APPENDIX K - GROUNDWATER ASSESSMENT

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

Level 32/12 Creek St
Brisbane City QLD 4000

Prepared by:

SLR Consulting Australia

SLR Project No.: 620.041537.00001

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Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Stanmore ID Extension Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Table of Contents

Basis of Report i
1.0 Introduction 1
1.1 Project Overview 1
1.2 Objectives 5
1.3 Information Sources 6
1.4 Investigations 7
1.4.1 Groundwater Bore Census 7
1.4.2 Hydraulic Testing 9
1.4.3 Electrical Resistivity Imaging Survey 9
1.4.4 Local GDE Studies 10
1.4.5 Routine Groundwater and Quality Monitoring 10
2.0 Legislative Requirements and Relevant Guidelines 11
2.1 Commonwealth Regulatory Framework 11
2.1.1 Environmental Protection and Biodiversity Act 1999 11
2.2 Queensland Regulatory Framework 11
2.2.1 Queensland Water Act 2000 11
2.2.2 Environmental Protection Act 1994 12
2.2.3 Environmental Protection (Water and Wetland Biodiversity) Policy 2019 13
2.3 Relevant Guidelines 14
3.0 Physical Setting 15
3.1 Climate 15
3.1.1 Rainfall 15
3.1.2 Evapotranspiration 17
3.2 Topography and Drainage 18
3.2.1 Topography 18
3.2.2 Surface Drainage 20
3.2.3 Isaac River Flow Regime 20
3.3 Land Use and Mining 23
3.3.1 Project Area 23
3.3.2 Surrounding Land Use & Mining 24
4.0 Geology 29
4.1 Regional Geology 29
4.2 Local Geology 33
4.2.1 Cenozoic Sediments 36
4.2.2 Regolith 41

4.2.3 Triassic Rewan Group 41
4.2.4 Permian Coal Measures (Blackwater Group) 41
4.2.5 Structural Geology 42
5.0 Hydrogeology 47
5.1 Overview 47
5.2 Groundwater Monitoring 48
5.2.1 IDE Project Monitoring Network 48
5.2.2 Other Monitoring Networks 52
5.3 Hydraulic Properties 55
5.3.1 Site Specific Hydraulic Conductivity Data 55
5.3.2 Regional Hydraulic Conductivity Ranges 56
5.3.3 Faulting 57
5.4 Groundwater Recharge 59
5.4.1 Overview 59
5.4.2 Deep Drainage 59
5.4.3 Chloride Mass Balance 62
5.5 Groundwater Distribution, Flow, Recharge and Discharge 64
5.5.1 Alluvium 64
5.5.2 Regolith 69
5.5.3 Permian Coal Measures 72
5.5.4 Vertical Connectivity and Hydraulic Gradient Between Aquifers 77
5.6 Baseline Groundwater Quality 80
5.6.1 Groundwater Types 80
5.6.2 Salinity 84
5.6.3 Beneficial Groundwater Use (Environmental Values) 86
5.7 Groundwater Receptors 91
5.7.1 Anthropogenic 91
5.7.2 Environmental - Groundwater Dependent Ecosystems 95
6.0 Conceptual Hydrogeological Model 105
7.0 Numerical Modelling 109
7.1 Model Details 109
7.2 Model Objectives 110
7.3 Model Design 110
7.4 Model Calibration 112
7.4.1 Calibration Targets 112
7.5 Model Performance and Limitations 113

8.0 Model Predictions 117
8.1 Water Level Drawdowns 117
8.1.1 Predicted Maximum Groundwater Drawdowns 117
8.1.2 Residual Drawdown (Post Recovery) 130
8.2 Predicted Groundwater Interception 142
8.2.1 Mine Groundwater Inflows – Active Mining 142
8.2.2 Final Void Inflows 143
8.3 Incidental Water Impacts 144
8.3.1 Influence on Alluvial Aquifer 144
8.3.2 Loss of Flow in Stream 148
8.4 Impact to Potential Receptors 151
8.4.1 Privately Owned Bores 151
8.4.2 Flow Path Simulation 153
9.0 Uncertainty and Sensitivity analysis 156
9.1 Sensitivity Analysis 156
9.2 Uncertainty Analysis 156
9.2.1 Uncertainty of Drawdown 157
9.2.2 Uncertainty of Mine Groundwater Inflows 157
9.2.3 Uncertainty in Alluvium Water Take 158
9.2.4 Uncertainty in River Baseflow Loss 160
10.0 Potential Impacts on Groundwater Resources 162
10.1 Potential Impact on Existing Groundwater Users 162
10.1.1 Privately- Owned Supply Bores 162
10.1.2 Groundwater Dependent Ecosystems 167
10.2 Potential Impacts on Surface Drainage 169
10.3 Potential Impacts on Groundwater Quality 169
10.3.1 Spoil Emplacements 169
10.3.2 Final Void 169
10.3.3 Workshops and Storage 170
10.3.4 Blasting 170
10.4 Potential Impacts on the Aquifer Physical Integrity and Hydraulic Properties 170
10.5 Risk Assessment 170
11.0 Management and Mitigation Measures 175
11.1 Mitigation Measures 175
11.1.1 Mine Affected Water 175
11.1.2 Groundwater Users 175

11.2 Groundwater Monitoring and Management 175
11.2.1 Groundwater Monitoring Network 175
11.2.2 Groundwater Dependent Assets 176
11.2.3 Monitoring Regime – Baseline and During Mining 184
11.2.4 Groundwater Level Triggers 184
11.2.5 Groundwater Quality Limit Derivation 187
11.3 Groundwater Dependent Ecosystems Monitoring and Management Plan 191
12.0 References 192

Tables

Table 3-1 Operational BoM Weather Stations near the Project 15
Table 3-2 Average Monthly Rainfall 16
Table 3-3 Average Monthly Potential Evapotranspiration 17
Table 3-4 Average Monthly Actual Evapotranspiration 17
Table 3-5 Isaac River Stream Gauging Stations closest to IDE 21
Table 3-6 Proposed and current operations near to the Project 24
Table 4-1 Regional Stratigraphy 30
Table 4-2 Fault Exploration Drillhole Summary 44
Table 5-1 Isaac Downs Extension Groundwater Monitoring Network 49
Table 5-2 Nearby Groundwater Monitoring Bores 53
Table 5-3 Summary of Mean Hydraulic Conductivity per Hydrogeologic Unit - Site Testing 56
Table 5-4 CMB Calculated Long Term Average Recharge Rates as a Percentage of Average Annual Rainfall 63
Table 5-5 Water Quality Objectives for Isaac Sub-basin Environmental Values 87
Table 5-6 Isaac River Sub-basin Zone 34 WQOs for groundwater resources (aquatic ecosystem protection) (DEHP, 2011) 88
Table 5-7 Available details of water supply bores within 5 km of the Project Area 92
Table 7-1 Model Layering 111
Table 7-2 Groundwater Model and Data Limitations 114
Table 8-1 Models Timing – Predictive 117
Table 8-2 Predicted Incremental Mine Groundwater Inflows from the Proposed 142
Table 8-3 Maximum Incremental and Cumulative Drawdown at Landholder Bores 151
Table 10-1 Drawdown Impact on Landholder Bores 163
Table 10-2 Consequence Assessment 171
Table 10-3 Likelihood Assessment 171
Table 10-4 Risk Analysis Matrix 171

Table 10-5 Risk Assessment 172
Table 11-1 Project GMMP Monitoring Network 177
Table 11-2 Groundwater Level Reference Values 185
Table 11-3 Groundwater Level Trigger Thresholds 186
Table 11-4 Proposed Parameters for Groundwater Quality Limits 189
Table 11-5 Interim Groundwater Quality Limits for Compliance Bores 190

Figures

Figure 1-1 Project Locality 2
Figure 1-2 Project Indicative Mining Progression 3
Figure 1-3 Mining Areas 4
Figure 3-1 Long-term Monthly Rainfall and CRD from the mean monthly rainfall 1958 – 2025) at SILO data point data Latitude: -22.10 and Longitude: 148.20 16
Figure 3-2 Average Monthly Rainfall and Evapotranspiration 18
Figure 3-3 Topography and Drainage 19
Figure 3-4 Isaac River at Deverill (Station 130410A) Stream Flow, and Rainfall at Moranbah Water Treatment Plant (34038) (1972 – February 2012) and Moranbah Airport (34035) (March 2012 – December 2025) 22
Figure 3-5 Maximum Discharge per flow event recorded at Isaac River at Deverill Station (130410A; 1968 – 2025 data) 22
Figure 3-6 Isaac River at Deverill (Station 130410A) Mean Daily Flow Duration Curve (1968 – 2025 data) 23
Figure 4-1 Regional geology of the Bowen Basin (after Dickens and Malone, 1973) 29
Figure 4-2 Solid Geology 31
Figure 4-3 Surface Geology 32
Figure 4-4 Local Geological Characterisation Drillholes 34
Figure 4-5 SW-NE Conceptual Geological Cross section across the IDE Project Area and proposed Project pit extent 35
Figure 4-6 Conceptualisation of Isaac River Alluvium Facies (AGE, 2020) 36
Figure 4-7 NW-SE Cross Section of the Alluvium along the Isaac River 38
Figure 4-8 SW-NE Cross Section of the Alluvium along Cherwell Creek 39
Figure 4-9 Interpreted Extent and Thickness of Alluvium 40
Figure 4-10 Isaac Thrust Fault Investigation 45
Figure 4-11 Localised SW-NE Geological Cross Section Across Fault Investigation Drillholes 46
Figure 5-1 Isaac Downs Extension Groundwater Monitoring Network 51
Figure 5-2 Other Groundwater Monitoring Network 54
Figure 5-3 Summary of all Hydraulic Conductivity Results – Site Testing 56

Figure 5-4 Horizontal Hydraulic Conductivity Ranges 57
Figure 5-5 Faulting Conceptual Model developed by Coffey (2014) 59
Figure 5-6 AWRA-L conceptual structure (Frost, A. J., and Ahokri., 2021) 60
Figure 5-7 Comparison of monthly rainfall with AWRA-L simulated deep drainage and deep drainage lagged by four months for the Project Area (Latitude: -22.10, Longitude: 148.20) 61
Figure 5-8 Annual rainfall, AWRA-L simulated annual deep drainage, and deep drainage expressed as a percentage of annual rainfall for the Project Area (Latitude: -22.10, Longitude: 148.20) 62
Figure 5-9 CMB Calculated Long Term Average Recharge Rates as a Percentage of Average Annual Rainfall 64
Figure 5-10 Isaac River Alluvium monitoring bore hydrographs 65
Figure 5-11 Cherwell Creek Alluvium monitoring bore hydrographs 66
Figure 5-12 Conrock Gully Alluvium monitoring bore hydrographs 67
Figure 5-13 Potentiometric Map – Alluvium 68
Figure 5-14 Tertiary Sediments and Basalt (regolith) monitoring bore hydrographs 70
Figure 5-15 Triassic Rewan Group monitoring bore hydrographs 71
Figure 5-16 Weathered Permian (regolith) monitoring bore hydrographs 71
Figure 5-17 Leichhardt Coal Seam monitoring bore hydrographs (above 180 mHD) 74
Figure 5-18 Leichhardt Coal Seam monitoring bore hydrographs (below 180 m AHD) 74
Figure 5-19 Vermont Coal Seam monitoring bore hydrographs 75
Figure 5-20 Potentiometric Surface and Groundwater Flow Direction - Rangal Coal Measures 76
Figure 5-21 Vertical Connectivity and Gradient Between Aquifers 79
Figure 5-22 Alluvium Durov Plot 81
Figure 5-23 Regolith Durov Plot 82
Figure 5-24 Permian Coal Measures Durov Plots 83
Figure 5-25 Fort Cooper Coal Measures Durov Plot 84
Figure 5-26 FAO (2013) Salinity Ranking by Unit – Project Area and surrounding areas 85
Figure 5-27 Water Quality Objective Zones 90
Figure 5-28 Registered and Landholder Bores within 5km of Project Area 94
Figure 5-29 GDE Atlas Potential Groundwater Dependent Ecosystems 96
Figure 5-30 Watermark Eco (2026a) GDE Mapping 100
Figure 5-31 Conceptual models demonstrating the ecohydrological function of the Isaac River and associated HES wetland including the dry season model, the wet season model, and post-wet model (Watermark Eco, 2026a). 104
Figure 6-1 Conceptual Hydrogeological Model of IDE Project Groundwater System 108
Figure 8-1 Predicted Maximum Water Table Drawdown (Incremental) 119
Figure 8-2 Predicted Maximum Drawdown (Incremental) – Alluvium (Layer 1) 120

Figure 8-3 Predicted Maximum Drawdown (Incremental) – Regolith (Layer 2) 121
Figure 8-4 Predicted Maximum Drawdown (Incremental) – Leichardt Seam (Layer 5) 122
Figure 8-5 Predicted Maximum Drawdown (Incremental) – Vermont Seam (Layer 7) 123
Figure 8-6 Predicted Maximum Water Table Drawdown (Cumulative) 125
Figure 8-7 Predicted Maximum Drawdown (Cumulative) – Alluvium (Layer 1) 126
Figure 8-8 Predicted Maximum Drawdown (Cumulative) – Regolith (Layer 2) 127
Figure 8-9 Predicted Maximum Drawdown (Cumulative) – Leichardt Seam (Layer 5) 128
Figure 8-10 Predicted Maximum Drawdown (Cumulative) – Vermont Seam (Layer 7) 129
Figure 8-11 Residual Water Table Drawdown (Incremental) 131
Figure 8-12 Residual Drawdown (Incremental) – Alluvium (Layer 1) 132
Figure 8-13 Residual Drawdown (Incremental) – Regolith (Layer 2) 133
Figure 8-14 Residual Drawdown (Incremental) – Leichardt Seam (Layer 5) 134
Figure 8-15 Residual Drawdown (Incremental) – Vermont Seam (Layer 7) 135
Figure 8-16 Residual Water Table Drawdown (Cumulative) 137
Figure 8-17 Residual Drawdown (Cumulative) – Alluvium (Layer 1) 138
Figure 8-18 Residual Drawdown (Cumulative) – Regolith (Layer 2) 139
Figure 8-19 Residual Drawdown (Cumulative) – Leichardt Seam (Layer 5) 140
Figure 8-20 Residual Drawdown (Cumulative) – Vermont Seam (Layer 7) 141
Figure 8-21 Predictive Incremental Mine Groundwater Inflows during Active Mining 142
Figure 8-22 Predicted Residual Void Groundwater Inflows – IDE Void 143
Figure 8-23 Incremental (Project) Predicted Alluvium Net Flux (top) and Change in Alluvium Net Flux (bottom) 145
Figure 8-24 Cumulative Predicted Alluvium Net Flux – 146
Figure 8-25 Predicted Alluvium Net Flux (top) and Change in Alluvium Net Flux (bottom) – Post Mining 147
Figure 8-26 Predicted Alluvium Net Flux –Cumulative – Post Mining 148
Figure 8-27 Predicted Reduction in River Baseflow (Incremental and Cumulative) 149
Figure 8-28 Predicted Reduction in River Baseflow (Incremental and Cumulative) – Post Mining 150
Figure 8-29 Landholder Bore Locations 152
Figure 8-30 Starting Location of Particles 154
Figure 8-31 Predicted Movement of Particles 155
Figure 9-1 Uncertainty in Incremental Mine Groundwater Inflows (Active Mining) 158
Figure 9-2 Uncertainty in Incremental Alluvium Take 159
Figure 9-3 Uncertainty in Cumulative Alluvium Take 159
Figure 9-4 Uncertainty in Incremental Stream Baseflow Loss 160
Figure 9-5 Uncertainty in Cumulative Stream Baseflow Loss 161

Figure 10-1 Landholder Bore Locations and 2 m Drawdown Uncertainty – Regolith (Layer 2) 164
Figure 10-2 Landholder Bore Locations and 5 m Drawdown Uncertainty–Vermont Seam (Layer 7) 165
Figure 10-3 Landholder Bore Locations and 5 m Drawdown Uncertainty – Fort Cooper Coal Measures (Layer 10) 166
Figure 10-4 Uncertainty in Predicted 1m Incremental Drawdown – Alluvium (End of Recovery) 168
Figure 11-1 Alluvial Bores and 1 m Drawdown Uncertainty (Alluvium) 179
Figure 11-2 Regolith Bores and 1 m Drawdown Uncertainty (Regolith) 180
Figure 11-3 Leichhardt Coal Seam Bores and 1 m Drawdown Uncertainty (Leichhardt Coal Seam) 181
Figure 11-4 Vermont Coal Seam Bores and 1 m Drawdown Uncertainty (Vermont Coal Seam) 182
Figure 11-5 Fort Cooper Coal Seam Bores and 1 m Drawdown Uncertainty (Fort Cooper Coal Seam) 183

Appendices

Appendix A Groundwater Quality Statistical Analysis and EV comparison

Appendix B Guideline Checklist: IESC Information Requirements

Appendix C Guideline Checklist: Requirements for site-specific and amendment applications—underground water rights

Appendix D Checklist: Project Specific Terms of Reference (groundwater related)

Appendix E Bore Census Factual Report (SLR, 2024e)

Appendix F Factual Field Investigation Report (SLR, 2026a)

Appendix G Isaac Downs Extension Electrical Resistivity Survey Report (MES, 2025)

Appendix H Isaac Downs Extension Groundwater Modelling Calibration and Prediction Report (SLR, 2026b)

Appendix I Central Bowen Basin Regional Groundwater Model Version 6.0 (SLR, 2026c)

1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Stanmore ID Extension Pty Ltd, a subsidiary of Stanmore Resources Limited (Stanmore), to prepare a Groundwater Impact Assessment (GIA) for the Isaac Downs Extension (IDE) project (the Project), for incorporation into the Project's Environmental Impact Statement (EIS).

The Project is a proposed open-cut coal mine located approximately 15 kilometres (km) southeast of Moranbah, within the Bowen Basin mining region. The Project will be integrated into Stanmore's Isaac Plains Complex (IPC), comprising Isaac Downs Mine (IDM) and Isaac plains Mine (IPM), with the Project located to the south of IDM. Stanmore applied for four mining leases (MLs) for the Project in June 2025 (ML application MLA 700081, MLA 700082, MLA 700083 and MLA 700084) (**Figure 1-1**).

1.1 Project Overview

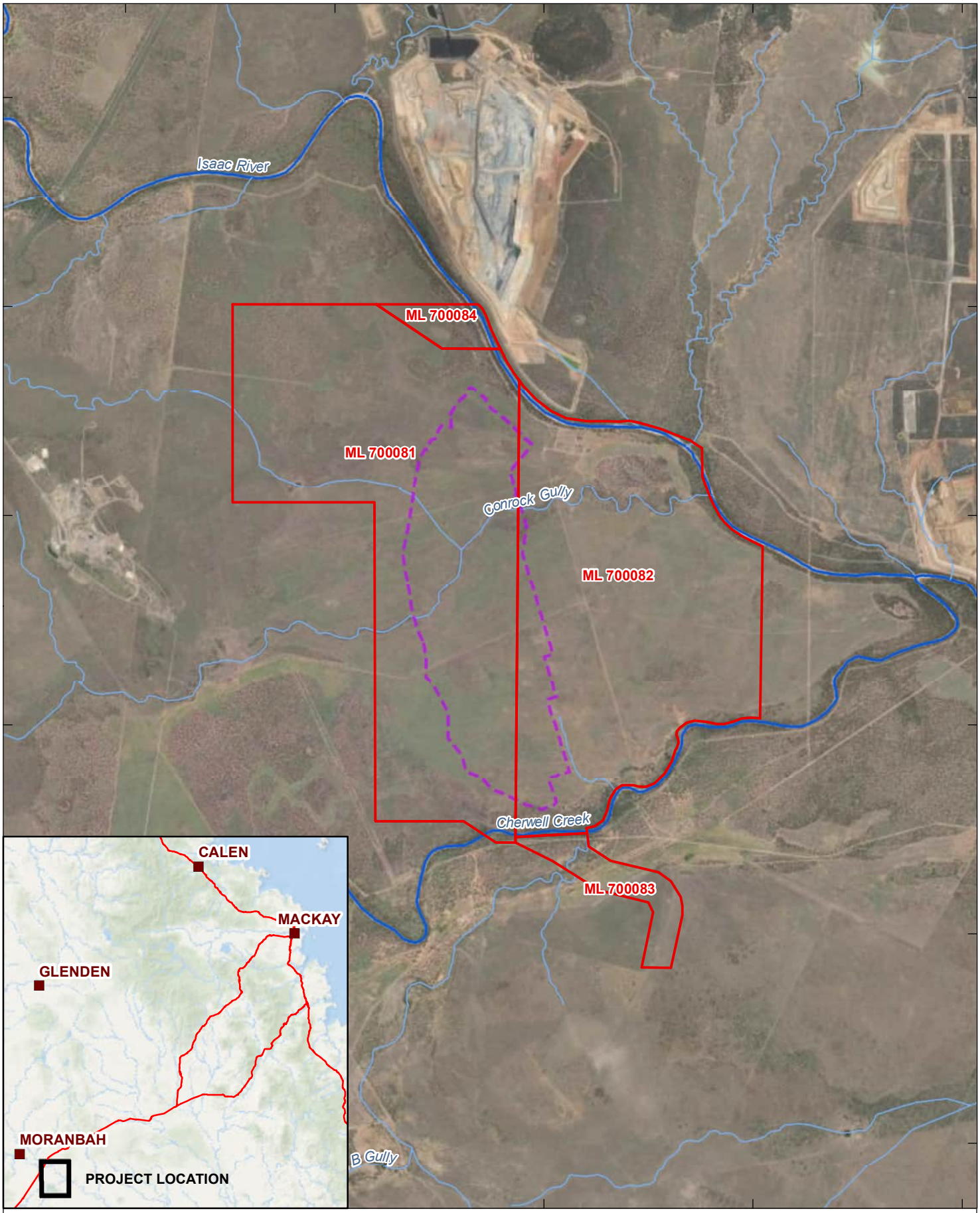
Stanmore, through its subsidiaries, owns and operates several mines nearby to the Project, including IDM, IPM, Poitrel Mine (PTM), and Eagle Downs Mine (EDM) (**Figure 1-1**). The Project will extend the life of mining operations at IPC through the development of an open cut coal mine pit and associated infrastructure.

The Project targets the Permian-aged Leichhardt and Vermont coal seams of the Rangal Coal Measures. Mining is expected to produce approximately 46 million tonnes (Mt) of run-of-mine (ROM) coal over a 15-year period, at an annual production rate of 2 to 4.5 Mt per annum (Mtpa). ROM coal will be transported to a coal handling and processing plant (CHPP) at IPM. Rejects and tailings from the CHPP will be managed at IPM in accordance with the approvals for IPM. The Project indicative mining progression is shown in **Figure 1-2**.

Throughout this report, the terms "Project Area" and "Study Area" are used, as defined by:

- The Project Area corresponds to the area within MLA 700081, MLA 700082, and MLA 700084, as shown in **Figure 1-1**.
- The Study Area comprises the Project Area (MLA 700081, MLA 700082, MLA 700083 and MLA 700084) and a surrounding buffer of approximately 15 km. This area is used to describe the broader environmental conditions such as climate patterns, landforms, and drainage systems relevant to the Project.

Located immediately around the Project are existing, or approved but not commenced mine operations, including IPC to the north (IDM and IPM), PTM to the northeast, Moranbah South (approved but not commenced) to the west, Winchester South (approved but not commenced) to the east, Daunia Mine to the east of PTM, Eagle Downs Mine (approved but not materially commenced) to the southeast, and Peak Downs Mine and Caval Ridge Mine to the west, southwest and south (**Figure 1-3**).



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:60,000 at A4
Project Number:	620.041537.00001
Date:	06-May-2026
Drawn by:	AS

Major Watercourse
Minor Watercourse
IDE Project MLAs
Approximate Project Pit Extent

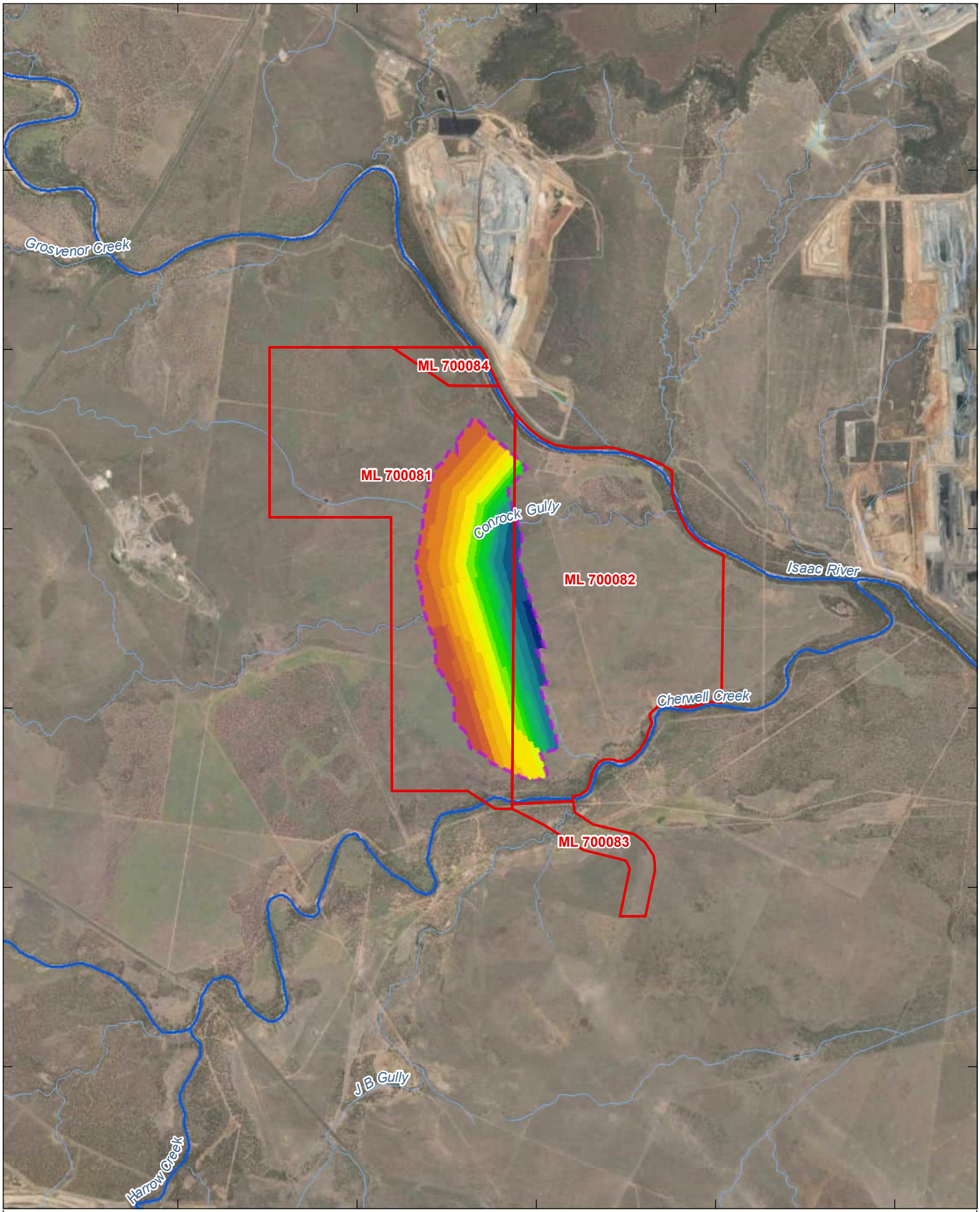
SLR

ISAAC DOWNS EXTENSION PROJECT

PROJECT LOCATION

FIGURE 1-1

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F01_01_Project Location.mxd



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	18-Mar-2026
Drawn by:	AS

Major Watercourse
Minor Watercourse
IDE Project MLAs
Approximate Project Pit Extent

Mine Progression

2029	2034	2039
2030	2035	2040
2031	2036	2041
2032	2037	2042
2033	2038	2043

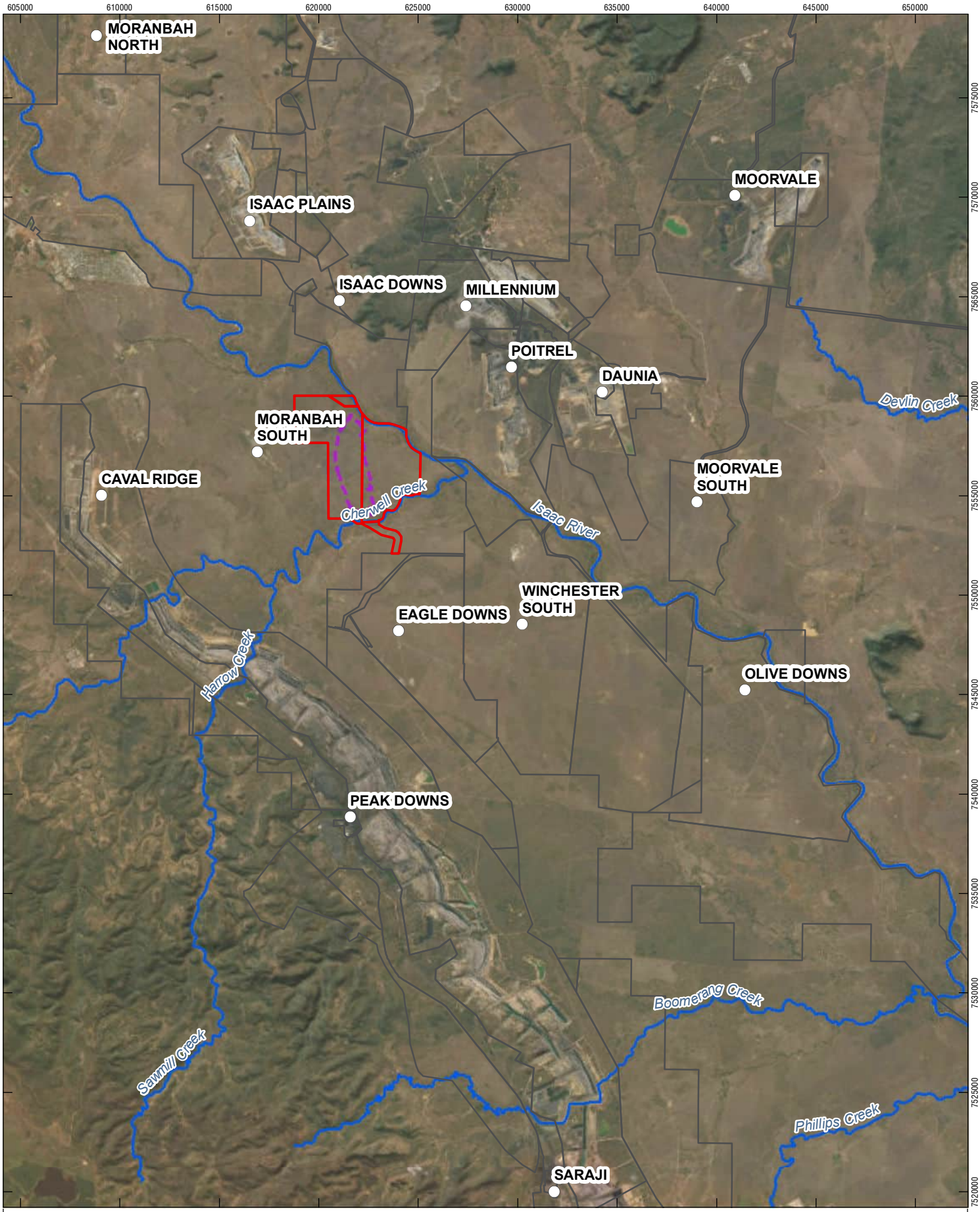
ISAAC DOWNS EXTENSION PROJECT

PLANNED MINING PROGRESSION

SLR

FIGURE 1-2

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F01_02_Planned Mining Progression.mxd



0 2.5 5 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:250,000 at A4
Project Number:	620.041537.00001
Date:	12-May-2026
Drawn by:	AS

- Existing and Proposed Mine
- Major Watercourse
- IDE Project MLAs
- Surrounding Mining Lease
- Approximate Project Pit Extent

ISAAC DOWNS EXTENSION PROJECT

PROJECT AND SURROUNDING MINE OPERATIONS

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FIGURE 1-3

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F01_03_Project and Surrounding Mine Operations.mxd

1.2 Objectives

The GIA was undertaken in accordance with Queensland and Commonwealth Government requirements, specifically the terms of reference (ToR) for the EIS. The GIA comprises two parts; (i) a description of the existing hydrogeological environment; and (ii) an assessment of the impacts of mining on that environment.

To this end, the stated scope of work was to:

- Review relevant groundwater, geotechnical and environmental reports to characterise the geological and hydrogeological setting of the Project.
- Review publicly available hydrogeological data such as The Queensland Government's spatial data system (Queensland Globe) and The Bureau of Meteorology's (BoM) National Groundwater Information System (NGIS) (BoM, 2019).
- Characterise the existing groundwater resources, including properties and quality.
- Review census information for third party groundwater supply bores near to the Project.
- Conceptualise the groundwater regime of the Project Area and Study Area.
- Assess the potential interaction between the Project and alluvium deposits of Cherwell Creek and the Isaac River.
- Identify the potential of groundwater dependent ecosystems (GDEs) occurring in proximity to the Project.
- Construction and calibration of a numerical groundwater flow model suitable for assessment of potential impacts of the Project, in accordance with the Australian Groundwater Modelling Guidelines (Barnett et al., 2012) and Murray Darling Basin Commission guidelines (Middlemis et al., 2001).
- Perform predictive modelling for the scale and extent of mining impacts upon groundwater levels, groundwater quality and groundwater users at various stages during mine operations and beyond closure.
- Model the cumulative impacts of Project and surrounding existing and proposed mines.
- Assess the extent of groundwater impacts as a result of the operation of the Project, including long-term impacts on regional groundwater levels and water quality, and impacts on environmental flows and baseflows.
- Assess potential impacts on GDEs resulting from short and/or long-term changes in the quantity and quality of groundwater.
- Assess the potential third-party impacts (i.e. private bores) as a result of changes to the regional groundwater system.
- Develop feasible mitigation and management strategies where potential adverse impacts are identified.
- Develop a groundwater monitoring and management program.

1.3 Information Sources

No specific groundwater studies have previously been completed for the Project Area. However, the *Isaac Downs Groundwater Impact Assessment* (AGE, 2020) is directly relevant as the area lies along the same geological strike and abuts the northern extent of the Project. Relevant information from AGE (2020) has been supplemented with an extensive program of Project-specific data collection including the field programs discussed in **Section 1.4**, as well as relevant information from adjoining Stanmore mine sites, including PTM (immediately northeast of IDE), IPM and publicly available information.

A summary of the information considered is provided below.

Existing relevant groundwater studies for adjacent Stanmore operations:

- Integrated Isaac Plains Project (Matrix+ Consultants, 2008).
- Isaac Downs Groundwater Impact Assessment (AGE, 2020).
- Poitrel Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2024a).
- Poitrel Mine Highwall Mining Project Groundwater Impact Assessment (SLR, 2023a).
- Isaac Plains East Extension Project (KCB, 2023).
- Eagle Downs reference (SLR, 2025a).

Stanmore provided Project information:

- Relevant Project information in GIS format.
- Topographic data.
- Stanmore resource structure geological model.
- Groundwater monitoring data (bore logs, drilling information, water level and quality data).

Publicly available information:

- Queensland Government registered bore database (GWDB).
- Queensland Government geological mapping.
- BoM GDE Atlas.

In addition, this GIA has been prepared utilising other information and data collected and collated as part of recent groundwater assessments for other nearby non-Stanmore mining projects. Stanmore has established groundwater data sharing agreements with the owners of each of these neighbouring projects / mines, which allows for the sharing of groundwater data and documentation. Under these agreements, data utilised as part of each project/mine's groundwater assessment has been incorporated into this GIA where relevant. These include:

- Peak Downs Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2024b).
- Moorvale South Project Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2024c).
- Caval Ridge Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2024d).

- Millennium Mine Mavis South Extension Project Groundwater Impact Assessment (SLR, 2023b).
- Millennium Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2023c).
- Daunia Mine Transitional PRC Plan Hydrogeology report (SLR, 2023d).
- Saraji Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment (SLR, 2023e).
- Saraji East Mining Lease Project Groundwater Resource Technical Report (AECOM, 2023).
- Winchester South Project Groundwater Assessment (SLR, 2022).
- Caval Ridge Mine Horse Pit Extension Project Groundwater Assessment (SLR, 2021).
- Moorvale South Project Groundwater Assessment (SLR, 2019).
- Olive Downs Project Groundwater Assessment (HydroSimulations, 2018).
- Project Groundwater Field Programs and Moranbah South Groundwater Impact Assessment (AGE, 2013)

1.4 Investigations

Numerous groundwater field programs have been undertaken for the Project to inform the GIA. Each field program sought to build upon the previous programs and address residual gaps identified in the available information and dataset. The Project field programs have included:

- Field program from the Integrated Isaac Plains Project (IIPP) (Matic+ Consultants, 2008), which directly overlapped with the IDE Project Area and included bore drilling, hydraulic slug testing of selected bores, and a regional landholder bore survey.
- An initial groundwater bore census (SLR, 2024e; **Appendix E**).
- Hydrogeological drilling and bore installation campaigns (AGE, 2022; SLR, 2026a; **Appendix F**).
- Site specific hydraulic testing (SLR, 2026a; **Appendix F**).
- Geophysical (Electrical Resistivity Surveys (MES, 2025; **Appendix G**);
- GDE field studies (Watermark Eco, 2026a) and
- Routine groundwater level monitoring and groundwater quality sampling.

Interpretation of the data collected in the field programmes and investigations are described in subsequent **Sections 1.4.1** to **1.4.5** below

1.4.1 Groundwater Bore Census

The primary objective of the bore census undertaken in November 2024 by SLR (2024e) (**Appendix E**) was to identify and confirm existing bores (specifically bores from previous IIPP which overlapped with the Project Area) that could be incorporated into the baseline groundwater monitoring network (to support the EIS). It also served to identify landholder bores that required consideration in the assessment. The census involved a desktop review and field investigation, including groundwater level measurements and water quality sampling.

In total, 43 bores were assessed, comprising 32 monitoring bores and 11 landholder supply bores. Of the 32 monitoring bores, 16 were found to be functional, while the remaining 16 were either damaged, lost, or destroyed, often due to broken or buried PVC casings. Among the landholder bores, six were active and sampled, while five were inactive at the time of the survey.

The census informed the scope of work for the 2025 groundwater field investigation programme (SLR, 2026a and **Appendix F**). An initial groundwater level and quality monitoring event was undertaken during the groundwater bore census and data included in the baseline groundwater dataset for the 2025 Groundwater Field Investigation Programme.

1.4.1.1 Bore Drilling and Installation

A baseline groundwater monitoring program for the Project was recommended by AGE (2022), and together with the Gap Analysis prepared by SLR (2024f), formed the foundation for the scope of work for the 2025 groundwater field investigation programme. The recommendations included the installation of 19 new monitoring bores. Of these, seven were successfully installed in 2022 but remained undeveloped, requiring contractor services to airlift develop the bores in the 2025 groundwater field investigation programme before being deemed suitable for baseline monitoring.

In addition, seven damaged legacy bores identified during the site bore census were recommended for rehabilitation to re-establish the integrity of the bores and widen spatial coverage of the groundwater monitoring network. Two of these legacy bores, considered key components of the monitoring network, were damaged beyond rehabilitation and were therefore scheduled for redrilling. Consequently, the installation of a total of 14 additional bores was completed in the 2025 groundwater field investigation programme (SLR, 2026a and **Appendix F**).

1.4.1.2 Fault Exploration Drilling

A component of the 2025 groundwater field investigation programme was exploration drilling to delineate and characterise the Isaac Thrust Fault east of the Project Area. These five exploration holes would be used to identify the fault core and inform the design and installation of a subsequent groundwater monitoring bore targeting the fault (SLR, 2026a and **Appendix F**).

Exploration drilling was conducted 1.5 km east of the Project Area, where State regional geological mapping indicates the likely position of the fault. Five exploratory air-rotary chip holes were drilled southwest to northeast across geological strike of the mapped fault trace to the east of the Project Area. These chip holes provided key geological information, enabling the identification of the fault's location and depth on the basis of observed structural offsets with respect to the expected stratigraphy as is present within the Project Area.

The results of this exploratory drilling combined with downhole geophysical logging informed the final design and siting of a monitoring bore targeting the Isaac Thrust Fault itself. The most hydraulically conductive zone of the fault was targeted for the monitoring bore installation, as discussed further in **Section 1.4.1.3** below.

1.4.1.3 Down-hole Geophysics Survey

Epiroc undertook downhole geophysics at all five exploration holes drilled as part of the Fault Investigation (SLR, 2026a and **Appendix F**). The objective of the downhole geophysics was to support the siting and final design of the monitoring bore targeting the Isaac Thrust Fault.

The wireline geophysical techniques applied included the following:

- three-arm calliper logging to measure borehole diameter and detect changes in shape or constrictions down hole.
- Optical Televiewer (OTV) imaging was used to generate high-resolution visuals of the borehole wall, enabling detailed logging of fractures, bedding planes, and lithological features.
- Acoustic Televiewer (ATV) amplitude and travel time measurements were used to assess borehole wall texture and geometry, respectively, with the amplitude data highlighting fractures and cavities, and the travel time data mapping structural variations and diameter changes.

Nuclear magnetic resonance (NMR) testing was employed on three (3) of the fault investigation exploration drillholes, RFIS0060, RFIS0062 and RFIS0064. These three drillholes were selected as they were determined to show the most significant faulting present out of the five exploration drillholes. NMR is a widely utilised method employed in the petroleum industry and involves running a geophysical wireline tool down the drillhole, where the tool measures the response of hydrogen nuclei within rock pore fluids to an induced magnetic field. Resulting data processing provides measurements of:

- Porosity: Total volume of rock pore space.
- Permeability Estimates: Based on pore size distribution and fluid mobility.
- Bound vs. Free Fluid: Helps identify producible fluids vs. those bound to rock surfaces.

The NMR method provides a faster, and higher resolution method of assessing downhole hydrogeological properties than more traditional methods such as packer testing. The aim of the NMR testing was to:

- provide characterisation of Isaac Thrust Fault permeability across the vertical drillhole profile;
- contrast the inferred permeabilities between the fault zone and the overlying/underlying undisturbed Rangal Coal Measures interburden; and
- identify any higher permeability zones for installation of a groundwater monitoring bore.

1.4.2 Hydraulic Testing

SLR conducted groundwater hydraulic slug testing across the IDE baseline groundwater monitoring network, which comprised 33 bores (SLR, 2026a and **Appendix F**). The testing included both rising and falling head slug tests. Prior to this campaign, slug testing was carried out in 2008 at selected existing bores as part of the IIPP (Matix+ Consultants, 2008).

Hydraulic testing had previously been carried out on the adjacent IDM, located north of the IDE Project Area. This earlier work was conducted by AGE (AGE, 2020), providing useful comparative data for regional hydrogeological interpretation and is included in this report (refer **Section 5.3**).

1.4.3 Electrical Resistivity Imaging Survey

Between 14 May and 26 June 2025, Marine & Earth Science (MES) conducted Electrical Resistivity Imaging (ERI) surveys to test the resistivity of the ground cover up to 80 m below ground level (MES, 2025; **Appendix G**). The primary objective of these surveys was to characterise the thickness and lateral extent of alluvial sediments along the Isaac River and Cherwell Creek, the Isaac River alluvium near the northern highwall of the Project mining area as well as the sediments underlying the potential wetlands. The survey also assisted to

assess the potential connectivity between shallow groundwater and alluvium, possible presence of paleochannels and occurrence and thickness of clay layer between the alluvium and underlying Permian rock. The transects were aligned with existing drilling data as best as possible in order to tie in the geophysical data with the drill hole data.

A total of six ERI transects were completed during the survey period. Two lines were positioned along the riverbeds of Isaac River and Cherwell Creek, while the remaining four were strategically located to investigate subsurface conditions adjacent to the Project's proposed mine pit (outcomes discussed in **Section 4.2**).

1.4.4 Local GDE Studies

The field assessment for the Project was conducted between 4 and 8 November 2024 by Watermark Eco (2026a), supplemented by additional fieldwork in August – November 2025. This investigation aimed to verify the groundwater dependence of mapped potential aquatic and terrestrial GDEs in relation within and adjacent the Project area. Assessing the likelihood of GDEs within and adjacent the Project area is essential for understanding potential risks to water-dependent ecological assets.

To evaluate groundwater dependence, multiple lines of evidence were applied, including measurements of leaf water potential (LWP), soil moisture potential (SMP), stable isotope analysis, and direct physical observation. These methods were used to assess the physiological and hydrological characteristics of vegetation within and adjacent to the Project area (outcomes discussed in **Section 5.7**).

1.4.5 Routine Groundwater and Quality Monitoring

Routine groundwater level and quality monitoring has been conducted monthly at all Project monitoring bores since March 2025 by SLR, following an initial monitoring event in late 2024 associated with the groundwater bore census (refer **Section 1.4.1**). As new bores have been installed in ongoing drilling campaigns, these have been incorporated into the routine monitoring programme, and loggers installation completed.

It should be noted that some historical monitoring at bores within the IDE Project Area, including initial groundwater levels collected in 2006 as part of the IIPP, as well as routine IDM monitoring starting in ~2021, have been incorporated into the baseline groundwater database.

2.0 Legislative Requirements and Relevant Guidelines

2.1 Commonwealth Regulatory Framework

This section summarises the Commonwealth and Queensland groundwater legislation and policy relevant to the Project. Also summarised are the guidelines relevant to the groundwater assessment required to facilitate environmental approvals process.

2.1.1 Environmental Protection and Biodiversity Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). The EPBC Act is designed to protect national environmental assets, known as Matters of National Environmental Significance (MNES). Under the 2013 amendment to the EPBC Act, impacts on water resources were included, and are referred to as the 'Water Trigger'.

Due to the Bilateral Agreement between the Commonwealth of Australia and the State of Queensland (2004), only one impact assessment is required for a project that triggers an assessment under both the EPBC Act and State legislation, as is the case for the Project's EIS. However, the impact assessment (i.e. the EIS for the Project) is reviewed separately by the State and Commonwealth.

The IESC is a statutory body established under the EPBC Act that provides scientific advice to the Commonwealth Environment Minister and relevant state ministers. Guidelines have been developed in order to assist the IESC in reviewing coal seam gas (CSG) or large coal mining development proposals that are likely to have significant impacts on water resources. This includes completion of an independent peer review of numerical groundwater modelling in accordance with the Australian Groundwater Modelling Guidelines (Barnett et al., 2012). A checklist against the IESC information guideline requirements is presented in **Appendix B**.

The Project was referred under the EPBC Act on 28/04/2025 to the Australian Government (EPBC 2025/10183). On 06/06/2025 DCCEEW determined that the Project was a controlled action under the EPBC Act subject to the following controlling provisions:

- listed threatened species and ecological communities
- water resources that relate to large coal mining development.

On 23/06/2025 DCCEEW decided that the Project would be assessed by an accredited assessment process, being the voluntary EIS required under the under EP Act.

Therefore, the final Terms of Reference (ToR) for the project (DESTI, 2025) now specify the IESC-related water resource information requirements that must be addressed in the EIS. The Project's GIA has therefore been prepared to meet the requirements of the Referral under the EPBC Act and ToR for the Project IESC, which includes addressing the IESC requirements.

2.2 Queensland Regulatory Framework

2.2.1 Queensland Water Act 2000

The *Water Act 2000* (Water Act), supported by the subordinate *Water Regulation 2016* (Water Regulation), is the primary legislation regulating groundwater resources in Queensland. The purpose of the Water Act is to advance sustainable management and efficient use of water resources by establishing a system for planning, allocation and use of water.

2.2.1.1 Management Framework Relevant to the Project

The Water Act is enacted under a framework of catchment specific Water Resource Plans (WRPs). A WRP provides a management framework for water resources in a plan area, and includes outcomes, objectives and strategies for maintaining balanced and sustainable water use in that area. Resource Operations Plans (ROPs) implement the outcomes and strategies of WRPs. Groundwater Management Areas (GMAs) and their component groundwater units are defined under WRPs. Authorisation is required to take non-associated groundwater from a regulated GMA or groundwater unit for specified purposes. The specified purposes are defined under a WRP, the Water Regulation or a local water management policy.

Associated water is defined as groundwater that is taken (or interfered with) during the process of carrying out an authorised resource activity. For coal mines operating under a mining lease or mineral development licence, the *Mineral Resources Act 1989* (MR Act) grants a statutory right to take associated water (underground water rights). Consequently, provided the activity is authorised under the resource authority, no separate water licence or permit under the Water Act is required for associated water take.

Water resources within the vicinity of the Project are captured under the Water Plan (Fitzroy Basin) 2011. The plan covers surface water (zone WQ1301) associated with Isaac River, and groundwaters (zone WQ1310 – Fitzroy Basin groundwaters). The Project Area lies within the Isaac Connors Groundwater Management Area (GMA) of the Fitzroy Basin under the Water Plan (Fitzroy Basin) 2011. The Isaac Connors GMA consists of the following:

- Groundwater Unit 1, containing the aquifers of the Quaternary alluvium associated with the Isaac Conners Alluvium sub-area; and
- Groundwater Unit 2, containing all subartesian aquifers within the Isaac Conners GMA other than the aquifers included in Isaac Conners Groundwater Unit 1.

As part of the Project, Stanmore is proposing to exercise its underground water rights (i.e. the statutory right to take associated water) during the period in which resource activities would be carried out within the Project Area. The Project may therefore interact with groundwater within the Isaac Connors Groundwater Management Area (GMA – Zone 34) of the Fitzroy Basin under the Water Plan (Fitzroy Basin) 2011. This relates to both Groundwater Unit 1 (containing aquifers of the Quaternary alluvium) and Groundwater Unit 2 (sub-artesian aquifers).

2.2.1.2 Water Act Declared Watercourses and Drainage

The Water Act includes criteria for determining watercourses that require authorisation under the Water Act to take water, interfere with the flow of water, take quarry material or excavate and place fill in a watercourse. The Water Act also includes criteria for drainage features that may require authorisation to take or interfere with overland flow. Two declared defined watercourses within and adjacent the Project area, the Isaac River in the east and Cherwell Creek in the south. There is a small tributary of the Isaac River, Conrock Gully, which traverses the Project Area with the downstream portion being a defined watercourse and the upstream portion being a defined as drainage feature (see **Section 3.2**). The Water Act declared watercourses may be relevant to the GIA for the Project if there is interaction between surface water and groundwater.

2.2.2 Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) is the primary Queensland legislation relating to the natural environment. The object of the EP Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now

and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).

On 16/05/2025 the proponent applied to prepare a voluntary EIS for the Project under Chapter 3, Part 2 of the EP Act. On 17/06/2025 the DETSI approved the voluntary EIS application. The proponent will apply for an environmental authority (EA) and progressive rehabilitation and closure plan (PRCP) schedule for the Project. The voluntary EIS for the Project will support the EA and PRCP schedule applications. The EIS process assesses the potential environmental impact of the activity, and how impacts should be avoided, minimised and managed. The EIS also informs subsequent approval decisions under the EP Act and other relevant legislation. DETSI is responsible for the administration of environmental EA and PRCP schedule applications under the EP Act.

The minimum reporting requirements for EA groundwater impact assessments under the EP Act are outlined within the Guideline Requirements for site-specific and amendment applications – underground water rights (ESR/2016/3275) (DESI, 2024). A checklist against the requirements of ESR/2016/3275 is presented in **Appendix C**.

Final Terms of Reference (ToR) for the Project's EIS under the EP Act have been issued by DETSI. A checklist against the relevant items in the ToR is provided as **Appendix D**

2.2.3 Environmental Protection (Water and Wetland Biodiversity) Policy 2019

The *Environment Protection (Water and Wetland Biodiversity) Policy 2019* (EPP Water and Wetland Biodiversity) aims to achieve objectives set out by the EP Act and applies to all waters of Queensland. EPP Water provides a framework to protect and/or enhance the suitability of Queensland waters for various beneficial uses by:

- Identifying environmental values and management goals for Queensland waters.
- Providing state water quality guidelines and water quality objectives (WQOs) to enhance or protect the environmental values.
- Providing a framework for making consistent, equitable and informed decisions.
- Monitoring and reporting on the condition of Queensland waters.

Groundwater resources within the vicinity of the Project are scheduled under the EPP Water and Wetland Biodiversity as Isaac Groundwaters of the Isaac River Sub-basin of the Fitzroy Basin water plan (WQ1310). The legislated environmental values (EVs) for these groundwaters are:

- Biological integrity of aquatic ecosystems.
- Human use EVs:
    - Aquatic Ecosystem.
    - Suitability of water supply for irrigation.
    - Farm water supply/use.
    - Stock watering.
    - Primary recreation.
    - Drinking water supply.
    - Cultural and spiritual values.

The EPP Water and Wetland Biodiversity also provides limited WQOs for underground aquatic ecosystem protection in Fitzroy Basin groundwaters. These WQOs provided in the

EPP Water and Wetland Biodiversity are classified by groundwater depth and regional chemistry zone.

Surface water resources within the vicinity of the Project are scheduled under the EPP Water and Wetland Biodiversity as Isaac western upland tributaries of the Isaac River Sub-basin of the Water Plan (Fitzroy Basin) 2011 (WQ1301).

2.3 Relevant Guidelines

As discussed above, there are several available guidelines designed to assist project proponents to meet the relevant legislative requirements in order to complete a GIA for coal mining proposals such as the Project. These guidelines are:

- EP Act – *Requirements for site-specific and amendment applications—underground water rights* (DESI, 2024).
- EPBC Act – *Information guidelines for proponents preparing coal seam gas and large coal mining development proposals* (IESC, 2024).
- EPBC Act – *Information Guidelines explanatory note. Uncertainty analysis—Guidance for groundwater modelling within a risk management framework* (IESC, 2023).
- EPBC Act – *Information Guidelines Explanatory Note. Assessing groundwater-dependent ecosystems* (Doody et al., 2019).
- *Australian Groundwater Modelling Guidelines* (Barnett et al., 2012).
- Guideline: Progressive Rehabilitation and Closure Plans (ESR/2019/4964).

3.0 Physical Setting

3.1 Climate

The general climate of the Study Area is characterised according to the Köppen-Geiger climate zones (Beck et. al., 2018) as a “BSh” climate zone. BSh is a hot semi-arid climate zone and experiences hot to extremely hot summers, and warm to cool winters, with some to minimal precipitation. The closest Bureau of Meteorology (BoM) weather station is located at Moranbah Airport (34035) located approximately 16 km to the northwest of the Project. This weather station has been in operation since 2012. The nearest open weather station with the longest data record is Booroondarra (station 35109) located approximately 80 km south of the Project. The Booroondarra weather station has been in operation since 1929 and has a continuous record with only a few occasional months of missing data. **Table 3-1** provides the details of the nearby operational weather stations.

Table 3-1 Operational BoM Weather Stations near the Project

Name	Site Number	Operational Status	Easting (GDA94 Z55)	Northing (GDA94 Z55)	Elevation (mAHD[1])	Distance from IDE
Moranbah Airport	34035	2012 – Present	604006	7550177	232	16 km NW
Iffley	34100	1998 – 2023	647367	7539912	173	30 km SE
Dysart Post Office	35278	1987 – 2007 (Closed)	637975	7501644	200	55 km S
Dysart Station	35092	1956 – 2008 (Closed)	639057	7498467	183	55 km S
Booroondarra	35109	1929 – Present	652913	7475845	200	80 km S

[1] mAHD = metres Australian Height Datum

3.1.1 Rainfall

SILO Grid point data (Latitude: -22.10, Longitude: 148.20) was used to assess long-term rainfall trends in the vicinity of the Project Area. This dataset is interpolated from quality checked observational timeseries data collected at nearby stations by BoM. Data from January 1958 (when routine digitisation of data was first begun by BoM) until December 2025 was used to assess the long-term rainfall trends. From this data, the average annual site rainfall is 575 millimetres (mm). The highest annual rainfall was recorded for 2010, with 1,046 mm falling that year. The minimum annual rainfall occurred in 1982 with 259 mm. Monthly averages for the Booroondarra station as well as the SILO grid point are listed in **Table 3-2**. Low relative annual rainfall was measured at the Dysart Post Office station, owing to the relatively short time period this was in operation aligning with relatively low precipitation.

Table 3-2 Average Monthly Rainfall

Rainfall (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
SILO Grid Point Data	99.7	90.9	62.7	35.3	30.2	22.3	19.9	20.0	10.7	30.7	63.0	89.8	575
Boroondara	116.9	96.8	71.5	34.4	35.8	25.5	24.2	23.0	16.7	40.5	57.7	103.2	646
Moranbah Airport	96.7	92.9	76.8	25.7	30.6	23.1	35.9	13.9	13.3	24.6	66.2	61.4	561.2
Dysart Post Office	77	73.6	41.1	24	35.1	21.9	6.8	26.9	8.1	38.9	48.4	103.3	505.1
Dysart Station	121	124	58.3	33.2	29.8	19.8	20.2	15.0	15.4	32.1	46.6	94	609.4

Source: http://www.bom.gov.au/climate/data/index.shtml

Note: SILO Grid point data coordinates are Latitude: -22.10 and Longitude: 148.20.

Rainfall trends for the Study Area since 1958 are analysed with the Cumulative Rainfall Departure (CRD) for monthly rainfall data which is useful in assessing medium- and long-term climatic trends (**Figure 3-1**). Positive gradients on this curve (rising limbs) indicate wetter than average conditions whilst a negative gradient (falling limbs) indicate drier than average conditions. This plot has been generated to show long term climate trends (1958-2025). **Figure 3-1** shows that, over the past 50 years, the wettest periods occurred during 1973-1979, and in 2010-2011 (albeit the latter being over a short period). The driest periods were 1961-1970, 1991-1998, 2001-2007 and 2018-2020. Between 2017 and 2021 IDE experienced drier than average conditions after which wetter than average condition prevailed between 2022-2023. More recently, average rainfall conditions prevailed between 2023-2024 and wetter than average conditions in 2025.

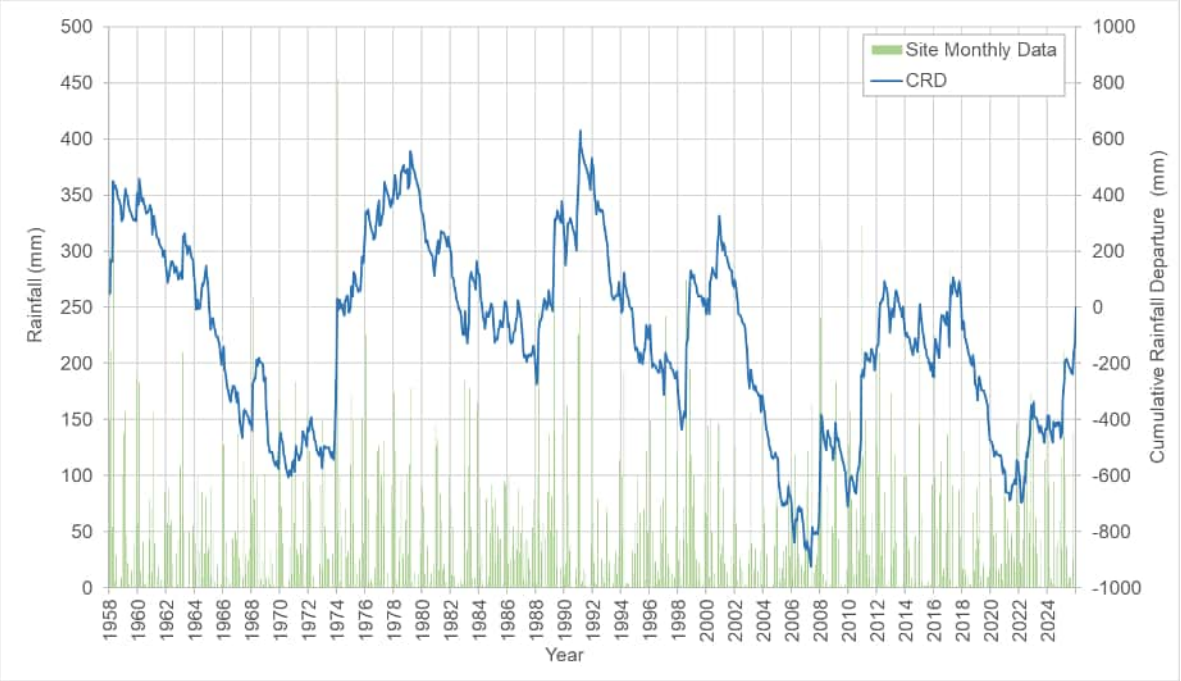


Figure 3-1 Long-term Monthly Rainfall and CRD from the mean monthly rainfall 1958 – 2025) at SILO data point data Latitude: -22.10 and Longitude: 148.20

3.1.2 Evapotranspiration

Actual evapotranspiration (AE) and potential evapotranspiration (PE) have been obtained from BoM's Australia wide interpolation dataset at the locations of the weather stations (BoM, 2012). The PE in the vicinity of the Project area is about 2,391 mm/yr according to BoM (2012) (**Table 3-3**). The definition of PE is: *"… the evapotranspiration that would take place, under the condition of unlimited water supply, from an area so large that the effects of any upwind boundary transitions are negligible and local variations are integrated to an areal average*". For example, this represents the *evapotranspiration* which would occur over a very large wetland or large lakes area, with a never-ending water inflow. Further to this, where the groundwater table approaches the ground surface, *evapotranspiration* can also approach the PE value.

Table 3-3 Average Monthly Potential Evapotranspiration

PE (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Booroondarra	252.6	211.6	217.6	179.9	147.5	122.0	135.4	166.9	207.4	252.8	259.7	268.6	2422
SILO Grid Point Data	246.4	206.2	212.1	175.2	144.5	121.5	135.0	166.2	206.7	252.0	258.8	265.2	2389.9

PE = Potential Evapotranspiration

The AE in the vicinity of the Project area is about 1127.8 mm/year according to BoM (2012) (**Table 3-4**). The definition for AE is: "*... the evapotranspiration that actually takes place, under the condition of existing water supply, from an area so large that the effects of any upwind boundary transitions are negligible and local variations are integrated to an areal average*". For example, this represents the predicted *evapotranspiration* that is occurring over a large area of land under the existing (mean) rainfall conditions.

Figure 3-2 shows that the average monthly PE exceeds the average monthly rainfall over the entire year, often by more than double. Average AE is slightly greater than average rainfall for all months.

Table 3-4 Average Monthly Actual Evapotranspiration

AE (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Booroondarra	139.1	120.6	116.5	81.7	51.6	36.2	40.2	60.8	81.7	108.4	122.4	140.2	1099.4
SILO Grid Point Data	140.5	123.9	121.1	88.5	57.8	40.2	44.0	64.3	83.3	106.7	120.2	138.3	1128.8

PE = Potential Evapotranspiration

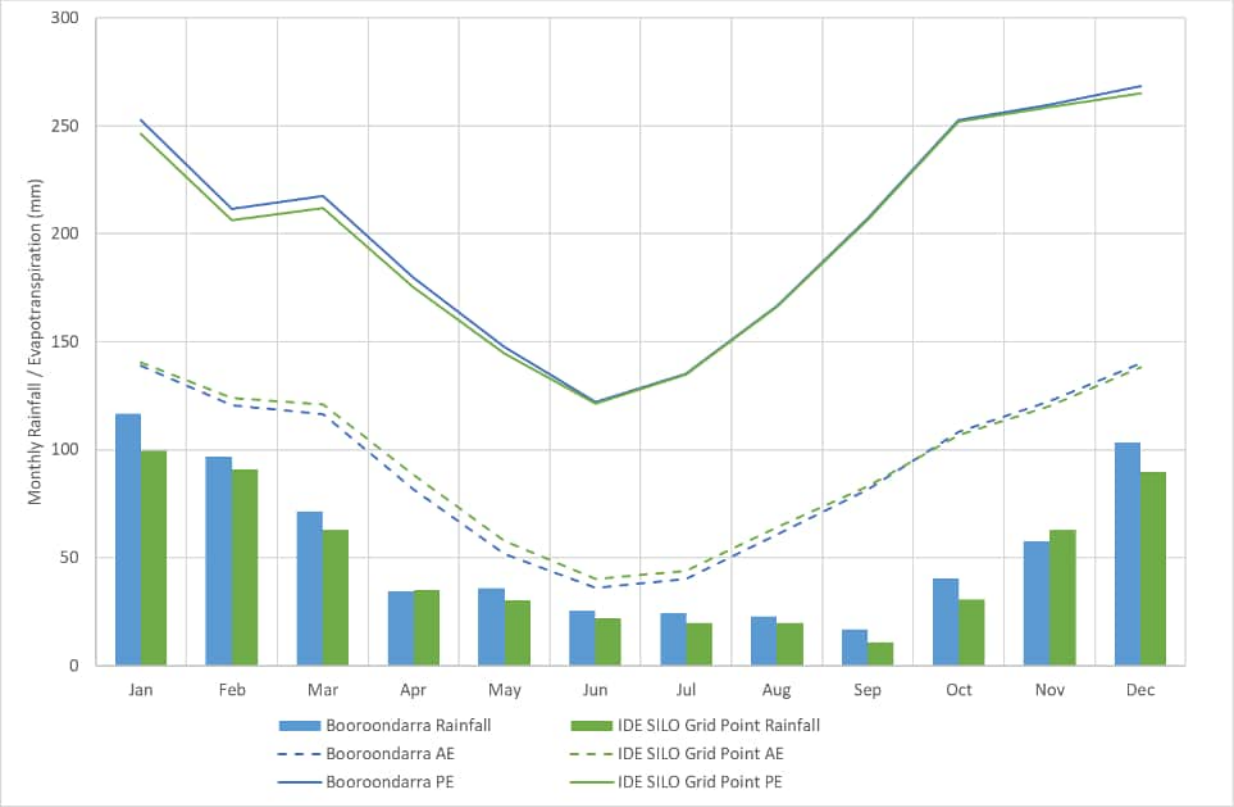
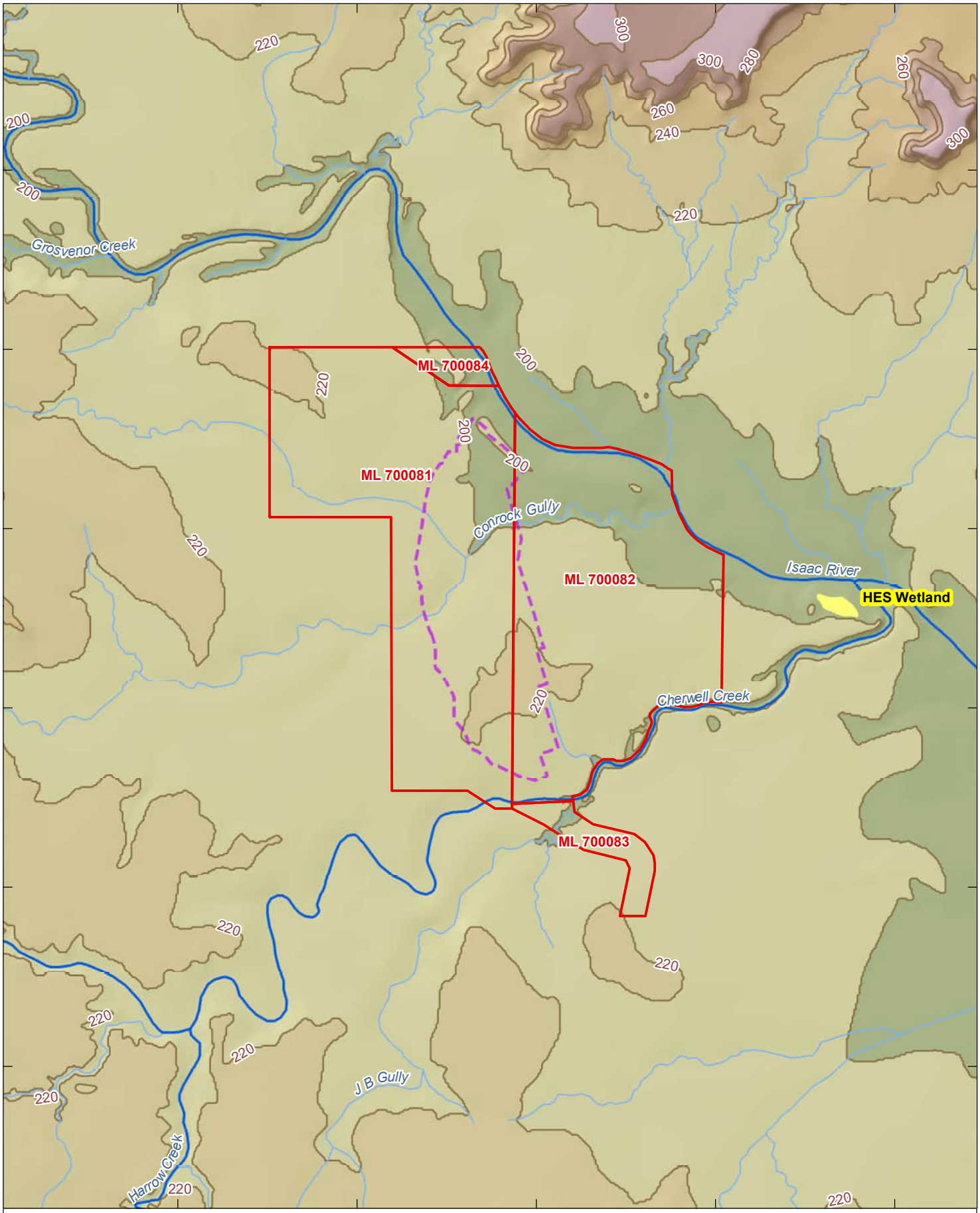


Figure 3-2 Average Monthly Rainfall and Evapotranspiration

3.2 Topography and Drainage

3.2.1 Topography

The topography of the Study Area features gently sloping valleys extending from the elevated terrain of the Harrow Range 15 km west of the Project Area toward Cherwell Creek and Isaac River in the south – southeast of the Project Area (**Figure 3-3**). Within and adjacent the Project Area, elevations are highest in the central area (~225 m AHD) and slope outward, reaching the lowest levels (~195 m AHD) along the Isaac River and Cherwell Creek in the east. High-resolution LiDAR data with a 5 m spatial resolution is available for the Project Area.



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	18-Mar-2026
Drawn by:	AS

SLR

- Major Watercourse
- Minor Watercourse
- Topographic Contour (20mAHD)
- IDE Project MLAs
- Approximate Project Pit Extent
- High Ecological Significance Wetland

Elevation (mAHD)

- 180 - 200
- 200 - 220
- 220 - 240
- 240 - 260
- 260 - 280
- 280 - 300
- 300 - 320

ISAAC DOWNS EXTENSION PROJECT

TOPOGRAPHY AND DRAINAGE

FIGURE 3-3

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F03_03_Topography and Drainage.mxd

3.2.2 Surface Drainage

The Project Area is situated within the Upper Isaac surface water catchment, specifically within the Isaac River Sub-basin (WQ1301) of the Fitzroy Basin. The drainage network is dominated by the Isaac River, which forms the northern boundary of the Project Area and flows from west-northwest to southeast (**Figure 3-3**). The Isaac River is a well-defined, incised channel with an elevation of approximately 200 mAHD at the channel bed, which is typically 10 to 12 m below the top of the channel banks. The riverbed primarily consists of sand overlying bedrock, with localised occurrences of outcropping Tertiary sediments. The Isaac River and its tributaries function as ephemeral systems, flowing primarily in response to major rainfall events or extended wet periods, with surface water predominantly sourced from overland flow. During dry periods, water may persist in isolated pools due to perched water overlying shallow bedrock or clay layers.

Cherwell Creek, a significant drainage feature and major tributary of the Isaac River, traverses the southern boundary of the Project Area and flows southwest to northeast, joining the Isaac River near the northwestern corner of the Project Area (**Figure 3-3**). Conrock Gully is a minor ephemeral drainage feature traversing the central region of the Project Area, draining from the west into the Isaac River to the east. Several other smaller, unnamed ephemeral tributaries drain the Project Area, flowing generally west to east into the Cherwell Creek and Isaac River catchments. These tributaries are classified as drainage features and only convey flow during significant rainfall events.

Near the confluence of the Isaac River and Cherwell Creek, west of the Cherwell Creek channel and south of the Isaac River channel, lies a wetland of High Ecological Significance (HES) as defined under the Queensland *Environmental Protection Regulation 2008* (**Figure 3-3**). The HES wetland is approximately 1.5 km west of the Project area. This is the only significant wetland identified within the Study Area. Characterisation of the wetland is provided in the Project's GDE Assessment (Watermark Eco, 2026a) and a summary of those findings with respect to the wetland's relationship with groundwater is provided in **Section 5.7.2**).

3.2.3 Isaac River Flow Regime

There are two Queensland Government gauging stations along the Isaac River. The closest gauging station is the Isaac River at Deverill (130410A) located ~25 km downstream of the Project Area while gauging station Isaac River at Goonyella (130414A) is ~35 km upstream of the Project Area. **Table 3-5** provides relevant summary information for these stations.

Table 3-5 Isaac River Stream Gauging Stations closest to IDE

Station Name	Station Number	Operational Status	Distance from IDE Project	Zero-gauge Elevation (mAHD)	Mean Flow (ML/day)	Max Flow (GL/day)	Max Flow Date
Isaac River at Goonyella	130414A	1983-2020 (Closed)	28 km upstream (along river channel, located north of CVM)	230.06	146	150	Jan 1991
Isaac River at Deverill	130410A	1968 - present (operational)	34 km downstream (along river channel, located south east of CVM)	169.30	439	228	Mar 1988

ML/day = megalitres per day, GL/day = gigalitres per day

Figure 3-4 presents daily mean stream discharge at the Isaac River at Deverill station (130410A) from 1972 to December 2025, compared against daily rainfall at Moranbah Water Treatment Plant (34038) (1972 – February 2012) and Moranbah Airport (34035) (March 2012 – December 2025). The graph shows that flows within the Isaac River are typically ephemeral, with short duration flows generally occurring over the summer months. **Figure 3-5** shows the maximum discharge recorded per flow event at the Isaac River (Deverill station) since the station was in operation in 1968. On average, flow events last approximately 20 days and are defined as periods during which discharge values are recorded at the gauge station (flow >0 ML/day). Over 50% of these events are shorter than 10 days, highlighting that most flow events are relatively brief. Only 9% of flow events persist for more than 75 days, and these occur exclusively when maximum daily flow rates exceed 5,000 ML. **Figure 3-6** shows that the Isaac River is highly ephemeral, flowing only 27 % of the time, with less than 11 % probability of flows exceeding 100 ML/day. Less than 1 % of readings exceed 10,000 ML/day, which includes high flow/flood events in 2008 (January and February), 2010 (December), 2012 (March), 2016 (February), 2017 (March), 2021 (January) and 2025 (April), further highlighting the ephemeral nature of the river.

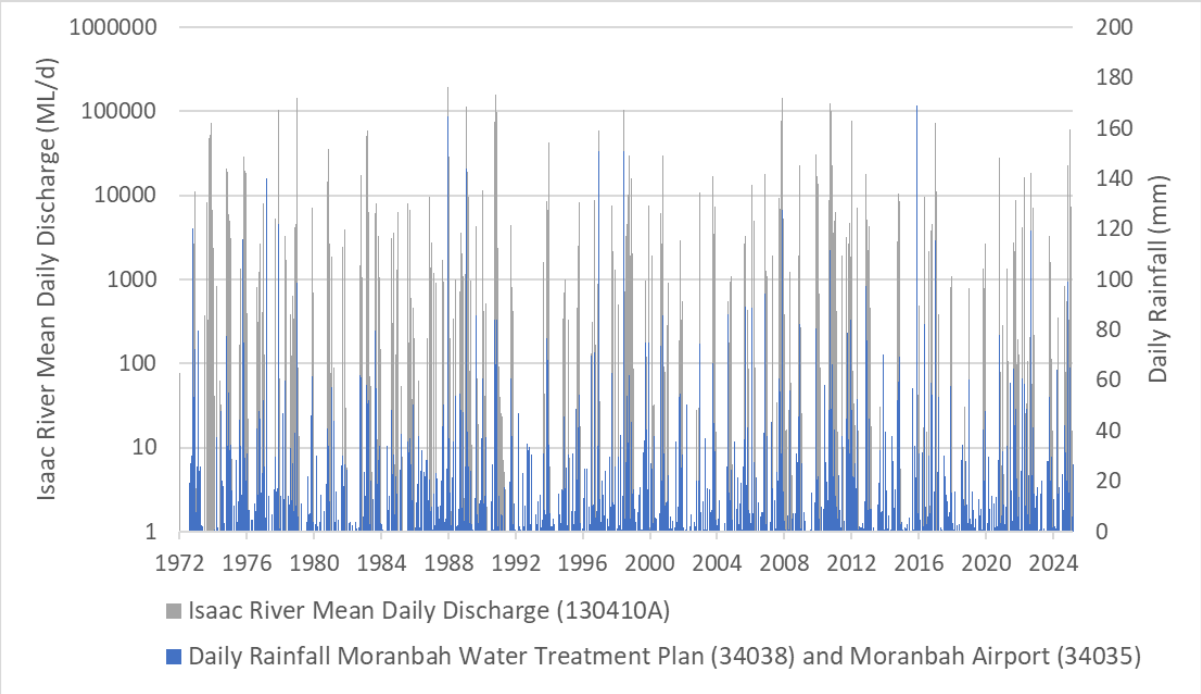


Figure 3-4 Isaac River at Deverill (Station 130410A) Stream Flow, and Rainfall at Moranbah Water Treatment Plant (34038) (1972 – February 2012) and Moranbah Airport (34035) (March 2012 – December 2025)

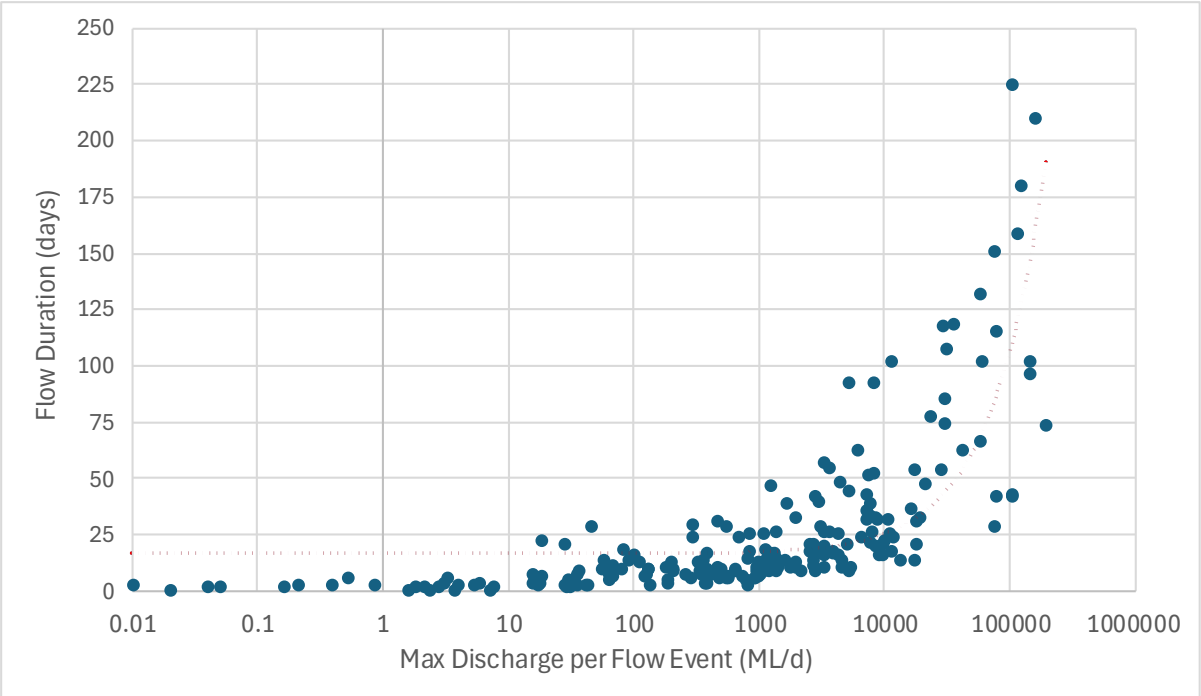


Figure 3-5 Maximum Discharge per flow event recorded at Isaac River at Deverill Station (130410A; 1968 – 2025 data)

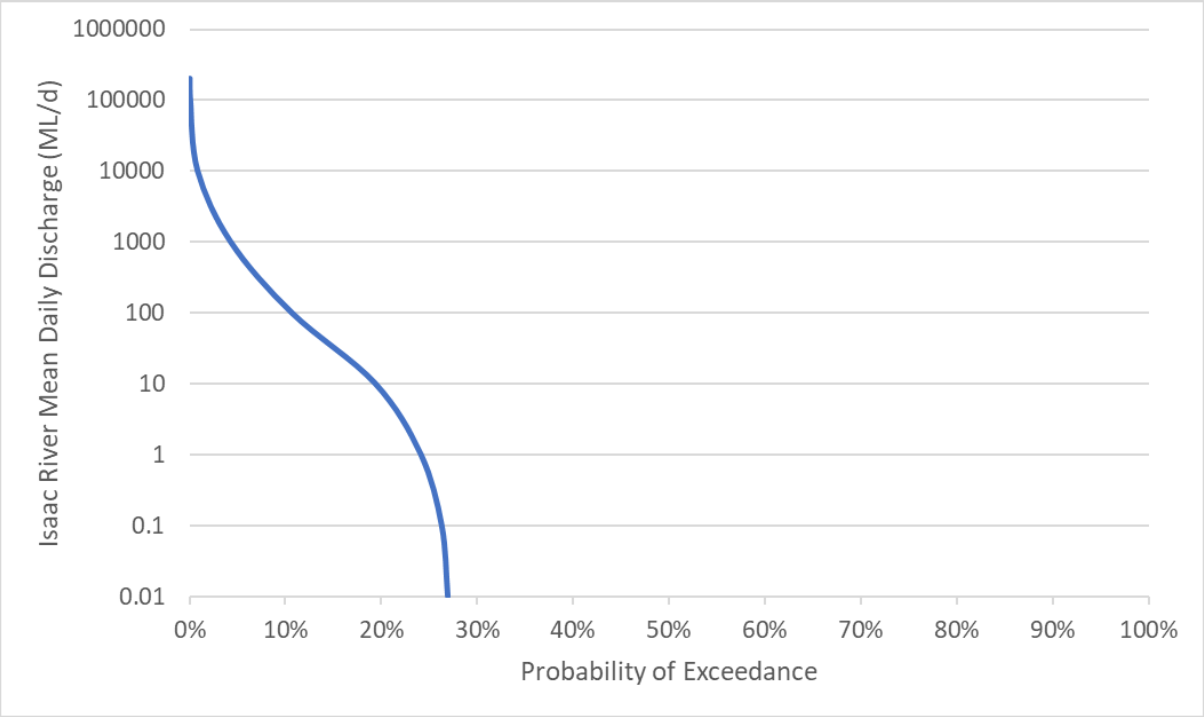


Figure 3-6 Isaac River at Deverill (Station 130410A) Mean Daily Flow Duration Curve (1968 – 2025 data)

3.3 Land Use and Mining

3.3.1 Project Area

The Project Area is predominantly covered by native pasture used for cattle grazing, with small patches of remnant and regrowth woodland vegetation. There are no nature conservation areas, such as National or State Parks, within or near the Project Area.

3.3.2 Surrounding Land Use & Mining

Surrounding land uses within the Study Area are primarily focused on mining and agriculture (grazing). Several proposed and active coal mining operations exist in close proximity to the Project. Additionally, in the broader region, there are also several proposed wellfields for coal seam gas (CSG) extraction associated with the Bowen Gas Project and Moranbah Gas Project. A small basalt quarry is also present approximately 2 km to the west of proposed Project activities.

Table 3-6 provides a summary of the nearby resource extraction operations.

Table 3-6 Proposed and current operations near to the Project

Operation	Status	Type	Planned Start	Planned End	Distance from IDE Project[1]	Target Coal Resource
Isaac Downs	Operating	Open-cut	2021	2028	1 km north	Rangal Coal Measures
Isaac Plains	Operating	Open-cut	2006	2026	10 km north	Rangal Coal Measures
Moranbah South	Proposed (on hold)	Underground – Longwall and Bord and Pillar	2045	2088	Adjacent west	Moranbah Coal Measures
Moranbah North	Operating	Underground - Longwall	1998	2033	35 km northwest	Rangal Coal Measures
Winchester South	Proposed (approved)	Open-cut	2026	2051	10 km southeast	Rangal Coal Measures, Fort Cooper Coal Measures
Poitrel	Operating	Open-cut	2006	2032	7 km northeast	Rangal Coal Measures
Eagle Downs	Care and Maintenance	Underground - Longwall	2029	2064	3 km south	Moranbah Coal Measures
Millennium	Operating	Open-cut	2005	2027	11 km northeast	Rangal Coal Measures
Daunia	Operating	Open-cut	2011	2034	13 km east	Rangal Coal Measures
Moorvale South	Operating	Open-cut	2021	2031	18 km southeast	Rangal Coal Measures, Fort Cooper Coal Measures
Moorvale	Operating	Open-cut	2023	2033	23 km northeast	Rangal Coal Measures
Olive Downs	Operating	Open-cut	2023	2099	21 km southeast	Rangal Coal Measures

Operation	Status	Type	Planned Start	Planned End	Distance from IDE Project[1]	Target Coal Resource
Caval Ridge	Operating	Open-cut	2014	2037	13 km west	Moranbah Coal Measures
Peak Downs	Operating	Open-cut and underground	1972	2119	17 km southwest	Moranbah Coal Measures
Saraji Mine	Operating	Open-cut	1974	2055	37 km south	Moranbah Coal Measures
Lake Vermont	Operating	Open-cut (with approved underground extension)	2008	2045	47 km SW	Rangal Coal Measures
Meadowbrook	Approved / Proposed	Open-cut and underground	2026	2050-2055	35 km SW	Rangal Coal Measures
Moranbah Gas Project[1]	PL 196	Coal Seam Gas	NA	NA	11 km northwest	Rangal Coal Measures, Moranbah Coal Measures
	PL 191		NA	NA	23 km northwest	
	PL 223		NA	NA	17 km northeast	
	PL 224		NA	NA	16 km northwest	
Bowen Gas Project	Exploration & Appraisal (ATP 1103)	Coal Seam Gas	2030	2060	Large exploration area with small overlap with Project Area	Rangal Coal Measures, Moranbah Coal Measures
	Production (PL 486)		NA	NA	45 km northwest	

[1] Distances measured from approximate centre of ML/PL

[2] IDM end of mining has recently been updated to 2028; however, an end of mining year of 2033 was applied in the numerical model due to information available at the time

A brief summary of each of the surrounding mines included in the cumulative assessment component of this GIA is provided below.

3.3.2.1 Isaac Downs Mine

IDM is an open cut coal mine owned by a subsidiary of Stanmore, located immediately north-northwest of the IDE Project. Commencing operations in 2021, the mine targets the Rangal Coal Measures and has a design mine life of approximately 16 years (noting that the operational period is forecast to end in 2028). Stanmore operates the mine as part of the IPC, which also includes IPM. IDM mine is located along geological strike from IDE.

3.3.2.2 Moranbah South Project

The Moranbah South Project is a proposed underground coal mine 3 km southeast of Moranbah and immediately adjacent IDE. The project is an unincorporated venture between Anglo Coal (Grosvenor) Pty Ltd (Anglo Coal) and Exxaro Australia Pty Ltd (Exxaro). The project will target the Goonyella Middle Seam of the Moranbah Coal Measures using longwall extraction. The project proposes a production rate of up to 18 Mtpa with a mine life of more than 30 years. The project received federal environmental approval under the EPBC Act in 2014, but it did not progress to obtaining the required state-level approvals and no activities have been conducted at the site. It is currently unknown when operations will commence. A subsidiary of Stanmore, and Anglo Coal and Exxaro executed an agreement in September 2024 giving Stanmore the right to apply for MLs for the Project over underlying tenements held by Anglo Coal and Exxaro.

3.3.2.3 Winchester South Project

Whitehaven WS Pty Ltd proposes to develop the Winchester South Project located to the south east of Project Area. The approved project will consist of a series of open cut pits targeting the Rangal Coal Measures and Fort Cooper Coal Measures. The mine will extract up to 15 Mtpa over a mine life of approximately 30 years. Based on the planned maximum production rate, approximately 130 Mt of product coal would be produced during the life of the mine. It is currently unknown when operations will commence.

3.3.2.4 Poitrel Mine

The Poitrel Mine (PTM) owned by a subsidiary of Stanmore is located 25 km east-southeast of Moranbah. PTM is an open cut mine targeting the Leichhardt and Vermont Seams within the Rangal Coal Measures (approximately 3 km west of the IDE Project) which consists of 79 Mt of resources. Operations commenced in 2008 and are planned to continue until approximately 2032.

3.3.2.5 Eagle Downs Mine

Eagle Downs Mine is a multi-seam underground mine owned by a subsidiary of Stanmore, south of IDE. The project targets the Moranbah Coal Measures using longwall extraction. The project was approved in 2011 and development of a small boxcut and drift commenced in 2013. However, no activities have been conducted at the site since 2015. The project proposes a production rate of up to 11 Mtpa with a mine life of 50 years, however, future investment decisions by Stanmore will determine when operations will recommence.

3.3.2.6 Millennium Mine

Stanmore's Millennium Coal Mine consists of two mining areas, the Mavis Downs area and the Millennium area, which together form a single operational project immediately north of PTM. Open cut mining operations at Millennium Coal Mine occur in five pits and underground mining occurs in one underground bord and pillar mine. All operations at Millennium target the economic resource contained within the Rangal Coal Measures. The Millennium Mine was placed in care and maintenance in mid-2024.

3.3.2.7 Daunia Mine

Whitehaven Coal's Daunia Mine is located approximated 30 km southeast of Moranbah immediately east of PTM. As with PTM, Daunia is an open cut mine targeting the Leichhardt and Vermont Seams within the Rangal Coal Measures. The mine is located on the eastern limb of an anticline that separates it from the adjacent PTM.

3.3.2.8 Moorvale South Mine

Moorvale South Mine, located 23 km south of Coppabella and just east of Daunia Mine, is operated by Peabody Energy Australia PCI (C&M Management) Pty Ltd and is owned by the Coppabella and Moorvale Joint Venture. The project targets the Leichhardt and Vermont Seams, and where economically viable also the Fort Cooper Coal Measures using conventional open cut mining and strip-mining methods. The mine is projected to extract between 1.5 and 2 Mt per year with a mine life of 10 years.

3.3.2.9 Olive Downs Project

Pembroke Resources Limited's Olive Downs Project is located to the southeast of the Winchester South Project. The mine will consist of a series of open cut pits targeting the Leichhardt and Vermont Seams of the Rangal Coal Measures. The mine will extract up to 20 Mtpa over a mine life of approximately 79 years, commencing approximately in 2021. Based on the planned maximum production rate, approximately 400 Mt of product coal would be produced during the life of the mine. Mining operations commenced in 2023.

3.3.2.10 Caval Ridge Mine

The Caval Ridge Mine is an open cut metallurgical coal mine operated by BMA and follows the strike of the outcropping Moranbah Coal Measures, west of IDE. Coal extraction from the Moranbah Coal Measures commenced in 2014 and is expected to continue until approximately 2056. The mine will continue to develop from its current extents in an easterly direction.

3.3.2.11 Peak Downs Mine

Peak Downs Mine is an open cut metallurgical coal mine operated by BMA and follows the strike of the outcropping Moranbah Coal Measures, immediately south of Caval Ridge Mine. Coal extraction from the Moranbah Coal Measures commenced in 1972 and is expected to continue until approximately 2113. The mine will continue to develop from its current extents in an easterly direction (the Peak Downs Continuation project).

3.3.2.12 Saraji Mine

The Saraji Mine is an open cut metallurgical coal mine located in the Bowen Basin of central Queensland and forms part of the BMA operations. The mine produces predominantly hard coking coal for the export steelmaking market and targets coal seams within the Moranbah Coal Measures. Saraji commenced operations in 1974 with mining activities extending across multiple pits and associated infrastructure areas. Current mine planning and proposed continuation projects are expected to support operations into the 2050s, extending the long term productive life of the Saraji mining complex.

3.3.2.13 Lake Vermont Mine

The Lake Vermont Coal Mine is a medium size open cut coal mine producing coking and pulverised coal injection (PCI) coal for the export market to be used in steel production, with a majority ownership held by Jellinbah Group. Mining operations at the site commenced in September 2008, with first coal production in January 2009. The planned production rate is 12 Mtpa, targeting the Rangal Coal Measures. The project has gained recent approval to extend the existing mining operation into new mining areas to the north of the current operation.

3.3.2.14 Meadowbrook Mine

The Meadowbrook Mine, also known as the Lake Vermont Meadowbrook Project, is an approved underground coal mining extension to the existing Lake Vermont operation. The project is designed primarily as a longwall underground mine, with limited supplementary open-cut mining, producing hard coking coal for the export steelmaking market. The operation is held by the Jellinbah Group and targets the Vermont Lower and Leichhardt Lower coal seams, which form part of the broader Rangal Coal Measures. Mining is planned to commence in the mid-to-late 2020s and extend the life of mining in the Lake Vermont area into the 2050s.

3.3.2.15 Moranbah Gas Project

The Moranbah Gas Project (MGP) is a coal seam gas (CSG) development operated by QPM Energy, focused on capturing gas from coal seams and waste mine gas in the Bowen Basin. The project, formerly known as the Bowen Gas Project under Arrow Energy before QPM Energy took over the Petroleum Leases (PL196, PL191, PL223, PL224), spans multiple leases north of Moranbah and is connected to five major coal mines. In continuous production since 2006, MGP currently delivers around 28–30 TJ/day of gas and operates extensive infrastructure, including 500 km of gas gathering pipelines and compression facilities with a capacity of 64 TJ/day.

3.3.2.16 Bowen Gas Project

The Bowen Gas Project is a CSG development by Arrow Energy Pty Ltd (Arrow), targeting gas within coal seams of the Rangal Coal Measures and Moranbah Coal Measures. The Bowen Gas Project proposes to extract approximately 270 GL of associated water with the gas over a period of 55 years from 6,000+ extraction wells covering an area of 9,500 km². Within the Study Area, the development of the Bowen Gas Project is only a fraction of the overall planned project.

4.0 Geology

4.1 Regional Geology

The Project is located in the northern part of the Bowen Basin, a foreland sedimentary basin of approximately 200,000 km^2 (**Figure 4-1**). The Bowen Basin is a north-northwest to south-southeast oriented basin and contains the largest coal reserves in Australia. The southern half of the Bowen Basin is covered by the Surat Basin, and the Galilee Basin exists to the west (Geoscience Australia, 2017).

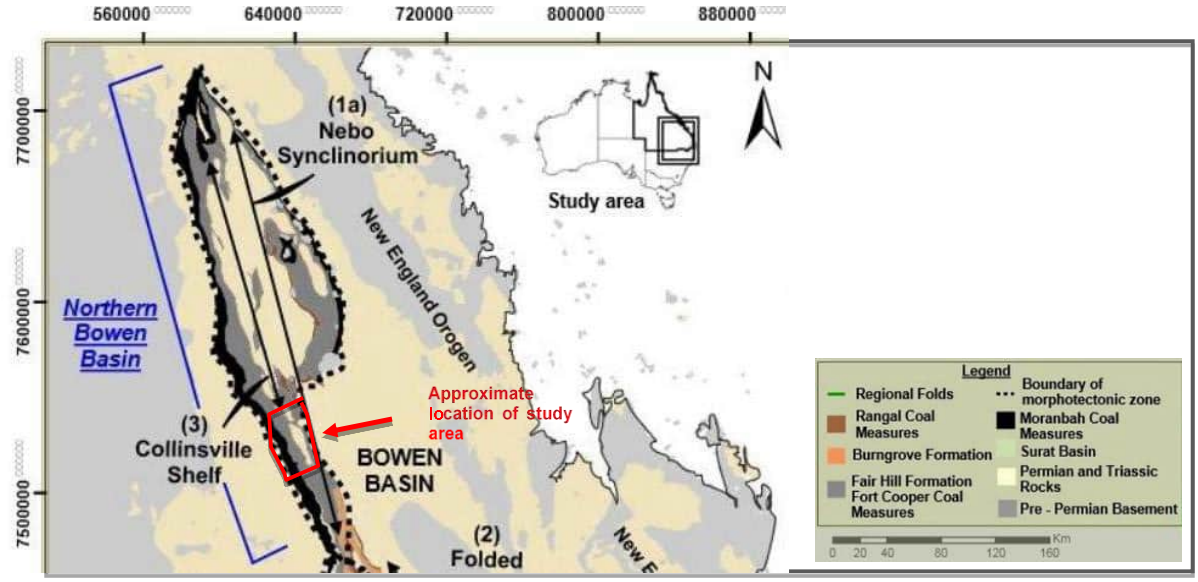


Figure 4-1 Regional geology of the Bowen Basin (after Dickens and Malone, 1973)

Basin geology within the Collinsville Shelf includes the basal Permian aged Back Creek Group, which typically comprises of fine-grained clastic sedimentary rocks deposited in a fluvial to shallow marine environment. The Back Creek Group is conformably overlain by the Blackwater Group, which includes the Moranbah Coal Measures, Fort Cooper Coal Measures and Rangal Coal Measures. The economic coal seams at the Project are contained in the Late Permian Rangal Coal Measures. The Permian strata occur at outcrop on the eastern and western edges of the Basin and are generally unconformably overlain by the Triassic aged terrestrial sedimentary rocks of the Rewan Group.

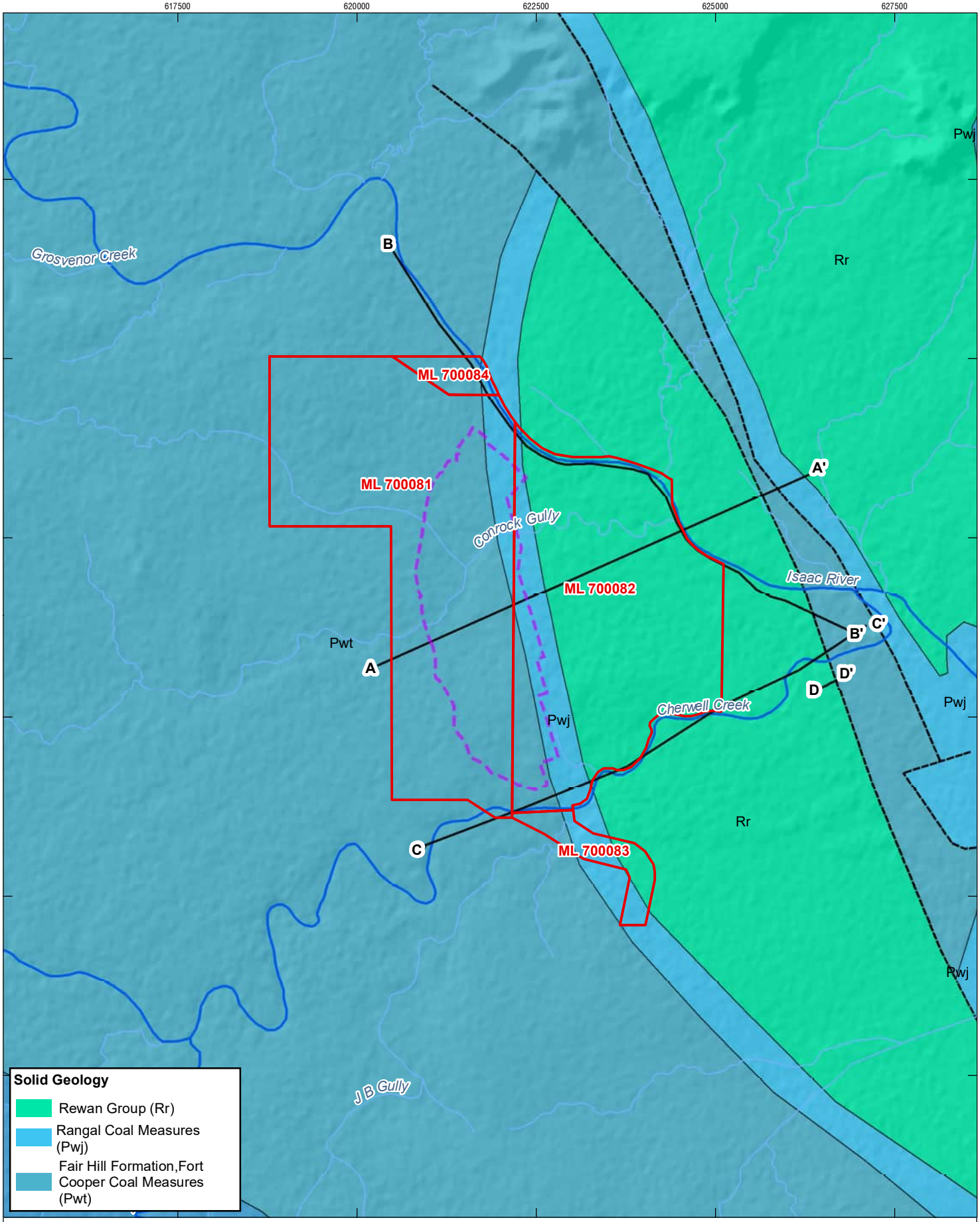
The Permian and Triassic units are covered by a thin veneer of unconsolidated to semi-consolidated Cenozoic sediments (undifferentiated Tertiary to Quaternary alluvium and colluvium, and unconsolidated to semi-consolidated Tertiary sedimentary formations), as well as Tertiary aged basalt flows. The alluvial sediments are primarily localised along surface water features (e.g. Cherwell Creek and Isaac River).

The generalised regional stratigraphy is summarised in **Table 4-1**. Local geology is described in the following section and shown in the Solid Geology map (**Figure 4-2**) (surface cover layers removed), and Surface Geology maps (**Figure 4-3**) (with cover sequence extents).

Table 4-1 Regional Stratigraphy

Period		Stratigraphic Unit		Description	Mapped Distribution	Max Thickness (m)[1]
Cenozoic		Quaternary alluvium (Qa)		Floodplain alluvium comprising clay, silt, sand and gravel deposited by major modern watercourses.	Surficial cover localised along Isaac River and Cherwell Creek	~ 50 m
		"Regolith" – Tertiary to Quaternary aged alluvium, colluvium and other sediments in floodplains, alluvial fans, and high terraces (Qr, Qr\b and TQa). Includes material derived from weathering of underlying Triassic and Permian rocks.		Shallow unconsolidated and semi-consolidated sediments and weathered units outside of Quaternary alluvium (Qa), comprising colluvial and residual deposits of poorly sorted clay, silt, sand, gravel and black soils, silts and muds derived from weathered basalts and weathering of Triassic and Permian bedrock.	Extensive surficial cover throughout the Project Area. TQa coverage throughout Project Area extending eastwards until overlain by Qa deposits and pinching out on Tu/Permian outcrop contacts. Qr distributed in central parts of the Project Area. Associated with immature mobilisation of weathered Permian rocks.	~ 20 m
Triassic		Rewan Group (Rr) (Rewan Formation and Sagittarius Sandstone)		Rewan Formation: green lithic sandstone, pebbly lithic sandstone, green to reddish brown mudstone and minor volcanolithic pebble conglomerate (at base).	Rewan Group forms the central unit within the regional syncline, outcropping to the east of the Project Area on MLA 700082.	~840
Permian	Late	Blackwater Group	Rangal Coal Measures (Pwj)	Calcareous sandstone, calcareous shale, mudstone, coal, concretionary limestone.	Occurs between Rewan Group and Fort Cooper Coal Measures, outcropping in the west of the Project Area and extending further east due to the regional syncline. Contains the economic Leichhardt and Vermont coal seams.	~100
			Fort Cooper Coal Measures (Pwt)	Coal, brown and green sandstone, conglomerate, carbonaceous shale, tuff.	Within/underlies the Project Area, with a northwest-southeast strike along the trend of mining areas. According to surface mapping Fort Cooper Coal Measures (FCCM).	~350
			Moranbah Coal Measures (Pwb)	Quartzose to sub-labile locally argillaceous sandstone, siltstone, mudstone, carbonaceous mudstone and coal.	Within/underlies the Project Area at depth. Outcrop occurs to the west of the Project Area.	~ 400
	Early to Middle	Back Creek Group		Quartzose to lithic sandstone, siltstone, carbonaceous shale, minor coal and sandy coquinite.	Within/underlies the Project Area at depth. Outcrop occurs to the west of the Project Area, west of the Moranbah Coal Measures outcrop.	~400

[1]Generalised thicknesses for regional stratigraphy, rather than Project specific



Solid Geology

- Rewan Group (Rr)
- Rangal Coal Measures (Pwj)
- Fair Hill Formation,Fort Cooper Coal Measures (Pwt)

0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	18-Mar-2026
Drawn by:	AS

- Hydrogeological/Geological Cross Section Line
- Major Watercourse
- Minor Watercourse
- IDE Project MLAs
- Approximate Project Pit Extent

Structure Geology

- Fault
- Geological Boundary

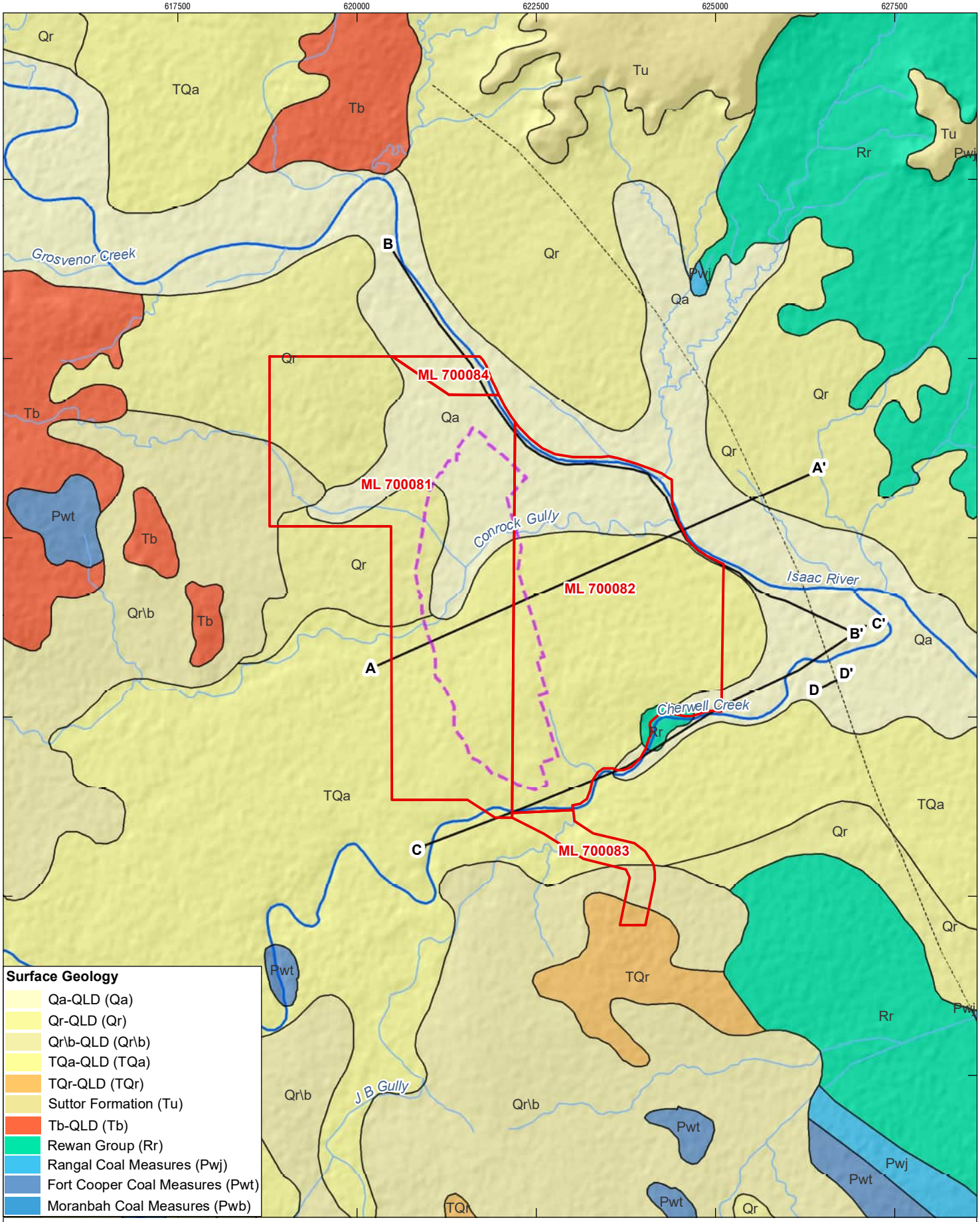
ISAAC DOWNS EXTENSION PROJECT

SOLID GEOLOGY

SLR

FIGURE 4-2

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F04_02_Solid Geology.mxd


617500
620000
622500
625000
627500
7562500
7560000
7557500
7555000
7552500
7550000
Grosvenor Creek
Conrock Gully
Isaac River
Cherwell Creek
J B Gully
ML 700084
ML 700081
ML 700082
ML 700083
A
A'
B
B'
C
C'
D
D'
Qr
TQa
Tb
Tu
Rr
Pwj
Qa
Pwt
Qr\b
TQr
Surface Geology
Qa-QLD (Qa)
Qr-QLD (Qr)
Qr\b-QLD (Qr\b)
TQa-QLD (TQa)
TQr-QLD (TQr)
Suttor Formation (Tu)
Tb-QLD (Tb)
Rewan Group (Rr)
Rangal Coal Measures (Pwj)
Fort Cooper Coal Measures (Pwt)
Moranbah Coal Measures (Pwb)
0
0.5
1
km
Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:70,000 at A4
Project Number: 620.041537.00001
Date: 18-Mar-2026
Drawn by: AS
Hydrogeological/Geological Cross Section Line
Major Watercourse
Minor Watercourse
IDE Project MLAs
Approximate Project Pit Extent
Fault approximate
Fault concealed
Geological boundary approximate
ISAAC DOWNS EXTENSION PROJECT
SURFACE GEOLOGY
SLR
FIGURE 4-3
H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F04_03_Surface Geology.mxd

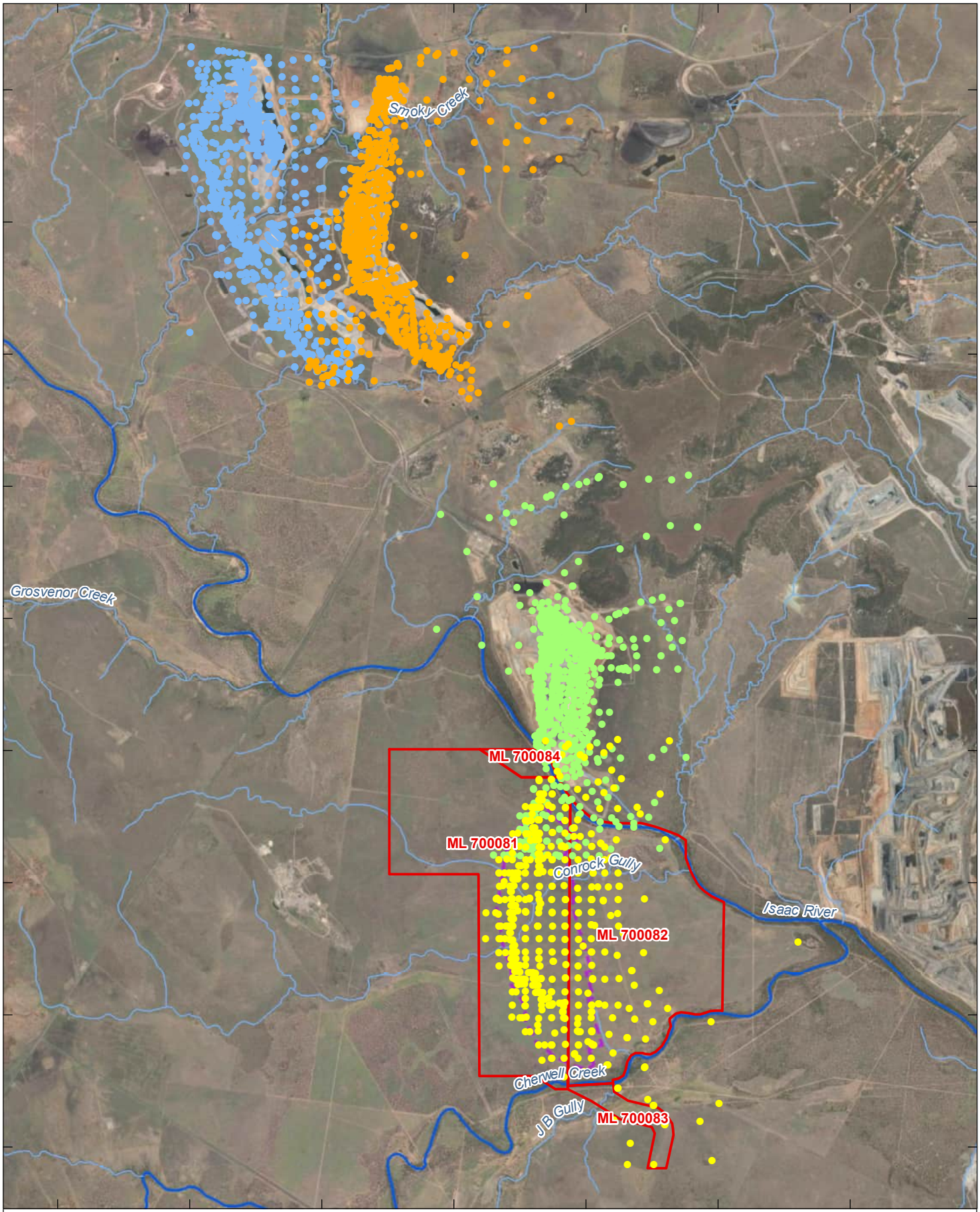
4.2 Local Geology

The local geology of the Project Area is well defined through both resource exploration and groundwater drilling, with over 500 individual drillholes at and near to the Project Area (**Figure 4-4**). Furthermore, Stanmore's extensive resource exploration and groundwater drilling at the adjoining IDM enhances the understanding of the local geology. Additional methods, including downhole geophysical surveys and electrical resistivity imaging, have further refined the geological model of the region.

The stratigraphic profile within the Project Area and surrounds comprises three distinct units:

- Cenozoic sediments:
    - Quaternary alluvium and colluvium.
    - Tertiary Alluvium, colluvium, and Regolith that includes weathered Permian strata, and weathered Tertiary basalt in places.
- Triassic Rewan Group Strata.
- Permian Strata:
    - Rangal Coal Measures.
    - Fort Coper Coal Measures (at depth).
    - Moranbah Coal Measures (at depth).

A geological cross-section (A-A') (**Figure 4-5**) illustrates the overall stratigraphy and structural geology framework of the Project Area and surrounds, depicting the spatial relationships between the main geological units. The corresponding plan view of the cross-section trace is presented in **Figure 4-2.**



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:95,000 at A4
Project Number:	620.041537.00001
Date:	06-May-2026
Drawn by:	AS

Resource Exploration Drillhole

- IDE
- ID
- IPE
- IP

- Major Watercourse
- Minor Watercourse
- IDE Project MLAs
- Approximate Project Pit Extent

ISAAC DOWNS EXTENSION PROJECT

LOCAL GEOLOGICAL CHARACTERISATION DRILLHOLES

SLR

FIGURE 4-5

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F04_04_Local Geological Characterisation Drillholes.mxd

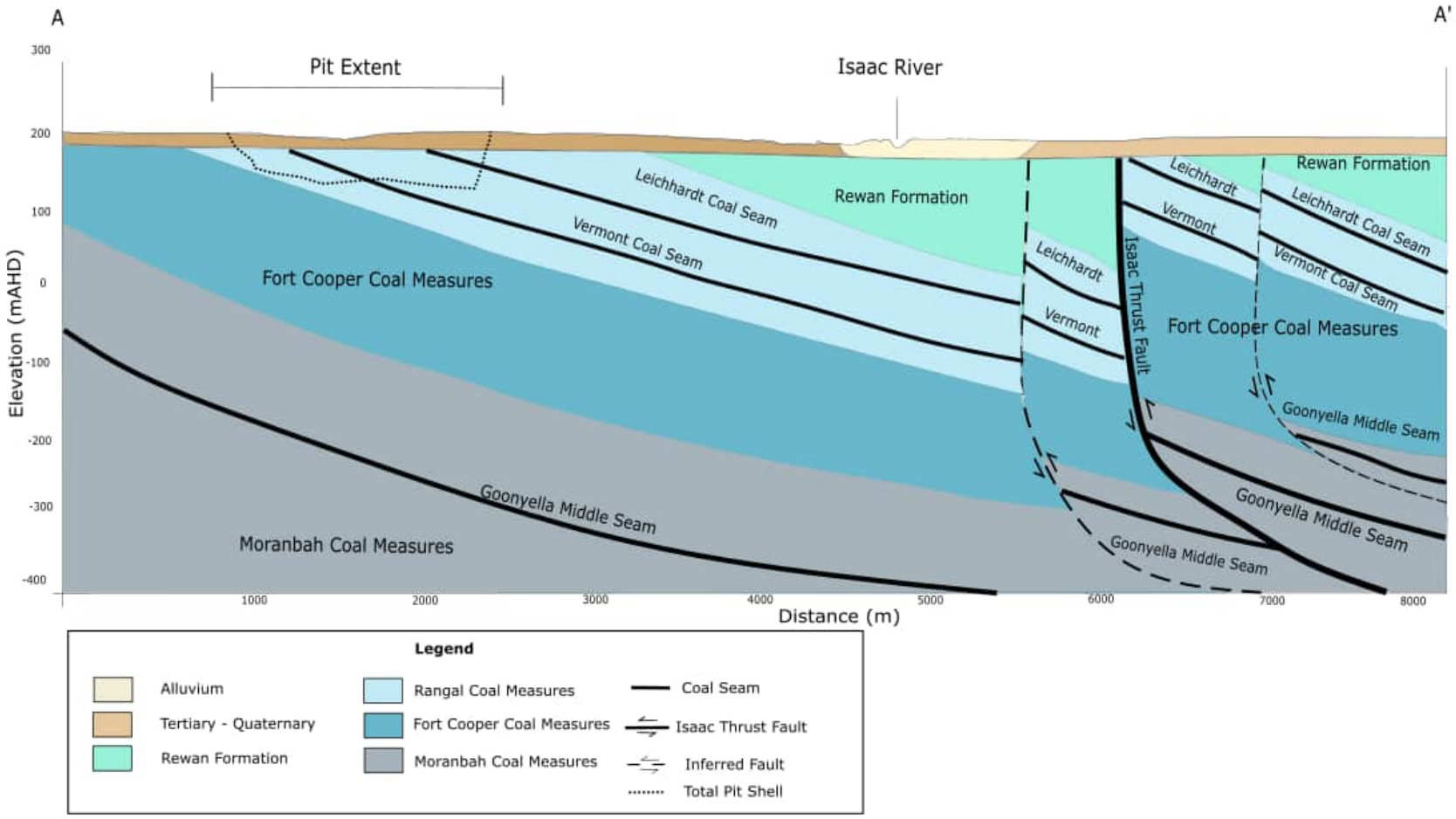


Figure 4-5 SW-NE Conceptual Geological Cross section across the IDE Project Area and proposed Project pit extent

4.2.1 Cenozoic Sediments

Cenozoic aged (Tertiary to Quaternary) sediments within and surrounding the Project Area include recent alluvium associated with the Isaac River, Cherwell Creek and other tributaries, overlying weathering derived colluvium and undifferentiated Tertiary sediments which are collectively termed Regolith in many recent studies and this GIA.

4.2.1.1 Quaternary Alluvium

General

Detailed surface geology mapping by the Queensland Government (**Figure 4-3**) identifies Quaternary alluvium (Qa) primarily along the Isaac River, which intersects the eastern portion of the Project Area. Tributaries such as Cherwell Creek, Cornock Gully, and other smaller unnamed creeks also contain mapped alluvium, with the most extensive development occurring at the confluence of the Isaac River and Cherwell Creek southeast of the Project Area.

Quaternary alluvium hereafter referred to as alluvium in the region is generally described as a geological unit of unconsolidated sequences of clay, silt, sand, and gravel, typically less than 20 m thick (AGE, 2020). Previous studies (Advisian, 2018; AGE, 2020) report that the thickest accumulations occur adjacent to the Isaac River, with locally deeper sections associated with paleochannel systems incised into bedrock (i.e., former river channels). Away from the main channel, the deposits are dominated by clay and silt derived from floodplain environments. A conceptual representation of the alluvial facies of the Isaac River is provided as **Figure 4-6**, noting this is taken from a report for IDM (AGE, 2020) and does not present Project infrastructure or mining.

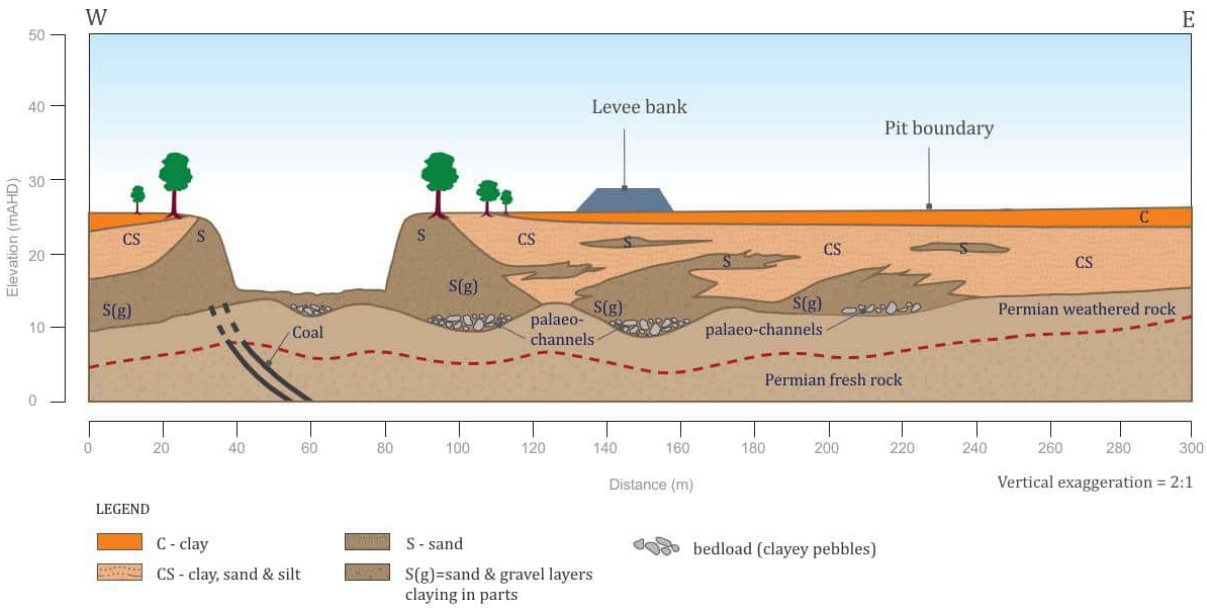


Figure 4-6 Conceptualisation of Isaac River Alluvium Facies (AGE, 2020)

Project Specific Investigations

A series of recent geological and hydrogeological investigations at and near to the Project area have helped improve the characterisation and determine the thickness of the Quaternary alluvium local to the Project Area. These include:

- Exploration drilling by Stanmore at IDE and IDM;
- Groundwater bore drilling records at IDE and IDM;
- Interpretations from geophysical surveys (Electrical Resistivity Imaging [ERI]); and
- Groundwater investigations/studies at IDM (AGE, 2020) and PTM (SLR, 2023; SLR, 2024b).

Data from these sources has been used to develop conceptual cross sections, demonstrating the shallow geological conditions along the Isaac River and Cherwell Creek in the vicinity of the Project (**Figure 4-7** and **Figure 4-8**). The location of the cross sections is shown on **Figure 4-3** and **Figure 4-9**. A discussion of the results is provided below.

Drill logs across the Project Area reveal that the alluvial sequences are composed of interbedded layers of clay, silt, sand, and gravel, reflecting fluvial depositional processes. Coarse sands and gravels are present near active surface drainage channels, particularly adjacent to the Isaac River, where alluvium thicknesses of 15 to 20 m have been recorded. These deposits thin progressively toward floodplain margins, where finer grained sediments such as clay and silt become more prevalent. This compositional variability is consistent with regional investigations at IDM and PTM (AGE, 2020; SLR, 2023; SLR, 2024b), which reported similar facies transitions from coarse channel deposits to finer floodplain sediments with distance away from the modern Isaac River channel.

Interpretation of ERI geophysical survey data, in conjunction with drillhole data, has refined the mapped extent of alluvium within and adjacent the Project Area. Along the southwest of Cherwell Creek, ERI revealed a ~5 m thick high-resistivity zone interpreted as alluvium, extending approximately two km further west along the creek than previously mapped in State surface geology mapping. This interpretation is supported by lithological data from monitoring drill holes in the area which recorded a 6 m thick alluvial sequence of sands and clay-bound sand, supporting a localised 2 km lateral extension of mapped alluvium along the further upstream part of Cherwell Creek.

Similarly, ERI Line 5, which runs northward perpendicular to Cherwell Creek, identified a 250 m northward zone of high-resistivity dry sands, interpreted as a northward extension of alluvium. This extension aligns with observable changes in remnant vegetation on satellite imagery. The ERI interpreted alluvium grades into a thin layer of clay rich sediments away from the modern Cherwell Creek channel. Comparable relationships have been observed at the Winchester South site to the south east of IDE, where geophysical surveys mapped shallow, laterally variable Isaac River alluvium thinning away from the modern river channel (SLR, 2020). Further ERI and drillhole data interpretations south of the Isaac River and west of the Cherwell Creek confluence, together with borehole lithology, confirm that the remaining mapped alluvium extent is consistent with Queensland Government surface geology mapping and validated by drill log data in these areas.

Alluvium extent along Cherwell Creek is more closely associated with the modern channel compared to the broader Isaac River floodplain. Near the confluence with the Isaac River, saturated alluvial sediments up to 14 m thick have been recorded. Alluvial deposits also extend along Conrock Gully within the Project Area, although they are thinner (generally <10 m) than those along the Isaac River.

Several paleochannels filled with gravel and coarse sediments have been identified, up to 15 m thick. Paleochannels were identified from drillhole data at groundwater bores MBIS12, and

MBIS19 and explain localised variations in alluvium thickness. ERI data (e.g., segment L1G along Cherwell Creek) confirms their presence and distribution. These findings are consistent with nearby investigations at IDM and PTM (AGE, 2020; SLR, 2023; SLR, 2024b), that identified deeper alluvial deposits in paleochannels and coarser sand facies near active channels grading to clay-silt floodplain deposits laterally.

The above investigations and data supported a re-assessment of alluvium extent and thickness local to IDE, as shown in **Figure 4-9**. The alluvium extent shown on **Figure 4-9** is based on multiple assessments and iterative refinements of the extent from surrounding mines, as additional drilling and geophysical investigations were conducted along the Isaac River and Cherwell Creek. Where field specific data on alluvium thickness is not available (e.g. areas outside the Project area, upstream of Isaac River and Cherwell Creek), alluvium thickness is based on publicly available mapped geology and data from surrounding mines and has been iteratively interpolated for model layering using data from these mines over the lifespan of the Central Bowen model.

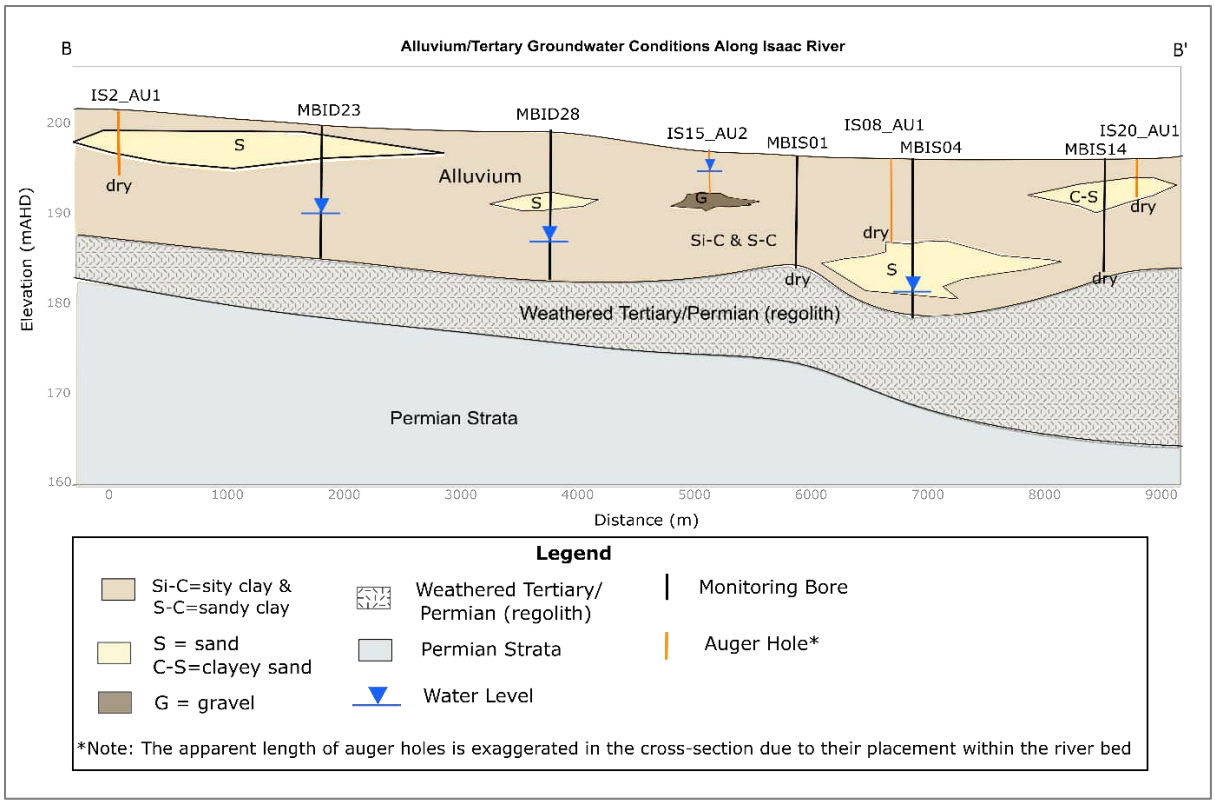


Figure 4-7 NW-SE Cross Section of the Alluvium along the Isaac River

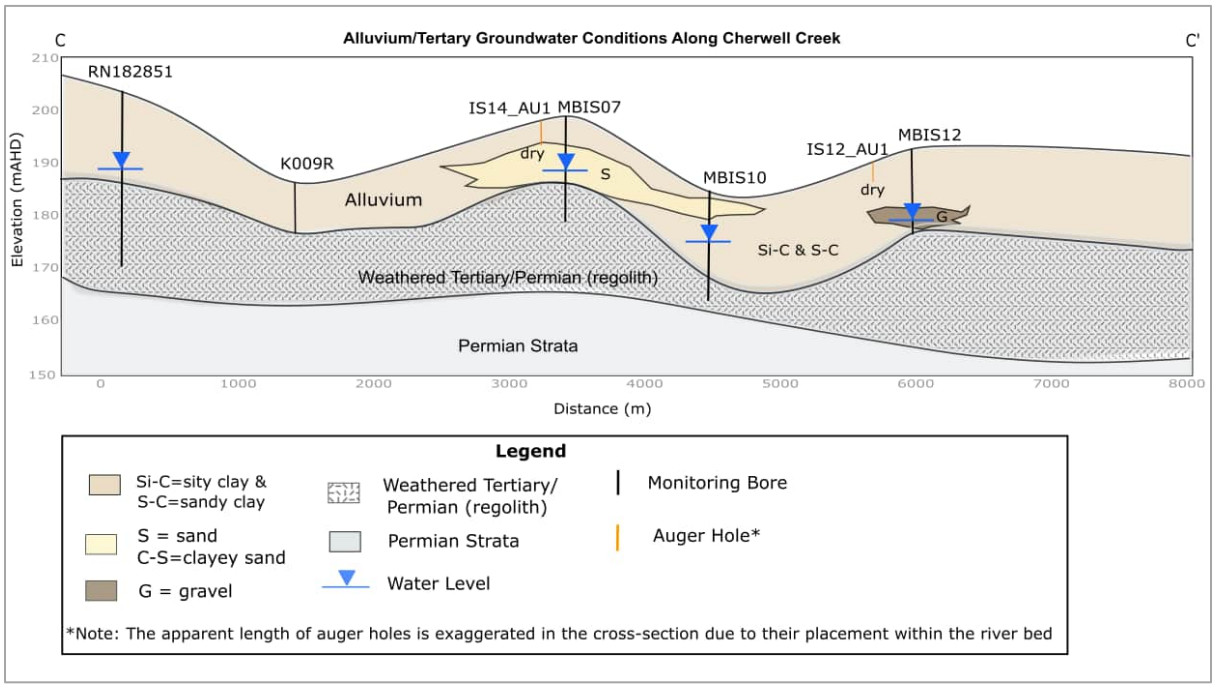
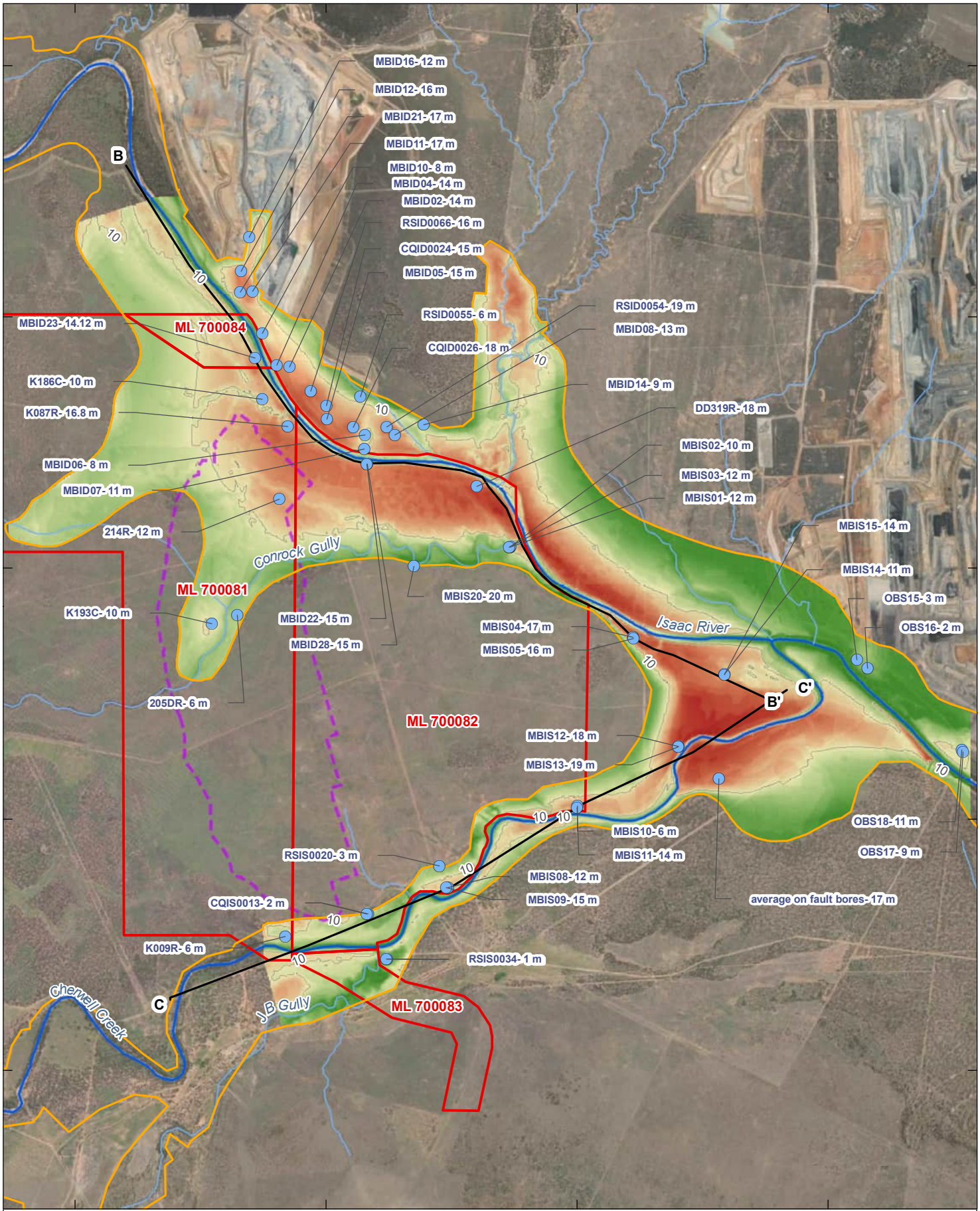


Figure 4-8 SW-NE Cross Section of the Alluvium along Cherwell Creek



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537.00001
Date:	06-May-2026
Drawn by:	AS

SLR

- Bore
- Major Watercourse
- Minor Watercourse
- Hydrogeological/Geological Cross Section Line
- IDE Project MLAs
- Approximate Project Pit Extent
- Alluvium Extent
- Alluvium Contour (m)

Alluvium Thickness (m)

20

0

ISAAC DOWNS EXTENSION PROJECT

INTERPRETED EXTENT AND THICKNESS OF ALLUVIUM

FIGURE 4-9

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F04_09_Interpreted Extent and Thickness of Alluvium.mxd

4.2.2 Regolith

The surface geology across the broader Study Area, outside of the extent of Quaternary alluvium, is dominated by Cenozoic-aged sediments (Quaternary to Tertiary) comprising a mix of colluvium and semi-consolidated, undifferentiated materials. These materials have been collectively referred to as 'regolith' in this GIA and other previous investigations given they function in a hydrogeological sense as one interconnected unit. The regolith also includes older alluvial deposits (mapped as TQa), which are widespread throughout the Study Area.

The regolith is lithologically heterogeneous, consisting of varying proportions of fine- to coarse-grained sand, clay, claystone and highly weathered siltstone and sandstone. At the adjacent IDM and PTM sites, Tertiary-aged materials are typically 8–25 m thick and directly overlie weathered Permian bedrock (SLR, 2024d; AGE, 2020).

Drilling data from groundwater monitoring and exploration boreholes at and adjacent the Project Area indicate that unconsolidated to semi-consolidated Tertiary sediments underlie the Quaternary alluvium to depths of approximately 20 m. These Tertiary units are predominantly composed of low strength, weathered siltstone and fine-grained sandstone. In areas dominated by colluvial processes away from drainage lines - such as at bore MBIS17 to the southeast of Cherwell Creek - the regolith includes clay, clayey sand, and mudstone.

Regionally, Tertiary basalt is also known to occur within paleovalleys incised into the underlying Permian–Triassic bedrock. However, basalt is absent from the Project Area. The nearest confirmed occurrence is ~4 km to the west of the Project Area, where it was intercepted during drilling of Moranbah South Project groundwater monitoring bores MB06, MB07, and MB09C. According to AGE (2020), a basalt flow is also present within a north-south oriented paleovalley system at the IDM, with evidence of lateral overflow deposits adjacent to the main valley. Within the paleochannel, the basalt can reach substantial thicknesses, exceeding 80 m in some locations, while on the flanks of the channel, the basalt becomes much thinner, typically ranging from 1 to 5 m in thickness.

4.2.3 Triassic Rewan Group

The consolidated Triassic sedimentary strata include the Rewan Group, which dips to the east and unconformably overlies the Permian coal measures, outcropping in the east of the Project Area. The Rewan Group regionally comprises Late Permian to Early Triassic strata with pebbly lithic sandstone, green to reddish brown mudstone and minor volcano lithic pebble conglomerates.

The Rewan Group is extensive over the eastern and northern parts of the Project Area, outcropping and sub-cropping in a number of places. Where intersected within the Project Area, the unit is generally comprised of a well consolidated pink-brown sandstone.

4.2.4 Permian Coal Measures (Blackwater Group)

Permian coal-bearing sedimentary rocks of the Blackwater Group form the main economic resource of the numerous mines in the Study Area. In increasing depth order, the major coal measures within the Study Area include the:

- Rangal Coal Measures.
- Fort Cooper Coal Measures.
- Moranbah Coal Measures.

4.2.4.1 Rangal Coal Measures

The Rangal Coal Measures (RCM) are ~ 100 m thick and dip 2 to 6 degrees to the east-northeast in the Project Area. It marks the youngest of the Blackwater Group coal measures, and overlies the Fort Cooper Coal Measures. The transition between the RCM and the Fort Cooper Coal Measures is marked by the Yarrabee Tuff, which lies between the Vermont Upper Seam and Vermont Lower Seam. The Yarrabee Tuff is a basin-wide marker bed comprised of weak, brown tuffaceous claystone, with an average thickness of 0.7 m.

The RCM comprise light grey, cross-bedded, fine to medium grained labile and well cemented sandstones, grey siltstones, mudstones, shale and coal seams. The non-coal portions of the sequence being predominantly sandstones, siltstones, mudstone and shales are referred to as interburden in the mining context. The Leichhardt and Vermont Seams occur within the RCM and are the target for mining at the Project. The coal seams are generally 1 to 2 m thick and comprise several coal plies separated by dark grey carbonaceous siltstones. In the Project Area, the Leichhardt and Vermont seams occur as two distinct seams separated by ~30 to 40 m of non-coal interburden strata. Regionally, the Leichhardt and Vermont seams can also occur as a singular coalesced package, in very close proximity (AGE, 2020).

In addition to IDM, the RCM are also mined at the nearby PTM, Millennium, Daunia and Olive Downs mines.

4.2.4.2 Fort Cooper Coal Measures

The Fort Cooper Coal Measures (FCCM) conformably underlie the RCM regionally and at the Project. The transition between the RCM and the FCCM is marked by the Yarrabee Tuff marker bed comprised of weak, brown tuffaceous claystone. Regionally, the formation has a maximum thickness of approximately 350 m (HydroSimulations, 2018a) and drill logs indicate the FCCM comprise lithic sandstone, conglomerate, mudstone, carbonaceous shale, coal, tuff and tuffaceous (cherty) mudstone.

4.2.4.3 Moranbah Coal Measures

The Moranbah Coal Measures (MCM) conformably underlie the FCCM. The MCM underlies the Project Area, at significant depth. The unit has little direct relevance to the Project's GIA. The Goonyella Middle Seam of the MCM is the target for mining at the adjacent Moranbah South Project, and the MCM is also mined at Caval Ridge, Peak Downs and Saraji mines to the west/southwest.

4.2.5 Structural Geology

4.2.5.1 General

The Bowen Basin was subject to significant tectonic compression from the eastern side at the end of coal deposition in the late Triassic. The compression from the eastern side caused major thrust faulting, which resulted in the commercial viability of mining the coal deposits across the region. The current structural geology is relatively stable, and faulting has been inactive within the Bowen Basin for over 140 million years (Clark *et al.*, 2011). Locally, the geology at IDE has undergone extensive deformation, including folding and faulting.

The Project Area is generally along the western margin of the synclinal structure dominated by north- northwest trending open folds, that plunge gently to the south-southeast and have caught up the Triassic and Permian lithologies (hence the east-northeast dip of the Triassic and Permian lithologies).

The Project Area and surrounds is affected by local and regional faults generally trending northwest to southeast (Advisian, 2018). Faulting in the Project Area is interpreted to extend up to the base of weathering beneath the Isaac River (AGE, 2020). The main regional scale fault in the vicinity of the Project is the north-northwest trending reverse Isaac Thrust Fault, which forms a wide zone of heavily fractured "fault complex" and associated secondary northwest trending fault splays, with throws of up to 100 m. The Isaac Thrust Fault is mapped to the east of the Project Area. The location of the Queensland Government mapping of these faults are shown on **Figure 4-2** and conceptual geological cross section shown in **Figure 4-5**.

4.2.5.2 Isaac Thrust Fault Characterisation and Interpretation

As described in **Section 1.4** an exploration drilling program was undertaken to delineate and characterise the Isaac Thrust Fault immediately east of the Project Area. A key objective was to install a dedicated monitoring bore within the fault core to enhance understanding of its hydrogeological properties, building upon previous fault characterisation undertaken at the Winchester South Project to the south (SLR, 2022).

To accurately delineate the fault immediately east of the Project Area, five exploratory air-rotary chip holes were drilled in 2025 across geological strike (**Table 4-2** and **Figure 4-10**). These chip holes provided key subsurface geological data, enabling identification of the fault's location, depth, and structural characteristics.

Key stratigraphic markers used to identify fault displacement included offsets in the Lower Vermont coal seam, which is regionally overlain by the Yarrabee Tuff. The tuff provided a reliable lithostratigraphic reference (as it does across the Bowen Basin), allowing for precise correlation and structural interpretation. Evidence of faulting was further supported by drilling behaviour such as loss of circulation during drilling (often indicative of fractured fault zones), and limited chip recovery in some holes. Despite limited chip recovery, signs of hydrothermal alteration and secondary mineralisation, including calcite and chlorite, was evident on some chips, indicating fault-related fluid movement (see **Appendix F** for drill hole details and bore logs). It is noted that similar secondary mineralisation was identified in the fault investigation conducted at the Winchester South Project and was inferred to indicate a degree of fault 'healing' post fault forming episodes (SLR, 2022).

Faulting was evident across all five exploratory drillholes, likely due to the presence of a shallow dip angle to the fault structure (typical of reverse thrust faults) combined with a broad zone of deformation and secondary faulting associated with the main fault structure. Detailed analysis of lithology and geophysical data identified significant faulted zones/structures in drillholes RFIS0060, RFIS0062, and RFIS0064 (**Table 4-2** and **Appendix F**, and **Figure 4-10**). NMR logging at these holes provided high-resolution vertical profiles of inferred porosity and hydraulic conductivity, enabling identification of permeability contrasts across the fault zone and the relatively undisturbed RCM strata above and below the fault zone. Higher inferred permeability zones less than 0.5 m thick were identified at various depths at all three drill holes where NMR was conducted. However, at hole RFIS0062, a substantially larger zone, approximately 2 m thick, of higher inferred hydraulic conductivity was observed at 116 m AHD (see **Table 4-2**).

This interval provided the clearest evidence of the Isaac Thrust Fault core, with NMR data indicating significantly higher permeability relative to the surrounding lithologies.

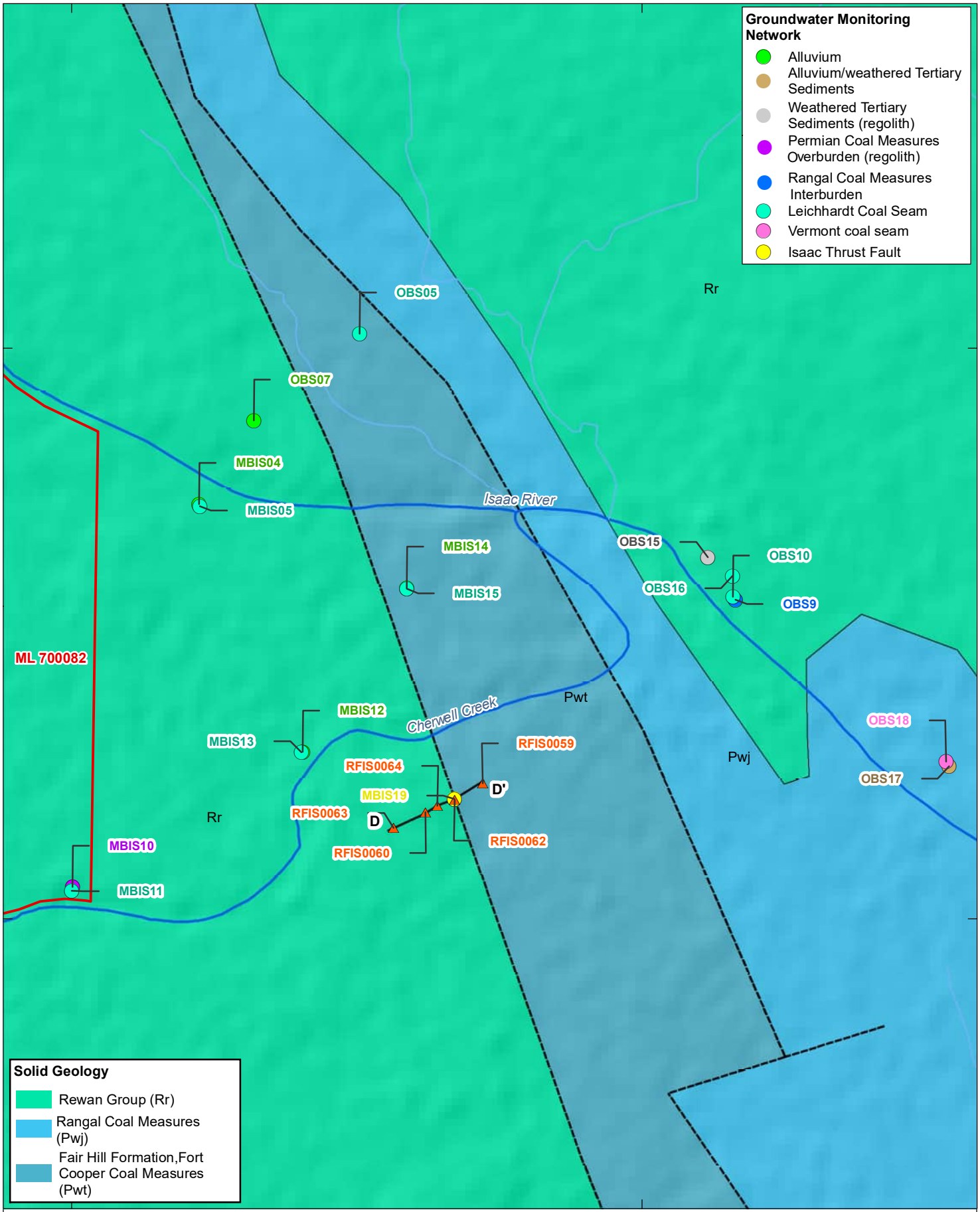
As a result, monitoring bore MBIS19 was installed at this location, with the screen interval designed to target the most permeable zone within the fault structure as identified in the NMR data. **Section 5.0** provides discussions of the resulting groundwater information from this bore.

Table 4-2 Fault Exploration Drillhole Summary

Bore ID	Easting (AGD84)	Northing (AGD84)	Total Depth (mBGL)	Ground Level (mAHD)	NMR Recorded Higher K (m AHD)
RFIS0059	626689	7555413	145	198	NA[1]
RFIS0060	626437	7555285	175	198	162
RFIS0062	626566	7555339	145	197	164, 116
RFIS0063	626298	7555216	97	198	NA[1]
RFIS0064	626490	7555314	193	198	154, 94, 47

1. NA = NMR not conducted

Analysis of lithological data and downhole geophysical logging informed delineation of the fault core and supported a localised characterisation of the Isaac Thrust Fault, summarised in the cross-section presented in **Figure 4-11**. Based on the vertical displacement of coal seams and the horizontal distance between drillholes, a dip angle of approximately 5 degrees was calculated. This is consistent with regional fault geometry and confirms a southwest-directed fault throw of approximately 100 m.


625000
627500
7557500
7555000
Groundwater Monitoring Network
Alluvium
Alluvium/weathered Tertiary Sediments
Weathered Tertiary Sediments (regolith)
Permian Coal Measures Overburden (regolith)
Rangal Coal Measures Interburden
Leichhardt Coal Seam
Vermont coal seam
Isaac Thrust Fault
OBS05
OBS07
MBIS04
MBIS05
MBIS14
MBIS15
OBS15
OBS10
OBS16
OBS9
OBS18
OBS17
ML 700082
MBIS12
MBIS13
MBIS10
MBIS11
RFIS0059
RFIS0064
MBIS19
RFIS0063
RFIS0060
RFIS0062
D
D'
Isaac River
Cherwell Creek
Rr
Pwt
Pwj
Solid Geology
Rewan Group (Rr)
Rangal Coal Measures (Pwj)
Fair Hill Formation,Fort Cooper Coal Measures (Pwt)
0
250
500
m
Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:22,000 at A4
Project Number: 620.041537.00001
Date: 30-Sep-2025
Drawn by: AS
Fault Exploration Drill Hole
Major Watercourse
Minor Watercourse
IDE Project MLAs
Hydrogeological/Geological Cross Section Line
Structure Geology
Fault
Geological Boundary
ISAAC DOWNS EXTENSION PROJECT
ISAAC THRUST FAULT INVESTIGATION
FIGURE 4-10
H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F04_10_Isaac Thrust Fault Investigation.mxd

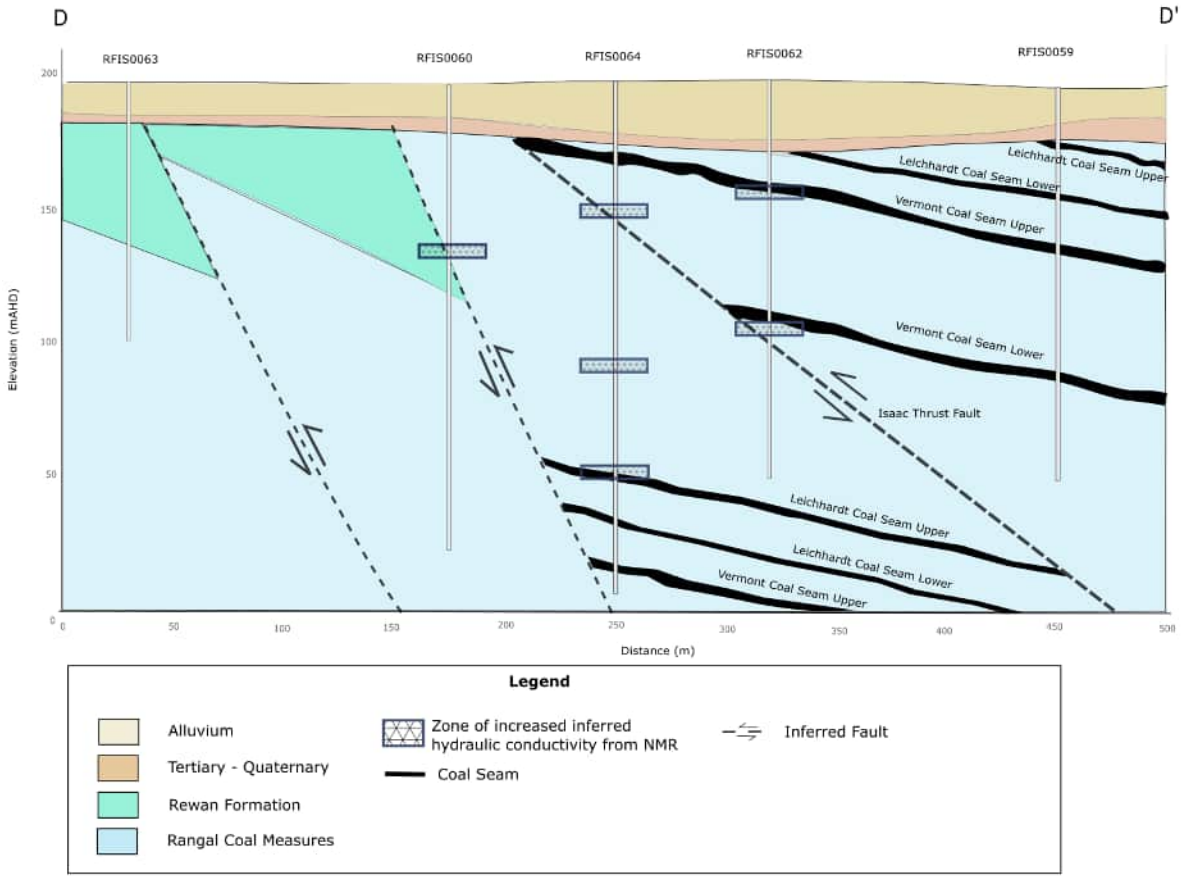


Figure 4-11 Localised SW-NE Geological Cross Section Across Fault Investigation Drillholes

5.0 Hydrogeology

5.1 Overview

Based on the understanding of the geological setting presented in **Section 4.0**, the hydrogeological regime located within the Project Area comprises the following key hydrogeological units:

- Cenozoic sediments:
  - Quaternary alluvium (i.e. alluvium) – forms the unconfined alluvial aquifer (sporadically water-bearing strata of permeable unconsolidated sand or gravel with interlayered clays and silts) localised to major ephemeral drainage lines (Isaac River and Cherwell Creek) in the Project area and in the Study Area.
    - Perched groundwater systems are likely to occur within the alluvium. These are discrete groundwater units sitting above the alluvial water table / aquifer and are separated by unsaturated zone. Downward percolation of groundwater in these perched systems is restricted by a material of localised low permeability such as a clay lens.
  - Quaternary to Tertiary non-alluvial sediments and weathered units (collectively termed 'regolith') – unconfined unit with variable but limited saturation and generally present at the surface within the Project Area.
- Triassic Rewan Group – Considered a regional scale aquitard, however, some saturated more hydraulically conductive horizons exist within, particularly within the upper weathered zone. The Rewan Group subcrops on the eastern side of the Project Area.
- Permian coal measures with:
  - Low permeability interburden and overburden units with aquitard properties.
  - Coal seams that exhibit water bearing properties associated with secondary porosity through cracks and fissures.

A note on terminology used for the alluvium in this report. Bore data, and numerical modelling presented herein relate to groundwater conditions within the alluvial aquifer (alluvium). Perched groundwater systems are only referenced in the context of GDEs and are referred to as "Perched groundwater systems". None of the groundwater monitoring bores intersect perched systems; therefore, all monitoring and modelling results in this report relate solely to the alluvial aquifer. Perched groundwater systems associated with GDEs are discussed in **Section 5.7.2.** When referring to water in the alluvium in this report, this relates to water in the alluvial aquifer, unless specifically describing the perched groundwater systems.

The coal seams within the Permian RCM are the main aquifer units in the Project Area. The coal seams can be characterised as confined aquifers, with the Leichhardt and Vermont coal seams forming the main aquifer units locally. The RCM overburden and interburden act as aquitards and are typically dry, or very low yielding.

Note again that as IDE is located immediately south of IDM, along geological strike, the hydrogeology is very similar between that site and the Project. AGE (2020) discussed the hydrogeology of IDM, and information presented therein has been drawn on for this report where relevant.

5.2 Groundwater Monitoring

5.2.1 IDE Project Monitoring Network

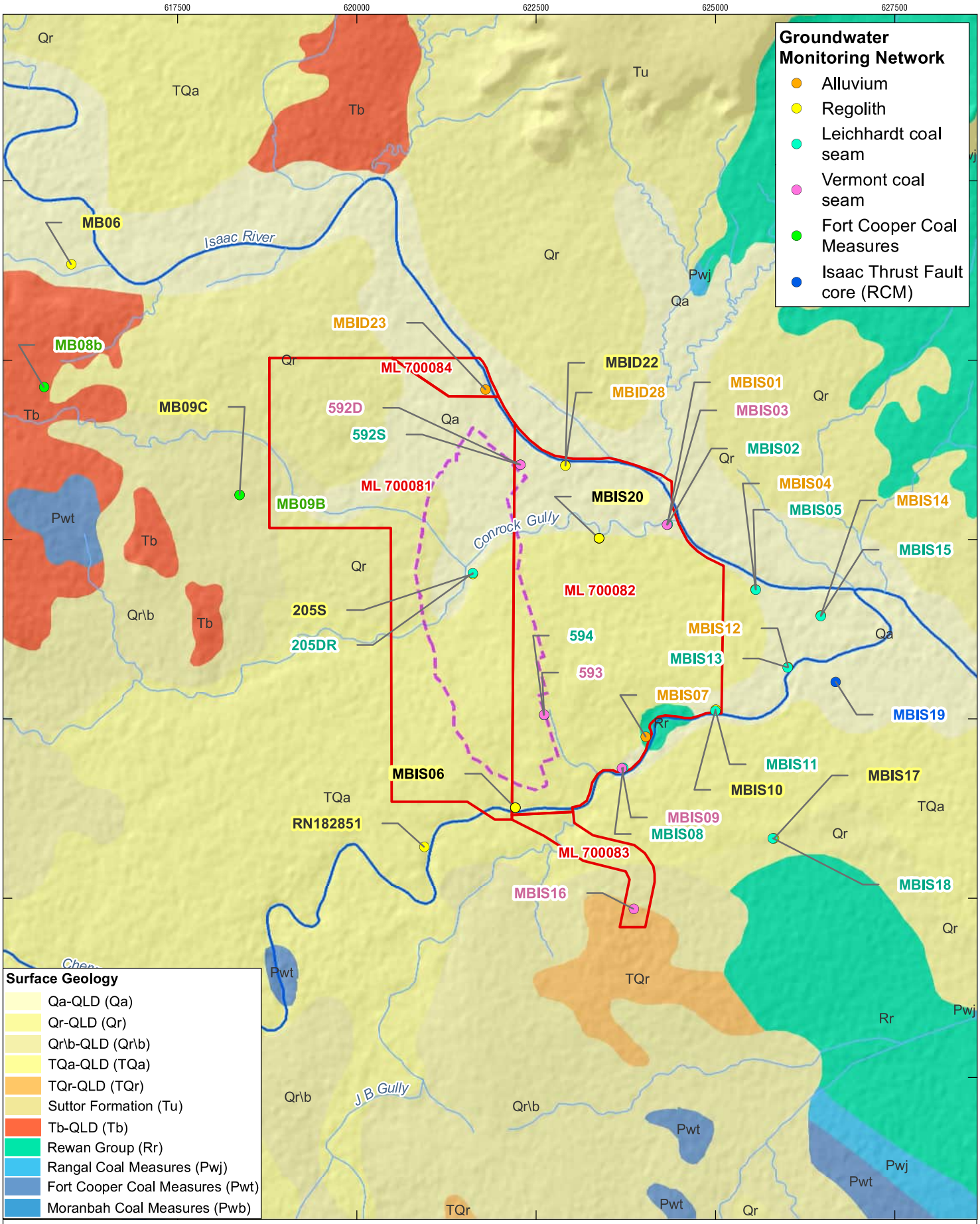
The Project groundwater monitoring network, developed from the field programs detailed in **Section 1.4** is presented in **Table 5-1** and shown in **Figure 5-1**. Also provided in **Table 5-1** is the indication of the data availability from the monitoring network to inform this GIA. A total of 34 bores form the Project's baseline groundwater monitoring network, and includes:

- Nine bores targeting Quaternary alluvium (associated with either Isaac River, Cherwell Creek or Cornock Gully).
- Seven bores targeting the Regolith (colluvium, Tertiary basalts, Tertiary sediments, weathered Rewan Group and shallow highly weathered RCM overburden).
- Ten bores targeting the Leichhardt coal seam of the RCM.
- Five bores targeting the Vermont coal seam of the RCM.
- One bore targeting the core of the Isaac Thrust Fault within the RCM.
- Two bores targeting the FCCM.

Table 5-1 Isaac Downs Extension Groundwater Monitoring Network

Bore ID	Easting (AGD84)	Northing (AGD84)	Surface Elevation (mAHD)	Total Depth (mBGL)	Screen Top Elevation (mAHD)	Screen Base Elevation (mAHD)	Monitored Unit	Install Date	Bore Status	WL Data Availability	WQ Data Availability
MBID23	621681	7559410	198.86	14	191.36	185.36	Alluvium	28-06-20	Active	May-21 – Oct 25	May-21 – Oct 25
MBID28	622797	7558353	198.37	16	186.37	183.37	Alluvium	29-06-20	Active	May-21 - Oct 25	May-21 – Oct 25
MBIS01	624220	7557525	196.88	22	187.88	184.88	Alluvium	13-05-25	Active	May-25 - Oct-25	dry bore
MBIS04	625445	7556627	195.89	19	183.89	177.89	Alluvium	05-05-25	Active	May-25 - Oct-25	May-25 – Oct 25
MBIS07	623916	7554568	199.9	19	190.90	187.90	Alluvium	15-06-25	Active	Jun-25 - Oct-25	Jun-25 - Oct 25
MBIS12	625900	7555541	196.66	20	181.66	178.66	Alluvium	21-05-25	Active	May-25 - Oct-25	May-25 - Oct 25
MBIS14	626356	7556261	194.67	11	187.67	184.67	Alluvium	11-06-25	Active	Jun-24 - Oct-25	dry bore
MBIS20	623262	7557334	198.88	22	181.88	178.88	Regolith	06-07-25	Active	Aug-25 - Oct-25	Aug-25 - Oct-25
MBIS06	622094	7553583	185.54	12.4	178.54	175.54	Regolith	18-11-22	Active	Nov-24 - Oct-25	dry bore
MBIS17	625707	7553156	200.84	23	183.84	180.84	Regolith	16-11-22	Active	May-21 - Nov-25	dry bore
MB06	615903	7561156	206	23	190.18	184.18	Regolith	11-08-12	Active	Nov-24 - Nov-25	Nov-24 – Nov 25
MB09C	618252	7557938	213	15	203.68	197.68	Regolith	15-06-12	Active	Mar-25 - Oct-25	dry bore
MBID22	622793	7558352	198.52	25	174.52	162.52	Regolith	26-06-20	Active	Jan-23 - Oct-25	Jan-23 - Oct 25
RN182851	620826	7553036	208	35	202.45	173.95	Regolith	31-05-21	Active	Nov-24 - Oct-25	Nov-24 - Oct 25
205S	621504	7556838	201.46	26	unkown	unkown	Regolith	unkown	Active	2026 & Nov-24 - Nov-25	Jun-25 - Nov 25
MBIS10	624891	7554950	183.93	24.15	166.43	160.43	Regolith	26-11-22	Active	Dec-24 - Oct-25	Dec-24 - Oct 25
205DR	621504	7556849	201.33	47	158.33	155.33	Leichhardt coal seam	15-06-25	Active	2026 & Nov-24 - Nov-25	Jul-25 - Nov 25
592S	622166	7558360	200.23	57	unkown	unkown	Leichhardt coal seam	unkown	Active	2026 & Sep-22 - Oct-25	Sep-22 - Oct 25
594	622498	7554874	216.03	47	unkown	169.15	Leichhardt coal seam	unkown	Active	2026 & May-21 - Sep-25	May-21 - Oct 25
MBIS02	624225	7557529	196.98	138	63.98	60.98	Leichhardt coal seam	29-05-25	Active	Jul-25 - Nov-25	Jul-25 - Nov 25
MBIS05	625449	7556618	195.96	155	47.96	41.96	Leichhardt coal seam	09-05-25	Active	May-25 - Nov-25	Jul-25 - Nov 25
MBIS08	623600	7554137	202.53	50	160.53	154.53	Leichhardt coal seam	19-11-22	Active	Nov-24 - Oct-25	Dec-24 - Oct 25
MBIS11	624888	7554933	199.15	94	109.15	106.15	Leichhardt coal seam	13-05-25	Active	Jul-25 - Nov-25	Jul-25 - Nov-25
MBIS13	625895	7555538	196.71	153	47.71	44.71	Leichhardt coal seam	22-05-25	Active	May-25 - Nov-25	Jul-25 - Nov 25
MBIS15	626357	7556255	194.46	52	152.46	143.46	Leichhardt coal seam	12-06-25	Active	Jul-25 - Oct-25	Jun-25 - Oct 25
MBIS18	625689	7553154	200.92	150	54.92	51.92	Leichhardt coal seam	16-11-22	Active	Nov-24 - Nov-25	Mar-25 - Nov 25
592D	622166	7558360	200.23	86	unkown	unkown	Vermont coal seam	unkown	Active	2026 & Sep-22 - Oct-25	Sep-22 - Oct 25
593	622497	7554875	216.04	95	unkown	121.04	Vermont coal seam	unkown	Active	2026 & May-21 - Oct-25	May-21 - Oct 25
MBIS03	624211	7557525	196.66	181	25.66	15.66	Vermont coal seam	16-05-25	Active	May-25 - Nov-25	Jul-25 - Nov 25
MBIS09	623585	7554134	202.57	96.41	122.57	110.57	Vermont coal seam	18-11-22	Active	Nov-24 - Oct-25	Dec-24 – Oct 25

Bore ID	Easting (AGD84)	Northing (AGD84)	Surface Elevation (mAHD)	Total Depth (mBGL)	Screen Top Elevation (mAHD)	Screen Base Elevation (mAHD)	Monitored Unit	Install Date	Bore Status	WL Data Availability	WQ Data Availability
MBIS16	623748	7552170	213.58	69.19	154.58	146.58	Vermont coal seam	15-11-22	Active	Nov-24 - Nov-25	Dec-24 – Nov 25
MBIS19	626565	7555334	197.28	86	118.28	112.28	Isaac Thrust Fault core (RCM)	05-08-25	Active	Aug-25 - Nov-25	Aug-25 - Nov-25
MB08b	615524	7559448	228	84.2	157.43	145.43	Fort Cooper Coal Measures	01-09-12	Active	Nov-24 - Nov-25	Nov-24 – Nov 25
MB09B	618252	7557938	213	36	188.68	176.68	Fort Cooper Coal Measures	15-06-12	Active	Nov-24 - Oct-25	Mar-25 - Oct 25



Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	20-Mar-2026
Drawn by:	AS

ISAAC DOWNS EXTENSION PROJECT

ISAAC DOWNS EXTENSION MONITORING NETWORK

SLR

FIGURE 5-1

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_01_Isaac Downs Extension Monitoring Network.mxd

5.2.2 Other Monitoring Networks

IDM is located immediately adjacent (northwest) and along geological strike from the Project. As a result, groundwater monitoring bores from IDM have been incorporated into this GIA as relevant to characterisation of the baseline setting at the Project, particularly for bores around the southern/southeastern boundary of IDM, adjoining the Project area:

- Eleven bores targeting the Alluvium associated with the Isaac River.
- Three bores targeting weathered Rewan Group.
- Two bores targeting the Leichhardt Seam of the RCM.
- One bore targeting the Vermont Seam of the RCM
- One bore screened across both the Leichhardt and Vermont seams of the RCM.

The PTM is also located immediately adjacent to the Project (northeast). Groundwater monitoring bores from PTM have been incorporated into this GIA as relevant to characterisation of the baseline setting at the Project, particularly for bores around the east/southeastern boundary of PTM:

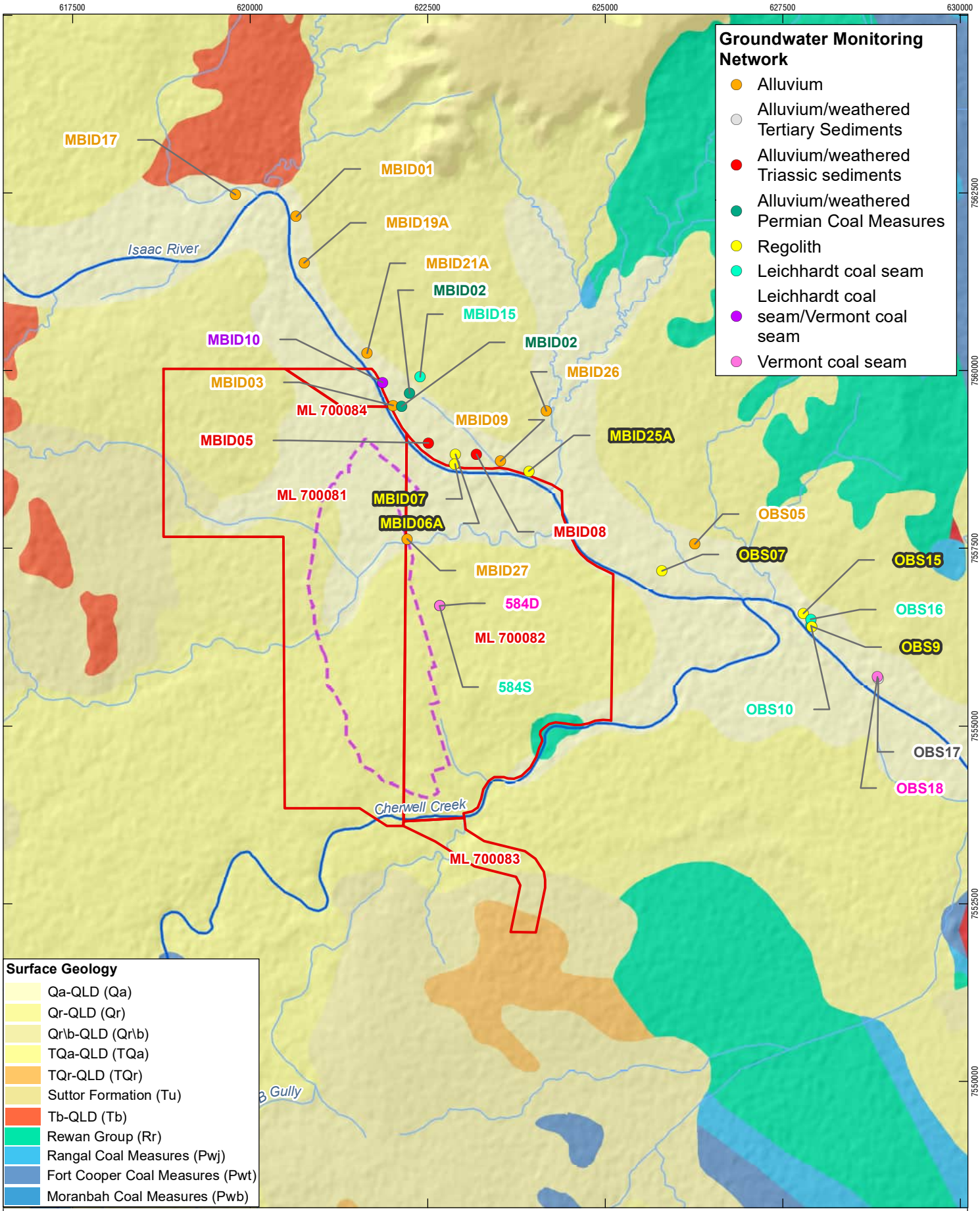
- One bore targeting the Alluvium associated with the Isaac River.
- One bore targeting both the Alluvium associated with the Isaac River and weathered Tertiary sediments (Regolith).
- Two bores targeting weathered Tertiary sediments (Regolith).
- Two bores targeting the Leichhardt Seam of the RCM.
- One bore targeting the Vermont Seam of the RCM
- One bore screened in the interburden of the RCM.

Table 5-2 presents the bore details and data availability for both IDM and PTM bores incorporated into this GIA for relevant hydrogeological characterisation. Bore locations are shown on **Figure 5-2**.

As previously discussed, Stanmore has also entered into groundwater data sharing agreements with the owners of several neighbouring projects and mines. These agreements facilitate the exchange of groundwater data, models, and supporting documentation. Where applicable, relevant data from each participating project or mine’s groundwater assessment has been integrated into this assessment.

Table 5-2 Nearby Groundwater Monitoring Bores

Bore ID	Easting (AGD84)	Northing (AGD84)	Surface Elevation (mAHD)	Total Depth (mBGL)	Screen Top Elevation (mAHD)	Screen Base Elevation (mAHD)	Monitored Unit	Bore Status	WL Data Availability	WQ Data Availability
PTM										
OBS05	626149	7557383	194.817	16	181	178	Alluvium	Active	Apr-08 – Dec 25	Jan-17 – Dec-25
OBS17	628734	7555487	194	11.2	186	183	Alluvium/weathered Tertiary Sediments	Active	Apr-24	-
OBS07	625685	7557002	198.3	16	190	184	Regolith	not monitored	Mar-16 - Aug-17	-
OBS15	627675	7556403	200	23	181	178	Regolith	Active	Apr-24 – Dec 25	Sep-25 – Dec-25
OBS10	627785	7556230	195	65.75	138	135	Leichhardt coal seam	Active	Oct-15 – Dec 25	Jan-15 – Dec-25
OBS16	627783	7556321	200	75	135	129	Leichhardt coal seam	Active	Apr-24 - Dec 255	-
OBS09	627796	7556217	203	48	161	155	Regolith	Active	Oct-15 – Dec 25	Oct-15 – Nov-23
OBS18	628720	7555507	193.93	46	158	152	Vermont coal seam	Active	Apr-24	Jan-17 – Dec-25
IDM										
MBID01	620535	7561989	203	17	192	186	Alluvium	Active	Jul-21 - Oct-25	Nov-18 - Oct-25
MBID03	621900	7559331	201	20	187	181	Alluvium	Active	May-21 - Oct-25	Jan-19 - Oct-25
MBID09	623411	7558550	196	13	191	188	Alluvium	Active	Jan-23 – Oct-25	Nov-20
MBID17	619680	7562296	201	15	192	186	Alluvium	Active	Jun-21 - Oct-25	Jan-19 - Oct-25
MBID19A	620650	7561336	202	17.6	190	184	Alluvium	Active	Jan-23 - Oct-25	Oct-23 – Oct-25
MBID21A	621533	7560064	203	16.5	194	186	Alluvium	Active	Jan-23 - Oct-25	Jul-23 – Oct-25
MBID26	624057	7559254	202	18	190	184	Alluvium	Active	May-21 – Oct-25	Jun-21 - Apr-22
MBID27	622098	7557455	199	19	187	181	Alluvium	Destroyed	May-21 - Jan-23	Nov-20 – Jan23
MBID02	622021	7559319	201	17	190	184	Alluvium/weathered Permian Coal Measures	Active	May-21 - Oct-23	Jun-20 - Sep-22
MBID05	622397	7558802	200	18	188	182	Alluvium/weathered Triassic sediments	Active	May-21 - Oct-23	Jun-20 – Oct-25
MBID08	623073	7558644	199	17	188	182	Alluvium/weathered Triassic sediments	Active	May-21 - Oct-23	Jun-20 - Oct-23
584S	622558	7556512	212	unknown	unknown	unknown	Leichhardt coal seam	Destroyed	2026 & May-21 - Jan-23	Dec-18 – Jan-23
MBID15	622281	7559730	203	101	108	102	Leichhardt coal seam	Active	Feb-24 - Jul-25	Dec-18 - Jan-25
MBID10	621752	7559653	201	43	164	158	Leichhardt coal seam/Vermont coal seam	Active	Feb-24 - Oct-25	Nov-18 – Oct-25
584D	622558	7556512	214	unknown	unknown	unknown	Vermont coal seam	Destroyed	2026 & May-21 - Jan-23	Jan-23
MBID06A	622776	7558642	200	19	187	181	Regolith	not monitored	Oct-21 - May-23	Jan-19 – Sept-22
MBID07	622769	7558505	199	26	179	173	Regolith	Active	May-21 - Oct-25	Nov-18 – Oct-25
MBID25A	623813	623813	198	18	186	180	Regolith	Active	May-21 – Jul-24	Nov-20 - Jan-23



Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:70,000 at A4
Project Number: 620.041537.00001
Date: 23-Mar-2026
Drawn by: AS

ISAAC DOWNS EXTENSION PROJECT

OTHER GROUNDWATER MONITORING NETWORKS

SLR

FIGURE 5-2

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_02_Other Groundwater Monitoring Networks.mxd

5.3 Hydraulic Properties

5.3.1 Site Specific Hydraulic Conductivity Data

Groundwater hydraulic testing results are available from slug (rising and falling head) tests conducted on the Project's monitoring network bores completed by SLR (2025) (**Appendix F**). A summary of the results are provided in **Table 5-3** and **Figure 5-3**.

Hydraulic conductivity values for the alluvium range from 0.33 to 9.68 m/day, with an average of 1.19 m/day, indicating significant variability between bores. This variability is attributed to the heterogeneous nature of floodplain deposits along the Isaac River, where differing grain sizes influence permeability.

Hydraulic conductivity values for the regolith hydrogeological unit range between 0.15 and 2.51 m/day. These bores, with screen depths less than 30 m, target highly weathered material. The mean hydraulic conductivity recorded was 0.71 m/day. This weathered transition zone in the Permian strata is expected to exhibit greater permeability and storage capacity than the underlying fresh Permian rock (RCM) due to the opening of joints and bedding planes through weathering.

The coal seams within the RCM generally exhibit higher hydraulic conductivities than the surrounding non-coal strata and are considered the primary groundwater-bearing zones within the RCM. These seams are conceptualised as highly anisotropic systems with elevated hydraulic conductivities compared to the non-coal RCM (SRK, 2020). Site-specific slug testing of the Leichhardt coal seam yielded hydraulic conductivity values ranging from 0.001 to 30.31 m/day, while the Vermont coal seam estimates ranged from 0.03 to a 5.90 m/day. It is noted that hydraulic conductivities obtained for the Leichhardt and Vermont coal seams hold bore outliers within the respective results datasets (MBIS08 and MBIS11 in the Leichhardt coal seam, and MBIS16 in the Vermont coal seam). The hydraulic conductivities recorded for these bores are at least an order of magnitude higher than the remaining dataset for the other bores for each coal seam. In consideration of the broader regional dataset (**Section 5.3.2**), the elevated values at these three bores are not considered representative of the typical values of the Leichhardt and Vermont coal seams. These values where however considered to set the model calibration range.

As previously discussed, testing of the MBIS19 bore installed into the Isaac Thrust Fault zone yielded hydraulic conductivity estimates generally two orders of magnitude lower than the RCM coal seams (10^{-3} m/day). Noting that MBIS19 was installed in to the most permeable part of the fault zone inferred from NRM data (see **Section 4.2.5.2**), this indicates that the fault structure does not provide for a preferential groundwater flow pathway with respect to groundwater flow in the RCM. Further discussion on the hydraulic properties of faulting is provided in **Section 5.3.3**.

Table 5-3 Summary of Mean Hydraulic Conductivity per Hydrogeologic Unit - Site Testing

Target Formation	Number of Bores	Number Slug tests Analysed	Minimum Hydraulic Conductivity (m/day)	Maximum Hydraulic Conductivity (m/day)	Median Hydraulic Conductivity (m/day)	Geometric Mean Hydraulic Conductivity (m/day)
Alluvium	5	48	0.33	9.68	1.33	1.19
Regolith	4	49	0.15	2.51	1.00	0.71
Leichhardt Coal Seam	10	74	0.001	30.31	0.25	0.33
Vermont Coal Seam	5	32	0.03	5.90	0.45	0.37
Fort Cooper Coal Measures	2	16	0.04	0.11	0.07	0.07
Isaac Thrust Fault	1	12	0.002	0.006	0.003	0.003

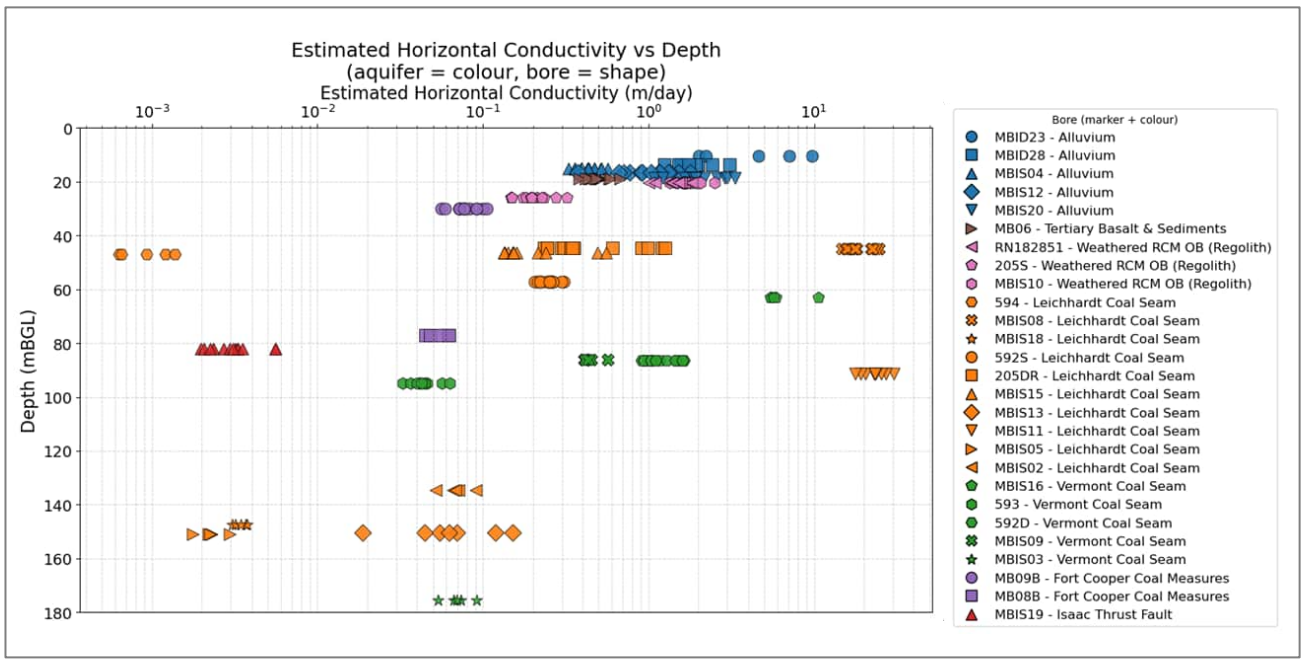


Figure 5-3 Summary of all Hydraulic Conductivity Results – Site Testing

5.3.2 Regional Hydraulic Conductivity Ranges

A significant record of aquifer hydraulic testing information is available from adjacent and nearby mines and project sites for the same hydrogeologic units that are found at IDE. Given the similar geologies, these data are considered representative of the hydraulic properties of the units at IDE.

A histogram of the spread of horizontal hydraulic conductivity from the field testing at the adjacent/nearby IDM, PTM, Daunia Mine, Winchester South Project, Olive Downs Project, and Moorvale South Project, is presented in **Figure 5-4**. The results are compared to the range of documented values for the various units in literature. The comparison shows that the field results for the hydrogeologic units within the Project Area and immediate surrounds fall within the range of field data collected through other studies across the Bowen Basin. It is also noted that the results of the site specific testing documented in **Section 5.3.1** above generally fall within the range of regional and literature values for each unit presented in **Figure 5-4**, indicating the site specific dataset aligns with the regional dataset.

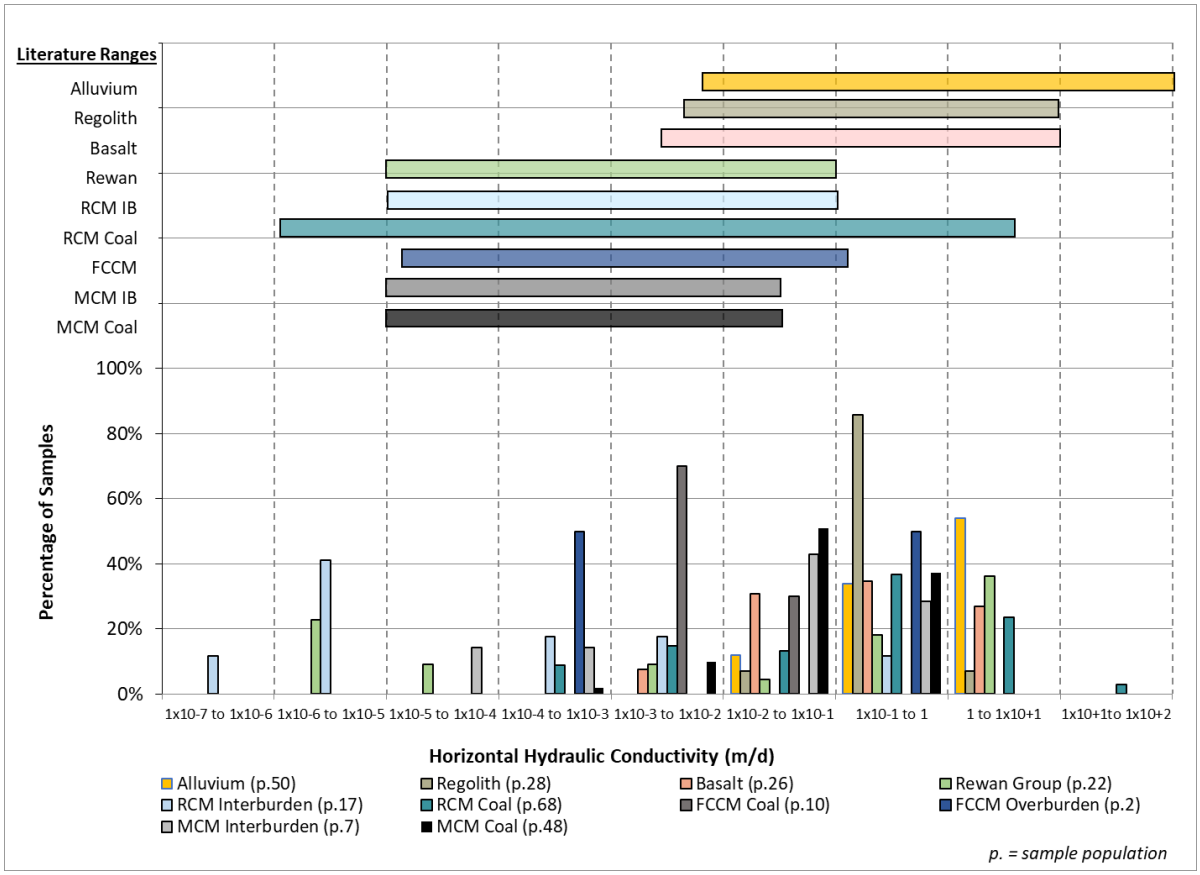


Figure 5-4 Horizontal Hydraulic Conductivity Ranges

5.3.3 Faulting

As discussed in **Section 4.0**, extensive faulting has been mapped in and around the Project Area, particularly associated with the Isaac Thrust Fault on the Project's eastern margin. As identified by Jourde et al. (2002), faulting can result in higher permeabilities within strata parallel with the fault plane, and lower permeabilities within strata perpendicular to the fault plane. However, this can also be dependent on whether faults are currently active (Paul et al., 2009). Faulting has been inactive within the Bowen Basin for over 140 million years (Clark et al., 2011), indicating that the fault zones are less likely to act as conduits to flow; this relates to filling of the fractured pore spaces over time through hydrothermal alteration and mineralisation (Uysal et al., 2000).

Coffey (2014), building on the work of Jourde et al. (2002) and Flodin et al. (2001), developed a conceptual model for fault zone hydraulic characterisation in the Bowen Basin (**Figure 5-5**). This model suggests that fault cores typically exhibit hydraulic conductivities one to three orders of magnitude lower than the surrounding host rock, while the adjacent damage zones may have conductivities up to an order of magnitude higher.

Drill core logs from the Study Area and surrounding mines indicate that many fractures and faults are “healed” with calcite and siderite, reducing the effective permeability compared to open fracture networks (e.g. AGE, 2020). Drilling results from Winchester South (SLR, 2022) also revealed calcite infills and slickensides indicative of fault infills. Fault packer testing results at the Winchester South Project revealed relatively low hydraulic conductivities ranging between 2.02×10^{-3} and 6.93×10^{-5}, consistent with the lower hydraulic conductivities assessed at the Project fault investigation and those presented in **Figure 5-5**. Mineralisation within faulted zones was also encountered in the fault investigation exploratory drilling undertaken for the Project (refer **Section 4.2.5.2**). This mineralisation supports the interpretation that fault zones in the region act more as barriers than conduits to groundwater flow, as the mineralisation would act to reduce any enhanced secondary permeability that might have existed as a result of the faulting.

The impact of faults on groundwater flow within the Study Area was also assessed as part of the Bowen Gas Project. Kinnon (2010) assessed the movement of water and gas across a series of faults in the Bowen Basin using stable isotope and water quality analysis to assess zones of potential recharge, water mixing and flow pathways. Higher gas production rates were also observed on either side of a major fault, with differences in isotopic compositions of produced water for wells north and south of the major fault line at similar depths, implying little communication across the fault boundary, and suggesting that the fault acts as a horizontal permeability barrier to water and gas flow. The results of the study showed that compartmentalisation was evident and that this was due to the structural geology (faulting) in the basin.

In the Project Area, vertical displacement of coal seams (typically thin <4 m) often results in juxtaposition against lower permeability interburden or Rewan Group strata, creating local scale compartmentalisation. The Isaac Thrust Fault, which throws eastward by up to 100 m, contributes significantly to this compartmentalisation in a regional sense (as illustrated in **Figure 4-5**). Fault displacement and remineralisation together create hydraulic barriers that disrupt lateral groundwater flow along lithological bedding planes.

This conceptual understanding is supported by site-specific hydraulic testing at the Project. As previously discussed, slug test data from monitoring bore MBIS19 (which targets the Isaac Thrust Fault) recorded hydraulic conductivity values of 10^{-3} m/day, two orders of magnitude lower than the average values observed in the Leichhardt and Vermont coal seams at the Project (refer **Table 5-3**). These results reinforce the interpretation that fault structures in the Bowen Basin, particularly the Isaac Thrust Fault, act as hydraulic barriers consistent with regional literature and observed field data.

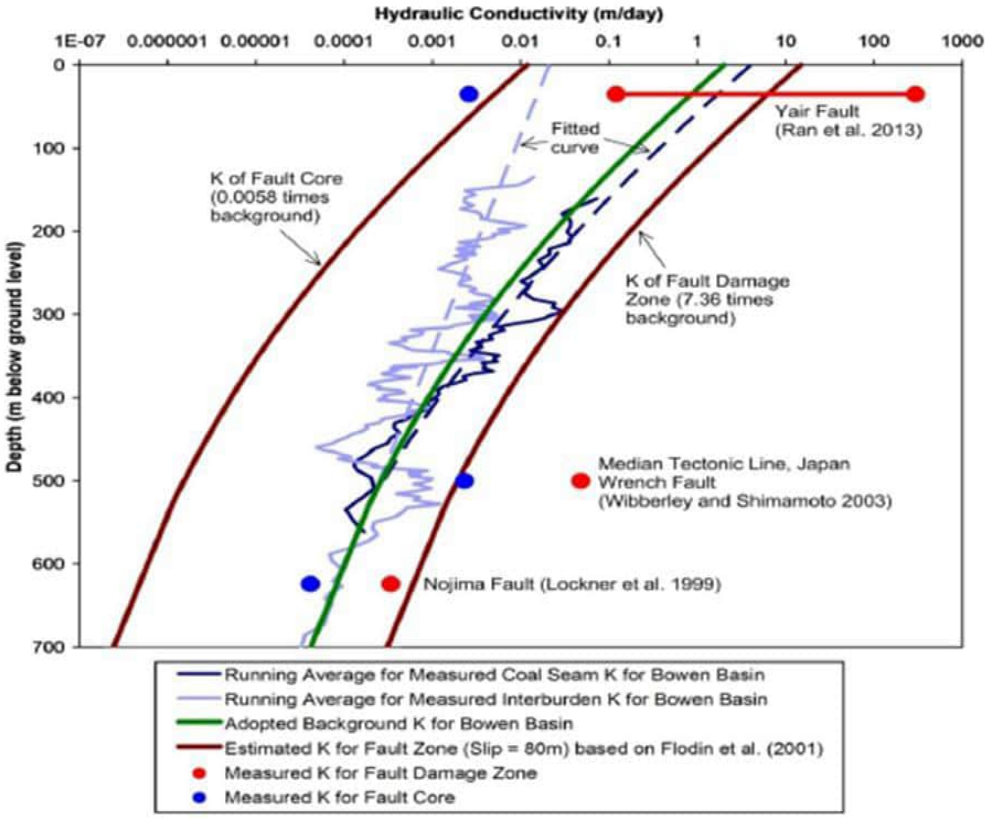


Figure 5-5 Faulting Conceptual Model developed by Coffey (2014)

5.4 Groundwater Recharge

5.4.1 Overview

The dominant mechanism for recharge to the groundwater system in the vicinity of the Project is via diffuse infiltration of rainfall through the soil profile and subsequent deep drainage to the underlying groundwater table. Short term sporadic recharge events to the underlying alluvium may also result from seepage of streamflow in the Isaac River and Cherwell Creek.

