

Wandoan Coal Project Preliminary Groundwater Assessment

November, 2008

Wandoan Joint Venture



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Date: November, 2008.....

Distribution: WJV, PB File

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Glossary

QDEX	Queensland Digital Exploration Reports system
NRW	Queensland Department of Natural Resources and Water
CG	Coordinator General
EC	Electrical conductivity
GDWB	Groundwater Database
MRA	Mineral Resources Act 1989
SDPWO Act	Queensland State Development and Public Works Organisation Act 1971
IPA	Integrated Planning Act 1997
WA 2000	Water Act 2000
gINT	gINT Geotechnical and Geoenvironmental software
Piezo	Piezometer, measuring water levels under pressure
ToR	Terms of Reference
EIS	Environmental Impact Statement
Mtpa	Million Tonnes per annum
MDL	Mineral Development Licence
NATA	National Association of Testing Authorities
pH	The measure of the acidity or alkalinity of a solution
ROM	Run of Mine
EPA	Environment Protection Authority, Queensland
PB	Parsons Brinkerhoff (Australia) Pty Ltd
TOC	Top of Casing
mbgl	Meters below ground level
L/s	Litres/second
GAB	Great Artesian Basin

Executive summary

The Wandoan Coal Project (the Project) comprises the development of thermal coal resources situated immediately west of the Wandoan township. The Project is located approximately 350 km northwest of Brisbane and 60 km south of Taroom, and covers an area of approximately 32,000 ha. The topography is undulating, with low ridge lines separating the main drainage lines

The coal resources will be developed through open cut mining. The mining of the coal resources will be undertaken using a combination of truck, excavator, dozer and dragline mining equipment. Coal will be mined at a rate of around 30 million tonnes per annum (Mtpa) run of mine (ROM) coal. The coal will be crushed, sized, and washed before being transported by rail to the Port of Gladstone.

The proposed mining at Wandoan is expected to be limited in depth to 60 m and targeting the Juandah Coal Measures, namely the Kogan, Macalister Upper and Lower, and Wambo coal seams. The groundwater technical study focused primarily on MLA 50230 and 50231, with limited assessment of MLA 50229. It is recognised that further work is required in MLA 50229 to further conceptualise the hydrogeology.

The project area is underlain by Quaternary age sediments along the major creek lines, namely; Frank Creek, Mud Creek, and Woleebee Creek, and their tributaries. The majority of the project area and the Quaternary sediments are underlain by early Jurassic through to Middle/Late Jurassic sedimentary rocks of the Surat Basin.

The groundwater technical study was undertaken during the period December 2007 to July 2008 and involved literature and data search, hydrocensus, drilling and bore construction, pumping test, hydrogeological assessment, including hydrochemistry and hydrogeological conceptualisation.

The hydrocensus identified 77 existing private groundwater bores located in and within 2 km of the MLAs. Of these, seven are identified as community bores which supply multiple landholders through a network pipelines and bore drains and extract groundwater from the GAB.

In total, four drilling locations were identified for pump testing in the pits programmed for commencement of mining in MLA 50230. Only one site produced sufficient water to warrant construction of a production bore that was subjected to a pumping test. There are a total of sixteen currently monitored bores, ten of which are open holed, converted exploration boreholes and six are specifically designed monitoring/production bores.

The technical study found that the cleats within the coal seams are the main water bearing structures. The deeper coal seams below 50 m are the more transmissive seams. Groundwater monitoring results show that the deeper coal seams of the Macalister and Wambo have a slightly lower salinity up to 17,000 $\mu\text{S}/\text{cm}$ (brackish) compared with the upper coal seams of the Kogan, which are typically up to 23,000 $\mu\text{S}/\text{cm}$ (brine). The alluvial sediments are considered to be a limited groundwater resource, located around Mud, Frank and Woleebee Creeks, and their tributaries. The surface/groundwater interaction needs to be determined including the effect the alluvials have on recharge to the underlying aquifers.

The groundwater resource within the Juandah Coal Measures is semi-confined with sandstones, siltstones and mudstones between the coals seams acting as semi-confining/confining layers. The field work results indicate that there is a very low vertical hydraulic connection between the water bearing

zones in the coal seams. Horizontal transmissivity is low, $< 8 \text{ m}^2/\text{day}$. Water make (the location in the stratigraphy from where a groundwater source is derived) across the Project area is highly variable, both spatially and vertically with indications of groundwater encountered within the coal cleats.

Currently, there is no evidence to suggest that a link exists between bores extracting groundwater below the proposed base of the pits (60 m) and production bores extracting from the GAB. The vertical hydraulic transmissivity of the Juandah Coal Measures and the extensive sequence of semi-confining material between the Juandah Coal Measures and the GAB, being up to 400m, is very low.

Bores located in close proximity to the pits and extracting from above 75 m, are likely to be affected due to increased groundwater level drawdowns from pit dewatering activities. The offsite impacts should be limited to approximately 20 bores located in close proximity to the MLA boundary. The 20 bores potentially affected will be assessed in more detail to confirm the likely effects of the mining activities on the ongoing use of the bores.

Groundwater impacts are expected to be confined to the Walloon Coal Measures (in particular the Juandah Coal Measures) and other overlying aquifers. Any exception to this would likely be the result of geological structures (e.g. faults) that have not yet been identified on the geological models. Mitigation measures for existing users may be required in some circumstances where access to groundwater supplies have been affected. In these instances the affected landowners will require access to an additional water source.

Augmentation of the existing groundwater monitoring network is recommended together with further pump testing in the future pits to the west as agreed with NRW to enhance the hydrogeological conceptualisation of the Project area and monitor potential impacts to the environment and existing users. At least one production bore should be established prior to mining within each of the three major western pits in MLA 50229 whereby hydraulic characteristics through pumping tests can be calculated. The data will be used to: verify the conceptual hydrogeological model, form the basis for further baseline assessment, allow comparison to existing hydraulic parameter calculations (to either support the existing values, or to illustrate the variability in hydraulic parameters), and provide for a long term monitoring network before during and after development of the mine. The additional data will be used to augment existing data and to develop a numeric model to supply predictions on groundwater pit inflows and the lateral effect of the sink created by the pits on the local and regional hydrogeology.

1. Introduction

1.1 Project background

The Wandoan Coal Project (the Project) comprises the development of thermal coal resources situated immediately west of the Wandoan township. The Project is located approximately 350 km northwest of Brisbane and 60 km south of Taroom as shown in Figure 1-1. The coal resources for the Project exist within two Mineral Development Licences (MDLs) (over which three mining lease applications, MLA 50229, 50230 and 50231 have been submitted), as shown in Figures 1-1 and 1-2. The coal resources will be developed through open cut mining. The Project covers an area of approximately 32,000 ha.

The mining of the coal resources will be undertaken using a combination of truck, excavator, dozer and dragline mining equipment. Coal will be mined at a rate of around 30 million tonnes per annum (Mtpa) run of mine (ROM) coal. The coal will be crushed, sized, and washed before being transported by rail to the Port of Gladstone.

1.2 Description of study area

The technical hydrogeological assessment characterises the groundwater environment at Wandoan within MLA's 50229, 50230 and 50231.

The project area is underlain by Quaternary age sediments along the major creek lines, namely Frank Creek, Mud Creek, and Woleebee Creek, and their tributaries. The majority of the project area and the Quaternary sediments are underlain by the Walloon Coal Measures strata. The topography is undulating, with low ridge lines separating the main drainage lines.

The project location and the project area are provided in Figures 1-1 and 1-2 (Attachment A).

2. Methodology of assessment

2.1 Relevant legislation and guidelines

2.1.1 Queensland State Development and Public Works Organisation Act 1971 and other relevant legislation

The Wandoan Coal Project was declared a Project of State Significance under Section 26(1)(a) of the *Queensland State Development and Public Works Organisation Act 1971* (SDPWO Act) by the Coordinator-General (CG) in December 2007.

The Proponent, WJV will require both a Mining Lease under the Mineral Resources Act 1989 issued by the Queensland Minister for Mines and Energy, and an Environmental Authority under the *Environmental Protection Act 1994* issued by the Queensland Minister for Environment to undertake the mining components of the Project. Some elements of the Project may also invoke the need for permits under the *Integrated Planning Act 1997* (IPA).

2.1.2 Water Act 2000

The *Water Act 2000* (WA 2000) is the key legislation that regulates the interference and extraction of groundwater within Queensland. The regulatory authority for the WA 2000 is the NRW. Water management within Queensland is regulated through the development of Water Resource Plans and implementation of Water Operations Plans. These plans provide the process to balance socio-economic and environmental needs, for managing unallocated water and defining the rules to protect dependent ecosystems and manage extraction. The project area is located within the Surat North Management Area (20) within the Great Artesian Basin (GAB) Water Resource Plan. The Walloon Coal Measures, which include the coal seams targeted by the Project are considered an aquifer and form part of the Surat North 1 Management Unit within the GAB WRP 2000.

The WA 2000 permits NRW to grant licences and permits for the extracting, use and interference of the flow of water, including groundwater. All bores that 'take' water (i.e. pumped) are required to have a development permit which gives the authority to construct a bore and defines any conditions of extraction (e.g. maximum depth). The development permit with a designated 'works number' replaces the need for bores to be registered (as required under superseded legislation). The licence grants a share of the resource (i.e. entitlement). A water permit allows for the extraction of water, and designates a use/purpose, volume for extraction and time period.

Monitoring bores that take water such as for a pumping test (i.e. production bores as described in this report) require a development permit and water permit (if the extraction exceeds 24 hours). Each borehole drilled for hydrogeological purposes as part of the program at Wandoan was regulated by a development permit issued by NRW. An application was submitted to NRW who subsequently granted the water permit for the proposed production bore.

Water bores are required to be drilled by a licensed driller according to the type of drilling undertaken, as described in Minimum Construction Requirements for Water Bores in Australia, Edition 2 and Revised September 2003. For example, a Class 1 licence allows

drilling and water bore construction through one aquifer. A Class 2 licence allows drilling through multiple aquifers and a Class 3 licence allows drilling through artesian aquifers (i.e. Measures as a 'single' aquifer and therefore a Class 1 licensed driller is required for bore construction) (pers. comm. Adrian McKay (NRW), 12/9/07). The drilling company engaged to undertake the work provided a licensed Class 2 driller during drilling and bore construction.

2.1.3 *Environmental Protection Act 1994 and Environmental (Water) Protection Policy 1997*

The *Environmental Protection Act 1994* and *Environmental Protection (Water) Policy 1997*, principally Sections 15 to 20, govern the discharge of wastewater to land, surface waters, and groundwater. It provides a framework for defining the environmental value of water and guidelines for water quality. This policy will control any discharge to groundwater by protecting it to the designated environmental value.

Discharge of water onsite into the bulk sample environmental dam at the proposed Austinvale pit location does not require a specific Environment Protection Authority (EPA) licence. Water discharged onsite is managed through a Standard Environmental Authority (mining activities), as shown in Attachment B. Water discharged onsite complied with the Authority, Permit No. M4489.

2.1.4 *Queensland Aboriginal Cultural Heritage Act (2003), and Aboriginal, and Torres Strait Islander Heritage Protection Act (1984) (Commonwealth)*

The *Queensland Aboriginal Cultural Heritage Act 2003* protects areas of land and objects of heritage to the Aboriginal people. These sites are considered to be of cultural significance and thereby protected. 'Undisturbed' land must be inspected to determine if additional protection and management practices are required. The Act requires a site supervisor to maintain a 'duty of care' approach, particularly where human remains are found and environmental disturbance may occur. The legislation requires that activities that may cause harm to cultural heritage are minimised and reported where necessary. WJV outlines procedures to manage its duty of care to protect cultural heritage in its induction courses which are compulsory for all persons entering the MLA.

2.2 How the study was conducted and information obtained

2.2.1 Overview

The groundwater technical study was undertaken during the period December 2007 to July 2008. It builds on the work previously undertaken by PB (Groundwater Impact Assessment 2133006A-RPT003, PB, 2007).

This technical study focused primarily on developing a conceptual understanding for MLA's 50230 and 50231 as these areas are where operations will commence. Operations are not expected to commence in MLA 50229 until at least 2015 (Year 4) and by 2017 (Year 6) approximately one third of production is expected to come from pits located in the MLA 50229 area.

The groundwater technical study involved:

- literature and data search
- hydrocensus
- drilling and bore construction
- a pumping test in the initially mined eastern deposits
- hydrogeological assessment, including hydrochemistry
- groundwater impact assessment.

This section discusses the methodology of the assessment while subsequent sections present and discuss the data obtained, and an assessment of the potential for impacts to the groundwater system and users.

2.2.2 Existing data and literature

Groundwater data and information was collated and assessed as part of the prefeasibility study undertaken in 2007 (PB, 2007). The study highlighted a number of data gaps that would need to be addressed for the Project to meet the requirements of the EIS ToR. This technical study aimed to ensure there was sufficient data to assess the potential impact of mining on the local groundwater resources.

Information sources are listed in Table 2-1. All the data and available information has been collated and analysed to conceptualise the groundwater resource within MLA's 50230 and 50231 and assess the potential impacts of the Project within the MLA areas. Data for bores and (WJV) exploration boreholes was archived and is available for future data analysis.

Table 2-1: Data inventory

Required data	Source	Format
Geology/lithology	PB database and drilling program NRW WJV QDEX	Geological logs, with select sites across Project area input into gINT.
Registered and licensed bores	NRW	All registered bores within 50 km of MLA's were extracted from the NRW database. Data converted to excel spreadsheet, including entitlement, bore construction, total depth, location (eastings and northings), water level, water quality, yield and lithology.
Surface physiography	PB data base PB Ecological Survey	Easting, northing, elevation to form topographic contours.
Exploration boreholes	WJV QDEX	Well identification number, latitude, longitude, depth drilled, lithology and geophysics, water quality.
Monitoring bores	WJV PB drill program	Bore identification number, latitude, longitude, depth drilled, lithology yield, water quality and geophysics.

Required data	Source	Format
Production bore	PB drill program	Bore identification number, latitude, longitude, depth drilled, lithology, yield, water quality and geophysics.
Water level	NRW WJV	Water level on construction or after drilling. Production bore water level (and response) determined from pumping test.
Water quality	NRW WJV	Limited water quality (primarily EC) on construction or during drilling. Production bore water quality determined from pumping test.
Yield	NRW PB drill program WJV	Yield on construction or during drilling. Production bore yield determined from pumping test.
Surface water runoff	Chapter 11	Charts and tables.
Rainfall and evaporation figures	Chapter 7 and 11	Charts and tables.

2.2.3 Field investigations

Hydrocensus

A hydrocensus was conducted across MLA's 50229, 50230 and 50231 to identify all bores that could potentially be affected by the Project. Property owners within 5 km of the MLA's were contacted to determine whether they had (registered/unregistered) bores, the bore status, bore construction details and usage records.

Bores were identified from the NRW Groundwater Database (GWDB), the pre-feasibility study (PB, 2007) as well as any observed since the prefeasibility study during subsequent PB field visits. For MLA's 50230 and 50231, the hydrocensus was undertaken during the period of April to May 2008, and for MLA 50229 it was undertaken in July 2008.

WJV exploration boreholes were not considered as part of the hydrocensus as they are not boreholes constructed for the taking or interference (e.g. monitoring) of groundwater.

The purpose of the hydrocensus was to:

- determine the status of all identified bores, including private and WJV owned, that may be affected by proposed mining operations
- collect water level (and where possible water quality) data to establish a baseline monitoring database
- identify potential water supply bores (such as community bores) for use during construction and operation phases of the mine.

PB staff comprising a groundwater technician and community liaison officer visited each property and asked a series of questions to landholders. Questions asked as part of the survey and responses are provided in the hydrocensus datasheets which can be found in Attachment C.

Each bore existing at the time of the hydrocensus was inspected, photographed, and where possible had basic field measurements recorded including total depth, water level and field electrical conductivity, pH and temperature. The collection and recording of this data was an essential component to determining the location, use and purpose of bores that could potentially be influenced by mining and provides a reference for future measurements. The location of bores identified during the hydrocensus are shown in Figure 3-2 contained in Attachment A.

There are a number of reasons that may prevent/not justify the collection of water quality data from hydrocensus bores. These include:

- no access to the bore site
- no access to the bore due to the nature of pump installation
- no geological log or construction details available hence the source of the sample cannot be ascertained.

Community bores accessing water supplies from the underlying GAB within and in close proximity to the MLA's were also identified, as this information was deemed useful in the consideration of construction and long term water supply options for the Project. Where possible, the location of bore drains (surface channel for conveying water from bores) and pipelines that feed the various landholders supplied by the community bores was also gathered. The extent of the bore drain network is shown on Figure 3-4 in Attachment A.

Drilling — enhancement of the bore network

The prefeasibility study (PB, 2007) recognised that the existing monitoring bore network required additional coverage at strategic locations and quantification of the hydrogeological and hydrochemical characteristics of the aquifers within the proposed MLA areas was required.

The bore network enhancement program initially focused on MLA 50230 as this is the area in which mining will be undertaken for the first five years of the Project under the current mine plan. This program will be continued for the subsequent mining operations.

In total four drilling locations were identified. Subsequent monitoring and production bores drilled and completed as part of this Preliminary Groundwater Assessment were designed to fill data gaps in the existing monitoring network identified in the prefeasibility study (PB, 2007). Preliminary investigations also suggested that the apparently limited groundwater may tend to concentrate within 'troughs' in the coal seams. This was considered during review of the following information to identify the preferred drilling locations:

- geological cross sections (compiled by WJV from exploration data)
- geological logs of exploration boreholes and private bores
- exploration data noting sites of observed water make
- physiographic features (i.e. creeks, topography).

The four drilling sites adopted are shown in Figure 2-1 in Attachment A.

For each site the intention was to install a single production/test pumping bore and up to two monitoring bores at different depths depending on the aquifers and quantity of water encountered. In each case the coal seams were expected to be the only significant aquifers. This strategy was adopted for the following reasons:

- to enable quantification of the aquifer (coal seam) hydrogeological properties from test pumping and therefore enable the area of influence of mining on local groundwater to be determined
- to determine an connectivity between different aquifers
- to enhance the current monitoring bore network by providing bores to facilitate the collection of baseline water level and water quality data.

The sites were drilled over the period December 2007 to April 2008. The installation of groundwater bores was undertaken by an appropriately licensed Class 2 water bore driller in accordance with the Minimum construction requirements for water bores in Australia (LWBC, 2003). A qualified hydrogeologist supervised the drilling and construction at all times to ensure these standards were applied.

Water level monitoring

Water level data collected and analysed in this report focused on groundwater within the Juandah Coal Measures (the upper sequence of the Walloon Coal Measures). All bores monitored as part of WJV's ongoing groundwater monitoring program measure water levels from bores either screened or open holed through the Juandah Coal Measures to maximum depths of 100 m. There are a total of sixteen bores that are currently monitored, ten of which are open-holed converted exploration boreholes and six are specifically designed monitoring/production bores. Two of the new sites monitor water levels at different levels (i.e. shallow and deep) in the stratigraphy. The location of all currently monitored sites is shown in Figure 2-2.

Groundwater level data was collected from the newly constructed bores using an electronic water level meter to sub-centimetre accuracy during the drilling and test pumping programs.

Automated water level and temperature data loggers (CeraDiver's) were installed in the newly constructed wells and one existing WJV monitoring well as detailed in Table 2-2 below. Manual water levels were recorded at the time of installation to facilitate accurate correction of recorded water levels to the desired height datum. All loggers were set to record at 30 minute intervals.

A BaroDiver was also installed to record barometric pressure and allow correction of water level data for barometric pressure changes. The BaroDiver provided by the manufacturer was faulty and would not communicate with a computer. A replacement BaroDiver was requested, supplied and installed.

Table 2-2: Water level data logger installation details

Bore name	Equipment installed	Logger serial No.	First true reading ¹	Approximate installation depth (m bgl)
WPB1	CeraDiver	C0150	3/5/08 16:30	55
WMB1-D	CeraDiver	A9182	3/5/08 16:00	50
WMB1-S	CeraDiver	C0146	3/5/08 16:00	32
WMB1-S	BaroDiver	B0653	23/5/08 15:30	Ground level
WMB2	CeraDiver	A9179	4/5/08 09:00	65
WMB3-S	CeraDiver	A9194	4/5/08 08:00	43
WMB3-D	CeraDiver	C0150	4/5/08 08:00	55
C4057	CeraDiver	A1929	27/5/08 15:00	25

¹ In some instances the logger may have been started prior to the first true water level reading, hence the time of the first true reading has been used.

Test pumping — R9095

The site at which borehole R9095 (WPB1) is located was the only site that produced sufficient water to warrant construction of a production/test pumping bore and pumping test.

The purpose of the pumping test on bore WPB1 was to determine the hydraulic characteristics of the water bearing zones in the coal seams and define potential water make into the nearby proposed Woleebee pits. A three stage (step) multi-rate test (3 x 2 hours) and a 24 hour single (constant) rate pumping test with recovery monitoring were performed in accordance with AS 2368-1990 Test pumping of water wells (Standards Australia, 1990).

The pumping test equipment comprised of:

- a Grundfos 76 mm diameter SQN 7-50 electric submersible pump with built in non-return valve
- an ARAD Multi-jet magnetic water meter, Model MS, 40 mm for flow measurement.

Flow measurements were also checked manually by filling a container of known volume.

The test pump was installed at a depth of 45.5 m, approximately 1 m above the commencement of the slotted casing. The multi-rate pumping test was started at 12:00 pm on 24 May 2008 for six hours after which the water level was allowed to recover. The single rate test was started at 13:30 pm on 25 May 2008 for 24 hours, followed immediately by recovery which was completed at 13.30 pm on 27 May 2008.

For the multi-rate test two bores were monitored in addition to the pumping bore — WMB1-D and WMB1-S. WMB1-D intersects the coal seams over the same interval as WPB1 while WMB1-S intersects an overlying coal seam aquifer. WMB1-D and WMB1-S are both constructed in borehole R9096 and are located 14.30 m from WPB1.

In the single rate test three bores were monitored in addition to the pumping bore — WMB1-D, WMB1-S and C4057 (an existing WJV monitoring bore). Figure 3-1 includes the locations of bores monitored during the test pumping.

Water levels in bores WPB1, WMB1-D and WMB1-S were recorded at 30 second intervals throughout the duration of the pumping and recovery tests using automatic water level data loggers (CeraDiver's). Manual readings to sub centimetre accuracy were also taken at designated intervals in these bores and in bore C4057 using an electronic water level meter.

Water samples and field parameter values were taken from the monitored bores at the start and end of the single rate test. This was designed to show any changes in groundwater quality, particularly salinity as a result of pumping.

Water quality

Quantification of groundwater quality across the Project site was restricted to measurement of field parameters (EC, pH and temperature) during drilling and the collection and analysis of samples during the pumping test.

Samples collected during the pumping test were done using a bailer for all wells except the pumping well (WPB1) from which the sample was taken from a valve on the pump discharge pipe work within 5 m of the bore.

Where required, samples were filtered and stored in bottles (with appropriate preservatives) supplied by a NATA registered laboratory. Samples were kept chilled until delivery at the laboratory.

In addition to the eight samples taken (two from each bore; start and end of pumping test), one additional sample was provided to a second NATA registered laboratory for quality control purposes.

Chain of custody and laboratory quality control documentation is provided in Attachment H.

2.3 Limitations

This report does not consider the following which have been addressed in separate studies:

- the southern and western CSM water supply pipelines
- the GAB as a water supply for the Project
- groundwater impacts associated with any other water supply options.

The location of groundwater drilling sites was based on available WJV exploration data and NRW information available at the time.

The study did not include an assessment of the hydrogeological conditions of MLA 50229.

3. Existing environment

3.1 Geology

The Project area is located in the northern portion of the Surat Basin. Alluvium (Quaternary deposits) is found within the major creeks within the area. Average depth of weathering is about 12 m and ranges between 5 m and 30 m. The only hard strata in the overburden material consist of thin ironstone and lenticular calcified sandstone bands, both generally less than 1 m thick. Topsoil thickness in the area ranges between 0.5 and 1.5 m.

The geological sequence present within the MLA's consist of early Jurassic through to Middle/Late Jurassic sedimentary rocks. Table 3-1 presents the Surat Basin Stratigraphy for the area which is predominantly the rocks of the Injune Creek Group, which is then underlain by the Early Triassic Hutton Sandstone.

The Injune Creek Group consists of:

- Westbourne Formation (sandstone and mudstone with coal, about 140 m thick), not found in the Project area
- Springbok Sandstone (friable sandstone with beds of mudstone and thin coal seams near its base, about 90 m thick), located in the eastern portion of the Project area
- Walloon Subgroup (variable sandstone/siltstone/mudstone/coal lithology with thick banded coal seams, up to 510 m thick). This unit consists of the Juandah Coal Measures (target for mining in this Project), Tangalooma Sandstone and Taroom Coal Measures
- Eurombah Formation (quartzose sandstone with some silt, mudstone and fine coal fragments).

The proposed mining is limited to the Juandah Coal Measures, down to the Wambo coal seams. The coal seams that form the Juandah Coal Measures are shown in Figure 3-1.

A number of historical geological logs from NRW registered bores identify the Birkhead Formation as a distinct geological unit of the Surat Basin. The rocks of this formation consist of coarse sandstones with volcanic matter and are the western equivalents of the Walloon Subgroup.

The Durabilla Formation consisted of coarse sands, and was an informal name that is no longer used. The rocks of the Durabilla and Eurombah Formation are now part of the Injune Creek Group.

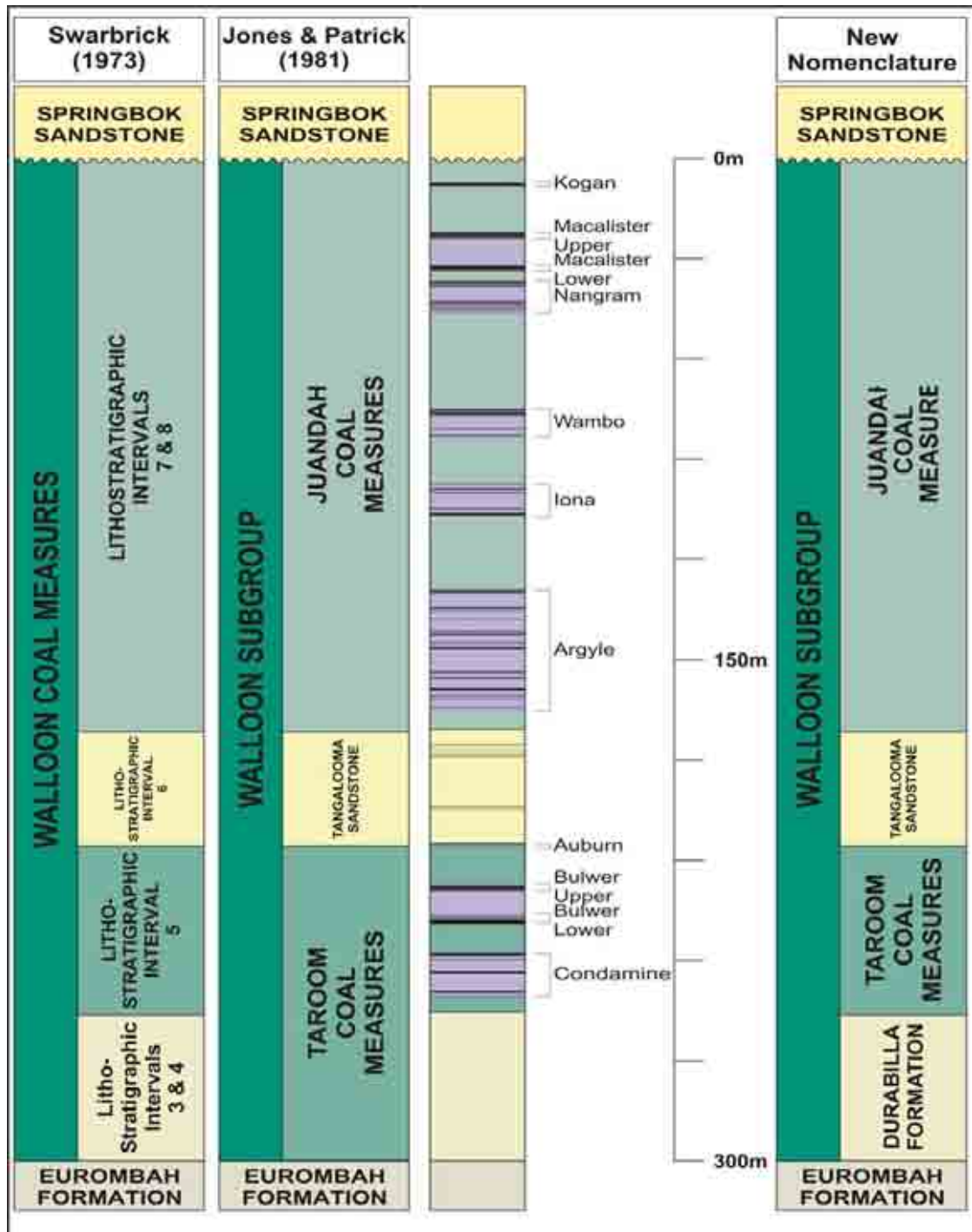
Below the Eurombah Formation is the strata which forms the GAB. The Hutton Sandstone forms the upper sequence of the GAB, which is underlain by the Evergreen Formation and the Precipice Sandstone.

Cross sections compiled from the drilling are located in Attachment G.

Table 3-1: Surat Basin Stratigraphy — north eastern area

Age			Formation	Description	
Late Jurassic			Gubberamunda Sandstone	Fine to coarse and pebbly, poorly sorted, friable, cross-bedded, quartzose to sub-labile sandstone. Minor interbedded siltstone and mudstone. Upper fluvial depositional environment.	
Middle to Late Jurassic	Injune Creek Group		Westbourne Formation	Finely interbedded lithic sandstone, mudstone and coal in lower part. Interbedded siltstone and lithic sandstone in upper part. Lacustrine deposition grading to point bar at the top.	
			Springbok Sandstone	Litho-feldspathic sandstone, medium to coarse, porous and friable, some calcareous and cemented beds, minor siltstone, mudstone and coal seams. Lower part trough cross-stratified with authigenic matrix, upper part poorly cemented, exhibiting point bar depositional features.	
Walloon Sub-Group		Juandah Coal Measures	Lithic, labile sandstone, interbedded with siltstone, mudstone and coal, with coal deposition more frequent towards top. Argillaceous component of sandstone is mainly authigenic.		
		Tangalooma Sandstone	Lithic, labile sandstone, medium grained with argillaceous matrix. Numerous intraformational conglomerate beds. Sedimentary structures suggest channel deposition grading to point bar deposition.		
		Taroom Coal Measures	Sub-labile, medium grained sandstone grading upwards to interbedded sandstone, siltstone, mudstone and coal.		
		Eurombah Formation	Lithic to sub-labile, poorly sorted, medium grained sandstone with argillaceous matrix. Minor siltstone and mudstone in basal section, more argillaceous towards top.		
Early Jurassic				Hutton Sandstone	Interbedded labile to quartzose sandstone, siltstone and mudstone and intraformational conglomerate.

Source: Jones and Patrick, 1981



Source: Scott et al, 2004

Figure 3-1: Stratigraphy of the Walloon Subgroup

3.2 Hydrogeology of the Project site

3.2.1 Nature and hydrology of the aquifers

Quaternary sediments (alluvium)

Alluvium occurs along the creeks within the Project area and is the youngest geological unit. Each of the major creek systems have a number of tributaries that also flow through the area. These sediments comprise a sequence of clay, silt, sand and minor gravel. The sediments are deposited by flowing surface water systems, and in the majority are contained within a few metres of the water course. The thickness and lateral extent of the alluvium will vary across the MLA areas did not form part of this investigation and will be addressed in future investigations.

The alluvium acts as an unconfined aquifer that is directly responsive to rainfall and recharge from creeks. The groundwater/surface water interaction and recharge will need to be determined as part of the investigation for creek diversions. The groundwater from boreholes drilled through the alluvial deposits during the exploration program can not be used for interpretation purposes as other aquifers were also intersected, resulting in a mixing and blending of the groundwater that could lead to incorrect interpretations.

Individually constructed monitoring bores, within the alluvium and underlying aquifer will assist to determine the hydraulic linkages and connectivity.

As indicated, no independent investigation targeting the alluvial deposits was carried out.

Middle to Upper Jurassic Injune Creek Group Strata, particularly the Juandah Coal Measures

This geological unit:

- is comprised of mudstone; labile sandstone and siltstone, some calcareous rocks and coal
- has potential for limited water supply.

WJV exploration boreholes within the Project area are targeting the Walloon Subgroup, which range in depth from 15 to 200 m. The Walloon Subgroup is a unit of the Injune Creek Group, and contain two distinct coal-bearing formations namely the lower Taroom Coal Measures and the upper Juandah Coal Measures. These two coal sequences contain the substantial, potential thermal coal resources of the Surat Basin. The Tangalooma Sandstone separates the Taroom Coal Measures from the Juandah Coal Measures.

The coals of the Wandoan region occur within a belt of sub-contiguous deposits which sub-crop in an arc to the west and south of the Wandoan township, on the eastern limb of the Mimosa Syncline. They are contained in the Juandah Coal Measures, which forms the major economic horizon within the area. The Wandoan Coal Project will target the Macalister (Upper and Lower) and potentially the Wambo coal seams.

The coal seams of the Juandah Coal Measures are relatively flat lying with a regional dip of no more than two degrees to the south-west. Local increases in dip to three degrees do occur, probably as a result of differential compaction around sandstone bodies. Two of the deposits have defined faulting that would be likely to impact on mining operations in the area

including groundwater storage and movement. Igneous intrusions have not been detected within the coal measures sequence.

Typically, the seam groups are continuous over most of the deposit, even if individual seams are highly attenuated in part.

Groundwater occurs predominantly within the coal cleats. Water strikes in the Juandah Coal Measures are highly variable, varying from 5 to 250 m in depth. The interbedded sandstones, siltstones and mudstones act as semi-confining/confining layers separating the water bearing zones within the coal seams.

A regional groundwater contour map has not been compiled as the current water levels were not recorded in correctly constructed monitoring boreholes, with the exception of the new monitoring boreholes. The current boreholes used for groundwater level recording intersect different aquifers which, if intersecting confining layers without installing bentonite seals, will provide combined piezometric water levels for the area. As additional correctly constructed monitoring bores are installed across the MLA areas, the recorded water levels will indicate and allow for groundwater maps to be compiled for each of the underlying aquifers.

Water level data from R9096 and R9098 both shallow and deep piezometers, suggest that within the Project area, the water bearing zones within the coal seams are hydraulically connected (i.e. water levels in shallow and deep piezometers are at the same level)

Cross sections showing the stratigraphic profile of the coal seams across the Project area are shown in Attachment G. These sections were derived using the Vulcan model with lithology logs obtained from the WJV exploration drilling program. Included in these sections are the estimated location and depth of the mine pits (modelled at 80 m depth) and details regarding logged observations of water make in the exploration boreholes. Together the information provides a graphical view of the potential depth and number of pits that may make water. It should be acknowledged however, that unless specifically hydrogeologically logged, the notation of water make in an exploration borehole should be considered indicative only rather than a definitive indication of the depth and amount of water make.

