirements of this conditions are addressed in the below section of the BOMP:<br>a) Section 2 and Appendix 1<br>b) Section 3<br>c) Sections 4, 5, 6 & 7. |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| | performance and completion criteria;<br>(iv) A description of potential risks to the successful implementation of the plan, a description of the measures that will be implemented to mitigate against these risks and a description of the contingency measures that will be implemented if defined triggers arise; and<br>(v) Details of who would be responsible for monitoring, reviewing, and implementing the plan. | | |
| 5 | The approval holder must not commence the action until the BOMP is approved by the Minister. The approval BOMP must be published on an internet web site approved by the Department, within 1 month of being approved and for a period of 5 years thereafter. The approved BOMP must be implemented. | Compliant | The BOMP was approved on **17 December 2014**, prior to commencement on **23 December 2014**. |
| 6 | To compensate for the loss of 16.5 hectares of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBGW) ecological community and 171.4 hectares of habitat for EPBC listed threatened species, the approval holder must secure the lands identified as the Offset Areas at Schedule 2 (Figures 1-5) of this notice as a biodiversity offset by a legal instrument under relevant nature conservation legislation on the title of the land. This instrument must:<br>a. Provide for the protection of the land in perpetuity;<br>b. Prevent any future development activities, including mining and mineral extraction; and<br>c. ensure the active management of the land.<br>The approval holder must not commence the action until the Department has approved the proposed instrument in writing. | Compliant | Draft Security Terms provided to NSW Department of Planning and Environment for approval in November 2015. Pending response from the Department. |
| 7 | The approval holder must provide evidence to the Department of their compliance with Condition 6, along with offset attributes, shapefiles and textual descriptions and maps to clearly define the location and boundaries of the offset sites, prior to the commencement of the action. | Compliant | Correspondence and shape files provided **1 December 2014**. |
| 8 | Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement. | Compliant | Department of Environment advised **20 January 2015**. |
| 9 | The approval holder must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures take to implement the BOMP and VCPLMP, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with Section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may be publicised through the general media. | Compliant | Noted |
| 10 | The approval holder must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of the BOMP and VCPLMP as specified in the | Compliant | This report. |

| Condition Number | Condition | Compliance[1] | Evidence/Comments |
|---|---|---|---|
| | conditions, by 31 March for the preceeding calendar year. Documentary evidence providing proof of the date of publication must be provided to the Department at the same time as the compliance report is published. | | |
| 11 | Non-compliance with any of the conditions of this approval must be reported to the Department within 2 business days of becoming aware of the non-compliance. | Not Applicable | Noted |
| 12 | Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must be address the criteria to the satisfaction of the Minister. | Not Applicable | Noted |
| 13 | If the approval holder wishes to carry out any activity otherwise than in accordance with the Plan as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of the Plan. The approval holder must not commence the varied activity until the Minster has approved the varied Plan in writing. The Minister will not approve a varied Plan unless the revised Plan would result in an equivalent or improved environmental outcome over time. If the Minster approves the revised Plan, that Plan must be implemented in place of the Plan originally approved. | Not Applicable | Noted |
| 14 | If the Minster believes that it is necessary or convenient for the better protection of listed threatened species and ecological communities to do so, the Minster may request that the approval holder make specified revisions to the Plan specified in the conditions and submit the revised Plan for the Minsters written approval. The approval holder must comply with any such request. The revised approved Plan must be implemented. Unless the Minister has approved the revised Plan then the approval holder must continue to implement the Plan originally approved. | Not Applicable | Noted |
| 15 | If, at any time after 5 years from the date of this approval, the approval holder has not substantially commenced the action, then the approval holder must not substantially commence the action without the written agreement of the Minster. | Compliant | Action commenced **23 December 2014**. |