5.4.2 Deep Drainage

Deep drainage is defined as the downward movement of water from the soil profile beyond the root zone into the saturated groundwater system. This process occurs when infiltrated rainfall exceeds the soil water-holding capacity and is not removed through evapotranspiration or root uptake.

The Australian Water Resources Assessment Landscape model (AWRA-L), developed by the Frost, A. J., and Shokri, A. (2021) simulates the historical and projected landscape water balance for Australia and outputs estimates of surface runoff, soil moisture, evapotranspiration and deep drainage. The conceptual structure of the AWRA-L model, shown in **Figure 5-6**, considers various climatic variables including radiation, temperature, actual vapor pressure, wind and precipitation, in addition to the hydrological processes represented in the model (Frost and Shokri, 2021):

- Rainfall (interception losses and net rainfall);

- Overland flow (due to saturation of groundwater store exceedance);
- Infiltration and Hortonian overland flow;
- Drainage and interflow within and from soil layers;
- Evaporation from surface soil store;
- Transpiration from shallow and deep soil stores; and
- Groundwater evaporation, transpiration and baseflow.

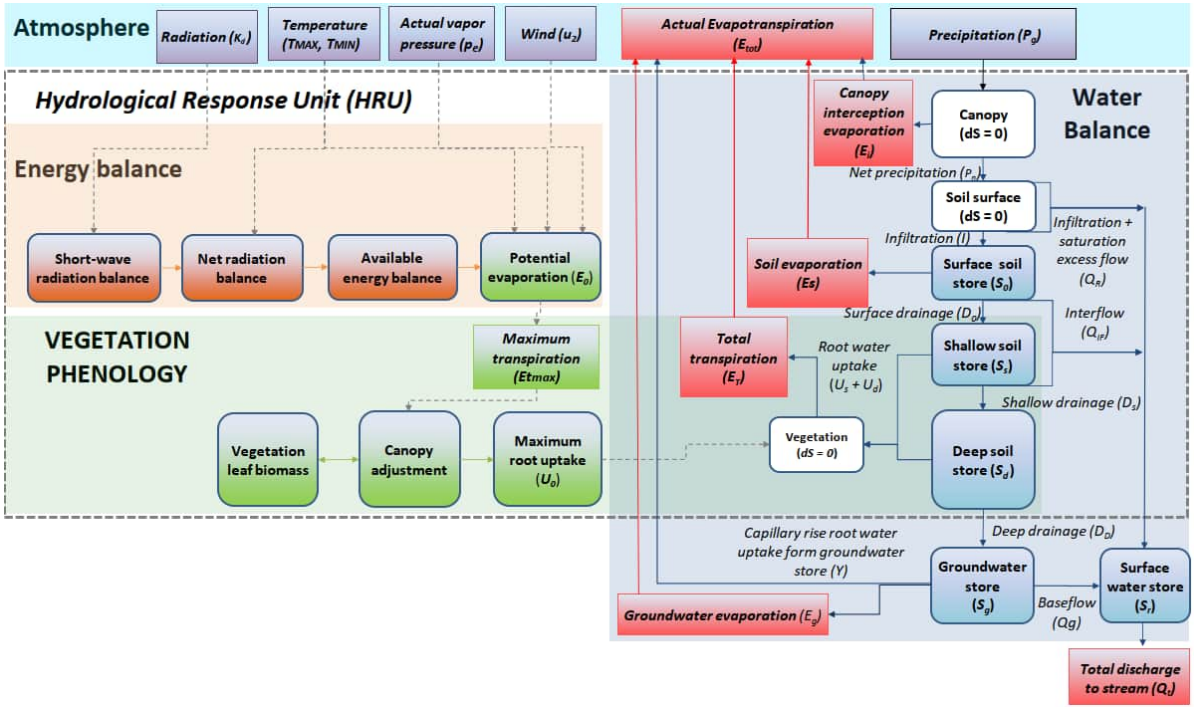


Figure 5-6 AWRA-L conceptual structure (Frost, A. J., and Ahokri., 2021)

In this study, monthly AWRA-L deep drainage outputs from 1985 to the end of 2025 were obtained from the BoM and used as a proxy for groundwater recharge relevant to the Project Area. Historical monthly deep drainage data were extracted from the AWRA-L dataset for the Project Area (Latitude: -22.10, Longitude: 148.20), noting that the AWRA-L data is provided as an approximate 5 km x 5 km grid (i.e. provides for a modelled effective groundwater recharge across a 5 km x 5 km area and in the case of the Project Area is therefore not specific to a particular hydrogeologic unit). These outputs were compared against observed monthly rainfall data from SILO (2025) for the same location (**Figure 5-7**) as discussed in **Section 3.1**.

To assess the temporal relationship between rainfall and modelled recharge from AWRA-L, a lag analysis was performed. The analysis showed that the strongest correlation between rainfall variability and deep drainage occurred when a four-month lag was applied to the deep drainage data. This lagged series is also shown in **Figure 5-7** and demonstrates a stronger alignment of peaks and troughs between rainfall and deep drainage, compared to the unlagged series. This pattern indicates a notable time delay between rainfall events and the eventual movement of infiltrated water to the groundwater table, which ultimately contributes to groundwater recharge.

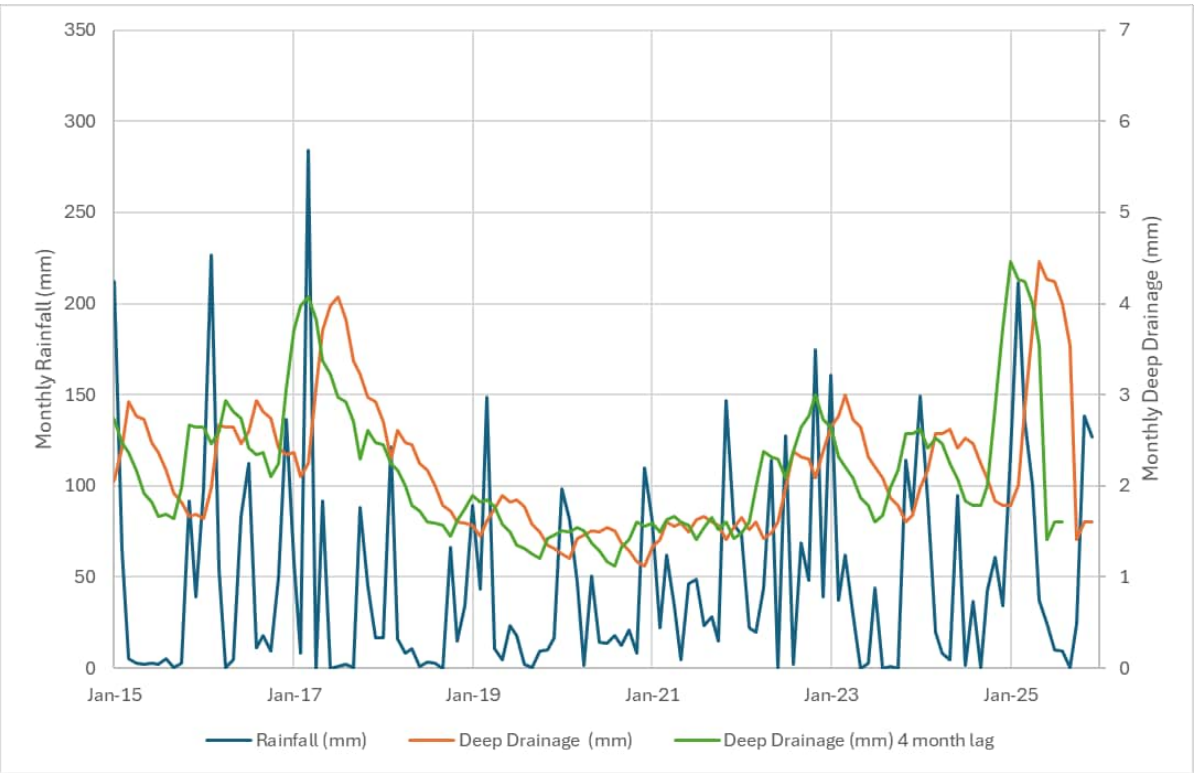


Figure 5-7 Comparison of monthly rainfall with AWRA-L simulated deep drainage and deep drainage lagged by four months for the Project Area (Latitude: -22.10, Longitude: 148.20)

Figure 5-8 shows annual rainfall, annual AWRA-L simulated deep drainage, and deep drainage expressed as a percentage of annual rainfall for the Project Area. Annual deep drainage shows a link relative to annual rainfall, with deep drainage as a percentage of rainfall ranging from less than 2% in dry years to over 12% in wetter years. That is, it is evident that the amount of rainfall that is simulated by AWRA-L to end up as deep drainage is variable (rather than a fixed percentage), and increases proportionally with increases in total annual rainfall. A long-term annual average deep drainage is calculated at 5.4% of average annual rainfall for the period 1998 to 2025.

It is also noted that peaks in simulated annual deep drainage by AWRA-L generally appear in the year following peak rainfall, which is explained by the seasonal timing of rainfall and the observed four month lag shown in **Figure 5-7**. That is, rainfall peaks often occur in late spring to early summer (November to December), while deep drainage peaks in autumn (March to April), approximately four months later but in the next calendar year, as water moves through the soil layers down to the groundwater table.

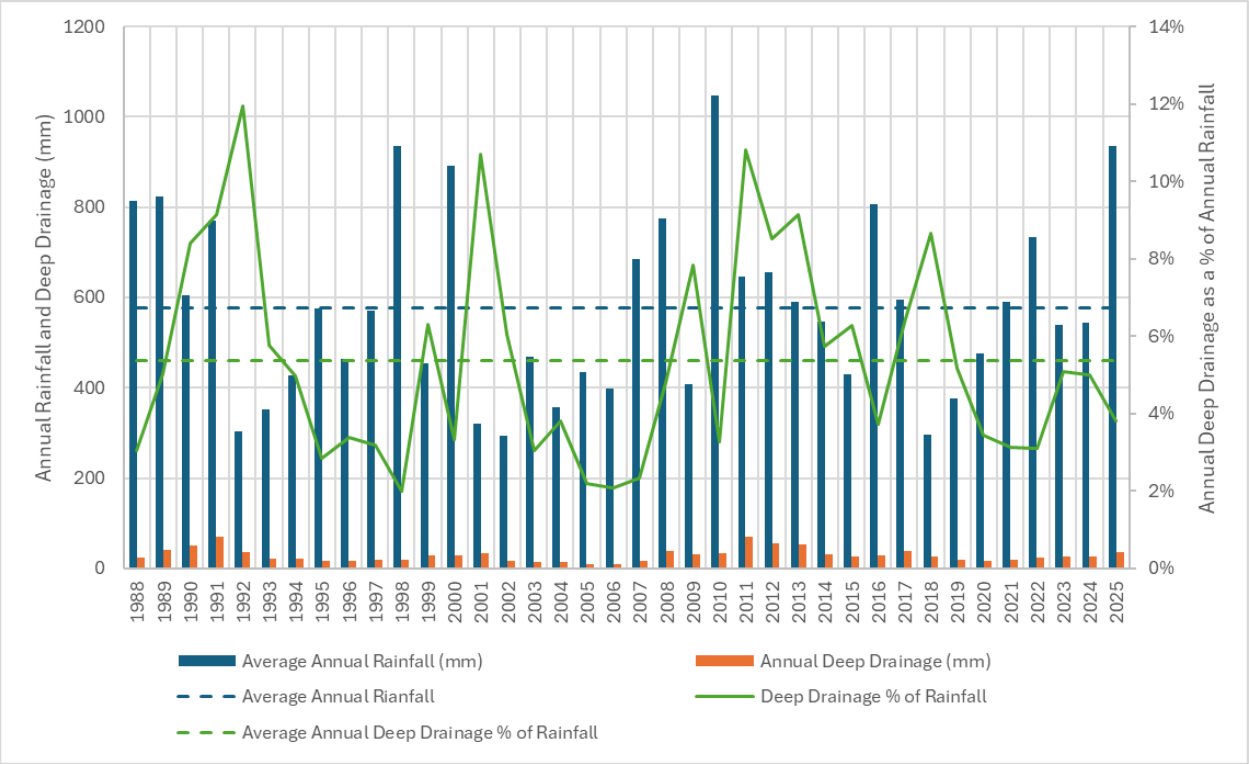


Figure 5-8 Annual rainfall, AWRA-L simulated annual deep drainage, and deep drainage expressed as a percentage of annual rainfall for the Project Area (Latitude: -22.10, Longitude: 148.20)

5.4.3 Chloride Mass Balance

Recharge rates have been estimated using chloride mass balance (CMB) calculations. The CMB method estimates long-term mean recharge rates based on mean annual rainfall, atmospheric chloride accession, and chloride concentration in the groundwater, with the assumption of no other sources or sinks for the deposited chloride. The underlying assumptions in the CMB method include the following:

- Chloride in groundwater originates from rainfall plus dry deposition with no influence from run-on and run-off on chloride deposition (noting it also does not account for the influence of chloride input via seepage out of any surface water features).
- There are no other sources of sinks for the deposited chloride.
- Chloride is conservative and does not take part in chemical processes in soil.
- Chloride mass flux does not change over time (assuming piston-flow process).

The CMB calculations presented herein are based on available groundwater quality results (chloride concentrations) collected from the monitoring bores in the Project monitoring network up until December 2025. The CMB calculation assumed an average rainfall of 576.9 mm based on SILO Grid point data (Latitude: -22.10, Longitude: 148.20) over the same period as the deep drainage data (1985 and 2025).

The calculation assumes a mean annual chloride flux at and near the Project Area from two sources:

- Wilkins et al. (2022) CSIRO Australian gridded chloride deposition-rate dataset: 4.2 milligrams per litre (mg/L).
- Hutton (1976) Chloride in Rainwater in Relation to Distance from Ocean: 2.14 mg/L.

The results of the CMB analysis are presented in **Table 5-4** and **Figure 5-9**. As shown, calculated recharge rates generally range from 0.02 % to 4.96 % of long-term average annual rainfall, with highest recharge rates in the Isaac River Alluvium and lowest recharge rates for the Leichhardt and Vermont coal seam. After the Leichardt and Vermont Coal Seam, the next lowest recharge rates are calculated for the Fort Cooper Coal Measures. **Figure 5-9** shows the significant variability in calculated recharge rates within the Alluvium, mainly due to the elevated rates at bores MBID05 and MBID28, which are screened in the Isaac River Alluvium. This variability reflects the heterogeneous nature of the alluvial sequence (**Figure 4-6).** In areas where the alluvium is dominated by coarse, highly conductive sands, there is higher rainfall infiltration, residence times are shorter, and chloride in groundwater is diluted, resulting in higher calculated recharge rates. Conversely, where clay lenses and finer grained sediments are present, infiltration is restricted, groundwater residence times increase, and chloride accumulates, producing lower calculated recharge. Bores logs from MBID05 and MBID28 indicate package of sands supporting the fact that these bores likely have higher recharge rates.

Table 5-4 CMB Calculated Long Term Average Recharge Rates as a Percentage of Average Annual Rainfall

Hydrogeologic Unit	No. Bores	No. Data Points	Wilkins et al. (2022) Rainfall Chloride			Hutton (1976) Rainfall Chloride		
			Min	Median	Max	Min	Median	Max
Isaac River Alluvium[1]	13	206	0.04%	0.26%	4.96%	0.02%	0.13%	2.56%
Cherwell Creek Alluvium[1]	2	3	0.67%	0.73%	0.89%	0.33%	0.35%	0.43%
Regolith	8	67	0.07%	0.52%	2.83%	0.03%	0.25%	1.38%
Leichhardt Seam	11	94	0.04%	0.05%	1.59%	0.02%	0.02%	0.77%
Vermont Seam	5	17	0.08%	0.10%	0.24%	0.04%	0.05%	0.11%
Leichhardt Seam & Vermont Seam	1	38	0.05%	0.07%	0.09%	0.03%	0.04%	0.04%
Fort Cooper Coal Measures	2	8	0.42%	1.05%	1.32%	0.20%	0.51%	0.64%

1. Considered to be influenced by both rainfall infiltration and surface water flow leakage from Isaac River and Cherwell Creek

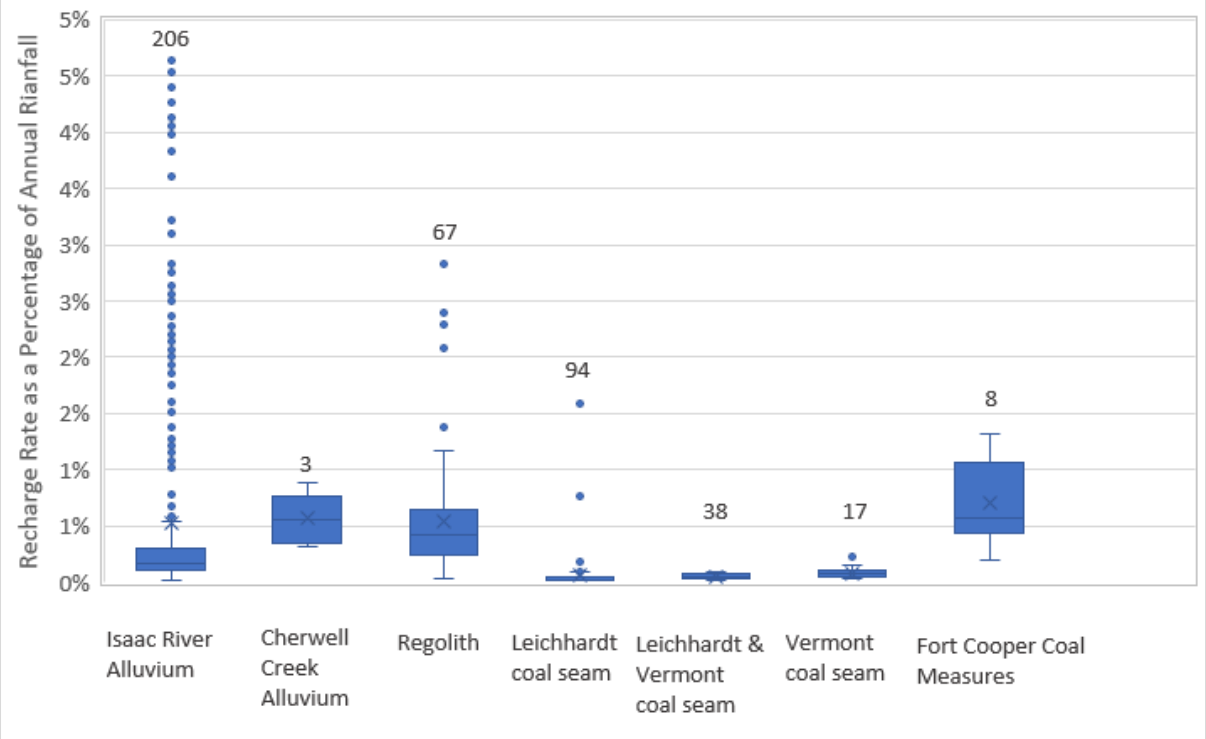


Figure 5-9 CMB Calculated Long Term Average Recharge Rates as a Percentage of Average Annual Rainfall

With reference to the deep drainage values discussed in **Section 5.4.2**, the long term average simulated deep drainage is higher than the long term average recharge rates calculated using the CMB. This is likely attributed to the scale of the data, as deep drainage is not aquifer specific and simulated on a broad 5 km x 5 km grid spacing, whereas the CMB calculation is local aquifer (and bore) specific.

5.5 Groundwater Distribution, Flow, Recharge and Discharge

5.5.1 Alluvium

5.5.1.1 Distribution and Flow

Saturation within the alluvial sediments across the Study Area is highly variable, suggesting that the alluvium does not form a continuous, high-yielding groundwater-bearing unit away from the immediate vicinity of the Isaac River and Cherwell Creek. Groundwater monitoring and ERI data (MES, 2025) indicate that significant saturation occurs primarily near the modern drainage channels of the Isaac River, Cherwell Creek, and at the confluence of these where thicker and more permeable sediments are present. In contrast, areas further away from these channels often exhibit unsaturated or intermittently saturated conditions, reflecting the discontinuous nature of the aquifer system. This spatial variability suggests that the alluvium does not function as a single, laterally extensive groundwater-bearing unit across its mapped extent, but rather as a series of localised zones. This conceptualisation was indicated by cross sections though Isaac River and Cherwell Creek provided as **Figure 4-7** and **Figure 4-8**, respectively. Regionally groundwater in the alluvium, where saturated, occurs between 10 - 12 mBGL. The potential for alluvium to host groundwater is considered limited at depths shallower than this.

Groundwater levels were plotted with the AWRA-L deep drainage (see **Section 5.4**) to assess the relationship between simulated general groundwater recharge in the area and corresponding changes in groundwater levels.

Within the Isaac River alluvium, Project bores MBIS01 (base screen 12 mBGL or 184.9 mAHD), MBID03 (base screen 20 mBGL, 181.5 mAHD), MBID09 (base screen 8 mbgl, 187.8 mAHD), and MBID26 (base screen 8 mBGL, 184.4 mAHD) have all been dry since installation. MBID26, with a base of screen of 8 mBGL (184.4 mAHD) has been recorded as dry since January 2023 (**Figure 5-10**). Other bores show a general west to east decrease in groundwater level from approximately 192 mAHD to 183 mAHD, with some response to variation in rainfall. Groundwater levels along the Isaac River shows a subtle response to deep drainage. Notably, MBID23 and MBID28 show a response to a larger rise in deep drainage (> 3 mm increase in monthly deep drainage in July 2025).

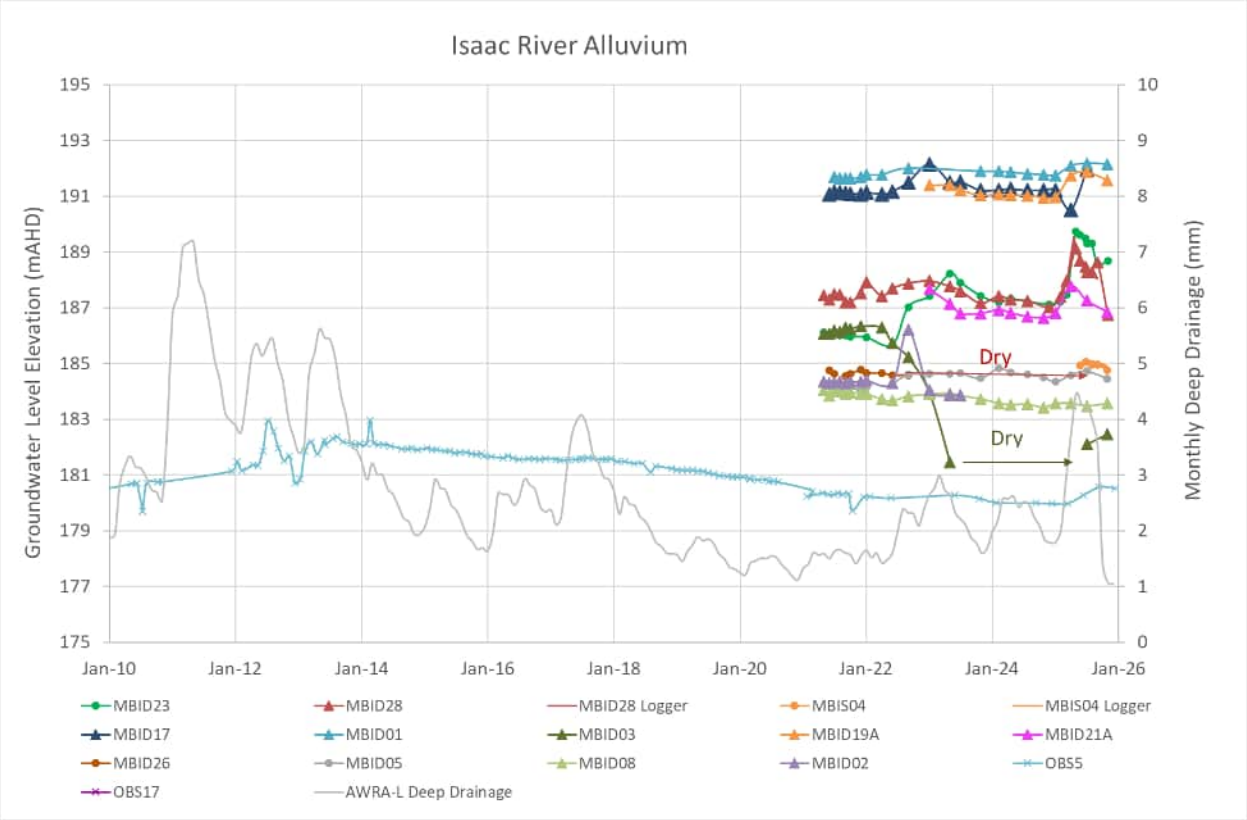


Figure 5-10 Isaac River Alluvium monitoring bore hydrographs

In the Cherwell Creek alluvium, saturation is similarly sporadic. Project bore MBIS06 (base screen 10 mbgl, 175.5 mAHD) has remained dry since installation in November 2024, while MBIS07, monitored since May 2025, show groundwater levels between approximately 10 and 12.5 mBGL respectively, with a subtle decline in groundwater levels of approximately 0.5 m since the start of monitoring coinciding with declining deep drainage (**Figure 5-11**). Groundwater level elevations decrease from southwest to northeast in the Cherwell Creek alluvium, in the direction of surface water flow.

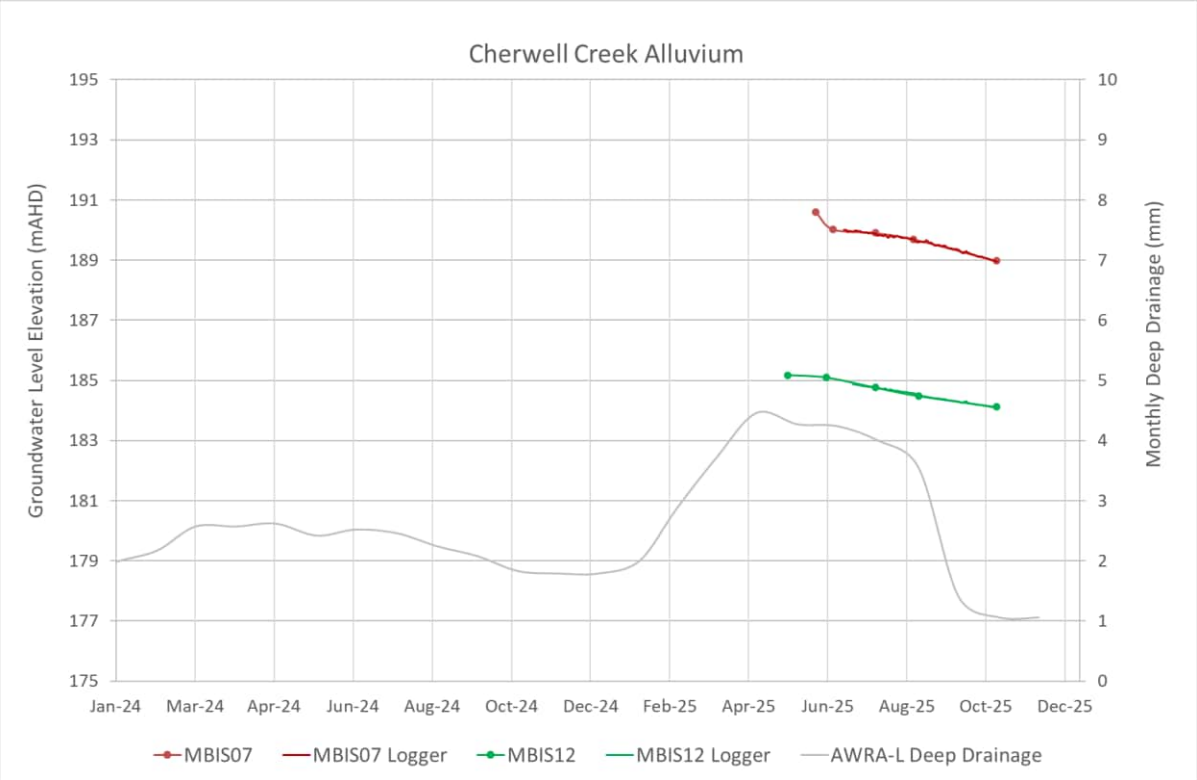


Figure 5-11 Cherwell Creek Alluvium monitoring bore hydrographs

MBIS14 (bottom of screen 12 mBGL or 184.7 mAHD), located at the confluence of Isaac River and Cherwell Creek, has been dry since installation in June 2025. This indicates that the HES Wetland at this location is not supported by groundwater hosted in the regional alluvium aquifer. Intense iron staining observed at a nearby auger site into the shallow alluvium (Watermark Eco, 2026a) suggests a seasonally fluctuating perched water table, with saturation likely only after significant surface ponding or flood events. At this location, the floor of the HES Wetland is reported to be underlain by a roughly 2.5 m thick hardened clay sequence, which acts as an aquitard and contributes to perched surface water above that horizon during wetter periods (further discussed in **Section 5.7.2** and Watermark Eco, 2026a).

At Conrock Gully, groundwater levels at MBID27 (May 2021 to January 2023) show limited fluctuations in response to deep drainage recharge events, with groundwater levels occurring around 12.5 mBGL (186 mAHD). A short period of water level measurements are available from installed bore MBIS20 (installed late July 2025) as the replacement for bore MBID27. These groundwater levels are consistent with historical values from MBID27 (**Figure 5-12**).

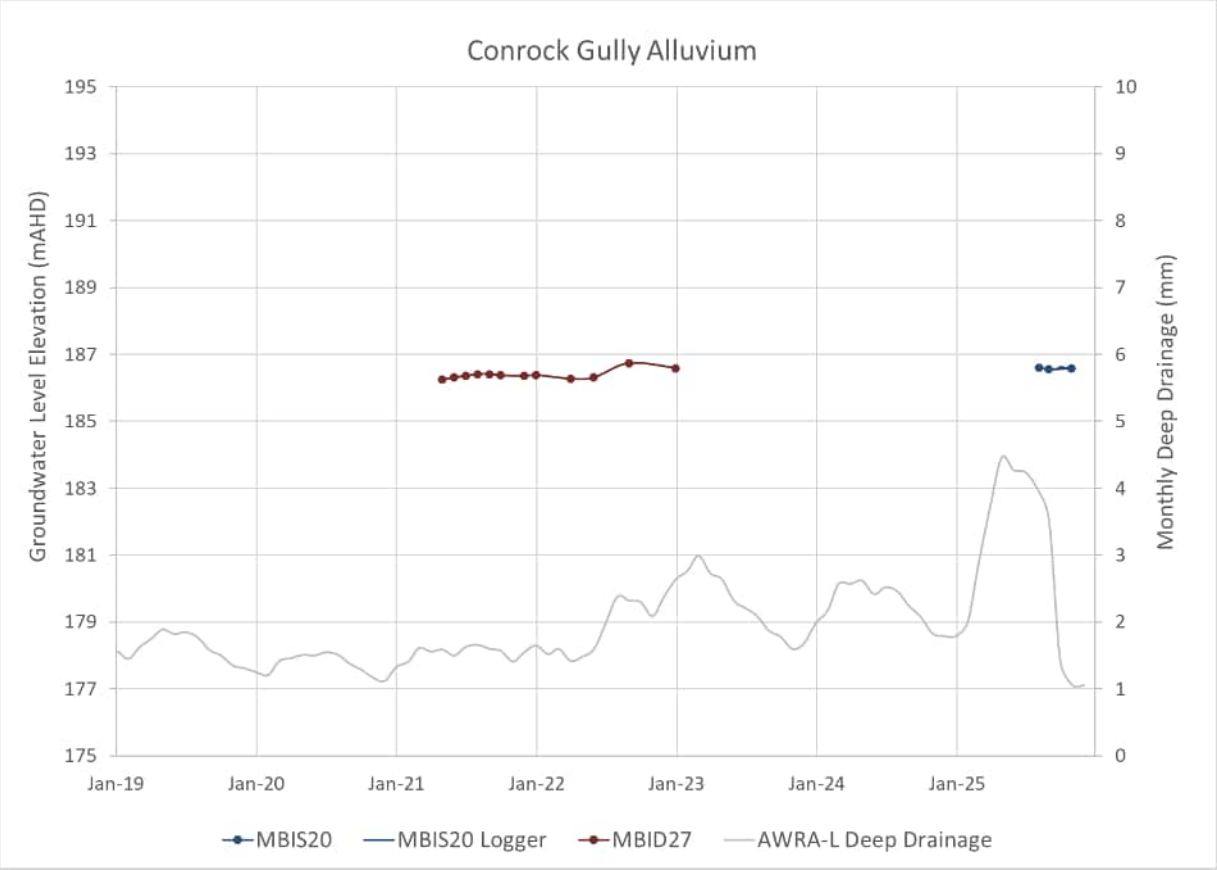
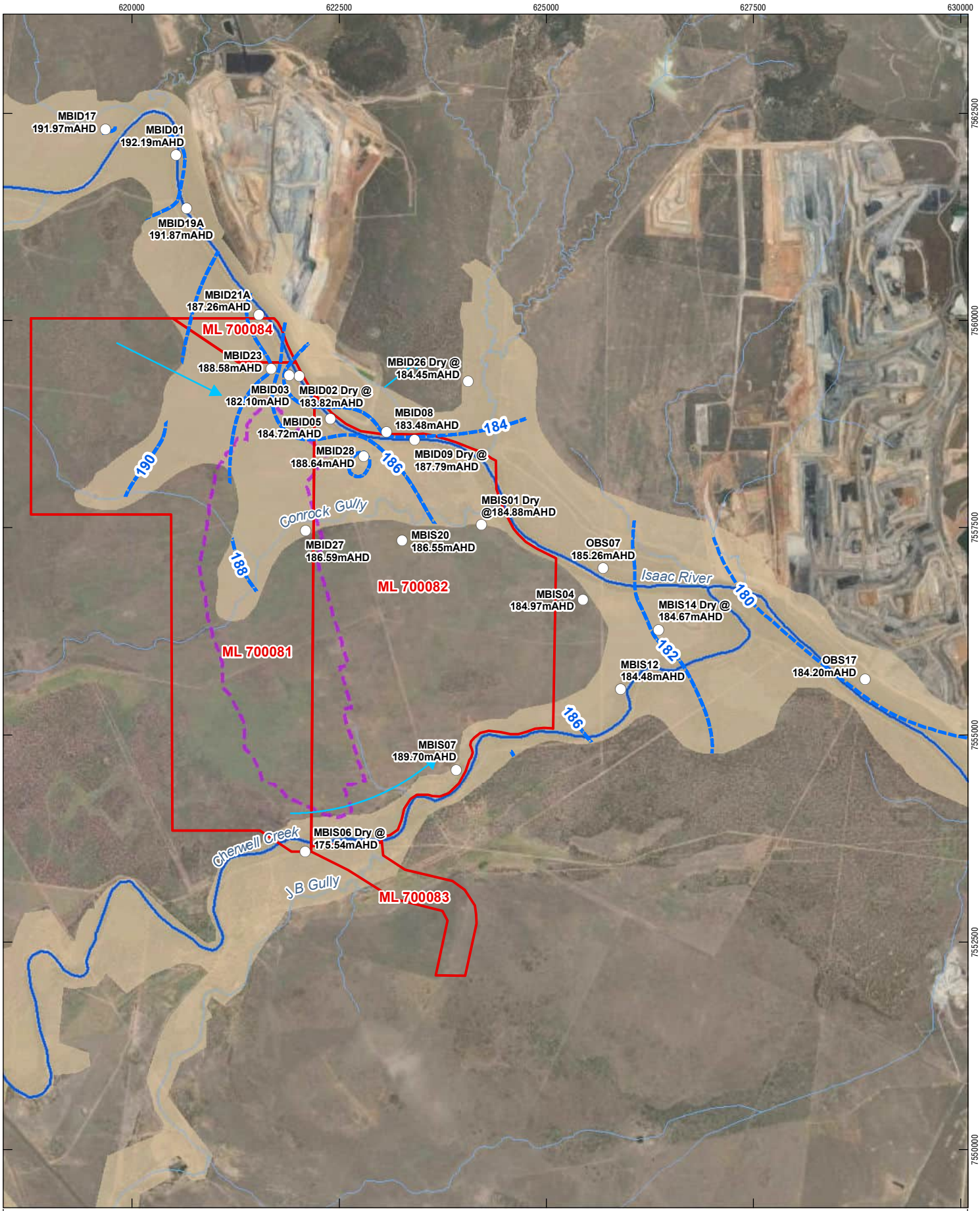


Figure 5-12 Conrock Gully Alluvium monitoring bore hydrographs

Recent hand-augering investigations targeting the shallow alluvium along the Isaac River and Cherwell Creek indicated that the majority of auger holes were dry (Watermark Eco, 2026a). Only one hole, located within the Isaac River channel itself, intersected groundwater at a depth of 0.8 m below the current streambed (Watermark Eco, 2026a). However, this is interpreted as a shallow perched groundwater system, derived from rainfall and surface water infiltration rather than the regional alluvial water table. The presence of an unsaturated zone beneath the streambed (besides limited perched groundwater systems) confirms that the river is a losing stream with no baseflow interaction at this location, and that the alluvial aquifer is hydraulically disconnected from the riverbed.

Figure 5-13 illustrates the interpreted alluvial potentiometric surface for the end-2025. Groundwater flow within the Isaac River alluvium is directed to the southeast, consistent with the surface water flow. Groundwater levels range from approximately 192 mAHD in the northwest of the Project Area (upstream) to 182 mAHD in the southeast (downstream). Groundwater elevations along Cherwell Creek exhibit a similar pattern, reflecting both surface water flow and local topography. Levels decrease from about 186 mAHD in the southwest of the Project Area (upstream) to 182 mAHD in the northeast (downstream). A northeastern hydraulic gradient is evident at the adjacent IDM, indicating groundwater flow towards the IDM. This may be indicative of localised modification of the regional alluvial groundwater flow regime in the vicinity of existing IDM operations. However, a similar situation is shown in groundwater level mapping presented by AGE (2020) for the pre-mining period at the south-easternmost extent of the IDM, indicating these local flow patterns may not reflect mining related influence.


620000
622500
625000
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MBID17
191.97mAHD
MBID01
192.19mAHD
MBID19A
191.87mAHD
MBID21A
187.26mAHD
ML 700084
MBID23
188.58mAHD
MBID03
182.10mAHD
MBID02 Dry @
183.82mAHD
MBID26 Dry @
184.45mAHD
MBID08
183.48mAHD
MBID05
184.72mAHD
MBID28
188.64mAHD
MBID09 Dry @
187.79mAHD
184
186
190
188
Conrock Gully
MBIS01 Dry
@184.88mAHD
MBIS20
186.55mAHD
MBID27
186.59mAHD
OBS07
185.26mAHD
Isaac River
ML 700082
MBIS04
184.97mAHD
MBIS14 Dry @
184.67mAHD
180
182
ML 700081
MBIS12
184.48mAHD
OBS17
184.20mAHD
186
MBIS07
189.70mAHD
Cherwell Creek
MBIS06 Dry @
175.54mAHD
JB Gully
ML 700083
0
0.5
1
km
Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:60,000 at A4
Project Number: 620.041537.00001
Date: 06-May-2026
Drawn by: AS
Flow Direction
Groundwater Elevation Contour (mAHD)
Major Watercourse
Minor Watercourse
IDE Project MLAs
Approximate Project Pit Extent
Alluvium Refined Extent
ISAAC DOWNS EXTENSION PROJECT
POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTION - ALLUVIUM
FIGURE 5-13
H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_13_Potentiometric Surface and Groundwater Flow Direction - Alluvium.mxd

5.5.1.2 Recharge and Discharge

Recharge to the alluvium is considered to be mostly by infiltration from short lived stream flow or flooding (losing streams as demonstrated in **Section 5.5.4**), with direct infiltration of rainfall also occurring where there are no substantial clay barriers in the shallow subsurface.

The calculated CMB recharge estimates as a percentage of long term average annual rainfall ranged from 0.02% to 4.69% for the Isaac River Alluvium. For the Cherwell Creek Alluvium, 3 samples from 2 bores were analysed, showing recharge estimates between 0.33% and 0.89% of long term average annual rainfall.

Geological logs in in the alluvial sediments indicate the alluvium is underlain by low hydraulic conductivity strata, including claystones, siltstones (with only pockets of coarser grained sand). These layers restrict the rate of downward leakage to underlying formations and contribute to the overall low recharge percentage. Slight differences in recharge between the Cherwell Creek and Isaac River alluvium are primarily influenced by variations in river size, sediment characteristics, and hydrological connectivity. The Isaac River alluvium occurs as a larger river system with drill logs indicating larger floodplains and coarser sediments, which promote higher infiltration and more variable recharge rates. In contrast, Cherwell Creek is a smaller tributary with finer-grained sediments limiting infiltration from surface and lower recharge estimates.

Following significant rainfall and flood alluvial groundwater levels may rise, causing temporary discharge from the perched groundwater system as interflow contributions back into the Isaac River. The alluvial groundwater system has not been recorded to rise above stream bed elevations over the current monitoring period. Groundwater discharge from the alluvium at IDE also occurs through the use of privately-owned bores within the region.

Some limited local-scale discharge from the alluvium to active mine pits may occur in the Study Area, where saturated alluvium is intersected by mining pits.

Localised perched groundwater systems within the alluvium (i.e. above and disconnected from the alluvial aquifer considered to form the alluvial aquifer) are evident where surface waterbodies continue to hold water at times during dry periods, e.g. pools in the Isaac River and floodplain wetlands occur where clay layers slow the percolation of surface water (**Figure 4-7**, **Figure 4-8 and Figure 5-31**). Watermark Eco (2026a) provides further assessment of these features (**Section 5.7.2.3**).

5.5.2 Regolith

5.5.2.1 Distribution and Flow

Across the Project Area, the colluvial material, Tertiary sediments, weathered Triassic strata and weathered Permian strata (< 30 m deep), collectively referred to as the Regolith, generally form the water table aquifer where saturated overlying alluvium is not present. Groundwater within the Regolith (where it is present) typically occurs at depths between 9 to 14 mBGL within the clayey sand and weathered horizons of Tertiary and Permian-aged sediments.

Historic data from the PTM bore OBS07 just to the east of the Project Area recorded relatively stable water elevations of approximately 184 mAHD prior to its destruction in 2017. Water levels from bore Project bore MBIS17, which targets the colluvium to the south of the Project Area, has been recorded as dry since installation in 2022 with base screen elevation of 181 mAHD. Given the bore locations and distance from active mining or abstraction, these declines are unlikely to be mining or abstraction related effects. Moranbah South Project bores MB09C and MB06, which target the weathered Tertiary sediments and basalt west of

the Project Area, have shown groundwater levels near 196 mAHD, although MB06 has recently been recorded as dry (**Figure 5-14**).

Bores MBID22, MBID06A, MBID07, MBID25A target the weathered Rewan Group strata. Groundwater levels in MBIS22 fluctuate by approximately 10 m in the monitoring record, likely in response to pumping for livestock water supply from a nearby landholder bore located about 5 m away. Similarly, bore MBID07, situated just northeast of MBIS22, exhibits comparable fluctuations, which are also attributed to landholder pumping activities. In contrast, historical data from MBID25 show relatively stable water levels around 183 mAHD, although a notable decline of 10 m was observed at the end of 2021 (**Figure 5-15**).

Shallow bores within the upper weathered parts of the RCM are included with the Regolith. Recent monitoring at bores targeting the upper weathered RCM interburden (see **Figure 5-16**) shows groundwater levels ranging between 184 and 195 mAHD.

Groundwater flow within the Regolith, where it is saturated, is generally towards the south-southeast, following regional topographic gradients and the drainage direction of the Isaac River and Cherwell Creek.

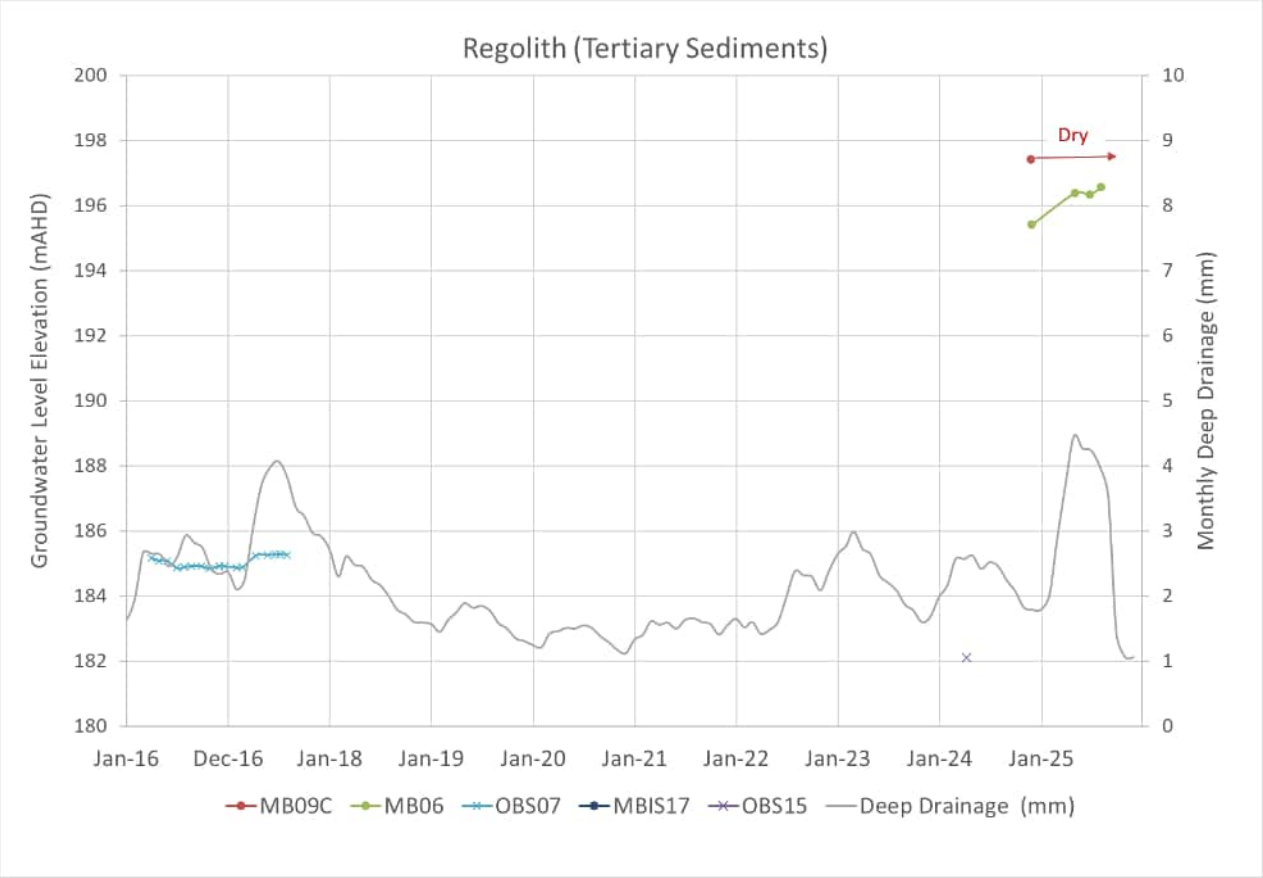


Figure 5-14 Tertiary Sediments and Basalt (regolith) monitoring bore hydrographs

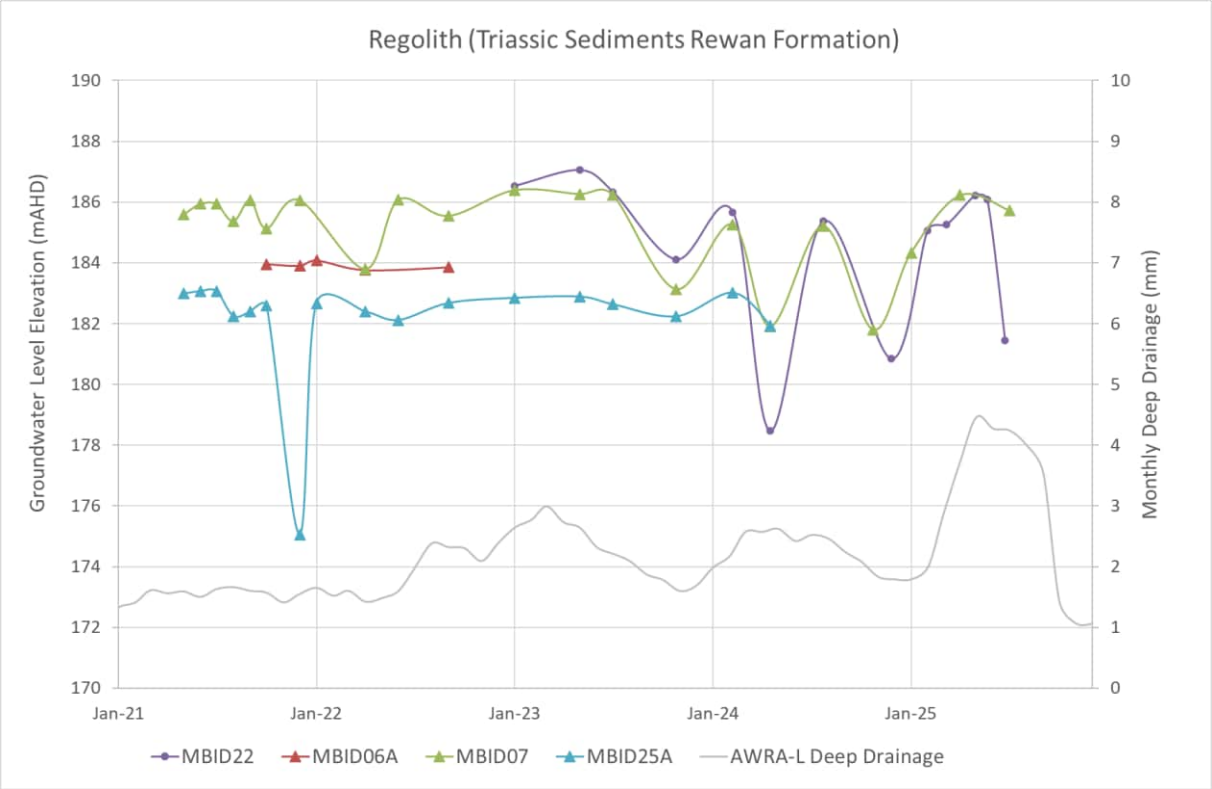


Figure 5-15 Triassic Rewan Group monitoring bore hydrographs

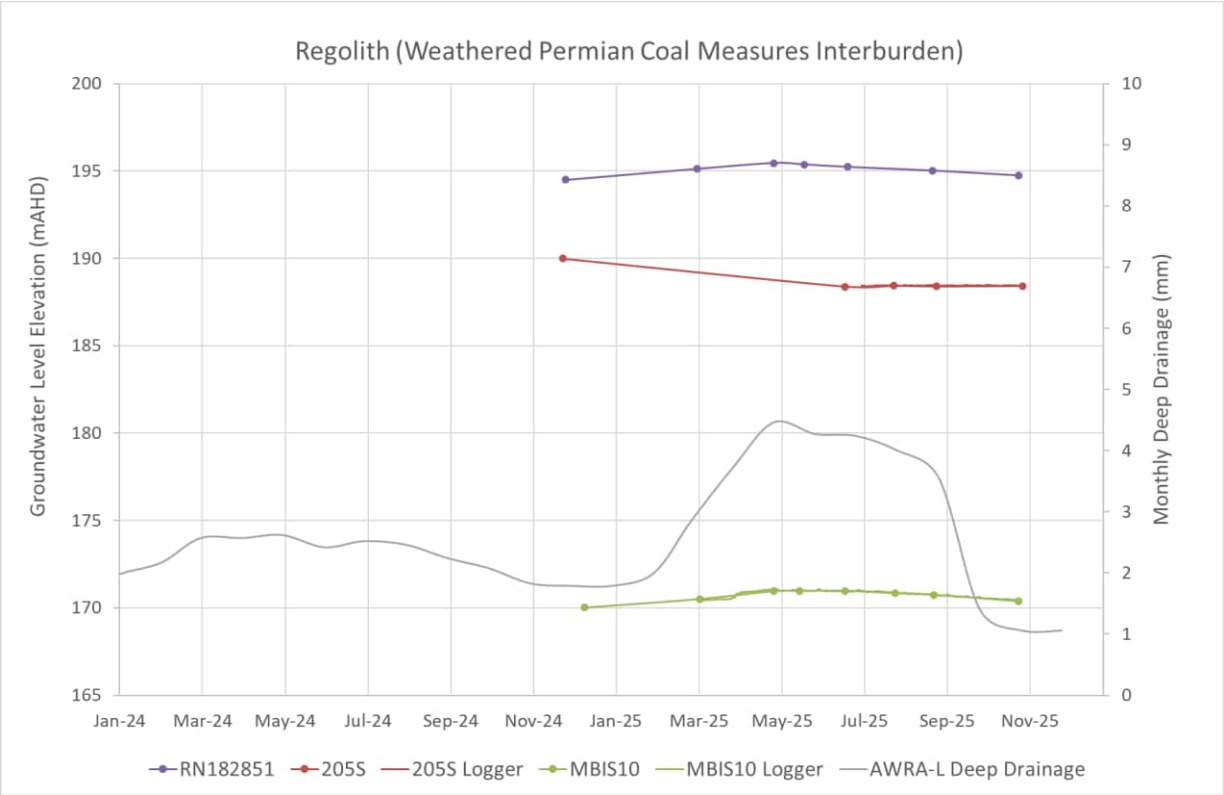


Figure 5-16 Weathered Permian (regolith) monitoring bore hydrographs

5.5.2.2 Recharge and Discharge

The calculated CMB recharge estimates as a percentage of long term average annual rainfall ranged from a minimum of 0.03% to a maximum of 2.83%. Recharge to the Tertiary sediments and weathered strata (Regolith) is restricted by the presence of low hydraulic conductivity material (clays) which limit rainfall infiltration.

Regionally, groundwater discharge within the Regolith may occur primarily via evapotranspiration (which includes components of evaporation through the soil profile, and transpiration from terrestrial vegetation). However, transpiration from terrestrial vegetation appears unlikely in the Project area, as Watermark Eco (2026a) did not identify any terrestrial groundwater-dependent ecosystems beyond the immediate vicinity of creek lines (refer **Section 5.7.2**). There may be some limited local-scale discharge from the Regolith to active mine pits where saturated Regolith is intersected. Vertical seepage from the Regolith to deeper formations is expected to be limited by the underlying low hydraulic conductivity Rewan Group (where present) and other aquitards, such that the Regolith effectively forms a perched groundwater system above the Permian strata.

5.5.3 Permian Coal Measures

5.5.3.1 Distribution and Flow

Groundwater within the Permian coal measures is confined and sub-artesian. Groundwater levels for Project monitoring network bores screened in the Permian coal measures are presented in **Figure 5-17**, **Figure 5-18** and **Figure 5-19**.

Within the Leichhardt coal seam, groundwater levels generally range from approximately 179 to 191 mAHD (~ 11 to 23 BGL) across the Project Area and surrounds (**Figure 5-17**). Most bores with long-term (pre-2022) monitoring data show relatively stable groundwater levels, with gradual declines of up to 2 to 3 m over the monitoring period, likely reflecting the influence of nearby mining activities at IDM. More recent data from newly installed bores at the Project, further east-southeast from IDM, indicate subtle short-term fluctuations of 1–2 m, which appear to correspond with rainfall events.

Notably, bores 592S and MBID15, located close together just north of the proposed Project pit extent, record groundwater levels 10 to 20 m lower than other bores targeting the Leichhardt coal seam. These bores are situated immediately south of mining at IDM, and their lower water levels likely reflect mining-related drawdown and/or compartmentalisation of the RCM groundwater system (**Figure 5-18**).

Poitrel bore OBS9 east of IDE targets the interburden between the Leichhardt and Vermont coal seams. Groundwater levels occur ~12mBGL (190 mAHD), similar to that in the coal seams.

Groundwater levels from bores targeting the Vermont coal seam indicate groundwater levels are between 186 and 189 mAHD (12 to 25 mBGL) and are generally stable over the monitoring record, with only minor fluctuations in response to rainfall. An exception is observed at MBIS16 in the south of the Project Area, where groundwater levels are affected by an actively pumping landholder bore located approximately 10 m south of MBIS16, resulting in localised drawdown (**Figure 5-19**).

Historical data from Matrix+ Consultants (2008) give an insight to historical pre-mining groundwater levels recorded in 2006 within the IIPP project area, which overlapped directly with the IDE Project Area. This provides a comparison to more recent pre-mining groundwater levels. Bores 205S, 205D, 592S and 592D record deeper groundwater levels in 2025 compared to those observed in 2006, with these declines likely attributed to the cumulative impacts of mining activities in and around the Project area. In contrast, bores 593

and 594 show shallower water levels in 2025 relative to 2006, which may possibly be attributed to historical landholder abstraction in the vicinity of these bores 593 and 594 which has now ceased.

Figure 5-20 illustrates the interpreted Permian coal measures potentiometric surface for the end-2025. Overall, groundwater flow directions within the Permian coal measures is consistent with regional topographic trends, with a localised inward gradient towards the active pits at IDM and PTM (**Figure 5-20**).

5.5.3.2 Recharge and Discharge

Recharge to the Permian coal measures occurs where the coal seams of the unit subcrop. Due to the low hydraulic conductivity of the interburden material, groundwater largely flows along the bedding plane of the coal seams. CMB recharge estimates for the Leichhardt coal seam were derived from 94 samples collected across 11 bores. The calculated recharge as a percentage of long term average annual rainfall ranged from 0.02% to 1.59%. For the combined Leichhardt/Vermont coal seam, 38 samples from a single bore were analysed, showing recharge estimates between 0.03% and 0.09% of long term average annual rainfall. Recharge estimates for the Vermont coal seam were based on 17 samples collected from 5 bores. The calculated recharge as a percentage of long term average annual rainfall ranged from 0.04% to 0.24%. For the Fort Cooper Coal Measures, 8 samples from 2 bores were analysed, showing recharge estimates between 0.20% and 1.32% of long term average annual rainfall.

Recharge within the Permian formations is generally low because these units occur at significant depths and are overlain by thick interburden sequences composed of sandstone and siltstone, that have very low hydraulic conductivity, which restricts vertical water movement from the surface to the coal seams. The combination of depth and low-permeability barriers means that rainfall infiltration rarely reaches these formations, and recharge is limited to slow, localised processes such as leakage through fractures or faults. The limited correlation with deep drainage also supports this.

Groundwater discharge occurs predominantly via evaporation from pit faces in mining operations at neighbouring mines.

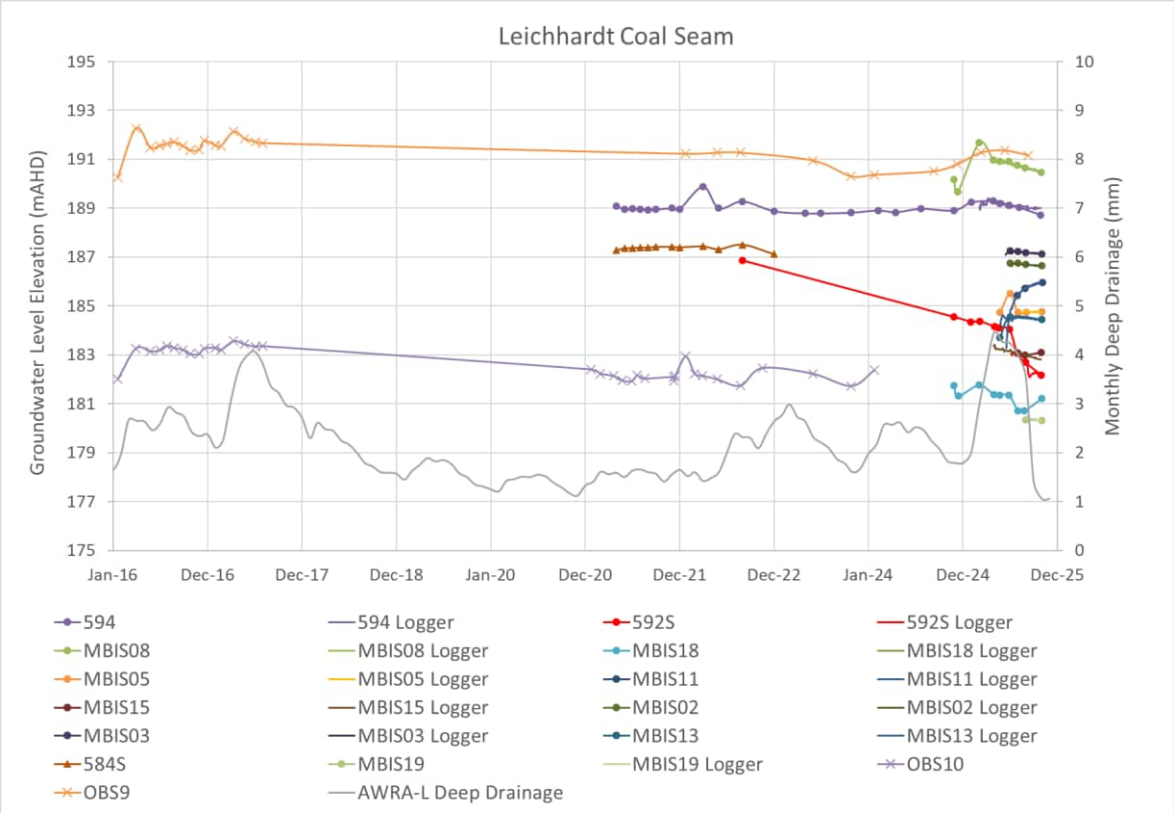


Figure 5-17 Leichhardt Coal Seam monitoring bore hydrographs (above 180 mHD)

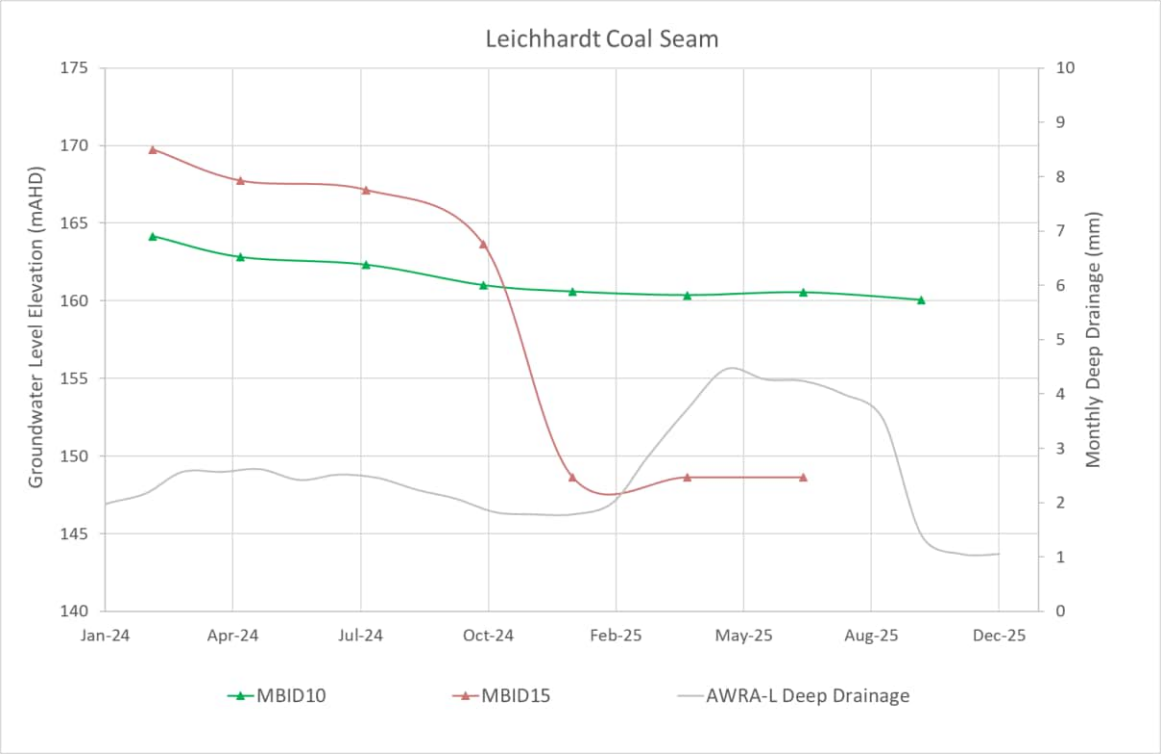


Figure 5-18 Leichhardt Coal Seam monitoring bore hydrographs (below 180 m AHD)

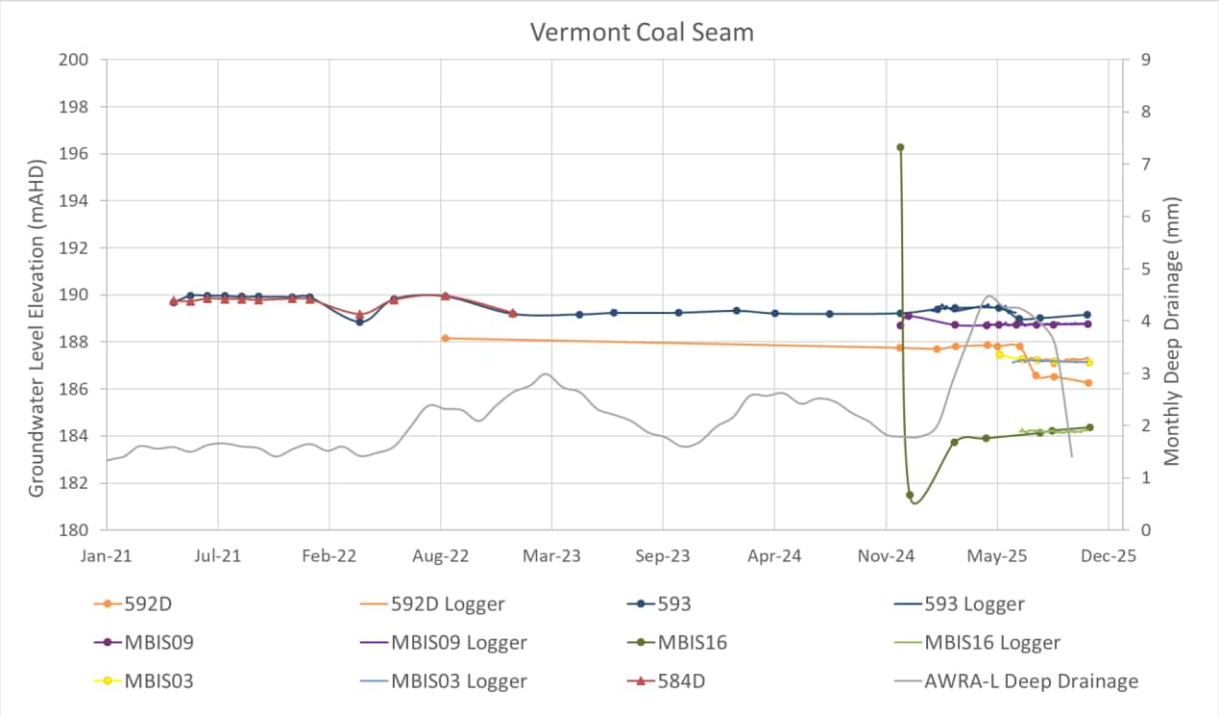
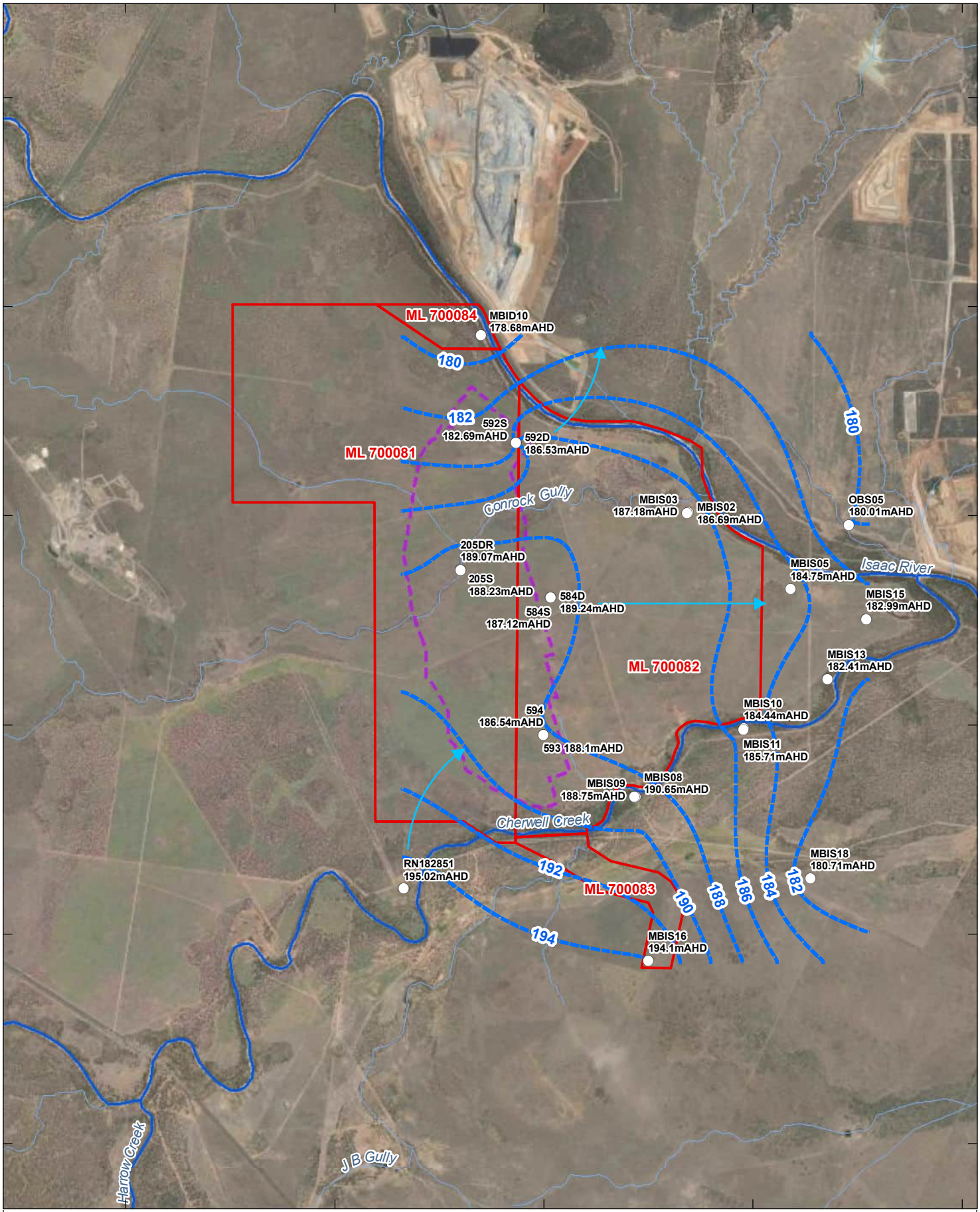


Figure 5-19 Vermont Coal Seam monitoring bore hydrographs



H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_20_Potentiometric Surface and Groundwater Flow Direction - RCM.mxd

0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:60,000 at A4
Project Number:	620.041537.00001
Date:	12-May-2026
Drawn by:	AS

SLR

- Flow Direction
- Groundwater Elevation Contour (mAHD)
- Major Watercourse
- Minor Watercourse
- IDE Project MLAs
- Approximate Project Pit Extent

ISAAC DOWNS EXTENSION PROJECT

POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTION - RANGAL COAL MEASURES

FIGURE 5-20

5.5.4 Vertical Connectivity and Hydraulic Gradient Between Aquifers

The Project's monitoring network includes several locations where two or more bores are installed at the same site, each screened in different aquifer units. These "paired" bores enable direct comparison of groundwater levels between overlying and underlying aquifers, providing valuable insights into hydraulic connectivity and potential vertical flow gradients within the stacked aquifer system.

Figure 5-21 presents a series of graphs illustrating groundwater level trends observed in these paired bores across the Project Area and surrounds. The data is colourised per aquifer unit with groundwater levels in the alluvium (yellow), Leichhardt coal seam (orange), and Vermont coal seam (green), along with the LiDAR derived river bed elevation adjacent to each monitoring site at either Isaac River or Cherwell Creek (as relevant).

At MBIS01/MBIS02/MBIS03 (Isaac River), a vertical head difference of approximately 0.5 m was observed between the Leichhardt and Vermont coal seams, with the Vermont seam exhibiting the higher hydraulic head. This indicates a downward vertical gradient (magnitude ~0.02), suggesting potential downward groundwater movement between the seams. MBIS01 was recorded as dry, and only the base of screen is shown in the figure below; however, measured water levels in the coal seams were above the elevation of the base screen. The site is located approximately 1 km south of active mining operations at IDM, which may be influencing local groundwater levels and hydraulic gradients.

At MBIS04/MBIS05 (Isaac River), groundwater levels in the alluvium and Leichhardt seam are similar, with the alluvium water level slightly shallower. The small head difference of 0.2 m equates to an upward gradient of only magnitude 0.002 but most recent data show an even smaller upward gradient of <0.0001 with heads essentially equal between the two units.

Groundwater levels at bores 594/593, located in the central Project Area, are very similar and fluctuate between upward and downward gradients.

At MBIS14/MBIS15 (confluence of Isaac River and Cherwell Creek, adjacent to the HSE Wetland), Leichhardt Seam groundwater levels are recorded below the base of the alluvium and base of screen at MBIS14 (dry alluvium bore), indicating no potential for Leichhardt coal seam groundwater discharge into the alluvium.

At 592S and 592D (located along the northern edge of the Project Area), a larger vertical head separation of approximately 6 m is observed, with the Vermont seam maintaining a higher head (downward gradient magnitude -0.04). Both bores show a slight decline in groundwater levels over the monitoring period; however, the Leichhardt seam exhibits a greater rate of decline. This, combined with the downward gradient, suggests that the RCM interburden acts as a confining layer between these coal seams at this location.

At MBIS07/MBIS08/MBIS09 (Cherwell Creek), the Leichhardt seam maintains slightly higher groundwater levels relative to the overlying alluvium (downward gradient of magnitude -0.03), with a vertical head difference of approximately 1 m. In contrast, the Vermont seam exhibits an upward head difference relative to both the Leichhardt seam and the alluvium.

At MBIS12/MBIS13 (Cherwell Creek), a vertical head difference of 3 m is recorded (alluvium water levels shallower than the Leichhardt seam), corresponding to an upward gradient of magnitude 0.01. However more recent data shows an even smaller upward gradient of <0.0001 with heads essentially equal between the two units. Although the most recent water-level measurements show similar heads, the longer-term hydrographs display distinctly different trends and responses. This indicates that the two aquifers are hydraulically separate despite the short term similarity in head.

At MBIS17/MBIS18 (south of Project Area), a head difference of approximately 6 m is observed between MBIS17 (historical water level in colluvium; bore now dry) and MBIS18

(recent measurement in the Leichhardt seam). This equates to an upward gradient of magnitude 0.05.

At MBIS10/MBIS11 (Cherwell Creek), a downward gradient of magnitude -0.02 is observed, with a vertical head difference of 1.27 m. Here, the Leichhardt seam maintains higher groundwater levels than the Regolith at MBIS10 (weathered Permian interburden).

Overall, the data indicate that vertical hydraulic connectivity between the alluvium, Leichhardt coal seam, and Vermont coal seam is limited. This supports the conceptualisation of these aquifers as hydraulically distinct, with minimal potential for significant vertical groundwater movement under current conditions. Furthermore, groundwater levels within the alluvium and the Leichhardt and Vermont coal seams are below the stream bed elevations of the Isaac River and Cherwell Creek, indicating there is no potential for RCM groundwater discharge into these surface water features.

Figure 5-21 Vertical Connectivity and Gradient Between Aquifers

5.6 Baseline Groundwater Quality

5.6.1 Groundwater Types

Summary statistics for all monitoring bores, across the parameters assessed, are presented in **Appendix A**.

The proportions of major anions and cations were used to determine the hydrochemical facies of groundwaters sampled at the Project (as well as relevant groundwater sampled at IDM and PTM). The anion-cation balance, pH and electrical conductivity (EC) of historical data from Project monitoring bores (i.e. all bores listed in **Section 5.2.1** and **section 5.2.2**) is displayed on the Durov diagrams in **Figure 5-22** to **Figure 5-25**. The diagrams are split by aquifer, including bores in the Alluvium (**Figure 5-22**), regolith (**Figure 5-23**),and Permian Coal Measures (**Figure 5-24**) and Fort Cooper Coal Measures (**Figure 5-25**). Overall, groundwater quality shows a high degree of variability both between hydrostratigraphic units and among individual bores within the same unit.

Groundwater quality for majority of the monitoring bores screened within the Alluvium indicates a Na-Cl water type, with pH values ranging from weakly acidic to weakly alkaline. While some bores have a mixed water type with higher ratios of magnesium and bicarbonate. This chemistry is consistent with processes such as ion exchange on clays and the dissolution of saline or evaporitic material, which commonly influence groundwater in alluvial settings. In contrast, bores upstream along the Isaac River show a Na-Mg-Ca water type and slightly lower EC, which reflects fresher groundwater with shorter residence times and stronger interaction with the surrounding sediments and rocks.

Monitoring bores within the Regolith include those installed into both Tertiary sediments/basalt, weathered Rewan Group and shallow weathered RCM overburden. The dominant water types are Na-Mg-Cl, with some Na-Mg-HCO_3 (MBIS10 – weathered RCM). Na-Mg waters usually form when silicate minerals like feldspars and pyroxenes break down, releasing sodium and magnesium into solution, which can occur as a result of weathering. The Na–HCO_3 water type points to ion exchange processes and carbonate inputs, with bicarbonate coming from both carbonate dissolution and CO_2 from soils.

In the shallow zones, some samples have higher salinity as EC (bore 205S), showing an evaporitic signature where salts are concentrating through evaporation. The pH is neutral to moderately alkaline, which is typical where carbonate reactions help buffer acidity.

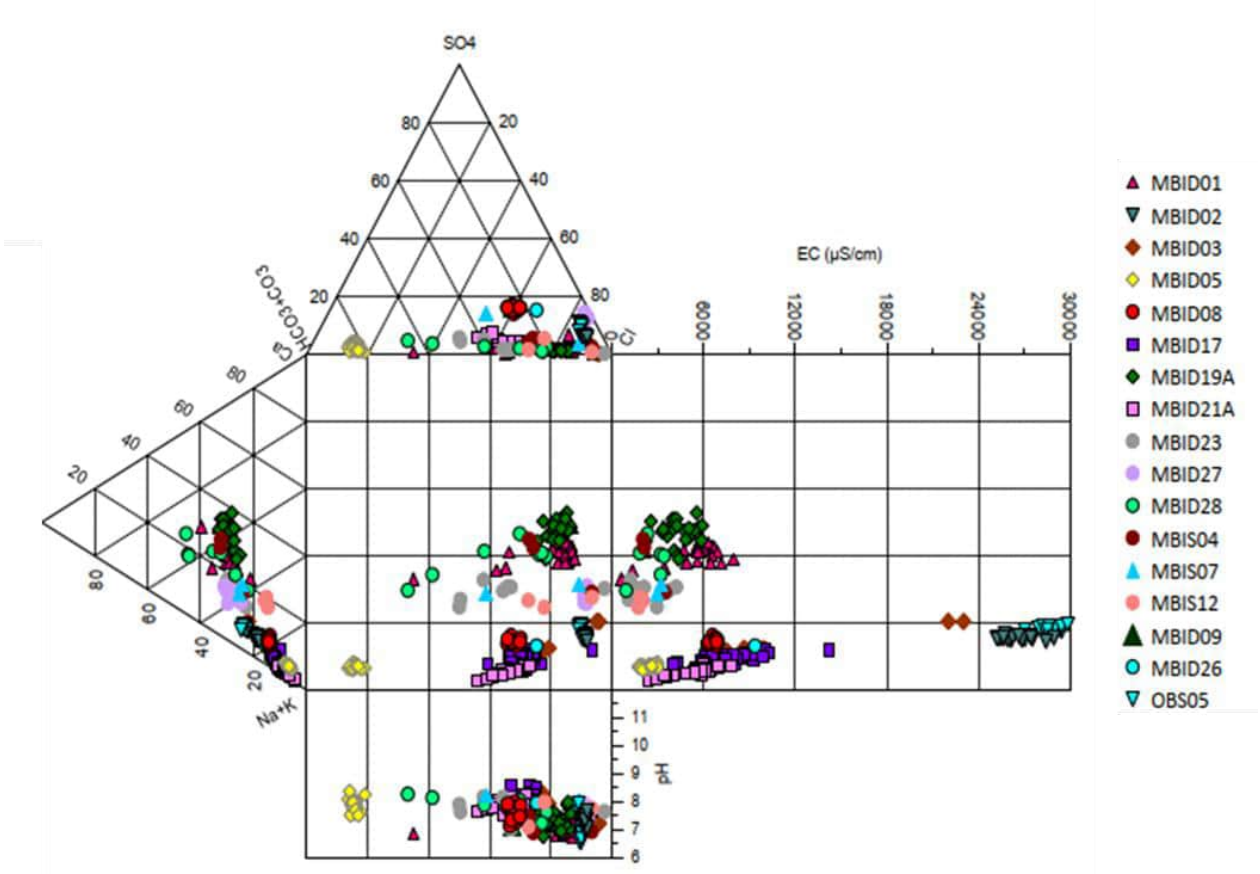


Figure 5-22 Alluvium Durov Plot

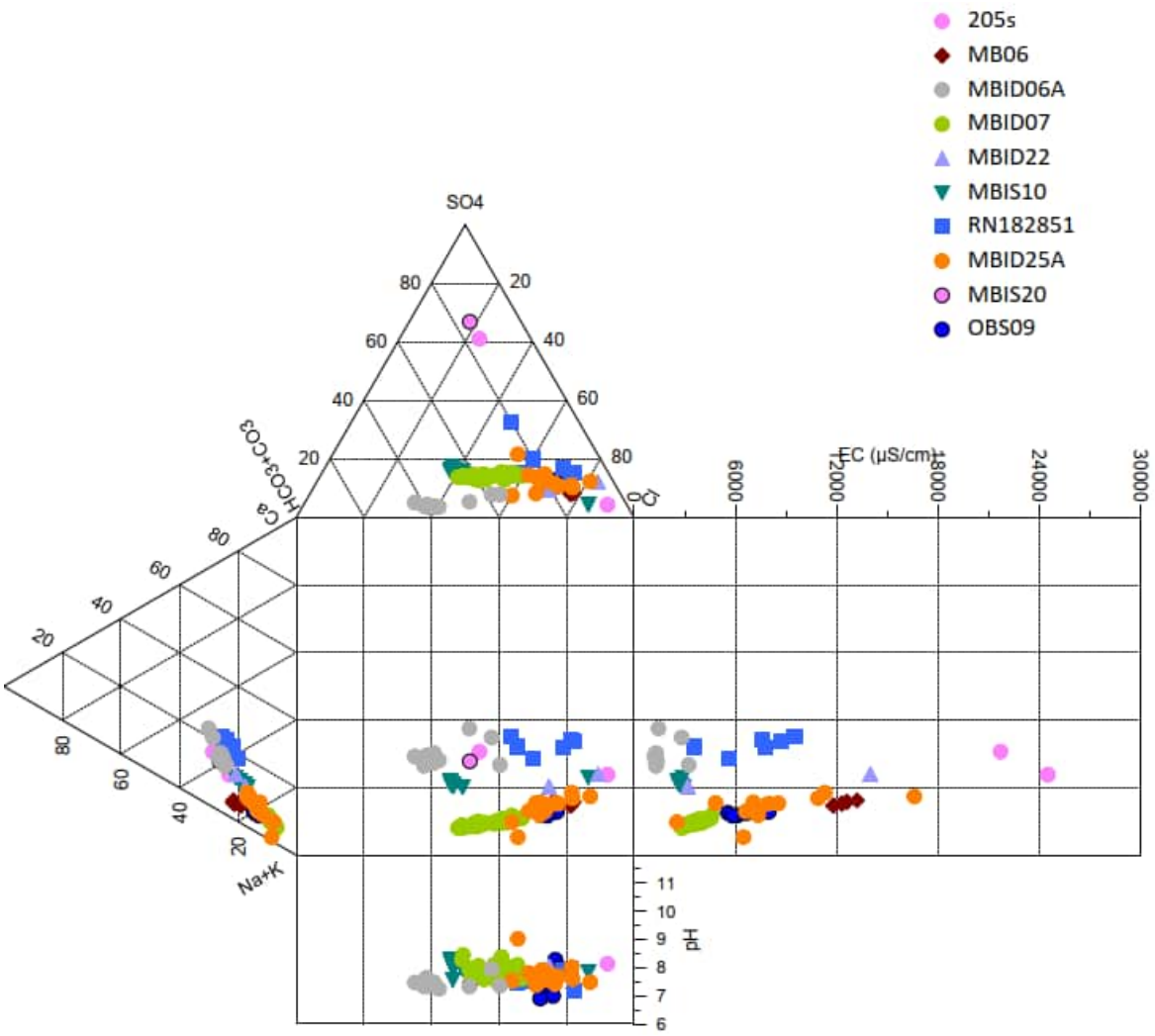


Figure 5-23 Regolith Durov Plot

Monitoring bores screened within the RCM mainly record Na–Cl type waters, with minor increases in carbonate (CO_3) and magnesium (Mg). The dominance of Na–Cl waters likely reflects the influence of evaporite dissolution and long-term water–rock interaction in the coal-bearing formation. Salinity across the RCM varies widely, from brackish to highly saline, indicating compartmentalisation of the groundwater system. Bores 592D and 205DR, located in the central part of the Project Area, show particularly high salinities, suggesting that brackish to highly saline groundwater is common throughout the RCM. Groundwater pH also varies considerably, ranging from slightly acidic to strongly alkaline, as observed in MS0163.

In the Fort Cooper Formation (FCCM), monitoring bores consistently record strongly Na-Cl type waters, with minor contributions of HCO_3. The waters are generally slightly alkaline. The dominance of Na-Cl-HCO_3 suggests significant rock–water interaction and long residence times, allowing minerals to dissolve and release their ions into solution.

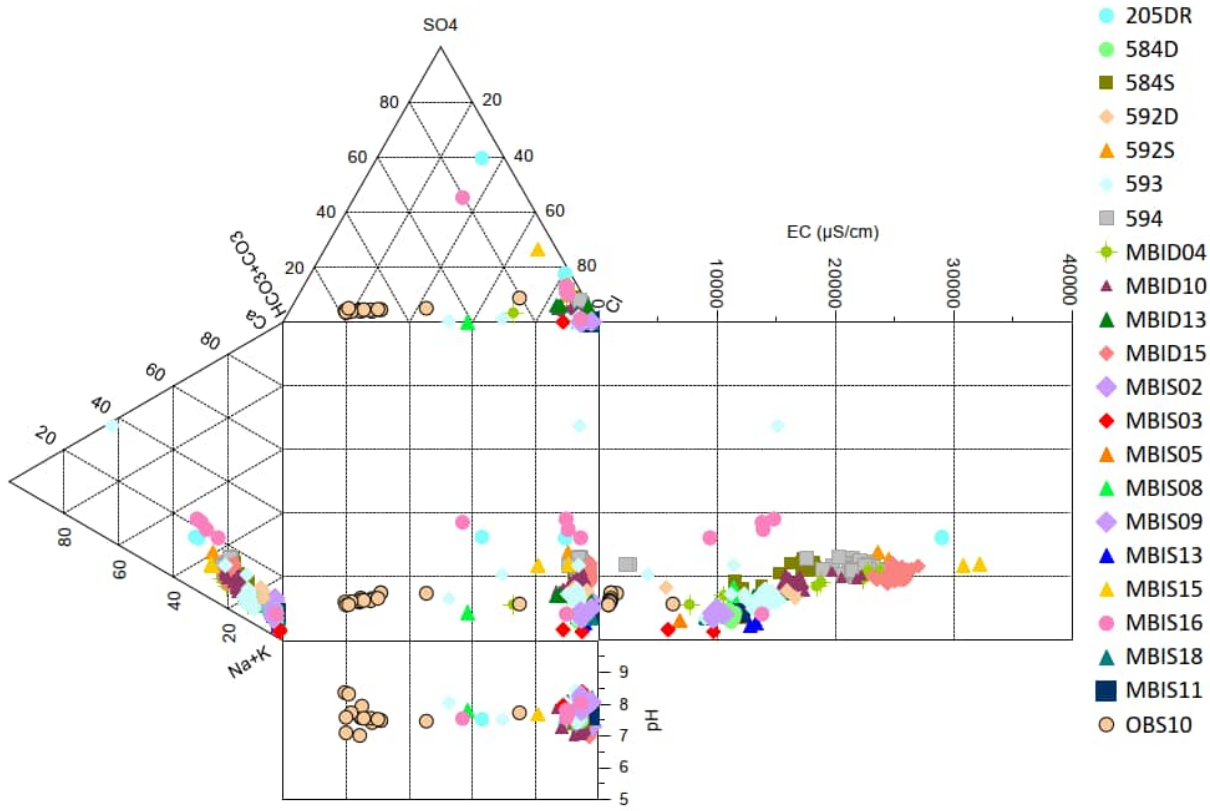


Figure 5-24 Permian Coal Measures Durov Plots

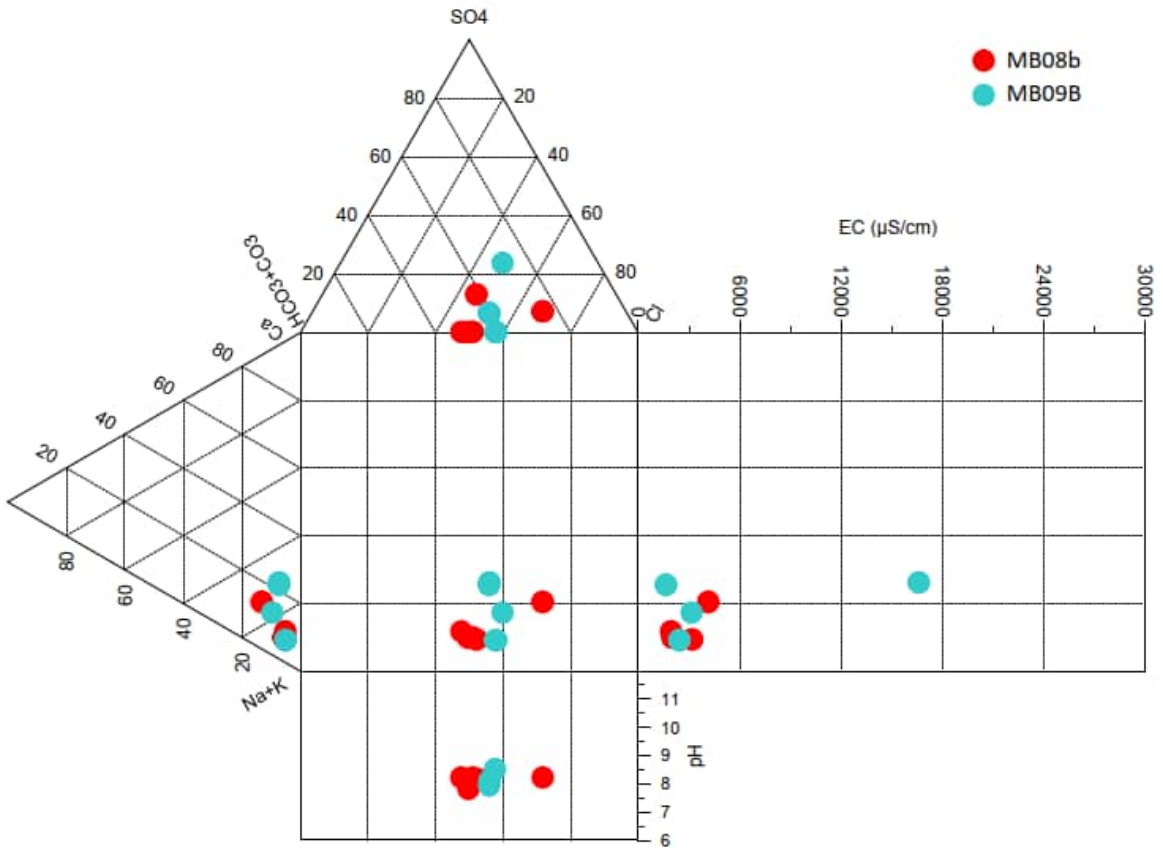


Figure 5-25 Fort Cooper Coal Measures Durov Plot

5.6.2 Salinity

Salinity is a key constraint to water management and groundwater use by receptors and can be described by total dissolved solid (TDS) concentrations. **Figure 5-26** presents the TDS data associated with groundwaters screened in the various hydrostratigraphic units for Project monitoring bores.

The graph shows that available data for the alluvium indicates a large range in salinity, with TDS ranging from fresh to highly saline, with an average TDS of 7,727 mg/L and range between 566 mg/L and 24,800 mg/L. Fresher salinities are considered indicative of relatively recent local recharge, whereas more saline areas of alluvium are considered indicative of relatively long groundwater residence times and significant evapo-concentration. Elevated total dissolved solids (TDS) were recorded at PTM bore OBS05, located just to the west of the PTM mining area. Similarly, elevated TDS levels were observed at bore MBID02, which is situated just southeast of IDM. In contrast, salinity at other bores along the Isaac River and Cherwell Creek were at or below the average of the dataset. These results indicate that groundwater in the alluvium is not well interconnected but rather somewhat isolated across the formation. It also indicates that some areas receive significant recharge from surface water whereas other areas experience a comparative lack of freshwater recharge, an increase in evapoconcentration, and longer groundwater residence times

Groundwater from bores in the Regolith ranges from brackish to highly saline, with an average TDS of 4,719 mg/L and range between 793 and 23,800 mg/L. Lower TDS values

were recorded at bore MBID06A, which targets the shallow, weathered Rewan Group. Although classified as “brackish” according to FAO (2013), the salinity at this location is relatively fresh. This may indicate the presence of recently recharged groundwater with shorter residence times, facilitated by flow through highly weathered strata.

Bores that screen the Leichhardt and Vermont coal seams of the RCM generally have higher salinities, recording groundwater ranging from brackish to highly saline, with an average TDS of a saline 11,081 mg/L and range between 2,710 and 23,000 mg/L.

The FCCM have salinities between 915 and 7,310 mg/L with an average of 2,106 mg/L.

For the purposes of the RGS (2026) study, a subset of the project groundwater quality dataset was used to represent more localised conditions around the void. This subset focuses on bores targeting non-coal interburden that will surround the spoil, as well as selected bores targeting coal seams near the void. Median field electrical conductivity (EC) values were 3,492 µS/cm for the non-coal interburden and 11,216 µS/cm for the coal seams.

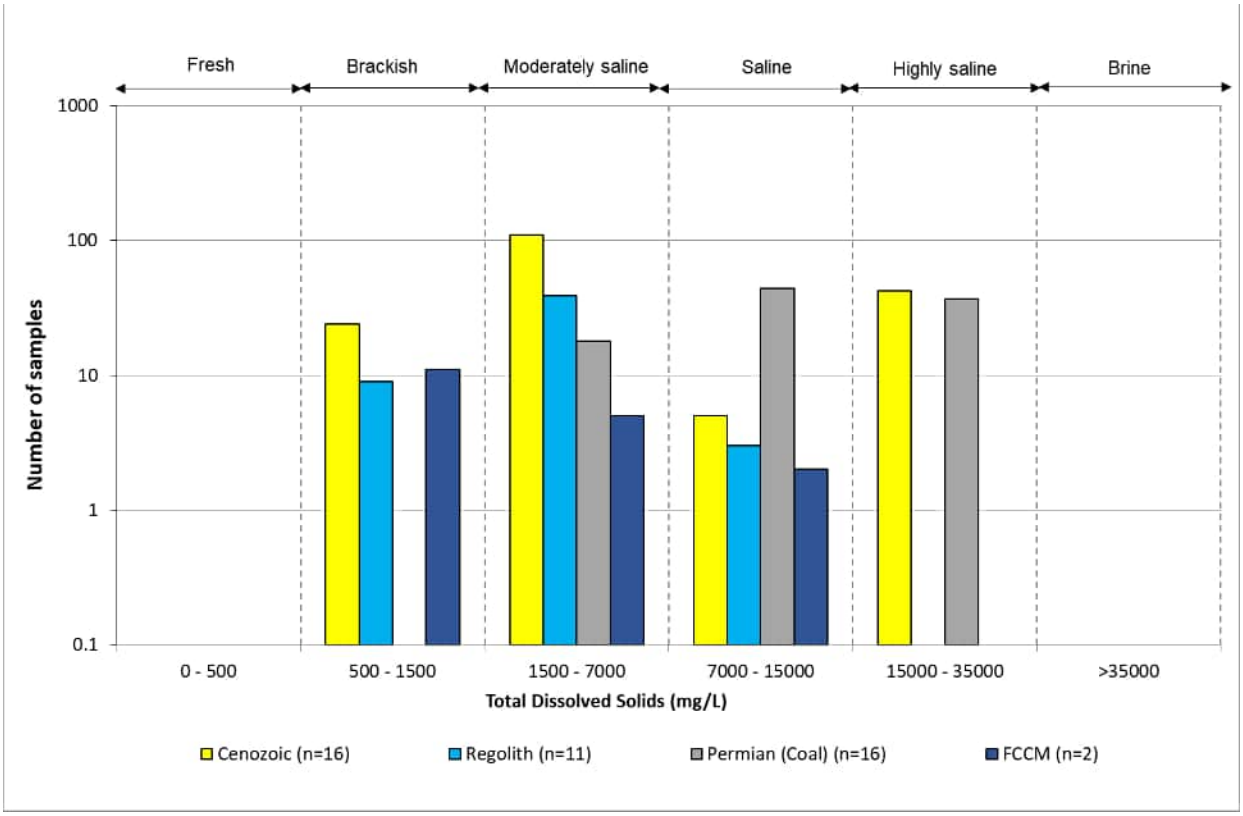


Figure 5-26 FAO (2013) Salinity Ranking by Unit – Project Area and surrounding areas

5.6.3 Beneficial Groundwater Use (Environmental Values)

Water resources within the vicinity of the Project are captured under the *Water Plan (Fitzroy Basin) 2011* (Water Plan). The plan covers surface water (zone WQ1301) associated with Isaac River, and groundwaters (zone WQ1310 – Fitzroy Basin groundwaters). The Project Area lies within the Isaac Connors Groundwater Management Area (GMA) of the Fitzroy Basin under the Water Plan (**Figure 5-27**). The Isaac Connors GMA consists of the following:

- Groundwater Unit 1, containing the aquifers of the Quaternary alluvium associated with the Isaac Conners Alluvium sub-area; and
- Groundwater Unit 2, containing all subartesian aquifers within the Isaac Connors GMA other than the aquifers included in Isaac Conners Groundwater Unit 1.

Groundwater resources at the Project are also scheduled under the EPP Water and Wetland Biodiversity as Isaac Groundwaters of the Isaac River Sub-basin of the Fitzroy Basin Water Plan (WQ1310). The legislated environmental values (EVs) for these groundwaters are:

- Biological integrity of aquatic ecosystems;
- Human use EVs:
    - Suitability of water supply for irrigation;
    - Farm water supply/use;
    - Stock watering;
    - Primary recreation;
    - Drinking water supply;
    - Cultural and spiritual values.

The EPP Water and Wetland Biodiversity provides water quality objectives (WQOs) for the scheduled EVs in WQ1310. WQOs are long-term goals for water quality management and the purpose of the WQOs is to support and protect EVs. They are numerical concentration levels or narrative statements of indicators established for receiving waters to support and protect the designated EVs for those waters. They are based on scientific criteria or water quality guidelines but may be modified by other inputs (e.g. social, cultural, economic).

Where groundwater quality analysis results exceed a particular WQO for a particular EV, it is considered indicative that the groundwater may be unsuitable for supporting that particular EV. The WQ1310 WQOs for groundwater relevant to IDE are shown **Table 5-5**.

Table 5-5 Water Quality Objectives for Isaac Sub-basin Environmental Values

Water Quality Indicator	Unit	ADWG Guidelines[1]		Isaac River Sub-basin EVs[2]		
		Health	Aesthetic	Irrigation	Stock	Aquatic 95%[3]
pH	-		6.5 to 8.5			6.5 to 8.5
Aluminium	mg/L		0.2		5	0.055
Calcium	mg/L				1000	
Chloride	mg/L		250			
Magnesium	mg/L				2000	
Manganese	mg/L	0.5	0.1	10		1.9
Sodium	mg/L		180			
Sulfate	mg/L				1000	
Zinc	mg/L		3			0.008
Arsenic	mg/L	0.01		2	0.5	0.024
Cadmium	mg/L	0.002			0.01	0.0002
Chromium	mg/L	0.05			1	0.001
Cobalt	mg/L			0.1	1	
Copper	mg/L	2	1		1	0.0014
Lead	mg/L	0.01			0.1	0.0034
Mercury	mg/L	0.001			0.002	0.0006
Nickel	mg/L	0.02			1	0.011
Selenium	mg/L	0.01			0.02	0.005
Silver	mg/L	0.1				0.05

1. NHMRC, NRMMC (2011) Australian Drinking Water Guidelines
2. Table 2, Table 9, Table 10 and Table 11 of DEHP (2011) Isaac River Sub-basin Environmental Values and Water Quality Objectives
3. ANZG (2018) Aquatic ecosystem protection for moderately disturbed system (95% protection)

The EPP Water and Wetland Biodiversity also provides limited WQOs specifically for underground aquatic ecosystem protection in Fitzroy Basin groundwaters (**Table 5-6**). These WQOs vary across the Fitzroy Basin and are defined on the basis of groundwater Chemistry Zones. The applicable Chemistry Zone for the Project is Isaac Groundwater (Zone 34; Sodic Sequence - Saline: Na, Cl, see **Figure 5-27**). These WQOs are classified by groundwater depth ('shallow' being <30 m depth, and 'deep' being >30 m depth) and are summarised below. The management intent of each WQO zone is to maintain each of 20th, 50th and 80th percentile values.

Table 5-6 Isaac River Sub-basin Zone 34 WQOs for groundwater resources (aquatic ecosystem protection) (DEHP, 2011)

Water Quality Indicator	Unit	Shallow Groundwater (<30m)			Deep Groundwater (<30m)		
Percentile	-	20th	50th	80th	20th	50th	80th
EC	µS/cm	498	2150	8910	3419	6100	16000
Hardness as CaCO3	mg/L	163	674	2228	359	919	3208
pH	-	7.1	7.75	8.1	7.4	7.8	8.03
Alkalinity	mg/L	154	435	752	156	275	536
Ca	mg/L	18	84	215	46	145	442
Mg	mg/L	27	108	389	35	115	491
Na	mg/L	135	747	1500	480	1100	2565
Cl	mg/L	171	1309	3185	753	1900	5905
SO4	mg/L	12	140	318	25	138	398
HCO3	mg/L	187	536	878	188	330	650
NO3	mg/L	0	0.95	5.3	0.01	2.15	14.92
SiO2	mg/L	21	36	52	16	25	36
F	mg/L	0.1	0.28	0.5	0.02	0.155	0.4
Fe	mg/L	0	0.03	0.14	0	0.05	0.246
Mn	mg/L	0	0.01	0.16	0	0.05	0.291
Zn	mg/L	0	0.015	0.06	0.01	0.025	0.317
Cu	mg/L	0	0.01	0.03	0.017	0.03	0.03

In order to understand the possible utilisation of groundwater resources within and proximal to the Project Area, available Project groundwater quality data (80th percentile of available dataset at each bore) have been compared to the:

- Australian Drinking Water Guidelines (ADWG) (NRMMC, 2011).
- Aquatic ecosystem protection for moderately disturbed system (ANZG, 2018) (95% protection).
- Isaac River Sub-basin Environmental Values and Water Quality Objectives: stock and irrigation (DEHP, 2011).
- Fitzroy Basin Groundwater Water Quality Objectives: Aquatic ecosystems (Zone 34) (DEHP, 2011).

A comparison of these guidelines to the 80th percentile of available historical water quality data for the monitoring bores are presented as **Appendix A**.

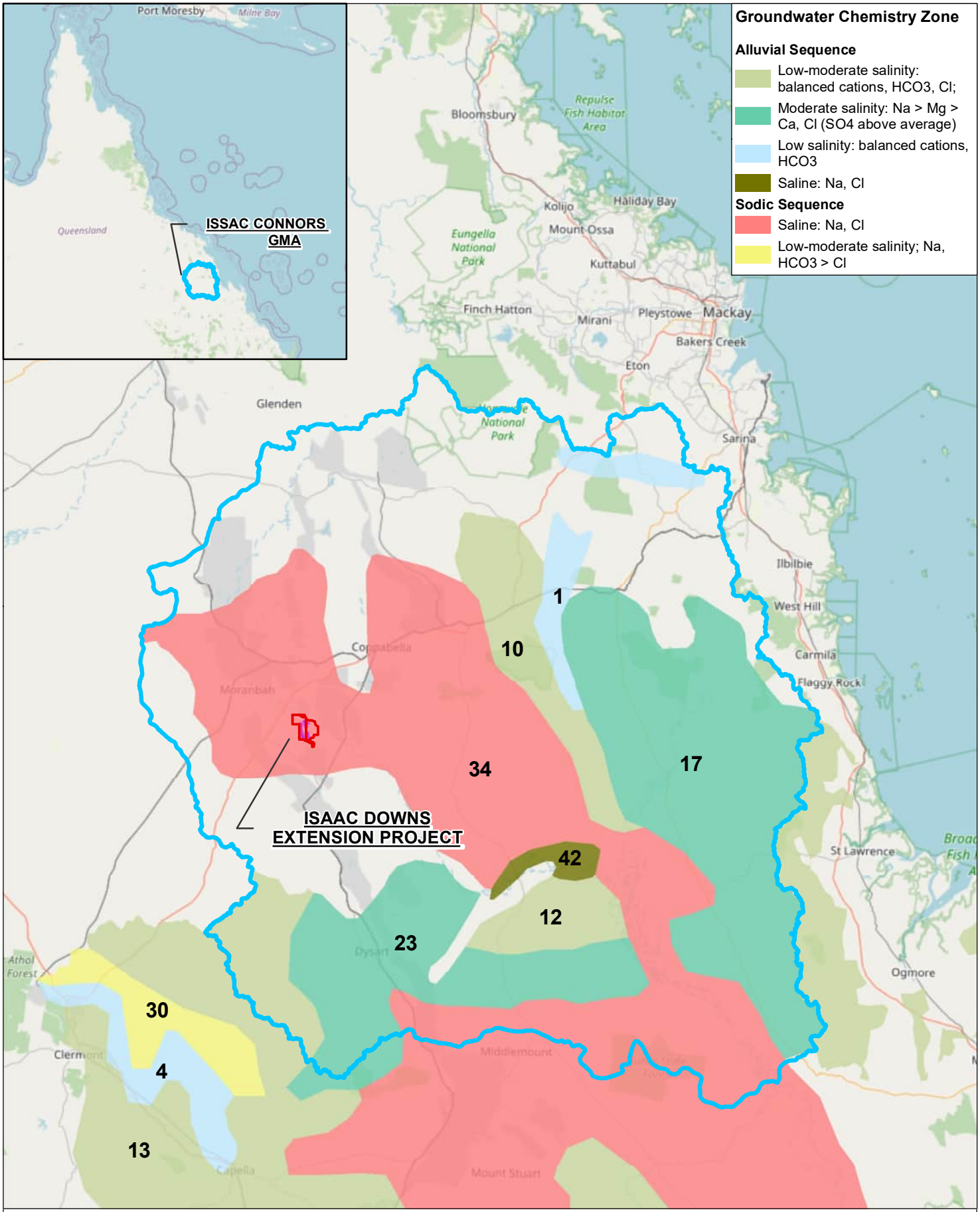
Groundwater within the alluvial and regolith Project bores generally exceeds the WQO criteria for Zone 34 Fitzroy Basin WQOs for Aquatic Ecosystem protection (shallow groundwaters <30 m) for zinc, manganese, pH, and total alkalinity. Bores also exceed the

Aquatic Ecosystem EV for cadmium, copper, mercury and selenium. However, bores MBIS05 and MBID07 targeting the alluvium along the Isaac River show no exceedances of WQO criteria. This difference may be attributed to the aforementioned hydrogeological heterogeneity of the alluvium, which likely results in shorter groundwater residence times and a greater influx of recharged fresher water at these locations. Additional exceedances for chloride, sodium, sulphate, and selenium were observed at the nearby PTM bore OBS5 which also recorded elevated salinities compared to other alluvium bores (**Section 5.6.2**). Overall, the comparison suggests that alluvial and regolith groundwater typically exceeds one or more WQO criteria for aquatic ecosystem protection but is generally suitable for supporting the stock watering and irrigation.

Groundwater in the Permian strata units, including the Leichhardt and Vermont coal seams, consistently exceeds multiple WQO criteria across all scheduled EVs. Key exceedances include pH, EC, and many major ions and dissolved metals such as manganese, chromium, iron, and zinc. A similar exceedance pattern is observed in groundwater from the FCCM. This indicates that groundwater in the Permian coal measures is generally unsuitable to support any of the scheduled EVs.

Overall, the above comparative analysis of available Project groundwater quality data with EV WQO criteria indicates the following:

- Alluvial groundwater: Exceeds several WQOs for Zone 34 Fitzroy Basin WQOs for Aquatic Ecosystem protection (shallow groundwaters <30 m) and the Aquatic Ecosystem EV, however considered generally suitable for supporting the stock watering and irrigation EVs.
- Regolith groundwater: Exceeds several WQOs for Zone 34 Fitzroy Basin WQOs for Aquatic Ecosystem protection (shallow groundwaters <30 m) and Aquatic Ecosystem EV, however considered generally suitable for supporting the stock watering and irrigation EVs.
- Permian coal measures groundwater: Consistently exceeds WQOs for the stock watering, irrigation, and aquatic ecosystem protection EVs.


Groundwater Chemistry Zone
Alluvial Sequence
Low-moderate salinity: balanced cations, HCO3, Cl;
Moderate salinity: Na > Mg > Ca, Cl (SO4 above average)
Low salinity: balanced cations, HCO3
Saline: Na, Cl
Sodic Sequence
Saline: Na, Cl
Low-moderate salinity; Na, HCO3 > Cl
ISSAC CONNORS GMA
Queensland
Port Moresby
Milne Bay
Bloomsbury
Repulse Fish Habitat Area
Kolijo
Halliday Bay
Mount Ossa
Eungella National Park
Kuttabul
Finch Hatton
Mirani
Pleystowe
Mackay
Bakers Creek
Eton
Glenden
Sarina
Ilbilbie
West Hill
Carmila
Flaggy Rock
St Lawrence
Ogmore
Coppabella
Moranbah
Dysart
Middlemount
Mount Stuart
Clermont
Capella
Athol Forest
1
10
34
17
42
12
23
30
4
13
ISAAC DOWNS EXTENSION PROJECT
0
15
30
km
Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:1,250,000 at A4
Project Number: 620.041537.00001
Date: 18-Mar-2026
Drawn by: AS
IDE Project MLAs
Approximate Project Pit Extent
Isaac Connors Groundwater Management Area (GMA)
ISAAC DOWNS EXTENSION PROJECT
WATER QUALITY OBJECTIVE ZONES
SLR
FIGURE 5-27
H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_24_Water Quality Objective Zones.mxd

5.7 Groundwater Receptors

Based on the information reported in SLR (2024f), SLR (2024e) (**Appendix E**) and AGE (2022) as well as other nearby relevant studies, the two key groundwater receptors relevant to the Project are:

1. Private landholder groundwater extraction bores utilised for farm supply (primarily stock watering); and
2. Potential GDEs, particularly those associated with the Isaac River and its floodplain and tributaries.

5.7.1 Anthropogenic

A search of the Queensland Government's Registered Groundwater Bore Database (GWDB) (DRDMW, 2024) was carried out for registered bores within 5 km of the Project Area (**Figure 5-28**). A subsequent bore census was conducted by SLR (2024e) (**Appendix E**). The bore census confirmed a total of 11 landholder supply bores within 5 km of the Project Area. Of these, six (6) were active supply bores, while the remaining five (5) were inactive and not equipped with pumps at the time of the survey. Details of the 11 landholder bores are provided in **Table 5-7**, while **Figure 5-28** shows all GWDB registered bores inspected during the 2024 census, including the 11 landholder bores. Non-landholder bores RN162143 (MB06), RN158317 (MB08b), RN162046 (MB09B), RN162047 (MB09C) and RN182851 formed part of the baseline monitoring network at IDE (**Section 5.2**). Other non-landholder bores shown in **Figure 5-28** are historical monitoring bores.

Bores RN162815 (unknown aquifer), RN103210 (Permian coal measures), and the 5 Mile Windmill Bore (weathered Triassic / regolith) are stock supply bores, each supplying one or more storage tanks or cattle troughs. Measured flow rates at these bores during the site visit ranged from 0.05 to 0.25 L/s. The Horse Paddock Bore was not operational at the time of inspection, and the landholder was unable to activate the pump. No information regarding the pumping schedules of the stock supply bores was available from the landholder.

Bores RN182871 and RN182872 are active supply bores for a small basalt quarry just west of the Project Area and drilled to 60 mBGL and 80 mBGL respectively, indicating a likely groundwater source within the FCCM. Both are equipped with steel headworks and electro-submersible pumps however no depth or source aquifer information is available. These bores reportedly operate at rates of 0.2 and 0.3 L/s, respectively, for approximately 8 hours per day. Bore RN182871, drilled in October 2024, is more recent than RN182872, and the quarry manager reported elevated iron precipitate in this bore.

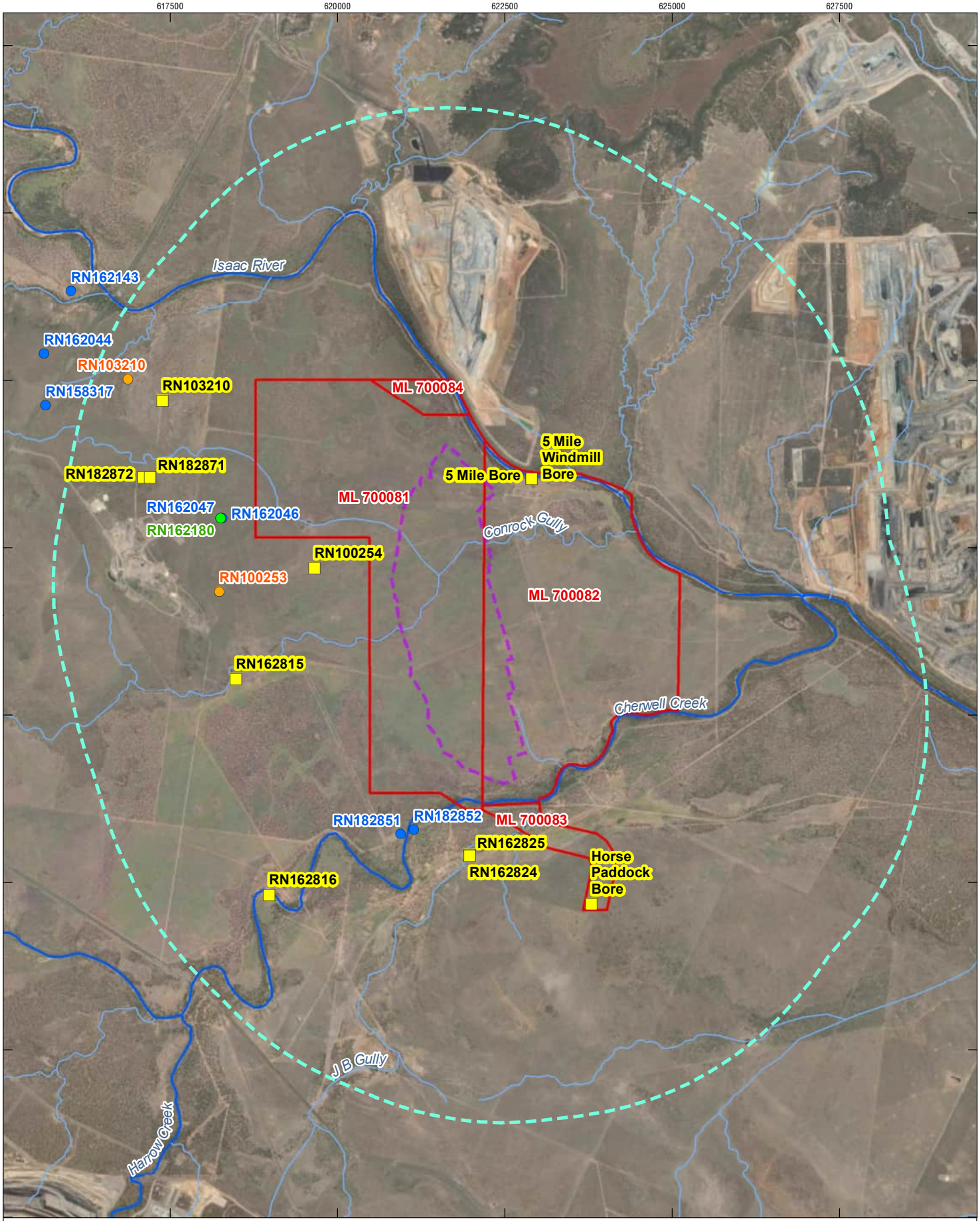
Table 5-7 Available details of water supply bores within 5 km of the Project Area

Bore ID	Easting (AGD84)	Northing (AGD84)	Depth (m)	Geology	Status	Comment	EC (µS/cm)	pH	Pumping rate at time of visit (L/s)
RN162817 (5 Mile Bore)	622783	7558348	36.3	Weathered Triassic strata (regolith)	Inactive Supply Bore	Not equipped	1,776	6.64	-
RN162818 (5 Mile Windmill Bore)	622787	7558347	36.3	Weathered Triassic strata (regolith)	Active Supply Bore	Steel headworks with submersible pump powered by 2 solar panels and an electric box; windmill disconnected; feeds polyline.	7,652	6.646	0.05
RN162815	618369	7555359	59	[2]Unknown (possibly Fort Cooper Coal Measures)	Active Supply Bore	Steel headworks with submersible pump powered by 2 solar panels and an electric box; feeds polyline to water storage tank	2,306	7.33	0.25
RN182872	616986	7558366	50	[2]Unknown (possibly FCCM)	Active Supply Bore	Steel headworks with 7A-25 submersible pump powered by generator; feeds 63 mm polyline.	1,872	7.4	0.2
RN182871	617089	7558366	60	[2]Unknown (possibly FCCM)	Active Supply Bore	Steel headworks with 7A-25 submersible pump powered by generator; feeds 63 mm polyline.	1,755	7.15	0.3
RN162459 (Horse Paddock Bore)	623683	7551993	85	Permian Coal Measures Vermont Coal Measures	Active Supply Bore	Submersible pump with 3 pipes (63 mm polyline) attached to headworks.	1,162	7.72	-
RN103210	616755	7559838	66	Permian Coal Measures (possibly FCCM)	Active Supply Bore	Steel headworks with submersible pump powered by 2 solar panels and an electric box; feeds polyline to water storage tank	2,376	7.18	~0.25
RN100254	619554	7556994	>150	[2]Unknown (possibly FCCM)	Inactive Supply Bore	Not equipped with pump	6,826	8.15	-

Bore ID	Easting (AGD84)	Northing (AGD84)	Depth (m)	Geology	Status	Comment	EC (µS/cm)	pH	Pumping rate at time of visit (L/s)
RN162825	621858	7552731	40.8	[2]Unknown (possibly FCCM)	Inactive Supply Bore	Old steel head works not attached to main riser not equipped with pump	3,393	7.09	-
RN162816	618861	7552129	45	[2]Unknown (possibly FCCM)	Inactive Supply Bore	not equipped with pump	578	6.98	-
RN162824	621858	7552713	15	[2]Unknown (possibly regolith)	Inactive Supply Bore	not equipped with pump	2,968	6.89	

[1] blocked by pump headworks

2 target geology is unknown and has been assigned based on bore depth and model layers



0 1 2 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:75,000 at A4
Project Number:	620.041537.00001
Date:	06-May-2026
Drawn by:	AS

Landholder Bore

Registered Bore

- Monitoring
- Monitoring (VWP)
- Supply

- Major Watercourse
- Minor Watercourse
- IDE Project MLAs
- Approximate Project Pit Extent
- Proposed Project Pit 5km Buffer

ISAAC DOWNS EXTENSION PROJECT

REGISTERED AND LANDHOLDER BORES WITHIN 5KM OF IDE AREA

SLR

FIGURE 5-28

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_28_Registered and Landholder Bores within 5km of IDE Area.mxd

5.7.2 Environmental - Groundwater Dependent Ecosystems

A groundwater dependent ecosystem (GDE) is a natural ecosystem that requires “access to groundwater to meet all or some of their water requirements on a permanent or intermittent basis, so as to maintain their communities of plants and animals, ecosystem processes and ecosystem services” (Richardson, et al., 2011). GDEs are typically classified as either:

- aquatic GDEs (i.e. ecosystems dependent on the surface-expression of groundwater;
- terrestrial GDEs (i.e. ecosystems dependent on the sub-surface presence of groundwater, including some riparian vegetation communities); or
- subterranean GDEs (aquifer and cave ecosystems, e.g. stygofauna).

GDEs can require access to groundwater on a permanent (obligate) or intermittent (facultative) basis to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services (Doody et al., 2019).

5.7.2.1 National Atlas of Groundwater Dependent Ecosystems

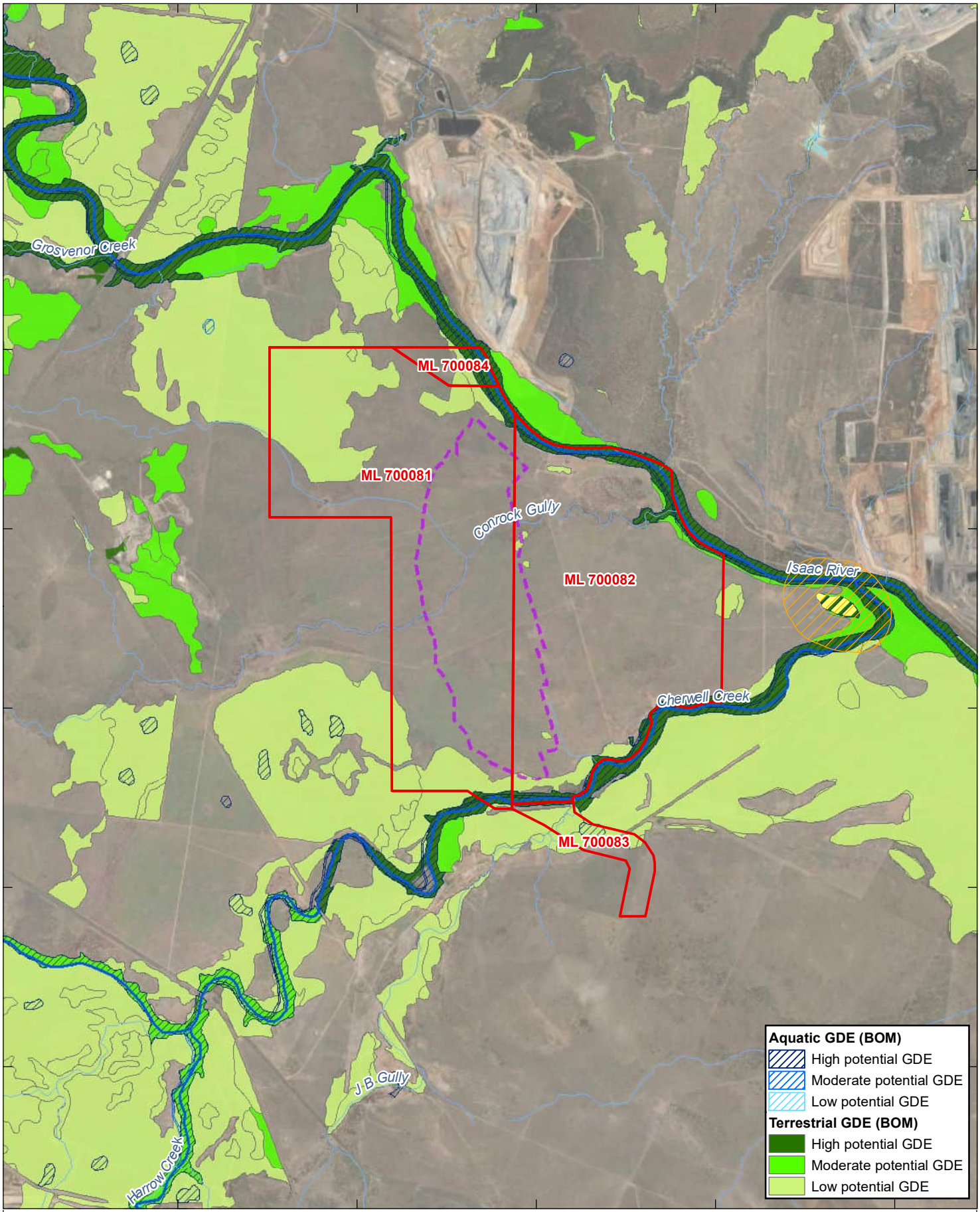
The BoM’s National Atlas of Groundwater Dependent Ecosystems (GDE Atlas) (BoM, 2017) classifies ecosystems based on the potential for dependence on groundwater. Ecosystems have been mapped in the GDE Atlas as either:

- Known (previously ground-truthed) GDEs;
- High potential for groundwater dependence (indicating a strong possibility the ecosystem is interacting with groundwater);
- Moderate potential for groundwater dependence; or
- Low potential for groundwater dependence (indicating it is relatively unlikely the ecosystem will be interacting with groundwater and will include ecosystems that are not interacting with groundwater).

Desktop mapping of potential aquatic and terrestrial GDEs in the GDE Atlas indicates that areas with possible high, moderate, and low potential for groundwater interaction occur in the vicinity of the Project. These areas are mainly associated with the Isaac River and Cherwell Creek in the immediate vicinity of the Project (**Figure 5-29**) and are summarised below:

- Moderate and high potential aquatic GDEs along the entirety of the Isaac River and Cherwell Creek, as well as parts of the floodplain area adjacent Cherwell Creek.
- Moderate and high potential terrestrial GDEs along the entirety of the Isaac River and Cherwell Creek, as well as parts of the floodplain area adjacent both features.
- Low potential terrestrial GDEs on the floodplains surrounding most of the Project Area.
- A high potential aquatic and terrestrial GDE associated with the HES Wetland located just south of the confluence of Cherwell Creek and the Isaac River.

The GDE Atlas mapping indicates that Conrock Gully is unlikely to have GDEs, except at the downstream reach near the intersection with Isaac River.



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	12-May-2026
Drawn by:	AS

Major Watercourse
Minor Watercourse
IDE Project MLAs
Approximate Project Pit Extent
MSES Wetlands of High Ecological Significance
Wetland Trigger Area

SLR

ISAAC DOWNS EXTENSION PROJECT

GDE ATLAS POTENTIAL GROUNDWATER DEPENDANT ECOSYSTEM MAPPING

FIGURE 5-29

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_29_GDEMapping.mxd

The Map of Queensland wetland environmental values is a statewide statutory map under the EPP (Water and Wetland Biodiversity). It identifies wetlands of high ecological significance (HES) and general ecological significance (GES) across the state. Wetland protection areas (WPA) are policy trigger buffer areas that protect HES wetlands in the Great Barrier Reef catchments. The aim of the WPA buffer is to limit development within proximity of a HES wetland to provide for continual ecological protection. The WPA trigger area for the HES Wetland at the confluence of Cherwell Creek and the Isaac River is also shown on **Figure 5-29**. The WPA associated with the HES Wetland is within the Study Area but remains outside of the Project Area (i.e. outside IDE MLAs). Further discussion on the HES Wetland is provided below, in terms of the results of the recent GDE ground-truthing field study completed for the Project by Watermark Eco (2026a).

5.7.2.2 Previous Local GDE Studies

In the areas immediately upstream and downstream of the Project, associated with IDM and PTM respectively, GDE field assessments have been competed by Stanmore in accordance with the methods described in the GDE Toolbox (Richardson et al. 2011) to test and validate the GDE Atlas mapping. In both studies undertaken by 3D Environmental (2020 and 2024), the methodology included testing using several methods for the purpose of using multiple lines of evidence to assess vegetation groundwater dependence including:

- Leaf Water Potential (LWP) - Provides indication as to whether trees are utilising saturated zones or soil moisture.
- Leaf Area Index (LIA) – Provides indication of a trees' response to reduced water availability and stress.
- Soil Moisture Potential (SMP) - Hand augering profiling to characterise SMP for areas where LWP indicates potential groundwater usage.
- Xylem Stable Isotope Sampling and Analyses and water sampling - Comparison of isotopic ratios of water contained in vegetation with those found in various sources of water to help define predominant source of water used.

Data interpretation followed a structured approach in which multiple lines of evidence were filtered to provide an assessment of groundwater dependence. The biophysical measurement of LWP formed the assessment, followed by the adjunct comparison with SMP, with stable isotope data used to provide supplementary evidence where ambiguity remained. As a final filter, the depth to groundwater table and groundwater salinity were used to determine potential for accessibility to groundwater and suitability as a source of moisture to support transpiration at each assessment locality.

Isaac Downs Mine

A GDE field assessment at IDM was completed in 2019 (3D Environmental, 2020) in accordance with the methods described in the GDE Toolbox (Richardson et al. 2011). The field survey focused on areas mapped as potential aquatic and terrestrial GDEs in the GDE Atlas which are associated with woody vegetation occupying creek channels, floodplain vegetation and vegetation associated with older residual surfaces.

The data and outcomes from the assessment by 3D Environmental (2020) is summarised as follows:

1. The study found that terrestrial GDEs in the IDM project area are primarily associated with riparian vegetation dominated by Eucalyptus camaldulensis (river red gum) and Eucalyptus tereticornis (forest red gum). River red gum is known to use groundwater opportunistically, shifting between soil moisture and groundwater depending on rainfall and flooding, while forest red gum can meet its water needs from soil

moisture alone, particularly in elevated areas. Assessment methods included soil profile analysis, leaf water potential (LWP) measurements, and stable isotope analysis (δ18O and δ2H) from groundwater, soil moisture, and twig xylem samples across eight sites.

2. Two GDE areas were identified. GDE Area 1 is a localized section of the Isaac River where most trees permanently interact with shallow groundwater in the alluvium. This is likely due to geomorphic features such as a broad inner bench and flood overflow, which facilitate aquifer recharge, and possibly an elevated basement rock subcrop creating a perched groundwater systems. GDE Area 2 encompasses a broader section of the river channel and riparian fringe, where groundwater interaction varies by riverbank position. Trees on lower banks show greater dependence on groundwater, while those on upper terraces exhibit little or no interaction. Vegetation on older, elevated terraces displayed signs of water stress, with LWP values below -1.5 MPa, indicating reliance on shallow soil moisture rather than groundwater. No evidence was found of vegetation using deeper confined aquifers associated with Permian coal seams.
3. The assessment concluded that groundwater dependency within riparian vegetation is highly variable and largely confined to shallow alluvial aquifers near the river channel. Provided that volumetric changes to the alluvial aquifer are gradual and normal river hydrology is maintained, potential mining-related impacts on identified GDEs are expected to be minor.
4. A stygofauna study was also undertaken as part of the Isaac Downs Project (AGE, 2020). Of ten bores sampled, only one contained stygofauna, and the two taxa identified were stygoxenes species not obligate to groundwater ecosystems. Elevated groundwater salinity (brackish to saline) across aquifers further limits stygofauna diversity. Overall, stygofauna occurrence was reported as very limited.

Poitrel Mine

A GDE field assessment at PTM was completed in 2023 (3D Environmental, 2024) in accordance with the methods described in the GDE Toolbox (Richardson et al. 2011). Again the field survey focused on areas mapped as potential aquatic and terrestrial GDEs in the GDE Atlas which are associated with woody vegetation occupying creek channels, floodplain vegetation and vegetation associated with older residual surfaces. In total, 10 representative sites were chosen for targeted GDE assessment, with soil augering completed at a subset of these and additional augering sampling completed at the Winchester South Project downstream (southeast) of PTM used to supplement these bores.

The data from the assessment by 3D Environmental (2024) was summarised as follows:

1. Combined application of LWP and SMP measurements demonstrate the vast majority of riparian vegetation fringing the Isaac River is utilising soil moisture in the unsaturated portion of the soil profile to support transpiration at the time of assessment (i.e. not groundwater from below the water table). This is supported by analysis of the stable isotope composition of xylem, soils and waters which demonstrates twig xylem samples are generally isotopically enriched above other sources.
2. There is some evidence from stable isotopes that some components of fringing riparian vegetation (RE 11.3.25 – *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines; i.e. River Red Gum woodland) may be utilising moisture from the perched groundwater systems at some test sites, although this is likely to be restricted to trees on the lower riverbanks, and potential for groundwater utilisation decreases with distance from, and height above the river. That is, usage of

perched groundwater in the alluvium is restricted to some, but not all, River Red Gum vegetation located immediately on the current river channel.

3. The HES Wetland at the confluence of Cherwell Creek and the Isaac River was similarly confirmed to be utilising moisture sourced from an unsaturated 3 m thick massive sequence interval of sand above the groundwater table and above weathered basement rock. Moisture sources were confirmed through reconciliation of data from three parameters which include SMP, LWP and stable isotope signatures of soil, xylem and water. Though no saturation was present at the time of survey, the sandy interval may become variably saturated during wet seasons through downward leakage of surface waters, with evidence from strong iron staining of sand grains suggesting a seasonally fluctuating water table, which may only be wet following significant surface pondage and associated leakage.

Based on the assessment, 3D Environmental (2024) inferred the spatial extent of Terrestrial (Type 1) and Wetland (Type 2) GDEs are confined close to the Isaac River, similar to the outcomes from the prior IDM assessment.

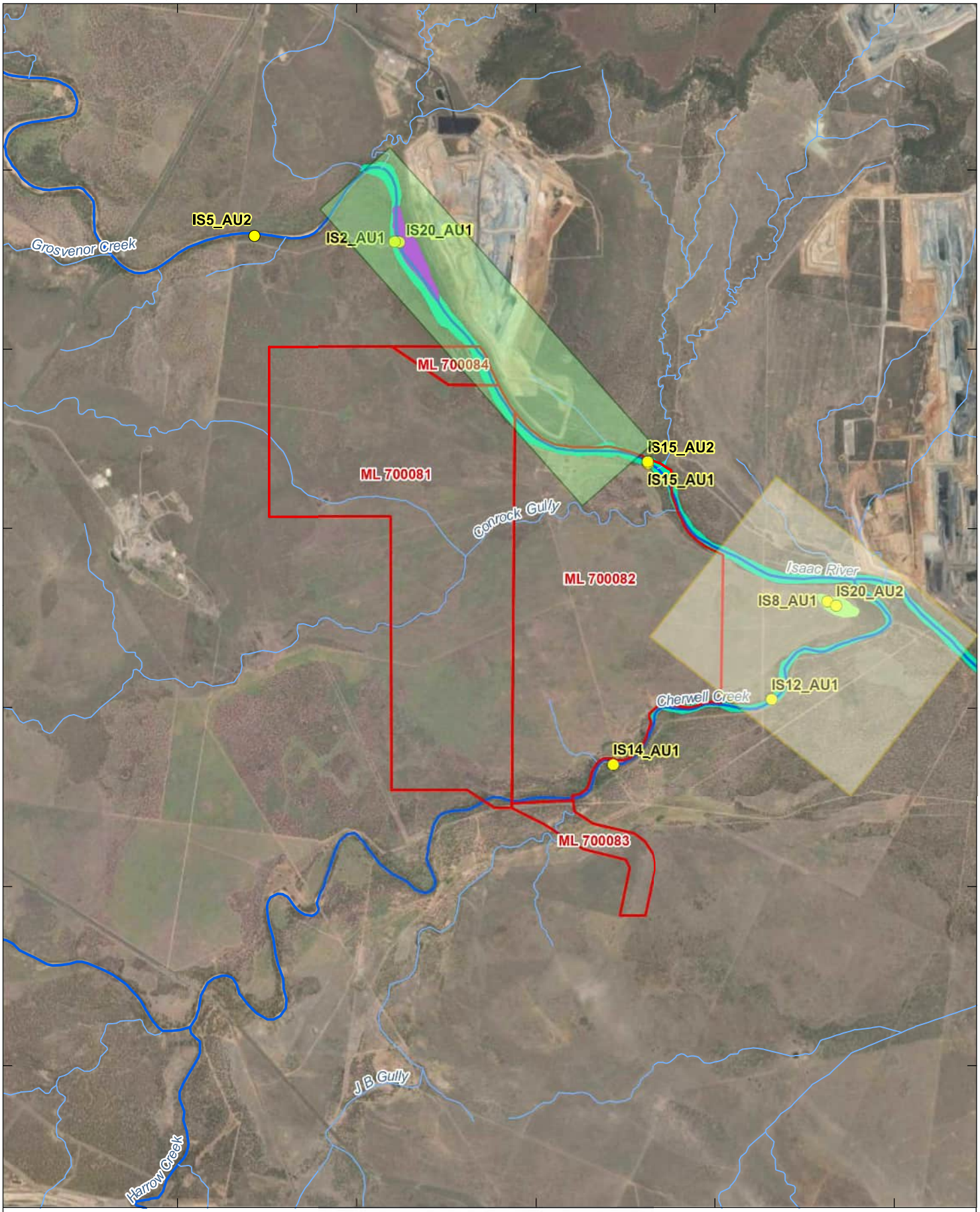
Previous studies have consistently indicated that groundwater discharge does not maintain surface water features in the area, and that aquatic GDEs are absent due to the ephemeral nature of the drainage systems and lack of persistent groundwater-supported pools.

5.7.2.3 Project GDE Study

A GDE field assessment for the Project was completed by Watermark Eco (2026a) and involved ground truthing of broad scale areas mapped as potential aquatic and terrestrial GDEs in the GDE Atlas (**Figure 5-29**), similar to the previous IDM and PTM assessments. The Project GDE assessment area overlapped with previous GDE assessments for IDM and PTM, as shown in **Figure 5-30**, resulting in a continuous mapping of GDEs within and surrounding the Project area. The work aimed to build upon the earlier assessments for IDM and PTM. The works involved terrestrial and aquatic environment surveys at 20 sites to describe the ecology in terms of richness and diversity. Of the 20 assessment sites, augering was conducted at 9 locations and the location of these is shown in **Figure 5-30**.

Similar to the previous local GDE Studies, the methodology included testing using several methods for the purpose of using multiple lines of evidence to assess vegetation groundwater dependence including:

- LWP - Provides indication as to whether trees are utilising saturated zones or soil moisture.
- Xylem Stable Isotope Sampling and Analyses and water sampling - Comparison of isotopic ratios of water contained in vegetation with those found in various sources of water to help define predominant source of water used.
- SMP - Hand augering profiling to characterize SMP for areas where LWP indicates potential groundwater usage.
- Sampling of residual surface water on the Isaac River and groundwater for Stable Isotopes to provide evidence for separation or connectivity between soil moisture, perched systems, and deeper aquifers.
- Sampling of residual surface water on the Isaac River and groundwater for Radon-222 to quantify groundwater contributions to the shallow groundwater and surface water.
- Sampling surface water in the Isaac River and measuring groundwater levels to constrain vertical connectivity and feasibility of groundwater uptake by vegetation.



0 0.5 1 km

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	01-Oct-2025
Drawn by:	AS

SLR

Watermark Eco Auger
Major Watercourse
Minor Watercourse
IDE Project MLAs

Known/Likely GDE (Watermark Eco, 2026)
Type 1
Type 2
Type 3

Overlapping Survey
3D Environmental (2020)
3D Environmental (2024)

ISAAC DOWNS EXTENSION PROJECT

WATERMARK ECO (2026) GDE MAPPING

FIGURE 5-30

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Groundwater Assessment\620041537_IsaacSouth_F05_27_Watermark Eco (2025) GDE Mapping.mxd

All methods are consistent with GDE assessment protocols detailed by Doody et al. (2019) and Richardson et al. (2011).

The data from the assessment by Watermark Eco (2026a) was summarised as follows:

1. The combined application of pre-dawn leaf water potential (LWP) and soil moisture potential (SMP) measurements demonstrates that riparian vegetation (RE 11.3.25) fringing both the Isaac River and Cherwell Creek was utilising soil moisture stored within the unsaturated zone of the soil profile to support transpiration at the time of assessment.
2. For the poplar box (RE 11.5.3) and Brigalow TEC habitats (RE 11.3.1 and 11.4.9), the highly negative LWP measurements confirm that trees are utilising moisture tightly bound to soil grains within the vadose zone (i.e. not groundwater).
3. Stable isotope compositions of tree xylem water were substantially enriched relative to groundwater sources and showed poor correspondence with alluvial groundwater signatures, indicating that vegetation water use was derived from unsaturated-zone soil moisture and, where present, surface water rather than from the regional alluvial aquifer.
4. Radon-222, a Low radon concentrations and low EC in surface water sampled in August 2025 indicate rainfall-derived water associated with widespread surface ponding, including within the HES wetland. In contrast, elevated radon concentrations measured in isolated residual pools in November 2025 are consistent with groundwater from the perched groundwater unit within river sands and adjacent banks. These results indicate that residual river pools represent surface expressions of the perched groundwater system rather than discharge from the alluvial aquifer. Stable isotope data further indicate that groundwater from the perched unit leaks diffusely and slowly into the alluvial aquifer, providing a delayed and minor recharge contribution over timescales of several months.
5. The HES Wetland was confirmed to be utilising moisture sourced from an unsaturated 3 m thick massive sequence interval of sand above the groundwater table and above weathered basement rock, supporting the previous PTM survey results. Moisture sources were confirmed through reconciliation of data from three parameters which include SMP, LWP and stable isotope signatures of soil, xylem and water. Though no saturation was present at the time of survey, the sandy interval may become variably saturated during wet seasons through downward leakage of surface waters, with evidence from strong iron staining of sand grains suggesting a seasonally fluctuating water table.. Perching of small volumes of groundwater at the base of the sandy interval was confirmed during November 2025 auger sampling, though groundwater perching only occurs following significant surface pondage and associated leakage. Perched groundwater in this wetland is not associated with the deeper alluvial aquifer.
6. The local extent of GDEs in the vicinity of the Project is restricted to the margins of the Isaac River, attenuating upstream along Cherwell Creek. The likelihood of GDEs pinches out upstream along Cherwell Creek due to shallowing of the sedimentary basement toward the west, associated with a thinning of the alluvium.

Based on the assessment, and in consideration of the outcomes of the previous IDM and PTM assessments, Watermark Eco (2026a) concluded that Terrestrial (Type 1 and Type 3), and Wetland (Type 2) GDEs are confirmed to be primarily restricted to areas adjacent to the Isaac River and lower reaches of Cherwell Creek, as depicted in **Figure 5-30**.

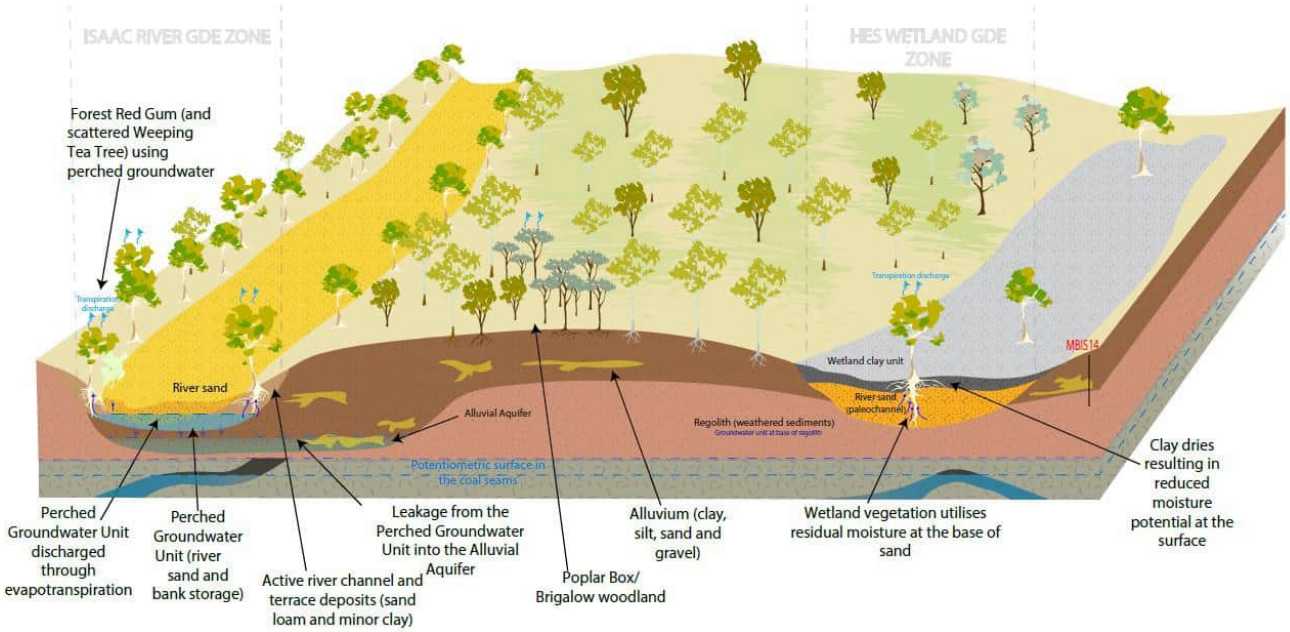
The Project assessment demonstrated a lack of groundwater use at the time of the assessment for any habitats within and surrounding the Project Area. Nevertheless

Increased volumes of groundwater from the perched groundwater unit (as distinct from the deeper alluvial aquifer) were demonstrated during sampling. Although seasonal in nature, the accumulation of seasonal perched groundwater in the root zone of woody vegetation is consistent with the definition of a 'terrestrial' GDE. Where groundwater use occurs, it is restricted to the immediate riverbanks where trees interact directly with perched groundwater unit, and not with the deeper alluvial aquifer.

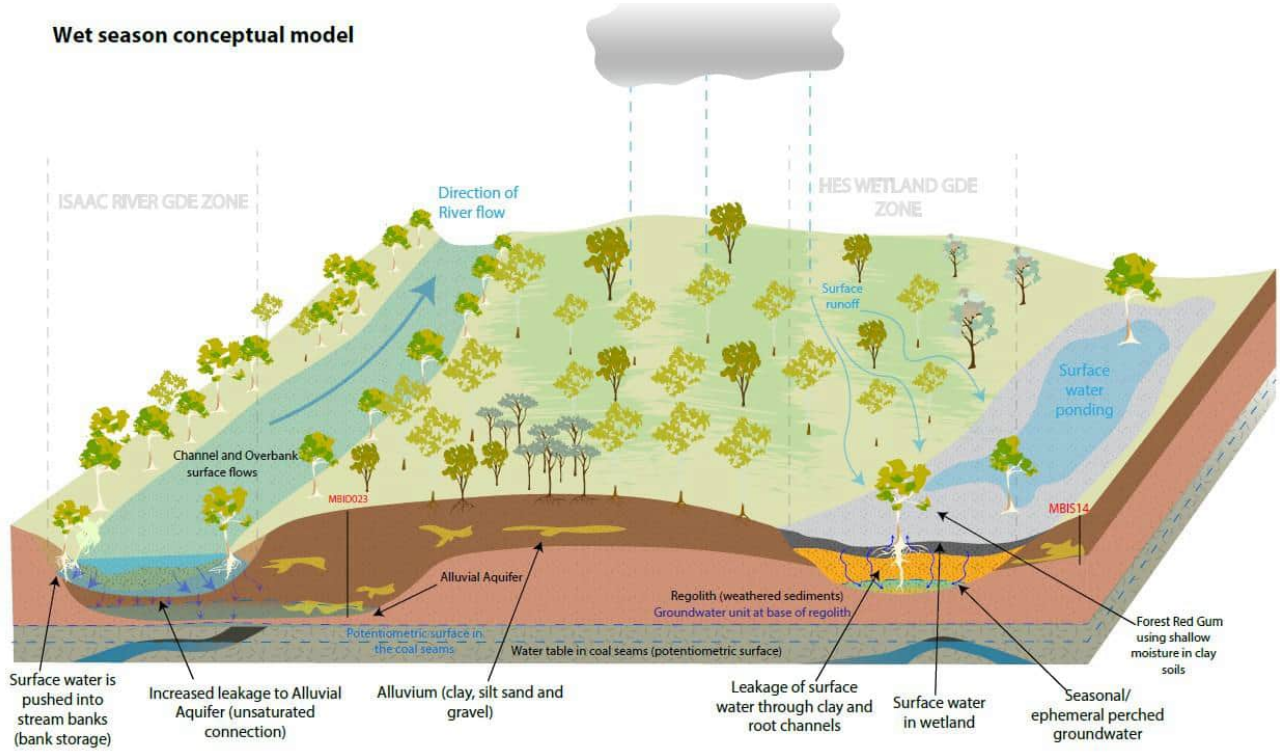
The conceptual models outlined in Watermark Eco (2026a), demonstrating the ecohydrological function of the Isaac River and associated HES wetland including the dry season model, the wet season model, and post-wet model is shown graphically in **Figure 5-31** and summarised below:

1. Dry Season Ecohydrological Conceptualisation: dry-season conditions in the Isaac River, Cherwell Creek, and the HES wetland. It illustrates the separation of a shallow perched groundwater unit from the deeper alluvial aquifer, with only slow leakage between them, and highlights the reliance of fringing riparian vegetation on the perched groundwater. The hydrological function of the lower reaches of Cherwell Creek mimics the Isaac River, except for shorter flow duration and faster drainage due to thinning alluvium and a shallowing Permian basement. At the HES wetland, soil profiling shows a thick, free-draining sand sequence overlying weathered Permian sediments, interpreted as a palaeochannel. Small volumes of seasonally perched groundwater form above the basement contact and may be accessed by deep-rooted vegetation, while a clay-rich wetland floor restricts infiltration and promotes surface water retention. Isotopic evidence indicates wet-season infiltration occurs mainly via diffuse matric flow rather than preferential pathways.
2. Wet Season Recharge and Bank Storage: During wet-season conditions, where flooding of the Isaac River and lower Cherwell Creek drives surface water into recent and active alluvium along inner riverbanks, recharging the perched groundwater unit. This process creates a transient rise in perched groundwater levels, commonly described as bank storage, which is utilised by riparian vegetation adjacent to the channel. Vegetation dependence on this stored water decreases upslope as access to the perched system diminishes. Hydraulic connectivity between the perched groundwater and the deeper alluvial aquifer remains weak under these conditions, limiting downward recharge during wet-season flooding.
3. Post flooding recession: This is the transition from wet to dry conditions, as bank storage progressively discharges back into the river channel when surface flows subside and evapotranspiration increases. This delayed release extends periods of river flow and sustains moisture within river sands. Residual surface pools persist where channel fluvial processes expose the perched groundwater unit, however the longevity and spatial extent are controlled by climate and fluvial processes. During prolonged dry periods, these pools rapidly contract and disappear as the perched groundwater system discharges during dry climatic conditions.

Dry season conceptual model



Wet season conceptual model



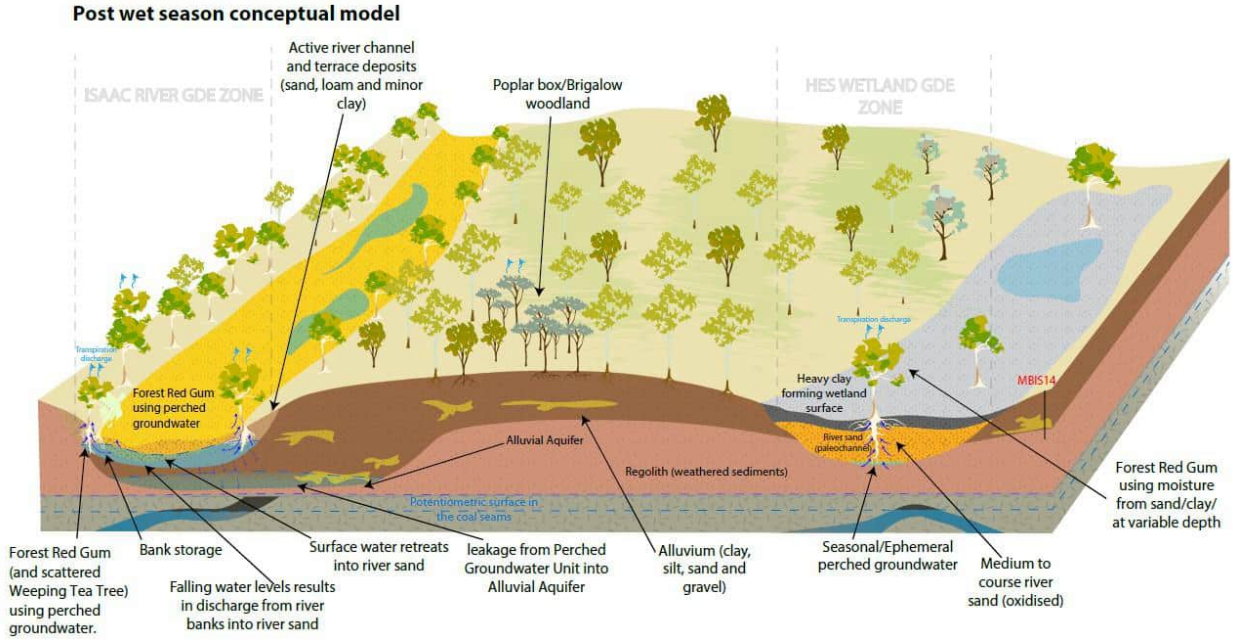


Figure 5-31 Conceptual models demonstrating the ecohydrological function of the Isaac River and associated HES wetland including the dry season model, the wet season model, and post-wet model (Watermark Eco, 2026a).

6.0 Conceptual Hydrogeological Model

A conceptual hydrogeological model (CHM) of the groundwater regime has been developed based on the review of the hydrogeological information for the Project Area and surrounds as presented in the above report sections. Visual representation of the CHM is shown as **Figure 6-1.** It is important to note that the CHM presented herein represents an evolution of the hydrogeological understanding at and surrounding the Project Area. It builds upon the groundwater conceptualisation presented in the groundwater assessments for other surrounding projects that occur in the same hydrogeologic environment (e.g. IDM, PTM and Winchester South Project), and overall is consistent with those other conceptualisations. That is, no information has come to light that would suggest that the Project Area is hydrogeologically unique to any of these surrounding project sites.

The Project is located within the northern part of the Bowen Basin. The geology of Project Area comprises the stratified sequences of Permian aged Rangal Coal Measures, unconformably overlain in part by the Triassic aged Rewan Group, and by regolith where the RCM occurs at subcrop. The regolith is comprised of weathered Permian rock and unconsolidated to semi-consolidated Tertiary-aged sediments. Overlying the regolith in proximity to the Isaac River along the northern margin of the Project Area, and Cherwell Creek along the southern margin of the Project Area, is Quaternary aged alluvium deposited by the modern drainage channels.

The key hydrostratigraphic units relevant to the Project include:

- Cenozoic Sediments –
    - Quaternary alluvium – forms the unconfined alluvial aquifer (sporadically water-bearing strata of permeable unconsolidated sand or gravel with interlayered clays and silts) localised to major ephemeral drainage line channels (Isaac River and Cherwell Creek) in the Project Area and in the Study Area.
    - Perched groundwater systems occur within the Alluvium. These are discrete groundwater units sitting above the alluvial water table and are separated by unsaturated zone. Downward percolation of groundwater in these perched systems is restricted by a material of localised low permeability such as a clay lens.
    - Quaternary to Tertiary non-alluvial sediments and weathered units (collectively termed ‘regolith’) – unconfined unit with variable but limited saturation and generally present at the surface within the Project Area.
- Triassic Rewan Group – Considered a regional scale aquitard, however, some saturated more hydraulically conductive horizons exist within, particularly within the upper weathered zone.
- Permian Coal Measures - Coal seams of this unit form the primary regional aquifer. Groundwater flow is primarily within the coal seams (via interconnected cleats and fractures), which are confined by low permeability overburden and interburden.

At and surrounding the Project Area, the deeper parts of the unconsolidated alluvial sediments of the Isaac River and Cherwell Creek, other Cenozoic sediments (e.g. Tertiary sediments), and weathered Regolith, generally function as one interconnected hydrogeologic unit, though with significant heterogeneity given the lithological and stratigraphic distinctions within. Along the Isaac River and Cherwell Creek the alluvium comprises a highly heterogeneous distribution of silts to sands interspersed with lenses of clays and gravels. The hydraulic properties of the alluvium vary due to the variable lithologic composition. The

hydraulic conductivity of the alluvium decreases away from the channel margin into the floodplain area due to the fining of sediments (i.e. a greater fraction of clay and silt).

Where present, the alluvial aquifer is disconnected from the riverbed elevation. Spatially, the alluvial aquifer is locally variably saturated and drilling results close to the Project have indicated it is dry and/or comprised only of clay in several locations, with groundwater hosted only in the deeper coarser grained intersections of alluvium that are likely representative of incised paleochannels.

Shallow perched groundwater systems occur locally within recent channel sands and bank deposits, typically within 1–2 m of the ground surface. These perched systems are transient, seasonally recharged during flow and flood events, and are hydraulically disconnected from the deeper alluvial aquifer. Perched groundwater is facultatively accessed by riparian vegetation, predominantly River Red Gum, fringing the Isaac River and lower reaches of Cherwell Creek. Away from the immediate proximity of the river channel, the alluvial aquifer occurs at depth generally between 10 and 12 mBGL and not accessible by terrestrial vegetation. Groundwater levels within the alluvial aquifer and the Leichhardt and Vermont coal seams are all below the stream bed elevations of the Isaac River and Cherwell Creek, indicating there is no potential for groundwater discharge into these surface water features.

Regionally, groundwater flow within the alluvial aquifer is a subdued reflection of topography, with groundwater flowing in a southeasterly direction consistent with the alignment of the Isaac River and northeasterly along Cherwell Creek. Groundwater levels within the alluvium are also highest close to the main surface water features, indicating losing conditions from the surface water features to the underlying alluvium aquifer during flow periods. Over 50% of flow events are shorter than 10 days, highlighting that most flow events are relatively brief. Recharge to the unconsolidated sediments is primarily from stream flow losses or flooding (i.e. losing streams), with direct infiltration of rainfall also occurring rapidly where there are no substantial clay barriers in the shallow sub surface.

Hydraulic connection between the Cenozoic unconsolidated sediments (including alluvium) and the underlying formations is limited to areas where relatively high hydraulic conductivity units (e.g. coal seams) subcrop beneath the unconsolidated sediments, although the weathering horizon at the interface of the Permian and overlying Cenozoic units may reduce this connectivity. General downwards recharge to deeper units is limited by the low hydraulic conductivity (confining) coal measure interburden sequences. Water quality in the Cenozoic sediments (including alluvium) ranges from brackish to highly saline and is indicated to be unsuitable for aquatic ecosystem protection however is considered suitable for stock watering and irrigation.

The Triassic aged Rewan Group, present across the eastern extent of the Project Area is considered a regional scale aquitard, though still contains some saturated horizons. Due to its typically fined grained nature, the Rewan Group generally exhibits a low vertical hydraulic conductivity, resulting in limited hydraulic connection between the unit and the underlying/overlying units, however local permeability testing indicates hydraulic conductivity values may be higher in the upper weathered zone of the unit. Despite acting as a regional aquitard, there are two active monitoring bores screened in the Rewan Group observing saturated horizons within the Project Area. Though there is limited data available, groundwater flow direction would be expected to follow topographic gradients. Recharge is expected to occur predominantly via leakage from the overlying units. Recharge rates are likely very low due to the low hydraulic conductivity of the unit restricting infiltration. Discharge is expected occur via lateral flow, with the low hydraulic conductivity limiting any leakage to underlying units. Water quality in the Rewan Group ranges from brackish to moderately saline and is generally suitable for stock watering and irrigation, but exceeds aquatic ecosystem protection WQOs.

In the Permian aged coal measures strata, groundwater is encountered mainly in the coal seams, and only occasionally in the sandstone/siltstone units. As with the rest of the Bowen Basin, the coal seams are the main groundwater bearing units within the Permian sequences, with low hydraulic conductivity interburden generally confining the individual seams. The coal seams are dual porosity in nature with a primary matrix porosity and a secondary (dominant) porosity provided by fractures (joints and cleats). Hydraulic conductivity of the coal decreases with depth due to increasing overburden pressure reducing the aperture of fractures. Vertical movement of groundwater (including recharge) is limited by the confining interburden layers, meaning that groundwater flow is primarily horizontal through the seams with recharge only occurring at subcrop where the overlying strata permits. Regionally, groundwater within the Permian coal measures flows in a south-easterly direction with local flow towards the active mining areas proximal to the Project.

The Permian coal measures at and surrounding the Project have undergone extensive deformation, including folding and faulting. Faults are common, with numerous main northwest-southeast trending faults (i.e. Isaac Thrust Fault). These faults significantly compartmentalise the Permian groundwater system, particularly the major northwest-southeast trending faults. Review of fault behaviour within and adjacent the Project Area and from external studies has identified that faults can increase vertical hydraulic conductivity parallel to the fault trace and reduce it perpendicular to the fault trace. However, any increases in vertical hydraulic conductivity is limited to small vertical horizons (<20 m) and is variable between faults dependent on localised hydrothermal activity and mineralisation in-filling pore spaces. Hydraulic testing of faults at sites near to IDE within the Study Area indicate that faulting zones tested are not pathways for preferential flow but rather act as hydraulic barriers. Testing of the Isaac Thrust Fault immediately east of the Project has supported the previous findings that the fault zone is ‘healed’ by mineralisation and the fault does not provide a higher permeability pathway for groundwater flow in the Permian coal measures, with hydraulic conductivity values several orders of magnitude lower than the coal seams.

Recharge to the Permian coal measures occurs where the unit subcrops. Due to the low hydraulic conductivity of the interburden material, groundwater largely flows horizontally, along the bedding plane of the coal seams. Groundwater discharge occurs predominantly via evaporation from pit faces in mining operations. Water quality in the Permian units ranges from brackish to highly saline and is indicated to be generally unsuitable to be used for stock watering, irrigation, and aquatic ecosystem protection.

During mining, excavation of open-cut pits and depressurisation of the coal seams will create strong localised hydraulic sinks, resulting in a change of natural hydraulic gradients in the vicinity of mining area. Groundwater flow will become directed toward the pit from the surrounding coal seams, and regolith. This inward flow regime causes localised drawdown and depressurisation; however, the extent of these changes is constrained by the low permeability interburden. In the alluvial aquifer, the conceptual model indicates that changes to groundwater flow direction will be minimal. The discontinuous nature of the alluvial aquifer, combined with its weak hydraulic connectivity to deeper units, means that regional flow directions (aligned to drainage) are largely maintained.

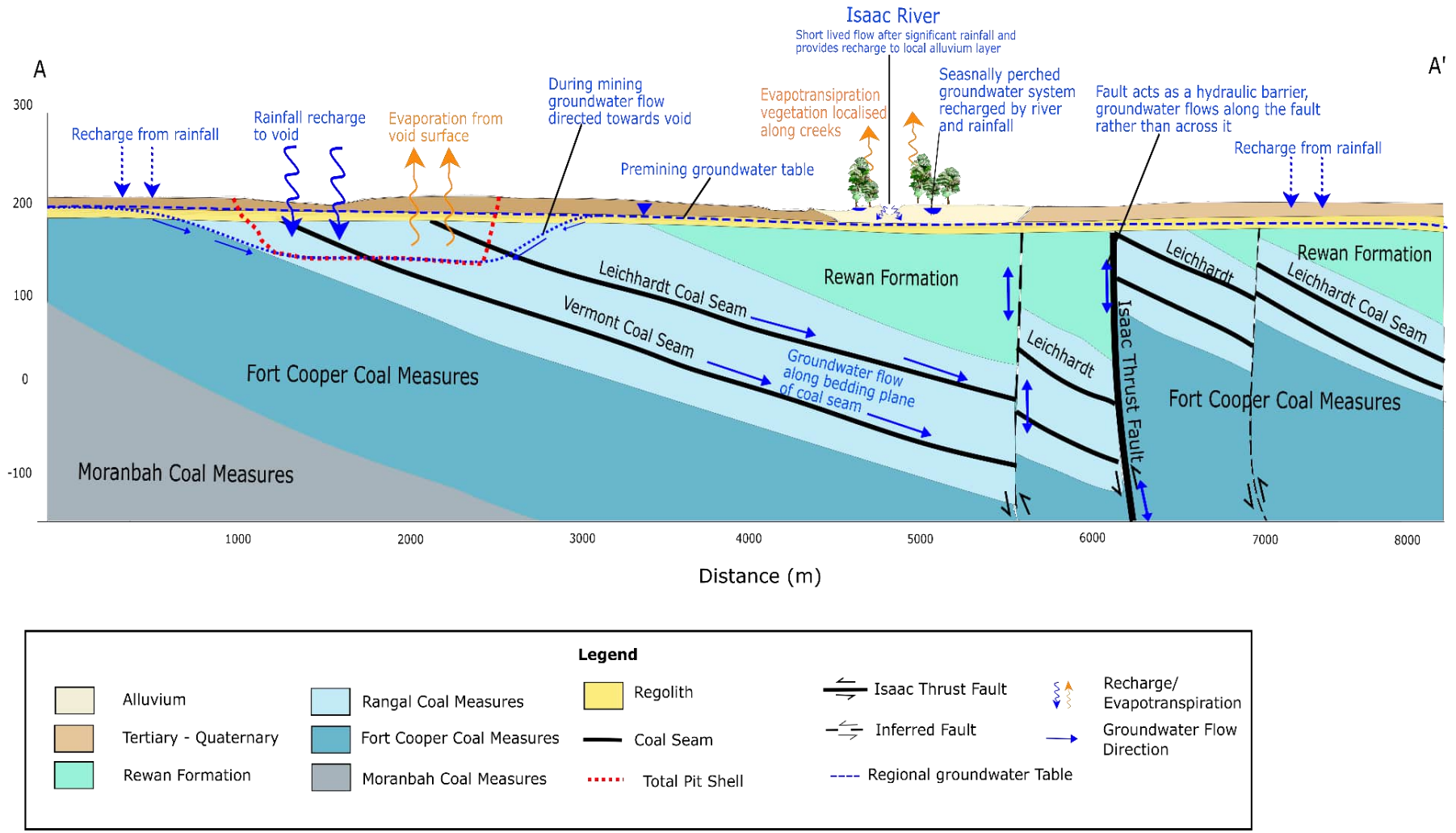


Figure 6-1 Conceptual Hydrogeological Model of IDE Project Groundwater System

7.0 Numerical Modelling

This section provides a summary of the design and development of the numerical groundwater model used to support this groundwater assessment. The design and development of the Central Bowen Basin Regional Groundwater Model Version 6.0. is presented in SLR, (2026c) (**Appendix I**). The IDE Groundwater Modelling Calibration and Prediction Report (SLR 2026b, **Appendix H**) presents the project specific scenarios, updates, and results derived from the established Central Bowen Basin Regional Groundwater Model. In this way, the Central Bowen Basin Regional Groundwater Model (SLR, 2026c, **Appendix I**) informs and underpins the IDE numerical groundwater model, with the core model architecture remaining consistent and only targeted refinements and scenario applications varying between the two.

7.1 Model Details

The Central Bowen Basin regional numerical groundwater model was adopted for assessing the Project's impact on groundwater (**Appendix I,** SLR, 2026c). This model originated as the Olive Downs Project model (HydroSimulations, 2018), which served as the foundational regional-scale model. Since then, the model has been progressively updated and expanded to support a number of projects.

Over time, the model has been enhanced to reflect improved geological and hydrogeological understanding. Updates have included domain extension to incorporate additional mining areas, mesh refinements around key mine areas, the incorporation of additional mine footprints, revised modelling packages, expanded calibration datasets, and an updated calibration method.

The model was deemed appropriate for the purposes of the Project for the following reasons:

- Adoption of the MODFLOW-USG code in the existing model allows for sufficient refinement of the model grid around the Project's proposed mining activities, such that the limitations of a regional model in terms of the grid design are mitigated;
- The model incorporates the Project's geologic model with model layer representation consistent with the geologic model;
- The stochastic model is calibrated using an extensive regional dataset, including data collected at IDM and other neighbouring mines. Calibration targets were selected from the regional dataset based on monitoring locations that are within or proximal to the Project, and the model realisation with the best fit to these targets was selected for the Project assessment;
- The model incorporates regional influences that may interact with the groundwater system (and model predictions) post-closure, including operations at the IDM and Poitrel Mine that are considered likely to interact with the Project voids given their proximity;
- The version of the model adopted for the Project is the latest update to the existing Central Bowen Basin regional numerical model that has been subject to multiple independent peer reviews, as well as State and Commonwealth regulator reviews.

7.2 Model Objectives

Numerical modelling was undertaken in support of the groundwater assessment for the Project to assess the potential impacts due to mining on the local groundwater regime. The objectives of the predictive modelling were to:

- Predict groundwater levels during the lifecycle of the Project (operation and closure) and the extent of groundwater drawdown/depressurisation due to mining at the Project and cumulatively with existing and proposed resource projects, including those at IPC.
- Predict changes in groundwater levels at identified groundwater receptors (i.e. registered bores, landholder bores, and groundwater dependent ecosystems [GDEs]), during operations and closure, due to mining at the Project and cumulatively with existing and proposed resource projects.
- Predict induced changes in water budgets including groundwater fluxes to and from alluvial sediments during Project mining operations and mine closure (via the use of zone budgets).
- Predict potential changes in surface water flow due to Project mining operations (i.e. the reduction in baseflow to or induced leakage from watercourses).
- Identify where groundwater impact mitigation/control measures may be required for the Project.
- Estimate direct water take (groundwater removed during mining) and final void inflows (groundwater fluxes to the final void post mining) of the Project.
- Estimate post-mining recovery conditions

The predictions are required for the incremental impacts of the proposed mining at the Project, and for cumulative impacts considering both the Project and adjacent mines.

7.3 Model Design

The most recently updated version of the Central Bowen Basin regional numerical groundwater model (**Appendix I**, SLR, 2026c) adopted for the Project, was developed based on the updated conceptual groundwater model, presented within **Section 6.0**. Conceptualisation of the groundwater regime and the calibration of the model against observed data are key to achieving a reliable numerical model. The model is designed primarily to predict regional scale mining impacts in a cumulative impact framework. That is, mines such as the Project are represented within the regional cumulative hydrogeological impact framework in which they sit.

MODFLOW-USG Transport was used as the model code (Panday, 2021). MODFLOW-USG is a version of industry standard MODFLOW code and is suitable for accomplishing the model objectives. MODFLOW-USG optimises the model grid and increases numerical stability by using unstructured, variably sized cells. Cells take any polygonal shape, with variable size allowing for refinement in areas of interest (e.g. geological or mining features).

Where previous MODFLOW versions restricted interlayer flow to vertical connectivity, MODFLOW-USG offers lateral connectivity between model layers. Lateral connectivity enables more accurate representations of hydrostratigraphic units, particularly those that pinch out, outcrop, or cross geological faults.

MODFLOW-USG is also able to simulate unsaturated conditions, allowing progressive mine dewatering and post mining rewetting to be represented by the model. For the current

model, vadose zone properties have been excluded, and the unsaturated zone was simulated using the upstream-weighting method. Model layering is based on a simplified regional scale representation of the central Bowen Basin hydrogeological framework. The model layer structure is presented in **Table 7-1**.

Table 7-1 Model Layering

Model Layer	Geologic Formation	Hydrogeologic Unit	Present in Project area	Average Thickness (m)
1	Quaternary alluvium (Qa), Quaternary colluvium, Tertiary basalt (at outcrop)	Quaternary alluvium, surface cover	Yes	6.8
2	Tertiary sediments, Tertiary basalt	Tertiary sediments, weathered Permian (collectively 'regolith') Tertiary basalt	Yes	18.5
3	Rewan Group	Triassic	Yes (unit subcrops within pit area)	74.6
4	Rangal Coal Measures	Leichhardt overburden	Yes (unit subcrops within pit area)	36.2
5		Leichhardt seam	Yes (unit subcrops within pit area)	4.5
6		Interburden	Yes	34.5
7		Vermont seam	Yes	3.8
8		Vermont underburden	Yes	43.9
9	Fort Cooper Coal Measures	Fort Cooper overburden	Yes	182.3
10		Fort Cooper seams (combined)	Yes	58.1
11		Fort Cooper underburden	Yes	58.2
12	Moranbah Coal Measures	Q Seam	Yes	3.3
13		Interburden	Yes	34.8
14		P Seam	Yes	2.8
15		Interburden	Yes	53.0
16		H Seam	Yes	5.4
17		Interburden	Yes	65.1
18		D Seam	Yes	8.1
19		Interburden	Yes	496.2

7.4 Model Calibration

Model calibration was performed using a Sequential Monte Carlo (SMC) approach, which incrementally refines parameter distributions through a series of resampling and adjustment steps. This method begins with an ensemble of parameter realisations sampled from the prior distribution for each parameter, which is established on the basis of conceptual hydrogeological bounds. At each stage of calibration, the ensemble is updated by weighting realisations according to their likelihood that they result in acceptable calibration statistics with respect to the groundwater level observation dataset, followed by weighted parameter resampling. To enhance the accuracy of the posterior parameter estimates, Laplace approximations to the likelihood function were employed, allowing for more precise characterisation of parameter uncertainty around high-likelihood regions. This approach enables a more flexible and robust assimilation of groundwater level data, particularly in the presence of nonlinearity and multimodality in the parameter space.

7.4.1 Calibration Targets

Transient calibration was undertaken for the period 2008 to 2025 and includes representation of historical mining at Daunia Mine (DNM), Caval Ridge Mine (CVM), Peak Downs, Saraji, Lake Vermont, Poitrel, Millennium, IPM, Olive Downs, Eagle Downs, Winchester South, IDM, Moorvale South, and Meadowbrook mines (**Appendix H** and SLR, 2026b).

For the Project specifically, calibration targets were selected from the regional dataset on the basis of monitoring locations that are within or proximal to the Project. The resulting calibration target locations included all monitoring locations in the Project monitoring network. In all, the calibration used 646 target heads for 52 monitoring locations within or near the Project with available groundwater level data.

The selected datasets were separated into two separate target datasets: (i) initial water level elevations (52 targets), and (ii) change in water level elevations (594 targets). The initial water level elevations are the first (i.e. earliest) groundwater level readings at each selected calibration location. The change in water level elevations are all subsequent water levels readings minus the initial water level elevation, this providing a dataset on the variability of the water levels with time. By calibrating to both datasets, the objective of calibration is to provide a balanced approach to calibration whereby the model is calibrated to both water level elevations, and the magnitude and timing of changes in water levels.

7.5 Model Performance and Limitations

The groundwater modelling is conducted in accordance with the Australian groundwater modelling guideline (Barnett et al. 2012) and the MDBC Groundwater Flow Modelling Guideline (MDBC, 2001). These are mostly generic guides and do not include specific guidelines on special applications, such as open cut mine modelling.

The model confidence level (Class 1, Class 2 or Class 3 in order of increasing confidence) based on the Australian Groundwater Modelling Guidelines (Barnett et al. 2012) was previously widely used in the industry. The latest version of the IESC Explanatory Note for Uncertainty Analysis (Peeters and Middlemis, 2023) introduces a new concept on how model confidence can be assessed. The document also indicates that this change will follow in the next iteration of the Australian Modelling Guidelines and the new concept for assessing model confidence is hence applied for this groundwater model.

The latest version of the IESC Explanatory Note for Uncertainty Analysis defines a model fit for purpose when model results are:

- Usable -- Relevant to the decision-making process, providing information about the uncertainty in conceptualisations and modelling simulations in a way that allows decision-makers to understand the effects of uncertainty on project objectives and the effects of potential bias. The relevant Quantities of Interests (QoI) in this context are the groundwater inflows and drawdowns to assess licensing, site water management and drawdown impacts.
- Reliable -- Demonstrate that the range of model outcomes is consistent with the system knowledge and honours historical observations and provides objective evidence that uncertainties affecting decision-critical predictions of impacts on aquifer resources and dependent systems are not underestimated. The calibration performance was deemed acceptable.
- Feasible -- Trade-offs due to budget, time and technical constraints are reasonable and justifiable within the risk context of the Project. This study is an update of an earlier model, which shows that there are several model revisions therefore mitigating budget and time trade-offs. Updated technical datasets are included in the most recent revision. The model has been peer reviewed for each revision. The model builds and associated review process are therefore deemed commensurate with the Project related risk to the groundwater environment.

In order to assess these three points above, the four sources of scientific uncertainty (structural, parametrisation, measurement error, predictions) have been qualitatively assessed with regards key aspects of the groundwater model, as presented in **Table 7-2**.

Overall, the model is considered fit for purpose to achieve the objectives outlined in **Section 7.2.**

Table 7-2 Groundwater Model and Data Limitations

Type	Part	Status	Comment
Structural/ Conceptual	Grid and Model Extent	Fit for purpose	The model has an unstructured Voronoi grid that includes detailed cell refinement around site, neighbouring mines and along drainage features.
	Layers and Geological Structure	Fit for purpose	Top of Layer 1 uses detailed Digital Elevation Model (DEM) data. Unconsolidated geology: Regionally, representation of alluvium and regolith is based on publicly available mapped geology and Commonwealth Scientific and Industrial Research Organisation (CSIRO) (2015) regolith mapping. At the Project, representation of the alluvium was based on detailed surface geology mapping by the Queensland Government and was further refined using drill data, ERI survey interpretations, and groundwater investigations from IDM and PTM, as discussed in **Section 1.4.1** and **Section 4.2.1.1.** Consolidated Geology: Regionally, solid geology is based on geological models and publicly available data. At IDE, the local structure of the geology is well defined through both resource exploration and groundwater drilling, at and near to the Project Area, supported by regional geological interpretation outside the site, as discussed in **Section 4.2.5.2**. The main regional fault (Isaac Thrust Fault) has been defined and characterised through exploration drilling, as discussed in **Section 4.2.5.2** Model vertical resolution is sufficient to represent relevant geological units and unstructured grid allows layer pinch out where units not present.
	Conceptualisation – GDEs	Fit for purpose	A GDE conceptualisation is provided in **Section 5.7.2**.
	Conceptualisation – Surface Water Groundwater Interactions	Fit for purpose	The groundwater -surface water interactions are conceptualised as limited. Due to the surface water features being classified as ephemeral (**Section3.2.2**), no long-term baseflow contribution from the groundwater is expected. Rather, surface water is expected to recharge the groundwater and that the alluvial aquifer is hydraulically disconnected from the riverbed.

Type	Part	Status	Comment
	Conceptualisation – Saturated Extent of Alluvium and Regolith	Fit for purpose	Several monitoring bores for the regional area are present within the Alluvium and Regolith and monitored regularly were used to inform saturated extent of alluvium locally at site and for calibration targets.
	Hydraulic Conductivity – Shallow layers	Fit for purpose,	Spatial variability of hydraulic parameters in the Alluvium and Regolith has been incorporated in this model version by adding pilot points in both layer 1 and 2. This enhancement has allowed representing the heterogeneity in the alluvial system, improving the model's ability to replicate water level measurements in these units.
Parameterisation	Hydraulic Conductivity – Depth Dependence	Fit for purpose	Field testing of hydraulic conductivity (horizontal) has been conducted in the area. Hydraulic conductivity test results from the other sites within the model domain were also considered. The data shows a general decline in hydraulic conductivity with depth that is replicated in the model.
	Spoil Properties	Fit for purpose, future improvements possible	No site-specific spoil data is available, as mining has not yet commenced and spoil materials are therefore not able to be measured. Spoil properties were adopted using the previous studies.
	Rivers	Fit for purpose, future improvements possible	Major rivers and creeks were represented using the RIV package with smoothed riverbed elevations. Stage data from regional gauging stations were adjusted to reflect the seasonal nature of the Isaac River. Local stage data collection would improve future assessments.
	Recharge	Fit for purpose	Recharge zonation is based on mapped surface geology and calibrated recharge rates.
	Observation Data Quality	Fit for purpose	Bore logs and construction details available for most site bores, and long-term site water level data available for various units.
Measurement Error	Landholder Bore Data Quality	Fit for purpose.	Publicly available private bore data were incorporated in the model calibration across the model domain.
	Temporal spread	Fit for purpose	Timeseries water level data with varying resolution has been used in the model calibration.
	Calibration	Fit for purpose. Future improvement possible.	A transient calibration model was run and calibrated to observed groundwater levels using sequential Monte Carlo analysis. The model calibration could be further refined as more data is collected in the Project area and surrounds.

Type	Part	Status	Comment
Scenario Uncertainties Future stresses/ conditions	Predictive	Fit for purpose.	Model captures open cut mining progression and timing at the Project based on data provided by Stanmore. The surrounding mines' plans have been included based on the data sharing agreement (i.e. most recent mine plans).
	Sensitivity Analysis	Fit for purpose.	A global sensitivity analysis was used to assess model sensitivity to both calibration and predictions. The sensitivity analysis identified that majority of the parameters are Type I - Type III parameters which have an insignificant impact on model predictions or conditioned by calibration. The sensitivity analysis highlighted several parameters that contribute to predictive uncertainty and that are likely to be poorly conditioned by the calibration process (Type IV parameters). Prediction uncertainty was quantified for the quantities of interest in the uncertainty analysis.
	Uncertainty Analysis	Fit for purpose.	A Type 3 Monte Carlo uncertainty analysis was undertaken to estimate the uncertainty in the future impacts predicted by the model. While the majority of the parameters identified as part of the sensitivity analysis are Type I-Type III, the limited Type IV parameters identified, were included in the uncertainty analysis.

8.0 Model Predictions

The predictive modelling presented herein was conducted to assess the potential groundwater impacts of the Project. As such, transient predictive modelling was used to simulate the Project as well as mining at other approved and foreseeable mines within the model domain.

The predictive model has been set up to simulate mining activities from the end of calibration (2025) through to the end of 2043, after which the post-mining period begins for the Project. The predictive recovery starts from the end of mining at the Project (2043) up to 2519 (**Table 8-1**). Note that the stress period setup also accounts for predictive simulations at other mines within the model domain (i.e. is not designed only for the simulation at the Project).

Transient predictive models have been developed for three model scenarios:

- **Null Run** – no mining within the region.
- **Approved** - all approved and foreseeable mining operations within the model domain that are likely to have model prediction effects.
- **Proposed** – all approved and foreseeable mining with the addition of the proposed Project.

Table 8-1 Models Timing – Predictive

Stress Period	Date Start	Date End	IDE Mining Period	Max Stress Period Length (day)	Max Time Step Length (day)
76 - 93	Jan 2026	Dec 2043	Predictive - Mining	365	186
94 - 216	Jan 2044	Jan 2519	Predictive - Recovery	18,262	9,131

8.1 Water Level Drawdowns

8.1.1 Predicted Maximum Groundwater Drawdowns

The process of mining reduces groundwater levels and pressures in surrounding geological units. The extent of the zone affected is dependent on the properties of the aquifers/aquitards and the nature (i.e., extent) of the extractive activities and is referred to as the zone of depressurisation in a confined aquifer and zone of drawdown within unconfined aquifers, including the water table (i.e. the upper surface of the saturated zone where pore water pressure equals atmospheric pressure).

Depressurisation and drawdown are greatest at the working coal-face and reduce with distance from the Project. The following sections discuss both:

- Predicted incremental impacts: Maximum incremental drawdown refers to the drawdown impact associated with the Project and is obtained by subtracting the predicted maximum aquifer groundwater drawdown for the Approved model scenario over the model duration from the predicted maximum aquifer groundwater drawdown for the Proposed model scenario over the model duration, and
- Cumulative mining impacts: The predicted drawdowns due to the ‘cumulative mining effects’, which is the difference between the Proposed scenario and the Null Run.

8.1.1.1 Incremental Drawdown

The maximum drawdown represents the maximum drawdown recorded at each model cell at any time over the model simulation duration time from the start of the calibration period

(1960) to the end of recovery (2519). Predicted maximum drawdown (incremental) is the component of maximum drawdown resultant from the proposed action (the Project).

Predicted incremental drawdown figures (**Figure 8-1** to **Figure 8-5**) show where maximum drawdown impacts are predicted to exceed 1 m as a result of the Project.

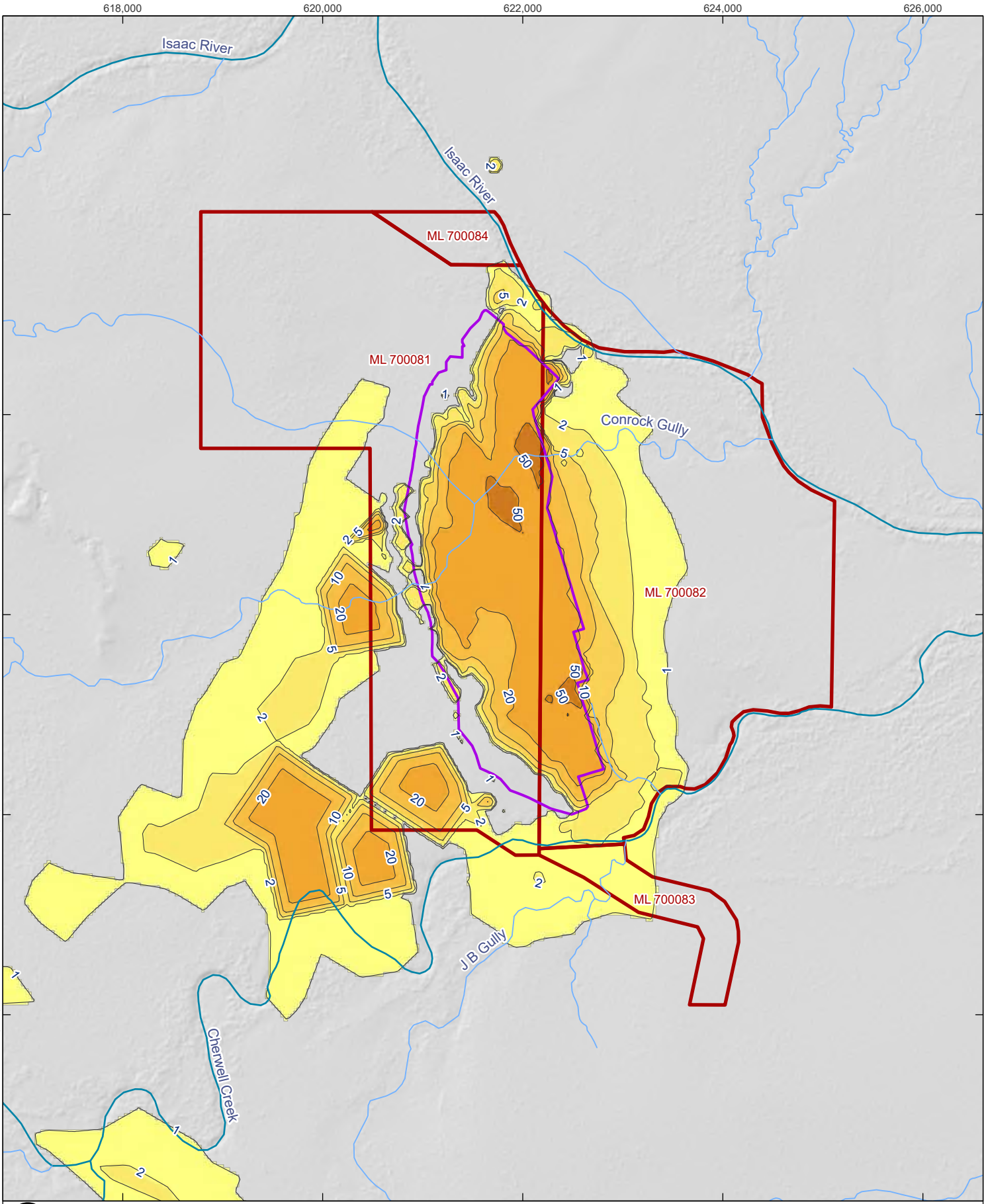
Figure 8-1 shows that the predicted maximum water table drawdown (incremental) is concentrated around the Project mining area. The small areas of drawdown shown outside the Project Area (to the west of the Project Area) are the result of numerical effects within the model and do not represent any physical depressurisation beyond the project.

No incremental drawdown impacts exceeding 1 m are predicted for the Quaternary alluvium as a result of the proposed Project (**Figure 8-2**).

The predicted maximum drawdowns (incremental) exceeding 1 m associated with the Project within the regolith are shown in **Figure 8-3**. The incremental drawdown extent within the regolith (Layer 2) is confined to a small area directly south of the Project Area.

The coal seams of the Rangal Coal Measures are the primary groundwater bearing strata targeted by mining at the Project and experience drawdowns as a direct result of mining at the Project. Groundwater level drawdown within the mined coal seams is influenced by unit structure and is confined to unit extents.