The water make across the project area is highly variable, both vertically and spatially. Limited water volumes are intersected in boreholes between 25–35 m in depth. Between this level and the deeper more significant water bearing horizons below 50 m depth in the Wambo coal seams are semi confining layers which are relatively dry.

Within MLA 50230 and 50231, in areas between Woleebee and Frank Creeks, the strata is relatively dry, likely due to topographic elevation and low potential for recharge to the underlying stratigraphy. The creeks would have formed along paths of least resistance that could suggest structural zones or where changes in the geology occur, enhancing the pathways for vertical groundwater movement from the surface. The possibility of surface/groundwater interaction in these areas will need to be investigated and if surface water recharges the groundwater in these discrete areas.

Table 3-2 shows the hydrogeological stratigraphy and indicative upper yields.

Table 3-2: Hydrogeological stratigraphic summary

Age		Formation		Coal units	Lithological description		Hydrogeological unit	Typical thickness (m)	Indicative upper yield (L/s)
Quaternary		Alluvium			Clay, silt, sand and minor gravel		Aquifer	<15	—
Late Jurassic		Mooga Sandstone			Fluvial quartzose to sublabilite sandstone with thinly interbedded dark grey mudstone and siltstone		Aquifer	Insufficient data	35
		Orallo Formation			Lithic sandstone, siltstone and mudstone		Primarily a confining bed	140–270	
		Gubberamunda Sandstone			Fluvatile sandstone, minor conglomerate, siltstone and mudstone		Aquifer (>50% of total thickness)	45–3,000	40
Middle to Late Jurassic		Westbourne Formation			Siltstone and mudstone with fine-grained sandstone		Dominantly a confining bed	<120	
		Springbok Sandstone			Medium to fine-grained sandstone, with minor pebbly layers, siltstone and mudstone		Aquifer	<250	—
Middle Jurassic	Injune Creek Group	Walloon Coal Measures	Juandah Coal Measures	Kogan	Lithic, labile sandstone, interbedded with siltstone, mudstone and coal, with coal deposition more frequent towards top.		Limited aquifer (coal seams)	170	5
				Macalister Upper					
				Macalister Lower					
				Wambo					
				Iona					
				Argyle					
		Tangalooma Sandstone			Lithic, labile sandstone, medium grained with argillaceous matrix. Numerous intraformational conglomerate beds.		—	<40	—
		Taroom Coal Measures		Auburn	Sub-labile, medium grained sandstone grading upwards to interbedded sandstone, siltstone, mudstone and coal		—	<100	—
				Bulwer Upper					
				Bulwer Lower					
				Condamine					
		Eurombah Formation			Sandstone, siltstone and mudstone		—	<100	—
Early to Middle Jurassic		Hutton Sandstone			Fine to coarse-grained quartzose sandstone, lithic sandstone, siltstone and mudstone		Aquifer	<250	50
Early Jurassic		Evergreen Formation (incl Boxvale Sandstone Member)			Siltstone, mudstone and sandstone		Dominantly a confining bed; Sandstone is an aquifer	200-300	—
		Precipice Sandstone			Quartzose sandstone and siltstone		Aquifer	40–150	—
Middle Triassic		Moolayember Formation			Shale, mudstone, siltstone and lithic sandstone		Dominantly a confining bed	200–1,500	
		Clematis Sandstone			Quartzose sandstone interbedded with siltstone and mudstone		Aquifer	20–300	—
Early Triassic		Rewan Formation			Interbedded mudstone, siltstone, lithic sandstone and minor conglomerate		No significant aquifers	<3500	

Water quality for the Juandah Coal Measures suggest that groundwaters from the coal seams are saline, decreasing in salinity with depth. Salinity is sodium-chloride dominant. Electrical Conductivity (EC), which is a measure of salinity values up to 26,000 $\mu\text{S}/\text{cm}$ have been observed in the shallow water bearing seams (up to 50 m depth) of the Kogan seams and with EC values are typically between 8,000 to 18,000 $\mu\text{S}/\text{cm}$ for the deeper seams (of 50 to 100 m depth) of the Macalister and Wambo seams. pH increases with depth, typically neutral in the shallower water bearing zones to slightly alkaline (up to nine) in the deeper zones.

Low levels of nitrate and phosphorous have been detected in some of the new monitoring bores which need to be compared with other bores in the area to obtain a better understanding of potential contaminant sources. There are elevated levels of Arsenic in some areas, although all observations are still within drinking water standards (of 0.007 mg/L).

Early Jurassic Great Artesian Basin, particularly Hutton Sandstone

The Hutton Sandstone forms the upper part of the GAB and comprises interbedded labile to quartzose sandstone, siltstone and mudstone and intraformational conglomerate. This formation is well below the base of the proposed mine. It is the target formation for local community bores, due to its highly transmissive nature. An investigation of the potential for this resource to supply good quality water to the mine is being undertaken for the EIS.

3.2.2 Groundwater quantity, levels and flow

Drilling — enhancement of bore network

Four drilling sites were selected in the vicinity of the planned three main open cut pit areas within MLA 50230 as part of the groundwater program

This groundwater drilling program included the installation of one production bore R9095 (WPB1) and five monitoring bores. Borehole R7068 produced insufficient water to install a monitoring bore and was backfilled. Boreholes R9096 and R9098 were completed as with a nested deep and shallow borehole forming part of the existing monitoring network.

Each borehole was hydrogeologically logged and water bearing zones defined. The onsite WJV geologist was consulted after each borehole was drilled to identify coal seams and two sites (R9095 and R9097) were geophysically (density) logged. The contract wireline logging company was unavailable at the required time to log borehole R9098.

The boreholes were drilled to target the coal seams of the Juandah Coal Measures, specifically the Kogan, Macalister and Wambo coal seam groups. Therefore, maximum drilling depths were in the order of 100 m below ground level (mbgl), which is beyond the maximum proposed pit depth of 75 m.

Table 3-3 provides a summary of the boreholes and provides for correlation of the WJV borehole name and completed monitoring / test bore names. The screened sections of each bore were designed based on observations during the drilling process of the main areas of water inflow. Detailed hydrogeological bore logs and construction details are provided in Attachment E. Easting's and northing's are from a handheld GPS as detailed survey including elevations is not yet available.

Table 3-3: New borehole summary

WJV borehole no.	Bore name	Easting	Northing	Total depth	Depth of first water inflow	Water levels	Purpose
		(m MGA)	(m MGA)	(m bgl)	(m bgl)	(m bgl)	
R9095	WPB1	786937	7106175	96	27	22.47	Test pumping
R9096	WMB1-D	786921	7106177	94	25.5	22.88	Monitoring
	WMB1-S	786921	7106177			23.78	Monitoring
R9097	WMB2	795005	7105981	118	~70	40	Monitoring
R9098	WMB3-D	789498	7110003	118	55	41.09	Monitoring
	WMB3-S	789498	7110003			41.12	Monitoring

WPB = Wandoan production borehole
WMB = Wandoan monitoring borehole

Only borehole R9095 encountered sufficient water to merit the construction of a test/production bore. The borehole was drilled to 96 m, at 165 mm diameter and then reamed out to 280 mm from surface to 75 m, and to 254 mm diameter from 75 to 91 m. The variable diameters were the result of difficulties encountered by the driller (e.g. damaged bits).

The production bore was cased with Class 12 PVC to a diameter of 125 mm. Screened sections were made using a grinder cutting slots into the PVC across the major water bearing zones. The annulus of the bore was backfilled with a size 4–6 mm gravel pack and where required, bentonite plugs installed to prevent the vertical blending of groundwater between separate aquifers and from the surface.

Two monitoring bores were installed in the same borehole where more than one significant water bearing zone was encountered, with screened sections across the aquifers targeted for monitoring. This was the case for boreholes R9096 and R9098 where one bore is referred to as 'D' for deep and 'S' for shallow. A small water bearing zone encountered resulted in a single monitoring bore being installed in borehole R9097.

Each monitoring bore was cased with 50 mm diameter Class 18 PVC. Screened sections were made using a grinder cutting slots into the same PVC across the major water bearing zones. Gravel pack was installed and separated by bentonite plugs in the annulus of the bore to ensure no vertical blending of groundwater occurs between the aquifers and from contamination at the surface.

Bore WMB1-D and WMB1-S were constructed in borehole R9096 which was drilled 14.30 m from borehole R9095 (WPB1) to provide a multi-level monitoring point to observe drawdown during the pumping test of WPB1.

A lithological log of the new monitoring boreholes was provided by WJV. The log identifies the depth of the coal seams encountered in each borehole. R9095 and R9097 were also geophysically logged and therefore are considered to be depth corrected. Table 3-4 provides the seam depths each borehole. A schematic diagram of coal seams can be found in Attachment F.

Table 3-4: Lithological summary of new monitoring bores

Bore number	Kogan Coal Seam	Macalister Coal Seam	Wambo Coal Seam	Depth to water (m bgl)	Screened interval (m bgl)
R9095 — Production (WPB 1)	K20: 14.95–16.5 m K30: 27–28 m K50: 32–33 m K60: 41–42 m	MU30: 48–49 m MU40: 53–55 m ML13-21: 67–69 m ML22: 71–73 m	W10: 81-82 m W20: 84-85 m	22.47	46 to 60, 66 to 72, 78 to 84
R9096 — Monitoring (WMB 1 S and D)	K20: 14.5–17 m K40: 30–31 m K50: 32–33.2 m K60: 41–42 m	MU10-MU30: 46–50 m MU40: 53–55.2 m ML20: 70–72 m	W10: 80-81 m W20: 83-84 m	Piezo 1 = 22.78 Piezo 2 = 22.88	Piezo 1 = 27 to 33 Piezo 2 = 46 to 57, 69 to 72, 78 to 84
R9097 — Monitoring (WMB 2)	K60: 21–21.9 m	MU30: 40 – 32–34 m ML22: 71–73 m		40	70 to 73
R9098 — Monitoring (WMB 3 S and D)		MU: 36-44 m ML and W SEAM GROUP: 47-58 m		Piezo 1 = 41.12 Piezo 2 = 41.09	Piezo 1 = 38 to 44 Piezo 2 = 49 to 58

Note: K=Kogan, MU=Macalister Upper, ML=Macalister Lower, W=Wambo seams.

The bores located close to Woleebee Creek (R9095 and R9096); appear to be making water from the Kogan, Macalister and Wambo seam groups. In the Austinvale area (R9098), the Macalister and Wambo seam groups are the main water bearing zones (the Kogan doesn't exist there). In the east of MLA 50230, closer to Wandoan (R9097), the Lower Macalister is the main water bearing zone, but with very low transmissivity.

Water levels

Water strikes were initially observed during the drilling process. However, as the groundwater system at Wandoan within the Juandah Coal Measures is under pressure due to the presence of confining/semi-confining layers above and in between coal seams, the actual water level measured in the bore once it has stabilised can be considerably different from that initially observed. In this situation the water level measured in the bore is referred to as the potentiometric water level.

Table 3-3 demonstrates the effect of the confining pressure, whereby the monitored water level is considerably higher than the observed water bearing zone (i.e. used to select the screened interval of the bore).

Initially, the different monitoring bores (shallow and deep) at boreholes R9096 and R9098, had water levels at variable heights. However upon stabilisation, the water levels are now similar between the shallow and deep bores. The pumping test, discussed below, was used to determine the extent of the hydraulic connection.

Groundwater contour and flow maps were not prepared due to insufficient data for accurate representation of specific aquifers to allow contours or accurate assessments of groundwater flow to be made. Continuation of monitoring of existing bores and the progressive establishment of new monitoring bores will be undertaken.

In addition to the four monitoring sites installed as part of this technical study, a total of 16 groundwater monitoring sites are located across MLA 50230 and 50231. These sites are shown in Figure 2-2 in Attachment A. A total of 12 existing exploration boreholes have been left as open holed with surface casing to provide a point for groundwater monitoring. These bores are located in MLA 50230, except one located in MLA 50231. Although these boreholes are open holed (and therefore potentially measure multiple water bearing zones) and often without a cap at the surface to protect the borehole, they provide a useful measuring point for water levels across MLA 50230.

Historic water level monitoring at these sites has been sporadic. Monitoring data collected and archived for these monitoring bores is shown in Table 3-5. This technical study will propose a monitoring schedule to ensure data is collected regularly to facilitate future monitoring of any groundwater response to mining.

Figure 3-3 shows a hydrograph for manual readings taken from the existing groundwater monitoring bore network since 2007. It shows that for the majority of bores monitored, the water level response is reasonably stable over time. The minor water level changes observed in the newly constructed bores, R9095 through to R9098, are likely a stabilising response of water levels following construction. No natural fluctuations in response to dry and wet seasons were observed from the monitoring data.

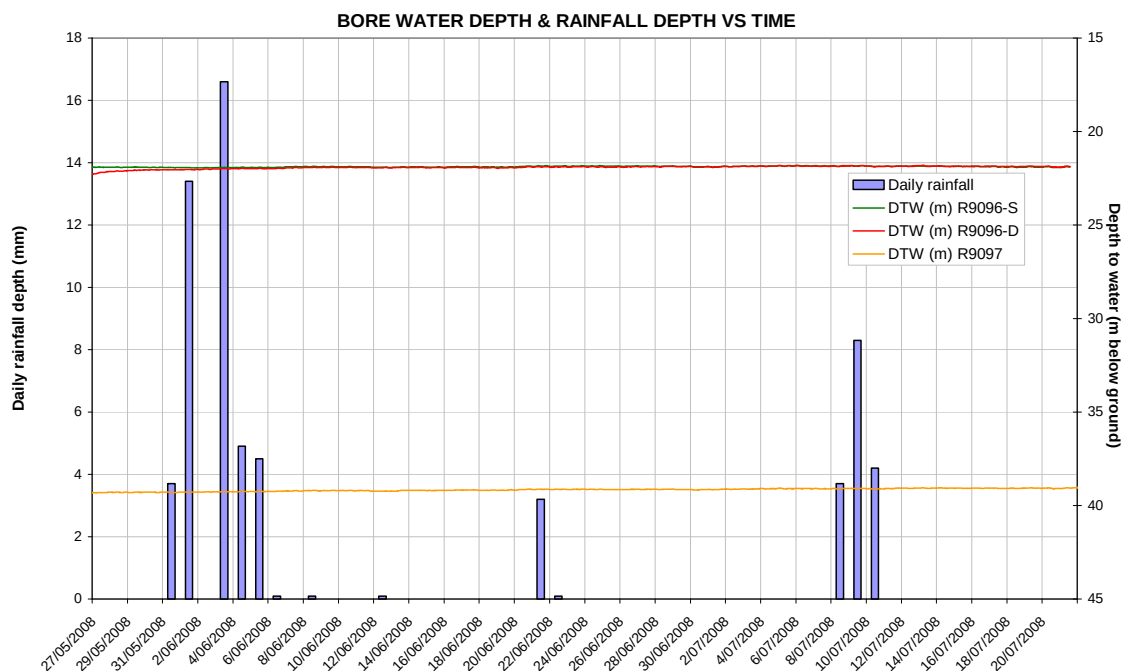


Figure 3-2: Hydrograph of time series data for R9096 and R9097

Figure 3-2 shows a hydrograph of the time series water level data downloaded from divers installed in the new monitoring bores. The divers were installed in May 2008; following bore construction and therefore have only two months of data.

Table 3-5: Water level monitoring data for Wandoan

				1/05/1998	27/10/2007	26/03/2008	3/05/2008	25/05/2008	21/07/2008	23/07/2008	24/07/2008
Hole ID	Area	Easting (MGA)	Northing (MGA)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)	Top of casing to SWL (m)
C4072	Frank Creek (Jondale)	792902.61	7108560.45	16.86	17.3	17.68					
C4042	Austinvale (Pit Rd)*	789463.61	7110949.45								
C4049	Austinvale (Pigsty)	789878.61	7110602.45		35						
F4046	Austinvale (westmans)#	788718.61	7110832.45	38.65	38.5	38.57				38.65	
C4053	S Austinvale	790393.61	7109152.45	34.25		dry					
C4061	Wolleebee (Wards)	788237.73	7105786.55	18	17.5	17.65			17.41		
C4057	Wolleebee (Cambrai)	786107.3	7107234.31	10.64	10.3	10.97		10.78			10.66
F4071	Frank Creek	794511.68	7109375.35								
C4049	Austinvale	789878.61	7110602.45		35		35.31				
R2131	Austinvale+	790673.61	7110707.45		34.9		35.99				
C4042	Austinvale	789463.61	7110949.45	32.6	32.7		33.07				
C5017	Austinvale	791170	7111155.25		13.3		13.41				
R9095	Wards	7106175	786937				21.57	22.47			
R9096 (s)	Wards	7106176	786921				22.78	23.87	22.67		
R9096 (d)	Wards	7106176	786921				22.88	22.87	22.67		
R9097	Westman	7105981	795005				40.00			40.08	
R9098 (s)	Austinvale	7110006	789500				40.37	41.12			
R9098 (d)	Austinvale	7110006	789500				41.37	41.09			

Overall, these time series water level response traces are relatively stable and correspond well with the longer term manual readings displayed in Figure 3-3. The hydrograph shown in Figure 3-2 is correlated with rainfall data (sourced from NRM Wandoan Station). The data and graph indicates no response or change in groundwater levels after major rainfall events. The results indicate and confirm the presence of confined/semi-confined aquifers being recharged off site at the outcrops and not vertically at bore locations. The effect on the drawdown in the vicinity of the pits will need to be modelled against the coal seam geology to obtain an understanding of recharge zones, storage and flow directions.

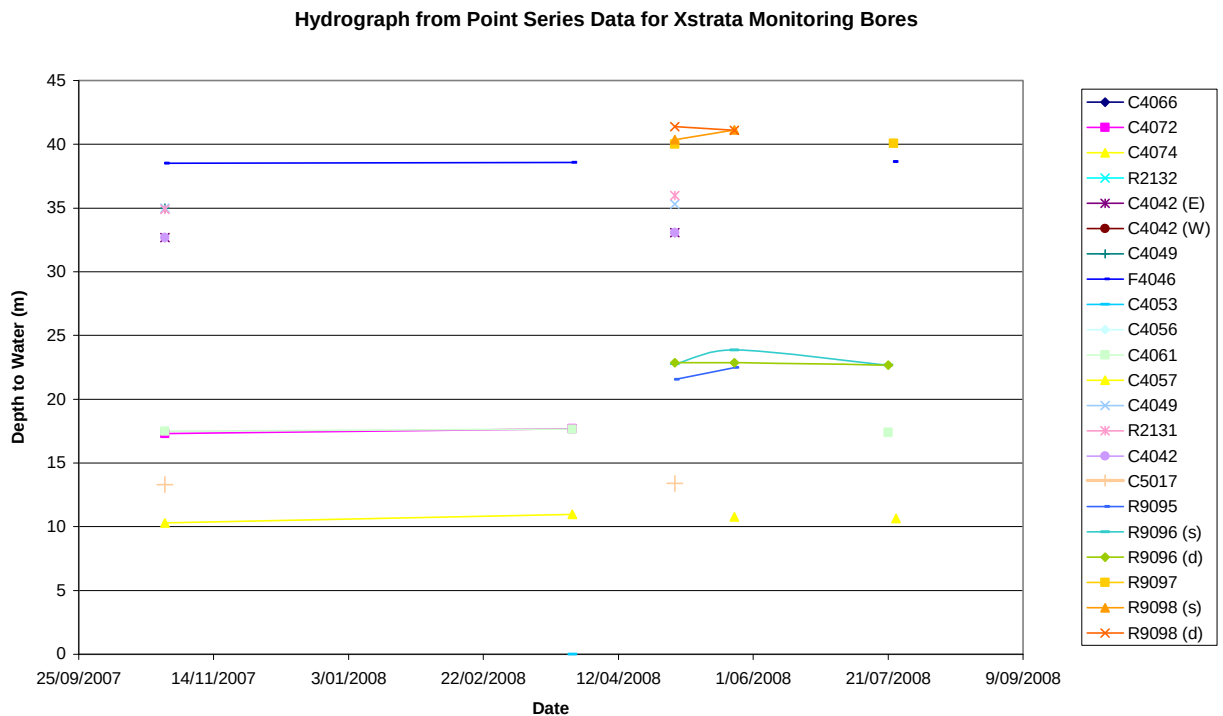


Figure 3-3: Hydrograph for existing groundwater monitoring bores

Pumping test

In the four locations drilled, R9095, is the only dedicated production bore in the MLA's designed for monitoring and hydraulic testing purposes, and was therefore the focus of the pumping tests. The water level was very sensitive to fluctuations and changes in the pumping rate. These fluctuations were most likely the result of gas in the bore or the onset of turbulent flow which resulted in a notable increase in sediment content for flow rates above approximately 0.45 l/s, both of which make the flow rate control difficult. Every effort was made to minimise this fluctuation, and for the purposes of analysis an average pumping rate for each test has been used. The multi-rate test was conducted at 0.28 (stage 1), 0.62 (stage 2) and 0.65 (stage 3) Litres/second (L/s) with the original intent being to test at step rates of approximately 0.25-0.3 L/s, 0.5-0.6 L/s and 0.75-0.9 L/s.

The single rate test was undertaken at an average rate of 0.49 L/s, based on the outcome of the multi-rate test, although rates fluctuated between 0.45 and 0.62 L/s. The pump rate was selected to stress the aquifer (as determined from the drilling of the bore and results of the multi-rate test) to determine the aquifer response to the groundwater volumes abstracted.

The pumping test was conducted as follows:

- installation of three automatic water level loggers, referred to as 'divers' into monitoring bores (R9095, R9096-shallow and R9096-deep) involved in the test, prior to pumping commencement. This was done to provide a baseline of data under static conditions prior to testing. This logger data was then collected during and after the pumping test to measure response in the aquifer under stress (pumping)
- water level response was also manually recorded during test on the production bore (R9095), nested piezometer R9096 (shallow and deep) and nearby existing monitoring bore C4057. R9096 is located 14 m and C4057 is located 1.6 km, respectively from the pumped site
- two rounds of sampling at the production bore and nested piezometer (two levels) were undertaken. One sample was taken at the commencement of the single rate test and the second sample round was taken at end of the single rate test. In addition, one sample was taken from C4057 at the end of the single rate test.

Water discharged from the pumping test was disposed of into tankers and discharged into WJV's dam and the water used in the concurrent Sample Pit operations.

The production bore (R9095) intersects groundwater from the Upper Macalister, Lower Macalister and Wambo coal seams. R9096-shallow is monitoring water level response in the Kogan coal seams and R9096-deep is monitoring water levels in the Upper Macalister, Lower Macalister and Wambo coal seams. C4057 is open holed (i.e. casing and screened intervals) and is measuring water levels in the Kogan, Upper Macalister, Lower Macalister and Wambo coal seams.

Results

The pumped drawdown curve (Attachment I) indicates the water level continued to draw down throughout the entire test, suggesting dewatering of the water bearing horizons. The drawdown graph suggests the changes in the abstraction rate did influence the dynamic drawdown water level but as can be seen from the drawdown curve towards the end of the test, there was a sudden drop in the water level before levelling off towards the end of the test, indicating the possibility of fractures being dewatered causing the drawdown. The graphical data is presented in Attachment I.

The pumping test was carried out at an average abstraction rate of 0.49 L/s, resulting in a final drawdown of 41.92 m below ground level (19.45 m below static water level) after 1,440 minutes, representing 84% of the available drawdown.

The water level recovered to 98% of the original water level after 1,440 minutes and to 99% after 2,445 minutes of ending the drawdown test.

The results suggest the selected abstraction rate of 0.49 l/s exceeded the safe sustainable yield of the borehole, as indicated by the shortfall in the recovery water level after 1,440 minutes.

The water level in monitoring bore R9096(d) was drawn down 2.39 m below the original static water level at the end of the abstraction cycle and recovered to 0.22 m (91%) of the original water level after 1,330 minutes of ending the pumping test.

The shallow monitoring bore, R9096(s) indicated a very limited hydraulic connectivity with the water level only drawing down 0.03 m at the end of the abstraction cycle (1,440 minutes)

Water levels measured in a bore (C4057) located 1.6 km away from the pumping site showed a response of less than 10 cm after 24 hours pumping.

The following parameters were calculated from the pumping test results:

- T Values for the monitoring bores — $7 \text{ m}^2/\text{day}$
- storativity value — 3.23×10^{-3} .

The interpretation of the calculated values should make allowance for the shortcomings in the pumping test (fluctuations in the abstraction rates).

Water levels measured in the deep coal seams (Upper and Lower Macalister, and Wambo) show a good horizontal hydraulic connection. Water level response was measured in both the deep monitoring bore (R9096-deep) and C4057. Water levels within the shallow monitoring bore (R9096-shallow) monitoring the Kogan coal seams, did not respond for the duration of the test. This suggests a limited vertical hydraulic connection between the shallow and deep coal seams at the borehole location.

The graphical plot of the pumping test is contained in Attachment I.

Drilling results and analysis of the pumping test results indicates that the Macalister Upper and Lower, and Wambo coal seams are the most transmissive in the project area at depths of proposed mining, with values below $10 \text{ m}^2/\text{day}$.

The estimated safe/optimum yield from the Macalister Upper and Lower and Wambo coal seams at the pumping test bore location is in the order of 0.4 L/s ($35 \text{ m}^3/\text{day}$). It should be noted that the pumping test bore, R9095, produced only yield sufficient to conduct a pumping test on, suggesting the reported values could be lower at other locations within the same coal seams. The opposite could however also apply with discreet zones that could enhance groundwater potential.

No recharge to the aquifer was considered in the interpretation or long term forecasts of the borehole sustainable yield. The above reported figures can not be extrapolated to be used as being representative across the MLA. The results from additional production bores subjected to abstraction tests will need to be compared with these results before a general value can be selected. Even then, the possibility of having zones with different groundwater parameters can exist within the MLA.

3.2.3 Groundwater quality

Limited groundwater quality data exists for the upper aquifers (<200 m depth) in the Project area. The data deemed to be most reliable is that obtained during bore development and test pumping which is discussed below. This data is however limited to the coal seam aquifers with no data available for the alluvial aquifers from the results of the hydrocensus. Of the data deemed reliable from the NRW GWDB (refer Section 3.2.1) only one alluvial bore (RN58128) was found to have water quality data. This bore is located approximately 14 km southeast of the boundary for MLA 50230.

The water quality data supplied by WJV was not used as the samples were collected after completion of drilling from an open borehole across various coal seams and could potentially have been contaminated by drilling fluids used during the drilling.

Bore development water quality

Following completion of the new bores, each bore was developed by air lifting to ensure drilling fluids and water used during construction as well as sand and silt was adequately removed from the bore, borehole and intersected formation. As part of this process, field water quality parameters including electrical conductivity (EC), pH and temperature were measured to assist in determining when development should cease. The data collected during bore development is summarised in Table 3-7.

It is noted that development of bore WPB1 continued until an elapsed time of 385 minutes in order to further remove sand/silt and not for water quality parameter stabilisation. No water quality data was collected during the development of bore WMB3-S due to the limited water produced in this bore. Electrical conductivity values, for bore WMB1-S could not be precisely determined as the upper limit on the instrument was 20,000 $\mu\text{S}/\text{cm}$.

Temperature readings are typically collected however when using compressed air for development they are of little use due to the heat transfer between the compressed air and the aquifer/bore water.

The data suggests that the electrical conductivity and thus salinity is higher in the shallow coal seams of the Kogan (EC values exceeding 20,000 $\mu\text{S}/\text{cm}$), with the deeper coal seams (Macalister and Wambo) showing slightly lower salinities (EC values approximately 17,000 $\mu\text{S}/\text{cm}$). pH values suggest that Kogan coal seams are closer to neutral than the slightly alkaline deeper Macalister and Wambo coal seams (pH of approximately 8).

Guideline values of salinity in drinking water for livestock are expressed in terms of total dissolved solids (TDS) which can be estimated from electrical conductivity (EC) as follows:

$$\text{TDS (mg/L)} = \text{EC (}\mu\text{S/cm)} \times 0.67$$

Therefore the minimum stable TDS for any bore during development is approximately 8,067 mg/L (12 040 $\mu\text{S}/\text{cm}$). Other than for sheep, which can tolerate TDS of up to 10,000 mg/L (ANZECC, 2000), a loss of production and decline in animal health would be expected for livestock once TDS exceeds 3,000-6,000 mg/L (ANZECC, 2000).

Barley and cotton are two of the most tolerant plants to salinity of irrigation water with threshold EC values of between approximately 4 mg/L for clay soil and 12.6 mg/L for sandy soil (ANZECC, 2000). Given that the EC values at the completion of development ranged between 12 mg/L and 18 mg/L and the soils in the Project area are more commonly loams and clays, it can be concluded that the water in the new bores intersecting the coal seams is unsuitable for irrigation.

Test pumping water quality

Table 3-8 provides a comparison of the groundwater quality data for the bores sampled during the test pumping program against the following guidelines:

- Australian Drinking Water Guidelines 2004 (NHMRC and NRMCC, 2004) (ADWG)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC and ARMCANZ, 2000) (ANZECC).

While sufficient data does not exist to assess the groundwater against all guideline values, adequate data does exist to comment on the suitability of the water for the various uses required under the Environmental Protection (Water) Policy 1997.

The ADWG outline two sets of criteria for drinking water: guideline values, which are based on aesthetic qualities such as smell, taste and appearance; and maximum acceptable values, which are based on the prevention of adverse health effects to humans.

The ANZECC guidelines were used for comparison against water quality criteria for irrigation, stock water and the 95 percent species protection level for freshwater.

Transgressions of either the ADWG and/or the ANZECC guidelines are summarised Table 3-6 below:

Table 3-6: Water quality interpretation as per ADWG and/or the ANZECC guidelines

Chloride	The ADWG value for chloride was exceeded in all of the bores. Exceedance of the guideline value can give the water a salty taste, and make the water very corrosive. The ANZECC irrigation water trigger value for chloride was exceeded for all bores. High chloride concentrations can cause foliar injury to certain types of crops.
Total hardness	The ADWG value for total hardness was exceeded in both the samples for bores WMB1-D and WMB1-S, and in one sample for bore WPB1. Exceedance of the guideline value can cause scale deposition, scum formation and affect the taste of the water.
Sodium	The ADWG value for sodium was exceeded in all of the bores. Exceedance of the guideline value can affect the taste of the water. The ANZECC irrigation water trigger value for sodium was exceeded for all bores. High sodium concentrations can cause foliar injury to certain types of crops.
Total dissolved solids	The ADWG value for total dissolved solids was exceeded in all of the bores. The water within these wells can be classified as brackish to saline (Freeze and Cherry, 1979). High concentrations of total dissolved solids can affect the taste of water and cause excessive scale deposition. The ANZECC total dissolved solid concentration trigger value for stock drinking water was exceeded for all bores. High total dissolved solids can cause loss of production and a decline in animal health.
Arsenic	The ADWG maximum acceptable value for arsenic was exceeded in bore WPB1. Arsenic concentrations greater than 0.01 mg/L can cause abdominal and muscular pain, vomiting, diarrhoea, dermal lesions and a risk of skin cancer.
Cadmium	The cadmium concentration of most of the samples exceeded the ANZECC trigger value for the 95 percent freshwater species protection level. This means that cadmium may have an adverse effect on certain types of freshwater ecosystems if the groundwater is discharged into a slightly to moderately disturbed environment.

Overall, the quality of groundwater within the bores is poor, with major transgressions of guideline values for chloride, total hardness and sodium. The arsenic concentration for bore WPB1 is unsafe for human consumption.

A duplicate sample for bore WPB1 was collected (25/05/2008) and sent to LabMark Environmental Laboratories for analysis. Most of the major ions of the duplicate show a good correlation i.e. less than 7% difference, which gives confidence in the results of the samples. It is however noted that the arsenic value in the duplicate sample differed from the primary laboratories result by 70%. This difference may be due to the different analysis methods used by each laboratory however this would not usually be expected to result in such a high variance.

Table 3-7: Bore development water quality summary

Bore ID	Elapsed time from start of development	Ec	pH	Temperature	Colour
	(min)	(mS/cm)	(-)	(°C)	
WPB1	20	15.09	8.16	23.70	Brown
	45	15.22	7.95	24.20	Brown
	70	15.43	7.88	25.20	Brown/grey
	195	15.93	8.25	22.90	Dark grey
	295	15.94	8.25	22.80	Light brown
WMB1-D	9	17.82	7.70	20.00	Opaque/cloudy
	19	17.85	8.16	20.90	Opaque/cloudy
	30	17.69	8.17	20.50	Opaque/cloudy
	45	17.48	8.16	21.20	Opaque/cloudy
	60	17.66	8.16	20.80	Opaque/cloudy
	75	17.80	8.15	20.80	Opaque/cloudy
	120	17.83	8.09	20.00	
	195	17.92	8.10	20.00	Opaque
	130	> 20	7.72	16.80	Opaque
	170	> 20	7.40	18.10	Light brown/grey
WMB1-S	245	> 20	7.62	19.10	Opaque
	60	13.64	7.56	19.00	Dark grey
	190	15.02	7.88	23.20	Dark grey
WMB2	230	13.37	8.22	21.40	Dark grey
	260	12.04	8.11	19.90	Dark grey
	20	8.38	7.96	16.50	Dark grey
	60	11.97	8.24	19.20	Dark grey
WMB3-D	120	14.78	8.28	19.10	Grey-brown
	190	16.45	8.30		Grey-brown
	240	16.75	8.46	20.10	Light brown

Table 3-8: Comparison of site groundwater quality with guideline values

Parameter	Units	LOR								
			WPB1		WMB1-D		WMB1-S		C4057	
			Start Test	End Test	Start Test	End Test	Start Test	End Test	Start Test	End Test
Date Sampled			25/05/2008	26/05/2008	25/05/2008	27/05/2008	25/05/2008	27/05/2008	25/05/2008	27/05/2008
pH Value	pH Unit	0.01	8.08	7.92	7.74	7.84	7.06	6.95	7.93	8.01
Electrical Conductivity @ 25°C	µS/cm	1	11700	15400	17500	17600	23100	23000	11600	11300
Hydroxide Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1	<1	<1	<1	8
Bicarbonate Alkalinity as CaCO3	mg/L	1	465	351	300	298	525	610	358	346
Total Alkalinity as CaCO3	mg/L	1	465	351	300	298	525	610	358	354
Sulphate as SO4 2-	mg/L	1	11	4	4	6	133	132	2	<1
Chloride	mg/L	1	3990	5730	6410	6370	9480	9380	4090	4090
Calcium	mg/L	1	40	71	98	102	770	783	35	34
Magnesium	mg/L	1	17	31	41	43	334	332	16	15
Total Hardness as CaCO3	mg/L	1	170	305	413	431	3294	3319	153	147
Sodium	mg/L	1	2680	3640	3780	3740	4530	4510	2600	2630
Dissolved Arsenic	mg/L	0.001	0.006	0.007	0.005	0.004	0.002	<0.001	0.004	0.004
Dissolved Cadmium	mg/L	0.0001	0.0002	0.0002	0.0004	0.0002	0.0005	0.0003	0.0007	0.0001
Nitrite as N	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as N	mg/L	0.01	0.014	<0.010	<0.010	0.011	0.011	<0.010	<0.010	<0.010
Nitrite + Nitrate as N	mg/L	0.01	0.014	<0.010	<0.010	0.011	0.011	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.01	<0.01	0.03	0.02	0.02	0.11	0.02	0.15	0.22
Potassium	mg/L	1	12	17	20	20	44	42	12	11
Benzene	µg/L	1	<5	<5	<5	<5	<5	<5	<5	<5
Total dissolved solids*	mg/L	-	7215	9844	10653	10579	15816	15789	7113	7134
Dissolved Oxygen	mg/L	0.1	2.8	3	3.1	2.9	3	2.2	3.9	2.9
Total Anions	meq/L	-	122	169	187	186	280	280	122	122
Total Cations	meq/L	-	120	165	173	172	264	264	116	118
Ionic Balance	%	-	0.77	1.15	3.86	3.87	3.01	2.96	2.55	2.01

Transgressed Australian Drinking Water Guidelines 2004 (NWQMS, 2004) Aesthetic Guideline Values

Exceeds Australian Drinking Water Guidelines 2004 (NWQMS, 2004) Health Guideline Values

Duplicate sample	
WPB1	%
Start Test	difference
25/05/2008	
8.1	0
11900	1
<10	0
<10	0
492.6	6
493	6
10.2	7
3900	2
nm	-
17	0
nm	-
2700	0.7
0.0018	70
<0.001	-
nm	-
<0.01	0
nm	-
<0.02	0
14	17
<0.5	0
nm	-
6.7	139
nm	-
nm	-
nm	-

ADWG	
Aesthetic	Health
6.5 - 8.5	-
-	-
-	-
-	-
-	-
-	-
-	-
250	500
250	-
-	-
-	-
200	-
180	-
-	0.007
-	0.002
-	3
-	50
-	-
-	-
-	-
-	0.001
500	-
-	-
-	-
-	-
-	-

ANZECC Trigger Values		
Irrigation	Stock	Freshwater (95% species protection)
6 - 8.5	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	1000	-
< 700	-	-
-	1000	-
-	-	-
-	-	-
< 460	-	-
2	0.5	0.013
0.05	0.01	0.0002
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	3000 - 13000	-
-	-	-
-	-	-
-	-	-

*Total dissolved solids measured as sum of parameters
nm = not measured

Salinity

Queensland NRW has recently completed a number of salinity studies some of which provide limited information in the Wandoan area (pers comm. Bruce Pearce). These reports were unavailable at the time of writing and will be investigated as part of the future investigations.