# APPENDIX 5. COMMUNITY COMPLAINTS SUMMARY 2016

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 1/01/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not contacted upon their request. |
| 2/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 4/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Operational adjustments were made. Caller not able to be contacted. |
| 6/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 6/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Operational adjustments were made. Caller not able to be contacted. |
| 8/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 11/01/2016 | Noise | Moolarben Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised. |
| 10/01/2016 | Noise | Ulan Road | Monitoring results indicated acceptable noise levels. No actions required. Caller not contacted upon their request. |
| 10/01/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 11/01/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not contacted upon their request. |
| 15/01/2016 | Noise | Winchester Crescent | No actions required. Caller advised of investigation, results and actions. |
| 17/01/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 19/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 19/01/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 27/01/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller not able to be contacted. |
| 28/01/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 1/02/2016 | Noise | Ridge Road | No actions required. Caller advised of investigation, results and actions. |
| 1/02/2016 | Noise | Winchester Crescent | No actions required. Caller advised of investigation, results and actions. |
| 2/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 4/02/2016 | Dust | Moolarben Road | No actions required. MCO Air Quality Monitoring Network discussed with complainant in person. |
| 6/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 8/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 8/02/2016 | Blast | Ridge Road | No actions required. Monitoring results indicated acceptable blast results. Caller added to blast notification register. Caller advised of investigation, results and actions. |
| 8/02/2016 | Blast | Ridge Road | No actions required. Monitoring results indicated acceptable blast results. Caller advised of investigation, results and actions. |
| 9/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 12/02/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 13/02/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 13/02/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 13/02/2016 | Blast | Ridge Road | No actions required. Monitoring results indicated acceptable blast results. Caller advised of investigation, results and actions. |
| 21/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 22/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 20/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 20/02/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 21/02/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 23/02/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 24/02/2016 | Noise | Ridge Road | No actions required. MCO Noise Monitoring and Management discussed with caller. |
| 25/02/2016 | Noise | Moolarben Road | No actions required. Caller advised of results and actions. |
| 1/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 2/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 3/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 3/03/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 3/03/2016 | Noise | Cope Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 6/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 7/03/2016 | Noise | Maiala Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 7/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 11/03/2016 | Noise | Moolarben Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 11/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 12/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 13/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller not able to be contacted. |
| 14/03/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 15/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 16/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 19/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 19/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 20/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 20/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 23/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 24/03/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 24/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 26/03/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 29/03/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 3/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 3/04/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 3/04/2016 | Dust | Maiala Road | Investigation revealed no unusual mining operations were occurring at the time. No actions required. Monitoring results indicated acceptable dust levels. MCO air quality and monitoring network discussed with caller. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 4/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 4/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 5/04/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 4/04/2016 | Noise | Maiala Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. MCO Noise Monitoring and Management discussed with caller. |
| 5/04/2016 | Noise | Mayberry Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 8/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 8/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 9/04/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 14/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 15/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 16/04/2016 | Noise | Moolarben Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 16/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 17/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 20/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. MCO noise and air quality monitoring network discussed. Caller advised of results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 20/04/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 20/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 21/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 26/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 26/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 27/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 28/04/2016 | Noise | Moolarben Road | No actions required. No investigation undertaken due to blocked access to property. Caller contacted and advised. |
| 28/04/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 2/05/2016 | Noise | Moolarben Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 5/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 7/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 8/05/2016 | Noise | Mayberry Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 11/05/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 11/05/2016 | Other | Ulan Road | No actions required. Caller advised of investigation, results and actions. |
| 14/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 14/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 20/05/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 22/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 30/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 30/05/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 30/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 31/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 31/05/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 3/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 3/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 4/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 5/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 12/06/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 12/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 14/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 17/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 26/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 26/06/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 26/06/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 29/06/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 3/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 4/07/2016 | Blast | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. No actions required. Monitoring results within compliance levels. Caller advised of investigation, results and actions. |
| 9/07/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 9/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 9/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 9/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller advised of investigation, results and actions. |
| 15/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 16/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller not able to be contacted. |
| 16/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 30/07/2016 | Noise | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. No actions required. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 30/07/2016 | Blast | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Monitoring results within compliance levels. Caller advised of investigation, results and actions. |
| 30/07/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 14/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 14/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 15/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 15/08/2016 | Blast | Winchester Crescent | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Monitoring results within compliance levels. Caller advised of investigation, results and actions. |
| 23/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 27/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 29/08/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 30/08/2016 | Noise | Mayberry Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 6/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 13/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 17/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 22/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 20/09/2016 | Blast | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 24/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller advised of investigation, results and actions. |
| 29/09/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 12/10/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 13/10/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 14/10/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Operational changes made to improve outcomes. Caller not able to be contacted. |
| 20/10/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable noise levels. No actions required. Caller not able to be contacted. |
| 1/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 2/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 11/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Caller advised of investigation, results and actions. |
| 21/11/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Caller advised of investigation, results and actions. |
| 21/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Caller advised of investigation, results and actions. |
| 26/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 28/11/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 28/11/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 30/11/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 30/11/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |

| Date | Type | Location | Complaint Description |
|---|---|---|---|
| 6/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 6/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Complainant was not able to be contacted. |
| 5/12/2016 | Other | Ridge Road | No Investigation required |
| 7/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 7/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 8/12/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 10/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 10/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 11/12/2016 | Noise | Ridge Road | No Investigation was ConductedCaller advised of investigation, results and actions. |
| 23/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 23/12/2016 | Noise | Ridge Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |
| 27/12/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 28/12/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. Operational adjustments were made. Caller advised of investigation, results and actions. |
| 28/12/2016 | Noise | Ulan Road | Investigation revealed no unusual mining operations were occurring at the time. Monitoring results indicated acceptable Noise levels. No actions required. Caller advised of investigation, results and actions. |

# APPENDIX 6. COMMUITY CONTRIBUTIONS

**Community Support Program**

| Beneficiary | Amount | Project/Event |
|---|---|---|
| Carewest Ability Links | $1,000 | Celebration of Ability Dinner |
| Cudgegong Camera Club | $1,000 | Henry Lawson Festival: Photography Award |
| Gulgong Amateur Fishing Club | $600 | Purchase fish to restock Cudgegong River |
| Gulgong Eisteddfod | $2,500 | The 37th Gulgong Prince of Wales Eisteddfod |
| Hargraves P&C | $500 | Cinema Under the Stars Event |
| Henry Lawson Society | $1,500 | Henry Lawson Festival Literary & Poetry Awards |
| Kanandah Retirement | $3,000 | Mortimer Cottage Garden Project |
| Lake Windamere Under Canvas | $5,000 | Solar power project |
| Lions Club Mudgee | $2,500 | Twilight Christmas Festival |
| Mid West Division Sydney Legacy | $1,000 | Purchase dishwasher |
| Mudgee Cycle Club | $3,000 | Annual Cycling Event |
| Mudgee Dressage | $1,000 | Official Dressage Competition Day |
| Mudgee High School | $2,000 | Equipment for fitness gym |
| Mudgee High School Year 12 | $2,000 | Fundraising for Mudgee Hospital & Ambulance Service |
| Mudgee Parkrun | $2,500 | Establishment of weekly Parkrun event |
| Mudgee Readers Festival | $4,000 | Annual Reading Festival Event |
| Mudgee Rugby League | $5,000 | Annual Rugby League 9's Event |
| Mudgee Show Rodeo | $2,500 | Mudgee Rodeo Event |
| Mudgee Touch Football | $4,000 | Subsidise Junior Touch rep teams and weekly touch comp. |
| Mudgee Triathlon Club | $4,000 | Moolarben Junior Participation & Development Program |
| Rotary Club Mudgee | $5,000 | Mudgee Showground Carols Annual Event |
| Rylstone Pony Club | $800 | Jumping equipment |
| Sculptures in the Garden | $5,000 | Annual Event |
| Ulan Public School | $4,000 | Resources for day care |
| Watershed Landcare | $4,000 | Environment day for all LGA primary school children |
| Wenonah Lodge Gulgong | $1,000 | Purchase BBQ equipment & provide first BBQ for Residents and staff |
| Wildlife Carers Network | $2,000 | Ongoing development of group |
| **Total** | **$70, 400** | |

**Additional Donations**

| Beneficiary | Amount | Project/Event |
|---|---|---|
| Benevolent Society | $500 | |
| Bungaba Progress Association | $2,000 | |
| Celebrity Golf Day | $16,000 | Annual local charity fundraiser |
| Dragon Boat | $2,000 | |
| Life Skills | $2,500 | Fundraising Raffles & Coal Mines Cup |
| Mudgee Police | $4,000 | |
| Mudgee Men's Shed | $1,500 | |
| Mudgee Touch Football | $1,500 | Team sponsorship |
| Mudgee Oz Tag | $500 | Team sponsorship |
| Munmurra Rural Fire Brigade | $1,000 | |
| Moolarben Spirit Awards | $5,000 | High School awards program |
| Rotary Club Mudgee | $1,500 | Mathematics Competition |
| Westpac Rescue Helicopter | $1,500 | Fundraising |
| **Total** | **$39, 500** | |

**Grand Total $109,900.00**