Figure 8-4 and **Figure 8-5** show the predicted maximum drawdown (incremental) for the Leichhardt and Vermont seams in the Rangal Coal Measures. The predicted maximum drawdowns (incremental) occur along the western margin of the Project pit area in both seams, with the Leichhardt seam exhibiting the highest magnitudes adjacent to the mined areas (**Figure 8-4**). In the Vermont seam (**Figure 8-5**), the footprint of drawdown extends further north and south relative to the Leichhardt seam.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM WATER TABLE DRAWDOWN (INCREMENTAL)

SLR

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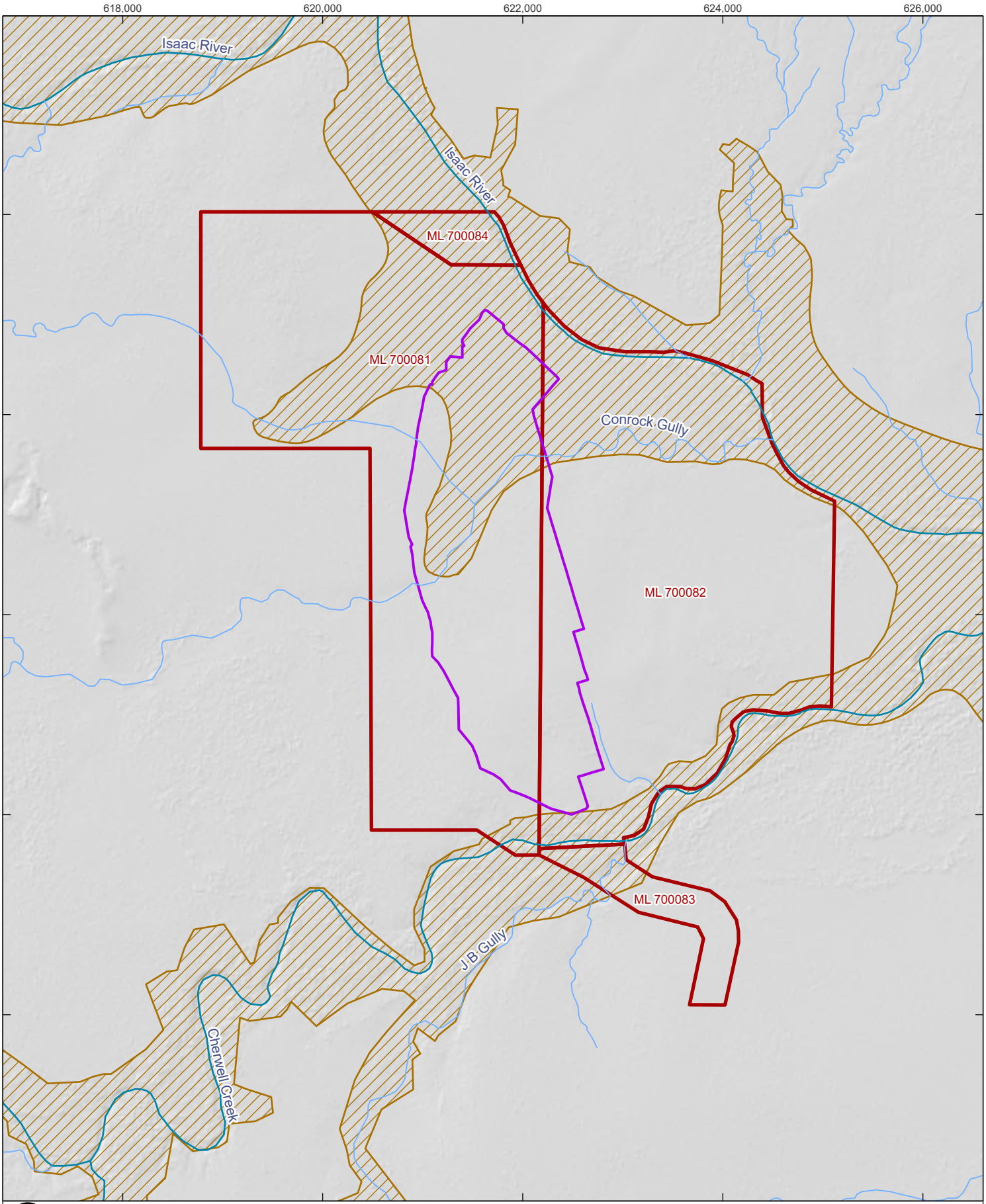
FIGURE 8-1

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-01_Predicted Maximum Water Table Drawdown (Incremental)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs
- Alluvium Extent

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM DRAWDOWN (INCREMENTAL) – ALLUVIUM (LAYER 1)

SLR

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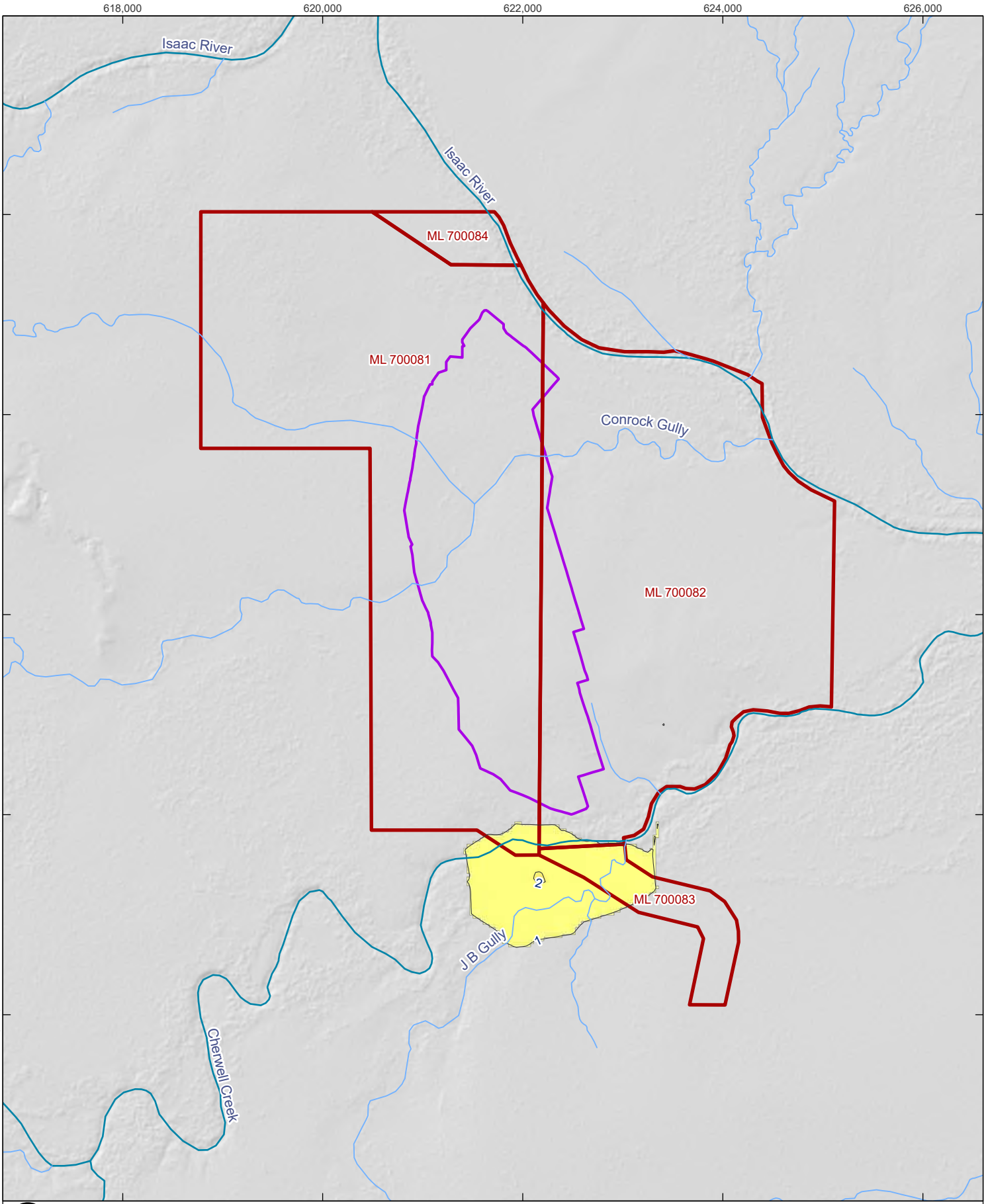
FIGURE 8-2

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-02_Predicted Maximum Drawdown (Incremental) – Alluvium (Layer 1)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM DRAWDOWN (INCREMENTAL) – REGOLITH (LAYER 2)

SLR

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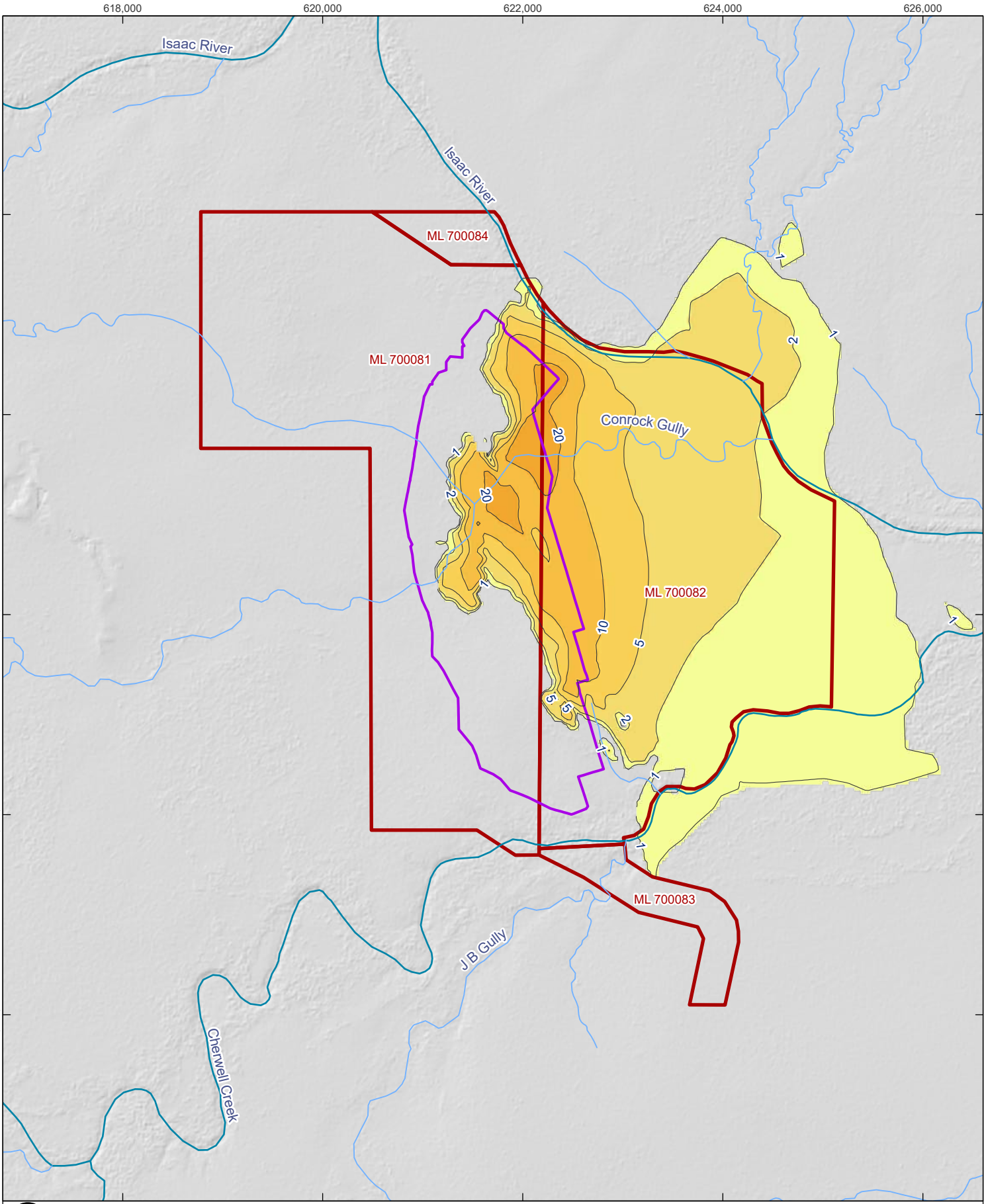
FIGURE 8-3

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-03_Predicted Maximum Drawdown (Incremental) – Regolith (Layer 2)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	04-Jun-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM DRAWDOWN (INCREMENTAL) – LEICHARDT SEAM (LAYER 5)

SLR

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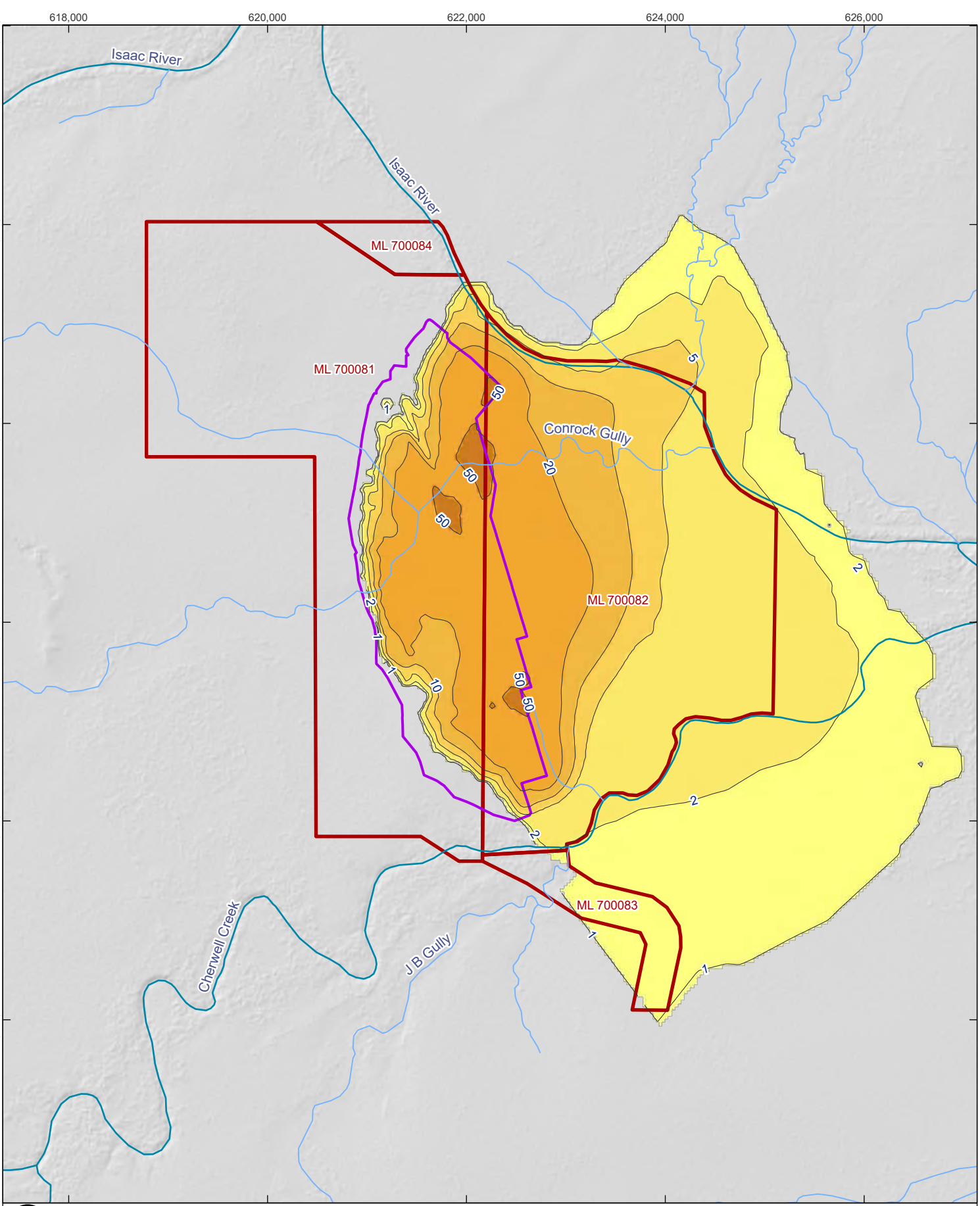
FIGURE 8-4

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-04_Predicted Maximum Drawdown (Incremental) – Leichhardt Seam (Layer 5)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM DRAWDOWN (INCREMENTAL) – VERMONT SEAM (LAYER 7)

SLR

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FIGURE 8-5

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-05_Predicted Maximum Incremental Drawdown – Vermont Seam (Layer 7)

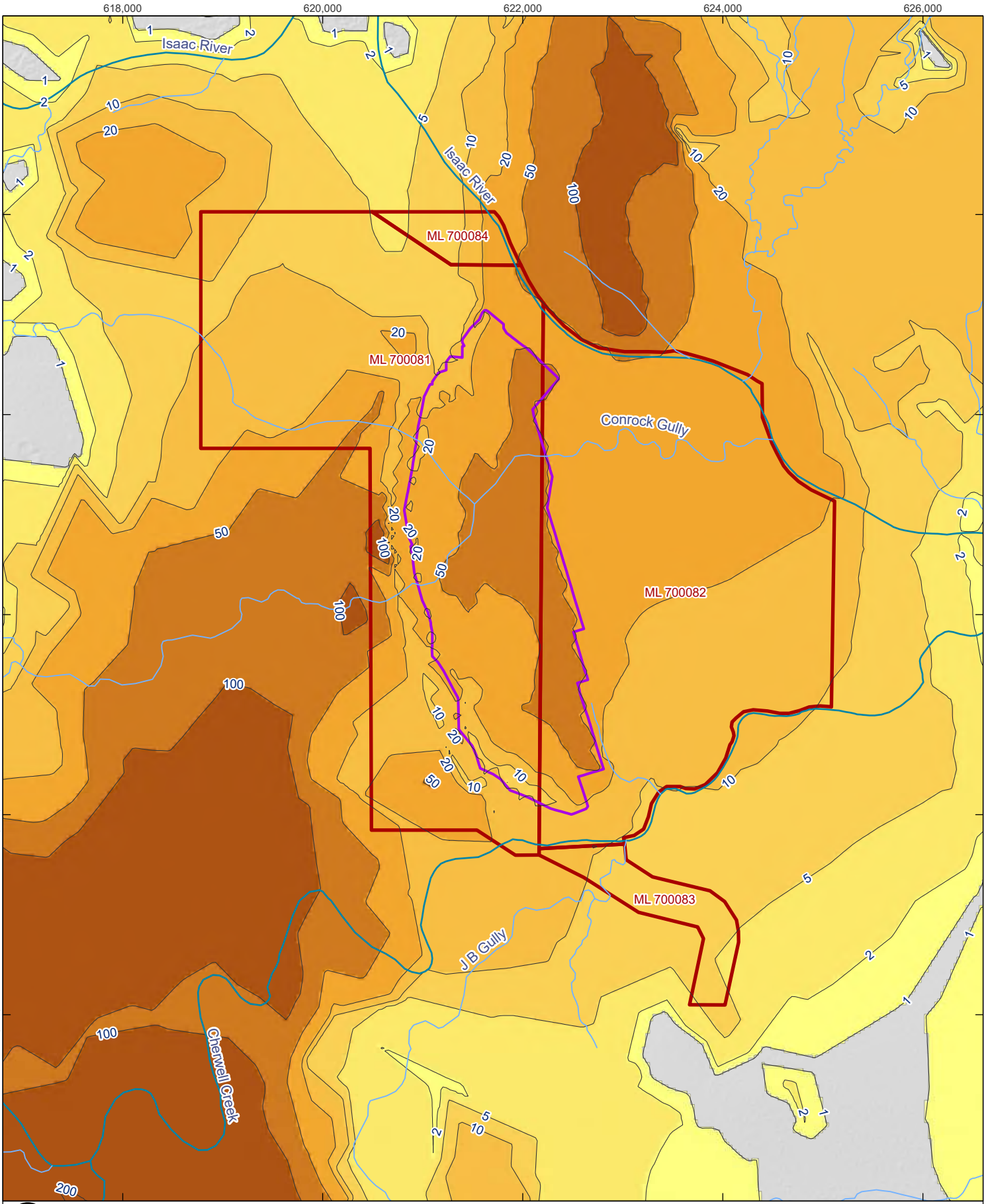
8.1.1.2 Cumulative Drawdown

The predicted maximum drawdowns (cumulative) are obtained by calculating the maximum difference in heads between the proposed scenario and null run at each cell at any time, from the start of the calibration period (1960) to the end of recovery (2519). **Figure 8-6** through **Figure 8-10** show the predicted maximum drawdowns (cumulative) for the water table, alluvium (layer 1), regolith (layer 2), Leichhardt Seam (layer 5) and Vermont Seam (layer 7), respectively.

The results indicate that cumulative drawdown increases with depth, with the most pronounced depressurisation occurring within the mined coal seams, particularly the Vermont Seam. Shallower units exhibit broader but lower-magnitude drawdown patterns.

The spatial extent of cumulative drawdown reflects the combined influence of long-term mining activities within the Project area and neighbouring operations.

As shown in **Figure 8-10**, the greatest cumulative depressurisation occurs in the Vermont Seam that is mined at the mining areas, regionally. In the deeper coal seams, drawdown extends beyond the immediate Project footprint, indicating cumulative hydraulic interaction between adjacent mining areas.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM CUMULATIVE WATER TABLE DRAWDOWN

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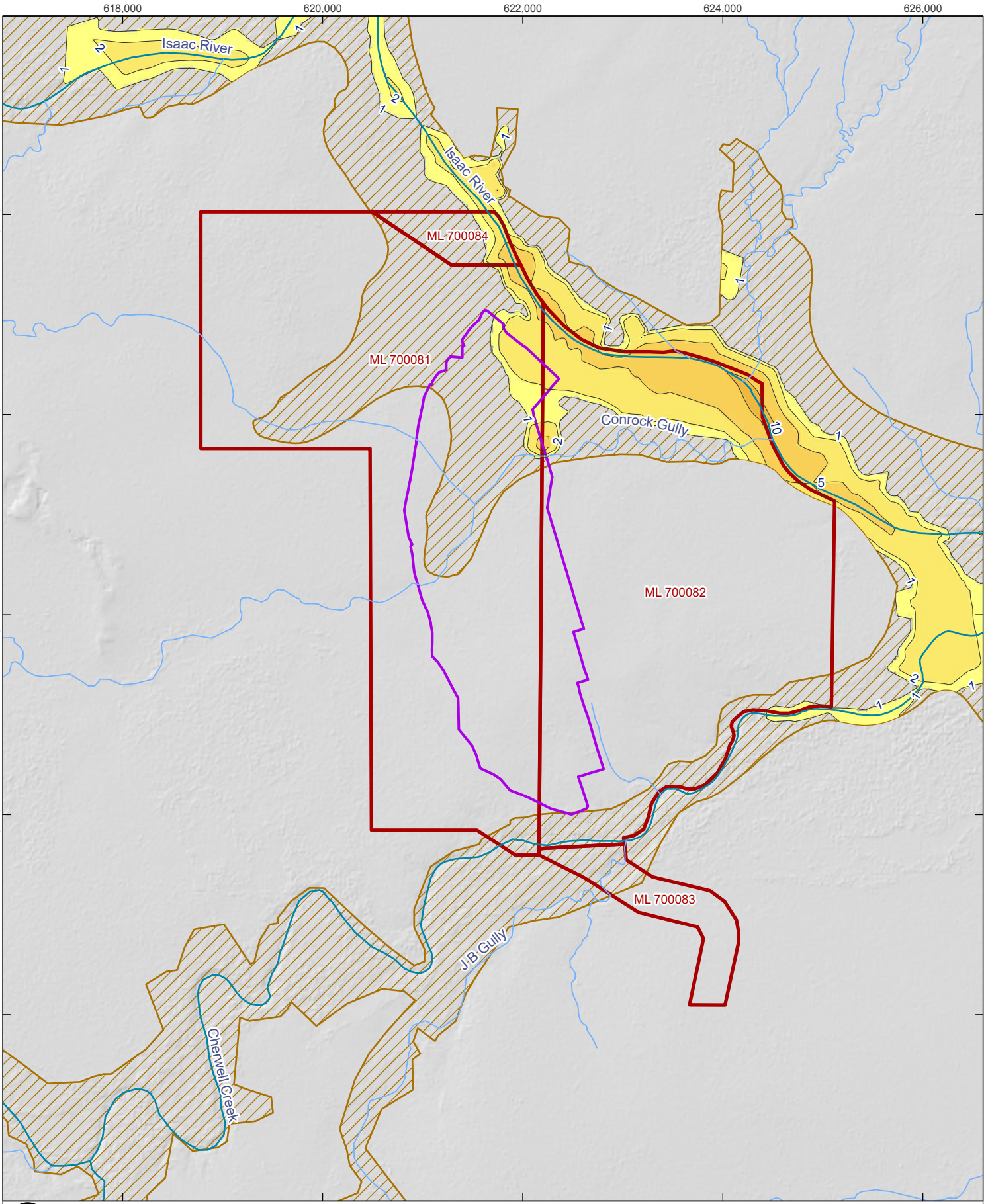
FIGURE 8-6

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-06_Predicted Maximum Cumulative Water Table Drawdown



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	12-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs
- Alluvium Extent

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM CUMULATIVE DRAWDOWN – ALLUVIUM (LAYER 1)

SLR

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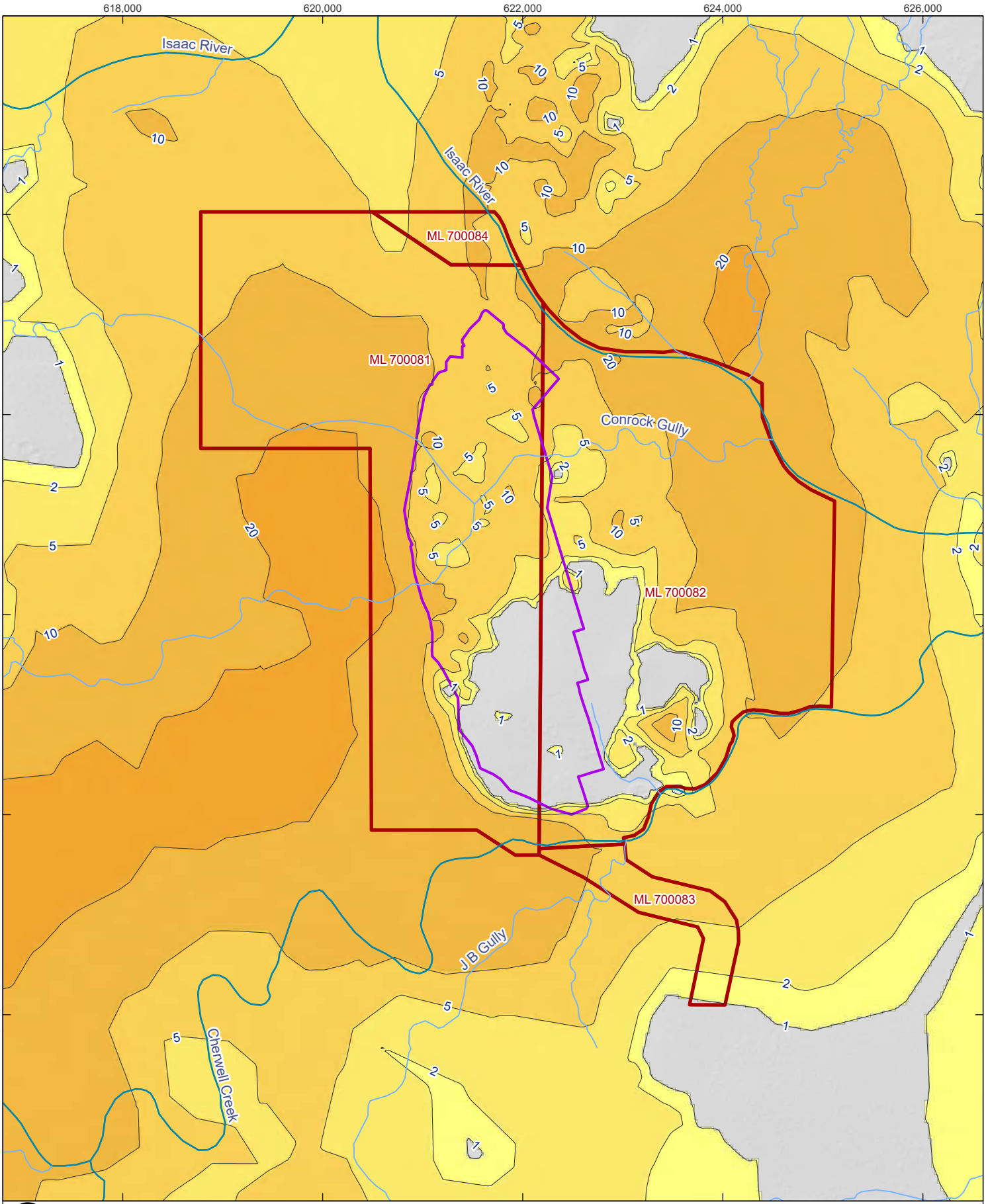
FIGURE 8-7

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-07_Predicted Maximum Cumulative Drawdown – Alluvium (Layer 1)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM CUMULATIVE DRAWDOWN – REGOLITH (LAYER 2)

SLR

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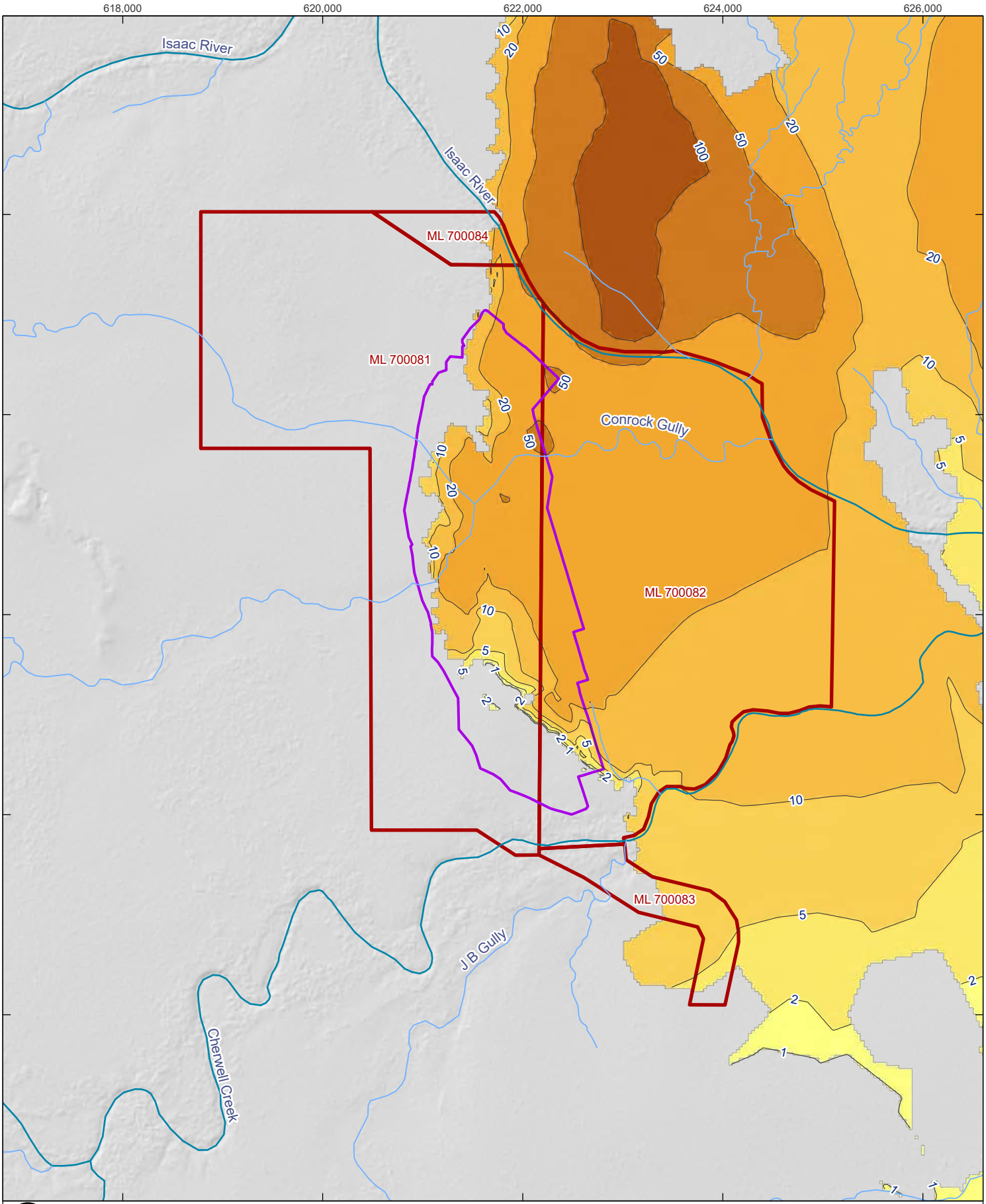
FIGURE 8-8

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-08_Predicted Maximum Cumulative Drawdown – Regolith (Layer 2)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM CUMULATIVE DRAWDOWN – LEICHHARDT SEAM (LAYER 5)

SLR

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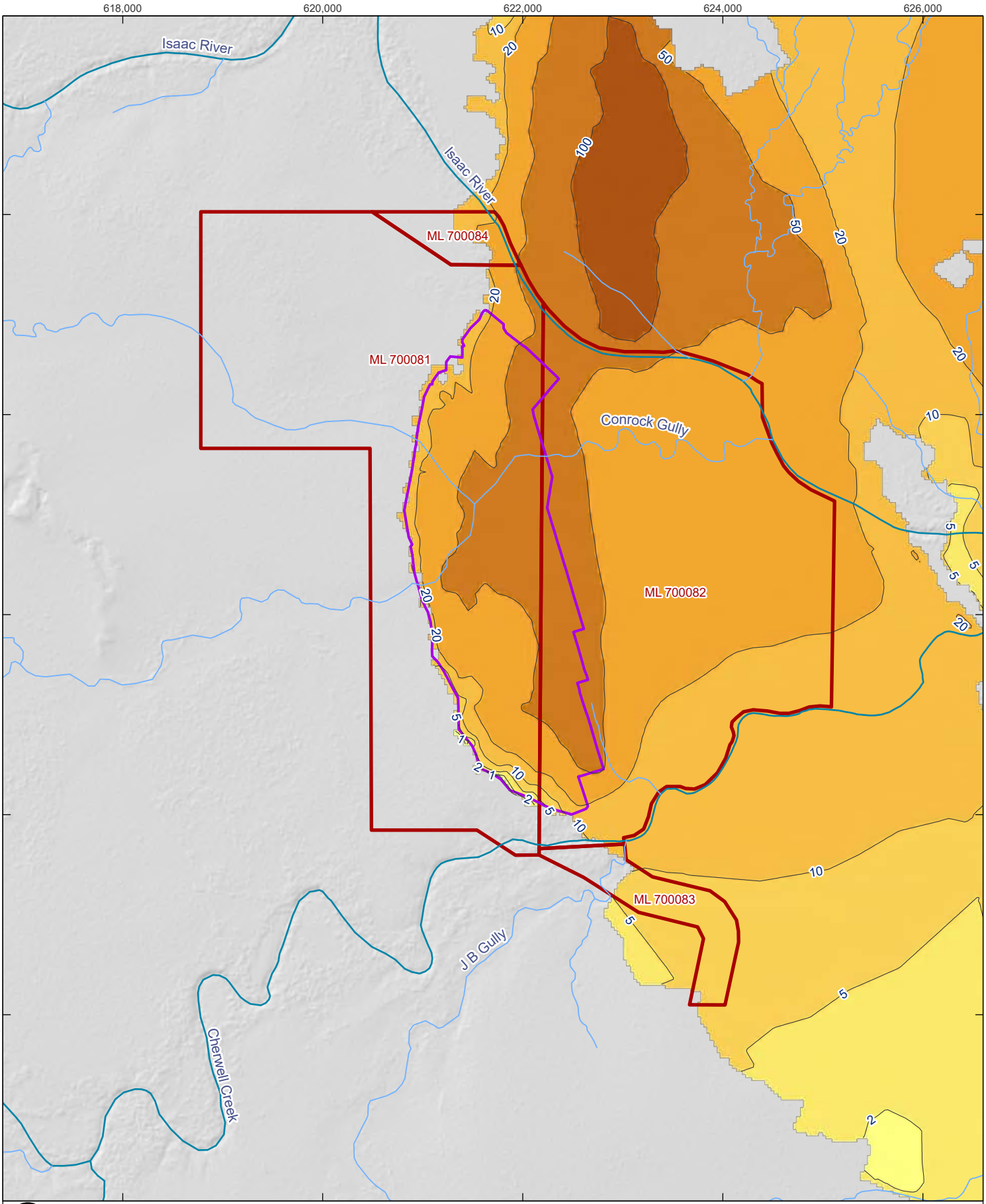
FIGURE 8-9

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-09_Predicted Maximum Cumulative Drawdown – Leichhardt Seam (Layer 5)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

PREDICTED MAXIMUM CUMULATIVE DRAWDOWN – VERMONT SEAM (LAYER 7)

SLR

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FIGURE 8-10

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-10_Predicted Maximum Cumulative Drawdown – Vermont Seam (Layer 7)

8.1.2 Residual Drawdown (Post Recovery)

8.1.2.1 Residual Drawdown (Incremental)

The residual drawdown (incremental or Project only) is the drawdown at the end of the recovery period, due to the Project only. It is calculated as the difference between the Proposed scenario and the Approved scenario for the last stress period of the simulation (i.e. at post mining equilibrium).

The residual drawdown (incremental) figures (**Figure 8-11** to **Figure 8-15**) show where maximum drawdown impacts are predicted to exceed 1 m. **Figure 8-11** to **Figure 8-15** show the residual water table drawdown (incremental), and residual drawdown (incremental) within Alluvium (layer 1), Regolith (layer 2), Leichhardt seam (layer 5), and Vermont seam (layer 7), respectively.

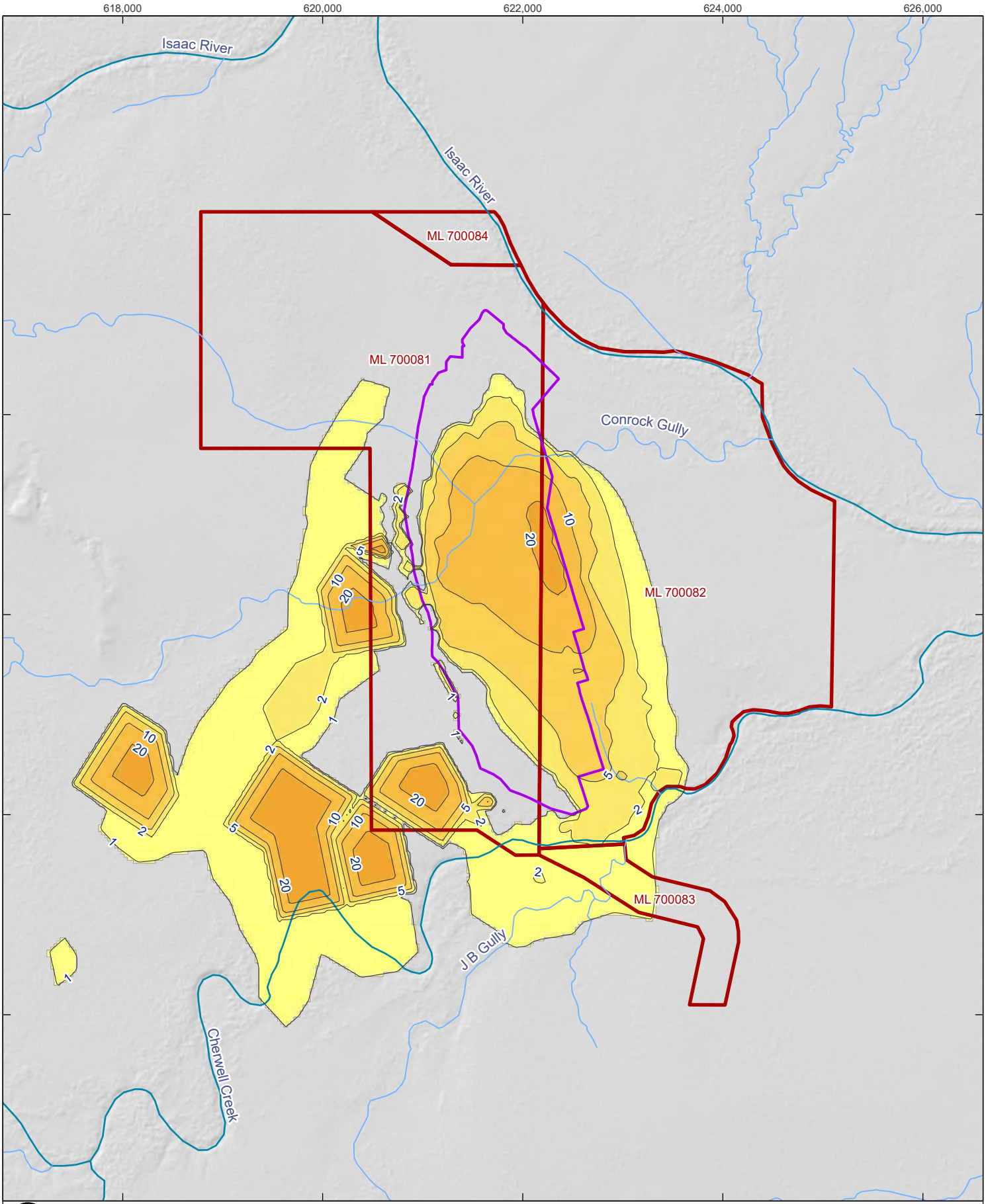
Figure 8-11 shows that the residual water table drawdown (incremental) remains within approximately 3km of the Project. The small areas of drawdown shown outside the Project area are the result of numerical effects within the model and do not represent any physical depressurisation beyond the Project.

No incremental drawdown impacts exceeding 1 m are predicted for the Quaternary alluvium as a result of the proposed Project (**Figure 8-12**). **Figure 8-13** shows that residual drawdown within the regolith (Layer 2) is limited in extent and confined to areas immediately to the south of the Project mining footprint at post-recovery, indicating minimal long-term impacts to the regolith following recovery.

Figure 8-11 to **Figure 8-15** show that impacts are strongly concentrated around the Project mining area, with the largest magnitudes occurring in the Leichhardt and Vermont seams.

Comparison of the maximum drawdown (incremental) and residual drawdown (incremental) results indicates that drawdown magnitudes are substantially reduced by the end of the recovery period. Maximum drawdown occurs during active mining and represents the peak Project-related response across the model period, whereas residual drawdown represents the remaining incremental change at post-mining equilibrium and is lower in magnitude and more spatially confined.

For the Project, residual drawdown (incremental) is largely confined to areas immediately surrounding the mining footprint, with no widespread drawdown persisting beyond the Project area at post-recovery. This indicates a high degree of groundwater recovery following cessation of mining, with only small residual drawdown remaining within the deeper mined seams.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL INCREMENTAL WATER TABLE DRAWDOWN

SLR

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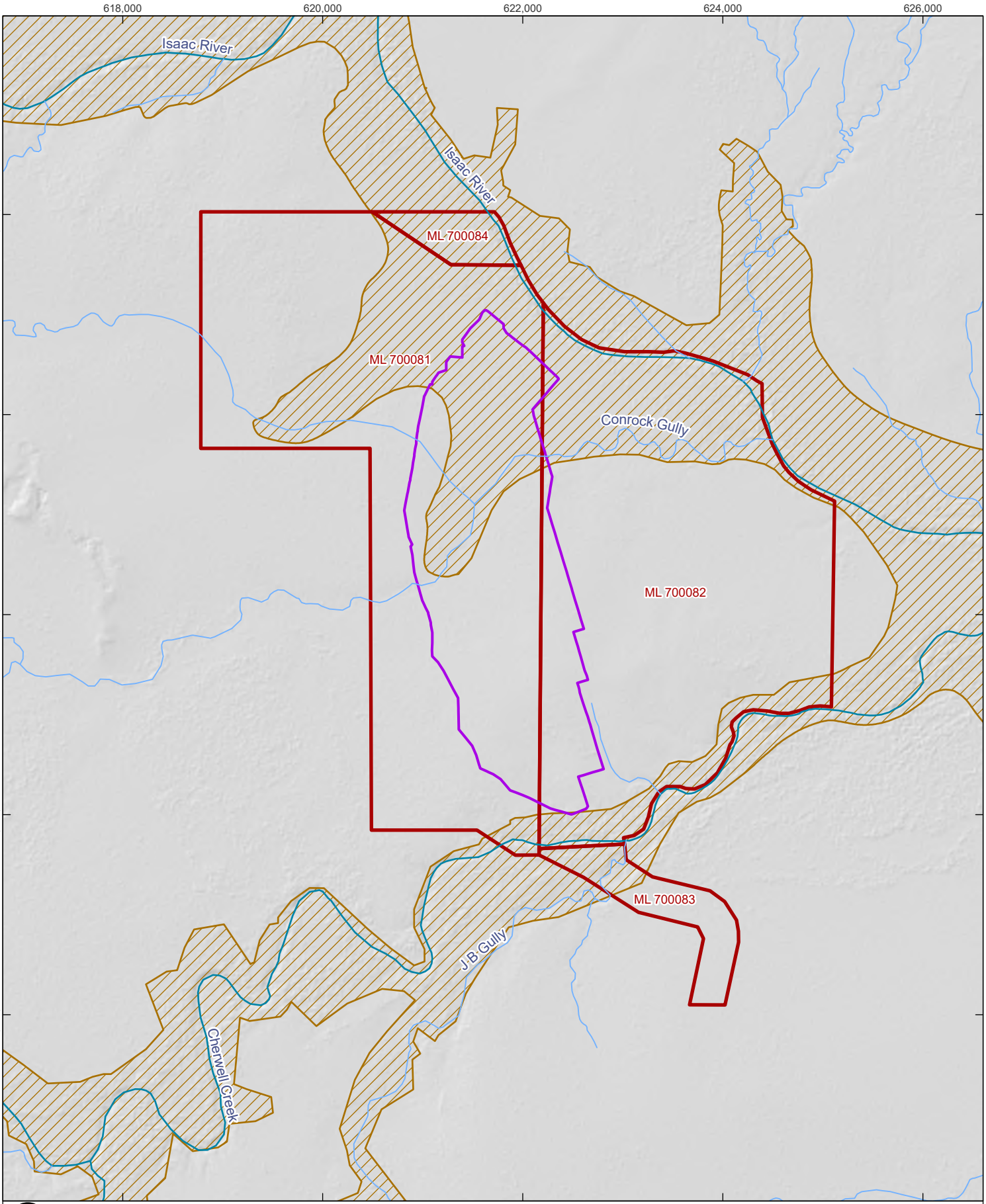
FIGURE 8-11

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-11_Residual Incremental Water Table Drawdown



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs
- Alluvium Extent

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (INCREMENTAL) – ALLUVIUM (LAYER 1)

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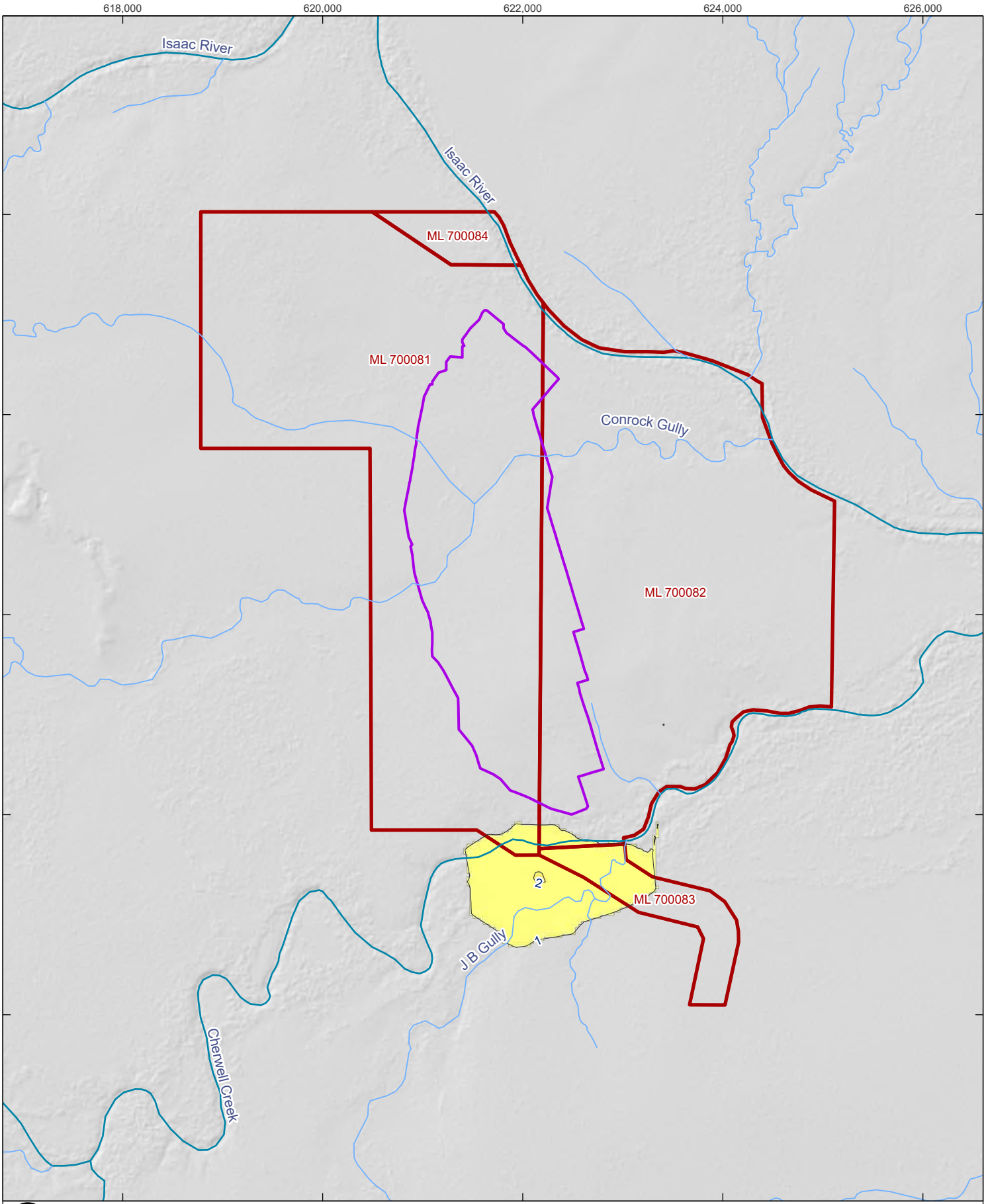
FIGURE 8-12

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-12_Residual Drawdown (Incremental) – Alluvium (Layer 1)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (INCREMENTAL) – REGOLITH (LAYER 2)

SLR

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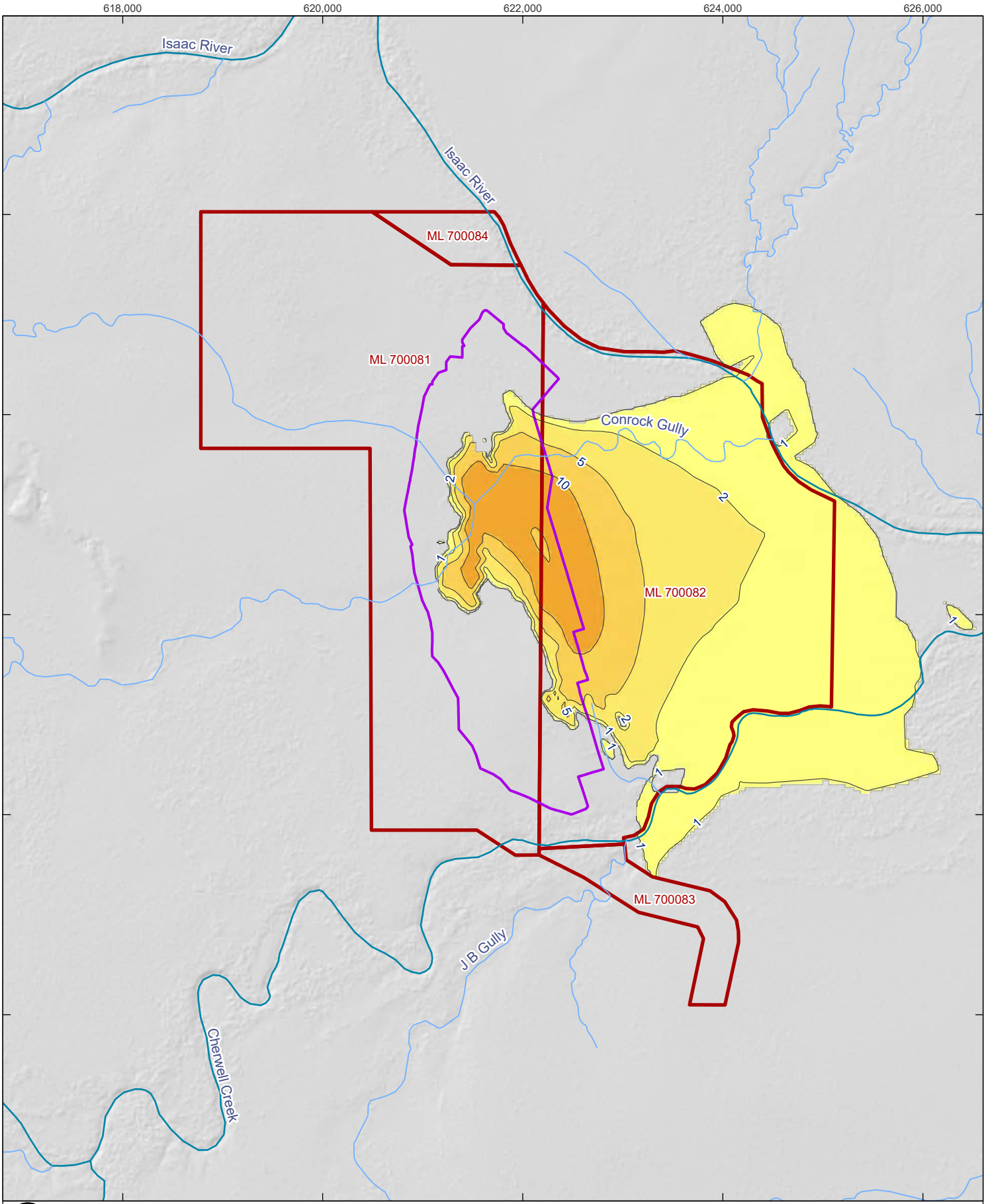
FIGURE 8-13

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-13_Residual Drawdown (Incremental) – Regolith (Layer 2)



LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (INCREMENTAL) – LEICHHARDT SEAM (LAYER 5)

SLR

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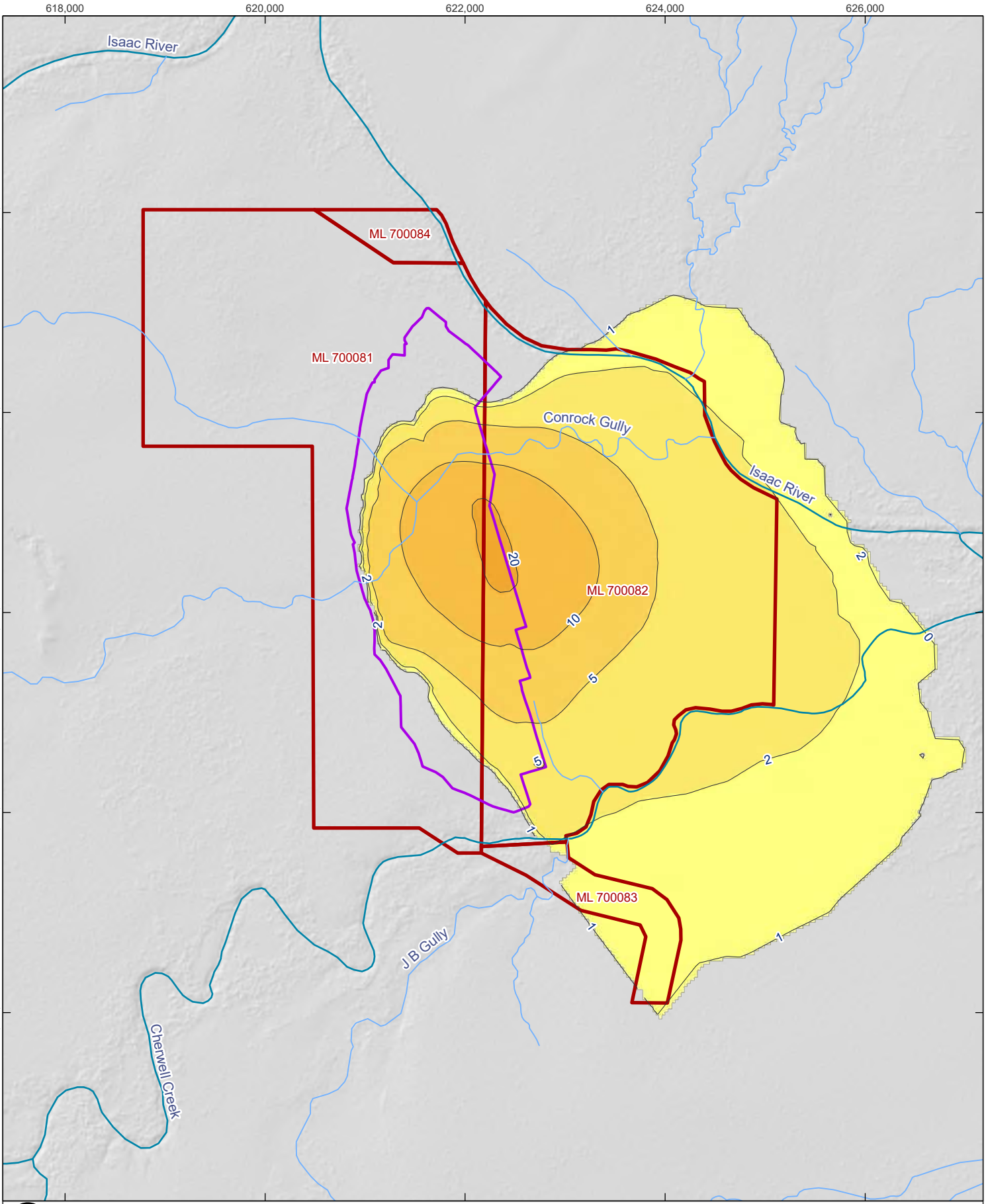
FIGURE 8-14

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-14_Residual Drawdown (Incremental) – Leichhardt Seam (Layer 5)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (INCREMENTAL) – VERMONT SEAM (LAYER 7)

SLR

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FIGURE 8-15

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-15_Residual Drawdown (Incremental) – Vermont Seam (Layer 7)

8.1.2.2 Residual Drawdown (Cumulative)

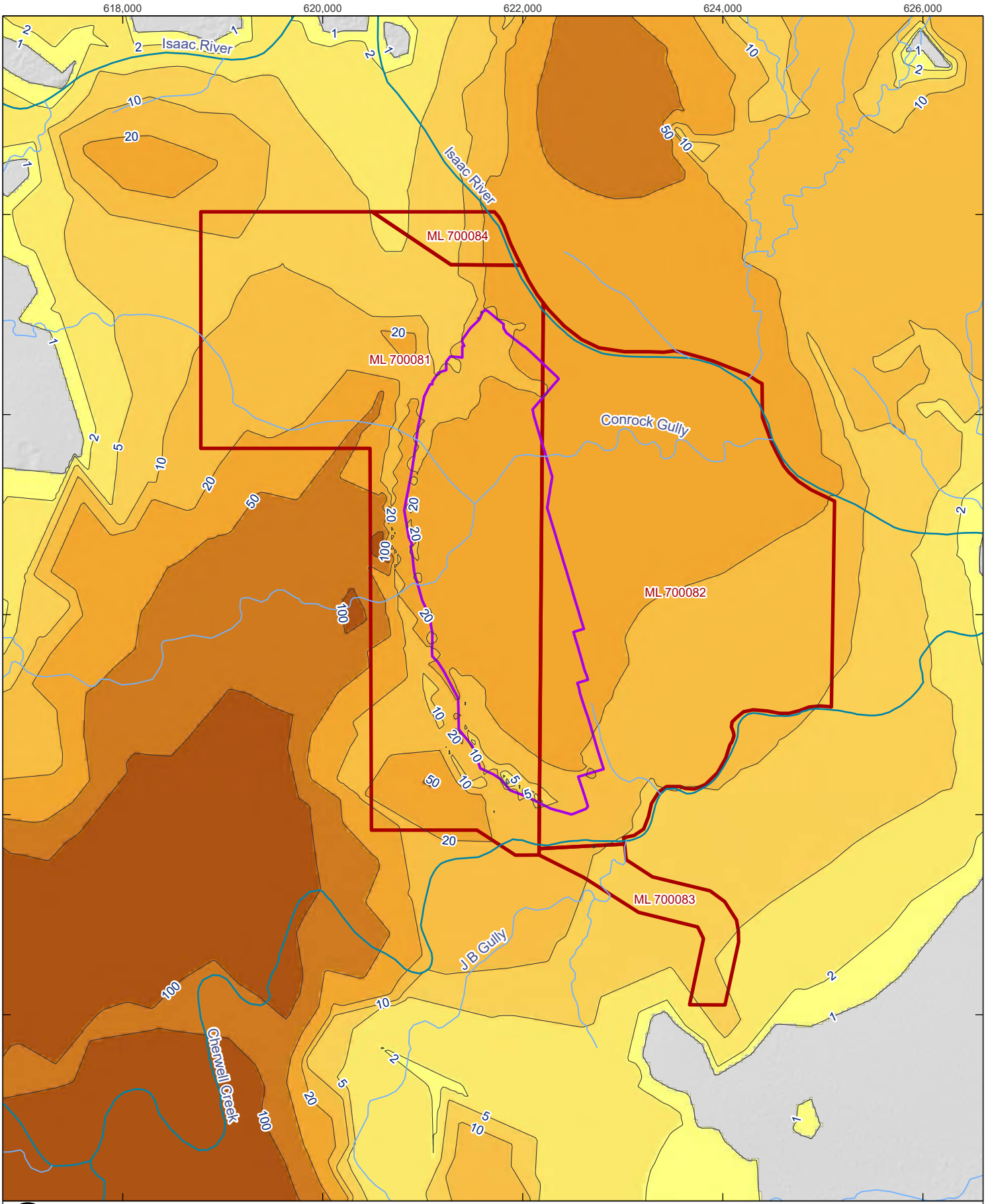
The residual drawdown (cumulative) is calculated as the difference between the Proposed scenario and the Null run, for the last stress period of the simulation, representing post-mining equilibrium conditions.

The residual drawdown (cumulative) figures (**Figure 8-16** to **Figure 8-20**) show where maximum drawdown impacts are predicted to exceed 1 m, for the last stress period of the simulation. **Figure 8-16** to **Figure 8-20** show the residual water table drawdown (cumulative), and residual drawdown (cumulative) within Alluvium (layer 1), Regolith (layer 2), Leichhardt seam (layer 5), and Vermont seam (layer 7), respectively. These results represent the combined effects of the Project and other existing and foreseeable mining operations across the model domain.

The residual drawdown (cumulative) map for the alluvium indicates that all drawdown within this layer arises from other existing and foreseeable mining operations rather than from the Project. This is consistent with the residual drawdown (incremental) results, which show no Project-only drawdown impacts exceeding 1 m in the alluvium. Accordingly, cumulative drawdown patterns within the alluvium predominantly reflect regional groundwater conditions and post-mining equilibrium responses associated with neighbouring mines, rather than Project-related effects.

Residual drawdown (cumulative) is shown across the water table, alluvium, regolith, and coal measures, with spatial patterns influenced by the location and extent of multiple mining operations. While drawdown magnitudes generally decrease with distance from the Project mining area, cumulative drawdown increases or persists in some areas further away, corresponding to the presence of other active or historical mines within the region.

In the deeper coal measures, particularly the Leichhardt and Vermont seams, cumulative drawdown reflects long-term groundwater responses to mining activities that extend beyond individual mine boundaries. These patterns indicate hydraulic interaction between mining areas and represent post-mining equilibrium conditions shaped by the combined influence of the Project and neighbouring operations.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL WATER TABLE DRAWDOWN (CUMULATIVE)

SLR

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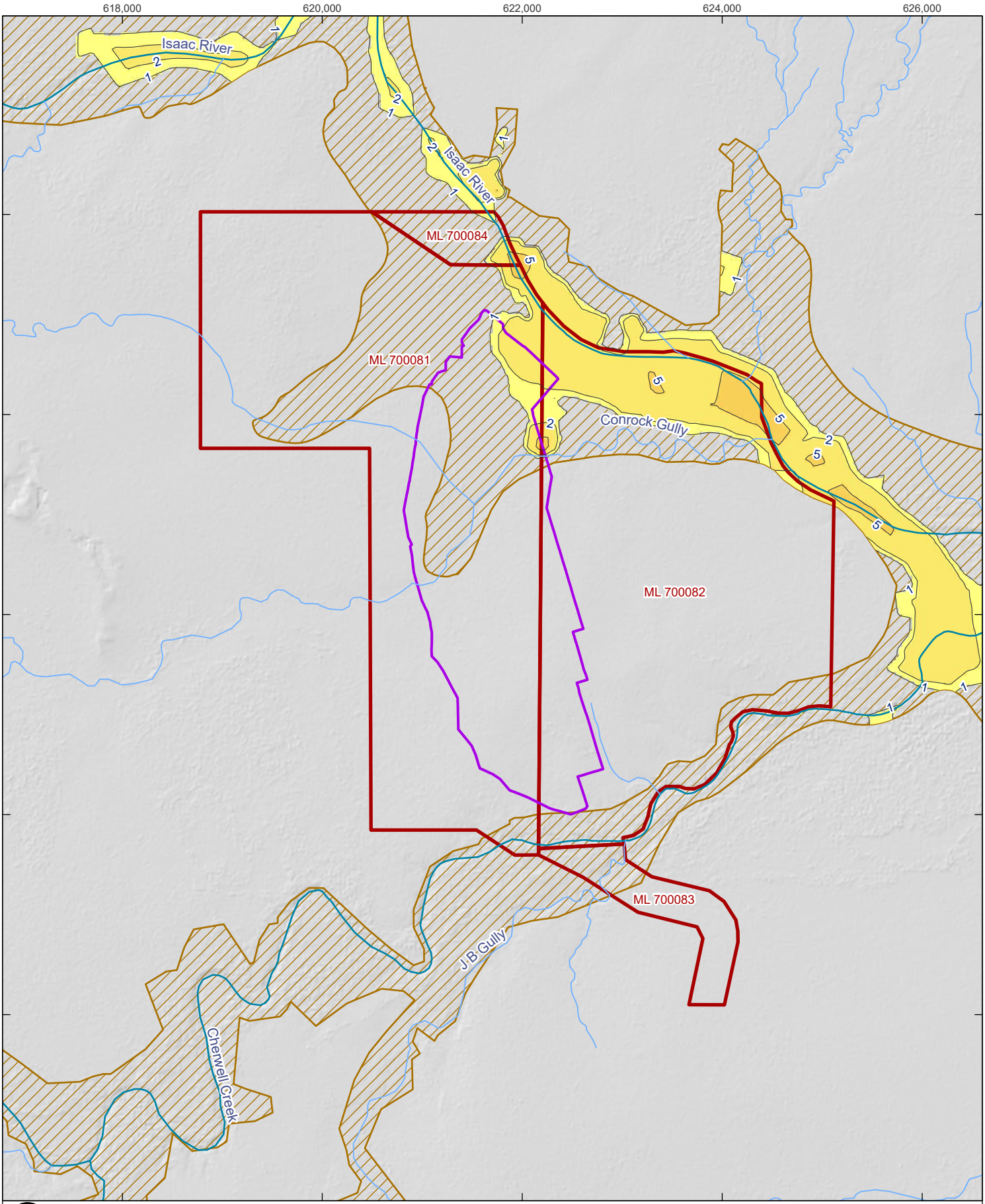
FIGURE 8-16

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-16_Residual Water Table Drawdown (Cumulative)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	12-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs
- Alluvium Extent

Maximum Drawdown (m)

- 1 - 2
- 2- 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- > 500

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (CUMULATIVE) – ALLUVIUM (LAYER 1)

SLR

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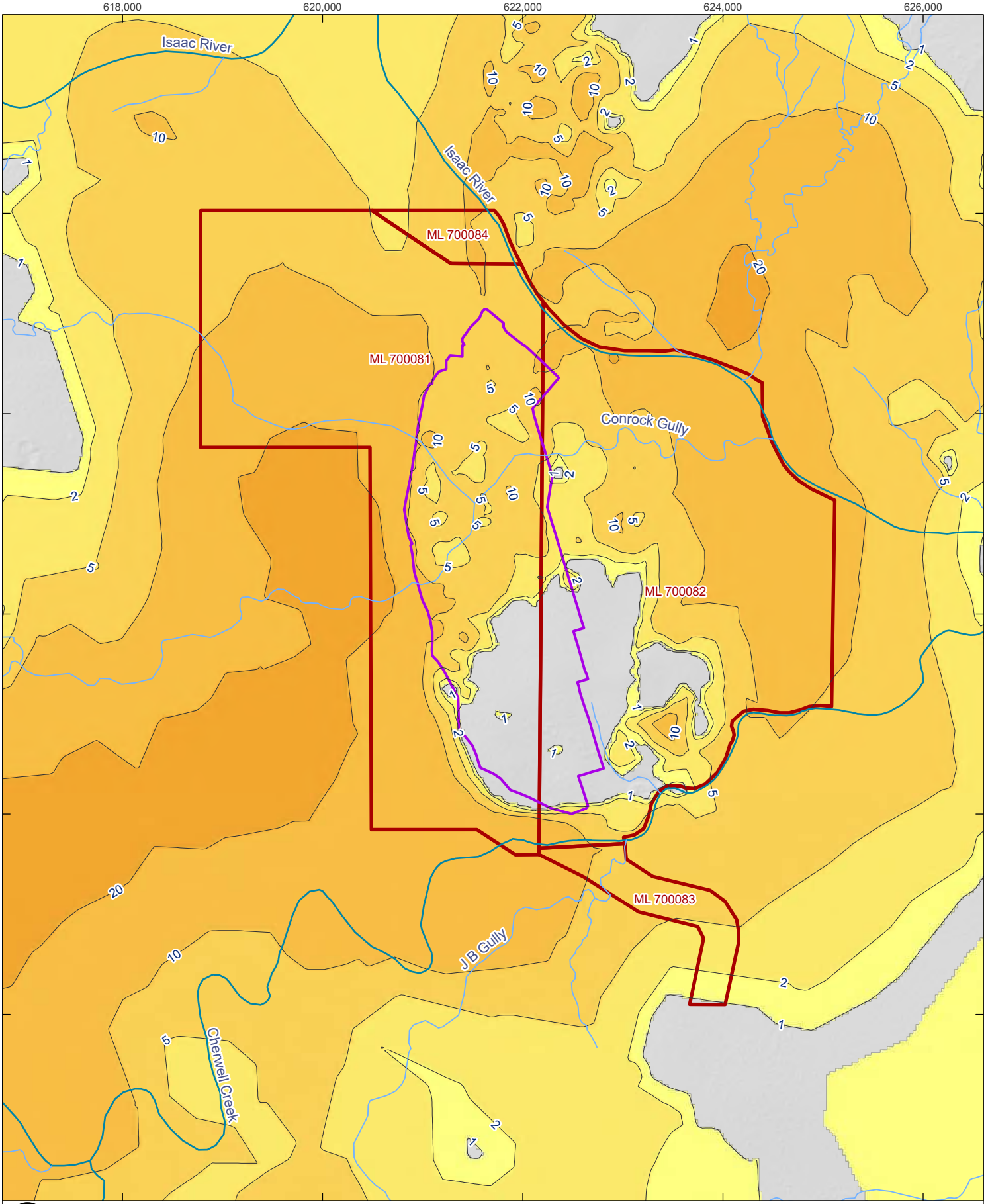
FIGURE 8-17

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-17_Residual Drawdown (Cumulative) – Alluvium (Layer 1)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (CUMULATIVE) – REGOLITH (LAYER 2)

SLR

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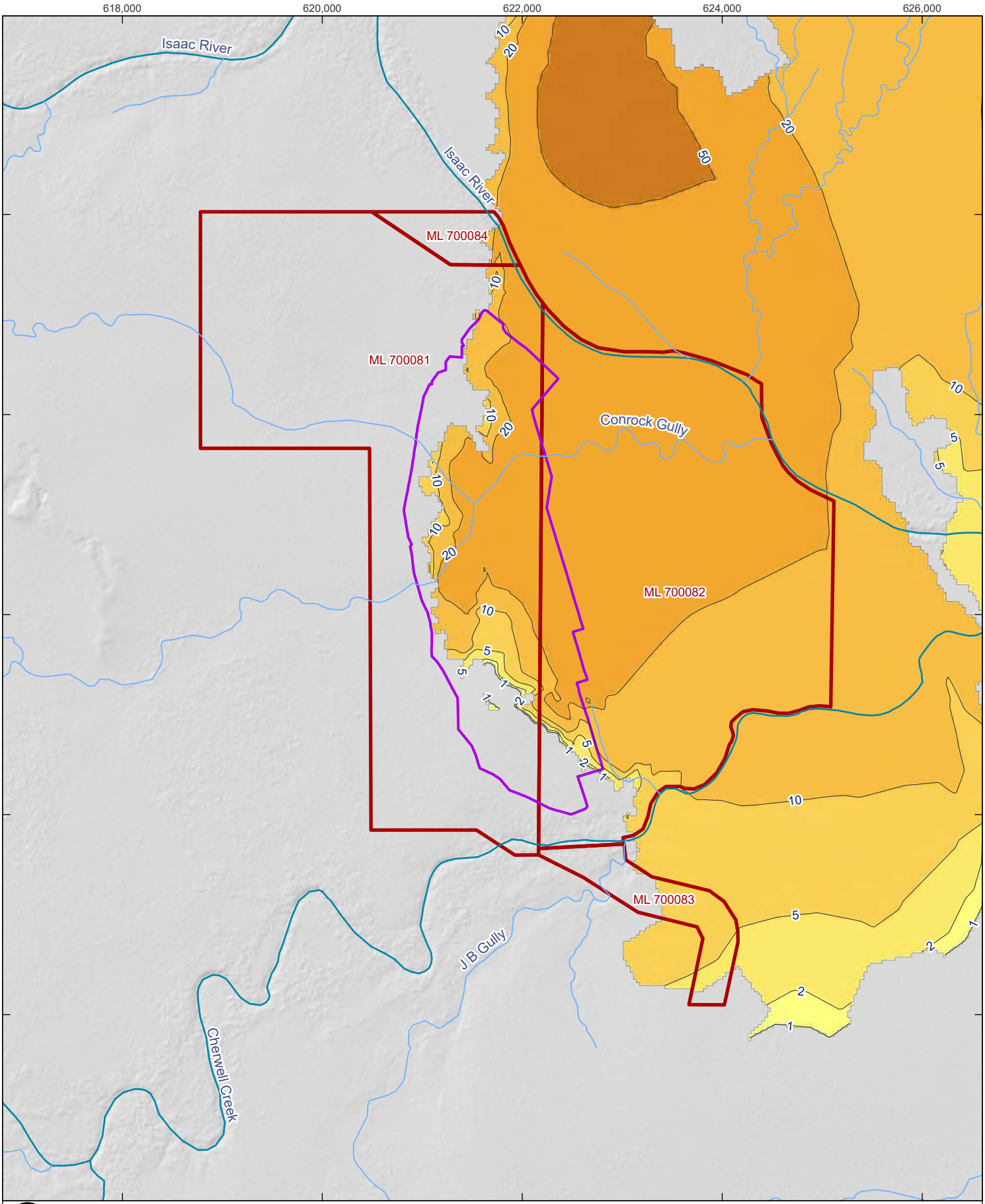
FIGURE 8-18

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-18_Residual Drawdown (Cumulative) – Regolith (Layer 2)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (CUMULATIVE) – LEICHHARDT SEAM (LAYER 5)

SLR

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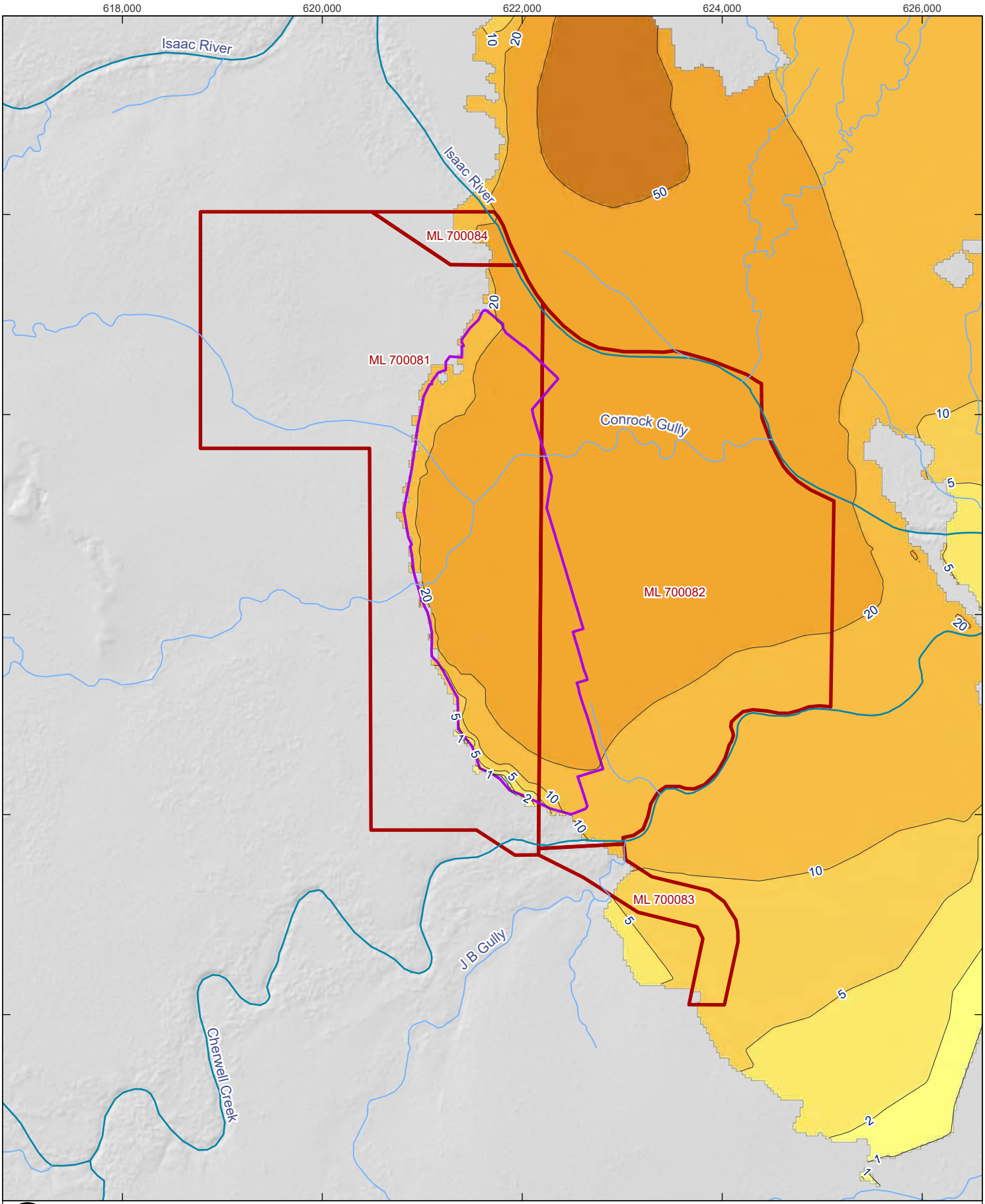
FIGURE 8-19

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-19_Residual Drawdown (Cumulative) – Leichhardt Seam (Layer 5)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Drawdown Contour (m)
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

1 - 2	50 - 100
2- 5	100 - 200
5 - 10	200 - 500
10 - 20	> 500
20 - 50	

ISAAC DOWNS EXTENSION PROJECT

RESIDUAL DRAWDOWN (CUMULATIVE) – VERMONT SEAM (LAYER 7)

SLR

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FIGURE 8-20

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-20_Residual Drawdown (Cumulative) – Vermont Seam (Layer 7)

8.2 Predicted Groundwater Interception

The predicted incremental total mine groundwater inflows are presented on **Figure 8-21** and **Table 8-2**. Note the predicted inflows commence with start of mining, expected in 2029 (see **Figure 1-2**).

8.2.1 Mine Groundwater Inflows – Active Mining

The predicted incremental mine groundwater inflows are presented on **Figure 8-21** and **Table 8-2.**

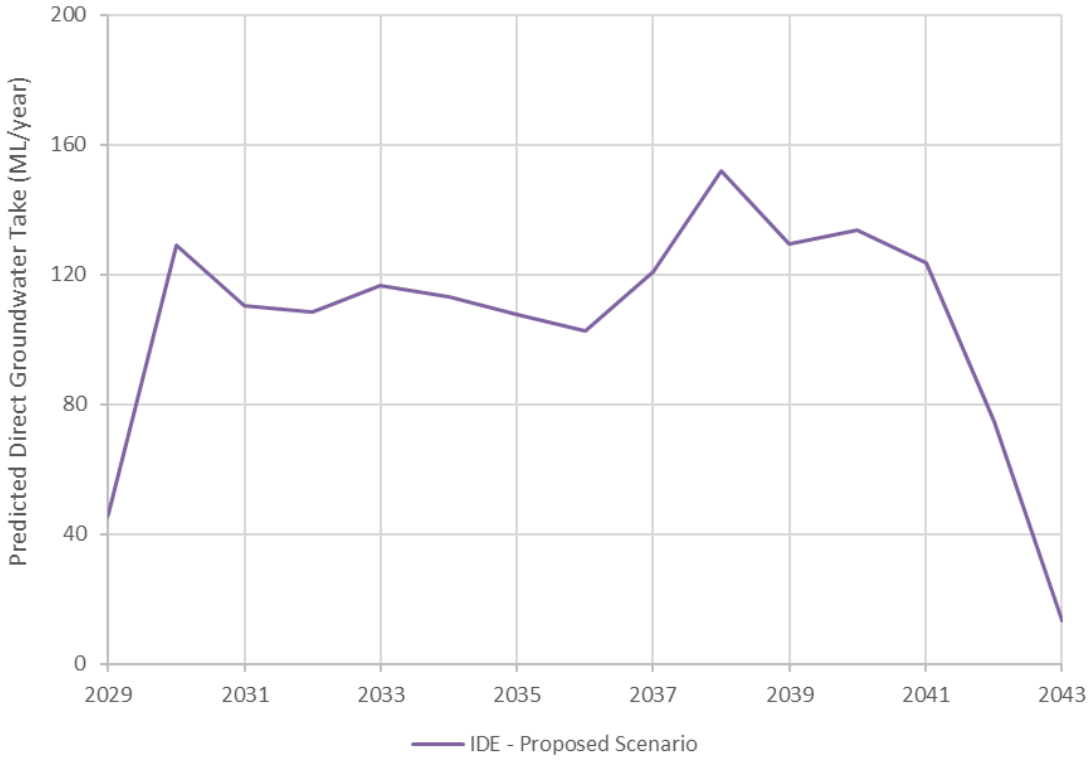


Figure 8-21 Predictive Incremental Mine Groundwater Inflows during Active Mining

The predicted pit inflows resultant from the proposed Project are summarised in **Table 8-2**. The peak incremental mine groundwater inflows would occur in the year 2038 at 152 ML/year (**Table 8-2**).

Table 8-2 Predicted Incremental Mine Groundwater Inflows from the Proposed

Year	Groundwater Inflows (ML/year)
2029	46
2030	129
2031	110
2032	108
2033	117
2034	113
2035	108
2036	103

Year	Groundwater Inflows (ML/year)
2037	121
2038	152
2039	129
2040	134
2041	124
2042	75
2043	13

8.2.2 Final Void Inflows

The final predicted groundwater inflows to the residual void from the groundwater model is shown on **Figure 8-22**, with inflows partitioned between that which flows into the residual void through spoil, and that which flows into the residual void through surrounding natural geological formations. This shows that almost all inflows are through spoil. Spoil materials are significantly more permeable and loosely compacted than the natural geological formations, providing preferential pathways for groundwater movement. As a result, groundwater is expected to enter the void predominantly through spoil. The final void geometry and elevation are illustrated in the particle-tracking maps presented later in **Section 8.4.2** (**Figure 8-31**).

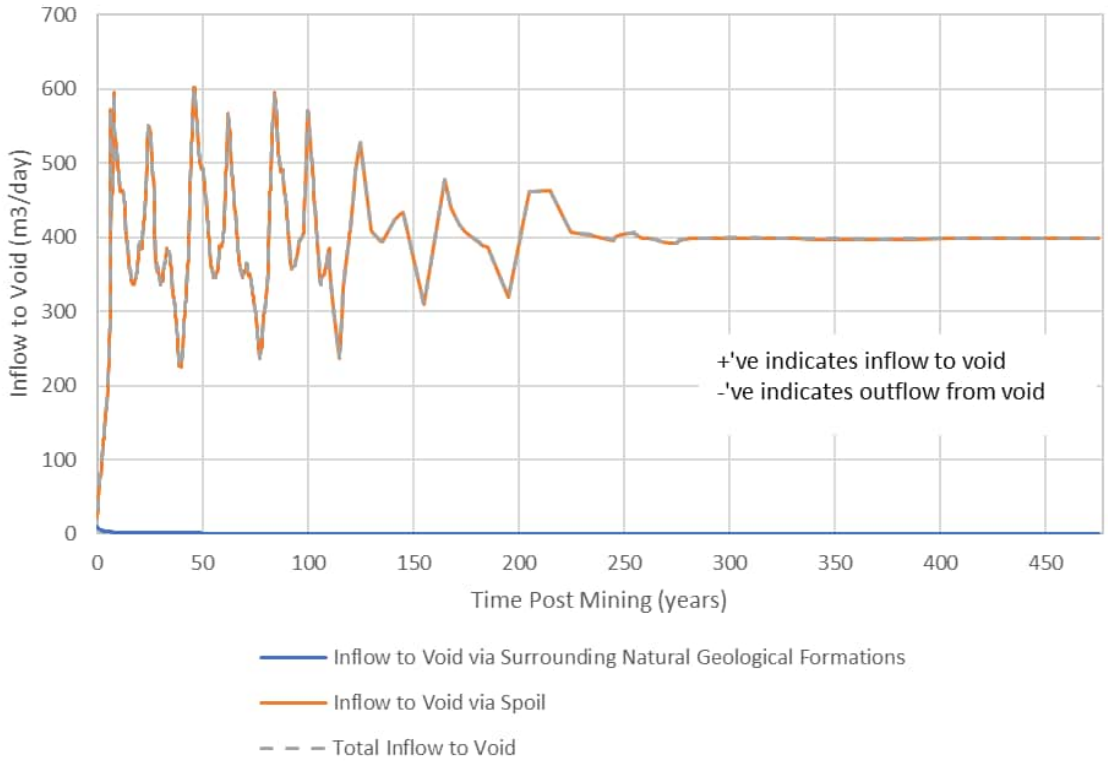


Figure 8-22 Predicted Residual Void Groundwater Inflows – IDE Void

8.3 Incidental Water Impacts

8.3.1 Influence on Alluvial Aquifer

The predicted incremental change in groundwater take from the alluvial aquifer due to the Project was calculated by comparing the net alluvium fluxes in the Proposed Scenario against the Approved Scenario. The predicted incremental change in alluvium net flux resultant of the Project, calculated in this manner, is shown on **Figure 8-23**. This shows that between the commencement of Project mining in 2029 and the end of mining in 2043, there is a predicted overall loss of water from the alluvial aquifer that is attributable to the Project of between approximately 0 and 34.5 ML/year. This represents a negligible reduction in the context of regional surface water flows; for example, compared to the mean daily flow of 430 ML/d in the Isaac River at Deverill, this equates to approximately 0.02% of annual flow.

The predicted cumulative alluvium net flux, is shown in **Figure 8-24**. This shows that between 2029 and the end of IDE mining in 2043, there is a predicted overall cumulative loss of water from the alluvial aquifer of between approximately 470 and 700 ML/year. This represents the net water flux associated with the alluvium across the entire regional-scale numerical model extent. As this is a cumulative prediction, the general trends in increasing and decreasing rates of loss of water from the alluvium that are shown on **Figure 8-24** cannot be attributed to only the Project but to all mining operations represented in the model.

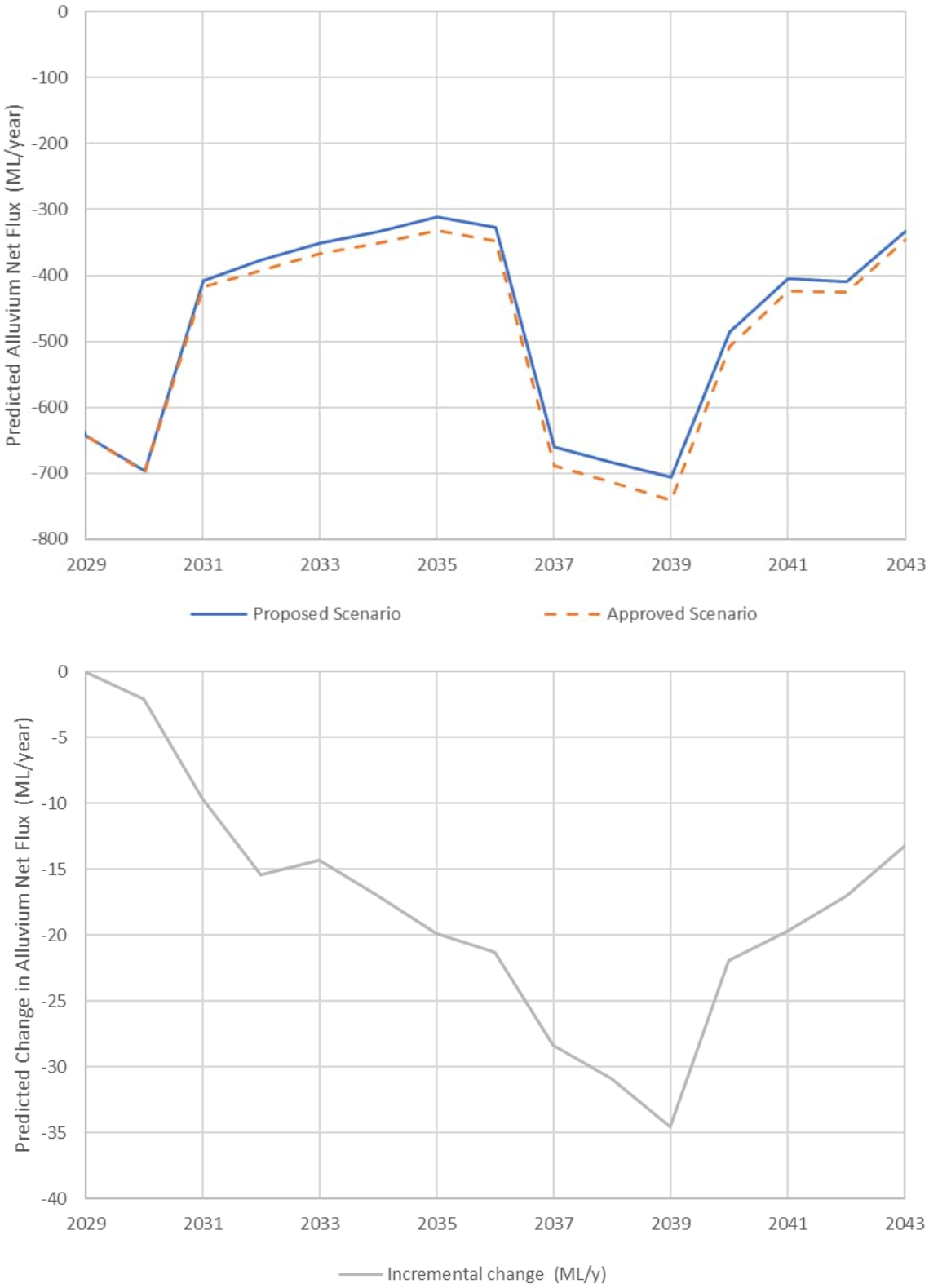


Figure 8-23 Incremental (Project) Predicted Alluvium Net Flux (top) and Change in Alluvium Net Flux (bottom)

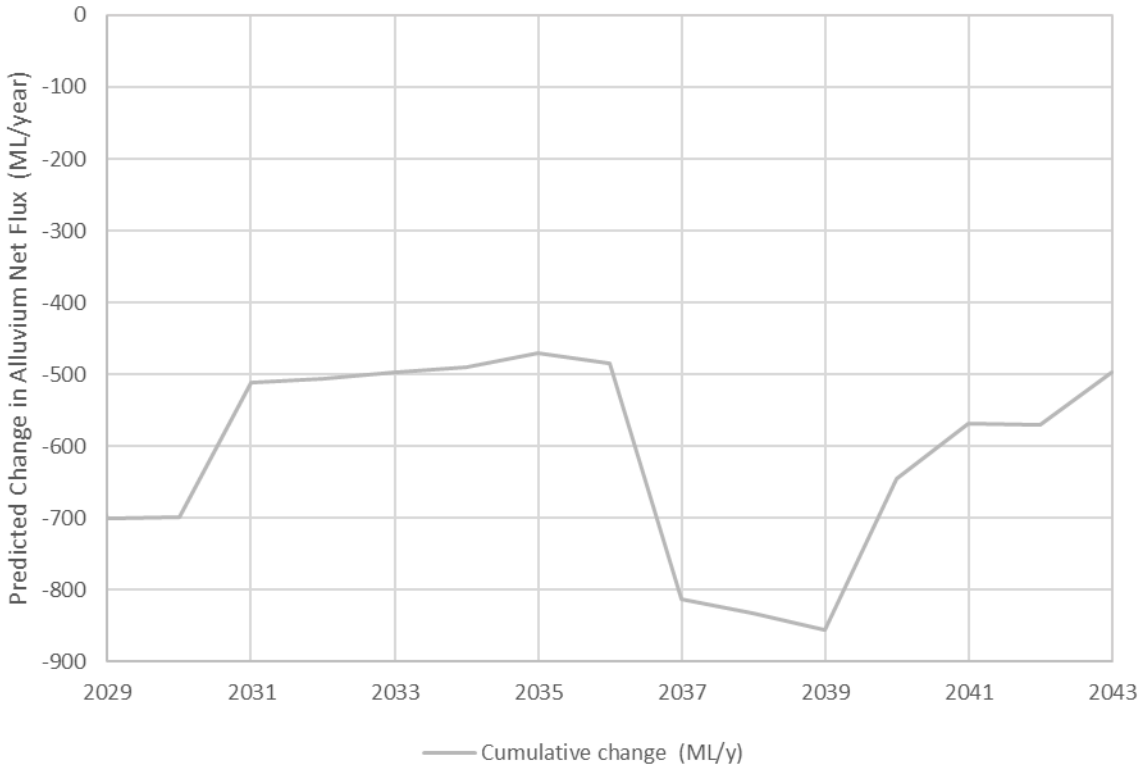


Figure 8-24 Cumulative Predicted Alluvium Net Flux –

8.3.1.1 Post Mining

The predicted change in incremental alluvium net flux and the predicted cumulative alluvium net flux for the post-mining period is shown on **Figure 8-25** and **Figure 8-26** respectively.

The incremental net flux time series (**Figure 8-25)** shows that post-mining variations are minor and do not exhibit any sustained increase in alluvium water loss attributable to the Project. Overall, the post-mining results demonstrate that Project-related impacts on alluvium water take are short-term, with no ongoing Project-specific increase in alluvium loss following mine closure.

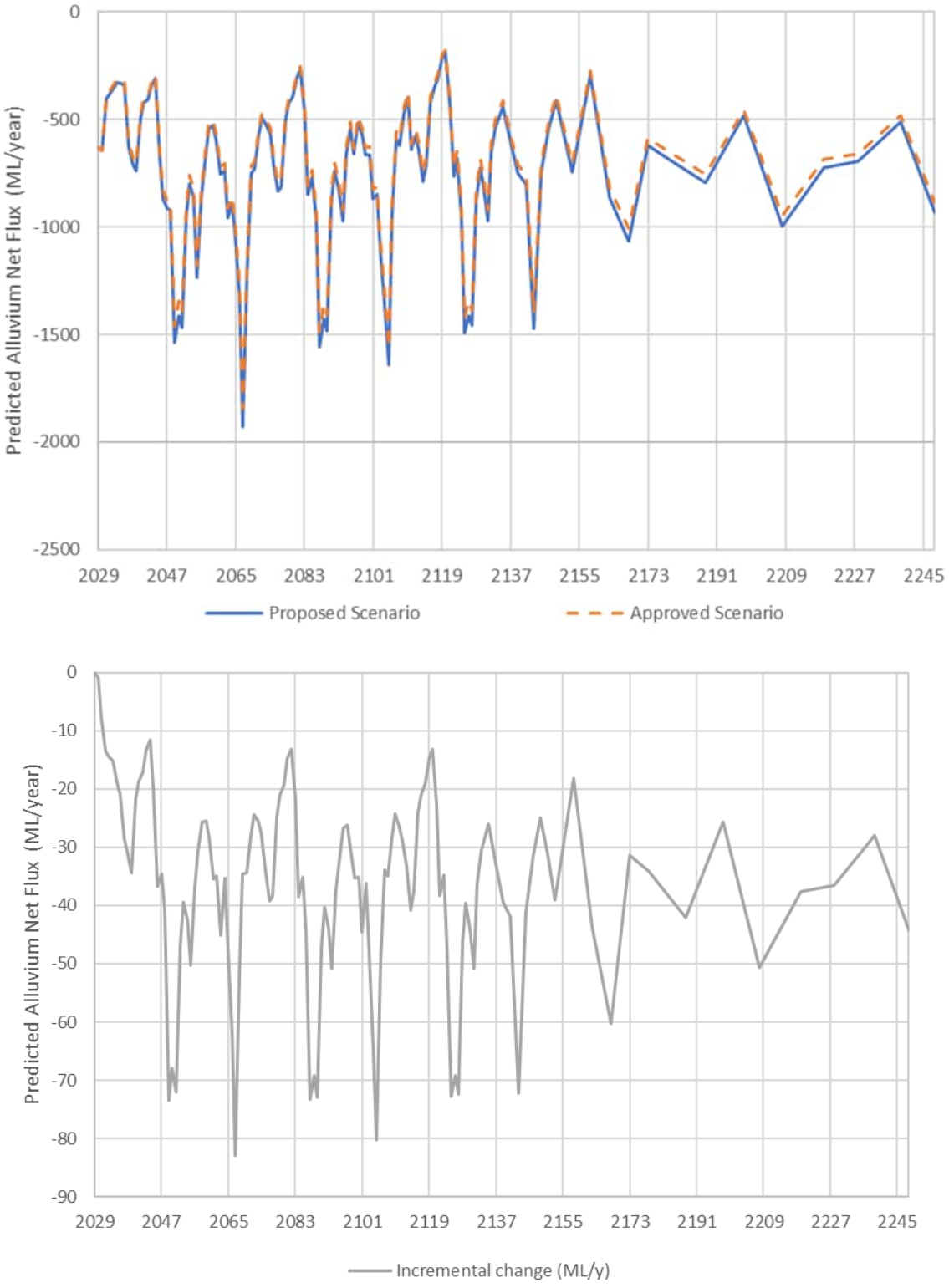


Figure 8-25 Predicted Alluvium Net Flux (top) and Change in Alluvium Net Flux (bottom) – Post Mining

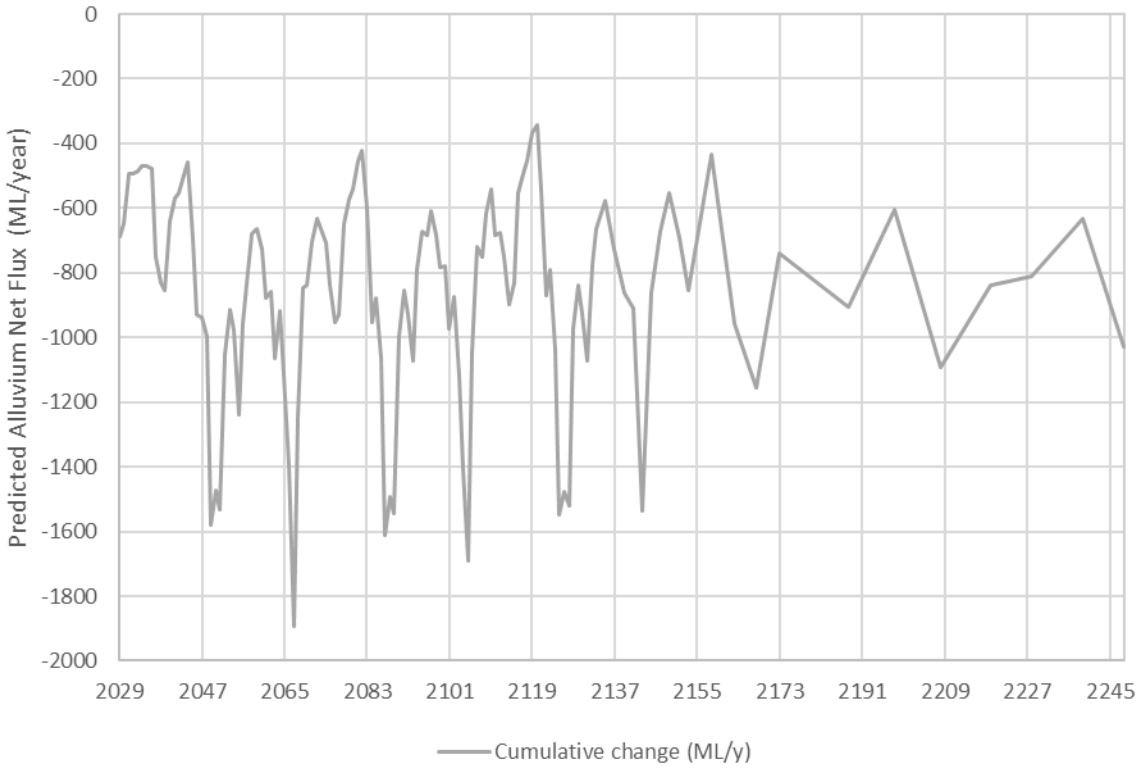


Figure 8-26 Predicted Alluvium Net Flux –Cumulative – Post Mining

8.3.2 Loss of Flow in Stream

Mining activities can result in a change in gradient from the aquifer into the watercourse, thereby reducing the rate at which baseflow occurs.

The predicted change in net flux to the Isaac River, under both incremental and cumulative conditions, is shown in **Figure 8-27**.

This shows that between 2029 and the end of IDE mining in 2043, there is no net flux in water moving in or out of the Isaac River that is attributable to the Project. The maximum cumulative net loss of water from the river is approximately 84 ML/year under a simulated future flow condition in 2030. This represents the net water flux associated with the River across the entire regional scale numerical model extent. As the Project does not result in a net flux of water to/from the River all fluxes are attributed all other mining operations represented in the model.

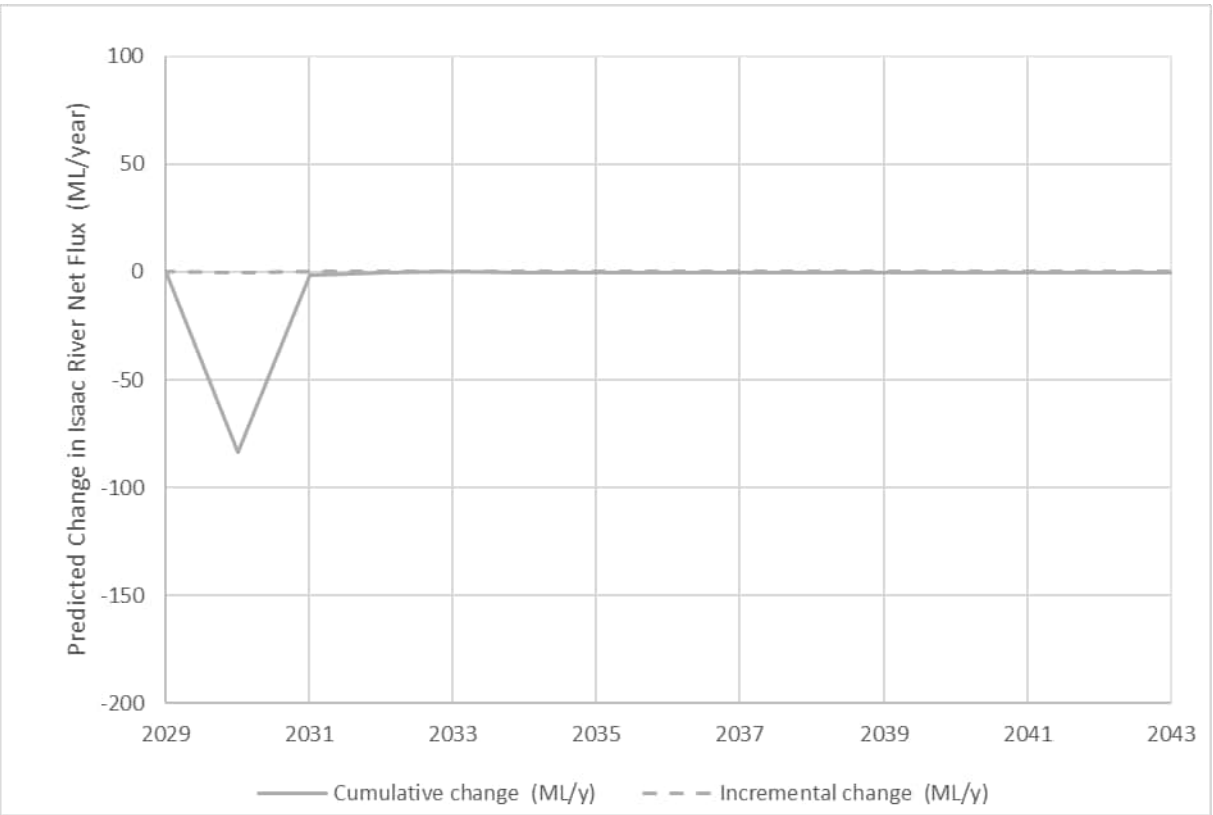


Figure 8-27 Predicted Reduction in River Baseflow (Incremental and Cumulative)

8.3.2.1 Post Mining

The predicted incremental (Project only) change in net flux and the predicted cumulative net flux of water moving in or out of the Isaac River for the post mining period are shown in **Figure 8-28**.

Figure 8-28 shows that both incremental and cumulative net fluxes to the Isaac River stabilise, with no ongoing Project-specific loss of river baseflow predicted during the post-mining period. The incremental net flux demonstrates that the Project has no impact on river flux.

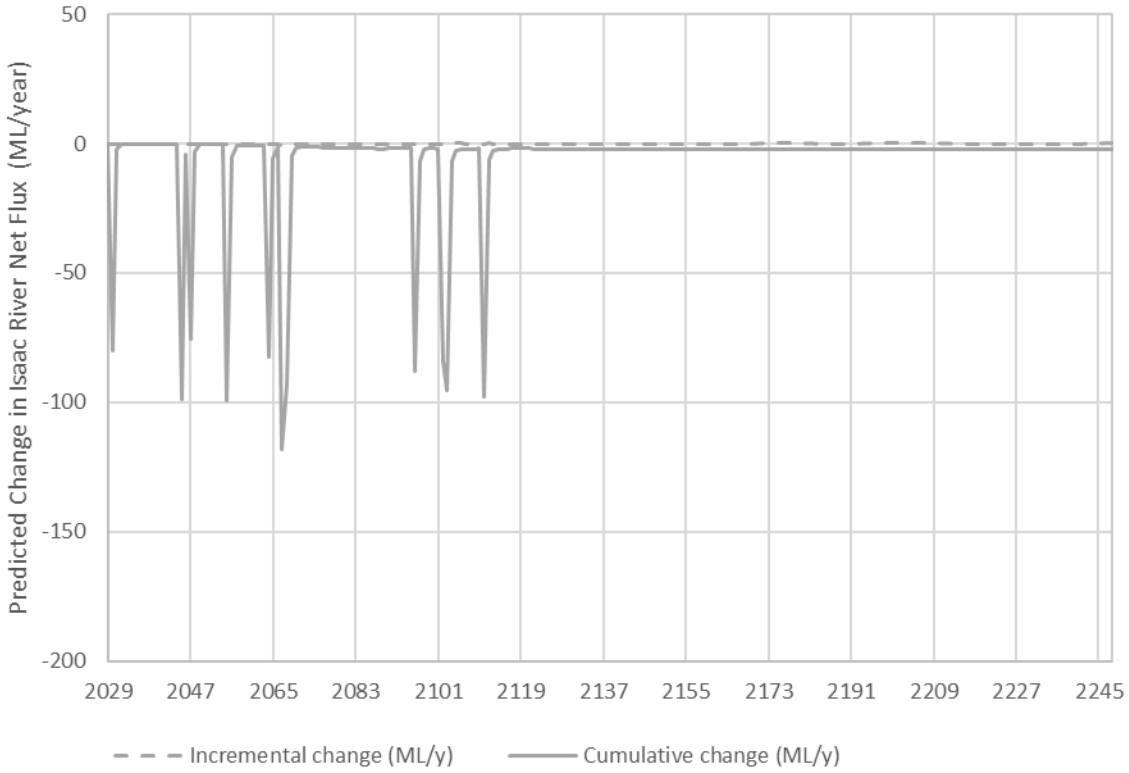


Figure 8-28 Predicted Reduction in River Baseflow (Incremental and Cumulative) – Post Mining

8.4 Impact to Potential Receptors

8.4.1 Privately Owned Bores

Chapter 3 of the Water Act 2000 provides bore drawdown threshold triggers of 2 m for unconsolidated aquifers, and 5 m for consolidated aquifers, to aid in the assessment of impacts to third party bore users. These criteria have been adopted for the assessment herein.

The potential impact to Landholder bores has been assessed by comparing both incremental and cumulative drawdown expected at each bore. Landholder bore's locations are presented, in **Figure 8-29**. Maximum incremental and cumulative drawdown at landholder bores from the Most Likely Estimate (MLE) (i.e. the parameter set that results in the highest likelihood, also otherwise known as the best calibrated model realisation) is represented on **Table 8-3**.

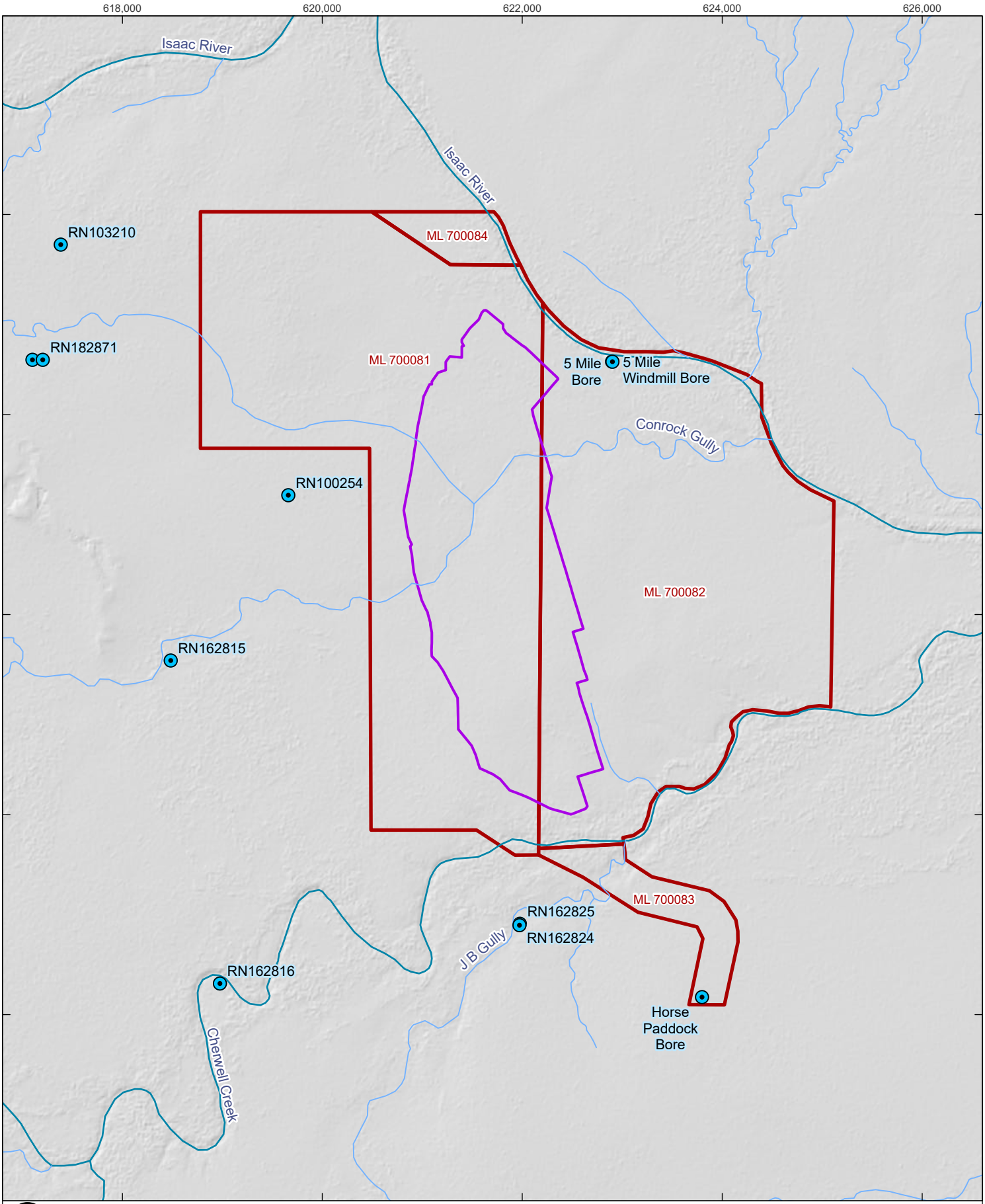
These results and impacts are further discussed in **Section 10.1.1**.

Table 8-3 Maximum Incremental and Cumulative Drawdown at Landholder Bores

Registered RN (ID)	Easting (GDA94)	Northing (GDA94)	Assumed Formation[1]	Bore Depth (m)	Use	Maximum Incremental Drawdown (m)	Maximum Cumulative Drawdown (m)[2]
5 Mile Bore	622897	7558528	Regolith	36.3	Inactive Supply	< 0.1	22.18
5 Mile Windmill	622901	7558527	Regolith	36.3	Active Supply	< 0.1	22.18
Horse Paddock	618483	7555539	Vermont Underburden	85	Active Supply	0.59	63.27
RN100254	617100	7558546	Fort Cooper Underburden	>150	Active Supply	0.35	50.38
RN103210	617203	7558546	Fort Cooper Overburden	65.53	Active Supply	0.36	49.68
RN162815	623797	7552173	Fort Cooper Seams	59	Active Supply	1.04	7.08
RN162816	617383	7559698	Fort Cooper Seams	45	Active Supply	0.23	39.89
RN162824	619659	7557192	Regolith	15	Inactive Supply	0.91	61.30
RN162825	621975	7552906	Fort Cooper Seams	40.83	Inactive Supply	1.43	20.01
RN182871	618975	7552309	Fort Cooper Overburden	60	Inactive Supply	0.29	80.21
RN182872	621971	7552892	Fort Cooper Overburden	50	Inactive Supply	1.27	13.74

1 Bores assigned to definitive geological unit and model layers based on known geology bore depth

2 Model-estimated cumulative drawdown may exceed the bore depth, indicating a risk that the bore could run dry.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	17-Mar-2026
Drawn by:	RB

LEGEND

- Landholder Bore
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

ISAAC DOWNS EXTENSION PROJECT

LANDHOLDER BORE LOCATIONS

SLR

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FIGURE 8-29

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_MOD_F02-42_Landholder Bore Locations

8.4.2 Flow Path Simulation

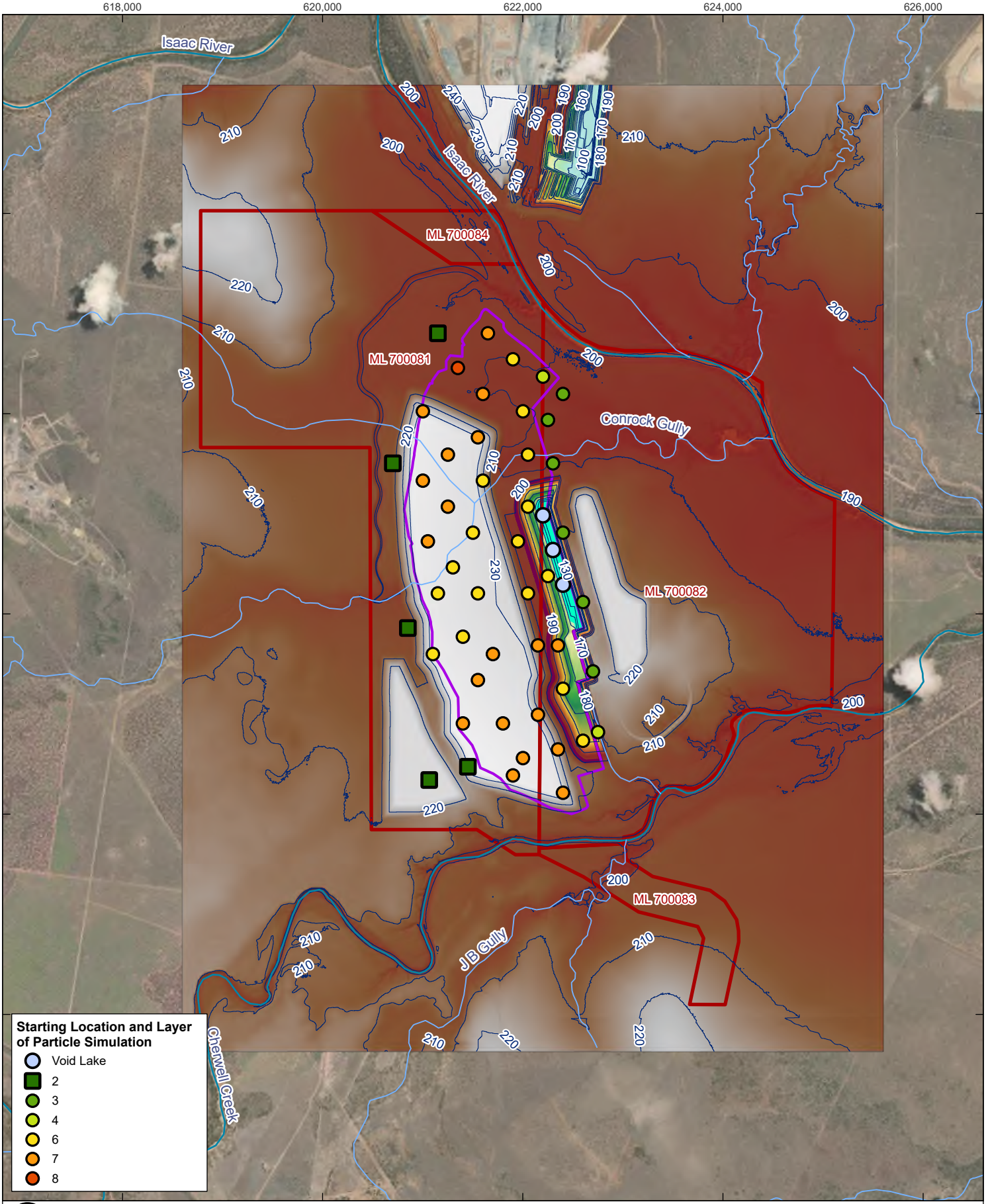
An analysis of the water movement within the final landform was undertaken to simulate and assess the movement and fate of water particles through the groundwater system post mining. A number of particles were placed on the final landform and within the residual void in the recovery groundwater model and the mod-PATH3DU code (S.S. Papadopulos & Associates, Inc., 2018) was used to simulate particle pathways along the groundwater flow field during recovery (i.e. 475 years). To run the mod-PATH3DU code, the transient head outputs from the groundwater flow model were used by mod-PATH3DU to simulate particle flowpath lines.

Figure 8-30 shows the initial location of particles on the final landform. The particles were placed at the surface of the model and released at the start of the post-mining simulation, with the movement of the particles then recorded during the post-mining simulation. It should be noted that the mod-PATH3DU code automatically moves the particle from the model surface to the shallowest saturated layer at the commencement of the simulation; as shown on **Figure 8-30** for many of the particles, this represents the RCM (Rangal Coal Measures) layers as the shallow layers (Layers 1 and 2) are unsaturated across much of the Project at the commencement of the post-mining simulation.

Figure 8-31 shows the predicted movement of water particles in the 475-year recovery simulation of the final landform. The colours along the predicted particle flow paths provides the model layer the particle was simulated to be moving through, with the green to red scale classification representing particles moving from shallow to deep model layers.

The colour changes along the paths on **Figure 8-31** indicate that particles situated within the shallower saturated layers at the beginning of the post-mining simulation generally move progressively toward deeper layers over the post-mining period. The flow path analysis indicates the particles generally move toward the void lake, with many of the particles terminating in the void. Particles that move into the void during the post-mining simulation remain within the void for the duration of the simulation. Particles starting in the void themselves remain within the void for the duration of the simulation.

A series of particles starting outside the of the void are noted to travel outside the Project MLAs, to the northeast in the direction of IDM. Particle tracking results indicate that migration is confined to the Rangal Coal Measures, and the flux direction is likely attributable to nearby mining operations (i.e. IDM) controlling drawdown and flow direction within the Rangal Coal Measures and terminates in the adjacent void. The migration terminates in adjacent voids with no loss to regional groundwater.



SLR

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

FIGURE 8-30

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F08-30_Starting Location of Particles

9.0 Uncertainty and Sensitivity analysis

9.1 Sensitivity Analysis

Sensitivity analysis was undertaken to quantify how calibration performance and model predictions respond to variations in input parameters, providing insight into model behaviour and uncertainty. Comparing calibration and prediction sensitivity allows for distinguishing between parameters that are constrained during calibration, and parameters that drive predictive uncertainty, which may or may not overlap. Such insights support decision-making in model refinement, data collection prioritisation, and risk-based scenario analysis. Details are presented in **Appendix H** (SLR, 2026b). The sensitivity analysis identified that majority of the parameters are Type I - Type III parameters. Types I-III parameters have an insignificant impact on model predictions or conditioned by calibration. The sensitivity analysis also highlighted several parameters that contribute to predictive uncertainty and that are likely to be poorly conditioned by the calibration process (Type IV parameters). A distinction was made between “weak” and “strong” type IV parameters, with strong type IV likely to be key contributors of prediction uncertainty. Prediction uncertainty was quantified for the quantities of interest (**Section 9.2**).

9.2 Uncertainty Analysis

A Type 3 Monte Carlo uncertainty analysis was undertaken to estimate the uncertainty in the future impacts predicted by the model. This method operates by using the calibrated realisations presented in **Section 7.4**, executing the model independently for each realisation, and then aggregating the results for statistical analysis.

As described in **Section 7.4**, calibrated realisations have been assigned a likelihood value as part of the SMC calibration. As such, the quantities of interest (i.e. drawdown, mine groundwater inflow (active mining), alluvium take and river baseflow loss) are weighted for each realisation based on the normalised likelihood (i.e. sum of likelihood for the ensemble are equal to 1) for this realisation. The statistical analysis is therefore performed on weighted predictions where realisations with a greater likelihood are given a higher weight. Results are presented as weighted percentiles for each quantity of interest.

The 109 calibrated realisations with the highest likelihood were selected for this uncertainty analysis. The predictions included in the uncertainty analysis were:

- Maximum Drawdown - the base case of the drawdown curve is plotting between the 67th and 95th percentile, meaning being at the upper end of the ensembles.
- Mine Inflows (active mining – the base case prediction mostly follows the 33-66th percentile interval, with inflows at later times being in the higher percentiles.
- Alluvium Water Take – the base case is conservative, following the 95th percentile of the ensemble. This gives certainty that the prediction for this quantity of interest is covering 95th percentile of cases, and the take might be lower than predicted.
- Loss of Stream Flow. – very small range of the ensemble results, meaning the predictions have a high level of certainty.

Due to the long model run times and the number of realisations required for the uncertainty analysis, the assessment was limited to 200 years of post-mining conditions, by which time the final void lake level is expected to have reached equilibrium.

The full summary of uncertainty analysis findings is presented in **Appendix H** (SLR, 2026b).

9.2.1 Uncertainty of Drawdown

To illustrate the level of uncertainty in the extent of predicted mine induced drawdown (1 m contours), the calibrated prediction model maximum drawdown (incremental and cumulative) and the 50th percentile maximum drawdown extent were compared to the maximum drawdown extent for the 5th and 95th percentiles (see SLR, 2026b, **Appendix H**). In addition, residual drawdown (incremental and cumulative) was assessed in SLR (2026b), **Appendix H**.

Overall, the results indicate that the Most Likely Estimate (MLE) (i.e. the parameter set that results in the highest likelihood, also otherwise known as the best calibrated model realisation) 1 m contour fits in between the median and the 95th percentile of the ensemble for the Regolith (Layer 2), the Leichhardt seam (Layer 5) and the Vermont seam (Layer 7). As mentioned in **Section 8.1**, no incremental drawdown exceeding 1 m is predicted for the MLE in the alluvium (Layer 1) as a result of the Project. This means that the MLE results presented in **Section 8.1** are thus unlikely to underestimate drawdown.

9.2.2 Uncertainty of Mine Groundwater Inflows

The uncertainty of mine groundwater inflow (active mining) into the Project pit (active take) from the start of Project mining (2029) to the end of mining (2043), is shown for the incremental (Project only) scenario in **Figure 9-1**. The figures show the predicted mine groundwater inflows (active mining) for the MLE model and different weighted percentiles prediction ranges. These represent:

- 5th – 33th indicates it is likely that the outcome is larger than this range.
- Median indicates it is as likely as not that the outcome is larger or smaller than this value.
- 33th – 67th indicates it is likely that the outcome is within that range.
- 67th – 95th indicates it is unlikely that the outcome is larger than this range.

The predicted uncertainty in mine groundwater inflows (active mining) is up to 0.45 ML/d deviation from the median for the incremental scenario. Overall, the results indicate that the MLE model is representative of the 33th – 67th percentile range from 2029 to 2036 and the 67th – 95th percentile range from 2036 to 2043 for the estimated mine groundwater inflows (active mining) (**Figure 9-1**). The MLE results presented in **Section 8.2.1** are thus unlikely to underestimate mine inflows.

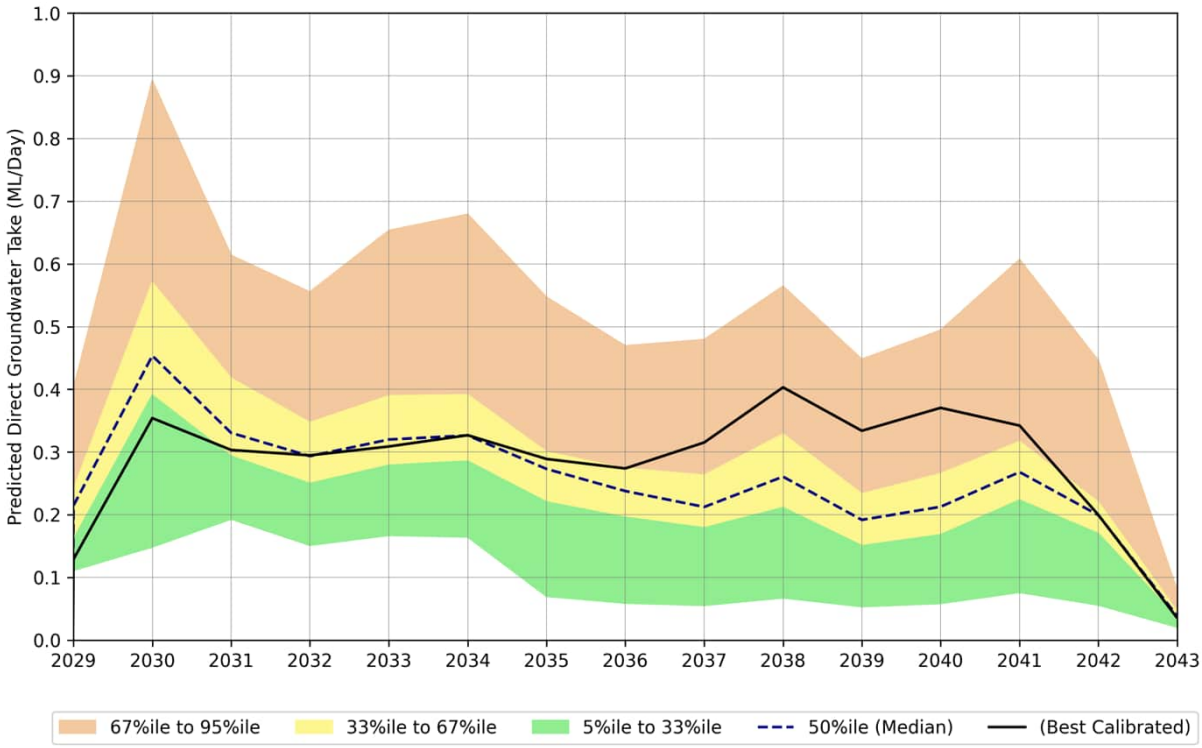


Figure 9-1 Uncertainty in Incremental Mine Groundwater Inflows (Active Mining)

9.2.3 Uncertainty in Alluvium Water Take

The uncertainty in alluvium water take from the start of the predictive model (2029) to post-mining equilibrium (2249), is shown for the incremental (Project only) scenario (**Figure 9-2**) and the cumulative scenario (**Figure 9-3**). The figures show the predicted alluvium take for the MLE model and different weighted percentiles prediction ranges.

Negative values indicate a reduction in alluvium take, while positive values indicate an increase in alluvium take. The MLE model is representative of the 5th percentile to 33rd percentile for the incremental and cumulative alluvium take. The MLE results presented in **Section 8.3.1** are thus unlikely to underestimate alluvium take.

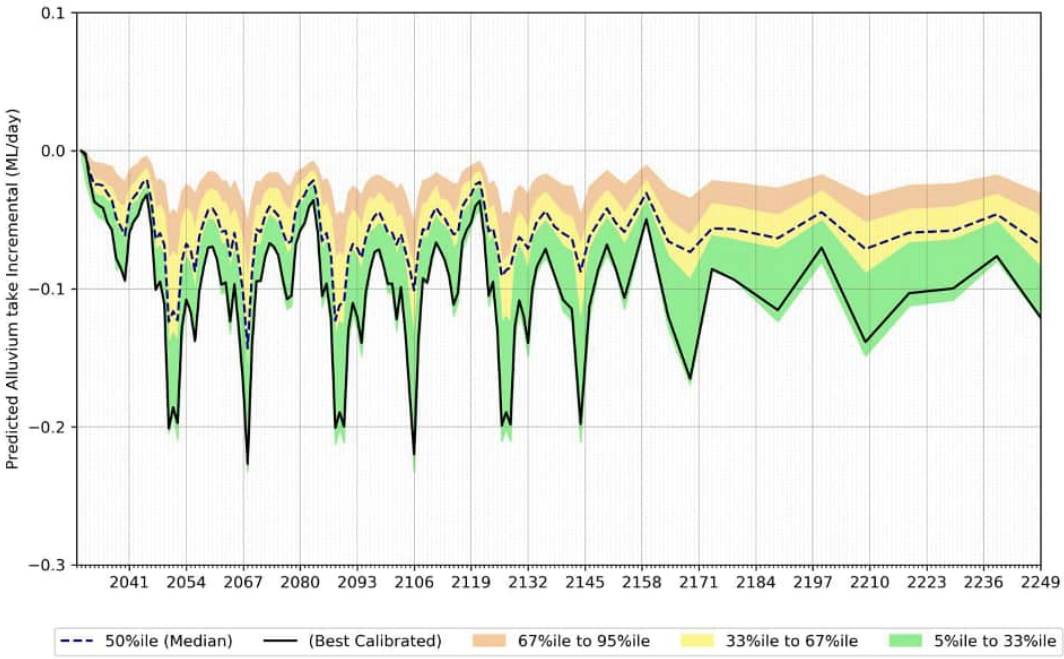


Figure 9-2 Uncertainty in Incremental Alluvium Take

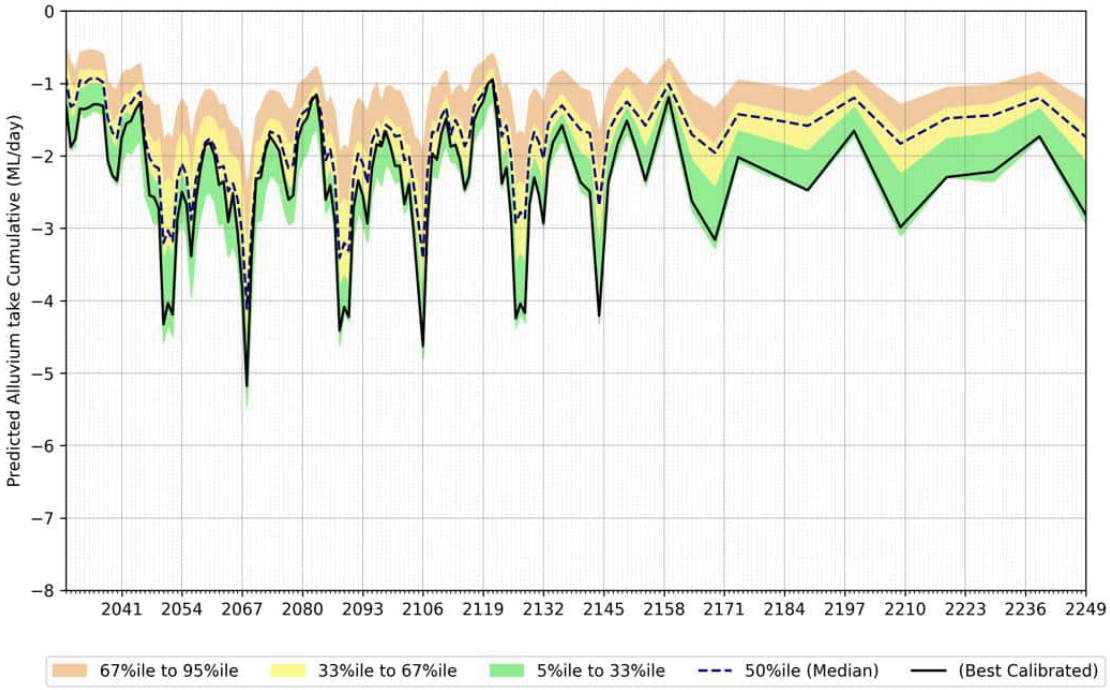


Figure 9-3 Uncertainty in Cumulative Alluvium Take

9.2.4 Uncertainty in River Baseflow Loss

The uncertainty of stream baseflow loss from the start of the predictive model (2029) to post-mining equilibrium (2249), is shown for the incremental (Project only) scenario (**Figure 9-4**) and the cumulative scenario (**Figure 9-5**). The figures show the predicted stream baseflow loss for the MLE model and different weighted percentiles prediction ranges. Overall, the MLE model is representative of the median for the active mining period and of the 5th percentile to 33rd percentile for the post-mining period. The MLE results presented in **Section 8.3.2** are thus unlikely to underestimate river baseflow loss.

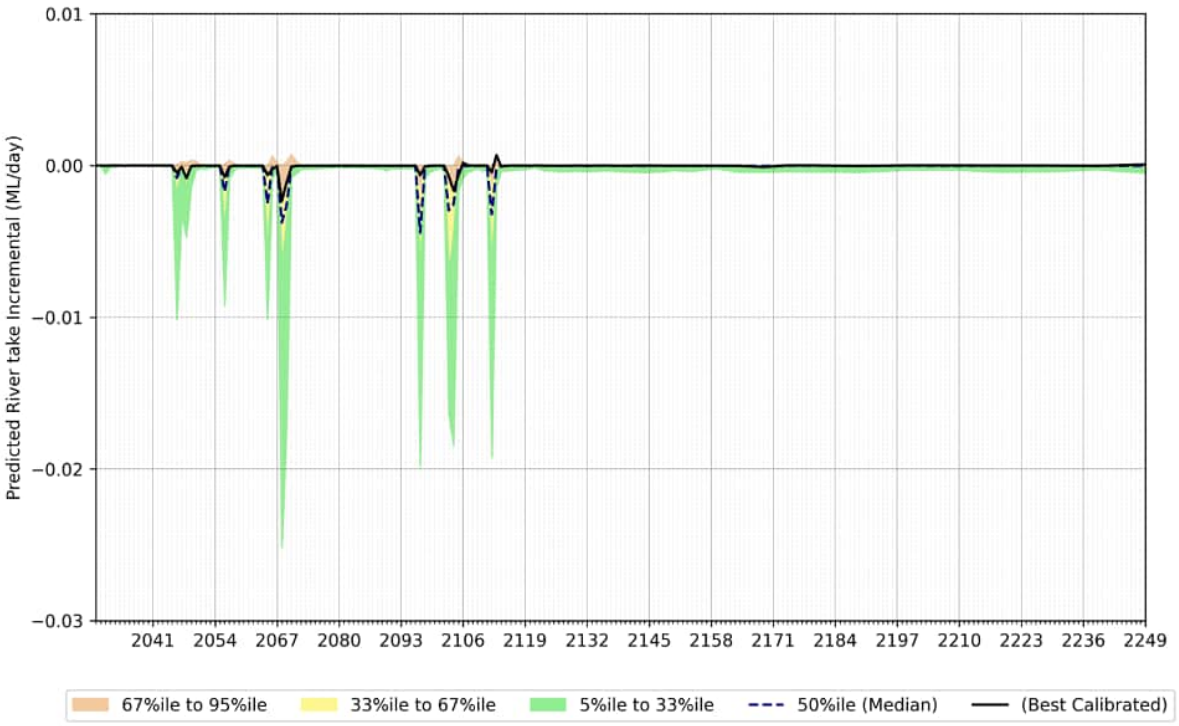


Figure 9-4 Uncertainty in Incremental Stream Baseflow Loss

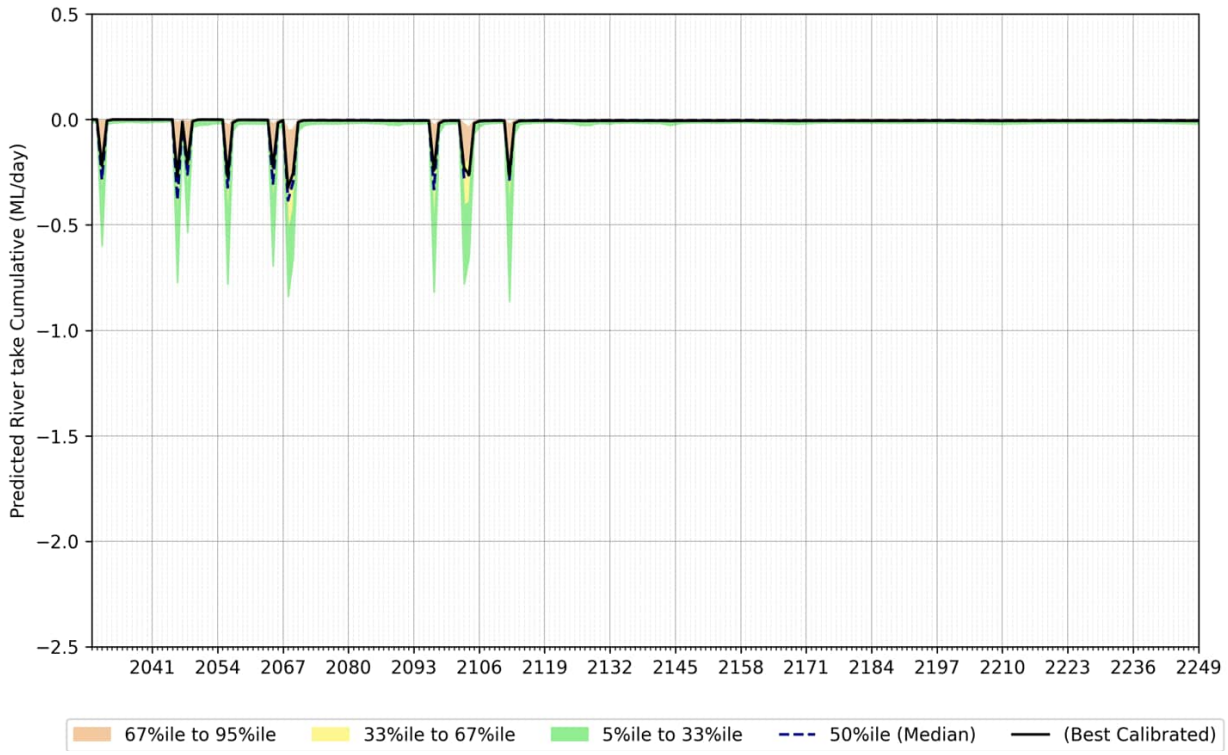


Figure 9-5 Uncertainty in Cumulative Stream Baseflow Loss

10.0 Potential Impacts on Groundwater Resources

The following sections provide a summary of the groundwater modelling results reported in the previous sections in the context of potential Project related groundwater impacts to water resources.

In addition to the modelling assumptions described above sections, consideration has also been given to the potential influence of long-term climate change on groundwater recharge process and associated impacts. Climate change projections for the Project Area indicate a modest reduction in annual rainfall and an increase in evapotranspiration. Under the SSP3-7.0 high-emissions scenario, annual rainfall is projected to reduce by ~10% by 2090, while potential evapotranspiration is projected to increase by ~12% (Queensland Government, 2024). These changes are expected to reduce effective recharge non-linearly, because recharge is controlled by rainfall intensity, event frequency, soil moisture conditions and evapotranspiration losses. The predictive uncertainty assessment includes varying recharge rates by up to an order of magnitude. As such, potential future climate change to rainfall is covered within the range of recharge rates for the impact assessment.

10.1 Potential Impact on Existing Groundwater Users

10.1.1 Privately- Owned Supply Bores

Landholder bore locations and predicted 2 m and 5 m drawdown uncertainty envelopes are presented in **Figure 10-1** to **Figure 10-3.** These drawdown thresholds correspond to the Water Act 2000 trigger levels, with a 2 m drawdown applicable to unconsolidated aquifers and a 5 m drawdown applicable to consolidated aquifers. **Table 10-1** summarises bore details, including location, depth, and target formation. For bores with unknown screen information, formation has been assigned based on bore depth in relation to the modelled layers.

Table 10-1 presents the MLE maximum predicted incremental drawdown at each bore, along with the approximate timeframes in which these peaks are expected to occur. In addition, the table includes the 95th percentile drawdown from the uncertainty analysis, representing a conservative, high-end estimate of groundwater decline that exceeds most modelled outcomes. The periods during which 95th percent drawdown is predicted to exceed the relevant Water Act 2000 thresholds is also presented.

Model results indicate that the MLE maximum incremental drawdown does not exceed the 2 m or 5 m Water Act thresholds at any landholder bore. The uncertainty analysis shows that, for most bores, predicted drawdown remains within the 2 m and 5 m envelopes, except at 5 Mile Bore and 5 Mile Windmill Bore. At 5 Mile Bore and 5 Mile Windmill Bore, the 95th percentile drawdown marginally exceeds 5 m, suggesting exceedance is possible at these locations under conservative assumptions. This response is attributed to the proximity to active mining areas and screens located within the shallow regolith, higher transmissivity and a more rapid hydraulic response. Even in these cases, impacts are predicted to remain localised.

Mining is scheduled to commence in 2028 and conclude in 2043, followed by a modelled recovery period from 2044 to 2519. For the majority of landholder bores, maximum incremental drawdown occurs after mining has ceased, typically during the recovery period.

Overall, groundwater impacts are predicted to be limited, with drawdown remaining below regulatory thresholds for the MLE maximum drawdown prediction. Exceedances of the 2 m threshold are confined to 5 Mile Bore and 5 Mile Windmill Bore and occur only under the conservative 95th percentile scenario. The likelihood of widespread exceedances of drawdown thresholds at landholder bores due to the Project is low.

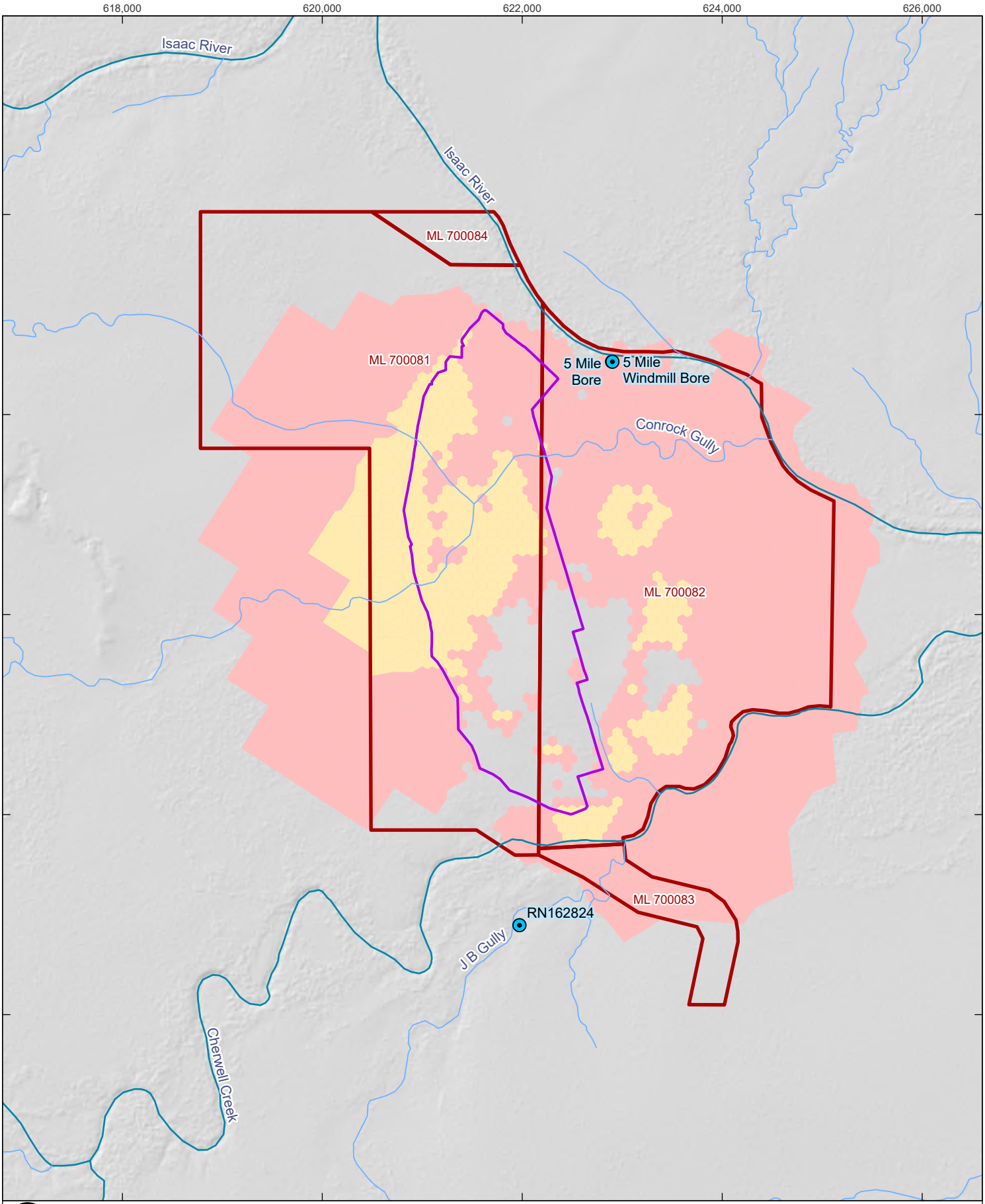
Table 10-1 Drawdown Impact on Landholder Bores

Year	Assumed Formation[1]	Easting (GDA94)	Northing (GDA94)	Bore Depth (m)	Incremental			
					MLE Max Drawdown (m)	95th Percentile Max Drawdown (m)	Timing of Maximum Incremental Drawdown	Timing of Threshold Exceedance (2 m / 5 m)[2,3]
5 Mile Bore	Regolith	622897	7558528	36.3	<0.1	5.22	2050-2059	2044
5 Mile Windmill	Regolith	622901	7558527	36.3	<0.1	5.22	2050-2059	2044
Horse Paddock	Vermont Underburden	618483	7555539	85	0.59	2.33	2050-2059	NA
RN100254	Fort Cooper Underburden	617100	7558546	>150	0.35	4.23	2050-2059	NA
RN103210	Fort Cooper Overburden	617203	7558546	65.53	0.36	1.42	2050-2059	NA
RN162815	Fort Cooper Seams	623797	7552173	59	1.04	2.5	2170-2179	NA
RN162816	Fort Cooper Seams	617383	7559698	45	0.23	1.39	2120-2129	NA
RN162824	Regolith	619659	7557192	15	0.91	1.28	2280-2289	NA
RN162825	Fort Cooper Seams	621975	7552906	40.83	1.43	2.37	2160-2169	NA
RN182871	Fort Cooper Overburden	618975	7552309	60	0.29	1.44	2040-2049	NA
RN182872	Fort Cooper Overburden	621971	7552892	50	1.27	1.44	2040-2049	NA

1 Bores assigned to definitive geological unit and model layers based on known geology bore depth

2. Chapter 3 of the Water Act 2000 specified drawdown threshold triggers of 2 m for unconsolidated aquifers and 5 m for consolidated aquifers

3. NA=No exceedance to the Chapter 3 of the Water Act 2000 specified drawdown threshold triggers



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	15-May-2026
Drawn by:	RB

LEGEND

- Landholder Bore
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

LANDHOLDER BORE LOCATIONS AND 2 M DRAWDOWN UNCERTAINTY– REGOLITH (LAYER 2)

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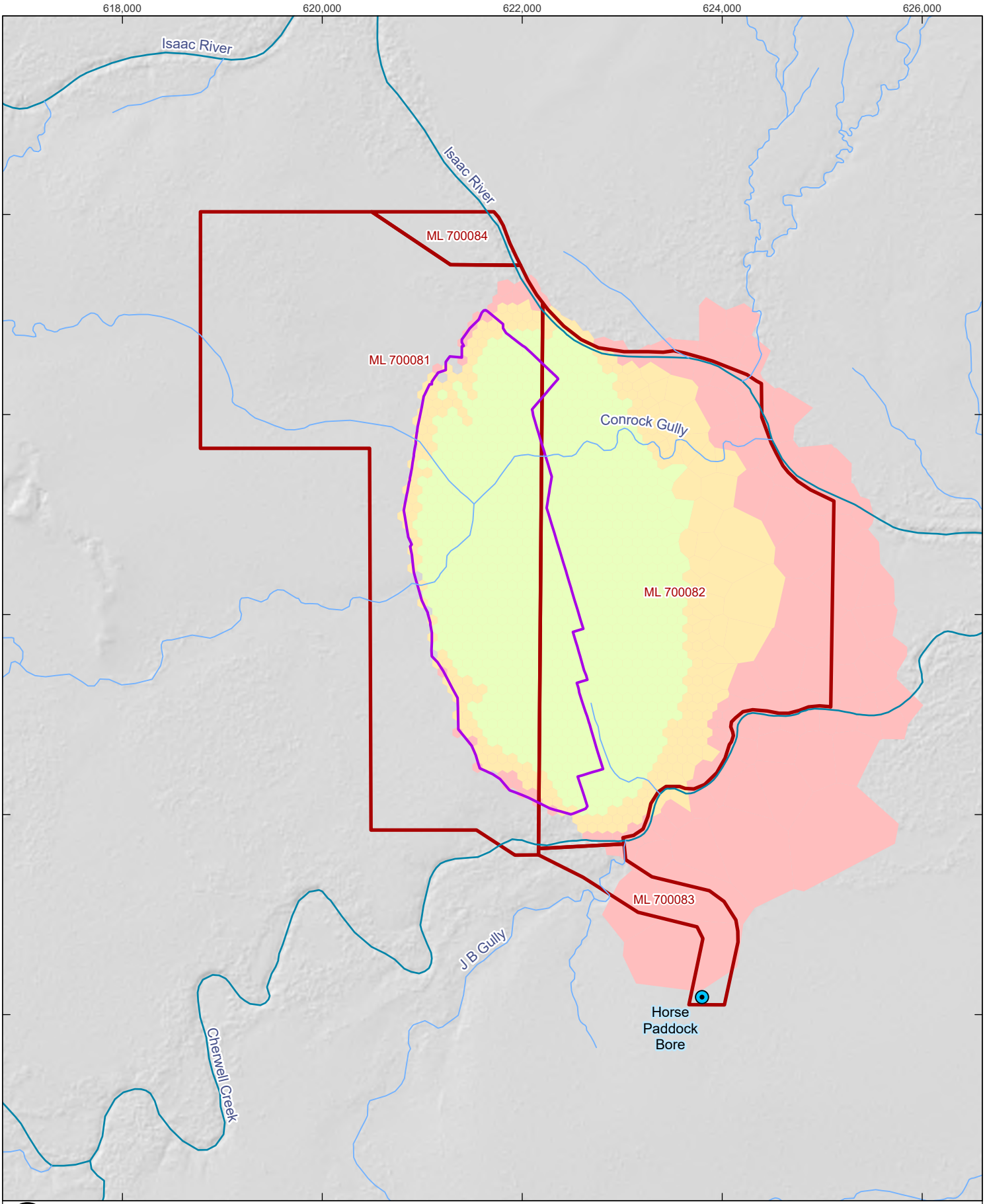
FIGURE 10-1

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F10-01_Landholder Bore Locations and Predicted Maximum Water Table Drawdown (Cumulative) – Regolith (Layer 2)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	15-May-2026
Drawn by:	RB

LEGEND

- Landholder Bore
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

LANDHOLDER BORE LOCATIONS AND 5 M DRAWDOWN UNCERTAINTY – VERMONT SEAM (LAYER 7)

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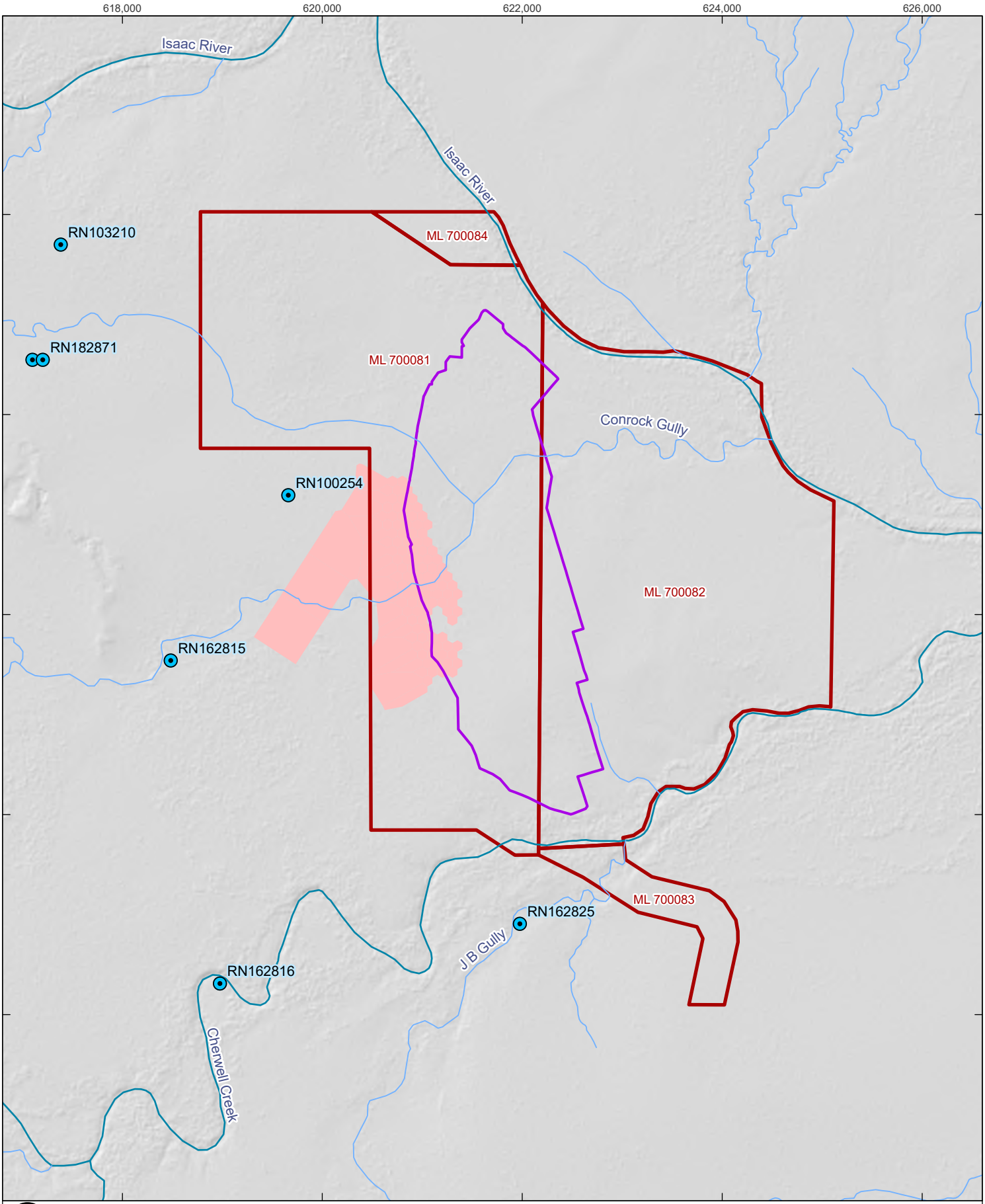
FIGURE 10-2

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F10-02_Landholder Bore Locations and Predicted Maximum Water Table Drawdown (Cumulative) – Vermont Seam (Layer 7)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	15-May-2026
Drawn by:	RB

LEGEND

- Landholder Bore
- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Maximum Drawdown (m)

- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

LANDHOLDER BORE LOCATIONS AND 5 M DRAWDOWN UNCERTAINTY – FORT COOPER COAL MEASURES (LAYER 10)

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FIGURE 10-3

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F10-03_Landholder Bore Locations and Predicted Maximum Water Table Drawdown (Cumulative) – Fort Cooper Coal Measures (Layer 10)

10.1.2 Groundwater Dependent Ecosystems

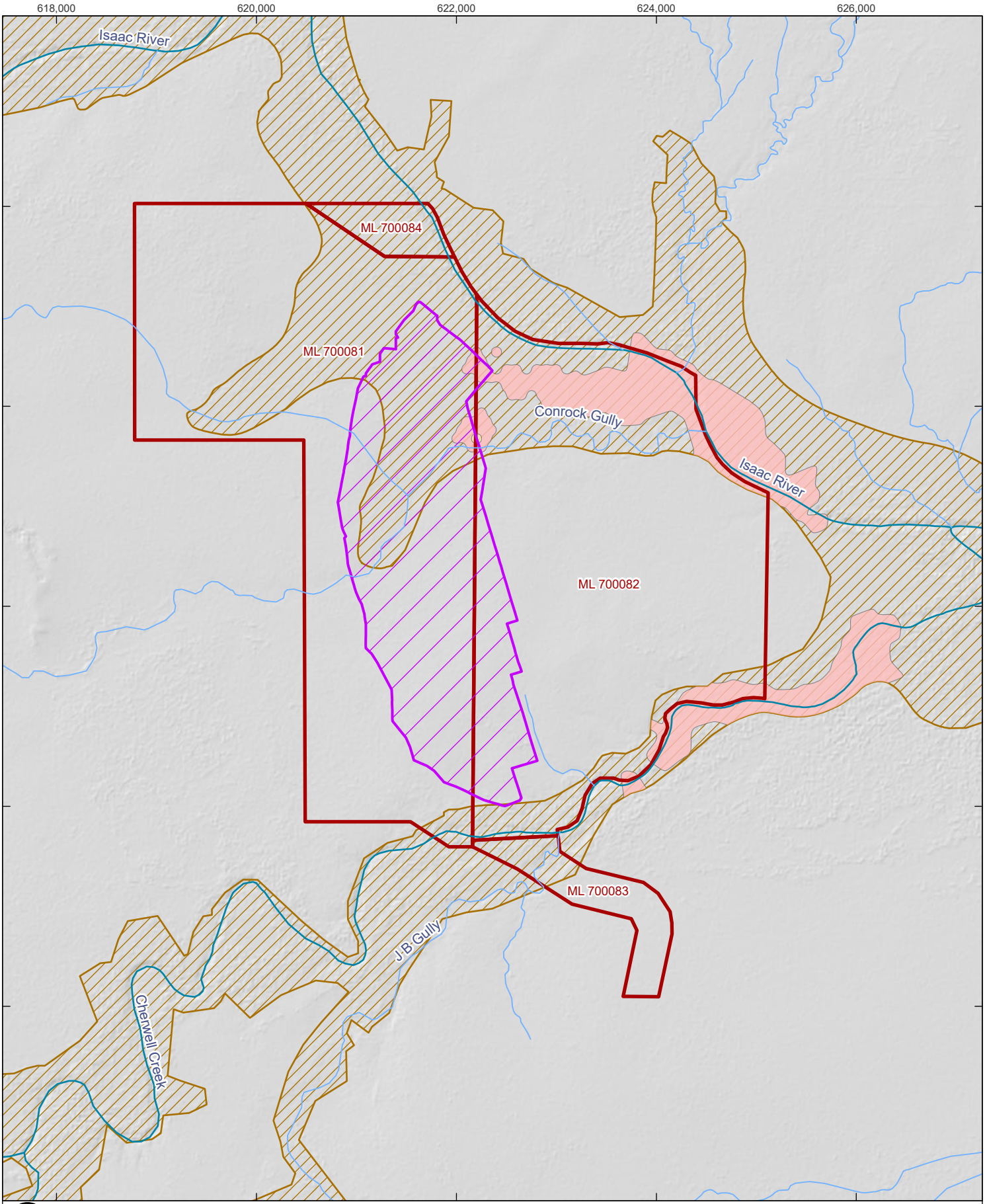
The presence of potential GDEs is described in detail in **Section 5.7.2.**

In summary, the results of the Project's GDE study (Watermark Eco, 2026a) show that groundwater within and around the Project Area in the alluvial aquifer or other modelled aquifer units, is highly unlikely to be a source of water for GDEs, with vegetation instead relying predominantly on soil moisture and surface water flows near stream embankments. During wetter periods, rainfall and surface flows can create seasonally perched groundwater above clay layers, which some terrestrial GDEs may opportunistically access. Along the Isaac River, perched groundwater systems within the Alluvium may supplement riparian trees during dry seasons, though availability decreases with elevation and distance from the channel. On older, elevated terraces, deep groundwater levels (>10 m), separation from the alluvium, and variable salinity prevent groundwater uptake. Overall, GDEs in the area show facultative dependence, accessing only the perched groundwater system when available but persisting on rainfall-derived soil moisture during dry periods (Watermark Eco, 2026a).

No incremental drawdown impacts exceeding 1 m are predicted for the alluvial aquifer as a result of the Project (**Section 8.1.1**). While modelling predicts minor areas of groundwater drawdown within the Regolith layer (**Section 8.1.1**), the GDE assessment indicates that groundwater in the Regolith is highly unlikely to support GDEs in the Project Area, and the predicted drawdown occurs outside the mapped GDE extent (Watermark Eco, 2026a).

Baseline characterisation indicates that where it occurs, groundwater within the alluvial aquifer is recorded at depths of around 10 to 12 mBGL, typically significantly disconnected from the streambed elevation. All watercourses within the Project Area are highly ephemeral where surface water flow is only sustained for hours to several days following rainfall events. Overall, these factors indicate a lack of groundwater discharge to these watercourses such that there is no groundwater baseflow and therefore no potential for groundwater drawdown to manifest as a decrease in surface water flow. However, the perched groundwater unit that supports GDEs along the Isaac River occurs within active river channel and terrace deposits that are directly connected to channel and overbank flows and experience relatively rapid recharge and discharge. Consequently, changes in surface-flow volume and duration have the potential to affect recharge of the perched groundwater unit and, in turn, the condition of GDEs that rely on this system (Watermark Eco, 2026a) but is not linked to groundwater drawdown.

While no incremental drawdown impacts exceeding 1 m are predicted for the alluvial aquifer as a result of the Project (**Section 8.1.1**), uncertainty analysis indicates that a 1 m drawdown extent may occur under 95th percentile (i.e. highly unlikely) conditions (**Figure 10-4**). The potential impacts to GDEs remain as described above. Although there may be some potential drawdown may occur within the alluvial aquifer, GDEs access shallow perched groundwater systems that are hydraulically separated from the alluvial aquifer (Watermark Eco, 2026a). Consequently, drawdown within the alluvial aquifer would not influence the perched groundwater systems upon which the GDEs facultatively rely.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	13-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs
- Alluvium Extent

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

UNCERTAINTY IN PREDICTED 1M INCREMENTAL DRAWDOWN – ALLUVIUM (END OF RECOVERY)

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FIGURE 10-4

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F10-04_Uncertainty in Predicted 1m Incremental Drawdown – Alluvium (End of Recovery)

10.2 Potential Impacts on Surface Drainage

The Isaac River is the major drainage feature of the region. It forms the northern boundary of the Project Area and flows from west-northwest to southeast.

A natural hydraulic gradient exists between the Isaac River and the associated alluvium that results in seepage from the Isaac River to the alluvium (i.e. a losing system). The change in groundwater levels induced by mining does not have the potential to increase the hydraulic gradient between the Isaac River and associated alluvium. Consequently, the model does not predict that the average rate of seepage from the Isaac River to the alluvium will increase over the life of the Project and therefore the Project does not result in any loss of baseflow to the Isaac River and there are no other predicted groundwater-related impacts to surface drainage as a result of the Project.

10.3 Potential Impacts on Groundwater Quality

This section describes the potential sources and pathways of groundwater quality changes associated with the Project.

10.3.1 Spoil Emplacements

Spoil emplacement at the Project will occur both within the mined void (in-pit backfill) and at designated out-of-pit spoil dump landforms, including the South-West and East out-of-pit dumps. Terrenus (2026) assessed the geochemical properties and environmental risk associated with spoil across both emplacement settings.

Terrenus (2026) demonstrated that spoil materials proposed for both in-pit and out-of-pit emplacement are overwhelmingly non-acid forming, with low total sulphur concentrations and a strong excess of acid neutralising capacity. Leach testing showed that seepage from spoil is expected to be neutral to alkaline, with low salinity and very low dissolved metal concentrations, typically at or near laboratory detection limits.

For out-of-pit spoil dumps, Terrenus (2026) concluded that the low contaminant source strength of spoil, combined with landform design and internal attenuation within the spoil mass, results in a low risk of groundwater quality impacts. No sustained acid generation or metalliferous drainage is expected from these landforms post-closure.

For in-pit spoil emplacement, interaction between groundwater and backfilled spoil is similarly characterised by neutral to alkaline seepage chemistry. Terrenus (2026) identified that minor quantities of waste coal potentially incorporated within in-pit backfill will be diluted and encapsulated by large volumes of non-acid forming spoil, ensuring groundwater quality is not adversely affected.

Based on the geochemical characteristics and assessed seepage behaviour of both in-pit and out-of-pit spoil, Terrenus (2026) concluded that spoil emplacements present a low risk to groundwater quality during operations and post-closure.

10.3.2 Final Void

The final predicted groundwater inflows to the residual void from the groundwater model is shown on **Figure 8-22**. The results indicate that over time all flow is inwards towards the void and there is no outwards flux from the void. This means that means the residual void functions as a long-term groundwater sink, limiting the potential for off-site groundwater quality impacts.

Water within the final void would evaporate from the final void water body surface and draw in groundwater from the surrounding strata and runoff from the final void catchment areas. A final void water balance has been prepared for the Project (Hydrobalance, 2026). This shows that water level remains well below the surface of void, there is no risk of the lake spilling to surface waters, and water quality in the void remains suitable for a range of post mining land

uses, including livestock watering and algae production. Irrespective of the water quality in the void, the final void water body would not pose a risk to the surrounding groundwater regime as the final void would remain as a groundwater sink in perpetuity.

Terrenus (2026) also assessed the geochemical risks associated with the post-mining residual void, including groundwater interaction with exposed highwall and floor materials. The study showed that only a small proportion of void highwall materials may be potentially acid forming, with overall AMD generation classified as unlikely. Additionally, the Terrenus (2026) study further identified that submergence of the void floor and portions of the highwall following closure will restrict oxidation processes, further reducing acid generation potential.

Based on these factors, Terrenus (2026) concluded that water quality within the residual void will be influenced by neutral to alkaline groundwater inflows and spoil interaction, with limited potential for metal mobilisation. The residual void was therefore assessed as posing a low risk to surrounding groundwater resources.

10.3.3 Workshops and Storage

All workshop and fuel/chemical storage areas (i.e. at the go-line area) at the Project will be developed and managed in accordance with current Australian Standards. This includes refuelling areas and chemical storage areas designed with adequate bunding and equipped for immediate spill clean-up. These controls represent standard practice and a legislated requirement at mining operations for preventing the contamination of groundwater. Therefore, there is considered to be limited potential for groundwater contamination to occur as a result of fuel/chemical storage and handling.

10.3.4 Blasting

Blasting activities have the potential to release metals, metalloids and ammonia associated with chemical reactions during the blasting process. During mining, the inward hydraulic flow gradients to the open cut voids would inhibit the potential for any outflow of such potential contaminants. Post-mining, model results indicate that the residual void continues to form a hydraulic sink such that there is no discharge offsite to the surrounding groundwater environment.

10.4 Potential Impacts on the Aquifer Physical Integrity and Hydraulic Properties

The process of open pit mining proposed at the Project will result in the removal of the aquifer and aquitard units within the mine pit footprints.

It is considered that there is no potential for any other impacts to the physical integrity of any of the identified aquifer and aquitard units, since there is no mechanism for physical impacts to the geology to propagate away from the open pits (for example, as might occur associated with underground mining subsidence). As such, there would in turn be no potential for impacts to the hydraulic properties of the identified aquifer and aquitard units outside of the open pit footprints.

10.5 Risk Assessment

A risk assessment matrix has been developed to summarise the potential impacts on water resources arising from the Project's groundwater impacts discussed in the previous report sections. For each of the key groundwater related risks identified, the following were considered and recorded as part of the risk assessment:

- Brief description of the risk;
- Likely cause;

- Potential consequence;
- Potential likelihood; and
- Risk rating and rank.

To undertake the risk assessment, it is useful to define (in a descriptive sense) the various levels of consequence of a particular event and the likelihood of such an event occurring. Descriptions of the categories that were used to rank the likelihood of a risk are provided in **Table 10-2** and **Table 10-3** respectively.

Table 10-2Consequence Assessment

Rating		Description
5	Severe	Environmental damage or effect (permanent; >10 years)
4	High	Long term (2 to 10 years) impact
3	Moderate	Medium term (<2 years impact)
2	Low	Short term (<1 year) impact
1	Negligible	No lasting environmental damage or effect

Table 10-3Likelihood Assessment

Likelihood	Probability	Basis of Rating
A	Highly Likely	Expected to occur
B	Likely	More likely to occur than not to occur
C	Possible	As likely to occur as not to occur
D	Unlikely	More likely to not occur than to occur
E	Highly Unlikely	Very unlikely to occur

The level of risk for each potential impact was determined by combining consequences defined in **Table 10-2** with likelihood as defined in **Table 10-3**. The numerical modelling uncertainty analysis discussed in **Section 9.2** allows quantification of the likelihood of a particular impact occurring. The resulting risk analysis matrix (combining consequence and likelihood) is presented in **Table 10-4**.

The risk assessment is presented as **Table 10-5**.

Table 10-4Risk Analysis Matrix

		Likelihood				
		E	D	C	B	A
Consequence	5	Insignificant	Low	High	High	High
	4	Insignificant	Low	Moderate	High	High
	3	Insignificant	Low	Moderate	Moderate	Moderate
	2	Insignificant	Low	Low	Low	Low
	1	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

Table 10-5Risk Assessment

Potential Receptor	Risk Description	Likely cause	Potential Impact	Consequence	Likelihood	Risk Rating
Third party bores.	Loss of supply (yield) from third party bores.	Drawdown of groundwater levels in the bore source aquifer.	Reduction in, or complete loss of, supply (yield) from third party bores.	High (4). Drawdown and therefore reduction or loss of bore yield may persist in the long term.	Possible (C). Modelling of Project drawdown indicates only marginal exceedances at two registered third-party water supply bores, and no exceedances at other registered or unregistered (census) bores will be subject to incremental drawdowns exceeding the relevant *Water Act 2000* bore trigger threshold.	Moderate (prior to management measures such as make good agreements)
Third party bores.	Reduction in water quality at third party bores.	Release of contaminants (including salts) to the groundwater system from the Project that enter the bore source aquifer and migrate to the bore.	Bore water quality no longer suitable for the intended use.	High (4). Water quality change may persist in the long term.	Highly Unlikely (E). Terrenus (2026) demonstrated that spoil and backfill materials are overwhelmingly non-acid forming with low salinity and very low dissolved metal leaching potential. During mining, the inward hydraulic flow gradients to the voids would inhibit any migration of water outwards to the regional groundwater system. Post-mining, model results indicate that the residual void continues to form a hydraulic sink for water emanating within the final landform. A series of particles are noted to travel outside the Project area to the northeast to a void at IDM. However, this migration results in termination in an adjacent void with no loss to regional groundwater. Therefore, there would be no mechanism for contaminants in water to leave the site and travel to a third party bore.	Insignificant
Surface water systems	Reduction in flow in surface water systems	Drawdown of groundwater levels In the alluvial aquifer either reduces baseflow to the surface	Impact to environmental receptors reliant on flow in surface water systems	High (4). Surface flow changes may persist in the long term.	Highly Unlikely (E). Baseline characterisation indicates that where it occurs, groundwater within the alluvial aquifer is recorded at depths of around 10 to 12 mBGL, typically significantly disconnected from the streambed elevation. All watercourses within the Project Area are highly ephemeral where surface water flow is only sustained for hours to several days following rainfall events. Overall,	Insignificant

Potential Receptor	Risk Description	Likely cause	Potential Impact	Consequence	Likelihood	Risk Rating
		water system or increases leakage out of the surface water system.			these factors indicate a lack of groundwater discharge to these watercourses such that there is no groundwater baseflow and therefore no potential for groundwater drawdown to manifest as a decrease in surface water flow. Additionally, the modelling indicates the cumulative prediction of the flux of water to/from the River cannot be attributed to Project, but to other mining operations represented in the model.	
Surface water systems (including potential aquatic GDEs).	Reduction in water quality in surface water systems.	Release of contaminants (including salts) to the groundwater system from the Project that then enter the surface water systems.	Surface water quality no longer suitable for environmental users.	High (4). Water quality change may persist in the long term.	Highly Unlikely (E). Terrenus (2026) demonstrated that spoil and backfill materials associated with the Project are overwhelmingly non-acid forming, with neutral to alkaline leachate characteristics, low salinity, and very low dissolved metal concentrations. Notwithstanding that groundwater does not discharge to surface water systems. Inward hydraulic flow gradients toward the open cut voids during mining would further inhibit any outward migration of groundwater to the regional groundwater system. Post-mining model results indicate that the residual void continues to function as a hydraulic sink, with no outward groundwater flow to the surrounding environment. Accordingly, there is no credible mechanism for contaminants in groundwater to leave the site and discharge to surface water systems.	Insignificant
Terrestrial GDEs	Loss of groundwater availability to Terrestrial GDEs	Drawdown of groundwater levels in the perched groundwater system utilised by TGDEs	Decline in health of TGDEs	Refer to GDE Study (3D Environmental, 2023)	No drawdown is expected to affect the perched groundwater system utilised by TGDEs. This shallow system forms seasonally above clay layers and is primarily recharged by rainfall and surface water flows, with rapid recharge and discharge. It is hydraulically separate from the deeper alluvial aquifer where no Project related drawdown > 1m is predicted. As a result, any drawdown in deeper groundwater units will not propagate to the perched system. TGDEs rely on this perched groundwater opportunistically and predominantly depend	Insignificant

Potential Receptor	Risk Description	Likely cause	Potential Impact	Consequence	Likelihood	Risk Rating
					on soil moisture during dry periods (Watermark Eco, 2026a)	
Terrestrial GDEs	Reduction in water quality used by Terrestrial GDEs.	Release of contaminants (including salts) to the groundwater system from the Project that then enter the perched groundwater system utilised by TGDEs.	Decline in health of TGDEs	Refer to GDE Study (3D Environmental, 2023)	No reduction in water quality used by TGDEs is expected. Terrestrial GDEs in the Project Area primarily utilise shallow, transient perched groundwater and soil moisture derived from rainfall and surface flows. This perched system is rapidly recharged and flushed during flow events, limiting the potential for persistent water quality degradation. It is also hydraulically separate from deeper aquifers, noting the Project is not expected to impact water quality in these deeper aquifers. As a result, there are not predicted to be changes to groundwater quality that would impact TGDEs (Watermark Eco, 2026a). Additionally, Terrenus (2026) indicates spoil and backfill generate neutral to alkaline seepage with low metal and salinity potential, providing supporting evidence for negligible groundwater quality risk to GDEs. Consistent with Terrenus (2026), there is no credible contaminant pathway by which Project-derived groundwater could discharge to surface water systems or aquatic groundwater-dependent ecosystems.	Insignificant

11.0 Management and Mitigation Measures

11.1 Mitigation Measures

11.1.1 Mine Affected Water

The mine plan for the Project includes strategies to manage mine affected water for the life of the Project (Hydrobalance, 2026).

Groundwater inflows to the open cut pits during mining operations would be pumped out (along with any surface water) via in-pit sumps if the groundwater doesn't passively evaporate on the pit face or from the pit floor. The groundwater inflows would be collected and contained within the mine water management system.

As outlined in **Section 8.4.2**, for the post mining period, the flow path analysis indicates the particles move toward the Project void lake (with some moving to the adjoining IDM void lake), with particles remaining in the void once they have entered the void lake. Particles that move into the void during the post-mining simulation remain within the void for the duration of the simulation. Particles starting in void themselves remain within the void for the duration of the simulation.

11.1.2 Groundwater Users

In accordance with Chapter 3 of the Water Act 2000, mining proponents are required to identify, monitor and review impacts on underground water resulting from the exercise of underground water rights. This includes the preparation and ongoing review of groundwater impact predictions and affected area mapping to confirm whether actual groundwater behaviour is consistent with that predicted. Groundwater monitoring undertaken for the Project provides the primary mechanism to identify any divergence between predicted and observed drawdown, including the potential for impacts to occur beyond those anticipated at groundwater users (privately-owned bores). Where groundwater drawdown attributable to mining activities is predicted or observed to exceed relevant bore trigger thresholds at a privately-owned bore, the Act requires the proponent to assess the bore and, where applicable, enter into a make good agreement with the bore owner to mitigate the impact on water supply.

Based on the potential impacts on privately-owned bores described in **Section 10.1.1**., the incremental drawdown is predicted to exceed the Water Act 2000 trigger for unconsolidated aquifers at only two bores (5 Mile Bore and 5 Mile Windmill Bore), reflecting their close proximity to the Project and shallow screened intervals. The proponent will enter a make good agreement with the landholder as required.

11.2 Groundwater Monitoring and Management

A dedicated Groundwater Monitoring and Management Program (GMMP) has been prepared for the Project (SLR, 2026d). The GMMP describes the groundwater monitoring regime for the Project and associated groundwater impact limits and triggers for further assessment and groundwater impact management during the life of the Project.

This section describes, based on the GMMP, the proposed groundwater monitoring network, including proposed water-level drawdown triggers and groundwater-quality limits for the defined compliance bores.

11.2.1 Groundwater Monitoring Network

A groundwater monitoring network has been established for the Project, based on the field programs detailed in **Section 1.4** and **Section 5.2**, and as presented in **Table 5-1**. This

monitoring network is deemed to contain sufficient monitoring points in terms of spatial coverage of monitoring across all formations of interest to describe pre-mining groundwater conditions and monitor potential changes in the groundwater environment during the construction, operations and rehabilitation phases.

The groundwater monitoring network includes defined compliance and interpretation bores as shown in **Table 11-1**. Compliance bores are bores that have impact criteria thresholds established in the GMMP, whereas interpretation bores are bores primarily intended to provide for background monitoring data outside of the potential mining impact area, that would support the assessment of an exceedance of a limit or trigger at a compliance bore. Bores 205S, 205DSR 593, 594, 592s, 592D, which are currently being monitored, are located within the footprint of the pit and will be mined out and are therefore not included in the Project's GMMP monitoring network.

Figure 11-1 to **Figure 11-4** presents the proposed GMMP groundwater monitoring network for each aquifer, classifying bores as either compliance or interpretation, and showing the 1 m drawdown, for different percentiles in the uncertainty analysis, for each respective aquifer.

11.2.2 Groundwater Dependent Assets

A GDE monitoring and management plan (GDEMMP) has been developed for the Project, refer to the Watermark Eco (2026b). The GDEMMP describes the monitoring methods for GDEs to identify if there are changes to GDE health as a result of Project related impacts. The GDEMMP describes the process for evaluating monitoring results, implementing management measures if required, and providing offsets if there is a significant impact to GDE habitat quality. The groundwater monitoring program will support the GDEMMP and will provide early detection of impacts on the groundwater resources. As is evident from the groundwater modelling predictions, there will be limited drawdown of alluvial aquifer and Regolith as well as depressurisation of underlying Permian sediments in proximity to the Project activities.

Table 11-1Project GMMP Monitoring Network

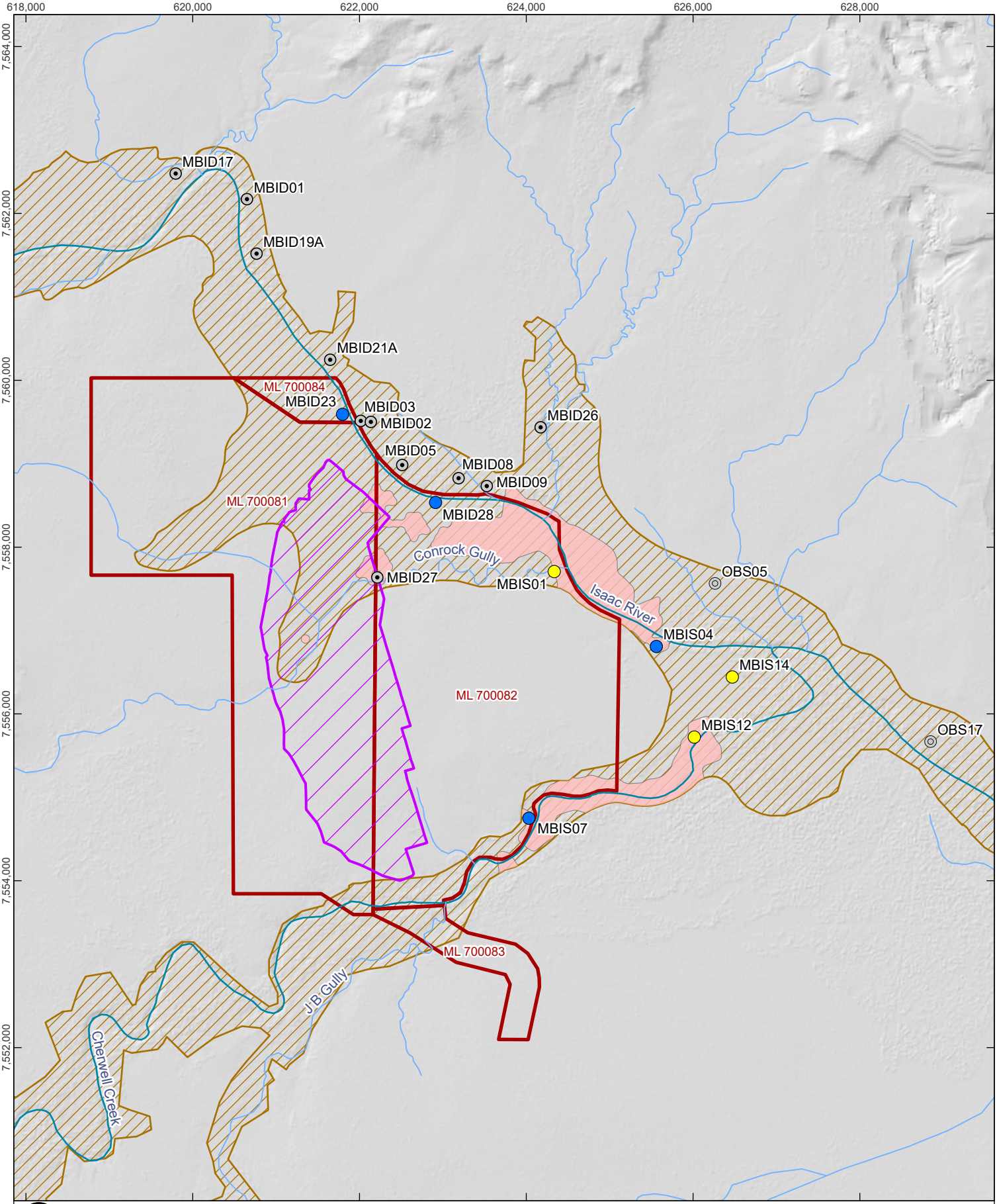
Bore	Install Date	Easting (AGD84)	Northing (AGD84)	Surface elevation (mAHD)	Total depth (mBGL)	Screen Top Elevation (mAHD)	Screen Base Elevation (mAHD)	Aquifer	Proposed GMMP Bore	Rationale
MBIS01	13/05/2025	624220	7557525	196.88	22	187.88	184.88	Alluvium	Interpretation	These bores are installed to the base of the alluvium. Recorded as dry since installation. Considered unsuitable as compliance bores but will continue to be monitored as interpretation bores.
MBIS14	11/06/2025	626356	7556261	194.67	11	187.67	184.67	Alluvium	Interpretation	
MBID23	28/06/2020	621681	7559410	198.86	14	191.35	185.35	Alluvium	Compliance	Shallow groundwater monitoring along Isaac River north of the pit.
MBID28	29/06/2020	622797	7558353	198.37	16	186.36	183.36	Alluvium	Compliance	Shallow groundwater monitoring along Isaac River northeast of the pit.
MBIS04	05/05/2025	625445	7556627	195.89	19	183.89	177.89	Alluvium	Compliance	Shallow groundwater monitoring along Isaac River.
MBIS07	15/06/2025	623916	7554568	199.9	19	190.9	187.9	Alluvium	Compliance	Shallow groundwater monitoring along Cherwell Creek southeast of the pit.
MBIS12	21/05/2025	625900	7555541	196.66	20	181.65	178.65	Alluvium	Interpretation	Shallow groundwater monitoring along Cherwell Creek.
MBID05	16/11/2018	622397	7558802	200	18	188	182	Alluvium	Interpretation	These form part of the IDM monitoring network and included as interpretation bores to provide shallow groundwater monitoring north of the Isaac River.
MBID08	17/11/2018	623073	7558644	199	17	188	182	Alluvium	Interpretation	
MBIS20	06/07/2025	623262	7557334	198.88	22	181.88	178.88	Regolith	Compliance	Shallow groundwater monitoring along Conrock Gully east of the pit.
MBIS06	18/11/2022	622094	7553583	185.54	12.4	178.54	175.54	Regolith	Interpretation	These bores are installed to regolith and are intermittently dry with a recent prolonged dry spell. As it is likely that there will be frequently no or insufficient water to sample (i.e. the regolith in this area is dry) they are considered unsuitable as compliance bores but will continue to be monitored as interpretation bores.
MBIS17	11/11/2022	625707	7553156	200.84	23	183.84	180.84	Regolith	Interpretation	
MB06	11/08/12	615903	7561156	206	23	190.18	184.18	Regolith	Interpretation	Located more than 5 km to the northwest and upgradient of the pit shell. Not anticipated to be impacted by Project mining related drawdown (see **Figure 11-2**).
MB09C	15/06/2012	618252	7557938	213	15	203.68	197.68	Regolith	Interpretation	Located over 1km to the east and upgradient of the pit shell. Not anticipated to be significantly impacted by Project mining related drawdown (see **Figure 11-2**)..
MBID22	26/06/2020	622793	7558352	198.52	37	174.52	162.52	Regolith	Interpretation	Shallow groundwater monitoring along Isaac River northeast of the pit. Groundwater levels are influenced by nearby actively pumping landholder bore. Bore is blocked and unsuitable for sampling.
RN182851	31/05/2021	620826	7553036	208	35	202	174	Regolith	Compliance	Mining impact south of the pit.
MBIS10	26/11/2022	624891	7554950	183.93	24.15	166.42	160.42	Regolith	Compliance	Located 2km to the southeast of the pit shell in a potential zone of Project drawdown.
MBIS02	29/05/2025	624225	7557529	196.98	138	63.97	60.97	Leichhardt coal seam	Compliance	Mining impacts northeast of the pit.

Bore	Install Date	Easting (AGD84)	Northing (AGD84)	Surface elevation (mAHD)	Total depth (mBGL)	Screen Top Elevation (mAHD)	Screen Base Elevation (mAHD)	Aquifer	Proposed GMMP Bore	Rationale
MBIS05	09/05/2025	625449	7556618	195.96	155	47.95	41.95	Leichhardt coal seam	Compliance	Mining Impacts east of the pit.
MBIS08	19/11/2022	623600	7554137	202.53	50	160.53	154.53	Leichhardt coal seam	Compliance	Mining impacts south of the pit.
MBIS11	13/05/2025	624888	7554933	199.15	94	109.14	106.14	Leichhardt coal seam	Compliance	Located 2km to the southeast of the pit shell in a potential zone of Project drawdown.
MBIS13	22/05/2025	625895	7555538	196.71	153	47.70	44.70	Leichhardt coal seam	Compliance	Located 2km to the east of the pit shell in a potential zone of Project drawdown.
MBIS15	12/06/2025	626357	7556255	194.46	52	152.45	143.45	Leichhardt coal seam	Compliance	Shallow groundwater monitoring along Isaac River and HSE Wetland. The bore is located more than 2 km to the east of the pit shell.
MBIS18	16/11/2022	625689	7553154	200.92	150	54.92	51.92	Leichhardt coal seam	Interpretation	Located over 2 km to the southeast of the pit shell outside of Project MLAs.
MBIS03	16/05/2025	624211	7557525	196.66	181	25.66	16.66	Vermont coal seam	Compliance	Mining impacts northeast of the pit
MBIS09	18/11/2022	623585	7554134	202.57	96.41	122.57	110.57	Vermont coal seam	Compliance	Mining impacts south of the pit.
MBIS16	15/11/2022	623748	7552170	213.58	69.19	154.58	146.58	Vermont coal seam	Interpretation	Located over 2 km to the south of the pit shell.
MBIS19	05/08/2025	626565	7555334	197.28	86	118.28	112.28	Isaac Thrust Fault core (RCM)	Interpretation	Monitoring on the Isaac Thrust Fault southeast of the pit outside of Project MLAs.
MB08b	01/09/2012	615524	7559448	228	84.2	157.43	145.43	Fort Cooper Coal Measures	Interpretation	Located more than 2 km to the northwest and upgradient of the pit shell. Not anticipated to be significantly impacted by Project mining related drawdown.
MB09B	15/06/2012	618252	7557938	213	36	188.68	176.68	Fort Cooper Coal Measures	Interpretation	Located over 1km to the east and upgradient of the pit shell. Not anticipated to be significantly impacted by Project mining related drawdown.

Note: mAHD = metres Australian Height Datum

mBGL = meters below ground level

Bores 205S, 205DSR 593, 594, 592s, 592D, shown as black circles in **Figure 11-1** to **Figure 11-5** ,, sits within the footprint of the pit and will be mined out and therefore not included as the Project GMMP monitoring network.