3.3 Groundwater use

3.3.1 Use in the greater Project area

A search of the NRW GWDB was undertaken to locate all registered bores within approximately 15 km of the MLA boundaries. It is noted that the GWDB does not necessarily provide a complete listing of all bores. This is because it has not always been a requirement for details of bores drilled to be provided to the relevant government department of the time.

This search identified a total of 599 bores, however due to the variability of data recorded for each bore record GWDB in the Project area, less than 25% of these bores have sufficient information to reliably determine which aquifer they are tapping. A summary of the preliminary review of this data is provided in Table 3-9.

Table 3-9: Results of GWDB search and preliminary data assessment

	Number
Total number of bores within 15 km	599
Number of bores with no/insufficient/erroneous data in casings table	269
Number of bores with no strata records available	25
Number of bores for which the aquifer being accessed could not be determined without detailed review and interpretation of data	108
Number of bores where casing/screen has multiple water entry points and may tap multiple aquifers	55
Total number of disregarded bores	457
Remaining bores	142

Without knowledge of which aquifers are being accessed, additional information in the GWDB such as water quality and water levels cannot be utilised nor can the potential impacts from the Project on existing users be fully determined.

3.3.2 Use within the Project area

Groundwater use within the Project area was ascertained from the hydrocensus undertaken on MLA's 50230 and 50231 in March to April 2008, and for MLA 50229 in July 2008.

Table 3-10 provides a summary of the number of bores visited during the hydrocensus while Table 3-11 provides a summary of the pertinent details of each bore. The location of all bores and their use identified as part of the hydrocensus are shown in Figure 3-2 contained in Attachment A. The detailed hydrocensus data sheets for each bore visited are provided in Attachment C.

Table 3-10: Summary of hydrocensus bores

	MLA 50229 (and surrounds)	MLA 50230 (and surrounds)	MLA 50231 (and surrounds)	Total
Verified NRW registered bores	39	5	2	46
Verified WJV bores	—	10	—	10
Newly identified bores	15	4	2	21
Total bores visited	54	19	4	77
NRW registered bores not located	11	—	—	—

Stock/stock and domestic use

The results of the hydrocensus indicate that there are a number of private bores across the MLA's, some of which are registered with NRW and many that are not. The majority of bores are for stock and domestic purposes utilising shallow groundwater of the alluvium and Walloon Coal Measures with total bore depth of these bores ranging from 7 m to 300 m.

The rate of abstraction from the stock/stock and domestic bores ranges from 42 l/hr to 6,000 l/hr however it is unclear whether these are continuous, intermittent or seasonal abstraction rates. Groundwater within the hydrocensus/Project area is considered low yielding except for those bores accessing the GAB aquifers.

From the seven stock/stock and domestic bores for which field water quality parameters were able to be obtained during inspection, it was found that the water was slightly alkaline (pH from 7.26 to 8.37) and relatively saline (EC from 4,740 to 13,140 $\mu\text{S}/\text{cm}$). While water quality data was not available for many bores, there were some cases where the landowners noted that water from their bores was too saline for stock without mixing it with other less saline water.

The depth to groundwater in the stock/stock and domestic bores inspected during the hydrocensus was found to range between 0 m and 42 m below ground level. No information relating to drawdown, recharge or seasonal variations in groundwater levels associated with abstraction was identified during the hydrocensus.

Table 3-11 Summary compilation of hydrocensus bores

Registered no.	Alternate reference no./description.	MLA within	Easting	Northing	Date visited	Located during site visit	Elevation	Pump type	Airlift yield	Estimated abstraction volume	Total depth	Depth to groundwater	Use	Property owner	Water quality field parameters		Comments
			Datum GDA94 MGA56				(m AHD)		(l/hr)	(l/hr)	(m)	(m bTOC)			pH	Cond (mS/cm)	
400405		50229	757370	7123971	24/07/2008	Yes	–	Mono	44000	50000	1206	63.5 ^e	Community (Bimbadeen)	Bimbadeen Water Group	–	–	
102714		50229	790300	7124621	14/07/2008	Yes	284	Submersible	35000	1500	1000	26.5 ^e	Community (Culgowie)	Pitkin	6.74	–	
58484		50229	777530	7122973	22/07/2008	Yes	291	Submersible	40000	27500	1182	33 ^e	Community (Grosmont)	Hay	6.80	0.193	
	New (6)	50229	772283	7112680	18/07/2008	Yes	295	Submersible	100000	35000	–	–	Community (Hinchley)	Hinchley Community Bore Pty Ltd	7.49	0.142	> 36 km Pipes, built 2005
58133		50229	782134	7111872	22/07/2008	Yes	283	–	7700	–	676	43 ^e	Community (Juandah)	Erbacher	–	–	
	New (13)	50229	796749	7117046	23/07/2008	Yes	290	Submersible	–	–	675	55 ^e	Community (Playfair)	Bradshaw	7.60	3.51	
22117		50230	789846	7102499	23/03/2008	Yes	295	Electric pump	–	–	–	–	Community (Ward)	Ward	–	–	Location different
58850		50229	769009	7118876	21/07/2008	Yes	–	Submersible	5500	–	1247	17 ^e	Community (Yabba)	Dean Anderson	–	–	
10460		50229	790500	7120215	14/07/2008	Yes	240	Pump jack	–	2000	–	–	Stock	Fraser	–	–	Crank and belt
14632		50229	761616	7115811	17/07/2008	Yes	264	Windmill	–	1000	–	–	Stock	Anderson	–	–	
15711		50229	784489	7123830	15/07/2008	Yes	217	Pump jack	–	–	–	–	Stock	Porter	–	–	
15765		50229	786111	7125437	20/07/2008	Yes	–	Line shaft	1000	750	85.3	–	Stock	Sharp	–	–	Not sighted, on Culgowie Com Bore
15831		50229	781801	7123011	15/07/2008	Yes	262	Pump jack	1100	–	200	41.41 ^m	Stock	Thornton	9.41	28.4	
15836		50229	787079	7122613	23/07/2008	Yes	–	–	–	–	–	–	Stock	Bradshaw (M)	–	–	Salty, not sighted.
15838		50229	771743	7122155	17/07/2008	Yes	242	–	–	2500	–	–	Stock	Conway	–	–	Blocked
17753		50229	772383	7122148	16/07/2008	Yes	–	–	–	2500	> 100	0 ^m	Stock	Conway	7.49	9.39	
17800		50229	783746	7027991	16/07/2008	Yes	228	Windmill	1600	–	213	14.215 ^m	Stock	Hawkins	–	–	
26371		50229	777607	7119425	25/07/2008	Yes	–	Was a mill	–	–	53.8	16.15 ^m	Stock	Cann	–	–	Brackish, casing rusty.
34718		50229	773196	7111004	18/07/2008	Yes	–	Submersible	14000	–	–	16.8 ^e	Stock	NEG Holdings	–	–	
34929		50229	769539	7112071	18/07/2008	Yes	282	Submersible	8000	6000	140	28.03 ^m	Stock	NEG Holdings	–	–	
44246		50229	764233	7117422	17/07/2008	Yes	245	Comet Windmill	–	1000	–	9.35 ^m	Stock	Anderson	–	–	
44605		50229	762893	7111955	18/07/2008	Yes	280	Air compressor	–	42	> 100	27.76 ^m	Stock	Boxflat Grazing	7.26	13.14	
48841		50229	789067	7125033	15/07/2008	Yes	252	Pump jack	–	–	200	78 ^e	Stock	Pitkin	–	–	
58079		50229	768034	7116109	21/07/2008	Yes	–	Pump jack	–	–	65.55	12.42 ^m	Stock	Dean Anderson	–	–	
58317		50229	786919	7121563	16/07/2008	Yes	233	Submersible	1000	–	45	40 ^e	Stock	Hawkins	–	–	Mono Jet Pump
58537		50229	765149	7117702	17/07/2008	Yes	–	–	–	1000	–	2.055 ^e	Stock	Anderson	–	–	
	New (1)	50229	771886	7129023	16/07/2008	Yes	–	–	–	–	–	–	Stock	Phillips and Sands	7.78	7.37	Gas
	New (2)	50229	766328	7122343	17/07/2008	Yes	235	–	–	2500	7.085	6.835 ^m	Stock	Conway	–	–	Could be blocked
	New (3)	50229	765468	7123817	17/07/2008	Yes	233	–	–	2500	> 100	0.029 ^m	Stock	Conway	8.37	7.99	
	New (4)	50229	764219	7117403	17/07/2008	Yes	245	–	–	–	–	8.44 ^m	Stock	Anderson	–	–	
	New (5)	50229	759733	7114559	17/07/2008	Yes	–	Windmill	–	–	–	–	Stock	Anderson	–	–	Bore blocked
	New (7)	50229	770667	7112399	18/07/2008	Yes	–	None	–	–	–	–	Stock	NEG Holdings	–	–	Bore not sighted, assumed to be in depression in land.
	New (8)	50229	768709	7113628	18/07/2008	Yes	273	Line shaft	4000	4000	–	–	Stock	NEG Holdings	–	–	
	New (9)	50229	766044	7113061	18/07/2008	Yes	261	–	–	–	–	7.84 ^m	Stock	Boxflat Grazing	7.80	4.74	Water smells putrid
	New (14)	50229	783805	7112859	23/07/2008	Yes	–	–	–	750	200	–	Stock	Erbacher	–	–	Salty, not sighted.
	New (15)	50229	783370	7112067	23/07/2008	Yes	–	–	–	750	300	–	Stock	Erbacher	–	–	Not sighted
12763		50230	795300	7105125	23/03/2008	Yes	–	Windmill	–	–	–	–	Stock	Westman	–	–	Too salty for stock without mixing with other water

Registered no.	Alternate reference no./description.	MLA within	Easting	Northing	Date visited	Located during site visit	Elevation	Pump type	Airlift yield	Estimated abstraction volume	Total depth	Depth to groundwater	Use	Property owner	Water quality field parameters		Comments
			Datum GDA94 MGA56				(m AHD)		(l/hr)	(l/hr)	(m)	(m bTOC)			pH	Cond (mS/cm)	
43772		50230	798877	7100778	23/03/2008	Yes	–	Windmill	–	–	–	–	Stock	Pukallus	–	–	Location different
44000		50230	792581	7099912	23/03/2008	Yes	–	Windmill	–	–	–	–	Stock	Peake	–	–	
44097		50230	796425	7101065	23/03/2008	Yes	–	Diesel pump	–	400 - 1000	–	–	Stock	Pitkin	–	–	Too salty for stock without mixing with other water
	New (Hay)	50230	797961	7103852	23/03/2008	Yes	279	Diesel pump	–	–	–	–	Stock	Hay	–	–	Too salty for stock without mixing with other water
	New (Old windmill)	50230	798877	7100778	23/03/2008	Yes	–	Windmill	–	–	–	–	Stock	Pukallus	–	–	
10459		50231	781202	7104414	20/07/2008	Yes	–	–	–	–	233.2	–	Stock	Forster	–	–	
58129		50231	783710	7109458	23/03/2008	Yes	244	Diesel pump	–	2000	–	–	Stock	Westman	–	–	Too salty for stock without mixing with other water
	New (Fitz No.2)	50231	785860	7107135	26/03/2008	Yes	–	Diesel pump	–	750	–	–	Stock	Fitzgerald	–	–	
	New (Fitz No.1)	50231	785736	7107273	26/03/2008	Yes	–	Diesel pump	–	1000 - 1500	–	–	Stock	Fitzgerald	–	–	
16191		50229	775106	7118743	17/07/2008	Yes	308	Line shaft	–	500	–	–	Stock & Domestic	Adams	–	–	
33807		50229	775961	7119433	24/07/2008	Yes	–	Pump jack	3000	3000	–	–	Stock & Domestic	Boyce	–	–	Not sighted
	New (11)	50229	768578	7126174	22/07/2008	Yes	244	–	–	2500	> 100	8.71 ^m	Stock & Domestic	Speed	7.91	8.44	
	New (12)	50229	772123	7124337	22/07/2008	Yes	223	–	–	2500	> 100	0.7 ^m	Stock & Domestic	Speed	8.10	9.3	Gassy
	New (Tip Road Bore)	50230	797471	7107872	23/03/2008	Yes	248	–	–	–	–	–	Town	Council	–	–	
15793		50229	796077	7106970	23/03/2008	Yes	–	Electric pump	–	54000	–	–	Town	Council	–	–	
	New (Town Bore No.2)	50230	796647	7106560	23/03/2008	Yes	257	Electric pump	–	3600 - 4300	–	–	Town	Council	–	–	
8428		50229	790854	7103432	–	No	–	–	–	–	–	–	Unknown	–	–	–	
4461		50229	782982	7105731	–	No	–	–	–	–	–	–	Unknown	–	–	–	
14743		50229	784054	7109003	–	No	–	–	–	–	–	–	Unknown	–	–	–	
15780		50229	776443	7124874	22/07/2008	Yes	268	Line shaft	–	–	–	–	Unknown	Conway	–	–	
15854		50229	776461	7122154	15/07/2008	Yes	–	Pump jack	–	–	> 100	8.16 ^m	Unknown	Dann	–	–	Not used since 1984
16882		50229	779489	7104913	–	No	–	–	–	–	–	–	Unknown	–	–	–	
17799		50229	786377	7121057	16/07/2008	No	–	–	1000	–	14	9 ^e	Unknown	Hawkins	–	–	
18061		50229	784465	7109980	–	No	–	–	–	–	–	–	Unknown	–	–	–	
26398		50229	797794	7102997	–	No	–	–	–	–	–	–	Unknown	–	–	–	
31331		50229	784432	7108471	–	No	–	–	–	–	–	–	Unknown	–	–	–	
58679		50229	796218	7107038	–	No	–	–	–	–	–	–	Unknown	–	–	–	
58910		50229	789028	7100167	–	No	–	–	–	–	–	–	Unknown	–	–	–	
58994		50229	795931	7106675	–	No	–	–	–	–	–	–	Unknown	–	–	–	
	New (10)	50229	764066	7121524	22/07/2008	Yes	–	Windmill	–	–	–	–	Unknown	Conway	–	–	Quagmire around mill
	C4042	50230	789464	7110949	3/05/2008	Yes	–	none	–	–	–	–	WJV Monitoring	WJV	–	–	
	C4049	50230	789879	7110602	3/05/2008	Yes	–	none	–	–	–	–	WJV Monitoring	WJV	–	–	
	C4053	50230	790394	7109152	23/03/2008	Yes	–	none	–	–	48.8	Dry	WJV Monitoring	Austin	–	–	
	C4057	50230	786107	7107234	23/03/2008	Yes	–	none	–	–	57.3	10.97 ^m	WJV Monitoring	Fitzgerald	–	–	
	C4061	50230	788238	7105787	23/03/2008	Yes	–	none	–	–	64.19	17.38 ^m	WJV Monitoring	Ward	–	–	
	C4072	50230	792903	7108560	23/03/2008	Yes	–	none	–	–	64.19	17.38 ^m	WJV Monitoring	Austin	–	–	
	C5017	50230	791170	7111155	3/05/2008	Yes	–	none	–	–	23.01	13.41 ^m	WJV Monitoring	WJV	–	–	
	F4046	50230	788719	7110832	23/03/2008	Yes	–	none	–	–	50.4	38.57 ^m	WJV Monitoring	Westman	–	–	
	F4071	50230	794512	7109375	23/03/2008	Yes	–	none	–	–	–	–	WJV Monitoring	Webster	–	–	
	R2131	50230	790674	7110707	3/05/2008	Yes	–	none	–	–	37.96	35.99 ^m	WJV Monitoring	WJV	–	–	
												^m - measured					

Community bores

There are eight community bores which are referred to as such because they supply more than one property. Available records indicate that these bores are extracting groundwater from either the Hutton Sandstone or Precipice Sandstone aquifers of the GAB from depths of between 600 and 1300 m. Both of these aquifers typically provide a reliable and good quality supply in comparison the shallower aquifers in the area. The details of the community bores inspected during the hydrocensus are also included in Table 3-11 with additional details provided in Table 3-12.

Within and around MLA 50230, there are only two community bores. There are no identified community bores on MLA 50231. On and around MLA 50229, there are five community bores. The location of community bores identified in the hydrocensus is shown in Figure 3-4 contained in Attachment A.

Community bores often supply multiple properties through a series of bore drains and/or pipelines. Where possible, landholders were asked during the hydrocensus to provide maps of bore drains and/or a pipeline extending from individual community bores. The information obtained in relation to bore drains and pipelines is presented in Figure 3-4 in Attachment A.

Water licence records for all community bores were not available at the time of writing. It is however noted that the licence details typically stipulate the parcel of land to which the licence is attached (i.e. the parcel on which the bore is situated) as well as any attached parcels of land (i.e. the land on which the water can be used/distributed). Furthermore the details of the licensee indicate whether a community group/organisation or a number of landholders is authorised to take water.

The GAB Water Resource Plan and Resource Operations Plan provide the mechanisms for the protection of existing users' entitlements and environmental flows associated with springs and baseflow.

Table 3-12: Summary of community bores

Registered no.	Community / Reference	Aquifer	Authorisation	Allocation per Water Year (ML)	Purpose
22117	Ward	Hutton Sandstone / Evergreen Formation	22117N	Not specified	Stock
58133	Juandah	Hutton Sandstone / Evergreen Formation	58133N	75	Stock, Stock Intensive
New (6)	Hinchley	N/A	N/A	N/A	N/A
58484	Grosmont	Lower Evergreen Formation & Precipice Sandstone	407325	100	Group Domestic, Stock
58850	Yabba	Precipice Sandstone	58850N	Not specified	Stock
102714	Culgowie	N/A	102714	80	Group Domestic, Stock
400405	Bimbadeen	Precipice Sandstone	400405	Not specified	Stock
58377 / New (13)	Playfair	Hutton Sandstone / Evergreen Formation	58377N	50	Group Domestic, Stock

Summary of groundwater resource environmental values

Section 7 of the Environmental Protection (Water) Policy 1997 sets out environmental values to be enhanced or protected for water resources.

Based on the ground water quality and existing uses data obtained to date, the environmental values of the groundwater resources of the Juandah Coal Measures, down to the basal Wambo coal seams, are interpreted as shown in Table 10-3. This excludes consideration of the GAB, which would have environmental values distinctly different from that of the coal measures.

Table 3-13: Environmental Values of the groundwater resource

EPP (water) environmental value	Interpretation	Environmental Values for the groundwater resources of the MLA areas (excluding the GAB)
if the water: (i) is a pristine water—biological integrity of a pristine aquatic ecosystem; or (ii) is not a pristine water—biological integrity of a modified aquatic ecosystem.	There are no known groundwater dependent aquatic ecosystems in the MLA areas.	Not applicable.
Suitability for recreational use.	No known recreational uses of groundwater in the MLA areas.	Not applicable.
Suitability for minimal treatment before supply as drinking water.	The high levels of salinity of much of the groundwater in the MLA areas demonstrates that substantial treatment would be required to meet drinking water standards.	Not applicable.
Suitability for agricultural use.	Some bores in the MLA areas are used for agricultural use.	Environmental Value1: Agricultural use.
Suitability for industrial use.	Coal seam water is proposed for certain industrial uses for the Project.	Environmental Value 2: Industrial use.

4. Potential impacts

4.1 Potential impacts during construction and operation

As mining progresses to depths beneath the pre-mine standing water level of the aquifers in the mine pit areas, the groundwater drawdown impact will progressively expand. WJV's ongoing hydrogeological investigations will facilitate the prediction of the rate and magnitude of this drawdown in advance of the mining operation. It is expected that substantial groundwater drawdown will occur in aquifers intersected by the mine pits with lesser drawdown in aquifers having some degree of hydraulic connection to these. Groundwater drawdown is expected to extend beyond the bounds of WJV's mining leases.

A preliminary review of bores identified during the hydrocensus was undertaken to determine the likelihood that they would be affected by the proposed mine. It was assumed that any bores within MLA 50229, 50230 and 50231 would be acquired by WJV, and are therefore not included in the assessment. WJV monitoring bores were also excluded from the assessment of effects on existing bores.

Bores in the north east of the MLA areas are not affected as they are located outside the limit of the mineable seams and would not intersect the minable coal seams.

Deep bores (>600 m) extracting water from the GAB were deemed not to be impacted due to significant depth of separation and presence of impermeable strata between the mine operations and these aquifers.

As a result of this review it was concluded that about 20 of the bores identified during the hydrocensus would require further investigation to determine whether they may be affected by mining. The remaining bores would not be affected. Figure 10-5 illustrates those bores requiring further investigation, and those that will not be impacted.

Preliminary assessment of the zone of influence (extent of drawdown cone) around the mine pits was conducted using the following assumptions:

- the transmissivity value (based on one pump test) of 7 m²/day
- based on monitored groundwater levels, the saturated thickness in the pit is between 20 and 40 m (pit depth 50 to 65 m)
- the hydraulic conductivity (K) ranges between 5 x 10⁻⁶ and 2 x 10⁻⁶ m/s
- the final pit size was assumed for calculating zone of influence.

The assessment determined that the drawdown radius around the centre of the pits ranged between 1,000 m and 2,800 m. This assessment did not consider the increased drawdown that would result from pits being operated simultaneously or take into account that some pits may be dry or become dry over time as mining progressed due to the limited quantity of groundwater present or dewatering of the aquifers.

The potential for impacts is expected to be confined to the Walloon Coal Measures (in particular the Juandah Coal Measures) and the other overlying / near surface aquifers (e.g. the alluvium). This is due to the thickness of the confining beds within the Walloon Coal Measures and the thickness of strata (>400 m) separating the Juandah Coal Measures and

the next significant aquifer — the Hutton Sandstone. Any exception to this would likely be the result of geological structures (e.g. faults) that have not been identified at this time.

Impacts of abstraction from the GAB for Project water supply purposes are not considered in this report but have been addressed in the Water Supply and Management Report (PB, 2008) TR11-1.5 report.

Potential impacts on the groundwater resources in and surrounding the Project area include:

- alteration to groundwater levels due to dewatering (in pit or advanced) of all intersected aquifers in the open pits
- alteration to groundwater flow patterns due to dewatering and potential artificial recharge
- reduced recharge and increased leakage of aquifers due to their partial removal (e.g. removal of alluvium)
- decrease in the groundwater levels and dewatering of the coal seam aquifers could result in reduced yields in surrounding boreholes within the same aquifers
- reduction in the overall size of the resource due to the discontinuity of a given aquifer created by intersection from mine pits
- changes in groundwater quality where aquifers have a hydraulic connection (e.g. between coal seams). In this situation, as the pressure head is reduced in an overlying aquifer, there may be an increase in upward vertical leakage from the underlying aquifer. Such a situation may result in a reduction in water quality should the underlying aquifer be of a lower quality
- release of hazardous gases due to the reduction in pressure head associated with dewatering the aquifer
- changes in water chemistry due to the release of dissolved and bound gases as the pressure head decreases
- changes in groundwater chemistry due to recharge infiltrating via spoil/backfill
- reduction or elimination of shallow groundwater (primarily associated with the alluvium) resulting in adverse impacts on groundwater dependent ecosystems
- artificial recharge from washing plant, coal stockpiles, discard and tailings facilities, workshops, or ponding 'dirty' runoff
- artificial recharge from storage, treatment, silt/settlement ponds and dust suppression
- contamination of aquifers due to infiltration from fuel or chemical spills
- contamination associated with ancillary infrastructure (e.g. sanitation and waste management).

4.1.1 Existing groundwater users

The potential impacts on groundwater users include:

- increased costs to extract water as power consumption increases due to water level decline in the bore(s)
- loss of water supply should the groundwater level fall below the depth of the bore

- inability to pump water from the bore (depending on the size pump currently installed) due to an increase in pump discharge head requirements as water level declines
- reduction in pumping rate/quantity of water that can be taken from a bore due to reduced water level and rate of recharge
- loss of existing infrastructure (bores and/or pipelines) and hence water supply if the infrastructure is located within a mine pit or needs to be removed/decommissioned for other mine construction or operational reasons
- changes in groundwater quality may be experienced where aquifers have a hydraulic connection (e.g. between coal seams). In this situation, as the pressure head is reduced in an overlying aquifer, there may be an increase in upward vertical leakage from the underlying aquifer. Such a situation may result in a reduction in water quality at a landholders bore should the underlying aquifer be of a lower quality
- release of hazardous gases due to the reduction in pressure head associated with dewatering the aquifer
- changes in water chemistry due to the release of dissolved and bound gases as the pressure head decreases
- contamination of aquifers (water supplies).

Water level drawdown due to mining activities is deemed by NRW to be significant once the mine induced drawdown exceeds 2 m at an existing bore.

4.1.2 Prediction of groundwater inflows

The existing data obtained from the one successful pumping test is insufficient to calculate and extrapolate pit inflows across the MLA. Additional production bores would be required to provide additional test parameters. The additional pumping test parameters will be required to supply sufficient data to develop a numerical model to determine pit inflows and the cumulative effect drawdown effect on the regional groundwater.

The numeric model to be developed will assist in determining the following:

- pit inflow volumes including the cumulative dewatering impact on the aquifers
- the sphere of influence — extent and lateral drawdown and changes in groundwater levels away from the pits
- changes in the groundwater flow direction due to pit inflows and the lateral extent
- effect of the pits on groundwater through flow and recharge
- effect the dewatering of the alluvial deposits will have on downstream users
- the period required before groundwater returns to pre mining levels.

The model will assist in the planning of a groundwater monitoring network and will flag issues that need to be addressed.

4.2 Potential impacts post-mining

4.2.1 Groundwater resources

Upon completion of mining, any groundwater extraction that has been occurring by WJV will cease. Groundwater levels/pressures in aquifers disturbed by mining activity will recover over time and new equilibrium level/pressure ranges will be attained. Aquifers will recover at different rates in different areas depending on the pit size, depth and duration of mining.

The impacted aquifers will have different potentiometric surfaces and localised water quality characteristics compared to the pre-mining situation for the following reasons:

- mine voids of various dimensions will exist across the Project area and may act as either sources of aquifer recharge or sinks for aquifer discharge depending on their location and depth relative to that of intersected aquifers, and the magnitude of evaporation and rainfall
- material used for backfill of voids will have different hydrogeological and geochemical properties than the configuration of the strata that existed pre-mining (e.g. strata that was not previously subjected to infiltration may be under post-mining conditions)
- recharge patterns will have been altered due to changes in topography caused by the location of spoil and surface water diversions
- the rate of evaporation from aquifers will be altered due to evaporation from the mine voids
- blasting may have resulted in new or increased connectivity between aquifers due to fracturing.

It is noted that the quality of water in the affected aquifers pre-mining is generally poor and either unsuitable or marginal for beneficial uses such as stock watering and irrigation without blending with other water. Accurate determination of post mining water quality of the impacted aquifers is not readily predictable and may require investigation.

The geological report discusses the potential for acid mine drainage.

4.2.2 Existing groundwater users

As discussed water levels/pressures in each impacted aquifer will attain a new equilibrium over time. The magnitude of the water level/pressure drawdown and its extent has not yet been fully determined and hence the magnitude and timing of the recovery cannot be known until sufficient data and additional aquifer parameters are known for a groundwater model to be developed to determine required scenarios. It is however expected that any adverse impacts on existing users bore yields and the suitability of their pumping equipment will persist for many years post mining.

Water quality in some landholder bores may have been either adversely or beneficially altered which will primarily depend on the proximity of these bores to the mine voids and spoil. Only bores that take water from the impacted aquifers and are in closest proximity to the mine voids and spoil can expect to experience some change in water quality.

The hydrocensus identified 86 existing bores (both private and WJV monitoring) that are located in and within 5 km of MLA's 50229, 50230 and 50231. The majority of private bores are used for stock and domestic purposes.

4.3 Cumulative impacts

The groundwater resources that can be expected to be impacted as a result of the Project are not considered to be high value resources as they are generally low yielding and of poor quality.

The current use of these resources (e.g. non-intensive stock watering) would be deemed low impact. The impacts of the Project on these resources can be expected to be high by comparison. Hence the cumulative impact is also deemed to be high.

It is not expected that the aquifers in the Project area that will be impacted would become high use/high value aquifers for stock, irrigation or any other purpose as the current yields are low and the groundwater quality is poor.

The most significant future impacts are likely to be the result of future mining activities which would be expected to have a medium to high level of impact on the aquifers in question.

The issues identified could be addressed in the compilation of a rigorous groundwater model that will assist in determining the cumulative impacts the mining has on the drawdown of regional groundwater levels in the project areas.

5. Mitigation measures

5.1 Potential mitigation measures for impacts on groundwater resources

The potential impacts on groundwater resources and mitigation measures for each are summarised in Table 4-1.

Table 5-1: Impacts and mitigation measures for groundwater resources

Potential impacts	Recommended mitigation measures
Construction and operational	
Alteration to groundwater levels due to dewatering (in pit or advanced) of all intersected aquifers in the open pits.	No practical mitigation measures exist.
Alteration to groundwater flow patterns due to dewatering and potential artificial recharge.	No practical mitigation measures exist.
Reduced recharge and increased leakage of aquifers due to their partial removal.	Artificial recharge — may not be practical or cost effective in the context of the environmental value being protected.
	Grout curtains/walls to prevent leakage — may not be practical or cost effective in the context of the environmental value being protected.
Reduction in the overall size of the resource due to the discontinuity of a given aquifer created by intersection from mine pits.	No practical mitigation measures exist.
Changes in groundwater quality where aquifers have a hydraulic connection.	Limited practical mitigation measures exist and would need to be evaluated on a case by case basis. It is unlikely that any practical or cost effective mitigation measures exist in the context of the environmental value being protected.
Release of hazardous gases due to the reduction in pressure head associated with de-watering the aquifer.	There may be isolated sites (bores) where gas needs to be captured in the interest of health and safety.
Changes in water chemistry due to the release of dissolved and bound gases as the pressure head decreases.	No practical mitigation measures exist.
Changes in groundwater chemistry due to recharge infiltrating via spoil/backfill.	It is unlikely that any practical mitigation measures exist however the mine planning process provides the opportunity to factor this issue into the location and scheduling of spoil dumps and re-use/disposal.
Reduction or elimination of shallow groundwater (primarily associated with the alluvium) resulting in adverse impacts on groundwater dependent ecosystems.	Artificial recharge and/or grout walls — may not be practical or cost effective in the context of the environmental value being protected.
Artificial recharge from washing plant, coal stockpiles, discard and tailings facilities, workshops, or ponding 'dirty' runoff.	Due consideration to location and design. For example tailing facilities should not be located in areas where the depth to groundwater is minimal such as on or adjacent to alluvium. In some instances impermeable hard stands and bunding will be necessary.

Potential impacts	Recommended mitigation measures
Construction and operational	
Artificial recharge from storage, treatment, silt/settlement ponds and dust suppression.	Design considerations such as the use of appropriate impermeable linings.
Contamination of aquifers due to infiltration from fuel or chemical spills.	Design and operational considerations such as appropriate storage, bunding and use procedures.
Contamination associated with ancillary infrastructure (e.g. sanitation and waste management).	Design considerations such as location and the use of appropriate storage tanks and impermeable linings.

5.2 Potential mitigation measures for impacts on existing users

The potential impacts on existing users and mitigation measures for each are summarised in Table 4-2.

Table 5-2: Impacts and mitigation measures for existing users

Potential impacts	Recommended mitigation measures
Construction and operational	
Increased costs to extract water as power consumption increases due to water level decline in their bore(s)	Subsidise pumping costs
	Provide the landholder with an alternative cheaper source of water
Loss of water supply should the groundwater level decline beneath the bottom of their boreholes	Deepen boreholes
	Replace/relocate boreholes
	Provide an alternative cost neutral source of water
Inability to pump water from the bore due to an increase in pump discharge head requirements as water level declines	Lower or replace pump
	Subsidise pumping costs
	Provide water from alternative source
Reduction in pumping rate/yield	Replace/relocate boreholes
	Install additional boreholes
	Increase water storage capacity
	Provide water from alternative source
Loss of existing infrastructure (boreholes and /or pipelines) and hence water supply	Replace/relocate boreholes and infrastructure
	Provide water from alternative
Changes in groundwater quality preventing current use	Replace/relocate boreholes
	Provide water from alternative source
Release of hazardous gases	Decommission boreholes
	Replace/relocate boreholes
	Provide water from alternative source
Contamination of aquifers	Decommission boreholes
	Replace/relocate boreholes
	Provide water from alternative source

Despite aquifer water levels and qualities attaining new equilibriums over time, this is not an instantaneous outcome and the end result may differ significantly from the pre-mining situation. Therefore the post mining impacts must remain the same as those during the construction and operation phases. It is expected that these potential impacts would have been mitigated during the construction and operation phases.

The WJV proposes to ensure continued access and supply from community or other multi-user bores within the area surrounding the MLA areas, by providing “make good” measures where groundwater monitoring demonstrates that mining activities are impacting groundwater supplies. Make good actions may include sinking of new bores or providing an alternative supply.

5.3 Monitoring

The establishment and revision of an ongoing long term monitoring program is essential and will:

- establish a pre-mining baseline dataset
- aid in revising the groundwater conceptual model
- provide data to correlate/calibrate numerical groundwater models and
- enable the WJV to determine the effectiveness of mitigation measures.

The existing monitoring program is predominantly focused on MLA 50230. A revised monitoring and investigation program is planned for MLA 50229, MLA 50230 and MLA 50231 that will:

- provide for the monitoring and advance identification of impacts on existing users by locating monitoring bores in strategic locations between mine pits (or other relevant infrastructure) and existing users
- provide for the monitoring and advance identification of impacts on groundwater resources by locating monitoring bores in strategic locations both in the immediate vicinity of mining operations and in the surrounding area and
- enable the effectiveness of the mitigation measures adopted to be evaluated.

The impacts and mitigation measures identified in this study provide the basis and direction for data review/re-evaluation to facilitate the development of such a monitoring program.

It is anticipated that approximately 10 new sites will need to be drilled and that these will result in 10-15 additional monitoring and test pumping boreholes being constructed. Of these, it is expected that there will be at least 3 new test pumping bores located in the main mine pit areas to provide information for determination of aquifer hydraulic parameters, pit inflows and to facilitate groundwater modelling and hence the magnitude and timing of groundwater drawdown.

Future groundwater investigation and monitoring will also be undertaken to assess surface water groundwater interactions and salinity issues.

The monitoring program should include collection of both water level and water quality data at a frequency appropriate to the purpose of the data collection. For example, collection of water level data for use in monitoring impacts on alluvial groundwater or the relationship

between surface water and groundwater may need to be collected on an hourly basis by using data loggers. On the other hand collection of background regional water quality data 2 km from the MLA boundary may only need to be collected on a quarterly basis unless certain trigger values are exceeded.

Water quality analysis should be sufficient to enable comparison with pertinent guidelines including the Australian Drinking Water Guidelines and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC and ARMCANZ, 2000).

Data and samples should be collected and stored in accordance with relevant guidelines or as prescribed by licence conditions specified by government departments (e.g. NRW or EPA). Such guidelines may include:

- water quality sampling manual (EPA, 1999) and
- water monitoring data collection standards (NRW, 2007).

Construction and decommissioning of any bores should be in accordance with the Minimum construction requirements for water bores in Australia (LWBC, 2003) and any other applicable legislative requirements (e.g. development permits).

6. Residual impacts

Section 4 identified a variety of potential mitigation options for impacts on groundwater resources and existing users. The residual impacts are those impacts that remain following implementation of mitigation measures.

Table 4-2 indicates that there are a range of viable mitigation measures to address impacts on existing users. Therefore there are not expected to be any direct residual impacts on existing users.

Due to the nature of open pit mining there are some impacts that cannot be mitigated. This is evident from Table 4-1 where it has been noted that no or limited practical and/or cost effective mitigation measures exist. The residual impacts on the groundwater resources are expected to be as follows:

- alteration to groundwater levels due to dewatering (in pit or advanced) of all intersected aquifers in the open pits
- alteration to groundwater flow patterns due to dewatering and potential artificial recharge
- reduced recharge and increased leakage of aquifers due to their partial removal
- reduction in the overall size of the resource due to the discontinuity of a given aquifer created by intersection from mine pits
- localised changes in groundwater quality where aquifers have a hydraulic connection
- release of hazardous gases due to the reduction in pressure head associated with dewatering the aquifer
- changes in water chemistry due to the release of dissolved and bound gases as the pressure head decreases
- changes in groundwater chemistry due to recharge infiltrating via spoil/backfill
- reduction or elimination of shallow groundwater (primarily associated with the alluvium) resulting in adverse impacts on groundwater dependent ecosystems.

The magnitude and significance of these residual impacts will be determined as part of an ongoing hydrogeological investigation and monitoring program.

7. Conclusions

The proposed mining at Wandoan is expected to be limited in depth to 75 m and targeting the Juandah Coal Measures, namely the Kogan, Macalister Upper and Lower, and Wambo coal seams. The groundwater technical study focused primarily on MLA 50230 and 50231, with limited assessment of MLA 50229. It is recognised that further work is required in MLA 50229 to further conceptualise the hydrogeology.

The groundwater technical study included a hydrocensus, augmentation of the existing monitoring network, exploration and monitoring data collection, and hydrogeological conceptualisation.

The technical study found that the cleats within the coal seams are the main water bearing structures. The deeper coal seams below 50 m, including the Macalister and Wambo are the more transmissive seams. The deeper coal seams of the Macalister and Wambo have a slightly lower salinity up to 17,000 $\mu\text{S}/\text{cm}$ compared with the upper coal seams of the Kogan, which are typically up to 23,000 $\mu\text{S}/\text{cm}$ (poor to very poor water quality). The indication is that pH values become more alkaline with depth.

The alluvial sediments are considered to be a limited groundwater resource, located around the creeks of Mud, Frank and Woleebee, and their tributaries. The surface/groundwater interaction needs to be determined including the effect the alluvials have on recharge to the underlying aquifers and the value as a storage and contributor to baseflow.

The groundwater resource within the Juandah Coal Measures is semi-confined with sandstones, siltstones and mudstones between the coals seams acting as semi-confining/confining layers. The indications are that there is a very low vertical hydraulic connection between the water bearing zones in the coal seams. Horizontal transmissivity is low, at less than 8 m^2/day .

The results indicate groundwater was encountered within the coal cleats and variable across the investigation area with low flows, both spatially and vertically.

The hydrocensus identified 77 existing private groundwater bores located in and within 2 km of the MLAs. Of these, seven are identified as community bores which supply multiple landholders through a network of bore drains and extract groundwater from the GAB. Except for those bores located within the proposed pits and within a radius of 2 km from the mine pits, the impact on water supply should be minimal.

Currently, there is no evidence to suggest that a link exists between bores extracting groundwater below the proposed base of the pits (60 mbgl) and production bores extracting from the GAB. The vertical hydraulic transmissivity of the Juandah Coal Measures and the extensive sequence of semi-confining material between the Juandah Coal Measures and the GAB, being up to 400m, is very low.

The offsite impacts should be limited, except potentially in MLA's 50231 and 50229 where proposed pits approach the MLA boundary. There are two private bores located within 2 km of the western boundary of each MLA 50229 and 50231 that could potentially be affected. The bore details, including depth of extraction are unknown. Bores located in close proximity to the pits and extracting from above 75 mbgl, are likely to be affected due to increased drawdowns.

To enhance the hydrogeological conceptualisation of the Project area and monitor any potential impacts to the environment and existing users, augmentation of the existing groundwater monitoring network is recommended. There are currently sixteen existing groundwater monitoring sites, from which baseline water level and water quality data is being collected. It is recommended that an additional five groundwater monitoring bores and three groundwater monitoring bores be installed within MLA's 50229 and 50231, respectively. Of these new monitoring bores, at least three should be installed as production bores whereby hydraulic characteristics through pumping tests can be calculated, and groundwater flow can also be considered.

The results of the drilling can be used to update cross sections presented in Attachment G. This data will be used to verify the conceptual hydrogeological model presented in this technical report and form the basis for further baseline assessment.

The additional data will be used to augment existing data and to develop a numeric model to supply predictions on groundwater pit inflows and the lateral effect of the sink created by the pits on the local and regional hydrogeology.

8. Summary of mitigation strategies

The potential options to mitigate the impacts on groundwater resources are generally considered to be limited. The main potential mitigation measures are design considerations and use of appropriate bunding, storage and linings to contain potential contamination from spills, infrastructure, or activities such as coal handling and preparation

The potential option to mitigate impacts to existing users is generally to provide alternative sources of water, or replace or deepen bores and or pumps for surrounding landholders.

The monitoring program should include collection of both water level and water quality data within the coal and overlying hydrogeological units. Sampling frequency prior to mining should be such to provide data on the natural seasonal variation within each of the hydrogeological units. The monitoring network should be constructed to provide baseline information across the study area pre mining, to monitor impacts during the operation of the mine, and also assess the effectiveness of mitigation measures adopted.

9. References

NHMRC and NRMCC (2004). Australian Drinking Water Guidelines 2004, National Water Quality Management Strategy, National Health and Medical Research Council and the Natural Resource Management Ministerial Council.

Freeze R.A and Cherry J.A. (1979). Groundwater. Prentice-Hall, New Jersey.

Standards Australia, 1990. AS 2368-1990 Test pumping of water wells.

EPA (1999). Water quality sampling manual, Third edition, Queensland Government, Environmental Protection Agency.

NRW (2007). Water monitoring data collection standards, Version 2.1, Queensland Government, Natural Resources and Water.

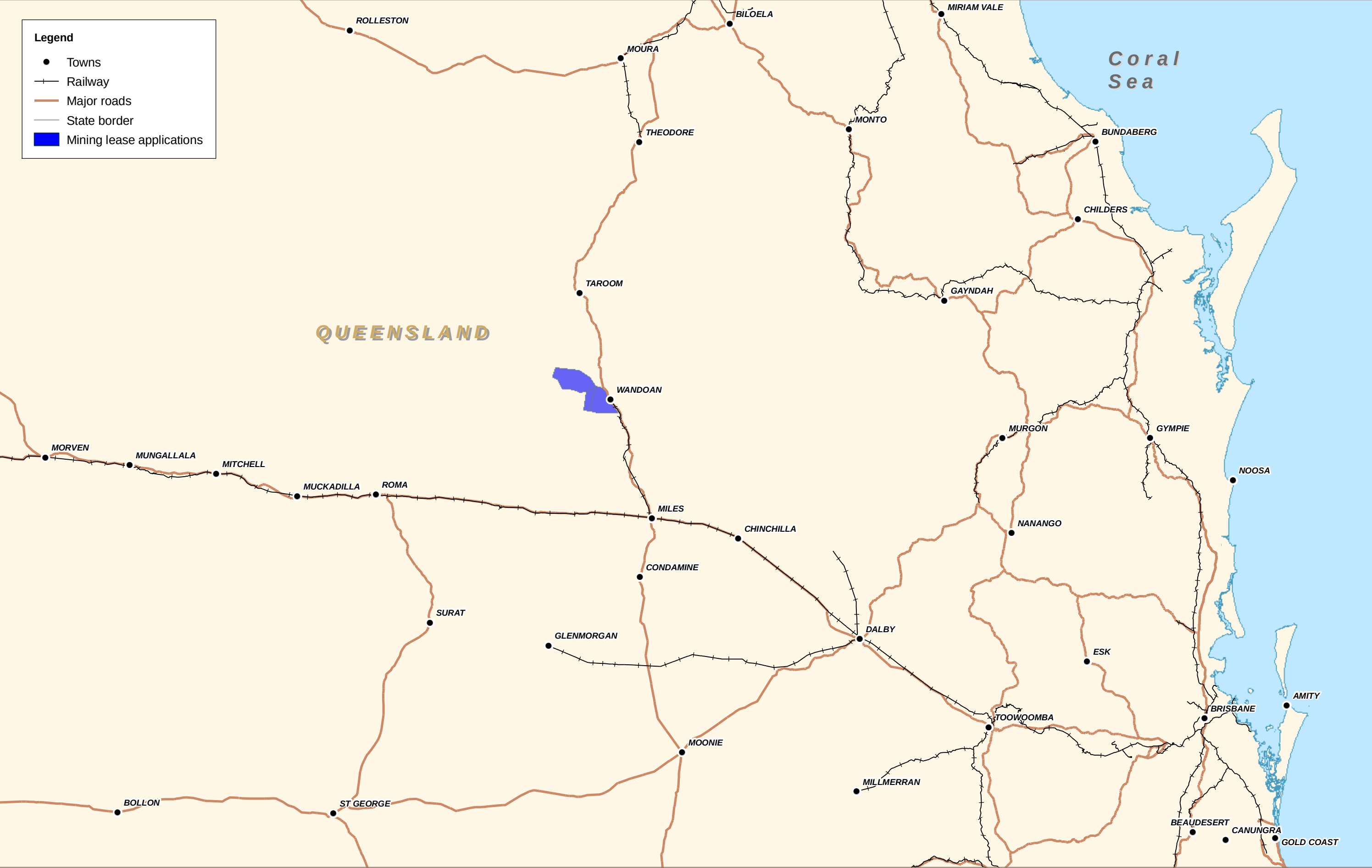
LWBC (2003). Minimum construction requirements for water bores in Australia, Edition 2, Land and Water Biodiversity Committee.

PB (2007). Groundwater Impact Assessment 2133006A-RPT003.

PB (2008). Water Supply and Management Report TR 11-1.5.

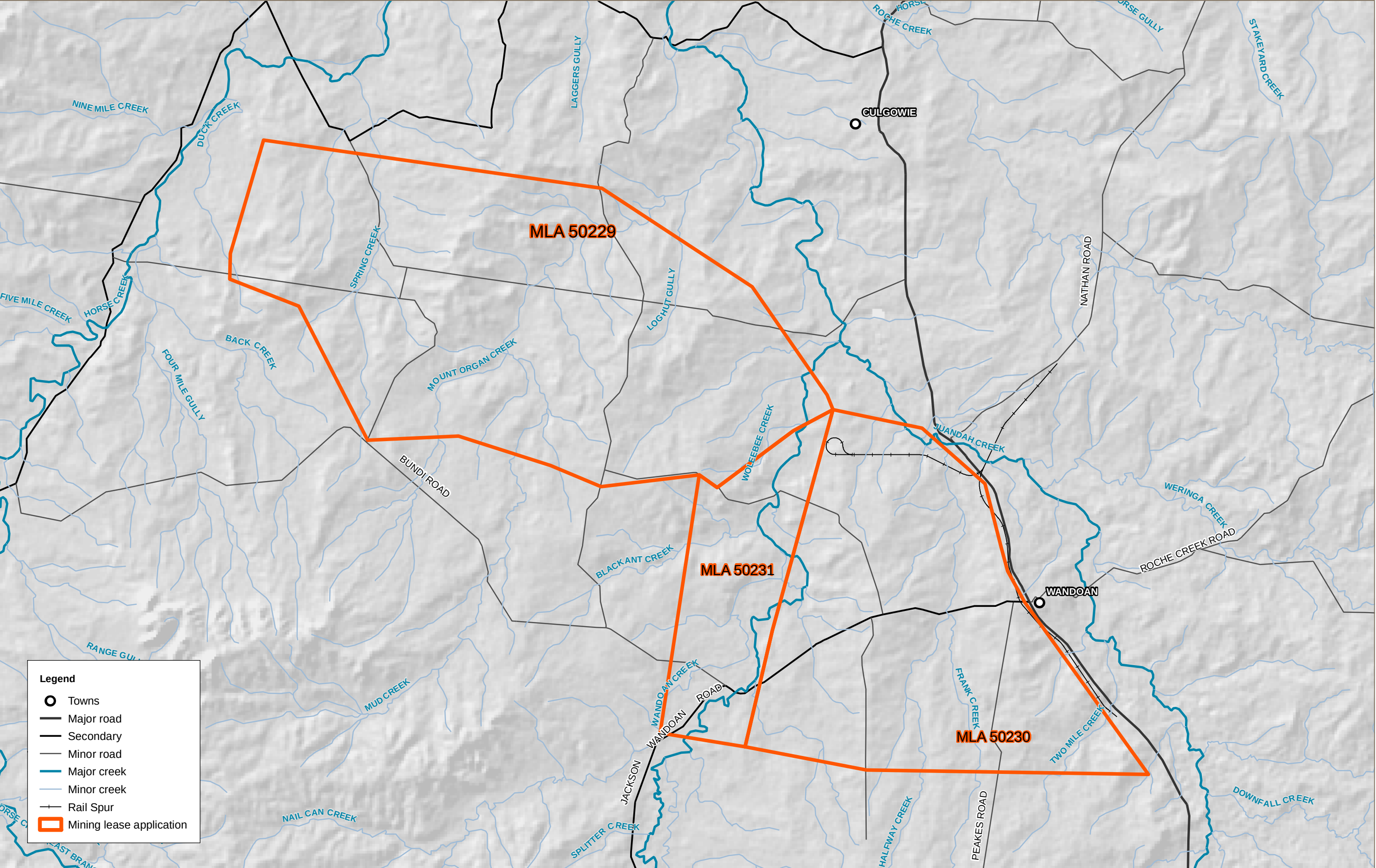
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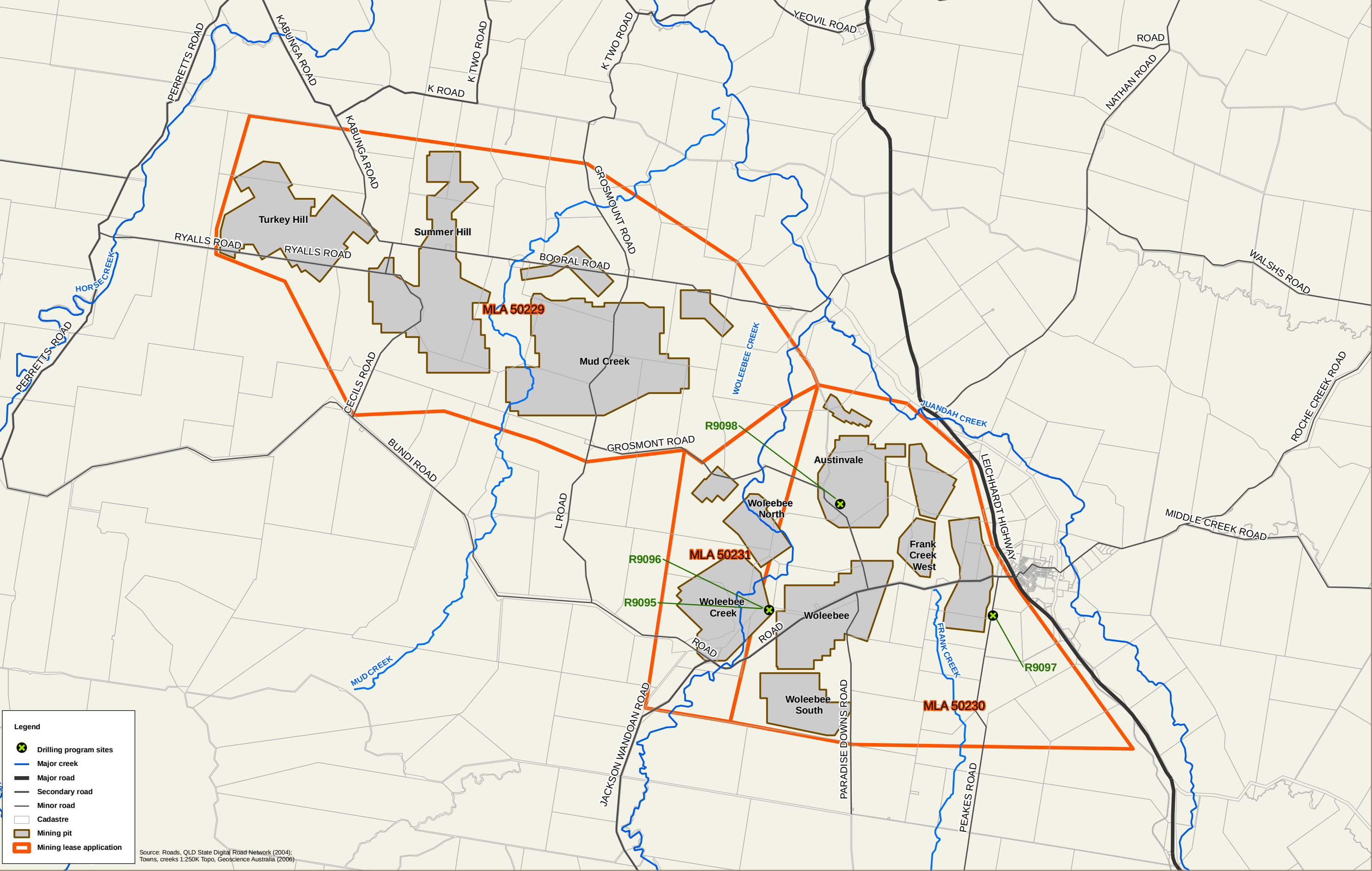
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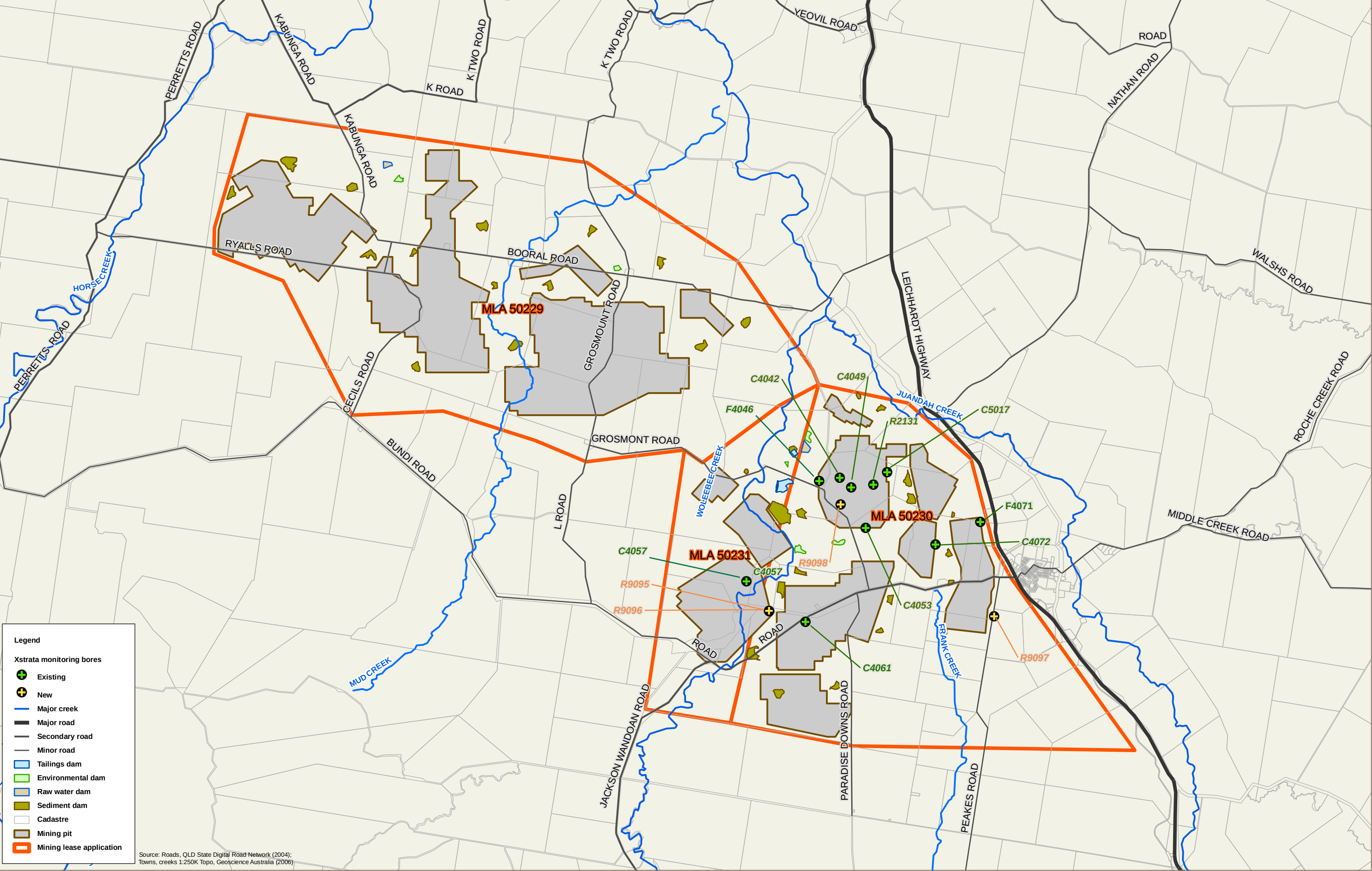
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Source: Roads, QLD State Digital Road Network (2004); Towns, Coastline , boundaries, 1:250K Topo, Geoscience Australia (2006)

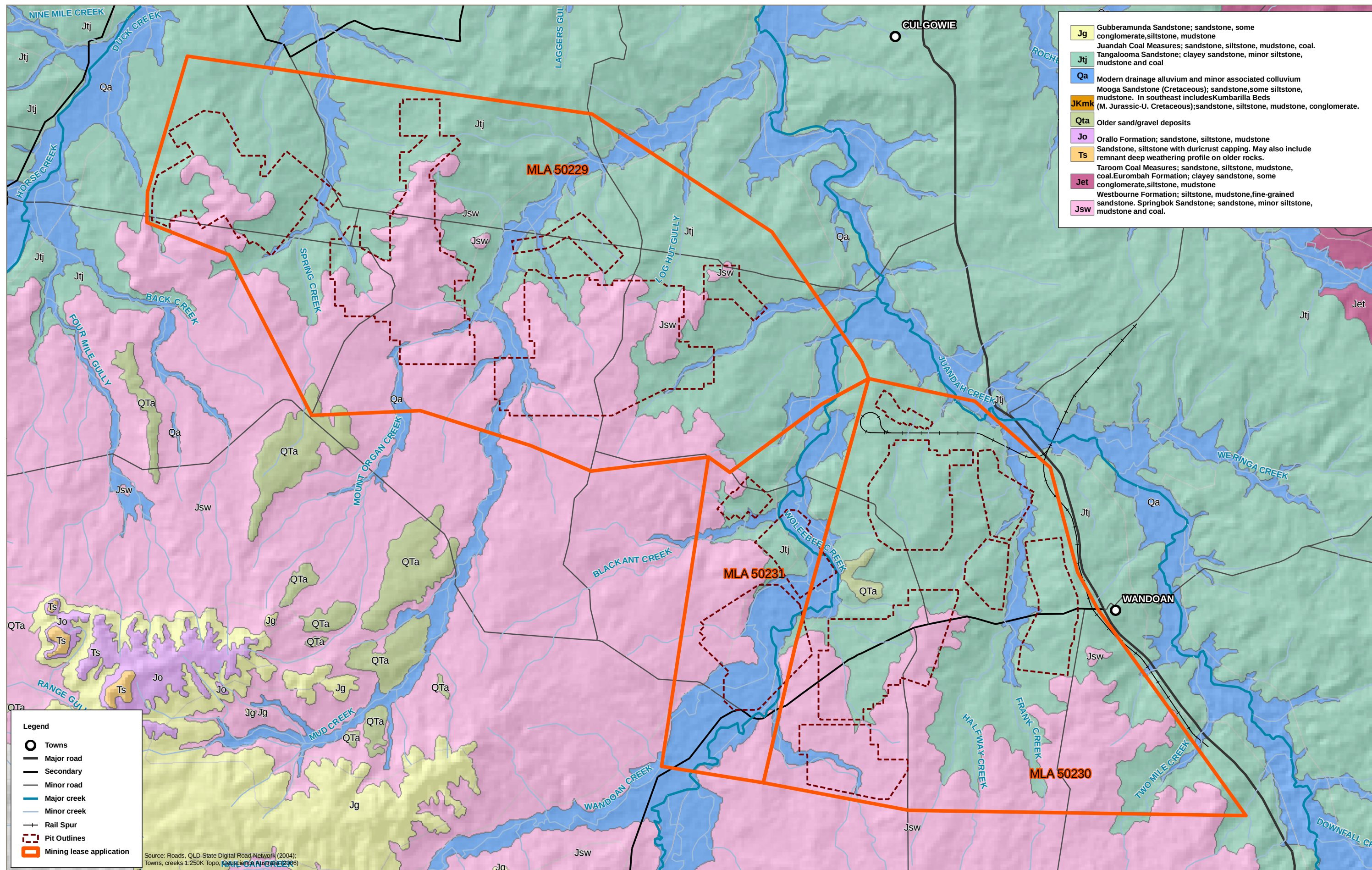


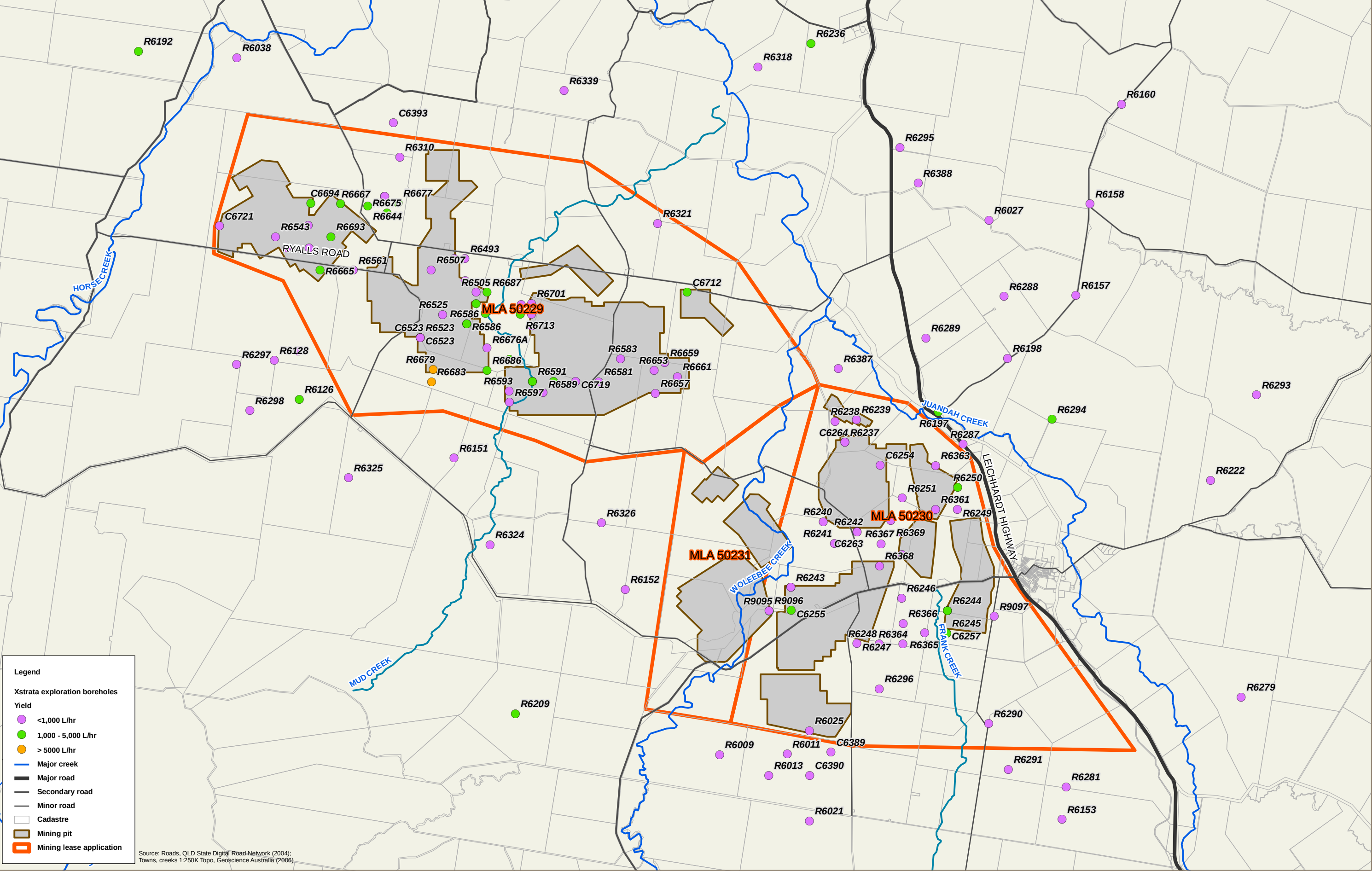


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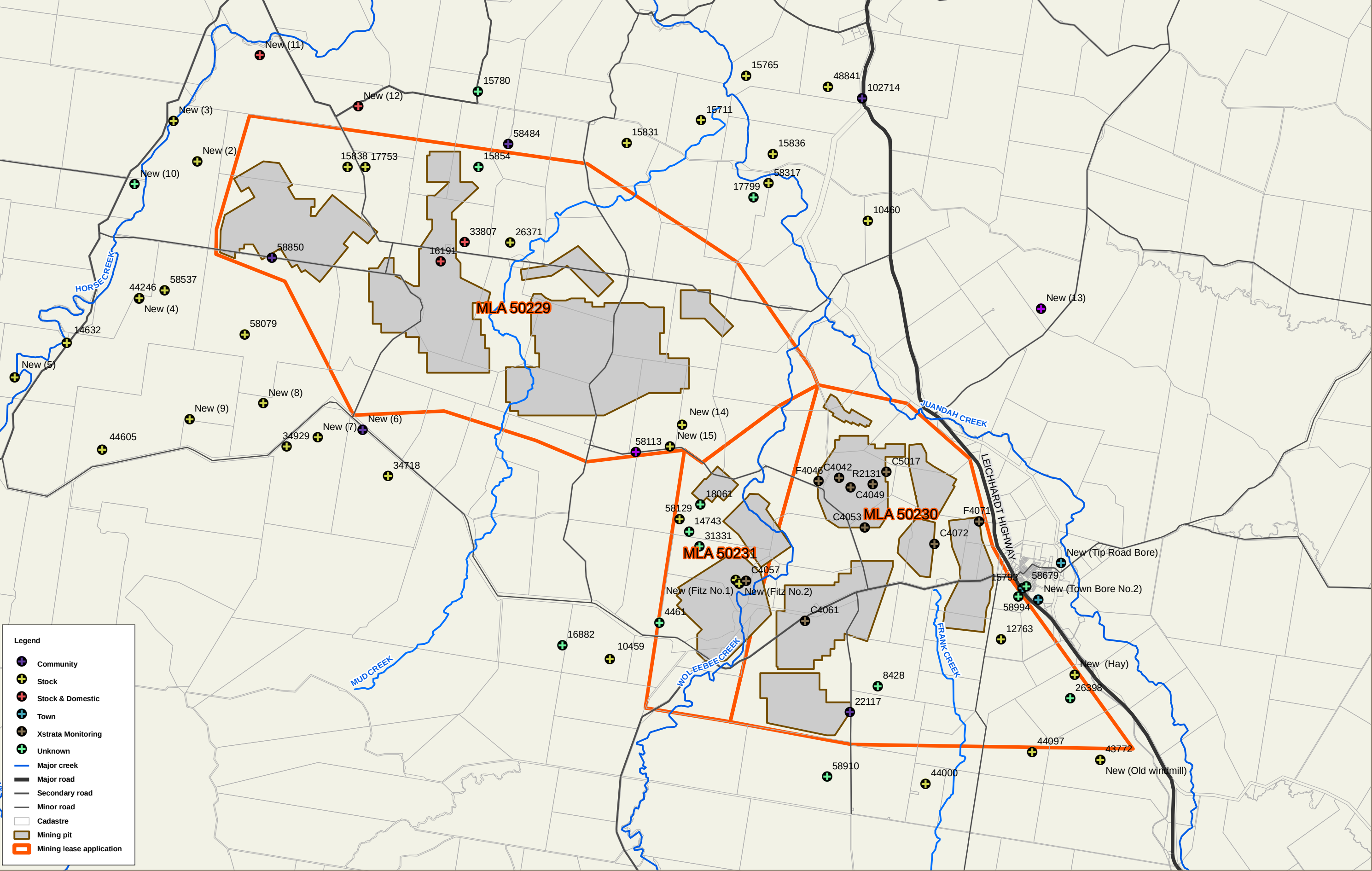
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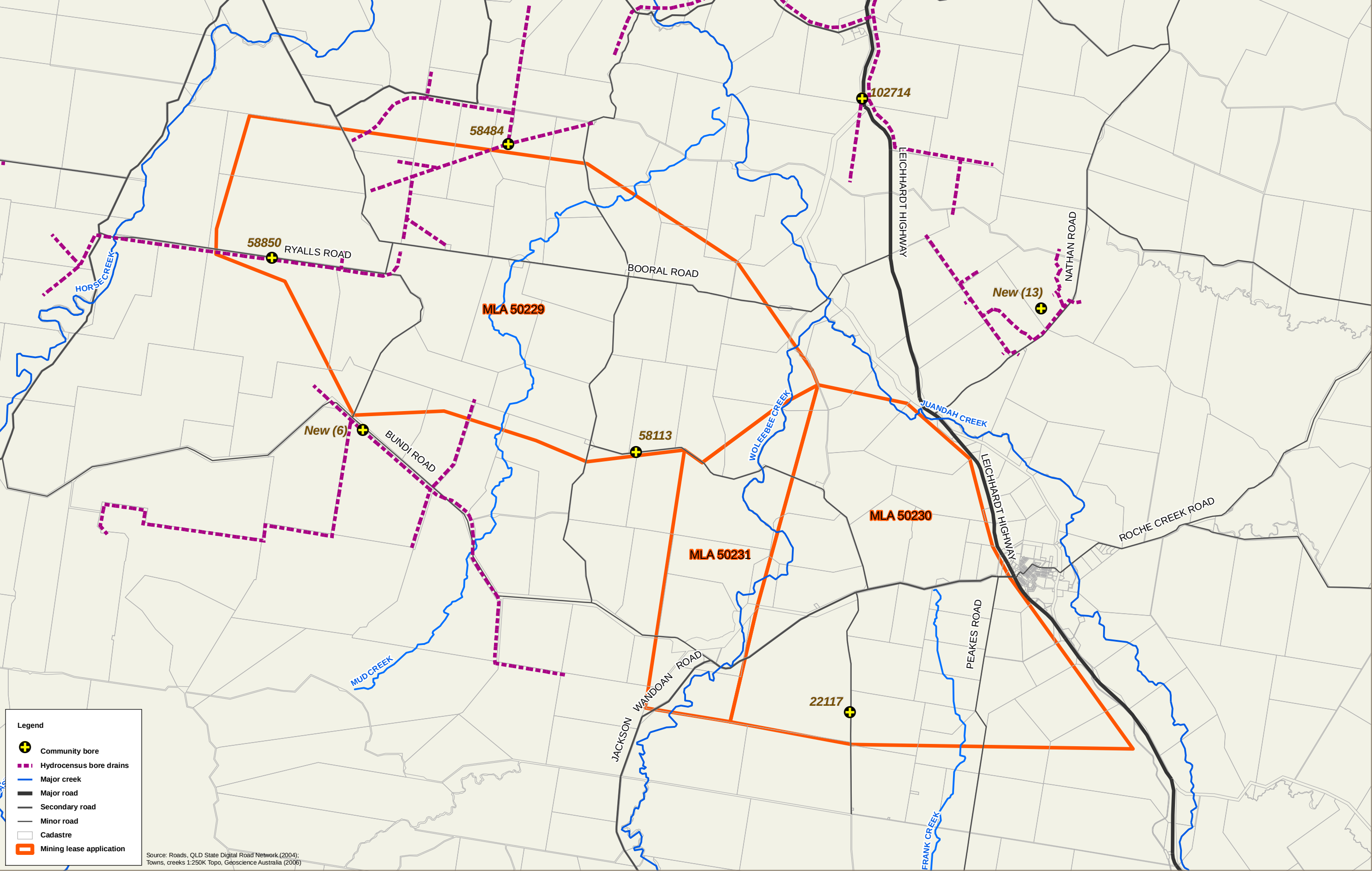
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Source: Roads, QLD State Digital Road Network (2004); Towns, creeks 1:250K Topo, Geoscience Australia (2006)