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:60,000 at A4
Project Number:	620.041537
Date Drawn:	13-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- Pit Extent
- IDE Project MLAs

Monitoring Bore

- IDE, Compliance
- IDE, Interpretation
- IDM, not included
- PTM, not included

- Alluvium Extent

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

ALLUVIAL BORES AND 1 M DRAWDOWN UNCERTAINTY (ALLUVIUM)

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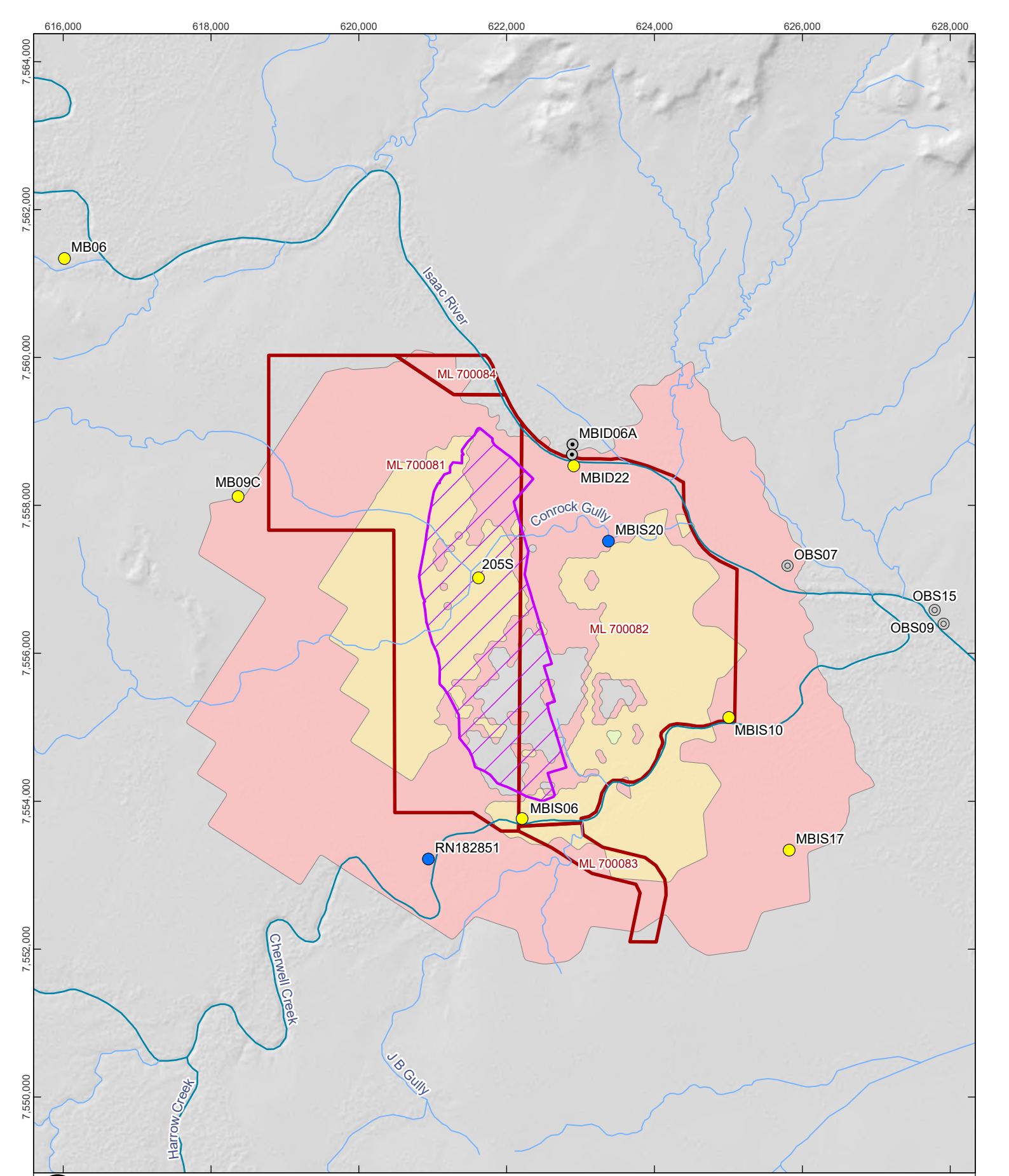
FIGURE 11-1

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F11-01_Alluvial Bores and 1 m Drawdown Uncertainty (Alluvium)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:65,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- MLE
- Pit Extent
- IDE Project MLAs

Monitoring Bore

- IDE, Compliance
- IDE, Interpretation
- IDM, not included
- PTM, not included

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

REGOLITH BORES AND 1 M DRAWDOWN UNCERTAINTY (REGOLITH)

SLR

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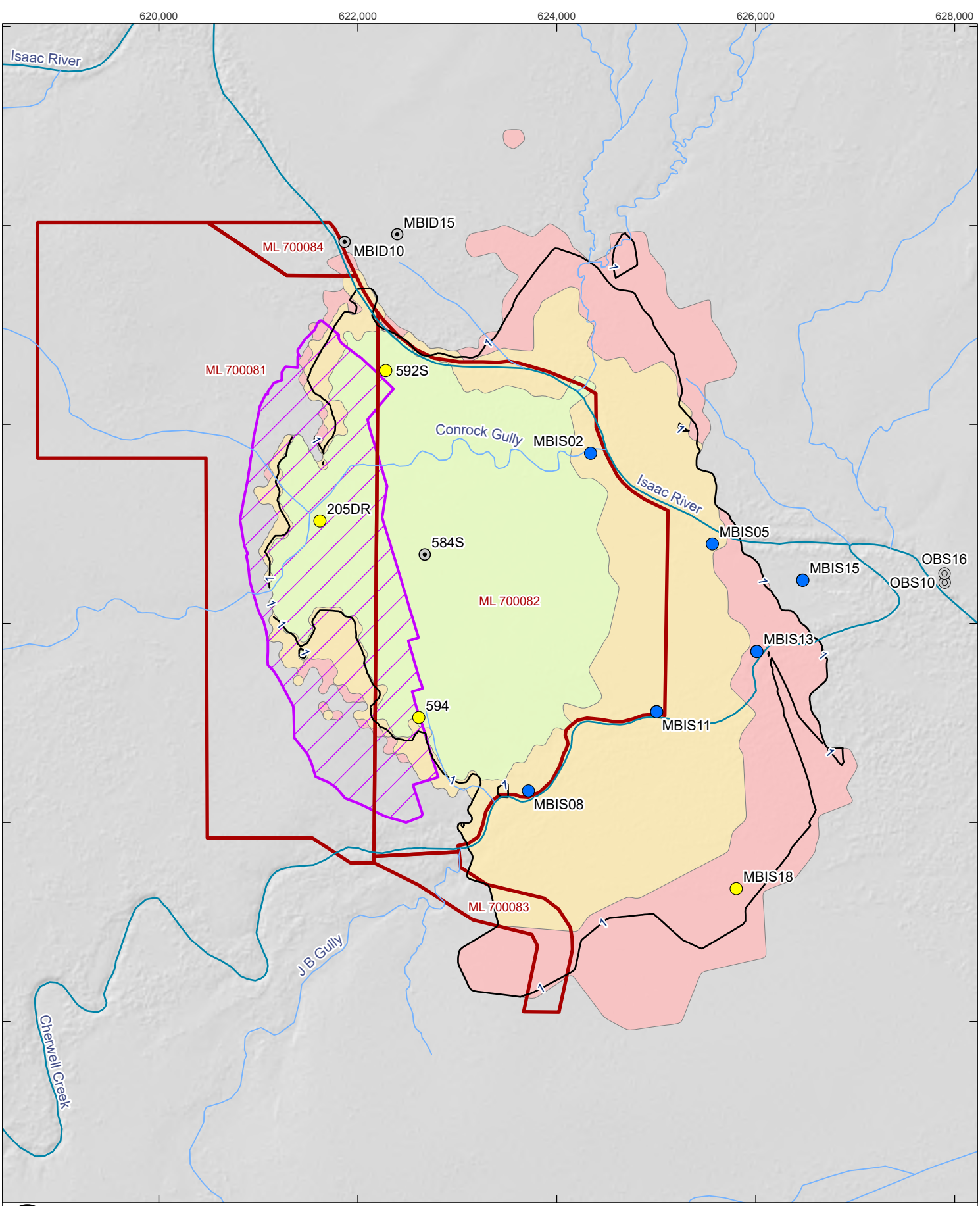
FIGURE 11-2

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F11-02_Regolith Bores and 1 m Drawdown Uncertainty (Regolith)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:50,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- MLE
- Pit Extent
- IDE Project MLAs

Monitoring Bore

- IDE, Compliance
- IDE, Interpretation
- IDM, not included
- PTM, not included

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

LEICHHARDT COAL SEAM BORES AND 1 M DRAWDOWN UNCERTAINTY (LEICHHARDT COAL SEAM)

SLR

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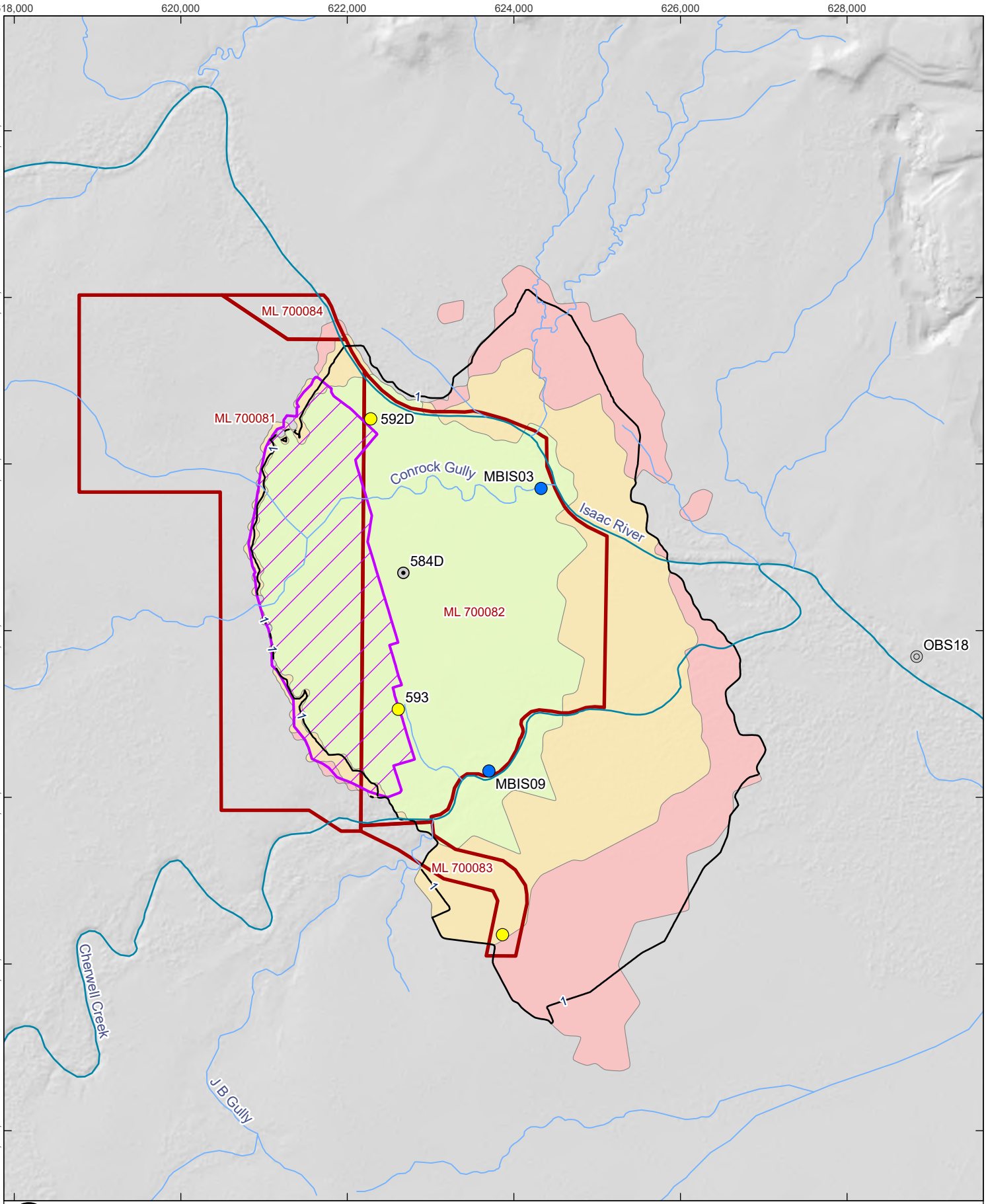
FIGURE 11-3

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F11-03_Leichhardt Coal Seam Bores and 1 m Drawdown Uncertainty (Leichhardt Coal Seam)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:60,000 at A4
Project Number:	620.041537
Date Drawn:	06-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- MLE
- Pit Extent
- IDE Project MLAs

Monitoring Bore

- IDE, Compliance
- IDE, Interpretation
- IDM, not included
- PTM, not included

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

VERMONT COAL SEAM BORES AND 1 M DRAWDOWN UNCERTAINTY (VERMONT COAL SEAM)

SLR

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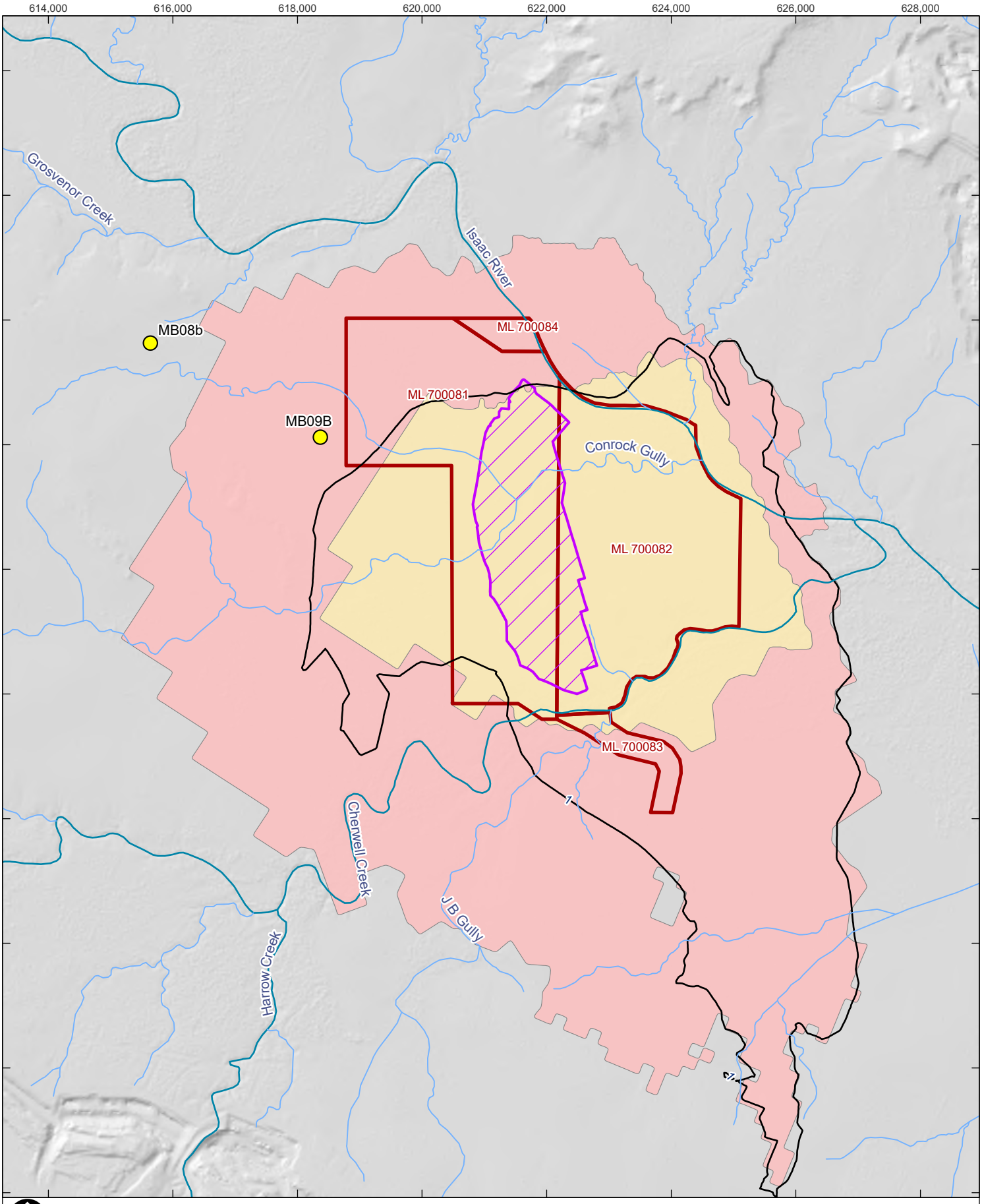
FIGURE 11-4

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F11-04_Vermont Coal Seam Bores and 1 m Drawdown Uncertainty (Vermont Coal Seam)



0 0.5 1 km

Coordinate System:	GDA2020 MGA Zone 55
Scale:	1:80,000 at A4
Project Number:	620.041537
Date Drawn:	14-May-2026
Drawn by:	RB

LEGEND

- Major Watercourse
- Minor Watercourse
- MLE
- Pit Extent
- IDE Project MLAs

Monitoring Bore

- IDE, Interpretation

Maximum Drawdown (m)

- 5th Percentile
- 50th Percentile
- 95th Percentile

ISAAC DOWNS EXTENSION PROJECT

FORT COOPER COAL SEAM BORES AND 1 M DRAWDOWN UNCERTAINTY (FORT COOPER COAL SEAM)

SLR

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FIGURE 11-5

Path: H:\Projects-SLR\620-BNE\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Isaac South EIS Groundwater\Isaac South EIS Groundwater.aprx\620041537_GIA_F11-05_Fort Cooper Coal Seam Bores and 1 m Drawdown Uncertainty (Fort Cooper Coal Seam)

11.2.3 Monitoring Regime – Baseline and During Mining

Routine monitoring includes groundwater level and quality monitoring as detailed in the below sections. Details of monitoring protocols and QA/QC procedures are further outlined in the Project's GMMP (SLR, 2026d).

Routine monitoring prior to the commencement of the mining operation (i.e. baseline period) which is already ongoing (see **Section 1.4**), will provide for continued assessment and characterisation of the pre-mining groundwater system, including quantification of pre-mining variability. Continuing to capture data to quantify pre-mining variability is important on the context of allowing the Project to distinguish any future Project related impacts from inherent natural variability, or variability from other mining operations, later during the Project's operational and rehabilitation phases. The baseline monitoring program will continue until active mining commences, at which point the operational regime will be implemented.

Routine monitoring during the mining operation will provide early warning of any variation in the response of the groundwater system to that predicted. This will enable the Project proponent to undertake mitigation measures, as required, to minimise any potential groundwater related impacts, such as to surrounding groundwater users and the environment, e.g. through the implementation of make-good measures.

11.2.4 Groundwater Level Triggers

The development of Groundwater Level Triggers involves two key components, the calculation of Reference Level values based on statistical analysis of the available groundwater level monitoring dataset and the derivation of Groundwater Level Trigger Thresholds informed by numerical groundwater modelling (SLR, 2026b, **Appendix H**). These two components are subsequently integrated to calculate an effective compliance trigger value, referred to as the Level Trigger Elevation. This value is then assessed against historical groundwater level trends, as outlined in in the GMMP and presented in **Section 11.2.4.1** below.

- Reference Level
  The bore specific groundwater level that all future groundwater level measurements will be compared to for the purpose of calculating actual groundwater drawdown. The Reference Level is derived on the basis of historic groundwater level monitoring data (i.e. 'baseline' data) as outlined in **Section 11.2.4.1.**

- Level Trigger Threshold
  The bore specific maximum groundwater level drawdown in the future that will be allowed under the EA. The Level Trigger Threshold is derived on the basis of predictive groundwater modelling (SLR, 2026c, **Appendix H**) such that an exceedance of the Level Trigger Threshold represents greater groundwater level impact than predicted by modelling. The proposed Level Trigger Thresholds are derived in **Section 11.2.4.2.**

- Trigger Level Elevation
  The proposed Reference Levels and Lever Trigger Thresholds presented above have been tested against the historical dataset using the proposed compliance approach. For the testing, the effective compliance trigger value is termed the Level Trigger Elevation and is calculated as:

  Level Trigger Elevation = Groundwater Reference Level – Level Trigger Threshold

11.2.4.1 Groundwater Level Reference Values

The time series plots and analysis presented in **Section 5.5** reveals that groundwater levels are highly variable, primarily driven by natural causes (i.e. climate variability, response to rainfall, etc.). Furthermore, the relatively large range between the maximum and minimum groundwater levels highlights that groundwater level change compliance criteria need to appropriately recognise the significant variability in groundwater levels.

It is therefore proposed to adopt the 20th percentile of the baseline dataset summary statistics as the Reference Level values, similar to the approach proposed within DES (2021) for establishing statistically appropriate groundwater quality triggers. Adoption of the 20th percentile allows consideration of the historic variability in groundwater levels when proposing a bore specific groundwater level that will be compared to model predictions for compliance purposes. The proposed groundwater Reference Level values for the compliance bores are presented in **Table 11-2**.

Table 11-2 Groundwater Level Reference Values

Proposed Compliance Bore	Formation monitored	Designation	Reference level (mAHD)
MBID23	Alluvium	Compliance	186.03
MBID28	Alluvium	Compliance	187.27
MBIS04	Alluvium	Compliance	184.89
MBIS07	Alluvium	Compliance	na
MBIS20	Regolith	Compliance	186.56
RN182851	Regolith	Compliance	194.77
MBIS10	Regolith	Compliance	170.44
MBIS02	Leichhardt coal seam	Compliance	186.67
MBIS05	Leichhardt coal seam	Compliance	184.74
MBIS08	Leichhardt coal seam	Compliance	190.35
MBIS11	Leichhardt coal seam	Compliance	185.54
MBIS13	Leichhardt coal seam	Compliance	182.93
MBIS15	Leichhardt coal seam	Compliance	183.02
MBIS03	Vermont coal seam	Compliance	187.18
MBIS09	Vermont coal seam	Compliance	188.73

*MBIS07 has not been given a water level trigger as the water level trigger elevation falls below the screen of the bore. MBIS07 is used for water quality compliance only

11.2.4.2 Groundwater Level Drawdown Triggers (Level Trigger Thresholds)

The predictive results of the Project's numerical groundwater model (**Appendix H** and SLR, 2026b) have been utilised to develop bore specific groundwater Level Trigger Thresholds for the compliance bores listed in **Table 11-1.** Level Trigger Thresholds have been based on the following criteria:

- Level Trigger Thresholds are based on the maximum predicted cumulative drawdown for each bore. Drawdown values are derived from the best-calibrated model realisation at each bore location, within the relevant model layer, over the life of the mine.
- The trigger level elevation is derived by subtracting the predicted maximum drawdown from the reference level value for the bore.
- Where the proposed Groundwater Level Trigger Threshold would result in a level trigger elevation below the base of the model layer, then the Groundwater Level Trigger Threshold has been limited to drawdown to the base of the model layer.

It should be noted that bore MBIS07 has not been given a water level trigger as the water level trigger elevation falls below the screen of the bore and therefore cannot be measured for the purpose of compliance. MBIS07 is used for groundwater quality compliance only.

The groundwater Level Trigger Thresholds derived using the methodology as above are presented in **Table 11-3**.

Table 11-3 Groundwater Level Trigger Thresholds

Proposed Compliance Bore	Formation monitored	Designation	Level Trigger Threshold (m)	Level Trigger Threshold Elevation (mAHD)
MBID23	Alluvium	Compliance	1.50[1]	184.5
MBID28	Alluvium	Compliance	3.47[1]	183.8
MBIS04	Alluvium	Compliance	4.28[1]	180.6
MBIS07	Alluvium	Compliance	na	
MBIS20	Regolith	Compliance	7.60[1]	179.0
RN182851	Regolith	Compliance	13.38	181.4
MBIS10	Regolith	Compliance	9.64	160.8
MBIS02	Leichhardt coal seam	Compliance	25.86	160.8
MBIS05	Leichhardt coal seam	Compliance	15.50	169.2
MBIS08	Leichhardt coal seam	Compliance	10.31	180.0
MBIS11	Leichhardt coal seam	Compliance	13.08	172.5
MBIS13	Leichhardt coal seam	Compliance	12.82	170.1
MBIS15	Leichhardt coal seam	Compliance	3.05	180.0
MBIS03	Vermont coal seam	Compliance	28.03	159.2
MBIS09	Vermont coal seam	Compliance	13.74	175.0

1. Maximum drawdown limited to base of model layer.

Note: MBIS07 has not been given a water level trigger as the water level trigger elevation falls below the screen of the bore. MBIS07 is used for groundwater quality compliance only

11.2.5 Groundwater Quality Limit Derivation

Groundwater Quality Limits for compliance bores have been established in accordance with the DES (2021) guideline *"Using monitoring data to assess groundwater quality and potential environmental impacts".*

11.2.5.1 Methodology Overview

The general approach detailed in DES (2021), to use or derive site appropriate groundwater quality limits, is as follows:

- Determine summary statistics (i.e. 20th, 50th, 80th and 95th percentiles) for each bore and each indicator using all available validated data.
- Identify relevant default toxicant guidelines and relevant WQOs.
- Determine whether the site-specific groundwater guidelines are more appropriate than existing default guidelines and WQOs through the following:
    - Compare the 20th (for pH lower guideline) and 80th percentile of the dataset to the relevant guidelines. DES (2021) states that where multiple EVs (with associated water quality guidelines) have been identified for an area of interest, groundwater quality should be managed to comply with the most conservative water quality guideline so that the most sensitive EV is protected.
    - Where insufficient data were available to derive a trigger value (e.g. fewer than eight [8] samples or where more than 15% of results were reported at the limit of reporting), the relevant ANZG (2018) guideline value has been adopted as an interim limit.
    - Determine appropriate site-specific limits. The limits are appropriate if they are sufficiently conservative to measure whether an environmental impact could occur, but do not result in false non-compliances.
    - If the 80th percentile aligns closely with the default guideline or WQO, the default guideline or WQO value should be adopted.
    - If the 80th percentile is substantially lower than the default guideline or WQO, a site-specific value may be adopted; however, for toxicants, the default guideline may still apply where it is more conservative.
    - If no default guideline or WQO exists, the 80th percentile may be used as a site-specific guideline, subject to regulatory acceptance.
    - If the 80th percentile exceeds the default guideline, a site-specific value may be adopted where it better reflects local hydrochemical conditions.

Groundwater monitoring for the Project have included all sampling events to the end of 2025, noting that some bores have less than 8 samples. Interim trigger values have therefore been developed based on consideration of the available data and default guidelines values. Additionally, some bores with fewer than eight data points show two or more exceedances of the ANZG (2018) guideline values, which have been adopted as interim trigger criteria. In these cases, "TBA" has been placed in **Table 11-5** as it is proposed that these trigger values be reassessed once additional data become available to ensure they are representative of meaningful hydrochemical conditions.

The monitoring bore network will continue to be monitored and final 'limits'/triggers will be developed when a sufficient number of representative samples have been obtained from each site.

11.2.5.2 Proposed Groundwater Analytical Suite

The analytes for which groundwater quality limits have been developed were selected based on the following considerations:

1. Potential impact from the activity: Natural groundwater conditions could potentially be impacted by the alteration of physiochemical parameters or the increase in/introduction of elements as a result of the activity, although as discussed in **Section 10.0** this is highly unlikely, and;
2. Their relevance to protect identified Environmental Values (EV): The analyte has been identified as necessary to protect an EV relevant to the Project based on relevant guidelines DEHP (2011) and Water Quality Objectives (WQO) (e.g. ANZG, 2018).

The proposed quality parameters selected for the Project groundwater monitoring suite are presented in **Table 11-4** which also indicates which parameters require quality limits to be defined and which are included for Reference only.

11.2.5.3 Proposed Groundwater Quality Limits

Initial proposed parameters for Groundwater Quality Limits are presented in **Table 11-5**. Based on the methodology for developing Groundwater Quality Limits and the statistical data analysis, site specific values have been proposed for some parameters for two bores, MBID23 and MBID28.

The following parameters will be monitored as part of the GDEMMP (Watermark Eco, 2026b) at bores relevant to the GDEMMP for the context of vegetation health

- Salinity
- Dissolved oxygen
- pH
- Nitrogen
- Phosphorous
- Organic Carbon

Table 11-4 Proposed Parameters for Groundwater Quality Limits

Parameter to be monitored	Limit required	Justification
Physiochemical parameters		
pH	Yes	Standard parameter, identified in DEHP (2011) and ANZG (2018) for the relevant EV's
EC	Yes	Standard parameter, identified in DEHP (2011)
TDS	No	Standard parameter, identified in ANZG (2018) for the stock watering (cattle) EV.
Metal and metalloids (Dissolved)		
Aluminium	Yes	Identified in ANZG (2018) for the relevant EV's
Arsenic	Yes	Identified in ANZG (2018) for the relevant EV's
Boron	Yes	Identified in ANZG (2018) for the irrigation EV
Cadmium	Yes	Identified in ANZG (2018) for the relevant EV's
Chromium	Yes	Identified in ANZG (2018) for the relevant EV's
Cobalt	Yes	Identified in ANZG (2018) for the irrigation EV
Copper	Yes	Identified in DEHP (2011) and in ANZG (2018) for the relevant EV's
Iron	Yes	Identified in DEHP (2011)
Lead	Yes	Identified in ANZG (2018) for the relevant EV's
Manganese	Yes	Identified in DEHP (2011) and in ANZG (2018) for the relevant EV's
Mercury	Yes	Identified in ANZG (2018) for the relevant EV's
Molybdenum	Yes	Identified in ANZG (2018) for irrigation EV
Nickel	Yes	Identified in ANZG (2018) for the relevant EV's
Uranium	Yes	Identified in ANZG (2018) for the relevant EV's
Silver	Yes	Identified in ANZG (2018) for the relevant EV's
Zinc	Yes	Identified in DEHP (2011) and in ANZG (2018) for the relevant EV's
Major Ions		
Sulphate	Yes	Identified in DEHP (2011) and in ANZG (2018) for stock watering (cattle) EV
Calcium	No	Identified in DEHP (2011) and in ANZG (2018) for stock watering (cattle) EV
Magnesium	No	Identified in DEHP (2011) and in ANZG (2018) for stock watering (cattle) EV
Potassium	No	To be monitored for interpretative purposes only, not identified in any relevant guideline for the relevant EV's
Carbonate	No	To be monitored for interpretative purposes only, not identified in any relevant guideline for the relevant EV's
Bicarbonate	No	To be monitored for interpretative purposes only, not identified in any relevant guideline for the relevant EV's
Sodium	No	Identified in DEHP (2011) and in ANZG (2018) for stock watering (cattle) EV
Chloride	No	Identified in DEHP (2011) and in ANZG (2018) for stock watering (cattle) EV
Non-Metallic Elements		
Nitrate	Yes	Identified in DEHP (2011)

Table 11-5 Interim Groundwater Quality Limits for Compliance Bores

Analyte	pH (Field)	EC (Lab)	SO4	$^{1}NO_3$ as N	Ag	Al	As	B	Cd	Co	Cu	Cr	Fe	Hg	Mo	Mn	Ni	Pb	U	Zn
Unit	-	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MBID23	6.5 to 8.5[a]	8910[d]	318[d]	3.26[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.784[e]	0.0006[a]	0.1[b]	1.788[e]	0.014[a]	0.0034[a]	0.0158[e]	0.06[d]
MBID28	6.38 to 6.85[e]	8910[d]	318[d]	3.26[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0062[a]	0.001[a]	0.784[e]	0.0006[a]	0.1[b]	1.83[e]	0.011[a]	0.0034[a]	0.004[b]	0.3214[e]
MBIS04	6.5 to 8.5[a]	8910[d]	318[d]	3.26[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	TBA	0.0006[a]	0.1[b]	TBA	0.011[a]	0.0034[a]	0.002[b]	TBA
MBIS07	6.5 to 8.5[a]	8910[d]	318[d]	3.26[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.14[d]	0.0006[a]	0.1[b]	TBA	0.011[a]	0.0034[a]	0.002[b]	0.008[c]
MBIS20	6.5 to 8.5[a]	8910[d]	TBA	3.26[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	TBA	TBA	TBA	TBA	0.14[d]	0.0006[a]	0.1[b]	TBA	0.011[a]	0.0034[a]	0.002[b]	TBA
RN182851	6.5 to 8.5[a]	16000[d]	TBA	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	TBA	0.0006[a]	0.1[b]	TBA	0.011[a]	0.0034[a]	0.002[b]	TBA
MBIS10	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	0.002[b]	TBA
MBIS02	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	TBA	0.011[a]	0.0034[a]	0.002[b]	TBA
MBIS05	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	TBA	TBA
MBIS08	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	TBA	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	0.002[b]	0.008[c]
MBIS11	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	0.291[d]	TBA	0.0034[a]	0.002[b]	TBA
MBIS13	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	0.002[b]	TBA
MBIS15	6.5 to 8.5[a]	TBA	TBA	1.12[d]	0.05[a]	0.055[a]	0.024[a]	TBA	0.0002[a]	0.1[b]	TBA	TBA	TBA	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	TBA	TBA
MBIS03	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	0.246[d]	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	0.002[b]	0.008[c]
MBIS09	6.5 to 8.5[a]	16000[d]	398[d]	1.12[d]	0.05[a]	0.055[a]	0.024[a]	0.5[b]	0.0002[a]	0.1[b]	0.0014[a]	0.001[a]	TBA	0.0006[a]	0.1[b]	0.291[d]	0.011[a]	0.0034[a]	0.002[b]	TBA

Note: Dissolved metals

1. Guideline values reported as NO_3 values have been converted to NO_3 as N to align with the sampling results.

a. Aquatic Ecosystem (95% Protection) (ANZG, 2018)
b. Irrigation (Fitzroy Basin WQO)
c. Stock (Fitzroy basin WQO)
d. Lower Isaac River (zone 34) (DEHP, 2011)
e. Site specific 80th percentile values.

11.3 Groundwater Dependent Ecosystems Monitoring and Management Plan

Despite the findings of low potential for impacts to GDEs, the proponent has developed a comprehensive GDEMMP, which is designed to monitor and detect changes in GDE health that may be attributable to Project activities. Should the Project impact GDE health then corrective actions are proposed (e.g. restoration of tree water supply or in fill planting). Should there still be a significant impact to GDEs, as measured by changes in habitat quality to listed species that utilise the identified GDEs, then biodiversity offsets will be provided. The GDE assessment determined that the residual (post mitigation) risk of the Project's potential impacts on GDEs was insignificant to low. For more details, refer to Watermark Eco (2026b).

12.0 References

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Appendix A Groundwater Quality Statistical Analysis and EV comparison

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

Geology	Bore	Depth	pH (Field)	EC (Lab)	Ca	Cl	Mg	Na	SO4	F	HCO3	NO3	Total Alkalinity	Hardness as CaCO3	Ag (Diss)	Al (Diss)	As (Diss)	B (Diss)	Cd (Diss)	Co (Diss)	Cu (Diss)	Cr (Diss)	Fe (Diss)	Hg (Diss)	Mn (Diss)	Mo (Diss)	Ni (Diss)	Pb (Diss)	Se (Diss)	Zn (Diss)
Australian Drinking Water Guidelines (Health)			-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	0.01	-	0.002	-	2	0.05	-	0.001	0.5	-	0.02	0.01	0.01	-
Australian Drinking Water Guidelines (Aesthetic)			6.5 to 8.5	-	-	250	-	180	-	-	-	-	-	-	-	0.2	-	-	-	-	1	-	-	-	0.1	-	-	-	-	3
Irrigation (Fitzroy Basin WQO)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.05	-	0.1	-	-	-	-	10	0.01	-	-	-	-
Stock (Fitzroy basin WQO)			-	-	1000	-	2000	-	1000	-	-	-	-	-	-	5	0.5	-	0.01	1	1	1	-	0.002	-	-	1	0.1	0.02	-
Aquatic Ecosystem (95% Protection)			6.5 to 8.5	-	-	-	-	-	-	-	-	-	-	-	0.05	0.055	0.024	-	0.0002	-	0.0014	0.001	-	0.0006	1.9	-	0.011	0.0034	0.005	0.008
Zone 34 Shallow Groundwater <30m			7.1 to 8.1	8910	215	3185	389	1500	318	0.5	878	5.3	752	2228	-	-	-	-	-	-	0.03	-	0.14	-	0.16	-	-	-	-	0.06
Zone 34 Deep Groundwater >30m			7.40 to 8.03	16000	442	5905	491	2565	398	0.4	650	14.92	536	3208	-	-	-	-	-	-	0.03	-	0.246	-	0.291	-	-	-	-	0.317
Alluvium	OBS5	<30m	6.99	31600	482	9832	975	5646	1732	0.64	1060.668	0.03	869.4		0.0025	0.025	0.0025	1.25	0.00013	0.007	0.0016	0.0013	1.3	0.00005	0.69	0.007	0.0044	0.0013	0.025	0.036
	MBID01	<30	6.70	6554	344.8	1918	242.8	655.4	58.8	0.2	555.344	0.005	455.2	1846	0.0005	0.005	0.0005	0.192	0.0002	0.0352	0.0106	0.0005	0.584	0.00005	5.57	0.0007	0.0092	0.0005	0.005	0.476
	MBID03	<30	7.15	9986	103	2876	175.6	1978	170	0.3	1427.4	0.005	1170	975	0.0005	0.02	0.0005	1.13	0.00005	0.002	0.009	0.0005	0.972	0.00005	0.42	0.0005	0.004	0.0005	0.005	0.136
	MBID09	<30	7.16	6350	97	1410	109	1170	531	0.2	1010.16	0.005	828	691	0.0005	0.005	0.0005	0.62	0.0002	0.001	0.041	0.0005	0.025	0.00005	0.31	0.0005	0.003	0.0005	0.005	0.266
	MBID17	<30	7.37	9042	76	2506	151.8	1896	184.2	1	1471.32	0.005	1206	766	0.0005	0.005	0.002	1.178	0.00005	0.002	0.0038	0.0005	0.182	0.00005	0.20	0.005	0.0048	0.0005	0.005	0.101
	MBID19A	<30	6.86	5456	282.6	1600	152.2	456	40.2	0.1	544.852	0.005	446.6	638	0.0005	0.005	0.002	0.17	0.00005	0.008	0.0005	0.0005	1.292	0.00005	1.75	0.0005	0.004	0.0005	0.005	0.208
	MBID21A	<30	7.32	5794	18.2	1472	73.2	1232	97.4	1.48	1228.052	0.005	809.6	348.4	0.0005	0.02	0.002		0.00005	0.0028	0.0005	0.0005	0.468	0.00005	0.20		0.0038	0.0005	0.005	0.068
	MBID23	<30	7.04	6704	124.2	2144	136.8	976	59.2	0.54	1212.192	0.11	993.6	1706	0.0005	0.005	0.0042	0.446	0.00005	0.016	0.0016	0.0005	0.634	0.00005	1.79	0.003	0.0124	0.0005	0.005	0.033
	MBID26	<30	7.01	9360		2420		1700	738	0.2	1051.64	0.183	862	964	0.0005	0.005	0.0005	1.83	0.00005	0.0005	0.004	0.0005	0.025	0.0338	0.003	0.0005	0.009	0.0005	0.005	0.008
	MBID27	<30	6.47	37380		13080		6142	2754	0.14	492.636		403.8	10400	0.0025	0.025	0.0025	0.802	0.00025	0.0096	0.0872	0.0025	1.324	0.00005	0.90	0.0025	0.0666	0.0025	0.025	0.608
	MBID28	<30	6.85	3164	106.6	870	146.6	259	56	0.3	443.836	0.005	363.8	1078	0.0005	0.005	0.0005	0.156	0.0001	0.011	0.0062	0.0005	0.126	0.00005	1.83	0.001	0.006	0.0005	0.005	0.321
	MBIS04	<30	6.56	3228	116	2448.2	92	528.4	190.8	0.2	489.952	0.005	401.6	641.2	0.0019	0.005	0.0007	0.294	0.00005	0.0028	0.0019	0.001	1.022	0.00005	0.66	0.0015	0.01	0.0005	0.005	0.090
	MBIS07	<30	7.62	3102	116.8	2691.2	97.2	442.2	243.6	0.16	720.044	0.02	590.2	2544.8	0.0005	0.028	0.0016	0.498	0.00005	0.0005	0.0016	0.0005	0.062	0.00005	0.26	0.0026	0.0014	0.0005	0.005	0.003
	MBIS12	<30	7.04	1994	78.4	2087.4	37.6	295	45.8	0.24	481.9	0.13	395	338.4	0.0005	0.047	0.008	0.296	0.00005	0.007	0.0027	0.0005	3.154	0.00005	1.54	0.0024	0.0114	0.0023	0.005	0.027
	MBID02	<30	6.71	27400		9390		5392	908	0.3	1060.424	0.005	869.2	3782	0.0025	0.025	0.0025	1.758	0.00025	0.0038	0.0025	0.0025	1.958	0.00005	0.91	0.0025	0.0025	0.0025	0.025	0.013
	MBID05	<30	7.62	2818		168		675.8	45.6	0.5	1644.56	0.005	1348	135.6	0.0005	0.005	0.0005	0.612	0.00005	0.0005	0.0005	0.0005	0.198	0.00005	0.05	0.0005	0.0011	0.0005	0.005	0.003
	MBID08	<30	6.99	6796		1504		1310	562	0.2	1090.68	0.005	894	774.8	0.0005	0.005	0.0005	0.654	0.0001	0.002	0.0082	0.0005	0.032	0.00005	0.33	0.0005	0.006	0.0005	0.005	0.344
Regolith	205S	<30	7.72	20800	655	7050	715	2930	1460	0.05	500.2		410	5020	0.0005	0.005	0.012	0.42	0.00005	0.004	0.0005	0.0005	9.7	0.00005	4.68	0.005	0.012	0.0005	0.005	0.014
	MB06	<30	7.12	12720	132.8	3930	338.6	2258	561.4	0.52	1218.536	0.009	998.8	1686	0.0005	0.005	0.0005	0.974	0.00005	0.0005	0.0005	0.0005	0.354	0.00005	0.25	0.0022	0.0042	0.0005	0.005	0.007
	MBID06A	<30	7.14	1332	43	197	43.8	197.8	28.2	0.7	714.92	0.005	415	287.6	0.0005	0.005	0.001		0.00005	0.001	0.003	0.0005	0.08	0.00005	0.10		0.003	0.0005	0.005	0.140
	MBID07	<30	7.37	4232		849.2		851	310.8	0.4	860.588	0.005	705.4	296	0.0005	0.01	0.002	0.64	0.00005	0.0005	0.004	0.0005	0.192	0.00005	0.16	0.003	0.002	0.0005	0.005	0.076
	MBID22	<30	7.50	14820	75	4992	69	2354	972.8	0.4	479.704		393.2	2994	0.0005	0.005	0.0026	0.466	0.00005	0.0005	0.0016	0.0005	2.576	0.00005	0.55	0.0016	0.002	0.0005	0.005	0.180
	MBID25A	<30	7.06	11060		3044		1842	595.4	0.2	976.976	0.005	800.8	723	0.0005	0.005	0.0005	0.59	0.00005	0.001	0.0005	0.0005	0.88	0.00005	0.48	0.0034	0.007	0.0005	0.005	0.007
	MBIS10	<30	7.84	2858	74.2	477.6	70.2	463.8	250.6	0.3	888.404	0.01	728.2	419	0.0005	0.017	0.0025	0.37	0.00005	0.0018	0.002	0.0009	0.136	0.00005	0.27	0.002	0.0078	0.0005	0.005	0.081
	MBIS20	<30	7.23	30180	996	8326.4	1096	4634	2288	0.18	638.304	0.005	523.2	7144	0.0025	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.094	0.00021	0.95	0.0025	0.0025	0.0025	0.022	0.031
	OBS15	<30	6.94	3772		712.2		639.2	134.4		940.376		810.4		0.0005	0.005	0.0005						0.061	0.00005	-	0.0005	-		0.0044	-
	OBS9	<30	7.34	7344		1798		1366	415.8	0.3	811.056		666.8		0.0005	0.005	0.0038	0.584	0.00005	0.0005	0.0005	0.0005	0.668	0.00005	0.05	0.002	0.002	0.0005	0.005	0.009
	RN182851	<30	7.15	8508	379.4	1986	248.8	1058	629	0.28	638.792	0.009	523.6	2124	0.0005	0.005	0.0084	0.49	0.00005	0.0018	0.0005	0.0005	2.806	0.00005	0.50	0.002	0.007	0.0005	0.005	0.640

Geology	Bore	Depth	pH (Field)	EC (Lab)	Ca	Cl	Mg	Na	SO4	F	HCO3	NO3	Total Alkalinity	Hardness as CaCO3	Ag (Diss)	Al (Diss)	As (Diss)	B (Diss)	Cd (Diss)	Co (Diss)	Cu (Diss)	Cr (Diss)	Fe (Diss)	Hg (Diss)	Mn (Diss)	Mo (Diss)	Ni (Diss)	Pb (Diss)	Se (Diss)	Zn (Diss)
Australian Drinking Water Guidelines (Health)			-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	0.01	-	0.002	-	2	0.05	-	0.001	0.5	-	0.02	0.01	0.01	-
Australian Drinking Water Guidelines (Aesthetic)			6.5 to 8.5	-	-	250	-	180	-	-	-	-	-	-	-	0.2	-	-	-	-	1	-	-	-	0.1	-	-	-	-	3
Irrigation (Fitzroy Basin WQO)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.05	-	0.1	-	-	-	-	10	0.01	-	-	-	-
Stock (Fitzroy basin WQO)			-	-	1000	-	2000	-	1000	-	-	-	-	-	-	5	0.5	-	0.01	1	1	1	-	0.002	-	-	1	0.1	0.02	-
Aquatic Ecosystem (95% Protection)			6.5 to 8.5	-	-	-	-	-	-	-	-	-	-	-	0.05	0.055	0.024	-	0.0002	-	0.0014	0.001	-	0.0006	1.9	-	0.011	0.0034	0.005	0.008
Zone 34 Shallow Groundwater <30m			7.1 to 8.1	8910	215	3185	389	1500	318	0.5	878	5.3	752	2228	-	-	-	-	-	-	0.03	-	0.14	-	0.16	-	-	-	-	0.06
Zone 34 Deep Groundwater >30m			7.40 to 8.03	16000	442	5905	491	2565	398	0.4	650	14.92	536	3208	-	-	-	-	-	-	0.03	-	0.246	-	0.291	-	-	-	-	0.317
Leichhardt coal seam	594	>30	7.16	22680	608.6	7840	552.6	3658	838.8	0.1	318.42	0.005	261	3904	0.0005	0.005	0.005	0.38	0.0002	0.006	0.067	0.0005	1.5	0.00005	2.49	0.01	0.0282	0.0005	0.005	0.553
	205DR	>30	7.30	29000	1168	7830	1328	4190	2752	0.1	408.212	0.005	334.6	7900	0.0025	0.025	0.0117	0.73	0.00045	0.0069	0.0025	0.0025	4.978	0.00025	0.87	0.0025	0.0053	0.0025	0.024	0.057
	584S	>30	7.14	17800		6298		2848	619.8	0.2	339.892		278.6	3010	0.0005	0.005	0.012	0.38	0.00005	0.0005	0.0005	0.0005	9.466	0.00005	2.61	0.01	0.003	0.0005	0.005	0.114
	592S	>30	7.54	24140	707.2	8346	782.8	3708	860.2	0.16	416.264	0.005	341.2	5072	0.0021	0.044	0.0017	0.584	0.00017	0.0032	0.0017	0.0017	1.032	0.00017	0.80	0.0166	0.0023	0.0017	0.017	0.009
	MBID15	>30	6.90	25720		9404		4452	2.1	0.3	510.692		418.6	4280	0.0021	0.025	0.0025	0.97	0.00005	0.001	0.004	0.0005	2.186	0.00005	0.24	0.0025	0.004	0.002	0.025	0.180
	MBIS02	>30	7.48	13780	292	4290	44.8	2478	3.8	0.3	216.672	0.005	177.6	883.4	0.0005	0.005	0.0018	1.13	0.00005	0.003	0.0005	0.0005	0.644	0.00005	0.31	0.0033	0.019	0.0005	0.0044	0.027
	MBIS05	>30	7.73	11054	141.4	6374	29.4	2472	2.8	0.38	331.352	0.13	271.6	415.6	0.0005	0.005	0.0064	1.82	0.00005	0.002	0.0005	0.0005	0.128	0.00005	0.14	0.0025	0.0044	0.0005	0.0044	0.016
	MBIS08	>30	7.98	11400	247.8	3936	104	2006	13.4	0.2	324.032	0.005	265.6	999.6	0.0005	0.005	0.0092	0.3	0.00005	0.0005	0.0018	0.0005	1.964	0.00005	0.07	0.0362	0.0068	0.0005	0.005	0.012
	MBIS11	>30	7.66	11940	156.4	4060	33	2286	4.4	0.38	81.008	0.005	66.4	570.4	0.0005	0.005	0.002	0.39	0.00005	0.0009	0.0005	0.0017	0.14	0.00005	0.14	0.0158	0.0246	0.0005	0.0044	0.009
	MBIS13	>30	7.79	13200	104.6	4006	22.4	2506	2	0.4	326.228	0.005	267.4	354.2	0.0005	0.02	0.0017	1.91	0.00005	0.0005	0.0005	0.0005	0.084	0.00005	0.05	0.0025	0.0005	0.0005	0.0044	0.011
	MBIS15	>30	7.37	31640	781.4	10000	1148	5262	2240	0.36	610.244	0.018	500.2	6094	0.0025	0.04	0.004	1.456	0.00025	0.0025	0.0025	0.0025	2.254	0.00025	0.17	0.0046	0.0132	0.0025	0.025	0.061
	MBIS18	>30	7.65	9410	107	3480	20	1780	23	0.4	344.04	0.009	282	370	0.0005	0.005	0.002	0.862	0.00005	0.0005	0.0005	0.0005	0.4	0.00005	0.12	0.039	0.009	0.0005	0.005	0.024
	OBS10	>30	7.87	1374		104.8		296.4	39.4	0.6	470.432		397.6		0.0005	0.02	0.0005	0.382	0.00005	0.0005	0.0005	0.0005	0.025	0.00005	0.06	0.001	0.0005	0.0005	0.005	0.007
Leichhardt coal seam/Vermont coal seam	MBID10	>30	6.87	16840		6044		2898	324.4	0.3	766.404	0.005	628.2	2310	0.0005	0.005	0.0005	1.04	0.00005	0.0005	0.0005	0.0005	1.38	0.00005	0.16	0.0005	0.003	0.0005	0.005	0.044
Vermont coal seam	593	>30	7.22	14700	436.4	5150	402	2750	6	0.2	627.08	0.005	514	1510	0.0005	0.005	0.003	0.696	0.00005	0.0005	0.0005	0.0005	3.7	0.00005	0.35	0.003	0.0036	0.0005	0.005	0.081
	584D		7.27	11400		3884		2300	0.8	0.4	414.556		339.8	514	0.0005	0.005	0.0192	0.544	0.00005	0.0005	0.0005	0.0005	6.43	0.00005	0.43	0.003	0.0014	0.0005	0.005	0.049
	592D	>30	7.52	16180	336.2	6622	132.4	2882	10.4	0.4	528.016	0.005	432.8	1414	0.0005	0.005	0.0052	1.136	0.00005	0.0016	0.0005	0.0005	8.558	0.00005	0.31	0.0074	0.009	0.0005	0.005	0.030
	MBIS03	>30	7.91	8934	37.4	5974	11.6	1855	1	0.58	611.708	0.005	521.4	189.6	0.0005	0.005	0.0054	1.5	0.00005	0.0005	0.0005	0.0005	0.05	0.00005	0.04	0.0033	0.005	0.0005	0.0044	0.013
	MBIS09	>30	7.90	10320	139.8	3418	41.8	1990	2.6	0.1	356.484	0.005	292.2	501	0.0005	0.005	0.0005	0.56	0.00005	0.0005	0.0009	0.0005	0.972	0.00005	0.05	0.003	0.0028	0.0005	0.005	0.018
	MBIS16	>30	7.51	13900	619	4590	514	1780	805	0.2	442.86	0.042	363	3780	0.0005	0.005	0.0005	0.63	0.00005	0.0005	0.0005	0.0005	3.24	0.00005	0.36	0.015	0.024	0.0005	0.005	0.176
	OBS18	>30	7.03	1654		221.6		363.6	0.9		667.34		598.4		0.0005	0.005	0.0005						0.318	0.00005	-	0.0005			0.0044	
	MBIS19	>30	7.40	14360	125.4	4872	65	2838	8.6	0.4	528.26	0.005	433	656.6	0.0005	0.02	0.002	3.34	0.00005	0.0017	0.0005	0.0005	0.196	0.00005	0.09	0.0028	0.0044	0.0005	0.0044	0.016
Fort Cooper Coal Measures	MB08b	>30	7.70	3382	51.4	526.8	23.4	470.6	144.6	0.4	660.996	0.005	541.8	552.4	0.0005	0.005	0.0005	0.3	0.00005	0.0005	0.0005	0.0005	0.122	0.00005	0.04	0.002	0.0052	0.0005	0.005	0.035
	MB09B	>30	7.36	6944	96.6	1628.8	40	572.4	59	0.6	729.56	0.005	598	382.8	0.0005	0.008	0.0006	0.292	0.00005	0.0005	0.002	0.0005	0.116	0.00005	0.11	0.0132	0.025	0.0005	0.005	0.043

Highlighted values exceed relevant WQO Red highlight = exceeds multiple guideline values

Note: Limit of Reporting (LOR) converted to x0.5 as per DES, 2021

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
593	Total Number	46	28	46	28	46	8	8	8	45	46	28	45	1
593	Number of outliers	5	6	3	4	3	0	0	1	5	6	3	10	0
593	from	01-12-18	17-09-19	01-12-18	01-12-18	01-12-18	26-11-24	26-11-24	26-11-24	01-12-18	01-12-18	01-12-18	01-12-18	28-10-25
593	to	30-10-25	28-10-25	30-10-25	28-10-25	30-10-25	28-10-25	28-10-25	28-10-25	30-10-25	30-10-25	28-10-25	30-10-25	28-10-25
593	Min	4170	6.18	294	322	294	99	24	5	516	401	0.1	0.5	0.005
593	5th %ile	11250	6.654	451.75	699.25	458.5	121.4	80.7	7.45	1762	2997.5	0.2	0.5	0.005
593	20th %ile	13500	6.974	469	1302	477	165.4	187.2	12	2428	4800	0.2	0.5	0.005
593	Median	14400	7.065	494	1380	498.5	185.5	203	13	2650	5035	0.2	0.5	0.005
593	80th %ile	14700	7.22	514	1510	514	436.4	402	15.2	2750	5150	0.2	6	0.005
593	95th %ile	15100	7.626	527.5	2309	527.5	628.95	534.7	16.65	2814	5280	0.33	24	0.005
593	Max	15200	8.02	633	3140	633	665	548	17	3240	5580	0.4	153	0.005
593	Tau	0.0365707	0.0800026	-0.176074	-0.157127	-0.112788	-0.357143	-0.5	-0.2965	-0.0835917	-0.0457658	-0.111368	0.225588	na
593	2-sided-p	0.732382	0.56618	0.0880839	0.251382	0.275874	0.26551	0.107762	0.37908	0.427689	0.66289	0.504595	0.0483176	na
593	Trend	No	No	No	No	No	No	No	No	No	No	No	Yes-Upward	na
594	Total Number	47	28	47	29	47	8	8	8	47	47	29	47	1
594	Number of outliers	4	3	2	2	2	1	1	0	2	5	4	6	0
594	from	01-12-18	17-12-19	01-12-18	01-12-18	01-12-18	26-11-24	26-11-24	26-11-24	01-12-18	01-12-18	01-12-18	01-12-18	28-10-25
594	to	30-10-25	28-10-25	30-10-25	28-10-25	30-10-25	28-10-25	28-10-25	28-10-25	30-10-25	30-10-25	28-10-25	30-10-25	28-10-25
594	Min	17600	6.59	232	3240	232	227	166	17	1030	3980	0	527	0.005
594	5th %ile	19400	6.6375	235.3	3476	235.3	320.45	281.85	17	3071	6421	0.07	645	0.005
594	20th %ile	21300	6.712	241	3626	241	507.6	512.2	17.4	3352	7460	0.1	747.8	0.005
594	Median	21900	6.815	248	3750	248	566.5	539	18	3500	7730	0.1	809	0.005
594	80th %ile	22680	7.16	261	3904	261	608.6	552.6	19.2	3658	7840	0.1	838.8	0.005
594	95th %ile	23480	7.7365	274.4	4058	274.4	671	570.55	20	3801	8011	0.16	894.2	0.005
594	Max	23800	7.91	401	4170	401	699	580	20	3860	8250	0.2	928	0.005
594	Tau	0.0441364	0.0800026	0.0785459	-0.298522	0.0785459	-0.285714	-0.254588	-0.169031	-0.0976759	-0.111892	-0.140456	0.222532	na
594	2-sided-p	0.672605	0.56618	0.446001	0.0253766	0.446001	0.386476	0.454427	0.684925	0.339964	0.274737	0.377743	0.0283651	na
594	Trend	No	No	No	Yes-Downward	No	No	No	No	No	No	No	Yes-Upward	na
MBID23	Total Number	35	20	35	19	35	8	8	8	35	34	19	35	1
MBID23	Number of outliers	7	3	7	3	7	0	0	0	7	7	3	7	0
MBID23	from	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	28-11-24	28-11-24	28-11-24	27-08-20	27-08-20	27-08-20	27-08-20	31-10-25
MBID23	to	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	30-10-25	31-10-25	31-10-25	31-10-25
MBID23	Min	1080	6.37	253	191	253	29	30	0.5	150	182	0.4	24	0.11
MBID23	5th %ile	1361	6.4935	257.4	203.6	257.4	30.05	31.05	0.5	156.5	236.8	0.4	27.1	0.11
MBID23	20th %ile	1976	6.748	326.6	534.4	326.6	37.2	38.2	0.5	208.2	460.4	0.4	33.6	0.11
MBID23	Median	4060	6.905	641	875	641	58	60	1.5	540	1020	0.5	40	0.11
MBID23	80th %ile	6704	7.042	993.6	1706	993.6	124.2	136.8	2	976	2144	0.54	59.2	0.11
MBID23	95th %ile	15740	7.8025	1827	3414	1827	136.7	145.3	2.65	2389	5576	1.01	224.1	0.11
MBID23	Max	18500	7.85	2020	3900	2020	143	146	3	2620	6270	1.1	260	0.11
MBID23	Tau	-0.384874	0.00527706	-0.262405	-0.251462	-0.262405	-0.357143	-0.357143	0.483494	-0.353238	-0.391072	-0.111694	-0.339043	na
MBID23	2-sided-p	0.00120402	1	0.0277046	0.141726	0.0277046	0.26551	0.26551	0.148635	0.00299356	0.00122738	0.56983	0.00483883	na
MBID23	Trend	Yes-Downward	No	Yes-Downward	No	Yes-Downward	No	No	No	Yes-Downward	Yes-Downward	No	Yes-Downward	na
MBID28	Total Number	38	23	38	19	38	7	7	7	38	38	19	38	1
MBID28	Number of outliers	2	3	2	2	2	0	0	1	1	2	0	3	0
MBID28	from	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	25-11-24	25-11-24	25-11-24	29-07-20	29-07-20	29-07-20	29-07-20	31-10-25
MBID28	to	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25
MBID28	Min	913	6.3	232	189	232	39	28	3	137	105	0.2	15	0.005
MBID28	5th %ile	1220	6.35	247.5	301.5	247.5	43.5	32.2	3	144.25	174	0.2	16.85	0.005
MBID28	20th %ile	1554	6.382	308.2	470.2	308.2	56.2	44	3.2	157.8	310.6	0.2	22.4	0.005
MBID28	Median	1860	6.57	335	584	335	80	72	4	180	420.5	0.2	27	0.005
MBID28	80th %ile	3164	6.852	363.8	1078	363.8	106.6	146.6	6.4	259	870	0.3	56	0.005
MBID28	95th %ile	4810.5	7.771	378.9	2032	378.9	119.5	180.8	8.4	363.75	1438	0.4	88.2	0.005
MBID28	Max	5680	7.86	385	2140	385	124	188	9	413	1760	0.4	100	0.005
MBID28	Tau	-0.155493	0.0159689	-0.0541698	-0.0409357	-0.0541698	0.238095	0.238095	0.899735	-0.142756	-0.199573	0.15775	-0.365117	na
MBID28	2-sided-p	0.174402	0.936738	0.641738	0.833735	0.641738	0.548006	0.548006	0.0110717	0.213091	0.0804797	0.432784	0.00149757	na
MBID28	Trend	No	No	No	No	No	No	No	Yes-Upward	No	No	No	Yes-Downward	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS08	Total Number	7	6	7	7	7	7	7	7	7	7	7	7	1
MBIS08	Number of outliers	0	0	0	0	0	0	0	0	0	2	1	0	0
MBIS08	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	30-10-25
MBIS08	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS08	Min	9930	7.05	112	484	112	141	42	8	1730	266	0.1	0.5	0.005
MBIS08	5th %ile	9933	7.13	118.6	522.4	118.6	141	49.2	8.3	1760	1152.2	0.13	0.95	0.005
MBIS08	20th %ile	9992	7.37	152.8	618.4	152.8	146.6	67.8	9	1844	3264	0.2	3.4	0.005
MBIS08	Median	10800	7.865	230	883	230	190	86	10	1970	3600	0.2	10	0.005
MBIS08	80th %ile	11400	7.98	265.6	999.6	265.6	247.8	104	10	2006	3936	0.2	13.4	0.005
MBIS08	95th %ile	11400	8.0475	278.6	1066	278.6	270.6	110.1	10.7	2045	4573	0.2	16.1	0.005
MBIS08	Max	11400	8.07	284	1090	284	276	111	11	2060	4840	0.2	17	0.005
MBIS08	Tau	0.308607	-0.6	0.333333	0.52381	0.333333	0.39036	0.52381	0.370479	-0.428571	0.619048	0.534522	0.428571	na
MBIS08	2-sided-p	0.433003	0.132855	0.367521	0.133129	0.367521	0.287611	0.133129	0.340762	0.229556	0.0715054	0.211299	0.229556	na
MBIS08	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na
MBIS09	Total Number	7	6	7	7	7	7	7	7	7	7	7	7	1
MBIS09	Number of outliers	0	0	0	0	0	0	0	0	0	1	1	1	0
MBIS09	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	30-10-25
MBIS09	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS09	Min	9610	7.27	263	392	263	93	34	8	1840	3240	0.05	0.5	0.005
MBIS09	5th %ile	9616	7.2825	264.5	409.4	264.5	97.2	34.3	8	1846	3261	0.065	0.65	0.005
MBIS09	20th %ile	9636	7.32	270.2	451.6	270.2	108.8	35.2	8	1862	3322	0.1	1	0.005
MBIS09	Median	10000	7.36	283	468	283	126	40	8	1940	3380	0.1	1	0.005
MBIS09	80th %ile	10320	7.9	292.2	501	292.2	139.8	41.8	9	1990	3418	0.1	2.6	0.005
MBIS09	95th %ile	10540	7.9975	295.4	505.1	295.4	152.9	44.1	9	2014	7543	0.1	13.5	0.005
MBIS09	Max	10600	8.03	296	506	296	158	45	9	2020	9310	0.1	18	0.005
MBIS09	Tau	-0.09759	-0.466667	0.619048	-0.238095	0.619048	-0.142857	-0.047619	0.503953	-0.238095	0.238095	0	0.845154	na
MBIS09	2-sided-p	0.879257	0.259656	0.0715054	0.548006	0.0715054	0.763891	1	0.215925	0.548006	0.548006	1	0.0190674	na
MBIS09	Trend	No	No	No	No	No	No	No	No	No	No	No	Yes-Upward	na
MBIS10	Total Number	7	6	7	7	7	7	7	7	7	7	7	7	1
MBIS10	Number of outliers	0	0	0	1	0	0	0	0	1	1	0	1	0
MBIS10	from	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	30-10-25
MBIS10	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS10	Min	2590	6.7	670	378	670	64	62	8	411	388	0.3	224	0.01
MBIS10	5th %ile	2602	6.7125	670.3	379.5	670.3	64.6	62	8.3	417.6	390.7	0.3	227.3	0.01
MBIS10	20th %ile	2638	6.75	676.6	385	676.6	66.2	62.2	9.2	435.8	401	0.3	236.2	0.01
MBIS10	Median	2800	6.825	700	400	700	70	65	11	461	418	0.3	242	0.01
MBIS10	80th %ile	2858	7.84	728.2	419	728.2	74.2	70.2	11.8	463.8	477.6	0.3	250.6	0.01
MBIS10	95th %ile	2912	7.915	745.1	809.2	745.1	77.1	73.8	13.4	515.8	2803.4	0.3	273.7	0.01
MBIS10	Max	2930	7.94	752	976	752	78	75	14	538	3800	0.3	283	0.01
MBIS10	Tau	0.047619	-0.333333	0.52381	-0.047619	0.52381	-0.238095	0.29277	0.39036	-0.52381	0.428571	1	0.52381	na
MBIS10	2-sided-p	1	0.45237	0.133129	1	0.133129	0.548006	0.447521	0.287611	0.133128	0.229556	1	0.133129	na
MBIS10	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na
MBIS16	Total Number	6	5	6	6	6	6	6	6	6	6	6	6	2
MBIS16	Number of outliers	0	0	0	0	0	0	1	0	0	0	1	0	0
MBIS16	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	28-06-25
MBIS16	to	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25
MBIS16	Min	5690	6.78	152	386	152	129	26	7	1190	436	0.05	45	0.01
MBIS16	5th %ile	6620	6.796	172.75	407.5	172.75	175.5	109	8.25	1252.5	749.5	0.0625	115.75	0.012
MBIS16	20th %ile	9410	6.844	235	472	235	315	358	12	1440	1690	0.1	328	0.018
MBIS16	Median	13800	7.46	313.5	3190	313.5	560.5	433.5	13.5	1565	3730	0.2	760.5	0.03
MBIS16	80th %ile	13900	7.506	363	3780	363	619	514	17	1780	4590	0.2	805	0.042
MBIS16	95th %ile	14575	7.584	365.25	3907.5	365.25	631	517.75	17.75	1855	4657.5	0.35	908.5	0.048
MBIS16	Max	14800	7.61	366	3950	366	635	519	18	1880	4680	0.4	943	0.05
MBIS16	Tau	-0.138013	0.6	0.0666667	-0.0666667	0.0666667	-0.0666667	0.0666667	-0.0666667	-0.466667	-0.733333	-0.447214	0.2	na
MBIS16	2-sided-p	0.848312	0.220671	1	1	1	1	1	1	0.259656	0.0602892	0.314063	0.707114	na
MBIS16	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MB08b	Total Number	5	5	5	5	5	5	5	5	5	5	5	5	1
MB08b	Number of outliers	0	0	0	1	1	1	1	1	2	1	0	0	0
MB08b	from	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	03-11-25
MB08b	to	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25
MB08b	Min	1950	7.34	516	113	358	26	13	3	372	349	0.3	0.5	0.005
MB08b	5th %ile	1966	7.346	516.6	115.8	389.6	26.4	13	3	379.2	355.8	0.3	0.6	0.005
MB08b	20th %ile	2014	7.364	518.4	124.2	484.4	27.6	13	3	400.8	376.2	0.3	0.9	0.005
MB08b	Median	2110	7.66	534	128	534	31	13	3	417	394	0.3	1	0.005
MB08b	80th %ile	3382	7.696	541.8	552.4	541.8	51.4	23.4	3.2	470.6	526.8	0.4	144.6	0.005
MB08b	95th %ile	3958	7.774	544.2	985.6	544.2	91.6	51.6	3.8	595.4	889.2	0.4	152.4	0.005
MB08b	Max	4150	7.8	545	1130	545	105	61	4	637	1010	0.4	155	0.005
MB08b	Tau	-0.2	-0.2	0	0	-0.2	0.2	-0.358569	-0.316228	-0.2	-0.2	0	0.316228	na
MB08b	2-sided-p	0.806496	0.806496	1	1	0.806496	0.806496	0.5791	0.723674	0.806496	0.806496	1	0.613354	na
MB08b	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na
MB07	Total Number	1	1	1	1	1	1	1	1	1	1	1	1	0
MB07	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MB07	from	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	na
MB07	to	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	na
MB07	Min	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	5th %ile	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	20th %ile	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	Median	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	80th %ile	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	95th %ile	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	Max	2080	6.87	544	190	544	22	32	7	419	489	1.3	2	na
MB07	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MB07	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MB07	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MB06	Total Number	5	3	5	5	5	5	5	5	5	5	5	5	2
MB06	Number of outliers	2	0	0	1	0	2	0	1	0	1	2	0	0
MB06	from	29-11-24	03-05-25	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	26-06-25
MB06	to	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25
MB06	Min	11800	6.89	929	1360	929	110	293	4	2020	2750	0.4	495	0.005
MB06	5th %ile	11900	6.89	936	1406	936	112.6	295.4	4	2042	2912	0.42	497.2	0.00525
MB06	20th %ile	12200	6.89	957	1544	957	120.4	302.6	4	2108	3398	0.48	503.8	0.006
MB06	Median	12500	6.89	981	1620	981	123	311	5	2200	3580	0.5	550	0.0075
MB06	80th %ile	12720	7.124	998.8	1686	998.8	132.8	338.6	5.4	2258	3930	0.52	561.4	0.009
MB06	95th %ile	13080	7.241	1007.2	1704	1007.2	144.2	352.4	6.6	2282	4020	0.58	577.6	0.00975
MB06	Max	13200	7.28	1010	1710	1010	148	357	7	2290	4050	0.6	583	0.01
MB06	Tau	0.4	na	0.4	-0.2	0.4	0.316228	0.4	0.67082	0.6	-0.2	-0.597614	0.4	na
MB06	2-sided-p	0.462433	na	0.462433	0.806496	0.462433	0.613354	0.462433	0.191695	0.220671	0.806496	0.267258	0.462433	na
MB06	Trend	No	na	No	No	No	No	No	No	No	No	No	No	na
RN182851	Total Number	7	6	7	7	7	7	7	7	7	7	7	7	2
RN182851	Number of outliers	0	0	0	0	0	0	0	2	0	0	0	0	0
RN182851	from	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	25-06-25
RN182851	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
RN182851	Min	3540	6.53	260	333	260	148	91	4	454	640	0.05	290	0.005
RN182851	5th %ile	3981	6.5475	299.3	447.9	299.3	154.3	102.7	4.6	489.4	692.2	0.05	308	0.00525
RN182851	20th %ile	5138	6.6	394.6	794.8	394.6	181.6	134.2	6.2	632.6	911.2	0.06	384	0.006
RN182851	Median	7570	6.695	457	2000	457	310	227	7	996	1430	0.1	576	0.0075
RN182851	80th %ile	8508	7.15	523.6	2124	523.6	379.4	248.8	7	1058	1986	0.28	629	0.009
RN182851	95th %ile	9260	7.42	583.6	2157	583.6	429.3	293.1	9.1	1154	2308	0.3	662.5	0.00975
RN182851	Max	9500	7.51	607	2160	607	447	312	10	1190	2440	0.3	673	0.01
RN182851	Tau	-0.047619	-0.333333	-0.333333	0.047619	-0.333333	-0.047619	-0.047619	-0.0563436	-0.047619	-0.52381	-0.308607	-0.142857	na
RN182851	2-sided-p	1	0.45237	0.367521	1	0.367521	1	1	1	1	0.133128	0.436738	0.763891	na
RN182851	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS18	Total Number	6	5	6	6	6	6	6	6	6	6	6	6	2
MBIS18	Number of outliers	2	1	0	1	0	0	1	0	1	2	2	1	0
MBIS18	from	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	28-06-25
MBIS18	to	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25
MBIS18	Min	6110	7.39	203	305	203	94	17	6	1650	1910	0.3	9	0.005
MBIS18	5th %ile	6842.5	7.394	212.5	309.75	212.5	94.25	17	6	1660	2175	0.325	9.5	0.00525
MBIS18	20th %ile	9040	7.406	241	324	241	95	17	6	1690	2970	0.4	11	0.006
MBIS18	Median	9225	7.55	275	334	275	101.5	18	6	1750	3020	0.4	17	0.0075
MBIS18	80th %ile	9410	7.652	282	370	282	107	20	6	1780	3480	0.4	23	0.009
MBIS18	95th %ile	10527.5	7.868	293.25	437.5	293.25	114.5	25.25	6	1892.5	8242.5	0.475	130.25	0.00975
MBIS18	Max	10900	7.94	297	460	297	117	27	6	1930	9830	0.5	166	0.01
MBIS18	Tau	0.0666667	0.4	0.333333	0.2	0.333333	-0.466667	0.358057	1	-0.138013	0.0666667	0.0860663	-0.2	na
MBIS18	2-sided-p	1	0.462433	0.45237	0.707114	0.45237	0.259656	0.435695	1	0.848312	1	1	0.707114	na
MBIS18	Trend	No	No	No	No	No	No	No	No	No	No	No	No	na
MB09B	Total Number	5	4	5	5	5	5	5	5	5	5	5	5	1
MB09B	Number of outliers	1	0	0	1	0	2	1	2	0	1	0	0	0
MB09B	from	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	31-10-25
MB09B	to	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25
MB09B	Min	1640	6.79	350	114	350	28	13	3	273	320	0.2	0.5	0.005
MB09B	5th %ile	1800	6.79	354	135.6	354	36.6	13.4	3.2	273	323.8	0.22	5.6	0.005
MB09B	20th %ile	2280	6.79	366	200.4	366	62.4	14.6	3.8	273	335.2	0.28	20.9	0.005
MB09B	Median	2860	7.045	474	222	505	74	15	4	430	516	0.4	54	0.005
MB09B	80th %ile	6944	7.36	598	382.8	598	96.6	40	4.6	572.4	1628.8	0.6	59	0.005
MB09B	95th %ile	14186	7.4275	610	592.2	610	155.4	70	6.4	636.6	4397.2	0.6	71	0.005
MB09B	Max	16600	7.45	614	662	614	175	80	7	658	5320	0.6	75	0.005
MB09B	Tau	0.4	0.182574	0.4	0.948683	0.4	0.6	0.948683	0.83666	0.527046	0.6	-0.316228	0.4	na
MB09B	2-sided-p	0.462433	1	0.462433	0.0432627	0.462433	0.220671	0.0432627	0.0960923	0.312216	0.220671	0.613354	0.462433	na
MB09B	Trend	No	No	No	Yes-Upward	No	No	Yes-Upward	No	No	No	No	No	na
MBIS04	Total Number	4	3	4	4	4	4	4	4	4	4	4	4	1
MBIS04	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS04	from	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	30-10-25
MBIS04	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS04	Min	2030	6.5	264	380	264	95	77	4	172	541	0.2	47	0.005
MBIS04	5th %ile	2040.5	6.502	264.9	409.7	264.9	97.7	77.3	4	176.8	547.3	0.2	49.25	0.005
MBIS04	20th %ile	2072	6.508	267.6	498.8	267.6	105.8	78.2	4	191.2	566.2	0.2	56	0.005
MBIS04	Median	2590	6.52	333	601	333	113.5	82.5	4	336	705	0.2	125	0.005
MBIS04	80th %ile	3228	6.556	401.6	641.2	401.6	116	92	4.8	528.4	2448.2	0.2	190.8	0.005
MBIS04	95th %ile	3394.5	6.574	407.9	660.55	407.9	118.25	98.75	5.7	596.35	4272.05	0.2	193.95	0.005
MBIS04	Max	3450	6.58	410	667	410	119	101	6	619	4880	0.2	195	0.005
MBIS04	Tau	1	na	0.333333	0.666667	0.333333	0.333333	0.666667	-0.707107	0.666667	1	1	1	na
MBIS04	2-sided-p	0.0894294	na	0.734095	0.308179	0.734095	0.734095	0.308179	0.371093	0.308179	0.0894294	1	0.0894294	na
MBIS04	Trend	No	na	No	No	No	No	No	No	No	No	No	No	na
205DR	Total Number	2	2	2	2	2	2	2	2	2	2	2	2	1
205DR	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
205DR	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	02-11-25
205DR	to	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25
205DR	Min	29000	6.95	317	7860	317	1120	1320	32	3990	1110	0.1	2680	0.005
205DR	5th %ile	29000	6.972	318.1	7862.5	318.1	1123	1320.5	32	4002.5	1530	0.1	2684.5	0.005
205DR	20th %ile	29000	7.038	321.4	7870	321.4	1132	1322	32	4040	2790	0.1	2698	0.005
205DR	Median	29000	7.17	328	7885	328	1150	1325	32	4115	5310	0.1	2725	0.005
205DR	80th %ile	29000	7.302	334.6	7900	334.6	1168	1328	32	4190	7830	0.1	2752	0.005
205DR	95th %ile	29000	7.368	337.9	7907.5	337.9	1177	1329.5	32	4227.5	9090	0.1	2765.5	0.005
205DR	Max	29000	7.39	339	7910	339	1180	1330	32	4240	9510	0.1	2770	0.005
205DR	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
205DR	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
205DR	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS12	Total Number	4	3	4	4	4	4	4	4	4	4	4	4	2
MBIS12	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS12	from	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	23-06-25
MBIS12	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS12	Min	1730	6.64	173	234	173	51	26	9	224	475	0.1	8	0.01
MBIS12	5th %ile	1748	6.677	192.2	243.6	192.2	54.6	27.5	9	232.4	481.9	0.115	9.5	0.0175
MBIS12	20th %ile	1802	6.788	249.8	272.4	249.8	65.4	32	9	257.6	502.6	0.16	14	0.04
MBIS12	Median	1910	7.01	344	308	344	76.5	36	9.5	283.5	550	0.2	31.5	0.085
MBIS12	80th %ile	1994	7.04	395	338.4	395	78.4	37.6	10	295	2087.4	0.24	45.8	0.13
MBIS12	95th %ile	2021	7.055	404	361.35	404	78.85	39.4	10	304	3784.35	0.285	46.7	0.1525
MBIS12	Max	2030	7.06	407	369	407	79	40	10	307	4350	0.3	47	0.16
MBIS12	Tau	0	na	1	0.666667	1	0.666667	0.182574	-0.408248	0.333333	0.666667	0.912871	-0.333333	na
MBIS12	2-sided-p	1	na	0.0894294	0.308179	0.0894294	0.308179	1	0.698535	0.734095	0.308179	0.148562	0.734095	na
MBIS12	Trend	No	na	No	No	No	No	No	No	No	No	No	No	na
592D	Total Number	4	2	4	2	4	3	3	3	4	4	3	4	1
592D	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
592D	from	22-09-22	29-06-25	22-09-22	30-08-25	22-09-22	29-06-25	29-06-25	29-06-25	22-09-22	22-09-22	29-06-25	22-09-22	31-10-25
592D	to	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25
592D	Min	5710	6.97	192	1390	192	282	127	12	965	1660	0.4	5	0.005
592D	5th %ile	7178.5	7.0045	227.25	1391.5	227.25	282.5	127	12.2	1235.75	2191	0.4	5.45	0.005
592D	20th %ile	11584	7.108	333	1396	333	284	127	12.8	2048	3784	0.4	6.8	0.005
592D	Median	15700	7.315	429.5	1405	429.5	287	127	14	2810	5435	0.4	9	0.005
592D	80th %ile	16180	7.522	432.8	1414	432.8	336.2	132.4	14	2882	6622	0.4	10.4	0.005
592D	95th %ile	16495	7.6255	433.7	1418.5	433.7	360.8	135.1	14	2918	7693	0.4	10.85	0.005
592D	Max	16600	7.66	434	1420	434	369	136	14	2930	8050	0.4	11	0.005
592D	Tau	0.333333	na	0.333333	na	0.333333	na	na	na	0.666667	1	na	1	na
592D	2-sided-p	0.734095	na	0.734095	na	0.734095	na	na	na	0.308179	0.0894294	na	0.0894294	na
592D	Trend	No	na	No	na	No	na	na	na	No	No	na	No	na
592S	Total Number	3	2	3	3	3	3	3	3	3	3	3	3	1
592S	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
592S	from	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	31-10-25
592S	to	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25
592S	Min	23300	6.98	278	2230	278	609	724	19	3190	4370	0.1	692	0.005
592S	5th %ile	23330	7.015	284.2	2483	284.2	617.8	724.3	19.3	3207	4746	0.1	693.7	0.005
592S	20th %ile	23420	7.12	302.8	3242	302.8	644.2	725.2	20.2	3258	5874	0.1	698.8	0.005
592S	Median	23600	7.33	340	4760	340	697	727	22	3360	8130	0.1	709	0.005
592S	80th %ile	24140	7.54	341.2	5072	341.2	707.2	782.8	24.4	3708	8346	0.16	860.2	0.005
592S	95th %ile	24410	7.645	341.8	5228	341.8	712.3	810.7	25.6	3882	8454	0.19	935.8	0.005
592S	Max	24500	7.68	342	5280	342	714	820	26	3940	8490	0.2	961	0.005
592S	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
592S	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
592S	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID22	Total Number	18	16	18	13	18	1	1	1	18	18	13	18	0
MBID22	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID22	from	31-07-20	29-07-20	31-07-20	31-07-20	31-07-20	23-06-25	23-06-25	23-06-25	31-07-20	31-07-20	31-07-20	31-07-20	na
MBID22	to	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	na
MBID22	Min	1800	6.61	344	135	344	75	69	5	367	356	0	50	na
MBID22	5th %ile	1800	6.6325	347.4	143.4	347.4	75	69	5	373.8	387.45	0	50.85	na
MBID22	20th %ile	2320	6.69	356.8	247.4	356.8	75	69	5	463.8	571.8	0.1	91.8	na
MBID22	Median	9295	7.05	369.5	2150	369.5	75	69	5	1455	2785	0.1	599.5	na
MBID22	80th %ile	14820	7.5	393.2	2994	393.2	75	69	5	2354	4992	0.4	972.8	na
MBID22	95th %ile	16375	7.77	402.5	3128	402.5	75	69	5	2603.5	5429	0.44	1051.5	na
MBID22	Max	16800	8.25	411	3140	411	75	69	5	2680	5480	0.5	1060	na
MBID22	Tau	-0.301641	0.142261	0.0196078	-0.512821	0.0196078	na	na	na	-0.314756	-0.294118	0.420422	-0.267974	na
MBID22	2-sided-p	0.0880601	0.470853	0.939614	0.0173434	0.939614	na	na	na	0.0748258	0.0955902	0.072071	0.129745	na
MBID22	Trend	No	No	No	Yes-Downward	No	na	na	na	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS02	Total Number	2	2	2	2	2	2	2	2	2	2	2	2	1
MBIS02	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS02	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	01-11-25
MBIS02	to	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25
MBIS02	Min	13300	7.26	136	861	136	268	44	10	2470	3290	0.3	3	0.005
MBIS02	5th %ile	13330	7.274	138.6	862.4	138.6	269.5	44.05	10	2470.5	3352.5	0.3	3.05	0.005
MBIS02	20th %ile	13420	7.316	146.4	866.6	146.4	274	44.2	10	2472	3540	0.3	3.2	0.005
MBIS02	Median	13600	7.4	162	875	162	283	44.5	10	2475	3915	0.3	3.5	0.005
MBIS02	80th %ile	13780	7.484	177.6	883.4	177.6	292	44.8	10	2478	4290	0.3	3.8	0.005
MBIS02	95th %ile	13870	7.526	185.4	887.6	185.4	296.5	44.95	10	2479.5	4477.5	0.3	3.95	0.005
MBIS02	Max	13900	7.54	188	889	188	298	45	10	2480	4540	0.3	4	0.005
MBIS02	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS02	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS02	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	Total Number	2	2	2	2	2	2	2	2	2	2	2	2	1
MBIS03	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS03	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	01-11-25
MBIS03	to	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25
MBIS03	Min	5870	7.89	319	160	319	23	6	5	915	1790	0.5	1	0.005
MBIS03	5th %ile	6061.5	7.891	330.4	161.85	331.65	23.9	6.35	6.2	973.75	2051.5	0.505	1	0.005
MBIS03	20th %ile	6636	7.894	364.6	167.4	369.6	26.6	7.4	9.8	1150	2836	0.52	1	0.005
MBIS03	Median	7785	7.9	433	178.5	445.5	32	9.5	17	1502.5	4405	0.55	1	0.005
MBIS03	80th %ile	8934	7.906	501.4	189.6	521.4	37.4	11.6	24.2	1855	5974	0.58	1	0.005
MBIS03	95th %ile	9508.5	7.909	535.6	195.15	559.35	40.1	12.65	27.8	2031.25	6758.5	0.595	1	0.005
MBIS03	Max	9700	7.91	547	197	572	41	13	29	2090	7020	0.6	1	0.005
MBIS03	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	Total Number	2	2	2	2	2	2	2	2	2	2	2	2	1
MBIS05	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS05	from	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	01-11-25
MBIS05	to	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25
MBIS05	Min	6870	7.55	154	414	154	119	27	13	2440	2270	0.3	2	0.13
MBIS05	5th %ile	7131.5	7.5615	161.35	414.1	161.35	120.4	27.15	13.2	2442	2526.5	0.305	2.05	0.13
MBIS05	20th %ile	7916	7.596	183.4	414.4	183.4	124.6	27.6	13.8	2448	3296	0.32	2.2	0.13
MBIS05	Median	9485	7.665	227.5	415	227.5	133	28.5	15	2460	4835	0.35	2.5	0.13
MBIS05	80th %ile	11054	7.734	271.6	415.6	271.6	141.4	29.4	16.2	2472	6374	0.38	2.8	0.13
MBIS05	95th %ile	11838.5	7.7685	293.65	415.9	293.65	145.6	29.85	16.8	2478	7143.5	0.395	2.95	0.13
MBIS05	Max	12100	7.78	301	416	301	147	30	17	2480	7400	0.4	3	0.13
MBIS05	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	Total Number	3	2	3	3	3	3	3	3	3	3	3	3	1
MBIS07	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS07	from	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	30-10-25
MBIS07	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS07	Min	2920	6.97	586	533	586	79	78	13	409	630	0.1	234	0.02
MBIS07	5th %ile	2922	7.0105	586	536.9	586	81.1	79.8	13.3	410.4	633.8	0.1	234	0.02
MBIS07	20th %ile	2928	7.132	586	548.6	586	87.4	85.2	14.2	414.6	645.2	0.1	234	0.02
MBIS07	Median	2940	7.375	586	572	586	100	96	16	423	668	0.1	234	0.02
MBIS07	80th %ile	3102	7.618	590.2	2544.8	590.2	116.8	97.2	16	442.2	2691.2	0.16	243.6	0.02
MBIS07	95th %ile	3183	7.7395	592.3	3531.2	592.3	125.2	97.8	16	451.8	3702.8	0.19	248.4	0.02
MBIS07	Max	3210	7.78	593	3860	593	128	98	16	455	4040	0.2	250	0.02
MBIS07	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS13	Total Number	2	2	2	2	2	2	2	2	2	2	2	2	1
MBIS13	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS13	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	01-11-25
MBIS13	to	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25
MBIS13	Min	12800	7.77	225	315	225	83	20	12	2450	2910	0.4	2	0.005
MBIS13	5th %ile	12825	7.7715	227.65	317.45	227.65	84.35	20.15	12.05	2453.5	2978.5	0.4	2	0.005
MBIS13	20th %ile	12900	7.776	235.6	324.8	235.6	88.4	20.6	12.2	2464	3184	0.4	2	0.005
MBIS13	Median	13050	7.785	251.5	339.5	251.5	96.5	21.5	12.5	2485	3595	0.4	2	0.005
MBIS13	80th %ile	13200	7.794	267.4	354.2	267.4	104.6	22.4	12.8	2506	4006	0.4	2	0.005
MBIS13	95th %ile	13275	7.7985	275.35	361.55	275.35	108.65	22.85	12.95	2516.5	4211.5	0.4	2	0.005
MBIS13	Max	13300	7.8	278	364	278	110	23	13	2520	4280	0.4	2	0.005
MBIS13	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS13	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS13	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	Total Number	3	2	3	3	3	3	3	3	3	3	3	3	2
MBIS15	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS15	from	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25
MBIS15	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS15	Min	27100	7.2	463	588	463	696	1040	20	4760	4190	0.3	1950	0.01
MBIS15	5th %ile	27470	7.2105	463.6	1112.2	463.6	696.2	1040	20.1	4770	4741	0.3	1976	0.0105
MBIS15	20th %ile	28580	7.242	465.4	2684.8	465.4	696.8	1040	20.4	4800	6394	0.3	2054	0.012
MBIS15	Median	30800	7.305	469	5830	469	698	1040	21	4860	9700	0.3	2210	0.015
MBIS15	80th %ile	31640	7.368	500.2	6094	500.2	781.4	1148	21	5262	10000	0.36	2240	0.018
MBIS15	95th %ile	32060	7.3995	515.8	6226	515.8	823.1	1202	21	5463	10150	0.39	2255	0.0195
MBIS15	Max	32200	7.41	521	6270	521	837	1220	21	5530	10200	0.4	2260	0.02
MBIS15	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	Total Number	2	0	2	2	2	2	2	2	2	2	2	2	1
MBIS11	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS11	from	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	03-11-25
MBIS11	to	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25
MBIS11	Min	11700	7.58	64	552	64	138	29	35	2270	3020	0.3	2	0.005
MBIS11	5th %ile	11715	7.59	64.15	553.15	64.15	139.15	29.25	35	2271	3085	0.305	2.15	0.005
MBIS11	20th %ile	11760	7.60	64.6	556.6	64.6	142.6	30	35	2274	3280	0.32	2.6	0.005
MBIS11	Median	11850	7.64	65.5	563.5	65.5	149.5	31.5	35	2280	3670	0.35	3.5	0.005
MBIS11	80th %ile	11940	7.68	66.4	570.4	66.4	156.4	33	35	2286	4060	0.38	4.4	0.005
MBIS11	95th %ile	11985	7.69	66.85	573.85	66.85	159.85	33.75	35	2289	4255	0.395	4.85	0.005
MBIS11	Max	12000	na	67	575	67	161	34	35	2290	4320	0.4	5	0.005
MBIS11	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	Total Number	2	1	2	2	2	2	2	2	2	2	2	2	1
MBIS19	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS19	from	30-08-25	02-11-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	02-11-25
MBIS19	to	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25
MBIS19	Min	14200	7.4	429	587	429	107	61	19	2830	3840	0.4	7	0.005
MBIS19	5th %ile	14210	7.4	429.25	591.35	429.25	108.15	61.25	19.05	2830.5	3904.5	0.4	7.1	0.005
MBIS19	20th %ile	14240	7.4	430	604.4	430	111.6	62	19.2	2832	4098	0.4	7.4	0.005
MBIS19	Median	14300	7.4	431.5	630.5	431.5	118.5	63.5	19.5	2835	4485	0.4	8	0.005
MBIS19	80th %ile	14360	7.4	433	656.6	433	125.4	65	19.8	2838	4872	0.4	8.6	0.005
MBIS19	95th %ile	14390	7.4	433.75	669.65	433.75	128.85	65.75	19.95	2839.5	5065.5	0.4	8.9	0.005
MBIS19	Max	14400	7.4	434	674	434	130	66	20	2840	5130	0.4	9	0.005
MBIS19	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBIS20	Total Number	2	1	2	2	2	2	2	2	2	2	2	2	1
MBIS20	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS20	from	31-08-25	30-10-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	30-10-25
MBIS20	to	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25
MBIS20	Min	29300	7.23	516	6800	516	900	1040	29	4290	432	0.1	2160	0.005
MBIS20	5th %ile	29355	7.23	516.45	6821.5	516.45	906	1043.5	29.3	4311.5	925.4	0.105	2168	0.005
MBIS20	20th %ile	29520	7.23	517.8	6886	517.8	924	1054	30.2	4376	2405.6	0.12	2192	0.005
MBIS20	Median	29850	7.23	520.5	7015	520.5	960	1075	32	4505	5366	0.15	2240	0.005
MBIS20	80th %ile	30180	7.23	523.2	7144	523.2	996	1096	33.8	4634	8326.4	0.18	2288	0.005
MBIS20	95th %ile	30345	7.23	524.55	7208.5	524.55	1014	1106.5	34.7	4698.5	9806.6	0.195	2312	0.005
MBIS20	Max	30400	7.23	525	7230	525	1020	1110	35	4720	10300	0.2	2320	0.005
MBIS20	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS20	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS20	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	Total Number	1	0	1	1	1	1	1	1	1	1	1	1	0
205S	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
205S	from	30-08-25	na	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	na
205S	to	30-08-25	na	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	na
205S	Min	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	5th %ile	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	20th %ile	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	Median	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	80th %ile	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	95th %ile	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	Max	20800	na	410	5020	410	655	715	32	2930	7050	0.05	1460	na
205S	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
584D	Total Number	10	7	10	9	10	0	0	0	10	10	9	10	0
584D	Number of outliers	0	1	1	1	1	0	0	0	1	3	0	2	0
584D	from	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	na	na	na	24-06-20	24-06-20	24-06-20	24-06-20	na
584D	to	10-01-23	27-01-21	10-01-23	21-04-21	10-01-23	na	na	na	10-01-23	10-01-23	21-04-21	10-01-23	na
584D	Min	10500	6.89	314	394	314	na	na	na	2010	3560	0.4	0.5	na
584D	5th %ile	10725	6.917	315.8	406.8	315.8	na	na	na	2095.5	3623	0.4	0.5	na
584D	20th %ile	11000	7.008	319.6	436.2	319.6	na	na	na	2200	3788	0.4	0.5	na
584D	Median	11200	7.12	332.5	445	332.5	na	na	na	2245	3845	0.4	0.5	na
584D	80th %ile	11400	7.27	339.8	514	339.8	na	na	na	2300	3884	0.4	0.8	na
584D	95th %ile	11455	7.44	358.15	574	358.15	na	na	na	2344	4070.5	0.4	3.1	na
584D	Max	11500	7.5	364	594	364	na	na	na	2380	4210	0.4	4	na
584D	Tau	-0.141421	-0.87831	0.511111	-0.611111	0.511111	na	na	na	0	0.0222222	1	0.0361551	na
584D	2-sided-p	0.647162	0.00980915	0.049098	0.0285677	0.049098	na	na	na	1	1	1	1	na
584D	Trend	No	Yes-Downward	Yes-Upward	Yes-Downward	Yes-Upward	na	na	na	No	No	No	No	na
584S	Total Number	17	13	17	16	17	0	0	0	17	17	16	17	0
584S	Number of outliers	2	0	2	3	2	0	0	0	2	4	1	3	0
584S	from	01-12-18	17-09-19	01-12-18	01-12-18	01-12-18	na	na	na	01-12-18	01-12-18	01-12-18	01-12-18	na
584S	to	10-01-23	24-02-21	10-01-23	21-04-21	10-01-23	na	na	na	10-01-23	10-01-23	21-04-21	10-01-23	na
584S	Min	11500	6.68	200	1340	200	na	na	na	1920	4060	0.2	250	na
584S	5th %ile	12060	6.728	203.2	1370	203.2	na	na	na	2032	4124	0.2	290.8	na
584S	20th %ile	15480	6.826	247.6	2770	247.6	na	na	na	2528	5274	0.2	512	na
584S	Median	17400	7.04	262	2920	262	na	na	na	2770	6100	0.2	561	na
584S	80th %ile	17800	7.14	278.6	3010	278.6	na	na	na	2848	6298	0.2	619.8	na
584S	95th %ile	18220	7.326	285.6	3152.5	285.6	na	na	na	2902	6450	0.225	704.2	na
584S	Max	18300	7.35	296	3190	296	na	na	na	2910	6450	0.3	737	na
584S	Tau	0.283614	-0.245166	0.127363	0.403376	0.127363	na	na	na	0.323529	0.592609	-0.306413	-0.0735294	na
584S	2-sided-p	0.125968	0.271241	0.507796	0.0339756	0.507796	na	na	na	0.0765136	0.00111508	0.193059	0.710836	na
584S	Trend	No	No	No	Yes-Upward	No	na	na	na	No	Yes-Upward	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBID01	Total Number	34	21	34	18	34	0	0	0	34	34	18	34	0
MBID01	Number of outliers	6	1	7	0	7	0	0	0	6	5	3	4	0
MBID01	from	14-11-18	16-09-19	14-11-18	14-11-18	14-11-18	na	na	na	14-11-18	14-11-18	14-11-18	14-11-18	na
MBID01	to	29-10-25	12-04-22	29-10-25	26-08-21	29-10-25	na	na	na	29-10-25	29-10-25	26-08-21	29-10-25	na
MBID01	Min	604	6.28	211	1330	211	na	na	na	79	80	0.1	0.5	na
MBID01	5th %ile	1915	6.29	240.3	1517	240.3	na	na	na	182.85	453.75	0.185	5.25	na
MBID01	20th %ile	4816	6.37	393.8	1596	393.8	na	na	na	438.4	1392	0.2	34	na
MBID01	Median	5970	6.62	438.5	1790	438.5	na	na	na	564.5	1725	0.2	46	na
MBID01	80th %ile	6554	6.7	455.2	1846	455.2	na	na	na	655.4	1918	0.2	58.8	na
MBID01	95th %ile	6977.5	6.93	529.4	1996.5	529.4	na	na	na	717.65	2140.5	0.3	82	na
MBID01	Max	7960	7.08	659	2090	659	na	na	na	873	2510	0.3	163	na
MBID01	Tau	-0.0196078	0.00956949	-0.258929	0.265817	-0.258929	na	na	na	-0.00892859	-0.044723	0.0589624	0.104038	na
MBID01	2-sided-p	0.88215	0.975888	0.0327456	0.138002	0.0327456	na	na	na	0.952705	0.721883	0.813558	0.397717	na
MBID01	Trend	No	No	Yes-Downward	No	Yes-Downward	na	na	na	No	No	No	No	na
MBID02	Total Number	18	15	18	14	18	0	0	0	18	18	14	18	0
MBID02	Number of outliers	0	0	0	0	0	0	0	0	0	2	4	0	0
MBID02	from	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	na	na	na	23-06-20	23-06-20	23-06-20	23-06-20	na
MBID02	to	20-09-22	31-01-22	20-09-22	24-08-21	20-09-22	na	na	na	20-09-22	20-09-22	24-08-21	20-09-22	na
MBID02	Min	25200	6.17	780	3420	780	na	na	na	4570	8010	0	773	na
MBID02	5th %ile	25200	6.282	783.4	3433	783.4	na	na	na	4604	8486	0.13	779.8	na
MBID02	20th %ile	25600	6.456	804.2	3490	804.2	na	na	na	4768	8872	0.26	837.6	na
MBID02	Median	26400	6.62	833	3715	833	na	na	na	5060	9130	0.3	855	na
MBID02	80th %ile	27400	6.712	869.2	3782	869.2	na	na	na	5392	9390	0.3	908	na
MBID02	95th %ile	28475	6.768	902.5	3894	902.5	na	na	na	5502	9913.5	0.335	944.6	na
MBID02	Max	28900	6.81	945	4050	945	na	na	na	5570	10500	0.4	948	na
MBID02	Tau	-0.356453	-0.257143	0.125003	0.0883991	0.125003	na	na	na	0.150327	0	0.265657	-0.0855282	na
MBID02	2-sided-p	0.0442355	0.198211	0.494746	0.701134	0.494746	na	na	na	0.40467	1	0.266874	0.648975	na
MBID02	Trend	Yes-Downward	No	No	No	No	na	na	na	No	No	No	No	na
MBID03	Total Number	28	22	28	21	28	0	0	0	28	28	21	28	0
MBID03	Number of outliers	6	0	3	3	3	0	0	0	3	6	9	3	0
MBID03	from	17-01-19	16-09-19	17-01-19	17-01-19	17-01-19	na	na	na	17-01-19	17-01-19	17-01-19	17-01-19	na
MBID03	to	29-10-25	11-01-23	29-10-25	24-08-21	29-10-25	na	na	na	29-10-25	29-10-25	24-08-21	29-10-25	na
MBID03	Min	6700	6.5	504	595	504	na	na	na	1310	1620	0.2	31	na
MBID03	5th %ile	6954.5	6.544	618.6	649	618.6	na	na	na	1344	1813.5	0.2	77.15	na
MBID03	20th %ile	8616	6.82	951	833	951	na	na	na	1620	2384	0.2	126.8	na
MBID03	Median	9385	6.985	1080	881	1080	na	na	na	1830	2640	0.3	156.5	na
MBID03	80th %ile	9986	7.152	1170	975	1170	na	na	na	1978	2876	0.3	170	na
MBID03	95th %ile	20670	7.359	1190	3510	1190	na	na	na	3202.5	7469.5	0.4	176.6	na
MBID03	Max	23000	7.37	1220	3760	1220	na	na	na	3770	8610	0.4	279	na
MBID03	Tau	-0.195767	0.197386	-0.218674	-0.0906924	-0.221639	na	na	na	-0.130496	-0.124503	0.243975	0.0965234	na
MBID03	2-sided-p	0.149239	0.21313	0.109121	0.586584	0.104704	na	na	na	0.342436	0.363362	0.183215	0.488302	na
MBID03	Trend	No	No	No	No	No	na	na	na	No	No	No	No	na
MBID04	Total Number	39	26	39	21	39	0	0	0	39	39	21	39	0
MBID04	Number of outliers	5	0	4	3	4	0	0	0	5	5	3	5	0
MBID04	from	17-11-18	18-12-19	17-11-18	17-11-18	17-11-18	na	na	na	17-11-18	17-11-18	17-11-18	17-11-18	na
MBID04	to	29-10-25	03-05-23	29-10-25	24-08-21	29-10-25	na	na	na	29-10-25	29-10-25	24-08-21	29-10-25	na
MBID04	Min	7680	6.38	408	680	408	na	na	na	1460	2240	0.2	2	na
MBID04	5th %ile	10600	6.5075	448.9	1010	448.9	na	na	na	1963	3338	0.2	7.8	na
MBID04	20th %ile	19920	6.67	485.6	3620	485.6	na	na	na	3314	7202	0.2	20.6	na
MBID04	Median	22800	6.795	508	3750	508	na	na	na	3740	8180	0.2	30	na
MBID04	80th %ile	23340	7.16	536.2	3980	536.2	na	na	na	4010	8614	0.2	59.6	na
MBID04	95th %ile	24010	7.2775	713.2	4070	713.2	na	na	na	4112	8768	0.3	175.4	na
MBID04	Max	24200	7.3	1260	4350	1260	na	na	na	4230	9300	0.3	206	na
MBID04	Tau	-0.342267	0.166926	-0.167909	-0.0192317	-0.167909	na	na	na	-0.210029	-0.280891	-0.356843	0.0163383	na
MBID04	2-sided-p	0.00252888	0.242382	0.13663	0.927664	0.13663	na	na	na	0.0623459	0.0122716	0.0629818	0.894031	na
MBID04	Trend	Yes-Downward	No	No	No	No	na	na	na	No	Yes-Downward	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBID05	Total Number	27	17	27	14	27	0	0	0	27	27	14	27	0
MBID05	Number of outliers	0	1	0	2	0	0	0	0	0	0	0	0	0
MBID05	from	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	na	na	na	23-06-20	23-06-20	23-06-20	23-06-20	na
MBID05	to	29-10-25	11-01-23	29-10-25	24-08-21	29-10-25	na	na	na	29-10-25	29-10-25	24-08-21	29-10-25	na
MBID05	Min	1740	6.73	752	102	752	na	na	na	416	90	0.3	12	na
MBID05	5th %ile	1766	6.994	811.2	102.65	811.2	na	na	na	428.4	91	0.365	17.2	na
MBID05	20th %ile	1912	7.25	876.4	104.8	876.4	na	na	na	446	96.6	0.4	21.2	na
MBID05	Median	2310	7.38	1090	115.5	1090	na	na	na	533	131	0.4	38	na
MBID05	80th %ile	2818	7.624	1348	135.6	1348	na	na	na	675.8	168	0.5	45.6	na
MBID05	95th %ile	3004	7.768	1494	175.65	1515	na	na	na	727.7	200.2	0.535	60.3	na
MBID05	Max	3480	7.8	1530	188	1540	na	na	na	761	227	0.6	68	na
MBID05	Tau	0.498575	-0.0588235	0.521367	0.188901	0.515669	na	na	na	0.410842	0.524965	0.319816	-0.276273	na
MBID05	2-sided-p	0.000286341	0.77308	0.000148177	0.379642	0.000175118	na	na	na	0.00286603	0.000135779	0.173442	0.0472821	na
MBID05	Trend	Yes-Upward	No	Yes-Upward	No	Yes-Upward	na	na	na	Yes-Upward	Yes-Upward	No	Yes-Downward	na
MBID06A	Total Number	3	2	3	0	3	0	0	0	3	3	0	3	0
MBID06A	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID06A	from	31-01-22	31-01-22	31-01-22	na	31-01-22	na	na	na	31-01-22	31-01-22	na	31-01-22	na
MBID06A	to	20-09-22	12-04-22	20-09-22	na	20-09-22	na	na	na	20-09-22	20-09-22	na	20-09-22	na
MBID06A	Min	1450	6.89	383	na	383	na	na	na	152	286	na	41	na
MBID06A	5th %ile	1587	6.8905	399.1	na	399.1	na	na	na	163.8	311.7	na	47.3	na
MBID06A	20th %ile	1998	6.892	447.4	na	447.4	na	na	na	199.2	388.8	na	66.2	na
MBID06A	Median	2820	6.895	544	na	544	na	na	na	270	543	na	104	na
MBID06A	80th %ile	3072	6.898	586	na	586	na	na	na	409.2	628.2	na	117.2	na
MBID06A	95th %ile	3198	6.8995	607	na	607	na	na	na	478.8	670.8	na	123.8	na
MBID06A	Max	3240	6.9	614	na	614	na	na	na	502	685	na	126	na
MBID06A	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID06A	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID06A	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID07	Total Number	39	27	39	21	39	0	0	0	39	39	21	39	0
MBID07	Number of outliers	0	3	0	0	0	0	0	0	0	0	5	0	0
MBID07	from	23-11-18	16-09-19	23-11-18	23-11-18	23-11-18	na	na	na	23-11-18	23-11-18	23-11-18	23-11-18	na
MBID07	to	27-10-25	02-05-23	27-10-25	24-08-21	27-10-25	na	na	na	27-10-25	27-10-25	24-08-21	27-10-25	na
MBID07	Min	2830	6.7	608	160	608	na	na	na	563	457	0.3	202	na
MBID07	5th %ile	2899	6.98	617.6	182	617.6	na	na	na	616.5	488.9	0.3	207.7	na
MBID07	20th %ile	3332	7.07	647.4	202	648.6	na	na	na	694.8	594.8	0.4	233.2	na
MBID07	Median	3860	7.21	668	242	670	na	na	na	788	782	0.4	287	na
MBID07	80th %ile	4232	7.374	705.4	296	705.4	na	na	na	851	849.2	0.4	310.8	na
MBID07	95th %ile	4487	7.667	720.2	315	720.2	na	na	na	891.6	962.2	0.5	329.6	na
MBID07	Max	4600	8.24	722	329	722	na	na	na	940	982	0.5	336	na
MBID07	Tau	0.540907	-0.251791	-0.331981	0.561905	-0.368818	na	na	na	0.401352	0.534508	-0.461352	0.501701	na
MBID07	2-sided-p	1.43051E-06	0.0695447	0.00314769	0.000410795	0.00103832	na	na	na	0.000342011	1.90735E-06	0.0126638	7.98702E-06	na
MBID07	Trend	Yes-Upward	No	Yes-Downward	Yes-Upward	Yes-Downward	na	na	na	Yes-Upward	Yes-Upward	Yes-Downward	Yes-Upward	na
MBID08	Total Number	25	20	25	13	25	0	0	0	25	25	13	25	0
MBID08	Number of outliers	0	1	0	1	0	0	0	0	3	2	1	2	0
MBID08	from	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	na	na	na	24-06-20	24-06-20	24-06-20	24-06-20	na
MBID08	to	24-10-23	02-05-23	24-10-23	24-08-21	24-10-23	na	na	na	24-10-23	24-10-23	24-08-21	24-10-23	na
MBID08	Min	6250	6.54	791	577	791	na	na	na	1020	1400	0.2	457	na
MBID08	5th %ile	6372	6.5495	794.4	652	794.4	na	na	na	1186	1400	0.2	488.8	na
MBID08	20th %ile	6524	6.754	806.6	738.6	806.6	na	na	na	1228	1444	0.2	526.6	na
MBID08	Median	6700	6.84	843	756	843	na	na	na	1260	1470	0.2	538	na
MBID08	80th %ile	6796	6.994	894	774.8	894	na	na	na	1310	1504	0.2	562	na
MBID08	95th %ile	6858	7.146	906	785.2	906	na	na	na	1366	1610	0.24	569.6	na
MBID08	Max	6920	7.45	908	787	908	na	na	na	1380	1650	0.3	571	na
MBID08	Tau	0.291461	-0.258576	-0.0168073	-0.0769231	-0.0168073	na	na	na	0.037358	0.123334	-0.261488	0.0134231	na
MBID08	2-sided-p	0.044413	0.119199	0.925469	0.760332	0.925469	na	na	na	0.814722	0.411295	0.349575	0.944081	na
MBID08	Trend	Yes-Upward	No	No	No	No	na	na	na	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBID09	Total Number	1	0	1	1	1	0	0	0	1	1	1	1	0
MBID09	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID09	from	23-11-20	na	23-11-20	23-11-20	23-11-20	na	na	na	23-11-20	23-11-20	23-11-20	23-11-20	na
MBID09	to	23-11-20	na	23-11-20	23-11-20	23-11-20	na	na	na	23-11-20	23-11-20	23-11-20	23-11-20	na
MBID09	Min	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	5th %ile	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	20th %ile	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	Median	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	80th %ile	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	95th %ile	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	Max	6350	na	828	691	828	na	na	na	1170	1410	0.2	531	na
MBID09	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID09	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID09	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID10	Total Number	39	26	39	21	39	0	0	0	39	39	21	39	0
MBID10	Number of outliers	7	4	0	0	0	0	0	0	5	8	2	0	0
MBID10	from	23-11-18	17-09-19	23-11-18	23-11-18	23-11-18	na	na	na	23-11-18	23-11-18	23-11-18	23-11-18	na
MBID10	to	29-10-25	03-05-23	29-10-25	25-08-21	29-10-25	na	na	na	29-10-25	29-10-25	25-08-21	29-10-25	na
MBID10	Min	13800	6.46	328	1940	328	na	na	na	2190	4430	0.2	15	na
MBID10	5th %ile	14440	6.54	352.3	1990	352.3	na	na	na	2530	4896	0.2	24.5	na
MBID10	20th %ile	15700	6.63	366.8	2080	366.8	na	na	na	2706	5556	0.3	44.6	na
MBID10	Median	16300	6.755	411	2160	411	na	na	na	2810	5830	0.3	77	na
MBID10	80th %ile	16840	6.87	628.2	2310	628.2	na	na	na	2898	6044	0.3	324.4	na
MBID10	95th %ile	20630	7.2075	792.4	2370	792.4	na	na	na	3306	7445	0.3	354.2	na
MBID10	Max	22200	7.709	849	2430	849	na	na	na	3650	7740	0.3	460	na
MBID10	Tau	-0.107932	0.329724	0.258108	-0.560445	0.258108	na	na	na	0.0381227	-0.224173	-0.179109	0.142278	na
MBID10	2-sided-p	0.344619	0.0204121	0.0215195	0.000495366	0.0215195	na	na	na	0.743687	0.0459198	0.368885	0.208143	na
MBID10	Trend	No	Yes-Upward	Yes-Upward	Yes-Downward	Yes-Upward	na	na	na	No	Yes-Downward	No	No	na
MBID15	Total Number	35	22	35	21	35	0	0	0	35	35	21	35	0
MBID15	Number of outliers	1	0	2	0	2	0	0	0	0	3	0	4	0
MBID15	from	10-12-18	16-09-19	10-12-18	10-12-18	10-12-18	na	na	na	10-12-18	10-12-18	10-12-18	10-12-18	na
MBID15	to	22-01-25	09-01-23	22-01-25	24-08-21	22-01-25	na	na	na	22-01-25	22-01-25	24-08-21	22-01-25	na
MBID15	Min	23200	6.4	322	3640	322	na	na	na	3850	8620	0.2	0.5	na
MBID15	5th %ile	23990	6.482	359.3	3730	359.3	na	na	na	3928	8682	0.2	0.5	na
MBID15	20th %ile	24700	6.542	371	3940	371	na	na	na	4078	9026	0.2	0.5	na
MBID15	Median	25200	6.77	389	4060	389	na	na	na	4280	9330	0.2	0.5	na
MBID15	80th %ile	25720	6.904	418.6	4280	418.6	na	na	na	4452	9404	0.3	2.1	na
MBID15	95th %ile	26120	7.009	444.3	4380	444.3	na	na	na	4689	9676	0.3	8	na
MBID15	Max	27000	7.09	456	4430	456	na	na	na	4850	10200	0.3	11	na
MBID15	Tau	-0.0529073	0.113292	0.108018	0.00484331	0.108018	na	na	na	0.059223	-0.0760145	0.0727393	0.246752	na
MBID15	2-sided-p	0.669428	0.480318	0.370679	1	0.370679	na	na	na	0.628903	0.531785	0.726095	0.0659502	na
MBID15	Trend	No	No	No	No	No	na	na	na	No	No	No	No	na
MBID17	Total Number	43	25	43	22	43	0	0	0	43	43	22	43	0
MBID17	Number of outliers	2	3	1	0	1	0	0	0	0	1	1	1	0
MBID17	from	16-01-19	16-09-19	16-01-19	16-01-19	16-01-19	na	na	na	16-01-19	16-01-19	16-01-19	16-01-19	na
MBID17	to	29-10-25	02-05-23	29-10-25	26-08-21	29-10-25	na	na	na	29-10-25	29-10-25	26-08-21	29-10-25	na
MBID17	Min	3440	6.96	468	439	468	na	na	na	709	782	0.8	0.5	na
MBID17	5th %ile	4389	7.038	806.2	449.7	806.2	na	na	na	949.4	1116	0.8	71.9	na
MBID17	20th %ile	6506	7.098	898.6	572.4	919.2	na	na	na	1280	1548	0.82	118	na
MBID17	Median	8010	7.26	1090	701.5	1100	na	na	na	1600	2170	0.9	147	na
MBID17	80th %ile	9042	7.372	1206	766	1206	na	na	na	1896	2506	1	184.2	na
MBID17	95th %ile	9968	7.72	1345	887.05	1345	na	na	na	2098	2735	1.095	207.3	na
MBID17	Max	14200	7.84	1480	983	1480	na	na	na	2540	4820	1.2	235	na
MBID17	Tau	-0.0598338	0.0971536	0.084492	0.78959	0.0811116	na	na	na	-0.0777349	-0.119668	0.20185	-0.129856	na
MBID17	2-sided-p	0.579101	0.512806	0.432315	3.57628E-07	0.450994	na	na	na	0.470103	0.262773	0.244019	0.22465	na
MBID17	Trend	No	No	No	Yes-Upward	No	na	na	na	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBID19A	Total Number	19	9	19	1	19	0	0	0	19	19	1	19	0
MBID19A	Number of outliers	1	1	0	0	0	0	0	0	0	0	0	0	0
MBID19A	from	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	na	na	na	25-08-21	25-08-21	25-08-21	25-08-21	na
MBID19A	to	29-10-25	11-01-23	29-10-25	25-08-21	29-10-25	na	na	na	29-10-25	29-10-25	25-08-21	29-10-25	na
MBID19A	Min	2210	6.25	258	638	258	na	na	na	199	584	0.1	23	na
MBID19A	5th %ile	3164	6.27	295.8	638	295.8	na	na	na	273.7	890	0.1	24.8	na
MBID19A	20th %ile	4002	6.396	321.6	638	321.6	na	na	na	336.2	1092	0.1	26.2	na
MBID19A	Median	4360	6.71	368	638	368	na	na	na	412	1310	0.1	31	na
MBID19A	80th %ile	5456	6.862	446.6	638	446.6	na	na	na	456	1600	0.1	40.2	na
MBID19A	95th %ile	5845	7.234	485.9	638	485.9	na	na	na	477	1693	0.1	43.5	na
MBID19A	Max	5890	7.43	494	638	494	na	na	na	495	1720	0.1	48	na
MBID19A	Tau	0.157895	0.555556	0.415205	na	0.415205	na	na	na	0.204678	0.0643275	na	0.240328	na
MBID19A	2-sided-p	0.36302	0.047604	0.0143257	na	0.0143257	na	na	na	0.234239	0.726447	na	0.169706	na
MBID19A	Trend	No	Yes-Upward	Yes-Upward	na	Yes-Upward	na	na	na	No	No	na	No	na
MBID21A	Total Number	14	2	14	0	14	0	0	0	14	14	0	14	0
MBID21A	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	2	0
MBID21A	from	22-09-21	22-09-21	22-09-21	na	22-09-21	na	na	na	22-09-21	22-09-21	na	22-09-21	na
MBID21A	to	29-10-25	15-12-21	29-10-25	na	29-10-25	na	na	na	29-10-25	29-10-25	na	29-10-25	na
MBID21A	Min	2190	7.35	377	na	416	na	na	na	420	451	na	65	na
MBID21A	5th %ile	2307	7.352	466.05	na	479.7	na	na	na	488.25	463.35	na	70.2	na
MBID21A	20th %ile	3224	7.358	627.4	na	627.4	na	na	na	698.8	688.2	na	106.2	na
MBID21A	Median	5810	7.37	871.5	na	871.5	na	na	na	1220	1260	na	123	na
MBID21A	80th %ile	6672	7.382	1006.6	na	1006.6	na	na	na	1378	1528	na	131.4	na
MBID21A	95th %ile	7266	7.388	1057	na	1057	na	na	na	1538.5	1823	na	164	na
MBID21A	Max	7760	7.39	1070	na	1070	na	na	na	1740	2200	na	203	na
MBID21A	Tau	-0.56044	na	-0.67033	na	-0.67033	na	na	na	-0.538462	-0.508295	na	-0.450549	na
MBID21A	2-sided-p	0.00619562	na	0.00102093	na	0.00102093	na	na	na	0.00859504	0.0136167	na	0.0285391	na
MBID21A	Trend	Yes-Downward	na	Yes-Downward	na	Yes-Downward	na	na	na	Yes-Downward	Yes-Downward	na	Yes-Downward	na
MBID25A	Total Number	9	6	9	1	9	0	0	0	9	9	1	9	0
MBID25A	Number of outliers	1	0	1	0	1	0	0	0	0	0	0	0	0
MBID25A	from	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	na	na	na	24-08-21	24-08-21	24-08-21	24-08-21	na
MBID25A	to	09-01-23	12-04-22	09-01-23	24-08-21	09-01-23	na	na	na	09-01-23	09-01-23	24-08-21	09-01-23	na
MBID25A	Min	6610	6.71	345	723	345	na	na	na	1310	1640	0.2	442	na
MBID25A	5th %ile	6794	6.7275	489.8	723	489.8	na	na	na	1310	1680	0.2	445.6	na
MBID25A	20th %ile	7166	6.78	710.6	723	710.6	na	na	na	1346	1752	0.2	453.4	na
MBID25A	Median	7510	6.865	791	723	791	na	na	na	1470	1830	0.2	493	na
MBID25A	80th %ile	11060	7.06	800.8	723	800.8	na	na	na	1842	3044	0.2	595.4	na
MBID25A	95th %ile	14480	7.1275	826.6	723	826.6	na	na	na	2112	3410	0.2	632	na
MBID25A	Max	16600	7.15	841	723	841	na	na	na	2220	3470	0.2	642	na
MBID25A	Tau	0.666667	-0.828079	0.444444	na	0.444444	na	na	na	0.800327	0.873326	na	0.333333	na
MBID25A	2-sided-p	0.0164887	0.0353782	0.117851	na	0.117851	na	na	na	0.00442648	0.00166166	na	0.251452	na
MBID25A	Trend	Yes-Upward	Yes-Downward	No	na	No	na	na	na	Yes-Upward	Yes-Upward	na	No	na
MBID27	Total Number	17	14	17	9	17	0	0	0	17	17	9	17	0
MBID27	Number of outliers	0	1	0	1	0	0	0	0	3	1	1	1	0
MBID27	from	16-11-20	25-11-20	16-11-20	16-11-20	16-11-20	na	na	na	16-11-20	16-11-20	16-11-20	16-11-20	na
MBID27	to	10-01-23	13-04-22	10-01-23	23-08-21	10-01-23	na	na	na	10-01-23	10-01-23	23-08-21	10-01-23	na
MBID27	Min	32800	6.2	368	7910	368	na	na	na	4340	11400	0	2290	na
MBID27	5th %ile	32880	6.2195	369.6	8454	369.6	na	na	na	4932	11800	0	2322	na
MBID27	20th %ile	34160	6.294	379.6	9492	379.6	na	na	na	5628	12300	0	2510	na
MBID27	Median	35900	6.405	389	9950	389	na	na	na	5770	12700	0	2640	na
MBID27	80th %ile	37380	6.47	403.8	10400	403.8	na	na	na	6142	13080	0.14	2754	na
MBID27	95th %ile	38300	6.7815	415.4	10520	415.4	na	na	na	6464	13700	0.26	2970	na
MBID27	Max	38700	6.97	417	10600	417	na	na	na	7320	14900	0.3	3010	na
MBID27	Tau	-0.0147059	-0.438313	0.343322	0.366233	0.343322	na	na	na	0.184503	0.0150414	-0.366667	0.273065	na
MBID27	2-sided-p	0.967142	0.0361703	0.062737	0.208413	0.062737	na	na	na	0.322437	0.966974	0.246103	0.137757	na
MBID27	Trend	No	Yes-Downward	No	No	No	na	na	na	No	No	No	No	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
MBID26	Total Number	1	6	1	1	1	0	0	0	1	1	1	1	0
MBID26	Number of outliers	0	1	0	0	0	0	0	0	0	0	0	0	0
MBID26	from	21-06-21	26-01-21	21-06-21	21-06-21	21-06-21	na	na	na	21-06-21	21-06-21	21-06-21	21-06-21	na
MBID26	to	21-06-21	12-04-22	21-06-21	21-06-21	21-06-21	na	na	na	21-06-21	21-06-21	21-06-21	21-06-21	na
MBID26	Min	9360	6.8	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	5th %ile	9360	6.8125	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	20th %ile	9360	6.85	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	Median	9360	6.93	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	80th %ile	9360	7.01	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	95th %ile	9360	7.4525	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	Max	9360	7.6	862	964	862	na	na	na	1700	2420	0.2	738	na
MBID26	Tau	na	-0.466667	na	na	na	na	na	na	na	na	na	na	na
MBID26	2-sided-p	na	0.259656	na	na	na	na	na	na	na	na	na	na	na
MBID26	Trend	na	No	na	na	na	na	na	na	na	na	na	na	na
OBS5	Total Number	60	20	22	0	22	0	0	0	37	22	14	37	0
OBS5	Number of outliers	0	2	2	0	2	0	0	0	0	0	2	0	0
OBS5	from	31-01-17	21-04-21	19-07-21	na	19-07-21	na	na	na	31-01-17	19-07-21	31-01-17	31-01-17	na
OBS5	to	10-12-25	10-12-25	10-12-25	na	10-12-25	na	na	na	10-12-25	10-12-25	25-09-18	10-12-25	na
OBS5	Min	25100	6.54	529	na	529	na	na	na	4240	8440	0.3	1160	na
OBS5	5th %ile	26195	6.559	704.05	na	704.05	na	na	na	4584	8821.5	0.365	1188	na
OBS5	20th %ile	27980	6.682	790.6	na	790.6	na	na	na	4814	9092	0.5	1364	na
OBS5	Median	29400	6.795	816.5	na	816.5	na	na	na	5370	9330	0.6	1530	na
OBS5	80th %ile	31600	6.992	869.4	na	869.4	na	na	na	5646	9832	0.64	1732	na
OBS5	95th %ile	32410	7.388	887.45	na	887.45	na	na	na	5950	10095	0.805	1862	na
OBS5	Max	33300	7.92	1040	na	1040	na	na	na	6550	10200	1	1870	na
OBS5	Tau	-0.506983	0.0105822	-0.251628	na	-0.251628	na	na	na	-0.564335	-0.399133	-0.0254246	-0.604241	na
OBS5	2-sided-p	1.34804E-08	0.97409	0.107852	na	0.107852	na	na	na	9.9292E-07	0.0102573	0.952957	1.76955E-07	na
OBS5	Trend	Yes-Downward	No	No	na	No	na	na	na	Yes-Downward	Yes-Downward	No	Yes-Downward	na
OBS9	Total Number	29	15	17	0	17	0	0	0	28	17	10	28	0
OBS9	Number of outliers	0	3	2	0	1	0	0	0	1	0	3	0	0
OBS9	from	31-01-17	20-07-21	20-07-21	na	20-07-21	na	na	na	31-01-17	20-07-21	31-01-17	31-01-17	na
OBS9	to	09-12-25	09-12-25	09-12-25	na	09-12-25	na	na	na	09-12-25	09-12-25	14-12-17	09-12-25	na
OBS9	Min	5160	6.83	570	na	570	na	na	na	940	1430	0.2	242	na
OBS9	5th %ile	5244	6.872	599.6	na	599.6	na	na	na	992.3	1478	0.2	251.35	na
OBS9	20th %ile	6122	6.908	625.6	na	628.8	na	na	na	1142	1530	0.28	293.4	na
OBS9	Median	6720	7.01	645	na	646	na	na	na	1220	1710	0.3	375	na
OBS9	80th %ile	7344	7.34	664.8	na	666.8	na	na	na	1366	1798	0.3	415.8	na
OBS9	95th %ile	7746	7.996	695.8	na	695.8	na	na	na	1430	1906	0.355	427.3	na
OBS9	Max	7970	8.08	699	na	699	na	na	na	1440	1930	0.4	442	na
OBS9	Tau	0.106042	0.173931	-0.110702	na	0.0588235	na	na	na	0.10161	-0.405907	-0.528419	0.381964	na
OBS9	2-sided-p	0.43071	0.398064	0.563813	na	0.77308	na	na	na	0.463969	0.0259946	0.0730381	0.00470912	na
OBS9	Trend	No	No	No	na	No	na	na	na	No	Yes-Downward	No	Yes-Upward	na
OBS10	Total Number	39	24	23	0	23	0	0	0	34	23	10	34	0
OBS10	Number of outliers	2	3	0	0	0	0	0	0	1	1	0	1	0
OBS10	from	31-01-17	21-04-21	20-07-21	na	20-07-21	na	na	na	31-01-17	20-07-21	31-01-17	31-01-17	na
OBS10	to	09-12-25	09-12-25	09-12-25	na	09-12-25	na	na	na	09-12-25	09-12-25	14-12-17	09-12-25	na
OBS10	Min	724	7.09	291	na	304	na	na	na	138	41	0.4	14	na
OBS10	5th %ile	754.7	7.301	293.2	na	306.6	na	na	na	142.95	42.3	0.445	15.65	na
OBS10	20th %ile	876.2	7.516	306.4	na	321.6	na	na	na	172.4	52.8	0.5	18	na
OBS10	Median	1010	7.675	364	na	376	na	na	na	202.5	85	0.5	22.5	na
OBS10	80th %ile	1374	7.872	385.6	na	397.6	na	na	na	296.4	104.8	0.6	39.4	na
OBS10	95th %ile	1659	8.256	397.8	na	403.5	na	na	na	336.4	164.6	0.6	50.75	na
OBS10	Max	2460	8.36	398	na	428	na	na	na	450	251	0.6	82	na
OBS10	Tau	-0.647262	0.127042	-0.569739	na	-0.630957	na	na	na	-0.716073	-0.432908	0.258199	-0.638457	na
OBS10	2-sided-p	7.80567E-09	0.398888	0.000172373	na	2.96986E-05	na	na	na	3.00946E-09	0.00457548	0.406787	1.58794E-07	na
OBS10	Trend	Yes-Downward	No	Yes-Downward	na	Yes-Downward	na	na	na	Yes-Downward	Yes-Downward	No	Yes-Downward	na

Bores	statistic	EC (Lab)	pH field	HCO3 Alk (as CaCO3)	Total Hardness (as CaCO3)	Total Alk (as CaCO3)	Ca	Mg	K	Na	Cl	F	Sulfate (SO4)	NO3 (as N)
OBS15	Total Number	2	2	2	0	2	0	0	0	2	2	0	2	0
OBS15	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
OBS15	from	09-09-25	09-09-25	09-09-25	na	09-09-25	na	na	na	09-09-25	09-09-25	na	09-09-25	na
OBS15	to	09-12-25	09-12-25	09-12-25	na	09-12-25	na	na	na	09-12-25	09-12-25	na	09-12-25	na
OBS15	Min	3420	6.86	730	na	804	na	na	na	596	593	na	116	na
OBS15	5th %ile	3442	6.865	732.55	na	804.4	na	na	na	598.7	600.45	na	117.15	na
OBS15	20th %ile	3508	6.88	740.2	na	805.6	na	na	na	606.8	622.8	na	120.6	na
OBS15	Median	3640	6.91	755.5	na	808	na	na	na	623	667.5	na	127.5	na
OBS15	80th %ile	3772	6.94	770.8	na	810.4	na	na	na	639.2	712.2	na	134.4	na
OBS15	95th %ile	3838	6.955	778.45	na	811.6	na	na	na	647.3	734.55	na	137.85	na
OBS15	Max	3860	6.96	781	na	812	na	na	na	650	742	na	139	na
OBS15	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS15	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS15	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	Total Number	2	2	2	0	2	0	0	0	2	2	0	2	0
OBS18	Number of outliers	0	0	0	0	0	0	0	0	0	0	0	0	0
OBS18	from	10-09-25	10-09-25	10-09-25	na	10-09-25	na	na	na	10-09-25	10-09-25	na	10-09-25	na
OBS18	to	08-12-25	08-12-25	08-12-25	na	08-12-25	na	na	na	08-12-25	08-12-25	na	08-12-25	na
OBS18	Min	1630	6.58	543	na	576	na	na	na	362	200	na	0.5	na
OBS18	5th %ile	1631.5	6.608	543.25	na	577.4	na	na	na	362.1	201.35	na	0.525	na
OBS18	20th %ile	1636	6.692	544	na	581.6	na	na	na	362.4	205.4	na	0.6	na
OBS18	Median	1645	6.86	545.5	na	590	na	na	na	363	213.5	na	0.75	na
OBS18	80th %ile	1654	7.028	547	na	598.4	na	na	na	363.6	221.6	na	0.9	na
OBS18	95th %ile	1658.5	7.112	547.75	na	602.6	na	na	na	363.9	225.65	na	0.975	na
OBS18	Max	1660	7.14	548	na	604	na	na	na	364	227	na	1	na
OBS18	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na

*na = not enough data

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
593	Number	46	46	27	28	28	28	28	46	28	28	28	46	28	46	27	8	28
593	of	1	0	1	0	1	1	4	0	0	5	0	7	3	1	1	0	2
593	from	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	26-11-24	01-12-18
593	to	30-10-25	30-10-25	02-09-25	28-10-25	28-10-25	28-10-25	28-10-25	30-10-25	28-10-25	28-10-25	28-10-25	30-10-25	28-10-25	30-10-25	02-09-25	28-10-25	28-10-25
593	Min	0.005	5.00E-04	0.18	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.11	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	5.00E-04	0.0025
593	5th %ile	0.005	5.00E-04	0.449	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.2466	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	5.00E-04	0.007
593	20th %ile	0.005	5.00E-04	0.528	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.2	5.00E-04	0.2896	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	5.00E-04	0.0138
593	Median	0.005	0.0015	0.63	5.00E-05	5.00E-04	5.00E-04	5.00E-04	2.345	5.00E-04	0.333	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	5.00E-04	0.045
593	80th %ile	0.005	0.003	0.696	5.00E-05	5.00E-04	5.00E-04	5.00E-04	3.7	5.00E-04	0.347	5.00E-05	0.003	0.0036	0.005	5.00E-04	5.00E-04	0.0808
593	95th %ile	0.005	0.003	0.799	5.00E-05	5.00E-04	5.00E-04	0.001	4.2025	5.00E-04	0.37125	5.00E-05	0.00975	0.00895	0.005	5.00E-04	5.00E-04	0.3059
593	Max	0.01	0.004	0.83	5.00E-05	0.003	0.005	0.001	4.64	5.00E-04	0.978	5.00E-05	0.028	0.024	0.005	0.008	5.00E-04	0.759
593	Tau	0.0602375	-0.710007	0.150526	1	-0.0296957	0.168276	-0.188982	-0.552973	1	-0.209829	1	0.259364	0.222441	-0.199247	0.0418716	1	-0.238728
593	2-sided-p	0.651308	5.29573E-10	0.286189	1	0.901476	0.321991	0.250584	7.38226E-08	1	0.123095	1	0.0251048	0.12342	0.113693	0.847286	1	0.0785746
593	Trend	No	Yes-Downward	No	No	No	No	No	Yes-Downward	No	No	No	Yes-Upward	No	No	No	No	No
594	Number	47	47	28	29	29	29	29	47	29	29	29	47	29	47	27	7	29
594	of	5	0	0	0	3	5	7	0	5	0	1	3	6	2	2	1	6
594	from	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-02-25	01-12-18
594	to	30-10-25	30-10-25	02-09-25	28-10-25	28-10-25	28-10-25	28-10-25	30-10-25	28-10-25	28-10-25	28-10-25	30-10-25	28-10-25	30-10-25	02-09-25	28-10-25	28-10-25
594	Min	0.005	5.00E-04	0.22	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	1.17	5.00E-05	0.0025	0.004	0.002	5.00E-04	5.00E-04	0.0025
594	5th %ile	0.005	0.0013	0.2635	5.00E-05	5.00E-04	0.0022	5.00E-04	0.025	5.00E-04	1.24	5.00E-05	0.005	0.006	0.005	5.00E-04	5.00E-04	0.0114
594	20th %ile	0.005	0.0021	0.284	5.00E-05	5.00E-04	0.004	5.00E-04	0.488	5.00E-04	1.356	5.00E-05	0.006	0.008	0.005	5.00E-04	5.00E-04	0.15
594	Median	0.005	0.004	0.33	5.00E-05	5.00E-04	0.005	0.0025	1.22	5.00E-04	1.56	5.00E-05	0.007	0.01	0.005	5.00E-04	5.00E-04	0.255
594	80th %ile	0.005	0.005	0.38	2.00E-04	5.00E-04	0.006	0.067	1.5	5.00E-04	2.488	5.00E-05	0.01	0.0282	0.005	5.00E-04	5.00E-04	0.5528
594	95th %ile	0.0205	0.005	0.433	0.00025	0.0028	0.0082	0.2628	1.877	0.0046	3.038	5.00E-05	0.0151	0.0502	0.005	0.0019	0.0019	1.772
594	Max	0.04	0.005	0.46	4.00E-04	0.006	0.009	0.373	2.08	0.007	3.14	0.00025	0.03	0.217	0.025	0.005	0.0025	1.91
594	Tau	-0.152437	-0.113997	0.121818	0.0510628	0.12683	-0.362829	0.0368248	-0.209502	-0.400454	-0.836644	0.262613	0.280225	0.19248	-0.168983	0.112112	-0.356348	0.0961776
594	2-sided-p	0.208888	0.308949	0.382733	0.742918	0.431937	0.0107156	0.802873	0.0397855	0.00908367	2.51727E-10	0.106623	0.00899518	0.157164	0.170735	0.517385	0.453255	0.475888
594	Trend	No	No	No	No	No	Yes-Downward	No	Yes-Downward	Yes-Downward	Yes-Downward	No	Yes-Upward	No	No	No	No	No
MBID23	Number	33	35	18	18	17	18	18	34	18	19	19	35	18	35	18	8	19
MBID23	of	2	3	4	0	2	0	4	5	1	0	0	2	1	1	0	0	2
MBID23	from	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	27-08-20	28-11-24	27-08-20
MBID23	to	31-10-25	31-10-25	01-09-25	01-09-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	01-09-25	31-10-25	31-10-25
MBID23	Min	0.005	5.00E-04	0.12	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.001	5.00E-05	5.00E-04	0.001	0.002	5.00E-04	0.003	0.0025
MBID23	5th %ile	0.005	5.00E-04	0.188	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0055	5.00E-05	5.00E-04	0.00185	0.005	5.00E-04	0.003	0.0025
MBID23	20th %ile	0.005	5.00E-04	0.21	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.057	5.00E-05	5.00E-04	0.0034	0.005	5.00E-04	0.0034	0.004
MBID23	Median	0.005	0.002	0.26	5.00E-05	5.00E-04	0.002	5.00E-04	0.11	5.00E-04	0.29	5.00E-05	5.00E-04	0.0055	0.005	5.00E-04	0.005	0.006
MBID23	80th %ile	0.005	0.0042	0.446	5.00E-05	5.00E-04	0.016	0.0016	0.634	5.00E-04	1.788	5.00E-05	0.003	0.0124	0.005	5.00E-04	0.0158	0.0326
MBID23	95th %ile	0.015	0.011	0.6745	5.00E-05	0.001	0.0239	0.003025	2.523	0.000575	2.689	5.00E-05	0.0063	0.0169	0.005	5.00E-04	0.01765	0.0608
MBID23	Max	0.08	0.018	0.7	5.00E-05	0.001	0.029	0.006	4.45	0.001	2.86	5.00E-05	0.009	0.022	0.005	5.00E-04	0.018	0.068
MBID23	Tau	-0.0932098	-0.59389	0.0265817	1	-0.0626224	-0.536796	0.131533	-0.0963914	0.254902	-0.590643	1	-0.424572	-0.0401448	-0.239046	1	-0.2965	0.396972
MBID23	2-sided-p	0.546399	2.70723E-06	0.90916	1	0.823063	0.00303211	0.523824	0.449726	0.247482	0.000467783	1	0.00112122	0.848965	0.102313	1	0.37908	0.0248142
MBID23	Trend	No	Yes-Downward	No	No	No	Yes-Downward	No	No	No	Yes-Downward	No	Yes-Downward	No	No	No	No	Yes-Upward
MBID28	Number	38	38	18	19	19	19	19	38	19	19	19	38	19	38	17	6	19
MBID28	of	4	7	2	3	2	0	2	3	0	0	0	7	1	1	1	0	0
MBID28	from	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	29-07-20	31-01-25	29-07-20
MBID28	to	31-10-25	31-10-25	01-09-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	01-09-25	31-10-25	31-10-25
MBID28	Min	0.005	5.00E-04	0.1	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.108	5.00E-05	5.00E-04	0.002	0.002	5.00E-04	5.00E-04	0.011
MBID28	5th %ile	0.005	5.00E-04	0.1	5.00E-05	5.00E-04	0.00095	5.00E-04	0.025	5.00E-04	0.1791	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	0.000625	0.0137
MBID28	20th %ile	0.005	5.00E-04	0.11	5.00E-05	5.00E-04	0.0032	5.00E-04	0.025	5.00E-04	0.2352	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	0.001	0.0172
MBID28	Median	0.005	5.00E-04	0.125	5.00E-05	5.00E-04	0.006	0.002	0.025	5.00E-04	1.06	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	0.001	0.153
MBID28	80th %ile	0.005	5.00E-04	0.156	1.00E-04	5.00E-04	0.011	0.0062	0.126	5.00E-04	1.83	5.00E-05	0.001	0.006	0.005	5.00E-04	0.004	0.3214
MBID28	95th %ile	0.01	0.00215	0.3015	2.00E-04	0.0024	0.0132	0.0123	0.459	5.00E-04	2.556	5.00E-05	0.002	0.0093	0.005	6.00E-04	0.004	0.4488
MBID28	Max	0.48	0.003	0.31	2.00E-04	0.006	0.015	0.015	0.6	5.00E-04	2.7	5.00E-05	0.004	0.012	0.005	0.001	0.004	0.456
MBID28	Tau	-0.00319901	-0.570764	0.240002	-0.0175439	0.323153	-0.552754	0.109482	-0.408511	1	-0.614035	1	-0.0381407	0.0447643	-0.229416	-0.0428746	0.0778499	-0.426901
MBID28	2-sided-p	1	1.70024E-05	0.191087	0.963544	0.111699	0.00135526	0.558973	0.00111271	1	0.000274231	1	0.781806	0.828189	0.100702	0.918707	1	0.0117702
MBID28	Trend	No	Yes-Downward	No	No	No	Yes-Downward	No	Yes-Downward	No	Yes-Downward	No	No	No	No	No	No	Yes-Downward

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS08	Total Number	7	7	6	7	7	7	7	7	7	7	7	7	7	7	6	7	7
MBIS08	of	1	0	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0
MBIS08	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24
MBIS08	to	30-10-25	30-10-25	29-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	29-08-25	30-10-25	30-10-25
MBIS08	Min	0.005	5.00E-04	0.26	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.006	5.00E-05	0.001	5.00E-04	0.004	5.00E-04	5.00E-04	0.006
MBIS08	5th %ile	0.005	5.00E-04	0.27	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.0475	5.00E-04	0.0123	5.00E-05	0.0025	0.00065	0.0043	5.00E-04	5.00E-04	0.006
MBIS08	20th %ile	0.005	5.00E-04	0.3	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.104	5.00E-04	0.0306	5.00E-05	0.0068	0.0014	0.005	5.00E-04	5.00E-04	0.006
MBIS08	Median	0.005	0.003	0.3	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.29	5.00E-04	0.053	5.00E-05	0.024	0.003	0.005	5.00E-04	5.00E-04	0.008
MBIS08	80th %ile	0.005	0.0092	0.3	5.00E-05	5.00E-04	5.00E-04	0.0018	1.964	5.00E-04	0.0678	5.00E-05	0.0362	0.0068	0.005	5.00E-04	9.00E-04	0.0124
MBIS08	95th %ile	0.0155	0.0114	0.5025	5.00E-05	0.00085	5.00E-04	0.002	2.19	5.00E-04	0.0764	5.00E-05	0.0391	0.0077	0.005	5.00E-04	0.001	0.0172
MBIS08	Max	0.02	0.012	0.57	5.00E-05	0.001	5.00E-04	0.002	2.25	5.00E-04	0.08	5.00E-05	0.04	0.008	0.005	5.00E-04	0.001	0.019
MBIS08	Tau	0.356348	0.411476	-0.258199	1	0	1	-0.233285	0.333333	1	0.619048	1	0.142857	0.19518	-0.534522	1	-0.414039	0
MBIS08	2-sided-p	0.453255	0.272341	0.651998	1	1	1	0.610385	0.367521	1	0.0715054	1	0.763891	0.648582	0.211299	1	0.332922	1
MBIS08	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
MBIS09	Number	7	7	6	7	7	7	7	7	7	7	7	7	7	7	6	7	7
MBIS09	of	1	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0
MBIS09	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24
MBIS09	to	30-10-25	30-10-25	29-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	29-08-25	30-10-25	30-10-25
MBIS09	Min	0.005	5.00E-04	0.49	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.006	5.00E-05	0.001	5.00E-04	0.002	5.00E-04	5.00E-04	0.006
MBIS09	5th %ile	0.005	5.00E-04	0.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.0955	5.00E-04	0.0084	5.00E-05	0.0013	5.00E-04	0.0029	5.00E-04	5.00E-04	0.0063
MBIS09	20th %ile	0.005	5.00E-04	0.53	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.308	5.00E-04	0.0142	5.00E-05	0.002	6.00E-04	0.005	5.00E-04	5.00E-04	0.0086
MBIS09	Median	0.005	5.00E-04	0.54	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.59	5.00E-04	0.024	5.00E-05	0.003	0.001	0.005	5.00E-04	5.00E-04	0.015
MBIS09	80th %ile	0.005	5.00E-04	0.56	5.00E-05	5.00E-04	5.00E-04	9.00E-04	0.972	5.00E-04	0.0532	5.00E-05	0.003	0.0028	0.005	5.00E-04	0.0025	0.0176
MBIS09	95th %ile	0.0785	5.00E-04	0.575	5.00E-05	5.00E-04	5.00E-04	0.0017	1.049	0.00155	0.0633	5.00E-05	0.0044	0.0037	0.005	5.00E-04	0.003	0.0215
MBIS09	Max	0.11	5.00E-04	0.58	5.00E-05	5.00E-04	5.00E-04	0.002	1.07	0.002	0.066	5.00E-05	0.005	0.004	0.005	5.00E-04	0.003	0.023
MBIS09	Tau	0.178174	1	-0.276026	1	1	1	-0.197386	-0.142857	0.178174	0.904762	1	0.264628	-0.0500626	-0.534522	1	0.690066	-0.19518
MBIS09	2-sided-p	0.802587	1	0.56609	1	1	1	0.703771	0.763891	0.802587	0.00686383	1	0.525358	1	0.211299	1	0.0813611	0.648582
MBIS09	Trend	No	No	No	No	No	No	No	No	No	Yes-Upward	No	No	No	No	No	No	No
MBIS10	Number	7	7	6	7	7	7	7	7	7	7	7	7	7	7	6	7	7
MBIS10	of	1	1	0	0	1	0	1	1	1	0	0	0	1	1	0	1	0
MBIS10	from	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24	13-12-24
MBIS10	to	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25
MBIS10	Min	0.005	5.00E-04	0.31	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.186	5.00E-05	5.00E-04	0.001	0.002	5.00E-04	0.004	0.0025
MBIS10	5th %ile	0.005	5.00E-04	0.3125	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.1881	5.00E-05	0.00065	0.0016	0.0029	5.00E-04	0.004	0.00355
MBIS10	20th %ile	0.005	5.00E-04	0.32	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.194	5.00E-05	0.001	0.0036	0.005	5.00E-04	0.004	0.0064
MBIS10	Median	0.005	5.00E-04	0.355	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.226	5.00E-05	0.002	0.006	0.005	5.00E-04	0.004	0.04
MBIS10	80th %ile	0.017	0.0025	0.37	5.00E-05	9.00E-04	0.0018	0.002	0.136	5.00E-04	0.2732	5.00E-05	0.002	0.0078	0.005	5.00E-04	0.004	0.081
MBIS10	95th %ile	1.042	0.0044	0.3925	5.00E-05	0.0038	0.0027	0.0125	2.282	0.00295	0.294	5.00E-05	0.0027	0.0178	0.005	5.00E-04	0.0054	0.1401
MBIS10	Max	1.48	0.005	0.4	5.00E-05	0.005	0.003	0.017	3.2	0.004	0.3	5.00E-05	0.003	0.022	0.005	5.00E-04	0.006	0.162
MBIS10	Tau	0.460566	-0.197386	0.333333	1	0.197386	-0.394405	-0.349927	0.617213	0.178174	0.333333	1	-0.264628	-0.68313	-0.534522	1	-0.534522	-0.428571
MBIS10	2-sided-p	0.253993	0.703771	0.45237	1	0.703771	0.31506	0.395766	0.0845387	0.802587	0.367521	1	0.525358	0.0482861	0.211299	1	0.211299	0.229556
MBIS10	Trend	No	No	No	No	No	No	No	No	No	No	No	No	Yes-Downward	No	No	No	No
MBIS16	Number	6	6	5	6	6	6	6	6	6	6	6	6	6	6	5	6	6
MBIS16	of	0	1	2	0	0	1	1	0	0	1	0	1	0	1	0	0	0
MBIS16	from	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24	14-12-24
MBIS16	to	02-11-25	02-11-25	27-08-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	27-08-25	02-11-25	02-11-25
MBIS16	Min	0.005	5.00E-04	0.47	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.1	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	5.00E-04	0.0025
MBIS16	5th %ile	0.005	5.00E-04	0.484	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.15775	5.00E-05	5.00E-04	0.002125	0.00275	5.00E-04	5.00E-04	0.004375
MBIS16	20th %ile	0.005	5.00E-04	0.526	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.331	5.00E-05	5.00E-04	0.007	0.005	5.00E-04	5.00E-04	0.01
MBIS16	Median	0.005	5.00E-04	0.57	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.29	5.00E-04	0.346	5.00E-05	0.0065	0.009	0.005	5.00E-04	5.00E-04	0.0615
MBIS16	80th %ile	0.005	5.00E-04	0.63	5.00E-05	5.00E-04	5.00E-04	5.00E-04	3.24	5.00E-04	0.363	5.00E-05	0.015	0.024	0.005	5.00E-04	5.00E-04	0.176
MBIS16	95th %ile	0.005	0.001625	0.78	5.00E-05	5.00E-04	0.000875	0.002375	3.2775	5.00E-04	0.3915	5.00E-05	0.033	0.03525	0.005	5.00E-04	5.00E-04	0.176
MBIS16	Max	0.005	0.002	0.83	5.00E-05	5.00E-04	0.001	0.003	3.29	5.00E-04	0.401	5.00E-05	0.039	0.039	0.005	5.00E-04	5.00E-04	0.176
MBIS16	Tau	1	-0.11547	0.2	1	1	-0.34641	-0.57735	0.690066	1	-0.333333	1	-0.690066	-0.690066	-0.57735	1	1	-0.552052
MBIS16	2-sided-p	1	1	0.806496	1	1	0.558185	0.241567	0.0851679	1	0.45237	1	0.0851679	0.0851679	0.241567	1	1	0.1806
MBIS16	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MB08b	Total Number	5	5	4	5	5	5	5	5	5	5	5	5	5	5	4	5	5
MB08b	of	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
MB08b	from	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24
MB08b	to	03-11-25	03-11-25	05-08-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	05-08-25	03-11-25	03-11-25
MB08b	Min	0.005	5.00E-04	0.23	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.008	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	5.00E-04	0.0025
MB08b	5th %ile	0.005	5.00E-04	0.239	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0082	5.00E-05	6.00E-04	6.00E-04	0.0026	5.00E-04	5.00E-04	0.003
MB08b	20th %ile	0.005	5.00E-04	0.266	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0088	5.00E-05	9.00E-04	9.00E-04	0.0044	5.00E-04	5.00E-04	0.0045
MB08b	Median	0.005	5.00E-04	0.295	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.011	5.00E-05	0.001	0.003	0.005	5.00E-04	5.00E-04	0.019
MB08b	80th %ile	0.005	5.00E-04	0.3	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.122	5.00E-04	0.0444	5.00E-05	0.002	0.0052	0.005	5.00E-04	5.00E-04	0.0348
MB08b	95th %ile	0.005	5.00E-04	0.3	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.128	5.00E-04	0.1176	5.00E-05	0.002	0.0058	0.005	5.00E-04	5.00E-04	0.0402
MB08b	Max	0.005	5.00E-04	0.3	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.13	5.00E-04	0.142	5.00E-05	0.002	0.006	0.005	5.00E-04	5.00E-04	0.042
MB08b	Tau	1	1	-0.547723	1	1	1	1	0.358569	1	0	1	-0.447214	0.2	-0.632456	1	1	0.4
MB08b	2-sided-p	1	1	0.470101	1	1	1	1	0.5791	1	1	1	0.433422	0.806496	0.288844	1	1	0.462433
MB08b	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
MB07	Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MB07	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MB07	from	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24
MB07	to	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24
MB07	Min	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	5th %ile	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	20th %ile	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	Median	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	80th %ile	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	95th %ile	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	Max	0.005	5.00E-04	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	0.004	0.001	0.005	5.00E-04	5.00E-04	0.0025
MB07	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MB07	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MB07	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MB06	Number	5	5	4	5	5	5	5	5	5	5	5	5	5	5	4	5	5
MB06	of	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	1
MB06	from	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24	29-11-24
MB06	to	03-11-25	03-11-25	01-09-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	01-09-25	03-11-25	03-11-25
MB06	Min	0.005	5.00E-04	0.88	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.07	5.00E-04	0.166	5.00E-05	0.002	0.001	0.004	5.00E-04	0.021	0.0025
MB06	5th %ile	0.005	5.00E-04	0.8815	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.076	5.00E-04	0.178	5.00E-05	0.002	0.001	0.0042	5.00E-04	0.0212	0.0025
MB06	20th %ile	0.005	5.00E-04	0.886	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.094	5.00E-04	0.214	5.00E-05	0.002	0.001	0.0048	5.00E-04	0.0218	0.0025
MB06	Median	0.005	5.00E-04	0.93	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.16	5.00E-04	0.232	5.00E-05	0.002	0.001	0.005	5.00E-04	0.024	0.005
MB06	80th %ile	0.005	5.00E-04	0.974	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.354	5.00E-04	0.2542	5.00E-05	0.0022	0.0042	0.005	5.00E-04	0.0256	0.0068
MB06	95th %ile	0.005	5.00E-04	0.9785	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.816	5.00E-04	0.2578	5.00E-05	0.0028	0.0048	0.005	5.00E-04	0.0274	0.0122
MB06	Max	0.005	5.00E-04	0.98	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.97	5.00E-04	0.259	5.00E-05	0.003	0.005	0.005	5.00E-04	0.028	0.014
MB06	Tau	1	1	1	1	1	1	1	0.8	1	0.8	1	-0.632456	-0.83666	-0.632456	1	0.6	0
MB06	2-sided-p	1	1	0.0894294	1	1	1	1	0.0864108	1	0.0864108	1	0.288844	0.0960923	0.288844	1	0.220671	1
MB06	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
1	Number	7	7	6	7	7	7	7	7	7	7	7	7	7	7	6	7	7
1	of	0	0	0	0	0	1	0	0	0	2	0	1	0	1	0	0	1
1	from	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24	27-11-24
1	to	30-10-25	30-10-25	27-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	27-08-25	30-10-25	30-10-25
1	Min	0.005	0.002	0.33	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.259	5.00E-05	0.002	5.00E-04	0.002	5.00E-04	5.00E-04	0.007
1	5th %ile	0.005	0.002	0.3475	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.3235	5.00E-04	0.3019	5.00E-05	0.002	0.00095	0.0029	5.00E-04	5.00E-04	0.0079
1	20th %ile	0.005	0.002	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.126	5.00E-04	0.4064	5.00E-05	0.002	0.0022	0.005	5.00E-04	5.00E-04	0.0106
1	Median	0.005	0.005	0.475	5.00E-05	5.00E-04	5.00E-04	5.00E-04	2.51	5.00E-04	0.448	5.00E-05	0.002	0.004	0.005	5.00E-04	5.00E-04	0.013
1	80th %ile	0.005	0.0084	0.49	5.00E-05	5.00E-04	0.0018	5.00E-04	2.806	5.00E-04	0.4986	5.00E-05	0.002	0.007	0.005	5.00E-04	5.00E-04	0.64
1	95th %ile	0.005	0.0097	0.5275	5.00E-05	5.00E-04	0.0055	5.00E-04	2.908	5.00E-04	0.7613	5.00E-05	0.0027	0.007	0.005	5.00E-04	5.00E-04	0.9958
1	Max	0.005	0.01	0.54	5.00E-05	5.00E-04	0.007	5.00E-04	2.92	5.00E-04	0.869	5.00E-05	0.003	0.007	0.005	5.00E-04	5.00E-04	1.09
1	Tau	1	-0.514345	0.0666667	1	1	0.281718	1	0.19518	1	-0.333333	1	-0.534522	-0.411476	-0.534522	1	1	-0.29277
1	2-sided-p	1	0.158152	1	1	1	0.503001	1	0.648582	1	0.367521	1	0.211299	0.272341	0.211299	1	1	0.447521
RN182851	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS18	Total Number	6	6	5	6	6	6	6	6	6	6	6	6	6	6	5	6	6
MBIS18	of	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1
MBIS18	from	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25	04-03-25
MBIS18	to	02-11-25	02-11-25	27-08-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	27-08-25	02-11-25	02-11-25
MBIS18	Min	0.005	5.00E-04	0.83	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.081	5.00E-05	0.011	0.002	0.002	5.00E-04	5.00E-04	0.0025
MBIS18	5th %ile	0.005	0.000625	0.832	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.0575	5.00E-04	0.08425	5.00E-05	0.0135	0.00275	0.00275	5.00E-04	5.00E-04	0.003125
MBIS18	20th %ile	0.005	0.001	0.838	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.08	5.00E-04	0.094	5.00E-05	0.021	0.005	0.005	5.00E-04	5.00E-04	0.005
MBIS18	Median	0.005	0.002	0.84	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.13	5.00E-04	0.1085	5.00E-05	0.0315	0.007	0.005	5.00E-04	5.00E-04	0.007
MBIS18	80th %ile	0.005	0.002	0.862	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.4	5.00E-04	0.122	5.00E-05	0.039	0.009	0.005	5.00E-04	5.00E-04	0.024
MBIS18	95th %ile	0.005	0.00275	0.898	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.4225	5.00E-04	0.13025	5.00E-05	0.04725	0.01575	0.005	5.00E-04	5.00E-04	0.05175
MBIS18	Max	0.005	0.003	0.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.43	5.00E-04	0.133	5.00E-05	0.05	0.018	0.005	5.00E-04	5.00E-04	0.061
MBIS18	Tau	1	-0.894427	0.527046	1	1	1	1	-0.0666667	1	0.466667	1	-0.866667	0.0666667	-0.57735	1	1	-0.414039
MBIS18	2-sided-p	1	0.0267728	0.312216	1	1	1	1	1	1	0.259656	1	0.0241706	1	0.241567	1	1	0.338888
MBIS18	Trend	No	Yes-Downward	No	No	No	No	No	No	No	No	No	Yes-Downward	No	No	No	No	No
MB09B	Number	5	5	4	5	5	5	5	5	5	5	5	5	5	5	4	5	5
MB09B	of	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
MB09B	from	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25	05-03-25
MB09B	to	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25
MB09B	Min	0.005	5.00E-04	0.24	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.005	5.00E-05	5.00E-04	0.001	0.002	5.00E-04	5.00E-04	0.005
MB09B	5th %ile	0.005	5.00E-04	0.243	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0052	5.00E-05	5.00E-04	0.0012	0.0026	5.00E-04	5.00E-04	0.0052
MB09B	20th %ile	0.005	5.00E-04	0.252	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0058	5.00E-05	5.00E-04	0.0018	0.0044	5.00E-04	5.00E-04	0.0058
MB09B	Median	0.005	5.00E-04	0.27	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.008	5.00E-05	0.002	0.003	0.005	5.00E-04	5.00E-04	0.009
MB09B	80th %ile	0.008	6.00E-04	0.292	5.00E-05	5.00E-04	5.00E-04	0.002	0.116	5.00E-04	0.1118	5.00E-05	0.0132	0.025	0.005	5.00E-04	5.00E-04	0.0428
MB09B	95th %ile	0.017	9.00E-04	0.3055	5.00E-05	5.00E-04	5.00E-04	0.002	0.164	5.00E-04	0.1262	5.00E-05	0.0138	0.025	0.005	5.00E-04	5.00E-04	0.0692
MB09B	Max	0.02	0.001	0.31	5.00E-05	5.00E-04	5.00E-04	0.002	0.18	5.00E-04	0.131	5.00E-05	0.014	0.025	0.005	5.00E-04	5.00E-04	0.078
MB09B	Tau	0	0	0.666667	1	1	1	-0.258199	0.83666	1	0.4	1	-0.316228	-0.316228	-0.632456	1	1	-0.6
MB09B	2-sided-p	1	1	0.308179	1	1	1	0.77283	0.0960923	1	0.462433	1	0.613354	0.613354	0.288844	1	1	0.220671
MB09B	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
MBIS04	Number	4	4	3	4	4	4	4	4	4	4	4	4	4	3	4	4	4
MBIS04	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS04	from	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25
MBIS04	to	30-10-25	30-10-25	01-09-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	01-09-25	30-10-25	30-10-25	30-10-25
MBIS04	Min	0.005	5.00E-04	0.15	5.00E-05	5.00E-04	0.001	5.00E-04	0.09	5.00E-04	0.416	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	5.00E-04	0.0025
MBIS04	5th %ile	0.005	5.00E-04	0.15	5.00E-05	0.000575	0.00115	5.00E-04	0.12	5.00E-04	0.4373	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	5.00E-04	0.0025
MBIS04	20th %ile	0.005	5.00E-04	0.15	5.00E-05	8.00E-04	0.0016	5.00E-04	0.21	5.00E-04	0.5012	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	5.00E-04	0.0025
MBIS04	Median	0.005	5.00E-04	0.15	5.00E-05	0.001	0.002	5.00E-04	0.6	5.00E-04	0.5705	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	0.00125	0.01525
MBIS04	80th %ile	0.005	7.00E-04	0.294	5.00E-05	0.001	0.0028	0.0019	1.022	5.00E-04	0.657	5.00E-05	0.0015	0.01	0.005	0.0019	0.002	0.0904
MBIS04	95th %ile	0.005	0.000925	0.366	5.00E-05	0.001	0.0037	0.003475	1.148	5.00E-04	0.74025	5.00E-05	0.002625	0.01675	0.005	0.003475	0.002	0.1606
MBIS04	Max	0.005	0.001	0.39	5.00E-05	0.001	0.004	0.004	1.19	5.00E-04	0.768	5.00E-05	0.003	0.019	0.005	0.004	0.002	0.184
MBIS04	Tau	1	0.235702	na	1	-0.235702	-0.912871	-0.235702	0.333333	1	0	1	-0.707107	-0.547723	na	0.707107	0.816497	-0.912871
MBIS04	2-sided-p	1	1	na	1	1	0.148562	1	0.734095	1	1	1	0.371093	0.470101	na	0.371093	0.245278	0.148562
MBIS04	Trend	No	No	na	No	No	No	No	No	No	No	No	No	No	na	No	No	No
205DR	Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
205DR	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205DR	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25
205DR	to	02-11-25	02-11-25	03-07-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	03-07-25	02-11-25	02-11-25
205DR	Min	0.025	0.0025	0.73	0.00025	0.0025	0.0025	0.0025	4.37	0.0025	0.402	0.00025	0.0025	0.0025	0.02	0.0025	0.0025	0.025
205DR	5th %ile	0.025	0.003075	0.73	0.0002625	0.0025	0.002775	0.0025	4.408	0.0025	0.43105	0.00025	0.0025	0.002675	0.02025	0.0025	0.002775	0.027
205DR	20th %ile	0.025	0.0048	0.73	3.00E-04	0.0025	0.0036	0.0025	4.522	0.0025	0.5182	0.00025	0.0025	0.0032	0.021	0.0025	0.0036	0.033
205DR	Median	0.025	0.00825	0.73	0.000375	0.0025	0.00525	0.0025	4.75	0.0025	0.6925	0.00025	0.0025	0.00425	0.0225	0.0025	0.00525	0.045
205DR	80th %ile	0.025	0.0117	0.73	0.00045	0.0025	0.0069	0.0025	4.978	0.0025	0.8668	0.00025	0.0025	0.0053	0.024	0.0025	0.0069	0.057
205DR	95th %ile	0.025	0.013425	0.73	0.0004875	0.0025	0.007725	0.0025	5.092	0.0025	0.95395	0.00025	0.0025	0.005825	0.02475	0.0025	0.007725	0.063
205DR	Max	0.025	0.014	0.73	5.00E-04	0.0025	0.008	0.0025	5.13	0.0025	0.983	0.00025	0.0025	0.006	0.025	0.0025	0.008	0.065
205DR	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
205DR	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
205DR	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS12	Total Number	4	4	3	4	4	4	4	4	4	4	4	4	4	4	3	4	4
MBIS12	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS12	from	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25	24-05-25
MBIS12	to	30-10-25	30-10-25	01-09-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	01-09-25	30-10-25	30-10-25
MBIS12	Min	0.005	5.00E-04	0.15	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.218	5.00E-05	5.00E-04	0.004	0.002	5.00E-04	5.00E-04	0.006
MBIS12	5th %ile	0.005	0.001325	0.161	5.00E-05	5.00E-04	0.000875	5.00E-04	0.41	5.00E-04	0.3923	5.00E-05	0.000575	0.00445	0.00245	5.00E-04	5.00E-04	0.00615
MBIS12	20th %ile	0.005	0.0038	0.194	5.00E-05	5.00E-04	0.002	5.00E-04	1.49	5.00E-04	0.9152	5.00E-05	8.00E-04	0.0058	0.0038	5.00E-04	5.00E-04	0.0066
MBIS12	Median	0.005	0.007	0.26	5.00E-05	5.00E-04	0.004	5.00E-04	2.57	5.00E-04	1.4	5.00E-05	0.0015	0.009	0.005	5.00E-04	0.00075	0.0125
MBIS12	80th %ile	0.047	0.008	0.296	5.00E-05	5.00E-04	0.007	0.0027	3.154	0.0023	1.544	5.00E-05	0.0024	0.0114	0.005	5.00E-04	0.001	0.0268
MBIS12	95th %ile	0.09425	0.008	0.314	5.00E-05	5.00E-04	0.00925	0.005175	3.676	0.004325	1.6835	5.00E-05	0.00285	0.01185	0.005	5.00E-04	0.001	0.0367
MBIS12	Max	0.11	0.008	0.32	5.00E-05	5.00E-04	0.01	0.006	3.85	0.005	1.73	5.00E-05	0.003	0.012	0.005	5.00E-04	0.001	0.04
MBIS12	Tau	-0.235702	0.912871	na	1	1	-0.333333	-0.235702	1	-0.235702	0	1	-0.333333	0	-0.707107	na	-0.816497	-0.666667
MBIS12	2-sided-p	1	0.148562	na	1	1	0.734095	1	0.0894294	1	1	1	0.734095	1	0.371093	na	0.245278	0.308179
MBIS12	Trend	No	No	na	No	No	No	No	No	No	No	No	No	No	No	na	No	No
592D	Number	4	4	2	3	3	3	3	4	3	3	3	4	3	4	2	3	3
592D	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
592D	from	22-09-22	22-09-22	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	22-09-22	29-06-25	29-06-25	29-06-25	22-09-22	29-06-25	22-09-22	29-06-25	29-06-25	29-06-25
592D	to	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25
592D	Min	0.005	5.00E-04	1.04	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.52	5.00E-04	0.054	5.00E-05	0.002	0.005	0.002	5.00E-04	5.00E-04	0.016
592D	5th %ile	0.005	5.00E-04	1.046	5.00E-05	5.00E-04	0.00055	5.00E-04	0.592	5.00E-04	0.0768	5.00E-05	0.0026	0.0054	0.00245	5.00E-04	5.00E-04	0.0163
592D	20th %ile	0.005	5.00E-04	1.064	5.00E-05	5.00E-04	7.00E-04	5.00E-04	0.808	5.00E-04	0.1452	5.00E-05	0.0044	0.0066	0.0038	5.00E-04	5.00E-04	0.0172
592D	Median	0.005	0.00125	1.1	5.00E-05	5.00E-04	0.001	5.00E-04	4.305	5.00E-04	0.282	5.00E-05	0.0065	0.009	0.005	5.00E-04	5.00E-04	0.019
592D	80th %ile	0.005	0.0052	1.136	5.00E-05	5.00E-04	0.0016	5.00E-04	8.558	5.00E-04	0.3108	5.00E-05	0.0074	0.009	0.005	5.00E-04	5.00E-04	0.0298
592D	95th %ile	0.005	0.0088	1.154	5.00E-05	5.00E-04	0.0019	5.00E-04	9.6245	5.00E-04	0.3252	5.00E-05	0.00785	0.009	0.005	5.00E-04	5.00E-04	0.0352
592D	Max	0.005	0.01	1.16	5.00E-05	5.00E-04	0.002	5.00E-04	9.98	5.00E-04	0.33	5.00E-05	0.008	0.009	0.005	5.00E-04	5.00E-04	0.037
592D	Tau	1	-0.547723	na	na	na	na	na	0.333333	na	na	na	0	na	-0.707107	na	na	na
592D	2-sided-p	1	0.470101	na	na	na	na	na	0.734095	na	na	na	1	na	0.371093	na	na	na
592D	Trend	No	No	na	na	na	na	na	No	na	na	na	No	na	No	na	na	na
592S	Number	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3	3
592S	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
592S	from	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25	29-06-25
592S	to	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	31-10-25	30-08-25	31-10-25	31-10-25
592S	Min	0.005	5.00E-04	0.16	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.056	5.00E-05	0.001	0.002	0.002	5.00E-04	5.00E-04	0.0025
592S	5th %ile	0.005	5.00E-04	0.1865	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.1005	5.00E-04	0.1308	5.00E-05	0.0022	0.002	0.0023	6.00E-04	5.00E-04	0.0025
592S	20th %ile	0.005	5.00E-04	0.266	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.327	5.00E-04	0.3552	5.00E-05	0.0058	0.002	0.0032	9.00E-04	5.00E-04	0.0025
592S	Median	0.005	5.00E-04	0.425	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.78	5.00E-04	0.804	5.00E-05	0.013	0.002	0.005	0.0015	5.00E-04	0.0025
592S	80th %ile	0.044	0.0017	0.584	0.00017	0.0017	0.0032	0.0017	1.032	0.0017	0.8046	0.00017	0.0166	0.0023	0.017	0.0021	0.0017	0.0085
592S	95th %ile	0.0635	0.0023	0.6635	0.00023	0.0023	0.00455	0.0023	1.158	0.0023	0.8049	0.00023	0.0184	0.00245	0.023	0.0024	0.0023	0.0115
592S	Max	0.07	0.0025	0.69	0.00025	0.0025	0.005	0.0025	1.2	0.0025	0.805	0.00025	0.019	0.0025	0.025	0.0025	0.0025	0.0125
592S	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
592S	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
592S	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID22	Number	18	18	13	13	13	13	13	18	13	13	13	18	13	18	13	1	13
MBID22	of	2	1	0	1	0	0	3	0	0	0	0	4	0	0	1	0	0
MBID22	from	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	31-07-20	23-06-25	31-07-20
MBID22	to	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25	23-06-25
MBID22	Min	0.005	5.00E-04	0.29	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.043	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.002	0.011
MBID22	5th %ile	0.005	5.00E-04	0.32	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0598	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.002	0.0206
MBID22	20th %ile	0.005	0.001	0.344	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.047	5.00E-04	0.1304	5.00E-05	5.00E-04	7.00E-04	0.005	5.00E-04	0.002	0.0296
MBID22	Median	0.005	0.002	0.4	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.7	5.00E-04	0.418	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	0.002	0.095
MBID22	80th %ile	0.005	0.0026	0.466	5.00E-05	5.00E-04	5.00E-04	0.0016	2.576	5.00E-04	0.5488	5.00E-05	0.0016	0.002	0.005	5.00E-04	0.002	0.1798
MBID22	95th %ile	0.043	0.00315	0.52	7.00E-05	5.00E-04	5.00E-04	0.0024	2.7645	5.00E-04	0.567	5.00E-05	0.00315	0.002	0.005	0.0011	0.002	0.2226
MBID22	Max	0.23	0.004	0.55	1.00E-04	5.00E-04	5.00E-04	0.003	2.79	5.00E-04	0.57	5.00E-05	0.004	0.002	0.005	0.002	0.002	0.234
MBID22	Tau	0.239247	-0.435365	-0.259762	-0.261488	1	1	0.16343	-0.321158	1	-0.564103	1	0.112777	-0.708784	1	-0.130744	na	-0.564103
MBID22	2-sided-p	0.262228	0.0221407	0.244624	0.349575	1	1	0.525895	0.0730166	1	0.00870615	1	0.594643	0.00288062	1	0.6885	na	0.00870615
MBID22	Trend	No	Yes-Downward	No	No	No	No	No	No	No	Yes-Downward	No	No	Yes-Downward	No	No	na	Yes-Downward

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS02	Total Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS02	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS02	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25
MBIS02	to	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25
MBIS02	Min	0.005	0.001	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.18	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.002	5.00E-04	5.00E-04	0.026
MBIS02	5th %ile	0.005	0.00105	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.209	5.00E-04	0.3074	5.00E-05	0.000675	0.004	0.00215	5.00E-04	5.00E-04	0.02605
MBIS02	20th %ile	0.005	0.0012	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.296	5.00E-04	0.3086	5.00E-05	0.0012	0.007	0.0026	5.00E-04	5.00E-04	0.0262
MBIS02	Median	0.005	0.0015	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.47	5.00E-04	0.311	5.00E-05	0.00225	0.013	0.0035	5.00E-04	5.00E-04	0.0265
MBIS02	80th %ile	0.005	0.0018	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.644	5.00E-04	0.3134	5.00E-05	0.0033	0.019	0.0044	5.00E-04	5.00E-04	0.0268
MBIS02	95th %ile	0.005	0.00195	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.731	5.00E-04	0.3146	5.00E-05	0.003825	0.022	0.00485	5.00E-04	5.00E-04	0.02695
MBIS02	Max	0.005	0.002	1.13	5.00E-05	5.00E-04	0.003	5.00E-04	0.76	5.00E-04	0.315	5.00E-05	0.004	0.023	0.005	5.00E-04	5.00E-04	0.027
MBIS02	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS02	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS02	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS03	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS03	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25
MBIS03	to	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25
MBIS03	Min	0.005	0.003	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.028	5.00E-05	5.00E-04	0.001	0.002	5.00E-04	5.00E-04	0.007
MBIS03	5th %ile	0.005	0.00315	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.02855	5.00E-05	0.000675	0.00125	0.00215	5.00E-04	5.00E-04	0.00735
MBIS03	20th %ile	0.005	0.0036	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.0302	5.00E-05	0.0012	0.002	0.0026	5.00E-04	5.00E-04	0.0084
MBIS03	Median	0.005	0.0045	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.0335	5.00E-05	0.00225	0.0035	0.0035	5.00E-04	5.00E-04	0.0105
MBIS03	80th %ile	0.005	0.0054	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.0368	5.00E-05	0.0033	0.005	0.0044	5.00E-04	5.00E-04	0.0126
MBIS03	95th %ile	0.005	0.00585	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.03845	5.00E-05	0.003825	0.00575	0.00485	5.00E-04	5.00E-04	0.01365
MBIS03	Max	0.005	0.006	1.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.05	5.00E-04	0.039	5.00E-05	0.004	0.006	0.005	5.00E-04	5.00E-04	0.014
MBIS03	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS03	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS05	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS05	from	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25	02-07-25
MBIS05	to	01-11-25	01-11-25	02-07-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	02-07-25	01-11-25	01-11-25
MBIS05	Min	0.005	0.004	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.08	5.00E-04	0.136	5.00E-05	5.00E-04	0.002	0.002	5.00E-04	0.003	0.009
MBIS05	5th %ile	0.005	0.00415	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.083	5.00E-04	0.13655	5.00E-05	0.000625	0.00215	0.00215	5.00E-04	0.00305	0.00945
MBIS05	20th %ile	0.005	0.0046	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.092	5.00E-04	0.1382	5.00E-05	0.001	0.0026	0.0026	5.00E-04	0.0032	0.0108
MBIS05	Median	0.005	0.0055	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.11	5.00E-04	0.1415	5.00E-05	0.00175	0.0035	0.0035	5.00E-04	0.0035	0.0135
MBIS05	80th %ile	0.005	0.0064	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.128	5.00E-04	0.1448	5.00E-05	0.0025	0.0044	0.0044	5.00E-04	0.0038	0.0162
MBIS05	95th %ile	0.005	0.00685	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.137	5.00E-04	0.14645	5.00E-05	0.002875	0.00485	0.00485	5.00E-04	0.00395	0.01755
MBIS05	Max	0.005	0.007	1.82	5.00E-05	5.00E-04	0.002	5.00E-04	0.14	5.00E-04	0.147	5.00E-05	0.003	0.005	0.005	5.00E-04	0.004	0.018
MBIS05	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS05	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	Number	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3	3
MBIS07	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS07	from	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25
MBIS07	to	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25
MBIS07	Min	0.005	0.001	0.49	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.102	5.00E-05	5.00E-04	5.00E-04	0.004	5.00E-04	0.004	0.0025
MBIS07	5th %ile	0.0055	0.001	0.4905	5.00E-05	5.00E-04	5.00E-04	0.00055	0.0275	5.00E-04	0.111	5.00E-05	0.00065	5.00E-04	0.0041	5.00E-04	0.004	0.0025
MBIS07	20th %ile	0.007	0.001	0.492	5.00E-05	5.00E-04	5.00E-04	7.00E-04	0.035	5.00E-04	0.138	5.00E-05	0.0011	5.00E-04	0.0044	5.00E-04	0.004	0.0025
MBIS07	Median	0.01	0.001	0.495	5.00E-05	5.00E-04	5.00E-04	0.001	0.05	5.00E-04	0.192	5.00E-05	0.002	5.00E-04	0.005	5.00E-04	0.004	0.0025
MBIS07	80th %ile	0.028	0.0016	0.498	5.00E-05	5.00E-04	5.00E-04	0.0016	0.062	5.00E-04	0.2616	5.00E-05	0.0026	0.0014	0.005	5.00E-04	0.0046	0.0025
MBIS07	95th %ile	0.037	0.0019	0.4995	5.00E-05	5.00E-04	5.00E-04	0.0019	0.068	5.00E-04	0.2964	5.00E-05	0.0029	0.00185	0.005	5.00E-04	0.0049	0.0025
MBIS07	Max	0.04	0.002	0.5	5.00E-05	5.00E-04	5.00E-04	0.002	0.07	5.00E-04	0.308	5.00E-05	0.003	0.002	0.005	5.00E-04	0.005	0.0025
MBIS07	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS07	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS13	Total Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS13	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS13	from	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25	03-07-25
MBIS13	to	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	01-11-25	03-07-25	01-11-25	01-11-25
MBIS13	Min	0.02	5.00E-04	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.06	5.00E-04	0.018	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	5.00E-04	0.008
MBIS13	5th %ile	0.02	0.000575	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.0615	5.00E-04	0.02	5.00E-05	0.000625	5.00E-04	0.00215	5.00E-04	5.00E-04	0.0082
MBIS13	20th %ile	0.02	8.00E-04	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.066	5.00E-04	0.026	5.00E-05	0.001	5.00E-04	0.0026	5.00E-04	5.00E-04	0.0088
MBIS13	Median	0.02	0.00125	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.075	5.00E-04	0.038	5.00E-05	0.00175	5.00E-04	0.0035	5.00E-04	5.00E-04	0.01
MBIS13	80th %ile	0.02	0.0017	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.084	5.00E-04	0.05	5.00E-05	0.0025	5.00E-04	0.0044	5.00E-04	5.00E-04	0.0112
MBIS13	95th %ile	0.02	0.001925	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.0885	5.00E-04	0.056	5.00E-05	0.002875	5.00E-04	0.00485	5.00E-04	5.00E-04	0.0118
MBIS13	Max	0.02	0.002	1.91	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.09	5.00E-04	0.058	5.00E-05	0.003	5.00E-04	0.005	5.00E-04	5.00E-04	0.012
MBIS13	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS13	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS13	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	Number	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3	3
MBIS15	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS15	from	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25	28-06-25
MBIS15	to	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	28-08-25	30-10-25	30-10-25
MBIS15	Min	0.025	0.0025	1.4	0.00025	0.0025	0.0025	0.0025	1.52	0.0025	0.154	5.00E-05	0.0025	0.0025	0.01	0.0025	0.0025	0.0125
MBIS15	5th %ile	0.025	0.0025	1.4035	0.00025	0.0025	0.0025	0.0025	1.585	0.0025	0.1551	7.00E-05	0.0025	0.00285	0.0115	0.0025	0.0025	0.01375
MBIS15	20th %ile	0.025	0.0025	1.414	0.00025	0.0025	0.0025	0.0025	1.78	0.0025	0.1584	0.00013	0.0025	0.0039	0.016	0.0025	0.0025	0.0175
MBIS15	Median	0.025	0.0025	1.435	0.00025	0.0025	0.0025	0.0025	2.17	0.0025	0.165	0.00025	0.0025	0.006	0.025	0.0025	0.0025	0.025
MBIS15	80th %ile	0.04	0.004	1.456	0.00025	0.0025	0.0025	0.0025	2.254	0.0025	0.171	0.00025	0.0046	0.0132	0.025	0.0025	0.0025	0.061
MBIS15	95th %ile	0.0475	0.00475	1.4665	0.00025	0.0025	0.0025	0.0025	2.296	0.0025	0.174	0.00025	0.00565	0.0168	0.025	0.0025	0.0025	0.079
MBIS15	Max	0.05	0.005	1.47	0.00025	0.0025	0.0025	0.0025	2.31	0.0025	0.175	0.00025	0.006	0.018	0.025	0.0025	0.0025	0.085
MBIS15	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS15	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS11	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS11	from	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25	28-08-25
MBIS11	to	03-11-25	03-11-25	28-08-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	03-11-25	28-08-25	03-11-25	03-11-25
MBIS11	Min	0.005	0.002	0.39	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.1	5.00E-04	0.137	5.00E-05	0.015	0.023	0.002	5.00E-04	5.00E-04	0.008
MBIS11	5th %ile	0.005	0.002	0.39	5.00E-05	0.000575	0.000525	5.00E-04	0.1025	5.00E-04	0.13725	5.00E-05	0.01505	0.0231	0.00215	5.00E-04	5.00E-04	0.00805
MBIS11	20th %ile	0.005	0.002	0.39	5.00E-05	8.00E-04	6.00E-04	5.00E-04	0.11	5.00E-04	0.138	5.00E-05	0.0152	0.0234	0.0026	5.00E-04	5.00E-04	0.0082
MBIS11	Median	0.005	0.002	0.39	5.00E-05	0.00125	0.00075	5.00E-04	0.125	5.00E-04	0.1395	5.00E-05	0.0155	0.024	0.0035	5.00E-04	5.00E-04	0.0085
MBIS11	80th %ile	0.005	0.002	0.39	5.00E-05	0.0017	9.00E-04	5.00E-04	0.14	5.00E-04	0.141	5.00E-05	0.0158	0.0246	0.0044	5.00E-04	5.00E-04	0.0088
MBIS11	95th %ile	0.005	0.002	0.39	5.00E-05	0.001925	0.000975	5.00E-04	0.1475	5.00E-04	0.14175	5.00E-05	0.01595	0.0249	0.00485	5.00E-04	5.00E-04	0.00895
MBIS11	Max	0.005	0.002	0.39	5.00E-05	0.002	0.001	5.00E-04	0.15	5.00E-04	0.142	5.00E-05	0.016	0.025	0.005	5.00E-04	5.00E-04	0.009
MBIS11	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS11	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS19	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS19	from	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25
MBIS19	to	02-11-25	02-11-25	30-08-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	02-11-25	30-08-25	02-11-25	02-11-25
MBIS19	Min	0.02	0.002	3.34	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.06	5.00E-04	0.088	5.00E-05	0.002	0.002	0.002	5.00E-04	5.00E-04	0.01
MBIS19	5th %ile	0.02	0.002	3.34	5.00E-05	5.00E-04	0.000575	5.00E-04	0.0685	5.00E-04	0.08835	5.00E-05	0.00205	0.00215	0.00215	5.00E-04	5.00E-04	0.01035
MBIS19	20th %ile	0.02	0.002	3.34	5.00E-05	5.00E-04	8.00E-04	5.00E-04	0.094	5.00E-04	0.0894	5.00E-05	0.0022	0.0026	0.0026	5.00E-04	5.00E-04	0.0114
MBIS19	Median	0.02	0.002	3.34	5.00E-05	5.00E-04	0.00125	5.00E-04	0.145	5.00E-04	0.0915	5.00E-05	0.0025	0.0035	0.0035	5.00E-04	5.00E-04	0.0135
MBIS19	80th %ile	0.02	0.002	3.34	5.00E-05	5.00E-04	0.0017	5.00E-04	0.196	5.00E-04	0.0936	5.00E-05	0.0028	0.0044	0.0044	5.00E-04	5.00E-04	0.0156
MBIS19	95th %ile	0.02	0.002	3.34	5.00E-05	5.00E-04	0.001925	5.00E-04	0.2215	5.00E-04	0.09465	5.00E-05	0.00295	0.00485	0.00485	5.00E-04	5.00E-04	0.01665
MBIS19	Max	0.02	0.002	3.34	5.00E-05	5.00E-04	0.002	5.00E-04	0.23	5.00E-04	0.095	5.00E-05	0.003	0.005	0.005	5.00E-04	5.00E-04	0.017
MBIS19	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS19	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBIS20	Total Number	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
MBIS20	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBIS20	from	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25	31-08-25
MBIS20	to	30-10-25	30-10-25	31-08-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	30-10-25	31-08-25	30-10-25	30-10-25
MBIS20	Min	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.07	0.0025	0.659	5.00E-05	0.0025	0.0025	0.01	0.0025	0.016	0.025
MBIS20	5th %ile	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.0715	0.0025	0.67705	6.00E-05	0.0025	0.0025	0.01075	0.0025	0.016	0.02535
MBIS20	20th %ile	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.076	0.0025	0.7312	9.00E-05	0.0025	0.0025	0.013	0.0025	0.016	0.0264
MBIS20	Median	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.085	0.0025	0.8395	0.00015	0.0025	0.0025	0.0175	0.0025	0.016	0.0285
MBIS20	80th %ile	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.094	0.0025	0.9478	0.00021	0.0025	0.0025	0.022	0.0025	0.016	0.0306
MBIS20	95th %ile	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.0985	0.0025	1.00195	0.00024	0.0025	0.0025	0.02425	0.0025	0.016	0.03165
MBIS20	Max	0.025	0.0025	1.04	0.00025	0.0025	0.0025	0.0025	0.1	0.0025	1.02	0.00025	0.0025	0.0025	0.025	0.0025	0.016	0.032
MBIS20	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS20	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBIS20	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
205S	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205S	from	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25
205S	to	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25	30-08-25
205S	Min	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	5th %ile	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	20th %ile	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	Median	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	80th %ile	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	95th %ile	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	Max	0.005	0.012	0.42	5.00E-05	5.00E-04	0.004	5.00E-04	9.7	5.00E-04	4.68	5.00E-05	0.005	0.012	0.005	5.00E-04	0.001	0.014
205S	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
205S	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
584D	Number	10	10	9	9	9	9	9	10	9	9	9	10	9	10	9	0	9
584D	of	0	2	1	0	0	0	0	1	0	0	0	1	2	0	0	0	0
584D	from	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	na	24-06-20
584D	to	10-01-23	10-01-23	21-04-21	21-04-21	21-04-21	21-04-21	21-04-21	10-01-23	21-04-21	21-04-21	21-04-21	10-01-23	21-04-21	10-01-23	21-04-21	na	21-04-21
584D	Min	0.005	0.003	0.41	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.318	5.00E-05	0.001	5.00E-04	0.005	5.00E-04	na	0.018
584D	5th %ile	0.005	0.0075	0.414	5.00E-05	5.00E-04	5.00E-04	5.00E-04	2.54275	5.00E-04	0.338	5.00E-05	0.00145	5.00E-04	0.005	5.00E-04	na	0.02
584D	20th %ile	0.005	0.0162	0.438	5.00E-05	5.00E-04	5.00E-04	5.00E-04	5.66	5.00E-04	0.3764	5.00E-05	0.002	5.00E-04	0.005	5.00E-04	na	0.0236
584D	Median	0.005	0.018	0.48	5.00E-05	5.00E-04	5.00E-04	5.00E-04	6.1	5.00E-04	0.413	5.00E-05	0.002	0.001	0.005	5.00E-04	na	0.031
584D	80th %ile	0.005	0.0192	0.544	5.00E-05	5.00E-04	5.00E-04	5.00E-04	6.43	5.00E-04	0.4342	5.00E-05	0.003	0.0014	0.005	5.00E-04	na	0.0486
584D	95th %ile	0.005	0.02055	0.622	5.00E-05	5.00E-04	5.00E-04	5.00E-04	6.7395	5.00E-04	0.4444	5.00E-05	0.00465	0.002	0.005	5.00E-04	na	0.0552
584D	Max	0.005	0.021	0.65	5.00E-05	5.00E-04	5.00E-04	5.00E-04	6.96	5.00E-04	0.448	5.00E-05	0.006	0.002	0.005	5.00E-04	na	0.056
584D	Tau	1	-0.690066	0.166667	1	1	1	1	-0.0666667	1	-0.722222	1	0.138409	-0.261488	1	1	na	-0.611111
584D	2-sided-p	1	0.00865125	0.602168	1	1	1	1	0.858028	1	0.00914915	1	0.68257	0.429979	1	1	na	0.0285677
584D	Trend	No	Yes-Downward	No	No	No	No	No	No	No	Yes-Downward	No	No	No	No	No	na	Yes-Downward
584S	Number	17	17	16	16	16	16	16	17	16	16	16	17	16	17	16	0	16
584S	of	1	0	1	0	0	0	2	0	1	0	0	3	2	0	1	0	1
584S	from	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	01-12-18	na	01-12-18
584S	to	10-01-23	10-01-23	21-04-21	21-04-21	21-04-21	21-04-21	21-04-21	10-01-23	21-04-21	21-04-21	21-04-21	10-01-23	21-04-21	10-01-23	21-04-21	na	21-04-21
584S	Min	0.005	0.001	0.27	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.021	5.00E-05	0.005	0.001	0.005	5.00E-04	na	0.0025
584S	5th %ile	0.005	0.001	0.2775	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.1725	5.00E-05	0.0058	0.001	0.005	5.00E-04	na	0.026875
584S	20th %ile	0.005	0.0024	0.31	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.918	5.00E-04	1.38	5.00E-05	0.007	0.001	0.005	5.00E-04	na	0.061
584S	Median	0.005	0.01	0.36	5.00E-05	5.00E-04	5.00E-04	5.00E-04	8.58	5.00E-04	1.95	5.00E-05	0.009	0.002	0.005	5.00E-04	na	0.079
584S	80th %ile	0.005	0.012	0.38	5.00E-05	5.00E-04	5.00E-04	5.00E-04	9.466	5.00E-04	2.61	5.00E-05	0.01	0.003	0.005	5.00E-04	na	0.114
584S	95th %ile	0.008	0.013	0.4975	5.00E-05	5.00E-04	5.00E-04	0.002	10.12	0.002125	2.78	5.00E-05	0.0396	0.00775	0.005	0.000875	na	0.185
584S	Max	0.02	0.013	0.61	5.00E-05	5.00E-04	5.00E-04	0.002	10.2	0.007	2.99	5.00E-05	0.05	0.01	0.005	0.002	na	0.32
584S	Tau	-0.214373	-0.179294	0.241523	1	1	1	-0.10351	-0.0369006	-0.306413	-0.183333	1	-0.193294	-0.0870877	1	0.353553	na	0.0840366
584S	2-sided-p	0.358326	0.35666	0.219084	1	1	1	0.69141	0.869014	0.193059	0.344418	1	0.315765	0.701514	1	0.128885	na	0.684723
584S	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	na	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBID01	Total Number	34	34	18	18	18	18	18	34	18	18	18	34	18	34	17	0	18
MBID01	of	5	6	4	2	0	0	1	4	3	0	1	7	2	0	0	0	2
MBID01	from	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	14-11-18	13-04-19	na	14-11-18
MBID01	to	29-10-25	29-10-25	26-08-21	26-08-21	26-08-21	26-08-21	26-08-21	29-10-25	26-08-21	26-08-21	26-08-21	29-10-25	26-08-21	29-10-25	26-08-21	na	26-08-21
MBID01	Min	0.005	5.00E-04	0.06	5.00E-05	5.00E-04	0.005	5.00E-04	0.025	5.00E-04	3.45	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.0025
MBID01	5th %ile	0.005	5.00E-04	0.128	5.00E-05	5.00E-04	0.00925	5.00E-04	0.025	5.00E-04	3.7135	5.00E-05	5.00E-04	0.00485	0.005	5.00E-04	na	0.013975
MBID01	20th %ile	0.005	5.00E-04	0.154	5.00E-05	5.00E-04	0.018	5.00E-04	0.076	5.00E-04	4.498	5.00E-05	5.00E-04	0.006	0.005	5.00E-04	na	0.1004
MBID01	Median	0.005	5.00E-04	0.16	1.00E-04	5.00E-04	0.026	0.00075	0.19	5.00E-04	4.88	5.00E-05	5.00E-04	0.006	0.005	5.00E-04	na	0.368
MBID01	80th %ile	0.005	5.00E-04	0.192	2.00E-04	5.00E-04	0.0352	0.0106	0.584	5.00E-04	5.57	5.00E-05	0.0007	0.0092	0.005	5.00E-04	na	0.4764
MBID01	95th %ile	0.01	0.001	0.2215	0.000775	5.00E-04	0.0399	0.02835	2.2415	0.0023	6.359	7.25E-05	0.00135	0.01215	0.005	5.00E-04	na	1.026
MBID01	Max	0.01	0.003	0.23	0.0012	5.00E-04	0.045	0.104	2.87	0.004	6.41	2.00E-04	0.005	0.013	0.005	5.00E-04	na	1.23
MBID01	Tau	-0.0596051	0.298523	0	-0.257443	1	0.239236	-0.246647	0.169534	-0.070014	-0.267974	-0.254902	0.0119416	-0.102471	1	1	na	0.189542
MBID01	2-sided-p	0.697268	0.0382738	1	0.182935	1	0.183142	0.193264	0.167075	0.768538	0.129745	0.247482	0.949376	0.603931	1	1	na	0.288883
MBID01	Trend	No	Yes-Upward	No	No	No	No	No	No	No	No	No	No	No	No	No	na	No
MBID02	Number	18	18	14	14	14	14	14	18	14	14	14	18	14	18	14	0	14
MBID02	of	0	0	0	0	0	3	0	0	0	0	0	1	3	0	0	0	1
MBID02	from	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	na	23-06-20
MBID02	to	20-09-22	20-09-22	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	20-09-22	24-08-21	24-08-21	24-08-21	20-09-22	24-08-21	20-09-22	24-08-21	na	24-08-21
MBID02	Min	0.005	5.00E-04	1.02	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.102	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID02	5th %ile	0.005	5.00E-04	1.085	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.1189	5.00E-05	5.00E-04	0.000825	0.005	5.00E-04	na	0.0025
MBID02	20th %ile	0.005	7.00E-04	1.25	5.00E-05	5.00E-04	0.002	5.00E-04	0.26	5.00E-04	0.1462	5.00E-05	5.00E-04	0.0016	0.005	5.00E-04	na	0.004
MBID02	Median	0.025	0.0025	1.595	0.00015	0.0015	0.0025	0.0025	0.695	0.0015	0.2695	5.00E-05	0.0025	0.00225	0.025	0.00175	na	0.01025
MBID02	80th %ile	0.025	0.0025	1.758	0.00025	0.0025	0.0038	0.0025	1.958	0.0025	0.912	5.00E-05	0.0025	0.0025	0.025	0.0025	na	0.0125
MBID02	95th %ile	0.025	0.0025	1.865	0.00025	0.0025	0.006	0.003025	2.934	0.0025	1.3	5.00E-05	0.003025	0.0025	0.025	0.0025	na	0.017225
MBID02	Max	0.025	0.0025	1.93	0.00025	0.0025	0.006	0.004	3.41	0.0025	1.43	5.00E-05	0.006	0.0025	0.025	0.0025	na	0.026
MBID02	Tau	0.543577	0.505605	0.331497	0.46424	0.46424	0.176912	0.189466	0.625013	0.46424	0.486195	1	0.424708	0.356593	0.543577	0.409917	na	0.123542
MBID02	2-sided-p	0.00862849	0.0109502	0.111838	0.055285	0.055285	0.432647	0.43112	0.000362992	0.055285	0.0183952	1	0.0366545	0.120012	0.00862849	0.0830679	na	0.603734
MBID02	Trend	Yes-Upward	Yes-Upward	No	No	No	No	No	Yes-Upward	No	Yes-Upward	No	Yes-Upward	No	Yes-Upward	No	na	No
MBID03	Number	28	28	21	21	21	21	21	28	21	21	21	28	21	28	20	0	21
MBID03	of	1	5	2	4	1	5	3	1	2	0	0	2	1	0	0	0	2
MBID03	from	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	17-01-19	11-04-19	na	17-01-19
MBID03	to	29-10-25	29-10-25	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	29-10-25	24-08-21	na	24-08-21
MBID03	Min	0.005	5.00E-04	0.35	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.086	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.009
MBID03	5th %ile	0.005	5.00E-04	0.35	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.09	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	na	0.009
MBID03	20th %ile	0.005	5.00E-04	0.82	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.128	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	na	0.019
MBID03	Median	0.005	5.00E-04	1.03	5.00E-05	5.00E-04	5.00E-04	0.002	0.295	5.00E-04	0.192	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	na	0.043
MBID03	80th %ile	0.02	5.00E-04	1.13	5.00E-05	5.00E-04	0.002	0.009	0.972	5.00E-04	0.423	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.136
MBID03	95th %ile	0.0365	0.001	1.21	2.00E-04	5.00E-04	0.003	0.06	1.7635	0.001	0.598	5.00E-05	0.000825	0.006	0.005	5.00E-04	na	0.374
MBID03	Max	3	0.002	1.22	2.00E-04	0.002	0.003	0.063	2.48	0.004	0.634	5.00E-05	0.008	0.011	0.005	5.00E-04	na	0.567
MBID03	Tau	-0.0592696	0.117875	0.0480791	-0.048795	0.308607	0.206818	0.0211702	0.203194	0.0552495	0.238095	1	-0.0494555	0.148747	1	1	na	-0.153112
MBID03	2-sided-p	0.707131	0.473224	0.785415	0.823984	0.116677	0.259968	0.924419	0.152785	0.81096	0.138967	1	0.7892	0.387308	1	1	na	0.348779
MBID03	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	na	No
MBID04	Number	39	39	21	21	21	21	21	39	21	21	21	39	21	39	20	0	21
MBID04	of	0	5	3	1	5	1	4	1	1	0	0	8	1	0	0	0	1
MBID04	from	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	17-11-18	11-04-19	na	17-11-18
MBID04	to	29-10-25	29-10-25	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	29-10-25	24-08-21	na	24-08-21
MBID04	Min	0.005	5.00E-04	0.5	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.09	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.007
MBID04	5th %ile	0.005	5.00E-04	0.52	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.097	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.007
MBID04	20th %ile	0.005	5.00E-04	0.73	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.07	5.00E-04	0.148	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.01
MBID04	Median	0.02	0.001	0.78	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.42	5.00E-04	0.188	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	na	0.027
MBID04	80th %ile	0.03	0.0034	0.9	5.00E-05	0.002	5.00E-04	5.00E-04	1.404	5.00E-04	0.22	5.00E-05	0.0007	0.004	0.005	5.00E-04	na	0.052
MBID04	95th %ile	0.04	0.01	1.02	5.00E-05	0.002	5.00E-04	0.003	2.292	5.00E-04	0.24	5.00E-05	0.0031	0.007	0.005	5.00E-04	na	0.076
MBID04	Max	0.05	0.016	1.14	2.00E-04	0.003	0.002	0.003	4.22	0.001	0.275	5.00E-05	0.015	0.011	0.005	5.00E-04	na	0.125
MBID04	Tau	-0.0856103	0.0412921	-0.287085	0.0617213	0.182574	0.092582	0.153456	-0.0847645	0.0617213	0.167065	1	0.298477	0.483484	1	1	na	0.237322
MBID04	2-sided-p	0.492641	0.741255	0.0745464	0.804353	0.325255	0.679708	0.423749	0.459506	0.804353	0.304343	1	0.0219074	0.00403357	1	1	na	0.145795
MBID04	Trend	No	No	No	No	No	No	No	No	No	No	No	Yes-Upward	Yes-Upward	No	No	na	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBID05	Total Number	27	27	14	14	14	14	14	27	14	14	14	27	14	27	14	0	14
MBID05	of	2	1	0	1	2	0	1	1	0	3	0	0	3	0	0	0	2
MBID05	from	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	23-06-20	na	23-06-20
MBID05	to	29-10-25	29-10-25	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	24-08-21	24-08-21	29-10-25	24-08-21	29-10-25	24-08-21	na	24-08-21
MBID05	Min	0.005	5.00E-04	0.38	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.016	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID05	5th %ile	0.005	5.00E-04	0.4125	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.016	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID05	20th %ile	0.005	5.00E-04	0.478	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.082	5.00E-04	0.0316	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID05	Median	0.005	5.00E-04	0.535	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.14	5.00E-04	0.0425	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID05	80th %ile	0.005	5.00E-04	0.612	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.198	5.00E-04	0.0544	5.00E-05	5.00E-04	0.0011	0.005	5.00E-04	na	0.0025
MBID05	95th %ile	0.0295	5.00E-04	0.697	0.0003125	0.0017	5.00E-04	0.000675	0.276	5.00E-04	0.055	5.00E-05	5.00E-04	0.00335	0.005	5.00E-04	na	0.006
MBID05	Max	0.28	0.001	0.71	8.00E-04	0.003	5.00E-04	0.001	0.35	5.00E-04	0.055	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.006
MBID05	Tau	0.142009	0.209358	0.201146	-0.203519	-0.14676	1	-0.0290742	-0.137064	1	-0.0452158	1	1	-0.0349428	1	1	na	-0.385164
MBID05	2-sided-p	0.405213	0.222583	0.349853	0.45675	0.585441	1	1	0.335471	1	0.868435	1	1	0.938624	1	1	na	0.120691
MBID05	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	na	No
MBID06A	Number	3	3	0	0	0	0	0	3	0	0	0	3	0	3	0	0	0
MBID06A	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID06A	from	31-01-22	31-01-22	na	na	na	na	na	31-01-22	na	na	na	31-01-22	na	31-01-22	na	na	na
MBID06A	to	20-09-22	20-09-22	na	na	na	na	na	20-09-22	na	na	na	20-09-22	na	20-09-22	na	na	na
MBID06A	Min	0.005	0.002	na	na	na	na	na	0.87	na	na	na	5.00E-04	na	0.005	na	na	na
MBID06A	5th %ile	0.005	0.0022	na	na	na	na	na	1.121	na	na	na	5.00E-04	na	0.005	na	na	na
MBID06A	20th %ile	0.005	0.0028	na	na	na	na	na	1.874	na	na	na	5.00E-04	na	0.005	na	na	na
MBID06A	Median	0.005	0.004	na	na	na	na	na	3.38	na	na	na	5.00E-04	na	0.005	na	na	na
MBID06A	80th %ile	0.005	0.0046	na	na	na	na	na	3.8	na	na	na	8.00E-04	na	0.005	na	na	na
MBID06A	95th %ile	0.005	0.0049	na	na	na	na	na	4.01	na	na	na	0.00095	na	0.005	na	na	na
MBID06A	Max	0.005	0.005	na	na	na	na	na	4.08	na	na	na	0.001	na	0.005	na	na	na
MBID06A	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID06A	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID06A	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID07	Number	39	39	21	21	21	21	21	39	21	21	21	39	21	39	21	0	21
MBID07	of	6	0	1	0	1	0	5	5	0	3	0	0	0	0	0	0	1
MBID07	from	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	na	23-11-18
MBID07	to	27-10-25	27-10-25	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	27-10-25	24-08-21	24-08-21	24-08-21	27-10-25	24-08-21	27-10-25	24-08-21	na	24-08-21
MBID07	Min	0.005	5.00E-04	0.47	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.104	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID07	5th %ile	0.005	5.00E-04	0.51	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.117	5.00E-05	0.002	5.00E-04	0.005	5.00E-04	na	0.0025
MBID07	20th %ile	0.005	5.00E-04	0.57	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.131	5.00E-05	0.002	5.00E-04	0.005	5.00E-04	na	0.008
MBID07	Median	0.005	0.001	0.6	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.141	5.00E-05	0.002	0.001	0.005	5.00E-04	na	0.035
MBID07	80th %ile	0.01	0.002	0.64	5.00E-05	5.00E-04	5.00E-04	0.004	0.192	5.00E-04	0.164	5.00E-05	0.003	0.002	0.005	5.00E-04	na	0.076
MBID07	95th %ile	0.03	0.002	0.69	5.00E-05	5.00E-04	5.00E-04	0.022	0.436	5.00E-04	0.187	5.00E-05	0.003	0.002	0.005	5.00E-04	na	0.142
MBID07	Max	0.04	0.002	0.69	5.00E-05	0.003	5.00E-04	0.072	0.81	5.00E-04	0.212	5.00E-05	0.003	0.003	0.005	5.00E-04	na	0.193
MBID07	Tau	-0.14468	-0.199634	0.0690066	1	0.216025	1	0.0381154	-0.286724	1	0.295442	1	-0.122433	-0.0739903	1	1	na	0.139092
MBID07	2-sided-p	0.267082	0.118264	0.692327	1	0.283074	1	0.856265	0.0222159	1	0.0687813	1	0.363944	0.697283	1	1	na	0.397034
MBID07	Trend	No	No	No	No	No	No	No	Yes-Downward	No	No	No	No	No	No	No	na	No
MBID08	Number	25	25	13	13	13	13	13	25	13	13	13	25	13	25	13	0	13
MBID08	of	2	0	1	2	0	0	1	5	0	0	0	3	0	0	0	0	0
MBID08	from	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	24-06-20	na	24-06-20
MBID08	to	24-10-23	24-10-23	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-10-23	24-08-21	24-08-21	24-08-21	24-10-23	24-08-21	24-10-23	24-08-21	na	24-08-21
MBID08	Min	0.005	5.00E-04	0.42	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.043	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID08	5th %ile	0.005	5.00E-04	0.444	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0622	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID08	20th %ile	0.005	5.00E-04	0.524	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0968	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0039
MBID08	Median	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	0.001	0.025	5.00E-04	0.17	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.072
MBID08	80th %ile	0.005	5.00E-04	0.654	1.00E-04	5.00E-04	0.002	0.0082	0.032	5.00E-04	0.3324	5.00E-05	5.00E-04	0.006	0.005	5.00E-04	na	0.344
MBID08	95th %ile	0.009	5.00E-04	0.702	0.00024	5.00E-04	0.0024	0.021	0.18	5.00E-04	0.3776	5.00E-05	0.001	0.01	0.005	5.00E-04	na	0.4046
MBID08	Max	0.01	5.00E-04	0.72	3.00E-04	5.00E-04	0.003	0.033	1.08	5.00E-04	0.398	5.00E-05	0.002	0.01	0.005	5.00E-04	na	0.461
MBID08	Tau	0.255377	1	0.0129035	0.0176832	1	-0.164971	0.0998575	-0.226731	1	-0.128205	1	-0.266053	0.0823853	1	1	na	-0.0130744
MBID08	2-sided-p	0.146384	1	1	1	1	0.512389	0.698734	0.178104	1	0.582951	1	0.122721	0.754661	1	1	na	1
MBID08	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	na	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBID09	Total Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
MBID09	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID09	from	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	na	23-11-20
MBID09	to	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	23-11-20	na	23-11-20
MBID09	Min	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	5th %ile	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	20th %ile	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	Median	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	80th %ile	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	95th %ile	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	Max	0.005	5.00E-04	0.62	2.00E-04	5.00E-04	0.001	0.041	0.025	5.00E-04	0.307	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.266
MBID09	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID09	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID09	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID10	Number	39	39	21	21	21	21	21	39	21	21	21	39	21	39	21	0	21
MBID10	of	4	0	0	0	0	0	2	0	0	2	0	6	2	0	2	0	2
MBID10	from	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	23-11-18	na	23-11-18
MBID10	to	29-10-25	29-10-25	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	29-10-25	25-08-21	25-08-21	25-08-21	29-10-25	25-08-21	29-10-25	25-08-21	na	25-08-21
MBID10	Min	0.005	5.00E-04	0.72	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.114	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID10	5th %ile	0.005	5.00E-04	0.76	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.116	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.0025
MBID10	20th %ile	0.005	5.00E-04	0.88	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.406	5.00E-04	0.134	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	na	0.006
MBID10	Median	0.005	5.00E-04	0.94	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.23	5.00E-04	0.15	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	na	0.016
MBID10	80th %ile	0.005	5.00E-04	1.04	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.38	5.00E-04	0.16	5.00E-05	5.00E-04	0.003	0.005	5.00E-04	na	0.044
MBID10	95th %ile	0.011	5.00E-04	1.1	5.00E-05	5.00E-04	5.00E-04	0.001	1.494	5.00E-04	0.23	5.00E-05	0.002	0.004	0.005	0.001	na	0.062
MBID10	Max	0.02	5.00E-04	1.15	5.00E-05	5.00E-04	5.00E-04	0.002	1.56	5.00E-04	0.266	5.00E-05	0.006	0.004	0.005	0.001	na	0.086
MBID10	Tau	-0.0795945	1	-0.160622	1	1	1	-0.0110499	-0.423336	1	-0.618721	1	-0.0740464	0.125869	1	0.179109	na	-0.0726497
MBID10	2-sided-p	0.563529	1	0.331308	1	1	1	1	0.000187201	1	0.000108611	1	0.587178	0.482723	1	0.368885	na	0.671294
MBID10	Trend	No	No	No	No	No	No	No	Yes-Downward	No	Yes-Downward	No	No	No	No	No	na	No
MBID15	Number	35	35	21	21	21	21	21	35	21	21	21	35	21	35	20	0	21
MBID15	of	1	0	2	4	4	4	2	1	5	2	0	0	2	0	4	0	1
MBID15	from	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	10-12-18	12-04-19	na	10-12-18
MBID15	to	22-01-25	22-01-25	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	22-01-25	24-08-21	24-08-21	24-08-21	22-01-25	24-08-21	22-01-25	24-08-21	na	24-08-21
MBID15	Min	0.005	5.00E-04	0.44	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.147	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.012
MBID15	5th %ile	0.005	5.00E-04	0.65	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.945	5.00E-04	0.18	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	na	0.013
MBID15	20th %ile	0.005	5.00E-04	0.77	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.218	5.00E-04	0.214	5.00E-05	5.00E-04	0.002	0.005	5.00E-04	na	0.065
MBID15	Median	0.005	0.001	0.89	5.00E-05	5.00E-04	5.00E-04	0.002	1.96	5.00E-04	0.226	5.00E-05	5.00E-04	0.0025	0.005	5.00E-04	na	0.14
MBID15	80th %ile	0.025	0.0025	0.97	5.00E-05	5.00E-04	0.001	0.004	2.186	0.002	0.239	5.00E-05	0.0025	0.004	0.025	0.0021	na	0.18
MBID15	95th %ile	0.025	0.0025	1.12	0.00025	0.0025	0.0025	0.01	2.586	0.0025	0.248	5.00E-05	0.0025	0.006	0.025	0.0025	na	0.254
MBID15	Max	0.1	0.0025	1.21	0.00025	0.0025	0.0025	0.014	2.9	0.0025	0.263	5.00E-05	0.0025	0.007	0.025	0.0025	na	0.493
MBID15	Tau	0.182772	-0.00779992	0.144237	0.384941	0.384941	0.231776	-0.128543	0.198821	0.312094	-0.0144589	1	0.11216	-0.13926	0.197054	0.367301	na	-0.0143199
MBID15	2-sided-p	0.193653	0.964408	0.380172	0.0438889	0.0438889	0.206708	0.465686	0.0964986	0.0914618	0.951732	1	0.42225	0.420187	0.170903	0.0566695	na	0.95182
MBID15	Trend	No	No	No	Yes-Upward	Yes-Upward	No	No	No	No	No	No	No	No	No	No	na	No
MBID17	Number	43	43	22	22	22	22	22	43	22	22	22	43	22	43	21	0	22
MBID17	of	6	11	2	1	0	1	2	5	1	2	0	6	2	0	1	0	0
MBID17	from	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	16-01-19	13-04-19	na	16-01-19
MBID17	to	29-10-25	29-10-25	26-08-21	26-08-21	26-08-21	26-08-21	26-08-21	29-10-25	26-08-21	26-08-21	26-08-21	29-10-25	26-08-21	29-10-25	26-08-21	na	26-08-21
MBID17	Min	0.005	5.00E-04	0.22	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	5.00E-04	5.00E-05	5.00E-04	0.001	0.005	5.00E-04	na	0.0025
MBID17	5th %ile	0.005	0.001	0.3055	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.00675	5.00E-05	0.003	0.002	0.005	5.00E-04	na	0.0025
MBID17	20th %ile	0.005	0.002	0.89	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0254	5.00E-05	0.0034	0.002	0.005	5.00E-04	na	0.004
MBID17	Median	0.005	0.002	1.015	5.00E-05	5.00E-04	0.00075	5.00E-04	0.025	5.00E-04	0.052	5.00E-05	0.004	0.003	0.005	5.00E-04	na	0.042
MBID17	80th %ile	0.005	0.002	1.178	5.00E-05	5.00E-04	0.002	0.0038	0.182	5.00E-04	0.2044	5.00E-05	0.005	0.0048	0.005	5.00E-04	na	0.1008
MBID17	95th %ile	0.04	0.003	1.24	5.00E-05	5.00E-04	0.00395	0.01165	0.3	5.00E-04	0.4807	5.00E-05	0.007	0.0088	0.005	5.00E-04	na	0.1247
MBID17	Max	0.34	0.007	1.32	1.00E-04	5.00E-04	0.016	0.017	1.24	0.001	3.5	5.00E-05	0.009	0.009	0.005	0.004	na	0.22
MBID17	Tau	-0.0996456	0.135971	0.154209	-0.244081	1	-0.246612	0.108223	0.274198	0.301511	-0.105039	1	-0.34915	-0.145515	1	0.216025	na	0.301642
MBID17	2-sided-p	0.432257	0.272105	0.335895	0.207317	1	0.151528	0.535731	0.0184594	0.114975	0.51568	1	0.00255746	0.395187	1	0.283074	na	0.0570834
MBID17	Trend	No	No	No	No	No	No	No	Yes-Upward	No	No	No	Yes-Downward	No	No	No	na	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBID19A	Total Number	19	19	1	1	1	1	1	19	1	1	1	19	1	19	1	0	1
MBID19A	of	2	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
MBID19A	from	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	na	25-08-21
MBID19A	to	29-10-25	29-10-25	25-08-21	25-08-21	25-08-21	25-08-21	25-08-21	29-10-25	25-08-21	25-08-21	25-08-21	29-10-25	25-08-21	29-10-25	25-08-21	na	25-08-21
MBID19A	Min	0.005	5.00E-04	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	0.025	5.00E-04	1.75	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.208
MBID19A	5th %ile	0.005	5.00E-04	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	0.0565	5.00E-04	1.75	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.208
MBID19A	20th %ile	0.005	5.00E-04	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	0.106	5.00E-04	1.75	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.208
MBID19A	Median	0.005	0.001	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	0.34	5.00E-04	1.75	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.208
MBID19A	80th %ile	0.005	0.002	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	1.292	5.00E-04	1.75	5.00E-05	5.00E-04	0.004	0.005	5.00E-04	na	0.208
MBID19A	95th %ile	0.017	0.0034	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	2.156	5.00E-04	1.75	5.00E-05	0.0015	0.004	0.005	5.00E-04	na	0.208
MBID19A	Max	0.08	0.007	0.17	5.00E-05	5.00E-04	0.008	5.00E-04	3.2	5.00E-04	1.75	5.00E-05	0.006	0.004	0.005	5.00E-04	na	0.208
MBID19A	Tau	-0.297301	-0.759224	na	na	na	na	na	-0.504401	na	na	na	-0.116335	na	1	na	na	na
MBID19A	2-sided-p	0.144826	3.73337E-05	na	na	na	na	na	0.00292421	na	na	na	0.595973	na	1	na	na	na
MBID19A	Trend	No	Yes-Downward	na	na	na	na	na	Yes-Downward	na	na	na	No	na	No	na	na	na
MBID21A	Number	14	14	0	0	0	0	0	14	0	0	0	14	0	14	0	0	0
MBID21A	of	3	3	0	0	0	0	0	3	0	0	0	4	0	0	0	0	0
MBID21A	from	22-09-21	22-09-21	na	na	na	na	na	22-09-21	na	na	na	22-09-21	na	22-09-21	na	na	na
MBID21A	to	29-10-25	29-10-25	na	na	na	na	na	29-10-25	na	na	na	29-10-25	na	29-10-25	na	na	na
MBID21A	Min	0.005	5.00E-04	na	na	na	na	na	0.025	na	na	na	0.001	na	0.005	na	na	na
MBID21A	5th %ile	0.005	5.00E-04	na	na	na	na	na	0.025	na	na	na	0.00165	na	0.005	na	na	na
MBID21A	20th %ile	0.005	5.00E-04	na	na	na	na	na	0.025	na	na	na	0.002	na	0.005	na	na	na
MBID21A	Median	0.005	5.00E-04	na	na	na	na	na	0.025	na	na	na	0.002	na	0.005	na	na	na
MBID21A	80th %ile	0.014	0.0014	na	na	na	na	na	0.063	na	na	na	0.0032	na	0.005	na	na	na
MBID21A	95th %ile	0.054	0.0027	na	na	na	na	na	1.038	na	na	na	0.00635	na	0.005	na	na	na
MBID21A	Max	0.08	0.004	na	na	na	na	na	2.52	na	na	na	0.007	na	0.005	na	na	na
MBID21A	Tau	-0.401859	-0.578196	na	na	na	na	na	-0.174714	na	na	na	-0.680069	na	1	na	na	na
MBID21A	2-sided-p	0.0835112	0.0124842	na	na	na	na	na	0.488315	na	na	na	0.00291324	na	1	na	na	na
MBID21A	Trend	No	Yes-Downward	na	na	na	na	na	No	na	na	na	Yes-Downward	na	No	na	na	na
MBID25A	Number	9	9	1	1	1	1	1	9	1	1	1	9	1	9	1	0	1
MBID25A	of	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
MBID25A	from	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	na	24-08-21
MBID25A	to	09-01-23	09-01-23	24-08-21	24-08-21	24-08-21	24-08-21	24-08-21	09-01-23	24-08-21	24-08-21	24-08-21	09-01-23	24-08-21	09-01-23	24-08-21	na	24-08-21
MBID25A	Min	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.48	5.00E-05	5.00E-04	0.007	0.005	5.00E-04	na	0.007
MBID25A	5th %ile	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.48	5.00E-05	5.00E-04	0.007	0.005	5.00E-04	na	0.007
MBID25A	20th %ile	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	0.025	5.00E-04	0.48	5.00E-05	8.00E-04	0.007	0.005	5.00E-04	na	0.007
MBID25A	Median	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	0.56	5.00E-04	0.48	5.00E-05	0.002	0.007	0.005	5.00E-04	na	0.007
MBID25A	80th %ile	0.005	5.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	0.88	5.00E-04	0.48	5.00E-05	0.0034	0.007	0.005	5.00E-04	na	0.007
MBID25A	95th %ile	0.008	8.00E-04	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	1.204	5.00E-04	0.48	5.00E-05	0.0064	0.007	0.005	5.00E-04	na	0.007
MBID25A	Max	0.01	0.001	0.59	5.00E-05	5.00E-04	0.001	5.00E-04	1.34	5.00E-04	0.48	5.00E-05	0.008	0.007	0.005	5.00E-04	na	0.007
MBID25A	Tau	-0.117851	0	na	na	na	na	na	0.551246	na	na	na	-0.377168	na	1	na	na	na
MBID25A	2-sided-p	0.846451	1	na	na	na	na	na	0.0554693	na	na	na	0.203374	na	1	na	na	na
MBID25A	Trend	No	No	na	na	na	na	na	No	na	na	na	No	na	No	na	na	na
MBID27	Number	17	17	9	9	9	9	9	17	9	9	9	17	9	17	9	0	9
MBID27	of	2	1	0	1	1	4	2	2	1	1	0	4	0	1	1	0	0
MBID27	from	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	16-11-20	na	16-11-20
MBID27	to	10-01-23	10-01-23	23-08-21	23-08-21	23-08-21	23-08-21	23-08-21	10-01-23	23-08-21	23-08-21	23-08-21	10-01-23	23-08-21	10-01-23	23-08-21	na	23-08-21
MBID27	Min	0.005	0.001	0.65	0.00025	5.00E-04	0.0025	0.0025	0.025	5.00E-04	0.29	5.00E-05	0.002	0.0025	0.005	5.00E-04	na	0.064
MBID27	5th %ile	0.021	0.0022	0.666	0.00025	0.0013	0.0025	0.0025	0.025	0.0013	0.32	5.00E-05	0.0024	0.0035	0.021	0.0013	na	0.1456
MBID27	20th %ile	0.025	0.0025	0.69	0.00025	0.0025	0.0046	0.0025	0.032	0.0025	0.4124	5.00E-05	0.0025	0.0092	0.025	0.0025	na	0.274
MBID27	Median	0.025	0.0025	0.75	0.00025	0.0025	0.007	0.008	0.47	0.0025	0.478	5.00E-05	0.0025	0.038	0.025	0.0025	na	0.346
MBID27	80th %ile	0.025	0.0025	0.802	0.00025	0.0025	0.0096	0.0872	1.324	0.0025	0.9034	5.00E-05	0.0025	0.0666	0.025	0.0025	na	0.6078
MBID27	95th %ile	0.036	0.0025	0.826	0.00034	0.0025	0.0162	0.2114	5.86	0.0025	1.288	5.00E-05	0.0066	0.0834	0.025	0.0025	na	0.639
MBID27	Max	0.08	0.0025	0.83	4.00E-04	0.0025	0.019	0.219	11.3	0.0025	1.38	5.00E-05	0.009	0.091	0.025	0.0025	na	0.655
MBID27	Tau	0.231015	0.171499	0.400163	0	0	-0.377168	0.49322	0.279343	0	-0.611111	1	0.225189	0.888889	0.171499	0	na	0.722222
MBID27	2-sided-p	0.298056	0.474958	0.170587	1	1	0.203374	0.0886834	0.13485	1	0.0285677	1	0.288677	0.00122941	0.474958	1	na	0.00914919
MBID27	Trend	No	No	No	No	No	No	No	No	No	Yes-Downward	No	No	Yes-Upward	No	No	na	Yes-Upward

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
MBID26	Total Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
MBID26	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MBID26	from	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	na	21-06-21
MBID26	to	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	21-06-21	na	21-06-21
MBID26	Min	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	5th %ile	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	20th %ile	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	Median	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	80th %ile	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	95th %ile	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	Max	0.005	5.00E-04	1.83	5.00E-05	5.00E-04	5.00E-04	0.004	0.025	5.00E-04	0.003	0.0338	5.00E-04	0.009	0.005	5.00E-04	na	0.008
MBID26	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID26	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MBID26	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS5	Number	36	36	14	14	14	14	14	36	14	14	36	36	14	36	36	14	14
OBS5	of	0	6	0	3	3	0	3	1	3	0	2	0	1	0	0	0	0
OBS5	from	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17
OBS5	to	10-12-25	10-12-25	25-09-18	25-09-18	25-09-18	25-09-18	25-09-18	10-12-25	25-09-18	25-09-18	10-12-25	10-12-25	25-09-18	10-12-25	10-12-25	25-09-18	25-09-18
OBS5	Min	0.005	0.001	1.13	5.00E-05	5.00E-04	0.002	5.00E-04	0.025	5.00E-04	0.133	5.00E-05	0.0025	0.002	0.002	5.00E-04	73	0.0025
OBS5	5th %ile	0.005	0.001	1.1625	5.00E-05	5.00E-04	0.00265	5.00E-04	0.025	5.00E-04	0.19865	5.00E-05	0.0025	0.002325	0.005	5.00E-04	77.55	0.0025
OBS5	20th %ile	0.005	0.002	1.192	5.00E-05	5.00E-04	0.0036	5.00E-04	0.025	5.00E-04	0.38	5.00E-05	0.0025	0.0028	0.005	5.00E-04	89.6	0.0106
OBS5	Median	0.005	0.0025	1.215	5.00E-05	5.00E-04	0.006	5.00E-04	0.295	5.00E-04	0.5565	5.00E-05	0.0045	0.0035	0.005	0.00225	106.5	0.018
OBS5	80th %ile	0.025	0.0025	1.25	0.00013	0.0013	0.007	0.0016	1.3	0.0013	0.6888	5.00E-05	0.007	0.0044	0.025	0.0025	120.4	0.0364
OBS5	95th %ile	0.025	0.00325	1.26	0.00025	0.0025	0.00805	0.0025	1.62	0.0025	0.77175	1.00E-04	0.009	0.00535	0.025	0.002875	124	0.0459
OBS5	Max	0.025	0.007	1.26	0.00025	0.0025	0.01	0.0025	4.72	0.0025	0.892	0.00025	0.01	0.006	0.025	0.005	124	0.055
OBS5	Tau	0.124722	0.237702	-0.137253	0.164235	0.164235	-0.216444	0.0479586	-0.189738	0.164235	-0.0769231	0.260897	0.252732	-0.22698	0.0800629	-0.130718	-0.388913	-0.255571
OBS5	2-sided-p	0.381311	0.0688239	0.54237	0.533417	0.533417	0.335314	0.888908	0.11954	0.533417	0.742557	0.0672309	0.042563	0.309982	0.573009	0.328436	0.0619114	0.227042
OBS5	Trend	No	No	No	No	No	No	No	No	No	No	No	Yes-Upward	No	No	No	No	No
OBS9	Number	27	27	10	10	10	10	10	27	10	10	27	27	10	27	27	10	10
OBS9	of	3	0	0	0	0	0	0	3	0	0	0	1	0	1	0	0	0
OBS9	from	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17
OBS9	to	09-12-25	09-12-25	14-12-17	14-12-17	14-12-17	14-12-17	14-12-17	09-12-25	14-12-17	14-12-17	09-12-25	09-12-25	14-12-17	09-12-25	09-12-25	14-12-17	14-12-17
OBS9	Min	0.005	5.00E-04	0.55	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.028	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	0.5	0.0025
OBS9	5th %ile	0.005	0.00065	0.55	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.291	5.00E-04	0.02845	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.5	0.0025
OBS9	20th %ile	0.005	0.001	0.558	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.446	5.00E-04	0.0314	5.00E-05	0.001	5.00E-04	0.005	5.00E-04	0.5	0.0025
OBS9	Median	0.005	0.002	0.57	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.57	5.00E-04	0.04	5.00E-05	0.002	0.0015	0.005	5.00E-04	0.5	0.0055
OBS9	80th %ile	0.005	0.0038	0.584	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.668	5.00E-04	0.0462	5.00E-05	0.002	0.002	0.005	5.00E-04	0.5	0.0086
OBS9	95th %ile	0.02	0.004	0.6	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.717	5.00E-04	0.0481	5.00E-05	0.003	0.002	0.005	5.00E-04	0.5	0.0132
OBS9	Max	0.13	0.004	0.6	5.00E-05	5.00E-04	5.00E-04	5.00E-04	1.88	5.00E-04	0.049	5.00E-05	0.006	0.002	0.005	5.00E-04	0.5	0.015
OBS9	Tau	-0.0868678	-0.051593	0.167093	1	1	1	1	-0.238515	1	0.414039	1	-0.0852518	-0.0276818	-0.272166	1	1	0.241825
OBS9	2-sided-p	0.616727	0.744669	0.581246	1	1	1	1	0.0869099	1	0.122751	1	0.59073	1	0.108526	1	1	0.402008
OBS9	Trend	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
OBS10	Number	33	33	10	10	10	10	10	33	10	10	33	33	10	33	33	10	10
OBS10	of	1	2	0	0	0	0	0	6	0	0	0	4	1	1	0	1	1
OBS10	from	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17	31-01-17
OBS10	to	09-12-25	09-12-25	14-12-17	14-12-17	14-12-17	14-12-17	14-12-17	09-12-25	14-12-17	14-12-17	09-12-25	09-12-25	14-12-17	09-12-25	09-12-25	14-12-17	14-12-17
OBS10	Min	0.005	5.00E-04	0.34	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.011	5.00E-05	5.00E-04	5.00E-04	0.002	5.00E-04	0.5	0.0025
OBS10	5th %ile	0.005	5.00E-04	0.34	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0119	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.5	0.0025
OBS10	20th %ile	0.005	5.00E-04	0.34	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0138	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.5	0.0025
OBS10	Median	0.01	5.00E-04	0.35	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.017	5.00E-05	5.00E-04	5.00E-04	0.005	5.00E-04	0.5	0.0025
OBS10	80th %ile	0.02	5.00E-04	0.382	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.025	5.00E-04	0.0622	5.00E-05	0.001	5.00E-04	0.005	5.00E-04	1	0.0068
OBS10	95th %ile	0.04	0.0007	0.39	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.182	5.00E-04	0.0725	5.00E-05	0.0024	0.001325	0.005	5.00E-04	6.5	0.0111
OBS10	Max	0.11	0.013	0.39	5.00E-05	5.00E-04	5.00E-04	5.00E-04	0.21	5.00E-04	0.077	5.00E-05	0.003	0.002	0.005	5.00E-04	11	0.012
OBS10	Tau	-0.266646	-0.191903	-0.0496904	1	1	1	1	-0.127574	1	-0.224733	1	-0.320751	0.447214	-0.246183	1	0.155417	-0.326599
OBS10	2-sided-p	0.0477557	0.199939	0.925162	1	1	1	1	0.378816	1	0.418962	1	0.0236947	0.163734	0.103562	1	0.654046	0.263223
OBS10	Trend	Yes-Downward	No	No	No	No	No	No	No	No	No	No	Yes-Downward	No	No	No	No	No

Bores	statistic	Diss Al	Diss As	Diss B	Diss Cd	Diss Cr	Diss Co	Diss Cu	Diss Fe	Diss Pb	Diss Mn	Diss Hg	Diss Mo	Diss Ni	Diss Se	Diss Ag	Diss U	Diss Zn
OBS15	Total Number	2	2	0	0	0	0	0	2	0	0	2	2	0	2	2	0	0
OBS15	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBS15	from	09-09-25	09-09-25	na	na	na	na	na	09-09-25	na	na	09-09-25	09-09-25	na	09-09-25	09-09-25	na	na
OBS15	to	09-12-25	09-12-25	na	na	na	na	na	09-12-25	na	na	09-12-25	09-12-25	na	09-12-25	09-12-25	na	na
OBS15	Min	0.005	5.00E-04	na	na	na	na	na	0.025	na	na	5.00E-05	5.00E-04	na	0.002	5.00E-04	na	na
OBS15	5th %ile	0.005	5.00E-04	na	na	na	na	na	0.02725	na	na	5.00E-05	5.00E-04	na	0.00215	5.00E-04	na	na
OBS15	20th %ile	0.005	5.00E-04	na	na	na	na	na	0.034	na	na	5.00E-05	5.00E-04	na	0.0026	5.00E-04	na	na
OBS15	Median	0.005	5.00E-04	na	na	na	na	na	0.0475	na	na	5.00E-05	5.00E-04	na	0.0035	5.00E-04	na	na
OBS15	80th %ile	0.005	5.00E-04	na	na	na	na	na	0.061	na	na	5.00E-05	5.00E-04	na	0.0044	5.00E-04	na	na
OBS15	95th %ile	0.005	5.00E-04	na	na	na	na	na	0.06775	na	na	5.00E-05	5.00E-04	na	0.00485	5.00E-04	na	na
OBS15	Max	0.005	5.00E-04	na	na	na	na	na	0.07	na	na	5.00E-05	5.00E-04	na	0.005	5.00E-04	na	na
OBS15	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS15	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS15	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	Number	2	2	0	0	0	0	0	2	0	0	2	2	0	2	2	0	0
OBS18	of	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBS18	from	10-09-25	10-09-25	na	na	na	na	na	10-09-25	na	na	10-09-25	10-09-25	na	10-09-25	10-09-25	na	na
OBS18	to	08-12-25	08-12-25	na	na	na	na	na	08-12-25	na	na	08-12-25	08-12-25	na	08-12-25	08-12-25	na	na
OBS18	Min	0.005	5.00E-04	na	na	na	na	na	0.31	na	na	5.00E-05	5.00E-04	na	0.002	5.00E-04	na	na
OBS18	5th %ile	0.005	5.00E-04	na	na	na	na	na	0.3105	na	na	5.00E-05	5.00E-04	na	0.00215	5.00E-04	na	na
OBS18	20th %ile	0.005	5.00E-04	na	na	na	na	na	0.312	na	na	5.00E-05	5.00E-04	na	0.0026	5.00E-04	na	na
OBS18	Median	0.005	5.00E-04	na	na	na	na	na	0.315	na	na	5.00E-05	5.00E-04	na	0.0035	5.00E-04	na	na
OBS18	80th %ile	0.005	5.00E-04	na	na	na	na	na	0.318	na	na	5.00E-05	5.00E-04	na	0.0044	5.00E-04	na	na
OBS18	95th %ile	0.005	5.00E-04	na	na	na	na	na	0.3195	na	na	5.00E-05	5.00E-04	na	0.00485	5.00E-04	na	na
OBS18	Max	0.005	5.00E-04	na	na	na	na	na	0.32	na	na	5.00E-05	5.00E-04	na	0.005	5.00E-04	na	na
OBS18	Tau	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	2-sided-p	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
OBS18	Trend	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

*na = not enough data

Appendix B Guideline Checklist: IESC Information Requirements

Isaac Downs Extension.

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

Table B-1: IESC Information Requirements Checklist

IESC Requirement	Section in the report
Description of the proposed project - General	
Provide a regional overview of the proposed project area, including a description of the geological basin, coal resource, surface water catchments, groundwater systems, water-dependent assets (including terrestrial and aquatic GDEs), and past, present and reasonably foreseeable coal mining and CSG developments.	Sections 1, 3, 4, 5, 6
Describe the proposal's location, purpose, scale, duration and disturbance area, and the means by which it is likely to have a significant impact on water resources and water-dependent assets.	Sections 1, 10
Assess the frequency (and time lags, if any), location, volume and direction of interactions between water resources, including surface water/groundwater connectivity, inter-aquifer connectivity and connectivity with sea water.	Section 5.4
Description of the proposed project – Regulatory context	
Describe the statutory context, including information on the proposal's status within the regulatory assessment process and any applicable water management policies or regulations.	Section 2
Describe how potentially impacted water resources are currently being regulated under state or Commonwealth law, including whether there are any applicable standard conditions.	Section 2
Describe existing water quality guidelines, environmental flow objectives and other requirements (e.g., water planning rules) for the surface water catchments and groundwater basins within which the development proposal is based.	Section 2
Describe public health, recreation, amenity, Indigenous, tourism and/or agricultural values for each water resource, and the plans relevant to their management and protection.	Section 2, 5.6
Description of the proposed project – Groundwater context	
Describe and map the geology at an appropriate level of horizontal and vertical resolution, including:	Section 4
• definition of the geological sequence(s) in the area, with names and descriptions of the formations and accompanying surface geology, cross-sections and any relevant field data	Sections 4, 5
• identification of hydrogeological sequences and characteristics.	Sections 4, 5
Define and describe or characterise significant geological structures (e.g., faults, folds, intrusives) and associated fracturing in the area and their influence on groundwater – particularly groundwater flow, discharge or recharge.	
• Provide geological maps appropriately annotated with symbols that denote fault type, throw and the parts of sequences the faults intersect or displace (e.g., Murray and Power 2021).	Sections 1.4, 4.2, 5
• Include discussion of how the faults potentially influence regional-scale groundwater conditions.	Sections 1.4, 4.2, 5
Describe the likely recharge, discharge and flow pathways for all hydrogeological units likely to be impacted by the proposed development.	

IESC Requirement	Section in the report
• Identify current stressors, including impacts from any currently approved projects.	Sections 3, 5.5, 7, 10
Describe the existing water quality of all aquifers in the project area.	
• Where groundwater is to be used for a given purpose such as irrigation, compare the data with relevant guideline values (ANZG 2018) and regional and local water quality objectives.	Sections 5.6
Description of the proposed project – Surface water context	
Describe the watercourses, standing waters and springs across the site, including:	
• drainage patterns and key surface water and floodplain features	Section 3.2
• hydrological regimes (especially ecologically relevant components such as durations, timing and frequency of periods when no surface water is present)	Sections 3.2, 8
• current stressors, including impacts from any currently approved projects.	Sections 3.2, 8
Describe the existing water quality of surface waters potentially impacted by the proposed development.	
• Include comparison to relevant default guideline values (ANZG 2018) and regional and local (or site-specific) water quality objectives.	Sections 5, 8
Description of the proposed project – Ecological context	
Describe the ecological water-dependent assets in and near the proposed development area, including:	
• water-dependent fauna and flora and their habitats, including GDEs (see Doody et al. 2019)	Section 5.7
• their current condition and environmental values	Section 5.6, 5.7
• stressors that currently affect each ecological water-dependent asset, including stressors that alter the quantity and/or quality of water required by each asset in and near the proposed development area.	Sections 5.7, 10.1
Environmental impact assessment - General	
Describe the intensity, duration, magnitude, timing and geographic extent of each potential impact, specifying the impact's significance and consequences, especially on the environmental condition and human values of each water resource.	Sections 8, 10
For proposed expansions or modifications, distinguish potential impacts from those of the existing project, and include the likely contribution of the proposed expansion to potential cumulative impacts.	Section 8, 10
Assess the significance of each impact with reference to the range of system behaviour found under pre-development conditions and natural environmental and climatic variability.	Sections 8, 10
Environmental impact assessment – Risk-based assessment	
Identify and assess all potential environmental risks to water resources and water-related assets, and their possible impacts. In selecting a risk-assessment approach,	Section 10

IESC Requirement	Section in the report
consideration should be given to the complexity of the project and the probability and potential consequences of the project's impacts.	
Describe the consultation with relevant stakeholders and regulators about the likely risks to water resources and water-related assets. This initial engagement should include agreement about the nature of the action, which assets (including water resources) may be impacted, and the likely sources of impacts and the receptors that may be affected.	Section 10
The risk assessment should include a systematic and evidence-based assessment of:	
• the sources of environmental impacts in the project area	Section 10
• the exposure pathways by which impacts may be transferred from these sources to water resources (receptors), presented as one or more IPDs based on ecohydrological conceptualisation (see Box 2)	Section 10
• the likely response of each receptor, especially when the impact(s) may be severe and likely to cause irreversible damage (posing a high risk)	Section 10
• 'hot spots', or areas in the project area (e.g., where vulnerable receptors occur close to impact sources) where risks are especially high	Section 10
• 'hot moments', or periods during and after the project (e.g., when activities are likely to generate major impact) when risks are especially high.	Section 10
Specify where and how each risk can be avoided or mitigated (or, as a last resort, requires appropriate offsets and/or a conservation payment), and:	Section 11
• provide evidence (preferably from equivalent activities and regions) for the feasibility and effectiveness of mitigation or offset methods	Section 11
• describe how monitoring will be able to demonstrate the effectiveness of the mitigation measures.	Section 11
Describe the risks of potential cumulative impacts of all past, present and reasonably foreseeable actions and activities that are likely to impact on water resources, including from multiple stressors arising from the proposed action.	Sections 8, 10
Specify all sources of uncertainty in the assessments of each risk and describe how information has been and will be collected to reduce this uncertainty.	Sections 8, 9
Investigate relevant context for the risk assessment, such as bioregional assessments, Commonwealth and state water resource plans (e.g., Murray–Darling Basin Plan, Hunter River Salinity Trading Scheme) and state processes such as those that apply in the Surat Cumulative Management Area and the Commonwealth's Joint Industry Framework on Coal Seam Gas.	Sections 2
Assess residual risks remaining after the implementation of the proposed mitigation and management options, to determine whether these effectively reduce risks to an acceptable level based on the identified environmental objectives.	Section 10,11
Environmental impact assessment – Modelling of water storage and movement	
Incorporate causal mechanisms and pathways identified in the risk assessment (e.g., IPDs) in conceptual and numerical modelling. Use the results of these models to update the risk assessment.	Sections 8, 10
Provide a detailed description of all analytical, numerical and conceptual models used, and any methods and evidence (e.g., expert opinion, analogue sites) employed in addition to modelling.	Section 7
Explain the conceptualisation of the system(s), including multiple conceptual models if appropriate. Describe the data and information, including field data, on which the models are based; all key assumptions; and model limitations and their consequences.	Section 6,7

IESC Requirement	Section in the report
Calibrated models require adequate monitoring data from either the project area or sites representative of local conditions, ideally with calibration targets related to model predictions. Summarise the extent to which parameterisation is consistent with expectations based on literature values, outcomes of field or laboratory investigations, or with values obtained by calibration in similar nearby applications.	Section 7
Where possible, verify models by using past and/or existing site monitoring data that were not used for calibration.	Section 7
Assess the quality of, and risks and uncertainty inherent in, the data used to establish baseline conditions and in modelling, particularly with respect to predicted potential impact scenarios. Identify key gaps in data and knowledge and describe how they can be addressed.	Sections 7, 8, 9
Describe the various stages of the proposed project (construction, operation and rehabilitation) and their incorporation into the model. Provide predictions of changes and recovery in each water resource for the life of the project and beyond, including an assessment of the impacts of climate change where applicable, and cumulative impacts.	Sections 7, 8
Provide a program for reviewing and updating models as more data and information become available, including reporting requirements.	Section 7
Environmental impact assessment – Groundwater	
Undertake groundwater modelling in accordance with the Australian groundwater modelling guidelines (Barnett et al. 2012), including independent peer review.	Section 7
Describe each hydrogeological unit as incorporated in the groundwater model, including the thickness, storage and hydraulic characteristics, and hydraulic linkages between units, if any.	Section 7
Describe the existing recharge/discharge pathways of the units and the changes that are predicted to occur upon commencement, throughout, and after completion of the proposed project.	Section 5.5
Select and justify appropriate boundary conditions across the model domain to enable a comparison of groundwater model outputs to seasonal field observations.	Section 7 and SLR (2026b)
Where possible, calibration should incorporate measurements of both potentiometric head (or pressure) and flux, such as measured mine inflows or measured discharges to streams or springs.	Section 7, 8
Undertake sensitivity analysis of boundary conditions and hydraulic and storage parameters, and justify the conditions applied in the final groundwater model. Where the interaction between surface water and groundwater is important, parameters describing their connectivity, such as riverbed conductance, should be assessed.	Section 9
Assess the potential impacts of the proposal, including how impacts are predicted to change over time and any residual long-term impacts. Consider and describe:	
• any hydrogeological units that will be directly or indirectly dewatered or depressurised (including lateral effects), interactions between water resources (inter-aquifer connectivity), and connectivity with sea water	Section 8, 10
• the magnitude, extent and change over time of drawdown/mounding, including the time for post-development equilibrium to be reached	Section 8, 10

IESC Requirement	Section in the report
• the extent of impacts on surface water/groundwater connectivity, water-dependent assets, flow direction and surface topography, including resultant impacts on the groundwater balance	Section 8, 10
• the potential range of drawdown at each affected bore, and clearly articulate the spatial and temporal scales of impacts on other water users	Section 8, 10
• the potential impacts on hydraulic and storage properties of hydrogeological units, including changes in storage, potential for physical transmission of water within and between units, and estimates of likelihood of leakage of contaminants through hydrogeological units	Section 10
• the possible fracturing of and other damage to confining layers.	Section 10
Undertake an uncertainty analysis of key predictive outputs (i.e., quantities of interest as per Peeters and Middlemis 2023).	Section 9
For each relevant hydrogeological unit, describe the proportional increase in groundwater use and impacts as a consequence of the proposed project, including an assessment of any consequential increase in demand for groundwater from towns or other industries resulting from associated population or economic growth due to the proposal.	Section 10
Baseline data	
For groundwaters, surface waters and ecological water-dependent assets that have been identified in the risk-based assessment, present data that are sufficient to establish pre-development (baseline) conditions and that have been collected at an appropriate sampling frequency and spatial coverage of monitoring sites, ideally over a period sufficiently long to characterise the impacts of climatic variability.	Section 5, 11
Baseline data - Groundwater	
Provide data from surveyed boreholes to demonstrate the varying depths of the hydrogeological units and associated standing water levels or potentiometric heads, including directions of groundwater flow, contour maps and hydrographs.	Section 5.2
Present information from site-specific studies (e.g., geophysical, coring/wireline logging) to characterise the local stress regime and fault structure (e.g., damage zone size, open/closed along fault plane, presence of clay/shale smear, fault jogs or splays).	Section 1.4 Section 4
Provide site-specific values for hydraulic parameters (e.g., vertical and horizontal hydraulic conductivity and specific yield or specific storage characteristics, including the data from which these parameters were derived) for each relevant hydrogeological unit. In situ observations of these parameters should be sufficient to characterise the heterogeneity of these properties for modelling.	Section 5.3
Provide hydrochemical characterisation (e.g., acidity/alkalinity, electrical conductivity, metals and major ions) and a suitable suite of environmental tracers (e.g., heat; stable isotopes of water; tritium, helium, strontium isotopes) (e.g., Kurukulasuriya et al. 2022; OWS 2020) commensurate with the risks of the proposed development to water resources and water-dependent assets.	Section 5.6
Provide sufficient data on physical aquifer parameters and hydrogeochemistry to establish pre-development conditions, including fluctuations in groundwater levels at time intervals relevant to aquifer processes. This should include time-series data for water levels and water quality that represent seasonal and climatic cycles.	Section 5.6
Provide long-term groundwater monitoring data, including a comprehensive assessment of all relevant chemical parameters to inform changes in groundwater quality and detect potential contamination events.	Section 5

IESC Requirement	Section in the report
Monitoring and management	
Describe the rationale for selected monitoring parameters and their sampling duration, frequency and methods, including the use of satellite or aerial imagery to identify and monitor large-scale impacts. Target monitoring programs to address key areas of uncertainty, especially for valued assets and water resources that are at greater risk of impacts from the proposed development.	Section 11
Ensure water quality monitoring complies with relevant National Water Quality Management Strategy guidelines (ANZG 2018) and relevant legislated state protocols (e.g., Queensland Government 2018).	Section 5.6 and 11
Identify and justify monitoring sites representative of the diversity of potentially affected water-dependent assets and the nature and scale of potential impacts. Match suitably replicated control and reference sites (BACI design, Downes et al. 2002) to enable detection and monitoring of potential impacts.	Section 11
Describe the processes employed to determine impact thresholds for water-dependent assets (e.g., threshold at which a significant impact on an asset may occur).	Section 11
Describe proposed mitigation and management actions, and their adequacy, for each significant impact identified, including any proposed mitigation or offset measures for long-term impacts post mining.	Section 11
Identify modifications or alternatives to avoid, minimise or mitigate potential cumulative impacts, and provide evidence of the likely success of these measures (e.g., case studies).	Section 11
Propose adaptive management measures and management responses, giving details of trigger action response plans (TARPs) for valued assets and water resources that are at greater risk of impacts from the proposed development.	Section 11
Monitoring and management - Groundwater	
Describe a robust groundwater monitoring program using dedicated groundwater monitoring bores – including nested arrays where there may be connectivity between hydrogeological units – and targeting specific aquifers, providing information on the groundwater regime and on recharge and discharge processes and identifying changes in quantities and quality of groundwater over time.	Section 11
Where reinjection schemes are proposed to manage wastewater (e.g., managed aquifer recharge), the monitoring program should include components specifically targeted at identifying any potential impacts from this management action.	Section 11
Cumulative impacts	
Assess the condition and likely responses of all water-dependent assets and water resources likely to be cumulatively impacted by the proposed development combined with all developments (past, present and/or reasonably foreseeable) and other water-intensive activities.	Section 10
Assess the cumulative impacts on potentially affected water-dependent assets and water resources, considering:	
• the full extent of potential impacts from the proposed project (including whether there are alternative options for infrastructure and mine configurations which could reduce impacts)	Section 10
• all stages of the development, including exploration, operations and post-closure/rehabilitation	Section 10

IESC Requirement	Section in the report
• the likely spatial magnitude and timeframe over which cumulative impacts will occur (ensuring that the analysis has sufficiently broad geographic and temporal boundaries to include all potentially significant impacts)	Section 10
• opportunities to work with other water users to avoid or mitigate potential cumulative impacts to meet specified environmental objectives.	Section 10

Appendix C Guideline Checklist: Requirements for site-specific and amendment applications—underground water rights

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

Table C- 1 Requirement for Site Specific and Amendment Applications – Underground Water Rights

	Detail	Section in Report
Part A	A statement that the applicant proposes to exercise underground water rights.	Section 2
Part B	A description of the area/s in which underground water rights are proposed to be exercised.	Section 1
Part C	A description of the aquifer/s affected or likely to be affected.	
	• Aquifer type (confined, unconfined, fractured etc)	Section 5
	• Geology/ stratigraphy for each aquifer	Section 4
	• Depth to and thickness of the aquifers	Section 4
	• Physical integrity of the aquifer, fluvial processes and morphology	Section 5
	• Depth to water level and seasonal changes in levels	Section 5.5
	• Hydrogeological cross sections	Section 6
	• Maps (spatial extent)	Section 4 Section 5
Part D	An analysis of the movement of underground water to and from the aquifer.	
	• Inputs (i.e. recharge) and outputs (i.e. baseflow and abstraction);	Section 5 Section 7
	• Underground water elevations (i.e. mapped groundwater flow directions);	Section 5.5
	• Connectivity between aquifers and hydraulic properties;	Section 5.3
	• Preferential flow pathways (i.e. faults);	Section 5.3
	• Springs.	Section 5.7
Part E	A description of the area of the aquifer where the water level is predicted to decline because of the exercise of underground water rights.	Section 6
	Predictions should: • Be made for the life of the resource project and for post resource tenure closure; • Be made about the timing, spatial extent and magnitude of maximum water level declines in affected aquifers; • Be made about the timing and magnitude of groundwater level equilibrium in affected aquifers.	Section 8
	Produce potentiometric contour maps showing maximum predicted water level decline for each affected aquifer.	Section 8
	Modelling methodology, including: • Model type (e.g. numerical or analytical); • Modelling platform; • Model inputs; • Model boundary conditions;	Section 7 and 8

	Detail	Section in Report
	• Model assumptions and limitations; • Sensitivity analysis and calibration results.	
Part F	The predicted quantities of water to be taken or interfered with because of the exercise of underground water rights.	Section 8
	Details on the methodology used for measuring extraction volumes and developing the extraction schedule.	Section 7 and 8
Part G	Information on predicted impacts to the quality of groundwater that will, or may, happen because of the exercise of underground water rights.	Section 8 and 10
	Identify the quality of the groundwater prior to the resource activity commencing.	Section 5.6
	Explain the variation of chemical concentrations as a result of chemical reactions over the life of the project due to the exercise of underground water rights (i.e. changes in salinity and concentration of dissolved gas).	Section 10
	Estimate extent and likelihood of groundwater quality impacts, with justification based on potential sources of contamination.	Section 10
Part H	Identifying and describing environmental values: • Information on the environmental values that will, or may, be affected by the exercise of underground water rights; • Describe and define environmental value of aquifers, presenting available raw data used. • Document groundwater use, including details on operating bores within the areas predicted to be affected by the exercise of underground water rights.	Section 5.6
	Nature and extent of the impacts on the environmental values (risk assessment): • The magnitude, relative size or actual extent of any impact in relation to the environmental value being affected; • The vulnerability or resilience of the environmental value (severity and duration) Uncertainty of impacts and any assumptions.	Section 10
	Surface subsidence impacts.	N/A
Part I	Information on strategies for avoiding, mitigating or managing the predicted impacts on the environmental values or predicted impacts on the quality of groundwater. Strategies for avoiding, mitigating and managing the predicted impacts on both environmental values and predicted changes in groundwater quality should include: • Objectives which define the outcomes that are intended to be achieved (i.e. avoiding, mitigating and managing the predicted impacts) and a description of unavoidable impacts to environmental values; • Measures (specific methods/procedures/tools) to be implemented to demonstrate how the objectives will be achieved; • Indicators relevant to protection of the environmental values (i.e. indicators are the values that are to be measured to gauge whether the objectives are being achieved and are used to are to be used in auditing the performance of measures); • A program for monitoring the indicators (see EP Act Guideline for requirements);	Section 11

	Detail	Section in Report
	• A reporting program which includes triggers for the review of the strategies, and identifies additional data, assessment, analysis and reporting requirements.	

Appendix D Checklist: Project Specific Terms of Reference (groundwater related)

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

Table D- 2 Requirements as per Terms of Reference for an Environmental Impact Statement under the Environmental Protection Act 1994 for the Isaac Downs Extension Project

Section in ToR	Detail	Section in Report
8.1	For each project specific matter outlined, the EIS must identify and describe the relevant environmental values, assess potential adverse and beneficial environmental, economic and social impacts of the project; and outline the management, monitoring, planning and other measures proposed to avoid, minimise and/or mitigate any adverse environmental impacts of the project.	Section 5.6 Section 8 Section 10 Section 11
8.2	For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act. Identify and describe the values that must be protected for all the relevant matters including: (a) environmental values specified in the EP Act, the EP Regulation (e.g. environmental objectives and performance outcomes as defined in schedule 8), environmental protection policies and associated guidelines (b) values under other State legislation, policies and guidelines including the *Vegetation Management Act 1999*, the *Nature Conservation Act 1992*, the *Regional Planning Interests Act 2014* (c) values identified in the project specific matters in section 9 of the TOR.	Section 5.5
8.3	Consider all available baseline information relevant to the environmental risks of the project, including seasonal and long term variations. Describe the quality of all information, in particular the source of the information, how recent the information is, how the reliability of the information was tested, and any assumptions and uncertainties in the information.	Section 5
8.4	Assess the impacts of the project on environmental values. This includes demonstrating that the project meets the environmental objectives and outcomes for each matter in section 9 of the TOR and the environmental objectives and performance outcomes for any matters listed in Schedule 8 of the EP Regulation. Impact assessment must address: (a) short-, medium- and long-term scenarios (b) the scale of an impact, including: i. the impact's intensity and duration ii. cumulative effects of the project in combination with other major projects or developments of which the proponent is reasonably aware iii. the risk of environmental harm iv. avoidance, mitigation and management strategies and if necessary, offsets (Queensland Government 2024b) provisions v. the potential for unforeseen impacts	Section 5 Section 10

Section in ToR	Detail	Section in Report
	vi. the risks associated with unlikely but potentially major impacts vii. direct, indirect, secondary, permanent, temporary, unknown, unpredictable and/or irreversible impacts viii. both positive and negative impacts ix. impact interactions.	
8.5	Assess the cumulative impacts of the project on environmental values. Every effort must be made to find information from all sources relevant to the assessment of cumulative impacts including other major projects or developments of which the proponent is reasonably aware. The EIS must outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis. Impact assessment must address cumulative impacts, considering all stages of the project, including: (a) impacts to environmental values of land, air and water, public health and the health of terrestrial and aquatic ecosystems (b) impacts to environmental values over time or in combination with other impacts in the dimensions of scale, intensity, duration or frequency of the impacts (c) impacts created by the activities on other adjacent, upstream and downstream developments and infrastructure, and landholders (d) impact of project on overall state and national greenhouse gas (GHG) inventories and targets.	Section 10
8.6	Propose and describe avoidance, mitigation and management strategies for the protection or enhancement of identified environmental values. Proposed strategies must: (a) adhere to the department's management hierarchy: (a) to avoid; (b) to minimise and mitigate including best practice environmental management; once (a) and (b) have been applied, (c) if necessary and possible, to offset (b) include a scientifically robust assessment of the expected or predicted effectiveness, of the mitigation measures for dealing with the project's relevant impacts (c) the name of the entity responsible for endorsing or approving each mitigation measure or monitoring program (d) any statutory or policy basis for the mitigation measures (e) the cost of the mitigation measures (f) include management plans setting out the framework for continuing management, mitigation and monitoring programs for the project's relevant impacts, including any provision for independent environmental auditing (g) include an adaptive management approach to provide confidence that, based on current technologies, the impacts can be effectively managed over the long-term	Section 11

Section in ToR	Detail	Section in Report
	(h) be described in context of proposed conditions including site-specific, outcome-focussed conditions that can be measured and audited.	
8.10	For information included in the EIS, provide the following: the source of the information, how recent the information is, how the reliability of the information was tested and any uncertainties in the information.	Section 5 and Section 9
8.13	Critical environmental matters identified for this project which the EIS must give priority are: (a) Water quality and flooding, including matters of national environmental significance and matters of state environmental significance	Section 5.4, 5.5 Section 10
9.11	Conduct the impact assessment in accordance with the latest version of the department's Contaminated land—EIS information guideline(ESR/2020/5300) (DESI 2024),	Section 10 Section 11
9.18	Detail any known or potential sources of contaminated land that could be impacted by the project. Describe how any proposed land use may result in land becoming contaminated.	Section 10
9.28	Conduct the impact assessment in accordance with the following guidelines: Water—EIS information guideline (ESR/2020/5312) (DESI 2024), Applications for activities with impacts to water (ESR/2015/1837) (DESI 2024), Water quality guidelines (DESI 2024a), Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018); (ANZG 2018); 2023), Queensland Water Quality Guidelines (DEHP 2009), Wastewater release to Queensland waters (ESR/2015/1654) (DESI 2024), Monitoring and sampling manual (DES 2018), Information guidelines on deriving site-specific guideline values for physico-chemical parameters and toxicants (IESC 2019) and Using monitoring data to assess groundwater quality and potential environmental impacts (DES 2021).	Section 10 Section 11
9.29	Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.	Section 10
9.30	With reference to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 and section 9 the EP Act, identify the environmental values of surface- and ground- waters within the project area and immediately downstream or downgradient that may be affected by the project, including wetlands, semi-permanent and permanent pools, seagrass beds, corals, any human uses and cultural values of water.	Section 5.6 Section 5.7
9.31	Define the relevant water quality guidelines applicable to the environmental values and demonstrate how these will be met by the project during construction, operation, decommissioning and following project completion. Locally derived trigger values must be derived in accordance with best practice environmental management including the guidelines listed in Water—EIS information guideline (ESR/2020/5312) (DESI 2024).	Section 10 Section 11

Section in ToR	Detail	Section in Report
9.32	Detail the hydrological, hydrogeological, chemical, physical and biological characteristics of groundwater within the area that may be affected by the project and at suitable reference locations using sufficient data to define natural variation, including for various water types, and seasonal and spatial variation.	Section 5
9.35	Describe how water quality guidelines and objectives would be achieved and environmental impacts would be avoided or minimised through the implementation of management strategies that comply with the management hierarchy and management intent of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019	Section 11
9.36	Describe how monitoring would be used to demonstrate that objectives were being assessed, audited and met. For example, provide measurable criteria, standards and/or indicators that will be used to assess the condition of the ecological values, environmental values and health of surface- and ground- water environments. Propose detailed corrective actions to be used if objectives are not likely to be met.	Section 11
9.37	Conduct the impact assessment in accordance with the department's Water—EIS information guideline, ESR/2020/5312 (ESR/2020/5312) (DESI 2024) and DAF Environmental impact assessment companion guide (DAF 2024). Address the requirements of section 126A of the EP Act.	Section 10
9.38	Describe present and potential users and uses of water in areas potentially affected by the project, including municipal, agricultural, industrial, recreational and environmental uses of water.	Section 5.7 Section 10
9.39	Describe the quality, quantity and significance of groundwater in the project area and any surrounding area potentially affected by the project's activities. Include the following: (i) characterise: the nature, type, geology/stratigraphy and depth to and thickness of the aquifers; their hydraulic properties; and value as water supply sources (j) analyse the movement of underground water to and from the aquifer(s), including how the aquifer(s) interacts with other aquifers and surface water, and the effect of geological structures on this movement (k) characterise the quality and volume of the groundwater including seasonal variations of groundwater levels (l) provide surveys of existing groundwater supply facilities (e.g. bores, wells, or excavations) (m) describe groundwater recharge and discharge processes; and their amount.	Section 4 Section 5
9.40	Model and describe the inputs, movements, exchanges and outputs of surface water and groundwater that would or may be affected by the project including potential post-mining land use outcomes. The models used to estimate associated water take must take into account the climatic conditions at the site, assess the potential impacts on water resources and include a site water balance. The groundwater model must be developed in accordance with the Australian groundwater modelling guidelines (Barnett et al. 2024) including peer-review by an independent appropriately qualified person(s).	Section 7

Section in ToR	Detail	Section in Report
9.41	Provide a description of the project's impacts at the local scale and in a regional context including: (a) changes in flow regimes from diversions, water take and discharges (b) groundwater draw-down and recharge (c) management of mine affected water (d) alterations to riparian vegetation and bank and channel morphology (e) direct and indirect impacts arising from the development.	Section 10
9.44	Identify any approvals or entitlements that would be needed under the Water Act 2000. Specifically address whether or not the project would take water from, or affect recharge to, aquifers of the Great Artesian Basin. Address the requirement/s for a Riverine Protection Permit (RPP) and/or Quarry Material Allocation Notice (QMAN) .Describe the practices and procedures that would be used to avoid or minimise impacts on water resources.	Section 7 Section 8 Section 10
9.45	Describe how 'make good' provisions would apply to any water users that may be adversely affected by the project. Propose a network of groundwater monitoring bores before and after the commencement of the project that would be suitable for the purposes of monitoring groundwater quality and hydrology impacts that may occur as a result of the resource activity. Include details on investigation timeframes and actions if exceedances are detected.	Section 112
9.60	The EIS must provide the information requirements contained in the IESC's Information guidelines (IESC 2024) including relevant information guidelines explanatory notes (e.g. uncertainty analysis, assessing groundwater-dependent ecosystems).	Section 7 and Section 9
9.115	Identify the quantity, quality and location of all potential discharges of water and contaminants by the project, including treated wastewater and sewage. Describe whether the discharges would be from point sources (whether uncontrolled and controlled discharges) or diffuse sources (such as irrigation to land of treated wastewater/sewage effluent) and describe the receiving environment (such as land or surface waters). Refer to the Water section of the TOR and Water—EIS information guideline (ESR/2020/5312) (DETSI 2024) for further guidance. For potential discharges to groundwaters, provide an assessment using the appropriate approaches and guidelines listed in the Water—EIS information guideline (ESR/2020/5312) (DETSI 2024).	Section 10 Section 11
Appendix 3 - Terms of reference for matters of national environmental significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 requirements		
A3.24	Describe the environment of the project site and surrounding areas (i.e. adjacent, upstream and downstream from project site) that may be affected by the project. At a minimum, this section needs to include details of: a) the current and historical land uses of the local region and project area, including the existing condition of the overall environment	Section 3 Section 5 Section 10

Section in ToR	Detail	Section in Report
	b) terrain, topography and elevation of the project site and surrounding areas including a description of any floodplains and significant geological features and structures of the region such as faults relevant to the mine site f) terrestrial and aquatic ecosystems including groundwater dependent ecosystems (GDEs), key vegetation communities and relevant watercourses h) characteristics of potentially impacted water resources (surface water and groundwater) including, but not limited to, the Isaac River and Cherwell Creek and relevant wetlands in the region i) values of water resources, including but not limited to social and economic values (including third party uses of groundwater and surface water), and cultural values.	
A3.42	Provide information and data to characterise the current condition of all groundwater systems associated with the project area and how they relate to other MNES (such as listed threatened species and communities), including but not limited to, groundwater levels/potentiometric surface, hydraulic parameters, groundwater flow, inter-aquifer connectivity, groundwater-surface water interactions and groundwater quality.	Section 5
A3.43	Provide a conceptualisation of water resources. Conceptualisation and understanding of surface water, GDEs, groundwater, surface-to-ground water interactions and their interconnection should: a) be informed by systematic water level and water quality monitoring with appropriate temporal coverage to best capture seasonality, inter-annual variability and trends, including: i) continuous or at least monthly monitoring of groundwater levels ii) regular water quality sampling of groundwater, as informed by variability in groundwater levels e.g. to capture processes like rainfall infiltration iii) regular water quality sampling of surface waters, and event-based sampling as needed b) follow relevant Commonwealth, State and/or best practice guidelines to conduct a baseline study and derive site-specific water quality guidelines where appropriate and/or adopt default guidelines as provided by the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018) (and other relevant sources) c) include measurement of physico-chemical parameters, nutrients, metals and metalloids, and any other relevant parameters, such as hydrocarbons, needed to understand potential impacts d) describe, if relevant, how baseline hydrological conditions may be influenced by activities associated with nearby mining operations e) provide a statement to evaluate the representativeness of water sampling and monitoring sites.	Section 5 and Section 6

Section in ToR	Detail	Section in Report
A3.50	With consideration of all project phases, identify and describe which component/s and stage/s of the project and/or consequential actions are of relevance to each listed threatened species and/or ecological community. All relevant impacts of the project are to be assessed in accordance with the latest relevant Commonwealth policies and guidelines, and information provided in the SPRAT database, including but not limited to: j) changes to hydrological regimes (including flow changes, groundwater levels and flooding) k) impacts on or changes to water quality (including direct and indirect), including but not limited to total suspended sediment and turbidity changes, waste and chemical pollution and land contamination l) impacts to groundwater levels in root zones of relevant vegetation habitat m) Impacts to groundwater levels and quality resulting from the final void	Section 7 Section 8 Section 10
A3.61	Assess how changes to hydrology associated with the proposed project may impact on listed threatened species and ecological communities, taking into consideration both surface and groundwater dependence.	Section 10
A3.67	With consideration of all project phases, identify and describe which component/s and stage/s of the project and/or consequential actions are of relevance to water resources. All relevant impacts of the project must be assessed in accordance with the latest relevant Commonwealth policies and guidelines, including but not limited to: a) changes to hydrological regimes (including flow changes, groundwater levels, river-floodplain connectivity, inter-aquifer connectivity, groundwater recharge rates and flood regimes) b) impacts on or changes to water quality (including direct and indirect), including but not limited to total suspended sediment and turbidity changes, waste and chemical pollution and land contamination c) impacts to groundwater levels in root zones of relevant vegetation habitat d) impacts to groundwater levels and quality resulting from the final void	Section 8 Section 10
A3.68	Identify and assess the cumulative impacts on water resources created by the project and the activities of other existing and proposed adjacent, upstream and downstream relevant developments, water users and land users. This must include at a minimum, cumulative impacts of other projects impacting on groundwater levels and other relevant parameters including, but not limited to, the Isaac Downs coal mine project (EPBC 2019/8413), the Bowen Gas Project (EPBC 2012/6377), the Moranbah South Project Coal Mine (EPBC 2012/6337) and any other mines which may might interact with the impacts for the proposed action. Details of these projects can be found on DCCEEW's EPBC Public Notices website.	Section 8 Section 10

Section in ToR	Detail	Section in Report
A3.69	Provide a conceptual model/s to describe impact pathways and linkages for pre- and post-mining activities, showing at least, but not limited to: c) groundwater-surface water interactions including groundwater recharge, and loss/gain to Isaac River and Cherwell Creek d) inter-aquifer connectivity vertical and horizontal hydraulic conductivity e) altered geomorphology of water courses through proposed infrastructure (e.g. diversion, bridge, levees).	Section 6
A3.70	Develop robust conceptual and numerical models that provide information on the potential future impacts to all groundwater systems and potential aquitards. Use the modelling and field data to assess the causes, pathways and receptors of potential impacts to groundwater. Discuss how modelling aligns with the IESC Information guidelines for proponents preparing coal seam gas and large coal mining development proposals (2024).	Section 6
A3.71	Provide information to identify and assess risks and impacts to all groundwater resources	Section 8
A3.72	Provide information and data to characterise long-term impacts to groundwater levels and quality depending on the final landform design, which has not been determined – e.g., open voids acting as a groundwater sink and permitting evaporative concentration of contaminants.	Section 8 Section 10
A3.82	Provide an evidence-based assessment that the potential impacts (due to dewatering and groundwater quality degradation) and expected depletion of aquifers will not affect other water users, aquifers, and associated environmental values.	Section 10 Section 11
A3.92	The EMPs must include details of specific and measurable environmental outcomes, performance criteria, monitoring, reporting, triggers and corrective actions, responsibility, and timing for each measure, including an assessment of the expected or predicted effectiveness of the proposed measures for relevant protected matters, including, but not limited to: a) information on the timing, frequency and duration of the proposed avoidance, mitigation and management measures to be implemented and address the project phases (construction, operation, decommission and rehabilitation) separately b) details of ongoing management and monitoring programs, including timing, to validate the effectiveness of proposed measures and demonstrate that environmental outcomes will be, or have been, achieved c) details of tangible, on-ground corrective actions that will be implemented, including timing, in the event that monitoring programs indicate that the environmental outcomes have not been, or will not be, achieved d) measures for the handling, disposal, and storage of organic chemicals, heavy metals or other potentially harmful chemicals	Section 10 Section 11

Section in ToR	Detail	Section in Report
	that might be used during operation. The EMP must also include a discussion on risk management and mechanisms for monitoring potential leakages to groundwater e) future climate change scenarios in the surface and groundwater models when designing the capacity of containment dams and other relevant infrastructure f) water quality and levels baseline data and details of trigger levels for groundwater and surface water contaminants g) information about other groundwater users and potential cumulative impacts of groundwater drawdown to these users as a result of the project h) Information about other surface water users and potential cumulative impacts of reduced surface water flows or quality to these users as a result of the project	
A3.86	Describe how impacts to water resources will be avoided.	Section 10 Section 11
A3.92	The EMPs must include details of specific and measurable environmental outcomes, performance criteria, monitoring, reporting, triggers and corrective actions, responsibility, and timing for each measure, including an assessment of the expected or predicted effectiveness of the proposed measures for relevant protected matters, including i) future climate change scenarios in the surface and groundwater models when designing the capacity of containment dams and other relevant infrastructure j) water quality and levels baseline data and details of trigger levels for groundwater and surface water contaminants	Section 7 Section 10 Section 11

Appendix E Bore Census Factual Report (SLR, 2024e)

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

To:	Richard Oldman	**From:**	Kirsty Gibson
Company:	Stanmore Resources Limited	**SLR Consulting Australia**	
cc:	Ciara Kruger	**Date:**	6 January 2025
		Project No.	620.041537.00003

RE: Isaac Downs Extension Project
Bore Census Factual Field Report and Recommendations

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1.0 Background

Stanmore IP South Pty Ltd, a subsidiary of Stanmore Resources Limited (Stanmore), has engaged SLR Consulting Australia Pty Ltd (SLR) to undertake a field bore census for Stanmore's Isaac Downs Extension (IDE), the Project. The Project is a proposed open-cut coal mine located approximately 9 kilometres (km) southeast of Moranbah, within the Bowen Basin mining region. The Project is currently in concept/design stage, extending over Stanmore's exploration permit – coal (EPC) 755 and portions of the Anglo American/Exxaro mineral development licence (MDL) 277 and EPC 548, subject to a commercial agreement.

The field bore census was undertaken to investigate the current status of existing bores at and surrounding the Project, with the aim to:

1. Identify/confirm existing bores that might be included in routine baseline monitoring for the future Groundwater Impact Assessment (GIA) in support of the Project Environmental Impact Statement (EIS); and
2. Identify/confirm any landholder bores surrounding the Project that would need to be considered in the GIA.

The assessment additionally provided baseline data for groundwater levels and quality against which potential future impacts from the Project may be quantified.

2.0 Methodology

2.1 Desktop Review and Field Planning

A desktop review was undertaken prior to the bore census to facilitate effective field planning. This process included the following activities:

- A review of information collated in SLR's Gap Analysis for the Project (SLR, 2024) including publicly available data (e.g. Queensland Groundwater Database, geological mapping, GDE mapping), Stanmore provided data and reports, and previous bore censuses in the area including existing Stanmore bore census' (e.g. Isaac Downs).
- Development of a list of bores planned for site visits, which was shared with Stanmore for review and feedback prior to execution of the census in the field.
- Preparation of field census sheets detailing all data to be collected during the survey. These sheets were designed to align with the DES Guideline for baseline

assessments (ESR/2016/1999 Guideline – Baseline Assessments (Department of Environment and Science (DES)[1])

- In addition to the DES Guideline, planned information gathering in the survey was based on SLR's prior experience and included:
    1. Bore location documentation, including GPS coordinates and photographs.
    2. Measurements of water table depth and bore depth, with reference points noted.
    3. Data downloads from any installed loggers and assessments of suitability for future logger installation.
    4. In-situ water quality measurements, including electrical conductivity (EC) and pH.
    5. Collection of water samples for laboratory analysis based on recommended suites from SLR's experience and DES guideline requirements.
    6. Documentation of bore usage and seasonal water volumes through discussions with landholders.
    7. General comments from landholders regarding bore yield, usage history, construction details, and other relevant observations.
    8. Observations of interactions with springs, seeps, or GDEs.
    9. Documentation of reasons for any missing data or inaccessible bores.
- Preparation of a Safe Work Method Statement (SWMS) outlining field tasks, including bore assessments and travel, for review and approval by Stanmore.

2.2 Bore Census

The bore census was conducted over five days, from 25th to 30th November 2024, by a suitably experienced SLR hydrogeologist, supported by a Stanmore geologist.

Activities conducted at each bore included the following.

2.2.1 Site Observations

Each bore was cross-referenced with the desktop database. Bore locations were recorded using GPS, and new photographs were taken of the bore and the surroundings, where relevant to hydrogeological conceptualisation. Photos were also taken of any installed downhole equipment, such as pumps and loggers.

2.2.2 Groundwater Level Monitoring

Groundwater level measurements were conducted using an industry-standard water level meter. The following procedures were followed:

- Ensured the water level meter was fit for purpose and in good working condition.
- Cleaned and decontaminated the probe and tape before use at each bore.
- Measured standing water levels prior sampling, ensuring consistency with a permanently marked reference point.

[1] Department of Environment and Science, 2024, Baseline assessment Guideline (1st ed. Published 2013). Queensland Government. https://www.des.qld.gov.au/policies?a=272936:policy_registry/rs-gl-baseline-assessments.pdf

- Compared measurements to historical data (if available) and repeated measurements in cases of significant discrepancies.

2.2.3 Groundwater Sampling

Sampling was conducted in accordance with relevant industry standard guidelines - Groundwater Sampling and Analysis—A Field Guide (Sundram et al., 2009)[2]; and AS/NZS 5667.11:1998 Water Quality—Sampling—Guidance on Sampling of Groundwaters. These protocols ensured the collection of representative groundwater samples and adherence to best practices.

- Bores equipped with pumps were sampled directly from sample taps installed to the bore headworks, as the pumps were actively in use at the time of the site visit. Field parameters, pH and electrical conductivity (EC), were monitored continuously during pumping and sampling commenced only after these parameters stabilised, indicating that the bore was sufficiently purged.
- At monitoring bores, low-flow sampling methodology was employed as follows. This was used to minimise sediment disturbance and collect representative samples which reflect the targeted groundwater conditions.
    - Where the screen depth was known, the pump was positioned in the middle of the screen portion. In cases where the screen depth was unknown, it was assumed that the screen was located near the lower portion of the bore, as per standard bore construction practices and low flow pump was positioned towards the base of the bore.
    - Pumping rates were maintained between <0.01 litres per second (L/s) to reduce drawdown and prevent the mixing of stagnant water in the bore.
    - In instances where low-flow pumps could not be used due to bore obstructions, shallow water levels, or other constraints, samples were collected using bailers. It was noted that bailer-collected samples might not represent the targeted groundwater conditions.
- Field parameters (pH and EC) were monitored and recorded using calibrated meters.
- Any limitations to sampling encountered during data collection were documented.

[2] Sundaram, B., Feitz, A., Caritat, P. de, Plazinska, A., Brodie, R., Coram, J. and Ransley, T. 2009. Groundwater Sampling and Analysis – A Field Guide. Geoscience Australia, Record 2009/27 95 pp.

3.0 Results of Bore Census

A total of 43 bores were assessed in the census, including both mine monitoring bores and landholder supply bores. An overview of the details and status of the bores inspected during the census is provided below. **Figure 3-1** provides a locality plan for bores surveyed in the census.

3.1 Monitoring Bores

A total of 32 monitoring bores were visited, with 16 found to be functional monitoring bores, while the remaining 16 bores were either lost, damaged, or destroyed.

3.1.1 Functional Bores

Appendix A provides the details and photos collected during the bore census for the 16 functional monitoring bores.

WinSitu water level loggers were found to be installed in four (4) of the functional monitoring bores (RN158317, RN162044, RN162143, and RN162046), while a Solinst Level Logger was installed at one bore, MBID28. These loggers were not able to be downloaded during the census as the two types of necessary supporting equipment and software were not available to the SLR hydrogeologist.

3.1.2 Lost, Damaged and Destroyed Bores

The bore census identified 16 monitoring bores that were non-functional due to being lost, damaged, or destroyed. **Appendix B** provides the details and photographs of these bores.

The compromise of these bores was primarily caused by knocked-down bore monuments, resulting in broken PVC casings at ground level.

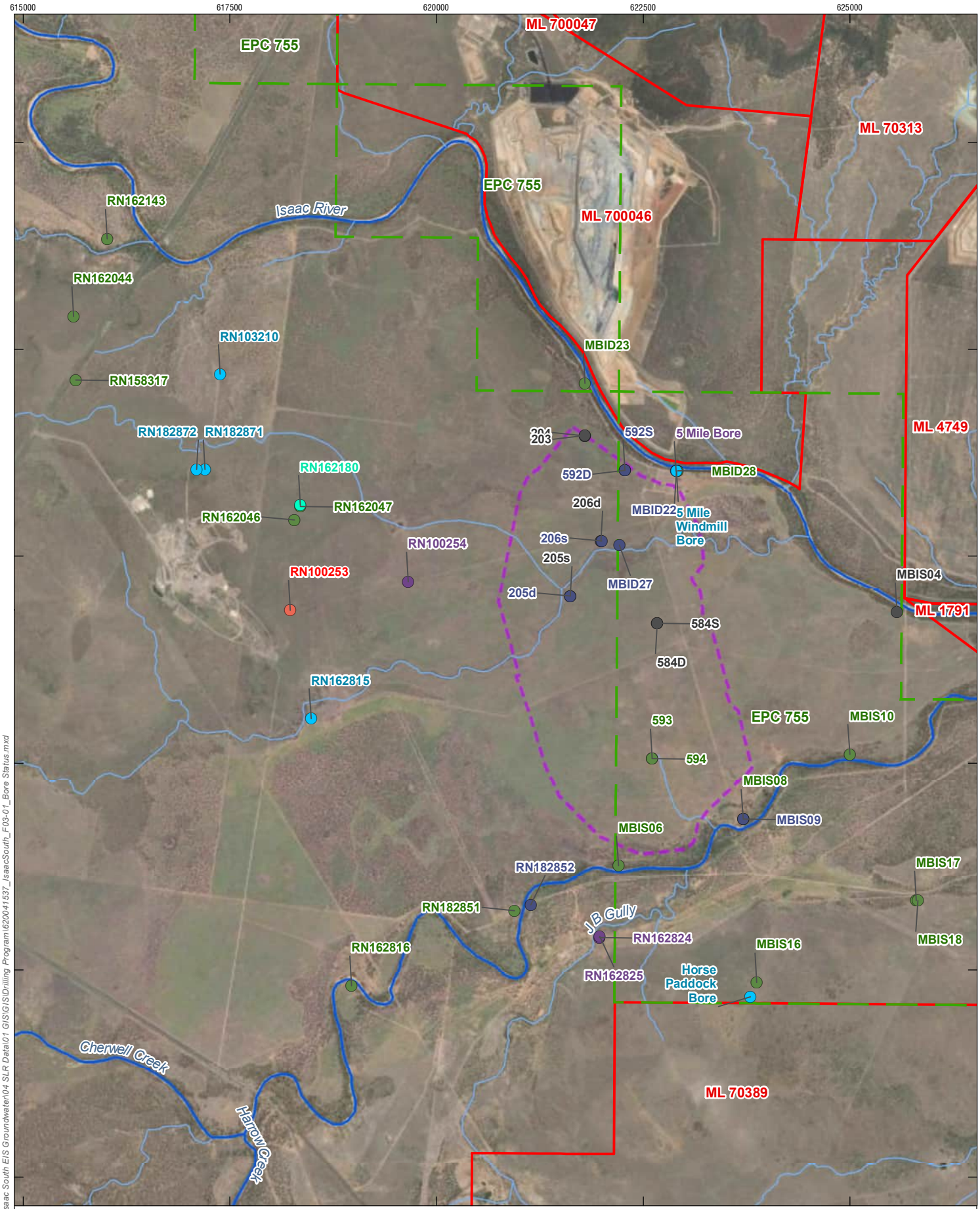
A summary of these bores is provided as follows:

- Eight (8) bores with damaged PVC casing remained accessible but exhibited varying degrees of damage. For instance, bore MBID27 had a bent PVC casing at the surface, preventing sampling with a low-flow pump.
- Bore RN162046, equipped as a vibrating wire piezometer (VWP) bore with multiple sensors, appeared non-functional as the electrical cables were either snapped or cut.
- Seven (7) monitoring bores were found to be entirely lost or destroyed, with broken PVC casings completely buried or backfilled with sand, rendering them inaccessible or unlocatable with only the broken-off monuments visible, providing evidence of their previous locations.

Additionally, some bores showed significant siltation, blockages, or structural collapse, as indicated by shallower observed bore depths compared to information on their original drilled depths:

  - Bore RN182852, originally drilled to 34.5 mbgl, however recorded a total depth of 10.94 mbgl at the time of the bore census.
  - Bore MBID27, drilled to 18 mbgl, recorded a total depth of 11.64 mbgl at the time of the bore census.

Note that several bores surveyed lack recorded original drilled depths, making it difficult to assess the degree of siltation or blockages in those bores.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ML 700047
EPC 755
ML 70313
EPC 755
ML 700046
Isaac River
RN162143
RN162044
RN103210
RN158317
MBID23
ML 4749
RN182872
RN182871
203
592S
5 Mile Bore
RN162180
592D
MBID28
206d
RN162047
RN162046
MBID22
5 Mile Windmill Bore
206s
RN100254
205s
RN100253
MBID27
MBIS04
205d
ML 1791
584S
584D
RN162815
593
EPC 755
MBIS10
594
MBIS08
MBIS09
MBIS06
RN182852
MBIS17
RN182851
JB Gully
RN162824
MBIS18
RN162816
MBIS16
RN162825
Horse Paddock Bore
Cherwell Creek
ML 70389
Harrow Creek
0
0.5
1
km
Coordinate System: GDA 1994 MGA Zone 55
Scale: 1:60,000 at A4
Project Number: 620.041537.00001
Date: 17-Dec-2024
Drawn by: AS
Status
Active Supply Bore
Inactive Supply Bore
Functional
Lost
Lost / Destroyed
Rehabilitation Required
Rehabilitation Required (VWP)
Major Watercourse
Minor Watercourse
Stanmore Mining Lease
Exploration Permit for Coal
Proposed Project Pit Extent
ISAAC DOWNS EXTENSION PROJECT
CENSUS LOCATIONS AND BORE STATUS
FIGURE 3-1
H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Drilling Program\620041537_IsaacSouth_F03-01_Bore Status.mxd

3.2 Landholder Water Supply Bores

A total of 11 landholder supply bores were visited, with six (6) found to be active supply bores, while the remaining five (5) bores were inactive and at the time of census were not equipped with pumps.

3.2.1 Functional Bores

Bore details and photographs of water supply bores visited during the bore census is provided in **Appendix C**.

Bore RN162815, RN103210 and the 5 Mile Windmill Bore are stock supply bores feeding one or more poly lines which flow into water storage tanks or directly into cattle troughs. Flow rates at these bores measured at the time of visit ranged between 0.05 and 0.25 L/s. Horse Paddock Bore was not pumping at the time of visit and the landholder was unable to switch the pump on. A water sample was taken from the tank which the bore supplies and as such it should be noted that this sample may not be representative of the targeted groundwater conditions at this bore. No details regarding the pumping schedule of the stock supply bores could be gathered from the landholder.

Bores RN182872 and RN182871 are active supply bores to the nearby quarry. Each of these bores are equipped with a steel headworks with Grundfos 7A-25 submersible pump which feeds a 63 mm poly line. These bores were reported to pump at a rate of 0.2 and 0.3 L/s respectively for 8 hours a day. Bore RN182871, was drilled in October 2024, more recently than RN182872 and reports of high iron precipitate in the bore was noted by the quarry manager.

3.2.2 Lost, Damaged and Destroyed Bores

Supply bore RN100253 could not be located despite extensive searching around its historical GWDB coordinates. Only a pile of PVC casing found nearby, which could not be confirmed as related to the bore. Bore details and photographs are provided in **Appendix D**.

3.3 Groundwater Quality Results

The results of the laboratory water quality analysis at functional monitoring, damaged monitoring bores and landholder supply bores are provided in **Appendix E, F** and **G** respectively. The laboratory certificate of analysis is provided in **Appendix I.**

Bores RN158317, RN162044, RN162143, and RN162180 were sampled using a bailer to avoid removing the installed WinSitu telemetry loggers. Bore MBID28, which contained only 3.5 m of water, was also sampled with a bailer to prevent sediment disturbance and damage to the low flow pump due to siltation. Bore MBID27 was sampled using a bailer due to a kink in the broken PVC casing at the surface which prevented the pump from being installed.

Bores MBIS06, MBIS09, MBIS08, MBIS10, MBIS17, MBIS18, and MBIS16 were not sampled during the bore census as these bores had not yet undergone development after drilling. Sampling of these bores falls within the scope of works planed for the bore development.

4.0 Recommendations

Based on the bore census findings, the following actions are recommended to re-establish the integrity and spatial coverage of the groundwater monitoring network.

Specific actions required at each bore is outlined in **Appendix H**.

1. **Monitoring Bores Requiring Rehabilitation**
    a. MBID22, MBID27: Remove and replace pinched sections of casing.
    b. MBIS09: Regrout and recement casing to secure bore structure and monument.
    c. 206S, 205D, 592S, 592D, RN182852, MBID27: Replace monuments, extend PVC casings above ground level, and airlift bores to clear siltation.
2. **Downhole Camera Survey**
    a. 593, 594, 592D, 592S, 205d, 206s, RN158317, RN162180, RN182851, RN182852: Downhole camera survey to confirm screen depths.
3. **Decommission Destroyed Bores**
    a. 204, 203, 206D, 584S, 584D, 205S: Decommission bores in accordance with the *Minimum Construction Requirements for Water Bores in Australia*.
4. **Replacement Bores**
    a. 205s: Drill a replacement for destroyed bore 205s, targeting the Rangal Coal Measures overburden.

    Note that following review of the census results and considering the SLR (2024) gap analysis and planned 2025 drilling program, SLR does not consider it necessary to replace any other destroyed monitoring bores.

5.0 Closure

We trust this memorandum meets your expectations.

Regards,

SLR Consulting Australia

Kirsty Gibson
Project Hydrogeologist

Derwin Lyons
Technical Director

6.0 References

SLR, 2024. Isaac Downs Extension Project Groundwater Gap Analysis & Field Program Recommendations. Prepared for Stanmore Resources Limited by SLR Consulting Australia Pty Ltd.

Appendix A Functional Monitoring Bores

Bore ID	Date & Time Visited	Easting (GDA94)	Northing (GDA94)	Casing Diameter (mm)[3]	TOC (mAGL)	SWL (mbTOC)	Depth to base bore (mbTOC)	Sampling Method	EC (µS/cm)	pH	Loggers
MBIS17	26-11-24 15:00	625803	7553336	52	0.86	Dry	23	-	-	-	-
MBIS18	26-11-24 15:00	625821	7553337	52	1.08	19.93	>150	low flow pump	429.2	6.98	-
MBIS16	27-11-24 13:00	623872	7552348	52	0.93	18.44	69.19	bailer	11457	6.78	-
MBIS10	26-11-24 13:00	624998	7555106	52	0.79	16.92	24.15	low flow pump	2655	6.96	-
MBIS06	27-11-24 9:00	622200	7553757	52	0.72	Dry	12.4	-	-	-	-
MBIS08	27-11-24 6:50	623708	7554323	52	0.82	13.33	50	low flow pump	8283	8.07	-
MBID23	26-11-24 6:40	621795	7559591	52	0.62	12.39	14.12	low flow pump	3685	6.43	-
594	26-11-24 22:57	622610	7555054	52	0.71	27.61	46.88	low flow pump	19461	6.92	
593	26-11-24 22:57	622610	7555055	52	0.68	27.32	95	low flow pump	12494	6.83	
RN182851	27-11-24 9:30	620943	7553218	52	0.71	14.69	35.35	low flow pump	7387	6.52	
RN158317	28-11-24 11:45	615638	7559628	102	0.42	21.74	84.2	bailer	1776	7.36	Win Situ telemetry logger
RN162044	29-11-24 6:22	615613	7560398	102	0.3	30.49	74.7	bailer	2225	7.67	Win Situ telemetry logger
RN162143	29-11-24 7:33	616017	7561336	102	0.48	11.18	23	bailer	10850	6.87	Win Situ telemetry logger
RN162046	25-11-24 7:20	618281	7557938	102	0.65	18.76	25	bailer	2479	6.66	Win Situ telemetry logger
RN162047	25-11-24 7:20	618351	7558101	102	0.55	Dry	15	-	-	-	-
MBID28	25-11-24 13:37	622918	7558534	52	0.55	12.03	15.79	bailer	1529	6.34	Solinst level logger

[3] All monitoring bores installed with PVC casing

MBIS17 	MBIS18 	MBIS16
MBIS10 	MBIS06 	MBIS08
MBID23 	594 	593
MBID28 	RN182851 	

RN162047

RN158317

RN162044

RN162143

RN162046

Appendix B Lost, Damaged and Destroyed Monitoring Bores

Bore ID	Date & Time Visited	Easting (GDA94)	Northing (GDA94)	Status	TOC (mAGL)	SWL (mbTOC)	Depth to base bore (mbTOC)	Sampling Method	EC (µS/cm)	pH	Comments
MBID22	25-11-24 13:37	622903	7558530	Rehabilitation Required	0.67	17.47	24.75	-	-	-	Casing pinched at 3 mbtoc. Pump and bailer cantt be installed down hole.
MBIS09	27-11-24 6:50	623708	7554321	Rehabilitation Required	1	14.87	96.41	bailer	8074	7.9	Loose monument and PVC casing - Grout/cement not adequate or weakened over time. Cautiously used bailer to sample.
206s	25-11-24 10:53	621999	7557682	Rehabilitation Required	0	12.96	20.6	low flow pump	7835	7.3	Monument knocked down, PVC casing is broken off below ground level - The bore remains open and accessible
205d	25-11-24 4:43	621616	7557019	Rehabilitation Required	0	12.15	58.17	low flow pump	15569	7.2	Monument knocked down, PVC casing is broken off below ground level - The bore remains open and accessible
592S	26-11-24 8:04	622278	7558539	Rehabilitation Required	0	16.37	57.1	low flow pump	621	7.1	Monument knocked down, PVC casing is broken off below ground level - The bore remains open and accessible
592D	26-11-24 8:04	622280	7558538	Rehabilitation Required	0	12.47	86.43	low flow pump	648	7.2	Monument knocked down, PVC casing is broken off below ground level - The bore remains open and accessible
RN182852	27-11-24 10:41	621142	7553285	Rehabilitation Required	0	Dry	10.94	-	-	-	Monument knocked down, PVC casing is broken off below ground level - The bore remains open and accessible. Bore is dry, likely backfilled or silted up.
MBID27	25-11-24 13:37	622212	7557635	Rehabilitation Required	0	3.61	11.64	bailer	313.7	6.7	Monument knocked down. Kink in PVC at surface
RN162180	25-11-24 7:20	618352	7558115	Rehabilitation Required	-	-	-	-	-	-	VWP cables snapped/cut. Rehabilitation not considered necessary for the Project given the very deep monitored formation of this bore.
204	26-11-24 7:55	621796	7558955	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled
203	26-11-24 7:55	621797	7558960	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled
206d	25-11-24 10:53	621990	7557687	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled
584D	25-11-24 12:20	622671	7556690	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled. Only Stake visible
584S	25-11-24 12:20	622671	7556690	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled. Only Stake visible
205s	25-11-24 4:43	621616	7557019	Lost / Destroyed	-	-	-	-	-	-	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled
MBIS04	not visited	625570	7556820	Decommissioned	-	-	-	-	-	-	OBS7 destroyed. Then replacement bore MBIS04 which was nested with MBIS05 - both now decommissioned

MBID22

MBIS09

206s

205d

592S

592D

RN182852

MBID27

RN162046

204 	**203** 	**206d**
584D 	**584S** 	**205s**

Appendix C Functional Landholder Supply Bores

Bore ID	Date & Time Visited	Easting (GDA94)	Northing (GDA94)	Status	Casing Material	Casing Diameter	TOC (m)	SWL (mbTOC)	Depth to base bore (mbTOC)	Sampling Method	EC (µS/cm)	pH	Headworks and Construction Details	Pump rate at time of visit (l/s)	Flow Meter (m^3)	Comments
5 Mile Bore	25-11-24 13:45	622897	7558528	Inactive Supply Bore	PVC	130	0.44	14.33	36.28	low flow pump	1776	6.64	Not equipped	-	-	
5 Mile Windmill Bore	29-11-24 6:34	622901	7558527	Active Supply Bore	PVC	220	0.58	Unable to measure	Unable to measure	tap	7652	6.646	Steel headworks with submersible pump powered by 2 solar panels and an electric box; windmill disconnected; feeds polyline.	0.05	5746	
RN162815	25-11-24 6:53	618483	7555539	Active Supply Bore	PVC	220	0.46	Unable to measure	Unable to measure	tap	2306	7.33	Steel headworks with submersible pump powered by 2 solar panels and an electric box; feeds polyline to water storage tank	0.25 l/s	3884	Landholder reported that the bore was broken and unused for some time, but has recently been repaired
RN182872	28-11-24 10:46	617100	7558546	Active Supply Bore	PVC	102	0.42	Unable to measure	Unable to measure	tap	1872	7.4	Steel headworks with 7A-25 submersible pump powered by generator; feeds 63 mm polyline.	0.2	no flow meter	
RN182871	28-11-24 10:46	617203	7558546	Active Supply Bore	PVC	102	0.42	Unable to measure	Unable to measure	tap	1755	7.15	Steel headworks with 7A-25 submersible pump powered by generator; feeds 63 mm polyline.	0.3	no flow meter	Drilled in October 2024. Complaints of high iron at the bore, but not at the supply plant
Horse Paddock Bore	27-11-24 12:45	623797	7552173	Active Supply Bore	steel	152	-	Unable to measure	Unable to measure	Grab sample from water storage tank	1162	7.72	Submersible pump with 3 pipes (63 mm polyline) attached to headworks.	-	-	Landholder did not want to give details and representative on site did not know any bore details or how to switch bore on.
RN103210	28-11-24 11:15	617383	7559698	Active Supply Bore	PVC	102	0.48	Unable to measure	Unable to measure	tap	2376	7.18	Steel headworks with submersible pump powered by 2 solar panels and an electric box; feeds polyline to water storage tank	~0.25 l/s	no flow meter	
RN100254	25-11-24 9:03	619659	7557192	Inactive Supply Bore	steel	152	0.52	3.42	>150	low flow pump	6826	8.15	Not equipped with pump	-	-	

Bore ID	Date & Time Visited	Easting (GDA94)	Northing (GDA94)	Status	Casing Material	Casing Diameter	TOC (m)	SWL (mbTOC)	Depth to base bore (mbTOC)	Sampling Method	EC (µS/cm)	pH	Headworks and Construction Details	Pump rate at time of visit (l/s)	Flow Meter (m^3)	Comments
RN162825	27-11-24 11:02	621975	7552906	Inactive Supply Bore	steel	152	0.18	9.32	40.83	low flow pump	3393	7.09	Old steel head works not attached to main riser not equipped with pump	-	-	
RN162816	28-11-24 8:27	618975	7552309	Inactive Supply Bore	PVC	130	0.48	7.45	45	low flow pump	578	6.98	not equipped with pump	-	-	
RN162824	27-11-24 11:02	621971	7552892	Inactive Supply Bore	steel	152	0.25	9.4	15	low flow pump	2968	6.89	not equipped with pump		-	Significant rust on low-flow pump from a rusted casing; water has a red tinge.

5 Mile Bore

5 Mile Windmill Bore

RN162815

RN182872

RN182871

Horse Paddock Bore

RN162824

RN162825

RN100254

RN162816

RN103210

Appendix D Lost Landholder Supply Bore

Bore ID	Date & Time Visited	Easting (GDA94)	Northing (GDA94)	Bore Type	Status	TOC (mAGL)	SWL (mbTOC)	Depth to base bore (mbTOC)	Sampling Method	EC (µS/cm)	pH	Comments
RN100253	25-11-24 11:00	618233	7556847	Supply bore	Lost	-	-	-	-	-	-	Unable to locate bore

RN100253

Appendix E Water Quality Results from Functional Monitoring Bores

Attribute	unit	RN162044	RN162143	RN158317	MBID23	RN182851	593	MBID 28	594
Electrical Conductivity @ 25°C	µS/cm	2080	12600	2030	4210	8700	16100	1730	19400
Solids @180°C	mg/l	1360	8130	1190	2720	6550	10700	1200	14800
pH Value	pH unit	7.8	7.27	7.82	7.02	7.18	7.47	7.25	7.85
Macrochemistry (mg/l)									
Bicarbonate Alkalinity as CaCO3	mg/l	544	981	545	702	457	463	376	401
Carbonate Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1	<1	<1
Hydroxide Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity as CaCO3	mg/l	544	981	545	702	457	463	376	401
Hardness as CaCO3	mg/l	190	1710	128	989	2000	3140	546	4010
Fluoride	mg/l	1.3	0.6	0.3	0.5	<0.1	0.2	0.3	0.2
Chloride	mg/l	489	3900	383	1020	2440	5580	375	6610
Sulfate as SO4	mg/l	2	550	<1	38	673	153	24	527
Dissolved Metals (mg/l)									
Aluminium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	<0.001	<0.001	<0.001	0.003	0.006	0.001	<0.001	0.002
Boron	mg/l	0.4	0.88	0.3	0.3	0.48	0.5	0.13	0.35
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	<0.001	<0.001	0.003	<0.001	0.001	0.002	0.002
Copper	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.012	<0.001
Iron	mg/l	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/l	0.028	0.226	0.008	0.141	0.424	0.978	0.231	1.44
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	0.004	0.003	0.002	0.003	0.003	0.006	0.002	0.008
Nickel	mg/l	0.001	0.005	0.001	0.009	0.003	0.006	0.007	0.004
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Uranium	mg/l	<0.001	0.022	<0.001	0.017	<0.001	<0.001		
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/l	<0.005	<0.005	<0.005	0.029	0.007	<0.005	0.015	<0.005
Total Metals (mg/l)									
Aluminium	mg/l	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
Arseni	mg/l	<0.001	<0.001	<0.001	0.004	0.011	0.002	<0.001	0.002
Beryllium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/l	0.45	1.05	0.31	0.31	0.5	0.41	0.15	0.42
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/l	22	123	26	125	345	562	80	570
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	<0.001	<0.001	0.002	<0.001	0.001	0.002	0.001
Copper	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001
Iron	mg/l	0.06	0.12	<0.05	0.71	2.76	0.57	<0.05	1.08
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium	mg/l	32	334	13	144	248	548	72	535
Manganese	mg/l	0.031	0.24	0.008	0.14	0.431	1.31	0.235	1.39
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	0.003	0.002	<0.001	0.001	0.003	0.008	<0.001	0.009
Nickel	mg/l	0.001	0.004	0.001	0.009	0.003	0.008	0.004	0.004
Potassium	mg/l	7	4	3	<1	7	17	3	18
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Sodium	mg/l	419	2130	372	496	1010	3240	157	3190
Uranium	mg/l	<0.001	0.026	<0.001	0.02	<0.001	<0.001		
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/l	<0.005	<0.005	<0.005	0.031	0.014	0.007	0.014	<0.005

Appendix F Water Quality Results from Damaged Monitoring Bores

Attribute	unit	592S	206S	205d	592D	MBID27	RN162180
Electrical Conductivity @ 25°C	µS/cm	711	9170	17800	601	319	2700
Solids @180°C	mg/l	404	5210	13600	375	285	1540
pH Value	pH unit	7.89	7.91	7.8	7.6	7.18	7.32
Macrochemistry (mg/l)							
Bicarbonate Alkalinity as CaCO3	mg/l	234	385	547	224	114	587
Carbonate Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1
Hydroxide Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1
Alkalinity as CaCO3	mg/l	234	385	547	224	114	587
Hardness as CaCO3	mg/l	220	359	3110	212	37	262
Fluoride	mg/l	<0.1	<0.1	0.2	<0.1	<0.1	0.5
Chloride	mg/l	89	2280	6000	46	21	569
Sulfate as SO4	mg/l	3	221	372	3	2	19
Dissolved Metals (mg/l)							
Aluminium	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Arsenic	mg/l	0.001	0.003	<0.001	0.001	0.004	<0.001
Boron	mg/l	0.09	0.08	0.39	0.08	<0.05	0.32
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	0.002	<0.001	<0.001	0.003	<0.001
Copper	mg/l	<0.001	0.006	<0.001	<0.001	<0.001	<0.001
Iron	mg/l	<0.05	<0.05	<0.05	<0.05	0.3	<0.05
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/l	0.013	0.036	4.56	0.017	0.223	0.115
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	0.005	0.116	0.001	0.004	0.002	0.002
Nickel	mg/l	<0.001	0.005	0.003	<0.001	0.005	<0.001
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l				<0.001	<0.001	<0.001
Uranium	mg/l				<0.001	<0.001	<0.001
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Zinc	mg/l	<0.005	0.008	<0.005	<0.005	0.011	<0.005
Total Metals (mg/l)							
Aluminium	mg/l	<0.01	0.01	<0.01	<0.01	0.03	<0.01
Arseni	mg/l	0.001	0.002	<0.001	0.001	0.003	<0.001
Beryllium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/l	0.1	0.1	0.48	0.08	<0.05	0.34
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/l	60	113	418	59	9	51
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	0.002	<0.001	<0.001	0.003	<0.001
Copper	mg/l	<0.001	0.008	<0.001	<0.001	0.002	<0.001
Iron	mg/l	<0.05	<0.05	0.12	<0.05	0.66	0.18
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium	mg/l	10	11	471	10	3	24
Manganese	mg/l	0.014	0.034	4.66	0.017	0.24	0.114
Mercury	mg/l	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	0.004	0.133	<0.001	0.004	0.001	0.001
Nickel	mg/l	<0.001	0.005	0.004	<0.001	0.005	<0.001
Potassium	mg/l	15	118	22	15	32	3
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l				<0.001	<0.001	<0.001
Sodium	mg/l	58	1110	2510	52	15	466
Uranium	mg/l				<0.001	<0.001	<0.001
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Zinc	mg/l	<0.005	0.01	<0.005	<0.005	0.019	<0.005

Appendix G Water Quality Results from Landholder Bores

Attribute	unit	5 mile bore	5 mile windmil	Horse Paddock	RN182872	RN182871	RN103210	RN162816	RN162815	RN100254	RN162824	RN162825
Electrical Conductivity @ 25°C	µS/cm	2020	8690	1270	2000	1980	2710	568	2630	7730	3580	3940
Solids @180°C	mg/l	1150	6120	963	1210	1160	1580	355	1560	4260	2020	2200
pH Value	pH unit	7.54	7.71	7.97	7.91	7.68	7.72	7.58	7.57	8.39	7.5	7.83
Macrochemistry (mg/l)												
Bicarbonate Alkalinity as CaCO3	mg/l	397	420	112	604	602	665	209	633	499	544	540
Carbonate Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1	<1	<1	24	<1	<1
Hydroxide Alkalinity as CaCO3	mg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity as CaCO3	mg/l	397	420	112	604	602	665	209	633	523	544	540
Hardness as CaCO3	mg/l	445	1570	336	424	442	284	123	389	55	537	486
Fluoride	mg/l	0.4	0.2	0.1	0.2	0.2	0.5	0.3	0.2	2	0.3	0.1
Chloride	mg/l	403	2320	322	356	340	354	43	530	2310	864	989
Sulfate as SO4	mg/l	50	536	53	25	27	27	24	24	<1	52	<1
Dissolved Metals (mg/l)												
Aluminium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/l	0.19	0.36	0.08	0.23	0.23	0.45	0.09	0.26	0.97	0.32	0.29
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Copper	mg/l	<0.001	0.008	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/l	0.191	0.285	<0.001	0.127	0.132	0.011	0.005	0.141	0.169	0.57	0.217
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	0.001	0.003	0.001	0.002	0.003	0.002	0.002	0.001	0.014	0.004	0.004
Nickel	mg/l	0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	
Uranium	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/l	<0.005	0.091	<0.005	0.016	0.007	0.007	<0.005	<0.005	<0.005	0.019	<0.005
Total Metals (mg/l)												
Aluminium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arseni	mg/l	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Attribute	unit	5 mile bore	5 mile windmil	Horse Paddock	RN182872	RN182871	RN103210	RN162816	RN162815	RN100254	RN162824	RN162825
Beryllium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/l	0.24	0.41	0.08	0.28	0.23	0.46	0.08	0.25	1.01	0.33	0.31
Cadmium	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/l	72	247	55	71	65	42	26	71	11	109	95
Chromium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Copper	mg/l	<0.001	0.02	0.001	0.002	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001
Iron	mg/l	<0.05	0.74	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	0.19	6.88
Lead	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium	mg/l	53	236	38	58	61	38	12	41	6	54	44
Manganese	mg/l	0.196	0.314	<0.001	0.136	0.136	0.012	0.005	0.143	0.172	0.573	0.219
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	<0.001	0.004	<0.001	0.002	0.002	0.001	<0.001	<0.001	0.016	0.003	<0.001
Nickel	mg/l	0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Potassium	mg/l	4	9	4	4	4	4	7	5	24	4	5
Selenium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	
Sodium	mg/l	257	1230	110	297	272	475	76	420	1480	489	590
Uranium	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/l	0.007	0.118	<0.005	0.019	0.011	0.009	0.005	<0.005	<0.005	0.024	0.011

Appendix H Recommendations and Actions

Bore ID	Easting (GDA94)	Northing (GDA94)	Bore Type	Aquifer	Status	Comments	Actions Required
MBID22	622903	7558530	Monitoring	Weathered Triassic	Rehabilitation Required	Casing pinched at 3 mbtoc. Pump and bailer cannot be installed down hole.	Rehabilitate casing by removing and replacing pinched section.
MBIS09	613083	7552751	Monitoring	Vermont coal seam	Rehabilitation Required	Loose monument and PVC casing - Grout/cement not adequate or weakened over time. Cautiously used bailer to sample.	Regrout and re-cement the casing to secure the bore structure and monument.
206s	621990	7557687	Monitoring	Rangal Coal Measures; overburden	Rehabilitation Required	Monument knocked down, PVC casing broken off below ground level - The bore remains open and accessible	Replace monument and extend PVC casing above ground level. Airlift bore to clear siltation.
205d	621616	7557019	Monitoring	Rangal Coal Measures; interburden	Rehabilitation Required	Monument knocked down, PVC casing broken off below ground level - The bore remains open and accessible	Replace monument and extend PVC casing above ground level. Airlift bore to remove siltation.
592S	622671	7556690	Monitoring	Leichhardt Seam	Rehabilitation Required	Monument knocked down, PVC casing broken off below ground level - The bore remains open and accessible	Replace monument and extend PVC casing above ground level. Airlift bore to remove siltation.
592D	622280	7558538	Monitoring	Vermont Seam	Rehabilitation Required	Monument knocked down, PVC casing broken off below ground level - The bore remains open and accessible	Replace monument and extend PVC casing above ground level. Airlift bore to remove siltation.
RN182852	621142	7553285	Monitoring	Permian Coal Measures	Rehabilitation Required	Monument knocked down, PVC casing broken off below ground level - The bore remains open and accessible. Bore is dry, backfilled or silted up.	Replace monument and extend PVC casing above ground level. Airlift bore to remove siltation.
MBID27	622212	7557635	Monitoring	Alluvium	Rehabilitation Required	Monument knocked down. Kink in PVC at surface	Replace monument and extend PVC casing above ground level. Airlift bore to remove siltation and remove kinked section of PVC casing.
RN162046	618281	7557938	Monitoring	Fort Cooper Coal Measures	Rehabilitation Required	VWP cables snapped/cut	Replace and reconnect VWP cables to restore functionality.
204	621796	7558955	Monitoring	Alluvium	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled	Bore no longer functional; plug and drill replacement bore
203	621797	7558960	Monitoring	Rangal Coal Measures; coal seams	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled	Bore no longer functional; plug and drill replacement bore
206d	622000	7557683	Monitoring	Rangal Coal Measures; interburden	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled	Bore no longer functional; plug and drill replacement bore
584D	622671	7556690	Monitoring	Vermont Seam	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled. Only Stake visible	Bore no longer functional; plug and drill replacement bore
584S	622671	7556690	Monitoring	Leichhardt Seam	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled. Only Stake visible	Bore no longer functional; plug and drill replacement bore
205s	621616	7557019	Monitoring	Rangal Coal Measures; overburden	Lost / Destroyed	Monument knocked down; PVC casing broken off below ground level - PVC lost/ backfilled	Bore no longer functional; plug and drill replacement bore
RN100253	618233	7556847	Supply bore	unknown	Lost	Unable to locate bore	Conduct survey to locate bore.
MBIS04	625570	7556820	Monitoring	#N/A	Decommissioned	OBS7 destroyed. Then replacement bore MBIS04 which was nested with MBIS05 - both now decommissioned	No further action required. Both bores decommissioned. Replacement bore planned to be drilled as part of 2025 drilling scope of works

Appendix I Water Quality Sampling Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order	: **EB2441931**	Page	: 1 of 8
Amendment	: **1**		
Client	: **SLR CONSULTING AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR DERWIN LYONS	Contact	: Jarret Venderley
Address	: 21 RIVER STREET MACKAY QLD 4740	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61-7-3552-8685
Project	: IDE Bore Census	Date Samples Received	: 03-Dec-2024 13:20
Order number	: ----	Date Analysis Commenced	: 04-Dec-2024
C-O-C number	: ----	Issue Date	: 19-Dec-2024 11:23
Sampler	: KIRSTY GIBSON		
Site	: ----		
Quote number	: EN-000		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Amendment (19/12/2024): This report has been amended and re-released to allow the reporting of additional metals analytes under the EG020F and EG020T methods.
- It is recognised that EG020T (Total Metals by ICP-MS) is less than EG020F (Dissolved Metals by ICP-MS) for some samples. However, the difference is within experimental variation of the methods.
- EG035T (Total Mercury by FIMS): Limit of reporting raised for some samples due to matrix interference.
- It is recognised that EG020T (Total Metals by ICP-MS) is less than EG020F (Dissolved Metals by ICP-MS) for 'MBID 28' (EB2441931-004) for Copper. This was confirmed by re-digestion and re-analysis.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN100254	5 mile bore	5 mile windmil	MBID 28	205d
				Sampling date / time	25-Nov-2024 00:00	24-Nov-2024 00:00	28-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441931-001	EB2441931-002	EB2441931-003	EB2441931-004	EB2441931-005
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		8.39	7.54	7.71	7.25	7.80
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		7730	2020	8690	1730	17800
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		4260	1150	6120	1200	13600
EA065: Total Hardness as CaCO3									
Total Hardness as CaCO3	----	1	mg/L		55	445	1570	546	3110
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		24	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		499	397	420	376	547
Total Alkalinity as CaCO3	----	1	mg/L		523	397	420	376	547
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		<1	50	536	24	372
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		2310	403	2320	375	6000
ED093T: Total Major Cations									
Calcium	7440-70-2	1	mg/L		11	72	247	80	418
Magnesium	7439-95-4	1	mg/L		6	53	236	72	471
Sodium	7440-23-5	1	mg/L		1480	257	1230	157	2510
Potassium	7440-09-7	1	mg/L		24	4	9	3	22
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	0.008	0.012	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN100254	5 mile bore	5 mile windmil	MBID 28	205d
				Sampling date / time	25-Nov-2024 00:00	24-Nov-2024 00:00	28-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441931-001	EB2441931-002	EB2441931-003	EB2441931-004	EB2441931-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	**0.002**	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.002**	**0.001**	**0.007**	**0.003**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	**0.091**	**0.015**	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.169**	**0.191**	**0.285**	**0.231**	**4.56**
Molybdenum	7439-98-7	0.001	mg/L		**0.014**	**0.001**	**0.003**	**0.002**	**0.001**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Boron	7440-42-8	0.05	mg/L		**0.97**	**0.19**	**0.36**	**0.13**	**0.39**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.001**	<0.001	<0.001
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	**0.020**	**0.003**	<0.001
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	**0.002**	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.002**	**0.001**	**0.004**	**0.004**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.007**	**0.118**	**0.014**	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.172**	**0.196**	**0.314**	**0.235**	**4.66**
Molybdenum	7439-98-7	0.001	mg/L		**0.016**	<0.001	**0.004**	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		----	----	----	<0.001	----
Uranium	7440-61-1	0.001	mg/L		----	----	----	**0.002**	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN100254	5 mile bore	5 mile windmil	MBID 28	205d
				Sampling date / time	25-Nov-2024 00:00	24-Nov-2024 00:00	28-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441931-001	EB2441931-002	EB2441931-003	EB2441931-004	EB2441931-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Boron	7440-42-8	0.05	mg/L		**1.01**	**0.24**	**0.41**	**0.15**	**0.48**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**0.74**	<0.05	**0.12**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**2.0**	**0.4**	**0.2**	**0.3**	**0.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	594	206S	RN162825	592S	----
			Sampling date / time	26-Nov-2024 00:00	25-Nov-2024 00:00	27-Nov-2024 00:00	25-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit	EB2441931-006	EB2441931-007	EB2441931-008	EB2441931-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.85**	**7.91**	**7.83**	**7.89**	**----**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**19400**	**9170**	**3940**	**711**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**14800**	**5210**	**2200**	**404**	**----**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**4010**	**359**	**486**	**220**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**401**	**385**	**540**	**234**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**401**	**385**	**540**	**234**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**527**	**221**	<1	**3**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**6610**	**2280**	**989**	**89**	**----**
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**570**	**113**	**95**	**60**	**----**
Magnesium	7439-95-4	1	mg/L	**535**	**11**	**44**	**10**	**----**
Sodium	7440-23-5	1	mg/L	**3190**	**1110**	**590**	**58**	**----**
Potassium	7440-09-7	1	mg/L	**18**	**118**	**5**	**15**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	**----**
Arsenic	7440-38-2	0.001	mg/L	**0.002**	**0.003**	<0.001	**0.001**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L	<0.001	**0.006**	<0.001	<0.001	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	594	206S	RN162825	592S	----
				Sampling date / time	26-Nov-2024 00:00	25-Nov-2024 00:00	27-Nov-2024 00:00	25-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2441931-006	EB2441931-007	EB2441931-008	EB2441931-009	--------
					Result	Result	Result	Result	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		**0.002**	**0.002**	<0.001	<0.001	**----**
Nickel	7440-02-0	0.001	mg/L		**0.004**	**0.005**	<0.001	<0.001	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.008**	<0.005	<0.005	**----**
Manganese	7439-96-5	0.001	mg/L		**1.44**	**0.036**	**0.217**	**0.013**	**----**
Molybdenum	7439-98-7	0.001	mg/L		**0.008**	**0.116**	**0.004**	**0.005**	**----**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**----**
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**----**
Boron	7440-42-8	0.05	mg/L		**0.35**	**0.08**	**0.29**	**0.09**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	**----**
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	**0.01**	<0.01	<0.01	**----**
Arsenic	7440-38-2	0.001	mg/L		**0.002**	**0.002**	<0.001	**0.001**	**----**
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L		<0.001	**0.008**	<0.001	<0.001	**----**
Cobalt	7440-48-4	0.001	mg/L		**0.001**	**0.002**	<0.001	<0.001	**----**
Nickel	7440-02-0	0.001	mg/L		**0.004**	**0.005**	<0.001	<0.001	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.010**	**0.011**	<0.005	**----**
Manganese	7439-96-5	0.001	mg/L		**1.39**	**0.034**	**0.219**	**0.014**	**----**
Molybdenum	7439-98-7	0.001	mg/L		**0.009**	**0.133**	<0.001	**0.004**	**----**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**----**
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**----**
Boron	7440-42-8	0.05	mg/L		**0.42**	**0.10**	**0.31**	**0.10**	**----**
Iron	7439-89-6	0.05	mg/L		**1.08**	<0.05	**6.88**	<0.05	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	594	206S	RN162825	592S	----
				Sampling date / time	26-Nov-2024 00:00	25-Nov-2024 00:00	27-Nov-2024 00:00	25-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2441931-006	EB2441931-007	EB2441931-008	EB2441931-009	--------
					Result	Result	Result	Result	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	<0.1	**0.1**	<0.1	**----**

CERTIFICATE OF ANALYSIS

Work Order	: **EB2441930**	Page	: 1 of 8
Client	: **SLR CONSULTING AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR DERWIN LYONS	Contact	: Jarret Venderley
Address	: 21 RIVER STREET MACKAY QLD 4740	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61-7-3552-8685
Project	: IDE Bore Census	Date Samples Received	: 03-Dec-2024 13:20
Order number	: ----	Date Analysis Commenced	: 03-Dec-2024
C-O-C number	: ----	Issue Date	: 10-Dec-2024 09:23
Sampler	: KIRSTY GIBSON		
Site	: ----		
Quote number	: EN-000		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- TDS by method EA-015 may bias high for sample 8(MBID 27) due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- It is recognised that EG020T (Total Metals by ICP-MS) is less than EG020F (Dissolved Metals by ICP-MS) for some samples. However, the difference is within experimental variation of the methods.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RN182871	RN182851	RN162824	Horse Paddock	593
			Sampling date / time	28-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit	EB2441930-001	EB2441930-002	EB2441930-003	EB2441930-004	EB2441930-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.68**	**7.18**	**7.50**	**7.97**	**7.47**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1980**	**8700**	**3580**	**1270**	**16100**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**1160**	**6550**	**2020**	**963**	**10700**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**442**	**2000**	**537**	**336**	**3140**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**602**	**457**	**544**	**112**	**463**
Total Alkalinity as CaCO3	----	1	mg/L	**602**	**457**	**544**	**112**	**463**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**27**	**673**	**52**	**53**	**153**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**340**	**2440**	**864**	**322**	**5580**
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**65**	**345**	**109**	**55**	**562**
Magnesium	7439-95-4	1	mg/L	**61**	**248**	**54**	**38**	**548**
Sodium	7440-23-5	1	mg/L	**272**	**1010**	**489**	**110**	**3240**
Potassium	7440-09-7	1	mg/L	**4**	**7**	**4**	**4**	**17**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.006**	<0.001	<0.001	**0.001**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN182871	RN182851	RN162824	Horse Paddock	593
				Sampling date / time	28-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441930-001	EB2441930-002	EB2441930-003	EB2441930-004	EB2441930-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.001**	<0.001	**0.001**
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.003**	<0.001	<0.001	**0.006**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.007**	**0.007**	**0.019**	<0.005	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.132**	**0.424**	**0.570**	<0.001	**0.978**
Molybdenum	7439-98-7	0.001	mg/L		**0.003**	**0.003**	**0.004**	**0.001**	**0.006**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Boron	7440-42-8	0.05	mg/L		**0.23**	**0.48**	**0.32**	**0.08**	**0.50**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L		<0.001	**0.011**	<0.001	<0.001	**0.002**
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	**0.001**	<0.001
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.001**	<0.001	**0.001**
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.003**	<0.001	<0.001	**0.008**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.011**	**0.014**	**0.024**	<0.005	**0.007**
Manganese	7439-96-5	0.001	mg/L		**0.136**	**0.431**	**0.573**	<0.001	**1.31**
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	**0.003**	**0.003**	<0.001	**0.008**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN182871	RN182851	RN162824	Horse Paddock	593
				Sampling date / time	28-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	27-Nov-2024 00:00	26-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441930-001	EB2441930-002	EB2441930-003	EB2441930-004	EB2441930-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Boron	7440-42-8	0.05	mg/L		**0.23**	**0.50**	**0.33**	**0.08**	**0.41**
Iron	7439-89-6	0.05	mg/L		**0.06**	**2.76**	**0.19**	<0.05	**0.57**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	<0.1	**0.3**	**0.1**	**0.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RN162815	RN162180	MBID 27	592D	----
			Sampling date / time	28-Nov-2024 00:00	25-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit	EB2441930-006	EB2441930-007	EB2441930-008	EB2441930-009	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.57**	**7.32**	**7.18**	**7.60**	**----**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**2630**	**2700**	**319**	**601**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**1560**	**1540**	**285**	**375**	**----**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**389**	**262**	**37**	**212**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**633**	**587**	**114**	**224**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**633**	**587**	**114**	**224**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**24**	**19**	**2**	**3**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**530**	**569**	**21**	**46**	**----**
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**71**	**51**	**9**	**59**	**----**
Magnesium	7439-95-4	1	mg/L	**41**	**24**	**3**	**10**	**----**
Sodium	7440-23-5	1	mg/L	**420**	**466**	**15**	**52**	**----**
Potassium	7440-09-7	1	mg/L	**5**	**3**	**32**	**15**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	**0.01**	<0.01	**----**
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	**0.004**	**0.001**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN162815	RN162180	MBID 27	592D	----
				Sampling date / time	28-Nov-2024 00:00	25-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2441930-006	EB2441930-007	EB2441930-008	EB2441930-009	--------
					Result	Result	Result	Result	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.003**	<0.001	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	**0.005**	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	**0.011**	<0.005	----
Manganese	7439-96-5	0.001	mg/L		**0.141**	**0.115**	**0.223**	**0.017**	----
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	**0.002**	**0.002**	**0.004**	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	**0.01**	<0.01	----
Boron	7440-42-8	0.05	mg/L		**0.26**	**0.32**	<0.05	**0.08**	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**0.30**	<0.05	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	**0.03**	<0.01	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.003**	**0.001**	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.003**	<0.001	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	**0.005**	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	**0.019**	<0.005	----
Manganese	7439-96-5	0.001	mg/L		**0.143**	**0.114**	**0.240**	**0.017**	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.001**	**0.001**	**0.004**	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN162815	RN162180	MBID 27	592D	----
				Sampling date / time	28-Nov-2024 00:00	25-Nov-2024 00:00	25-Nov-2024 00:00	26-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2441930-006	EB2441930-007	EB2441930-008	EB2441930-009	--------
					Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued									
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	**0.01**	<0.01	**----**
Boron	7440-42-8	0.05	mg/L		**0.25**	**0.34**	<0.05	**0.08**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	**0.18**	**0.66**	<0.05	**----**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	**0.5**	<0.1	<0.1	**----**

CERTIFICATE OF ANALYSIS

Work Order	: **EB2441929**	Page	: 1 of 8
Client	: **SLR CONSULTING AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR DERWIN LYONS	Contact	: Jarret Venderley
Address	: 21 RIVER STREET MACKAY QLD 4740	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61-7-3552-8685
Project	: IDE Bore Census	Date Samples Received	: 03-Dec-2024 13:20
Order number	: ----	Date Analysis Commenced	: 04-Dec-2024
C-O-C number	: ----	Issue Date	: 10-Dec-2024 14:58
Sampler	: KIRSTY GIBSON		
Site	: ----		
Quote number	: EN-000		
No. of samples received	: 8		
No. of samples analysed	: 8		

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- General Comments
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Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- It is recognised that EG020T (Total Metals by ICP-MS) is less than EG020F (Dissolved Metals by ICP-MS) for some samples. However, the difference is within experimental variation of the methods.
- EG020-T (Total Metals by ICP-MS): Sample EB2441918-002 shows poor matrix spike recovery for Arsenic due to matrix interference. Confirmed by re-extraction and re-analysis.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RN162044	RN162143	UNK 1	RN103210	RN158317
			Sampling date / time	29-Nov-2024 00:00	29-Nov-2024 00:00	29-Nov-2024 00:00	28-Nov-2024 00:00	28-Nov-2024 00:00
Compound	CAS Number	LOR	Unit	EB2441929-001	EB2441929-002	EB2441929-003	EB2441929-004	EB2441929-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.80**	**7.27**	**8.08**	**7.72**	**7.82**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**2080**	**12600**	**2380**	**2710**	**2030**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**1360**	**8130**	**1390**	**1580**	**1190**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**190**	**1710**	**136**	**284**	**128**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**544**	**981**	**620**	**665**	**545**
Total Alkalinity as CaCO3	----	1	mg/L	**544**	**981**	**620**	**665**	**545**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**2**	**550**	<1	**27**	<1
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**489**	**3900**	**453**	**354**	**383**
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**22**	**123**	**18**	**42**	**26**
Magnesium	7439-95-4	1	mg/L	**32**	**334**	**21**	**38**	**13**
Sodium	7440-23-5	1	mg/L	**419**	**2130**	**466**	**475**	**372**
Potassium	7440-09-7	1	mg/L	**7**	**4**	**7**	**4**	**3**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	**0.001**	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN162044	RN162143	UNK 1	RN103210	RN158317
				Sampling date / time	29-Nov-2024 00:00	29-Nov-2024 00:00	29-Nov-2024 00:00	28-Nov-2024 00:00	28-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441929-001	EB2441929-002	EB2441929-003	EB2441929-004	EB2441929-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.001**	**0.005**	**0.004**	<0.001	**0.001**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**0.007**	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.028**	**0.226**	**0.021**	**0.011**	**0.008**
Molybdenum	7439-98-7	0.001	mg/L		**0.004**	**0.003**	**0.001**	**0.002**	**0.002**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Uranium	7440-61-1	0.001	mg/L		<0.001	**0.022**	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Boron	7440-42-8	0.05	mg/L		**0.40**	**0.88**	**0.38**	**0.45**	**0.30**
Iron	7439-89-6	0.05	mg/L		<0.05	**0.07**	<0.05	<0.05	<0.05
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	**0.003**	<0.001
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.001**	**0.004**	**0.014**	<0.001	**0.001**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**0.009**	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.031**	**0.240**	**0.020**	**0.012**	**0.008**
Molybdenum	7439-98-7	0.001	mg/L		**0.003**	**0.002**	<0.001	**0.001**	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN162044	RN162143	UNK 1	RN103210	RN158317
				Sampling date / time	29-Nov-2024 00:00	29-Nov-2024 00:00	29-Nov-2024 00:00	28-Nov-2024 00:00	28-Nov-2024 00:00
Compound	CAS Number	LOR	Unit		EB2441929-001	EB2441929-002	EB2441929-003	EB2441929-004	EB2441929-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Uranium	7440-61-1	0.001	mg/L		<0.001	**0.026**	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Boron	7440-42-8	0.05	mg/L		**0.45**	**1.05**	**0.40**	**0.46**	**0.31**
Iron	7439-89-6	0.05	mg/L		**0.06**	**0.12**	<0.05	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**1.3**	**0.6**	**0.6**	**0.5**	**0.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RN182872	RN162816	MBID23	----	----
			Sampling date / time	28-Nov-2024 00:00	28-Nov-2024 00:00	26-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2441929-006	EB2441929-007	EB2441929-008	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.91**	**7.58**	**7.02**	**----**	**----**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**2000**	**568**	**4210**	**----**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**1210**	**355**	**2720**	**----**	**----**
EA065: Total Hardness as CaCO3								
Total Hardness as CaCO3	----	1	mg/L	**424**	**123**	**989**	**----**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	**----**	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	**----**	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**604**	**209**	**702**	**----**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**604**	**209**	**702**	**----**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**25**	**24**	**38**	**----**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**356**	**43**	**1020**	**----**	**----**
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**71**	**26**	**125**	**----**	**----**
Magnesium	7439-95-4	1	mg/L	**58**	**12**	**144**	**----**	**----**
Sodium	7440-23-5	1	mg/L	**297**	**76**	**496**	**----**	**----**
Potassium	7440-09-7	1	mg/L	**4**	**7**	<1	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	**0.003**	**----**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	**----**	**----**
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN182872	RN162816	MBID23	----	----
				Sampling date / time	28-Nov-2024 00:00	28-Nov-2024 00:00	26-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2441929-006	EB2441929-007	EB2441929-008	--------	--------
					Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.003**	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	**0.009**	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		**0.016**	<0.005	**0.029**	----	----
Manganese	7439-96-5	0.001	mg/L		**0.127**	**0.005**	**0.141**	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	**0.002**	**0.003**	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	**0.017**	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Boron	7440-42-8	0.05	mg/L		**0.23**	**0.09**	**0.30**	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	**0.03**	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.004**	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	<0.001	<0.001	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	**0.002**	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	**0.009**	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		**0.019**	**0.005**	**0.031**	----	----
Manganese	7439-96-5	0.001	mg/L		**0.136**	**0.005**	**0.140**	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	<0.001	**0.001**	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN182872	RN162816	MBID23	----	----
				Sampling date / time	28-Nov-2024 00:00	28-Nov-2024 00:00	26-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2441929-006	EB2441929-007	EB2441929-008	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Uranium	7440-61-1	0.001	mg/L		<0.001	<0.001	**0.020**	**----**	**----**
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
Boron	7440-42-8	0.05	mg/L		**0.28**	**0.08**	**0.31**	**----**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**0.71**	**----**	**----**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.2**	**0.3**	**0.5**	**----**	**----**

Appendix F Factual Field Investigation Report (SLR, 2026a)

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

Groundwater Factual Field Investigation Report

Isaac Downs Extension Project

Stanmore Resources Limited

Level 32/12 Creek St
Brisbane City QLD 4000

Prepared by:

SLR Consulting Australia Pty Ltd

SLR Project No.: 620.041537.00004

5 May 2026

Revision: 3.0

Making Sustainability Happen

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	19 September 2025	Kirsty Gibson	Derwin Lyons	Derwin Lyons
2.0	25 September 2025	Kirsty Gibson	Derwin Lyons	Derwin Lyons
3.0	5 May 2026	Kirsty Gibson	Brian Rask	Brian Rask

Basis of Report

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Stanmore Resources Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Table of Contents

Basis of Report i
1.0 Introduction 4
1.1 Background 4
1.2 2025 Groundwater Field Investigation Programme 4
1.2.1 Baseline Groundwater Monitoring Network Establishment 4
1.2.2 Fault Investigation 4
1.2.3 Hydraulic (Slug) Testing 4
1.3 This Report 5
2.0 2025 Bore Development – Existing Bores 9
3.0 2025 Bore Rehabilitation – Existing Bores 10
4.0 2025 Drilling Program – New Bores 12
4.1 Drilling and Bore Construction Activities 12
4.2 Fault Investigation 12
4.2.1 Exploration Drilling 12
4.2.2 Nuclear Magnetic Resonance Testing 13
4.2.3 Bore Installation and Bore Testing 14
4.3 New Bore Location and Construction Details 14
4.4 2025 Bore Development – New Bores 15
5.0 Hydraulic Slug Testing 17
5.1 Methodology 17
5.1.1 Field Procedure 17
5.1.2 Analysis Methodology 17
5.2 Results 18
6.0 Closure 21
7.0 References 22

Tables

Table 1-1 Bore Location Summary 6
Table 2-1 Bore Development Summary - Existing Bores 9
Table 3-1 Bore Rehabilitation Summary 11
Table 4-1 Fault Exploration Drillhole Summary 13
Table 4-2 Bore Construction Summary 15
Table 4-3 Bore Development Summary- 2025 Installed Bores 16
Table 5-1 Summary of Hydraulic Conductivity Estimates per Hydrogeologic Unit 18

Table 5-2 Slug Testing Results by Bore 20

Figures

Figure 1 Locality Plan 8
Figure 2 Summary of all Slug Test Analysis 19

Appendices

Appendix A Successful Rehabilitation Before and After Photos
Appendix B NMR Composite Logs
Appendix C Bore Logs
Appendix D Detailed AQTESOLV output reports

1.0 Introduction

1.1 Background

Stanmore Resources Limited (Stanmore), engaged SLR Consulting Australia Pty Ltd (SLR) to provide technical support for the Isaac Downs Extension (IDE) Project 2025 groundwater field investigation programme. The groundwater field investigation programme was undertaken in support of baseline monitoring and characterisation for the future Groundwater Impact Assessment (GIA) for the IDE Project's Environmental Impact Statement (EIS).

1.2 2025 Groundwater Field Investigation Programme

1.2.1 Baseline Groundwater Monitoring Network Establishment

A baseline groundwater monitoring program for the Project was previously recommended by AGE (2022) and, together with the Gap Analysis prepared by SLR (2024a), formed the foundation for the scope of work for the 2025 groundwater field investigation programme. The recommendations included the installation of 19 new monitoring bores. Of these, seven were successfully installed in 2022 but remained undeveloped, requiring contractor services to airlift develop the bores in the 2025 groundwater field investigation programme before being deemed suitable for baseline monitoring.

In addition, seven damaged legacy bores, identified during the site bore census undertaken by SLR in November 2024 (SLR, 2024b), were recommended for rehabilitation to re-establish the integrity and spatial coverage of the groundwater monitoring network. Two of these legacy bores, considered key components of the monitoring network, were damaged beyond rehabilitation and were therefore scheduled for redrilling. Consequently, the installation of a total of 14 additional bores was required in the 2025 groundwater field investigation programme.

1.2.2 Fault Investigation

A component of the 2025 groundwater field investigation programme was exploration drilling and testing of the Isaac Thrust Fault, a key geological feature relevant to the groundwater setting of the IDE Project to the east (SLR, 2024a). The aim of this program was to delineate and characterise the fault structure and install a dedicated monitoring bore into the fault core to improve the understanding of hydrogeological characteristics of the fault, local to the IDE Project.

To accurately delineate the fault, five exploratory air-rotary chip holes were drilled southwest to northeast across geological strike of the mapped fault trace to the east of the Project area. These chip holes provided key geological information, enabling the identification of the fault's location and depth on the basis of observed structural offsets with respect to the expected stratigraphy as is present within the Project area. The results of this exploratory drilling combined with downhole geophysical logging informed the final design and siting of a monitoring bore targeting the Isaac Thrust Fault itself. The most hydraulically conductive zone of the fault was targeted for the monitoring bore installation, as discussed further in **Section 4.2**.

1.2.3 Hydraulic (Slug) Testing

As part of the 2025 groundwater field investigation programme, hydraulic "slug" testing was undertaken at all new and existing bores that form the baseline groundwater monitoring network at IDE. This included the 14 newly drilled bores, the three existing bores that were successfully rehabilitated, the seven existing bores that underwent development, and a

further nine additional existing bores at the site. However bores MBIS06, MBIS17, MB09C, MBIS01, MBIS14 and MBIS07 were dry at the time of testing and there for could not be slug tested in the 2025 program. Data obtained from the rising and falling head (slug) tests were then analysed to provide estimates of formation hydraulic conductivity.

1.3 This Report

This report outlines the scope of field work and results of the 2025 groundwater field investigation programme. The results documented herein include:

- On-site hydrogeological support for rehabilitation of 7 legacy bores (airlift development and reconstructing monuments).
- On-site hydrogeological support for the airlift development of the seven (7) existing bores that had been installed earlier by Stanmore but were not yet operational.
- Drilling and construction of 14 new groundwater observation/monitoring bores;
- Hydraulic slug testing at 27 monitoring bores (noting that a further six suite bores are dry and can not be tested).

This report is intended to provide factual reporting of the work undertaken and the data collected in the 2025 groundwater field investigation programme. Analysis and interpretation of the results is excluded from this report but will be undertaken within the Project's GIA report.

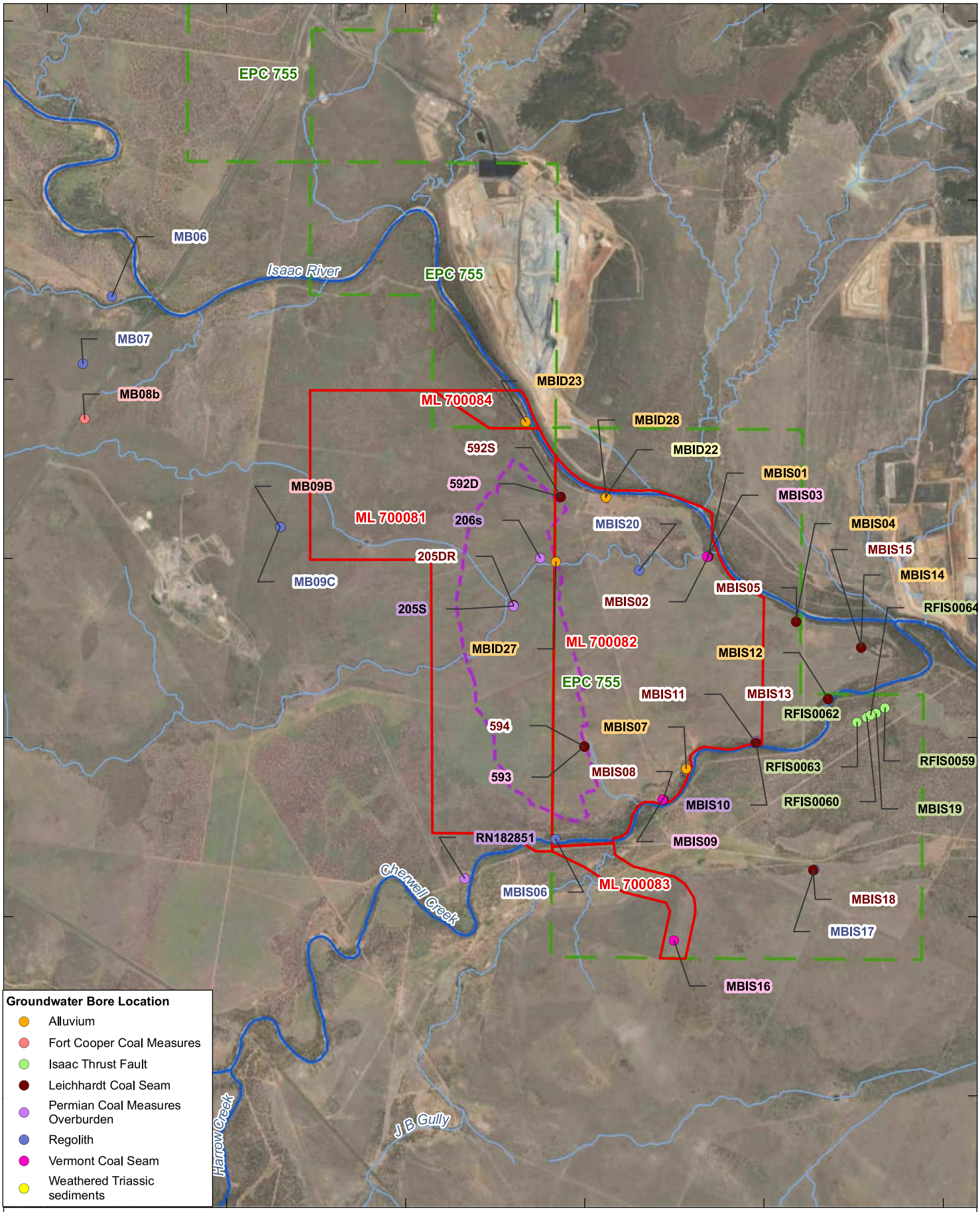
A locality plan for all bores where field work was undertaken in the 2025 groundwater field investigation programme is provided in **Figure 1**. Site details for each bore where field work was undertaken in the 2025 groundwater field investigation programme are provided in **Table 1-1**.

Table 1-1 Bore Location Summary

Bore ID	Easting (AGD84)[1]	Northing (AGD84)[1]	Target Formation	Total Drillhole Depth (m bgl)[2,3]	Ground Level (mAHD)	Top of Casing (mAHD)	Existing Bores that underwent Development	Rehabilitation	Newly Installed Bores	Bores Subjected to Slug Testing 20256	Exploration Drilling
MBID27	622097	7557455	Alluvium	12	198.88	198.88		✓[6]		NA[7]	
MBIS01	624220	7557525	Alluvium	22	196.88	196.88			✓	NA[7]	
MBIS04	625445	7556626	Alluvium	19	195.89	195.89			✓	✓	
MBIS07	623915	7554567	Alluvium	19	199.90	199.90			✓	NA[7]	
MBIS12	625900	7555541	Alluvium	20	196.66	196.66			✓	✓	
MBIS14	626355	7556260	Alluvium	11	194.67	194.67			✓	NA[7]	
MBID23	621681	7559410	Alluvium	14	198.86	198.86				✓	
MBID28	622797	7558353	Alluvium	16	198.37	198.37				✓	
MBIS06	622093	7553583	Regolith	12	185.54	185.54	✓			NA[7]	
MBIS20	623261	7557333	Regolith	22	198.88	198.88			✓	✓	
MBIS17	625707	7553156	Colluvium (regolith)	23	200.84	200.84	✓			NA[7]	
MB06	615903	7561156	Tertiary Basalt & Sediments (regolith)	23	206.18	206.18				✓	
MB09C	618252	7557938	Tertiary Basalt & Sediments (regolith)	15	212.68	212.68				NA[7]	
205S	621503	7556838	Weathered RCM[4] overburden (regolith)	26	201.46	201.46		✓		✓	
206s	621880	7557506	Weathered RCM[4] overburden (regolith)	21	199.95	199.95		✓[6]		NA[7]	
MBIS10	624891	7554949	Weathered RCM[4] overburden (regolith)	24	183.93	183.93	✓			✓	
RN182851	620826	7553036	Weathered RCM[4] overburden (regolith)	35	208.45	208.45				✓	
MBID22	622792	7558352	Weathered Triassic sediments	25	198.52	198.52		✓[6]		NA[7]	
592S	622165	7558360	Leichhardt coal seam	57	200.23	200.23		✓		✓	
MBIS08	623599	7554137	Leichhardt coal seam	50	202.53	202.53	✓			✓	
MBIS18	625689	7553154	Leichhardt coal seam	150	200.92	200.92	✓			✓	
MBIS02	624225	7557529	Leichhardt coal seam	138	196.98	196.98			✓	✓	
MBIS05	625449	7556617	Leichhardt coal seam	155	195.96	195.96			✓	✓	
MBIS11	624887	7554932	Leichhardt coal seam	94	199.15	199.15			✓	✓	
MBIS13	625894	7555538	Leichhardt coal seam	153	196.71	196.71			✓	✓	
MBIS15	626357	7556255	Leichhardt coal seam	52	194.46	194.46			✓	✓	
205DR	621504	7556849	Leichhardt coal seam	47	201.33	201.33			✓	✓	
594	622498	7554874	Leichhardt coal seam	47	216.03	216.03				✓	
592D	622165	7558360	Vermont coal seam	86	200.23	200.23		✓		✓	

Bore ID	Easting (AGD84)[1]	Northing (AGD84)[1]	Target Formation	Total Drillhole Depth (m bgl)[2,3]	Ground Level (mAHD)	Top of Casing (mAHD)	Existing Bores that underwent Development	Rehabilitation	Newly Installed Bores	Bores Subjected to Slug Testing 20256	Exploration Drilling
MBIS09	623584	7554134	Vermont coal seam	96	202.57	202.57	✓	✓		✓	
MBIS16	623747	7552169	Vermont coal seam	69	213.58	213.58	✓			✓	
MBIS03	624210	7557524	Vermont coal seam	181	196.66	196.66			✓	✓	
593	622497	7554875	Vermont coal seam	95	216.04	216.04				✓	
MB08B	615524	7559448	FCCM[5]	84	228.43	228.43				✓	
MB09B	618252	7557938	FCCM[5]	36	212.68	212.68				✓	
MBIS19	626564	7555333	Isaac Thrust Fault	86	197.28	197.28			✓	✓	
RFIS0059	626689	7555413	Isaac Thrust Fault	145	196.7	-					✓
RFIS0060	626437	7555285	Isaac Thrust Fault	175	197.6	-					✓
RFIS0062	626566	7555339	Isaac Thrust Fault	145	197.1	-					✓
RFIS0063	626298	7555216	Isaac Thrust Fault	97	197.7	-					✓
RFIS0064	626490	7555314	Isaac Thrust Fault	193	197.6	-					✓

1. Location co-ordinates and RL from surveyed data
2. Final bore depth post rehabilitation
3. m bgl = metres below ground level
4. RCM = Rangal Coal Measures
5. FCM = Fort Cooper Coal Measures
6. failed rehabilitation (bores MBID22, 206s, and MBID27
7. Slug testing not conducted on MBID22, 206s, and MBID27 (failed rehabilitation) and not on MBIS06, MBIS17, MBIS01, MBIS07, MBIS14, MB09C (dry at time of test)



Coordinate System: AGD 1984 AMG Zone 55

Scale:	1:70,000 at A4
Project Number:	620.041537.00001
Date:	07-May-2026
Drawn by:	AS

SLR

ISAAC DOWNS EXTENSION PROJECT

BORE LOCATION

FIGURE 1

H:\Projects-SLR\620-BNE\620.041537.00001 Isaac South EIS Groundwater\04 SLR Data\01 GIS\GIS\Drilling Program\620041537_IsaacSouth_F01 Bore Location.mxd

2.0 2025 Bore Development – Existing Bores

Airlift development was undertaken at the seven (7) previously installed groundwater bores in accordance with *the Minimum Construction Requirements for Water Bores in Australia*. Development activities were undertaken by GeoDrill Australia. Development was undertaken until the water recovered was assessed to be suitably clear and free of fines, and water quality parameters had stabilised, to the satisfaction of the onsite SLR hydrogeologist.

Bore MBIS18 was unable to meet the above requirements as the bore ran dry during development and could not be suitably airlifted. Bores MBIS06 and MBIS17 were found to be dry and could not be airlifted.

Table 2-1 presents the measured water quality data at the end of development for all bores.

Table 2-1 Bore Development Summary - Existing Bores

Bore ID	Target Unit	Airlift Yield (L/s)	Water Quality at the end of Airlift Development	
			pH	EC (µS/cm)
MBIS06	Alluvium	Dry		
MBIS08	Leichhardt coal seam	0.2	8.06	11,647
MBIS09	Vermont coal seam	1.8	8.19	9,990
MBIS10	Weathered RCM overburden (regolith)	0.06	8.46	3,027
MBIS16	Vermont coal seam	0.7	7.86	11,619
MBIS17	Colluvium (regolith)	Dry		
MBIS18*	Leichhardt coal seam	<0.01	7.68*	14,722*

*Bore ran dry during development

3.0 2025 Bore Rehabilitation – Existing Bores

Seven (7) legacy bores were rehabilitated during the 2025 groundwater field investigation programme, to re-establish bore integrity and spatial coverage of the site groundwater monitoring network. Rehabilitation activities were undertaken by GeoDrill Australia. The rehabilitation was deemed required based on the information gathered during the earlier 2024 site bore census (SLR, 2024b). The following lists issues encountered at that time, and corresponding actions undertaken in the 2025 groundwater field investigation programme:

- MBIS09:
  - Issue: Loose monument and PVC casing likely due to inadequate or deteriorated grout/cement.
  - Action: Grout was topped up around the casing, and the monument was reconstructed to stabilise the bore structure.
- MBID22:
  - Issue: Blockage identified at approximately 12 mBTOC.
  - Action: Bore was airlifted to remove the obstruction.
- 206S, 205S, 592S, 592D, MBID27:
  - Issue: Monuments had been knocked down and PVC casing is broken off below ground level
  - Action: New monuments were installed, PVC casings were extended above ground, and bores were airlifted to remove accumulated silt.

Folowng rehabilitation, rehabilitated groundwater bores were developed using airlift techniques in accordance with *the Minimum Construction Requirements for Water Bores in Australia*. Development was undertaken until the water recovered was assessed to be suitably clear and free of fines, and water quality parameters had stabilised, to the satisfaction of the onsite SLR hydrogeologist.

Table 3-1 provides a summary of the rehabilitation and final depths of bores post airlift development.

The rehabilitation of bores MBID22, MBID27 and 206S was unsuccessful. The blockage at MBID22 returned and persisted a few days after rehabilitation suggesting compromised casing causing re-siltation and blockage in the bore. During airlifting attempts at bores MBID27 and 206S, very thick clay and stones were countered that could not be removed. Available information suggests that MBID27 is likely silted over the screens, and no construction details are available for 206S. Given that these bores could not be adequately rehabilitated and it cannot be confirmed that they are monitoring the intended geological formation, an additional shallow bore along Conrock Gully (MBIS20) was drilled as a replacement (see **Section 4.0**). This bore provides reliable data on shallow groundwater conditions in the Conrock Gully area (as was the intent of the MBID27 and 206S bores).

Before and after photographs for each bore that underwent development is shown in **Appendix A**.

Table 3-1 Bore Rehabilitation Summary

Bore ID	Bore Drilled Depth (m bgl)	Target Aquifer	Date Rehabilitation	Depth Prior to Rehabilitation (m bgl)[1]	Depth After Rehabilitation (m bgl)[1]	Airlift Yield (L/s)	Water Quality at the end of Airlift Development		Final Comment After Rehabilitation
							pH	EC (µS/cm)	
MBIS09	96.41	Vermont coal seam	16-06-2025	96.41	96.41	Not airlifted	-	-	Successfully rehabilitated surface casing/monument.
205S	unknown	Weathered RCM overburden (regolith)	18-06-2025	21	26	0.25	7.90	7,794	Successfully rehabilitated surface casing/monument.
592D	85.2	Vermont coal seam	18-06-2025	85.8	86.43	1.5	7.79	13,580	Successfully rehabilitated surface casing/monument.
592S	57.5	Leichhardt coal seam	18-06-2025	55.68	57.1	0.3	8.03	20,423	Successfully rehabilitated surface casing/monument.
MBID22	36	Weathered Triassic sediments (regolith)	23-06-2025	33	Blockage at 12mbgl	n/a	8.25	2,836	Unsuccessful rehabilitation, blockage not removed during airlifting
206s	unknown	Weathered RCM overburden (regolith)	18-06-2025	20.6	-	Negligible	7.11	1,019	Unsuccessful rehabilitation, major siltation >20.6 mbgl which cannot be removed.
MBID27	18	Alluvium	18-06-2025	11.72	11.7	Negligible	-	-	Unsuccessful rehabilitation, major siltation >11.7 mbgl down bore which cannot be removed.

1. m bgl = metres below ground level

4.0 2025 Drilling Program – New Bores

4.1 Drilling and Bore Construction Activities

All drilling and bore construction activities were undertaken by GeoDrill Australia under the supervision of a Class 2 licenced water bore driller. The air rotary drilling method was the primary method adopted in the program, however the mud rotary drilling method was used for drilling through unstable shallow sediments and unconsolidated materials. For example. in the deeper bores targeting the Permian units, drilling commenced with mud rotary in the unconsolidated horizons, before transitioning to air rotary for penetrating the fresh, consolidated Permian strata. Where geological conditions were sufficiently stable, the air rotary method was utilised for drilling the full depth of the bore.

Following bore construction, the new groundwater bores were developed using airlift techniques in accordance with *the Minimum Construction Requirements for Water Bores in Australia*. Development was undertaken until the water recovered was assessed to be suitably clear and free of fines, and water quality parameters had stabilised, to the satisfaction of the onsite SLR hydrogeologist.

All drilling and bore construction activities carried out on site were overseen by a suitably qualified and experienced onsite hydrogeologist provided by SLR. The hydrogeologist's duties included:

- Geological logging of drill cuttings for the new boreholes;
- Recording airlift yields and water quality parameters throughout drilling;
- Designing bores in conjunction with the driller and SLR's project Technical Director Hydrogeologist to meet project requirements; and
- Confirming bore development was undertaken satisfactorily and that new bores were fit for purpose.

4.2 Fault Investigation

4.2.1 Exploration Drilling

An exploration drilling programme was undertaken to delineate and characterise the Isaac Thrust Fault east of the Project area, with a specific focus on identifying the fault core to support the design and installation of a groundwater monitoring bore targeting the fault.

Exploration drilling was conducted in east of the Project area, where State regional geological mapping indicates the likely position of the fault. Five exploratory air rotary chip holes were drilled in a ~100 m spacing from southwest to northeast across strike of bedding and the mapped Isaac Thrust Fault. Drillhole locations were selected to provide spatial coverage across the mapped fault trace.

Air-rotary drilling was used to produce chip samples for detailed geological logging, which was carried out by the onsite hydrogeologist, with support from a Stanmore geologist. The hydrogeologist was also responsible for interpreting fault indicators and advising on the depth and presence of the fault core. In collaboration with the Stanmore geologist, decisions on borehole termination were made on site based on observed geological and hydrogeological evidence, ensuring that sufficient data were obtained to define the depth and presence of the Isaac Thrust Fault core. Optical Televiewer (OTV) and Acoustic Televiewer (ATV) downhole geophysics was conducted on all five drillholes to confirm depth of coal seams intersected, deformation bedding planes, and lithological features which assisted to locate major zones of potential faulting.

The following indicators were used to identify the main Isaac Thrust Fault zone during drilling:

- Coal seam displacement: A key marker was the vertical offset of coal seams particularly the lower Vermont coal seam, which is regionally underlain by the Yarrabee Tuff, a weak, brown, tuffaceous claystone that serves as a reliable stratigraphic marker.
- Alteration features: The presence of clay-rich zones, oxidation (e.g., iron staining), and secondary mineralisation (e.g., calcite, chlorite, quartz) were used to infer fault-related alteration.
- Drilling behaviour: Sudden changes in drilling conditions such as loss of circulation or changes in penetration rate were used as proxies for fractured or faulted zones.

Details of each drilled hole are summarised in **Table 4-1.**

Table 4-1 Fault Exploration Drillhole Summary

Drillhole ID	Easting (AGD84)	Northing (AGD84)	Total Drillhole Depth (m bgl)[1]	Ground Level (mAHD)
RFIS0059	626689	7555413	145	196.7
RFIS0060	626437	7555285	175	197.6
RFIS0062	626566	7555339	145	197.1
RFIS0063	626298	7555216	97	197.7
RFIS0064	626490	7555314	193	197.6

1. m bgl = metres below ground level

4.2.2 Nuclear Magnetic Resonance Testing

Nuclear magnetic resonance (NMR) testing was employed on three (3) of the fault investigation exploration drillholes, RFIS0060, RFIS0062 and RFIS0064. These three drillholes were chosen on the basis of being determined to show the most significant faulting present out of the five exploration drillholes. NMR is a widespread method employed in the petroleum industry and involves running a geophysical wireline tool down the drillhole, where the tool measures the response of hydrogen nuclei within rock pore fluids to an induced magnetic field. Resulting data processing provides measurements of:

- Porosity: Total volume of rock pore space.
- Permeability Estimates: Based on pore size distribution and fluid mobility.
- Bound vs. Free Fluid: Helps identify producible fluids vs. those bound to rock surfaces.

The NMR method provides a faster, more reliable and higher resolution method of assessing downhole hydrogeological properties than more traditional methods such as packer testing. The aim of the NMR testing was to:

- provide characterisation of Isaac Thrust Fault permeability across the vertical drillhole profile;
- contrast the inferred permeabilities between the fault zone and the overlying/underlying undisturbed Rangal Coal Measures interburden; and
- identify any higher permeability zones for installation of a groundwater monitoring bore.

The NMR testing and analysis was undertaken by Stanmore's contractor Epiroc. Results are provided as the composite logs in **Appendix B**.

4.2.3 Bore Installation and Bore Testing

Following drilling and NMR results analysis, a groundwater bore (MBIS19) was constructed on the same drill pad as drillhole RFIS0062, approximately 5 m away from RFIS0062. This location was identified as the most suitable for construction of a groundwater bore targeting the fault based on:

- The clearest indication of the presence of the fault core; and
- An increase in inferred permeability associated with the fault based on NMR results.

The screen interval of MBIS19 placed against the highest inferred permeability section identified in the RFIS0062 NMR log. That is, the bore aimed to test the highest permeability section of the identified fault zone. Bore construction details for MBIS19 are provided in **Section 4.3**, and hydraulic testing results are provided in **Section 4.4**.

4.3 New Bore Location and Construction Details

Table 4-2 provides the construction details for the new groundwater bores installed in the 2025 groundwater investigation programme, including the fault investigation bore. All bores were surveyed by Stanmore following the completion of the drilling program.

Typically, drilling was undertaken to a depth slightly exceeding the planned target interval. This was done to accurately determine the lithology and stratigraphy of the drillhole, allowing the most appropriate screened interval to be chosen in conjunction with water make information. Final drilling depths also surpassed the target intervals in order to ensure the entire geological sequence of interest has been drilled. The appropriate screened interval was chosen by the onsite hydrogeologist based on the chip logs as well as consultation with the onsite drillers and SLR's project Technical Director Hydrogeologist.

All observation/monitoring standpipe bores were constructed with 50mm DN Class 18 uPVC casing and equipped with 50 mm DN Class 18 screens featuring a 0.5 mm slot size. The screened intervals of the bores included a gravel filter pack of 5 mm washed specialised filter gravel pack sealed using a minimum of a 2 m bentonite plug directly above the filter pack, followed by cement-bentonite grout to surface. In some cases, bores also included a bentonite plug beneath the screened interval to seal the target formation from the underlying formation.

Appendix C presents the graphical bore log for each bore.

During the drilling of MBIS02, the drill bit, stabilising rod and a small section of the first rod broke off hole at 134 mBGL. Attempts were made to fish out the items down hole however it was unsuccessful. This bore was decommissioned as MBIS02f in accordance with the *Minimum Construction Requirements for Water Bores in Australia*, and replacement drilled adjacent. A graphic log for this decommissioned bore is also provided in **Appendix C**.

Table 4-2 Bore Construction Summary

Bore ID	Construction Date	Total Hole Depth (m bgl)[1]	Bentonite (m bgl)[1]	Gravel (m bgl)[1]	Screened Interval (m bgl)[1]	Casing Sump (m bgl)[1]
MBIS01	13-05-25	22	2 - 4 & 12 - 15	4 - 12	9 - 12	12 - 13
MBIS02	29-05-25	137	130 - 132	132 - 138	133 – 136	136 - 137
MBIS03	16-05-25	181	163 - 165	165 - 181	171 - 180	180 - 181
MBIS04	05-05-25	19	8 - 10	10 - 19	12 - 18	18 - 19
MBIS05	09-05-25	155	144 - 146	146 - 155	150 - 156	154 - 155
MBIS07	15-06-25	19	6 - 8 & 13 - 19	8 - 13	12 - 18	18 - 19
MBIS11	13-05-25	96	83 - 87	87 - 96	90 - 93	93 - 94
MBIS12	20-05-25	19	10 - 12	12 - 20	15 - 18	18 - 19
MBIS13	22-05-25	153	145 - 147	147 - 153	148 - 151	151 - 153
MBIS14	11-06-25	12	5 - 7	7 - 12	8 - 11	11 - 12
MBIS15	12-06-25	53	39 - 35	39 - 52	42 - 51	51 - 52
MBIS19	05-08-25	86	82 - 86	74 - 86	79 - 85	85 - 86
MBIS20	06-07-25	22	11 - 13	13 - 22	17 - 20	20 - 22
205DR	15-06-25	47	35.5 - 39.5	39.5 - 47	43 - 46	46 - 47

1. m bgl = metres below ground level

4.4 2025 Bore Development – New Bores

The new groundwater bores were developed using airlift techniques in accordance with *the Minimum Construction Requirements for Water Bores in Australia*. Development activities were undertaken by GeoDrill Australia. Development was undertaken until the water recovered was assessed to be suitably clear and free of fines, and water quality parameters had stabilised, to the satisfaction of the onsite SLR hydrogeologist.

Bores MBIS01 and MBIS14 were found to be dry on installation and could not be airlifted.

Water quality results from bores MBIS03, MBIS05, and MBIS13 indicated elevated pH values recorded during field development, which were subsequently confirmed by laboratory analysis from the May 2025 groundwater monitoring event (SLR, 2025). These results collected shortly after bore installation additionally showed a notable shift in water chemistry compared to other bores intersecting the same aquifer, suggestive of residual cement grout related influence after drilling (SLR, 2025). In response, the bores were redeveloped to improve water quality and establish monitoring integrity. Post-redevelopment field measurements showed decrease in pH to the expected range; and further analysis of the June 2025 laboratory data revealed expected water chemistry concluding that the cement grout influence has been effectively resolved. **Table 2-1** presents the measured water quality data at the end of development for all bores.

Table 4-3 Bore Development Summary- 2025 Installed Bores

Bore ID	Target Unit	Airlift Yield (L/s)	Water Quality at the end of Airlift Development	
			pH	EC (µS/cm)
MBIS01	Alluvium	Dry		
MBIS02	Leichhardt coal seam	0.04	8.11	13,430
MBIS03	Vermont coal seam	0.8	8.9	9,754
MBIS03 (after redevelopment)	Vermont coal seam	-	8.63	9,988
MBIS04	Alluvium	-	8.1	3,492
MBIS05	Leichhardt coal seam	2.4	8.1	24,181
MBIS05 (after redevelopment)	Leichhardt coal seam	-	8.35	15,560
MBIS07	Alluvium	0.05	8.27	2,485
MBIS11	Leichhardt coal seam	1.5	7.9	10,236
MBIS12	Alluvium	0.1	8.30	1,917
MBIS13	Leichhardt coal seam	<0.01	8.76	15,047
MBIS13 (after redevelopment)	Leichhardt coal seam	0.01	8.65	12,460
MBIS14	Alluvium	Dry		
MBIS15	Leichhardt coal seam	0.09	7.89	25,932
MBIS19	Isaac Thrust Fault	0.797	8.37	1,6075
MBIS20	Regolith	0.2	7.84	2,784
205DR	Leichhardt coal seam	0.38	6.91	18,821

5.0 Hydraulic Slug Testing

This section outlines the methodology and results from hydraulic rising and falling head ('slug') testing. Slug testing was planned for 33 monitoring bores that form part of the IDE Baseline monitoring programme (**Figure 1**). Note that bores MBIS06, MBIS17, MB09C, MBIS01, MBIS14 and MBIS07 were dry at the time of testing and there for could not be slug tested in the 2025 program. A total of 27 bores were therefore tested.

5.1 Methodology

5.1.1 Field Procedure

The slug testing program consisted of conventional rising and falling head tests, performed by a tertiary qualified and experienced SLR hydrogeologist. The tests used a solid displacement slug with dimensions of 1 m x ~50 mm, resulting in a theoretical water column displacement of approximately 1 m in a 50 mm nominal diameter monitoring bore.

Before starting each slug test, the initial standing water level (SWL) was recorded. This step confirmed the resting water level and checked that the equipment (electronic level logger and slug) was installed at the appropriate depth.

Each monitoring bore underwent at least one rising head and one falling head test. More tests were typically conducted at bores where equilibrium conditions were established over a shorter time period following initial displacement. The falling-head tests (FHT) were conducted by lowering the slug below the SWL, causing the water level in the bore to rise. Rising-head tests (RHT) were conducted by rapidly removing the slug, resulting in a drop in the water level. Each test was concluded once equilibrium conditions were re-established after each the falling and rising head tests.

The changes in water level during the slug tests were recorded using an automated Solinst electronic level logger temporarily installed into the tested bore. The recording intervals were adjusted based on the bore's response rate, i.e., finer intervals for faster-responding bores and coarser intervals for slower-responding bores. Care was taken to avoid external disturbances that could affect the readings.

5.1.2 Analysis Methodology

Aquifer properties are estimated from the slug tests by fitting type curves from published literature to the water level displacement data recorded during the rising and falling head tests. There are several type curves which exist in literature, each with their own set of assumptions, i.e., appropriate conceptual model. It is important to understand the correct conceptual model prior to analysis to obtain the most accurate aquifer parameters.

Subsequent curve-fitting was carried out using industry standard AQTESOLV v4.50 software, which offers several built-in solutions that can be used for automatic or manual curve-fitting to estimate the horizontal hydraulic conductivity (Kh) from the testing data. One or more of the following mathematical solutions: Bouwer and Rice (1976), Hvorslev (1951), Dagan (1978) and Springer-Gelhar (1991), were used in the analysis as deemed appropriate for each individual test.

The Bouwer and Rice (1976) solution assumes that the bore is fully or partially penetrating, the aquifer is unconfined, homogeneous, of uniform thickness and there is steady state flow to the well. Bouwer (1989) did however find that the Bouwer and Rice (1976) method has application to both confined and unconfined aquifers. The Hvorslev (1951) method has similar assumptions to the Bouwer and Rice (1976) method, however, is more typically adopted for confined aquifers but is also considered applicable to unconfined aquifers.

In cases where the water table is across the well screens, the Dagan (1978) was used for determining the hydraulic conductivity. Dagan (1978) solution assumes the aquifer is of uniform thickness and unconfined and that flow is steady state in the well.

The Bouwer and Rice (1976), Hvorslev (1951) and Dagan (1978) methods match a straight line to the recorded slug test water level response data. This can lead to uncertainty when fitting these solutions to non-linear data. To overcome this uncertainty associated with the data curvature, Butler (1998) suggests matching straight line test solutions to data within recommended head ranges thereby improving the reliability of the data analysis. The Butler (1998) recommended head range is automatically superimposed onto each data plot in the AQTESOLV software and was used to guide the fitting of the straight line for slug tests where these solutions are applicable.

Springer and Gelhar (1991) extended the Bouwer-Rice (1976) solution for a slug test to include inertial effects in the test well. The solution accounts for oscillatory water level response also known as an underdamped response, often observed in aquifers of high hydraulic conductivity. The Springer and Gelhar (1991) solution was applied in AQTESOLV where deemed appropriate. i.e., where oscillatory water level response was observed in some tests.

5.2 Results

A summary of all the slug testing results are provided below in **Table 5-1** and **Figure 2**. The results from the analysis of the slug tests for all bores are shown in **Table 5-2**. Detailed AQTESOLV output reports for each test with reliable data are available in **Appendix D**.

Table 5-1 Summary of Hydraulic Conductivity Estimates per Hydrogeologic Unit

Target Formation	Number of Bores	Number Slug tests Analysed	Minimum Hydraulic Conductivity (m/day)	Maximum Hydraulic Conductivity (m/day)	Median Hydraulic Conductivity (m/day)	Geometric Mean Hydraulic Conductivity (m/day)
Alluvium	5	48	0.33	9.68	1.33	1.19
Regolith	4	49	0.15	2.51	1.00	0.71
Leichhardt Coal Seam	10	74	0.001	30.31	0.25	0.33
Vermont Coal Seam	5	32	0.03	5.90	0.45	0.37
Fort Cooper Coal Measures	2	16	0.04	0.11	0.07	0.07
Isaac Thrust Fault	1	12	0.002	0.006	0.003	0.003

Target Formation	Number of Bores	Number of Slug Tests Analysed	Mean Horizontal Hydraulic Conductivity (m/day)	Median Horizontal Hydraulic Conductivity (m/day)
Alluvium	5	48	1.66	1.33
Tertiary Basalt & Sediments (regolith)	1	12	0.50	0.49
Weathered Rangal Coal Measures Overburden (regolith)	3	38	1.15	1.47
Leichhardt Coal seam	10	74	5.55	0.25
Vermont Coal seam	5	32	1.28	0.51
Fort Cooper Coal Measures	2	16	0.07	0.07
Isaac Thrust Fault	1	12	3.2E-03	3.1E-03

It is noted that the mean (average) hydraulic conductivities obtained for the Leichhardt and Vermont coal seams are significantly higher than the median values. This is considered to be a result of individual bore outliers within the respective results datasets (MBIS08 and MBIS11 in the Leichhardt coal seam, and MBIS16 in the Vermont coal seam). The results for these bores are at least an order of magnitude higher than the remaining dataset for the other bores each coal seam.

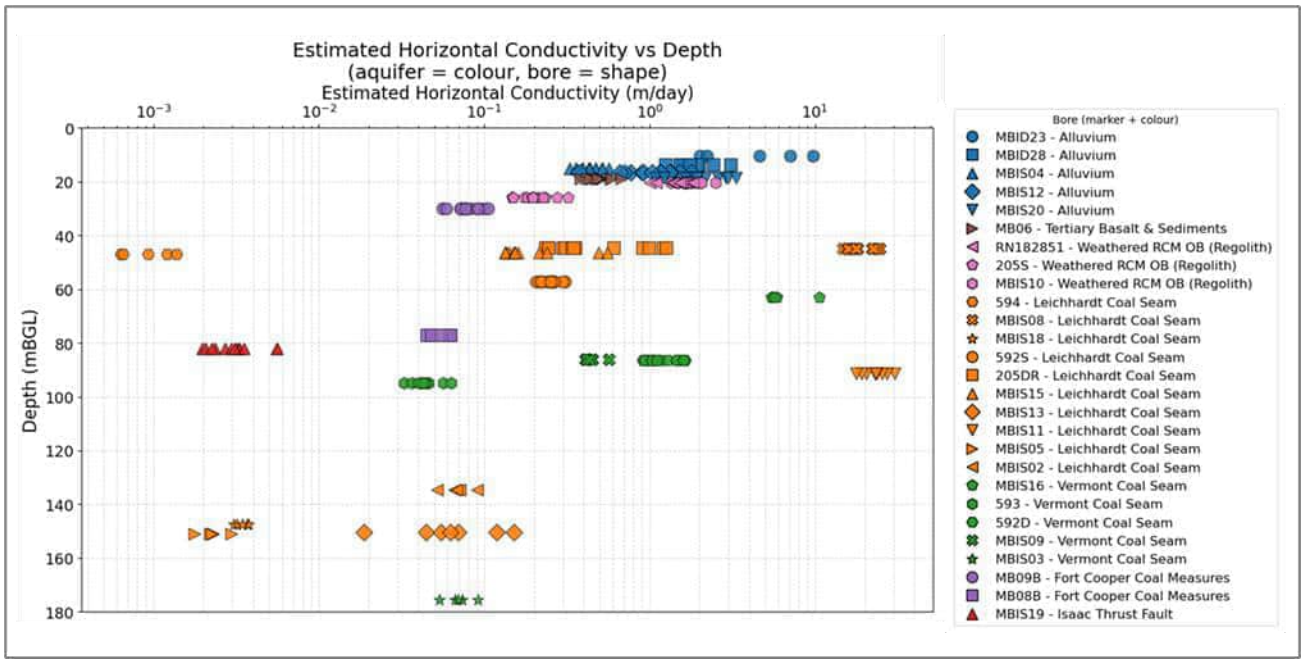


Figure 2 Summary of all Slug Test Analysis

Table 5-2 Slug Testing Results by Bore

Aquifer	Bore ID	Solution	Estimated Horizontal Hydraulic Conductivity (m/day)						
			FH1	FH2	FH3	RH1	RH2	RH3	Median
Alluvium	MBID23	Springer-Gelhar (1991)	2.02	2.22	-	9.68	7.07	-	4.64
	MBID28	Bouwer-Rice (1976)	1.57	1.24	-	1.51	2.43	-	1.76
		Hvorslev (1951)	1.99	1.58	-	1.93	3.10	-	
	MBIS04	Bouwer-Rice (1976)	0.39	0.36	0.43	0.33	0.36	0.39	0.43
		Hvorslev (1951)	0.52	0.47	0.56	0.43	0.47	0.52	
	MBIS12	Bouwer-Rice (1976)	0.77	0.70	0.37	1.78	1.35	1.32	1.03
		Hvorslev (1951)	0.90	0.66	0.91	1.52	1.15	1.17	
Regolith	MBIS20	Bouwer-Rice (1976)	2.59	2.99	1.94	1.08	1.70	1.66	1.93
		Hvorslev (1951)	2.90	3.35	2.18	1.21	1.91	1.86	
	MB06	Bouwer-Rice (1976)	0.45	0.42	0.51	0.38	0.44	0.59	0.49
		Hvorslev (1951)	0.52	0.48	0.58	0.43	0.50	0.68	
	RN182851	Bouwer-Rice (1976)	1.35	1.39	1.00	1.52	1.63	1.39	1.52
		Hvorslev (1951)	1.47	1.52	1.09	1.66	1.78	1.52	
		Dagan (1978)	1.51	1.56	-	1.71	1.83	1.57	
	205S	Bouwer-Rice (1976)	0.15	0.15	0.18	0.27	0.20	0.19	0.20
		Hvorslev (1951)	0.15	0.17	0.21	0.32	0.23	0.23	
	MBIS10	Bouwer-Rice (1976)	1.63	1.34	-	1.67	1.70	-	1.68
		Hvorslev (1951)	2.51	1.61	-	2.01	2.05	-	
Leichhardt Coal Seam	594	Bouwer-Rice (1976)	1.21E-03	-	-	6.32E-04	-	-	9.29E-04
		Hvorslev (1951)	1.38E-03	-	-	6.52E-04	-	-	
	MBIS08	Bouwer-Rice (1976)	17.28	17.40	14.73	16.68	15.51	15.89	17.79
		Hvorslev (1951)	24.48	24.67	18.17	23.65	21.99	22.54	
	MBIS18	Bouwer-Rice (1976)	3.69E-03	-	-	3.07E-03	-	-	3.44E-03
		Hvorslev (1951)	3.76E-03	-	-	3.19E-03	-	-	
	592S	Bouwer-Rice (1976)	0.26	0.22	0.25	0.20	0.21	0.22	0.25
		Hvorslev (1951)	0.31	0.27	0.30	0.24	0.25	0.26	
	205DR	Bouwer-Rice (1976)	0.90	0.30	1.20	0.23	0.36	0.34	0.35
		Hvorslev (1951)	0.99	0.61	1.26	0.25	0.31	0.25	
	MBIS15	Bouwer-Rice (1976)	0.49	0.21	0.14	0.14	0.13	0.13	0.15
		Hvorslev (1951)	0.56	0.24	0.15	0.16	0.15	0.15	
	MBIS13	Bouwer-Rice (1976)	0.12	0.05	-	0.04	-	-	0.0
		Hvorslev (1951)	0.15	0.07	-	0.02	-	-	
	MBIS11	Bouwer-Rice (1976)	22.93	20.52	-	19.24	17.77	-	23.22
		Hvorslev (1951)	30.31	27.13	-	25.44	23.50	-	
	MBIS05	Bouwer-Rice (1976)	2.30E-03	-	-	1.76E-03	-	-	2.25E-03
		Hvorslev (1951)	2.95E-03	-	-	2.20E-03	-	-	
	MBIS02	Bouwer-Rice (1976)	0.07	-	-	0.05	-	-	0.07
		Hvorslev (1951)	0.09	-	-	0.07	-	-	
Vermont Coal Seam	MBIS16	Springer-Gelhar (1991)	10.56	5.49	-	5.90	5.44	-	5.69
	593	Bouwer-Rice (1976)	0.03	0.04	-	0.06	0.04	-	0.04
		Hvorslev (1951)	0.04	0.05	-	0.06	0.04	-	
	592D	Bouwer-Rice (1976)	1.48	1.16	1.45	0.91	0.93	0.94	1.10
		Hvorslev (1951)	1.64	1.29	1.60	1.01	1.04	1.04	
	MBIS09	Bouwer-Rice (1976)	0.45	0.57	-	0.41	0.42	-	0.43
		Hvorslev (1951)	0.45	0.57	-	0.41	0.42	-	
	MBIS03	Bouwer-Rice (1976)	0.07	-	-	0.05	-	-	0.07
		Hvorslev (1951)	0.09	-	-	0.07	-	-	
Fort Cooper Coal Measures	MB09B	Bouwer-Rice (1976)	0.06	0.06	0.08	0.08	0.07	0.07	0.0
		Hvorslev (1951)	0.07	0.08	0.10	0.11	0.09	0.09	
	MB08B	Bouwer-Rice (1976)	0.06	-	-	0.05	-	-	0.0
		Hvorslev (1951)	0.04	-	-	0.06	-	-	
Isaac Thrust Fault	MBIS19	Bouwer-Rice (1976)	1.97E-03	2.72E-03	5.56E-03	3.18E-03	2.97E-03	3.31E-03	3.08E-03
		Hvorslev (1951)	2.06E-03	2.36E-03	5.60E-03	3.31E-03	2.25E-03	3.51E-03	

6.0 Closure

SLR considers that the new bores have been installed consistent with the pre-drilling specifications (SLR, 2024b) and all additional monitoring bores are fit for purpose for incorporation into the IDE monitoring network.

Sincerely,

SLR Consulting Australia Pty Ltd

Kirsty Gibson
Senior Hydrogeologist

Derwin Lyons
Technical Director

7.0 References

SLR, 2024a, Groundwater Gap Analysis & Field Program Recommendations Prepared for Stanmore Resources Limited by SLR Consulting Australia Pty Ltd.

SLR, 2024b, Bore Census Factual Field Report and Recommendations. Prepared for Stanmore Resources Limited by SLR Consulting Australia Pty Ltd.

SLR, 2024c, Groundwater Drilling Program Bore Specifications and Bill of Quantities. Prepared for Stanmore Resources Limited by SLR Consulting Australia Pty Ltd.

SLR, 2025, Isaac Downs Extension Project Factual Groundwater Monitoring Report –May 2025. Prepared for Stanmore Resources Limited by SLR Consulting Australia Pty Ltd.

Appendix A Successful Rehabilitation Before and After Photos

Groundwater Factual Field Investigation Report

Isaac Downs Extension Project

Stanmore Resources Limited

SLR Project No.: 620.041537.00004

5 May 2026

Nested bores 592s and 592d - before rehabilitation

Nested bores 592s and 592d - after rehabilitation

Bore 205s - before rehabilitation

Bore 205s - after rehabilitation

Appendix B NMR Composite Logs

Groundwater Factual Field Investigation Report

Isaac Downs Extension Project

Stanmore Resources Limited

SLR Project No.: 620.041537.00004

5 May 2026

NMR COMPOSITE LOG

RFIS0060

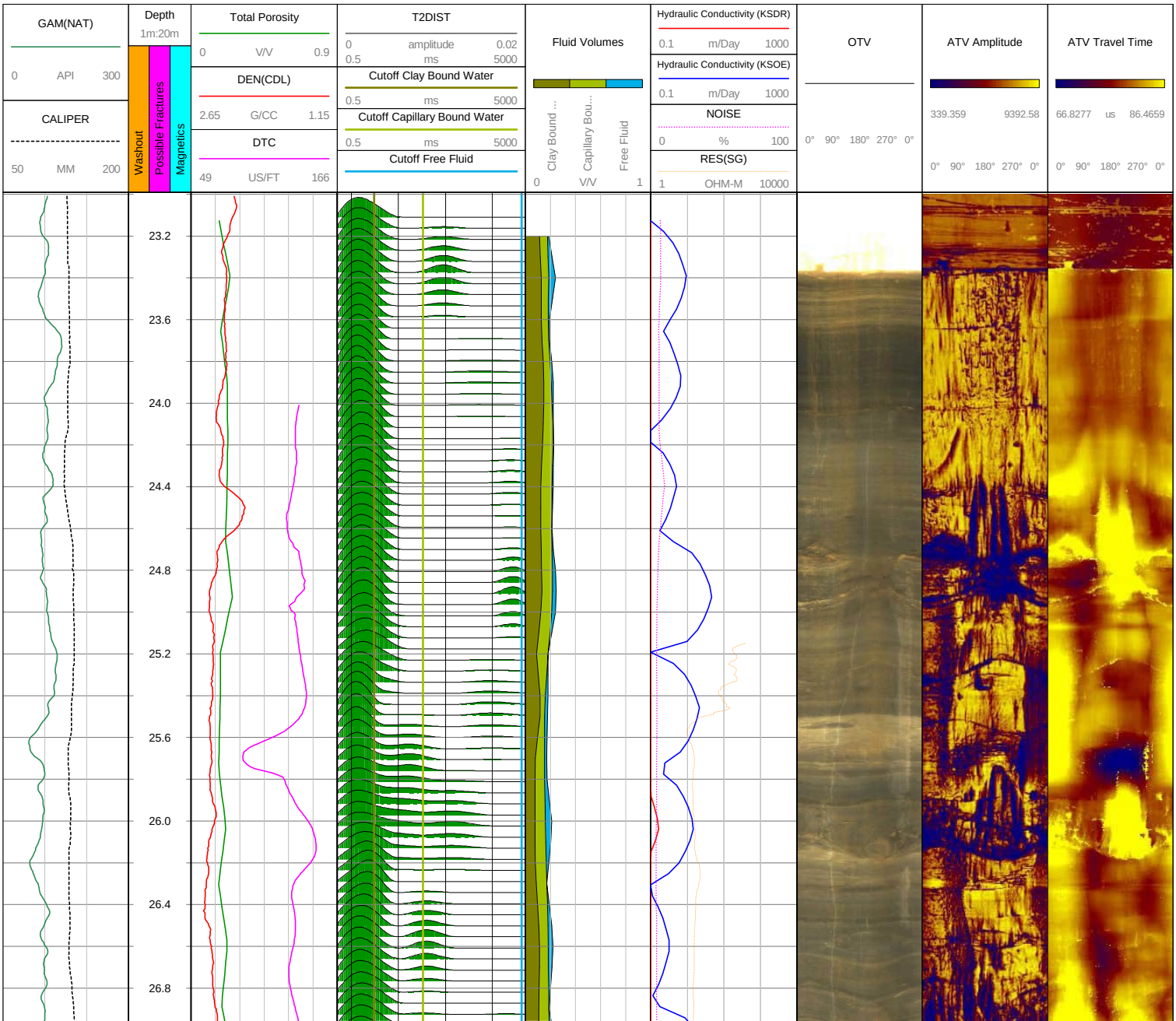
COMPANY	STANMORE COAL	**INSTRUMENT**	NMR, Density, OTV, ATV, FWS	**LOGGING CO.**	Epiroc KLS
LOCATION	25FLT_IDE_005	**DRILL DEPTH**	174m	**DATE**	19/07/2025
FIELD	IPS	**BIT SIZE**	124mm	**CLIENT REP**	N.CLIFFORD
PROJECT	IPS	**CASING WEIGHT**	PVC	**ENGINEER**	MSA
COUNTRY	AUSTRALIA	**CASING SIZE**	140mm	**VEHICLE**	SV013
STATE	QLD	**CASING BOTTOM**	30m	**TOOL**	JPY238 Javelin Wireline Slim
NORTHING	626438	**PERMANENT DATUM**	GL	**ELEV GL**	
EASTING	7555283	**ELEV PERM DATUM**	GL	**ELEV DF**	
				ELEV KB	

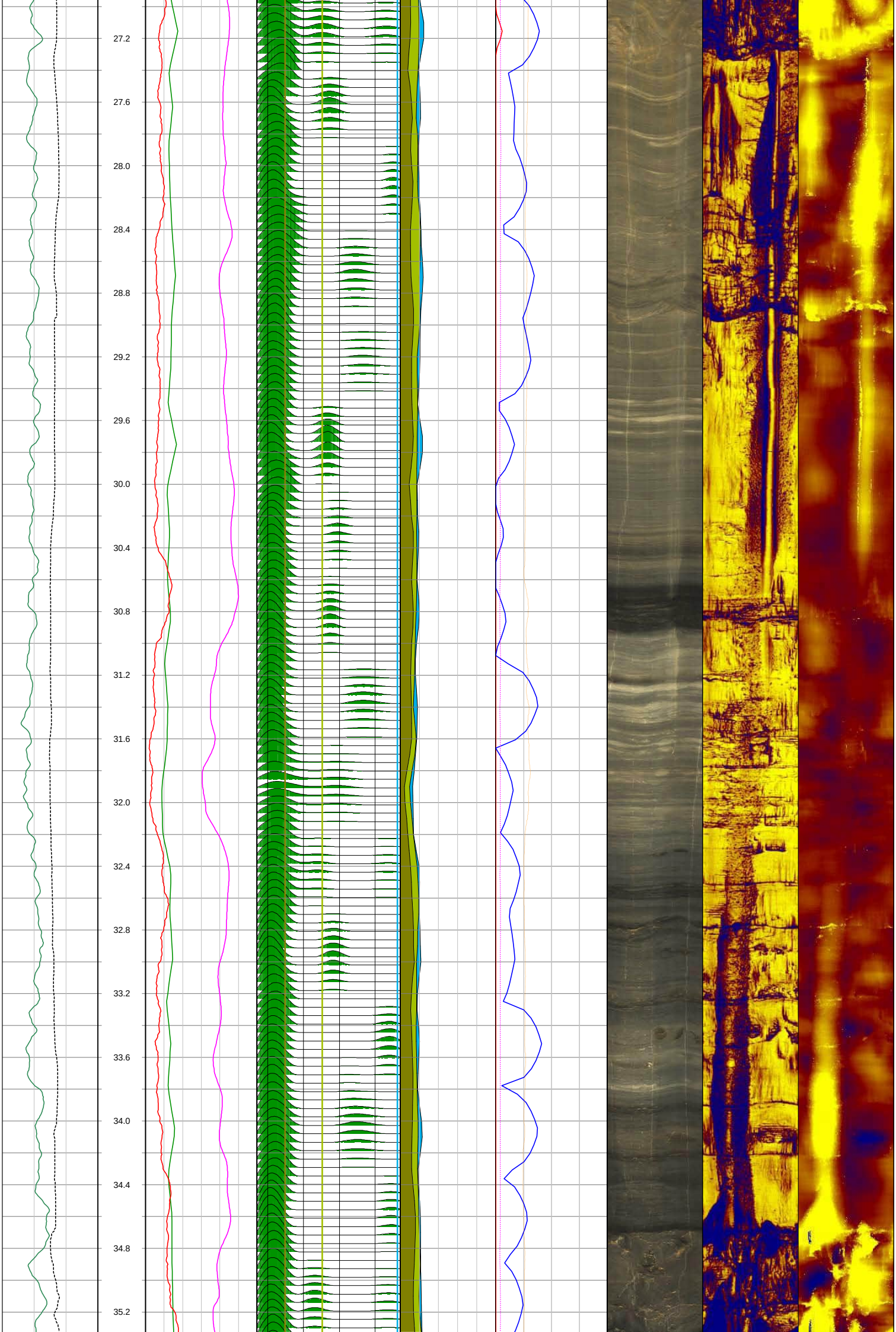
COMMENTS

Operator Comments	All image log data is oriented to true north. The applied magnetic declination correction is 8.20 degrees. Poor quality ATV image below 60 m due to a rugose borehole wall caused by drill marks. Nearly invisible OTV image below 74 m due to murky water. Relogging is recommended.
Log Analyst Comments	- NMR data quality is good with no unusual log sections. Possible Fractures intervals were flagged. - T2 cutoff of clay bound water: 3 ms and T2 cutoff of capillary bound water: 33 ms - Cutoff values were chosen to represent formation properties. Should lab experiment values be done on samples, these cutoff values can be adjusted if needed. - Hydraulic conductivity is calculated by the Schlumberger Doll Research equation for permeability (K SDR) and Sum Of Echoes (K SOE) - Interpretation Hydraulic conductivity peaks: Fault: 36.5 m: K SDR = 0.2 & K SOE = 3.5 m/Day. These low K values are an indication based on models, not actual measurements. - Interpretation Hydraulic conductivity peaks: Possible open natural fractures at 121.2 to 122.2 m: K SDR = 8.9 & K SOE = 4.7 m/Day. These low K values are an indication based on models, not actual measurements.
General Comments	If curves are (partially) empty, those were not logged or available for this hole at the time of processing.

IMPORTANT NOTE

The following interpretations are opinions based upon inferences from borehole logs, Epiroc Kinetic Logging Services Pty Ltd cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore, Kinetic Logging Services Pty Ltd shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.