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Attachment B

EPA Environmental Authority —
Permit

Permit¹

s603 Environmental Protection Act 1994

Standard Environmental Authority (mining activities)

Permit number: MIM400089602

Details

Permit Holder(s)	Name	Address
Principal Holder	M.I.M Holdings Limited	410 Ann Street BRISBANE QLD 4000 Australia
Activity(s)	Activity Location(s)	
Mineral Development	MDL222	West Wandoan

Conditions of Approval

Permit details:

Authorised Mining Tenements

Tenure Type	Tenure Number
MDL	222

Agency interest: General

- G1 The conditions of this environmental authority are in force until a surrender of the authority is accepted pursuant to the Environmental Protection Act 1994. The conditions apply unless an amendment is approved pursuant to the Environmental Protection Act 1994.
- G2 The environmental authority holder is to give the administering authority a financial assurance in the amount and form and at a time required by the administering authority.
- G3 The environmental authority holder must comply with each of the Standard Environmental Conditions contained in the Code of Environmental Compliance for Exploration and Mineral Development Projects (January 2001).
- G4 Important Note: The relevant Code of Compliance imposes certain restrictions on mining activities within or adjacent to Category A, B or C environmentally sensitive areas. Environmentally sensitive areas have been identified within or adjacent to the mining tenure. Please contact Toowoomba EPA 4639 4599 for details.

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service.



Permit¹

s603 Environmental Protection Act 1994
Permit number: MIM400089602



Signed

Craig Thamm
Environmental Protection Agency
Date

10-1-03

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service.



Attachment C

Hydrocensus

Basic Information Borehole Name: <u>Old Bore Hay</u> Landowner: <u>Brian & Donna Hay (Lot 109 FT915)</u> Farm or Property Name: <u>Weeleesha</u> Postal Address: _____ _____ Contact Details: Telephone (H): _____ Mobile No: _____ Borehole Coordinates: <u>Old Bore Diesel Pump</u> Eastings: <u>55 797 961</u> Northings: <u>7 103 852</u> Elevation: <u>279 m</u> Landholder Comments/Issues: <u>No used unknown when constructed contact prev owner Mark Lay Still a Local</u>
--

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒
	<u>Farm bore</u>		

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Unknown
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐
	<u>Too Salty for straight stock water needs to be mixed with other water</u>	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	Unknown	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

<u>Date :</u> <u>28/03/08</u>
<u>Signature :</u> <u>Lee Gnezdloff (Inspected)</u>



Basic Information	
Borehole Name: 44097	
Landowner : Pitkin (Lot 6 FT432)	
Farm or Property Name :	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Old Bore Diesel Pump	
Eastings : 55 796 425	
Northings : 7 101 065	
Elevation : 270 m	
Landholder Comments/Issues :	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 44097 Date drilled 01/01/1973	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Unknown
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Too Salty for straight stock water needs to be mixed with other water and slow pumping. Gave up registration.	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	33.5m DNRW She	
6.3	Borehole construction details	Unknown	
6.4	Has borehole been cased / or a sleeve installed	☐	☐
	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 29/03/08
Signature : Lee Gnezdiloff (Inspected)



Basic Information	
Borehole Name: 43772	
Landowner : Pukallus (Lot 3 FT695)	
Farm or Property Name : Lalagoola	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Old Bore Diesel Pump	
Eastings : 55 798 877	
Northings : 7 100 778	
Elevation : 303 m	
Landholder Comments/Issues :	



Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 43772 Date drilled 03/05/1973	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒
	Farm bore		
	13 cm above GL for Casing		



2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Unknown
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐



No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	42.20 m	
6.3	Borehole construction details	Unknown	
6.4	Has borehole been cased / or a sleeve installed	☒	☐
	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	36.83 m	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	



No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 28/03/08
Signature : Lee Gnezdiloff (Inspected)

Basic Information	
Borehole Name: Old Windmill	
Borehole Coordinates : Old Windmill	
Eastings : 55 798 877	
Northings : 7 100 778	
Elevation : 303 m	
Landholder Comments/Issues :	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore not used	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?	Unknown
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	Unknown	
6.3	Borehole construction details	Unknown	
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
Permission to access property to carry out the following :			
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 28/03/08
Signature : Lee Gnezdloff (Inspected)



Basic Information	
Borehole Name: 58129	
Landowner : Westman (Lot 50 FT573)	
Farm or Property Name : Beechley	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Old Bore Diesel Pump	
Eastings : 55 783 710	
Northings : 7 109 458	
Elevation : 244 m	
Landholder Comments/Issues :	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 58129 Date drilled 06/02/1983	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒
	Farm bore		

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	300 gallon/hr
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Too Salty for straight stock water needs to be mixed with other water	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following	Miss placed	
6.2	Depth of borehole (m)	121.92m guess	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
Permission to access property to carry out the following :			
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 28/03/08
Signature : Lee Gnezdiloff (Inspected)



Basic Information	
Borehole Name: 12763	
Landowner : Westman (Lot 87 FT325)	
Farm or Property Name : Stelroy	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Windmill Pump	
Eastings : 55 795 300	
Northings : 7 105 125	
Elevation : 286 m	
Landholder Comments/Issues :	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 12763 Date drilled 07/09/1954	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?	100-300 gallon/hr
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Too Salty for straight stock water needs to be mixed with other water	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	243.84m guess	
6.3	Borehole construction details		
6.4	Has borehole been cased / or a sleeve installed	☒	☐
	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 28/03/08
Signature : Lee Gnezdloff (Inspected)



Basic Information	
Borehole Name: C4072 & C4053	
Landowner : Austin (Lot 115 FT452, Lot 116 FT452)	
Farm or Property Name :	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : No Bores only mine Piezos (C4072 no1 & no2, C4053)	
Eastings : C4072 55 792 903 C4053 55 790 394	
Northings : 7 108 560 7 109 152	
Elevation : ? m ? M	
Landholder Comments/Issues :	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☐	☒
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☐

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☐
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Too Salty for straight stock water needs to be mixed with other water	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)		
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing		
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)		
6.7	Did the borehole ever overflow - artesian	☐	☐
6.8	Airlift yield measured at the time of drilling (l/s)		

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 26/03/08
Signature : Lee Gnezdloff (Inspected)



Three holes at C4072, two piezos one explore. 1st piezo on right of picture



Piezo no.1



Piezo no.2



Explore hole



Dry piezo

Basic Information Borehole Name: 44000 Landowner : Peake (Lot 2 RP110817) Farm or Property Name : Cherwondah Postal Address : _____ _____ Contact Details : Telephone (H) : Mobile No: _____ Borehole Coordinates : WindmillPump Eastings : 55 792 581 wrong location owner did not allow to GPS Northings : 7 099 912 Elevation : ? m Landholder Comments/Issues : Landholder did not allow full inspection all information below is from DNRW Spread sheet
--

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 44000 Date drilled 02/08/1973	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore _____ _____	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?	Unknown
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other : _____ _____ _____	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible (NO) If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	No access granted 670.5m DNRW S	
6.3	Borehole construction details	Unknown	
6.4	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Unknown	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
7	Permission to access property to carry out the following : Would you allow for the borehole to be yield tested Need to ask again maybe allowed in future..	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 27/03/08
Signature : Lee Gnezdiloff (Inspected)

Basic Information	
Borehole Name: Old Bore (Fitz No.1)	
Landowner : Fitzgerald (Lot 52 FT614)	
Farm or Property Name : Cambrai	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Old Bore Diesel Pump near yards	
Eastings : 55 785 736	
Northings : 7 107 273	
Elevation : ? m	
Landholder Comments/Issues :	
Not used any more	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒
	Farm bore		

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	200 gal/hr
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More that 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	Approx 60m	
6.3	Borehole construction details	Unknown	
6.4	Has borehole been cased / or a sleeve installed	☒	☐
	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)	Similar to Xstrata Piez	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
7	Permission to access property to carry out the following : Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 26/03/08
Signature : Lee Gnezdiloff (Inspected)



Basic Information Borehole Name: Old Bore (Fitz No.2) Borehole Coordinates : No.2 Old Bore Diesel Pump near yards Eastings : 55 785 960 Northings : 7 107 135 Elevation : ? m Landholder Comments/Issues : <u>Pump stuck down bore hole and bore collapse.</u>

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? <u>Farm bore</u>	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	<u>300-400gal/hr</u>
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	<u>Approx 60m</u>	
6.3	Borehole construction details	<u>Unknown</u>	
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	<u>Unknown</u>	
6.5	Water level below ground level (m)	<u>Similar to Xstrata Piez</u>	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	<u>Unknown</u>	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	<u>Unknown</u>	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

<u>Date : 26/03/08</u> <u>Signature : Lee Gnezdiloff (Inspected)</u>



Basic Information

Borehole Name: 22117

Landowner : Ward (Lot 10 FT949)

Farm or Property Name :

Postal Address :

Contact Details :

Telephone (H) :

Mobile No:

Borehole Coordinates : Bore electrical Pump

Eastings : 55 789 846

Northings : 7 102 499

Elevation : 295m

Landholder Comments/Issues :

distributed around nearby farms

Borehole and Groundwater questionnaire

(Please tick relevant boxes)

No	Description	Yes	No
----	-------------	-----	----

- | | | | |
|-----|--|-------------------------------------|--------------------------|
| 1 | Do you have a borehole ? | ☒ | ☐ |
| 1.1 | Is it registered with DNRW? If Yes, what is the registered number?
22117 | ☒ | ☐ |
| 1.2 | Is it a community bore? If Yes, who are the current users (include proportion of use if known)?
To Monk property, Rich property, Norwood property and wards | ☒ | ☐ |

- | | | | |
|-----|------------------------------|-------------------------------------|--|
| 2 | Borehole status - Select one | | |
| 2.1 | In use | ☒ | |
| 2.2 | Not in use | ☐ | |
| 2.3 | Collapsed / destroyed | ☐ | |
| 2.4 | Sealed / closed up | ☐ | |

- | | | | |
|-----|--|-------------------------------------|-------------------------------------|
| 3 | Borehole equipped with a pump ? | ☐ | ☒ |
| | Pump type : | | |
| 3.1 | Submersible pump (Motor & pump located inside borehole) | ☐ | |
| 3.2 | Line shaft pump (Motor located on surface - pipes down hole) | ☒ | |
| 3.3 | Windmill | ☐ | |

- | | | | |
|-----|---------------------------------------|--------------------------|--|
| 4 | Daily abstraction volume if known ? | unknown | |
| | If not known - please supply estimate | | |
| 4.1 | Less than 10 litres | ☐ | |
| 4.2 | Between 100 and 500 litres / day | ☐ | |
| 4.3 | Between 500 to 1000 litres / day | ☐ | |
| 4.4 | More than 1000 litres / day | ☐ | |

- | | | | |
|-----|---|-------------------------------------|--|
| 5 | Borehole usage - indicate if multiple use | | |
| 5.1 | Irrigation | ☐ | |
| 5.2 | Stock Watering | ☒ | |
| 5.3 | Domestic / household useage | ☐ | |
| 5.4 | Other : | ☐ | |

No	Description	Yes	No
----	-------------	-----	----

- | | | | |
|-----|--|-------------------------------------|-------------------------------------|
| 6 | Borehole details | | |
| 6.1 | Do you have any borehole records ? Get a copy if possible
If no records available, do you recall any of the following | ☒ | ☐ |
| 6.2 | Depth of borehole (m) | Unknown | |
| 6.3 | Borehole construction details | Unknown | |
| 6.4 | Has borehole been cased / or a sleeve installed | ☒ | ☐ |
| 6.4 | What type of sleeve / casing installed | | |
| | uPVC | ☐ | |
| | Steel | ☒ | |
| | Total length of casing | Unknown | |
| 6.5 | Water level below ground level (m) | Unknown | |
| | Measured (note meterage) or | ☐ | |
| | Guessed (note meterage) | ☐ | |
| | Unknown (note meterage) | ☐ | |
| 6.6 | Depth at which water was struck (meters below ground level) | Unknown | |
| 6.7 | Did the borehole ever overflow - artesian | ☐ | ☒ |
| 6.8 | Airlift yield measured at the time of drilling (l/s) | Unknown | |

No	Description	Yes	No
----	-------------	-----	----

- | | | | |
|---|--|-------------------------------------|--------------------------|
| | Permission to access property to carry out the following : | | |
| 7 | Would you allow for the borehole to be yield tested | ☒ | ☐ |
| 8 | Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels. | ☒ | ☐ |

Date : 26/03/08

Signature : Lee Gnezdiloff (Inspected)



Bore ID	Date	Time	Latitude	Longitude	Stickup above GL (m)	Total Bore Depth (m bREF)
R2131	03-May-08	11:58	26-5-36.97	149-54-21.84	0.58	37.96
C5017	03-May-08	12:13	26-5-22.32	149-54-39.17	0.46	23.01
C4049	03-May-08	12:56	26-5-41.03	149-53-52.89	0.68	36.32
C4042	03-May-08	13:03	26-5-30.22	149-53-37.57	0.41	32.69

Depth to Water	Casing Diameter	REF	Capped ?	Comments
(m bREF)	(mm)			
35.99	50	Top of PVC	Yes	
13.41	125	Top of PVC	No	
35.31	50	Top of PVC	No	Cap on ground when arrived
33.07	50	Top of PVC	Yes	

Basic Information	
Borehole Name: Town Bore No.1	
Landowner : Council	
Farm or Property Name :	
Postal Address :	
Contact Details :	
Telephone (H) :	
Mobile No:	
Borehole Coordinates : Town Bore No.1	
Eastings : Location underneath of Tower Reservoir	
Northings :	
Elevation :	
Landholder Comments/Issues :	
comes out at 57 degrees and in summer delivered to town at 50 degrees	



Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☒	☐
	Wandoan town		

2	Borehole status - Select one	
2.1	In use	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	15 L/s
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☐
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details Need to ask the Greater Dalby council for information		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	Artesian	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	Unknown	
6.7	Did the borehole ever overflow - artesian	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	Unknown	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
	If you can need to speak to council		
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 27/03/08
Signature : Lee Gnezdiloff (Inspected)

Basic Information	
Borehole Name: Town bore No.2	
Borehole Coordinates : Town bore No.2	
Eastings : 55 796 647	
Northings : 7 106 560	
Elevation : 257 m	
Landholder Comments/Issues :	
<u>Location of Bore next to the Town Sale Yards</u>	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? <u>Wandoan town</u>	☒	☐

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	<u>10-12 L/s</u>
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☒

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☐
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details Need to ask the Greater Dalby council for information		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	<u>Artesian</u>	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	<u>Unknown</u>	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	<u>Unknown</u>	
6.7	Did the borehole ever overflow - artesian	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	<u>Unknown</u>	

No	Description	Yes	No
Permission to access property to carry out the following :			
7	Would you allow for the borehole to be yield tested If you can need to speak to council	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

<u>Date : 27/03/08</u>
<u>Signature : Lee Gnezdlloff (Inspected)</u>



Basic Information	
Borehole Name: Tip Road Bore	
Borehole Coordinates : Tip Road Bore	
Eastings : 55 797 471	
Northings : 7 107 872	
Elevation : 248 m	
Landholder Comments/Issues :	
<u>Opposite Golf course</u>	

Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ?	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☒	☐
	<u>Wandoan town disused</u>		

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	<u>Unknown</u>
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☐
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details Need to ask the Greater Dalby council for information		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	<u>Likely Alluvials</u>	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	<u>Unknown</u>	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	<u>Unknown</u>	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	<u>Unknown</u>	

No	Description	Yes	No
Permission to access property to carry out the following :			
7	Would you allow for the borehole to be yield tested	☒	☐
	If you can need to speak to council		
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

<u>Date : 27/03/08</u>
<u>Signature : Lee Gnezdiloff (Inspected)</u>



Basic Information
Borehole Name/Number: **Yard Bore**
 Landowner : Robert Adams
 Farm or Property Name : Summer Hill
 Postal Address : Booral Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46273458
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 44' 55.8"
 Southings : 26° 01' 27.0"
 Elevation : 308m

 Landholder Comments/Issues : _____

 Landholder not present

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 16191	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	500L/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Unaccessable	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	Unknown	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08

Signature : Thomas Sheppard (Inspected)



Basic Information
Borehole Name/Number: **Comet Bore**
 Landowner : R + S Anderson
 Farm or Property Name : Elimatta
 Postal Address : 350 Ryals Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46283037
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 38' 26.0"
 Southings : 26° 02' 17.2"
 Elevation : 245m

 Landholder Comments/Issues : _____

 Brackish _____

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN44246	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?	1000l/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	21.75 Blocked	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	9.35	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____

Signature : Thomas Sheppard (Inspected) _____



Basic Information
Borehole Name/Number: **Horse Creek Bore**
 Landowner : R + S Anderson
 Farm or Property Name : Elimatta
 Postal Address : 350 Ryals Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46283037
 Mobile No: _____
 Borehole Coordinates :
 Eastings : 149° 36' 53.1"
 Southings : 26° 03' 11.2"
 Elevation : 264m
 Landholder Comments/Issues : _____
 Brackish _____

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN14632	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use - Since 2006	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill and Lister motor	☒	

4	Daily abstraction volume if known ?	1000L/hr	
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)		
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____
 Signature : Thomas Sheppard (Inspected) _____



Basic Information
Borehole Name/Number: **Original Comet Bore**
 Landowner : R + S Anderson
 Farm or Property Name : Elimatta
 Postal Address : 350 Ryals Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46283037
 Mobile No: _____
 Borehole Coordinates :
 Eastings : 149° 38' 25.5"
 Southings : 26° 02' 17.8"
 Elevation : 245m
 Landholder Coments/Issues : _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?		?
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Blocked	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	8.44	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: Perret's Well
 Landowner : R + S Anderson
 Farm or Property Name : Elimatta
 Postal Address : 350 Ryals Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46283037
 Mobile No: _____
 Borehole Coordinates :
 Eastings : 149° 35' 46.3"
 Southings : 26° 03' 53.1"
 Elevation : m _____
 Landholder Coments/Issues : _____
 Brackish _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?		?
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Blocked	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☒
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing		
6.5	Water level below ground level (m)	Alluvial sediment in well	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____
 Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: Tripod Bore
 Landowner : R + S Anderson
 Farm or Property Name : Elimatta
 Postal Address : 350 Ryals Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46283037
 Mobile No: _____
 Borehole Coordinates :
 Eastings : 149° 38' 58.7"
 Southings : 26° 02' 07.5"
 Elevation : m _____
 Landholder Comments/Issues : _____
 Brackish _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 58537	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use - Since 1998	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	1000L/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Blocked at 52.42	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☒
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing		
6.5	Water level below ground level (m)	2.055	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)		
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: Gadsby's Bore
 Landowner : Dean Anderson
 Farm or Property Name : Yabba
 Postal Address : 'Yabba' 852 Ryals rd, Wandoan, q 4419

 Contact Details :
 Telephone (H) : 46283272
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 40' 43.6"
 Southings : 26° 02' 57.3"
 Elevation : m _____
 Landholder Comments/Issues : _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN58079	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? B58079	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? Pump Jack	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	76.2(log) 65.55 (meas.)	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	12.42	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 21+C319/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information Borehole Name/Number: Bimbadeen Community Bore Landowner : Bimbadeen Water Group Farm or Property Name : Lot 1 Plan SP174422 Postal Address : Secretary, Harry Perrett, 'Cattle Downs', Wandoan Q 4419 _____ _____ Contact Details : Telephone (H) : 46283238 Mobile No: _____ _____ Borehole Coordinates : Eastings : 0757370 Southings : 7123971 Elevation : m _____ Landholder Comments/Issues : _____ _____ Could not access property. Send letter re permission.
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Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN400405	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? 400405	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Gaddis, B; Phillips, R; Speed, I; Conway, D; Golden, D; Hodgkinson, J; Perrett, H. _____ _____	☒	☐

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ? Mono 50000L/hr	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? 50ML/summer, metered at resevoir. If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☒	
5.4	Other : _____ _____ _____	☐	

No	Description	Yes	No
6	Borehole details From log		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	1206	
6.3	Borehole construction details Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed uPVC Steel Total length of casing	☐ ☒ 1206	
6.5	Water level below ground level (m)	63.5	
	Measured (note meterage) or Guessed (note meterage) Unknown (note meterage)	☐ ☒ ☐	
6.6	Depth at which water was struck (meters below ground level)	628	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	13740L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☐

Date : 24/7/08 _____ Signature : Thomas Sheppard (Telephone interview) _____

Basic Information
Borehole Name/Number: **House Bore**
 Landowner : Colin and Terry Boyce
 Farm or Property Name : Everest
 Postal Address : 'Everest' Booral Rd, Wandoan Q 4419

 Contact Details :
 Telephone (H) : 46274060
 Mobile No: _____
 Borehole Coordinates :
 Eastings : _____
 Southings : _____
 Elevation : m _____
 Landholder Comments/Issues :
 Phone interview only. Brackish, been on Everest since 2000. _____
 Owner would like more info re permission. On Grosmont.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN33807	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use - Since arrival	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? - Pump jack	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? - Sales figures say 3000L/hr	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐
	Not drinking water	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	225	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	3000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☐

Date : 24/7/08
Signature : Thomas Sheppard (Phone interview)

Basic Information
Borehole Name/Number: **Old Bore**
 Landowner : Mick Bradshaw
 Farm or Property Name : Allambie
 Postal Address : Allambie, Wandoan, Q 4419

 Contact Details :
 Telephone (H) :
 Mobile No: 0418152605

 Borehole Coordinates :
 Eastings : ° ' "
 Southings : ° ' "
 Elevation : m

 Landholder Comments/Issues :
 Conducted over phone, could not access due to rain. Bore was _____
 salty, now on Culgowie comm bore.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN15836	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?		?
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	_____
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	?	_____
6.5	Water level below ground level (m)	?	_____
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	_____
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	_____

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 23/7/08
Signature : Thomas Sheppard (Telephone conversation)

Basic Information
Borehole Name/Number: **House Bore**
 Landowner : Wayne Cann
 Farm or Property Name : Glennfallough
 Postal Address : 'Glennfallough' Booral rd, Wandoan Q 4419

 Contact Details :
 Telephone (H) : 46274008
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 777607
 Southings : 7119425
 Elevation : m

 Landholder Comments/Issues :
 Arrived 1992, Bore is gassy. Send letter with more information re _____
 permission.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RB26371	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use - Since 1992	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? - Did have SC windmill	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m) - May be blocked (rusty)	53.8	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	16.15	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☐

Date : 25/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Caenby Duck Gully**
 Landowner : Denis Conway
 Farm or Property Name : Caenby
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 39' 37.7"
 Southings : 25° 59' 36.0"
 Elevation : 235m

 Landholder Comments/Issues : _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? 2.5kL/hr when in use	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	7.085	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	6.835	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian - GAS	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Spring Creek Flat Bore**
 Landowner : Denis Conway
 Farm or Property Name : Spring Creek
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 43' 15.4"
 Southings : 25° 59' 38.3"
 Elevation : 206m

 Landholder Comments/Issues : _____
 pH:7.49, EC:9.39mS/cm, T:30.6C



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN17753	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? 2.5KL/hr when in use	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	>100m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	0	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian - GAS	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)		

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 16/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Spring Creek Dam Bore**
 Landowner : Denis Conway
 Farm or Property Name : Spring Creek
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 42' 52.4"
 Southings : 25° 59' 38.5"
 Elevation : 242m

 Landholder Comments/Issues : _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15838	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill No rods	☒	

4	Daily abstraction volume if known ? 2.5KL/hr when in use	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Blocked	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC - Brown high quality poly pipe	☒	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	Blocked	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Conway Wongaree**
 Landowner : Denis Conway
 Farm or Property Name : Wongaree
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 45' 39.2"
 Southings : 25° 58' 07.0"
 Elevation : 268m

 Landholder Comments/Issues :

 Sighted Southern X pump, no other info. _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15780	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Assumed	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	?	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 22/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Caenby Yard Bore**
 Landowner : Denis Conway
 Farm or Property Name : Spring Creek
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 39' 05.7"
 Southings : 25° 58' 48.7"
 Elevation : 233m

 Landholder Comments/Issues : _____
 pH: 8.37, T: 28.8C, EC: 7.99mS/cm



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	2.5KL/hr when in use
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	>100	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	0.029	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian - GAS	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 17/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Caenby Mill**
 Landowner : Denis Conway
 Farm or Property Name : Caenby
 Postal Address : Currawong, 2445 Yeovil Rd, Grosmont, 4419

 Contact Details :
 Telephone (H) : 46273496
 Mobile No: 0426273496

 Borehole Coordinates :
 Eastings : 149° 38' 17"
 Southings : 26° 00' 14.1"
 Elevation : m

 Landholder Comments/Issues :
 No info. Quagmire area around bore. Unsure re permission for this bore.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 10460??	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?		?
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	
	Assumed		

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☐	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☐

Date : 22/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Culgowie Community Bore**
 Landowner : On easement
 Farm or Property Name : Secretaries property (Rob Fraser): Lalina
 Postal Address : Rob Fraser, Lalina, Wandoan 4419

 Contact Details :
 Telephone (H) : 4627 4903
 Mobile No: 0427952792

 Borehole Coordinates :
 Eastings : 149° 53' 57.1"
 Northings : 25° 58' 05.5"
 Elevation : 284 m

 Landholder Comments/Issues :
 Bore is on easement of Russell Ezzys property Hidden Vale. 21 _____
 stakeholders. Precipice sandstone. Send letter re permission.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 102714	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? -	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☒	☐
	Sharp, R; Olsen, A&M; Fraser, M&D; Slattery, N&A; Richardson, W&H; Symes, K; Symes, P; Menzies, M; Ryan, L; Harper, N; McMillan, R; Thorne, T&V; Jones, L&J; Coutts, G&C; Brown, D; Dann, J&F; Little, L; Bradshaw, K; Eisenhauer, J&S.		

2	Borehole status - Select one	
2.1	In use	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? Mono 820, 53mBGL	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Each stakeholder is entitled to >50,000L/day.	
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	1342m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	1065m	
6.5	Water level below ground level (m)	27m	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	900m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	50000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 14/7/08 _____

Signature : Thomas Sheppard (Inspected) _____



Basic Information
Borehole Name/Number: **Old Bore**
 Landowner : J and J Dann
 Farm or Property Name : Kembla Downs
 Postal Address : K Road Wandooan 4419

 Contact Details :
 Telephone (H) : 46274 954
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 45' 41.9"
 Southings : 25° 59' 35.3"
 Elevation : m _____

 Landholder Comments/Issues :
 Now takes from Grosmont community Bore. Most data unknown as _____
 waqs decommissioned before Dann arrival.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15854	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	_____
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☐
5.3	Domestic / household useage	☐
5.4	Other :	☐
	Unknown as waqs decommissioned before Dann arrival	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	>100m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	8.16m	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 15/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **East Lynne Bore**
 Landowner : John Erbacher
 Farm or Property Name : East Lynne
 Postal Address : Grosmont rd, Wandoan, Q 4419

 Contact Details :
 Telephone (H) : 46274427
 Mobile No: 0427274473

 Borehole Coordinates :
 Latitude : 260432
 Longitude : 1495013
 Elevation : m

 Landholder Comments/Issues :
 Put down 1965. Salty. Cant access property due to legalaties. _____
 Permission for monitoring subject to legalaties also. _____

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	750L/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More that 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	200	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	200	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	122	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 23/7/08
Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Bore**
 Landowner : Kevin Erbacher
 Farm or Property Name : Tamarra
 Postal Address : Grosmont rd, Wandoan, Q 4419

 Contact Details :
 Telephone (H) : 46274473
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 1494958
 Southings : 260458
 Elevation : m _____

 Landholder Comments/Issues :
 Drilled 1965, Salty. Permission subject to legalities, no access due _____
 to the same.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	750L/hr	
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	300 (log)	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	300	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 23/7/08
Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number:
 Landowner : Ian Forster
 Farm or Property Name :
 Postal Address : 387 Bundi rd, Wandoan, q. 4419. Send correspondence to
 : PO box 10025 Adelaide st, Brisbane, Q 4000.
 Contact Details :
 Telephone (H) : 33525183
 Mobile No :
 Borehole Coordinates :
 Longitude : 1494846
 Latitude : 260908
 Elevation : m
 Landholder Comments/Issues :
 On Hinchley comm bore. Drilled 1956. Bore not visited due to
 tension re mine.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 10459	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? B10459	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ? Supply only If not known - please supply estimate		
4.1	Less than 10 000 litres	☒	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	233.2	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)		

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 20/7/08

Signature : Thomas Sheppard and Melissa Nixon phoned.

Basic Information
Borehole Name/Number: **Bore Paddock Bore**
 Landowner : Rob Fraser
 Farm or Property Name : Lalina
 Postal Address : Rob Fraser, Lalina, Wandoan 4419

 Contact Details :
 Telephone (H) : 4627 4903
 Mobile No: 0427952792

 Borehole Coordinates :
 Eastings : 149° 54' 07.8"
 Northings : 26° 00' 28.4"
 Elevation : 240 m

 Landholder Comments/Issues :
 Bore yield was subject to atmospheric pressure (greater when Low _____
 pressure systems were present).



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 10460	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Not in use since 1998, volume varied. If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More than 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household usage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)		
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian DUE TO ATMS. PRES.	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 14/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Old Bore**
 Landowner : On easement
 Farm or Property Name : Culgowie
 Postal Address : 119 Yeouvil rd, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46274 936
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 53' 12.5"
 Northings : 25° 57' 53.0"
 Elevation : 252 m

 Landholder Comments/Issues : _____

 Bore is old and decommissioned.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 102714	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore _____ _____ _____	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	☐
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? If not known - please supply estimate	Brs is entitled to >10,000gl/day	
4.1	Less than 10 litres	☐	
4.2	Between 100 and 500 litres / day	☐	
4.3	Between 500 to 1000 litres / day	☐	
4.4	More that 1000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☒	
5.4	Other : _____ Rob Fraser only, others may use for irrigation. _____ _____	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	1000m	
6.3	Borehole construction details Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed uPVC ☐ Steel ☒ Total length of casing	950m	
6.5	Water level below ground level (m) Measured (note meterage) or Guessed (note meterage) Unknown (note meterage)	Ar, SWL=26.5mBGL.	
6.6	Depth at which water was struck (meters below ground level)	900m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	.0000gl/hr	

No	Description	Yes	No
7	Permission to access property to carry out the following : Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 14/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Grosmont Community Bore**
 Landowner : Ivan Hay
 Farm or Property Name : Minamarra (leased from)
 Postal Address : Secretary, Terry Boyce, 'Everest', Booral rd, Wandoan, Q 4419

 Contact Details :
 Telephone (H) : Terry: 46274060
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 46' 19.7"
 Southings : 25° 59' 08.0"
 Elevation : 291m

 Landholder Comments/Issues :
 pH:6.8, EC:193uS/cm, T: 49C. Drilled 1992, 15 Shareholders all gravity fed.
 Meters fixed at discharge to property. Send letter re permission.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 58484	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number? B58484	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Grosmont school, R. Hay, L. Bahnisch, Phillips, Speed, Conway (wongaree and Spring ck (2shares)), Boyce, Edmonds, E. Bahnisch, Cann, M. Bahnisch, J. Dann, Bruggeman, I. Hay.	☒	☐

2	Borehole status - Select one	
2.1	In use - 15 shares	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? Mono 250, 37500L/hr	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? 20hrs/d@27500L/h in Summer	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐
	School drink it	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	1182	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	1240	
6.5	Water level below ground level (m)	33	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	20	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	10000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 22/7/08

Signature : Thomas Sheppard (Inspected)



Basic Information
Borehole Name/Number: **Flat Bore (S)**
 Landowner : Hawkins Pastoral Company
 Farm or Property Name : Moonamara
 Postal Address : Speculation, Taroom, 4420

 Contact Details :
 Telephone (H) : 46286103
 Mobile No: 04274628103

 Borehole Coordinates :
 Eastings : **COULD NOT LOCATE**
 Southings :
 Elevation :

 Landholder Comments/Issues :

 Same license as another borehole on property.