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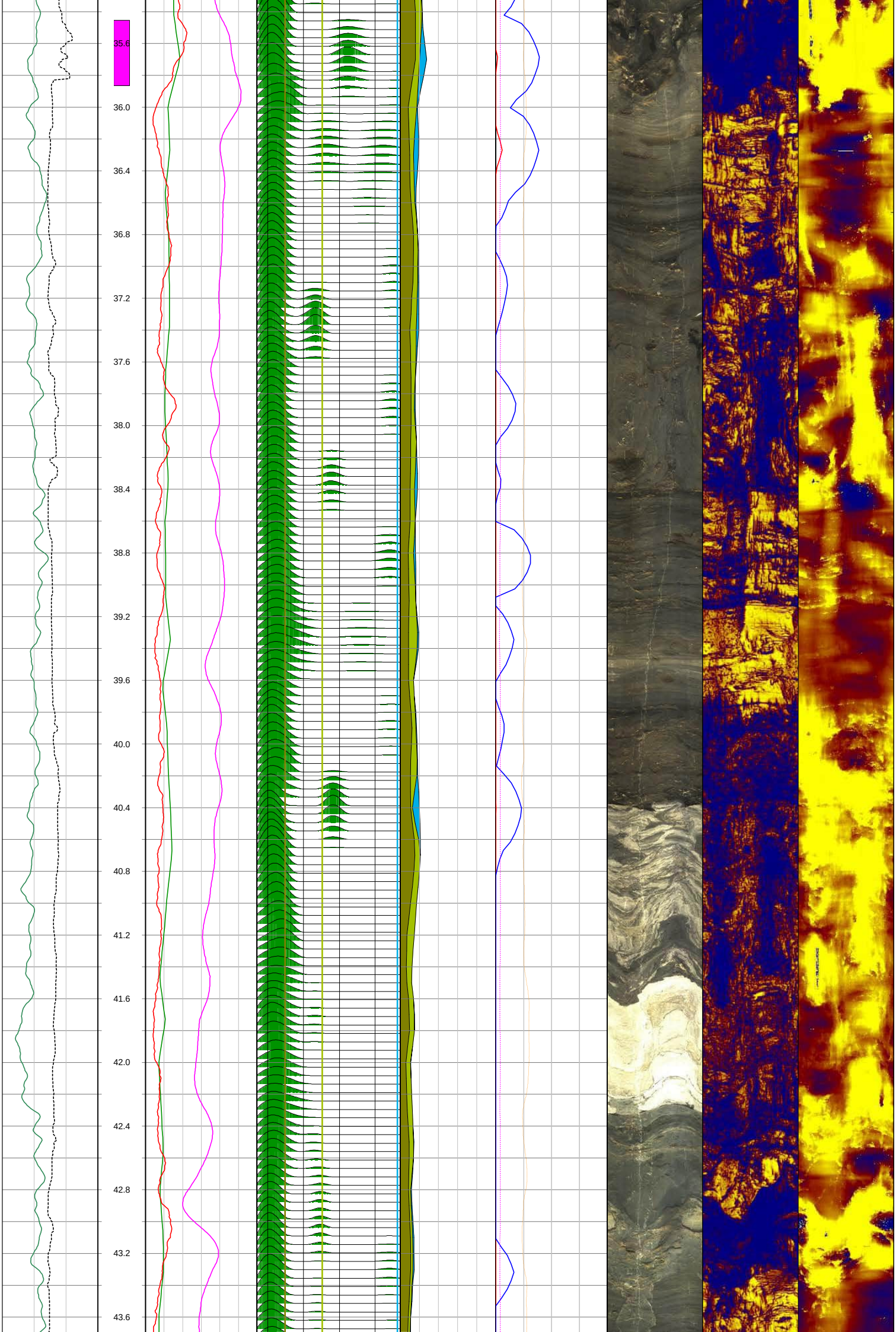
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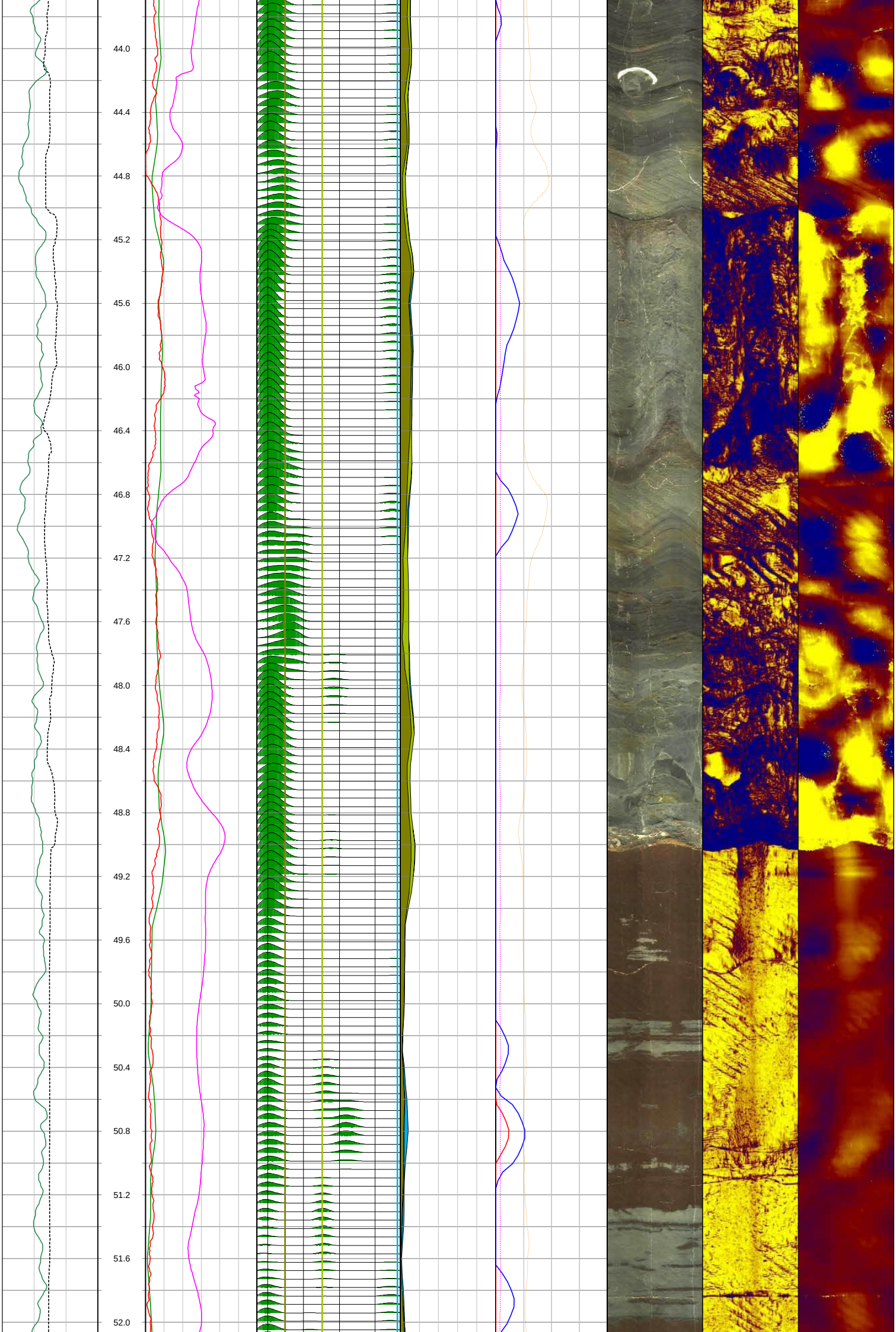
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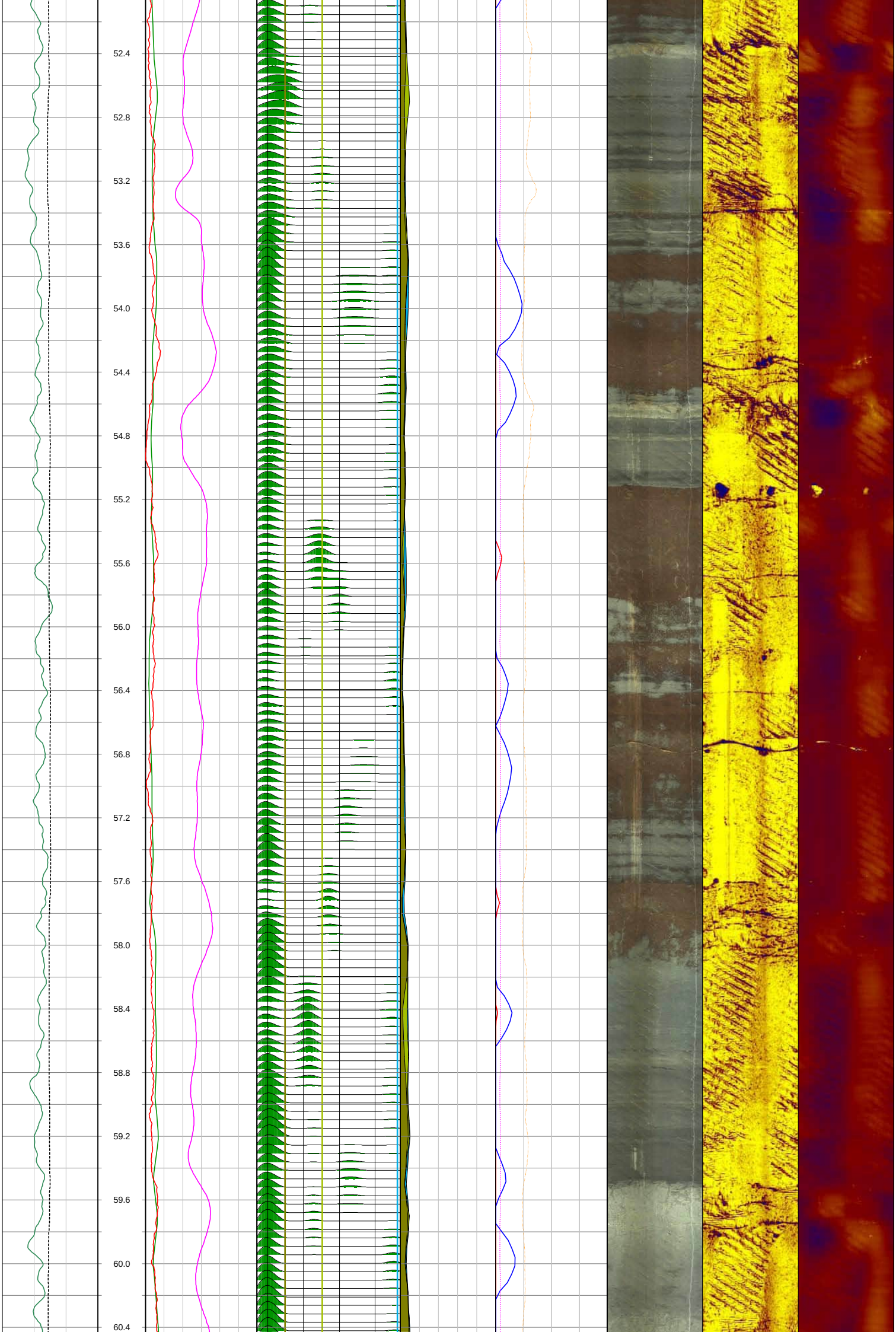
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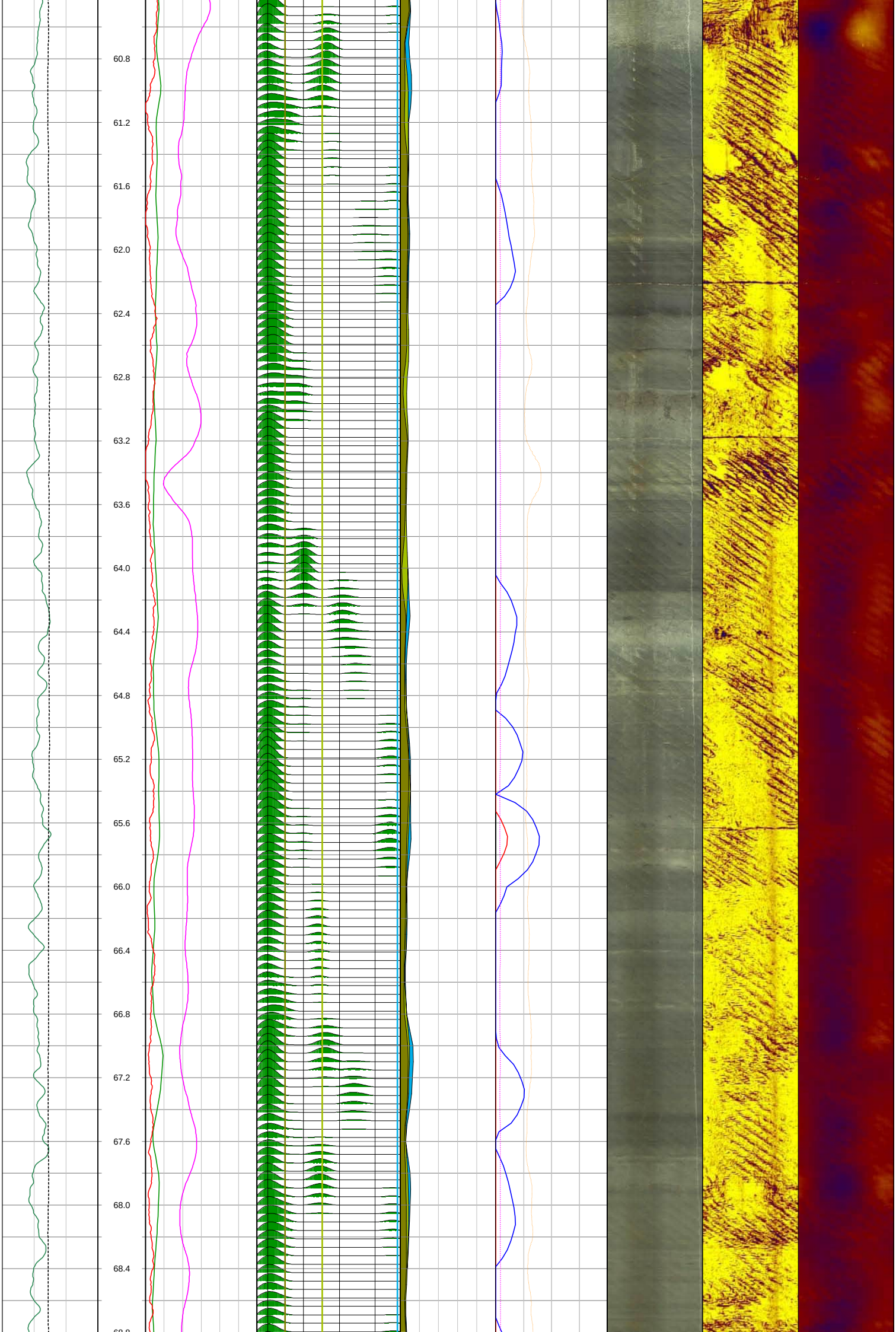
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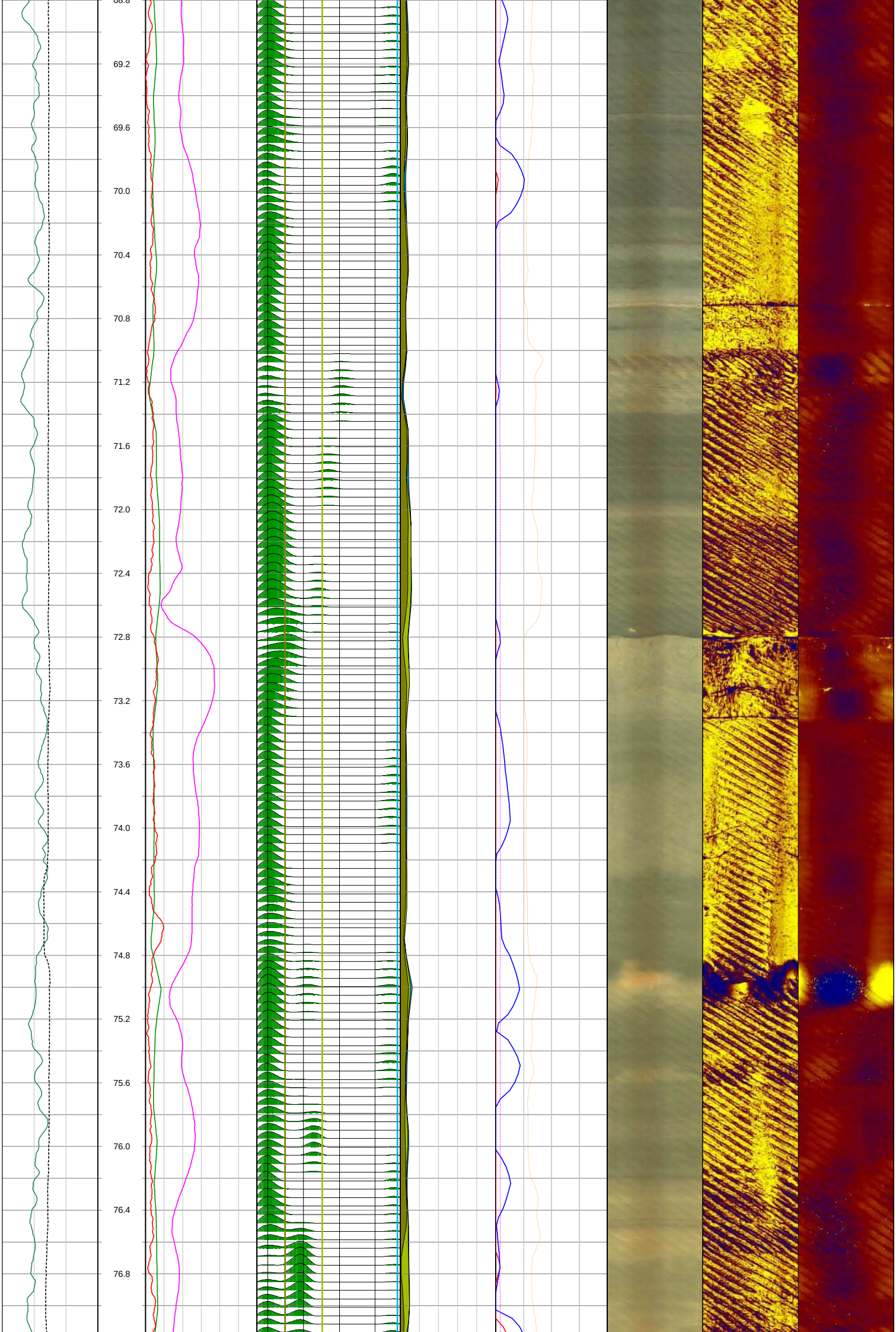
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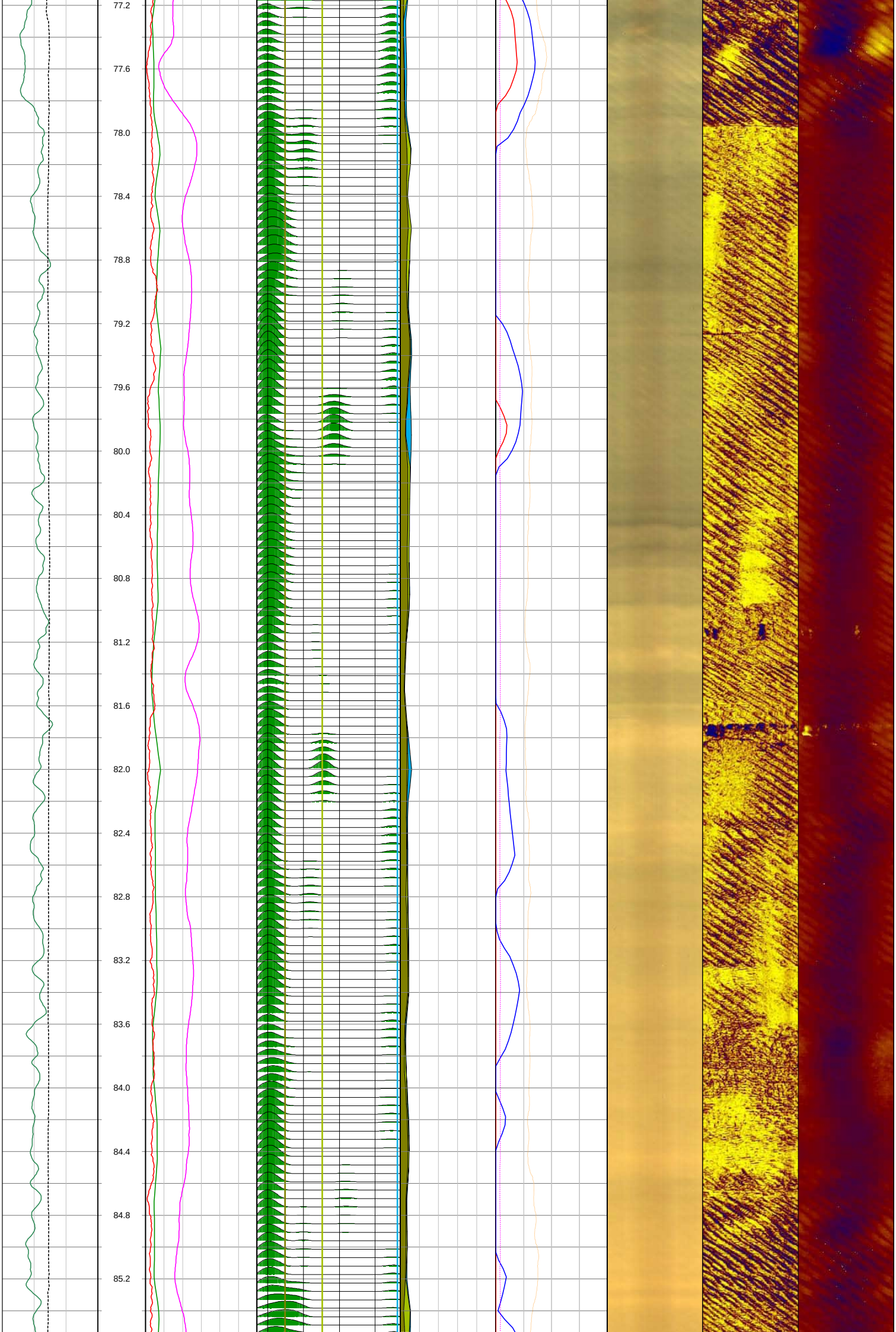
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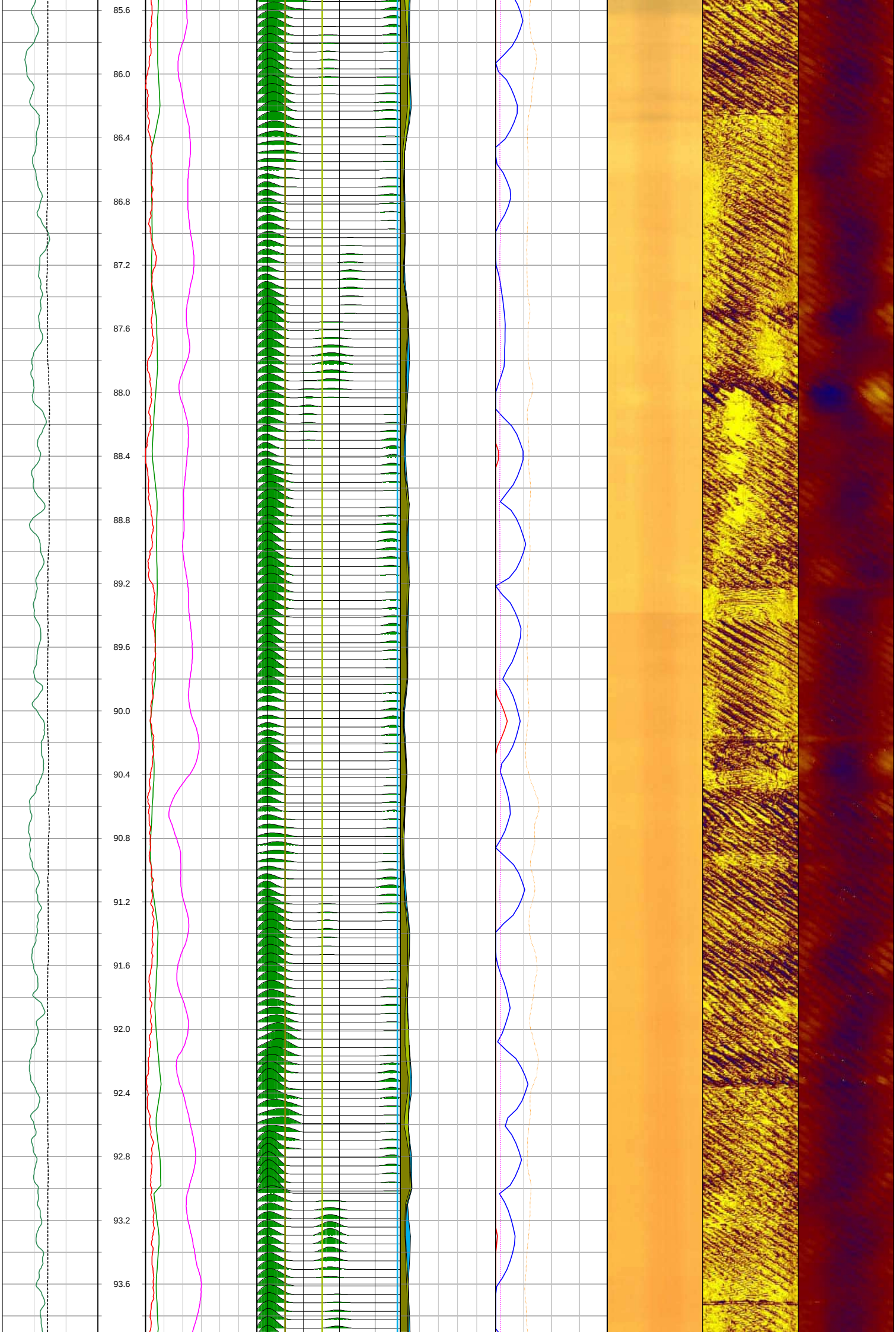
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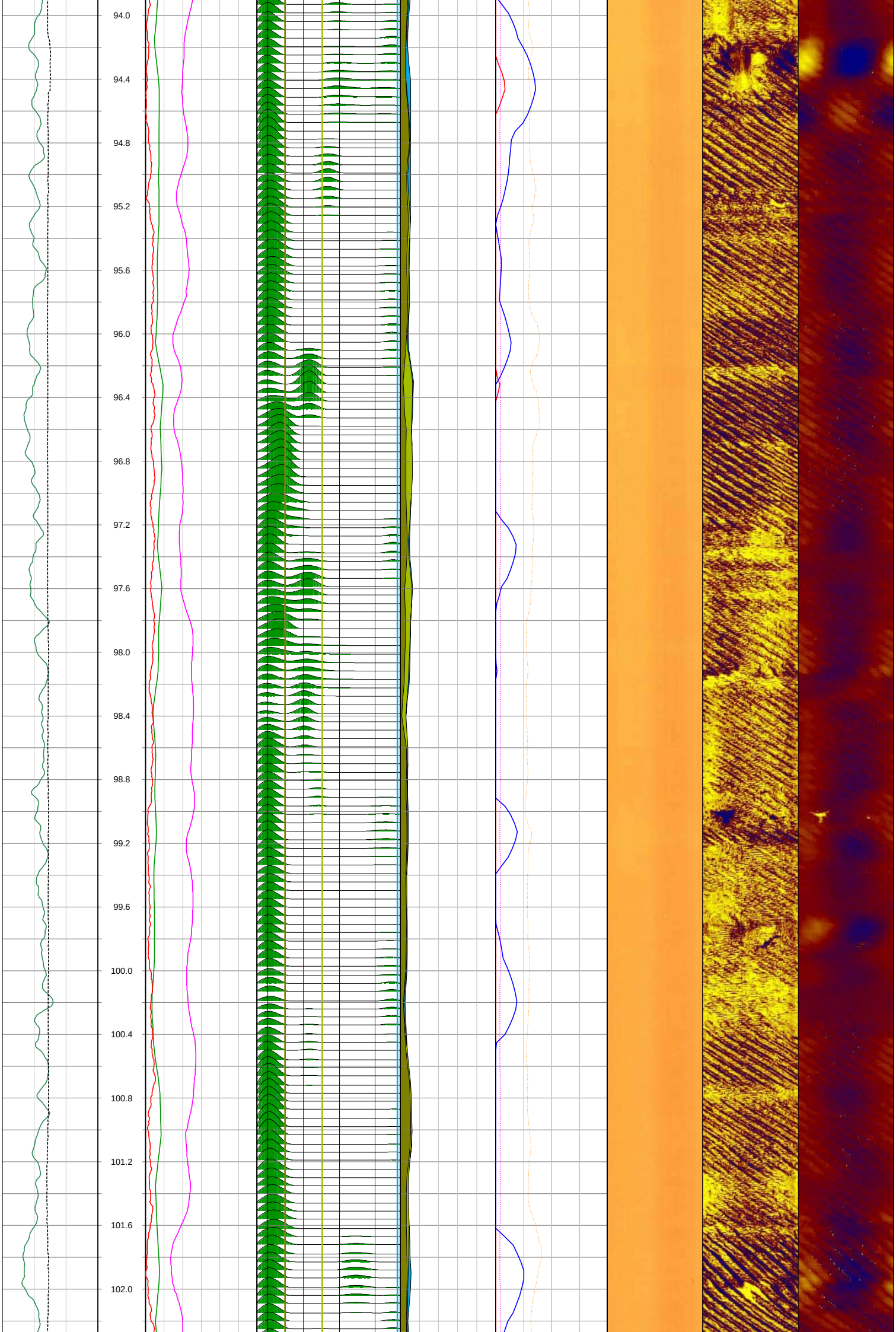
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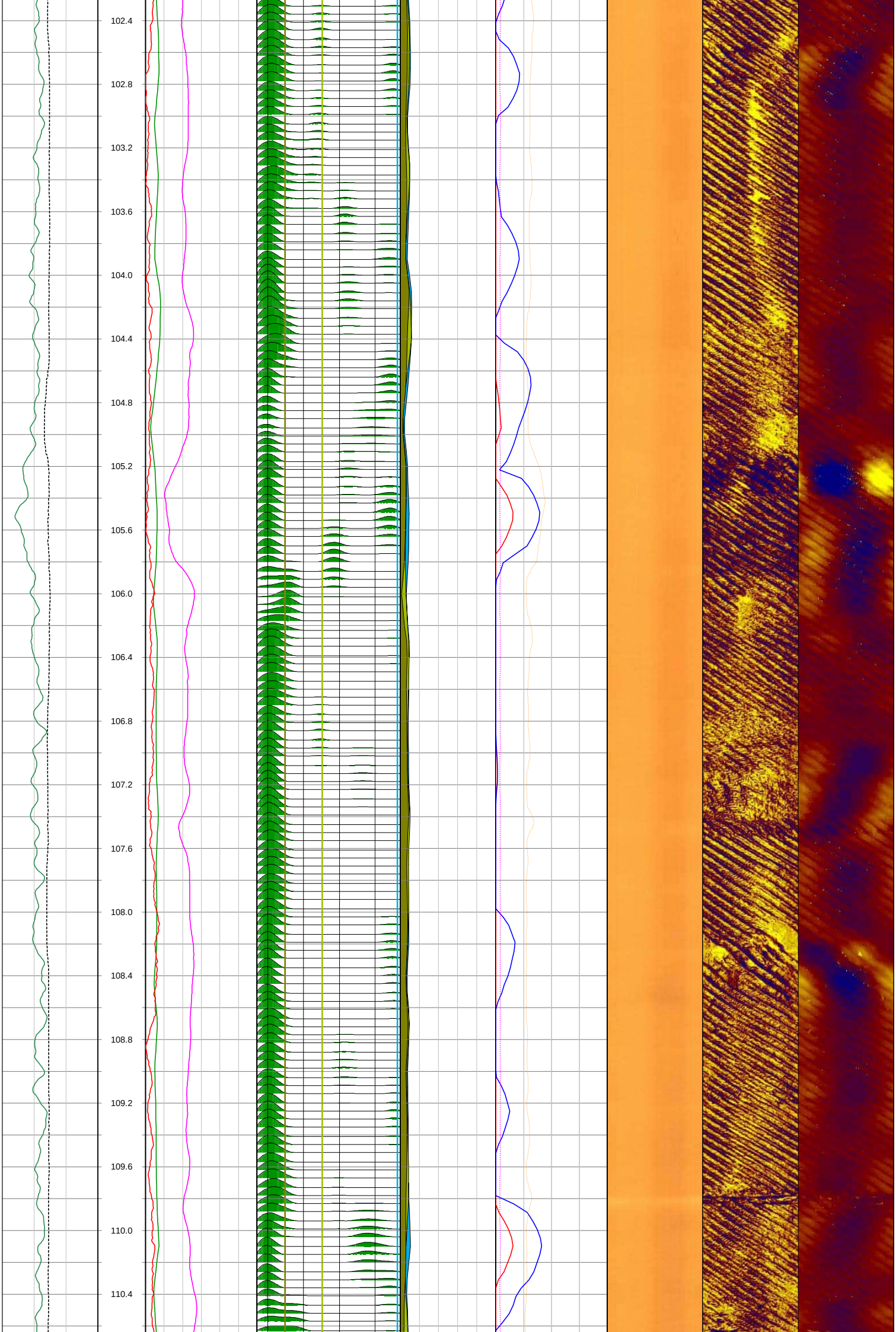
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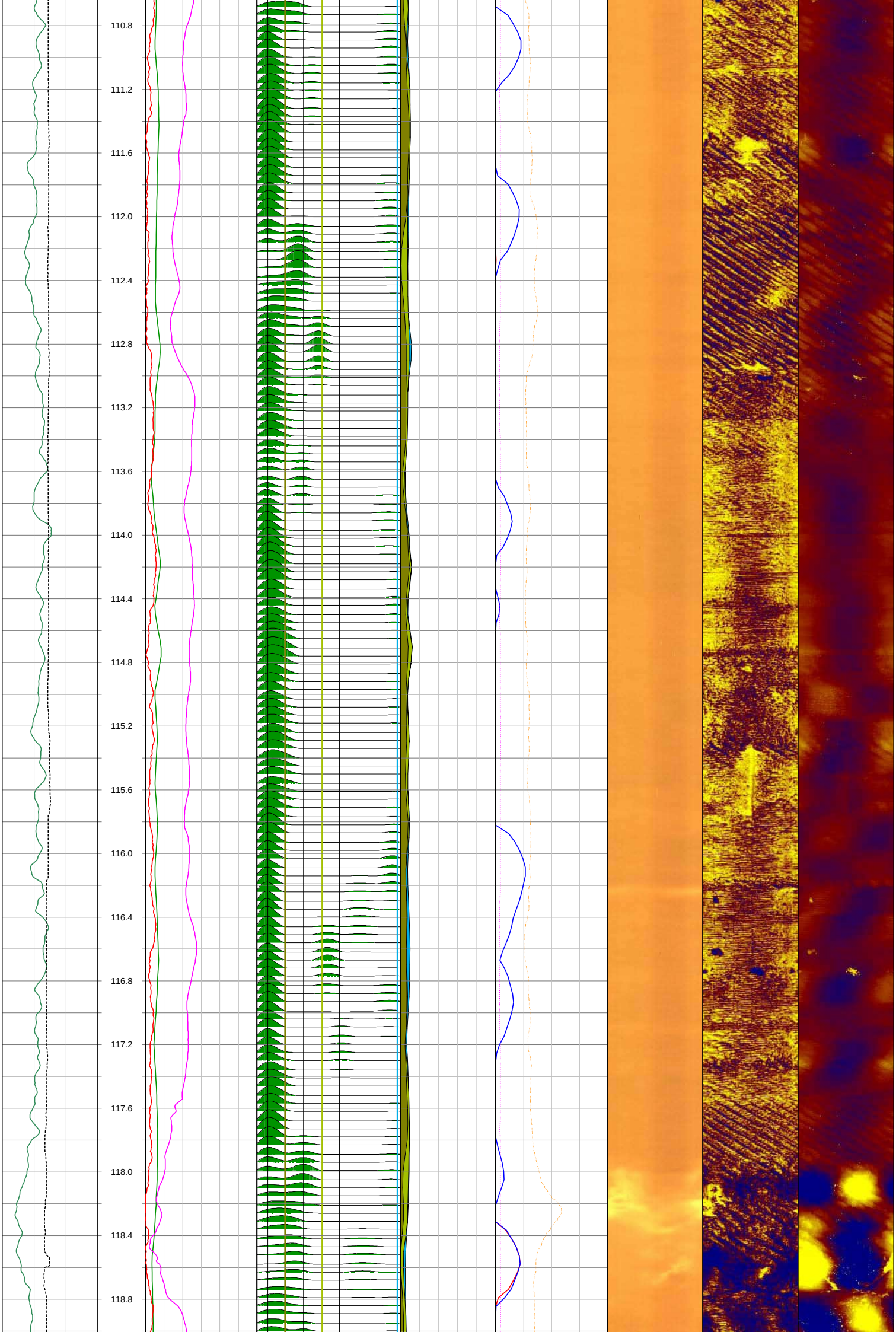
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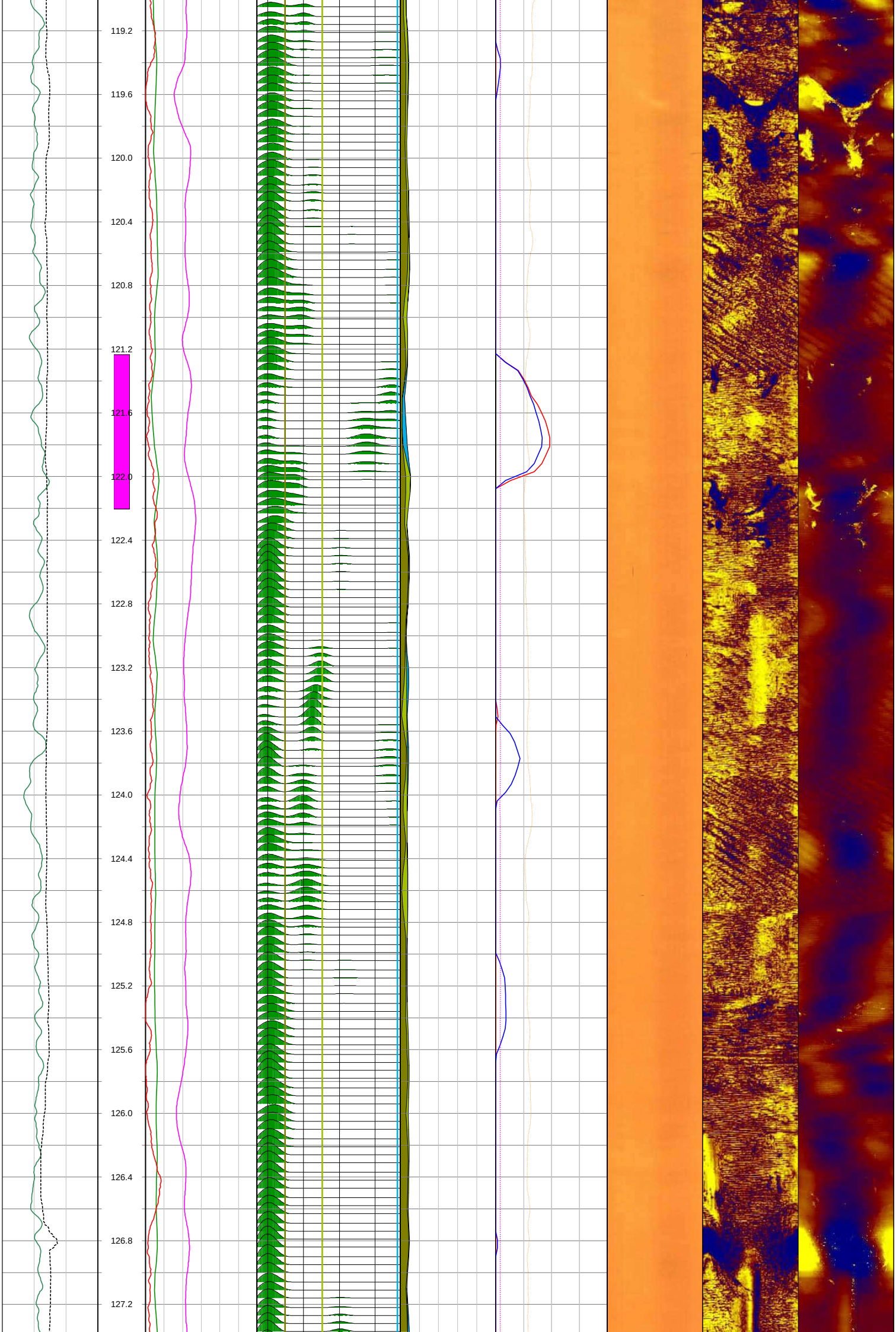
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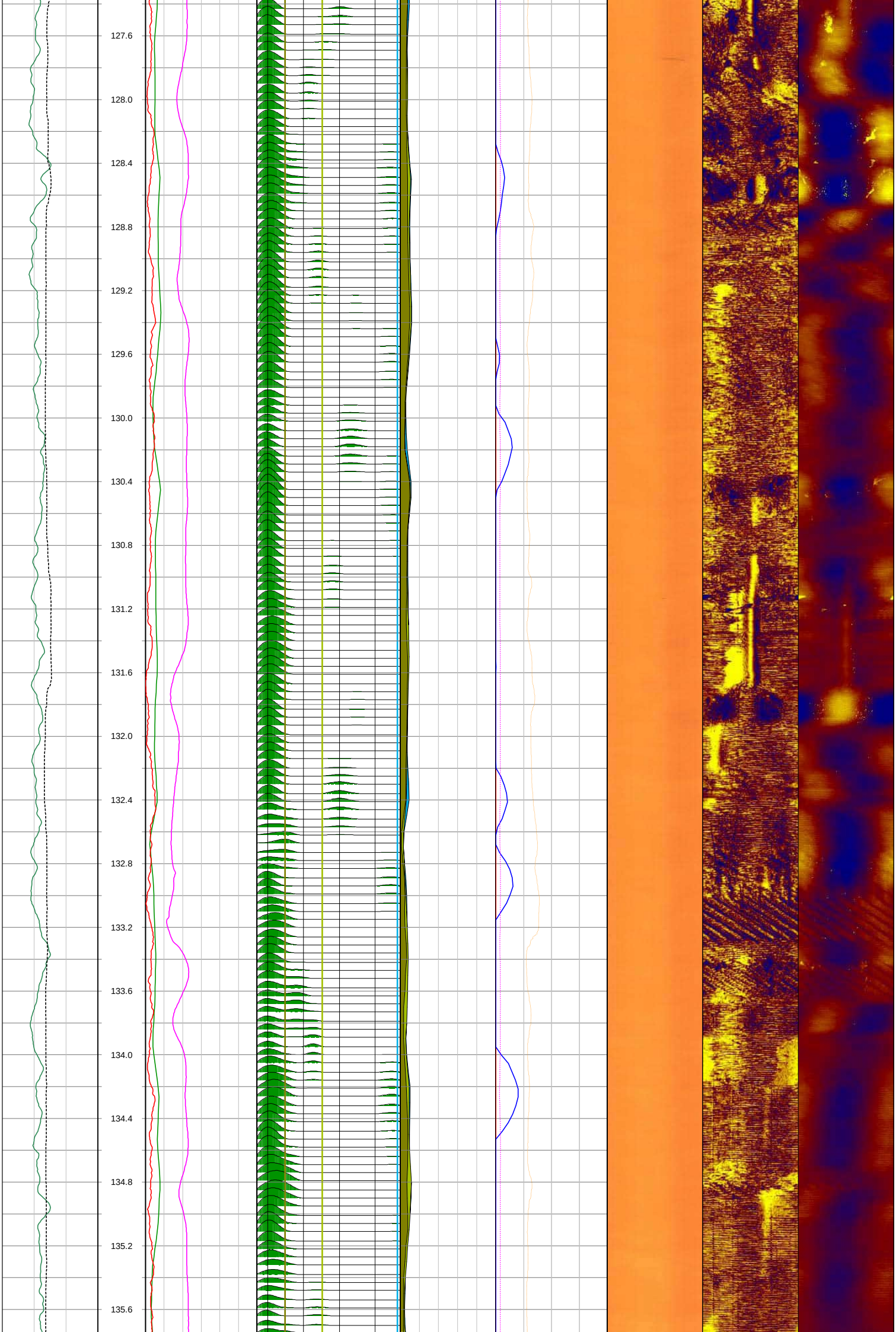
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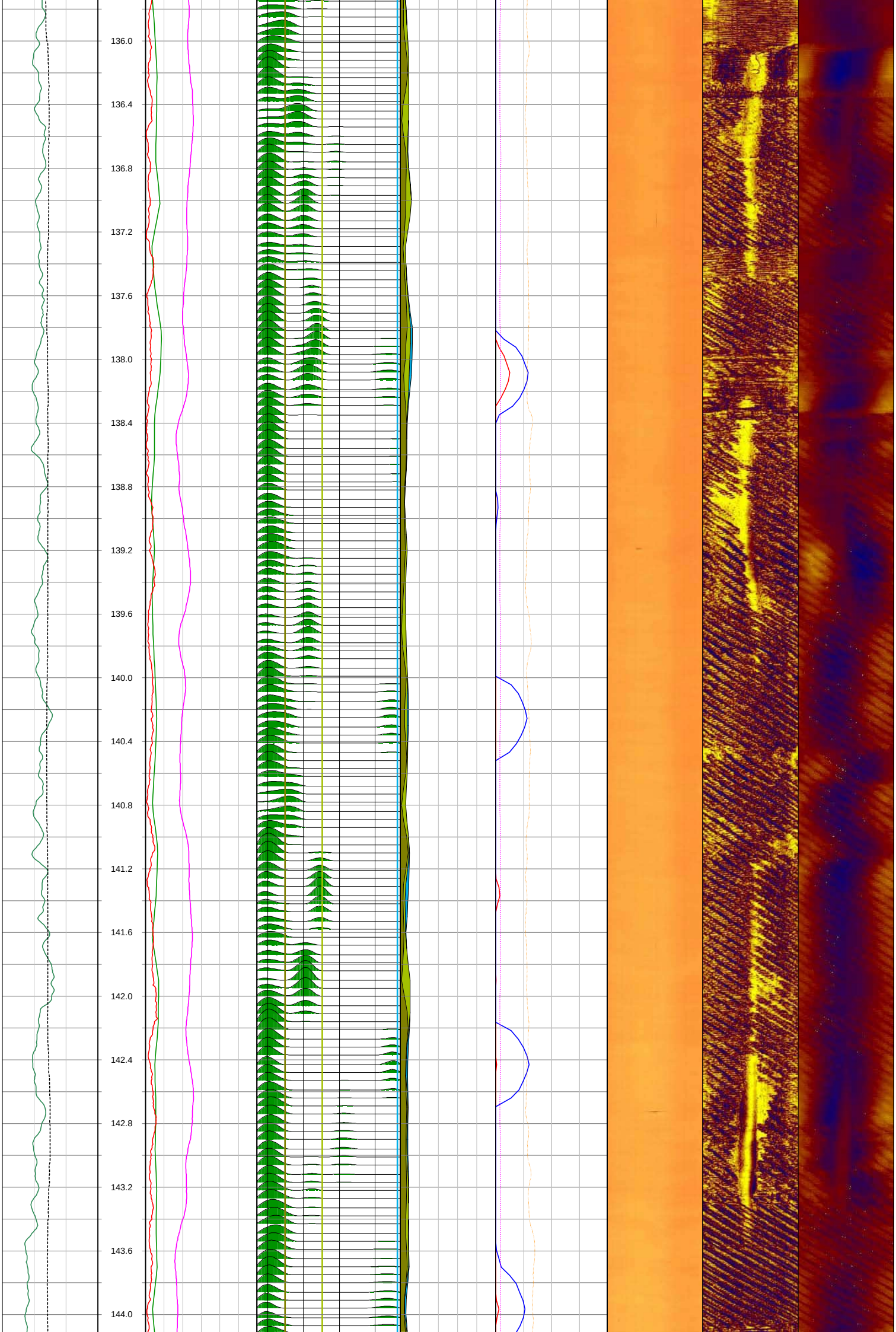
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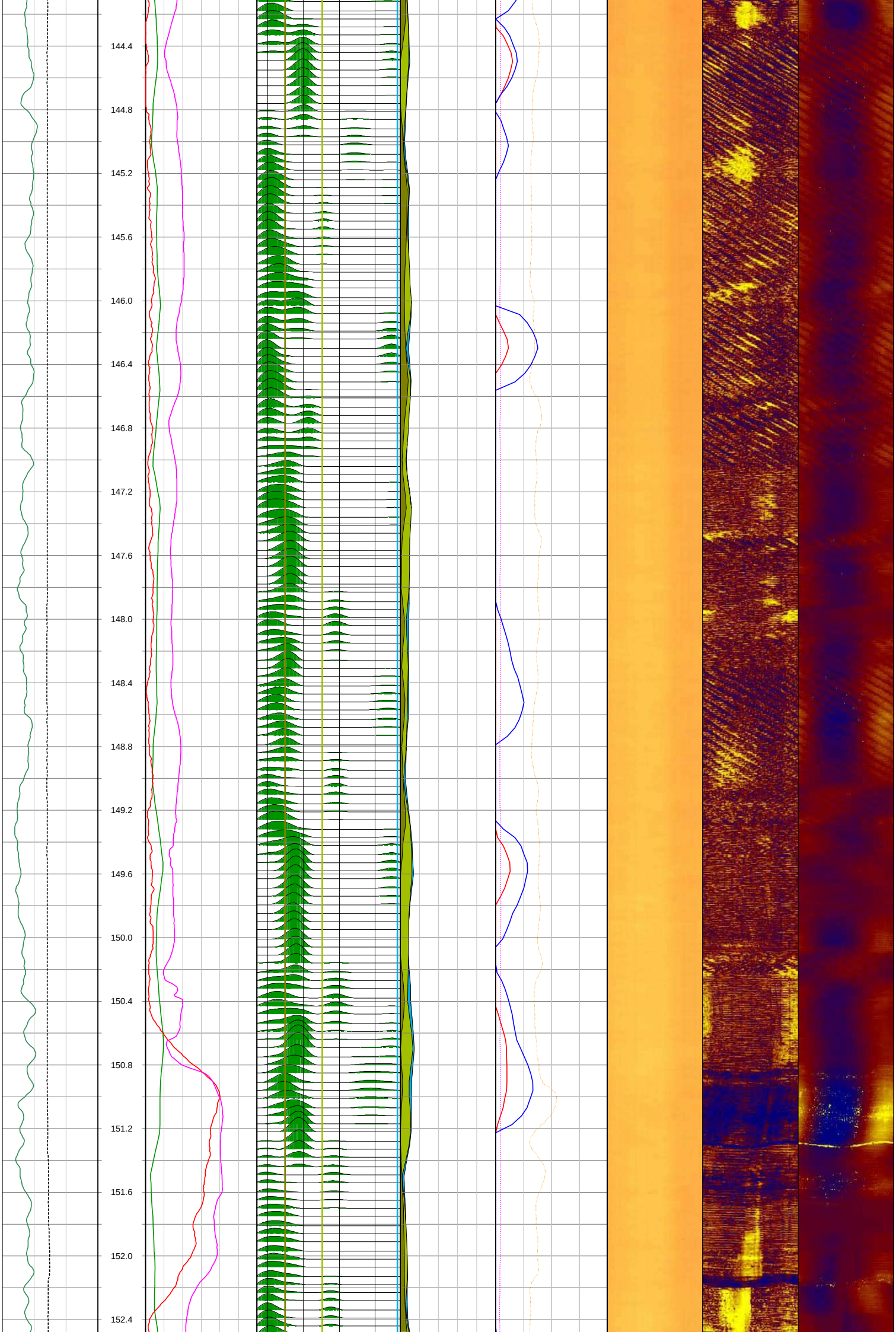
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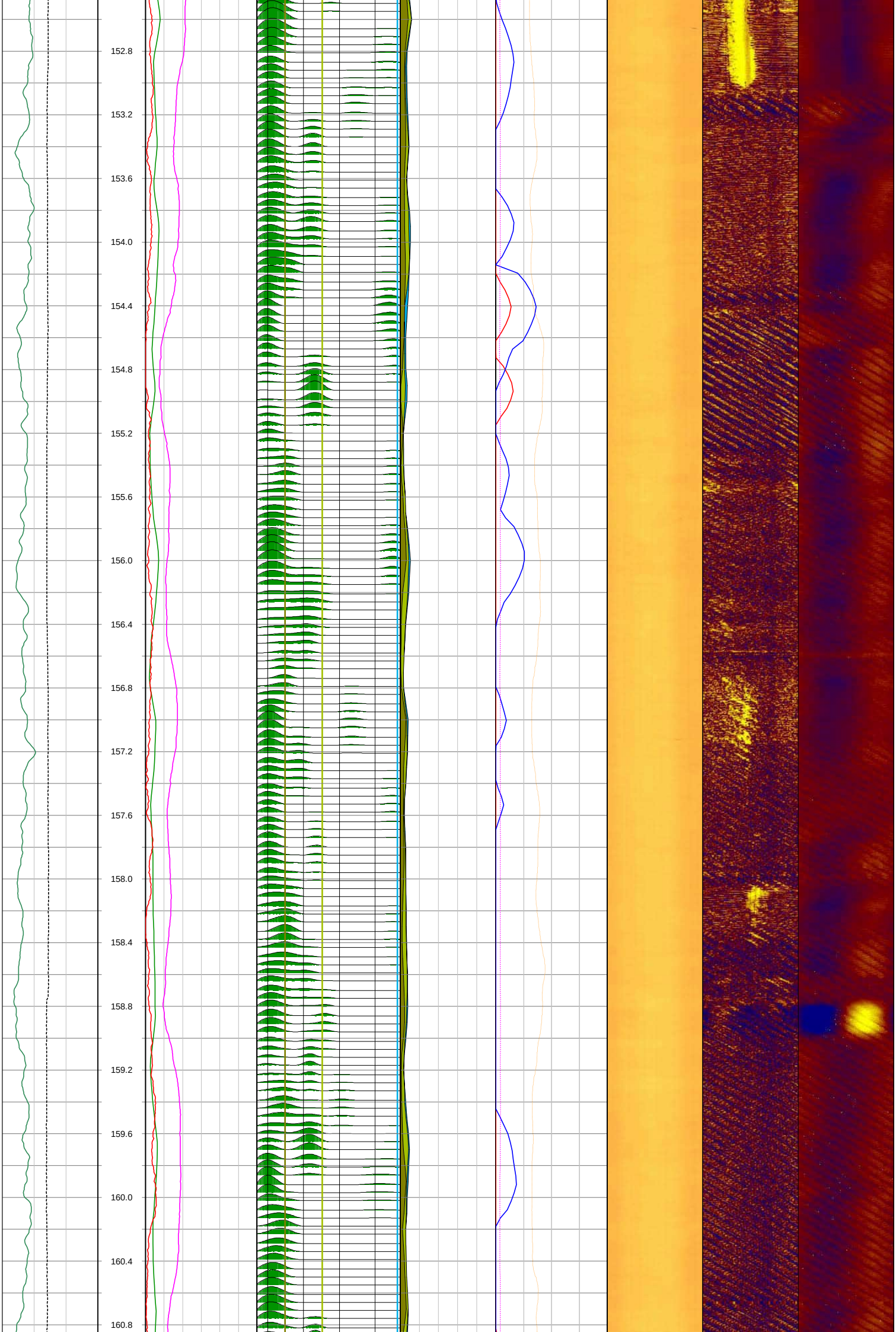
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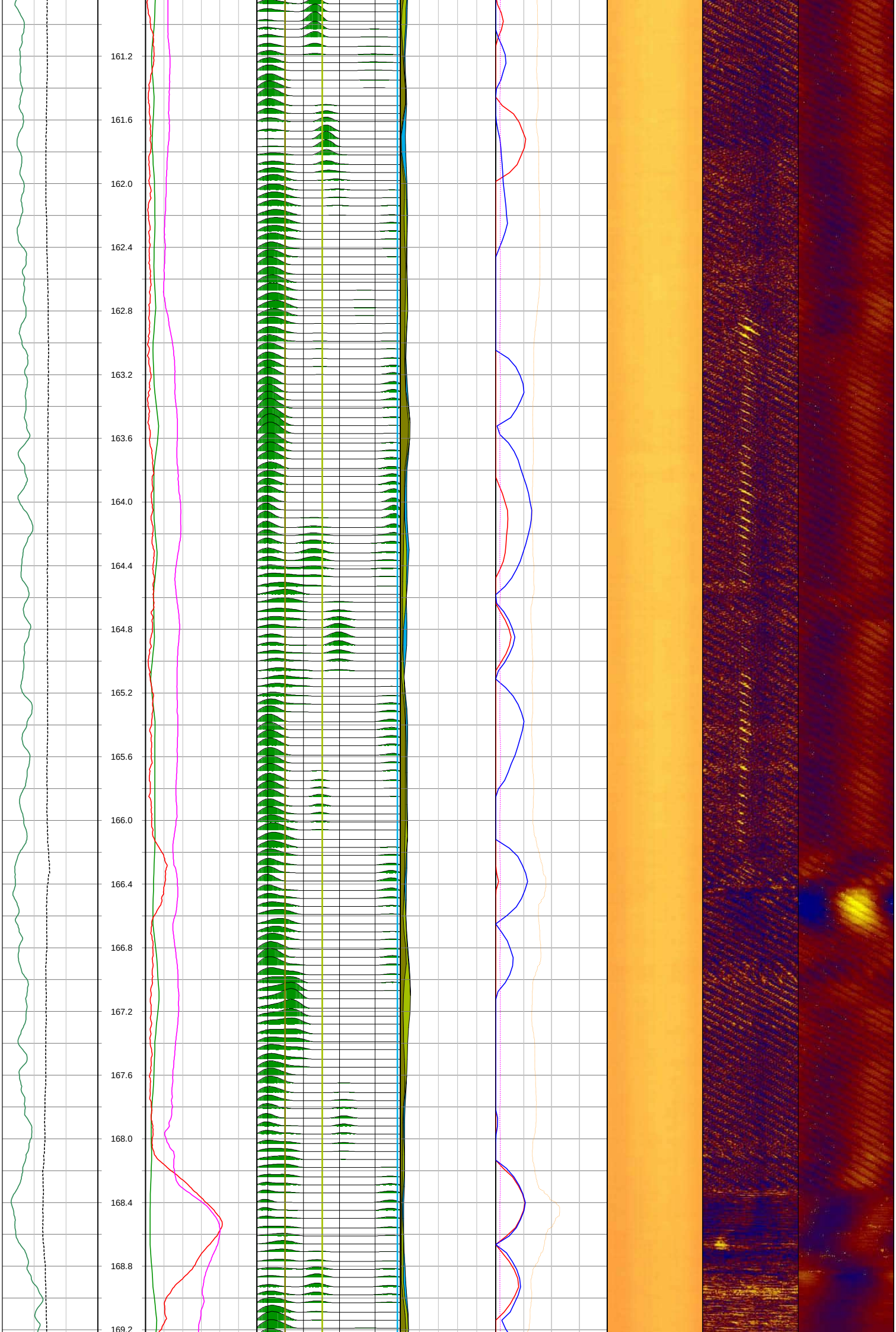
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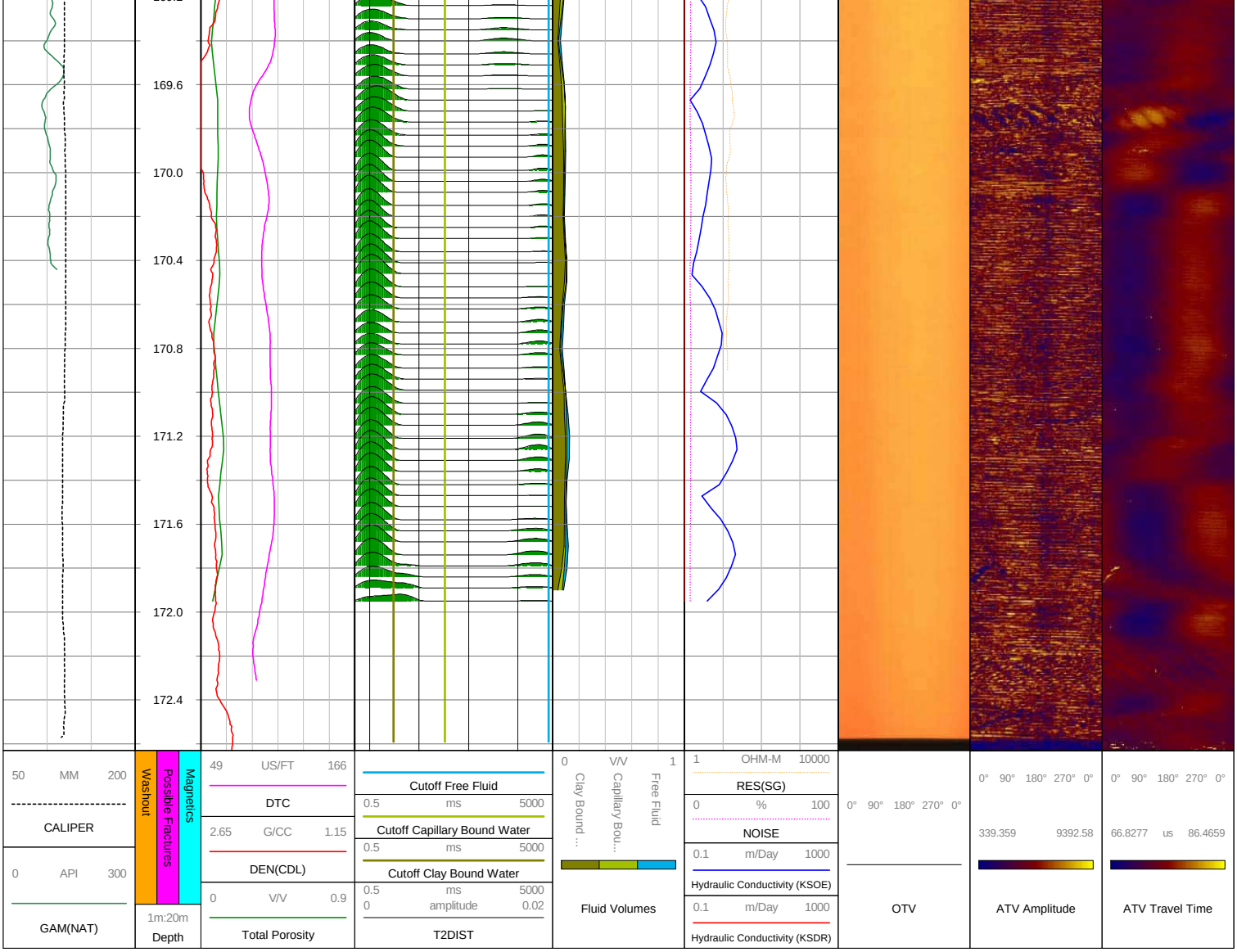

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CALIPER
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GAM(NAT)

Washout
Possible Fractures
Magnetics
1m:20m
Depth

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DTC
2.65 G/CC 1.15
DEN(CDL)
0 V/V 0.9
Total Porosity

Cutoff Free Fluid
0.5 ms 5000
Cutoff Capillary Bound Water
0.5 ms 5000
Cutoff Clay Bound Water
0.5 ms 5000
0 amplitude 0.02
T2DIST

0 V/V 1
Clay Bound ...
Capillary Bou...
Free Fluid
Fluid Volumes

1 OHM-M 10000
RES(SG)
0 % 100
NOISE
0.1 m/Day 1000
Hydraulic Conductivity (KSOE)
0.1 m/Day 1000
Hydraulic Conductivity (KSDR)

0° 90° 180° 270° 0°
OTV

0° 90° 180° 270° 0°
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ATV Amplitude

0° 90° 180° 270° 0°
66.8277 us 86.4659
ATV Travel Time

NMR COMPOSITE LOG

RFIS0062

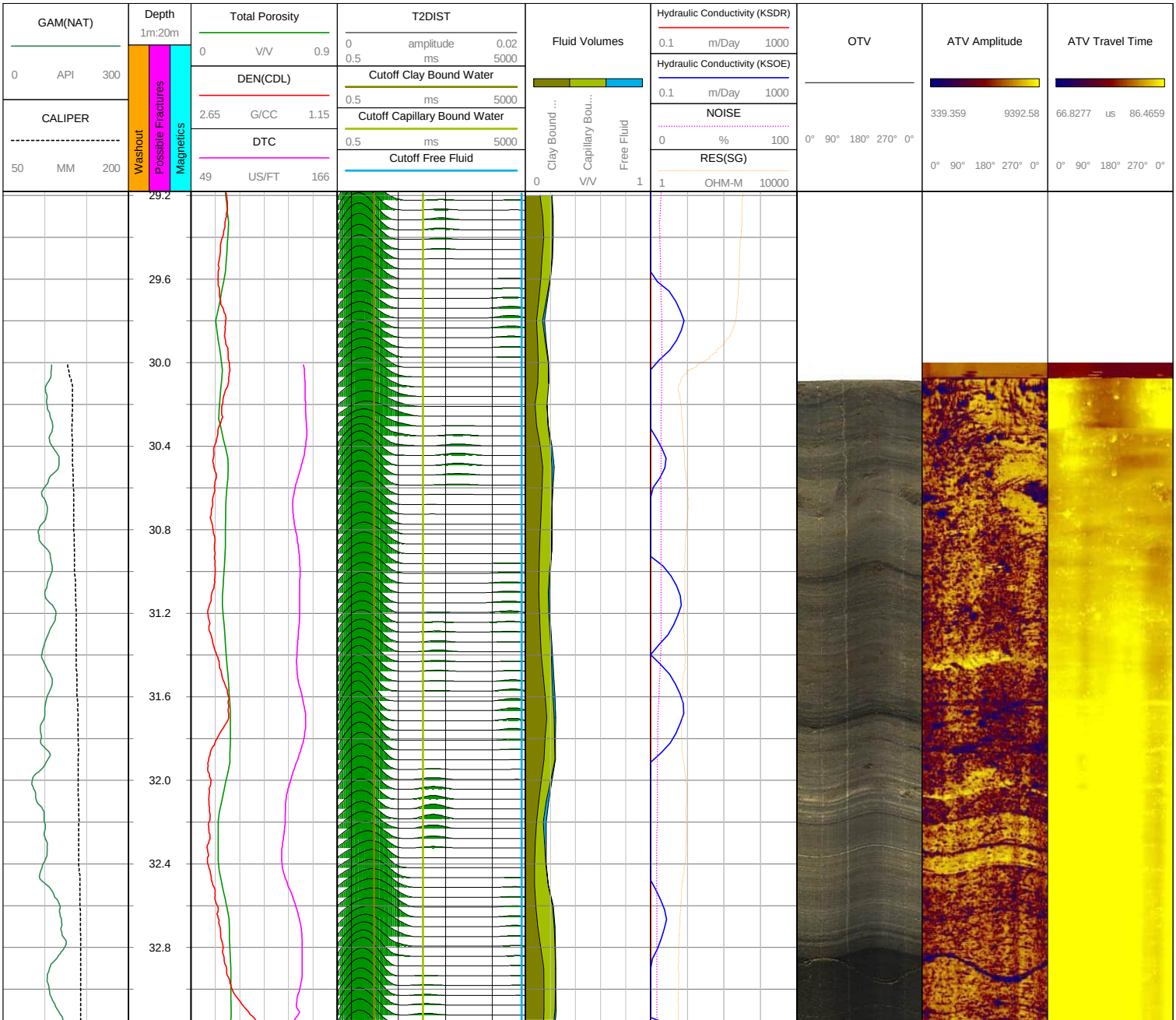
COMPANY	STANMORE COAL	**INSTRUMENT**	NMR, Density, OTV, ATV, FWS	**LOGGING CO.**	Epiroc KLS
LOCATION	25FLT_IDE_003	**DRILL DEPTH**	152.4m	**DATE**	23/07/2025
FIELD	IPS	**BIT SIZE**	124mm	**CLIENT REP**	N.CLIFFORD
PROJECT	IPS	**CASING WEIGHT**	PVC	**ENGINEER**	MSA
COUNTRY	AUSTRALIA	**CASING SIZE**	140mm	**VEHICLE**	SV013
STATE	QLD	**CASING BOTTOM**	30m	**TOOL**	JPY238 Javelin Wireline Slim
NORTHING	626566	**PERMANENT DATUM**	GL	**ELEV GL**	
EASTING	7555345	**ELEV PERM DATUM**	GL	**ELEV DF**	
				ELEV KB	

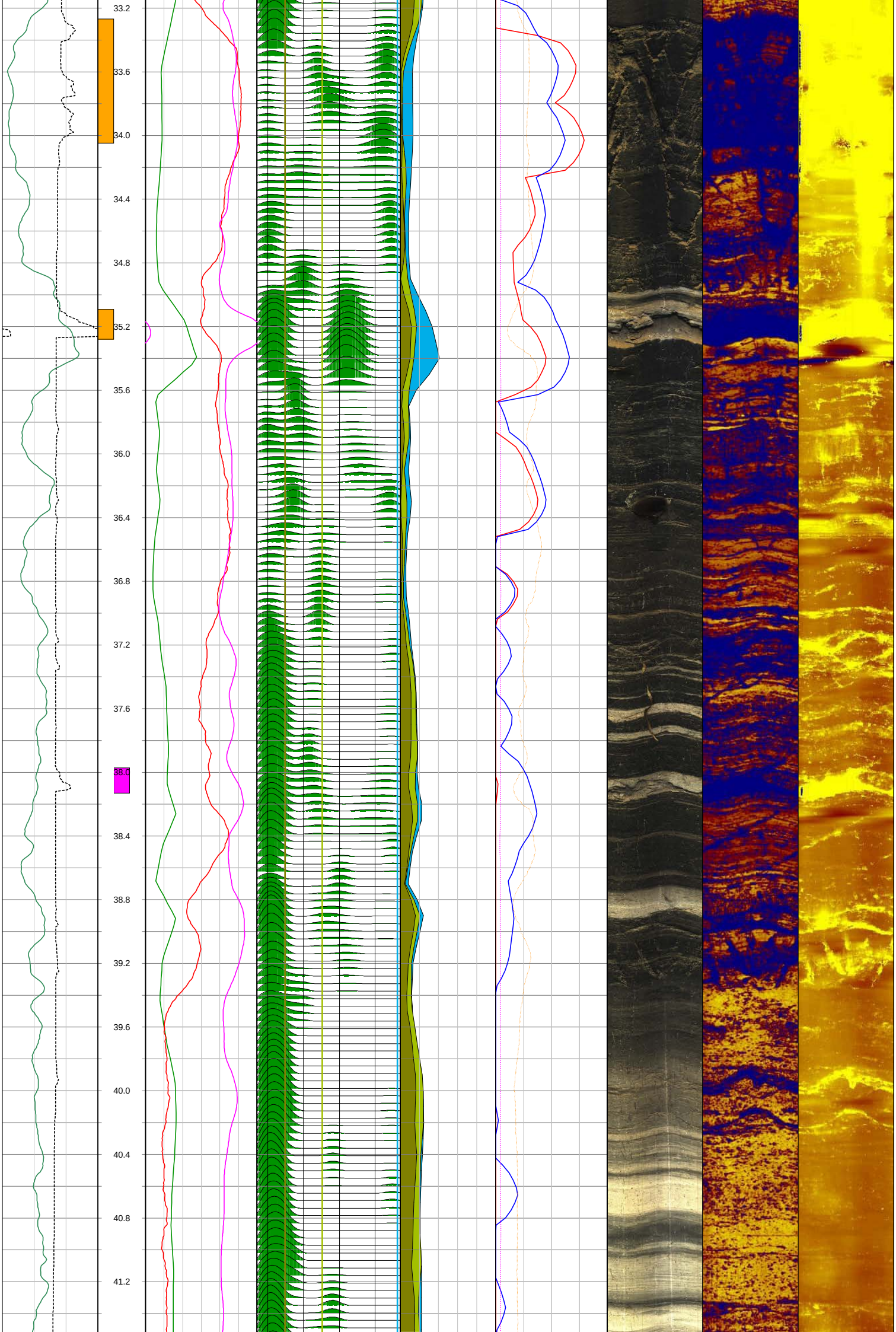
COMMENTS

Operator Comments	All image log data is oriented to true north. The applied magnetic declination correction is 8.20 degrees. Poor quality ATV image below 49 m due to a rugose borehole wall caused by drill marks. OTV image is affected by drill marks but still interpretable.
Log Analyst Comments	- NMR data quality is good with no unusual log sections. Possible Fractures and Washout intervals were flagged. - T2 cutoff of clay bound water: 3 ms and T2 cutoff of capillary bound water: 33 ms - Cutoff values were chosen to represent formation properties. Should lab experiment values be done on samples, these cutoff values can be adjusted if needed. - Hydraulic conductivity is calculated by the Schlumberger Doll Research equation for permeability (K SDR) and Sum Of Echoes (K SOE) - Interpretation Hydraulic conductivity peaks: Faults: 80.6, 82.8 & 84.3 m: K SDR = 388 & K SOE = 244 m/Day. High K values are model indications, not actual measurements. - Interpretation Hydraulic conductivity peaks: Open natural fractures at 38.1 m: K SDR = 0.1 & K SOE = 3.0 m/Day. K values are model indications, not actual measurements. - Interpretation Hydraulic conductivity peaks: Open natural fractures at 99.2 m: K SDR = 1.0 & K SOE = 4.5 m/Day. K values are model indications, not actual measurements.
General Comments	If curves are (partially) empty, those were not logged or available for this hole at the time of processing.

IMPORTANT NOTE

The following interpretations are opinions based upon inferences from borehole logs, Epiroc Kinetic Logging Services Pty Ltd cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore, Kinetic Logging Services Pty Ltd shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.

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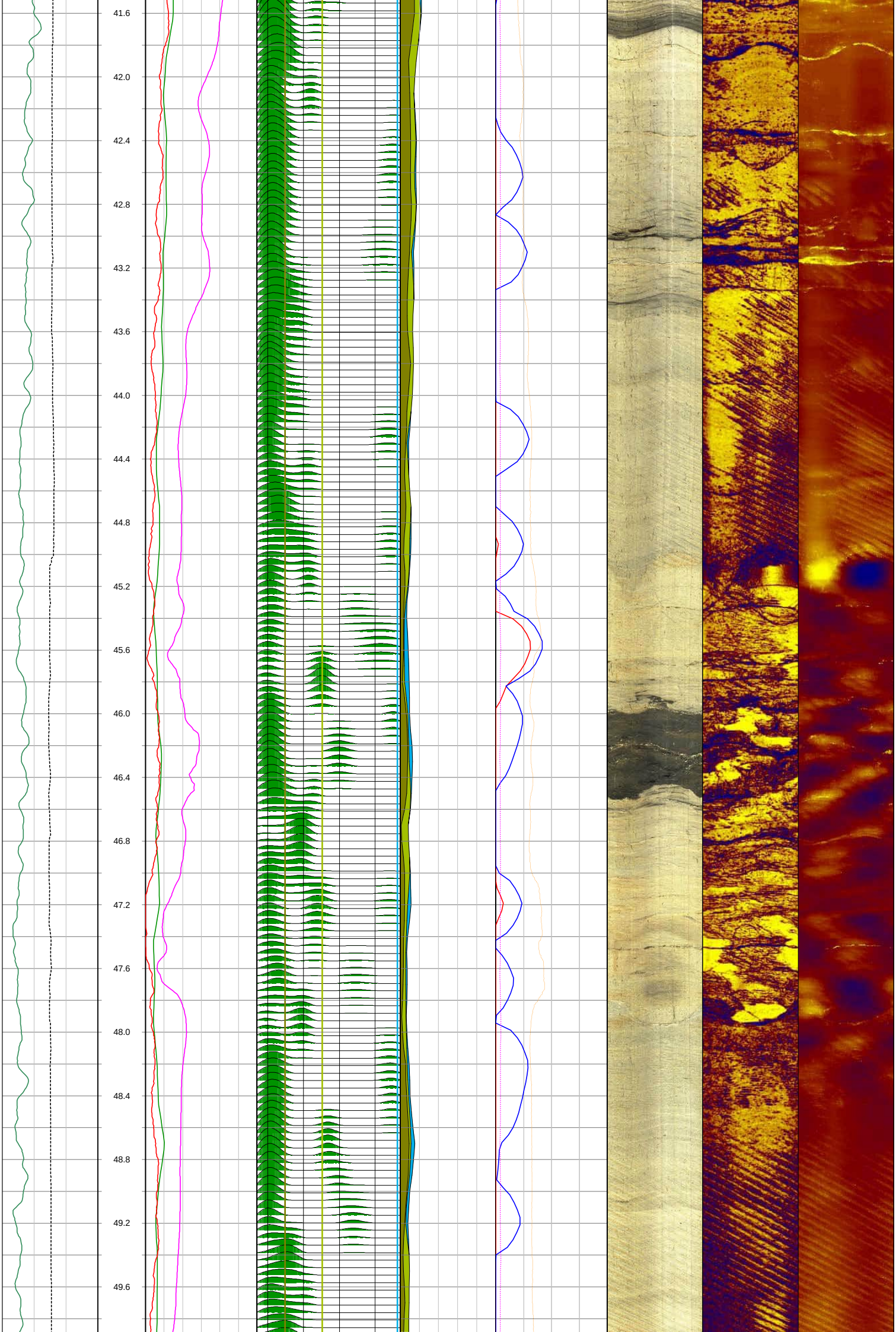
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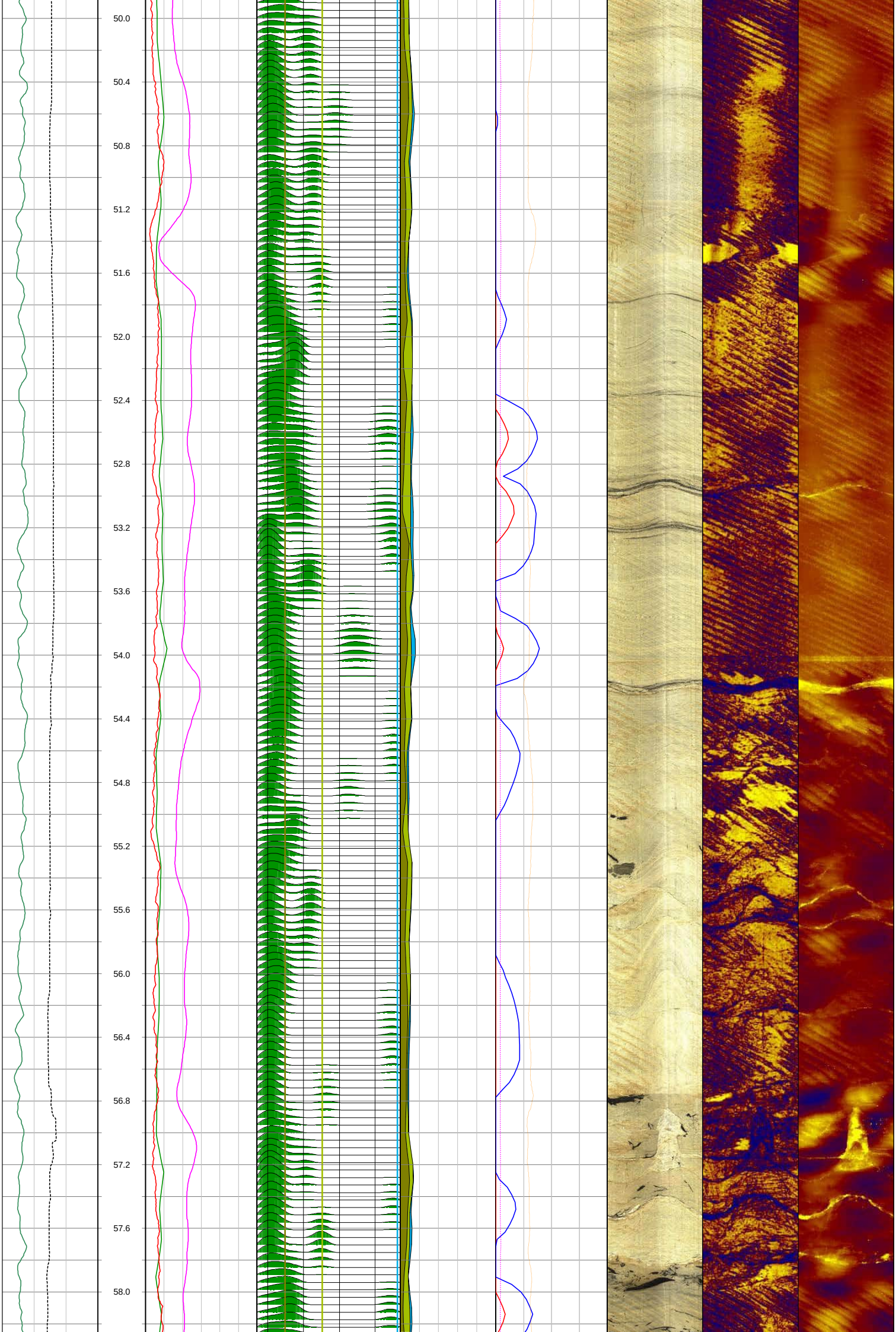
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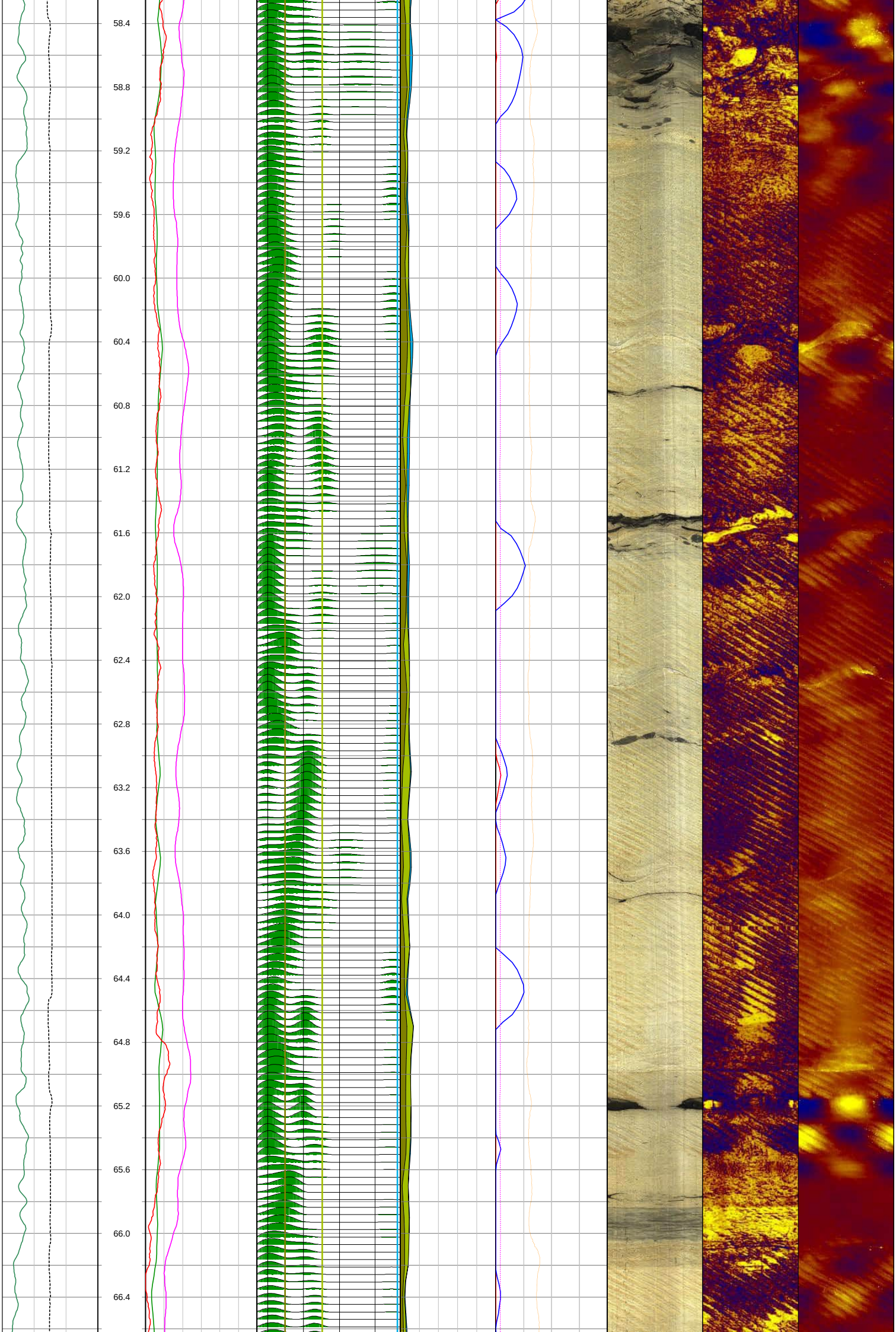
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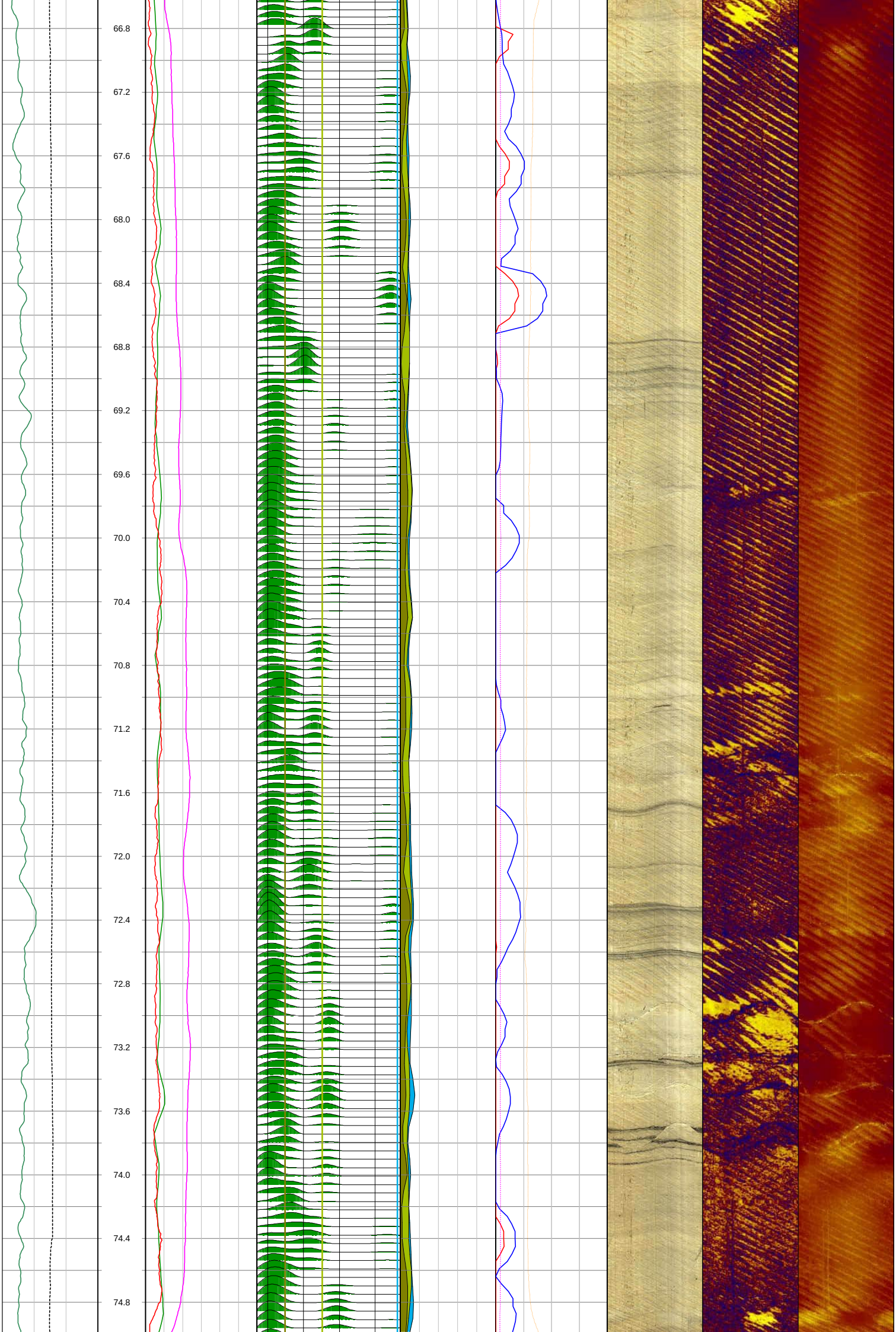
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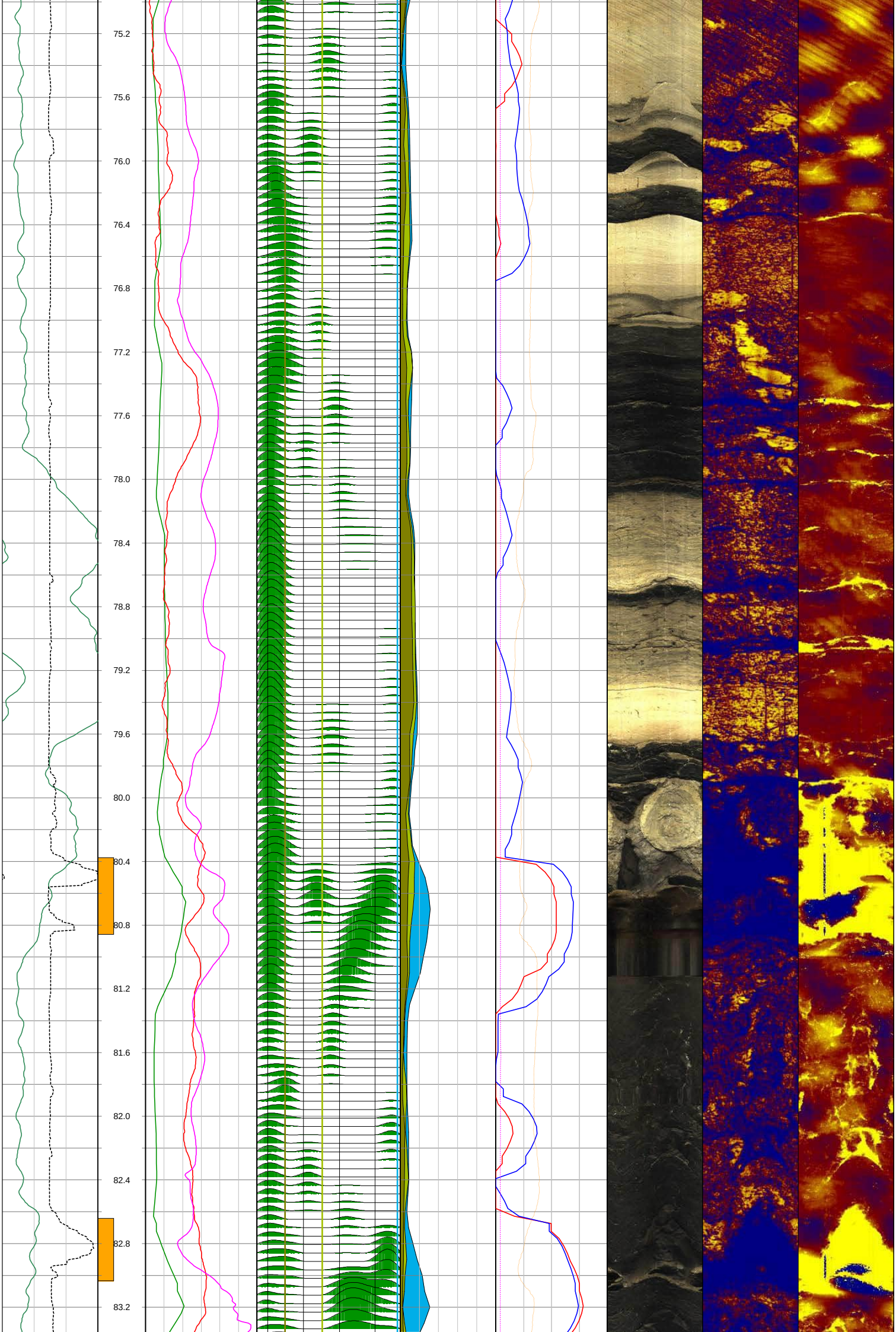
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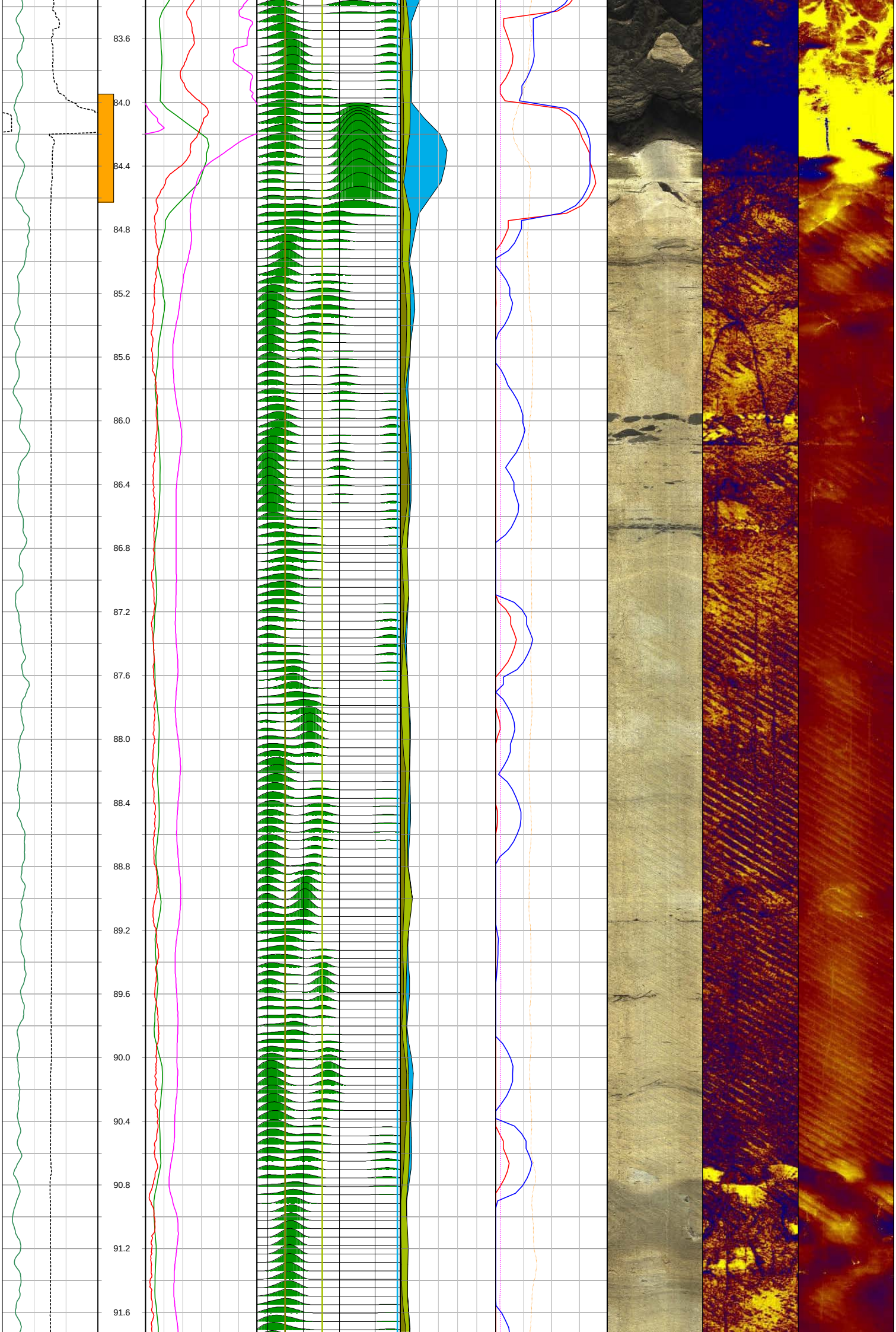
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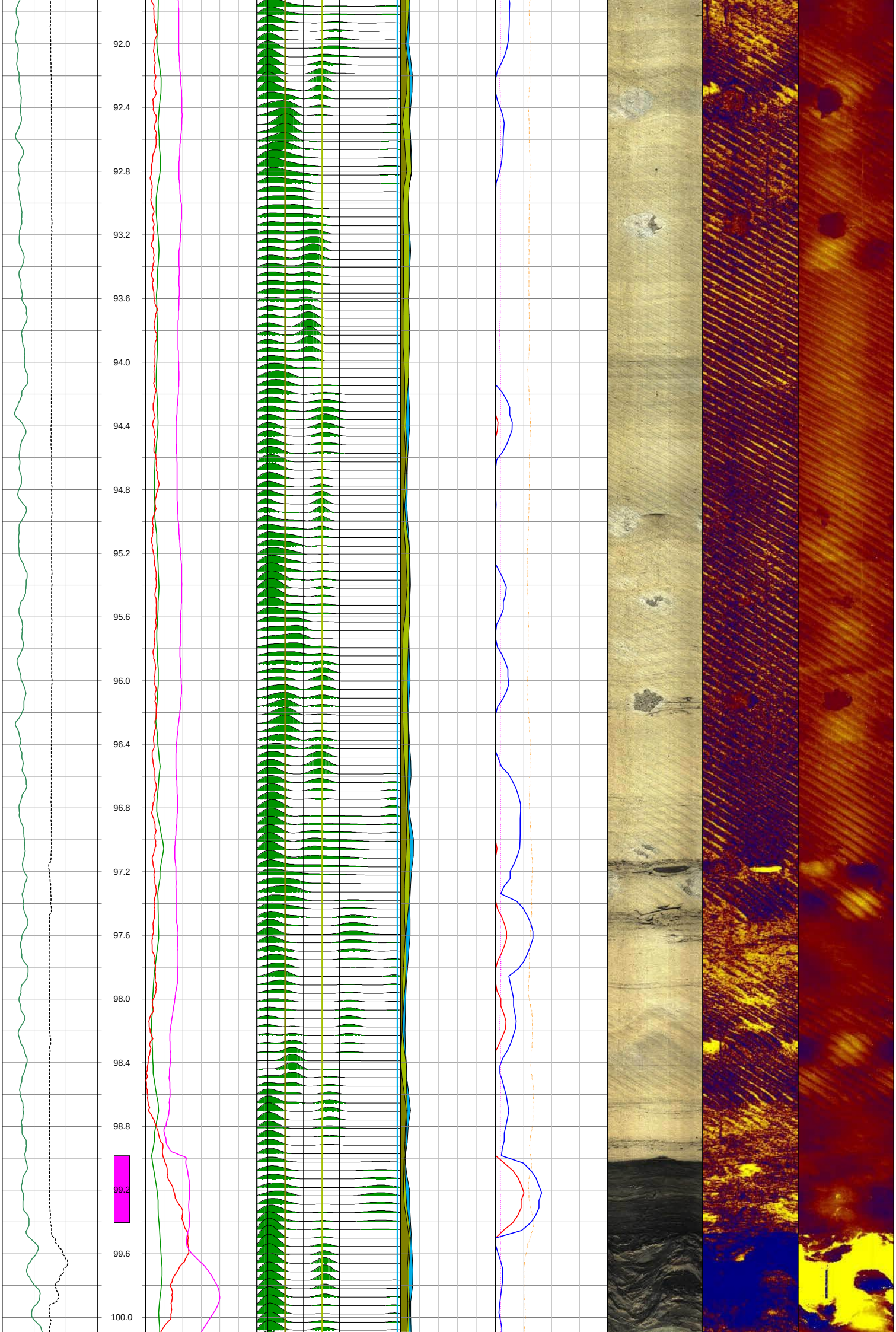
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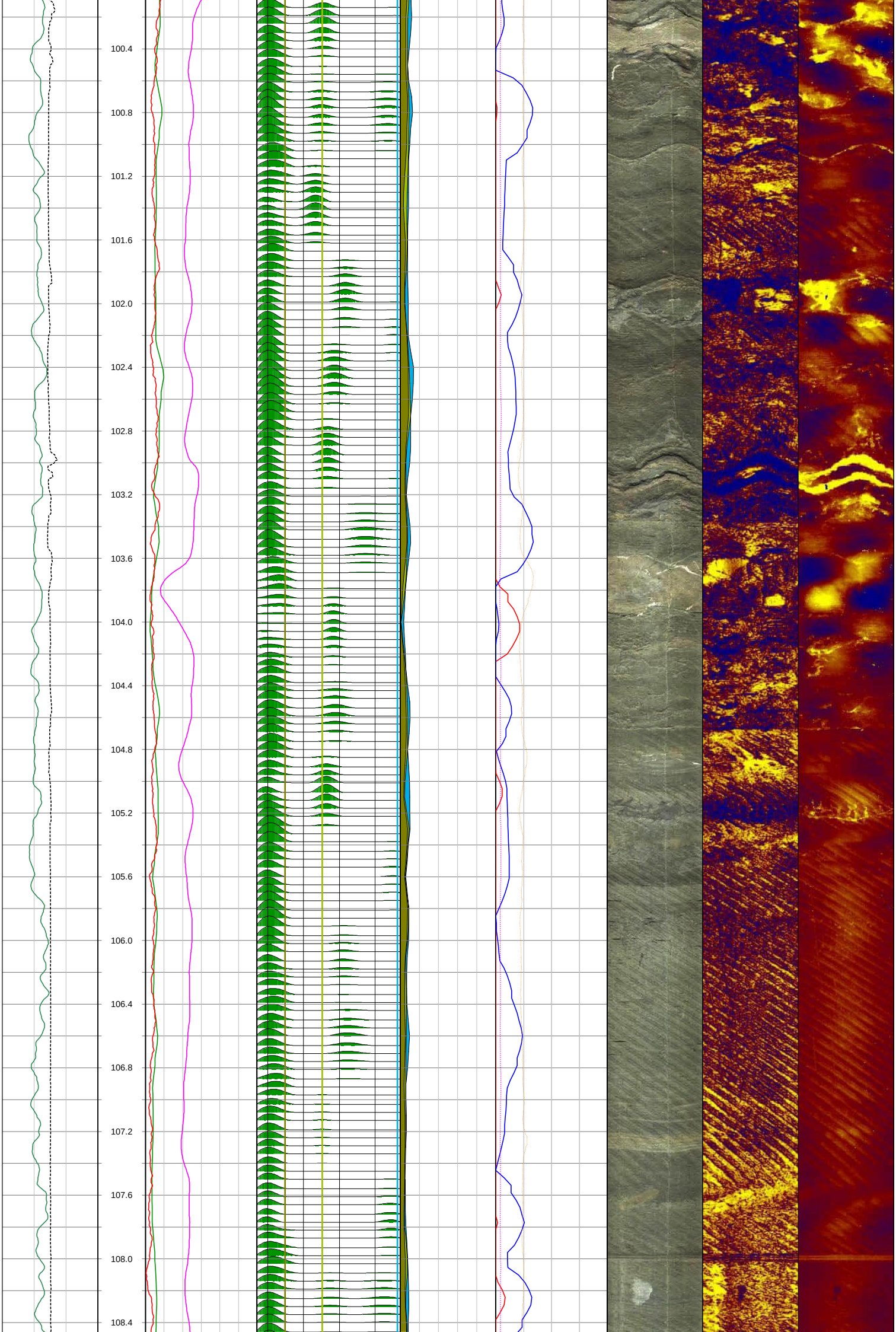
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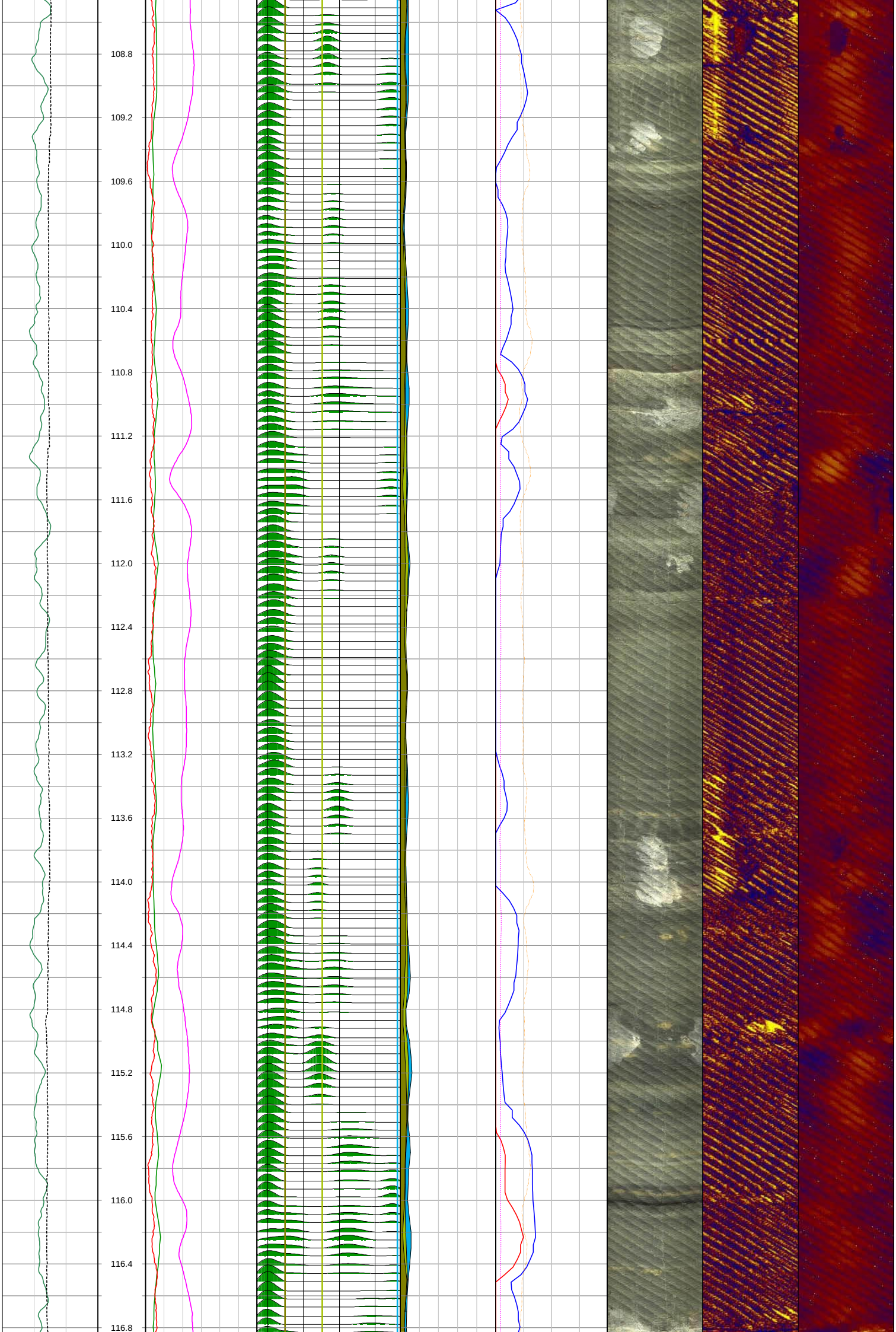
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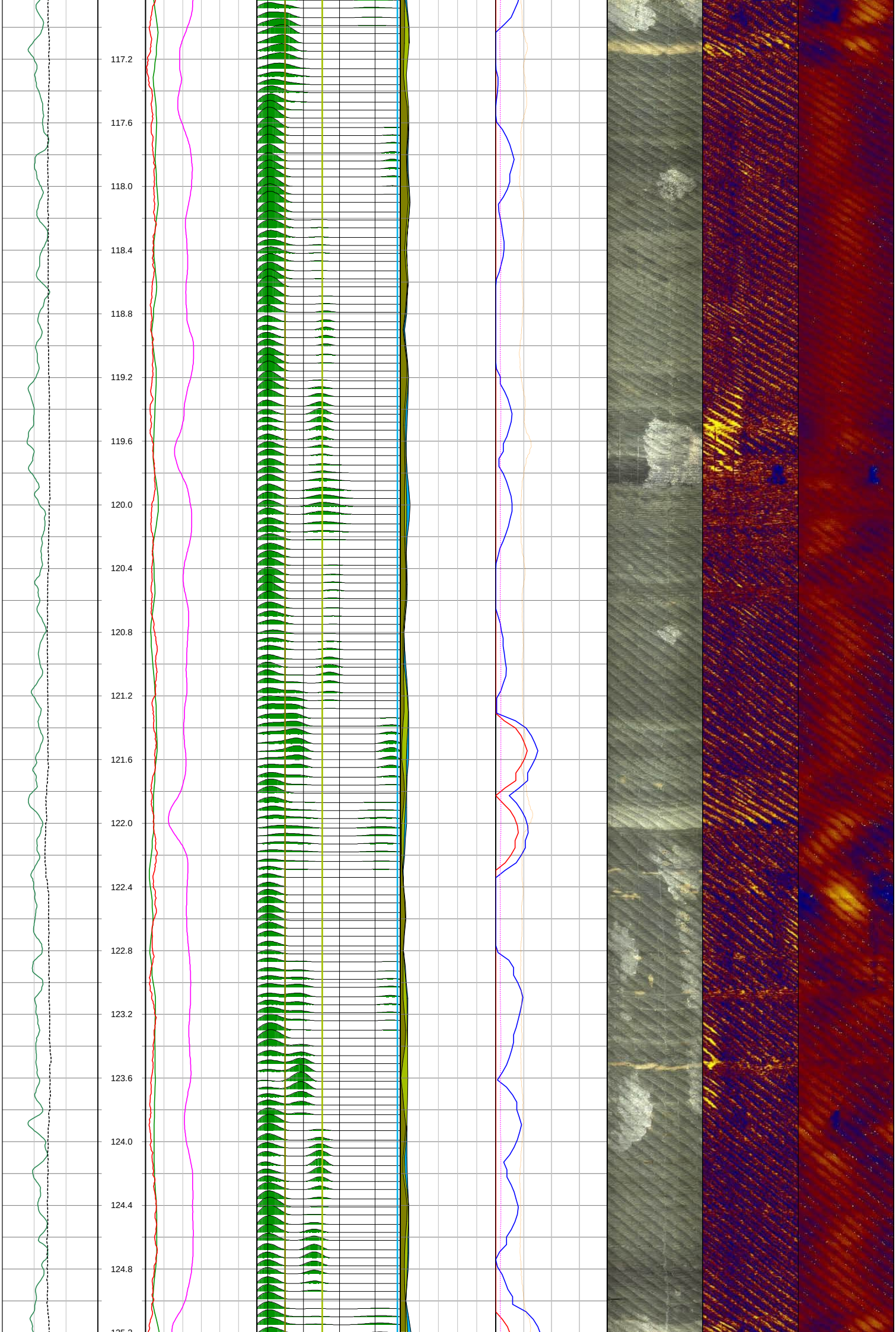
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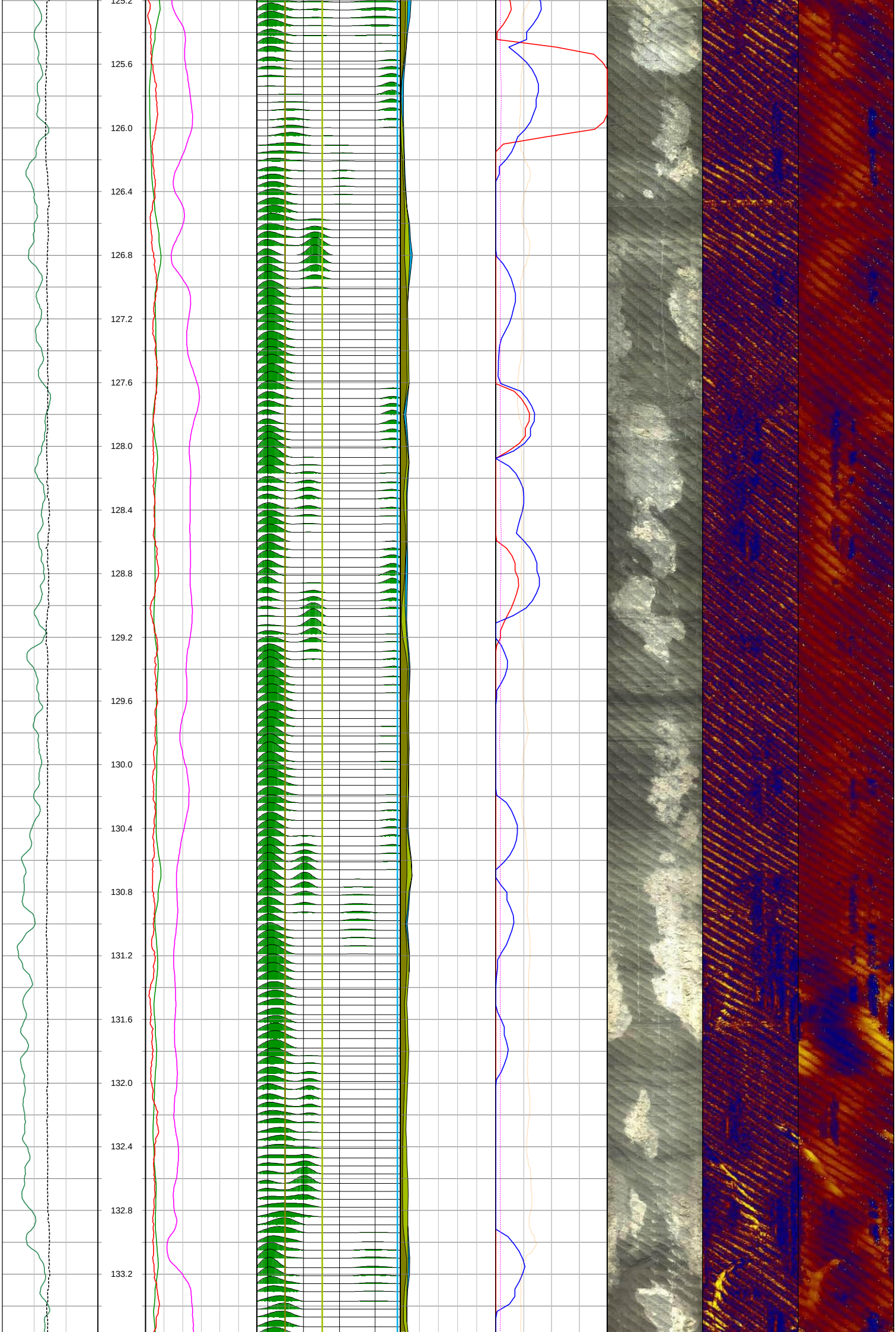
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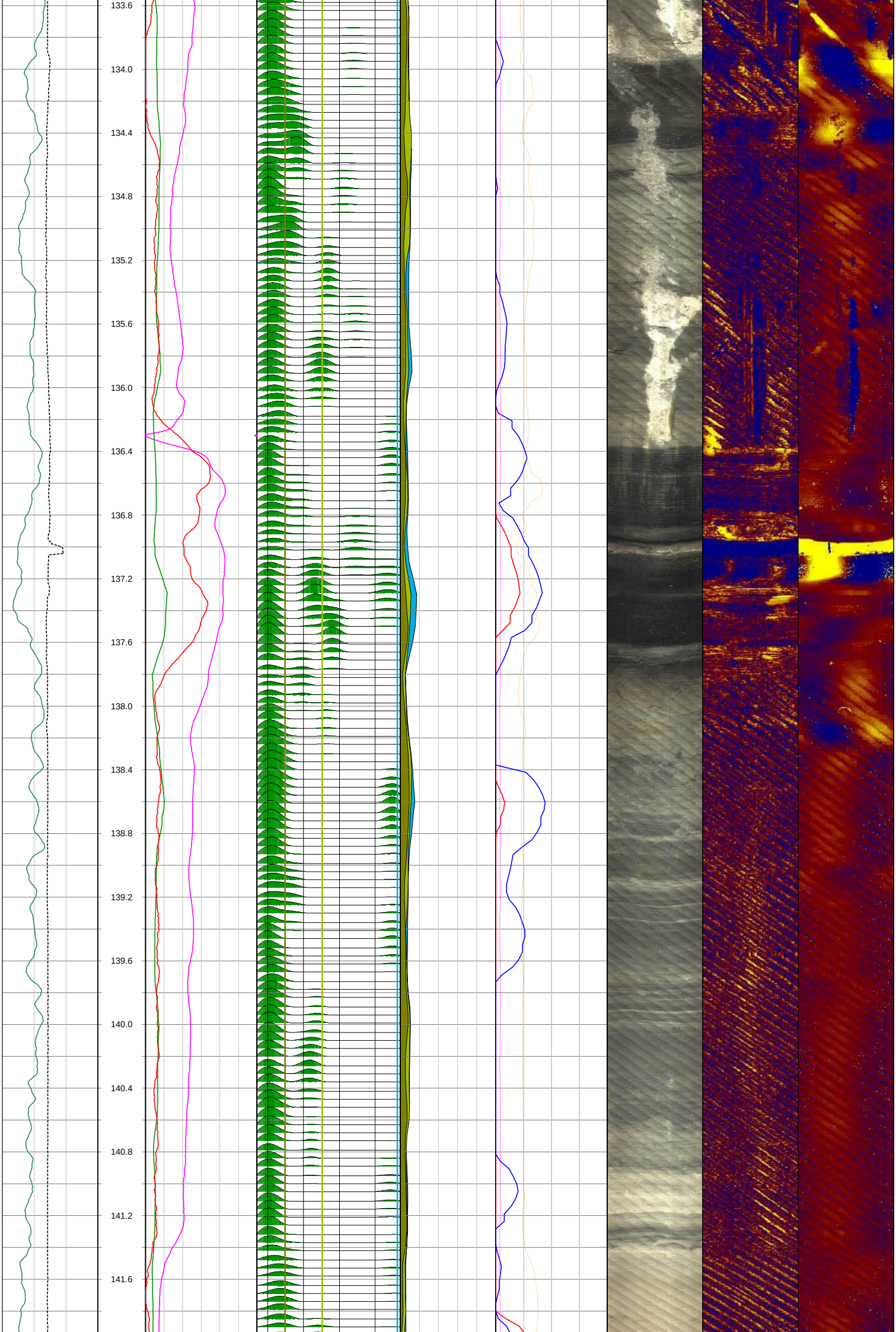
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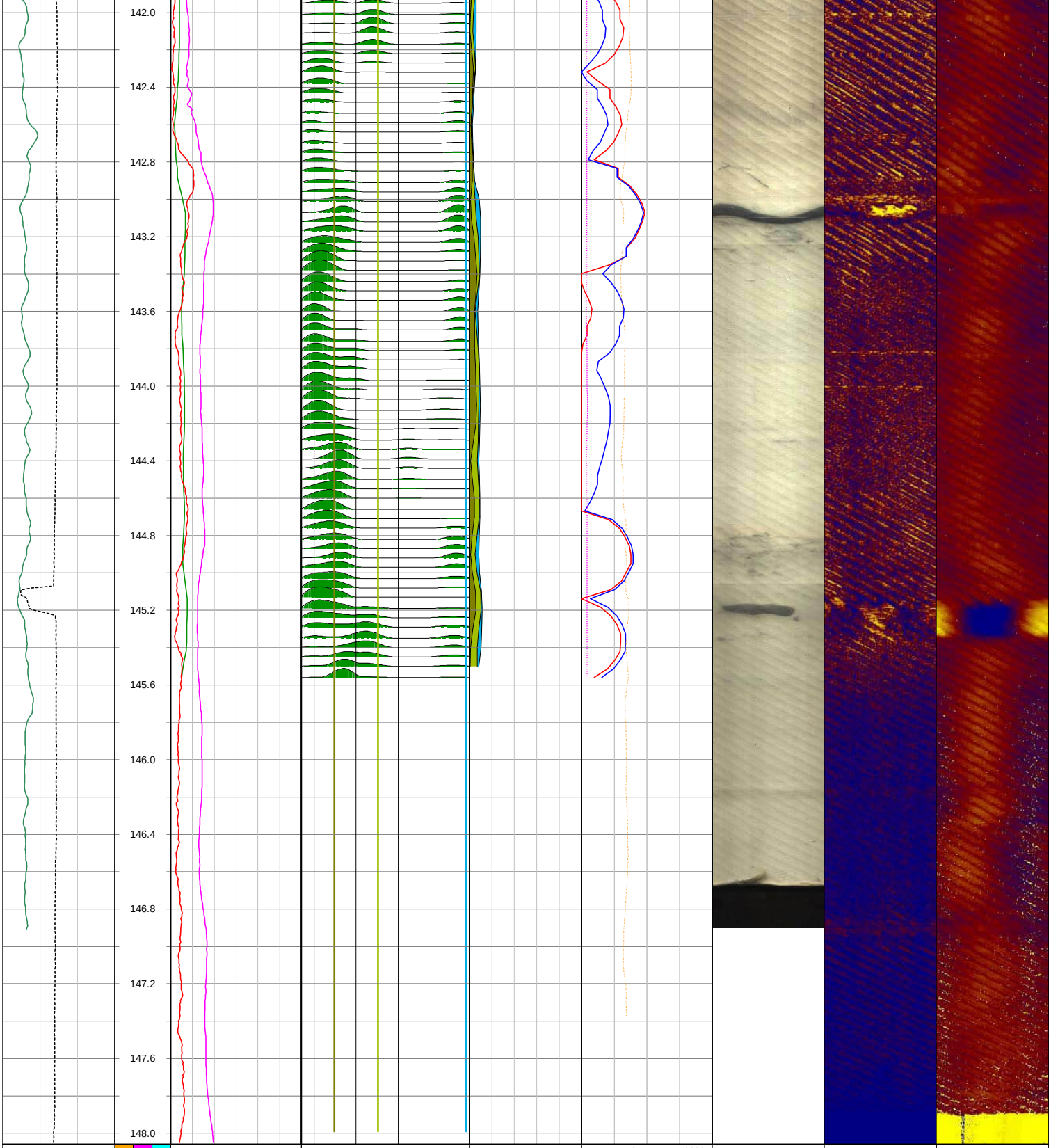


50 MM 200	Washout / Possible Fractures / Magnetics	49 US/FT 166	Cutoff Free Fluid	0 V/V 1	1 OHM-M 10000		0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	
CALIPER		DTC	0.5 ms 5000 Cutoff Capillary Bound Water	Clay Bound … / Capillary Bou… / Free Fluid	RES(SG)		339.359 9392.58	66.8277 us 86.4659	
0 API 300		2.65 G/CC 1.15	0.5 ms 5000 Cutoff Clay Bound Water		0 % 100 NOISE				
GAM(NAT)	1m:20m Depth	DEN(CDL)	0.5 ms 5000 0 amplitude 0.02 T2DIST	Fluid Volumes	0.1 m/Day 1000 Hydraulic Conductivity (KSOE)	OTV	ATV Amplitude	ATV Travel Time	
		0 V/V 0.9 Total Porosity			0.1 m/Day 1000 Hydraulic Conductivity (KSDR)				

NMR COMPOSITE LOG

RFIS0064

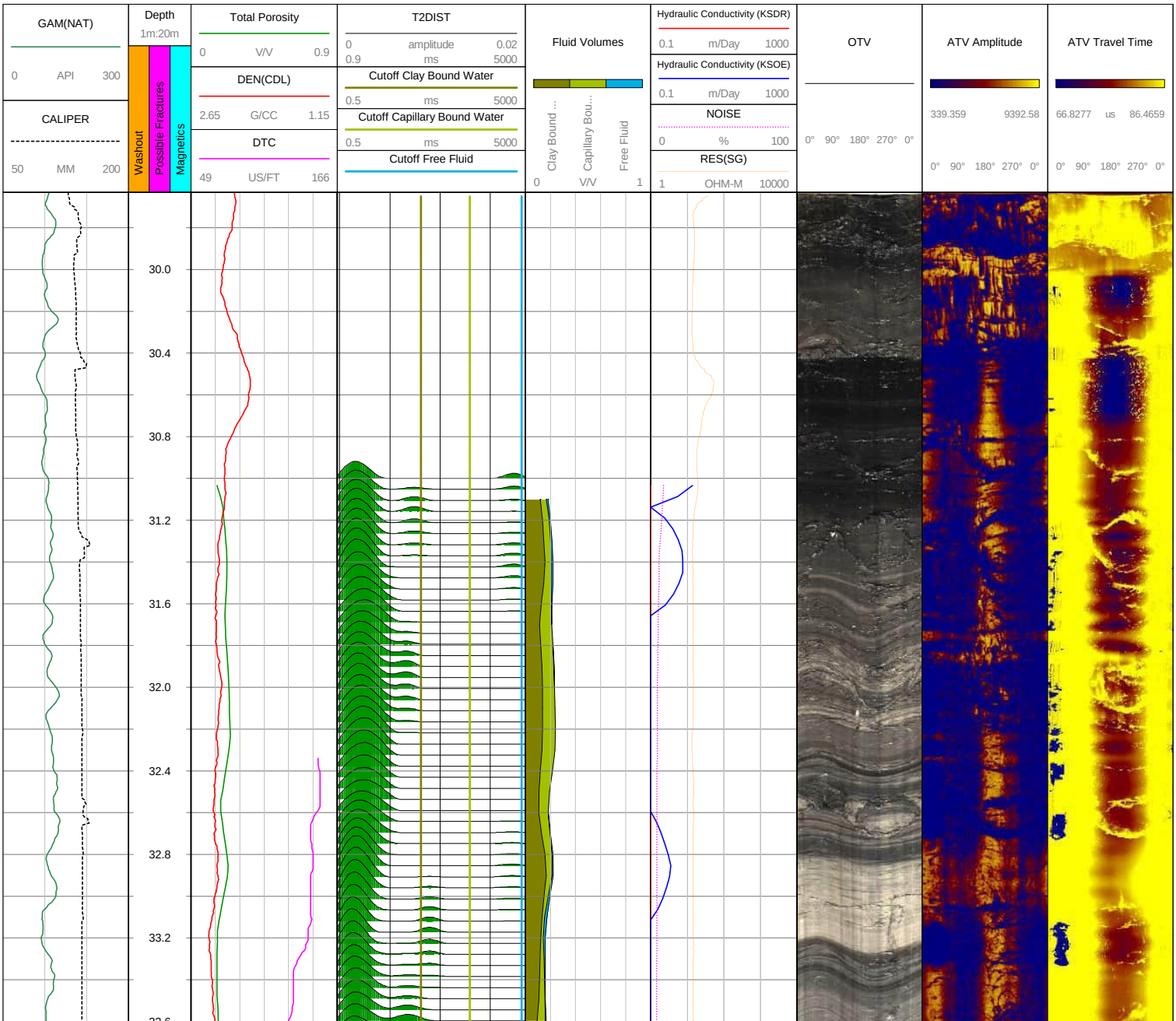
COMPANY	STANMORE COAL	**INSTRUMENT**	NMR, Density, OTV, ATV, FWS	**LOGGING CO.**	Epiroc KLS
LOCATION	25FLT_IDE_004	**DRILL DEPTH**	193m	**DATE**	10/07/2025
FIELD	IPS	**BIT SIZE**	124mm	**CLIENT REP**	N.CLIFFORD
PROJECT	IPS	**CASING WEIGHT**	PVC	**ENGINEER**	KJO
COUNTRY	AUSTRALIA	**CASING SIZE**	140mm	**VEHICLE**	SV013
STATE	QLD	**CASING BOTTOM**	30m	**TOOL**	JPY238 Javelin Wireline Slim
NORTHING	626488	**PERMANENT DATUM**	GL	**ELEV GL**	
EASTING	7555317	**ELEV PERM DATUM**	GL	**ELEV DF**	
				ELEV KB	

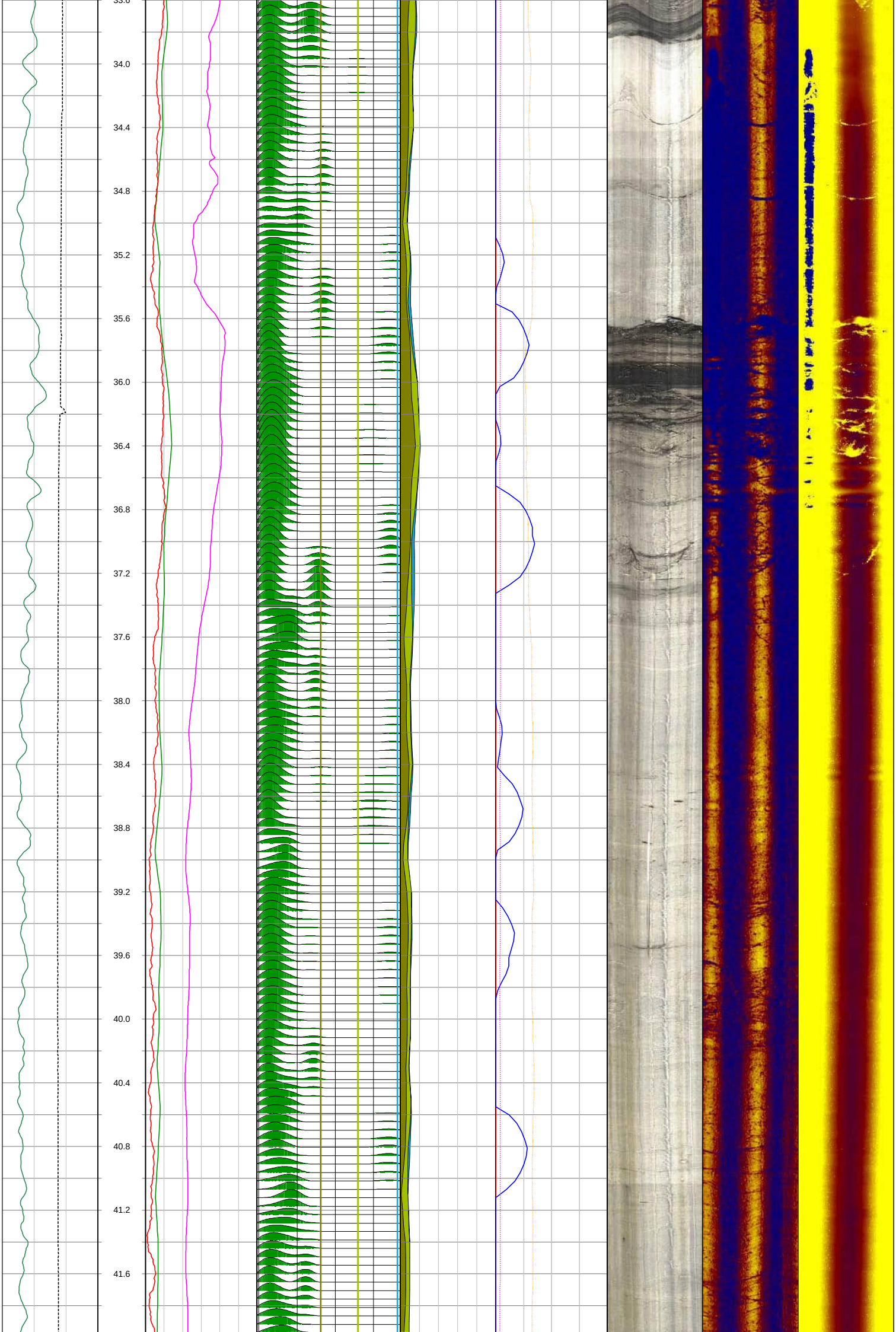
COMMENTS

Operator Comments	All image log data is oriented to true north. The applied magnetic declination correction is 8.20 degrees. Water filled to top of hole prior to logging ATV. The OTV image for the bottom hole section, below 177.4 m, was relogged providing a clearer image of the formations.
Log Analyst Comments	- NMR data quality is good with no unusual log sections. Washout and Possible Fractures intervals were flagged. - T2 cutoff of clay bound water: 3 ms and T2 cutoff of capillary bound water: 33 ms - Cutoff values were chosen to represent formation properties. Should lab experiment values be done on samples, these cutoff values can be adjusted if needed. - Hydraulic conductivity is calculated by the Schlumberger Doll Research equation for permeability (K SDR) and Sum Of Echoes (K SOE) - Interpretation of Hydraulic conductivity peaks: Fault at 43.3 m: K SDR = 6 and K SOE = 50 m/Day. These K values are an indication based on models, not actual measurements. - Interpretation of Hydraulic conductivity peaks: Possible open natural fractures at 103.3 & 151.2 m. K SOE= ~1 m/Day, hence low. High K SDR is likely anomalous.
General Comments	If curves are (partially) empty, those were not logged or available for this hole at the time of processing.

IMPORTANT NOTE

The following interpretations are opinions based upon inferences from borehole logs, Epiroc Kinetic Logging Services Pty Ltd cannot and does not guarantee the correctness or accuracy of any interpretations. Therefore, Kinetic Logging Services Pty Ltd shall not be liable or responsible for any loss, damage, cost or expense incurred or sustained by anyone resulting from any interpretations.

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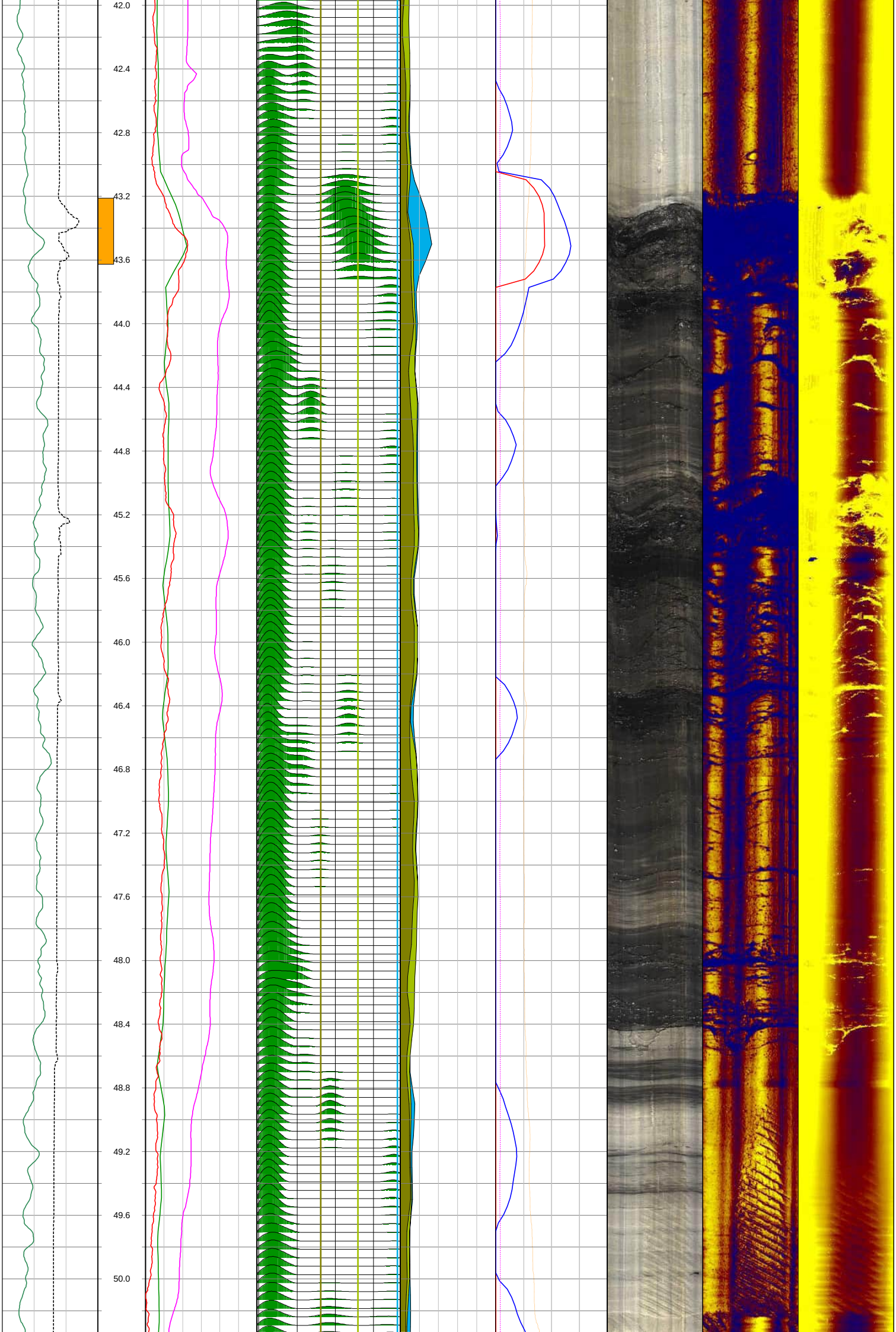
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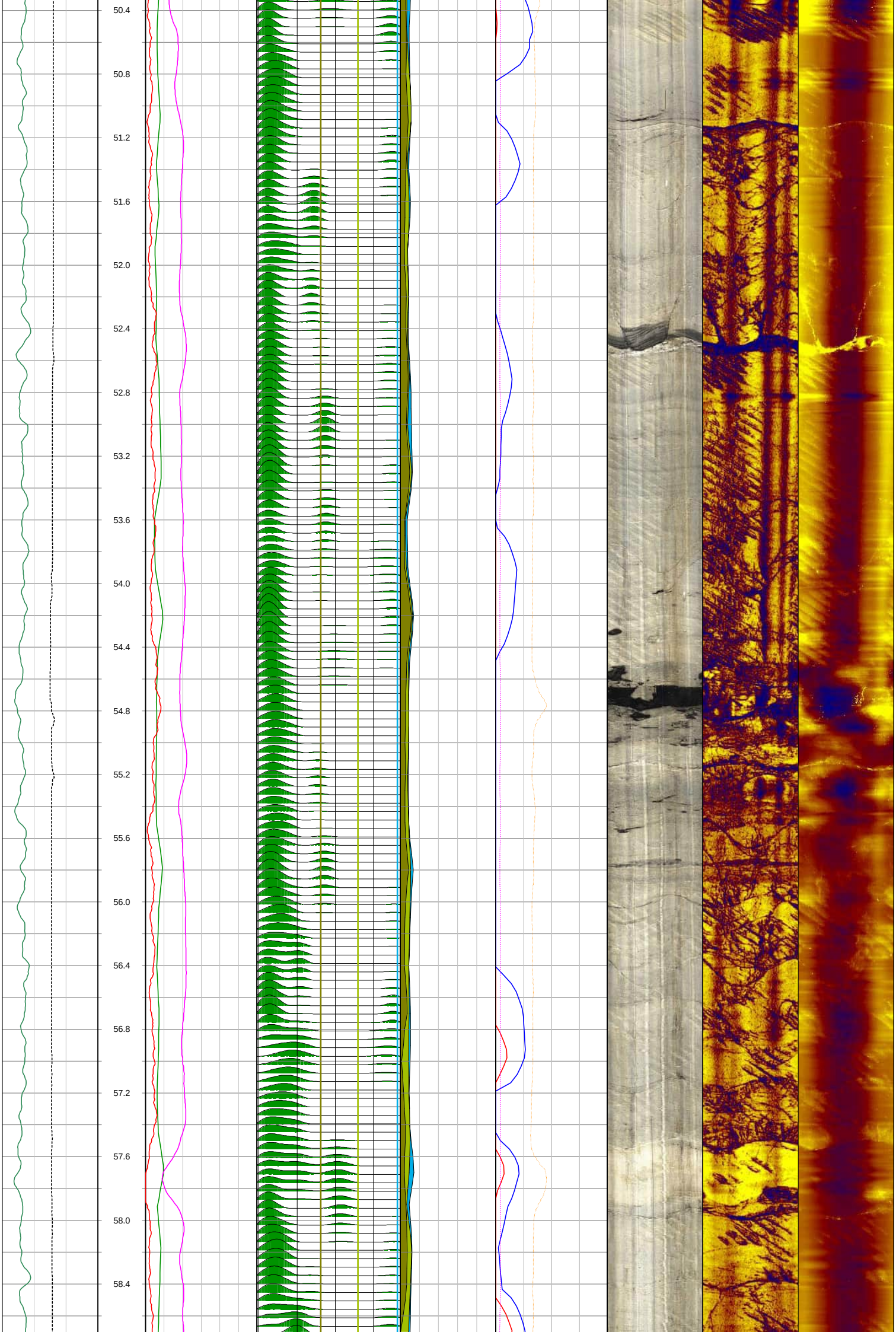
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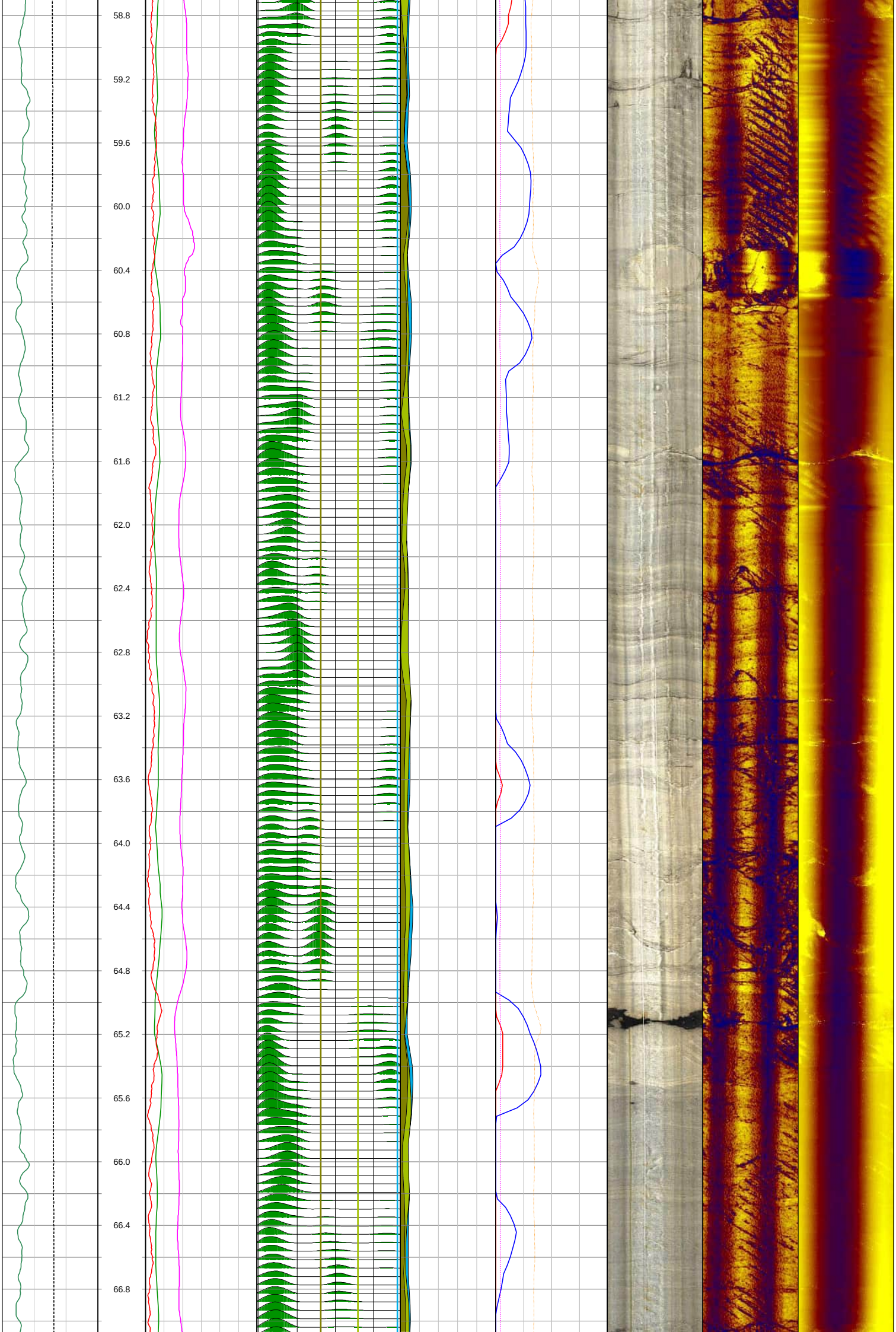
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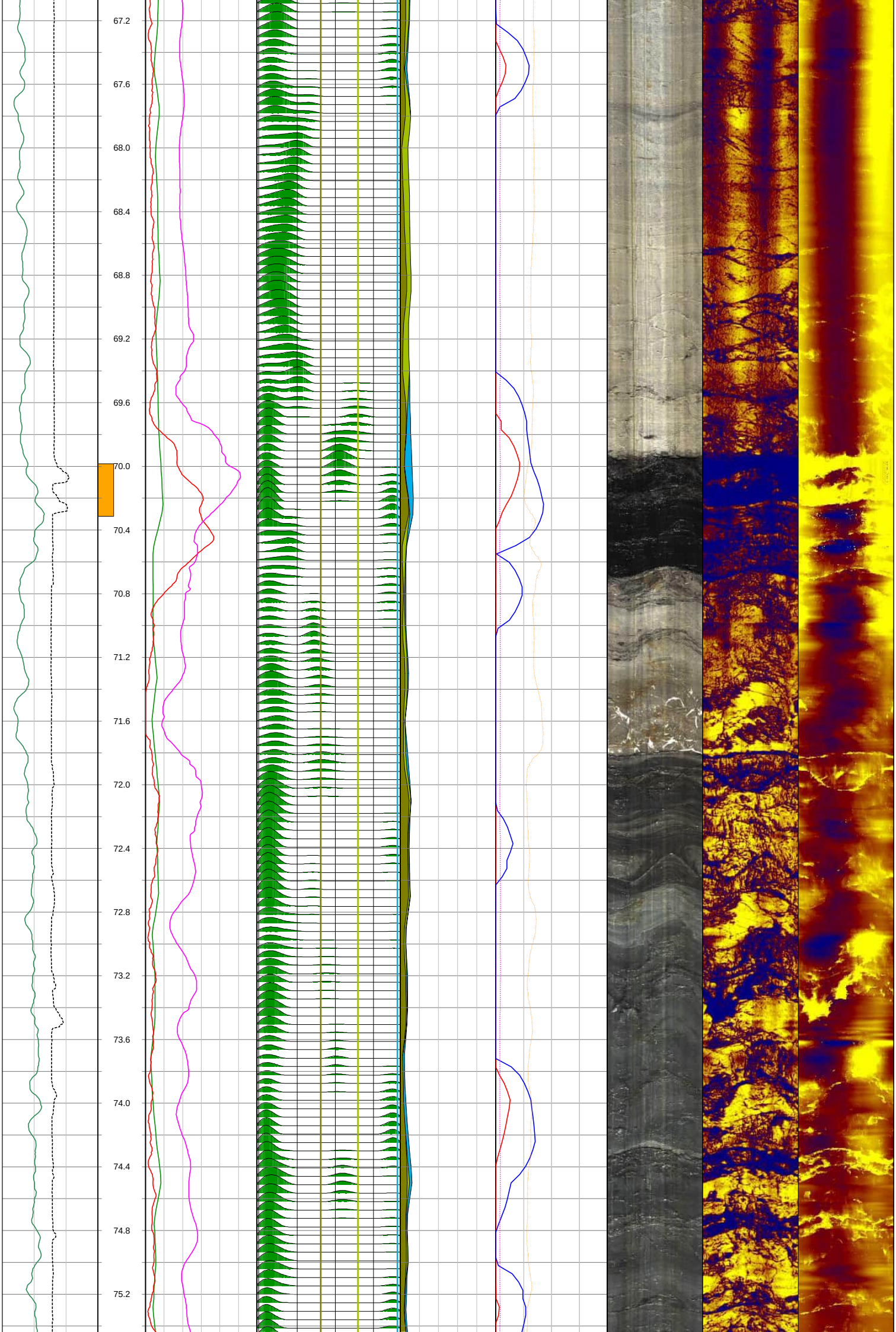
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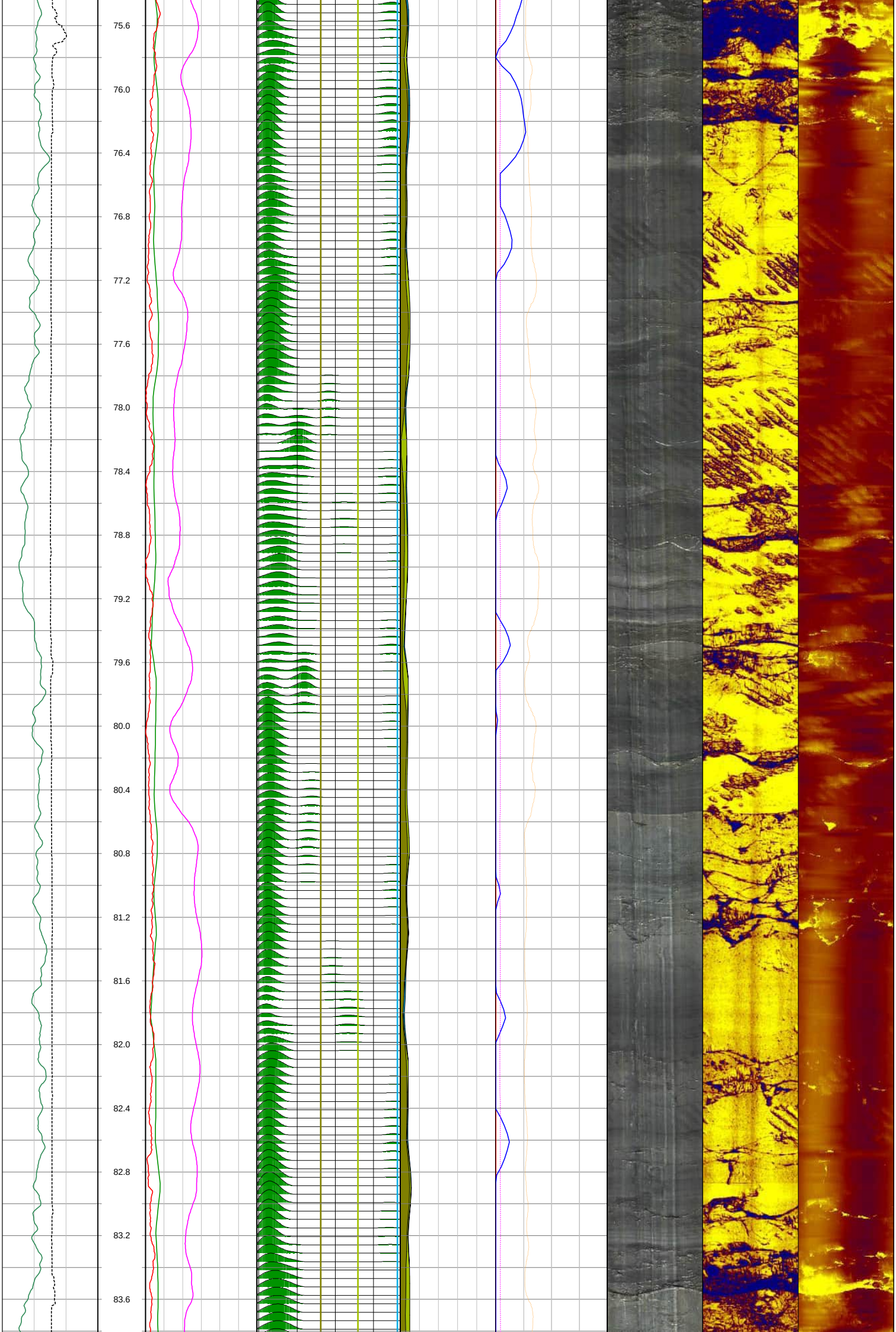
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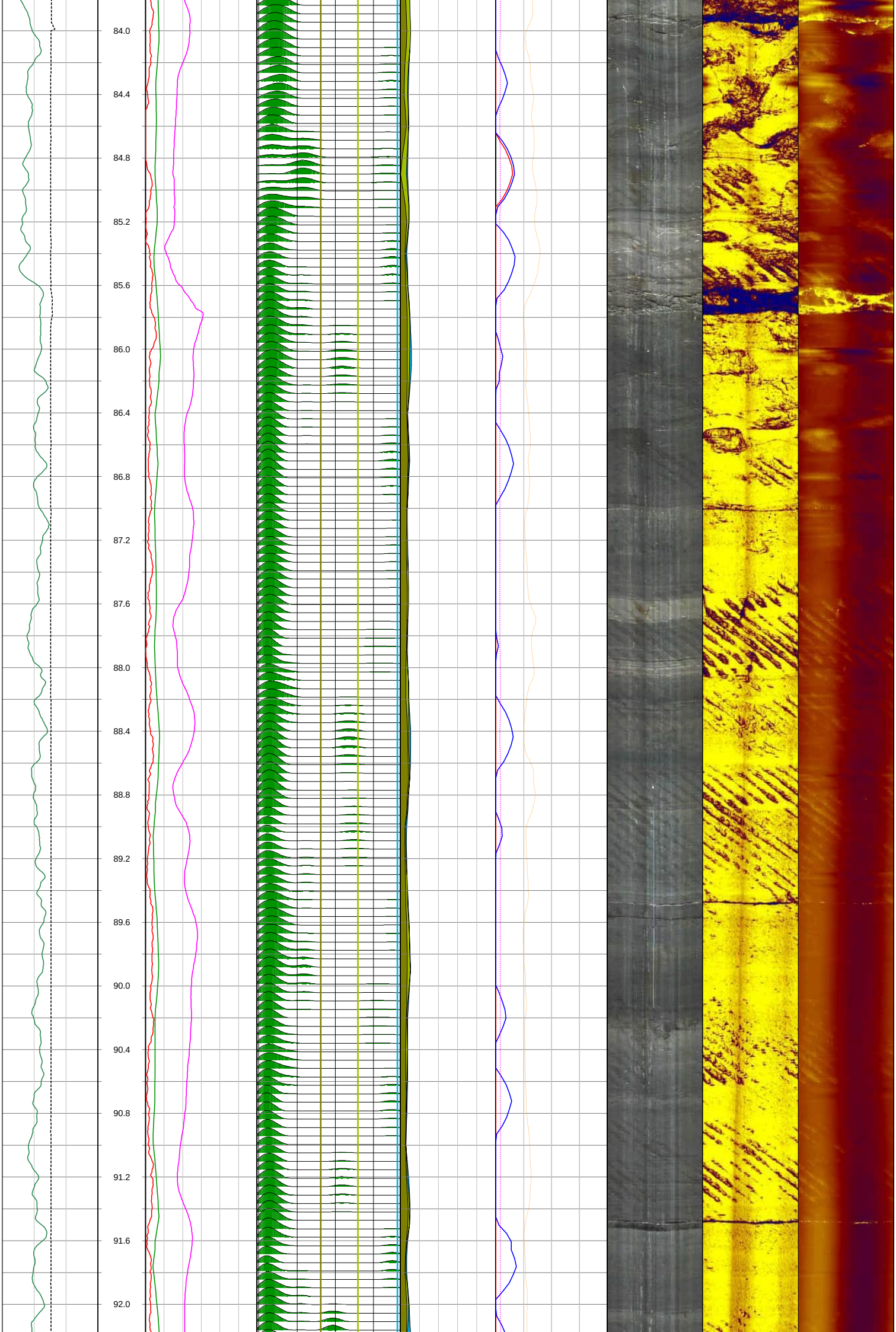
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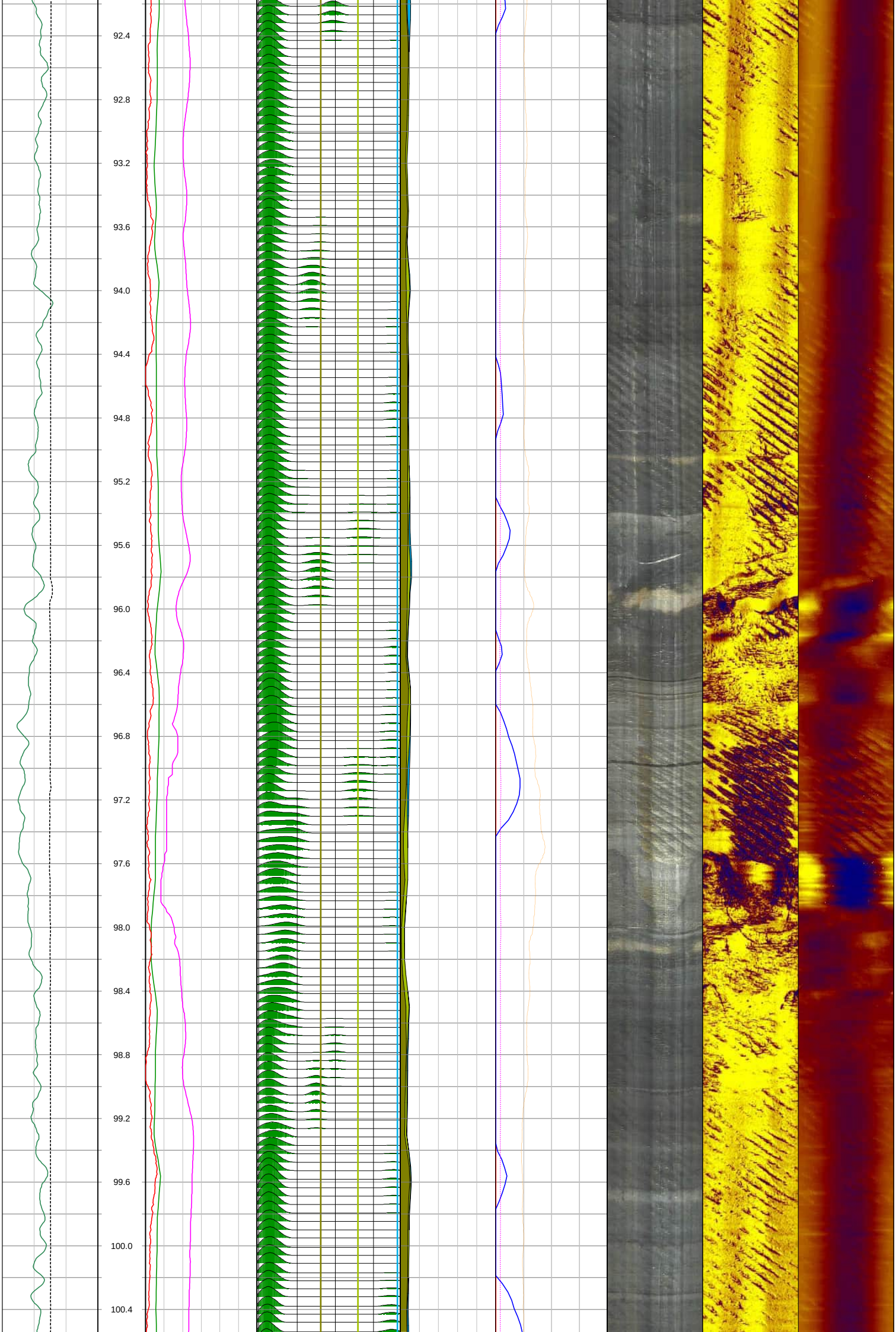
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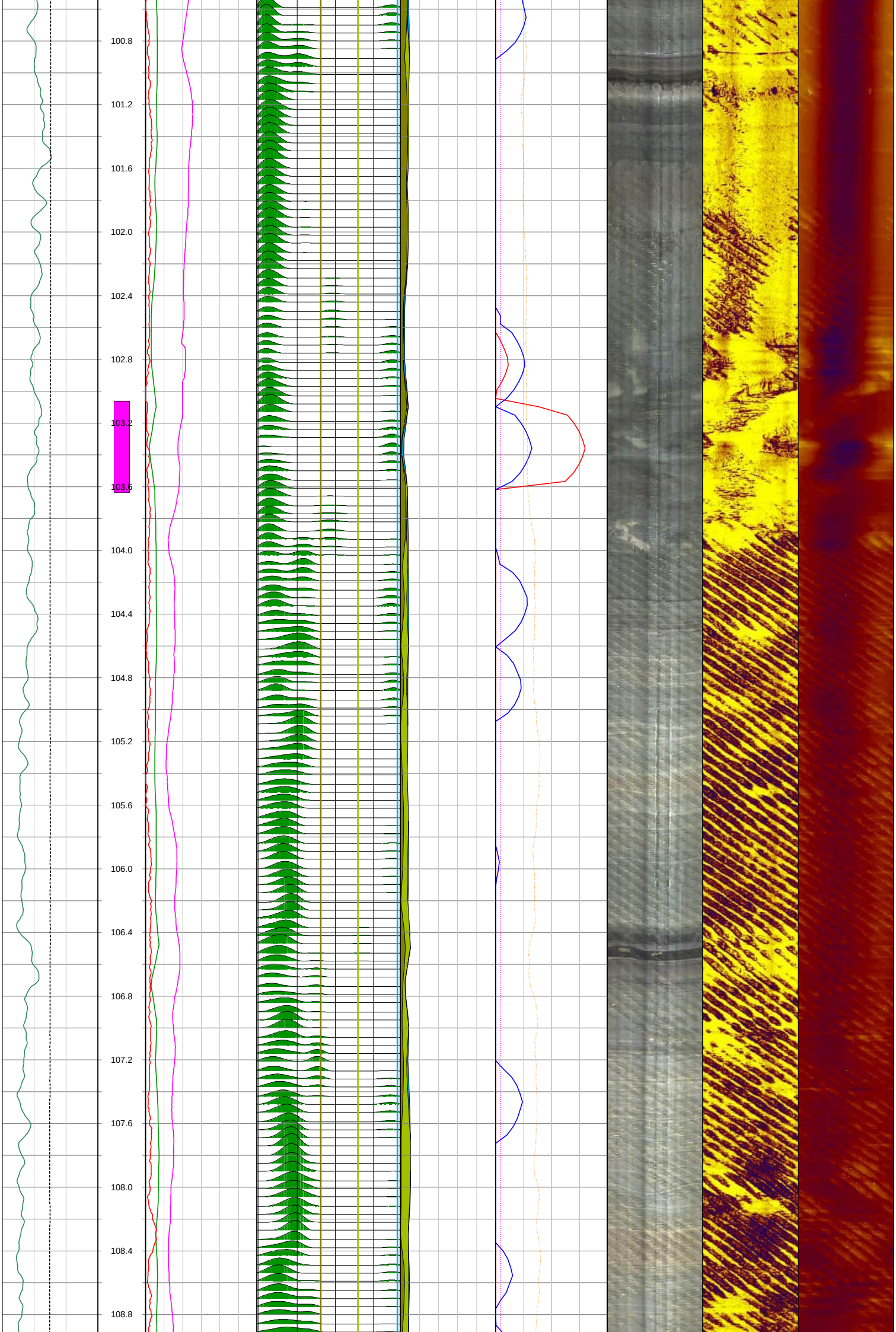
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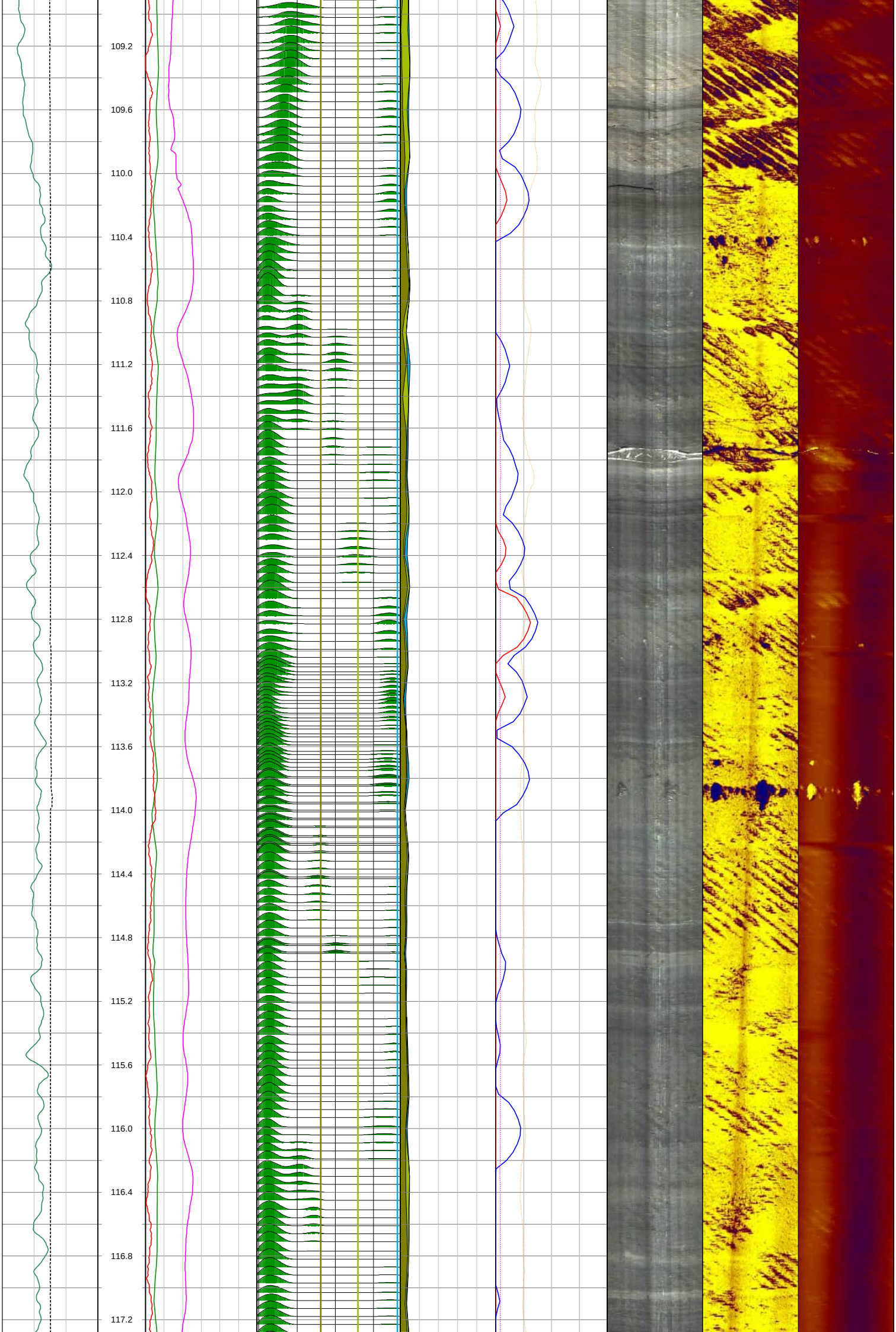
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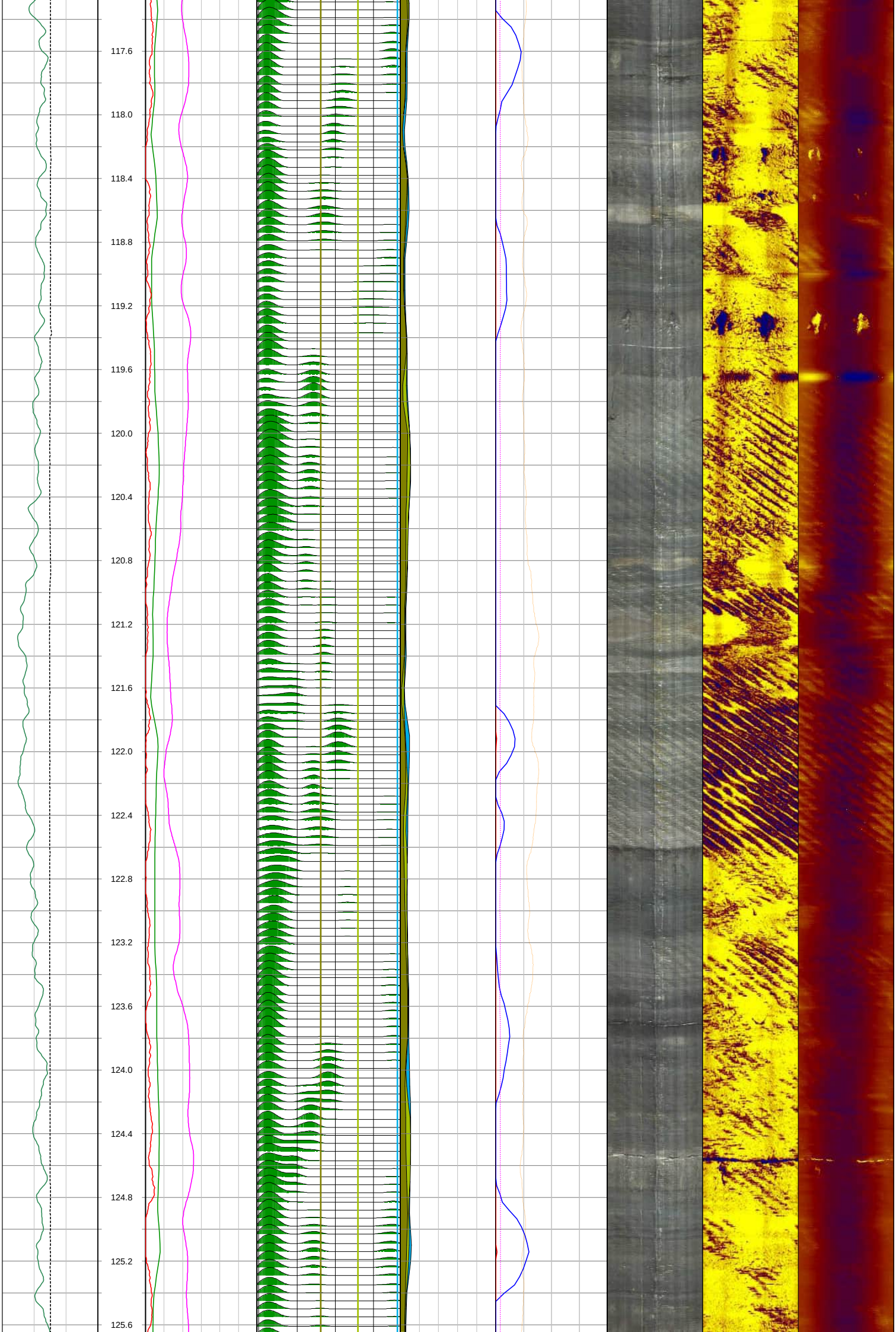
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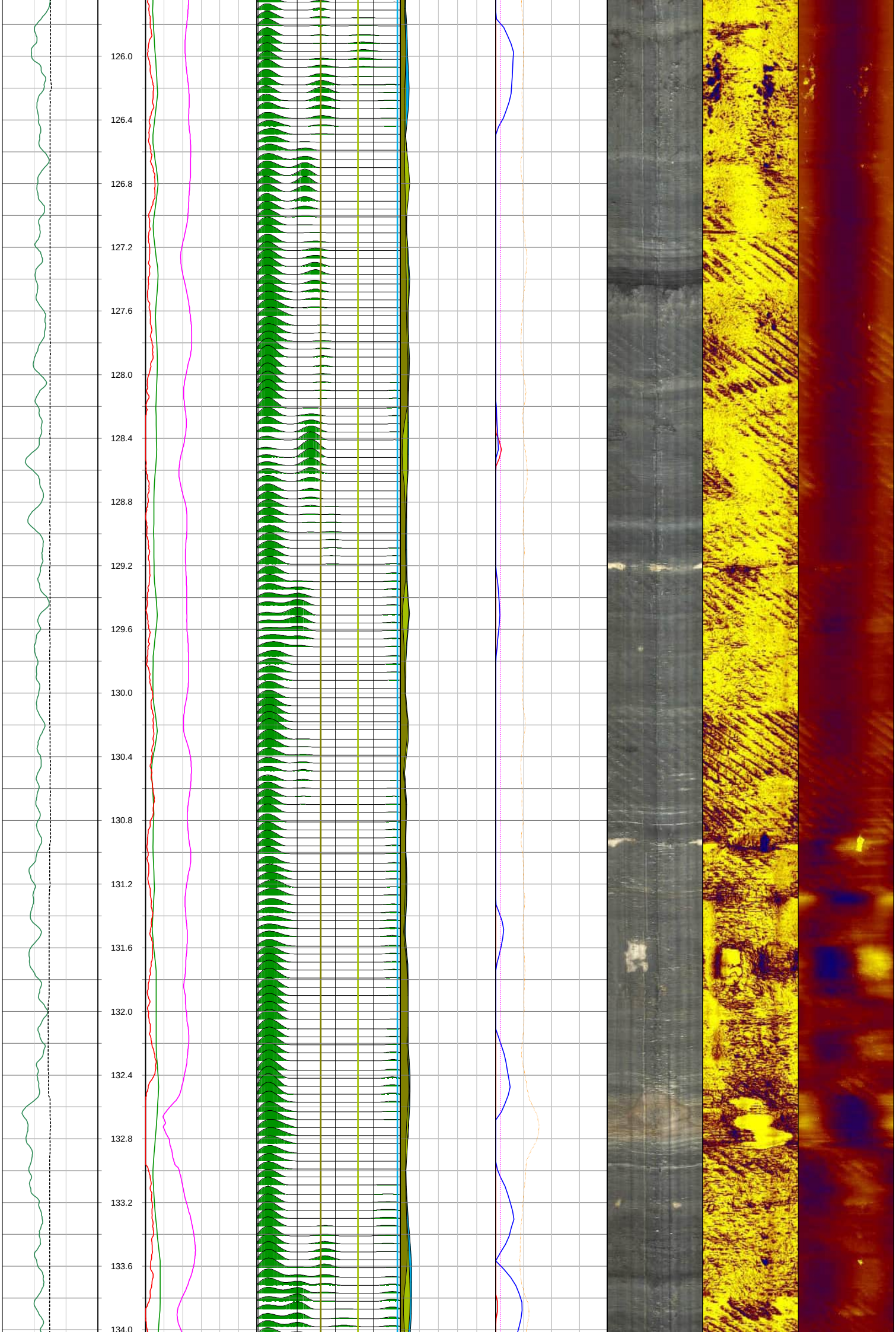
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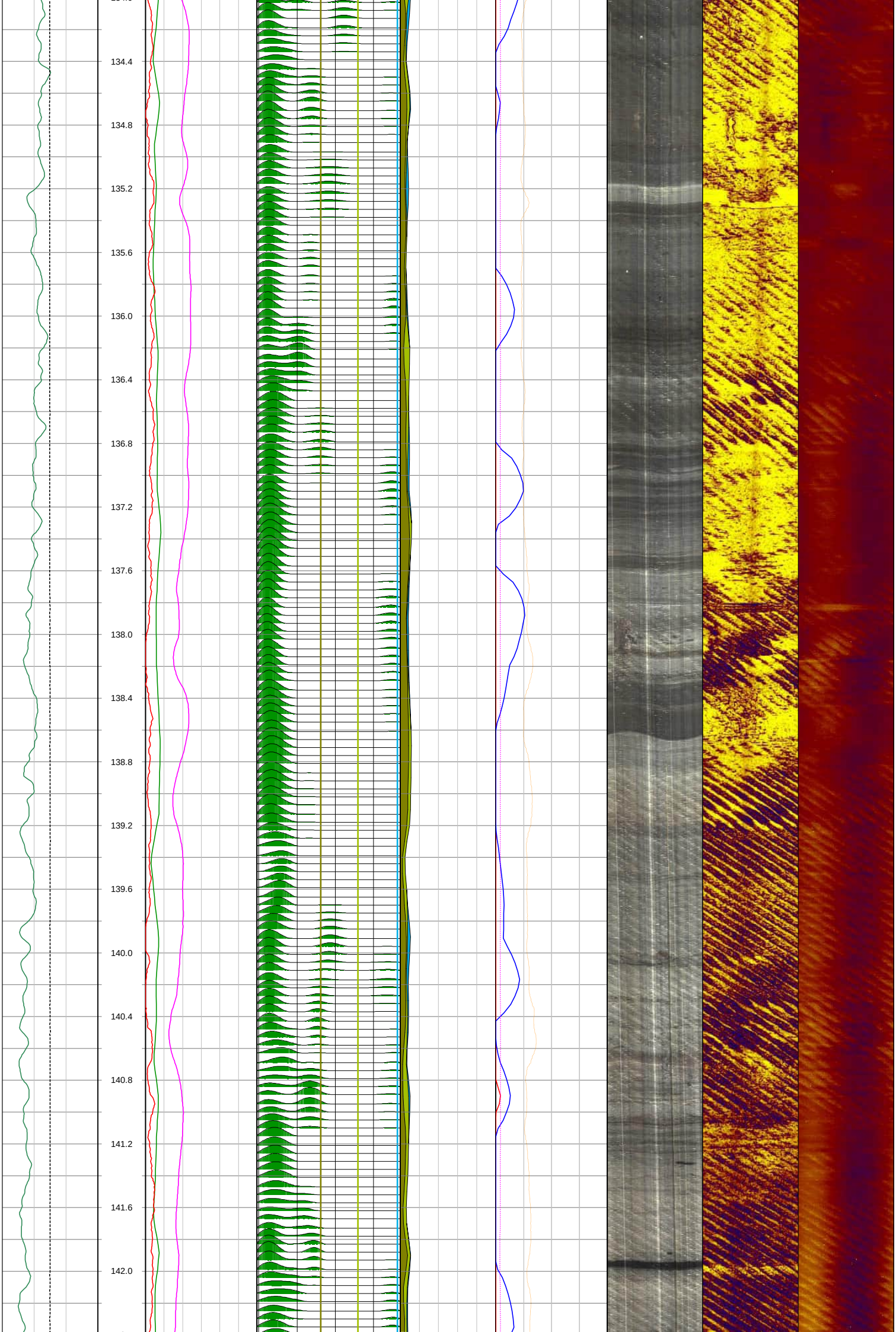
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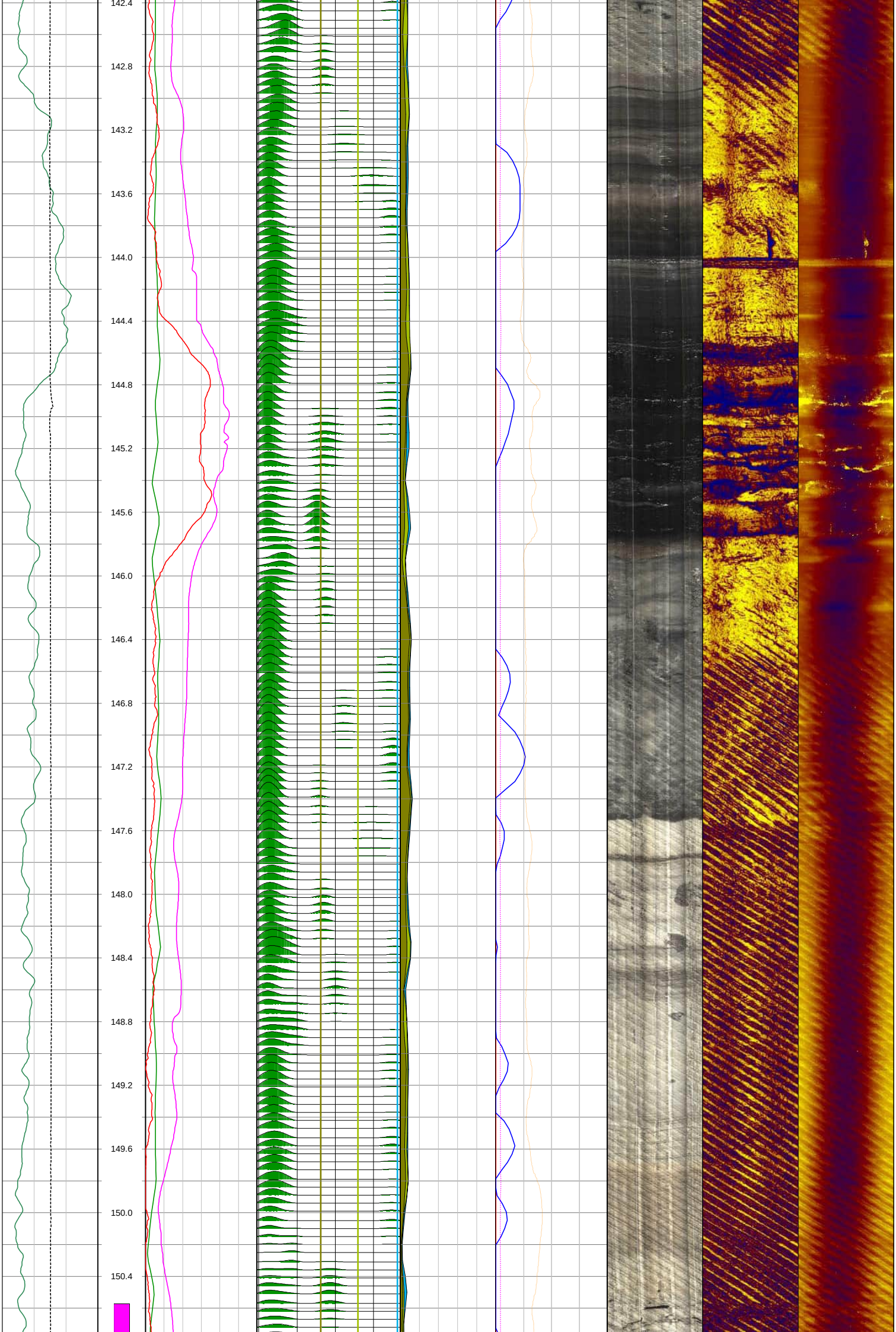
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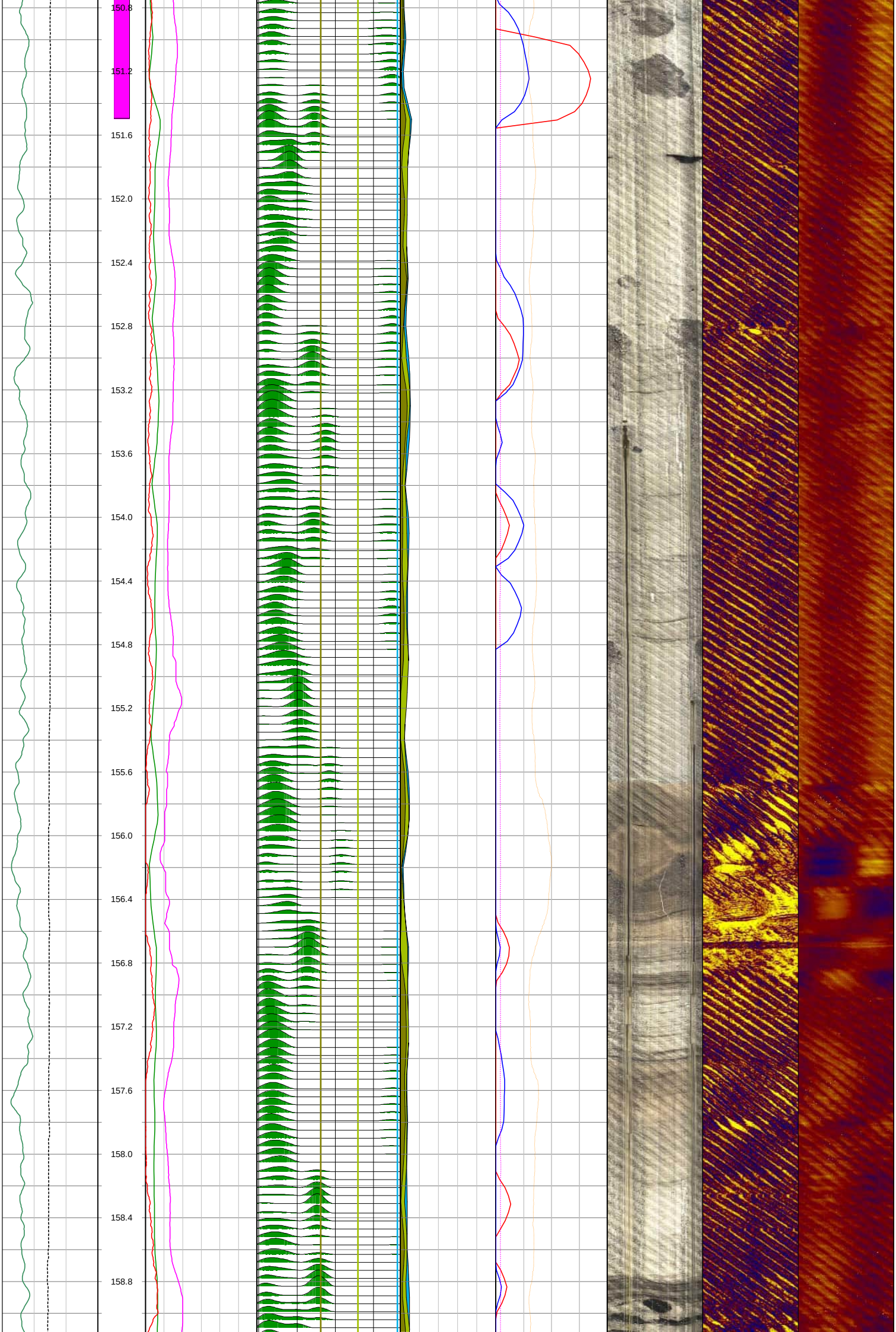
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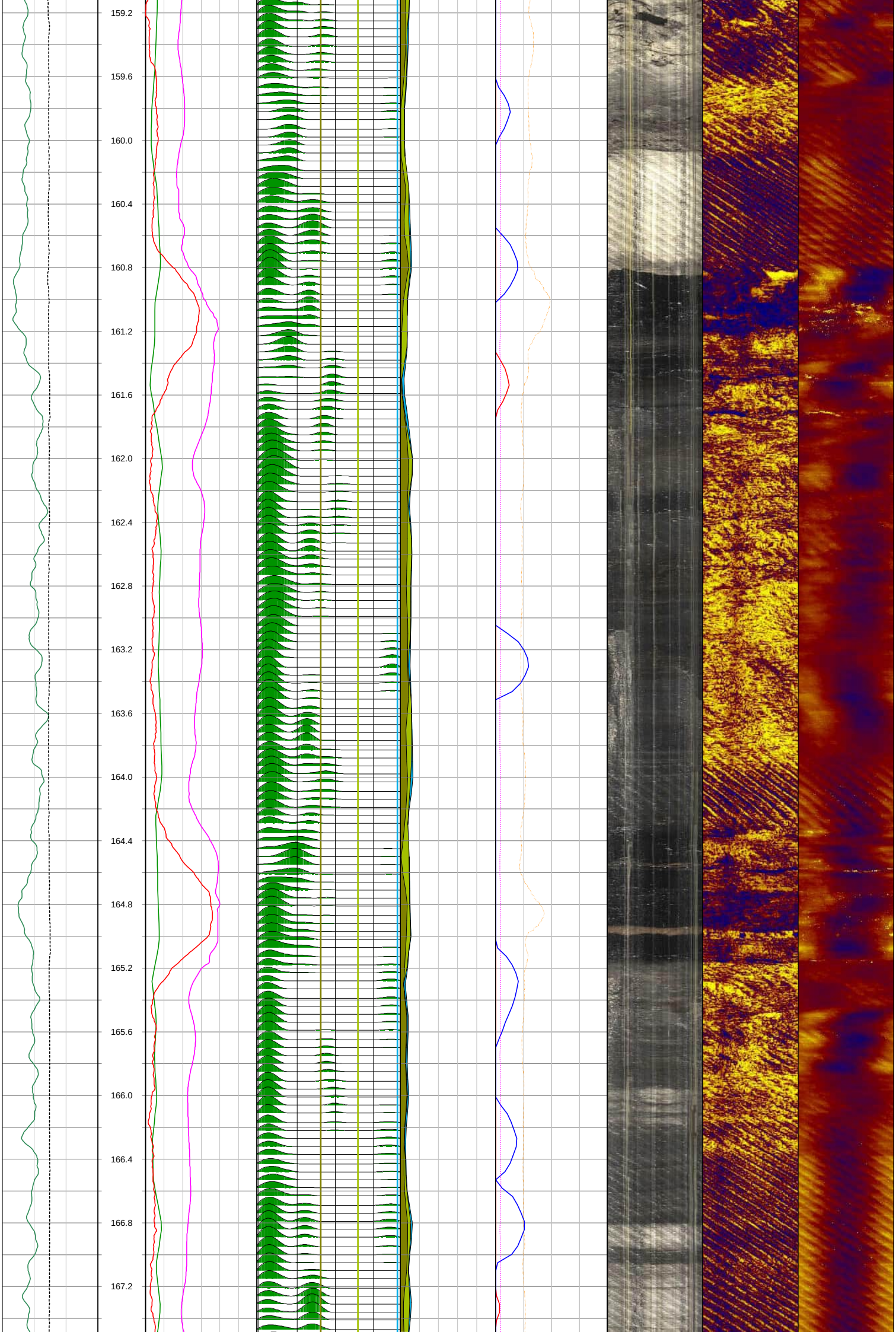
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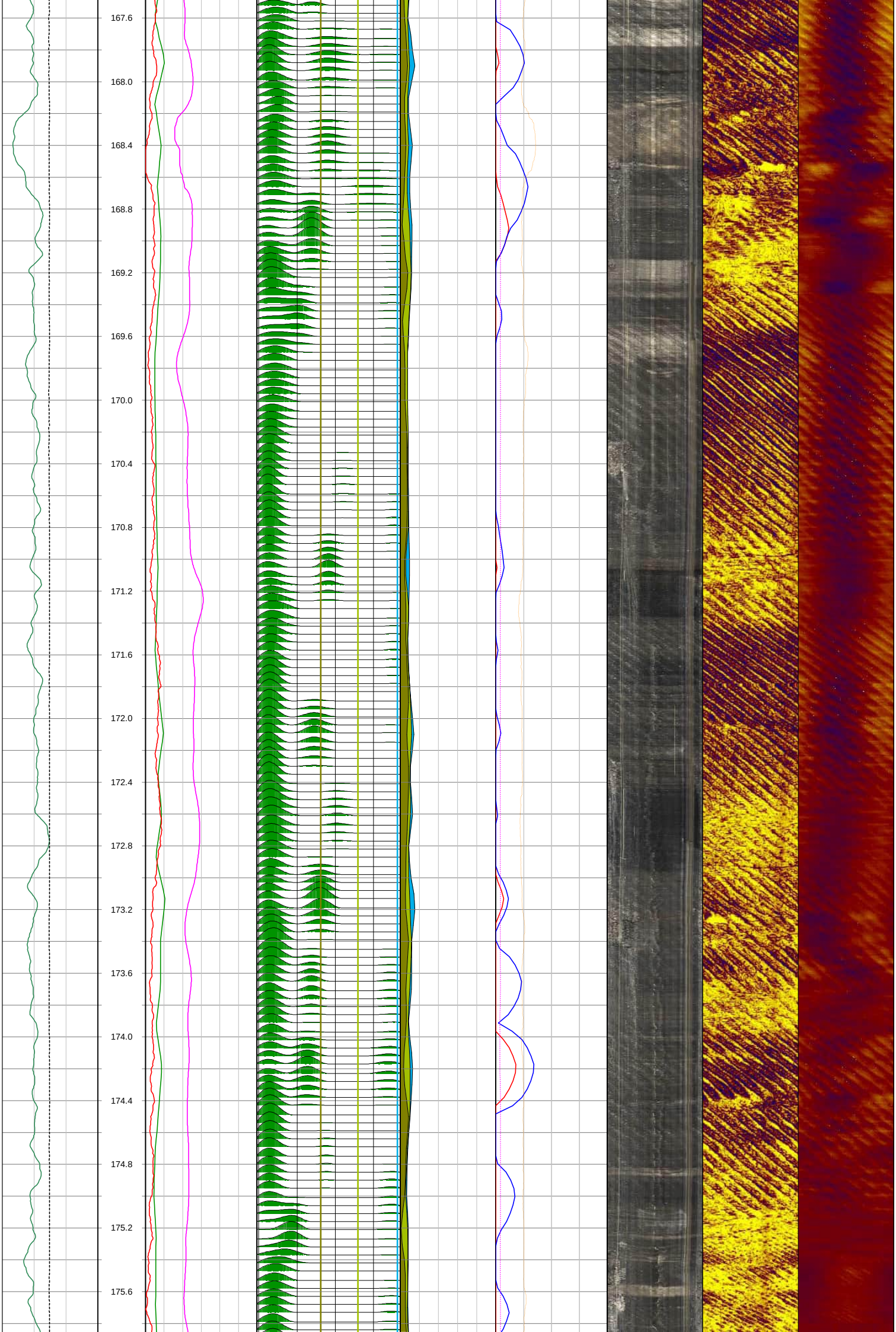
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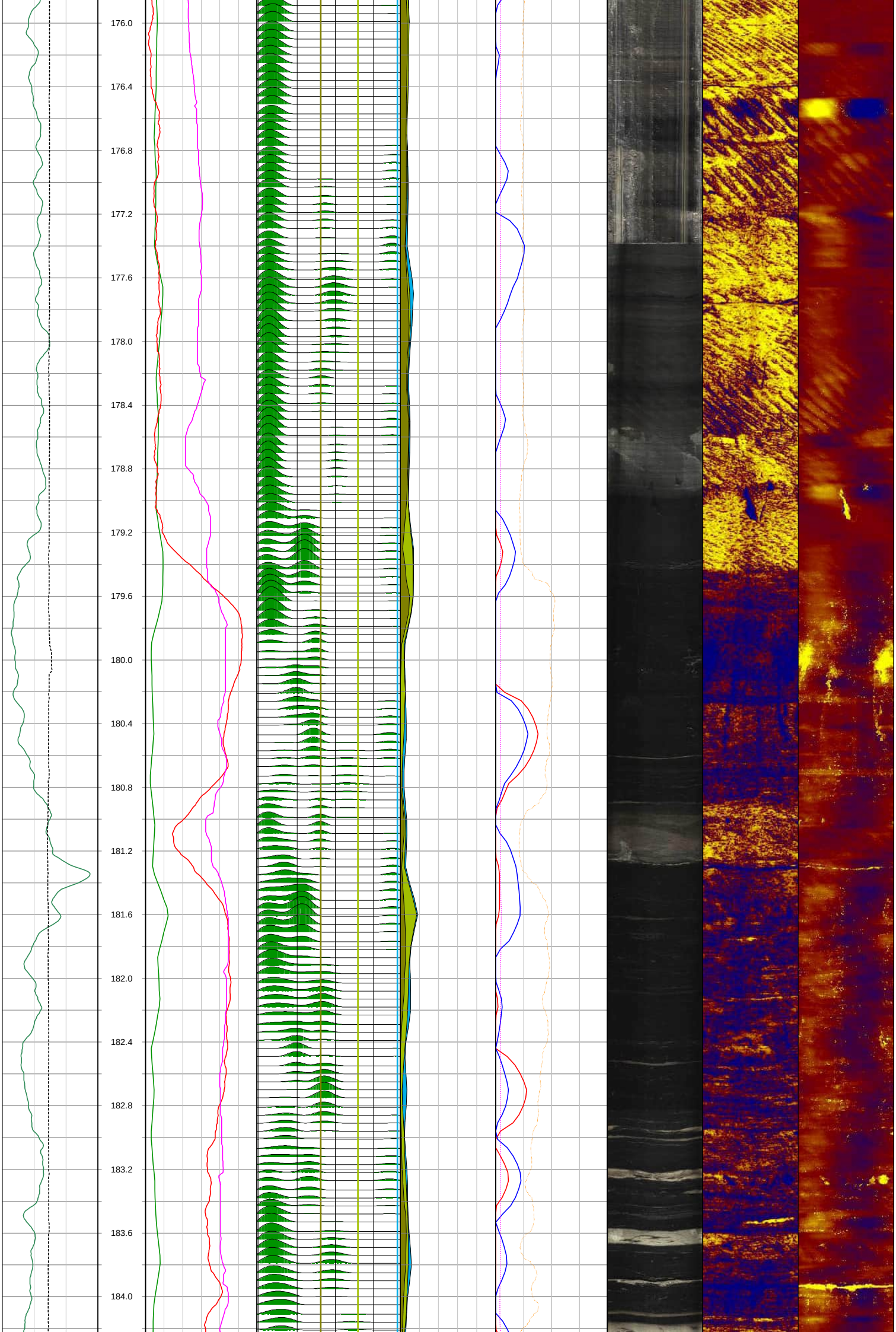
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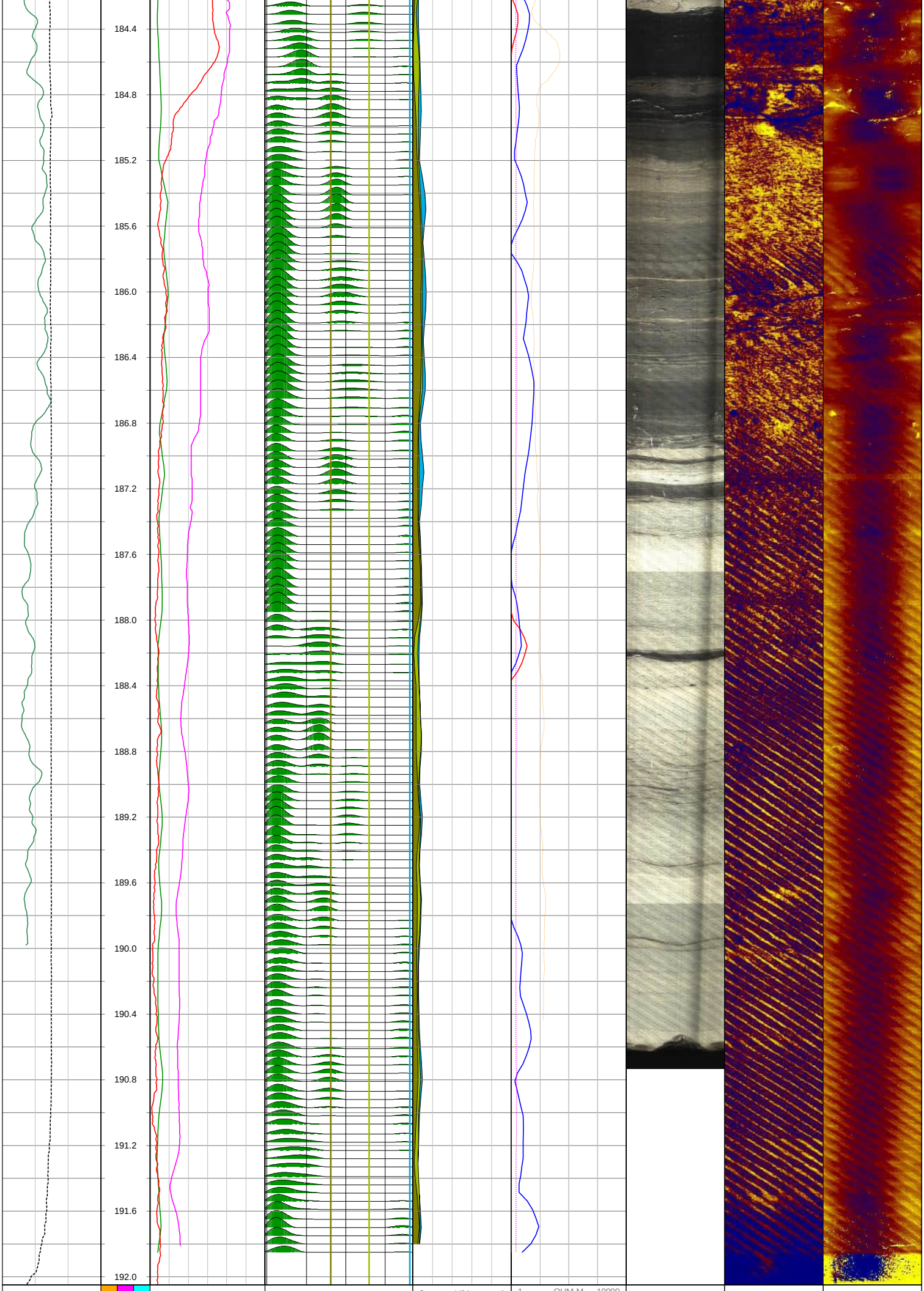


50 MM 200

CALIPER

Washout

Possible Fractures

Magnetics

49 US/FT 166

DTC

2.65 G/CC 1.15

DEN(CPL)

Cutoff Free Fluid

0.5 ms 5000

Cutoff Capillary Bound Water

0.5 ms 5000

0 V/V 1

Clay Bound ...

Capillary Bou...

Free Fluid

1 OHM-M 10000

RES(SG)

0 % 100

NOISE

0.1 m/Day 1000

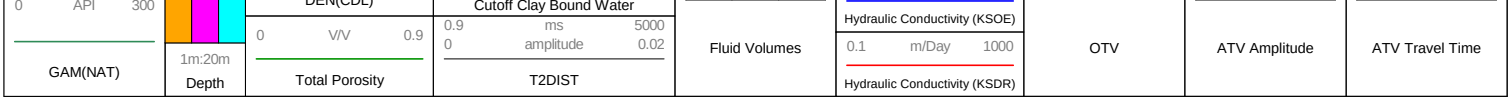
0° 90° 180° 270° 0°

0° 90° 180° 270° 0°

339.359 9392.58

0° 90° 180° 270° 0°

66.8277 us 86.4659


0
API
300
GAM(NAT)
1m:20m
Depth
DEN(CDL)
0
V/V
0.9
Total Porosity
Cutoff Clay Bound Water
0.9
ms
5000
0
amplitude
0.02
T2DIST
Fluid Volumes
Hydraulic Conductivity (KSOE)
0.1
m/Day
1000
Hydraulic Conductivity (KSDR)
OTV
ATV Amplitude
ATV Travel Time

Appendix C Bore Logs

Groundwater Factual Field Investigation Report

Isaac Downs Extension Project

Stanmore Resources Limited

SLR Project No.: 620.041537.00004

5 May 2026

SLR Consulting – Brisbane
Level 16, 175 Eagle Street, Brisbane, QLD, Australia 4000
Phone: +61 7 3858 4800

Monitoring Well Log - Borehole

MBIS01

Easting (m) : 624220.45	Drill Rig : Rig 10	Job Number	: 620.041537.00001
Northing (m) : 7557525.22	Driller Supplier : GeoDrill	Client	: Stanmore Resources
Ground Elevation : 196.88 m AHD	Drilling Logged By : GK/GH	Project	: Isaac South EIS Groundwater
Total Depth : 22 m BGL	Reviewed By :		
CRS : AGD84, Zone 55	Date : 13/05/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)	DRY	196.0 – 175.0	1 – 21		TOP SOIL: high plasticity, dark brown, organic.	TOPSOIL		0-2, Cement Grout
			2		SILTY CLAYS: Medium to light brown, silty, high plasticity clays. Minor low plasticity, white and mint green clays within.	ALLIVIUM		2-5, Bentonite 0-9, 50mm PVC Solid Casing
			10		SILTY CLAYS (60%): Medium to light brown, high plasticity clays. SANDSTONE AND GRAVELS (40%): coarse grained light brown, black specs within, very low strength and gravels, primarily siltstone brown, no grainsize, very low strength. Moist but not wet samples.			5-12, Filter Pack 9-12, 50mm PVC Slotted Screen
			12		SILTSTONE: Medium brown, very low strength, highly weathered, brittle, with no grain size. Mudstone at 13 m dark brown, fissile, very low strength. Significant light brown, high plasticity clays and minor low plasticity white and mint green clays within.	WEATHERED TERTIARY		12-13, Sump 12-15, Bentonite
			18		WEATHERED SILTSTONE: Light brown, low strength, slightly weathered, brittle. Significant light brown, high plasticity clays and minor low plasticity white and mint green clays within. Thin very light brown, fine grained, black specs within, low strength sandstone bands likely to be interbedded within.			15-21, Filter Pack
			21		SANDSTONE: Fresh, fine grained, light blue grey, medium strength. Interbedded with thin bands of siltstone: dark blue grey, low strength.	RCM OVERBURDEN	22 m: Airlift yield (L/s): moisture	
					MBIS01 Terminated at 22 m		EC (uS/cm): 7649; pH: 7.66; Temp (degC): 22.1	

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Monitoring Well Log - Borehole

MBIS02

Easting (m) : 624225.10	**Drill Rig**	**: Rig 10**	**Job Number : 620.041537.00001**
Northing (m) : 7557529.19	**Driller Supplier**	**: GeoDrill**	**Client : Stanmore Resources**
Ground Elevation : 196.98 m AHD	**Logged By**	**: KG**	**Project : Isaac South EIS Groundwater**
Total Depth : 138 m BGL	**Reviewed By**	**:**	
CRS : AGD84, Zone 55	**Date**	**: 29/05/2025**	

Drilling Method	Material Description	Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	TOP SOIL: high plasticity, dark brown, organic, dry. (0–2 m)	TOPSOIL		
	SILTY CLAY: firm, medium plasticity, medium to light brown, with medium grained sand, organic. (2–10 m)	ALLUVIUM		
	WEATHERED SILTSTONE (60%): very low strength, weathered light to medium brown and MUDSTONE (40%): brown, very low strength with minor medium brown sandy low plasticity clay (10–21 m)	WEATHERED TERTIARY		
	FINE GRAINED SANDSTONE: slightly weathered, light grey, low-med strength, minor brown and white clay. (21–23 m)	RCM OVERBURDEN		
	FINE GRAINED SANDSTONE: fresh, moderate strength, subrounded, light grey. (23–30 m)			
125mm Air Rotary (PDC)	COARSE SANDSTONE: fresh, high strength, subrounded, light grey, carbonaceous specs (30–54 m)			
	FINE GRAINED SANDSTONE: fresh, light grey, high strength, interbedded with thin bands of dark grey high strength siltstone. (54–74 m)		55.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 1348; pH: 7.48; Temp (degC):26 61.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 8678; pH: 8.05; Temp (degC):27.5 67.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 6654; pH: 8.15; Temp (degC):27.6	0-130, Cement Grout 0-133, 50mm PVC Solid Casing

Water: 10.84 mBGL

Elevation (m AHD): 430.0 to 356.0

Depth (m bgl): 1 to 74

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Monitoring Well Log - Borehole

MBIS02

Easting (m) : 624225.10	**Drill Rig**	**: Rig 10**	**Job Number : 620.041537.00001**
Northing (m) : 7557529.19	**Driller Supplier**	**: GeoDrill**	**Client : Stanmore Resources**
Ground Elevation : 196.98 m	**Logged By**	**: KG**	**Project : Isaac South EIS Groundwater**
AHD Total Depth : 138 m BGL	**Reviewed By**	**:**	
CRS : AGD84, Zone 55	**Date**	**: 26/06/2024**	

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		355.0 to 293.0	75 to 137		COARSE SANDSTONE: fresh, high strength, subrounded, light grey, carbonaceous specs			
			85		FINE GRAINED SANDSTONE: fresh, light grey, high strength, interbedded with thin bands of dark grey siltstone.		79.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 7618; pH: 8.02; Temp (degC):27.6	
			96		COARSE SANDSTONE: fresh, high strength, subrounded, light grey, carbonaceous specs		91.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 11129; pH: 7.863; Temp (degC):28.7	
			111		COARSE SANDSTONE: fresh, high strength, subrounded, med grey, increase carbonation.	RCM OVERBURDEN	103.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 7129; pH: 8.14; Temp (degC):25.6 109.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 6617; pH: 8.37; Temp (degC):27.5 115.00 m: Airlift yield (L/s): 0.082; EC (uS/cm): 6337; pH: 8.18; Temp (degC):26.7 121.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 6192; pH: 0.87; Temp (degC):26.1 127.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 9174; pH: 7.79; Temp (degC):26.9	0-130, Cement Grout 0-133, 50mm PVC Solid Casing
			132		SILTSTONE: dark grey, medium to high strength			130-132, Bentonite
			134		COAL: fresh, black, medium strength, vitreous interbedded with minor medium strength siltstone.	Leichhardt CS	133.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 10824; pH: 7.96; Temp (degC):29.2	133-136, 50mm PVC Slotted Screen
			136		COARSE SANDSTONE: fresh, high strength, subrounded, light grey, carbonaceous specs	RCM Inter.	135.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 15747; pH: 7.82; Temp (degC):26	132-138, Filter Pack
					MBIS02 Terminated at 138 m		138.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 13020; pH: 7.88; Temp (degC):25.9	136-137, Sump

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Monitoring Well Log - Borehole

MBIS03

Easting (m) : 624210.57	**Drill Rig**	**: Rig 10**	**Job Number : 620.041537.00001**
Northing (m) : 7557524.90	**Driller Supplier**	**: GeoDrill**	**Client : Stanmore Resources**
Ground Elevation : 196.66 m AHD	**Logged By**	**: GK/GH**	**Project : Isaac South EIS Groundwater**
Total Depth : 181 m BGL	**Reviewed By**	**:**	
CRS : AGD84, Zone 55	**Date**	**: 16/05/2024**	

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	10.66 mBGL	430.0 to 369.0	1 to 61		TOPSOIL: Dark brown, organic, silty, high plasticity clays.	TOPSOIL		0-163, Cement Grout 0-171, 50mm PVC Solid Casing
			3		SILTY CLAYS: Medium to light brown, silty, high plasticity clays. Minor white and mint green low plasticity clays within.	ALLUVIUM		
			10		SILTY CLAYS (60%): Medium to light brown, silty, high plasticity clays. SAND AND GRAVELS (40%): Coarse sands, light brown, black specs within, very low strength and gravels, primarily siltstone brown, no grainsize, very low strength. Moist but not wet samples.			
			12		WEATHERED SILTSTONE: Medium brown, very low strength, highly weathered, brittle. Mudstone band at 13m: Dark brown, fissile, very low strength. Significant clays, light brown, high plasticity and minor white and mint green clays within (low plasticity).	WEATHERED TERTIARY		
			20		WEATHERED SILTSTONE: Light brown to light grey, base of weathering, very fine grain sandstone/siltstone			
			23		SANDSTONE: light grey blue, very fine grain, black specs within. Thin siltstone layers within (dark grey blue, fine grain). Still significant clays.	RCM OVERBURDEN		
102mm Air Rotary (PDC)			30		INTERBEDDED SILTSTONE AND SANDSTONE: fresh, predominantly siltstone (grey blue, moderate strength, no grain size), interbedded with sandstone (high strength, fine grained, black specs within), still significant clays			

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Monitoring Well Log - Borehole

MBIS03

Easting (m) : 624210.57	**Drill Rig**	**: Rig 10**	**Job Number : 620.041537.00001**
Northing (m) : 7557524.90	**Driller Supplier**	**: GeoDrill**	**Client : Stanmore Resources**
Ground Elevation : 196.66 m	**Logged By**	**: GK/GH**	**Project : Isaac South EIS Groundwater**
AHD Total Depth : 181 m BGL	**Reviewed By**	**:**	**Location :**
CRS : AGD84, Zone 55	**Date**	**: 16/05/2024**	**Loc Comment :**

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
102mm Air Rotary (PDC)		368.0 to 307.0	63 to 123		INTERBEDDED SILTSTONE AND SANDSTONE: fresh, predominantly siltstone (grey blue, moderate strength, no grain size), interbedded with sandstone (high strength, fine grained, black specs within), still significant clays (continued)	RCM OVERBURDEN		0-163, Cement Grout 0-171, 50mm PVC Solid Casing
			74		SANDSTONE: very light grey blue, fresh, fine to moderate grained, high strength, black specs within. Minor siltstone bands within, minor clays.		75.00 m: Airlift yield (L/s): 0.8; EC (uS/cm): 21288; pH: 7.1; Temp (degC): 32.9	
			82		SILTSTONE: fresh, medium blue grey, predominantly siltstone. Noticeable darkening in colour, minor clays.			
			90		SANDSTONE: very light grey blue, fresh, fine to moderate grained, high strength, black specs within. Minor siltstone bands within, reduction of clays.			
			110		SILTSTONE (INTERBEDDED): fresh, medium blue grey, predominantly siltstone. Noticeable darkening in colour, minor clays.			
			120		SANDSTONE: very light grey blue, fresh, fine to moderate grained, high strength, black specs within. Minor siltstone bands within, reduction of clays.			

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Monitoring Well Log - Borehole

MBIS03

Easting (m) : 624210.57	**Drill Rig : Rig 10**	**Job Number : 620.041537.00001**	
Northing (m) : 7557524.90	**Driller Supplier : GeoDrill**	**Client : Stanmore Resources**	
Ground Elevation : 196.66 m	**Logged By : GK/GH**	**Project : Isaac South EIS Groundwater**	
AHD Total Depth : 181 m BGL	**Reviewed By :**	**Location :**	
CRS : AGD84, Zone 55	**Date : 16/05/2024**	**Loc Comment :**	

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
102mm Air Rotary (PDC)		306.0 – 250.0	125 – 180		SANDSTONE: very light grey blue, fresh, fine to moderate grained, high strength, black specs within. Minor siltstone bands within, reduction of clays. (continued)	RCM OVERBURDEN		0-163, Cement Grout
		302.8	128		INTERBEDDED SILTSTONE AND SANDSTONE: fresh, medium blue grey, significant chip loss, both sandstone and siltstone minor siderite within.			
		296.0	134		INTERBEDDED SILTSTONE, SANDSTONE AND COAL: Minor coal bands interbedded with significant amounts of resh, medium blue- grey to very dark grey siltstone and fine- to medium- grained sandstone.	LEICHHARDT CS		0-171, 50mm PVC Solid Casing
		291.8	139		INTERBEDDED SILTSTONE AND SANSTONE: Fresh, medium blue grey and very dark grey, coal remnants.			
					INTERBEDDED SILTSTONE AND SANDSTONE: Fresh, medium light grey blue, back to chips, significant chip loss, minor carbonaceous siltstone within.			
		278.8	152		INTERBEDDED SILTSTONE, SANDSTONE: Fresh, medium light grey blue, sandstone and siltstone, with minor black, glassy, very high strength coal fragments within.	RCM INTERBURDEN	157.00 m: EC (uS/cm): 20796; pH: 6.59; Temp (degC): 26.2	
		267.8	163		SILTSTONE: Fresh, dark grey, primarily carbonaceous siltstone, medium to high strength, with fine grain, grey sandstone, trace siderite.			163-165, Bentonite
		261.8	169		SANDSTONE: fresh, fine grained, moderate strength, black specs within			
		259.8	171		INTERBEDDED SILTSTONE, SANDSTONE AND COAL: Fresh, medium light grey blue, sandstone and siltstone, with black, glassy, very high strength coal fragments within.		171.00- 178.00 m: VERMONT CS	165-181, Filter Pack
		257.8	173		COAL and SILTSTONE: fresh, predominantly dark grey, no grain size, mod strength, carbonaceous siltstone and minor black, glassy, high strength coal.			171-180, 50mm PVC Slotted Screen
		252.8	179		SILTSTONE: fresh, fine grained, medium dark grey, moderate strength. Fine grained, light grey, sandstone with carbonaceous spec at 181 m		178.00- 181.00 m: RCM INTERBURDEN	180-181, Sump
					MBIS03 Terminated at 181 m		178.00 m: Airlift yield (L/s): 1; EC (uS/cm): 19015; pH: 6.53; Temp (degC): 28.7	

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Monitoring Well Log - Borehole

MBIS04

Easting (m)	: 625445	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7556627	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 195.89 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 19 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 05/05/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Mud Rotary (PDC)	▽	195.0	1		TOP SOIL: high plasticity, dark brown, organic.	TOPSOIL		
		194.0	2		SILTY CLAYS: Medium to light brown, silty, high plasticity clays.	ALLUVIUM		
		193.0	3		SAND: red - brown, fine grained, 10% high plasticity clay.			
		192.0	4					0.00-8.00, Cement Grout
		191.0	5					
		190.0	6					0.00-12.00, 50mm PVC Solid Casing
		189.0	7		SAND: red - brown, fine - grained sand, 10% gravel, 10% high plasticity clay.			
		188.0	8					
		187.0	9					8.00-10.00, Bentonite
		186.0	10					
		185.0	11					
		184.0	12		CLAYEY SAND: red - brown, fine grain, 10% clay, high plasticity, 10% gravel, medium grain			
		183.0	13					
		182.0	14					
		181.0	15		SAND: brown, fine - grained, with minor weathered sandstone and siltstone, low - med strength			10.00-19.00, Filter Pack
		180.0	16					12.00-18.00, 50mm PVC Slotted Screen
		179.0	17		WEATHERED SILTSTONE: Light brown, low strength, slightly weathered, brittle. Significant light brown, high plasticity clays and minor low plasticity white and mint green clays within. Thin very light brown, fine grained, black specs within, low strength sandstone bands likely to be interbedded within.	WEATHERED TRIASSIC		
		178.0	18					
		177.0						18.00-19.00, 50mm PVC Solid Casing
					MBIS04 Terminated at 19 m			

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Monitoring Well Log - Borehole

MBIS05

Easting (m)	: 625449.31	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7556617.83	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 195.96 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 155 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 08/05/2025		

Drilling Method	Water Level	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	11.93 mBGL	430.0 – 401.0	1 – 30		TOP SOIL: high plasticity, dark brown, organic.	TOPSOIL		
		429.0 – 401.0	2 – 30		SILTY CLAYS: dark green grey, highly weathered, silty, high plasticity clays.	ALLUVIUM		
		428.0 – 401.0	3 – 30		SILTY CLAYS (80%): Light brown, silty, high plasticity clays. 20% SAND, light brown, very fine grain.	ALLUVIUM		
		427.0 – 401.0	4 – 30		CLAYEY SAND: light red brown, sand, very fine grain, red - brown, clay, high plasticity, very fine grain, highly weathered.	ALLUVIUM		
		424.0 – 401.0	7 – 30		CLAYEY SAND: brown grey, sand, very fine grain, red - brown, clay, medium plasticity, very fine grain, highly weathered.	ALLUVIUM		
		415.0 – 401.0	16 – 30		WEATHERED SILTSTONE: Brown, very low strength, highly weathered, angular, fine grained. 40% low plasticity clay, 10% sandstone, fine grained.	WEATHERED TERTIARY		0.00-144.00, Cement Grout 0.00-148.00, 50mm PVC Solid Casing
		408.0 – 401.0	23 – 30		WEATHERED SILTSTONE: grey, base of weathering, very fine grained siltstone	WEATHERED TERTIARY		
125mm Air Rotary (PDC)		400.0 – 394.0	30 – 37		SANDSTONE: grey, fine to coarse grained sandstone, fresh, 20% siltstone, low - medium strength, 10% clay, medium plasticity.	WEATHERED TERTIARY		
		393.0 – 393.0	38 – 38		MUDSTONE: Fresh, fine grain, subangular, medium strength, 20% clay, medium plasticity, 10% siltstone, fine grain, low - medium strength.	WEATHERED TERTIARY		
		392.0 – 387.0	39 – 44		SANDSTONE: Fresh, grey, coarse high strength, subangular.	RCM OVERBURDEN	42.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 23715; pH: 7.48; Temp (degC): 26	
		386.0 – 379.0	45 – 52		SANDSTONE: Fresh, fine grained, subangular, 20% siltstone, medium strength, fine grain	RCM OVERBURDEN		
		378.0 – 377.0	53 – 53		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, subangular, fine grain, high strength, sandstone interbedded with medium strength, fine grain, subangular siltstone	RCM OVERBURDEN		

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Monitoring Well Log - Borehole

MBIS05

Easting (m)	**: 625449.31**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7556617.83**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 195.96 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 155 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 08/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		376.0 – 323.0	55 – 107		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, subangular, fine grain, high strength, sandstone interbedded with medium strength, fine grain, subangular siltstone (continued)	RCM OVERBURDEN	54.00 m: Airlift yield (L/s): 4.448; EC (uS/cm): 24760; pH: 7.48; Temp (degC): 27.5	0.00-144.00, Cement Grout 0.00-148.00, 50mm PVC Solid Casing
			56		SANDSTONE: Fresh, grey, 60% coarse, high strength, rounded, quartz specs, 30% fine grain sandstone, angular, high strength, 10% siltstone, medium strength			
			69		SANDSTONE: Fresh, grey, 80% coarse, high strength, rounded, quartz specs, 15% fine grain sandstone, angular, high strength, 5% siltstone, medium strength		66.00 m: Airlift yield (L/s): 4.448; EC (uS/cm): 23420; pH: 7.41; Temp (degC): 25.5	
			71		SANDSTONE: Fresh, grey, 80% fine grain sandstone, angular, high strength, 10% coarse, high strength, rounded, quartz specs, 10% siltstone, medium strength			
			79		SANDSTONE: Fresh, light grey, coarse, high strength, sub - rounded, quartz specs		78.00 m: Airlift yield (L/s): 3.425; EC (uS/cm): 22525; pH: 7.38; Temp (degC): 26.5	
			83		SANDSTONE: Fresh, grey, 80% fine grain sandstone, angular, high strength, 15% coarse, high strength, rounded, quartz specs, 5% siltstone, medium strength			
			87		SANDSTONE: Fresh, grey, 50% fine grain sandstone, angular, high strength, 50% coarse, high strength, rounded, quartz specs		84.00 m: Airlift yield (L/s): 3.425; EC (uS/cm): 23120; pH: 7.39; Temp (degC): 26.2	
			89		INTERBEDDED SILTSTONE AND SANDSTONE: Fresh, grey, fine grain sandstone, angular, high strength, siltstone, medium strength, dark grey			
			90		SANDSTONE: Fresh, light grey, coarse grained, high strength, sub - rounded, quartz specs			
			91		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, fine grained high strength, sandstone, medium strength, dark grey, siltstone		96.00 m: Airlift yield (L/s): 2.55; EC (uS/cm): 23273; pH: 7.38; Temp (degC): 25.7	
			103		SANDSTONE: Fresh, light grey, coarse grained, high strength, sub - rounded, quartz specs		102.00 m: Airlift yield (L/s): 2.55; EC (uS/cm): 22792; pH: 7.46; Temp (degC): 24.7	
			107		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh...Continued on next page			

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Monitoring Well Log - Borehole

MBIS05

Easting (m)	**: 625449.31**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7556617.83**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 195.96 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 155 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 08/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		322.0 – 276.0	109 – 154		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, fine grained high strength, sandstone, medium strength, dark grey, siltstone (continued)	RCM OVERBURDEN		
			114		SANDSTONE: Fresh, light grey, coarse grained, high strength, sub - rounded, quartz specs		114.00 m: Airlift yield (L/s): 2.55; EC (uS/cm): 23011; pH: 7.37; Temp (degC): 28.4	
			116		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, fine grained high strength, sandstone, medium strength, dark grey, siltstone			
			119		SANDSTONE: Fresh, light grey, coarse, high strength, sub - rounded, quartz specs			
			121		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, fine grained high strength, sandstone, medium strength, dark grey, siltstone		126.00 m: Airlift yield (L/s): 2.55; EC (uS/cm): 23000; pH: 7.46; Temp (degC): 26.9	0.00-144.00, Cement Grout 0.00-148.00, 50mm PVC Solid Casing
			143		SANDSTONE: Fresh, light grey, coarse, high strength, sub - rounded, quartz specs		138.00 m: Airlift yield (L/s): 2.972; EC (uS/cm): 23234; pH: 7.49; Temp (degC): 28.2	
			144		INTERBEDDED SANDSTONE AND SILTSTONE: Fresh, grey, fine grained high strength, sandstone, medium strength, dark grey, siltstone			144.00-146.00, Cement Grout
			147		SANDSTONE: Fresh, light grey, coarse, high strength, sub - rounded, quartz specs			
			151		COAL: vitreous, black, high strength, 20% sandstone, coarse, subrounded, high strength	CSM	155.00 m: Airlift yield (L/s): 2.402; EC (uS/cm): 23392; pH: 7.43; Temp (degC): 26.7	146.00-155.00, Filter Pack 148.00-154.00, 50mm PVC Slotted Screen
			152		SANDSTONE: Fresh, light grey, coarse, high strength, sub - rounded, quartz specs	FORMATION		154.00-155.00, Sump
					MBIS05 Terminated at 155 m			

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Monitoring Well Log - Borehole

MBIS07

Easting (m)	: 623916	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7554568	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 199.9 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 19 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 56	Date	: 15/06/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)	▽	199.0	1		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL		
		198.0	2		SAND: coarse grained, medium to light brown, siliceous sand	ALLUVIUM		0.00-6.00, Cement Grout
		197.0	3					
		196.0	4					0.00-9.00, 50mm PVC Solid Casing
		195.0	5		SAND: light brown, coarse grained, very weathered slight concretions of sand but very immature			
		194.0	6					
		193.0	7					6.00-8.00, Bentonite
		192.0	8					
		191.0	9					
		190.0	10		SAND: medium brown medium grained			8.00-13.00, Filter Pack
		189.0	11					9.00-12.00, 50mm PVC Slotted Screen
		188.0	12		SANDSTONE: dark purple grey weathered sandstone, low strength, fine grained with minor moderate plasticity clay	WEATHERED TRIASSIC		12.00-13.00, Sump
		187.0	13					
		186.0	14		SANDSTONE: dark grey weathered, fine grained, subangular with medium plasticity clay and minor grey, fine grained weathered siltstone			
		185.0	15					
		184.0	16					13.00-19.00, Bentonite
		183.0	17		SANDSTONE: fine grained fresh, grey blue, medium strength.	RCM OVERBURDEN		
		182.0	18					
		181.0						
					MBIS07 Terminated at 19 m			

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Monitoring Well Log - Borehole

MBIS11

Easting (m)	: 624888	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7554933	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 199.15 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 96 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 13/05/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	▽	199.0 – 150.0	1 – 49		TOP SOIL: high plasticity, dark brown, organics within. (0 – 2 m)	TOPSOIL		
					SAND: medium brown, fine - grained sand, minor lithic fragments (2 – 7 m)	ALLUVIUM		
					SAND: medium brown, medium grained sand, with lithic fragments and minor medium brown high plasticity clay (7 – 14 m)			
					SANDSTONE: distinctly weathered brown - red, medium to fine grained low strength, with 30% medium to fine sand (14 – 18 m)	WEATHERED TRIASSIC		
					SANDSTONE: moderately weathered, light grey fine - grained sand, low strength, minor medium brown clay which increases at 24 m. (18 – 24 m)	RCM OVERBURDEN		
					SILTSTONE: fresh, subangular, medium strength, grey, minor fine grained sandstone, high strength (24 – 26 m)			0.00-83.00, Cement Grout
					SANDSTONE: fresh, fine grained, high strength, blue grey, subrounded (26 – 29 m)			0.00-90.00, 50mm PVC Solid Casing
					SANDSTONE: fresh, coarse, high strength, subrounded, light blue grey (29 – 31 m)			
125mm Mud Rotary (PDC)					SILTSTONE: fresh, purple grey, medium strength, subangular (31 – 44 m)			
					SANDSTONE: fresh, blue grey, fine grain, high strength, subangular (44 – 49 m)		48.00 m: Airlift yield (L/s): 0.458;	

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Monitoring Well Log - Borehole

MBIS11

Easting (m)	**: 624888**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7554933**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 199.15 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 96 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 13/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Mud Rotary (PDC)		149.0 – 104.0	50 – 95		SILTSTONE: fresh, purple grey, medium strength, subangular	RCM OVERBURDEN	54.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11280; pH: 7.59	0.00-83.00, Cement Grout
			58		SANDSTONE: fresh, blue grey, fine grain, high strength, subangular		60.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11253; pH: 7.65	
			62		SILTSTONE: fresh, purple grey, medium strength, subangular		66.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11182; pH: 7.73	0.00-90.00, 50mm PVC Solid Casing
			69		SANDSTONE: fresh, light blue grey, fine grain, high strength, subangular		72.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11134; pH: 7.75	
							78.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11128; pH: 7.72	
			84		SANDSTONE: light blue grey, fresh, fine tO medium grain, subangular, high strength, minor black siltstone, medium strength, subangular.		84.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11122; pH: 7.71	83.00-87.00, Bentonite
			91		COAL: black, fresh, lithic, stiff, medium strength, minor siltstone, medium strength, subangular, dark grey	LEICHHARDT CS	90.00 m: Airlift yield (L/s): 0.458; EC (uS/cm): 11091; pH: 7.71	87.00-96.00, Filter Pack
			92		SILTSTONE: fresh, dark grey, subangular, low - medium strength	RCS INTER.	96.00 m: Airlift yield (L/s): 6.29; EC (uS/cm): 11085; pH: 7.72	90.00-93.00, 50mm PVC Slotted Screen 93.00-94.00, Sump
					MBIS11 Terminated at 96 m			

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Monitoring Well Log - Borehole

MBIS12

Easting (m)	: 625900	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7555541	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 196.66 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 20 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 20/05/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Mud Rotary (PDC)	▽	196.0	0		TOP SOIL: high plasticity, dark brown, organic.	TOPSOIL		
		195.0	1					
		194.0	2					
		193.0	3					
		192.0	4		SILTY CLAYS: Medium to light brown, silty, high plasticity clays.	ALLUVIUM		0.00-10.00, Cement Grout
		191.0	5					
		190.0	6					
		189.0	7					0.00-15.00, 50mm PVC Solid Casing
		188.0	8					
		187.0	9					
		186.0	10		SAND: light brown medium to fine grained sand			10.00-12.00, Bentonite
		185.0	11					
		184.0	12		GRAVEL: siliceous with minor coarse grained light brown sand and minor lithic fragments			
		183.0	13					
		182.0	14					
		181.0	15					12.00-20.00, Filter Pack
		180.0	16					15.00-18.00, 50mm PVC Slotted Screen
		179.0	17					
		178.0	18		WEATHERED SILTSTONE: Medium brown, very low strength, highly weathered, brittle, fissile, moderate to low strength	WEATHERED TRIASSIC		18.00-19.00, Sump
		177.0	19					
					MBIS12 Terminated at 20 m			

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Monitoring Well Log - Borehole

MBIS13

Easting (m)	: 625895	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7555538	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 196.71 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 153 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 22/05/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	▽	196.0	1		TOP SOIL: high plasticity, dark brown, organic.	TOPSOIL		
		195.0	2					
		194.0	3		SILTY CLAYS: Medium to light brown, silty, high plasticity clays.	ALLUVIUM		
		193.0	4					
		192.0	5					
		191.0	6					
		190.0	7					
		189.0	8		SANDY GRAVEL: light brown, siliceous, ferocious gravel with coarse grained sand, lithic fragments and minor med plasticity, grey clay within.			
		188.0	9					
		187.0	10					
		186.0	11					
		185.0	12					
		184.0	13		GRAVELY SAND: coarse grained light brown sand and lithic fragments with siliceous gravel			
		183.0	14					
		182.0	15					
		181.0	16					
		180.0	17					
		179.0	18					
		178.0	19					
		177.0	20		SANDSTONE: highly weathered, orange grey medium strength sandstone	WEATHERED TRIASSIC		0.00-145.00, Cement Grout
		176.0	21					
		175.0	22					
		174.0	23					
		173.0	24		SANDSTONE: dark purple grey weathered sandstone, low strength, fine grained with minor moderate plasticity clay			0.00-149.00, 50mm PVC Solid Casing
		172.0	25					
		171.0	26					
		170.0	27					
		169.0	28					
		168.0	29					
		167.0	30					
		166.0	31					
		165.0	32					
		164.0	33					
		163.0	34					
		162.0	35					
		161.0	36		SANDSTONE: dark purple grey weathered, fine - grained, subangular with medium plasticity clay			
		160.0	37					
		159.0	38					
		158.0	39					
165mm Air Rotary (PDC)		157.0						

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Monitoring Well Log - Borehole

MBIS13

Easting (m)	**: 625895**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555538**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.71 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 153 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 22/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		156.0 – 117.0	41 – 79		SANDSTONE: dark purple grey weathered, fine - grained, subangular with medium plasticity clay (continued)	WEATHERED TRIASSIC		0.00-145.00, Cement Grout 0.00-149.00, 50mm PVC Solid Casing
			48		SANDSTONE: fine grained fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone.	RCM OVERBURDEN		
			74		SANDSTONE: coarse grained, fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone.			

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Monitoring Well Log - Borehole

MBIS13

Easting (m)	**: 625895**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555538**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.71 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 153 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 22/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		116.0 – 77.0	81 – 119		SANDSTONE: coarse grained, fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone. (continued)	RCM OVERBURDEN	84.00 m: Airlift yield (L/s): 0.143; EC (uS/cm): 15900; pH: 7.24; Temp (degC): 30.7	0.00-145.00, Cement Grout 0.00-149.00, 50mm PVC Solid Casing
			88		SANDSTONE: fine grained fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		90.00 m: Airlift yield (L/s): 0.225; EC (uS/cm): 15767; pH: 7.38; Temp (degC): 30.7	
			99		SANDSTONE: coarse grained, fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		96.00 m: Airlift yield (L/s): 0.225; EC (uS/cm): 14818; pH: 7.43; Temp (degC): 29.8	
			101		SANDSTONE: fine grained fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		102.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 14378; pH: 7.49; Temp (degC): 29.2	
							108.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 15589; pH: 7.41; Temp (degC): 25	
							114.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 15166; pH: 7.47; Temp (degC): 27.8	

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Monitoring Well Log - Borehole

MBIS13

Easting (m)	**: 625895**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555538**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.71 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 153 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 56**	**Date**	**: 22/05/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		76.0 – 44.0	121 – 152		SANDSTONE: fine grained fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone (continued)	RCM OVERBURDEN	120.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 15355; pH: 7.56; Temp (degC): 30.1 126.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 13171; pH: 7.65; Temp (degC): 30.2 132.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 15070; pH: 7.63; Temp (degC): 30.9 138.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 15249; pH: 7.55; Temp (degC): 28 144.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 14299; pH: 7.69; Temp (degC): 30.1	0.00-145.00, Cement Grout 0.00-149.00, 50mm PVC Solid Casing 145.00-147.00, Bentonite 147.00-153.00, Filter Pack 149.00-152.00, 50mm PVC Slotted Screen 152.00-153.00, Sump
			146		SANDSTONE: coarse grained, fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone			
			150		COAL: vitreous, subrounded, black high strength, with minor coarse grained sandstone, high strength, sub rounded	LEICHHARDT CS	150.00 m: Airlift yield (L/s): 0.329; EC (uS/cm): 13535; pH: 7.73; Temp (degC): 29.4	
			151		SILTSTONE: grey medium strength, with interbedded fine grained sandstone, light grey, high strength subangular	RCM INTER		
					MBIS13 Terminated at 153 m			

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Monitoring Well Log - Borehole

MBIS14

Easting (m)	: 626356	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7556261	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 194.67 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 12 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 11/06/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)	DRY	194.0	0		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL		0.00-5.00, Cement Grout
		193.0	1					
		192.0	2		SANDY CLAY: light grey, brown, high plasticity clay, and brown, fine grained sand	ALLUVIUM		0.00-8.00, 50mm PVC Solid Casing
		191.0	3					
		190.0	4					
		189.0	5					5.00-7.00, Bentonite
		188.0	6					
		187.0	7		CLAYEY SAND: fine grained orange sand, grey, high plasticity clay			
		186.0	8					
		185.0	9					7.00-12.00, Filter Pack
		184.0	10					8.00-11.00, 50mm PVC Slotted Screen
		183.0	11		SANDSTONE: red - brown weathered sandstone, low strength, fine grained with minor moderate plasticity clay	WEATHERED TERTIARY		11.00-12.00, Sump
					MBIS14 Terminated at 12 m			

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Monitoring Well Log - Borehole

MBIS15

Easting (m)	**: 626357**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7556255**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 194.46 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 52 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 12/06/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	▽	194.0	1		TOP SOIL: high plasticity, dark brown, organics within.			
		193.0	2					
		192.0	3		SANDY CLAY: light grey, brown, high plasticity clay, and brown, fine grained sand	TOPSOIL		
		191.0	4					
		190.0	5					
		189.0	6					
		188.0	7		GRAVEL: grey, subrounded gravel, minor clay			
		187.0	8		CLAY: light grey, high plasticity, minor sand fine grained			
		186.0	9		CLAYEY SAND: grey, fine grained sand, orange - brown, clay, high plasticity			
		185.0	10		SAND: orange sand, fine grained	ALLUVIUM		
		184.0	11					
		183.0	12					
		182.0	13					
		181.0	14					
		180.0	15		SANDSTONE: weathered, light grey, high strength, carbonaceous specs, 20% siltstone high strength, large quartz chips (possible indication of fault zone)	RCM OVERBURDEN		
		179.0	16					
		178.0	17					
		177.0	18		SANDSTONE: light grey, very weathered, fine grained, low - med strength			0.00-35.00, Cement Grout
		176.0	19					
		175.0	20					
		174.0	21					0.00-42.00, 50mm PVC Solid Casing
		173.0	22					
		172.0	23					
		171.0	24					
		170.0	25		SANDSTONE: light grey, slightly weathered, med - high strength, medium grained			
		169.0	26					
		168.0	27					
		167.0	28					
		166.0	29					
		165.0	30		SANDSTONE: light grey, fresh, high strength, medium to coarse grained			
		164.0	31					
		163.0	32					
		162.0	33					
		161.0	34					
		160.0	35					
		159.0	36					
		158.0	37					35.00-39.00, Bentonite
		157.0	38					
		156.0	39					
		155.0	40		COAL: grey, high strength, black, fresh	LEICHHARDT CS		
		154.0	41		SILTSTONE grey, med strength, subangular, fresh, interbedded coal, black	RCM INTER.		
		153.0	42					
		152.0	43		COAL: grey, high strength, black, fresh	LEICHHARDT CS	44.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 28091; pH: 8.23; Temp (degC):30	39.00-52.00, Filter Pack
		151.0	44					
		150.0	45					
		149.0	46					42.00-51.00, 50mm PVC Slotted Screen
		148.0	47					
		147.0	48					
125mm Air Rotary (PDC)		146.0	49					
		145.0	50		SANDSTONE: medium grey, fresh, high strength, fine grained	RCM INTER.	50.00 m: Airlift yield (L/s): 0.04; EC (uS/cm): 25818; pH: 8.15; Temp (degC):29	
		144.0	51					
		143.0						51.00-52.00, Sump
					MBIS15 Terminated at 52 m			

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Monitoring Well Log - Borehole

MBIS19

Easting (m)	**: 626565**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555334**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.28 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 86 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 05/08/2025**		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
225mm Mud Rotary (PDC)	▽	197.0	1		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL		
		196.0	2					
		195.0	3					
		194.3	3					
		194.0	4		CLAYEY SAND: orange - brown, high plasticity clays, fine grain sand, highly weathered	ALLUVIUM		
		193.0	5					
		192.0	6					
		191.0	7					
		190.3	7					
		190.0	8		SANDY GRAVEL: light brown, siliceous, ferrous gravel with coarse grained sand, lithic fragments and minor med plasticity, grey clay within.			
		189.0	9					
		188.0	10					
		187.3	10					
		187.0	11		GRAVELY SAND: coarse grained light brown sand and lithic fragments with siliceous gravel			
		186.0	12					
		185.3	12					
		185.0	13		SANDY GRAVEL: light brown, siliceous, ferocious gravel with medium grain sand, lithic fragments and minor med plasticity, grey clay within.			
		184.3	13					
		184.0	14		GRAVELY SAND: medium grain sand, light brown, highly weathered, coarse grained light brown sand and lithic fragments with siliceous gravel			
		183.0	15					
		182.0	16					
		181.0	17					
		180.0	18					
		179.0	19					
		178.0	20					
		177.3	20					
		177.0	21		SANDY GRAVEL: light brown, siliceous, ferocious gravel with coarse grained sand, lithic fragments and minor medium plasticity, grey clay within.			0.00-70.00, Cement Grout
		176.0	22					
		175.0	23					0.00-79.00, 50mm PVC Solid Casing
		174.3	23					
		174.0	24		SANDY GRAVEL: light brown, siliceous, ferocious gravel with coarse grained sand, lithic fragments and minor med plasticity, grey clay within.			
		173.3	24					
		173.0	25		SILTSTONE: grey medium strength, with interbedded fine - grained sandstone, light grey, high strength, subangular	RCM OVERBURDEN		
		172.0	26					
		171.0	27					
		170.0	28					
		169.0	29					
		168.0	30					
		167.0	31					
		166.0	32					
		165.0	33					
		164.0	34					
		163.0	35					
		162.3	35					
		162.0	36		COAL: vitreous, subrounded, black high strength, with minor coarse - grained sandstone, high strength, sub rounded	LEICHHARDT CS		
		161.0	37					
		160.0	38					
		159.3	38					
		159.0	39		SILTSTONE: grey medium strength, with interbedded fine - grained sandstone, light grey, high strength subangular	RCM INTERBURDEN		
		158.3	39					
		158.0	40		SANDSTONE: coarse grained, fresh, grey - blue, medium strength, interbedded with thin bands of dark grey siltstone			
		157.0	41					
		156.0	42					
		155.0	43					
		154.0	44					
		153.0						
125mm Air Rotary (PDC)							42.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 18977; pH: 7.66; Temp	

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Monitoring Well Log - Borehole

MBIS19

Easting (m)	: 626565	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7555334	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 197.28 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 86 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 05/08/2025		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)		152.0 to 112.0	46 to 85		SANDSTONE: coarse grained, fresh, grey - blue, medium strength, interbedded with thin bands of dark grey siltstone (continued)	RCM INTERBURDEN	48.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 18771; pH: 7.76; Temp (degC):27.1 56.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 19013; pH: 7.71; Temp (degC):28 60.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 19160; pH: 7.7; Temp (degC):27.4 66.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 18916; pH: 7.67; Temp (degC):28.9 72.00 m: Airlift yield (L/s): 0.797; EC (uS/cm): 19007; pH: 7.67; Temp (degC):28.3	0.00-70.00, Cement Grout 0.00-79.00, 50mm PVC Solid Casing 70.00-74.00, Bentonite 74.00-86.00, Filter Pack 79.00-85.00, 50mm PVC Slotted Screen 85.00-86.00, Sump
		120.3	77		COAL: vitreous, subrounded, black high strength, with minor coarse - grained sandstone, high strength, sub rounded	VERMONT CS		
		119.3	78		SILTSTONE: grey medium strength, with interbedded fine - grained sandstone, light grey, high strength subangular	RCM INTERBURDEN	78.00 m: Airlift yield (L/s): 1.01; EC (uS/cm): 18902; pH: 7.68; Temp (degC):26.4	
		117.3	80		SANDSTONE: coarse grained, fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		84.00 m: Airlift yield (L/s): 1.01; EC (uS/cm): 18542; pH: 7.67; Temp (degC):28.6	
					MBIS19 Terminated at 86 m			

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Monitoring Well Log - Borehole

MBIS20

Easting (m)	**: 623262**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7557334**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 198.88 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 22 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 06/07/2025**		

Drilling Method	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)	198.0	1		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL		0.00-11.00, Cement Grout
	197.0	2					
		2		SAND: light brown, moderate plasticity clay, and medium brown, fine - grained sand, lithic fragments within	ALLUVIUM		
	196.0	3					
	195.0	4					
		4		CLAYEY SAND: medium brown fine sand, with orangey - brown, clay, moderate plasticity, highly weathered.			
	194.0	5					
	193.0	6					
		6		SAND: brown, coarse grained with 30% mudstone, highly weathered			
	192.0	7					
		7		SANDY CLAY: medium to coarse grained medium orange - brown, with medium plasticity light brown clay, mudstone chips within			0.00-17.00, 50mm PVC Solid Casing
	191.0	8					
	190.0	9					
	189.0	10					
	188.0	11					11.00-13.00, Bentonite
	187.0	12					
	186.0	13					
		13		SAND: dark brown, fine grained with minor dark brown low strength mudstone and dark grey, low strength, minor fissile siltstone chips			
	185.0	14					
		14		CLAYEY SAND: medium grained, light brown sand with medium plasticity light brown clay, mudstone chips within	WEATHERED TERTIARY		
	184.0	15					
	183.0	16					
	182.0	17					13.00-22.00, Filter Pack
	181.0	18					
	180.0	19					17.00-20.00, 50mm PVC Slotted Screen
	179.0	20				19.00 m: Airlift yield (L/s): 0.02; EC (uS/cm): 24975; pH: 7.32	
		20		WEATHERED SANDSTONE: orange, brown weathered moderate strength with low plasticity clay			
	178.0	21				22.00 m: Airlift yield (L/s): 0.5; EC (uS/cm): 25652; pH: 7.48	20.00-22.00, Sump
		21		SANDSTONE: light grey, low to med strength, subangular, moderately weathered with highly weathered orange brown sandstone			
	177.0						
				MBIS20 Terminated at 22 m			

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Monitoring Well Log - Borehole

205DR

Easting (m)	: 621504	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7556849	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 201.33 (m AHD)	Logged By	: KG	Project	: Isaac South EIS Groundwater
Total Depth	: 47 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 15/06/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
125mm Air Rotary (PDC)	▽	201.0 – 155.0	1 – 46		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL		0.00-35.50, Cement Grout
			2		CLAYEY SAND: light yellow brown, sand, coarse grained with minor lithic fragments, red - brown, clay, moderate plasticity, highly weathered.	ALLUVIUM		
			5		SAND: light brown, coarse grained, very weathered slight concretion of sand but very immature			
			6		SANDSTONE/MUDSTONE: 50 % red - brown weathered sandstone, low strength, 50% mudstone iron staining	WEATHERED TERTIARY		0.00-43.00, 50mm PVC Solid Casing
			16		SANDSTONE: slightly weathered, medium grained, light grey, moderate strength with minor iron staining	RCM INTERBURDEN		
			18		SILTSTONE: fresh, dark grey, medium strength			
			33		SANDSTONE: fresh, coarse grained, high strength, subrounded, grey, with carbonaceous specks, large quartz chips.		35.00 m: Airlift yield (L/s): 0.05; EC (uS/cm): 17010; pH: 7.19; Temp (degC): 26.4	35.50-39.50, Bentonite
			43		COAL: fresh, black, medium strength, vitreous interbedded with minor medium strength, dark grey, siltstone	LEICHHARDT CS	43.00 m: Airlift yield (L/s): 0.38; EC (uS/cm): 20316; pH: 7.34; Temp (degC): 23.3	39.50-47.00, Filter Pack
			46		SILTSTONE: fresh, fine grained, dark grey, medium strength.	RCM INTER		43.00-46.00, 50mm PVC Slotted Screen
		155.0			**205DR Terminated at 47 m**		47.00 m: Airlift yield (L/s): 0.4; EC (uS/cm): 21960; pH: 7.39;	46.00-47.00, Sump

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Fault Exploration Chip Log
RFIS0059

Easting (m)	: 626689	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7555413	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 196.725 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 145 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 04/07/2025		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy
225mm Air Rotary (PDC)	▽	196.0	1		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL
		195.0	2		SAND: fine to medium grained, orange brown sand and 20 % mudstone	
		194.0	3			
		193.0	4			
		192.0	5			
		191.0	6			
		190.0	7			
		189.0	8		GRAVEL: orange brown, subrounded	ALLUVIUM
		188.0	9			
		187.0	10			
		186.0	11			
		185.0	12			
		184.0	13		SAND: medium brown, coarse grained	
		183.0	14			
		182.0	15			
		181.0	16		SAND: orange - brown coarse - grained sand with medium brown mudstone and siltstone (increase mudstone and siltstone @18 m)	WEATHERED TERTIARY
		180.0	17			
		179.0	18			
		178.0	19			
		177.0	20			
		176.0	21		SANDSTONE: fine grained, low strength, highly weathered, medium grey	RCM OVERBURDEN
		175.0	22			
		174.0	23		COAL: black, dull with 20% siltstone, low strength	LEICHHARDT CS
		173.0	24		SANDSTONE: light grey, low strength, coarse grained	RCM INTERBURDEN
		172.0	25			
		171.0	26			
		170.0	27			
		169.0	28			
		168.0	29		SILTSTONE: dark grey, fine grained, medium strength, fresh	
		167.0	30			
		166.0	31			
		165.0	32		COAL: black, high strength, vitreous	LEICHHARDT CS
		164.0	33		SANDSTONE: light grey, low strength, coarse grained	RCM INTERBURDEN
		163.0	34			
		162.0	35			
		161.0	36			
		160.0	37			
		159.0	38			
		158.0	39		COAL: black, high strength, vitreous, minor (10%) grey, fresh, moderate strength, carbonaceous siltstone @ 39 m	VERMONT CS
		157.0	40			
		156.0	41			
125mm Air Rotary (PDC)		155.0	42		SILTSTONE: dark grey, high strength	
		154.0	43			
		153.0	44			
		152.0	45			
		151.0	46			
		150.0	47			
		149.0	48			
		148.0	49			
		147.0	50			
		146.0	51			
		145.0	52			
		144.0	53			
		143.0	54			
		142.0	55			
		141.0	56			
		140.0	57		COAL: black high strength (minimal sample returns)	VERMONT CS
		139.0	58			
		138.0	59		TUFF: light grey, low strength, very fine grained, minor black, low strength coal	
		137.0	60			
		136.0	61		SILTSTONE: dark grey, high strength	
		135.0	62			
		134.0	63			
		133.0	64		SANDSTONE: light grey, coarse grained, high strength carbonaceous specs	RCM INTERBURDEN
		132.0	65			
		131.0	66			
		130.0	67			
		129.0	68			
		128.0	69			
		127.0	70			
		126.0	71			
		125.0	72			
		124.0	73			
		123.0	74			
		122.0				

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Monitoring Well Log - Borehole

MBIS02f

Easting ()	**: 624215.00**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing ()	**: 7557525.00**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.77 (m)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 134 m BGL**	**Reviewed By**	**:**	**Location**	**:**
		Date	**: 13/05/2024**	**Loc Comment**	**:**

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
152mm Mud Rotary (PDC)	▽	196.0 – 187.0	1 – 10		TOP SOIL: high plasticity, dark brown, organic, dry.	TOPSOIL		
		195.0 – 187.0	2 – 10		SILTY CLAY: weathered Medium to light brown, silty, moderate plasticity clays with minor sands, green and white clays within. Minor quartz grains.	ALLUVIUM		
		187.0 – 176.0	10 – 21		WEATHERED SILTSTONE: highly weathered very low strength, light to medium brown, mudstone low strength, (20%) minor sand and white clay	WEATHERED TERTIARY		
		176.0 – 175.0	21 – 22		FINE GRAINED SANDSTONE: slightly weathered, light grey, low- med strength, minor brown and white clay.	RCM OVERBURDEN		
		175.0 – 174.0	22 – 23		FINE GRAINED SANDSTONE: fresh, moderate strength, subrounded, light grey.			
		174.0 – 167.0	23 – 30					
102mm Air Rotary (PDC)		167.0 – 149.0	30 – 48		COARSE SANDSTONE: fresh, high strength, subrounded, grey, interbedded with dark grey, medium strength siltstone.			0.00-134.00, Cement Grout
		149.0 – 127.0	48 – 69		FINE GRAINED SANDSTONE: fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		55.00 m: Airlift yield (L/s): 1.01; EC (uS/cm): 21903; pH: 7.14; Temp (degC):28.1 61.00 m: Airlift yield (L/s): 1.253; EC (uS/cm): 22135; pH: 7.41; Temp (degC):26.8 67.00 m: Airlift yield (L/s): 1.253; EC (uS/cm):	

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Monitoring Well Log - Borehole

MBIS02f

Easting ()	**: 624215.00**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing ()	**: 7557525.00**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.77 (m)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 134 m BGL**	**Reviewed By**	**:**	**Location**	**:**
		Date	**: 13/05/2024**	**Loc Comment**	**:**

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy	Remarks: Observations	Well Diagram
102mm Air Rotary (PDC)		126.0 – 63.0	71 – 133		FINE GRAINED SANDSTONE: fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone (continued)	RCM OVERBURDEN		0.00-134.00, Cement Grout
			76		COARSE SANDSTONE: fresh, high strength, subrounded, grey, interbedded with dark grey, medium strength siltstone.		73.00 m: Airlift yield (L/s): 1253; EC (uS/cm): 22215; pH: 7.29; Temp (degC):29.9	
			82		FINE GRAINED SANDSTONE: fresh, light grey, high strength, interbedded with thin bands of dark grey siltstone.		79.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 19250; pH: 7.28; Temp (degC):27.6	
			91		COARSE SANDSTONE: fresh, high strength, subrounded, grey, interbedded with dark grey, medium strength siltstone.		91.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 19392; pH: 7.26; Temp (degC):27.9	
							103.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 19612; pH: 7.27; Temp (degC):27.4	
							109.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 19979; pH: 7.26; Temp (degC):27.7	
			112		FINE GRAINED SANDSTONE: fresh, grey blue, medium strength, interbedded with thin bands of dark grey siltstone		115.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 18656; pH: 7.35; Temp (degC):28	
			120		FINE GRAINED SANDSTONE: fresh, light grey, high strength, interbedded with thin bands of dark grey siltstone.		121.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 18625; pH: 7.37; Temp (degC):27.7	
							127.00 m: Airlift yield (L/s): 6.99; EC (uS/cm): 18890; pH: 7.42; Temp (degC):27.9	
			133		COAL: fresh, black, medium strength, vitreous interbedded with minor medium strength siltstone and fine-grained siltstone		133.00 m: Airlift yield (L/s): ; EC (uS/cm): 18342; pH: 7.36; Temp (degC):27.8	
					MBIS02f Terminated at 134 m	LEICHHARDT CS		

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Fault Exploration Chip Log
RFIS0059

Easting (m)	**: 626689**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555413**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 196.725 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 145 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 04/07/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy
125mm Air Rotary (PDC)		121.0 to 52.0	76 to 144		SANDSTONE: light grey, coarse grained, high strength carbonaceous specs (continued)	RCM INTERBURDEN
			101		COAL: black, high strength, interbedded with medium strength dark grey siltstone	GIRRAH CS
			119		SANDSTONE: light grey, coarse grained, high strength carbonaceous specs	RCM INTERBURDEN
					RFIS0059 Terminated at 145 m	

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Fault Exploration Chip Log
RFIS0062

Easting (m)	: 626437	Drill Rig	: Rig 10	Job Number	: 620.041537.00001
Northing (m)	: 7555285	Driller Supplier	: GeoDrill	Client	: Stanmore Resources
Ground Elevation	: 197.605 (m AHD)	Logged By	: GH	Project	: Isaac South EIS Groundwater
Total Depth	: 175 (m BGL)	Reviewed By	:	Location	:
CRS	: AGD84, Zone 55	Date	: 06/07/2025		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks / Stratigraphy
225mm Mud Rotary (PDC)	▽	197.0 196.6	1		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL
		196.0	2			
		195.0	3			
		194.0 193.6	4		CLAY: brown, high plasticity	ALLUVIUM
		193.0	5		SAND: light to medium grey, medium grained.	
		192.0	6			
		191.0	7			
		190.0	8			
		189.0	9			
		188.0	10			
		187.0	11			
		186.0	12			
		185.0 184.6	13			
		184.0	14			
		183.0	15			
		182.0	16			
		181.0	17			
		180.0	18			
		179.0 178.6	19		SAND: medium to coarse grained, whitish brown	
		178.0	20		SILTSTONE: medium to dark brown, moderately weathered, low strength	
		177.0	21			
		176.0	22			
		175.0	23			
		174.0 173.6	24			
		173.0	25		SANDSTONE: light grey, carbonaceous, moderate strength	
		172.0 171.6	26			
		171.0 170.6	27		SILTSTONE: fresh, dark grey, low strength.	
		170.0 169.6	28		SANDSTONE: light grey, carbonaceous, moderate strength	
		169.0 168.6	29			
		168.0	30			
		167.0	31		SILTSTONE: fresh, dark grey, low strength, light green chlorite mineralization on chips	
		166.0 165.6	32			
		165.0	33		SANDSTONE: light grey, coarse grained	
		164.0 163.6	34			
		163.0	35		SILSTONE: Medium grey, sandstone (30%) abundant light green chlorite alteration	
		162.0	36			
		161.0	37			
		160.0	38		SANDSTONE: fresh, light grey, low strength, minor chlorite on chip faces	
		159.0	39			
		158.0	40			
		157.0	41			
		156.0	42			
		155.0	43			
		154.0	44			
		153.0	45			
		152.0	46			
		151.0	47			
		150.0	48			
		149.0	49			
		148.0	50			
		147.0	51			
125mm Air Rotary (PDC)		146.0 145.6	52			RCM OVERBURDEN
		145.0	53		MUDSTONE: red - pink, low strength, 10% light grey sandstone, 10% red - brown clay, low plasticity (possible fault related alteration zone)	
		144.0 143.6	54			
		143.0	55			
		142.0 141.6	56		SANDSTONE: medium grained, low strength, minor chlorite on chip faces	
		141.0	57			
		140.0	58			
		139.0	59		MUDSTONE: red - pink, low strength, 10% light grey sandstone, 10% red - brown clay, low plasticity (possible fault related alteration zone)	
		138.0 137.6	60			
		137.0	61			
		136.0	62			
		135.0	63		SILSTONE: dark grey, medium strength	
		134.0	64			
		133.0	65			
		132.0 131.6	66			
		131.0	67		SANDSTONE: light grey, coarse grained, carbonaceous specks, medium strength	
		130.0	68			
		129.0	69			
		128.0	70			
		127.0	71			
		126.0	72			
		125.0	73			
		124.0	74			
		123.0	75			
		122.0	76			
		121.0	77			
		120.0	78			
		119.0	79			
		118.0	80			
		117.0	81			
		116.0	82			
		115.0	83			
		114.0	84			
		113.0	85			
		112.0	86			
		111.0	87			
		110.0	88			
		109.0	89			
		108.0				

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Fault Exploration Chip Log
RFIS0062

Easting (m)	**: 626437**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555285**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.605 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 175 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 06/07/2025**		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy
125mm Air Rotary (PDC)		107.0 … 23.0	91 … 174		SANDSTONE: light grey, coarse grained, carbonaceous specks, medium strength (continued)	RCM OVERBURDEN
			45.6 / 152			
			44.6 / 153		SILSTONE: grey - black, carbonaceous, high strength, minor coal	
			41.6 / 156		SANDSTONE: light grey, coarse grained, high strength	
					SANDSTONE SST: .	
			27.6 / 170		SILSTONE: dark grey, high strength	
					RFIS0060 Terminated at 175 m	

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Fault Exploration Chip Log
RFIS0062

Easting (m)	**: 626566**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555339**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.087 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 145 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 06/07/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy
225mm Mud Rotary (PDC)	▽	197.0 – 123.0	0 – 74		TOP SOIL: high plasticity, dark brown, organics within.	Stratigraphy: TOPSOIL
			1 – 2		SAND: fine to medium grained, orange - brown sand	Stratigraphy: ALLUVIUM
			2 – 4		GRAVEL: orange brown, subrounded	
			4 – 6		SAND: orange - brown, coarse grained, lithic fragments throughout and minor rounded pebbles	
			6 – 9		SANDSTONE: weathered, angular, orange to light brown	
			9 – 12		SAND: whitish - orange brown medium grained	
			12 – 16		GRAVEL (SST).	
			16 – 24		CLAEY GRAVEL: 70% brown - orange gravel, 30% high plasticity clay, med brown and minor white clay	
			24 – 27		SANDSTONE: weathered, orange brown sandstone, light grey coarse grained	Stratigraphy: WEATHERED TERTIARY
			27 – 28		COAL: black vitreous, low strength	Stratigraphy: LEICHHARDT CS
			28 – 35		INTERBEDDED SANDSTONE AND SILTSTONE: dark grey, medium strength siltstone interbedded with medium grey medium strength, fine grained sandstone	Stratigraphy: RCM INTERBURDEN
125mm Air Rotary (PDC)			35 – 39		COAL: black vitreous, low strength	Stratigraphy: VERMONT CS
			39 – 42		SILTSTONE: dark grey, high strength, carbonaceous, with minor light grey, fine grained TUFF	Stratigraphy: RCM INTERBURDEN
			42 – 49		INTERBEDDED SANDSTONE AND SILTSTONE: dark grey, medium strength siltstone interbedded with medium grey medium strength, fine grained sandstone	
			49 – 74		SANDSTONE: medium grey, carbonaceous specs, medium strength	Stratigraphy: RCM INTERBURDEN

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Fault Exploration Chip Log
RFIS0062

Easting (m)	**: 626566**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555339**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.087 (m AHD)**	**Logged By**	**: GH**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 145 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 06/07/2025**		

Drilling Method	Water	Elevation (m AHD)	Depth (m bgl)	Graphic Log	Material Description	Remarks: Stratigraphy
125mm Air Rotary (PDC)		122.0 … 53.0	76 … 144		SANDSTONE: medium grey, carbonaceous specs, medium strength (continued)	
			82		SILTSTONE dark grey carbonaceous siltstone with minor black coal (minimal sample returns)	
			85		INTERBEDDED SANDSTONE AND SILTSTONE: dark grey, medium strength siltstone interbedded with medium grey medium strength, fine grained sandstone	
			95		SILTSTONE dark grey carbonaceous siltstone	
			101		SILTSTONE dark grey carbonaceous siltstone	
			105		SANDSTONE: medium grey, carbonaceous specs, medium strength	
			109		SILTSTONE dark grey carbonaceous siltstone	Stratigraphy: RCM INTERBURDEN
					RFIS0062 Terminated at 145 m	

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Monitoring Well Log - Borehole

RFIS0063

Easting (m)	**: 626298**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555216**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.67 (m AHD)**	**Logged By**	**: KG**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 97 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 05/07/2025**		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy
225mm Mud Rotary (PDC)	Groundwater Level - 18.45		1		TOP SOIL: high plasticity, dark brown, organics within.	Stratigraphy: TOPSOIL
			1–15		SAND: fine to medium grained, orange brown sand	Stratigraphy: ALLUVIUM
			15–16		SANDSTONE: weathered, angular, orange to light brown	
			16–21		SAND: pink-brown light sand medium grained with 30% weathered, low strength mudstone chips (increased mudstone chips at 21 m)	
			21–26		SILTSTONE: Pink- brown siltstone chips with red dark brown sand	
			26–28		SILTSTONE: light grey weathered siltstone and mudstone, low strength	
			28–29		SILTSTONE: Pink- brown siltstone chips with red dark brown sand	
			29–30		SILTSTONE: light grey weathered siltstone and mudstone, low strength	
125mm Air Rotary (PDC)			30–45		SANDSTONE: light grey, fresh, coarse grained sandstone moderate strength	
			45–96		SILTSTONE: dark grey, high strength, fine grained with 1 m bands of red dark brown sand with pink-brown siltstone chips @ 47, 49, 54 and 61 m	Stratigraphy: RCM OVERBURDEN
			96		RFIS0063 Terminated at 97 m	

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Monitoring Well Log - Borehole

RFIS0064

Easting (m)	**: 626490**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555314**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.61 (m AHD)**	**Logged By**	**: KG**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 193 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 55**	**Date**	**: 07/07/2025**		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy
225mm Mud Rotary (PDC)	Groundwater Level - 16.53	197.0 to 189.0	1 to 9		TOP SOIL: high plasticity, dark brown, organics within.	TOPSOIL
					SAND: fine grained, orange brown with minor lithic fragments coarsening downwards	ALLUVIUM
		188.0 to 184.	9 to 14		GRAVEL: orange brown, subrounded	
		183.0 to 180.0	14 to 18		CLAYEY SAND: medium brown, medium grained coarse grained sand with low plasticity clay	
		179.0 to 175.0	18 to 23		SILTSTONE: weathered, medium grey with low plasticity clay	WEATHERED PERMIAN
		174.0 to 165.0	23 to 33		COAL: black, moderate strength coal with minor light grey low strength tuff and medium grey low strength siltstone.	CS
125mm Air Rotary (PDC)		164.0 to 138.0	33 to 60		SILTSTONE AND SANDSTONE: fresh interbedded sandstone and siltstone low to moderate strength very little returns.	RCM INTERBURDEN
		137.0 to 127.0	60 to 71		SANDSTONE: light grey, coarse grained sandstone with carbonaceous specs	
		126.0 to 98.0	72 to 99		SILTSTONE AND SANDSTONE: medium grey, low strength with minor coal SILTSTONE: medium grey, subangular, low strength	

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Monitoring Well Log - Borehole

RFIS0064

Easting (m)	**: 626490**	**Drill Rig**	**: Rig 10**	**Job Number**	**: 620.041537.00001**
Northing (m)	**: 7555314**	**Driller Supplier**	**: GeoDrill**	**Client**	**: Stanmore Resources**
Ground Elevation	**: 197.606 (m AHD)**	**Logged By**	**: KG**	**Project**	**: Isaac South EIS Groundwater**
Total Depth	**: 193 (m BGL)**	**Reviewed By**	**:**	**Location**	**:**
CRS	**: AGD84, Zone 56**	**Date**	**: 07/07/2025**		

Drilling Method	Water	Elevation (m)	Depth (m)	Graphic Log	Material Description	Remarks: Stratigraphy
125mm Air Rotary (PDC)		97.0 to 53.0	101 to 145		SILTSTONE: medium grey, subangular, low strength (continued)	RCM INTERBURDEN
		52.0 to 51.0	145 to 147		COAL: black, low strength, very low chip returns	CS
		50.0 to 33.0	147 to 165		SILTSTONE: medium grey, subangular, low strength	RCM INTERBURDEN
		32.0	165 to 166		COAL: black, low strength, very low chip returns	CS
		31.0 to 20.0	166 to 178		SILTSTONE AND SANDSTONE: medium grey, low strength	RCM INTERBURDEN
		20.0 to 12.0	178 to 186		COAL: black, low strength, very low chip returns	CS
		11.0 to 8.0	186 to 190		SILTSTONE AND SANDSTONE: medium grey, low strength	RCM INTERBURDEN
		8.0 to 5.0	190 to 192		SANDSTONE: light grey, coarse grained sandstone with carbonaceous specs	
					RFIS0064 Terminated at 193 m	

Appendix D Detailed AQTESOLV output reports

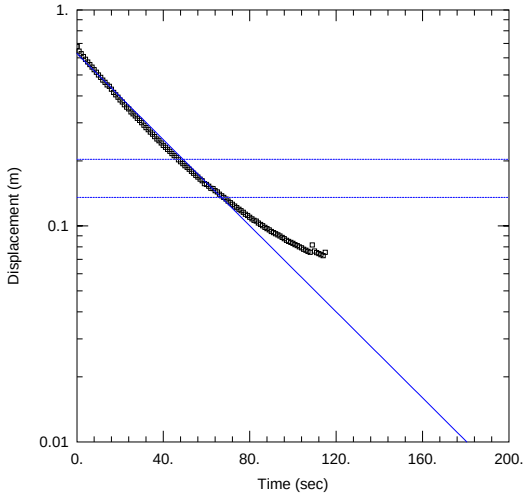
Groundwater Factual Field Investigation Report

Isaac Downs Extension Project

Stanmore Resources Limited

SLR Project No.: 620.041537.00004

5 May 2026



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_FHT1.aqt
Date: 09/17/25 Time: 12:20:14

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

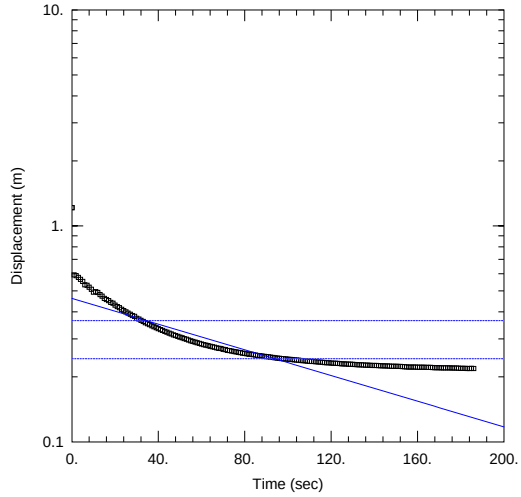
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.6773 m Static Water Column Height: 34.71 m
Total Well Penetration Depth: 33.71 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.9039 m/day y0 = 0.6281 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_FHT2.aqt
Date: 09/18/25 Time: 11:38:06

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

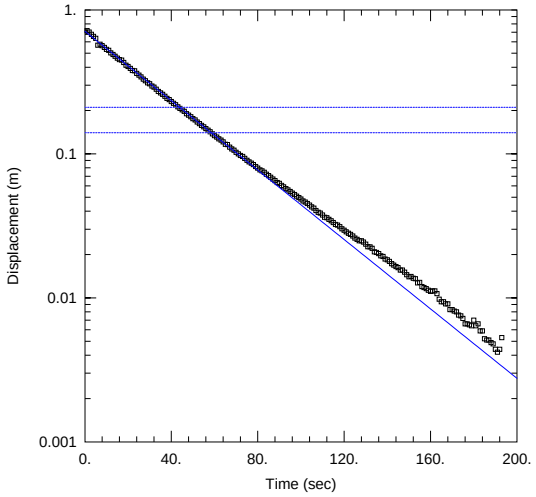
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 1.214 m Static Water Column Height: 34.71 m
Total Well Penetration Depth: 33.71 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2962 m/day y0 = 0.4616 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_FHT3.aqt
Date: 09/17/25 Time: 12:32:18

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

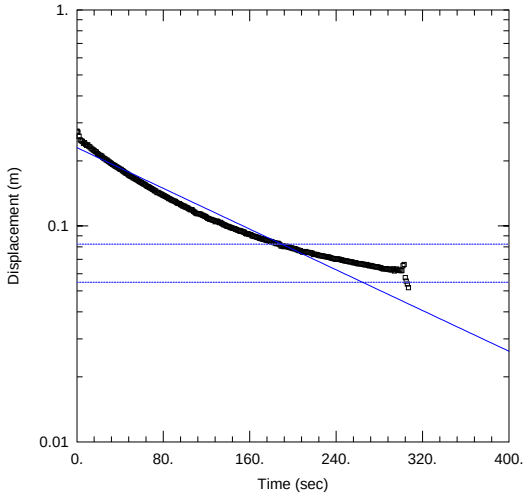
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.7016 m Static Water Column Height: 34.71 m
Total Well Penetration Depth: 33.71 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.2 m/day y0 = 0.7112 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_RHT1.aqt
Date: 09/17/25 Time: 12:38:56

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

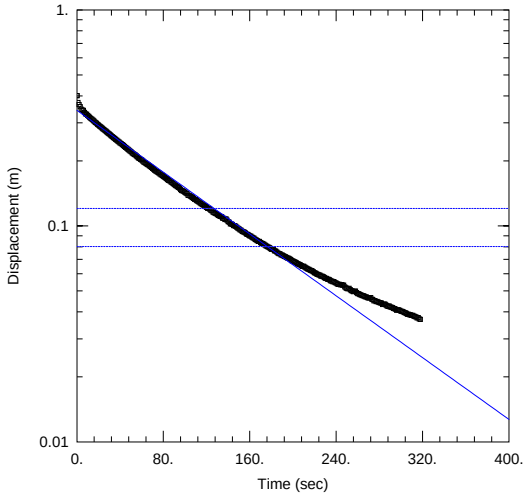
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.2742 m Static Water Column Height: 34.71 m
Total Well Penetration Depth: 33.71 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2347 m/day y0 = 0.2303 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_RHT2.aqt
Date: 09/17/25 Time: 12:41:02

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

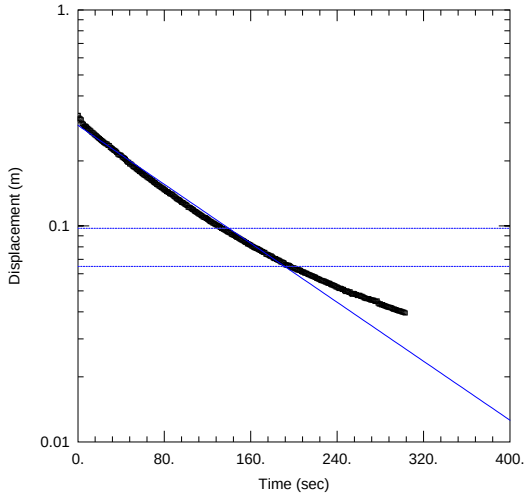
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.4013 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.3564 m/day y0 = 0.3431 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_BR_RHT3.aqt
Date: 09/17/25 Time: 12:42:44

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

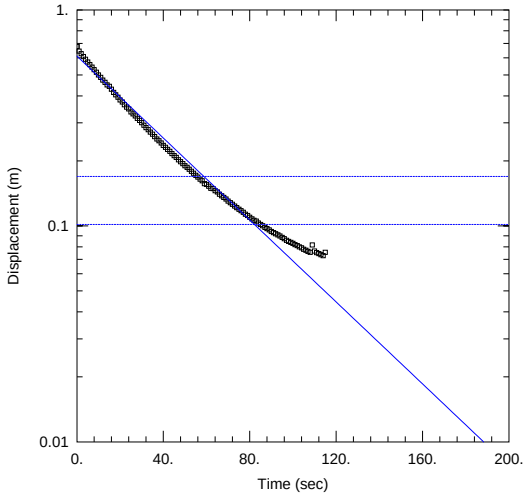
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.3247 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.3399 m/day y0 = 0.2923 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_FHT1.aqt
Date: 09/18/25 Time: 11:40:21

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

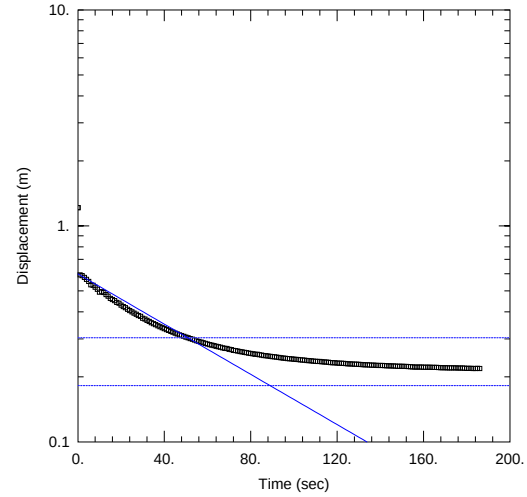
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.6773 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.9876 m/day y0 = 0.6117 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_FHT2.aqt
Date: 09/18/25 Time: 11:41:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

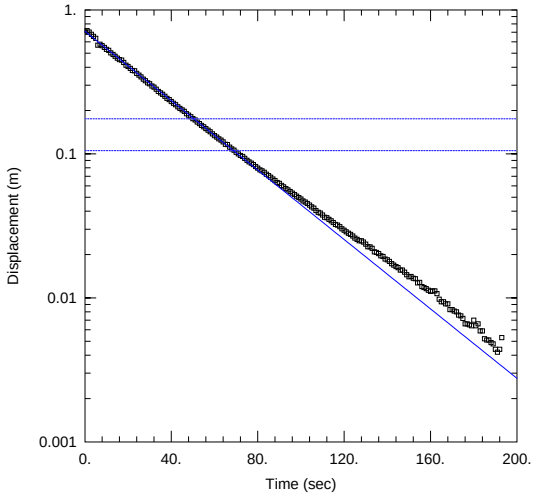
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 1.214 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.605 m/day y0 = 0.5995 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_FHT3.aqt
Date: 09/17/25 Time: 13:48:01

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

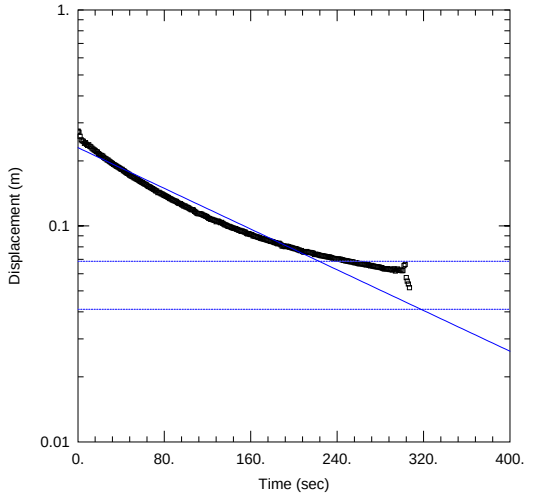
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.7016 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.255 m/day y0 = 0.7112 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_RHT1.aqt
Date: 09/17/25 Time: 13:49:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

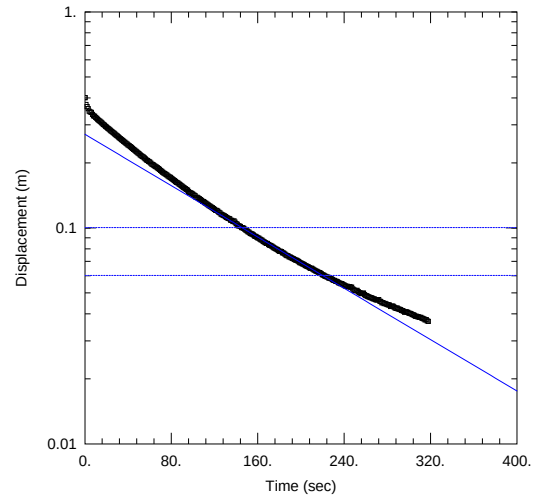
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.2742 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2453 m/day y0 = 0.2303 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_RHT2.aqt
Date: 09/18/25 Time: 11:43:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

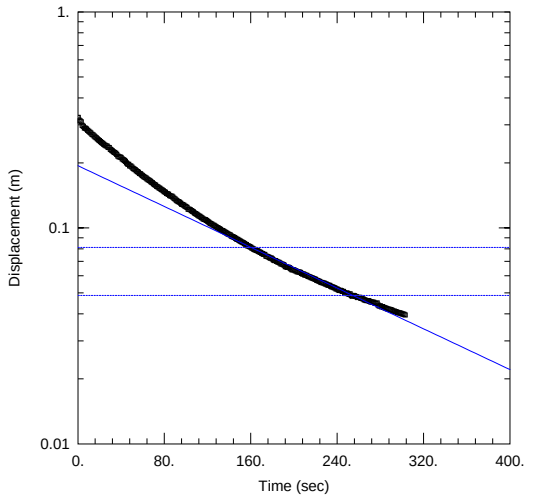
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.4013 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.3092 m/day y0 = 0.2712 m



WELL TEST ANALYSIS

Data Set: H:\...\205DR_HV_RHT3.aqt
Date: 09/18/25 Time: 11:43:24

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

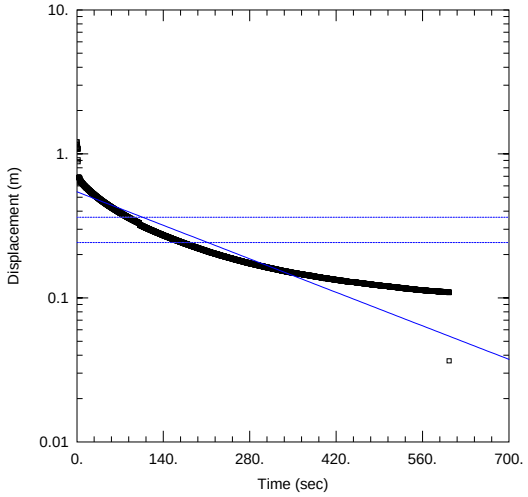
Saturated Thickness: 34.71 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205DR)

Initial Displacement: 0.3247 m
Total Well Penetration Depth: 33.71 m
Casing Radius: 0.025 m
Static Water Column Height: 34.71 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2457 m/day y0 = 0.1942 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_FHT1.aqt
Date: 09/17/25 Time: 13:56:04

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

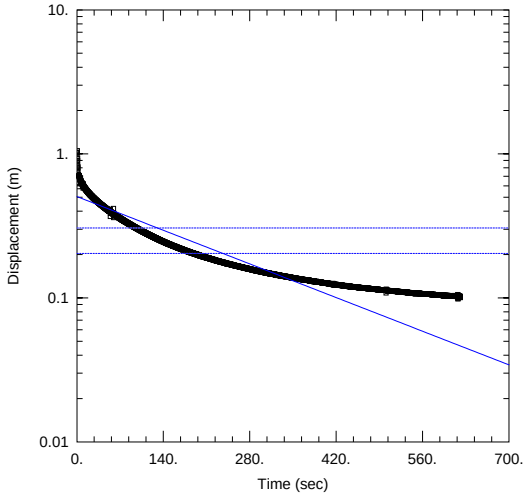
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.211 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.1486 m/day y0 = 0.5459 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_FHT2.aqt
Date: 09/17/25 Time: 13:56:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

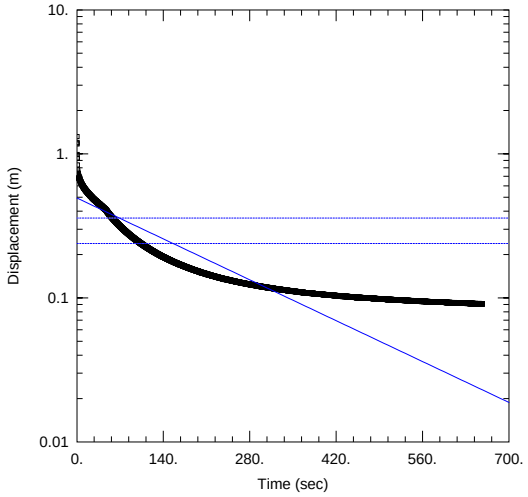
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.018 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.1492 m/day y0 = 0.5055 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_FHT3.aqt
Date: 09/17/25 Time: 13:57:58

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

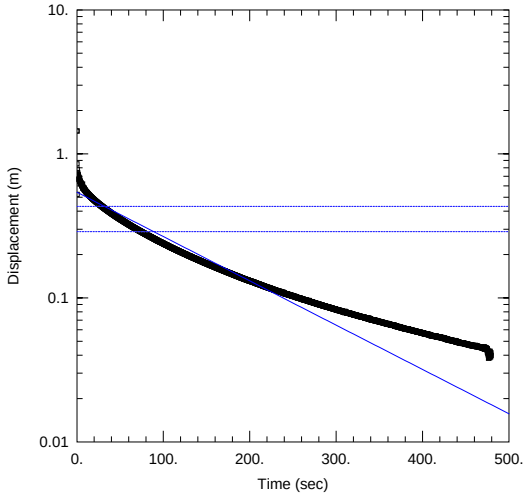
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.194 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.1812 m/day y0 = 0.4943 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_RHT1.aqt
Date: 09/17/25 Time: 13:58:55

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

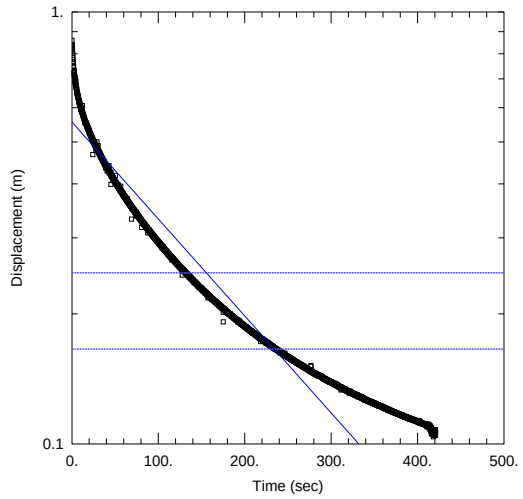
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.442 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.2749 m/day y0 = 0.5418 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_RHT2.aqt
Date: 09/17/25 Time: 14:02:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

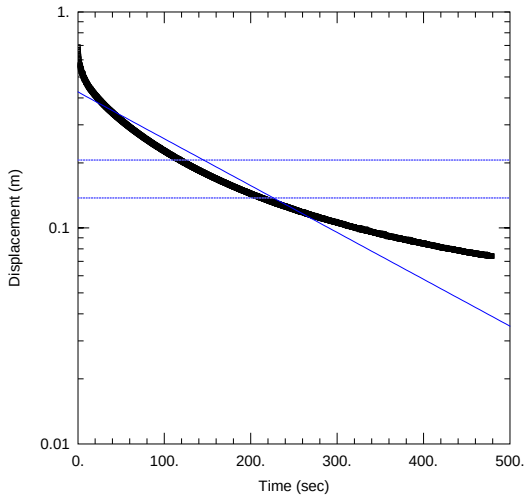
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 0.8292 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.2006 m/day
y0 = 0.5563 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_BR_RHT3.aqt
Date: 09/17/25 Time: 14:03:45

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

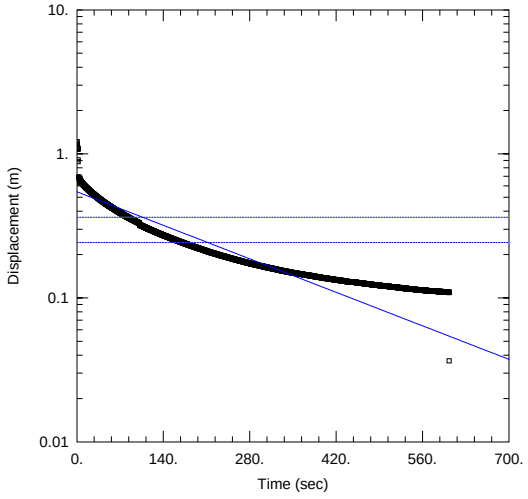
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 0.6877 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1938 m/day
y0 = 0.4262 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_FHT1.aqt
Date: 09/17/25 Time: 14:04:39

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

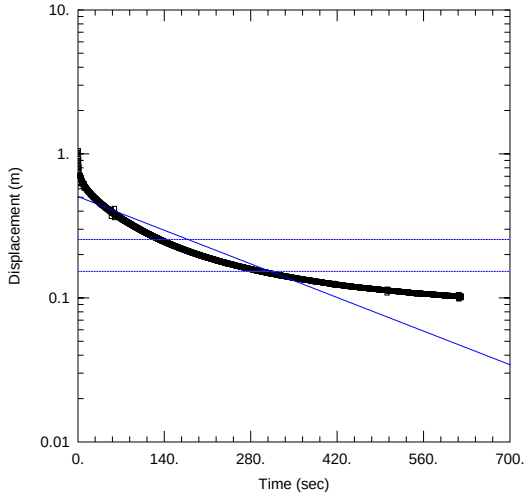
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.211 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1486 m/day
y0 = 0.5459 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_FHT2.aqt
Date: 09/17/25 Time: 14:05:38

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

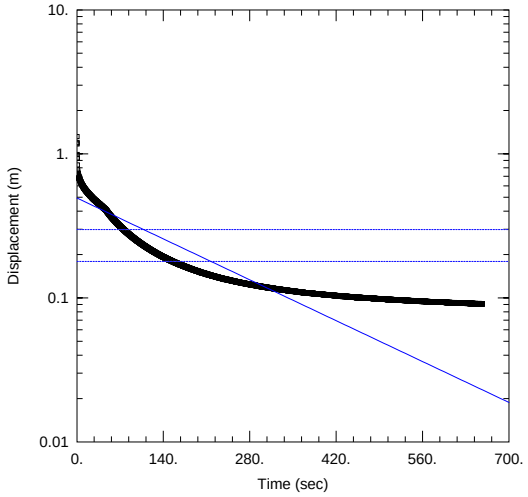
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.018 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.1736 m/day
y0 = 0.5052 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_FHT3.aqt
Date: 09/17/25 Time: 14:06:42

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

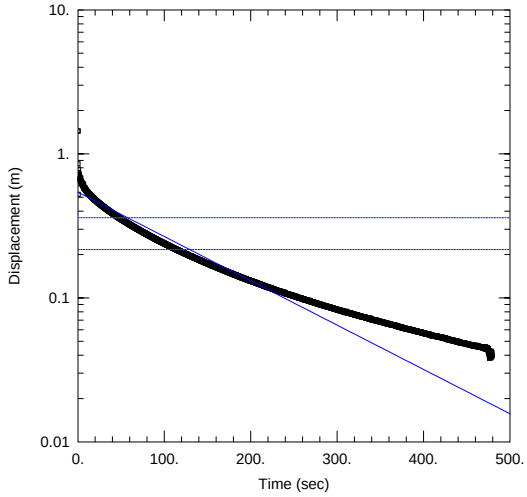
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.194 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.2111 m/day y0 = 0.4943 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_RHT1.aqt
Date: 09/17/25 Time: 14:07:40

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

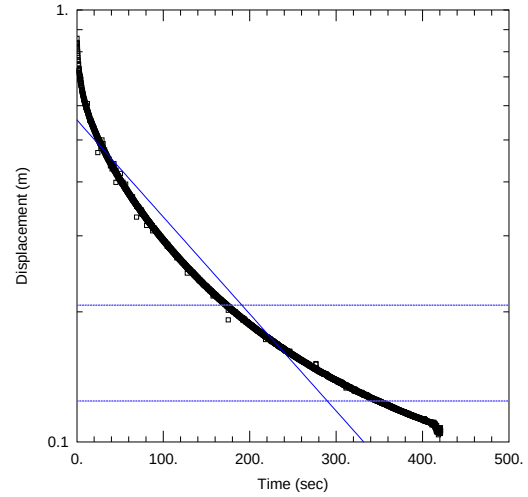
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 1.442 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.3203 m/day y0 = 0.5418 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_RHT2.aqt
Date: 09/17/25 Time: 14:08:25

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

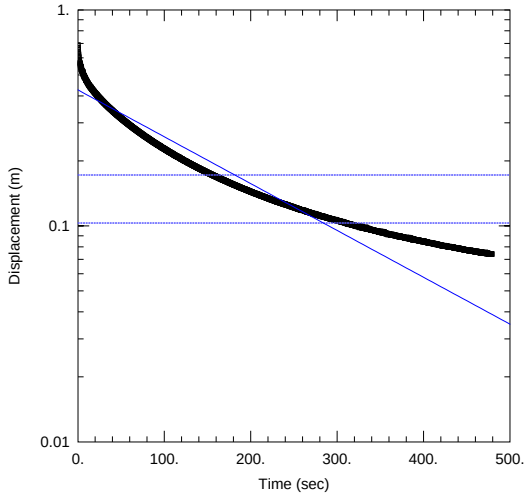
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 0.8292 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.2337 m/day y0 = 0.5563 m



WELL TEST ANALYSIS

Data Set: H:\...\205S_HV_RHT3.aqt
Date: 09/17/25 Time: 14:09:39

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

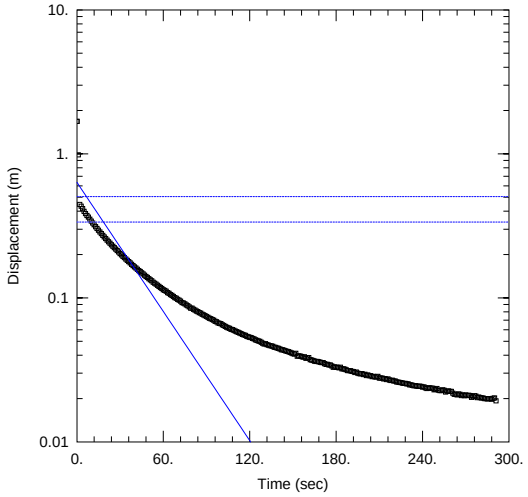
Saturated Thickness: 12.98 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (205S)

Initial Displacement: 0.6877 m
Total Well Penetration Depth: 11.98 m
Casing Radius: 0.025 m
Static Water Column Height: 12.98 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.2258 m/day y0 = 0.4262 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_FHT1.aqt
Date: 09/17/25 Time: 14:27:36

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

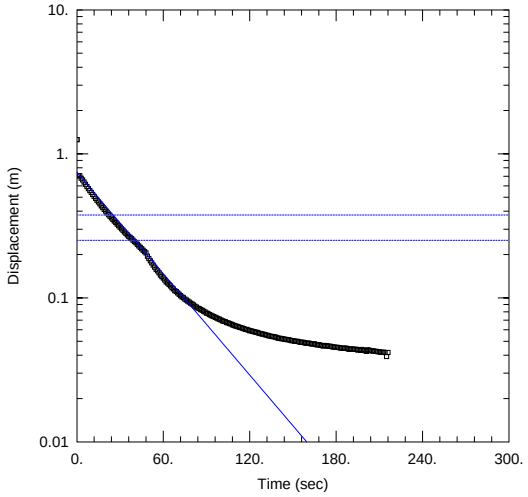
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.683 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.48 m/day y0 = 0.635 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_FHT2.aqt
Date: 09/17/25 Time: 14:28:35

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

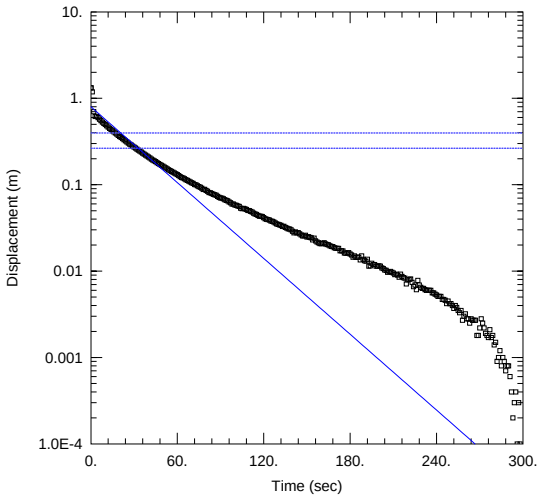
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.255 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.162 m/day y0 = 0.7447 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_FHT3.aqt
Date: 09/17/25 Time: 14:30:17

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

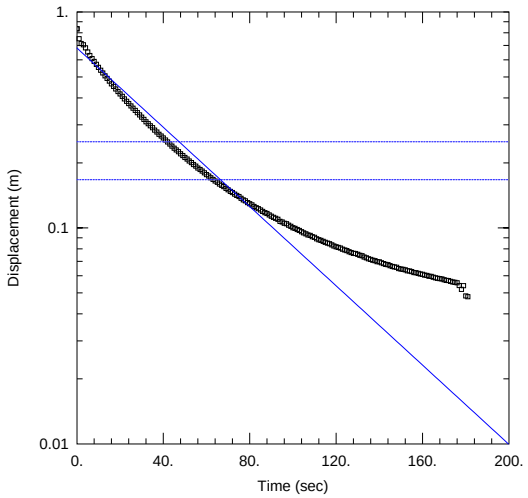
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.322 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.449 m/day y0 = 0.7992 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_RHT1.aqt
Date: 09/17/25 Time: 14:30:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

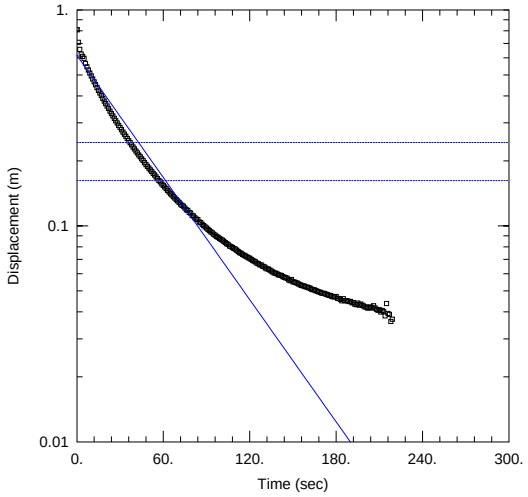
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.8353 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.909 m/day y0 = 0.6809 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_RHT2.aqt
Date: 09/17/25 Time: 14:31:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

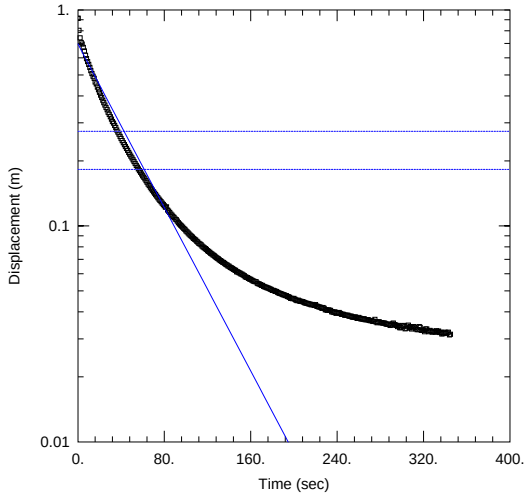
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.8104 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.9339 m/day y0 = 0.6166 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_BR_RHT3.aqt
Date: 09/17/25 Time: 14:33:36

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

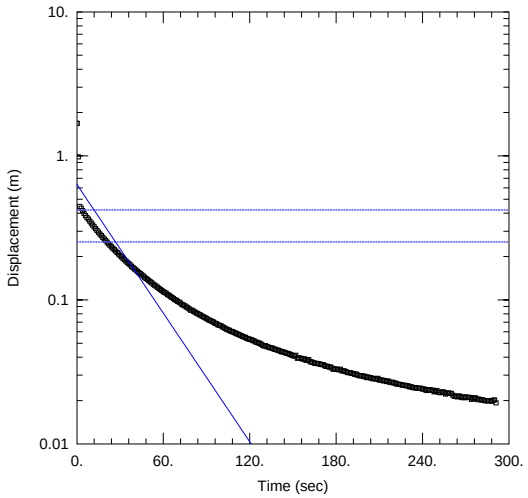
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.9136 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.9373 m/day y0 = 0.6958 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_FHT1.aqt
Date: 09/17/25 Time: 14:34:29

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

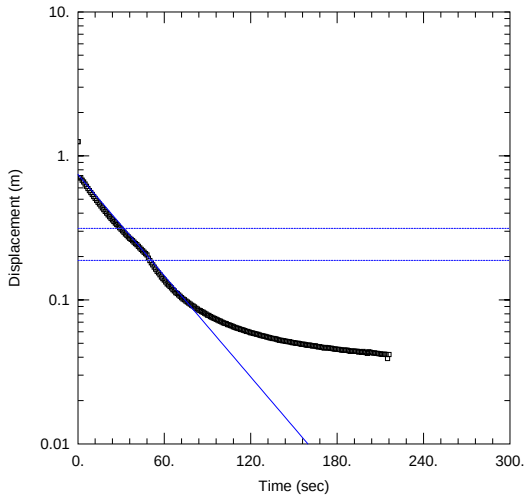
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.683 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.635 m/day y0 = 0.6339 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_FHT2.aqt
Date: 09/17/25 Time: 14:35:11

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

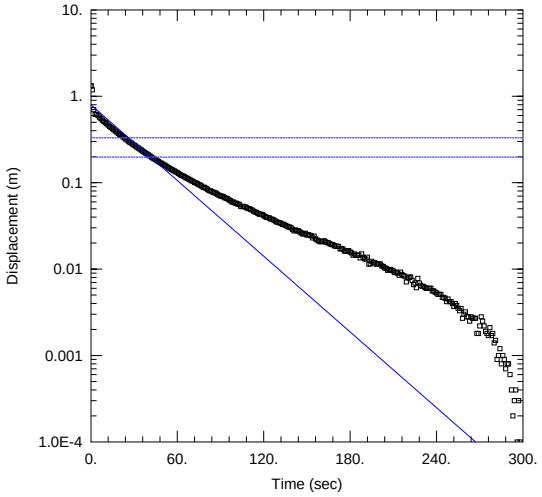
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.255 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.287 m/day y0 = 0.7443 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_FHT3.aqt
Date: 09/17/25 Time: 14:35:53

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

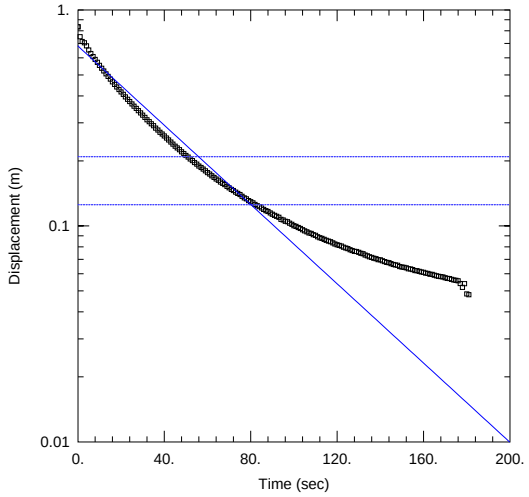
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 1.322 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.604 m/day y0 = 0.7987 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_RHT1.aqt
Date: 09/17/25 Time: 14:37:07

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

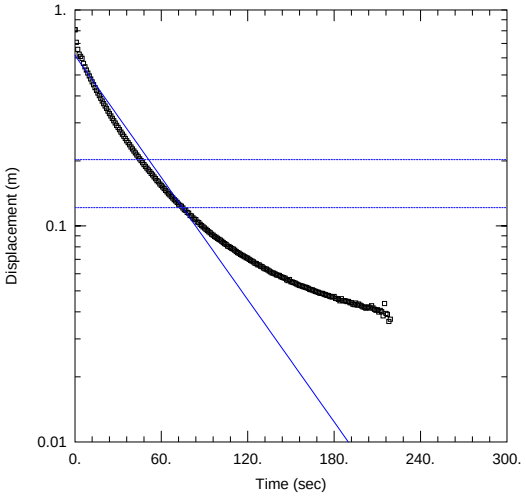
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.8353 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.007 m/day y0 = 0.6808 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_RHT2.aqt
Date: 09/17/25 Time: 14:37:46

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

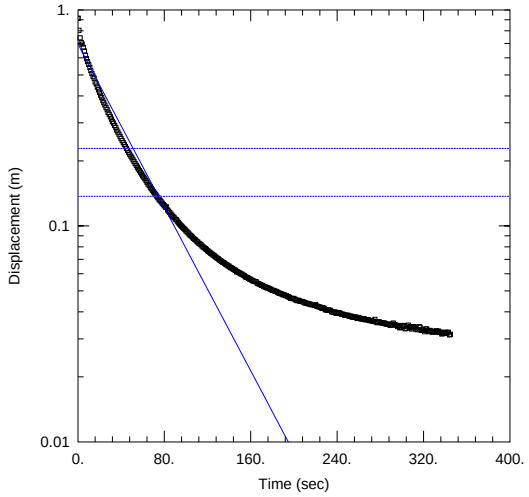
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.8104 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.035 m/day y0 = 0.6166 m



WELL TEST ANALYSIS

Data Set: H:\...\592D_HV_RHT3.aqt
Date: 09/17/25 Time: 14:38:25

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

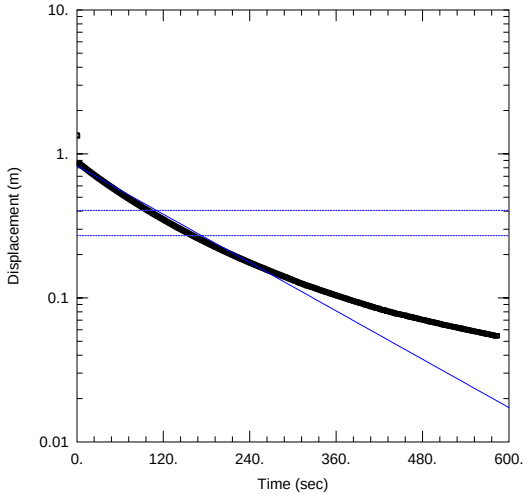
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592D)

Initial Displacement: 0.9136 m
Total Well Penetration Depth: 73.24 m
Casing Radius: 0.025 m
Static Water Column Height: 74.67 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 1.038 m/day y0 = 0.6956 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_FHT1.aqt
Date: 09/17/25 Time: 14:40:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

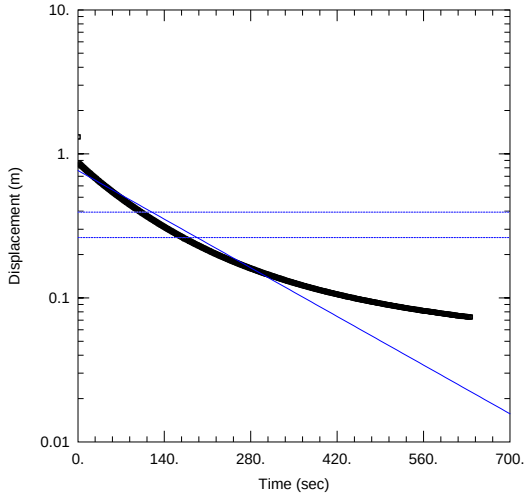
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.351 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.259 m/day y0 = 0.8267 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_FHT2.aqt
Date: 09/17/25 Time: 14:41:35

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

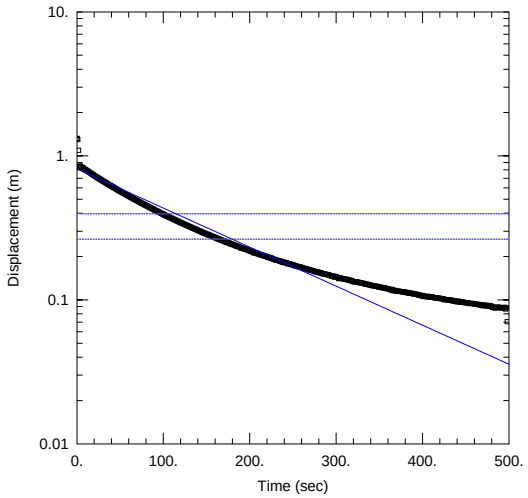
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.313 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2234 m/day y0 = 0.7676 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_FHT3.aqt
Date: 09/17/25 Time: 14:42:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

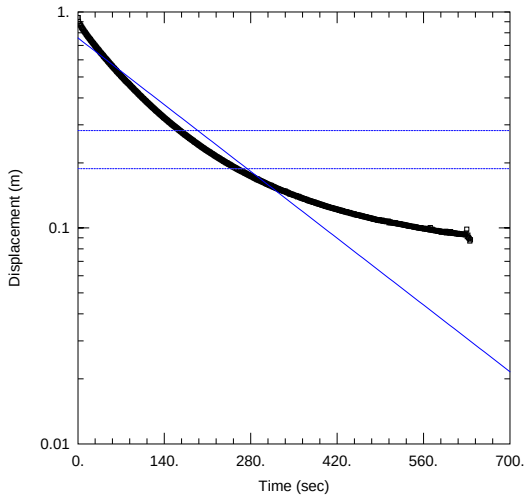
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.321 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.251 m/day y0 = 0.8111 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_RHT1.aqt
Date: 09/17/25 Time: 14:43:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

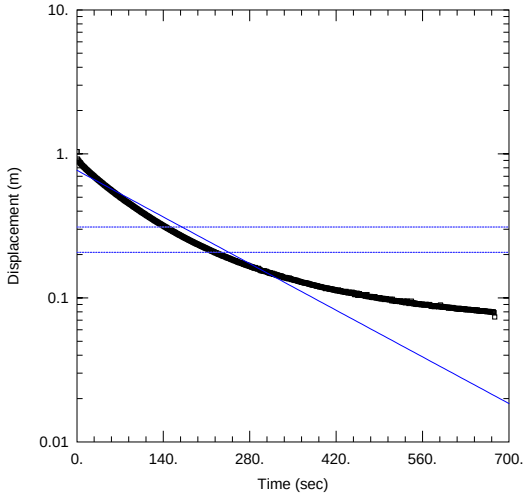
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 0.9405 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2043 m/day y0 = 0.7581 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_RHT2.aqt
Date: 09/17/25 Time: 14:43:35

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

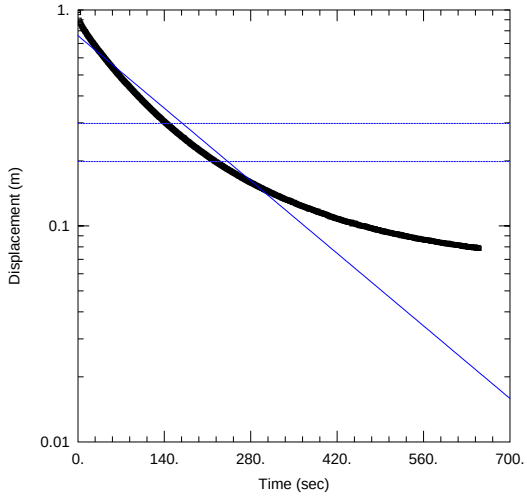
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.036 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2142 m/day y0 = 0.7697 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_BR_RHT3.aqt
Date: 09/17/25 Time: 14:45:16

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

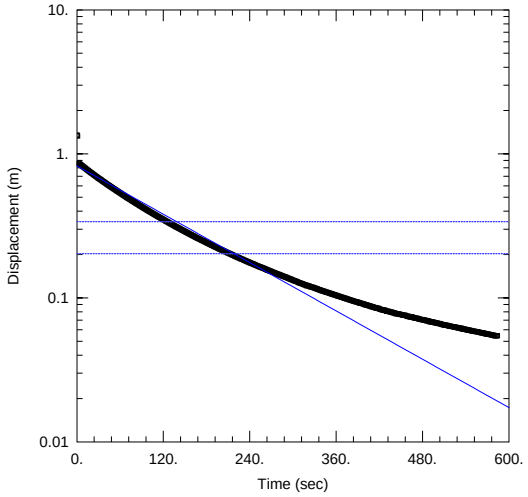
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 0.9935 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2221 m/day y0 = 0.7606 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_FHT1.aqt
Date: 09/17/25 Time: 14:46:08

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

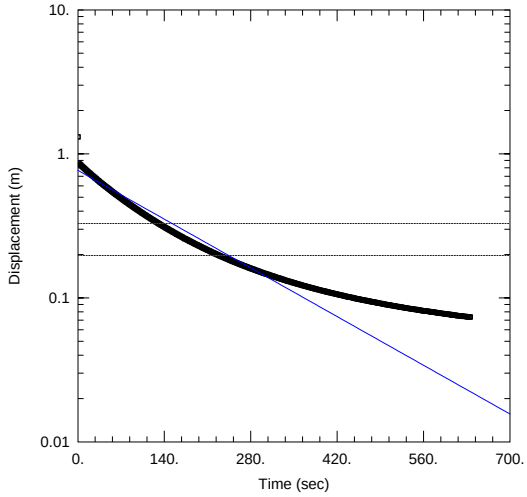
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.351 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.3073 m/day y0 = 0.8267 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_FHT2.aqt
Date: 09/17/25 Time: 14:46:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

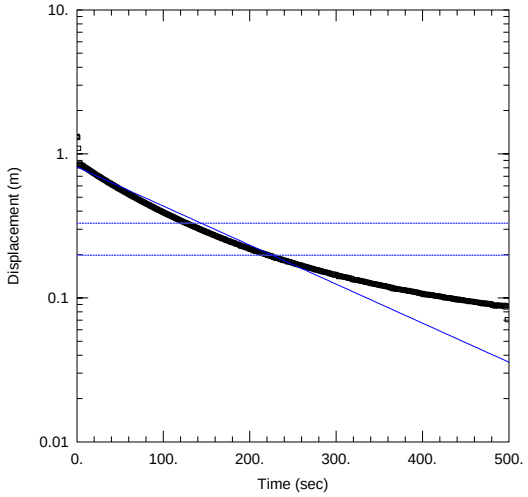
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.313 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2654 m/day y0 = 0.7681 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_FHT3.aqt
Date: 09/17/25 Time: 14:47:51

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

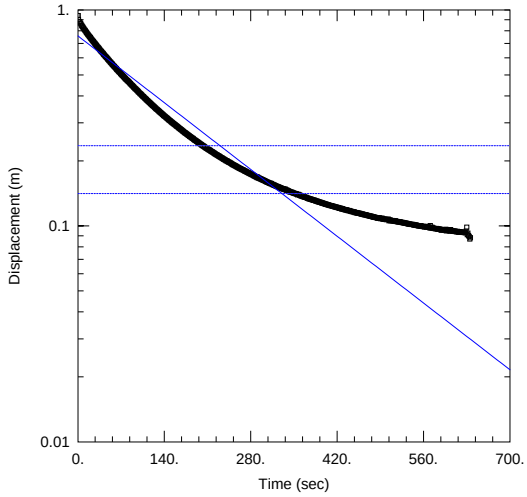
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.321 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2977 m/day y0 = 0.811 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_RHT1.aqt
Date: 09/17/25 Time: 14:48:31

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

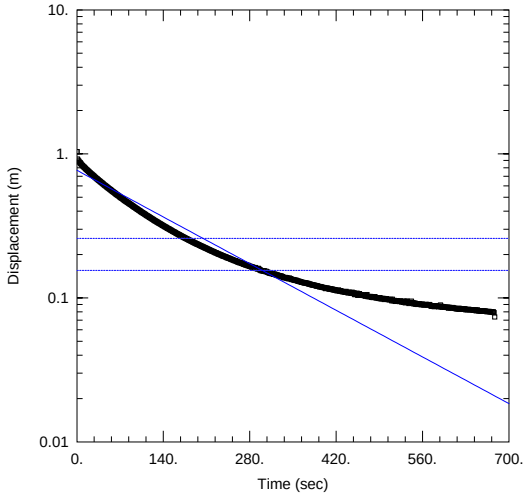
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 0.9405 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2425 m/day y0 = 0.7582 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_RHT2.aqt
Date: 09/17/25 Time: 14:49:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

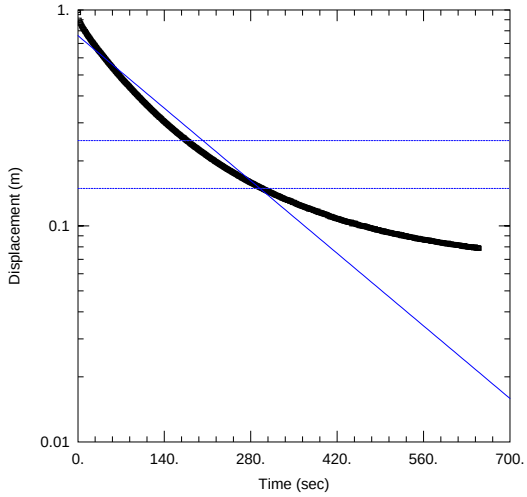
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 1.036 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2542 m/day y0 = 0.7698 m



WELL TEST ANALYSIS

Data Set: H:\...\592S_HV_RHT3.aqt
Date: 09/17/25 Time: 14:49:51

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

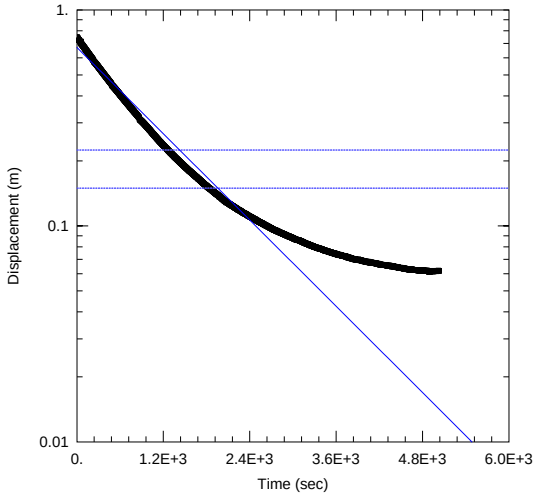
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (592S)

Initial Displacement: 0.9935 m
Total Well Penetration Depth: 39.76 m
Casing Radius: 0.025 m
Static Water Column Height: 40.86 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2635 m/day y0 = 0.7606 m



WELL TEST ANALYSIS

Data Set: H:\...\593_BR_FHT1.aqt
Date: 09/17/25 Time: 14:53:38

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

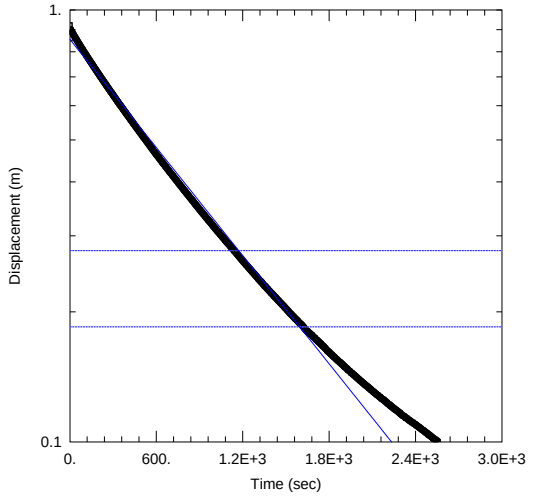
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.7483 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.03269 m/day y0 = 0.6705 m



WELL TEST ANALYSIS

Data Set: H:\...\593_BR_FHT2.aqt
Date: 09/17/25 Time: 14:54:28

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

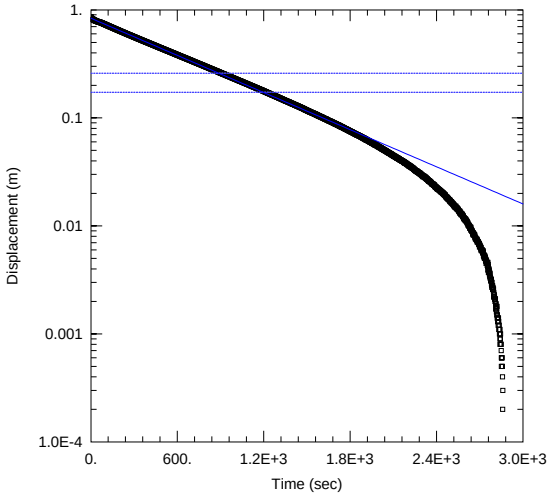
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.9232 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.04098 m/day y0 = 0.8548 m



WELL TEST ANALYSIS

Data Set: H:\...\593_BR_RHT1.aqt
Date: 09/17/25 Time: 14:55:07

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

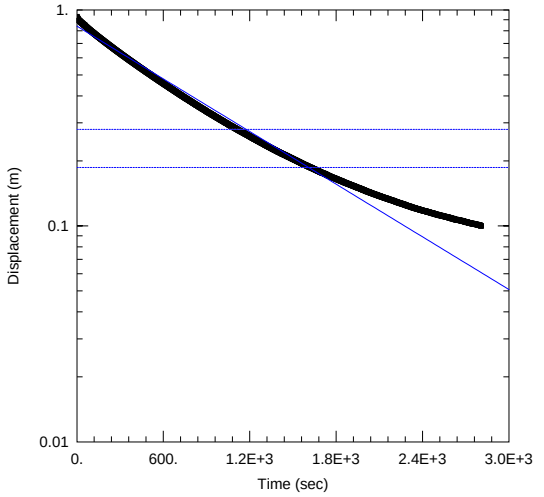
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.8649 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0563 m/day y0 = 0.8379 m



WELL TEST ANALYSIS

Data Set: H:\...\593_BR_RHT2.aqt
Date: 09/17/25 Time: 14:56:01

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

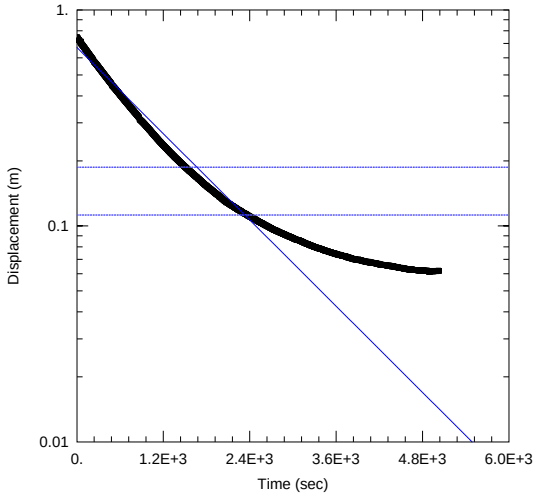
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.9322 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.03991 m/day y0 = 0.841 m



WELL TEST ANALYSIS

Data Set: H:\...\593_HV_FHT1.aqt
Date: 09/17/25 Time: 14:57:06

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

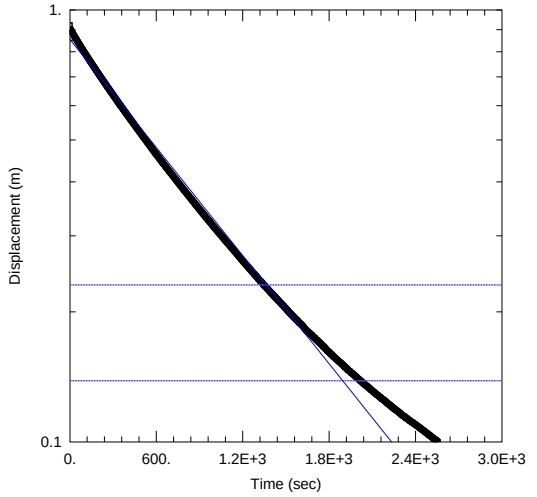
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.7483 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
K = 0.03654 m/day
Solution Method: Hvorslev
y0 = 0.6704 m



WELL TEST ANALYSIS

Data Set: H:\...\593_HV_FHT2.aqt
Date: 09/17/25 Time: 14:57:45

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

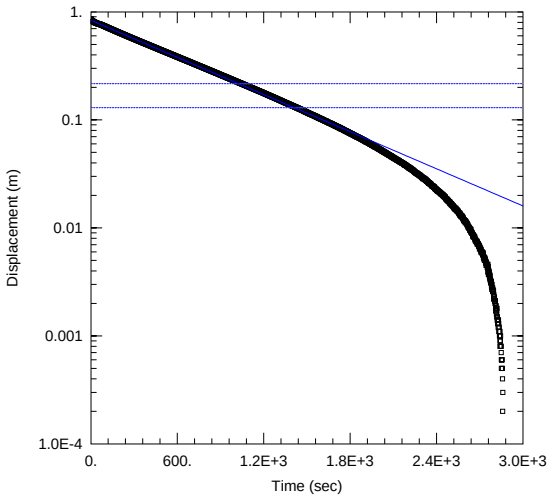
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.9232 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
K = 0.04581 m/day
Solution Method: Hvorslev
y0 = 0.8547 m



WELL TEST ANALYSIS

Data Set: H:\...\593_HV_RHT1.aqt
Date: 09/17/25 Time: 14:58:31

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

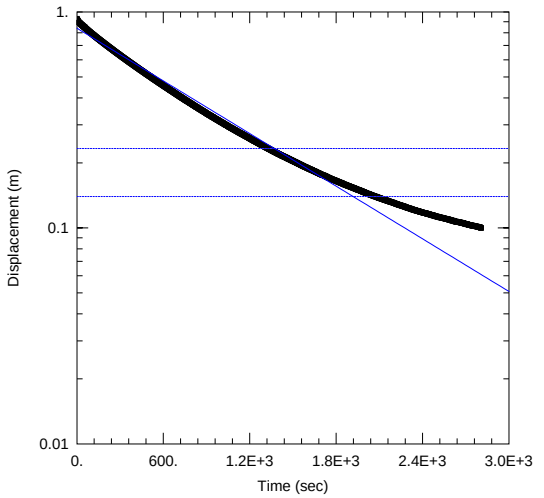
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.8649 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
K = 0.06295 m/day
Solution Method: Hvorslev
y0 = 0.8379 m



WELL TEST ANALYSIS

Data Set: H:\...\593_HV_RHT2.aqt
Date: 09/17/25 Time: 14:59:16

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

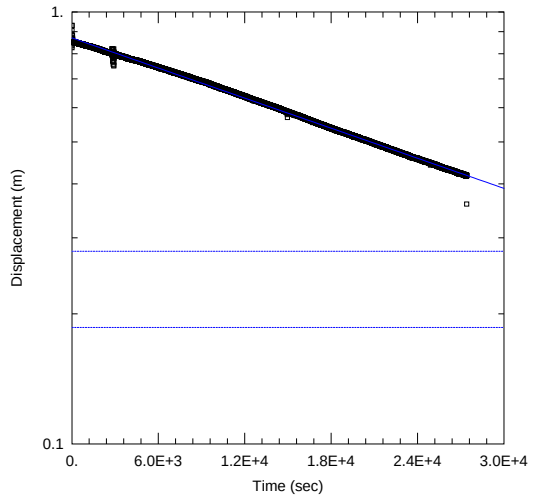
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (593)

Initial Displacement: 0.9322 m
Total Well Penetration Depth: 67.55 m
Casing Radius: 0.025 m
Static Water Column Height: 68.55 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
K = 0.04462 m/day
Solution Method: Hvorslev
y0 = 0.8409 m



WELL TEST ANALYSIS

Data Set: H:\...\594_BR_FHT1.aqt
Date: 09/18/25 Time: 11:46:49

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

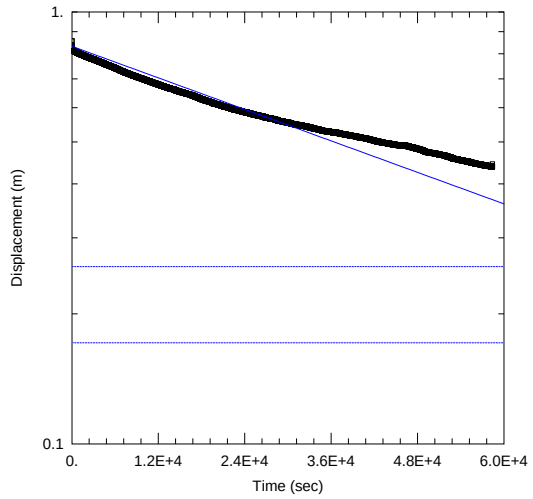
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (594)

Initial Displacement: 0.9304 m
Total Well Penetration Depth: 18.26 m
Casing Radius: 0.025 m
Static Water Column Height: 20.14 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.001207 m/day y0 = 0.8706 m



WELL TEST ANALYSIS

Data Set: H:\...\594_BR_RHT1.aqt
Date: 09/18/25 Time: 11:48:07

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

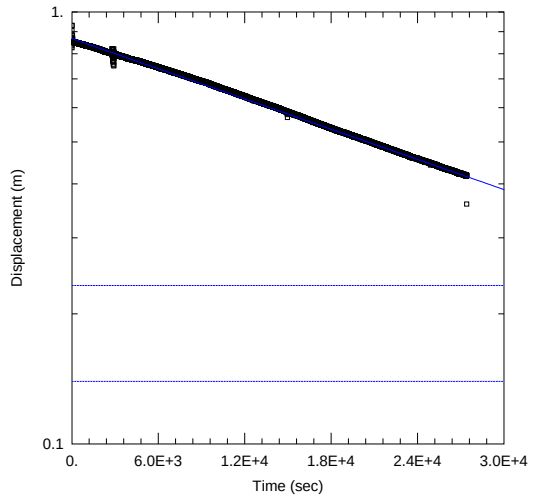
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (594)

Initial Displacement: 0.8572 m
Total Well Penetration Depth: 18.26 m
Casing Radius: 0.025 m
Static Water Column Height: 20.14 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0006321 m/day y0 = 0.8324 m



WELL TEST ANALYSIS

Data Set: H:\...\594_HV_FHT1.aqt
Date: 09/18/25 Time: 11:49:46

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

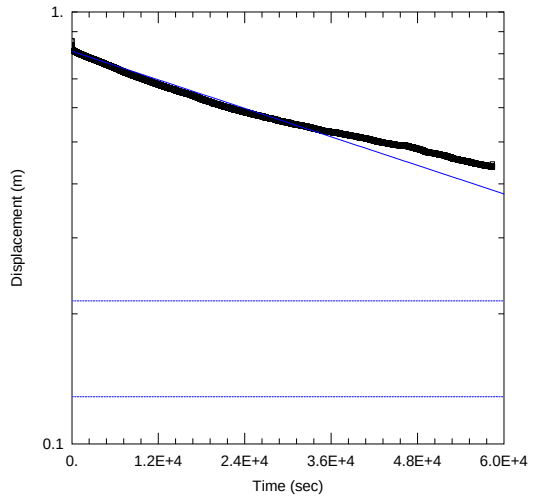
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (594)

Initial Displacement: 0.9304 m
Total Well Penetration Depth: 18.26 m
Casing Radius: 0.025 m
Static Water Column Height: 20.14 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.00138 m/day y0 = 0.8675 m



WELL TEST ANALYSIS

Data Set: H:\...\594_HV_RHT1.aqt
Date: 09/18/25 Time: 11:52:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

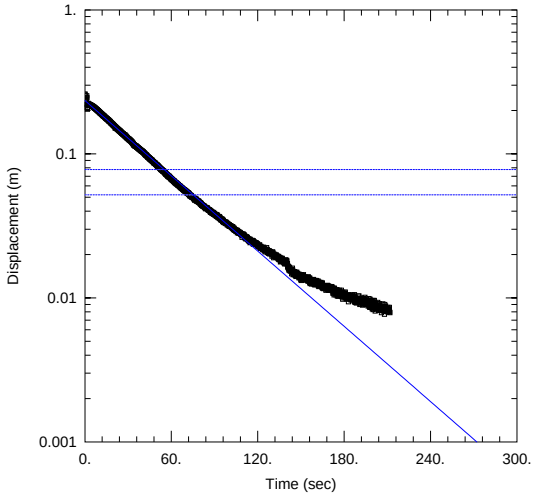
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (594)

Initial Displacement: 0.8572 m
Total Well Penetration Depth: 18.26 m
Casing Radius: 0.025 m
Static Water Column Height: 20.14 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.0006519 m/day y0 = 0.8109 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT1_BR.aqt
Date: 09/17/25 Time: 15:11:39

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

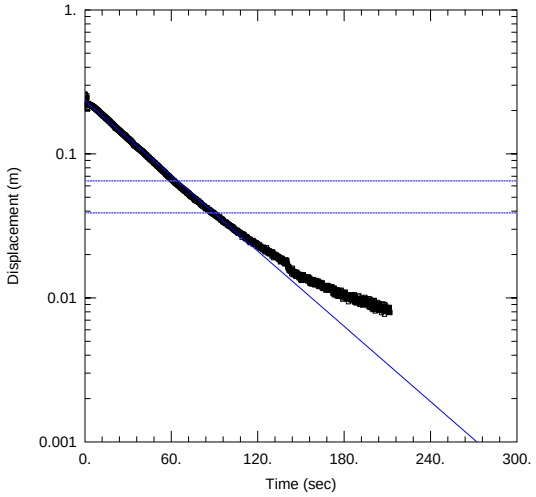
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2596 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.452 m/day
y0 = 0.2349 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT1_HV.aqt
Date: 09/17/25 Time: 15:12:40

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

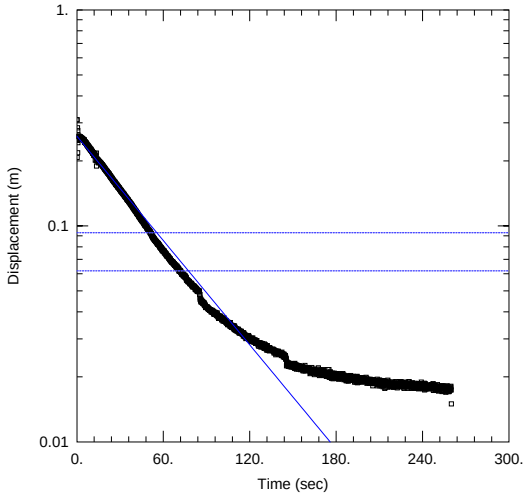
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2596 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.516 m/day
y0 = 0.2349 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT2_BR.aqt
Date: 09/17/25 Time: 15:13:34

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

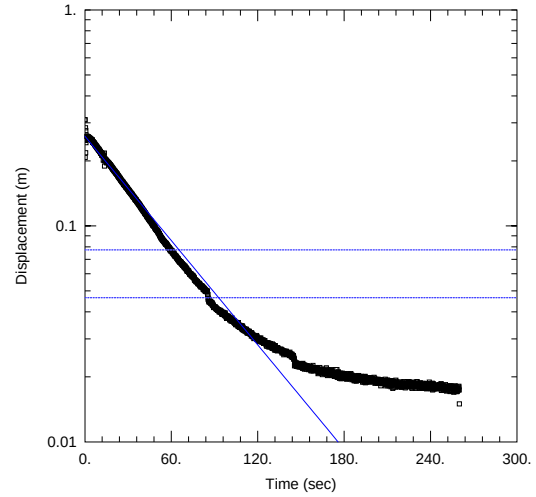
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.3097 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4175 m/day
y0 = 0.2601 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT2_HV.aqt
Date: 09/17/25 Time: 15:14:22

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

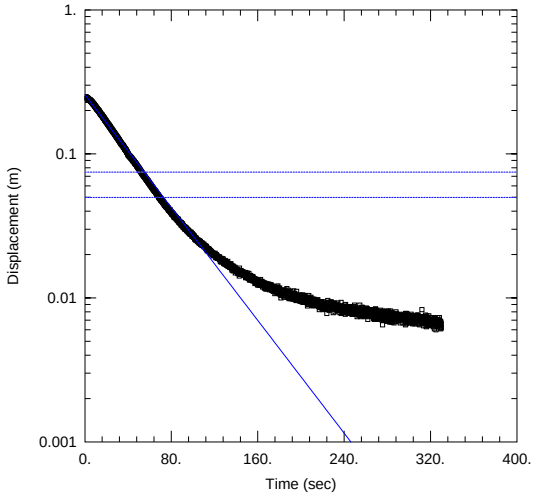
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.3097 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.4766 m/day
y0 = 0.2601 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT3_BR.aqt
Date: 09/17/25 Time: 15:15:09

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

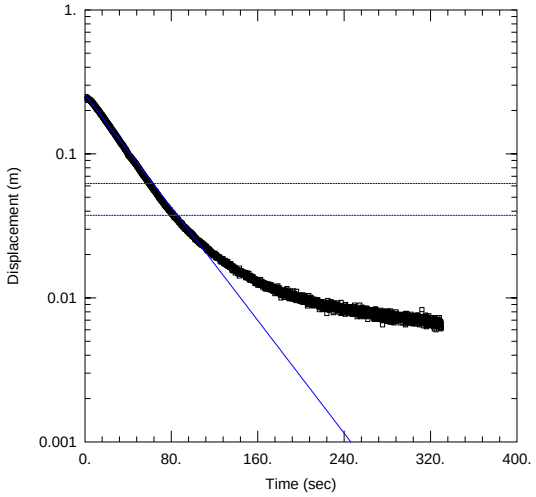
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2494 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.5081 m/day
y0 = 0.2578 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-FHT3_HV.aqt
Date: 09/17/25 Time: 15:15:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

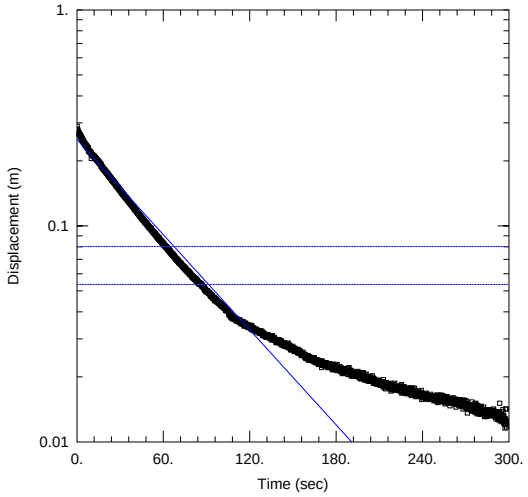
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2494 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.5802 m/day
y0 = 0.2578 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT1_BR.aqt
Date: 09/17/25 Time: 15:16:36

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

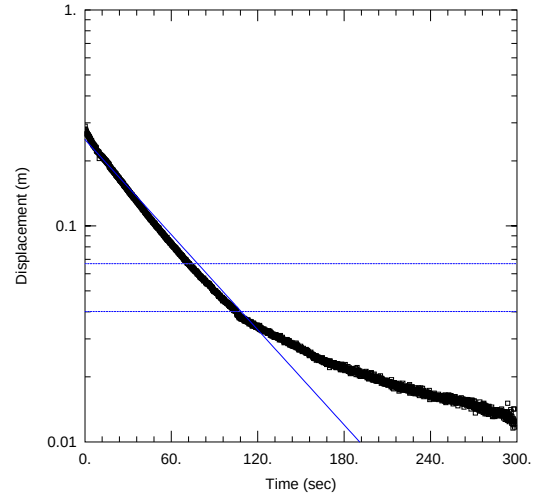
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2676 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.3808 m/day
y0 = 0.2512 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT1_HV.aqt
Date: 09/17/25 Time: 15:17:12

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

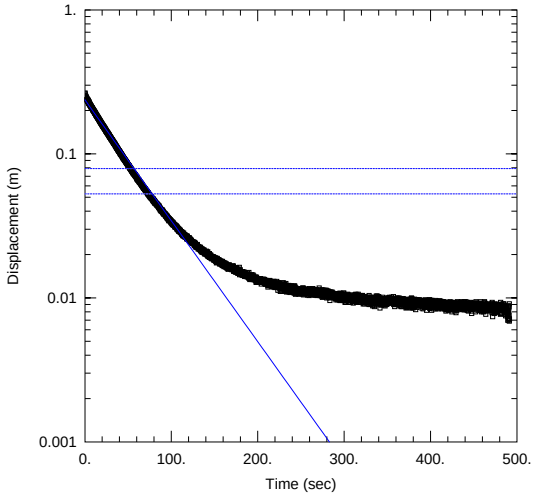
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2676 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.4346 m/day
y0 = 0.2512 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT2_BR.aqt
Date: 09/17/25 Time: 15:17:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

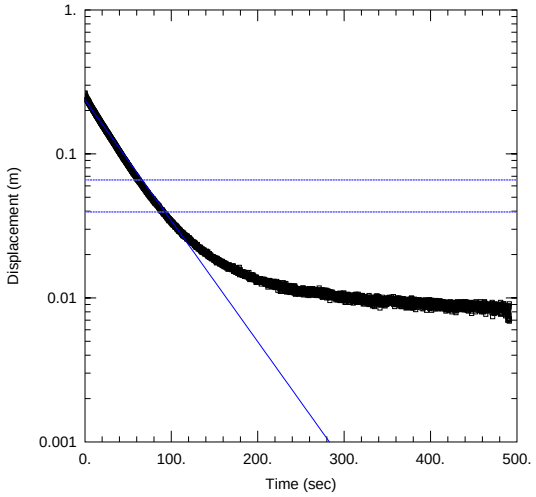
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2637 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4356 m/day
y0 = 0.2375 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT2_HV.aqt
Date: 09/17/25 Time: 15:19:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

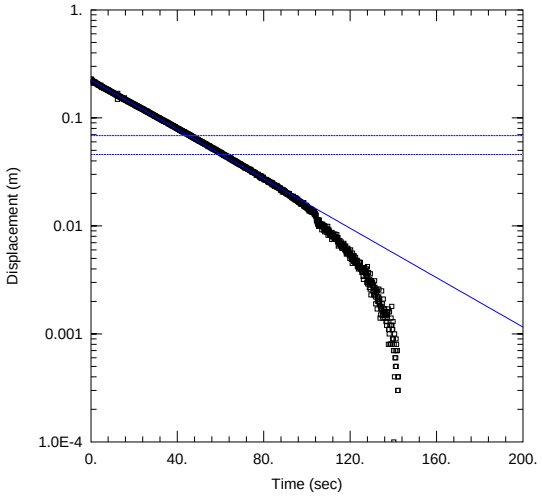
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2637 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.4973 m/day
y0 = 0.2375 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT3_BR.aqt
Date: 09/17/25 Time: 15:19:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

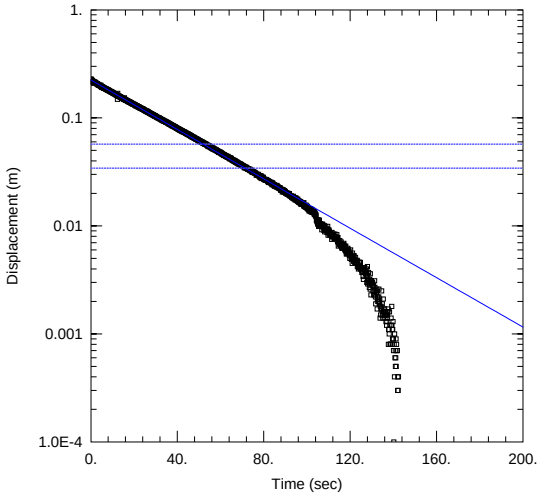
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2288 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.5935 m/day
y0 = 0.2244 m



WELL TEST ANALYSIS

Data Set: H:\...\MB06-RHT3_HV.aqt
Date: 09/17/25 Time: 15:20:32

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

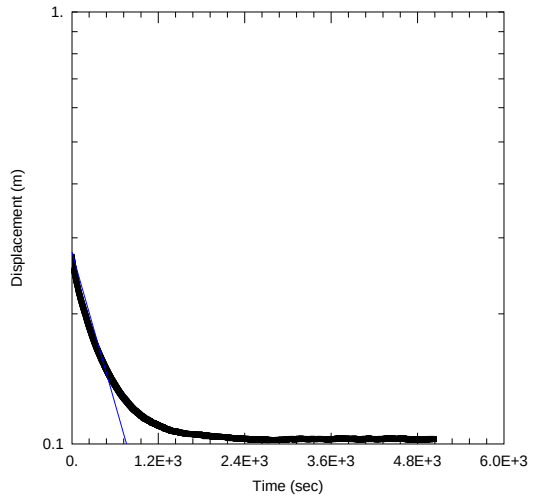
Saturated Thickness: 23.48 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN162143)

Initial Displacement: 0.2288 m
Total Well Penetration Depth: 22.48 m
Casing Radius: 0.025 m
Static Water Column Height: 23.48 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.6774 m/day
y0 = 0.2244 m



WELL TEST ANALYSIS

Data Set: H:\...\MB08B_BR_FHT1.aqt
Date: 09/18/25 Time: 11:54:16

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

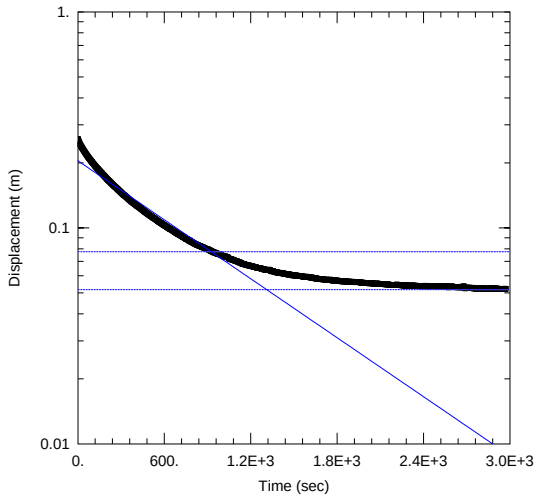
Saturated Thickness: 70.5 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.2706 m
Total Well Penetration Depth: 69.3 m
Casing Radius: 0.025 m
Static Water Column Height: 70.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.06186 m/day y0 = 0.2783 m



WELL TEST ANALYSIS

Data Set: H:\...\MB08B_BR_RHT1.aqt
Date: 09/18/25 Time: 11:57:05

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

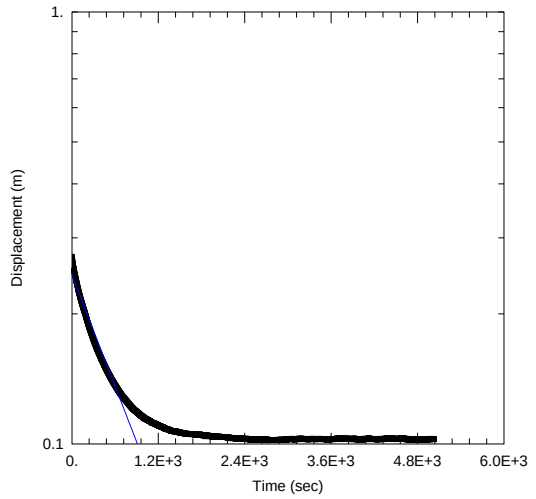
Saturated Thickness: 70.5 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.2587 m
Total Well Penetration Depth: 69.3 m
Casing Radius: 0.025 m
Static Water Column Height: 70.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.04808 m/day y0 = 0.2046 m



WELL TEST ANALYSIS

Data Set: H:\...\MB08B_HV_FHT1.aqt
Date: 09/18/25 Time: 11:57:47

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

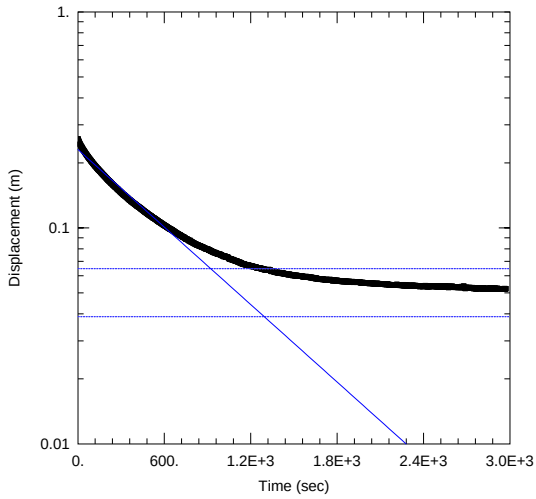
Saturated Thickness: 70.5 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.2706 m
Total Well Penetration Depth: 69.3 m
Casing Radius: 0.025 m
Static Water Column Height: 70.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.04479 m/day y0 = 0.2466 m



WELL TEST ANALYSIS

Data Set: H:\...\MB08B_HV_RHT1.aqt
Date: 09/18/25 Time: 11:58:58

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

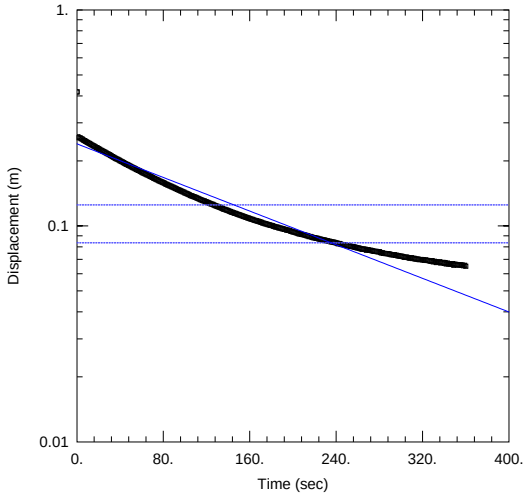
Saturated Thickness: 70.5 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.2587 m
Total Well Penetration Depth: 69.3 m
Casing Radius: 0.025 m
Static Water Column Height: 70.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.06225 m/day y0 = 0.2306 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_FHT1.aqt
Date: 09/17/25 Time: 15:30:47

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

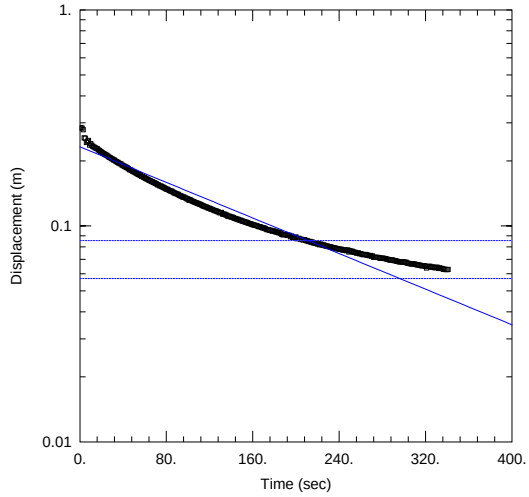
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.417 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.056 m/day
y0 = 0.2398 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_FHT2.aqt
Date: 09/17/25 Time: 15:31:29

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

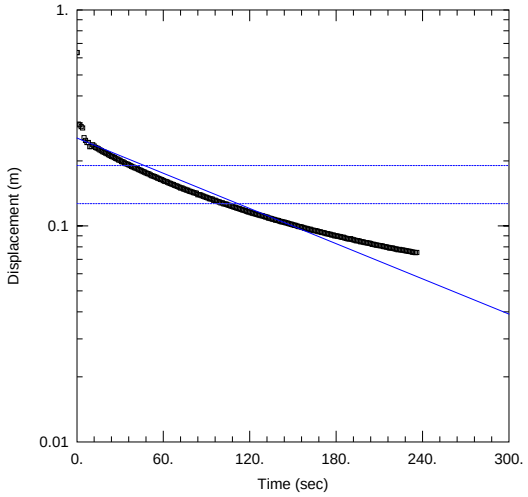
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.285 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.05929 m/day
y0 = 0.2324 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_FHT3.aqt
Date: 09/17/25 Time: 15:32:14

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

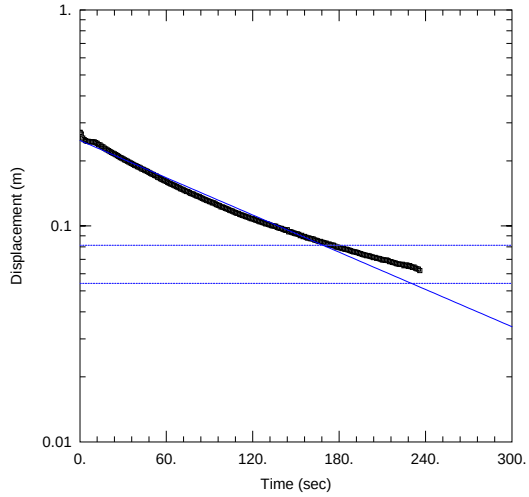
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.6342 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.07813 m/day
y0 = 0.255 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_RHT1.aqt
Date: 09/17/25 Time: 15:32:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

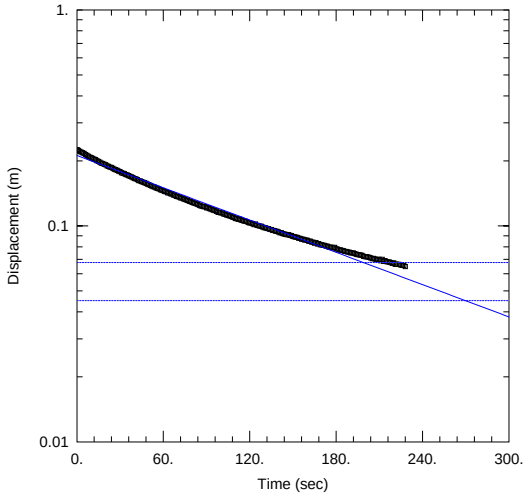
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.271 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.08273 m/day
y0 = 0.2486 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_RHT2.aqt
Date: 09/17/25 Time: 15:33:29

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

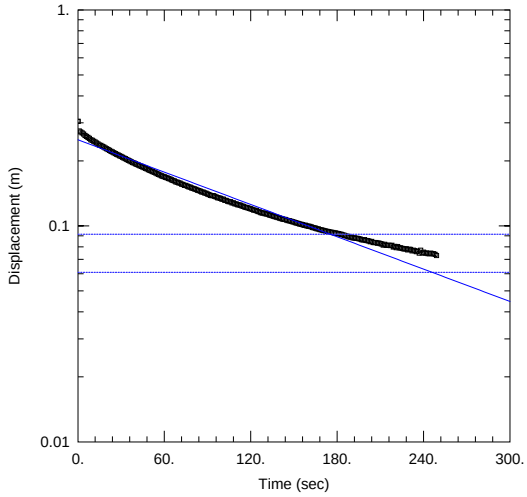
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.2254 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.07168 m/day
y0 = 0.2118 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_BR_RHT3.aqt
Date: 09/17/25 Time: 15:34:14

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

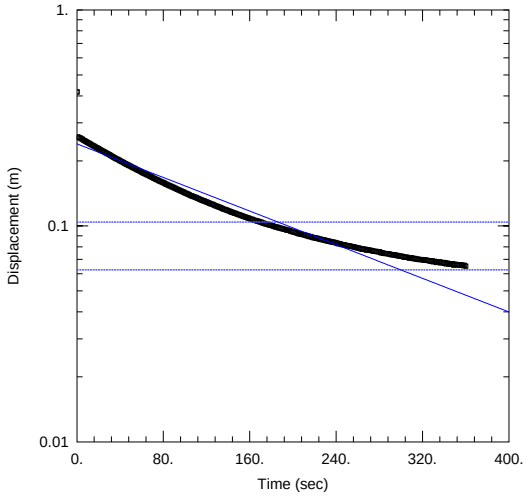
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.3049 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.07182 m/day
y0 = 0.2505 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_FHT1.aqt
Date: 09/17/25 Time: 15:34:48

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

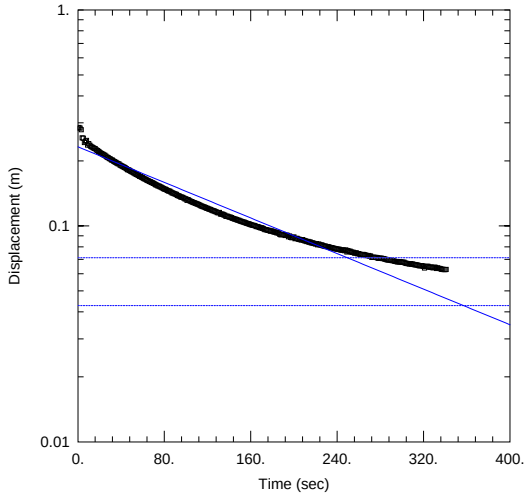
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB08B)

Initial Displacement: 0.417 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.07159 m/day
y0 = 0.2398 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_FHT2.aqt
Date: 09/17/25 Time: 15:35:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

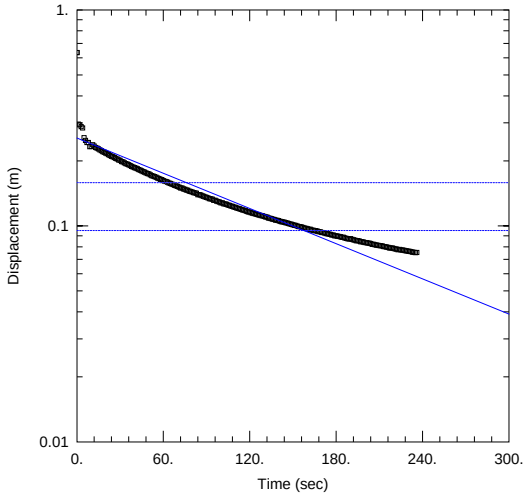
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.285 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.07579 m/day
y0 = 0.2324 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_FHT3.aqt
Date: 09/17/25 Time: 15:36:12

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

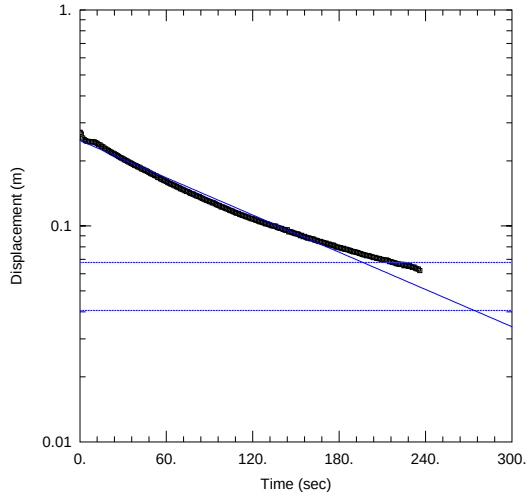
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.6342 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.09989 m/day
y0 = 0.255 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_RHT1.aqt
Date: 09/17/25 Time: 15:36:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

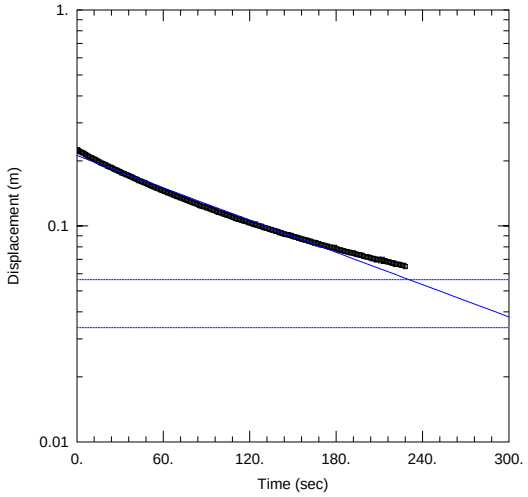
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.271 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.1058 m/day
y0 = 0.2486 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_RHT2.aqt
Date: 09/17/25 Time: 15:37:33

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

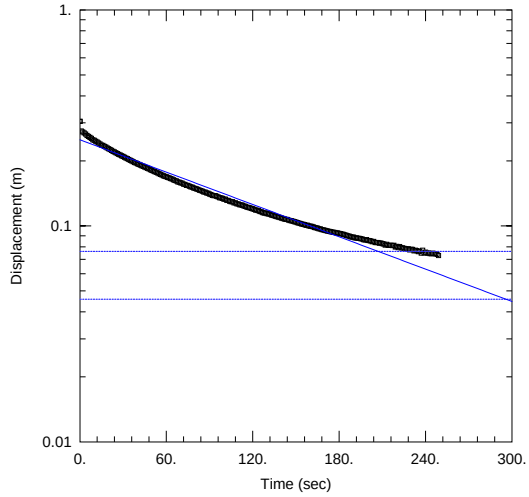
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.2254 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.09164 m/day
y0 = 0.2118 m



WELL TEST ANALYSIS

Data Set: H:\...\MB09B_HV_RHT3.aqt
Date: 09/17/25 Time: 15:38:08

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

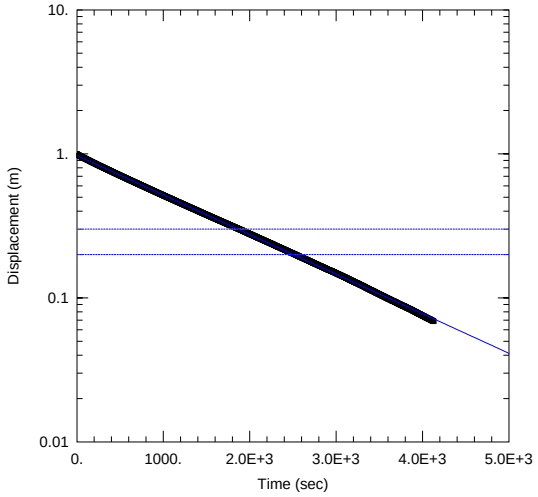
Saturated Thickness: 17.92 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MB09B)

Initial Displacement: 0.3049 m
Total Well Penetration Depth: 17.92 m
Casing Radius: 0.025 m
Static Water Column Height: 17.92 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.09182 m/day
y0 = 0.2505 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS02_BR_FHT1.aqt
Date: 09/17/25 Time: 15:39:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

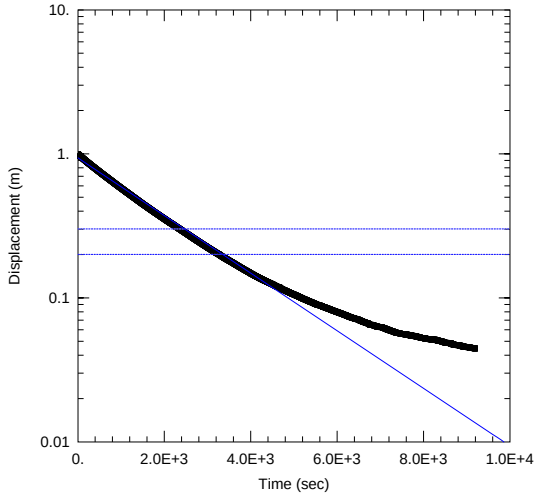
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS02)

Initial Displacement: 1. m
Total Well Penetration Depth: 125. m
Casing Radius: 0.025 m
Static Water Column Height: 126. m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.07107 m/day y0 = 0.9773 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS02_BR_RHT1.aqt
Date: 09/17/25 Time: 15:40:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

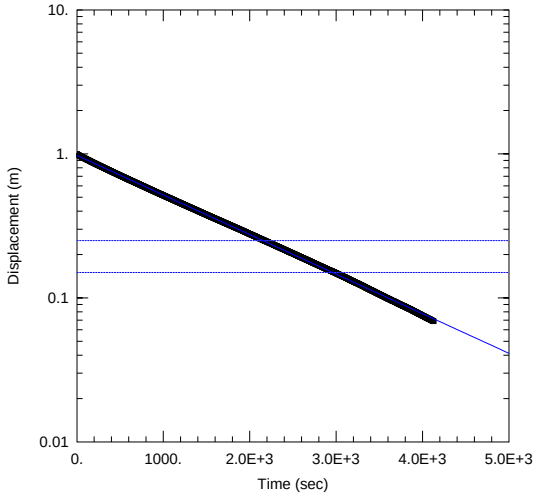
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS02)

Initial Displacement: 1.004 m
Total Well Penetration Depth: 125. m
Casing Radius: 0.025 m
Static Water Column Height: 126. m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0517 m/day y0 = 0.9382 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS02_HV_FHT1.aqt
Date: 09/17/25 Time: 15:41:17

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

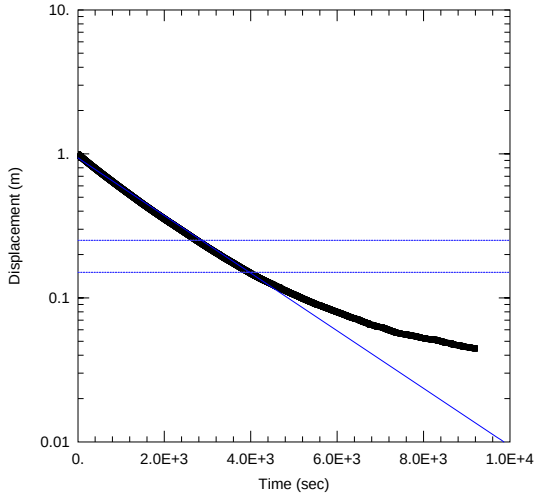
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS02)

Initial Displacement: 1. m
Total Well Penetration Depth: 125. m
Casing Radius: 0.025 m
Static Water Column Height: 126. m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.09057 m/day y0 = 0.9773 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS02_HV_RHT1.aqt
Date: 09/17/25 Time: 15:41:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

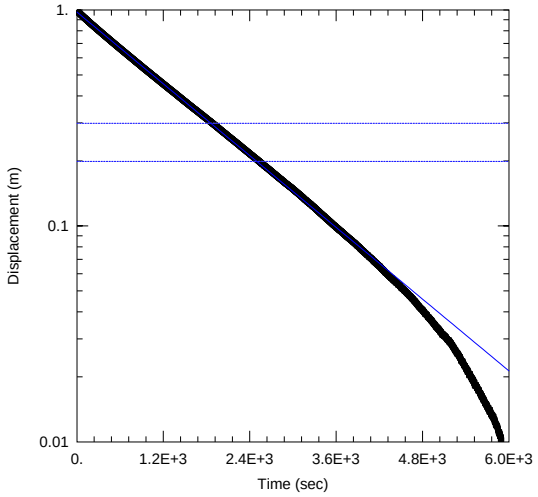
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS02)

Initial Displacement: 1.004 m
Total Well Penetration Depth: 125. m
Casing Radius: 0.025 m
Static Water Column Height: 126. m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.06588 m/day y0 = 0.9382 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS03_BR_FHT1.aqt
Date: 09/17/25 Time: 15:42:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

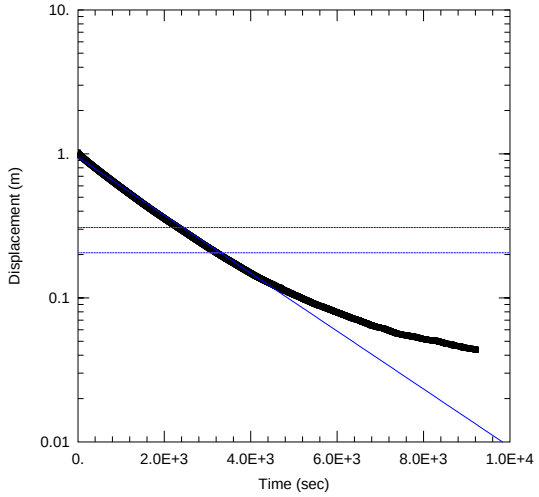
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS03)

Initial Displacement: 0.9945 m Static Water Column Height: 173.4 m
Total Well Penetration Depth: 172.4 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.07337 m/day y0 = 0.9776 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS03_BR_RHT1.aqt
Date: 09/17/25 Time: 15:43:33

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

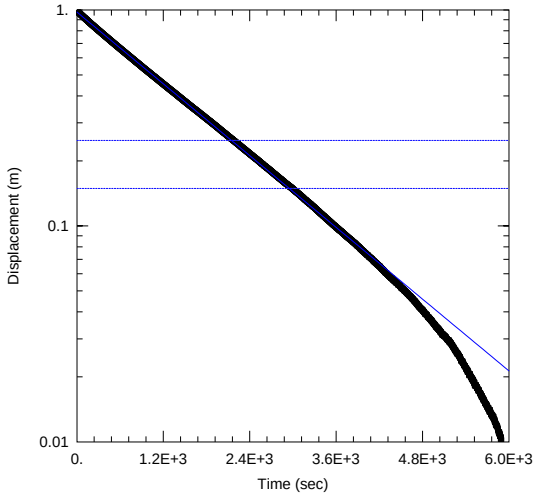
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS03)

Initial Displacement: 1.029 m Static Water Column Height: 173.4 m
Total Well Penetration Depth: 172.4 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.05332 m/day y0 = 0.9491 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS03_HV_FHT1.aqt
Date: 09/17/25 Time: 15:44:09

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

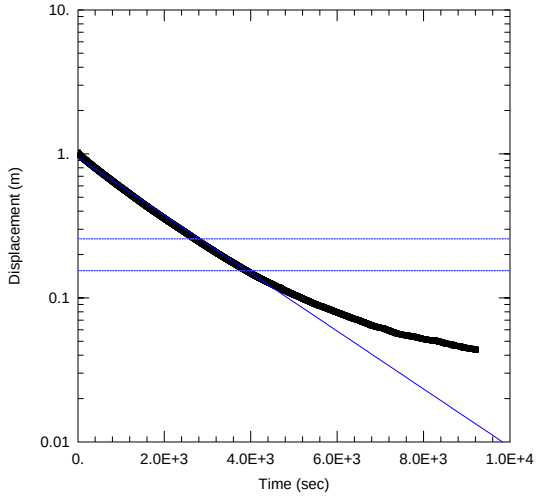
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS03)

Initial Displacement: 0.9945 m Static Water Column Height: 173.4 m
Total Well Penetration Depth: 172.4 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.09122 m/day y0 = 0.9776 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS03_HV_RHT1.aqt
Date: 09/17/25 Time: 15:44:42

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

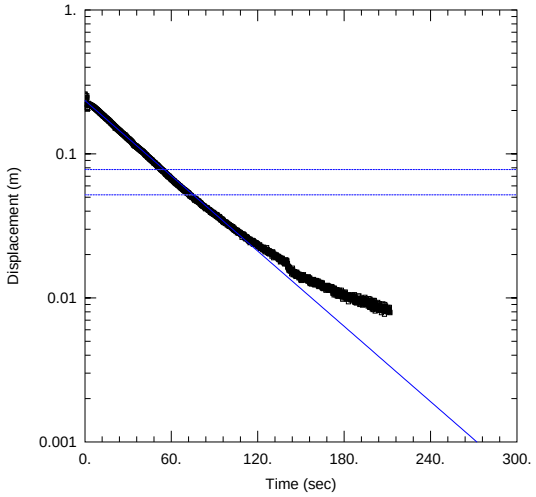
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS03)

Initial Displacement: 1.029 m Static Water Column Height: 173.4 m
Total Well Penetration Depth: 172.4 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.06628 m/day y0 = 0.9489 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT1_BR.aqt
Date: 09/17/25 Time: 15:46:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

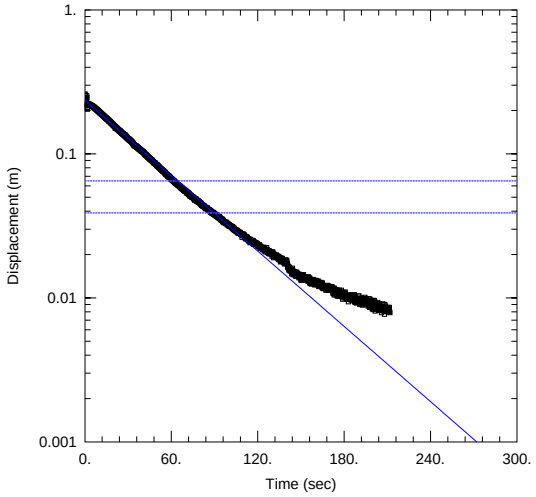
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2596 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3915 m/day y0 = 0.2349 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT1_HV.aqt
Date: 09/17/25 Time: 15:47:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

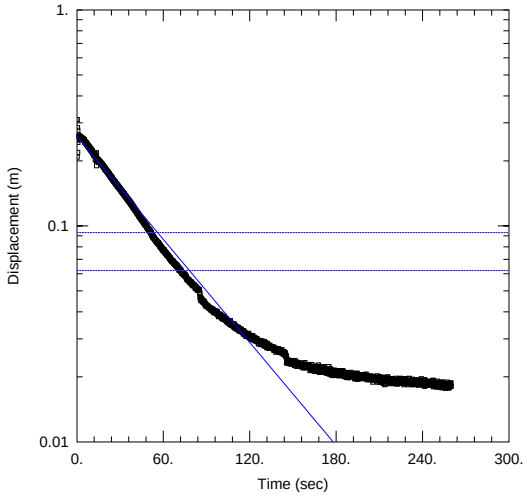
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2596 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.5161 m/day y0 = 0.2349 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT2_BR.aqt
Date: 09/17/25 Time: 15:48:19

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

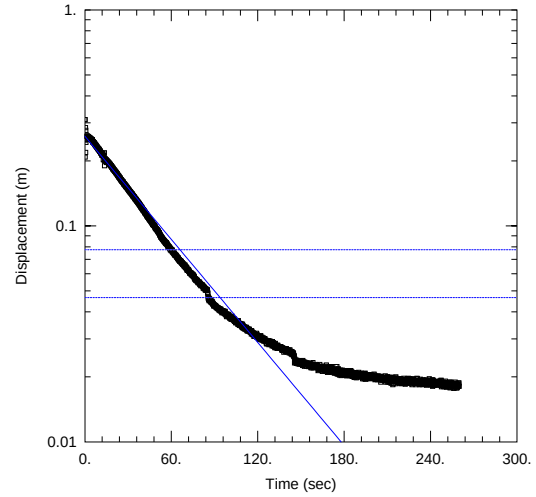
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.3104 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3573 m/day y0 = 0.2599 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT2_HV.aqt
Date: 09/17/25 Time: 15:48:56

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

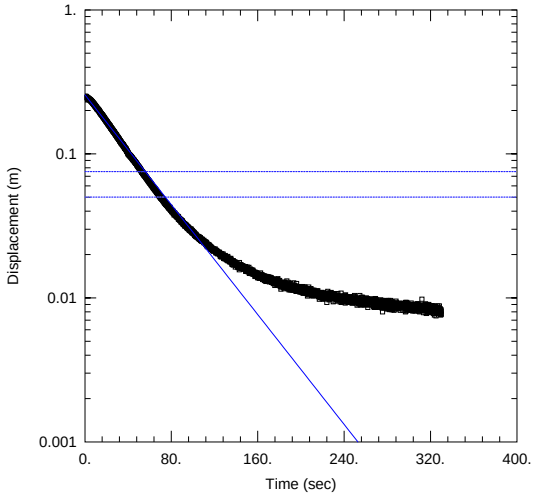
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.3104 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.471 m/day y0 = 0.2599 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT3_BR.aqt
Date: 09/18/25 Time: 15:52:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

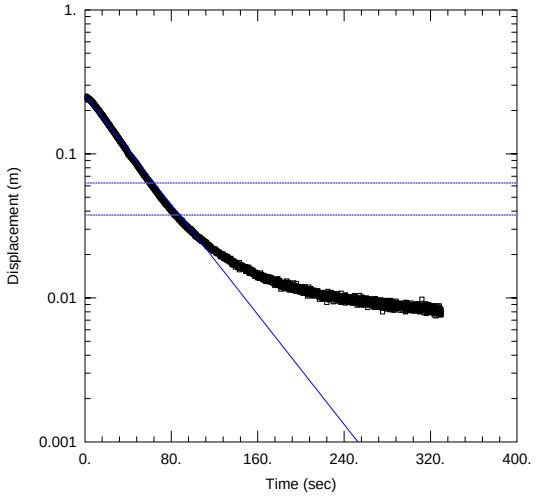
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2509 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.4286 m/day y0 = 0.2574 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-FHT3_HV.aqt
Date: 09/17/25 Time: 15:50:03

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

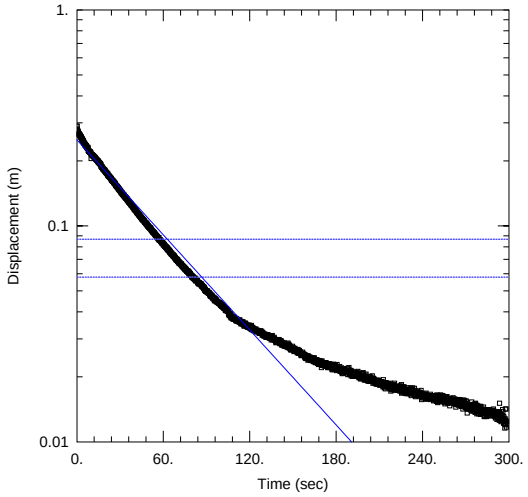
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2509 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.5649 m/day y0 = 0.2574 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT1_BR.aqt
Date: 09/17/25 Time: 15:50:43

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

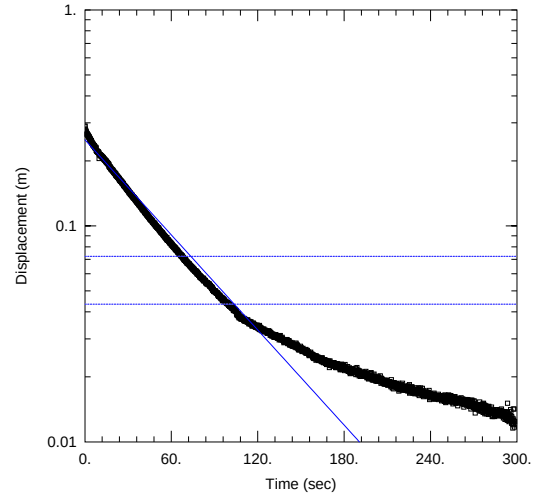
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2894 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3295 m/day y0 = 0.2505 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT1_HV.aqt
Date: 09/17/25 Time: 15:51:32

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

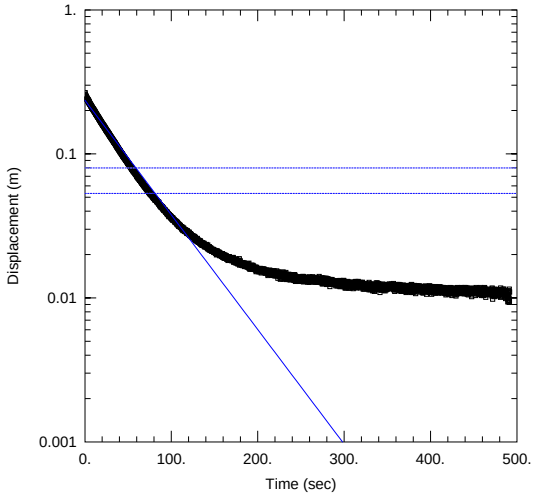
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2894 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.4346 m/day y0 = 0.2506 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT2_BR.aqt
Date: 09/17/25 Time: 15:52:11

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

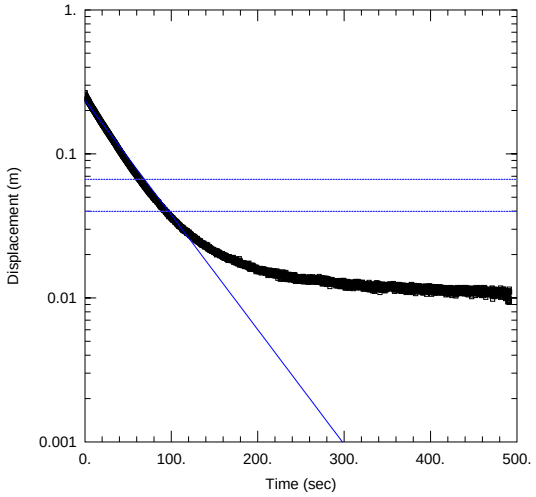
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2661 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3577 m/day y0 = 0.236 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT2_HV.aqt
Date: 09/17/25 Time: 15:52:53

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

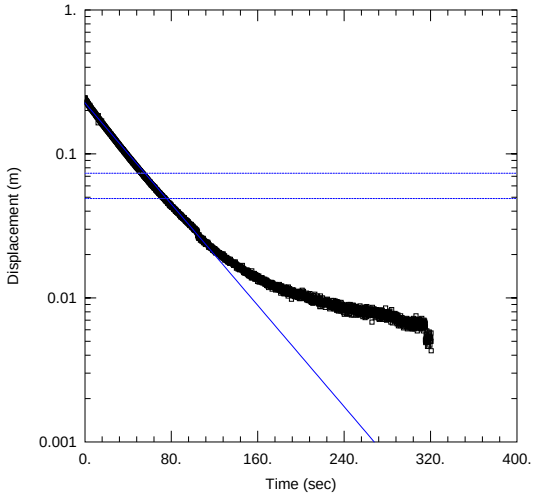
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2661 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.4716 m/day y0 = 0.236 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT3_BR.aqt
Date: 09/17/25 Time: 15:53:26

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

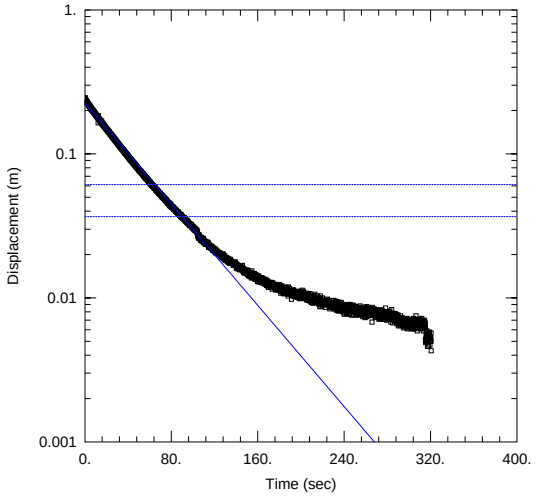
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2448 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3949 m/day y0 = 0.2262 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS04-RHT3_HV.aqt
Date: 09/17/25 Time: 15:54:05

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

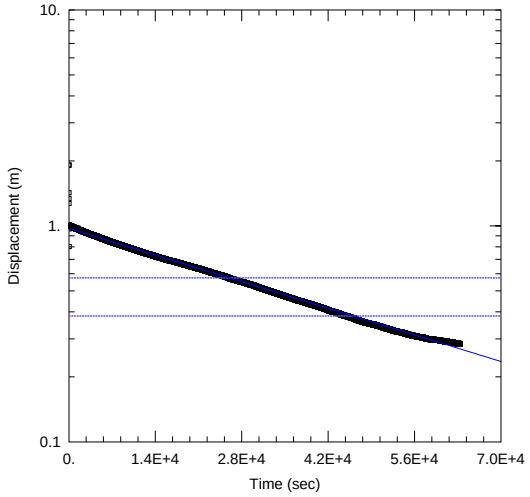
Saturated Thickness: 8.04 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS04)

Initial Displacement: 0.2448 m
Total Well Penetration Depth: 7.04 m
Casing Radius: 0.025 m
Static Water Column Height: 8.04 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.5204 m/day y0 = 0.2262 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS05_BR_FHT1.aqt
Date: 09/18/25 Time: 12:02:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

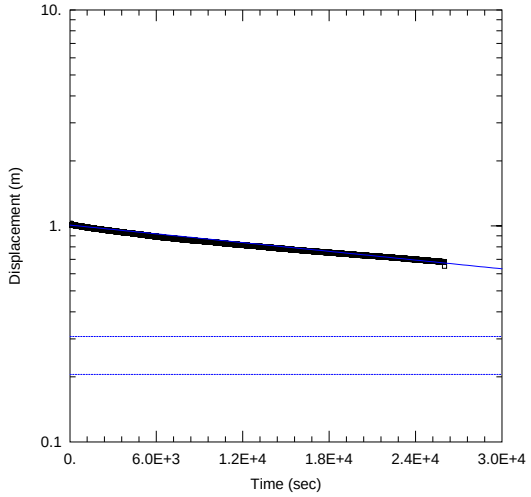
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS05)

Initial Displacement: 1.914 m
Total Well Penetration Depth: 142.7 m
Casing Radius: 0.025 m
Static Water Column Height: 143.7 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0023 m/day y0 = 0.9741 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS05_BR_RHT1.aqt
Date: 09/18/25 Time: 12:02:53

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

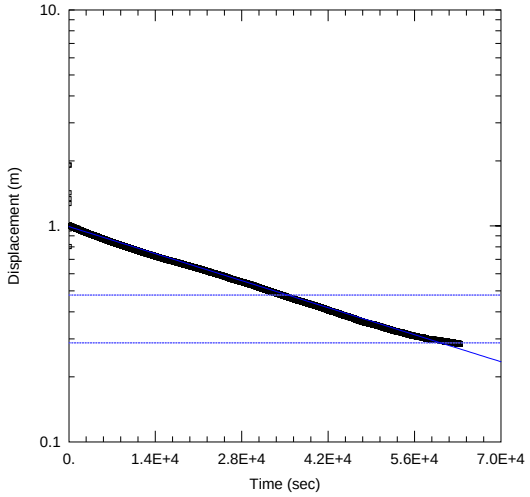
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS05)

Initial Displacement: 1.026 m
Total Well Penetration Depth: 142.7 m
Casing Radius: 0.025 m
Static Water Column Height: 143.7 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.001762 m/day y0 = 1.009 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS05_HV_FHT1.aqt
Date: 09/18/25 Time: 12:03:38

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

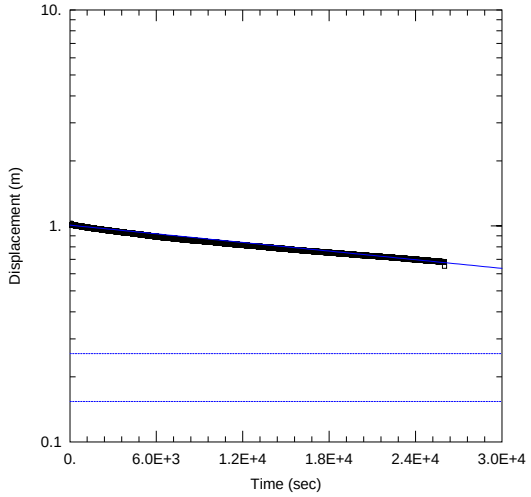
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS05)

Initial Displacement: 1.914 m
Total Well Penetration Depth: 142.7 m
Casing Radius: 0.025 m
Static Water Column Height: 143.7 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.002945 m/day y0 = 0.9929 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS05_HV_RHT1.aqt
Date: 09/18/25 Time: 12:04:08

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

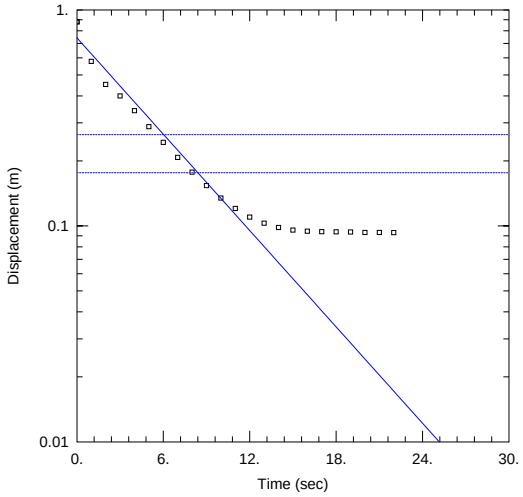
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS05)

Initial Displacement: 1.026 m
Total Well Penetration Depth: 142.7 m
Casing Radius: 0.025 m
Static Water Column Height: 143.7 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.002196 m/day y0 = 1.008 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_FHT1.aqt
Date: 09/17/25 Time: 16:04:46

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

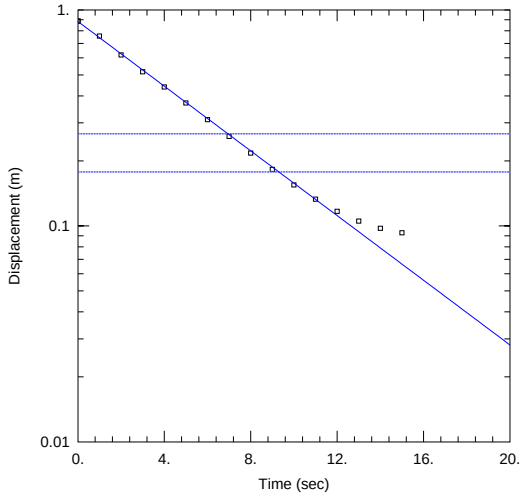
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8811 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 17.28 m/day y0 = 0.743 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_FHT2.aqt
Date: 09/17/25 Time: 16:05:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

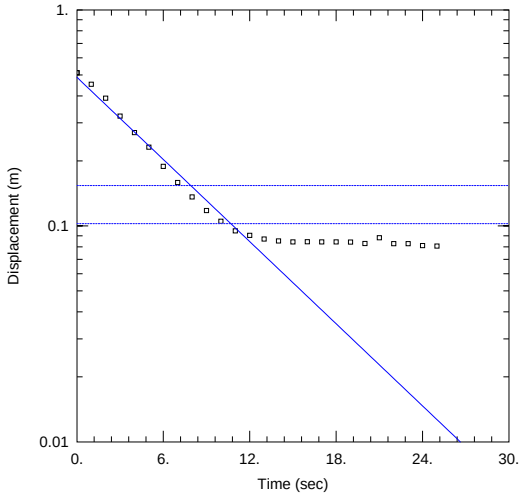
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8887 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 17.4 m/day y0 = 0.8842 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_FHT3.aqt
Date: 09/18/25 Time: 12:05:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

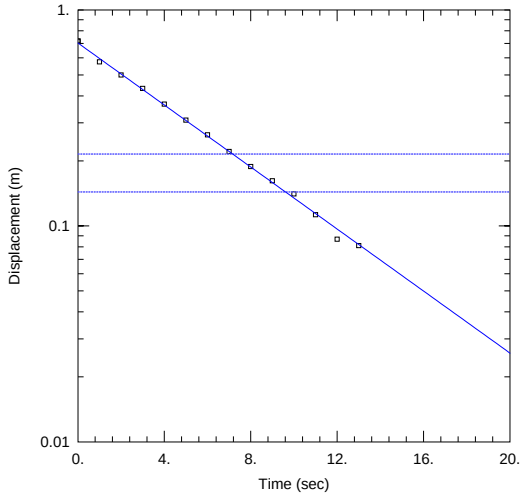
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.5121 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 14.73 m/day y0 = 0.4877 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_RHT1.aqt
Date: 09/17/25 Time: 16:06:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

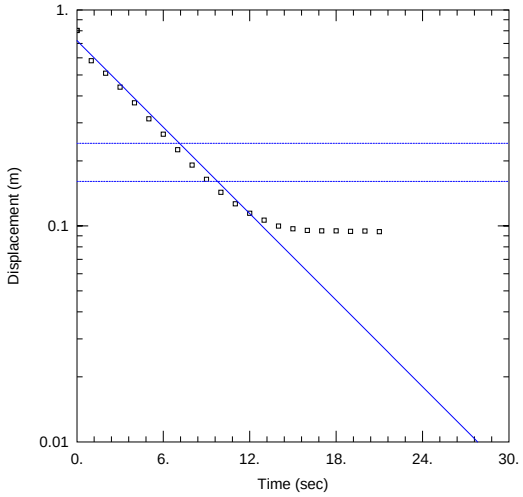
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.7176 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 16.68 m/day y0 = 0.7031 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_RHT2.aqt
Date: 09/17/25 Time: 16:07:51

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

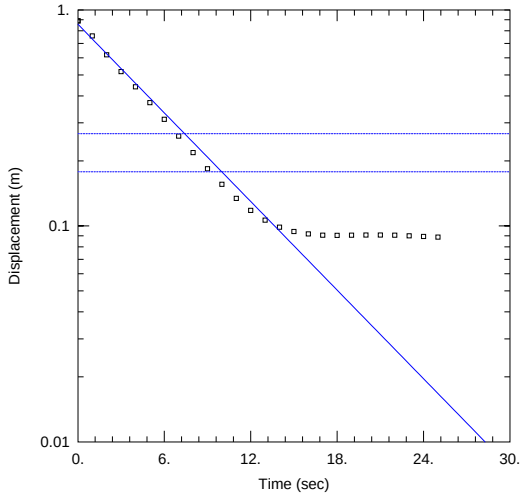
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8033 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 15.51 m/day y0 = 0.7211 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_BR_RHT3.aqt
Date: 09/17/25 Time: 16:09:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

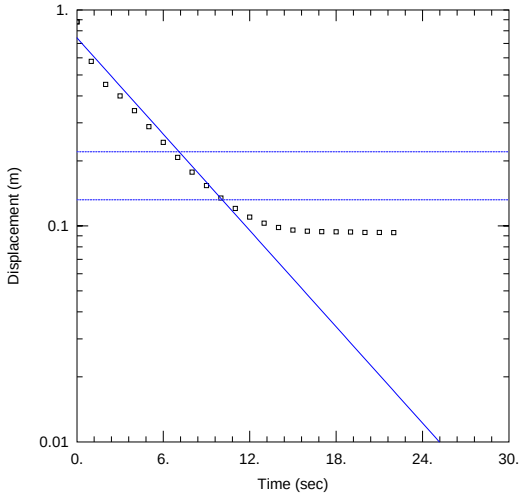
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.11

WELL DATA (MBIS08)

Initial Displacement: 0.8899 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 15.89 m/day y0 = 0.8587 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_FHT1.aqt
Date: 09/17/25 Time: 16:09:43

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

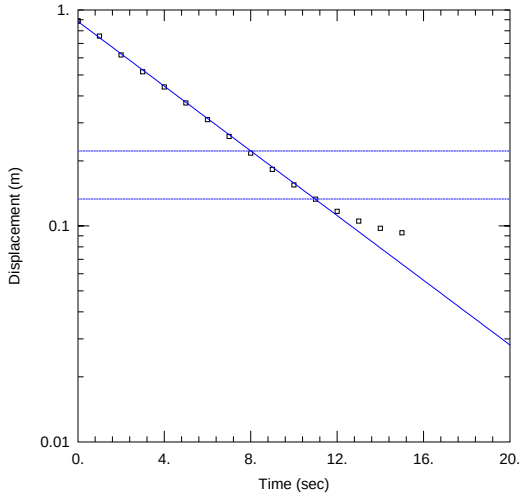
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8811 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 24.48 m/day y0 = 0.7429 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_FHT2.aqt
Date: 09/17/25 Time: 16:10:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

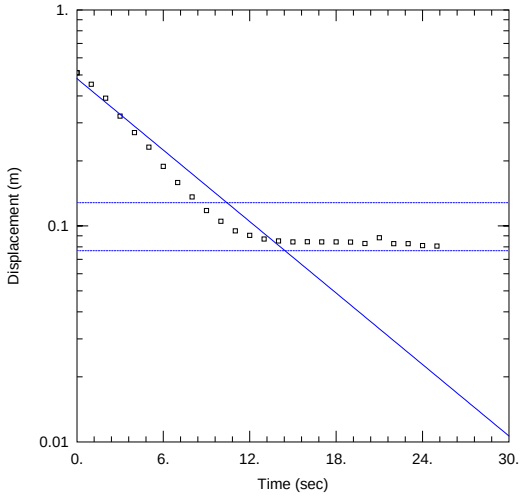
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8887 m Static Water Column Height: 38.69 m
Total Well Penetration Depth: 37.69 m Screen Length: 6. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 24.67 m/day y0 = 0.8842 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_FHT3.aqt
Date: 09/17/25 Time: 16:11:02

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

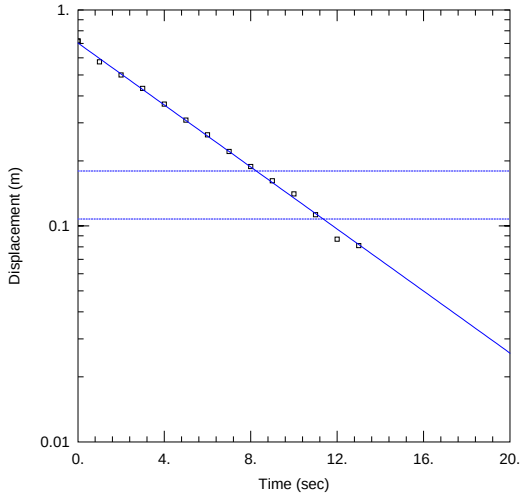
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.5121 m
Total Well Penetration Depth: 37.69 m
Casing Radius: 0.025 m
Static Water Column Height: 38.69 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 18.17 m/day y0 = 0.4811 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_RHT1.aqt
Date: 09/17/25 Time: 16:11:40

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

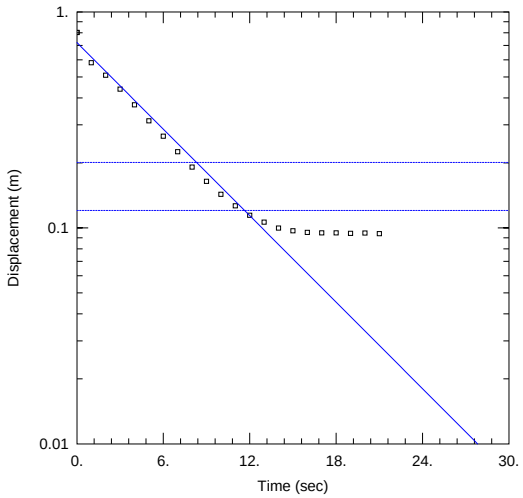
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.7176 m
Total Well Penetration Depth: 37.69 m
Casing Radius: 0.025 m
Static Water Column Height: 38.69 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 23.65 m/day y0 = 0.7031 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_RHT2.aqt
Date: 09/17/25 Time: 16:12:18

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

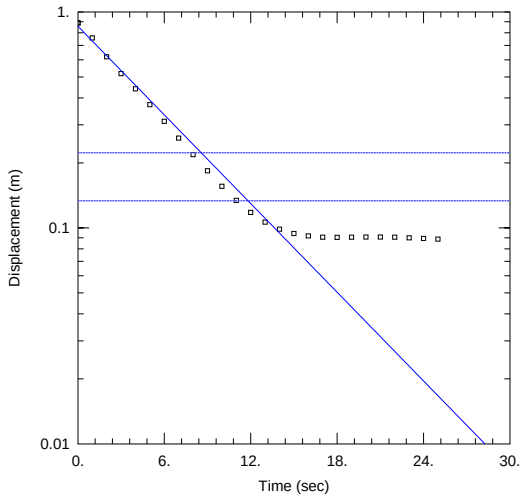
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8033 m
Total Well Penetration Depth: 37.69 m
Casing Radius: 0.025 m
Static Water Column Height: 38.69 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 21.99 m/day y0 = 0.7211 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS08_HV_RHT3.aqt
Date: 09/17/25 Time: 16:13:01

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

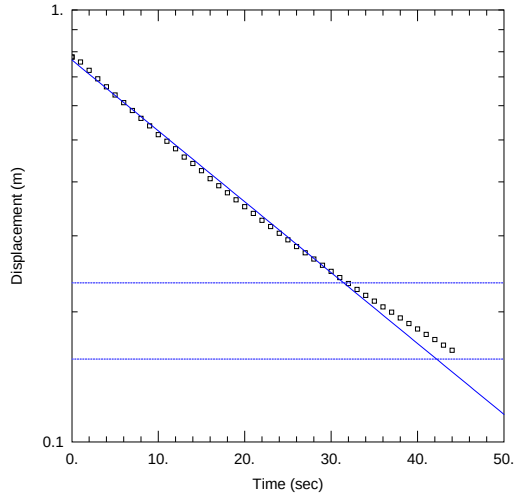
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS08)

Initial Displacement: 0.8899 m
Total Well Penetration Depth: 37.69 m
Casing Radius: 0.025 m
Static Water Column Height: 38.69 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 22.54 m/day y0 = 0.8591 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_BR_FHT1.aqt
Date: 09/17/25 Time: 16:14:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

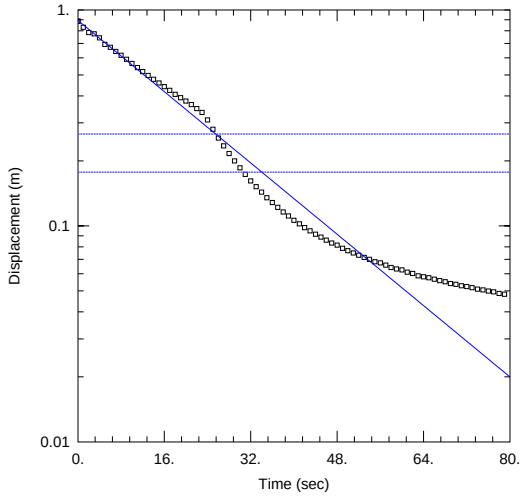
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.7777 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.4509 m/day y0 = 0.7658 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_BR_FHT2.aqt
Date: 09/17/25 Time: 16:16:43

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

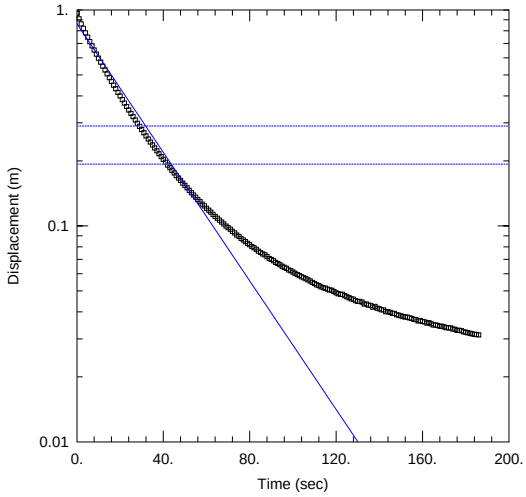
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.8869 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.5672 m/day y0 = 0.8953 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_BR_RHT1.aqt
Date: 09/17/25 Time: 16:17:23

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

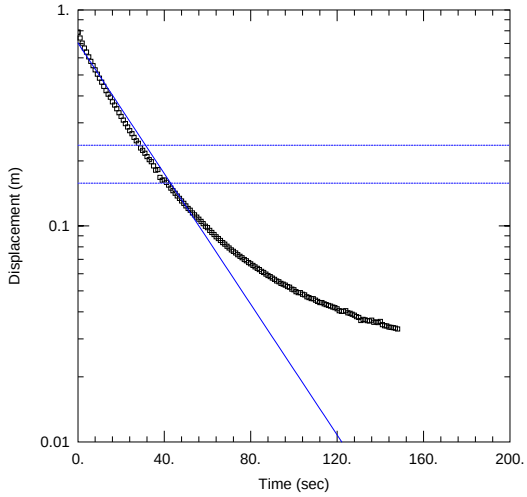
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.9662 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.409 m/day y0 = 0.863 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_BR_RHT2.aqt
Date: 09/17/25 Time: 16:17:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

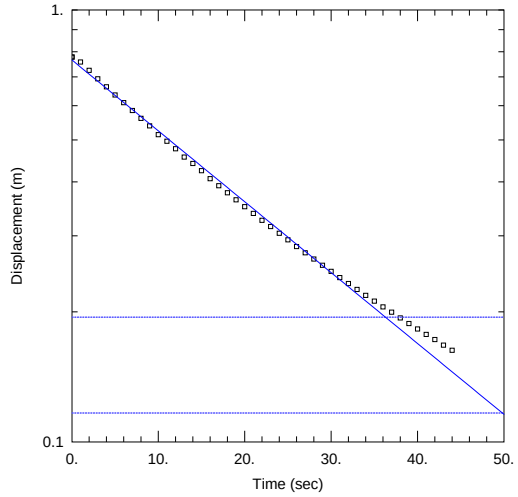
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.7879 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.4156 m/day y0 = 0.7033 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_HV_FHT1.aqt
Date: 09/17/25 Time: 16:18:39

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

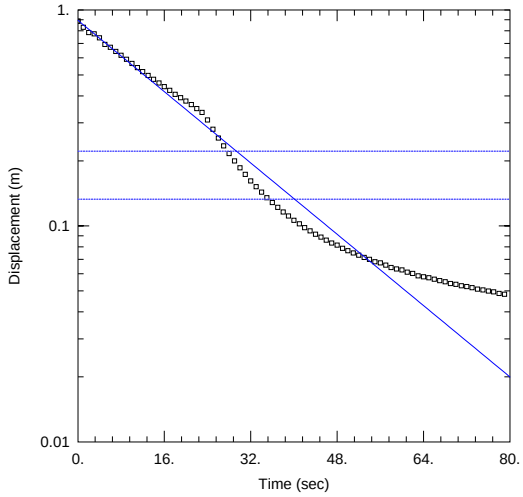
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.7777 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.4504 m/day y0 = 0.7658 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_HV_FHT2.aqt
Date: 09/17/25 Time: 16:19:14

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

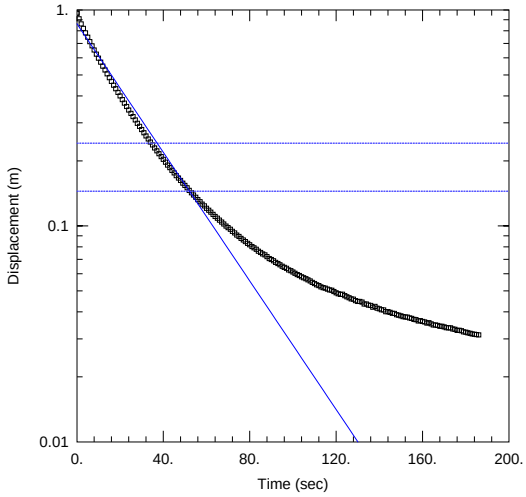
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.8869 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.5666 m/day y0 = 0.8953 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_HV_RHT1.aqt
Date: 09/17/25 Time: 16:19:49

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

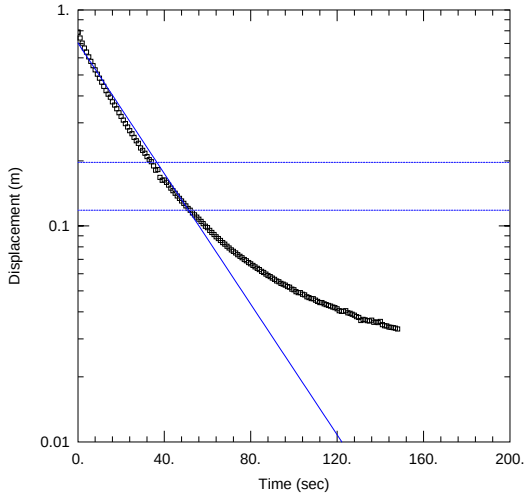
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.9662 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.4085 m/day y0 = 0.863 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS09_HV_RHT2.aqt
Date: 09/17/25 Time: 16:20:23

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

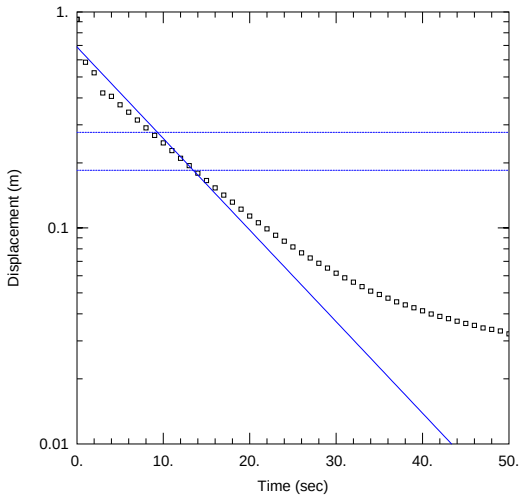
Saturated Thickness: 12. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS09)

Initial Displacement: 0.7879 m
Total Well Penetration Depth: 81.19 m
Casing Radius: 0.025 m
Static Water Column Height: 85.6 m
Screen Length: 12. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.415 m/day y0 = 0.7031 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_BR_FHT1.aqt
Date: 09/17/25 Time: 16:56:11