No images available, Bore could not be located.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 17799	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?		?
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	14m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	12m	
6.5	Water level below ground level (m)	9m	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	8m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	1000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 16/7/08
Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **House bore**
 Landowner : Hawkins Pastoral Company
 Farm or Property Name : Moonamara
 Postal Address : Speculation, Taroom, 4420

 Contact Details :
 Telephone (H) : 46286103
 Mobile No: 0427286103

 Borehole Coordinates :
 Eastings : 149° 51' 18.7"
 Southings : 26° 50' 27.3"
 Elevation : 228m

 Landholder Comments/Issues : _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 17800	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒
	<u>Lic: 21448</u>		

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☒	

4	Daily abstraction volume if known ?		
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☒	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m) 68.66m measured, log says 213m.		
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	200m	
6.5	Water level below ground level (m)	14.215m	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)		
6.6	Depth at which water was struck (meters below ground level)	16.5m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	1600L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 16/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: Hawkins Juandah Ck Bore (N)
 Landowner : Hawkins Pastoral Company
 Farm or Property Name : Moonamara
 Postal Address : Speculation, Taroom, 4420.

 Contact Details :
 Telephone (H) : 46286103
 Mobile No: 0427286103

 Borehole Coordinates :
 Eastings : 149° 51' 158.1"
 Southings : 25° 59' 47.2"
 Elevation : 233m

 Landholder Comments/Issues :
 Borehole subject to alluvial deposits when flooded. Same license _____
 as another borehole on property.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 58317	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? License: 20972	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	45m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	46m	
6.5	Water level below ground level (m)	40m	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	19m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	1000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 16/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information	
Borehole Name/Number: Hinchley Community Bore	
Landowner : Hinchley Bore Pty Ltd	
Farm or Property Name : Ashley Downs (sub division of)	
Postal Address : Attn: Secretary of Hinchley Community Bore, Helen McLennan, Taroom, Q. 4420.	
Contact Details :	
Telephone (H) : 46283217, fax 46283267	
Mobile No:	
Borehole Coordinates :	
Eastings : 149° 43' 18.9"	
Southings : 26° 04' 45.8"	
Elevation : 295m	
Sample: Turkey nest; pH: 7.49, EC: 141.8uS/cm, T: 27.0C	
Landholder Comments/Issues :	
36km of pipelines to properties. Turkey nest 50x25x3m. DNR have records. Flow meters at discharge to shareholders	



Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? James, John and Sandra; Ehrlich, Norm and Greg (3 shares under NEG holdings); Forster, Ian and John; Henry, June and Colin; Hay, Ivan and Tracee; McLennan, Peter and Helen (secretary); Monk, Malcolm and Janet (chair); Robins, Beverley and Bud, Brodie; Dun	☒	☐

2	Borehole status - Select one	
2.1	In use- By 14 Stakeholders, built in 2005	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
Pump type :			
3.1	Submersible pump- Mono, 60mBGL 50 000L/hr.	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Metered. Summer=50hrs/wk@35KL/hr If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
If no records available, do you recall any of the following			
6.2	Depth of borehole (m)	1228m	
6.3	Borehole construction details		
Has borehole been cased / or a sleeve installed			
6.4	What type of sleeve / casing installed	☒	☐
uPVC			
Steel			
Total length of casing- Double cased & cemented 0-180, single case 180-1228.			
6.5	Water level below ground level (m)	28m	
Measured (note meterage) or			
Guessed (note meterage)			
Unknown (note meterage)			
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - Bore isa artesian.	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	100 000L/hr.	

No	Description	Yes	No
Permission to access property to carry out the following :			
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 18/7/08
Signature : Thomas Sheppard (Inspected)

DNR provided log.

Basic Information Borehole Name/Number: Juandah Government Bore Landowner : Qld Govt Farm or Property Name : Easement on 'East Lynne' Postal Address : Secretary, J. Erbacher, 'East Lynne', Wandoan, Q, 4419. Contact Details : Telephone (H) : 46274427 Mobile No : Borehole Coordinates : Eastings : 149° 49' 13.7" Southings : 26° 05' 05.2" Elevation : 283m Landholder Comments/Issues : All info available online. Drilled 1983. Nest=45x20x1.8. 9 Shares. _____ Send letter re permission.



Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 58113	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Erbacher, Erbacher, Keyes, Keyes, Powell/X-Strata, Devlin, Goodland/X-Strata.	☒	☐



2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ? Mono, 14000L/hr	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Allocation 75ML/yr nominal		
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☒	
5.4	Other :	☐	
	Livestock/intensive livestock		

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	676	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	686	
6.5	Water level below ground level (m)	43(dnr log)	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	611	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	185.5m3/d	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 23/7/08
Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: Ashley Downs Bore

Landowner : NEG Holdings

Farm or Property Name : Ashley Downs

Postal Address : 1575 Bundi Rd, Wandoan, Q, 4419

Contact Details :
 Telephone (H) : 46274381 or 46274411
 Mobile No:

Borehole Coordinates :
 Eastings : 149° 43' 53.0"
 Southings : 26° 05' 39.6"
 Elevation : 268m

Landholder Comments/Issues :
 The previous owner used the bore a fair amount, NEG only at Ashley Downs for 1 year.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 34718	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use - Since 2005, put down in 1970	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump- Mono, 2.5KL/hr	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	170m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	203m	
6.5	Water level below ground level (m)	16.8m(from log)	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	99m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	3750L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 20/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Greenfields Bore**
 Landowner : NEG Holdings
 Farm or Property Name : Greenfields
 Postal Address : 1575 Bundi rd, Wandoan, Q. 4419

 Contact Details :
 Telephone (H) : 46274381, 46274411
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 41' 40.7"
 Southings : 26° 05' 07.4"
 Elevation : 282m

 Landholder Comments/Issues : _____

 Lived at Greenfields for 24yrs _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 34929	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump Mono 6000L/hr.	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	6000L/hr	
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	140 (off log)	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	28.03	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	104	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	10875L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 18/7/08 _____

 Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Greenfields Defunkt Bore**
 Landowner : NEG Holdings
 Farm or Property Name : Greenfields
 Postal Address : 1575 Bundi Rd, Wandoan, Q, 4419

 Contact Details :
 Telephone (H) : 46274381, 46274411
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 42' 21"
 Southings : 26° 04' 56"
 Elevation : m _____

 Landholder Comments/Issues :
 Gassy, Bore not sighted. Assumed to be in depression in the ground. _____



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use- Since before 1970	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Norm believes volume was quite substantial. If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	_____
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	_____
6.5	Water level below ground level (m)	?	_____
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	_____
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	_____

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 18/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Wongalea Bore**
 Landowner : NEG Holdings
 Farm or Property Name : Wongalea
 Postal Address : 1575 Bundi Road, Wandoan, Q, 4419

 Contact Details :
 Telephone (H) : 46274381, 46274411
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 41' 09.7"
 Southings : 26° 04' 17.4"
 Elevation : 273m

 Landholder Comments/Issues : _____

 NEG purchased Wongalea in 2004. Bore drilled 1987/88 by Zell.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump - Mono	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	4000L/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	220m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	Blocked	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	5500L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 18/7/08
Signature : Thomas Sheppard (Inspected)



Basic Information
Borehole Name/Number: **Cattle Downs Bore**
 Landowner : Harry Perrett
 Farm or Property Name : Cattle Downs
 Postal Address : 'Cattle Downs', Wandoan, Q 4419

 Contact Details :
 Telephone (H) : 46283238
 Mobile No: _____

 Borehole Coordinates :
 Eastings : _____
 Southings : _____
 Elevation : m _____

 Landholder Comments/Issues : _____

 No access, no co-ordinates.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? Not on MLA bounds RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ? Mono 10000L/hr	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? About 9ML/yr		
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☒	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	823	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	823	
6.5	Water level below ground level (m)	63	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	86	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	7000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 24/7/08 _____

Signature : Thomas Sheppard (Telephone conversation) _____

Basic Information
Borehole Name/Number: **Old Bore**
 Landowner : R Phillips and B sands
 Farm or Property Name : Horse Creek
 Postal Address : 732 K Road, Wandoan, 4419

 Contact Details :
 Telephone (H) : 46274089
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 42' 52.4"
 Southings : 25° 55' 55.4"
 Elevation : 224m

 Landholder Comments/Issues :
 Bore blocked due to corrosion. pH: 7.78, EC: 7.37mS/cm, T:24.6C. _____
 Tested water could be precipitation in bore.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒



2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use- SINCE AT LEAST 1977	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? If not known - please supply estimate	
4.1	Less than 10 000 litres	☒
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	?	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	0m	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - GAS	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)		

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 16/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Old Bore**

Landowner : On easement _____
Farm or Property Name : Culgowie _____
Postal Address : 119 Yeovil rd, Wandoan 4419 _____

Contact Details :
Telephone (H) : 46274936 _____
Mobile No: _____

Borehole Coordinates :
Eastings : 149° 53' 12.5" _____
Southings : 25° 57' 53.5" _____
Elevation : 252 m _____

Landholder Comments/Issues :
Bore in Burkehead formation, subject to gas. Not in use since _____
1977.



Borehole and Groundwater questionnaire
(Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 49841	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Varies	
	If not known - please supply estimate		
4.1	Less than 10 litres	☐	
4.2	Between 100 and 500 litres / day	☐	
4.3	Between 500 to 1000 litres / day	☐	
4.4	More than 1000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☐	☒
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	200m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	78m	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 15/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Playfair Community Bore**
 Landowner : Tim Bradshaw
 Farm or Property Name : Playfair
 Postal Address : Nathan Road Wandoan 4419

 Contact Details :
 Telephone (H) : 46274132
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 57' 54.9"
 Southings : 26° 02' 06.7"
 Elevation : 290m

 Landholder Comments/Issues :
 Water tested at Discharge of Slattery's: pH: 7.6, EC: 3.51mS/cm, _____
 T= 25.1C and at Bradshaws (T.B. Provided sample, pH: 8.25, EC: 3.45mS/cm, T:28.9C. Drilled 1989.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Bradshaw, Prescho, Welsh, Booth, X-Strata, Gadsby, Jacobson, Richardson, Slattery.	☒	☐

2	Borehole status - Select one	
2.1	In use- 9 Stakeholders	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? 25000L/hr, 155mBGL	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4 Daily abstraction volume if known ? **Metered at discharge points, recorded by individuals 6/12.**

4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	675	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	675	
6.5	Water level below ground level (m)	55	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 23/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Old Bore**

Landowner : Ray Porter

Farm or Property Name : Rotherfield

Postal Address : 202 M1 Road, Wandoan, 4419

Contact Details :
 Telephone (H) : 46274039
 Mobile No.:

Borehole Coordinates :
 Eastings : 149° 50' 35.3"
 Southings : 25° 58' 35.3"
 Elevation : 217 m

Landholder Comments/Issues :
 Cancelled license. Bore not in use since 1988.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15711	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Farm bore; license was N15711.	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? If not known - please supply estimate		
4.1	Less than 10 litres	☐	
4.2	Between 100 and 500 litres / day	☐	
4.3	Between 500 to 1000 litres / day	☒	
4.4	More that 1000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	157.6m	
6.3	Borehole construction details		
6.4	Has borehole been cased / or a sleeve installed	☒	☐
	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	167.4	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 15/7/08

Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Bore**
 Landowner : Robert Sharp
 Farm or Property Name : Springfield
 Postal Address : 'Springfield' Yeovil Road, Wandoan, Q 4419

 Contact Details :
 Telephone (H) : 46274925
 Mobile No: 0427221130

 Borehole Coordinates :
 Eastings : ° ' "
 Southings : ° ' "
 Elevation : m

 Landholder Comments/Issues :
 Been at farm since 1976, on Culgowie comm bore. Bore drilled _____
 1964. Unable to locate.

Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15765	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use - Since Culgowie	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ? Pump jack	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	
3.3	Windmill	☐	

4	Daily abstraction volume if known ? Supply, 750L/hr	
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible	☒	☐
	If no records available, do you recall any of the following		
6.2	Depth of borehole (m)	85.3(log)	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	?	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	62.48	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	1000L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 20/7/08
Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: Warrawoona Northern Bore
 Landowner : Bill Speed
 Farm or Property Name : Warrawoona
 Postal Address : Brig-o-toon, Wandoan, Q 4419

 Contact Details :
 Telephone (H) :46283237
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 40' 55.7"
 Southings : 25° 57' 30.1"
 Elevation : 244m

 Landholder Comments/Issues :
 pH: 7.91, T: 29.7C, EC: 8.44mS/cm. On Grosmont Bore (1992), _____
 Bore put down 1987.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use- Since Grosmont	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Max supply 2.5KL/hr	
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☒	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	>100	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	8.71	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 22/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Warrawoona S Bore**
 Landowner : Bill Speed
 Farm or Property Name : Warrawoona
 Postal Address : Brig-o-toon, Wandoan, Q 4419

 Contact Details :
 Telephone (H) :46283287
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 43' 04.4"
 Southings : 25° 58' 27.4"
 Elevation : 223m

 Landholder Comments/Issues : _____

 Gassy, capped, pH:8.1, EC:9.3mS/cm, T:29.4C



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one	
2.1	In use	☐
2.2	Not in use- Since 1992	☒
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	Supply 2.5KL/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	>100	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	-0.7	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian - GAS	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 22/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Supply Bore**
 Landowner : R. Thornton
 Farm or Property Name : Grosmont
 Postal Address : 138 M1 Rd, Wandoan 4419

 Contact Details :
 Telephone (H) : 46274935
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 48' 53.1"
 Southings : 25° 59' 03.8"
 Elevation : 262m

 Landholder Comments/Issues : _____

 License: N15831, pH:9.41, EC: 28.4mS/cm, T: 27.4C



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 15831	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	☐
2.2	Not in use	☐	☐
2.3	Collapsed / destroyed	☐	☐
2.4	Sealed / closed up	☐	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	☐
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☒	☐
3.3	Windmill	☐	☐

4	Daily abstraction volume if known ?	Varies
	If not known - please supply estimate	
4.1	Less than 10 litres	☐
4.2	Between 100 and 500 litres / day	☐
4.3	Between 500 to 1000 litres / day	☐
4.4	More that 1000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	200m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	☐
	Steel	☒	☐
	Total length of casing	200m	
6.5	Water level below ground level (m)	41.41m	
	Measured (note meterage) or	☒	☐
	Guessed (note meterage)	☐	☐
	Unknown (note meterage)	☐	☐
6.6	Depth at which water was struck (meters below ground level)	129m	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	1500L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 15/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Active Bore**
 Landowner : Boxflat Grazing (Bevan & Jo Wilson)
 Farm or Property Name : Bethany
 Postal Address : Boxflat, Taroom, Q. 4430

 Contact Details :
 Telephone (H) : 46278451, Paul on property-46283206
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 37' 41.8"
 Southings : 26° 05' 15.6"
 Elevation : 280m

 Landholder Comments/Issues :
 Paul on Bethany since 01/07. Bore drilled 22/9/00. pH:7.26, EC: _____
 13.14mS/cm, T=30.8C.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 44605	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☒	
2.2	Not in use	☐	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☒	☐
	Pump type : Air compressor.		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	42L/hr
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☒
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☐
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	>100m	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	?	
6.5	Water level below ground level (m)	26.76	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☒	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 18/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Basic Information
Borehole Name/Number: **Inactive Bore**
 Landowner : Boxflat Grazing (Bevan & Jo Wilson)
 Farm or Property Name : Bethany
 Postal Address : Boxflat, Taroom, Q. 4430

 Contact Details :
 Telephone (H) : 46278451, Paul on property-46283206
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 39' 34.3"
 Southings : 26° 04' 37.6"
 Elevation : 261m

 Landholder Comments/Issues : _____
 pH:7.80, T:32.4C, EC:4.74mS/cm.



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN NEW	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☐	☒
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)?	☐	☒

2	Borehole status - Select one		
2.1	In use	☐	
2.2	Not in use- Since 2000.	☒	
2.3	Collapsed / destroyed	☐	
2.4	Sealed / closed up	☐	

3	Borehole equipped with a pump ?	☐	☒
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☐	
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	
3.3	Windmill	☐	

4	Daily abstraction volume if known ?	?	
	If not known - please supply estimate		
4.1	Less than 10 000 litres	☐	
4.2	Between 10 000 and 50 000 litres / day	☐	
4.3	Between 50 000 to 100 000 litres / day	☐	
4.4	More than 100 000 litres / day	☐	

5	Borehole usage - indicate if multiple use		
5.1	Irrigation	☐	
5.2	Stock Watering	☒	
5.3	Domestic / household useage	☐	
5.4	Other :	☐	

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☐	☒
6.2	Depth of borehole (m)	Blocked	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☐	
	Steel	☒	
	Total length of casing	?	
6.5	Water level below ground level (m)	7.84	
	Measured (note meterage) or	☒	
	Guessed (note meterage)	☐	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☐	☒
6.8	Airlift yield measured at the time of drilling (l/s)	?	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☒	☐
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☒	☐

Date : 18/7/08

 Signature : Thomas Sheppard (Inspected)

Basic Information
Borehole Name/Number: **Yabba Community Bore**
 Landowner : Dean Anderson
 Farm or Property Name : Yabba
 Postal Address : 'Yabba' 852 Ryals Rd, Wandoan, Q 4419

 Contact Details :
 Telephone (H) : 46283272
 Mobile No: _____

 Borehole Coordinates :
 Eastings : 149° 41' 16.6"
 Southings : 26° 01' 26.8"
 Elevation : m _____

 Landholder Comments/Issues :
 Drilled in 1982. Nest=40x20x3. Dean been here for 2.5 years. _____
 Send letter re permission. (Hutton sandstone formation?)



Borehole and Groundwater questionnaire
 (Please tick relevant boxes)

No	Description	Yes	No
1	Do you have a borehole ? RN 58850	☒	☐
1.1	Is it registered with DNRW? If Yes, what is the registered number?	☒	☐
1.2	Is it a community bore? If Yes, who are the current users (include proportion of use if known)? Elimatta (Anderson, Roy); Yurol (Cann, Max and Kellie); Summer Hill (Adams, Robert); Retreat (Thornton, B + L); Wallangra (Hodkinson, Joyce); X-Strata. One holder has 2 shares.	☒	☐

2	Borehole status - Select one	
2.1	In use	☒
2.2	Not in use	☐
2.3	Collapsed / destroyed	☐
2.4	Sealed / closed up	☐

3	Borehole equipped with a pump ?	☒	☐
	Pump type :		
3.1	Submersible pump (Motor & pump located inside borehole)	☒	☐
3.2	Line shaft pump (Motor located on surface - pipes down hole)	☐	☐
3.3	Windmill	☐	☐

4	Daily abstraction volume if known ?	07-08, 35.47ML
	If not known - please supply estimate	
4.1	Less than 10 000 litres	☐
4.2	Between 10 000 and 50 000 litres / day	☐
4.3	Between 50 000 to 100 000 litres / day	☐
4.4	More than 100 000 litres / day	☐

5	Borehole usage - indicate if multiple use	
5.1	Irrigation	☐
5.2	Stock Watering	☒
5.3	Domestic / household useage	☒
5.4	Other :	☐

No	Description	Yes	No
6	Borehole details		
6.1	Do you have any borehole records ? Get a copy if possible If no records available, do you recall any of the following	☒	☐
6.2	Depth of borehole (m)	1247	
6.3	Borehole construction details		
	Has borehole been cased / or a sleeve installed	☒	☐
6.4	What type of sleeve / casing installed		
	uPVC	☒	
	Steel	☐	
	Total length of casing	210	
6.5	Water level below ground level (m)	17	
	Measured (note meterage) or	☐	
	Guessed (note meterage)	☒	
	Unknown (note meterage)	☐	
6.6	Depth at which water was struck (meters below ground level)	?	
6.7	Did the borehole ever overflow - artesian	☒	☐
6.8	Airlift yield measured at the time of drilling (l/s)	5500L/hr	

No	Description	Yes	No
	Permission to access property to carry out the following :		
7	Would you allow for the borehole to be yield tested	☐	☒
8	Would you allow for the borehole to be included into a monitoring program which will involve the borehole being visited periodically to collect water samples and record water levels.	☐	☒

Date : 21/7/08 _____

Signature : Thomas Sheppard (Inspected) _____

Attachment D

Listing of all drill holes considered in
technical study

RN	INFO SOURCE	DRILLED DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
4461	DNRW (not found)	6/10/1942	782982	7105731	240							
8428	DNRW (not found)	1/01/2100	790854	7103432	250							
8432	DNRW	12/12/1940	217313	7117749	370							
8437	DNRW	1/01/1940	215712	7124830	285							
8438	DNRW	1/01/1948	217321	7122524	285							
8439	DNRW	1/01/1940	211544	7126987	285							
8444	DNRW	1/01/1950	204004	7130392	290							
10372	DNRW	12/12/1944	787859	7128971	250		BIRKHEAD FORMATION	18.3				
10458	DNRW	1/01/2100	793021	7089860	350							
10459	DNRW (not found)	1/04/1956	781317	7104597	302							
10460	DNRW	12/12/1949	790693	7119884	250							
10463	DNRW	12/12/1937	207293	7115372	333							
10464	DNRW	18/12/1975	215424	7111240	354							
10466	DNRW	12/12/1942	203879	7124844	350							
10471	DNRW	12/12/1940	793971	7128312	250		BIRKHEAD FORMATION	0				
10479	DNRW (not found)	12/12/1945	797350	7106704	243.6	598	EUROMBAH FORMATION	12.19		32		
10546	DNRW	22/09/1945	797802	7128965	450			24.4	25.6			
10585	DNRW	1/02/1975	216256	7117757	356							
10587	DNRW	12/12/1945	215342	7095992	375							
10588	DNRW	1/01/1945	212610	7093899	348							
10596	DNRW	12/12/1940	788879	7127224	251		BIRKHEAD FORMATION	0				
10662	DNRW	24/06/1946	765947	7088383	375							
10663	DNRW	24/06/1946	767065	7090115	375							
10722	DNRW	6/07/1949	202891	7123405	262	295	HUTTON FORMATION	207	212			
10807	DNRW	12/12/1946	215733	7116206	373	85	INJUNECKGP	82	85			
10808	DNRW	12/12/1946	205620	7117984	315							
10809	DNRW	20/03/1946	209128	7101768	300	187	INJUNE CREEK GROUP	129	129			
10810	DNRW	1/01/1947	218287	7098520	250							
10848	DNRW	24/12/1947	204895	7081465	420	62	ORALLO FORMATION	55	62			
10886	DNRW	24/07/1947	208056	7106180	338	324	BIRKHEAD FORMATION	298	306			
10994	DNRW	26/05/1948	799430	7083644	350							
11064	DNRW	30/09/1947	200470	7102341	450	100	INJUNE CREEK GROUP	12	25			
11175	DNRW	22/08/1948	215295	7123558	365	270	BIRKHEAD FORMATION					
11176	DNRW	1/01/1948	214837	7125396	365							
11425	DNRW	1/01/1948	796710	7123784	257			19.8				
11434	DNRW	16/05/1949	792099	7128015	250		BIRKHEAD FORMATION	21				
11491	DNRW	28/03/1949	797054	7082929	350	199	ORALLO FORMATION	180	199			
11560	DNRW	31/12/1950	789508	7117908	255	611	HUTTON SANDSTONE	606	611			
11575	DNRW	24/03/1950	215668	7101389	350	149		145	149			
11600	DNRW	6/09/1949	791179	7083310	355	97	ORALLO FORMATION	85	97			
11605	DNRW	30/12/1949	208487	7117987	315	213	HUTTON SANDSTONE	28	28			
12072	DNRW	10/10/1952	795033	7085594	342.8	112.5	DONCASTER MEMBER	111.3	112.5			
12118	DNRW	1/11/1952	209229	7122131	285	350			344	350		
12382	DNRW	18/08/1953	202699	7121645	290	148	INJUNE CREEK GROUP	140	148			
12550	DNRW	1/11/1953	766241	7083819	398	78	MOOGA	69	78			
12627	DNRW	11/05/1954	797789	7127178	257	256	BIRKHEAD FORMATION	72.5	73.4			
12712	DNRW	20/03/1954	787050	7093598	300	228	INJUNE CREEK GROUP	219	228			
12713	DNRW	5/08/1949	788675	7092977	300	99	INJUNE CREEK GROUP	94	99			
12763	DNRW (verified, relocated)	7/09/1954	795570	7105451	350	134	INJUNE CREEK GROUP	101	106			
12904	DNRW	10/11/1955	782007	7086502	300	32	GUBBAMUNDA	25	32			
13041	DNRW	1/01/1955	798595	7124634	237	276.7	BIRKHEAD FORMATION	37.8	38.1			
13060	DNRW	30/11/1955	794166	7124580	242	271.5	BIRKHEAD FORMATION	25	28			
13218	DNRW	30/08/1956	798377	7078925	400							
13831	DNRW	15/12/1958	202159	7102626	286	24	INJUNE CREEK GROUP	21	24			
13856	DNRW	8/07/1958	795476	7109889	250							
13884	DNRW	2/06/1958	783785	7097952	350	166		162	166			
14192	DNRW	1/07/1960	785760	7088021	300							
14193	DNRW	1/07/1960	787364	7087739	300							
14247	DNRW	1/08/1960	208442	7119988	310							
14248	DNRW	1/06/1953	212810	7121347	300	297	HUTTON FORMATION	195	224			
14249	DNRW	1/01/1956	210028	7122549	300							
14250	DNRW	2/11/1958	209823	7117955	300	67	INJUNE CREEK GROUP	45	48			
14454	DNRW	18/08/1960	763237	7090255	350	103	GUBBAMUNDA	48	49			
14455	DNRW	1/11/1960	762977	7092509	300							
14456	DNRW	1/11/1960	764870	7091392	350							
14538	DNRW	1/01/1961	206946	7130889	250							
14539	DNRW	5/03/1961	762165	7086705	250	94	ORALLO FORMATION	92	94			
14596	DNRW	15/11/1960	762910	7122166	253		BIRKHEAD FORMATION	0				
14631	DNRW	1/01/1961	763861	7118297	250							
14632	DNRW	1/01/1961	762190	7115406	250							
14652	DNRW	11/03/1961	798169	7114509	300							
14654	DNRW	2/05/1961	208960	7116734	300	189	HUTTON	24	48			
14743	DNRW (not found)	17/07/1957	784054	7109003	250	30	INJUNE CREEK GROUP	25	30			
14744	DNRW	31/07/1958	783781	7113044	250	73	INJUNE CREEK GROUP	67	73			
14889	DNRW	1/01/1937	767668	7127551	345		BIRKHEAD FORMATION	0				
14986	DNRW	21/11/1961	205145	7129216	280	30	INJUNE CREEK GROUP	29	30			
15117	DNRW	17/10/1962	769078	7088133	550	91	ORALLO	86	91			
15189	DNRW	21/06/1962	792672	7087958	350	26	ORALLO	17	26			
15371	DNRW	16/11/1962	790952	7084332	350	172	ORALLO	164	172			
15487	DNRW	5/03/1963	201820	7127200	350	599	HUTTON	544	599			
15498	DNRW	20/02/1963	772099	7094507	350	82	GUBBAMUNDA	60	82			
15499	DNRW	4/03/1963	769071	7095771	350	67	GUBBAMUNDA	51	67			
15500	DNRW	29/11/1962	785119	7084123	350	85	GUBBERAMUNDA SANDSTONE	45	48			
15501	DNRW	18/12/1962	786283	7085329	350	75	ORALLOFNM	67	75			
15508	DNRW	17/05/1963	209305	7092624	300	539	HUTTON SANDSTONE	137	140			
15558	DNRW	14/03/1963	769500	7092374	350	100	GUBBAMUNDA	86	100			
15560	DNRW	1/01/1946	216052	7092712	350							
15561	DNRW	1/01/1946	216337	7092410	350							
15565	DNRW	1/01/1956	215572	7101942	350							
15568	DNRW	1/01/1955	213317	7097087	350							
15674	DNRW	7/11/1963	217180	7113650	300	195	INJUNE CREEK GROUP	184	195			
15711	DNRW	15/01/1964	784344	7123566	248		BIRKHEAD FORMATION	32				
15722	DNRW	1/01/1964	215664	7109151	360							
15761	DNRW	5/03/1964	777189	7115681	250	36	INJUNE CREEK GROUP	33	36			
15765	DNRW	5/02/1964	786111	7125437	250	85.3	BIRKHEAD FORMATION	62.5	67.1		8130	
15779	DNRW	22/12/1963	777937	7123395	270		BIRKHEAD FORMATION	165.2				
15780	DNRW	5/01/1964	776854	7124835	255		BIRKHEAD FORMATION	103.6			2420	
15781	DNRW	29/01/1964	781086	7124837	250	140.2	BIRKHEAD FORMATION	54.9				
15785	DNRW	10/03/1964	214106	7115524	340	157	HUTTON	27	30			
15793	DNRW (not found)	27/01/1965	796077	7106979	270	674	HUTTON SANDSTONE	56.4	57.9			
15802	DNRW	29/04/1964	793428	7116496	200							
15828	DNRW	4/04/1964	783805	7112859	300	125	INJUNE CREEK GROUP	122	125			
15831	DNRW	18/02/1964	781592	7122455	250	170.6	BIRKHEAD FORMATION	117.3	120.3			
15835	DNRW	1/04/1964	797584	7091450	350	164	INJUNE CREEK GROUP	160	164			
15836	DNRW	23/02/1964	787079	7122613	250	196.6	BIRKHEAD FORMATION	88.4	91.4			
15838	DNRW	26/04/1964	770384	7122937	250	147	BIRKHEAD FORMATION	102	103			
15854	DNRW	1/05/1964	776103	7122202	250	164.6	BIRKHEAD FORMATION	160.9	164.6			
15855	DNRW	1/05/1964	783315	7112069	250	132	INJUNE CREEK GROUP	129	132			
15856	DNRW	1/05/1964	769816	7110261	300	243	INJUNE CREEK GROUP	239	243			
15857	DNRW	1/05/1964	786529	7124195	250	110.4	BIRKHEAD FORMATION	106.7	110.4			
15888	DNRW	1/03/1964	796116	7096505	350	1163	PRECIPICE	1118	1163			
15889	DNRW	1/03/1964	796989	7094575	350	133	INJUNE CREEK GROUP	128	133			
15892	DNRW	30/09/1964	778990	7114041	250	15	INJUNE CREEK GROUP	10	15			
15967	DNRW	28/07/1964	760184	7099596	300	109	INJUNE CREEK GROUP	108	109			
16040	DNRW	2/11/1964										