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

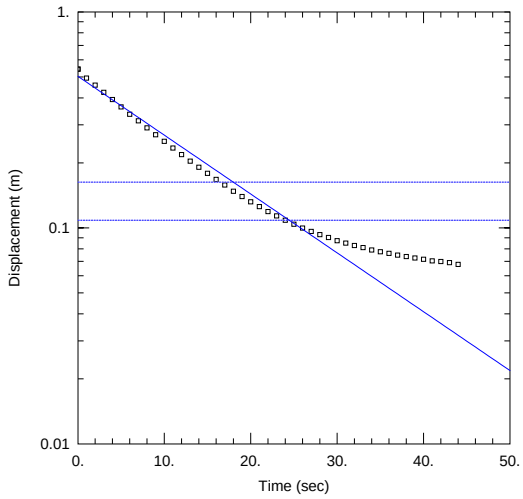
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MBIS10)

Initial Displacement: 0.9239 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.634 m/day y0 = 0.6886 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_BR_FHT2.aqt
Date: 09/17/25 Time: 16:57:20

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

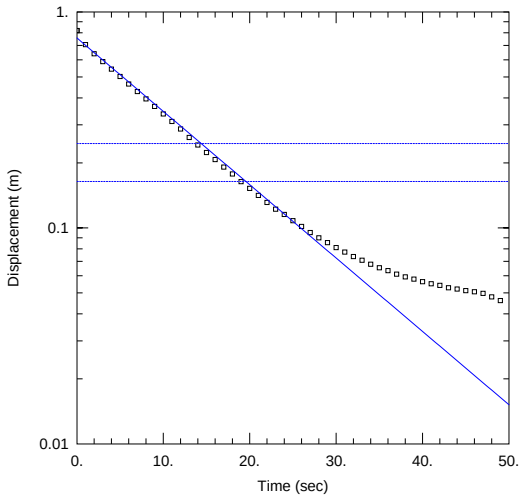
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.543 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.338 m/day y0 = 0.5036 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_BR_RHT1.aqt
Date: 09/17/25 Time: 16:57:55

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

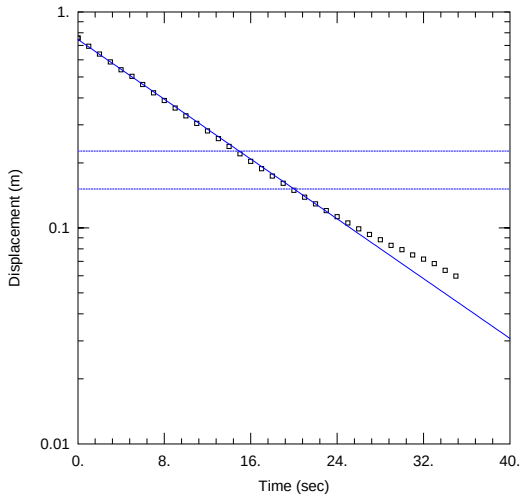
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.8196 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.667 m/day y0 = 0.7575 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_BR_RHT2.aqt
Date: 09/17/25 Time: 16:58:38

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

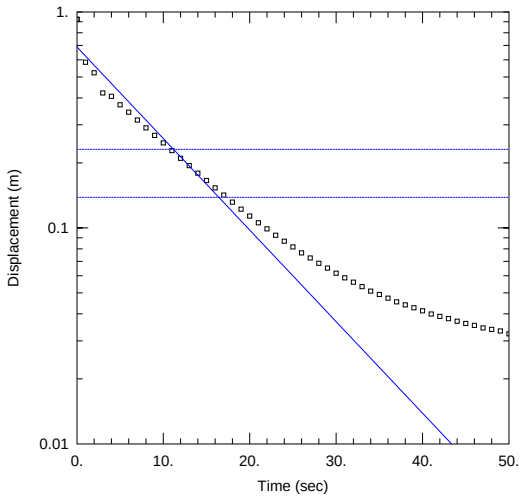
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.7564 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.699 m/day y0 = 0.7459 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_HV_FHT1.aqt
Date: 09/17/25 Time: 16:59:17

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

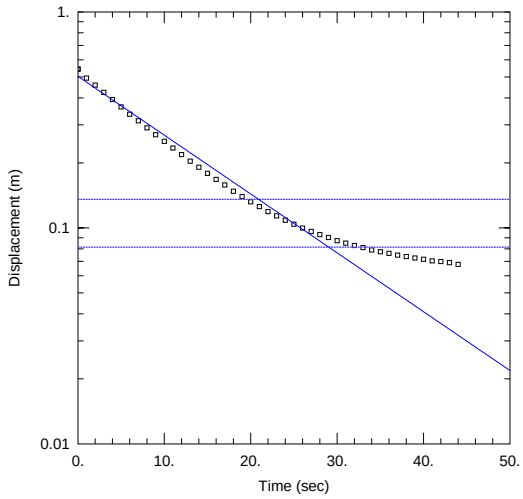
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.9239 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 2.511 m/day y0 = 0.6886 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_HV_FHT2.aqt
Date: 09/17/25 Time: 16:59:56

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

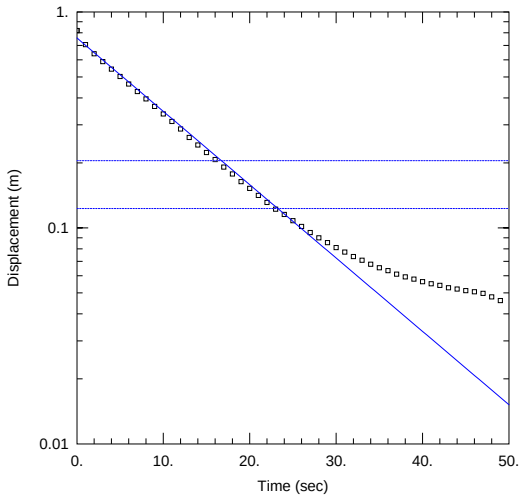
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.543 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.614 m/day y0 = 0.5035 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_HV_RHT1.aqt
Date: 09/17/25 Time: 17:00:30

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

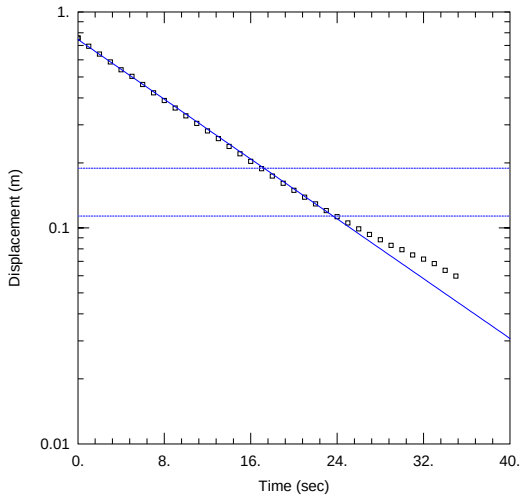
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.8196 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 2.011 m/day y0 = 0.7574 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS10_HV_RHT2.aqt
Date: 09/17/25 Time: 17:01:09

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

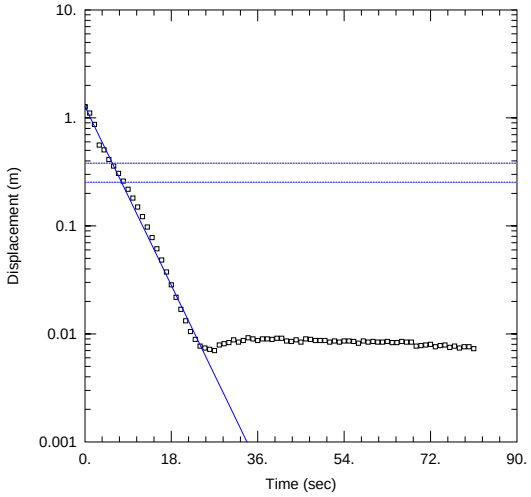
Saturated Thickness: 13.45 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS10)

Initial Displacement: 0.7564 m
Total Well Penetration Depth: 12.8 m
Casing Radius: 0.025 m
Static Water Column Height: 13.45 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 2.05 m/day y0 = 0.7459 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_BR_FHT1.aqt
Date: 09/18/25 Time: 09:24:38

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

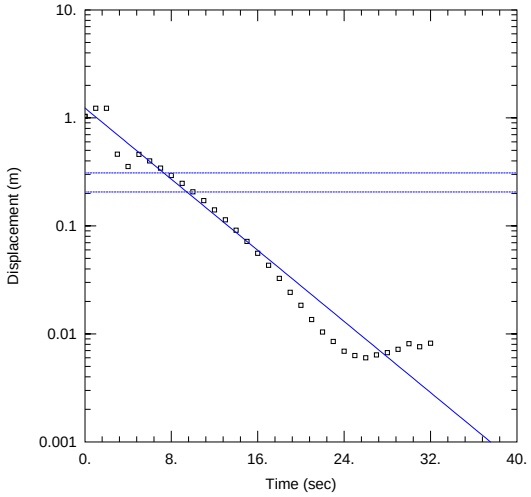
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.269 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 22.93 m/day y0 = 1.279 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_BR_FHT2.aqt
Date: 09/18/25 Time: 09:25:21

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

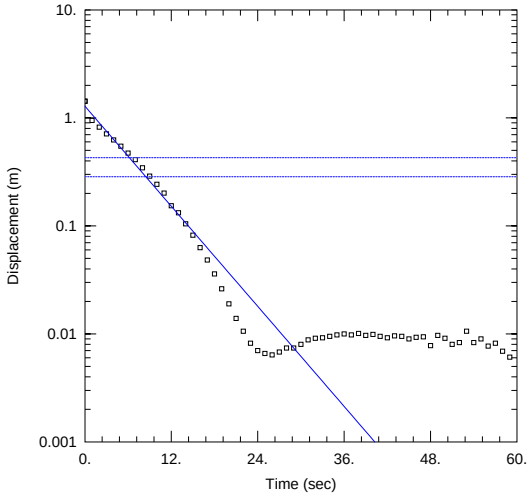
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.031 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 20.52 m/day y0 = 1.235 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_BR_RHT1.aqt
Date: 09/18/25 Time: 09:25:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

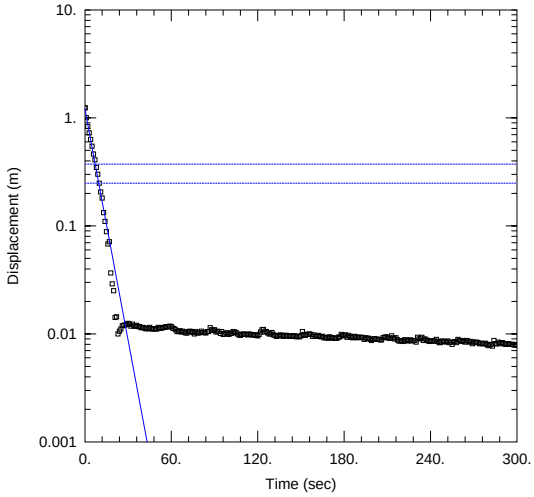
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.426 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 19.24 m/day y0 = 1.285 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_BR_RHT2.aqt
Date: 09/18/25 Time: 09:26:50

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

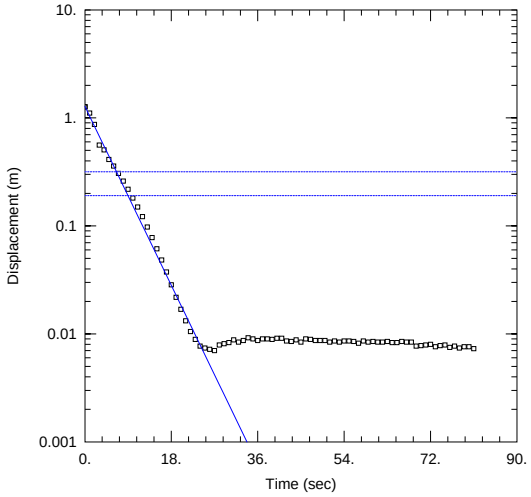
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.242 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 17.77 m/day y0 = 1.212 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_HV_FHT1.aqt
Date: 09/18/25 Time: 09:27:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

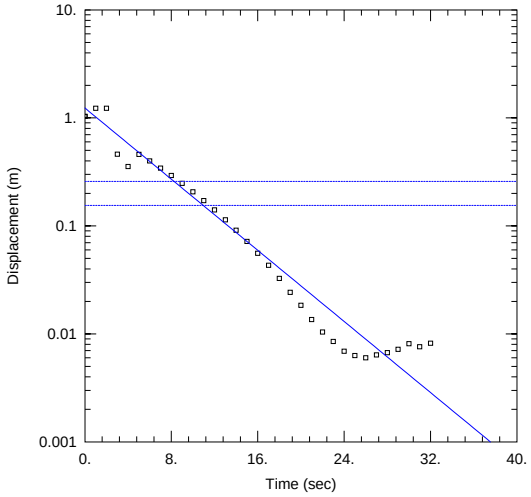
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.269 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 30.31 m/day y0 = 1.279 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_HV_FHT2.aqt
Date: 09/18/25 Time: 09:28:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

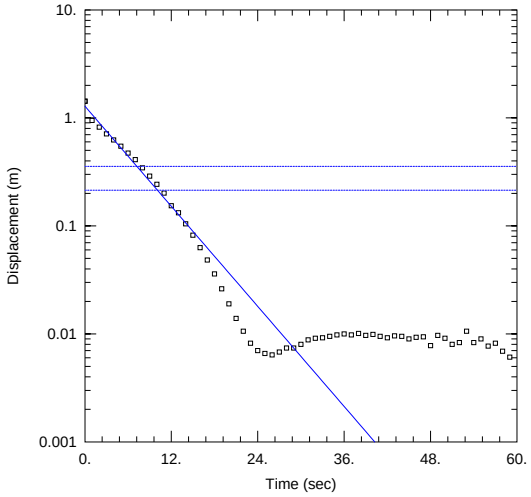
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.031 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 27.13 m/day y0 = 1.235 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_HV_RHT1.aqt
Date: 09/18/25 Time: 09:28:35

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

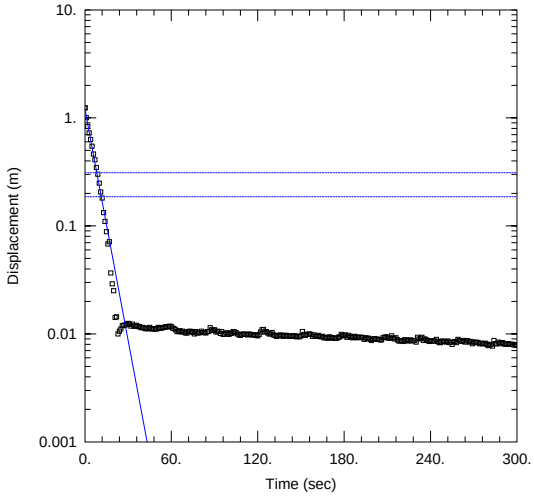
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.426 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 25.44 m/day y0 = 1.285 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS11_HV_RHT2.aqt
Date: 09/18/25 Time: 09:29:20

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

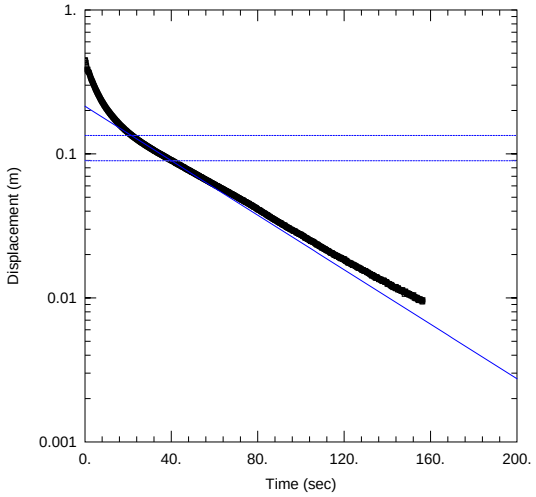
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS11)

Initial Displacement: 1.242 m
Total Well Penetration Depth: 80.13 m
Casing Radius: 0.025 m
Static Water Column Height: 81.13 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 23.5 m/day y0 = 1.212 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_FHT1.aqt
Date: 09/18/25 Time: 16:34:17

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

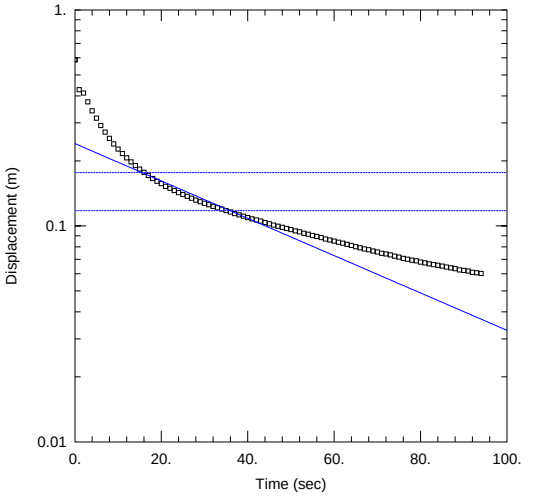
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.4479 m Static Water Column Height: 8.49 m
Total Well Penetration Depth: 6.49 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.7709 m/day y0 = 0.2146 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_FHT2.aqt
Date: 09/18/25 Time: 16:34:53

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

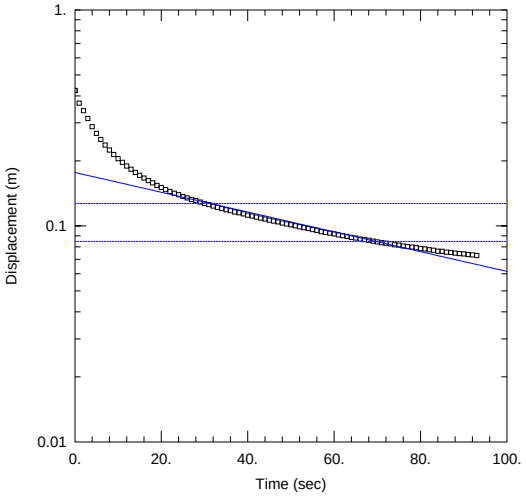
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.5881 m Static Water Column Height: 8.49 m
Total Well Penetration Depth: 6.49 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.7042 m/day y0 = 0.2406 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_FHT3.aqt
Date: 09/18/25 Time: 16:35:30

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

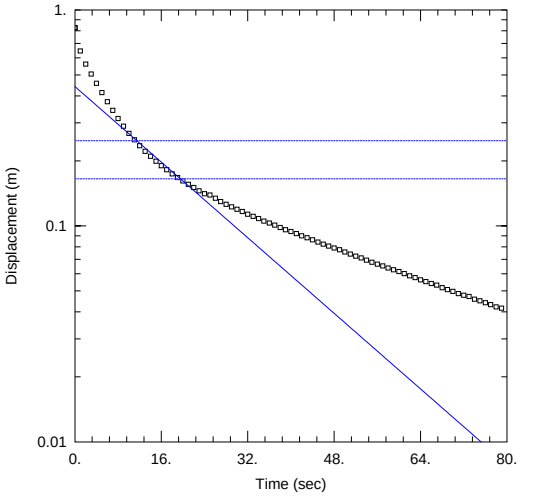
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.4234 m Static Water Column Height: 8.49 m
Total Well Penetration Depth: 6.49 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.3731 m/day y0 = 0.1767 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_RHT1.aqt
Date: 09/18/25 Time: 16:36:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

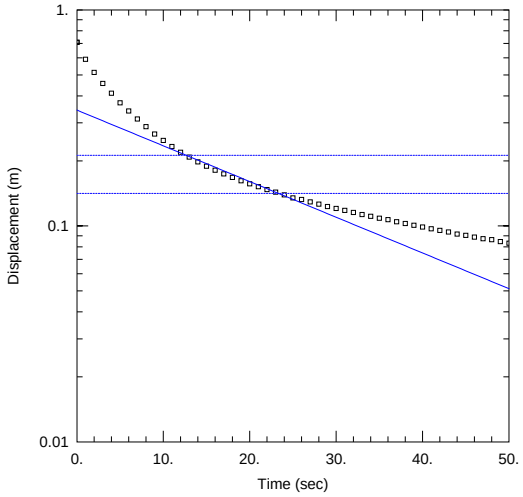
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.8263 m Static Water Column Height: 8.49 m
Total Well Penetration Depth: 6.49 m Screen Length: 3. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.782 m/day y0 = 0.442 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_RHT2.aqt
Date: 09/18/25 Time: 16:36:23

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

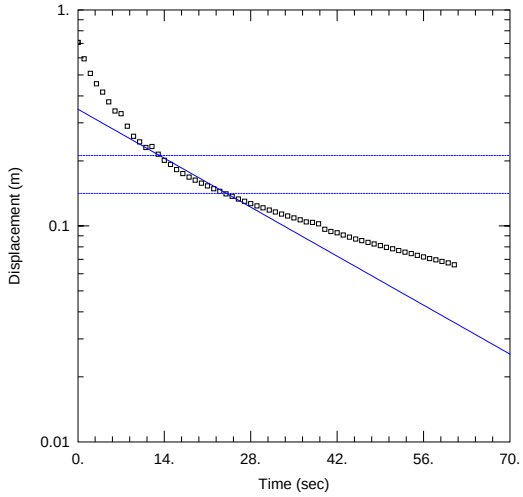
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.7075 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.347 m/day y0 = 0.3437 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_BR_RHT3.aqt
Date: 09/18/25 Time: 16:36:50

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

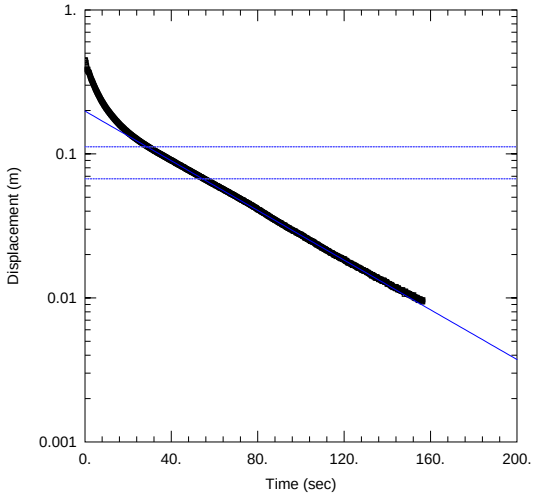
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.7066 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.319 m/day y0 = 0.3471 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_FHT1.aqt
Date: 09/18/25 Time: 16:37:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

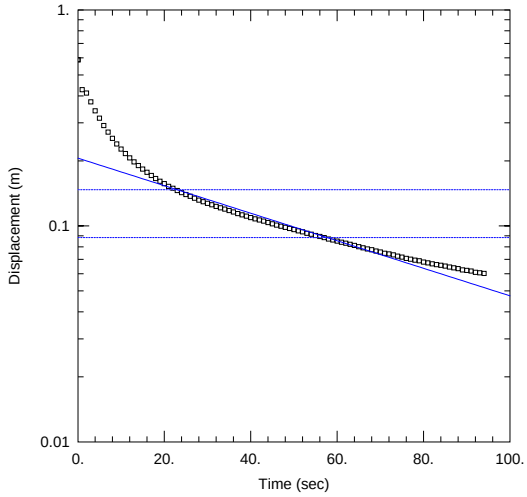
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.4479 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.8979 m/day y0 = 0.1984 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_FHT2.aqt
Date: 09/18/25 Time: 16:37:41

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

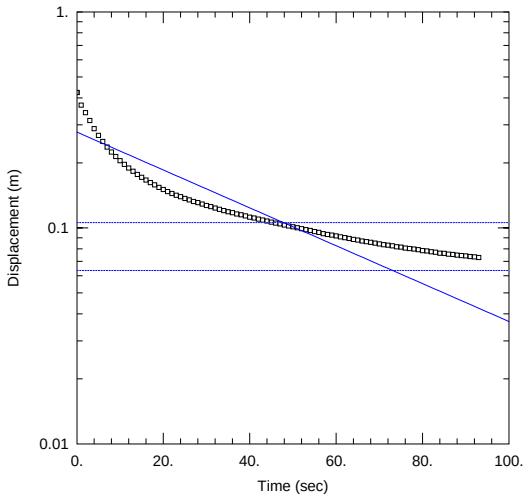
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.5881 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.6637 m/day y0 = 0.206 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_FHT3.aqt
Date: 09/18/25 Time: 16:39:05

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

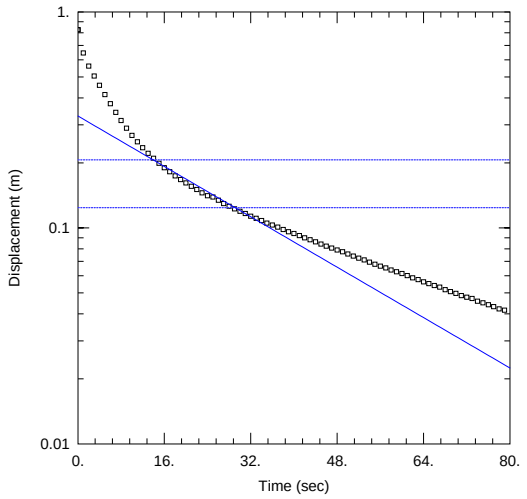
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.4234 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 0.9128 m/day y0 = 0.2777 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_RHT1.aqt
Date: 09/18/25 Time: 16:39:33

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

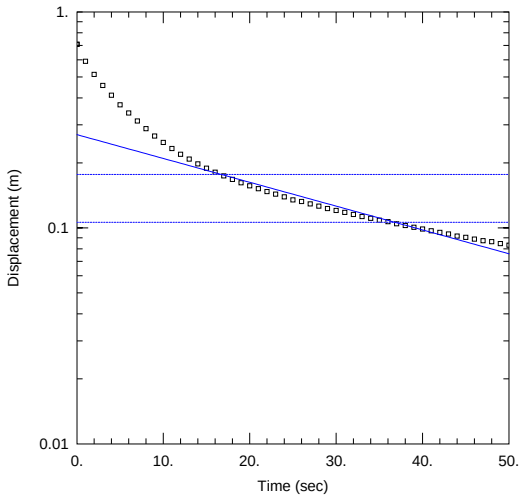
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.8263 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.518 m/day y0 = 0.3298 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_RHT2.aqt
Date: 09/18/25 Time: 16:39:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

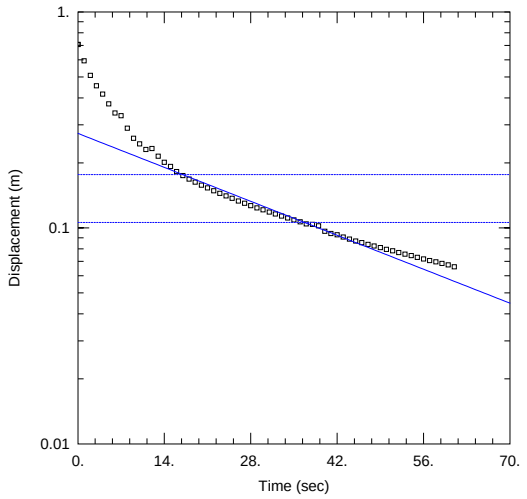
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.7075 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.148 m/day y0 = 0.2703 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS12_HV_RHT3.aqt
Date: 09/18/25 Time: 16:40:18

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

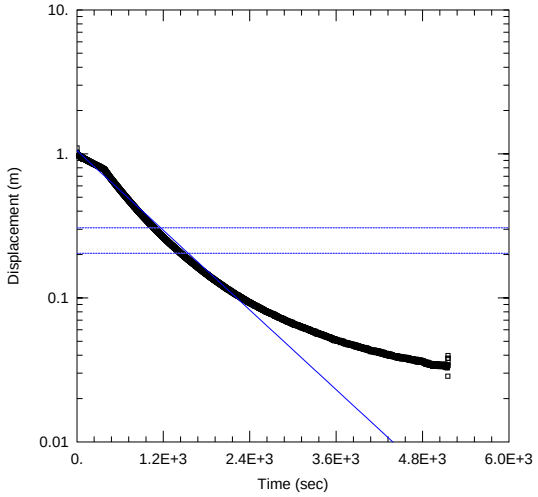
Saturated Thickness: 8.49 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS12)

Initial Displacement: 0.7066 m
Total Well Penetration Depth: 6.49 m
Casing Radius: 0.025 m
Static Water Column Height: 8.49 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.169 m/day y0 = 0.2739 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_BR_FHT1.aqt
Date: 09/18/25 Time: 09:40:19

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

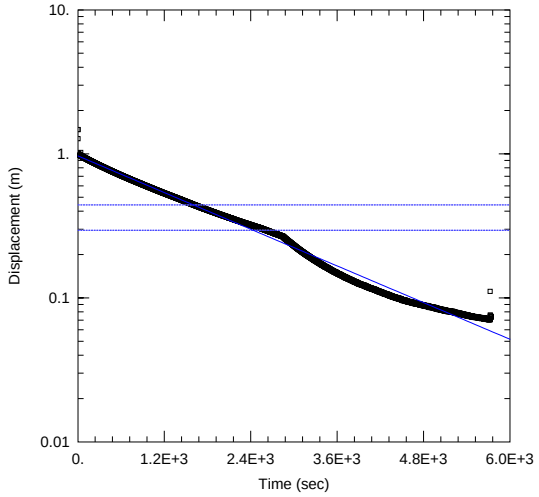
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 1.021 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.1193 m/day y0 = 1.055 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_BR_FHT2.aqt
Date: 09/18/25 Time: 09:41:14

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

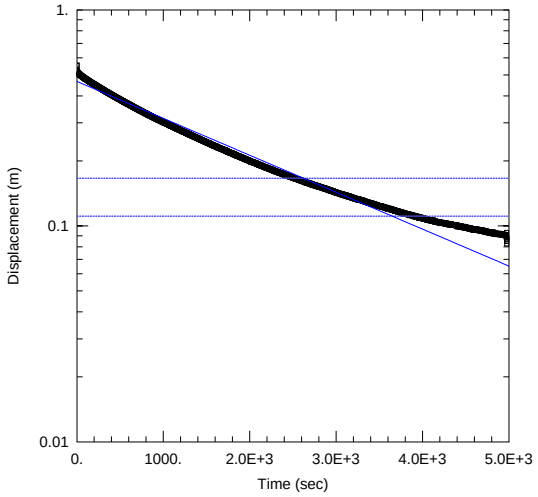
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 1.475 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.05492 m/day y0 = 0.9689 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_BR_RHT1.aqt
Date: 09/18/25 Time: 09:41:55

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

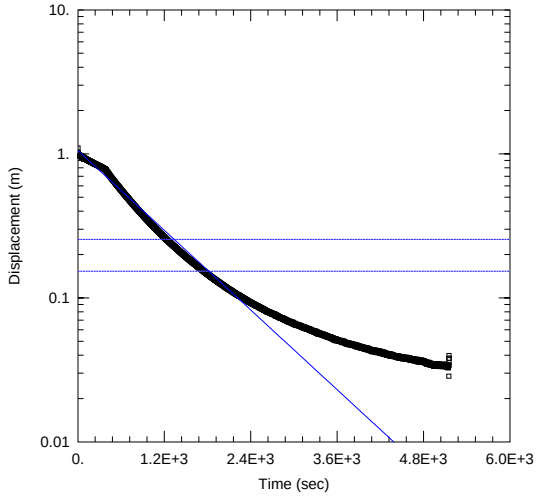
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 0.5547 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.04425 m/day y0 = 0.4668 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_HV_FHT1.aqt
Date: 09/18/25 Time: 09:42:28

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

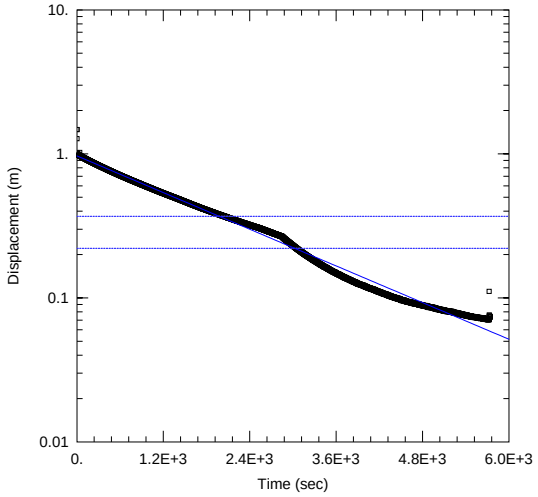
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 1.021 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.152 m/day y0 = 1.056 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_HV_FHT2.aqt
Date: 09/18/25 Time: 09:43:10

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

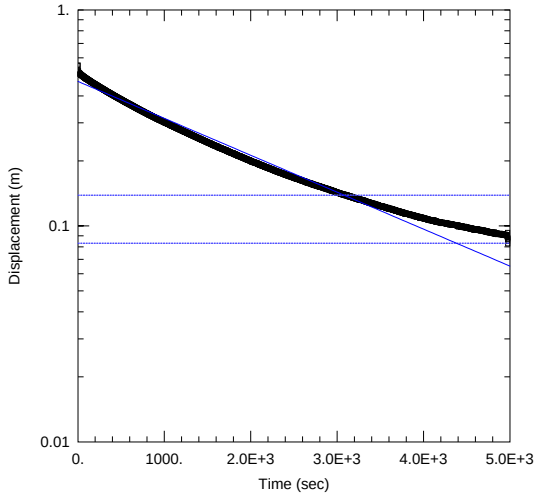
Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 1.475 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.06992 m/day y0 = 0.9689 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS13_HV_RHT1.aqt
Date: 09/18/25 Time: 09:43:50

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

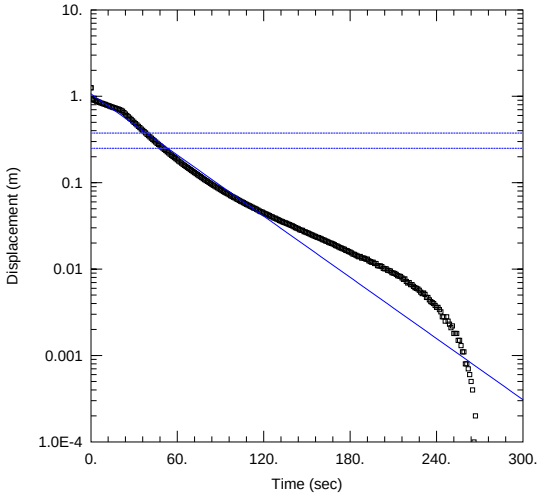
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS13)

Initial Displacement: 0.5547 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 140.5 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.01878 m/day y0 = 0.4668 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_FHT1.aqt
Date: 09/18/25 Time: 09:47:19

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

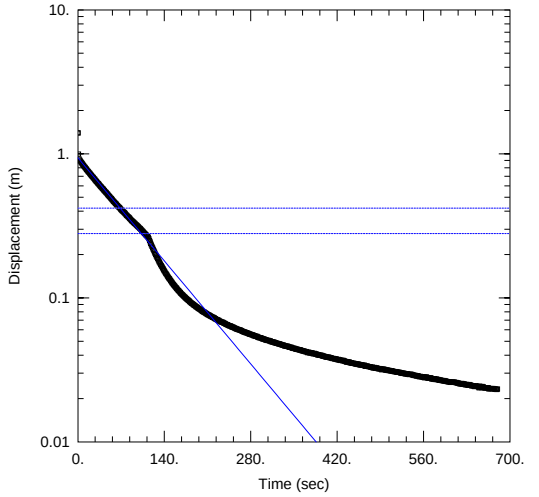
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.253 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.4928 m/day y0 = 1.069 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_FHT2.aqt
Date: 09/18/25 Time: 09:47:57

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

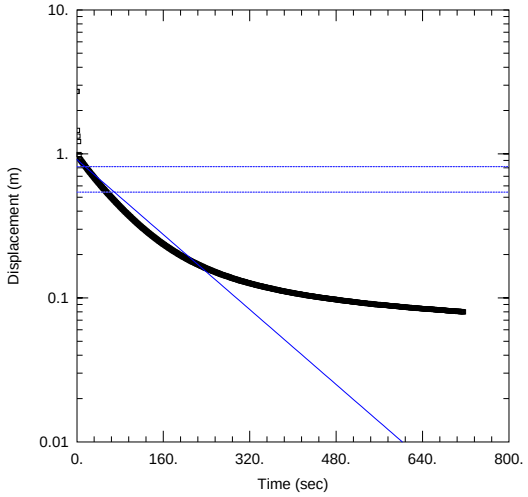
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.4 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.2135 m/day y0 = 0.9397 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_FHT3.aqt
Date: 09/18/25 Time: 09:48:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

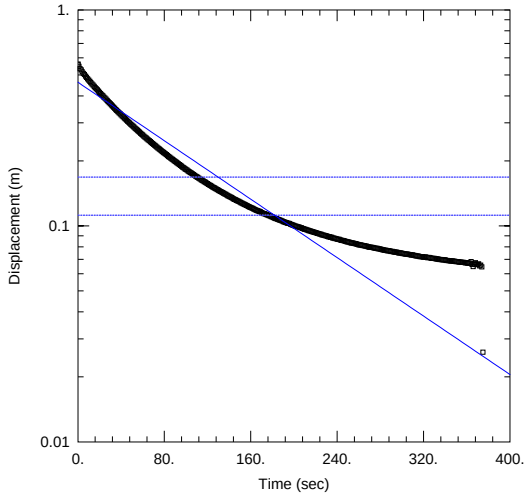
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 2.716 m Static Water Column Height: 40.23 m
Total Well Penetration Depth: 39.23 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.1359 m/day y0 = 0.9138 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_RHT1.aqt
Date: 09/18/25 Time: 09:49:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

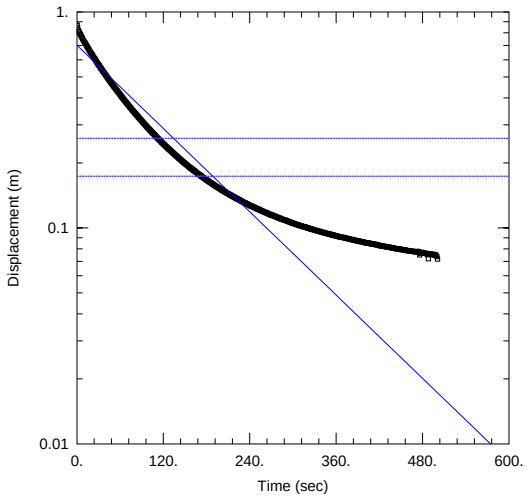
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 0.5607 m Static Water Column Height: 40.23 m
Total Well Penetration Depth: 39.23 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.1413 m/day y0 = 0.4626 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_RHT2.aqt
Date: 09/18/25 Time: 09:49:46

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

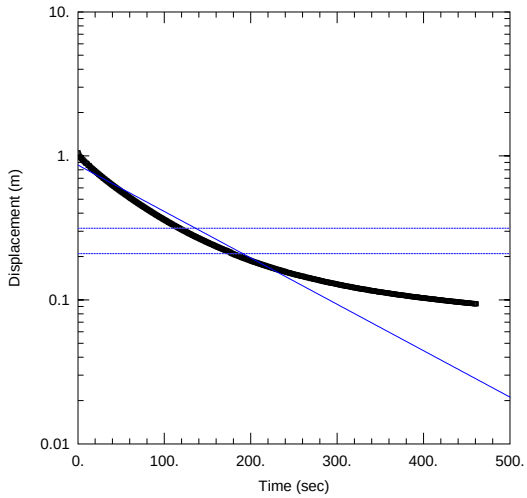
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 0.867 m Static Water Column Height: 40.23 m
Total Well Penetration Depth: 39.23 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.1342 m/day y0 = 0.7019 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_BR_RHT3.aqt
Date: 09/18/25 Time: 09:50:26

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

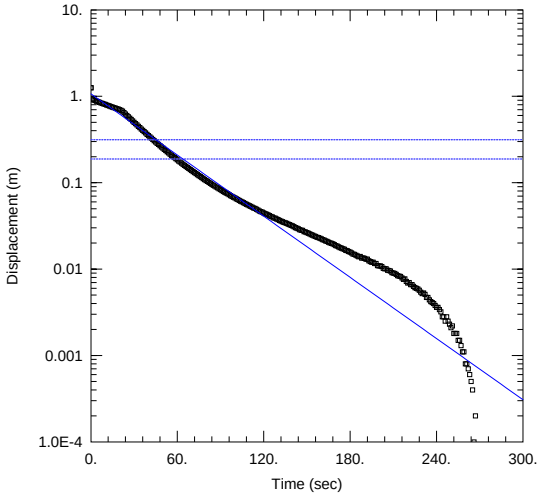
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.047 m Static Water Column Height: 40.23 m
Total Well Penetration Depth: 39.23 m Screen Length: 9. m
Casing Radius: 0.025 m Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.1346 m/day y0 = 0.8635 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_FHT1.aqt
Date: 09/18/25 Time: 09:51:00

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

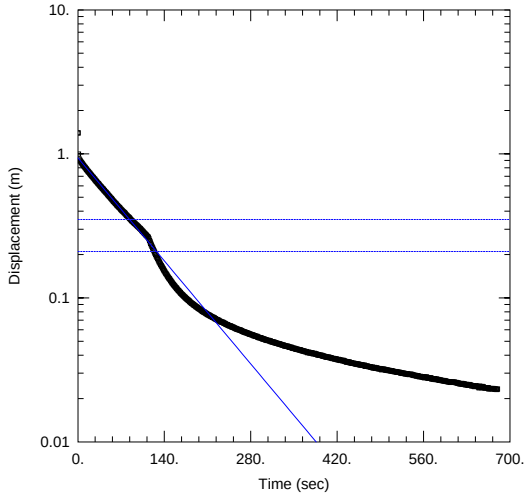
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.253 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.5554 m/day y0 = 1.069 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_FHT2.aqt
Date: 09/18/25 Time: 09:51:44

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

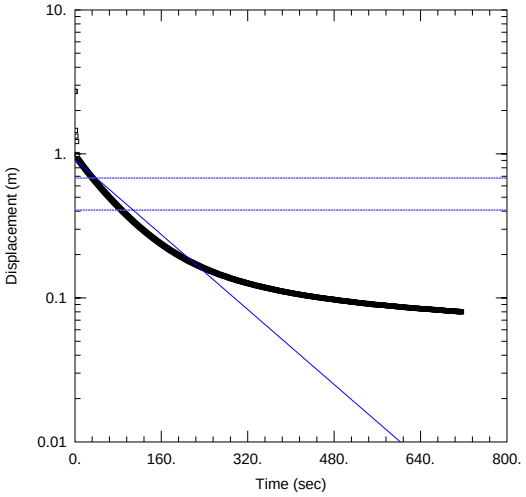
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.4 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.2405 m/day y0 = 0.9396 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_FHT3.aqt
Date: 09/18/25 Time: 09:52:21

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

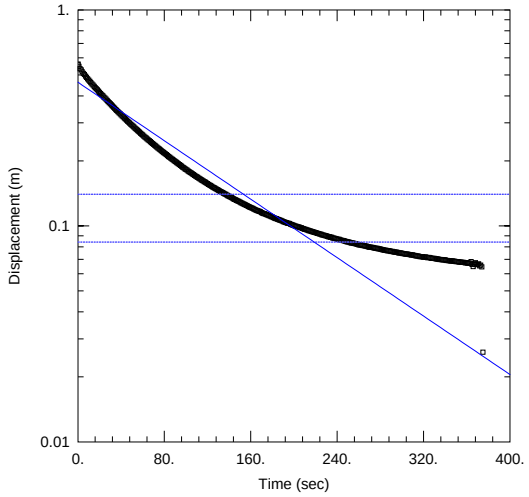
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 2.716 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.1531 m/day y0 = 0.9138 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_RHT1.aqt
Date: 09/18/25 Time: 09:52:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

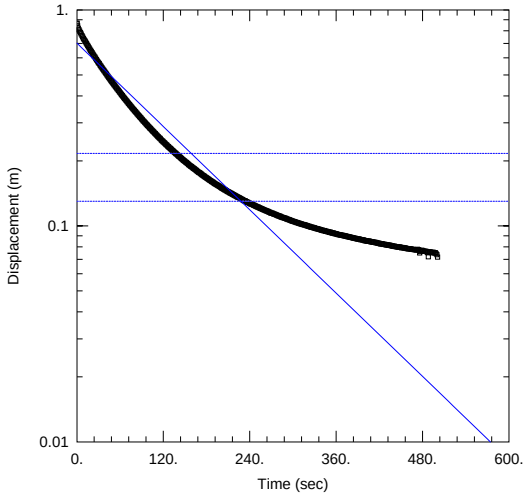
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 0.5607 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.1592 m/day y0 = 0.4626 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_RHT2.aqt
Date: 09/18/25 Time: 09:53:31

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

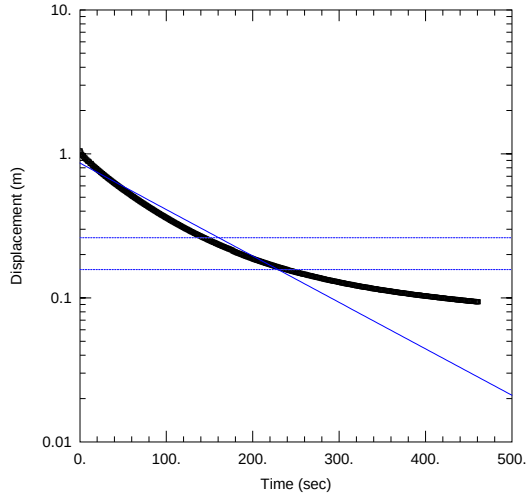
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 0.867 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.1513 m/day y0 = 0.7019 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS15_HV_RHT3.aqt
Date: 09/18/25 Time: 09:54:03

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

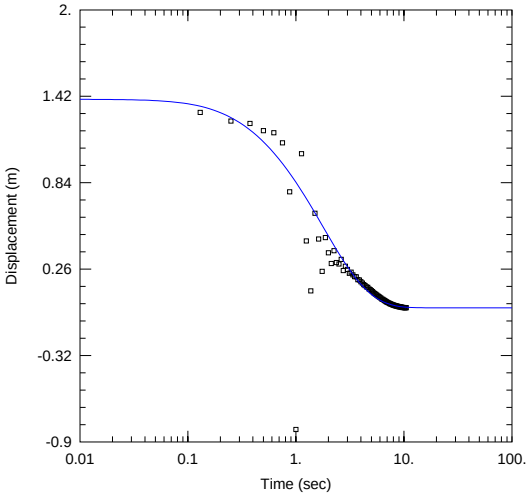
Saturated Thickness: 7. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS15)

Initial Displacement: 1.047 m
Total Well Penetration Depth: 39.23 m
Casing Radius: 0.025 m
Static Water Column Height: 40.23 m
Screen Length: 9. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.1518 m/day y0 = 0.8639 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS16_SG_FHT1.aqt
Date: 09/18/25 Time: 13:06:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

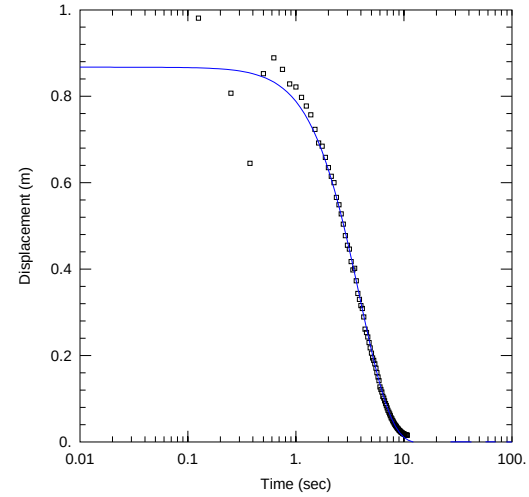
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS16)

Initial Displacement: 1.4 m
Total Well Penetration Depth: 37.27 m
Casing Radius: 0.025 m
Static Water Column Height: 39.46 m
Screen Length: 8. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar
K = 10.56 m/day Le = 1.585 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS16_SG_FHT2.aqt
Date: 09/18/25 Time: 13:14:05

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

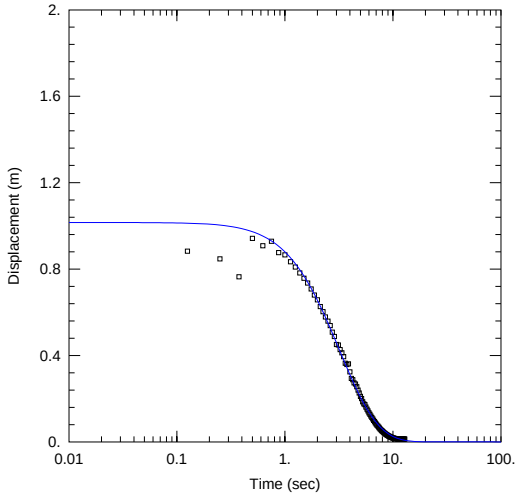
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS16)

Initial Displacement: 0.8674 m
Total Well Penetration Depth: 37.27 m
Casing Radius: 0.025 m
Static Water Column Height: 39.46 m
Screen Length: 8. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar
K = 5.486 m/day Le = 39.96 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS16_SG_RHT1.aqt
Date: 09/18/25 Time: 13:16:34

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

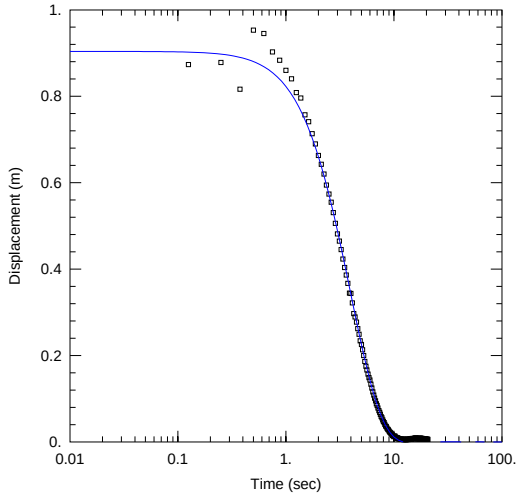
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS16)

Initial Displacement: 1.016 m
Total Well Penetration Depth: 37.27 m
Casing Radius: 0.025 m
Static Water Column Height: 39.46 m
Screen Length: 8. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 5.9 m/day
Le = 23.44 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS16_SG_RHT2.aqt
Date: 09/18/25 Time: 13:16:03

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

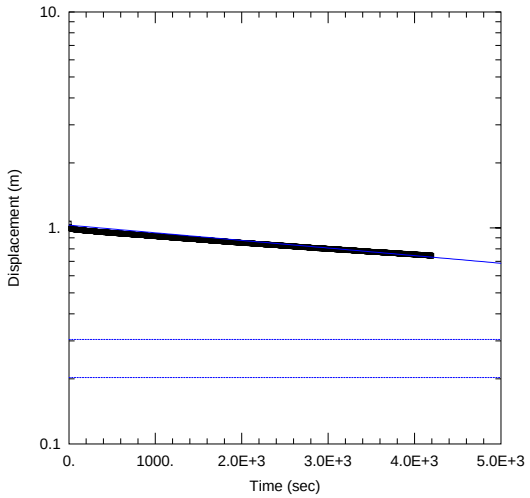
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS16)

Initial Displacement: 0.9039 m
Total Well Penetration Depth: 37.27 m
Casing Radius: 0.025 m
Static Water Column Height: 39.46 m
Screen Length: 8. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 5.442 m/day
Le = 40.93 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS18_BR_FHT1.aqt
Date: 09/18/25 Time: 12:07:54

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

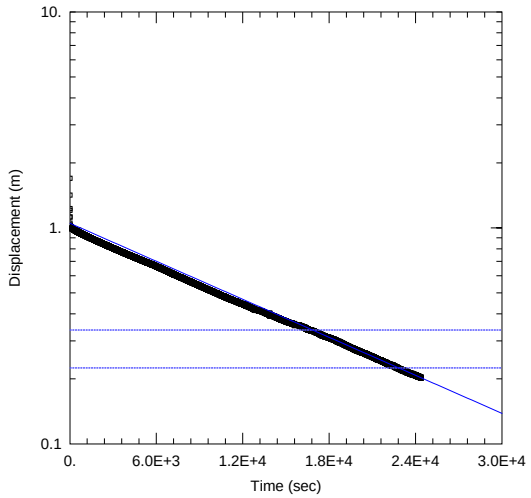
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS18)

Initial Displacement: 1.015 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 127.6 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.00369 m/day
y0 = 1.029 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS18_BR_RHT1.aqt
Date: 09/18/25 Time: 12:08:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

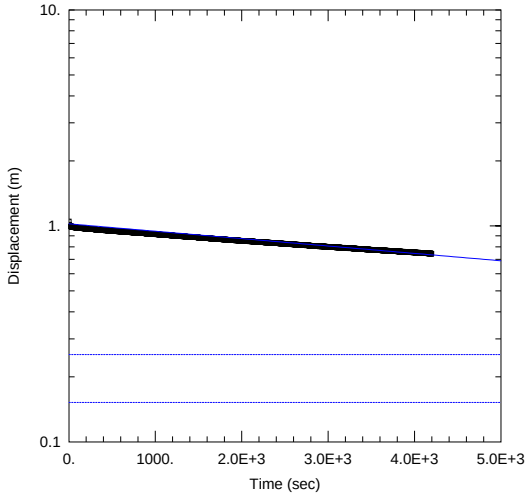
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS18)

Initial Displacement: 1.123 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 127.6 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.00307 m/day
y0 = 1.051 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS18_HV_FHT1.aqt
Date: 09/18/25 Time: 12:09:18

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

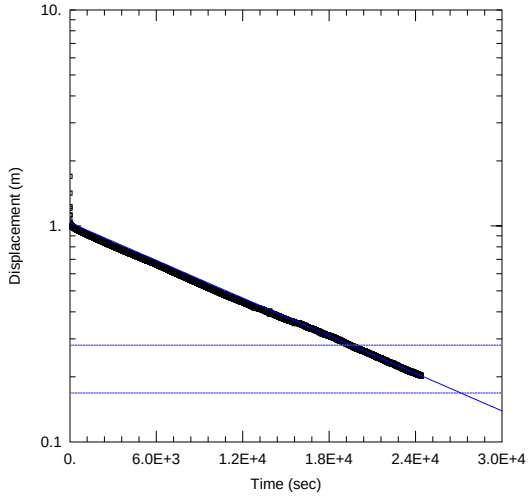
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS18)

Initial Displacement: 1.015 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 127.6 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.003756 m/day y0 = 1.022 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS18_HV_RHT1.aqt
Date: 09/18/25 Time: 12:09:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

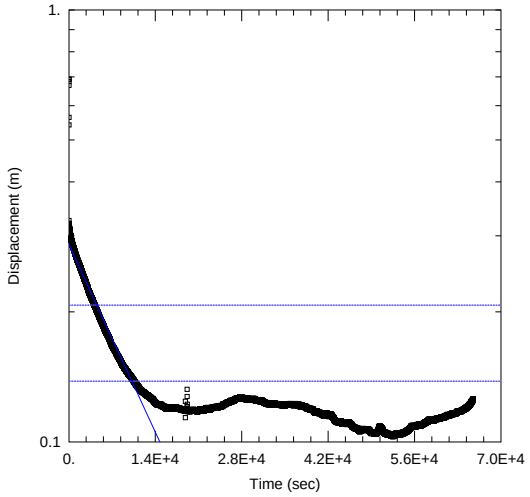
Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS18)

Initial Displacement: 1.123 m
Total Well Penetration Depth: 126.6 m
Casing Radius: 0.025 m
Static Water Column Height: 127.6 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.00319 m/day y0 = 1.035 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_FHT1.aqt
Date: 09/18/25 Time: 12:11:11

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

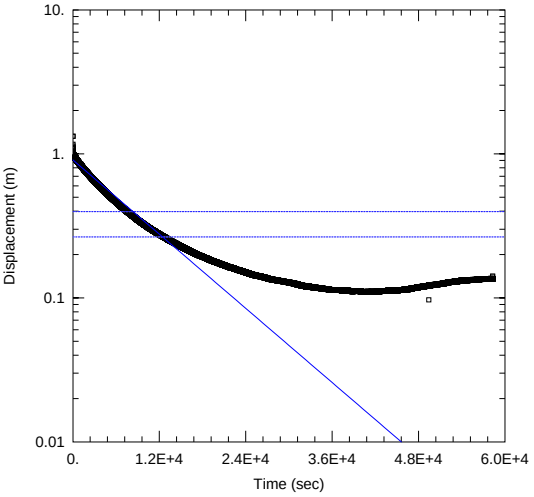
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 0.691 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.001965 m/day y0 = 0.2865 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_FHT2.aqt
Date: 09/18/25 Time: 12:11:58

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

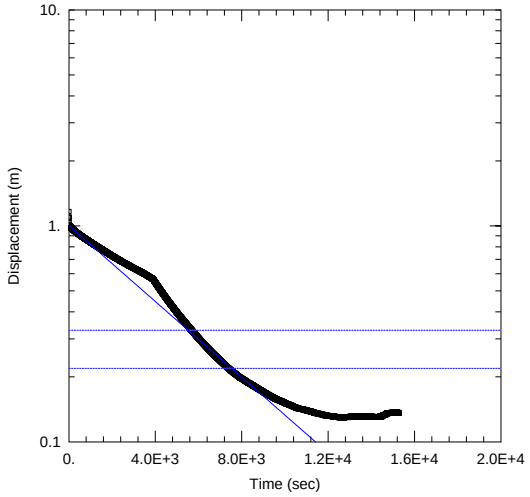
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.325 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.002721 m/day y0 = 0.9085 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_FHT3.aqt
Date: 09/18/25 Time: 12:12:34

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

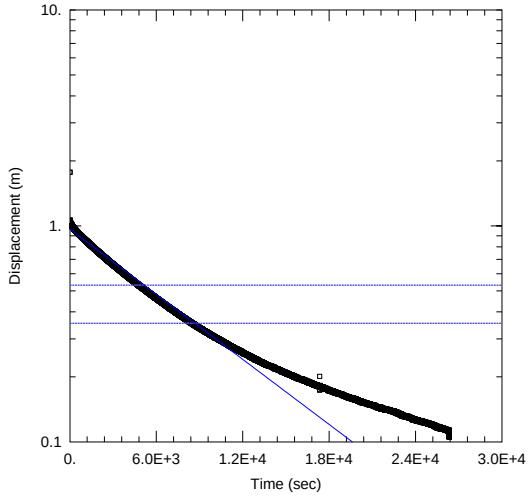
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.096 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.005556 m/day y0 = 1.002 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_RHT1.aqt
Date: 09/18/25 Time: 12:16:24

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

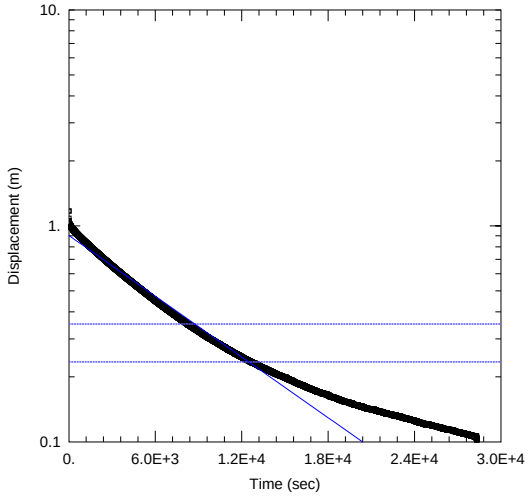
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.772 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.003181 m/day y0 = 0.9651 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_RHT2.aqt
Date: 09/18/25 Time: 12:17:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

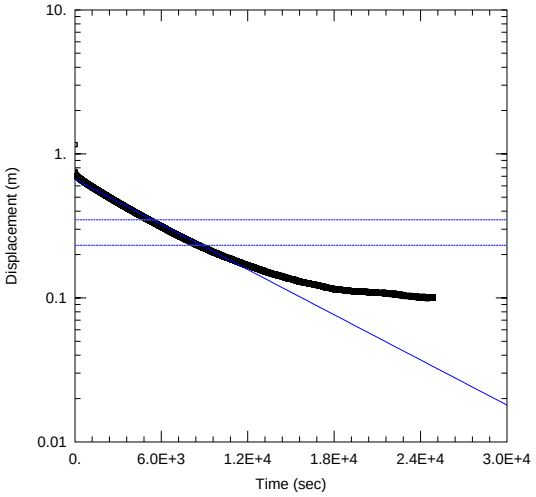
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.172 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.002971 m/day y0 = 0.9034 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_BR_RHT3.aqt
Date: 09/18/25 Time: 12:18:02

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

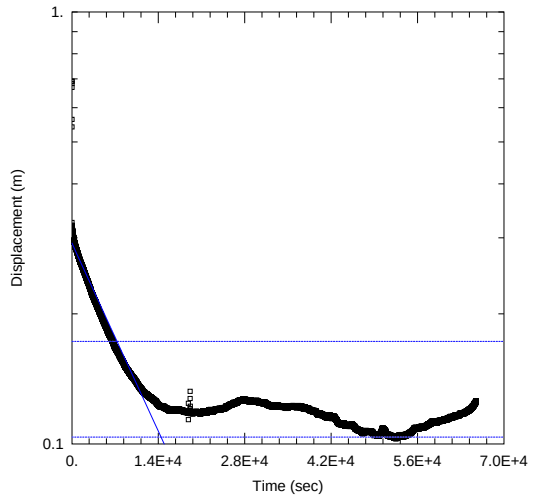
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.161 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.003313 m/day y0 = 0.6669 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_FHT1.aqt
Date: 09/18/25 Time: 12:18:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

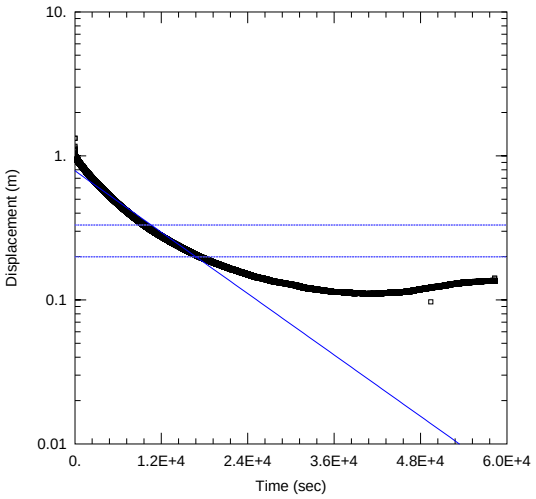
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 0.691 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.002064 m/day y0 = 0.2916 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_FHT2.aqt
Date: 09/18/25 Time: 12:19:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

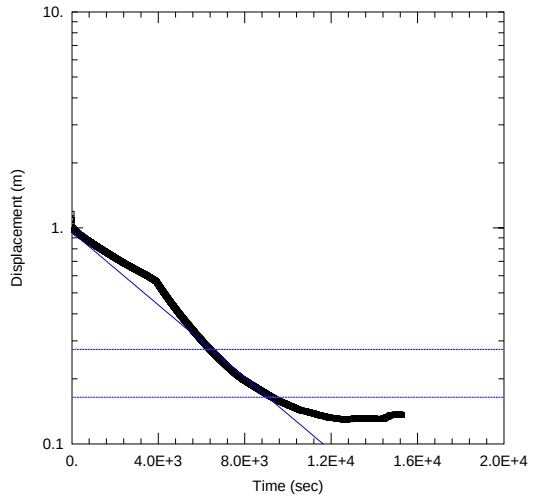
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.325 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.002359 m/day y0 = 0.7885 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_FHT3.aqt
Date: 09/18/25 Time: 12:20:12

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

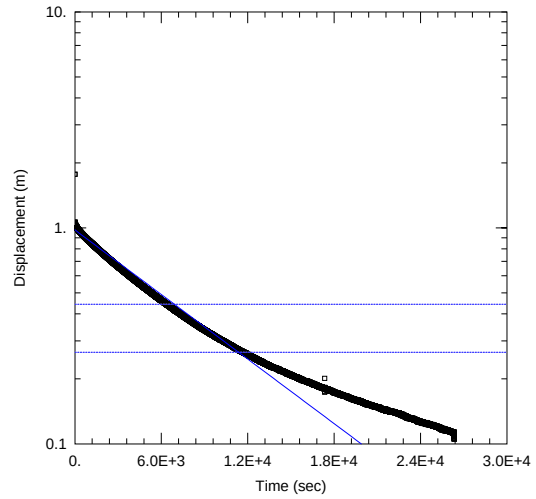
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.096 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.005602 m/day y0 = 0.9572 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_RHT1.aqt
Date: 09/18/25 Time: 12:20:44

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

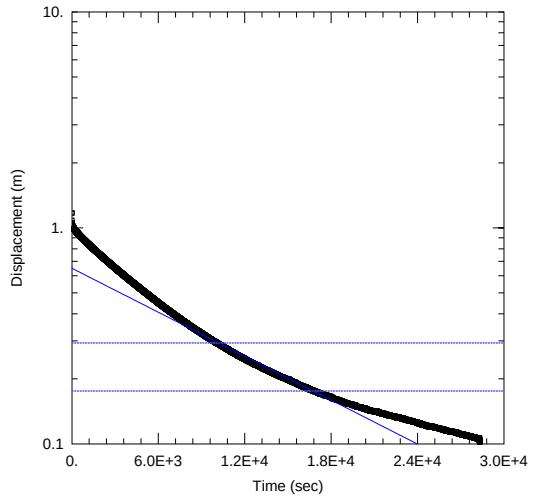
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.772 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.003309 m/day y0 = 0.9789 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_RHT2.aqt
Date: 09/18/25 Time: 12:21:40

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

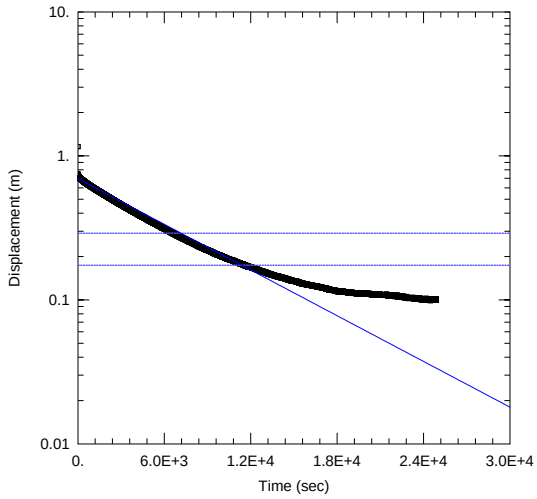
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.172 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.002252 m/day y0 = 0.6506 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS19_HV_RHT3.aqt
Date: 09/18/25 Time: 12:22:16

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

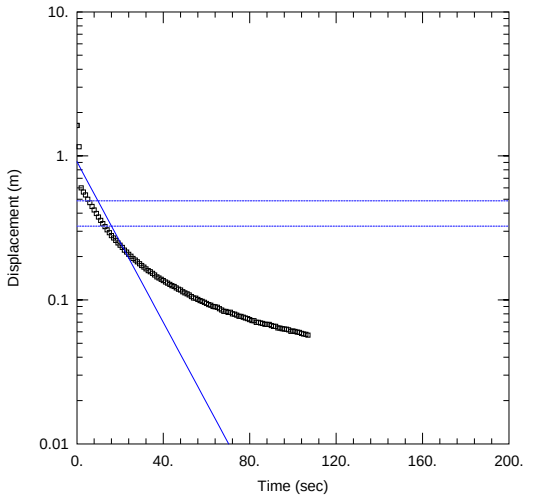
Saturated Thickness: 9. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS19)

Initial Displacement: 1.161 m
Total Well Penetration Depth: 68.25 m
Casing Radius: 0.025 m
Static Water Column Height: 69.25 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.003514 m/day y0 = 0.696 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_FHT1.aqt
Date: 09/18/25 Time: 10:20:55

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

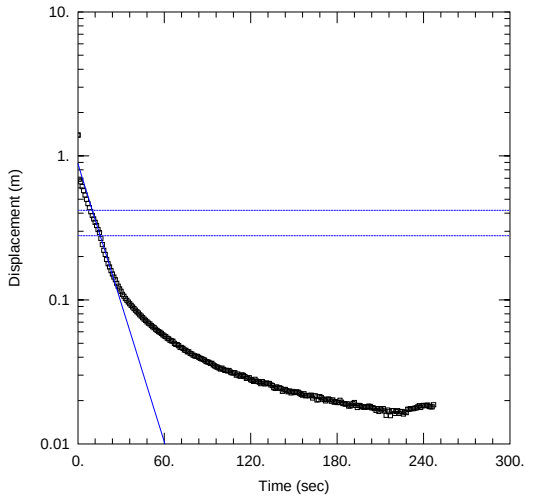
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.626 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.593 m/day y0 = 0.9117 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_FHT2.aqt
Date: 09/18/25 Time: 10:21:40

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

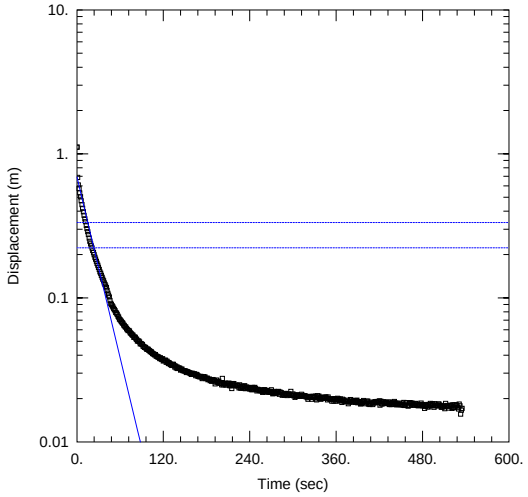
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.397 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.991 m/day y0 = 0.8823 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_FHT3.aqt
Date: 09/18/25 Time: 10:22:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

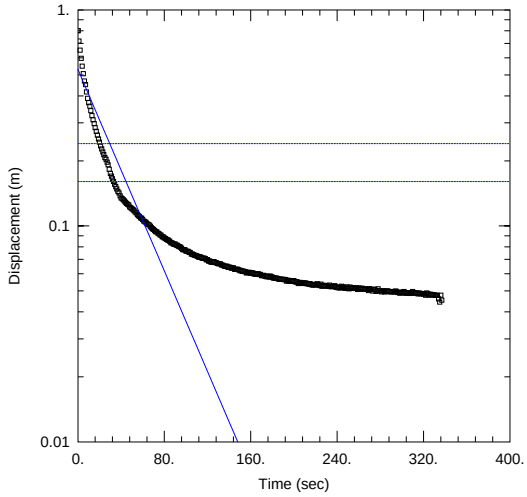
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.113 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.943 m/day y0 = 0.6929 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_RHT1.aqt
Date: 09/18/25 Time: 10:22:53

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

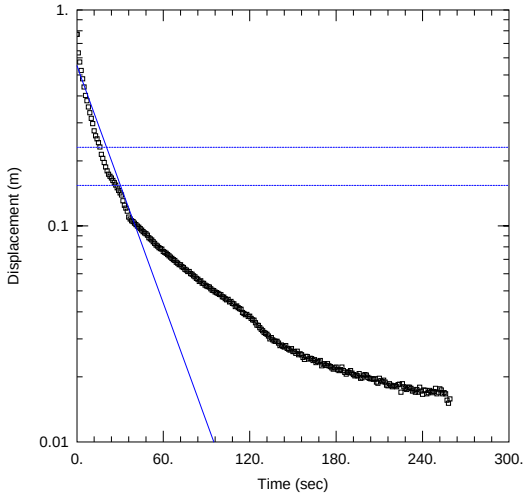
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.8018 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.083 m/day y0 = 0.5303 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_RHT2.aqt
Date: 09/18/25 Time: 10:23:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

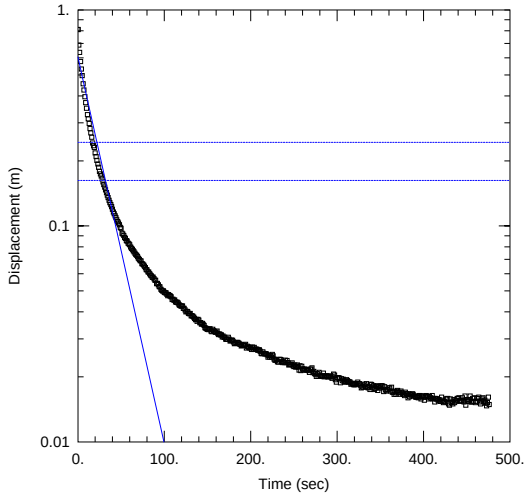
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.7705 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.703 m/day y0 = 0.5517 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_BR_RHT3.aqt
Date: 09/18/25 Time: 10:24:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

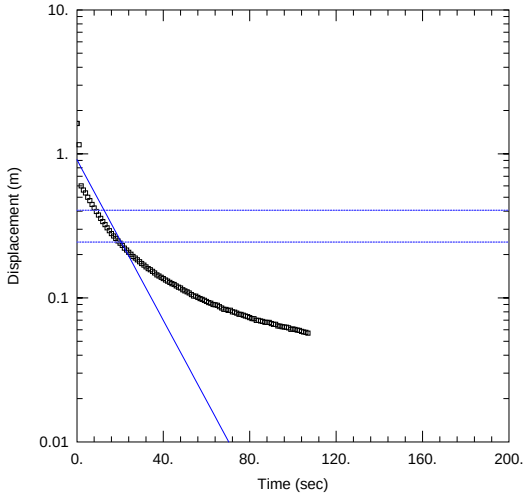
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.8116 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.663 m/day y0 = 0.6048 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_FHT1.aqt
Date: 09/18/25 Time: 10:25:07

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

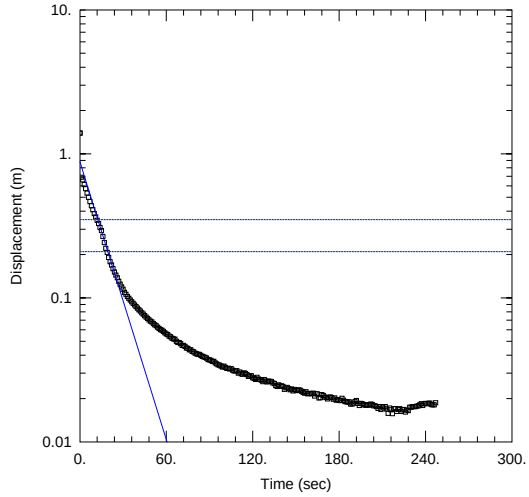
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.626 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 2.901 m/day y0 = 0.9115 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_FHT2.aqt
Date: 09/18/25 Time: 10:25:44

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

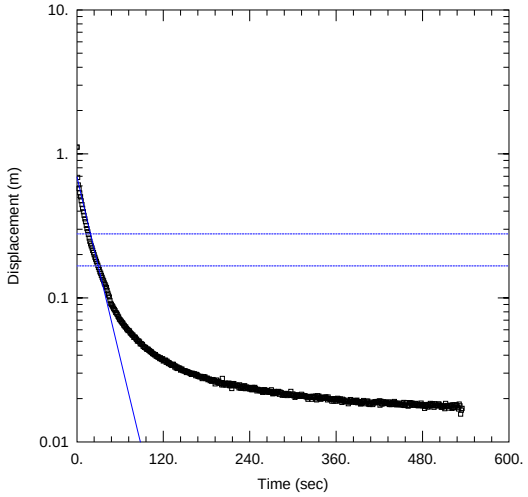
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.397 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 3.345 m/day y0 = 0.8818 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_FHT3.aqt
Date: 09/18/25 Time: 10:26:25

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

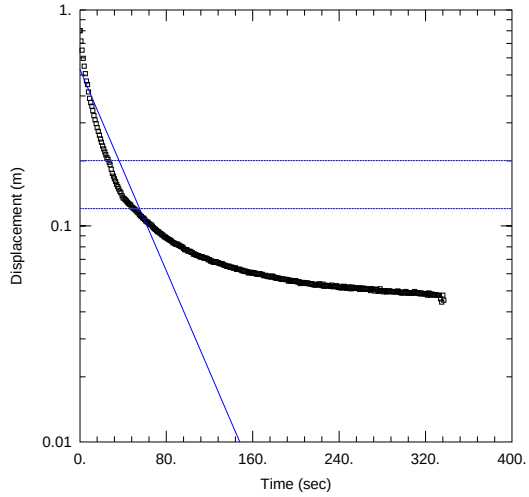
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 1.113 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 2.176 m/day y0 = 0.6929 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_RHT1.aqt
Date: 09/18/25 Time: 10:27:06

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

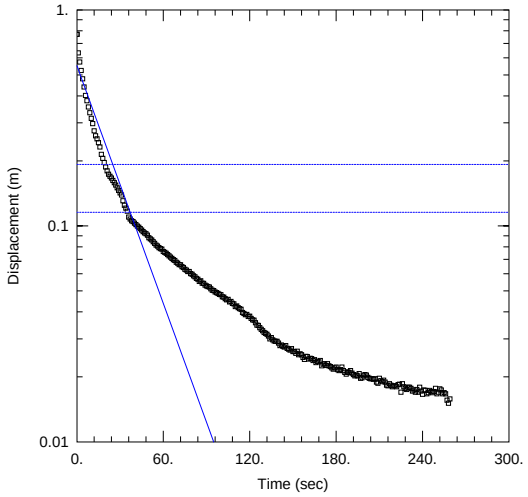
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.8018 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.213 m/day y0 = 0.5303 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_RHT2.aqt
Date: 09/18/25 Time: 10:27:39

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

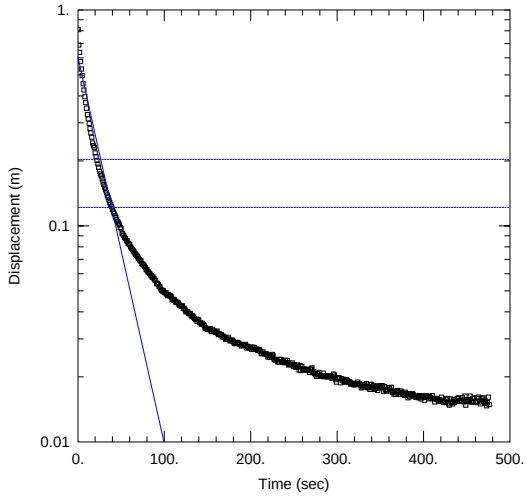
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.7705 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.909 m/day y0 = 0.5521 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS20_HV_RHT3.aqt
Date: 09/18/25 Time: 10:28:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

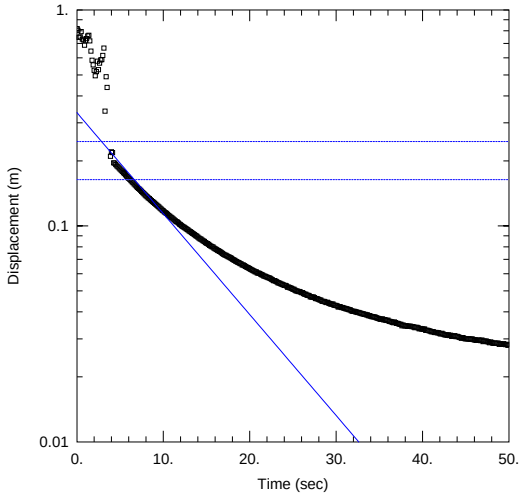
Saturated Thickness: 22.58 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS20)

Initial Displacement: 0.8116 m
Total Well Penetration Depth: 20.58 m
Casing Radius: 0.025 m
Static Water Column Height: 22.58 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.861 m/day y0 = 0.6047 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS23_BR_FHT2.aqt
Date: 09/18/25 Time: 14:42:22

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

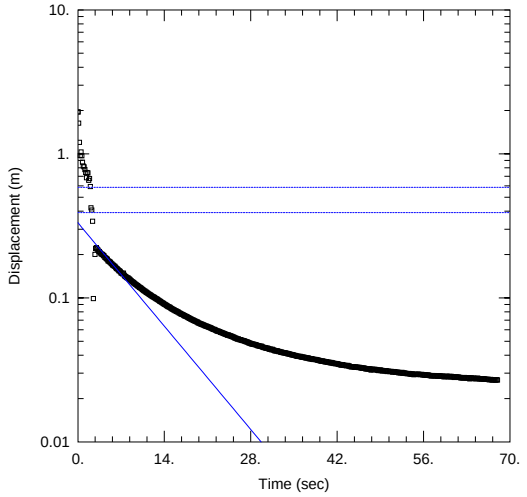
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS23)

Initial Displacement: 0.819 m
Total Well Penetration Depth: 6. m
Casing Radius: 0.025 m
Static Water Column Height: 4.68 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.023 m/day y0 = 0.3345 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS23_BR_FHT4.aqt
Date: 09/18/25 Time: 14:44:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

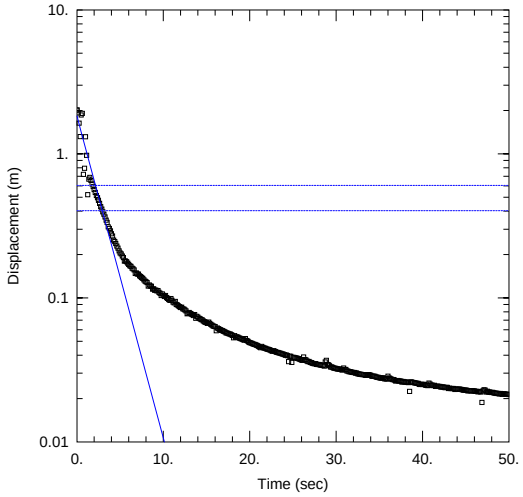
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS23)

Initial Displacement: 1.954 m
Total Well Penetration Depth: 6. m
Casing Radius: 0.025 m
Static Water Column Height: 4.68 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.219 m/day y0 = 0.3325 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS23_BR_RHT2.aqt
Date: 09/18/25 Time: 14:47:34

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

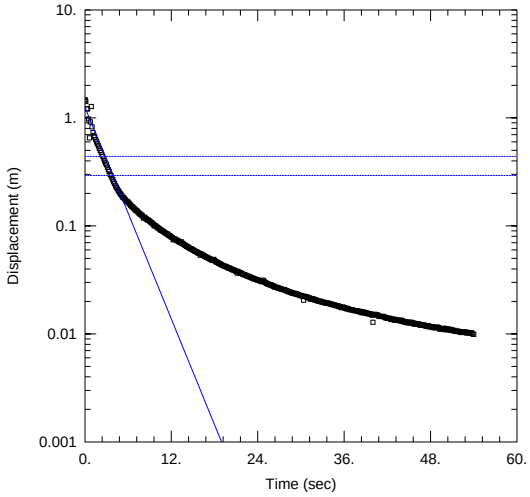
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS23)

Initial Displacement: 2.016 m
Total Well Penetration Depth: 6. m
Casing Radius: 0.025 m
Static Water Column Height: 4.68 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 9.675 m/day y0 = 1.835 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS23_BR_RHT4.aqt
Date: 09/18/25 Time: 14:48:21

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 26/06/2025

AQUIFER DATA

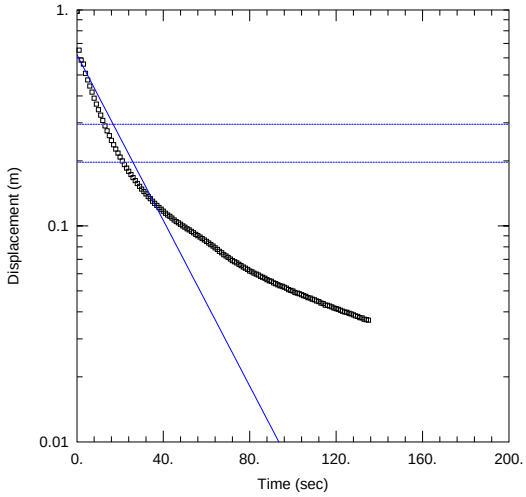
Saturated Thickness: 8. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS23)

Initial Displacement: 1.466 m
Total Well Penetration Depth: 6. m
Casing Radius: 0.025 m
Static Water Column Height: 4.68 m
Screen Length: 6. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.07 m/day y0 = 1.257 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_BR_FHT1.aqt
Date: 09/18/25 Time: 10:34:32

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

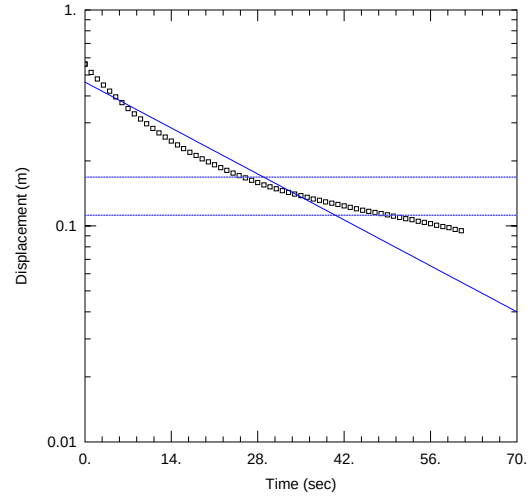
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.9858 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.566 m/day y0 = 0.6207 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_BR_FHT2.aqt
Date: 09/18/25 Time: 10:35:25

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

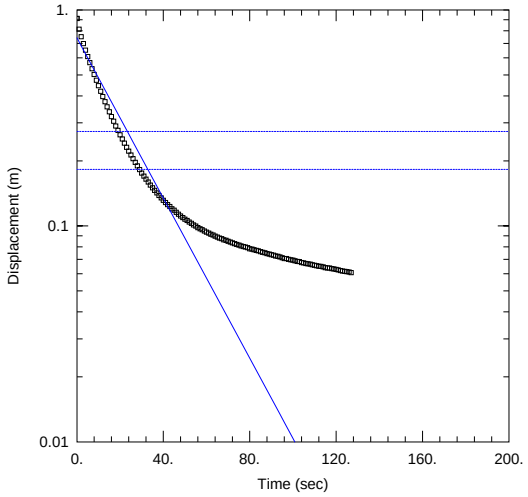
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.5609 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.241 m/day y0 = 0.4635 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_BR_RHT1.aqt
Date: 09/18/25 Time: 10:35:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

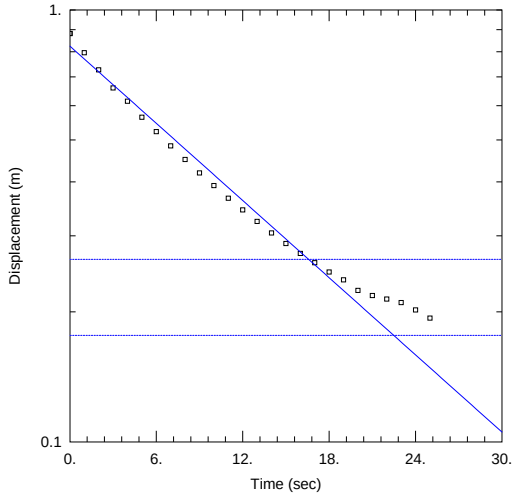
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.9127 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.514 m/day y0 = 0.7423 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_BR_RHT2.aqt
Date: 09/18/25 Time: 10:36:37

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

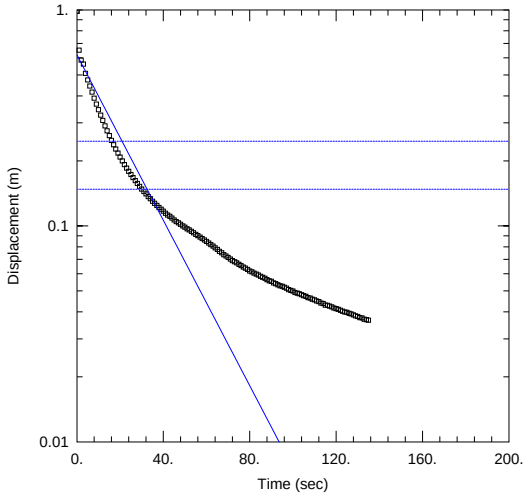
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.8821 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.432 m/day y0 = 0.8245 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_HV_FHT1.aqt
Date: 09/18/25 Time: 10:37:17

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

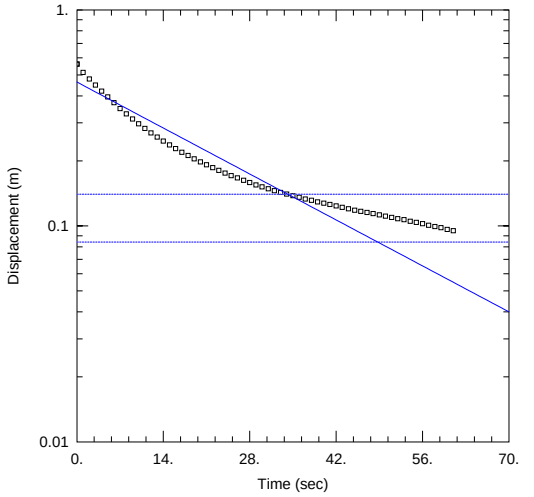
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.9858 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.993 m/day y0 = 0.6201 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_HV_FHT2.aqt
Date: 09/18/25 Time: 10:37:59

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

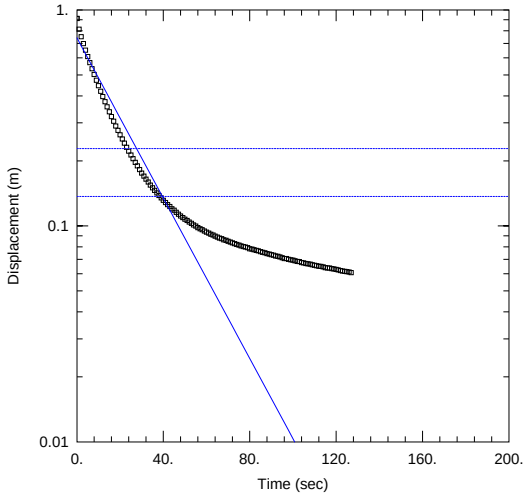
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.5609 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.582 m/day y0 = 0.4635 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_HV_RHT1.aqt
Date: 09/18/25 Time: 10:38:35

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

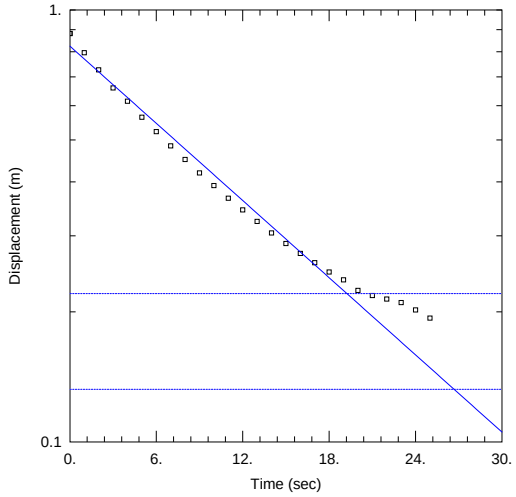
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.9127 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.931 m/day y0 = 0.7426 m



WELL TEST ANALYSIS

Data Set: H:\...\MBIS28_HV_RHT2.aqt
Date: 09/18/25 Time: 10:39:19

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

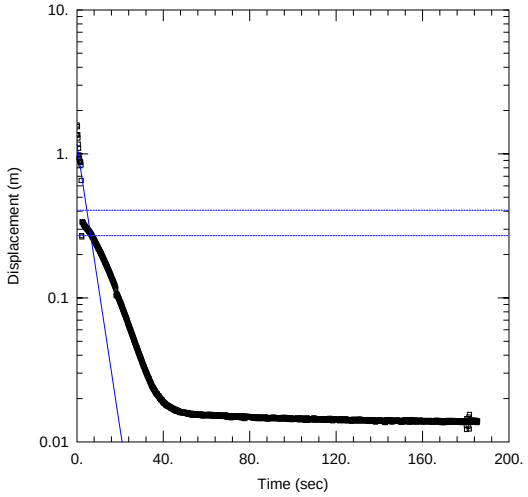
Saturated Thickness: 6.37 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MBIS28)

Initial Displacement: 0.8821 m
Total Well Penetration Depth: 5.58 m
Casing Radius: 0.025 m
Static Water Column Height: 6.37 m
Screen Length: 3. m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 3.1 m/day y0 = 0.8245 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_FHT1.aqt
Date: 09/18/25 Time: 10:40:34

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

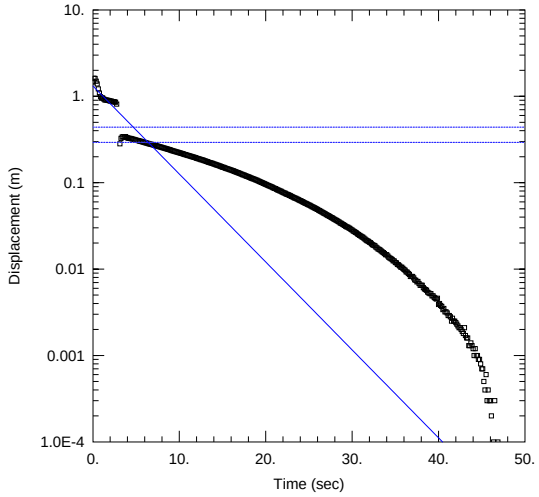
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.354 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.349 m/day y0 = 1.165 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_FHT2.aqt
Date: 09/18/25 Time: 10:41:20

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

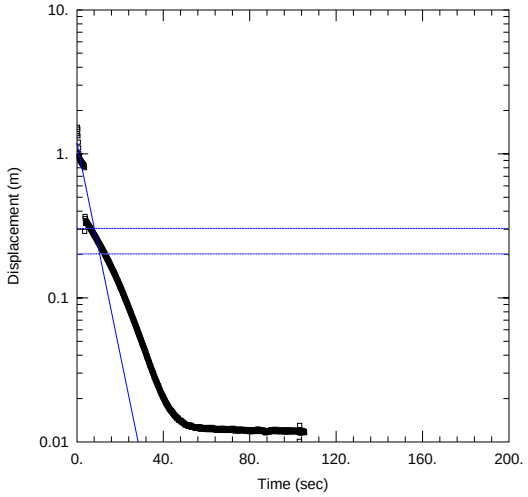
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.467 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.39 m/day y0 = 1.316 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_FHT3.aqt
Date: 09/18/25 Time: 10:41:52

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

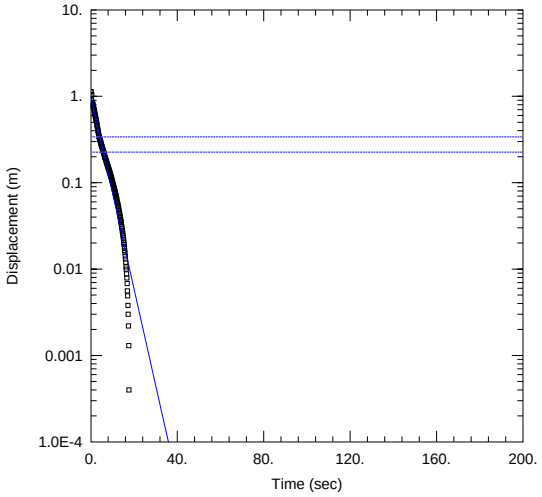
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.011 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.9994 m/day y0 = 1.191 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_RHT1.aqt
Date: 09/18/25 Time: 10:42:58

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

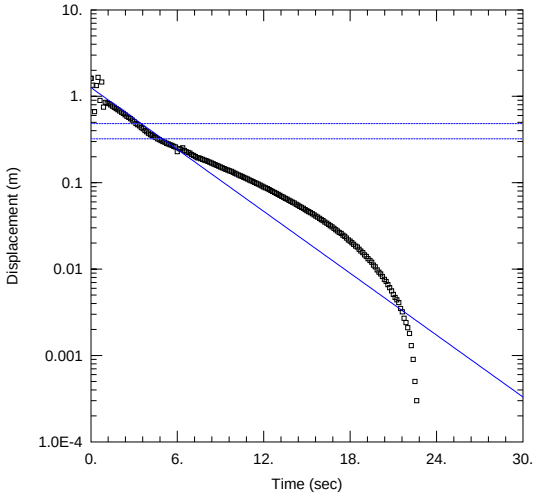
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.129 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.523 m/day y0 = 1.002 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_RHT2.aqt
Date: 09/18/25 Time: 10:43:31

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

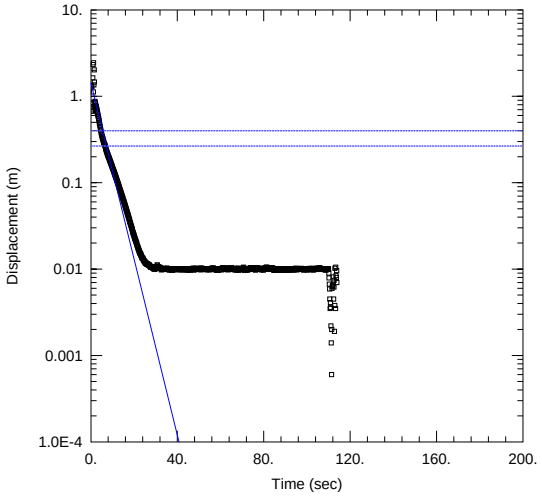
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.611 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.631 m/day y0 = 1.264 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_BR_RHT3.aqt
Date: 09/18/25 Time: 10:44:08

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

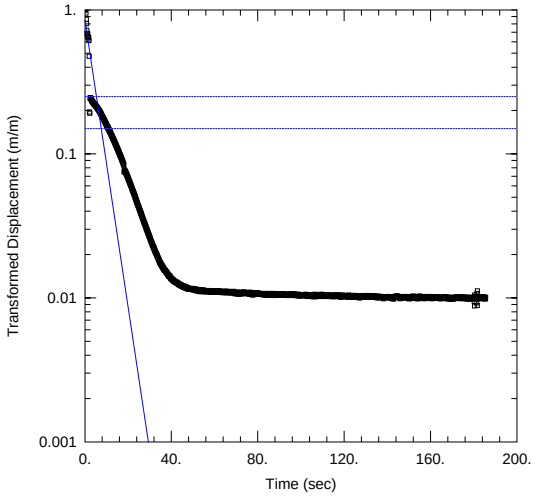
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.331 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.391 m/day y0 = 1.428 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_da_FHT1.aqt
Date: 09/18/25 Time: 10:44:49

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

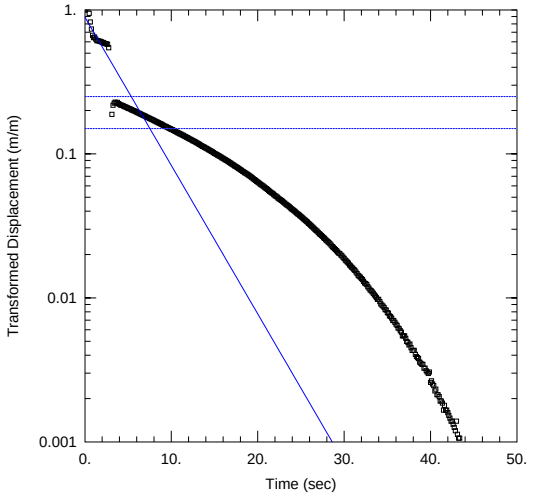
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.354 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan
K = 1.512 m/day y0 = 1.16 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_da_FHT2.aqt
Date: 09/18/25 Time: 10:46:13

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

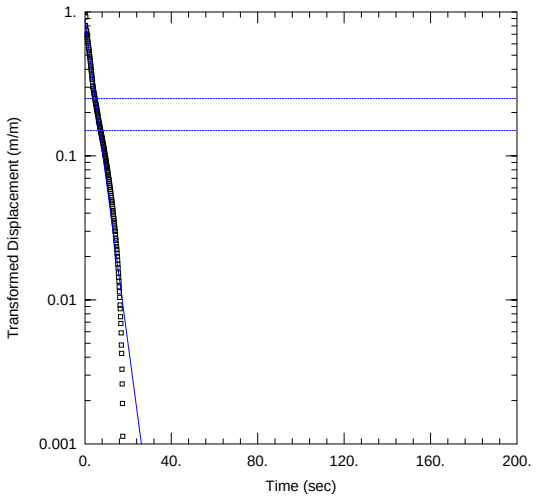
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.467 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan
K = 1.563 m/day y0 = 1.31 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_da_RHT1.aqt
Date: 09/18/25 Time: 10:47:04

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

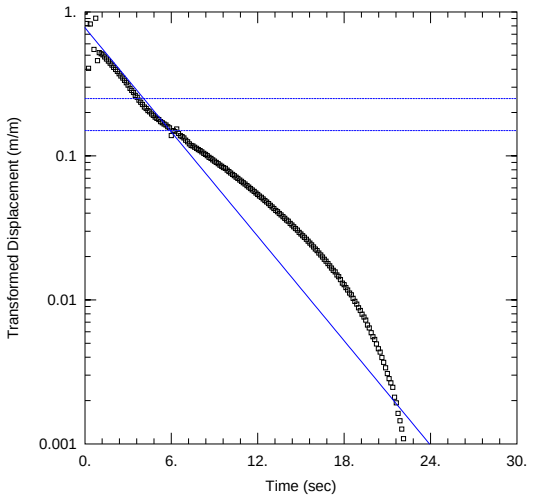
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.129 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan
K = 1.707 m/day y0 = 0.9994 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_da_RHT2.aqt
Date: 09/18/25 Time: 10:49:23

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

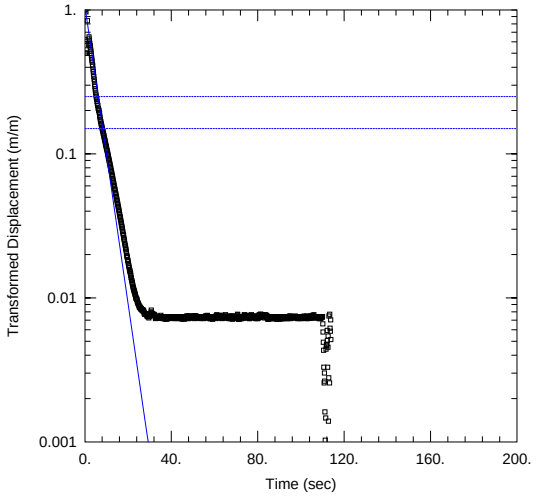
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.611 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan
K = 1.832 m/day y0 = 1.259 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_da_RHT3.aqt
Date: 09/18/25 Time: 10:53:24

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

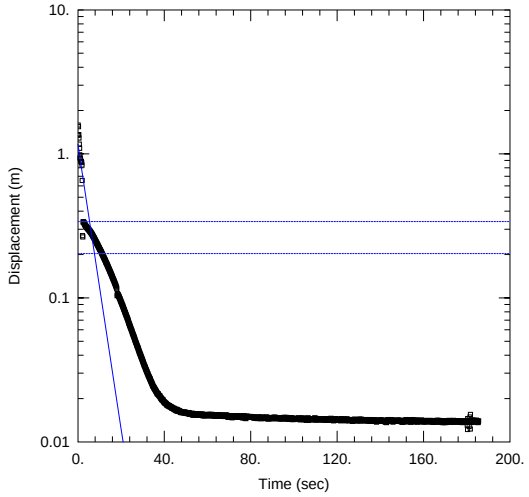
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.331 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Dagan
K = 1.57 m/day y0 = 1.425 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_FHT1.aqt
Date: 09/18/25 Time: 10:54:02

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

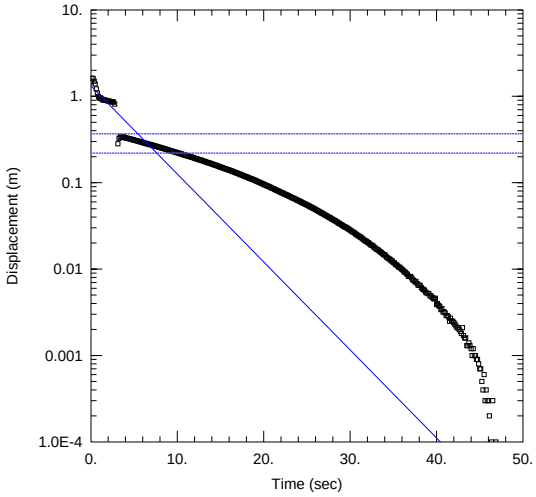
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.354 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.472 m/day y0 = 1.165 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_FHT2.aqt
Date: 09/18/25 Time: 10:54:42

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

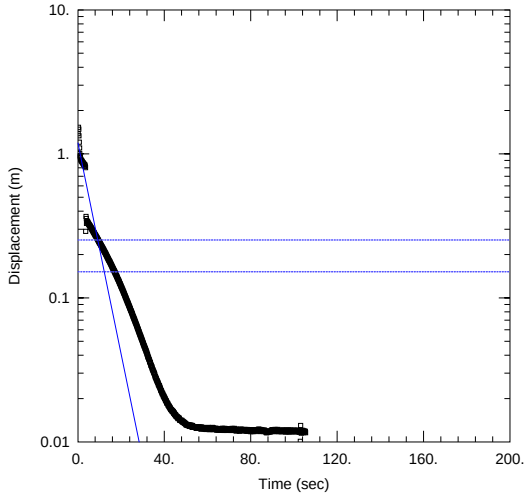
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.467 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.517 m/day y0 = 1.316 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_FHT3.aqt
Date: 09/18/25 Time: 10:55:25

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

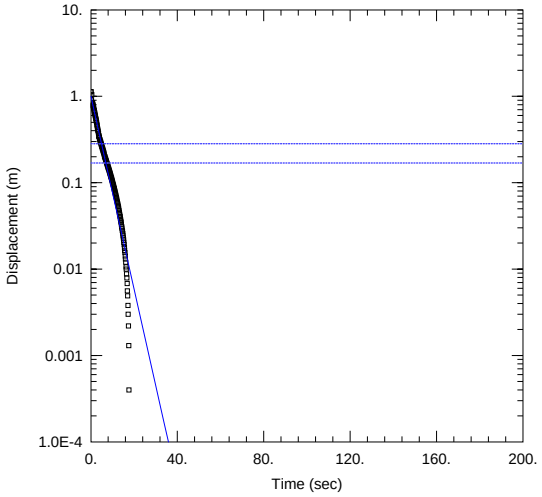
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.011 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.09 m/day y0 = 1.191 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_RHT1.aqt
Date: 09/18/25 Time: 11:15:27

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

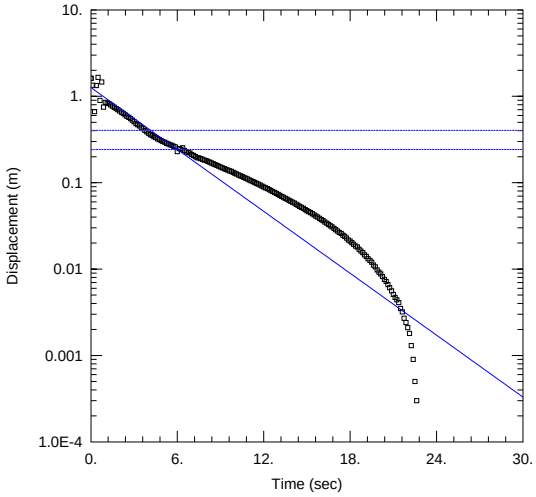
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.129 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.662 m/day y0 = 1.002 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_RHT2.aqt
Date: 09/18/25 Time: 11:17:15

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

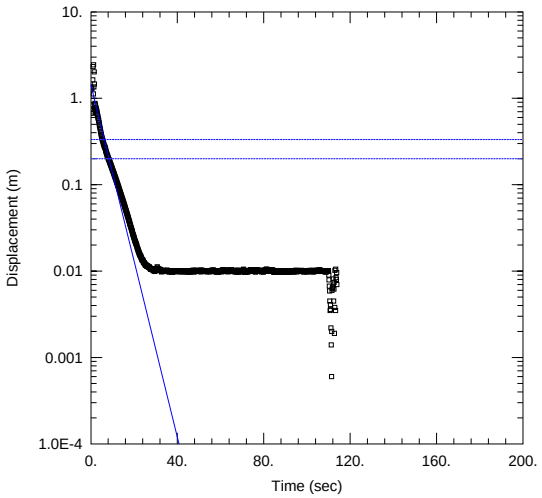
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.611 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.779 m/day y0 = 1.264 m



WELL TEST ANALYSIS

Data Set: H:\...\RN182851_HV_RHT3.aqt
Date: 09/18/25 Time: 11:21:49

PROJECT INFORMATION

Company: SLR
Client: Stanmore
Test Date: 20/04/2025

AQUIFER DATA

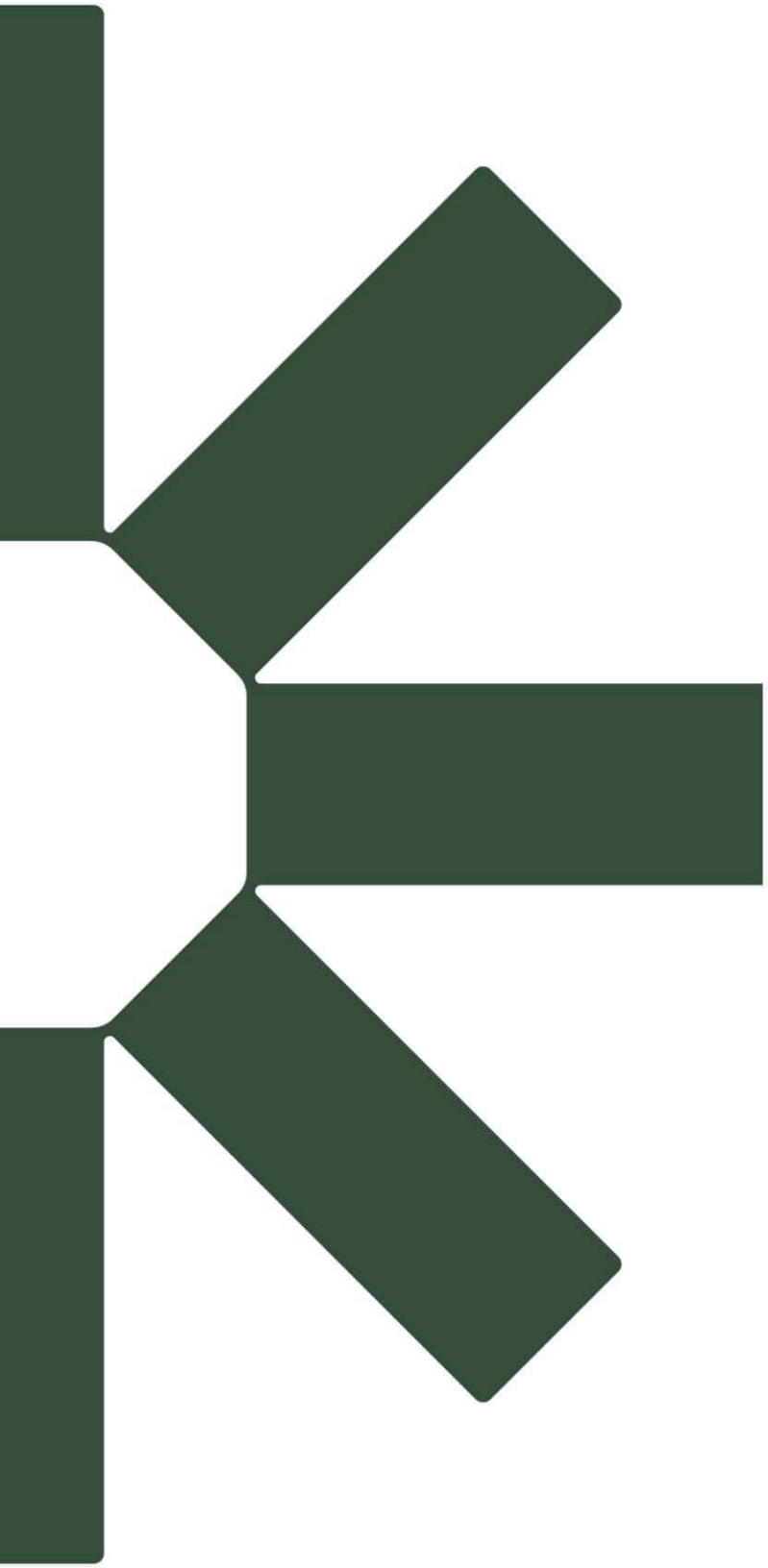
Saturated Thickness: 22.11 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (RN182851)

Initial Displacement: 1.331 m
Total Well Penetration Depth: 28.5 m
Casing Radius: 0.025 m
Static Water Column Height: 22.11 m
Screen Length: 28.5 m
Well Radius: 0.0625 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev
K = 1.517 m/day y0 = 1.428 m



Making Sustainability Happen

Appendix G Isaac Downs Extension Electrical Resistivity Survey Report (MES, 2025)

Isaac Downs Extension

Groundwater Impact Assessment

Stanmore ID Extension Pty Ltd

SLR Project No.: 620.041537.00001

28 May 2026

MES | MARINE&EARTH SCIENCES

Client:

Stanmore Resources

Project:

Isaac Downs Extension Electrical Resistivity Survey

DATE: 5 AUGUST 2025
REFERENCE: MES_1272_ISAACDOWNSEXTENSIONERI_AD.DOCX

07 3899 1156 info@marineandearth.com www.marineandearth.com ABN 51 111 435 717

Project Name: Isaac Downs Extension Electrical Resistivity Survey

Client Name: Stanmore Resources

Client Ref:

Prepared For: Richard Oldham

MES Job No. MES_1272

QUALITY INFORMATION

Document Name MES_1272_IsaacDownsExtensionERI_ac.docx

Date 25/07/2025

Prepared By Tony Parks

Reviewed By David King

Revision History

Rev	Revision Date	Details	Name/Position	Signature
01	08/07/2025	Version ab Prelim	DPK/PM	
02	25/07/2025	Version ac	DPK/PM	
03	04/08/2028	Version ad	TP/SG	

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CONTENTS

1 Introduction 1
2 Scope of Works 2
3 Field Techniques and Equipment Specifications 2
4 Data Processing and Interpretation Procedures 4
5 Results 5
6 Discussion 7

List of Figures

Figure A - Map of ERI surveyed line locations 1
Figure B - Simplified Schematic of the Electrical Resistivity Technique (Benson, R., et al., 1984) 2
Figure C - Pseudosection schematic (Loke, 1999). 3
Figure D - Data acquisition in the Isaac River, Line 1 segment CC 3

List of A1 Figures

Figure 1 – Overview Map

Figure 2 - Line 1 A to R – Resistivity Sections

Figure 3 – Line 1 A to R – Interpreted Geological sections

Figure 4 - Line 1 S to CC – Resistivity Sections

Figure 5 – Line 1 S to CC – Interpreted Geological Sections

Figure 6 - Lines 2 to 4 – Resistivity Sections

Figure 7 – Lines 2 to 4 – Interpreted Geological Sections

Figure 8 – Lines 5 to 6 – Resistivity Sections

Figure 9 – Lines 5 to 6 – Interpreted Geological Sections

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1 INTRODUCTION

Stanmore Resources commissioned Marine and Earth Sciences Pty Ltd (MES) to undertake an Electrical Resistivity Imaging (ERI) survey at the Isaac Downs Extension (IDE) Project, located approximately 12 kilometres South-east of Moranbah in central Queensland. The IDE Project represents a proposed open-cut coal mine extension that will impact both fluvial and alluvial deposits along the Isaac River and Cherwell Creek. In accordance with the scope defined by Stanmore Resources, this investigation sought to characterise subsurface stratigraphy and material composition to depths of approximately 20 metres below the base of the riverbeds and within the adjacent banks and alluvial plains.

The objectives of the ERI survey included:

- Determining the development and thickness of alluvium along the Isaac River and Cherwell Creek.
- Characterising the Isaac River alluvial deposits within the vicinity of the northern highwall of the IDE.
- Characterising the Cherwell Creek alluvial deposits adjacent to the southern limit of the IDE pit and delineating the shallow expression of mapped fault structures.
- Characterising alluvial sediments beneath the HES Wetland (a groundwater-dependent ecosystem) immediately east of the IDE, and delineating the extent of these sediments westward toward the IDE, including investigation of the shallow trace of the Isaac Thrust Fault.

The surveys were completed between the May 14th and June 26th, 2025 with no incidents or accidents occurring for duration of program.

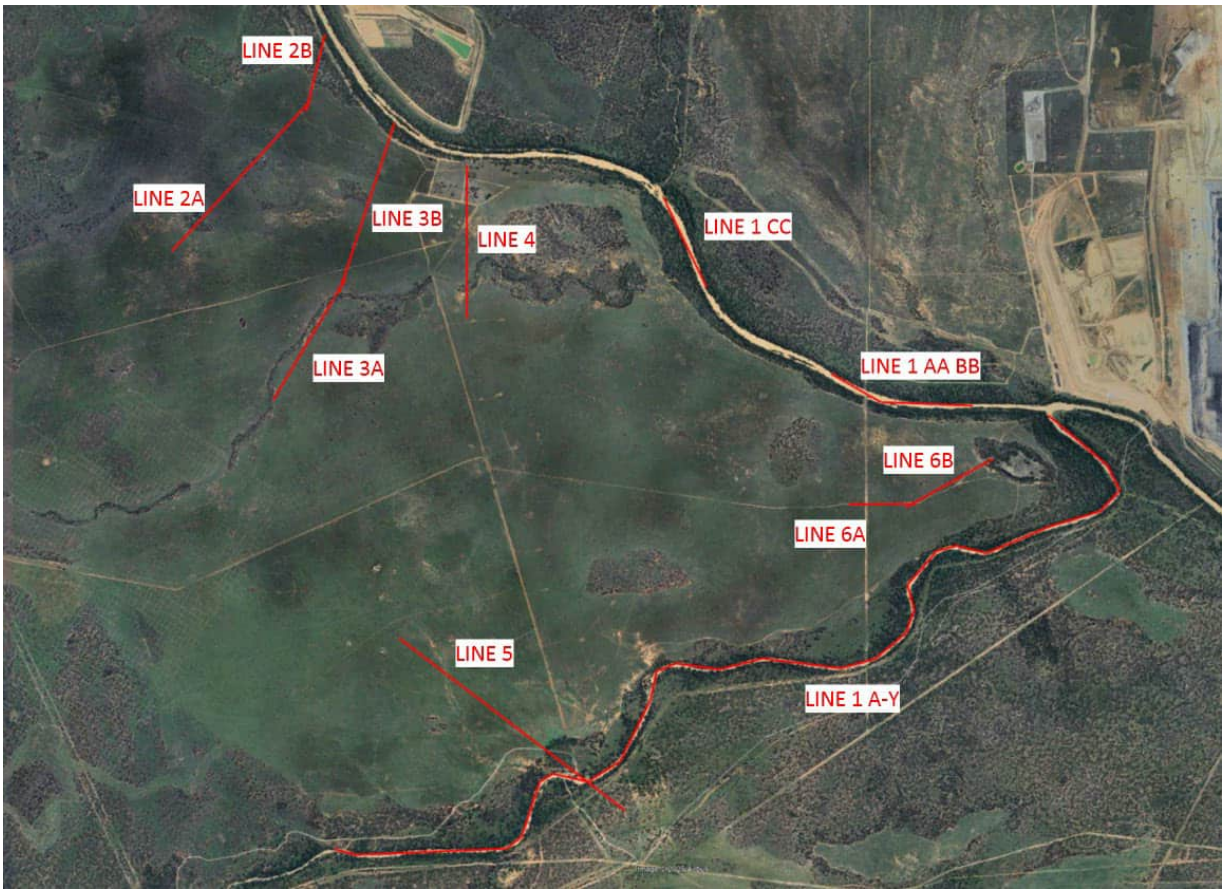

Figure A - Map of ERI surveyed line locations

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2 SCOPE OF WORKS

Line 1 generally followed the course of Cherwell Creek and the Isaac River. Owing to the meandering path and limited width of the riparian corridor, it was split into 28 straight segments to fit within the available space. Two portions of the Isaac River were inaccessible due to obstruction by standing water and saturated ground. This resulted in approximately 1600 metres of unsurveyed terrain. The total surveyed length of Line 1 was 9430 metres.

A total of five (ERI) lines were acquired on the alluvial plains in proximity to the Isaac River and Cherwell Creek to investigate the subsurface stratigraphy and material characteristics relevant to the Isaac Downs Extension Project. All survey data were collected using straight-line arrays.

Lines 2, 3, and 6 each contained a single vertex where data acquisition was stopped and subsequently resumed on the second segment, but continuity was maintained within each line to ensure data integrity. These lines were otherwise acquired as continuous straight profiles. Line segments are notated by a letter following the line number e.g.: L1A, L1B, L1C etc.

Line	Number of segments	Total Length
1	28	9430
2	2	1990
3	2	2242
4	1	1075
5	1	1995
6	2	1165

3 FIELD TECHNIQUES AND EQUIPMENT SPECIFICATIONS

Traditionally, electrical resistivity measurements are made by injecting an electrical current into the earth through two electrodes and measuring the resulting voltage at two other electrodes with the depth of investigation governed by the electrode spacing to generate a 1D sounding. The simplified operation of the resistivity method is shown schematically below in Figure B.

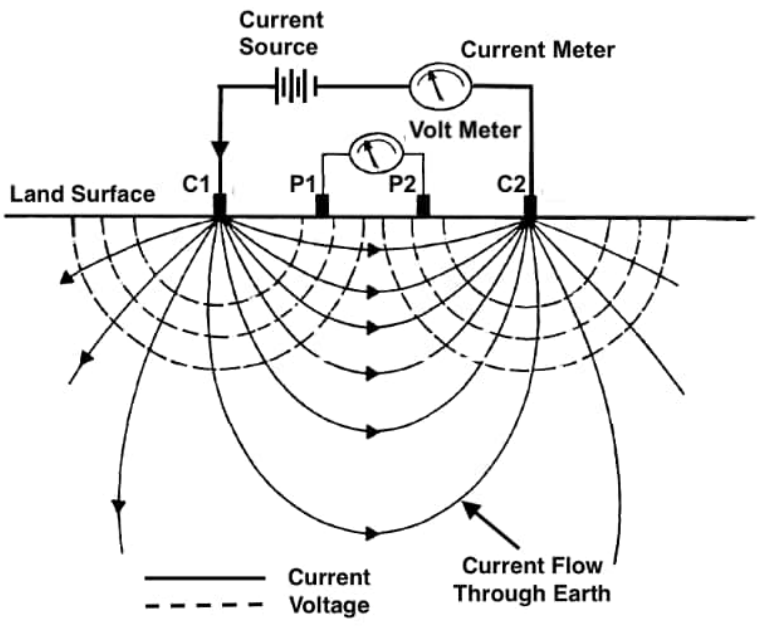

Figure B - Simplified Schematic of the Electrical Resistivity Technique (Benson, R., et al., 1984)

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Advances in technology have allowed the development of ERI using many electrodes and connected to a computer driven switching box via multi-core cables. Measurements are taken from closely spaced electrode pairs along the linear electrode array for measuring shallow earth properties and increases in separation between the pairs for deeper earth measurements. Figure C presents the schematic and sequence of measurements to build an apparent resistivity pseudo section.

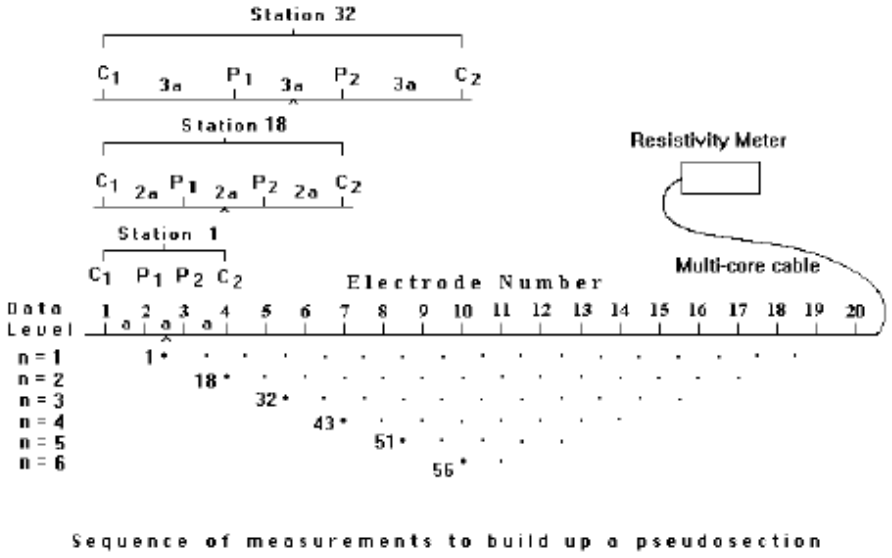

Figure C - Pseudosection schematic (Loke, 1999).

For this survey ERI data was collected with a Guideline Geo ABEM Terrameter LS2 Resistivity meter. 4 cables with 16 takeouts each were deployed end-to-end, allowing for up to 64 electrodes in a linear array at 5 m spacing for a total line length of 315m. This geometry allowed for a maximum depth of investigation of 70m although this can also be limited by other factors such as geology, electrode contacts or transmitting power. Data was collected in a roll-along fashion – after the initial reading was finished the first cable and its 16 electrodes were picked up and moved to the end of the line before reading recommenced. This process was repeated, moving up 80 metres at a time until the end of the line was reached.

Figure D - Data acquisition in the Isaac River, Line 1 segment CC

The Gradient XL protocol was chosen because it strikes a sound balance among available options: it delivers a strong signal-to-noise ratio, works with multi-channel acquisition for quicker surveys, and resolves horizontal and vertical structures clearly.

Table 1 - Field Acquisition Parameters

Electrode spacing	5m
Current Measurement Time per cycle	0.5 seconds
Maximum Current	500mA
Maximum number of stacks	4

4 DATA PROCESSING AND INTERPRETATION PROCEDURES

Prior to inversion, data quality was assessed and filtered to improve modelling reliability. All apparent resistivity readings with an error exceeding 5% were excluded from the dataset. Additionally, any measurements yielding negative resistivity values were removed, as these are non-physical and indicative of acquisition or processing anomalies.

Inverse modelling of the apparent resistivity data was carried out using EarthImager software by Advanced Geosciences Inc. (AGI). Significant outlier data points identified during preliminary inspection were excluded to prevent distortion of inversion results. A smooth model inversion approach was employed, with the inversion process achieving a root mean square (RMS) misfit below 5% for all survey lines.

The inversion of 2D resistivity data is an underdetermined and ill-posed problem, leading to non-unique solutions. To address this, additional constraints—referred to as regularization—are applied to stabilise the inversion and select a geologically reasonable solution. In this study, an Occam's inversion framework was adopted. This method seeks the smoothest resistivity model that sufficiently explains the observed data within a defined misfit threshold, typically based on an a priori chi-squared statistic. Smooth model inversion assumes a Gaussian distribution of data errors

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5 RESULTS

The inverted resistivity imaging sections along with the associated interpreted geological profiles for each line have been provided in Figures 2 to 9. The interpretation is based on the borehole data available as well as the authors experience.

The following summarises the subsurface conditions for each line:

Line 1 - Isaac River and Cherwell Creek

Line 1, which follows Cherwell Creek and the Isaac River, images a well-defined three-layer resistivity architecture to depths greater than 20 m. A near-surface unit extending to approximately 5 m depth is moderately to highly resistive (40–1000 Ω·m) and is interpreted as the dry bar and overbank sands logged during field work, with localised higher values suggesting coarse gravels. This unit is underlain by a laterally persistent conductive horizon (approximately 3–25 Ω·m) between 7 m and 15 m depth that is likely related to water-bearing weathered sandstone. Below 15 m, alternating pockets of resistive and conductive material indicating a variably weathering profile.

Several discrete features refine this model. Between CH830 m and CH920 m (segment L1B) a sharply conductive lens near 3 Ω·m overlies a 300 Ω·m body, a geometry consistent with a perched aquifer resting on an impermeable core. Segment L1F presents juxtaposed conductive and resistive blocks that mirror patterns on intersecting Line 5, pointing to fault-controlled compartmentalisation. In segment L1G (CH2150 m–2330 m), a 10–20 m thick interval with resistivities near 180 Ω·m is interpreted as a gravel-filled palaeochannel. Further downstream, narrow vertical conductors at CH5830 m (L1T) and CH6155 m (L1U) coincide with mapped structural lineaments and are regarded as probable fault zones.

Interpretation confidence is moderated by several factors. The conductive middle unit could equally reflect saprolite rather than saturated sediment; depth resolution deteriorates near segment gaps where triangular wedges reduce data density; and isolated high-resistivity spikes may arise from poor electrode coupling in dry sands. Interpretation is based on the closest boreholes near to the Isaac River and Cherwell Creek.

Alluvial Plains

Line 2A

From chainage 0 to 195 m the upper 5 to 7 m exhibit very low resistivity (1 to 10 Ω·m), likely attributed to clay-rich, moisture-saturated overburden. Between 195 to 335 m and again from 625 to 1276 m this surficial material grades into moderately resistive material (10 to 25 Ω·m) likely to be associated with sandy alluvium. A broad, laterally continuous high-resistivity body (100 to 200 Ω·m) is present at 7 to 20 m depth between 590 and 1300 m; it is interpreted as clean sand-gravel channel deposits. This package rests on a markedly conductive horizon (1 to 10 Ω·m) that likely represents weathered, moisture-laden sandstone–siltstone. Below approximately 20 to 30 m depth resistivity increases progressively (25 to 200 Ω·m) into fresh, competent sandstone–siltstone bedrock. A localised rise in the bedrock surface at chainage 1290 to 1375 m suggests minor up-faulting or positive structural relief.

Line 2B

Low resistive clay-rich soils (1 to 10 Ω·m) blanket the profile from chainage 0 to 225 m and 345 to 480 m, thinning to expose more resistive material (15 to 125 Ω·m) of interpreted sandy alluvium from 225 to 345 m. Beneath 5 to 8 m depth a conductive weathering zone (15 to 45 m depth, 3 to 15 Ω·m) is present south of chainage 375 m; its subdued expression to the north implies either reduced weathering intensity or a change in lithology. Fresh bedrock is inferred below 35 to 45 m where resistivity increases to 15 to 70 Ω·m.

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Line 3A

Discontinuous clayey overburden (1 to 10 Ω·m) dominates chainages 0 to 225 m, 530 to 760 m and 830 to 985 m. Intervening segments (225 to 540 m and 760 to 830 m) comprise more resistive sands and gravels (15 to 60 Ω·m). Between 5 and 20 m depth a laterally extensive conductive zone (5 to 15 Ω·m) corresponds to weathered sandstone–siltstone. Resistivity increases with depth toward fresh bedrock (15 to 50 Ω·m). A steeply south-dipping, resistivity-contrast feature at chainage 390 to 500 m could represent a fault or fracture zone. Data acquisition was interrupted at chainage 880 m due to standing water in a creek. This limited the depth of investigation at this end of the line.

Line 3B

Clay-rich overburden (1 to 15 Ω·m) extends from chainage 0 to 1190 m but becomes sandier and more resistive (15 to 210 Ω·m) adjacent to the Isaac River between 1190 and 1250 m. Heterogeneous sand-gravel lenses occur at 8 to 20 m depth, showing a northward increase in resistivity consistent with reduced clay content. A conductive weathered bedrock horizon (3 to 15 Ω·m) occupies 12 to 50 m depth, grading downward to fresh sandstone–siltstone where resistivity reaches 15 to 50 Ω·m.

Line 4

Low-resistivity surficial clays (1 to 10 Ω·m) occur at chainages 0 to 250 m, 360 to 830 m and 985 to 1075 m. Sand-gravel units (15 to 200 Ω·m) mark the intervening reaches, notably 250 to 360 m and 830 to 985 m. A conductive weathering zone in sandstone–siltstone dominates 15 to 30 m depth and deepens northward to approximately 60 m. Resistivity then increases gradationally to inferred fresh bedrock (>30 m depth, 15 to 50 Ω·m).

Line 5

Between chainage 0 and 1200 m, the upper 5–7 m consist of alternating clayey and sandy sediments, with resistivities ranging from 4 to 20 Ω·m. Beneath this, a broad sandstone sequence exhibits limited resistivity contrast both laterally and vertically, making stratigraphic differentiation difficult. Beyond 1200 m, where the survey line crosses Quaternary deposits near Cherwell Creek, near-surface resistivities increase sharply to 250 Ω·m, likely reflecting dry sandy gravels and zones of shallow bedrock. At depth, discrete high-resistivity features (up to 200 Ω·m) may correspond to unweathered sandstone ridges beneath the creek. A conductive weathered horizon (3 to 15 Ω·m) is observed between 10 and 25 m depth below these structures.

Line 6A

Between chainage 0 and 475 m the surficial 10 m are occupied by increasingly conductive soils eastward (1 to 10 Ω·m). Resistive sands and gravels (7 to 20 m depth, 10 to 40 Ω·m) persist along most of the line but become less resistive beyond chainage 380 m. A broad conductive zone (weathered sandstone–siltstone) spans 20 to 55 m depth, its base varying from 45 to greater than 60 m. Fresh sandstone is indicated below 45 m by a rise in resistivity.

Line 6B

Clay-dominated soils (1 to 10 Ω·m) blanket chainage 0 to 690 m to depths of approximately 15 m. A discrete resistive sand-gravel package (10 to 25 Ω·m) occurs between chainage 225 and 390 m at 15 to 25 m depth. Resistivity then increases gradually with depth across the entire profile (15 to 20 Ω·m below 15 m), reflecting competent but variably weathered sandstone–siltstone. The bedrock surface is irregular, consistent with differential weathering or subtle structural relief.

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General Observations

- Surficial clays and moisture-rich soils consistently show resistivities below 10 Ω·m.
- Clean sands and gravels range from 15 to 250 Ω·m, depending on saturation and grain size.
- Weathered sandstone–siltstone forms a distinctive conductive horizon (3 to 15 Ω·m) at intermediate depths.
- Fresh bedrock is characterised by a monotonic resistivity increase, typically exceeding 25 Ω·m.

6 DISCUSSION

The ERI program provides a clear first-order stratigraphic and structural framework for the Isaac Downs Extension project.

Across Line 1, three distinct resistivity units emerge to depths beyond 20 m: a surficial 0–5 m layer of dry bar and overbank sands (40–1000 Ω·m) with coarse-gravel lenses; a 7–15 m conductive horizon (3–25 Ω·m) most likely representing water-bearing weathered sandstone (though saprolite or saturated alluvium cannot be ruled out); and a deeper mixed basement of alternating resistive and conductive pockets.

Across the survey lines in the alluvial plains (2-6) a consistent tripartite resistivity signature emerges: (i) surficial clays and moisture-rich overbank sands (<10 Ω·m), (ii) a laterally persistent conductive horizon (3–25 Ω·m) interpreted as saprolitic or water-bearing sandstone/siltstone, and (iii) progressively more resistive bedrock (>25 Ω·m). This geometry confirms that the active alluvial package is thin (≤8 m) and that near-surface groundwater is largely restricted to the weathered sandstone interval rather than the overlying bar deposits. On lines 2 to 4 the resistivity sections show gradual northward deepening of the weathered zone and an irregular bedrock surface, features best explained by differential weathering and minor fault throw rather than lithological change.

While the survey faced some constraints, including inaccessible river reaches, suboptimal electrode coupling in dry-sand sections of the creek bed and the necessity to drill only from the banks of Cherwell Creek and the Isaac River, the resulting resistivity profiles should provide a reliable ground model for the IDE.

Should you have any questions or queries regarding this report please contact the undersigned.

For and on behalf of

MARINE & EARTH SCIENCES PTY LTD

David King

Principal Geophysicist

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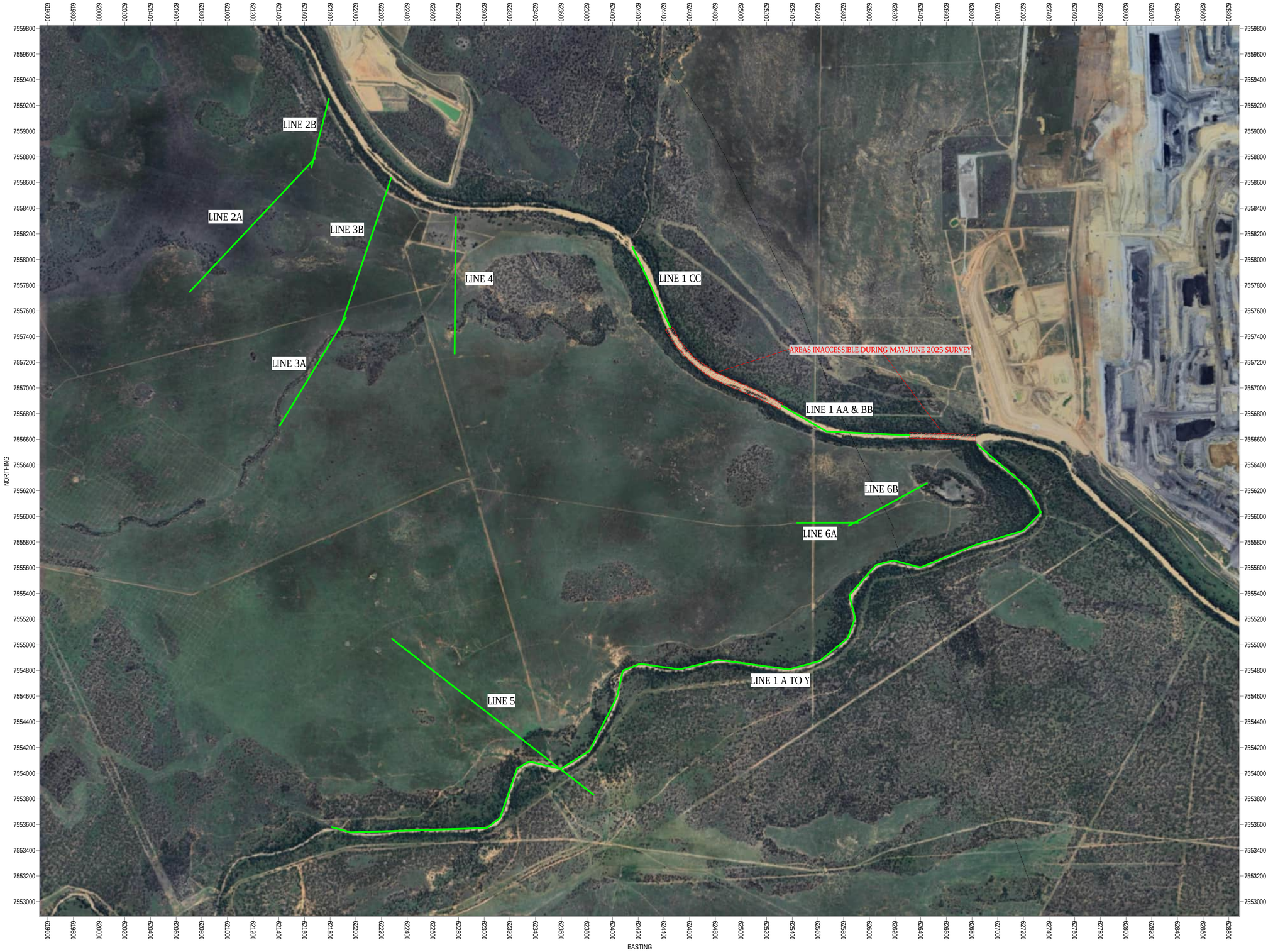
ELECTRICAL RESISTIVITY IMAGING SURVEY - OVERVIEW MAP



LEGEND	
ERI Line Location	
Inaccessible Area	

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING

SURVEY LINE LOCATION PLAN

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

SCALE 1:15,000 (A1)

Project Ref: **MES_1272** Figure No. **1**

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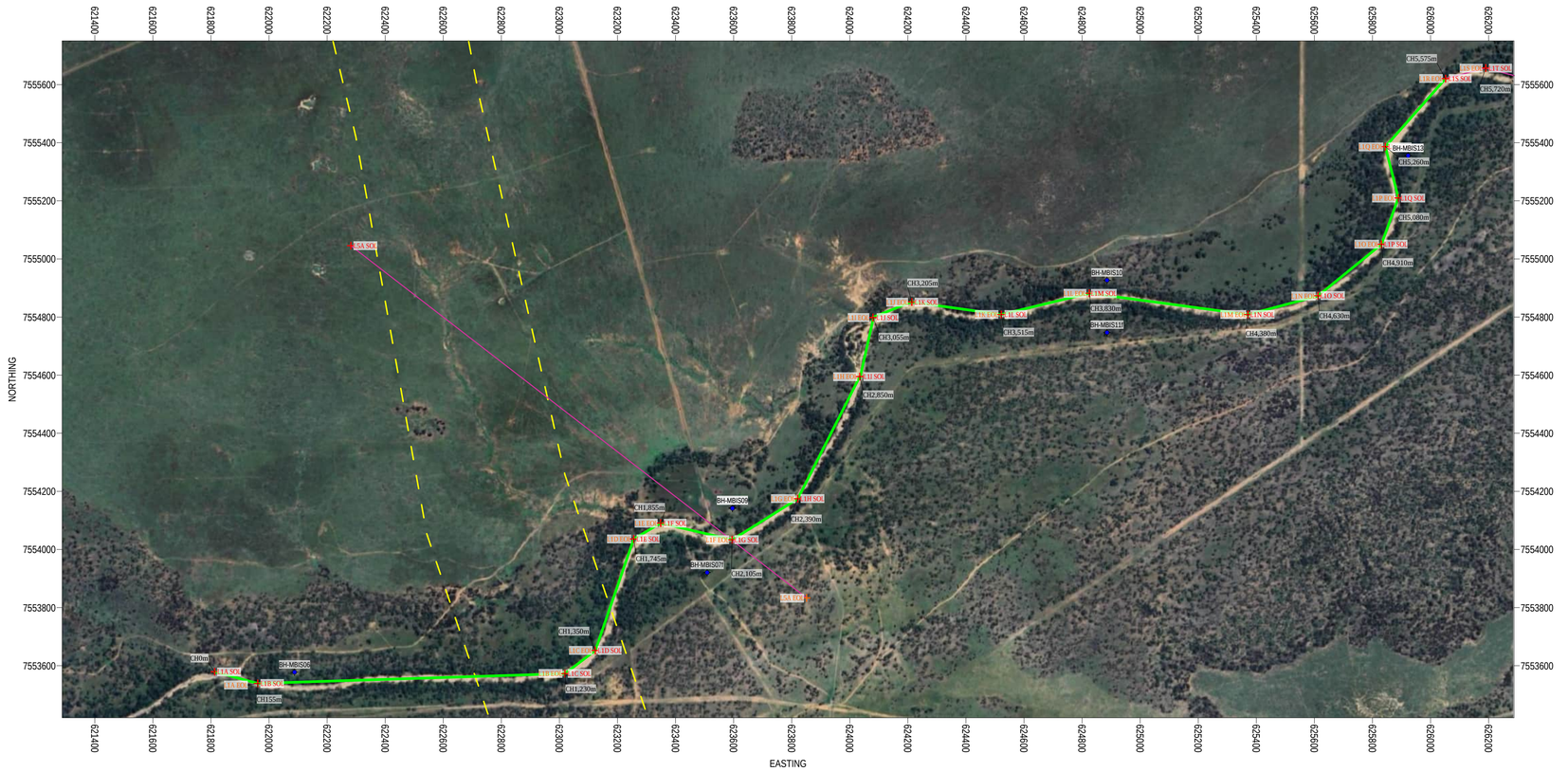
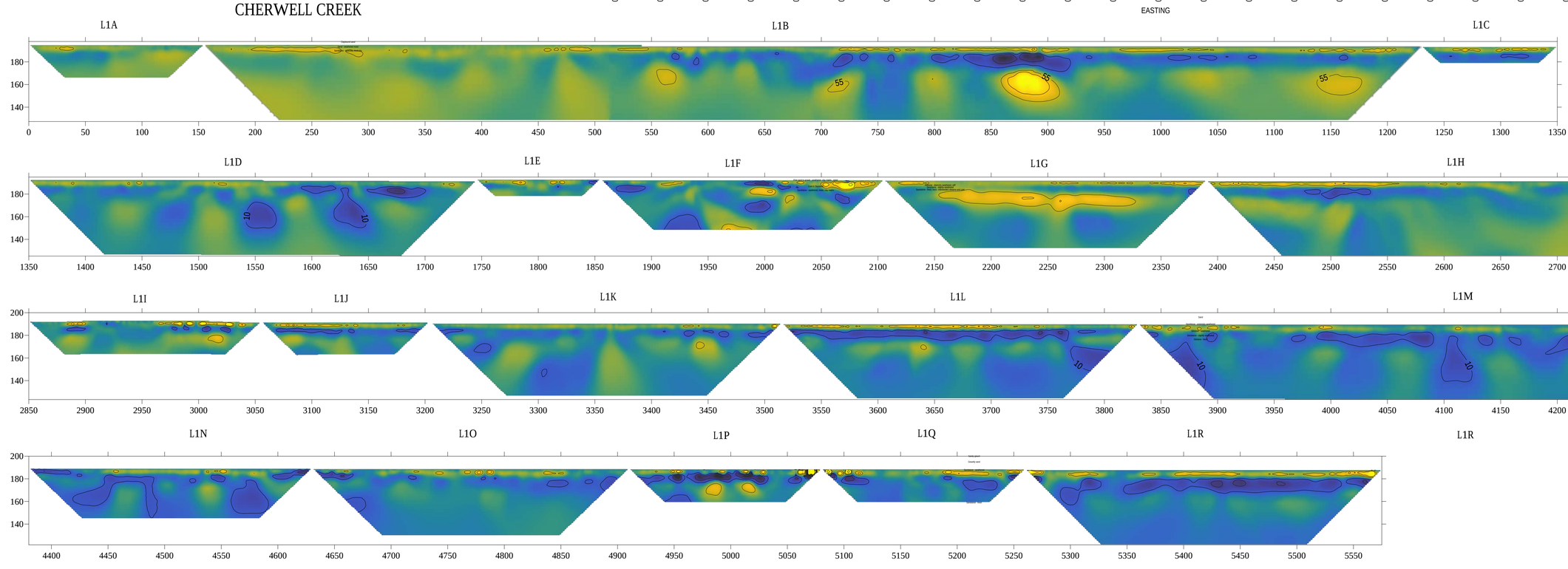
2						
3						

LINE 1 - SEGMENTS A TO R



CHERWELL CREEK


L1A
L1B
L1C
L1D
L1E
L1F
L1G
L1H
L1I
L1J
L1K
L1L
L1M
L1N
L1O
L1P
L1Q
L1R
L1R
55
10
Topsoil
Sand
Gravelly sand
Clayey gravel
Gravelly clay
Sandy gravel
Sandy clay
Clayey sand
Sandy clay
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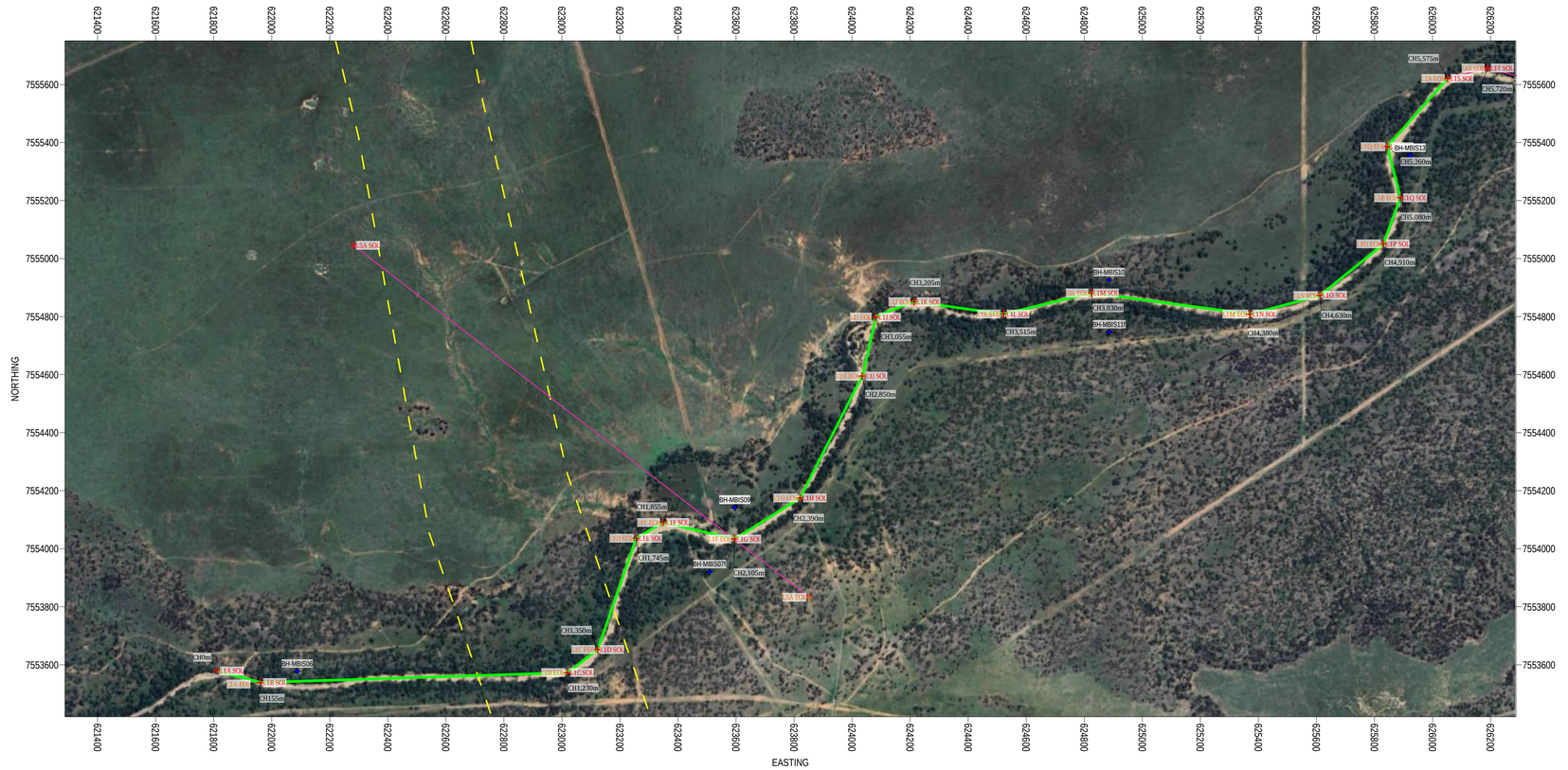
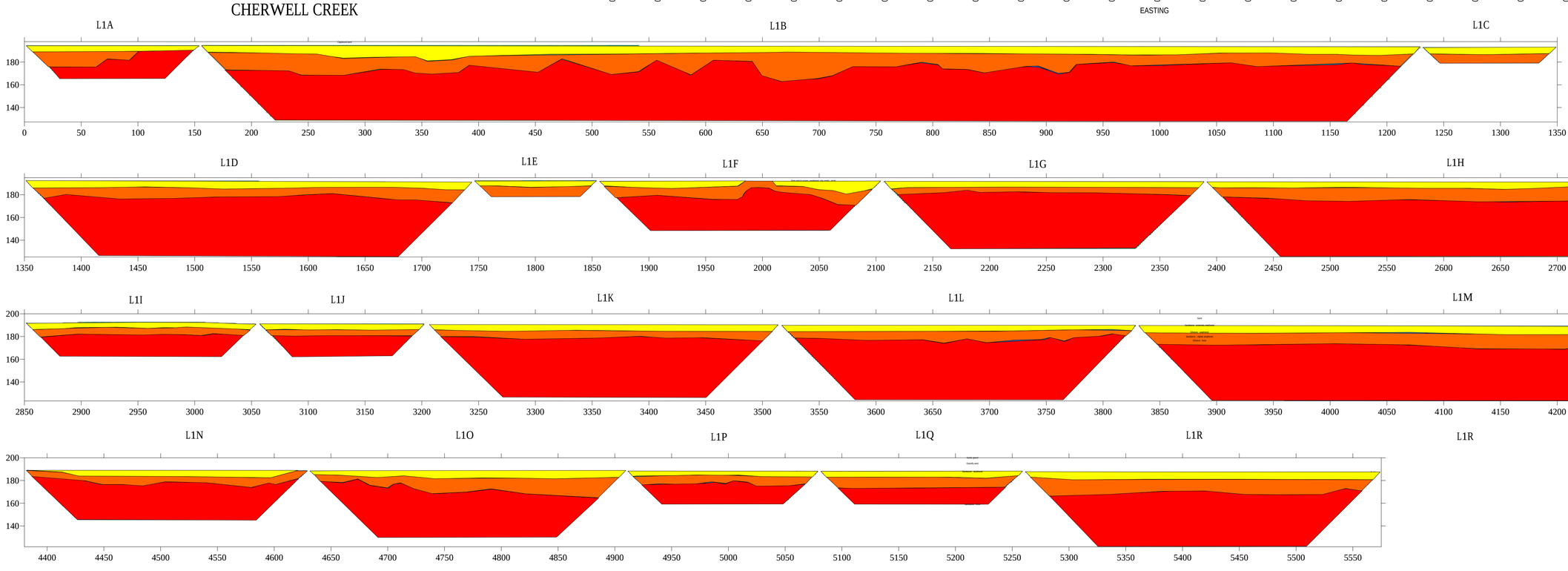
Gravelly sand
Clayey gravel
Sandy clay
Clayey sand
Gravelly clay
Sandy gravel

LINE 1 - SEGMENTS A TO R



CHERWELL CREEK



LEGEND		
Borehole Location		Unit 1 - Dry Sands
ERI Line Location		Unit 2 - Clay-rich weathered sandstone/siltstone
L1d SOL	Start of ERI L1d	Unit 3 - Fresh Sandstone with interbedded silstone and coal
L1d EOL	End of ERI L1d	Fault
CH3,922m	Metres Chainage Along Compiled ERI Line	

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING

INTERPRETED GEOLOGICAL PROFILES

LOCATION MAP

GEODETIC INFORMATION

Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

MAP SCALE 1:10,000 (A1)

PROFILE SCALE 1:2,000 (A1)

Project Ref:	**MES_1272**
Figure No.	**3**

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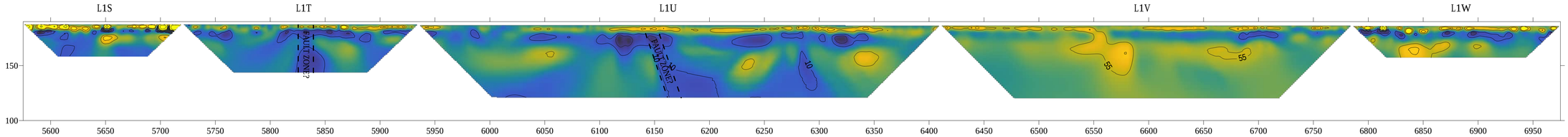
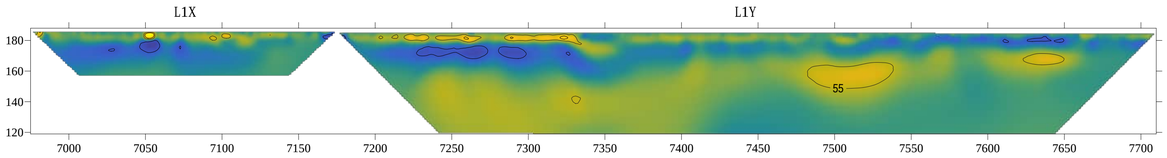
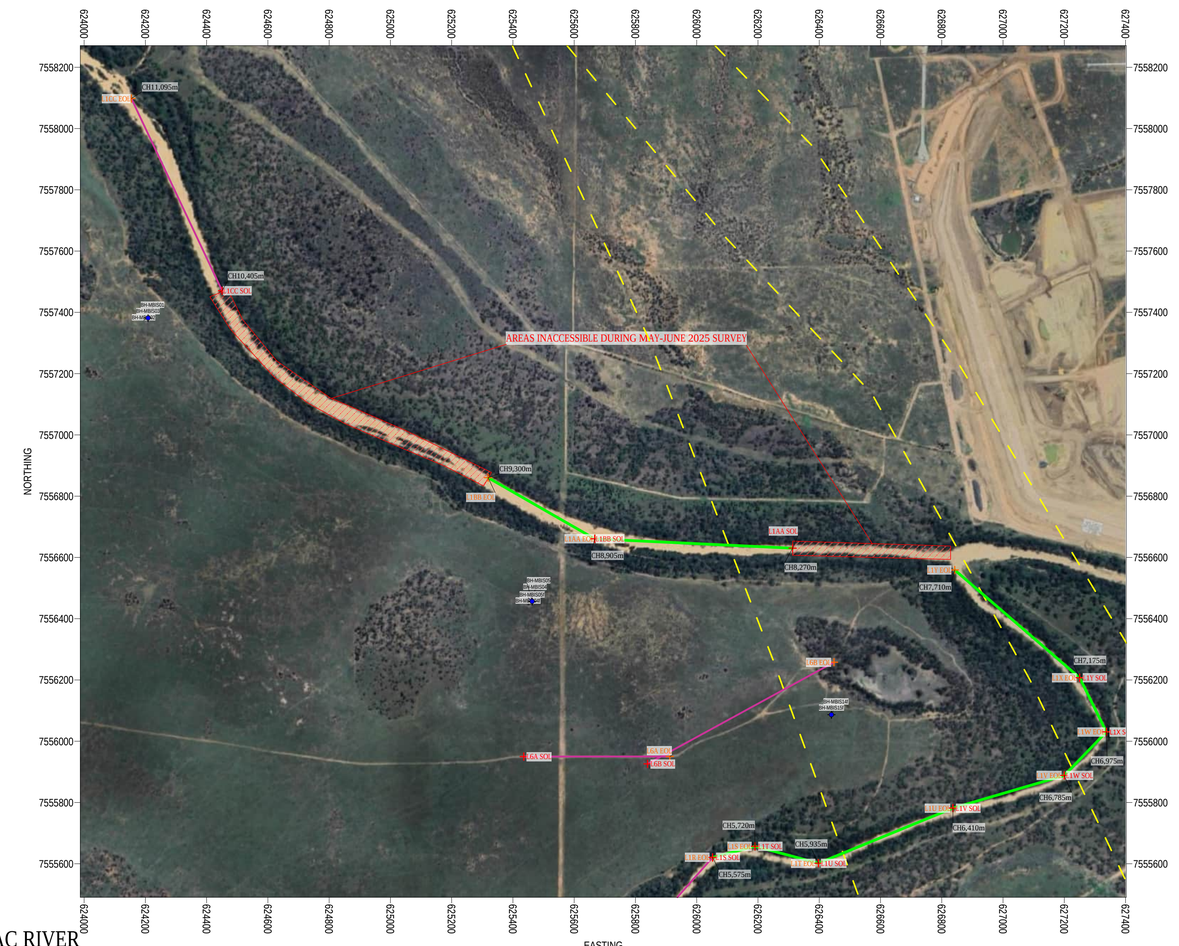
CHERWELL CREEK

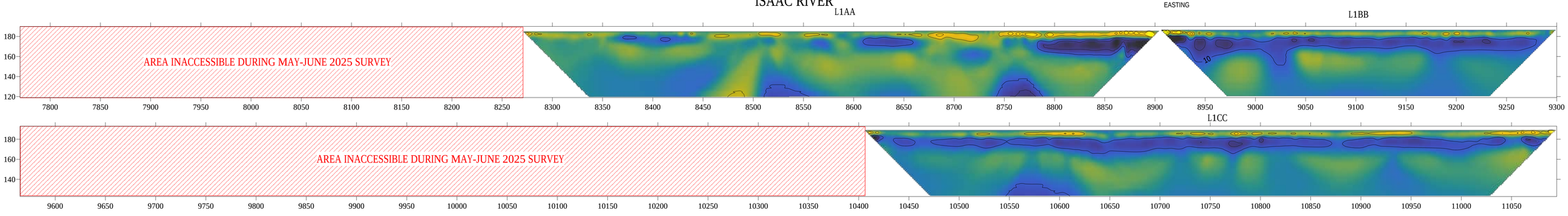




LINE 1 - SEGMENTS S TO CC



ISAAC RIVER



MODELLED RESISTIVITY Ohm.m

4 6 8 10 20 40 60 80 100 200

LEGEND	
Borehole Location	Fault
ERI Line Location	
L1d SOL	Start of ERI L1d
L1d EOL	End of ERI L1d
CH3,922m	Metres Chainage Along Compiled ERI Line
	Inaccessible Area

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING SECTIONS

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)
MAP SCALE 1:10,000 (A1)	
PROFILE SCALE 1:2,000 (A1)	
Project Ref: **MES_1272**	Figure No. **4**

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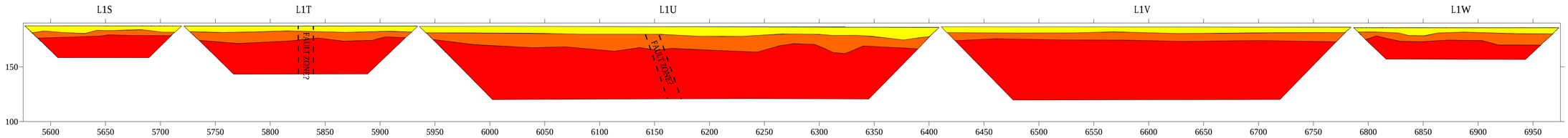
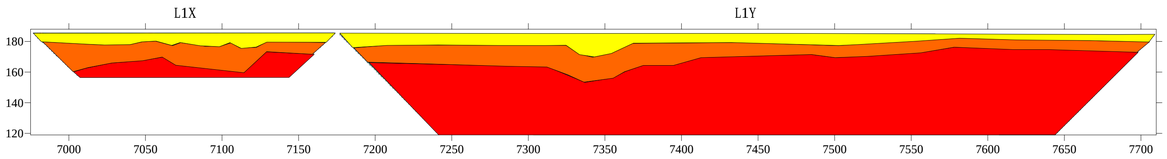
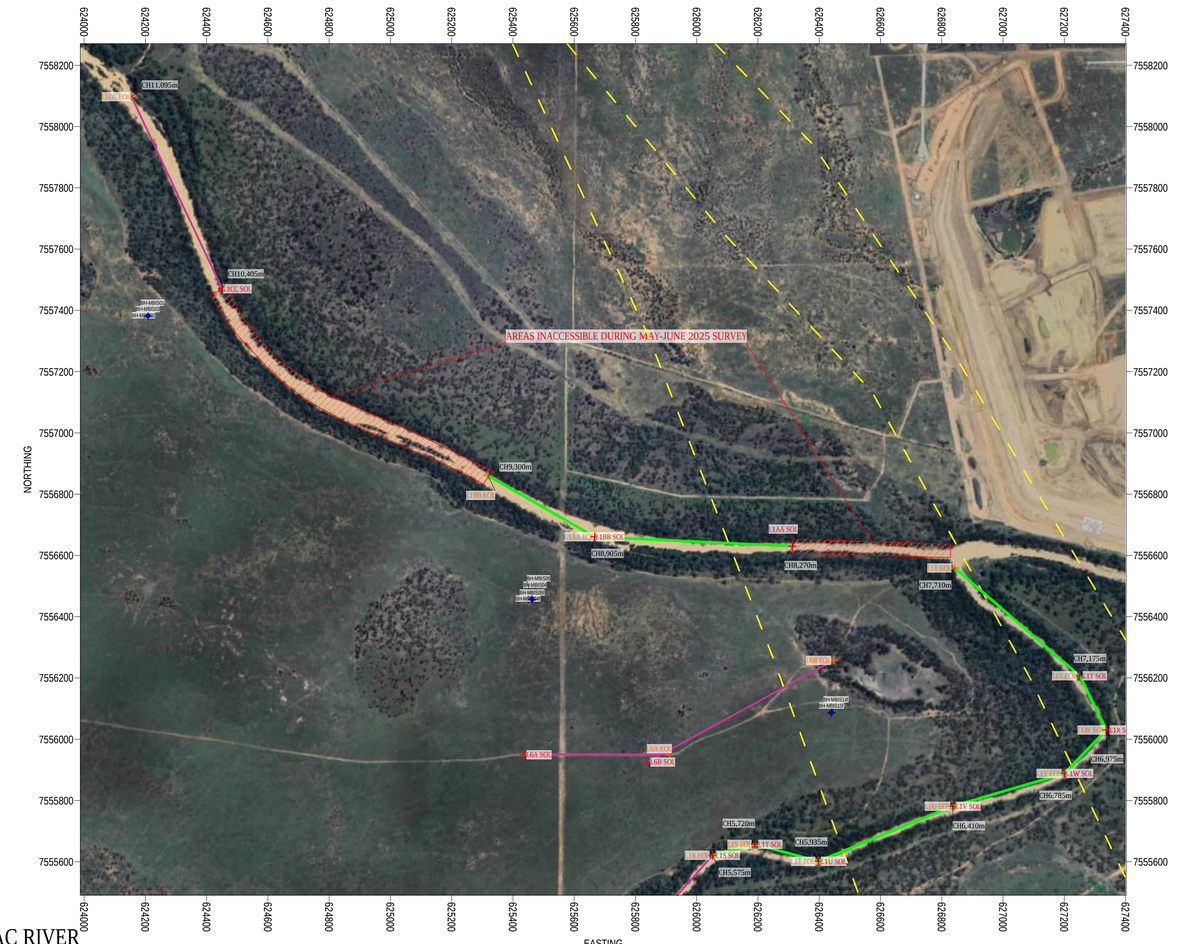
CHERWELL CREEK

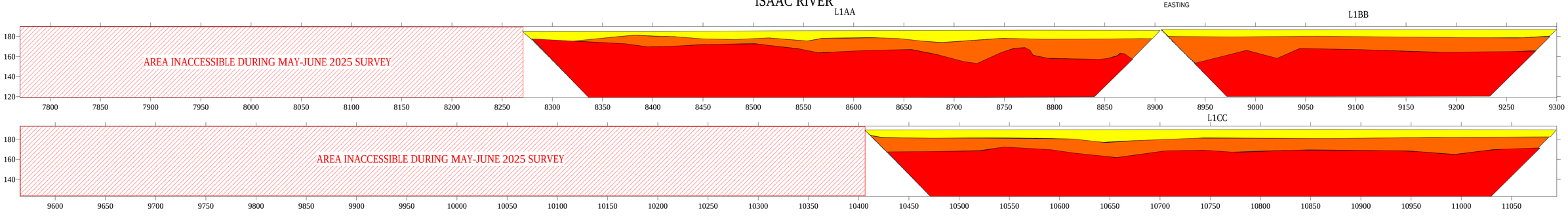




LINE 1 - SEGMENTS S TO CC



ISAAC RIVER



LEGEND	
Borehole Location	Unit 1 - Dry Sands
ERI Line Location	Unit 2 - Clay-rich weathered sandstone/siltstone
L1d SOL — Start of ERI L1d	Unit 3 - Fresh Sandstone with interbedded silstone and coal
L1d EOL — End of ERI L1d	Fault
CH3,922m — Metres Chainage Along Compiled ERI Line	
Inaccessible Area	

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING

INTERPRETED GEOLOGICAL PROFILES

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)
MAP SCALE 1:10,000 (A1)	
PROFILE SCALE 1:2,000 (A1)	
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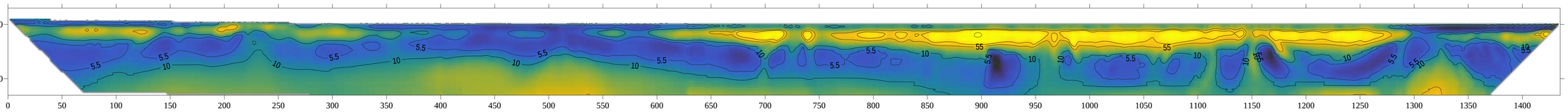
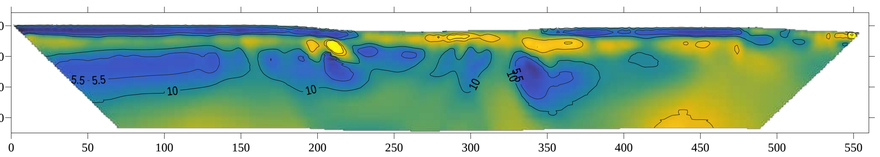
3						

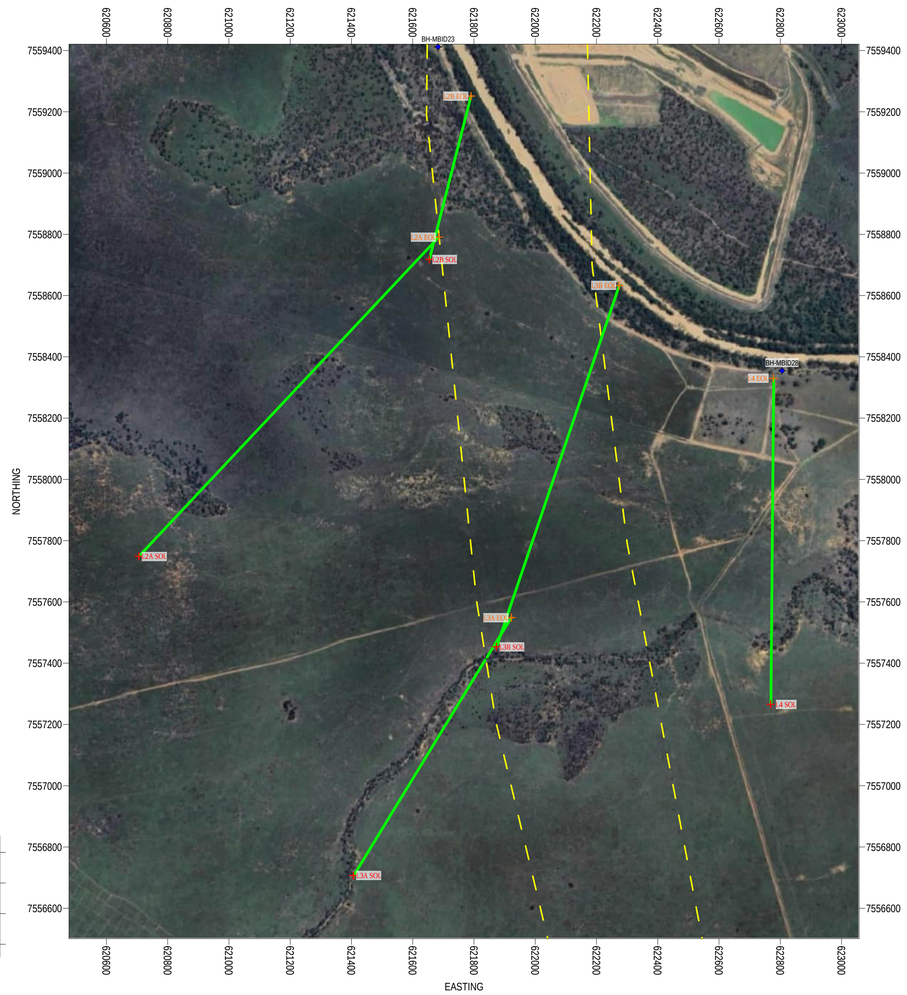
LINES 2, 3 and 4

LINE 2A

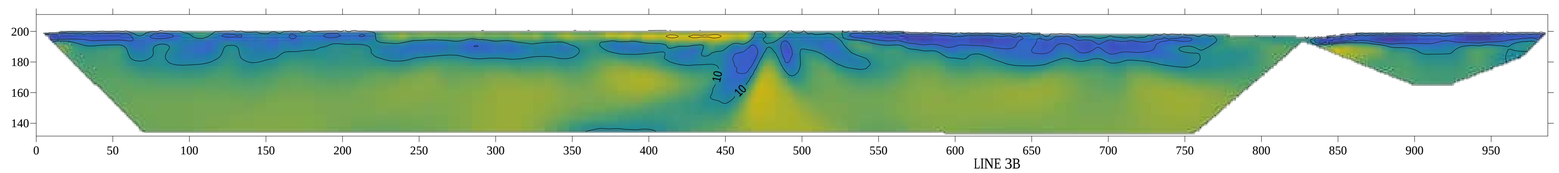


LINE 2B





LINE 3A



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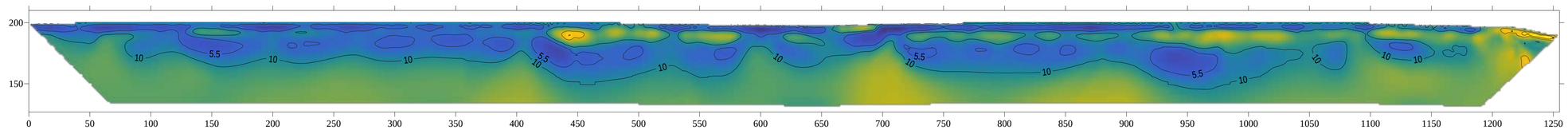
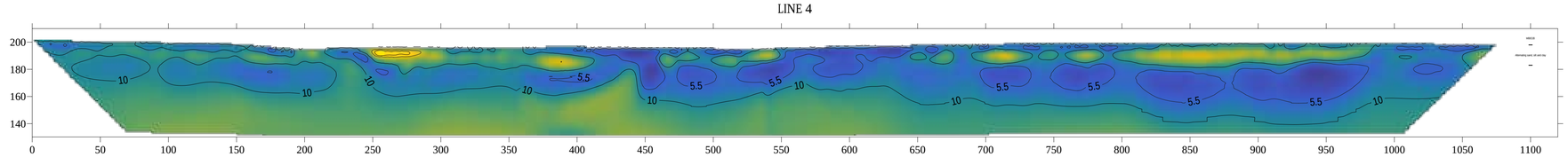


LINE 4



MODELLED RESISTIVITY (Ohm.m)

1 2 4 6 8 10 20 40 60 80100 200

LEGEND	
✦	Borehole Location
———	ERI Line Location
L1d SOL	Start of ERI L1d
L1d EOL	End of ERI L1d
CH3,922m	Metres Chainage Along Compiled ERI Line
—— ——	Fault

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING SECTIONS

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

MAP SCALE 1:10,000 (A1)

PROFILE SCALE 1:2,000 (A1)

Project Ref: **MES_1272**	Figure No. **6**

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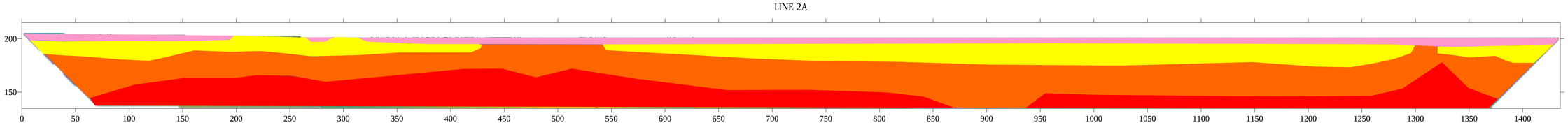
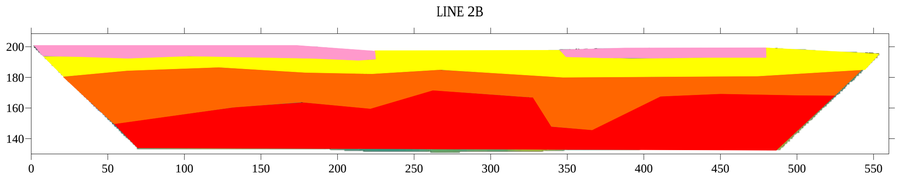
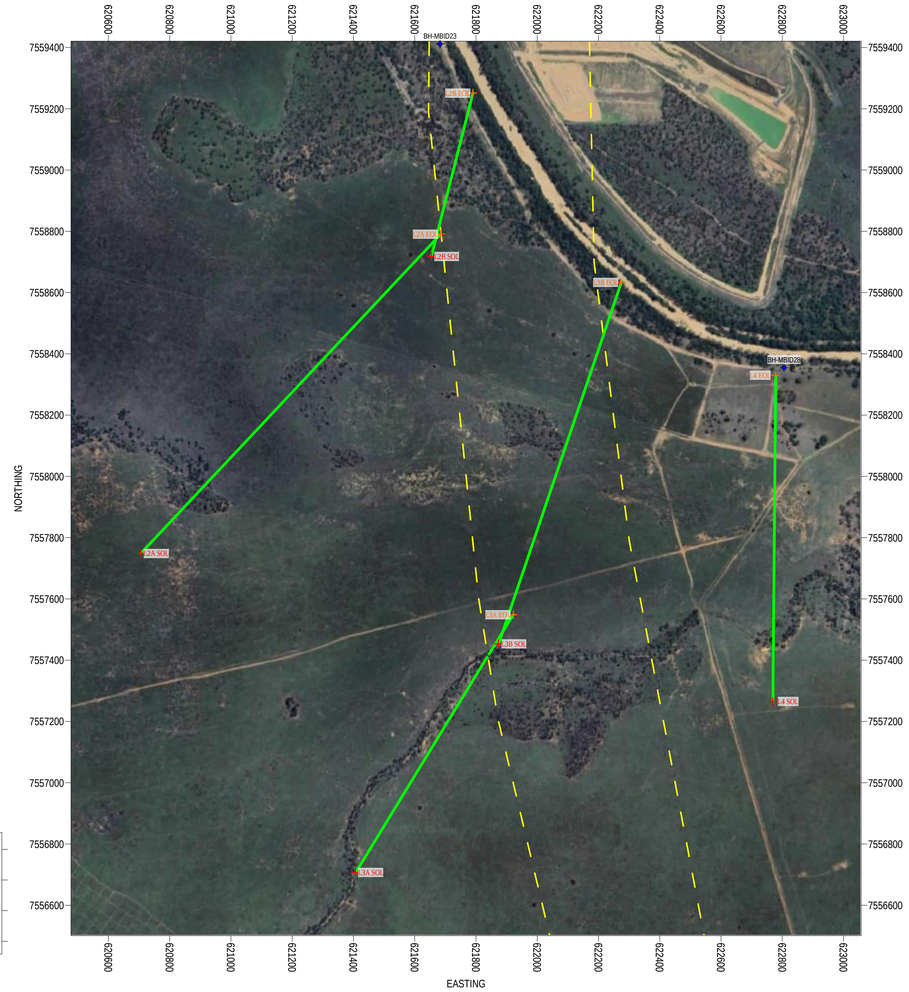
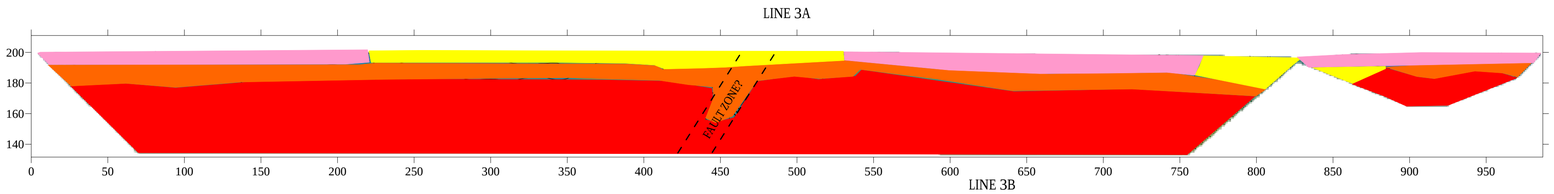
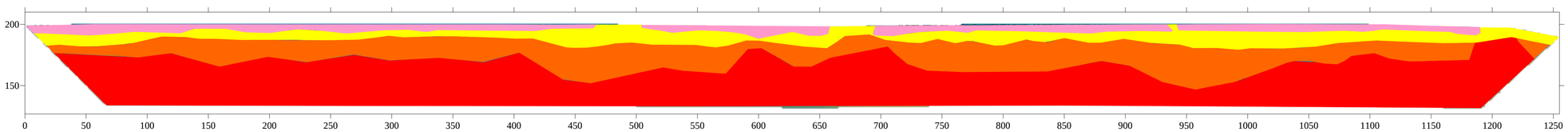
LINES 2, 3 and 4

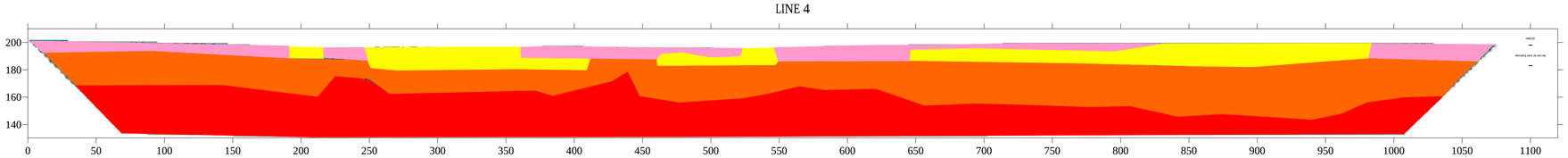












LEGEND	
Borehole Location	Unit 1a - Clay-rich Soils
ERI Line Location	Unit 1b - Dry Sands
L1d SOL Start of ERI L1d	Unit 2 - Clay-rich weathered sandstone/siltstone
L1d EOL End of ERI L1d	Unit 3 - Fresh Sandstone with interbedded silstone and coal
CH3,922m Metres Chainage Along Compiled ERI Line	
Fault	

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING

INTERPRETED GEOLOGICAL PROFILES

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

MAP SCALE 1:10,000 (A1)

PROFILE SCALE 1:2,000 (A1)

Project Ref: **MES_1272**	Figure No. **7**

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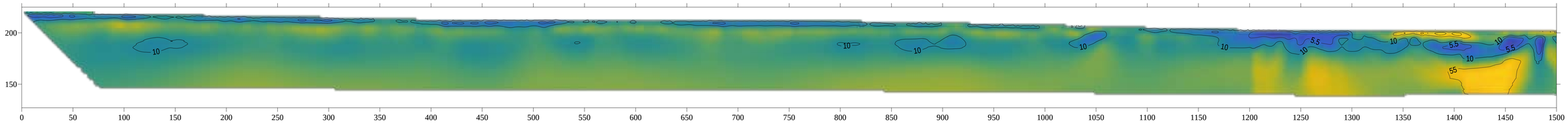
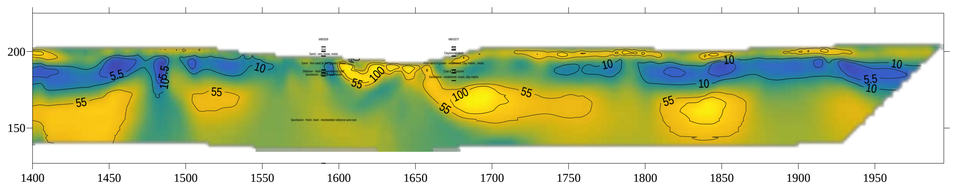
2						
3						

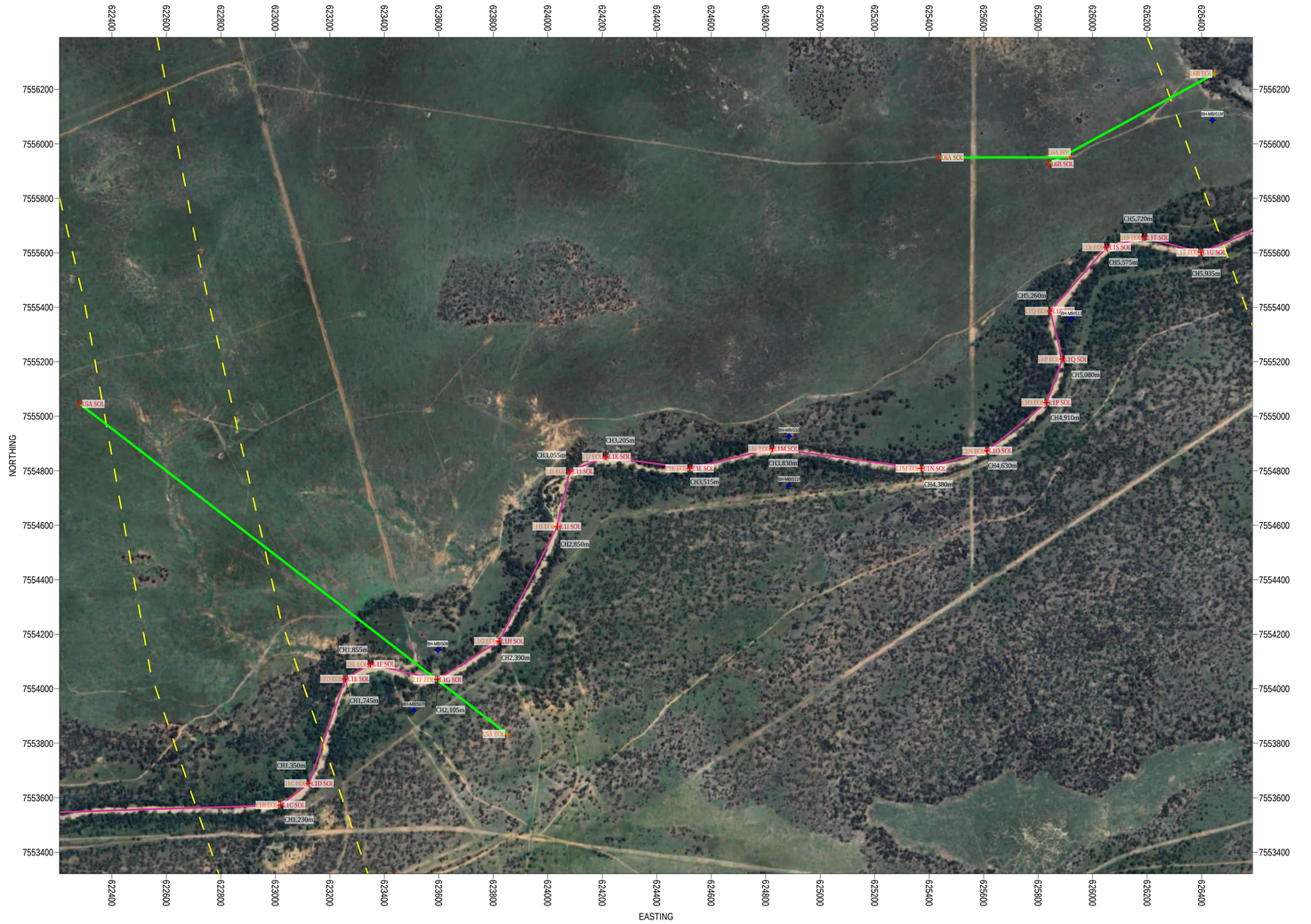
LINES 5 AND 6

LINE 5



LINE 5 - CONTINUED





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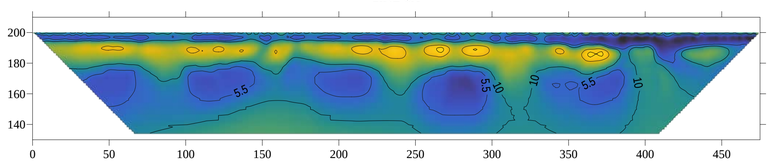

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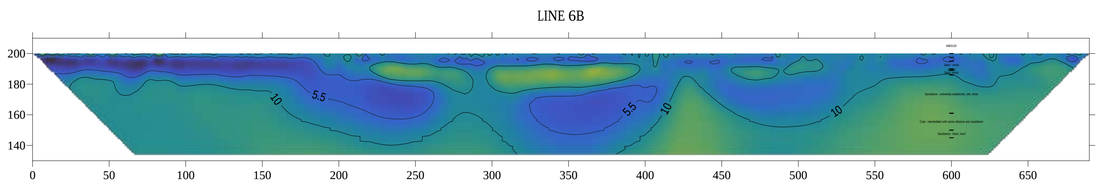

MODELLED RESISTIVITY (Ohm.m)

1 2 4 6 8 10 20 40 60 80100 200

LEGEND	
✦	Borehole Location
▬	ERI Line Location
L1d SOL	Start of ERI L1d
L1d EOL	End of ERI L1d
CH3,922m	Metres Chainage Along Compiled ERI Line
▬ ▬	Fault

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING SECTIONS

LOCATION MAP

GEODETIC INFORMATION	
Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

MAP SCALE 1:10,000 (A1)

PROFILE SCALE 1:2,000 (A1)

Project Ref: **MES_1272** Figure No. **8**

NOTES

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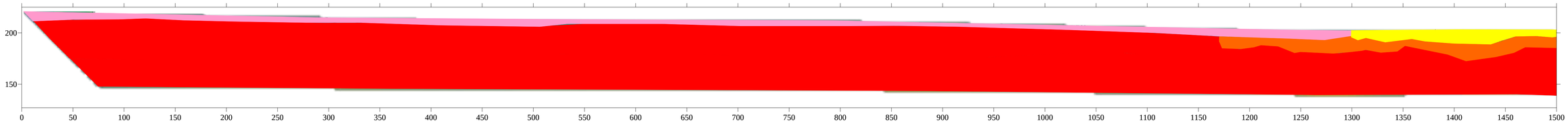
Issue No.	Date	Description	Surv.	Interp.	Drawn	Appr.
1	01/07/25	Preliminary				
2						
3						

LINES 5 AND 6

LINE 5



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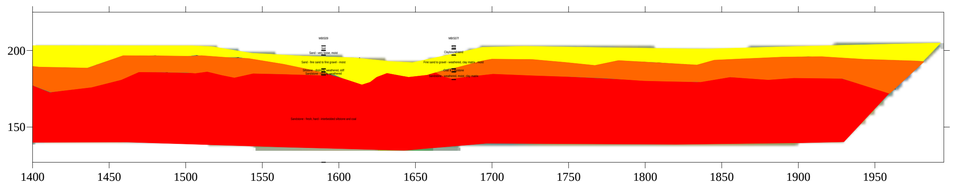

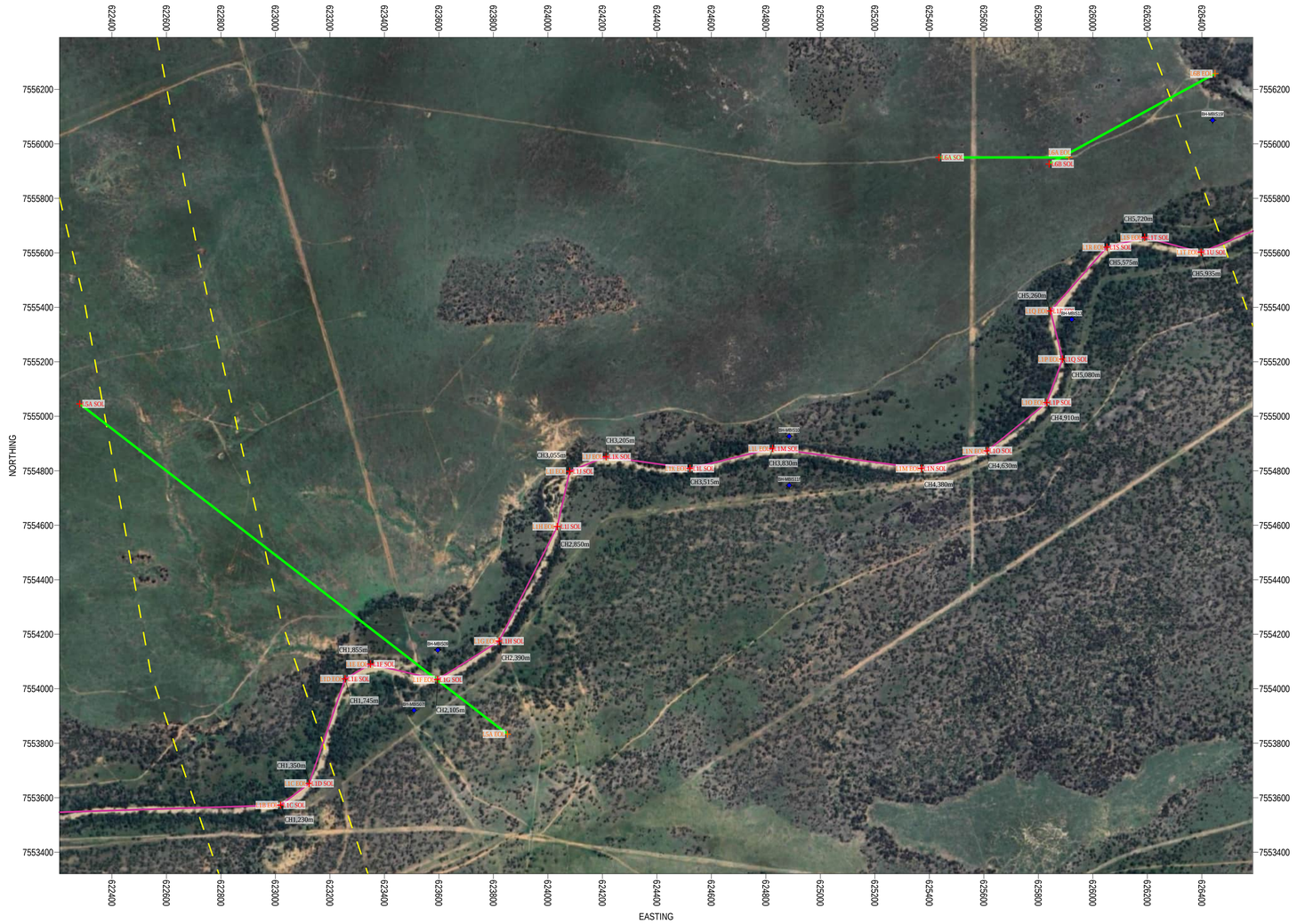

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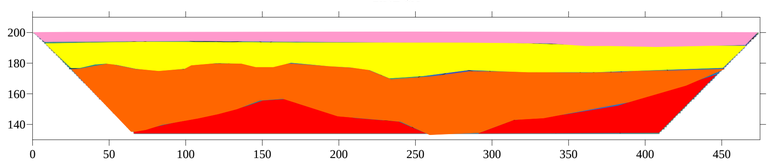

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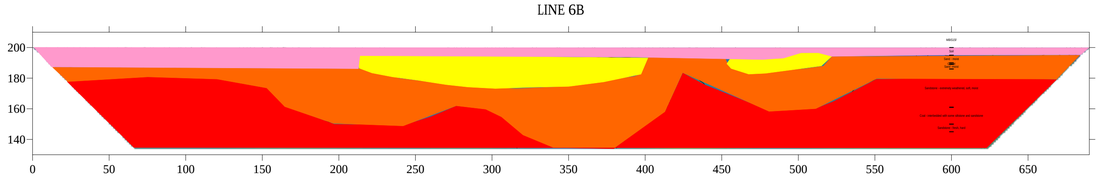

LEGEND			
Borehole Location		Unit 1a - Clay-rich Soils	
ERI Line Location		Unit 1b - Dry Sands	
L1d SOL	Start of ERI L1d	Unit 2 - Clay-rich weathered sandstone/siltstone	
L1d EOL	End of ERI L1d	Unit 3 - Fresh Sandstone with interbedded silstone and coal	
CH3,922m	Metres Chainage Along Compiled ERI Line		
Fault			

CLIENT	STANMORE RESOURCES
PROJECT	ISAAC DOWNS EXTENSION
SURVEY DATE	MAY - JUNE 2025

ELECTRICAL RESISTIVITY IMAGING

INTERPRETED GEOLOGICAL PROFILES

LOCATION MAP

GEODETIC INFORMATION

Horizontal Datum	AGD84 UTM Zone 55S
Vertical Datum	Australian Height Datum (AHD) (m)

MAP SCALE 1:10,000 (A1)

PROFILE SCALE 1:2,000 (A1)

Project Ref: **MES_1272** Figure No. **9**

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Issue No.	Date	Description	Surv.	Interp.	Drawn	Appr.
1	01/07/25	Preliminary				
2						
3						