RN	INFO SOURCE	DRILLED DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
16135	DNRW	30/06/1964	764241	7105479	300	152	INJUNE CREEK GROUP	146	152			
16191	DNRW	9/02/1965	771489	7118263	250	21	INJUNE CREEK GROUP	18	21			
16285	DNRW	10/06/1965	209156	7098041	320	104	INJUNE CREEK GROUP	102	104			
16298	DNRW	7/06/1965	766590	7110235	300	90	SPRINGBOK FORMATION	87	90			
16312	DNRW	1/09/1965	199831	7118006	250	1415	CLEMATIS					
16537	DNRW	16/12/1967	771838	7104583	300			1354	1375			
16661	DNRW	22/09/1966	200495	7124275	300	305	HUTTON FORMATION	164	166			
16789	DNRW	26/12/1966	768973	7108492	350	205	INJUNE CREEK GROUP	203	205			
16791	DNRW	4/12/1965	767921	7101985	350							
16882	DNRW (not found)	1/04/1965	779489	7104913	300	277	INJUNE CREEK GROUP	253	277			
17110	DNRW	28/02/1967	214594	7117382	370	372	HUTTON FORMATION	103	109			
17306	DNRW	16/09/1967	210092	7108381	360	411	HUTTON FORMATION	151	158			
17456	DNRW	2/07/1967	772271	7092101	350	65	ALLUVIUM	63	65			
17457	DNRW	5/07/1967	775961	7089374	350	78	GUBBERAMUNDA SANDSTONE	74	78			
17461	DNRW	8/07/1967	205205	7093393	350	47	INJUNE CREEK GROUP	42	47			
17462	DNRW	3/07/1967	205072	7090679	330	96	INJUNE CREEK GROUP	93	96			
17579	DNRW	29/06/1967	796753	7091562	300							
17580	DNRW	29/07/1967	797927	7093075	300							
17594	DNRW	10/08/1967	201159	7092961								
17595	DNRW	9/08/1967	201160	7092931								
17716	DNRW	29/06/1967	206253	7091261	330							
17717	DNRW	29/06/1967	207168	7088910	330							
17753	DNRW	13/11/1967	769829	7122980	250		BIRKHEAD FORMATION	54.9	55.8			
17799	DNRW (not found)	15/12/1967	786377	7121057	250	21	INJUNE CREEK GROUP	19	21			
17800	DNRW	25/01/1968	785695	7121719	250	65	INJUNE CK GROUP	63	65			
18061	DNRW (not found)	29/07/1968	784465	7109980	250	199	INJUNE CK GROUP	198	199			
18138	DNRW	18/11/1968	767063	7083309	400	130	ORALLO FORMATION	128	130			
18197	DNRW	15/03/1969	778951	7129164	250	125.3	BIRKHEAD FORMATION	53.3	53.9			
18239	DNRW	1/05/1964	204131	7102702	300							
18392	DNRW	8/12/1971	200726	7080506	350							
19025	DNRW	1/01/1934	207081	7092727	303							
19048	DNRW	1/01/1949	210258	7116095	300	237.8	INJUNE CREEK GROUP	237	237.8			
22117	DNRW (verified, relocated)	21/06/1962	789805	7101840	292							
22126	DNRW	6/10/1962	207660	7121223	327.5							
22343	DNRW	30/09/1964	794266	7079872	442.2							
22371	DNRW	24/11/1964	204097	7110486	302.2							
22392	DNRW	6/01/1965	791732	7091882	338.5							
22541	DNRW	19/06/1966	211885	7105116	317.8							
22654	DNRW	14/11/1969	770964	7087934	395.5							
23147	DNRW	17/11/1983	206872	7130542	340							
23172	DNRW	25/01/1982	791321	7091860	341.7							
23177	DNRW	9/02/1983	207646	7126834	300.5							
23509	DNRW	27/11/1985	791257	7098668	300							
24934	DNRW	1/01/1939	770470	7094972	300							
26292	DNRW	1/01/1964	792183	7125549	250							
26300	DNRW	7/04/1973	769512	7106325	350							
26371	DNRW	1/01/1965	778140	7119849	400							
26385	DNRW	1/01/1967	204618	7089899	330							
26386	DNRW	1/01/1967	206023	7091625	330							
26398	DNRW (not found)	1/01/1965	797794	7102997	350							
26429	DNRW	1/01/1964	776605	7126195	300							
26482	DNRW		791541	7084596	340							
30553	DNRW	30/08/1969	763805	7099052	450	35	WALLOON CM	2	35			
30650	DNRW	21/11/1969	217692	7116988	300	181	INJUNE CK GROUP	170	181			
30681	DNRW	5/07/1970	208536	7113403	300	413	HUTTON FORMATION	42	61			
31331	DNRW (not found)	1/03/1969	784432	7108471	300	26	INJUNE CK GROUP	25	26			
32880	DNRW	7/08/1969	786183	7093340	350	63	GUBBERAMUN	14	25			
33286	DNRW	28/08/1969	766208	7094321	300	66	WALLOON CM	44	66			
33435	DNRW	8/09/1969	761713	7105561	250	85	INJUNE CK GROUP	78	85			
33438	DNRW	1/09/1969	218272	7109454	350							
33443	DNRW	30/09/1969	787076	7089778	300	99	ORALLO FM	98	99			
33486	DNRW	23/05/1971	200988	7081190	350	101	INJUNE CK	29	30			
33567	DNRW	17/08/1969	790025	7090020	300	208	INJUNE CK	205	208			
33807	DNRW	18/04/1972	775961	7119433	250							
34542	DNRW	22/02/1971	777971	7084741	350	125	MOOGA SST	117	125			
34581	DNRW	20/07/1970	781061	7094069	300							
34708	DNRW	14/01/1970	766592	7110327	350	167	BIRKHEAD FORMATION	132	132			
34709	DNRW	10/01/1970	767306	7108527	300	137	INJUNE CK GROUP	135	137			
34718	DNRW (verified, relocated)	7/02/1970	773331	7109479	300	62	INJUNE CK GROUP	62	62			
34823	DNRW	21/02/1970	792589	7087960	340	70	GUBBAMUNDA	42	45			
34929	DNRW (verified, relocated)	30/01/1970	770047	7112012	300	57	INJUNE CK	51	57			
34951	DNRW	21/02/1970	766223	7122253	250		BIRKHEAD FORMATION	0				
35051	DNRW	13/05/1970	791537	7085674	340	19	GUBBAMUNDA	18	19			
35600	DNRW	25/07/1970	778412	7080728	400	114	SANDSTONE	103	114			
35842	DNRW	14/07/1970	763565	7100904	300	36	WALLOON CM	35	36			
35966	DNRW	15/07/1970	782230	7089115	300	48	BIRKHEAD FORMATION	47	48			
36342	DNRW	16/07/1973	765205	7113220	250							
36363	DNRW	28/09/1970	765357	7093476	300	86	GUBBAMUNDA	44	57			
36731	DNRW	13/04/1971	204632	7103915	300							
37479	DNRW	16/05/1973	763605	7102905	400	90	WALLOON CM	76	90			
37555	DNRW	18/12/1971	212879	7089315	350	82.9	INJUNE CREEK GROUP	82.3	82.9			
37611	DNRW	1/01/1970	205169	7092530	300	4	ALLUVIUM	3	4			
38337	DNRW	30/06/1972	205440	7129716	300	89	HUTTON FORMATION	41	57			
38573	DNRW	10/11/1972	217677	7097152	350	19	INJUNE CK GROUP	18	19			
43069	DNRW	18/05/1973	766471	7080211	400	335	GUBBAMUNDA	111	117			
43339	DNRW		793913	7085158	350	58	BUNGIL	52	58			
43380	DNRW	8/12/1972	772057	7121733	250		BIRKHEAD FORMATION	0				
43482	DNRW	6/03/1973	778359	7094989	300	25	GUBBERAMUNDA SANDSTO	21	25			
43483	DNRW	8/03/1973	786757	7079189	350	85	INJUNE CK GROUP	82	85			
43507	DNRW	5/03/1973	772550	7090863	300	115	GUBBAMUNDA	59	68			
43540	DNRW	30/04/1973	203587	7088828	350	8	ALLUVIUM	3	8			
43772	DNRW (verified, relocated)	3/05/1973	798263	7100460	300	61	INJUNE CK GROUP	57	61			
43802	DNRW	18/05/1973	765856	7081301	400							
43869	DNRW	3/08/1973	786180	7083176	300	102	GUBBERAMUNDA SANDSTONE	100	102			
43870	DNRW	7/05/1973	205718	7091618	300	11	ALLUVIUM	4	11			
43986	DNRW	24/07/1973	789603	7086056	350	87	GUBBERAMUNDA SANDST.	61	69			
44000	DNRW	2/08/1973	792581	7099912	350							
44001	DNRW	10/10/1973	786936	7083467	350	56	ORALLO FORMATION	54	56			
44006	DNRW	29/07/1951	783996	7092403	300							
44040	DNRW	26/07/1973	785822	7090822	300	73	ORALLO FORMATION	71	73			
44041	DNRW	25/07/1973	788226	7090276	300	51	ORALLO FORMATION	42	51			
44042	DNRW	18/07/1973	778337	7090124	350	131	GUBBAMUNDA	125	131			
44044	DNRW	7/08/1973	200992	7102600	300	47	INJUNE CK GROUP	45	47			
44097	DNRW (verified, relocated)	1/01/1973	796993	7100798	300	64	INJUNE CK GROUP	61	64			
44168	DNRW	1/01/1973	789633	7087411	300	67	GUBBERAMUNDA SANDST.	57	67			
44214	DNRW	1/01/1920	204849	7094371	350							
44215	DNRW	9/08/1973	207182	7089495	350							
44216	DNRW	9/08/1973	208317	7088443	350							
44217	DNRW	9/08/1973	207196	7088879	350							
44246	DNRW	7/10/1973	764476	7117053	250	19	INJUNE CK GROUP	18	19			
44270	DNRW	1/01/1934	206155	7091936	350							

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44277	DNRW	4/08/1973	783920	7088924	300	58	ORALLO FORMATION	57	58			
44278	DNRW	1/11/1973	783786	7087956	300	50	ORALLO FORMATION	43	50			
44279	DNRW	8/08/1973	779694	7089940	400	77	GUBBMUNDA	52	77			
44280	DNRW	1/11/1973	780798	7088376	350	106	GUBBMUNDA	45	106			
44324	DNRW	1/03/1974	782393	7085138	300	25	MOOGA SST	24	25			
44572	DNRW	1/12/1973	779097	7086719	300							
44573	DNRW	1/12/1973	781282	7086364	300							
44574	DNRW	12/12/1973	781242	7083284	300							
44605	DNRW	11/12/1973	766313	7113012	250	78	INJUNE CK	72	78			
44677	DNRW	1/02/1974	779049	7084533	350							
44699	DNRW	26/04/1974	770463	7098606	350	66	INJUNE CK	60	66			
44708	DNRW	1/01/1974	206037	7091009	300							
44709	DNRW	1/01/1974	206537	7089789	300							
44712	DNRW	22/03/1974	790293	7090815	350							
44713	DNRW	24/07/1973	789418	7088956	300							
48806	DNRW	22/04/1974	765903	7099748	350	140	SPRINGBOK SANDSTONE	134	140			
48807	DNRW	1/12/1973	208327	7087981	350	5	ALLUVIUM	2	5			
48811	DNRW	11/05/1974	779984	7127971	250	194.1	BIRKHEAD FORMATION	35.1	35.7			
48813	DNRW	18/09/1973	206025	7091533	300	5	ALLUVIUM	3	5			
48814	DNRW	7/03/1974	206281	7091261	300	5	ALLUVIUM	3	5			
48815	DNRW	1/01/1968	206683	7089484	300	5	ALLUVIUM	3	5			
48817	DNRW	29/03/1974	789022	7089889	300	65	ORALLO FORMATION	61	65			
48818	DNRW	28/03/1974	784332	7089993	300	26	ALLUVIUM	22	26			
48835	DNRW	14/01/1975	786208	7081943	350	137	GUBBERAMUN	102	137			
48836	DNRW	31/08/1945	786709	7084519	350	91	GUBBERAMUN	48	50			
48837	DNRW	15/03/1945	786831	7086241	350	40	GUBBERAMUN	30	40			
48841	DNRW (verified, relocated)	1/03/1950	789688	7124804	250		BIRKHEAD FORMATION	0				
48848	DNRW	1/01/1975	767405	7086413	400							
48852	DNRW	8/01/1976	205185	7082118	350	704	HUTTON SANDSTONE	370	377			
48855	DNRW	1/10/1975	769987	7083833	400							
48861	DNRW	14/10/1975	204628	7093134	300	7	ALLUVIUM	6	7			
48863	DNRW	11/02/1976	212619	7101014	350	817	CLEMATIS	780	817			
48914	DNRW	1/01/1962	205644	7121896	300							
48942	DNRW	15/01/1980	781003	7123576	400							
48944	DNRW	1/02/1979	763784	7084455	400							
48950	DNRW	14/09/1979	207257	7087402	350	633	HUTTON FORMATION	510	513			
48958	DNRW	21/11/1979	765803	7088170	400							
48965	DNRW	1/01/1979	765930	7105167	400	201	INJUNE CK	200	201			
48995	DNRW	1/12/1950	770157	7090605	350							
48996	DNRW	1/12/1950	774425	7090238	300							
48997	DNRW	1/12/1950	776909	7090832	300							
48998	DNRW	1/12/1950	771091	7088799	350							
48999	DNRW	31/12/1980	761254	7096578	300	91	BLYTHDALE	70	91			
58005	DNRW	31/05/1981	778387	7130161	250	164	BIRKHEAD FORMATION	59	68			
58006	DNRW	30/07/1980	778818	7086664	300	67	ORALLO FORMATION	66	67			
58007	DNRW	1/03/1973	792650	7084540	350	37	BUNGIL	35	37			
58009	DNRW	1/06/1980	775800	7100064	373	11	ALLUVIUM	9	11			
58010	DNRW	1/01/1980	795950	7080798	350							
58011	DNRW	1/01/1980	793818	7083618	350							
58020	DNRW	1/01/1964	200068	7104119	300							
58024	DNRW	1/11/1981	214897	7103559	355	378	HUTTON FORMATION	113	114			
58028	DNRW		783143	7081395	350							
58063	DNRW		201219	7093979								
58064	DNRW	4/04/1982	765955	7122751	250	51	INJUNE CK GROUP	49	51			
58075	DNRW		793729	7088058	350							
58079	DNRW	9/06/1982	768179	7115838	250	58	INJUNE CK GROUP	52	58			
58128	DNRW	2/06/1983	208174	7088594	350	11	ALLUVIUM	6	11			
58129	DNRW (verified, relocated)	6/02/1983	783 710	7 109 458	300	17	INJUNE CK GROUP	15	17			
58133	DNRW	6/07/1983	782141	7111871	250	670	HUTTON FORMATION	611	619			
58135	DNRW	1/01/1965	773557	7087300	350							
58145	DNRW	1/01/1959	774895	7084961	350							
58157	DNRW	12/12/1954	776064	7081210	300							
58213	DNRW	8/10/1985	203734	7114060	340	426.8	HUTTON FORMATION	268	426.8			
58216	DNRW	22/10/1985	798905	7129710	450	196	BIRKHEAD FORMATION	82	196			
58217	DNRW	5/09/1985	204920	7102227	300							
58232	DNRW	19/04/1986	797553	7114339	300	555.7	HUTTON FORMATION	161.6	167.7			
58234	DNRW	27/03/1986	216695	7105262	400	260	EUROMBAH FORMATION	254	260			
58244	DNRW	23/05/1986	782467	7087262	300	11	ORALLO FORMATION	10	11			
58252	DNRW	16/08/1986	770642	7080678	350	85.4	COREENA	61.9	65.6			
58259	DNRW (not found)	16/07/1986	792867	7106435	350	81	BIRKHEAD FORMATION	32	37			
58265	DNRW	14/11/1987	799011	7120928	250	312.9	HUTTON	61	62.2			
58274	DNRW	14/11/2003	797731	7082414								
58276	DNRW	17/11/2003	790844	7082024								
58294	DNRW	10/04/1987	787085	7093936	300	313.9	BIRKHEAD FORMATION	182.9	185.9			
58297	DNRW	7/04/1987	769957	7115709	250	146	BIRKHEAD FORMATION	35.9	36.6			
58300	DNRW	7/04/1987	217993	7091615	300	108	BIRKHEAD FORMATION	54	56			
58302	DNRW	30/03/1987	768587	7126208	350	66	INJUNE CREEK GROU	65	66			
58306	DNRW	30/08/1987	761758	7131366	245	474	BIRKHEAD FORMATION	86	98			
58307	DNRW	24/05/1987	781819	7081732	300	131	WALLOON COAL	87.5	131			
58309	DNRW	7/06/1987	765351	7093169	300	41.4	INJUNE CK GROUP	35.3	41.4			
58313	DNRW	4/07/1987	218035	7092494	300	353	HUTTON FORMATION	56	66			
58316	DNRW		206137	7091474	350							
58317	DNRW	2/05/1987	787086	7121658	250	11	ALLUVIUM	8	11			
58318	DNRW		204186	7086963	330	8.5	ALLUVIUM		8.5			
58319	DNRW	8/10/1987	206248	7091476	350			6.4				
58326	DNRW	1/01/1988	206617	7089944	350							
58335	DNRW	17/02/1988	218512	7089439	355	422	HUTTON SANDSTONE	288	422			
58372	DNRW	1/01/1989	761259	7083089	400							
58377	DNRW	10/08/1989	795328	7116854	300	670	HUTTON SANDSTONE	104				
58409	DNRW	30/09/1989	202127	7098005	250							
58462	DNRW	15/08/1991	761763	7121881	240	620	EUROMBAH	608	620			
58473	DNRW	13/11/1991	760595	7091418	330	131	GUBBERAMUNDA	45	50			1860
58484	DNRW	30/04/1992	776963	7123416	310	775	HUTTON SANDSTONE	62	71			
58486	DNRW	31/07/1991	207456	7126773		240	SPRINGBOK	221	240			
58491	DNRW	20/02/1993	786350	7127464	250	33	INJUNE CREEK GROUP	28	33			2880
58496	DNRW	1/01/2100	788461	7083433	380							
58519	DNRW	14/10/1992	205006	7093604	290							
58536	DNRW	1/02/1993	208432	7110500	350	218	INJUNE CREEK GROUP	204	218			3570
58537	DNRW	13/02/1993	765297	7117745	250	124	BIRKHEAD FORMATION	120	124			5950
58548	DNRW		204858	7094001	350							
58609	DNRW		778002	7100356	300	24.7	INJUNE CREEK	24.4	24.7			9700
58679	DNRW (not found)		796218	7107038								
58693	DNRW		793739	7083621	350							
58786	DNRW		783996	7092403		670	PRECIPICE SANDSTONE	600	670			
58827	DNRW	25/05/2000	217013	7116133								
58836	DNRW	13/08/2000	772327	7088189								
58842	DNRW	6/03/2001	783631	7083355								
58850	DNRW (verified, relocated)	20/05/2001	770996	7117535			PRECIPICE SANDSTONE	1200		27		
58910	DNRW (not found)	15/11/2001	789028	7100167								
58929	DNRW	7/02/2002	205390	7092566								
58967	DNRW	19/12/1977	762121	7105091	300							
58969	DNRW		796090	7086864	325							
58970	DNRW		771121	7103520	295							
58973	DNRW		772614	7108416	300							
58974	DNRW		772866	7107179	300							

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58987	DNRW (not found)		779596	7109870								
58990	DNRW		780988	7128412	250							
58991	DNRW		215239	7114624								
58994	DNRW (not found)		795931	7106675	250							
58999	DNRW		781987	7094510								
100015	DNRW	18/12/1991	207649	7126829								
100140	DNRW	5/06/1993	207866	7120827								
100141	DNRW	23/06/1993	207866	7120827								
100244	DNRW	29/08/1994	207895	7120797								
100245	DNRW	30/03/1995	207695	7121008								
100303	DNRW	31/10/1995	207459	7119124	307							
100304	DNRW	11/10/1995	206273	7117434								
100305	DNRW	21/09/1995	209390	7117381								
100306	DNRW	3/09/1995	209345	7119412								
123021	DNRW	18/11/2003	788111	7080175			93 MOOGA SANDSTONE	16	31			
123082	DNRW	19/12/2006	767188	7086694			217 GUBBERAMUNDA SANDSTONE	196	217	47.18		
123143	DNRW		208488	7084892								
123150	DNRW		212854	7109593								
13030806	DNRW	4/02/2003	207524	7081771	315.69		12 ORALLO FORMATION	9	12		15390	
13030807	DNRW	4/02/2003	207515	7081768	315.2		3.8 QUATERNARY - UNDEFINED	1	3.8			
13030808	DNRW	18/02/2003	784409	7090254	291.64		10.4 GUBBERAMUNDA SANDSTONE	8	10.4		2340	
13030809	DNRW	18/02/2003	783406	7095016	286.57		40 GUBBERAMUNDA SANDSTONE	36	40		8540	
13030810	DNRW	19/02/2003	783406	7095016	286.2		9 QUATERNARY - UNDEFINED	5	9			
13030811	DNRW	19/02/2003	782635	7127633	228.2		18 BIRKHEAD FORMATION	16.75	18		2370	
Tip Road Bore	New - hydrocensus		797 471	7 107 872								
Town Bore No.1	New - hydrocensus		Under Tower Reservoir									
Town Bore No.2	New - hydrocensus		796 647	7 106 560								
Old Bore (Fitz No.1)	New - hydrocensus		785 736	7 107 273								
Old Bore (Fitz No.2)	New - hydrocensus		785 860	7 107 135								
Old Bore (Hay)	New - hydrocensus		797 961	7 103 852								
Old windmill	New - hydrocensus		798 877	7 100 778								
Phillips and Sands	New - hydrocensus		149° 42' 52.4"	25° 55' 55.4"								
Conway	New - hydrocensus		149° 39' 37.7"	25° 59' 36.0"	235	7.085				6.835		
Conway	New - hydrocensus		149° 39' 05.7"	25° 58' 48.7"	233	>100				0.029		
Anderson	New - hydrocensus		149° 38' 25.5"	26° 02' 17.8"		Blocked				8.44		
Anderson	New - hydrocensus		149° 35' 46.3"	26° 03' 53.1"		Blocked				Silted over		
Hinchley Community Bore Pty Ltd	New - hydrocensus		149° 43' 18.9"	26° 04' 45.8"		No access				No access		
NEG Holdings	New - hydrocensus		149° 42' 21"	26° 04' 56"		Not sighted				Not sighted		
NEG Holdings	New - hydrocensus		149° 41' 09.7"	26° 04' 17.4"	273	Blocked				Blocked		
Boxflat Grazing	New - hydrocensus		149° 39' 34.3"	26° 04' 37.6"	261	Blocked				7.84		
Speed	New - hydrocensus		149° 40' 55.7"	25° 57' 30.1"	244	>100				8.71		
Speed	New - hydrocensus		149° 43' 04.4"	25° 58' 27.4"	223	>100				-0.7		
Bradshaw	New - hydrocensus		149° 57' 54.9"	26° 02' 06.7"		675				55		
Erbacher	New - hydrocensus		1495013	260432	200							
Erbacher	New - hydrocensus		1494958	260458	300							
Bimbadeen water group	New - hydrocensus		757370	7123971		1206				63.5		
C0105	Xstrata	27502	788909	7110381	269.75							
C0123	Xstrata	28094	789566	7109707	273.66							
C0136	Xstrata	27503	790717	7110682	281.14							
C0146	Xstrata	27502	789802	7110992	266.81							
C0204	Xstrata	32184	795545	7105913	285							
C0205	Xstrata	27377	795759	7106751	274.89							
C0206	Xstrata	36526	794661	7107400	277							
C0207	Xstrata	36526	794511	7107890	278							
C0209	Xstrata	27379	794892	7108489	279.49							
C0210	Xstrata	36526	794541	7109410	267							
C0211	Xstrata	27379	795019	7108984	272.83							
C0214	Xstrata	36526	794111	7106306	265							
C0217	Xstrata	28039	789262	7109965	269.65							
C0220	Xstrata	27498	794629	7106443	273.73							
C0221	Xstrata	28040	790779	7109332	271.53							
C0223	Xstrata	27823	789569	7110231	265.28							
C0223F	Xstrata	27499	793799	7106888	267.25							
C0224	Xstrata	27499	794066	7107593	271.03							
C0225	Xstrata	36526	789886	7110595	267							
C0225F	Xstrata	36526	794101	7108090	261							
C0226	Xstrata	27499	794214	7108508	264							
C0227	Xstrata	27500	793703	7108655	252.35							
C0229	Xstrata	36526	793561	7108910	267							
C0248	Xstrata	28042	791284	7109724	264.21							
C0249	Xstrata	27823	790790	7110037	282.41							
C0250	Xstrata	27827	789497	7110704	261.51							
C0251	Xstrata	27824	791129	7110622	275.39							
C0252	Xstrata	36526	790326	7110380	275							
C0253	Xstrata	27826	790078	7109551	280.6							
C0254	Xstrata	36526	790017	7109894	273.65							
C0254R	Xstrata	29242	790019	7109894	273.65							
C0255	Xstrata	27824	790087	7111686	264.62							
C0257	Xstrata	27828	790933	7111101	271.79							
C0258	Xstrata	36526	790260	7110833	271.05							
C0258R	Xstrata	29242	790262	7110833	271.05							
C0259	Xstrata	27830	790181	7111201	268.01							
C0260	Xstrata	36526	790497	7111278	275.88							
C0302	Xstrata	27827	793809	7108262	252.14							
C0303	Xstrata	28046	793811	7107907	253.46							
C0304	Xstrata	29289	793419	7107761	245.55							
C0305	Xstrata	27828	793427	7108813	240.95							
C0306	Xstrata	29241	789127	7110706	264.45							
C0306F	Xstrata	27829	794016	7108670	256.49							
C0307	Xstrata	36526	794539	7108190	275							
C0308	Xstrata	36526	794561	7108575	268							
C0309	Xstrata	27831	794915	7108018	281.61							
C0311	Xstrata	27832	794316	7109262	264.08							
C0312	Xstrata	27833	794972	7107488	276.46	84						
C0313	Xstrata	27833	794595	7107482	268.91							
C0314	Xstrata	27834	794270	7107743	269.82	48						
C0316	Xstrata	27835	794457	7106129	267.35	54						
C0317	Xstrata	27835	793824	7106419	262.49							
C0319	Xstrata	29240	789450	7112490	250.41							
C0320	Xstrata	27853	795153	7107196	280.22							
C0321	Xstrata	27854	795519	7106945	283.43	50						
C0322	Xstrata	28068	790911	7111899	260.58	80.7						
C0322F	Xstrata	27854	794250	7106576	268.06							
C0324	Xstrata	27855	794258	7106994	268.65	117						
C0330	Xstrata	29569	789391	7110335	265.55	120						
C0332	Xstrata	29241	789735	7111738	254.38							
C0333	Xstrata	29240	789143	7111266	263.61							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
C0335	Xstrata	37174	790382	7111995	254.2	69						
C0338	Xstrata	28114	791324	7112123	256.46							
C0339	Xstrata	28101	791743	7112021	254.49	129						
C0340	Xstrata	28041	795074	7106693	277.2							
C0345	Xstrata	28102	791207	7111857	263.76							
C0355	Xstrata	28043	793976	7108196	259.95							
C0474	Xstrata	37174	784577	7108785	269.26							
C0488	Xstrata	29182	785307	7109526	247.17	81						
C0489	Xstrata	28954	785172	7108689	267.28	42						
C0491	Xstrata	28941	786022	7107798	244.17	96						
C0492	Xstrata	28939	786047	7106904	245	84						
C0494	Xstrata	28877	787644	7109017	241	36						
C0499	Xstrata	37174	789780	7105461	287.18	96						
C0501	Xstrata	28467	788353	7106084	260.2	120						
C0505	Xstrata	28809	786837	7104977	267.07							
C0506	Xstrata	28971	785788	7105492	247.89	103						
C0507	Xstrata	28970	784820	7107245	263.98	37						
C0510	Xstrata	37174	788156	7105383	254.22							
C0511	Xstrata	28465	788916	7105281	267.72							
C0513	Xstrata	28760	788389	7103524	269.93							
C0514	Xstrata	28899	787459	7103276	258.14							
C0521	Xstrata	37174	790539	7107339	284.94							
C0522	Xstrata	29165	790745	7106062	279.32							
C0527	Xstrata	28461	790020	7106581	284.23							
C0528	Xstrata	28467	789530	7105902	278.15							
C0530	Xstrata	28635	790225	7107821	289.73							
C0532	Xstrata	37174	790099	7107040	284.88							
C0536	Xstrata	28808	791007	7107670	278.9							
C0538	Xstrata	28809	785882	7106058	246.13							
C0539	Xstrata	28893	786629	7107943	242.7							
C0541	Xstrata	28969	787494	7108208	240.77							
C0543	Xstrata	28898	785601	7106509	246.45							
C0544	Xstrata	37174	784904	7104999	247.25							
C0545	Xstrata	28812	785721	7104882	248.26							
C0549	Xstrata	37174	786539	7107169	243.9							
C0551	Xstrata	28631	788021	7106945	248.94							
C0553	Xstrata	28953	786993	7105506	265.58							
C0554	Xstrata	37174	786255	7105640	264.55							
C0555	Xstrata	28635	787457	7105764	263.84							
C0556	Xstrata	28462	788786	7106363	262.53							
C0557	Xstrata	37174	789259	7106759	275.44							
C0560	Xstrata	29196	789290	7105136	277.71							
C0563	Xstrata	28465	788600	7105721	261.26							
C0567	Xstrata	28464	788458	7104989	263.85							
C0569	Xstrata	28465	788105	7104739	257.32							
C0571	Xstrata	28467	787658	7105221	267.8							
C0573	Xstrata	29165	787295	7104901	272.16							
C0574	Xstrata	28467	787874	7105736	253.2							
C0575	Xstrata	28468	788712	7105963	265.1							
C0603	Xstrata	28951	786117	7104844	256.34							
C0608	Xstrata	28894	785384	7107413	245.38							
C0611	Xstrata	28875	785578	7108525	256.05							
C0612	Xstrata	28967	786341	7108434	248.25							
C0616	Xstrata	37174	790336	7106149	289.68							
C0617	Xstrata	37174	790283	7105727	285.38							
C0620	Xstrata	29174	788018	7106555	249.21							
C0622	Xstrata	37174	787538	7106208	254.24							
C0629	Xstrata	37174	789728	7107067	277.31							
C0630	Xstrata	28902	788728	7104458	268.80							
C0632	Xstrata	28634	787930	7104618	259.21							
C0636	Xstrata	28903	788301.3	7104114	267.6							
C0637	Xstrata	28904	787814.3	7103810	271.5							
C0638	Xstrata	28624	787417	7103904	267.1							
C0639	Xstrata	27895	787152	7104349	274.34							
C0641	Xstrata	37174	789984	7106193	283.86							
C0644	Xstrata	37174	788899	7104827	269.21							
C0645	Xstrata	37174	786021	7108860	254.44							
C0648	Xstrata	28964	786734	7108723	241.08							
C0649	Xstrata	37174	786534	7109561	239.43							
C0652	Xstrata	37174	786778	7106330	255.58							
C0655	Xstrata	28979	786950	7107417	243.07							
C0656	Xstrata	28627	787361	7107368	242.42							
C0657	Xstrata	37174	786428	7106774	245.6							
C0660	Xstrata	28872	785840	7109785	241.38							
C0661	Xstrata	28965	785880	7110217	237.73							
C0665	Xstrata	28966	785396	7110208	244.8							
C0670	Xstrata	28949	788251	7107296	253.61	138						
C0674	Xstrata	28688	790228	7110777	272							
C0977	Xstrata	29175	785214	7106911	243.4	120						
C0987	Xstrata	29198	787921	7108561	247.22							
C0997	Xstrata	29197	787069	7108311	241.2	128.5						
C1005	Xstrata	29170	785123	7105828	248.78	90.36						
C1006	Xstrata	29172	785120	7106159	248.3							
C1020	Xstrata	29183	787142	7109126	239.58							
C1023	Xstrata	29168	783804	7105161	250.55							
C1025	Xstrata	29166	783964	7106719	251.21	102.43						
C1044	Xstrata	29240	789840	7112400	246.57							
C1498	Xstrata	29522	790470	7109778	284.2							
C2181	Xstrata	30763	790644	7110398	284.1	162						
C2182	Xstrata	30763	791084	7110593	276							
C2608	Xstrata	28042	790499	7111278	275.88	144						
C2721	Xstrata	30132	791194	7110678	275.42							
C351R	Xstrata	29242	790613	7111569	271.7	102.11						
C355R	Xstrata	29243	791157	7110838	269.31							
C4042	Xstrata	30844	789464	7110950	260	156						
C4043	Xstrata	30946	791024	7111373	273.4	96.43						
C4045	Xstrata	30947	789289	7111491	260.34							
C4047	Xstrata	30951	792032	7111884	254.8							
C4048	Xstrata	30950	790674	7111838	265							
C4049	Xstrata	30953	789879	7110603	267							
C4051	Xstrata	30905	791049	7110143	274.3							
C4052	Xstrata	30915	790944	7109753	272							
C4053	Xstrata	30915	790394	7109153	275							
C4054	Xstrata	30925	789804	7109370	281.33							
C4055	Xstrata	30961	789269	7109598	275							
C4056	Xstrata	30960	787687	7105415	262.58	102.04						
C4057	Xstrata	30962	786107	7107235	246							
C4058	Xstrata	30963	789530	7106246	275							
C4059	Xstrata	30963	788814	7106827	264.15	102.03						
C4060	Xstrata	30964	786650	7105973	259.41							
C4061	Xstrata	30970	788238	7105787	253.28							
C4062	Xstrata	30971	794124	7108103	266.93							
C4063	Xstrata	30972	794686	7107182	277.83	96						
C4064	Xstrata	30972	794120	7106305	265							
C4066	Xstrata	30975	794929	7105698	271	90						
C4067	Xstrata	30975	795064	7106473	280							
C4069	Xstrata	30991	794523	7107896	281.86							
C4070	Xstrata	30992	794554	7108562	268.08							

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C4072	Xstrata	30994	792903	7108561	246.5	102						
C4073	Xstrata	30994	792716	7108909	259.2							
C4075	Xstrata	31230	790956	7107289	286.8	102.17						
C4076	Xstrata	31230	789152	7106050	271.18							
C4077	Xstrata	31231	790807	7106538	290.81							
C4078	Xstrata	31231	794524	7108907	267.36							
C5004	Xstrata	33674	791008	7110464	277.2							
C5016	Xstrata	33686	790081	7111414	265.1							
C5017	Xstrata	33671	791171	7111155	266.4							
C5018	Xstrata	33672	790686	7110925	278.65							
C5020	Xstrata	33694	790705	7111325	281.35							
C5021	Xstrata	33822	790794	7109973	282							
C5022	Xstrata	33823	790014	7109393	281							
C5023	Xstrata	33824	789299	7111343	258							
C6001	Xstrata	37637	790184	7111203	268.11	102						
C6002	Xstrata	37636	790083	7109552	280.85	162.36						
C6002A	Xstrata	37656	790082	7109551	280.85							
C6003	Xstrata	37639	786360	7106389	247.23	180						
C6004	Xstrata	37640	789265	7106768	275.29	132						
C6005	Xstrata	37650	792878	7108560	248.29	96						
C6006	Xstrata	37642	794249	7106576	267.1	102						
C6239	Xstrata	39145	790050	7113027	241.327							
C6239A	Xstrata	39145	790052	7113027	241.33							
C6248	Xstrata	39385	790879	7104998	273							
C6253	Xstrata	39165	791698	7108187	274.397							
C6254	Xstrata	38765	7911407	7111407	275.87	102.12						
C6255	Xstrata	38767	787723	7106190	248.44							
C6256	Xstrata	38774	790083	7105795	291.35	102.01						
C6257	Xstrata	38785	793297	7105380	263.39	102.03						
C6258	Xstrata	38786	793324	7106177	255.03	102.11						
C6260	Xstrata	38787	794087	7105403	270.28							
C6262	Xstrata	38788	794514	7107000	270.41	102.02						
C6263	Xstrata	38789	790081	7109014	280.51							
C6263_R	Xstrata	38789	790083	7109014	280.51	102.04						
C6264	Xstrata	38790	789639	7112218	247.4	102						
C6266	Xstrata	38791	789287	7111396	259.39	102.05						
C6268	Xstrata	38792	791696	7111416	260.88	102						
C6270	Xstrata	38793	790515	7110597	278.07	102						
C6272	Xstrata	38794	790085	7106603	285.47	102.15						
C6273	Xstrata	38795	787704	7107023	244.47	102						
C6361	Xstrata	39379	792897	7109806	241.73	102						
C6362	Xstrata	39356	792910	7110585	241.15	102.12						
C6365	Xstrata	39380	792505	7105388	257.56							
C6425	Xstrata	39171	794609	7109180	267.227	102						
C6425A	Xstrata	39171	794611	7109180	267.227	60						
C6428	Xstrata	39162	792616	7108385	252.527	102.08						
C6429	Xstrata	39168	794575	7108389	271.917	66						
C6429A	Xstrata	39169	794577	7108389	271.917	42						
C6429B	Xstrata	39170	794573	7108389	271.917	96.15						
C6431	Xstrata	39171	794253	7107444	268.967	42						
C6431A	Xstrata	39170	794253	7107444	268.967	72.17						
C6434	Xstrata	39186	793411	7108376	244.967	72						
C6435	Xstrata	39190	789410	7105582	284.647	66						
C6436	Xstrata	39172	793816	7108785	253.297	60						
C6437	Xstrata	39387	786107	7104547	255.84	36						
C6437A	Xstrata	39395	786109	7104547	255.84	72						
C6438	Xstrata	39138	790626	7111181	281.747	55.23						
C6439	Xstrata	39193	787813	7104793	262.92							
C6440	Xstrata	39139	789473	7110382	265.077							
C6442	Xstrata	39139	790207	7110383	274.047							
C6444	Xstrata	39140	791016	7110379	275.937							
C6445	Xstrata	39137	789804	7111189	262.967	102						
C6445A	Xstrata	39137	789803	7111189	262.967	102.21						
C6447	Xstrata	39157	790498	7111801	262.817	102.05						
C6453	Xstrata	39518	789302	7111805	259.64	102						
C6457	Xstrata	39172	793706	7109403	243.417	54						
C6458	Xstrata	39141	789403	7112794	253.587	66.01						
C6463	Xstrata	39162	792132	7108996	256.797							
C6464	Xstrata	39156	790234	7112398	249.297	102						
C6465	Xstrata	39406	786909	7104213	269.26	102						
C6471	Xstrata	39387	790901	7105400	270.5	129						
C6473	Xstrata	39171	792888	7105859	252.13	123						
C6481	Xstrata	39356	789645	7104245	264.88	123						
C6481A	Xstrata	39404	788541	7104248	264.76	123						
C6483	Xstrata	39188	790903	7109398	271.257	123						
C6485	Xstrata	39190	791285	7109810	263.21	123						
C6486	Xstrata	39185	793311	7109002	241.817	123						
C6487	Xstrata	39191	788497	7105000	264.52	123						
C6491	Xstrata	39193	786940	7104974	267.99	123						
C6491X	Xstrata	39238	775632	7118809	285.8							
C6496	Xstrata	39542	790601	7109550	278.88							
C6497	Xstrata	39303	775208	7118408	300.81	124						
C6500	Xstrata	39195	789306	7106202	273.287	123						
C6502	Xstrata	39195	788511	7105847	258.837	123						
C6505	Xstrata	39206	776401	7117604	265.92	123						
C6523	Xstrata	39235	774403	7115977	268.46	123						
C6525	Xstrata	39567	775200	7116801	276.69	123						
C6531	Xstrata	39301	770411	7119199	277.31	123						
C6537	Xstrata	39348	767928	7119914	265.68	123						
C6541	Xstrata	39347	768833	7120390	292.89	123						
C6545	Xstrata	39589	770748	7120397								
C6548	Xstrata	39456	789210	7108819	268.39	123						
C6558	Xstrata	39540	789284	7107399	268.88	123						
C6567	Xstrata	39374	773591	7117988	270.6	124						
C6576	Xstrata	39231	774407	7118016	283.41	123						
C6580	Xstrata	39228	774391	7118780	281.65	123						
C6580A	Xstrata	39229	774393	7118780	281.65	123						
C6582	Xstrata	39232	774767	7117574	289.03	124						
C6590A	Xstrata	39306	775207	7120420	291.64	148						
C6590B	Xstrata	39307	775218	7120390	291.02	123						
C6591	Xstrata	39250	778433	7114413	250	123						
C6602	Xstrata	39346	769232	7120819	273.44	153						
C6603	Xstrata	39586	780805	7116017	280.34	153						
C6621	Xstrata	39578	779224	7116763	255.68	153						
C6628	Xstrata	39566	773197	7117134	265.61	153						
C6630	Xstrata	39308	772868	7117957	258.68	123						
C6631	Xstrata	39625	781610	7115604	292	123						
C6632	Xstrata	39256	779194	7114403	268.35	123						
C6632A	Xstrata	39280	779197	7114413	268.96	123						
C6638	Xstrata	39305	769599	7121608	255.04							
C6640	Xstrata	39257	778377	7113614	255.48	123						
C6640A	Xstrata	39258	778380	7113615	255.65	123						
C6648	Xstrata	39356	775203	7121196	266	123						
C6648A	Xstrata	39356	775207	7121198	266.12	123						
C6651	Xstrata	39314	782000	7116354	285.99	123						
C6673	Xstrata	39588	768536	7121612		123						
C6674	Xstrata	39284	779945	7113632	276.41	123						
C6688	Xstrata	39287	779207	7113609	267.53							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
C6690	Xstrata	39306	770378	7120012	270.85	123						
C6692	Xstrata	39299	771200	7119601	259.29	123						
C6694	Xstrata	39302	770479	7120800	260.79	123						
C6696	Xstrata	39299	769602	7120005	288.13	123						
C6698	Xstrata	39302	768093	7119213	272.17	123						
C6700	Xstrata	39303	771199	7118802	252.93	123						
C6702	Xstrata	39305	768814	7122394	260.21	123						
C6706	Xstrata	39346	774379	7115190	253.96	123						
C6708	Xstrata	39347	775200	7115198	258.54	123						
C6710	Xstrata	39352	780826	7116811	283.42	123						
C6712	Xstrata	39353	783982	7117605	275.59	123						
C6714	Xstrata	39354	783968	7116807	271.91	123						
C6716	Xstrata	39401	787712	7103785	267.82	123						
C6718	Xstrata	39405	788389	7103298	270.92	123						
C6719	Xstrata	39298	779989	7114398	282.7	123						
C6721	Xstrata	39353	767194	7119990	255.9	123						
C6723	Xstrata	39354	769208	7122006	257.1							
C6723A	Xstrata	39355	769207	7122001	257.1	123						
C6725	Xstrata	39424	786086	7110207	237.51	123						
C6737	Xstrata	39428	785374	7107029	244.67	123						
C6739	Xstrata	39476	784493	7104683	248.72	123						
C6743	Xstrata	39411	784490	7105429	247.8	123						
C6745	Xstrata	39514	785300	7105366	247.27	123						
C6747	Xstrata	39502	785305	7106196	245.74	153						
C6753	Xstrata	39521	789300	7113777	247.5	159						
C6758	Xstrata	39521	789498	7113200	247	255						
C6766	Xstrata	39522	790496	7112991	242.46	123						
C6766A	Xstrata	39523	790500	7112996	242.5	300						
C6766B	Xstrata	39524	790494	7112991	242.5	201						
C6768	Xstrata	39520	788912	7113360	247.63							
C6771	Xstrata	39430	785295	7108613	265.06							
C6772	Xstrata	39432	786093	7108606	252.87							
C6773	Xstrata	39434	786827	7108637	241.22	207						
C6780	Xstrata	39424	786854	7109452	239.23	187						
C6780R	Xstrata	39516	786854	7109452	239.23	195						
C6783	Xstrata	39435	784496	7106201	248.65	243						
C6830	Xstrata	39544	788954	7111005	266.01							
C7000	Xstrata	39423	786872	7110195	239							
C7000A	Xstrata	39514	786084	7110205	237.77							
C7000B	Xstrata	39515	786088	7110205	237.61							
C7004	Xstrata	39424	785320	7110144	242.44	123						
C7051	Xstrata	39477	795320	7107798	281.96	123						
C7051R	Xstrata	39479	795315	7107800	281.99							
C7052	Xstrata	39475	791314	7111797	264	123						
C7057	Xstrata	39402	795298	7106204	289.68	123						
C7058	Xstrata	39402	794490	7105803	266.85							
C7059	Xstrata	39404	795306	7106976	283.88	125						
C7071	Xstrata	39479	786235	7105463	263.39							
C7073	Xstrata	39494	786922	7107789	242.57	123						
C7074	Xstrata	39476	785261	7104203	249.87							
C7076	Xstrata	39497	785410	7107791	244.21							
C7081	Xstrata	39479	786905	7107003	244.45	153						
C7081R	Xstrata	39480	786900	7107000	244.49	63						
C7083	Xstrata	39482	786083	7106996	244.85	123						
C7083A	Xstrata	39483	786078	7107013	244.85	155						
C7085	Xstrata	39496	786102	7107809	243.5	153						
C7088	Xstrata	39536	789907	7107729	283.5	123						
C7100	Xstrata	39537	790494	7105400	277.99	155						
C7101	Xstrata	39537	790598	7106344	286.36							
C7104	Xstrata	39537	788450	7106600		124						
C7112	Xstrata	39538	790898	7107953	280.71	123						
C7115	Xstrata	39541	794419	7108205	274.79	130						
C7117	Xstrata	39540	794274	7108954	266.68	123						
C7125	Xstrata	39539	791313	7107410	282.87	129						
C7150	Xstrata	39586	780800	7114800		129						
C7152	Xstrata	39580	779199	7115992	273.62	123						
C7188	Xstrata	39628	790896	7111988	257	75						
C9001	Xstrata	39397	786906	7103390	259.04	69						
C9002	Xstrata	39399	786115	7103771	252.09	69						
C9005	Xstrata	39428	786093	7109399	252.23	81						
C9005A	Xstrata	39427	786093	7109399	252.23	120						
C9023	Xstrata	39518	790926	7110871	275.35	120						
C9042	Xstrata	39560	790629	7111504	275.44	126						
C9084	Xstrata	39566	780800	7116005	280.17	120						
C9086	Xstrata	39540	787295	7106607	254.14	120						
C9103	Xstrata	39192	787673	7105415	262.58	120						
C9104	Xstrata	39516	791095	7110704	273.65	126						
F0147	Xstrata	28096	789908	7110175	270.25	120.5						
F0604	Xstrata	37174	786571	7105153	264.59	120						
F4046	Xstrata	30949	788719	7110833	265	120						
F4050	Xstrata	30954	790344	7110418	275							
F4071	Xstrata	30993	794512	7109376	267.35							
F4074	Xstrata	30995	792374	7109413	247.5							
G8000	Xstrata	39378	794771	7108154	279.25							
G8001	Xstrata	39379	790184	7107438	285.47							
G8002	Xstrata	39394	789664	7110858	265.64							
G8004	Xstrata	39398	781361	7115977	294.79	114						
G8005	Xstrata	39400	775224	7117101	271.68	120						
G8006	Xstrata	39403	769614	7119575	298.07	121						
L0805	Xstrata	29796	791103	7110648	275.42	120						
L259A	Xstrata	28596	790178	7111199	268.01	120						
L259B	Xstrata	28596	790178	7111199	268.01	121						
L260A	Xstrata	28016	790494	7111276	275.88	120						
L260B	Xstrata	28017	790178	7111199	268.01	126						
L4049	Xstrata	31245	789876	7110600	267	120						
L4052	Xstrata	31246	790941	7109750	270.5	128						
L5000	Xstrata	33665	790698	7110704	280.3	120						
L5001	Xstrata	33677	790616	7111001	279.95	122						
L5003	Xstrata	33681	790050	7111658	264.7	122						
L5005	Xstrata	33682	790416	7110078	280	126						
L5006	Xstrata	33684	788917	7110393	270.85	133						
L5015	Xstrata	33687	789526	7110225	265.45	122						
L5019	Xstrata	33686	791183	7111874	264	130						
L6001	Xstrata	37653	790189	7111208	268.11	132						
L6002	Xstrata	37655	790088	7109556	280.85	122						
L6003	Xstrata	37651	786365	7106393	247.23	122						
L6004	Xstrata	37648	789260	7106763	275.29	122						
L6005	Xstrata	37669	792883	7108565	248.29	128						
L6006	Xstrata	37669	794254	7106580	267.1	120						
L6525	Xstrata	39496	775204	7116795	276.45	126						
L6545	Xstrata	39483	770765	7120400	269.39	92						
L6589	Xstrata	39476	778808	7114011	254.43	125						
L6628	Xstrata	39479	773202	7117137	265.42	121						
L6631	Xstrata	39433	781601	7115604	292.12	122						
L6673	Xstrata	39499	768530	7121615	259.84	120						
MCC0201	Xstrata	28922	782434	7117020	269.52	126						
MCC0303	Xstrata	28762	781418	7116890	296.55	121						
MCC0324	Xstrata	28921	784377	7117569	287.63	121.03						

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MCC0438	Xstrata	28339	782023	7115310	277.78	120						
MCC0439	Xstrata	29522	785901	7115181	275.66	120						
MCC0443	Xstrata	29522	782881	7115965	293.32	120						
MCC0444	Xstrata	28923	782677	7115533	290.17	126						
MCC0448	Xstrata	28338	782524	7115906	294.6	120						
MCC0450	Xstrata	28922	781352	7116092	295.46	120						
MCC0452	Xstrata	29473	782624	7116616	276.44	127.03						
MCC0454	Xstrata	28391	782792	7116225	288.7	120						
MCC0459	Xstrata	29462	781861	7115667	286.6	96						
MCC0460	Xstrata	28392	782124	7115972	285.69	120						
MCC0461	Xstrata	28923	783283	7116847	281.6	120						
MCC0465	Xstrata	28343	782178	7114927	281.01	122						
MCC0470	Xstrata	29462	781812	7116713	280.29	120						
MCC0472	Xstrata	28346	781255	7115425	287.05	122						
MCC1378	Xstrata	29454	780233	7115990	270.62	128						
MCC1379	Xstrata	29454	779998	7115323	276.94	122						
MCC1520	Xstrata	29522	778791	7115672	276.01	122						
MCC1609	Xstrata	29522	779032	7115089	266.83	120						
MCC1610	Xstrata	29453	780575	7115502	280.86	120						
MCF1592	Xstrata	29722	780445	7114219	289	127						
MCR0007	Xstrata	27197	778977	7114129	255.75	120						
MCR0008	Xstrata	27198	781833	7118146	274.31	120						
MCR0102	Xstrata	27451	780539	7112208	285.02	96						
MCR0125	Xstrata	27472	780709	7114566	285.57	120						
MCR0202	Xstrata	27798	782585	7116016	292.73	120						
MCR0207	Xstrata	27800	780454	7115254	274.55	126						
MCR0213	Xstrata	27802	781770	7115887	297.93	120						
MCR0215	Xstrata	27802	782297	7115263	286.81	122						
MCR0261	Xstrata	27853	777171	7116670	241.02	97						
MCR0411	Xstrata	28216	778975	7118618	241.56							
MCR0412	Xstrata	28217	784290	7116477	268.38	121						
MCR0413	Xstrata	28217	784322	7118683	272.55							
MCR0418	Xstrata	28219	779125	7117745	244.81							
MCR0419	Xstrata	28220	780814	7117078	276	120						
MCR0437	Xstrata	28243	782160	7115635	284.52	85						
MCR0440	Xstrata	28335	783015	7116551	279.75							
MCR0441	Xstrata	28336	783413	7116473	291.65							
MCR0442	Xstrata	28336	783169	7116181	294.53							
MCR0445	Xstrata	28337	782491	7115740	295.38							
MCR0449	Xstrata	28339	781610	7115375	284.23							
MCR0451	Xstrata	28339	782239	7116684	273.5							
MCR0453	Xstrata	28340	782366	7116290	279.75							
MCR0455	Xstrata	28341	781979	7116348	286.83	120						
MCR0456	Xstrata	28341	781504	7115680	288.95							
MCR0457	Xstrata	28341	782818	7114426	261.39							
MCR0458	Xstrata	28342	782554	7114853	278.54	108						
MCR0462	Xstrata	28343	783576	7116087	281.83	114						
MCR0463	Xstrata	28343	783605	7116252	287.37	121						
MCR0464	Xstrata	28343	783342	7115969	288.15	120						
MCR0466	Xstrata	28344	781934	7114599	267.81	121						
MCR0467	Xstrata	28344	782294	7114545	268.69							
MCR0468	Xstrata	28344	781767	7115005	275.83	120						
MCR0469	Xstrata	28345	781384	7115060	281.19							
MCR0471	Xstrata	28346	781575	7116393	289.32	126						
MCR0577	Xstrata	28587	778627	7113753	267.91	120						
MCR0578	Xstrata	28587	777735	7114160	263.36	120						
MCR0579	Xstrata	28587	779612	7114626	287.23	121						
MCR0581	Xstrata	28589	776047	7114443	277.53	120						
MCR0582	Xstrata	28589	775831	7115157	269.99	122						
MCR0583	Xstrata	28590	776794	7113515	264.7	120						
MCR0584	Xstrata	28590	776989	7114794	252.76	109						
MCR0588	Xstrata	28592	779298	7112665	266.65	121						
MCR0589	Xstrata	28593	778912	7115535	285.09	103						
MCR0590	Xstrata	28593	778613	7115808	271.29	121						
MCR0591	Xstrata	28593	779449	7115198	284.92	127						
MCR0592	Xstrata	28594	778569	7116656	267.74	127						
MCR0593	Xstrata	28594	779278	7116294	263.3							
MCR0848	Xstrata	28920	783781	7117951	267.23	121						
MCR0849	Xstrata	28920	781763	7117632	283.14	121						
MCR0850	Xstrata	28921	779801	7118523	255.02	121						
MCR0862	Xstrata	28926	778258	7118361	236.8	111						
MCR0863	Xstrata	28926	778048	7117559	241.12	121						
MCR0866	Xstrata	28927	777782	7116771	244.21	121						
MCR0867	Xstrata	28928	777332	7116018	243.99	67						
MCR0868	Xstrata	28928	777259	7115370	253.68	127						
MCR0869	Xstrata	28929	776719	7115442	252.02	121						
MCR0870	Xstrata	28929	778740	7117351	251.53	121						
MCR0871	Xstrata	28935	780417	7116863	282.09	61						
MCR0872	Xstrata	28935	779334	7117162	250.14	121						
MCR0873	Xstrata	28935	779830	7116272	260							
MCR0874	Xstrata	28935	779675	7113795	273.1							
MCR0875	Xstrata	28936	778789	7114877	264.34							
MCR0876	Xstrata	28936	778323	7113395	254.17							
MCR0877	Xstrata	28936	778084	7115073	248.58							
MCR0878	Xstrata	28937	780854	7113450	280.99							
MCR0879	Xstrata	28937	780629	7115950	271.97							
MCR0880	Xstrata	28938	780449	7117681	269.92							
MCR0881	Xstrata	28938	779563	7117991	261.63							
MCR0917	Xstrata	28951	777002	7114116	257.2							
MCR0918	Xstrata	28951	778985	7113174	269.47							
MCR0919	Xstrata	28951	779904	7112832	276.37							
MCR1364	Xstrata	29453	781096	7115329	287.2							
MCR1365	Xstrata	29453	780921	7114979	282.3							
MCR1377	Xstrata	29453	781182	7115772	283.28							
MCR1501	Xstrata	29454	780336	7114751	280.31							
MCR1502	Xstrata	29454	779666	7115823	266.01							
MCR1503	Xstrata	29455	778900	7115994	279.54							
MCR1504	Xstrata	29455	779167	7115491	280.25							
MCR1505	Xstrata	29456	780667	7113440	285.07							
MCR1506	Xstrata	29456	780165	7113203	277.2							
MCR1507	Xstrata	29456	779701	7112901	275.83							
MCR1508	Xstrata	29456	779434	7113487	275.27							
MCR1509	Xstrata	29457	779135	7113926	257.98							
MCR1510	Xstrata	29457	779662	7114142	269.48							
MCR1511	Xstrata	29457	779341	7114626	274							
MCR1512	Xstrata	29458	778860	7114365	259.05							
MCR1513	Xstrata	29458	778605	7114886	256.12							
MCR1514	Xstrata	29460	780075	7115714	266.03							
MCR1515	Xstrata	29460	779929	7114937	285.66							
MCR1516	Xstrata	29460	779546	7115399	277.92							
MCR1517	Xstrata	29460	779310	7115898	270.44							
MCR1518	Xstrata	29460	779054	7116433	263.73							
MCR1519	Xstrata	29460	778561	7116134	265.56							
MCR1539	Xstrata	29464	777626	7115838	245.54							
MCR1540	Xstrata	29464	777564	7115621	246.96							
MCR1541	Xstrata	29460	780120	7114478	287.74							
MCR1542	Xstrata	29460	780528	7113890	289.14							
MCR1543	Xstrata	29461	780000	7113694	278.3							

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MCR1544	Xstrata	29461	779999	7114063	273.63							
MCR1545	Xstrata	29461	784822	7117596	270.22							
MCR1546	Xstrata	29461	781593	7117260	285.6							
MCR1547	Xstrata	29462	781931	7117381	275.78							
MCR1548	Xstrata	29462	782069	7117098	276.1							
MCR1549	Xstrata	29462	782335	7117315	270.42							
MCR1550	Xstrata	29463	780278	7113615	277.41							
MCR1551	Xstrata	29463	780353	7113188	279.05							
MCR1552	Xstrata	29463	779816	7113224	272.24							
MCR1553	Xstrata	29464	778985	7113530	266.44							
MCR1554	Xstrata	29464	779309	7113071	267.74							
MCR1555	Xstrata	29464	778426	7114042	250.55							
MCR1556	Xstrata	29465	777993	7114178	251.84							
MCR1558	Xstrata	29434	778024	7114661	251.01							
MCR1559	Xstrata	29465	777716	7114693	251.67							
MCR1560	Xstrata	29466	779210	7114274	264.78							
MCR1561	Xstrata	29465	777844	7115544	247.3							
MCR1562	Xstrata	29465	778071	7115882	246.67							
MCR1563	Xstrata	29465	777734	7116418	248.17							
MCR1564	Xstrata	29465	778232	7116620	255.78							
MCR1565	Xstrata	29466	778107	7116273	256.18							
MCR1569	Xstrata	29467	784565	7117318	273.09							
MCR1570	Xstrata	29467	784974	7117251	261.94							
MCR1571	Xstrata	29467	784304	7117027	268.34							
MCR1572	Xstrata	29468	784692	7116957	263.76							
MCR1573	Xstrata	29468	784123	7117413	283.68							
MCR1574	Xstrata	29468	784056	7117759	275.23							
MCR1575	Xstrata	29468	783850	7117444	282.95							
MCR1576	Xstrata	29468	783541	7117163	270.28							
MCR1577	Xstrata	29469	783689	7116809	284.35							
MCR1578	Xstrata	29469	783903	7117031	280							
MCR1579	Xstrata	29469	784052	7116723	268							
MCR1580	Xstrata	29469	784532	7118367	277							
MCR1581	Xstrata	29467	779620	7113608	264.79							
MCR1582	Xstrata	29467	777930	7113899	252.58							
MCR1583	Xstrata	29467	778348	7113772	251.78							
MCR1584	Xstrata	29467	778753	7114074	252.58							
MCR1585	Xstrata	29468	780767	7113820	286.31							
MCR1586	Xstrata	29468	781024	7113749	278.74							
MCR1587	Xstrata	29468	781503	7114687	277.94							
MCR1588	Xstrata	29468	781098	7114672	283.96							
MCR1589	Xstrata	29469	778753	7115241	278.29							
MCR1590	Xstrata	29469	778332	7115346	250.44							
MCR1601	Xstrata	29471	784304	7118065	278.41							
MCR1602	Xstrata	29471	784666	7117988	268.28							
MCR1603	Xstrata	29471	785050	7117914	264.89							
MCR1604	Xstrata	29471	784924	7118321	267.89							
MCR1605	Xstrata	29472	785222	7117544	262.8							
MCR1606	Xstrata	29472	782940	7116933	267.32							
MCR1607	Xstrata	29472	783051	7115474	275.22							
MCR1608	Xstrata	29472	783298	7115757	277.83							
MCR1847	Xstrata	29804	780051	7119269	252							
MCR1848	Xstrata	29804	778999	7118092	241.5							
MCR1849	Xstrata	29804	778426	7117463	250.50							
MCR1850	Xstrata	29805	778475	7117831	252							
MCR1851	Xstrata	29805	779778	7117047	259.00							
MCR1852	Xstrata	29805	780704	7118110	267							
MCR1853	Xstrata	29805	780924	7117570	270.60							
MCR1854	Xstrata	29805	780394	7117260	275.5							
MCR1855	Xstrata	29806	781146	7117046	288							
MCR1856	Xstrata	29807	780708	7116758	282.8							
MCR1857	Xstrata	29807	781030	7116658	293							
MCR1858	Xstrata	29807	779960	7117371	266.30							
MCR1859	Xstrata	29807	780122	7117812	266.8							
MCR1860	Xstrata	29839	780223	7118231	258.20							
MCR1861	Xstrata	29808	781409	7117893	278.5							
MCR1862	Xstrata	29808	781082	7117951	271.00							
R0004	Xstrata	27195	790134	7106507	286							
R0005	Xstrata	27196	788992	7113638	253.7							
R0005L	Xstrata	27192	784351	7104391	251.25							
R0101	Xstrata	27450	790263	7107985	287.6							
R0103	Xstrata	27459	791355	7107140	288							
R0104	Xstrata	27460	789928	7109011	280.53							
R0106	Xstrata	27460	787251	7111206	250.95							
R0112	Xstrata	26700	795159	7107393	280.2							
R0121	Xstrata	27471	789093	7111582	265.79							
R0122	Xstrata	27472	788279	7110782	263.11							
R0124	Xstrata	27472	784881	7111076	276.2							
R0137	Xstrata	27479	791106	7111589	269.98							
R0148	Xstrata	27494	788126	7109871	250.83							
R0150	Xstrata	27495	791796	7110523	260.00							
R0151	Xstrata	27495	791508	7111150	265.89							
R0201	Xstrata	33483	795484	7107368	279.3							
R0208	Xstrata	27800	783941	7110626	265.5							
R0208F	Xstrata	27379	795187	7107821	282.42							
R0215	Xstrata	27380	793910	7105292	269.44							
R0217	Xstrata	27495	794938	7109771	263.08							
R0218	Xstrata	27495	794222	7109709	260.78							
R0219	Xstrata	27495	794329	7110288	254.45							
R0221	Xstrata	27498	793348	7106402	252.08							
R0222	Xstrata	27499	793355	7105625	265.02							
R0228	Xstrata	27500	793262	7107301	247							
R0230	Xstrata	27501	794008	7109268	251.71							
R0231	Xstrata	27501	793332	7109273	240.51							
R0232	Xstrata	27503	795654	7108871	265.29							
R0233	Xstrata	27503	796249	7106308	267.91							
R0246	Xstrata	27811	789448	7111024	258.84							
R0247	Xstrata	27811	789585	7111439	257.84							
R0256	Xstrata	27825	790453	7111623	263.73							
R0301	Xstrata	27827	793817	7107443	256.96							
R0304	Xstrata	28038	791432	7110818	265.02							
R0305	Xstrata	28039	789656	7111904	251.42							
R0308	Xstrata	28040	791413	7109224	261.58							
R0309	Xstrata	28041	791334	7110187	263.89							
R0310	Xstrata	28052	788646	7108974	272.39							
R0310F	Xstrata	27832	794986	7108736	275.13							
R0311	Xstrata	28052	791211	7108632	269.97							
R0313	Xstrata	28053	790472	7108576	277.21							
R0314	Xstrata	28053	788376	7110330	259.61							
R0315	Xstrata	27834	794674	7106829	275.32							
R0316	Xstrata	28053	788373	7112065	245.59							
R0317	Xstrata	28053	787728	7111916	237.31							
R0320	Xstrata	28054	790292	7112251	252.48							
R0321	Xstrata	28054	789854	7113792	239.64							
R0323	Xstrata	28055	791471	7111905	259.91							
R0323F	Xstrata	27855	793503	7106868	251.82							
R0325	Xstrata	28056	789033	7112668	254.97							
R0325F	Xstrata	27856	793473	7108288	245.12							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R0326	Xstrata	28056	788432	7112983	248.81							
R0327	Xstrata	28056	788566	7112809	241.99							
R0328	Xstrata	28056	790747	7112515	249.93							
R0329	Xstrata	28093	789710	7109557	276.11							
R0331	Xstrata	28093	789152	7110997	263.55							
R0334	Xstrata	28097	790629	7112260	250.3							
R0335	Xstrata	28040	795278	7108246	267.41							
R0337	Xstrata	28098	790999	7112100	256.93							
R0337F	Xstrata	28041	795324	7109009	268.56							
R0338	Xstrata	28041	795229	7109398	264.02							
R0339	Xstrata	28042	794318	7108640	261.14							
R0341	Xstrata	28100	791603	7112219	254.21							
R0341F	Xstrata	28042	795016	7106238	278.41							
R0342	Xstrata	28100	791378	7112213	255.44							
R0342F	Xstrata	28042	794745	7107046	277.58							
R0343	Xstrata	28100	791499	7111696	261.82							
R0344	Xstrata	28100	791344	7111476	263.75							
R0344F	Xstrata	28043	794341	7105825	263.43							
R0345	Xstrata	28043	793742	7106006	256.92							
R0346	Xstrata	28101	790740	7112039	257.06							
R0346F	Xstrata	28043	794027	7105997	258.48							
R0347	Xstrata	28101	790809	7112144	254.47							
R0347F	Xstrata	28043	793620	7106405	259.42							
R0348	Xstrata	28043	793662	7109358	242.48							
R0349	Xstrata	28103	789947	7111945	258.27							
R0350	Xstrata	28103	790165	7111442	266.94							
R0350F	Xstrata	28042	794303	7109146	258.12							
R0352	Xstrata	28042	794149	7107298	257.70							
R0353	Xstrata	28104	790935	7110880	275.48							
R0353F	Xstrata	28042	793963	7107477	262.65							
R0354	Xstrata	28104	791165	7111145	266.66							
R0354F	Xstrata	28042	793982	7107818	258.79							
R0356	Xstrata	28105	790060	7109701	278.08							
R0356F	Xstrata	28044	794702	7105966	267.88							
R0357	Xstrata	28105	789697.1	7109894	270.5							
R0357F	Xstrata	28044	794479	7106831	274.04							
R0358	Xstrata	28105	790042.1	7109290	282.77							
R0358F	Xstrata	28044	794864	7106810	276.35							
R0359	Xstrata	28106	790292	7109583	284.26							
R0359F	Xstrata	28044	793136	7108913	240.71							
R0360	Xstrata	28106	790528	7109498	281.24							
R0360F	Xstrata	28045	795289	7106317	289.05							
R0361	Xstrata	28106	790893	7109105	267.77							
R0361F	Xstrata	28051	795283	7105189	287.58							
R0362	Xstrata	28106	791089	7109284	271.55							
R0363	Xstrata	28106	791410	7109629	267.60							
R0435	Xstrata	28243	789376	7109040	270.40							
R0436	Xstrata	28243	788624.3	7109989	267.9							
R0438	Xstrata	37174	795633.6	7105363	277.6							
R0439	Xstrata	28463	795964.2	7105652	271.35							
R0441	Xstrata	Dec-77	794812	7104975	267.77	91						
R0473	Xstrata	Sep-77	786041	7109128	255.23	88						
R0485	Xstrata	Sep-77	785979	7108561	256.15	77						
R0486	Xstrata	Sep-77	786706	7108432	244	62						
R0487	Xstrata	Sep-77	786076.8	7109732	240.79							
R0490	Xstrata	28388	785027	7108314	273.71							
R0493	Xstrata	28389	787799	7107714	242							
R0495	Xstrata	28390	790742	7106850	293.16							
R0496	Xstrata	28390	790586	7106405	285.82							
R0497	Xstrata	28328	790538	7105650	281.31							
R0498	Xstrata	28390	790174	7106187	290.15							
R0500	Xstrata	28391	789061	7106297	266.75							
R0502	Xstrata	28392	789125	7107046	270.57							
R0503	Xstrata	28392	788176	7106513	253.54							
R0512	Xstrata	28397	788574	7104704	265.16							
R0515	Xstrata	28398	786330	7103563	252.98							
R0523	Xstrata	28448	791325	7106840	286							
R0524	Xstrata	28448	791013	7105227	272.04							
R0525	Xstrata	28448	790573	7104920	280.63							
R0526	Xstrata	28448	789774	7105031	283.41							
R0529	Xstrata	28449	789639	7106715	281.2							
R0531	Xstrata	28449	790488	7106969	293.4							
R0533	Xstrata	28451	789823	7107491	276.29							
R0534	Xstrata	28451	790625	7107691	286.8							
R0535	Xstrata	28452	790302	7108222	279.75							
R0537	Xstrata	28452	790287	7105367	280.32							
R0540	Xstrata	28454	787023	7107876	241.82							
R0542	Xstrata	28455	785738	7107273	245.76							
R0546	Xstrata	28457	787959	7106158	249.42							
R0547	Xstrata	28457	787153	7106269	257.11							
R0548	Xstrata	28457	786356	7106391	246.95							
R0550	Xstrata	28458	787307	7107042	243.61							
R0552	Xstrata	28459	788557	7107287	257.36							
R0559	Xstrata	28463	789275	7105534	277.93							
R0561	Xstrata	28463	789172	7104383	278.1							
R0562	Xstrata	28463	788531	7105346	262.62							
R0565	Xstrata	28464	789025	7105630	268.97							
R0566	Xstrata	28464	788131	7105080	255.84							
R0570	Xstrata	28466	789195	7104719	273.45							
R0572	Xstrata	28466	787743	7105471	258.97							
R0576	Xstrata	28468	788358	7106458	257.81							
R0597	Xstrata	28595	783486	7108768	267.9							
R0599	Xstrata	28596	787062	7105897	264.96							
R0600	Xstrata	36526	786734	7105822	260							
R0601	Xstrata	28598	786605	7105574	263.9							
R0602	Xstrata	28598	786187	7105194	257.63							
R0605	Xstrata	28599	786528	7104768	264.9							
R0606	Xstrata	28600	787602	7105128	269.2							
R0607	Xstrata	28600	785326	7104943	247.83							
R0609	Xstrata	28602	785635	7106929	245.58							
R0610	Xstrata	28603	785041	7107880	266.65							
R0614	Xstrata	28618	791125	7106436	281.33							
R0615	Xstrata	28618	790434	7106571	292.97							
R0618	Xstrata	28619	790678	7105673	283.12							
R0619	Xstrata	28619	790624	7105360	275.83							
R0621	Xstrata	28619	788441	7106893	253.82							
R0623	Xstrata	28620	787605	7106595	247.15							
R0624	Xstrata	28622	787662	7106958	245.05							
R0625	Xstrata	28622	787760	7107319	243.89							
R0626	Xstrata	28622	787910	7108256	245							
R0627	Xstrata	28622	787232	7106667	255.72							
R0628	Xstrata	28623	790189	7107441	285.59							
R0631	Xstrata	28622	788336	7104537	260.95							
R0633	Xstrata	28622	787520	7104725	271.2							
R0634	Xstrata	37174	787534	7104278	273.1							
R0635	Xstrata	28623	787926	7104204	266.9							
R0640	Xstrata	28623	791415	7107607	284.6							
R0642	Xstrata	28623	789528	7106246	275.9							

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R0643	Xstrata	20856	789914	7105813	287.4							
R0646	Xstrata	28624	786404	7108903	248.84							
R0647	Xstrata	28625	786452	7109261	247.43							
R0650	Xstrata	28625	787142	7104798	270.62							
R0651	Xstrata	28626	788198	7103730	268.5							
R0653	Xstrata	28626	786820	7106666	250.18							
R0654	Xstrata	28627	786887	7107048	243.04							
R0658	Xstrata	28630	786239	7106023	252.13							
R0659	Xstrata	28630	785987	7106448	245.65							
R0662	Xstrata	28626	785640	7108927	258.92							
R0663	Xstrata	28626	785586	7109331	257.16							
R0664	Xstrata	28626	784808	7109652	242.59							
R0666	Xstrata	28627	785492	7108294	270.85							
R0667	Xstrata	28627	784577	7107433	265.95							
R0668	Xstrata	28628	785749	7107681	244.78							
R0971	Xstrata	28971	786090	7104421	256.44							
R0972	Xstrata	28971	785804	7105269	247.86							
R0973	Xstrata	28972	785274	7104544	248.26							
R0974	Xstrata	28972	784588	7105058	247.78							
R0975	Xstrata	28973	784579	7107857	266.4							
R0976	Xstrata	28973	784858	7106990	261.57							
R0978	Xstrata	28974	785198	7106580	244.84							
R0979	Xstrata	28974	784803	7106619	243.63							
R0980	Xstrata	28975	785139	7108946	262.76							
R0981	Xstrata	28975	784740	7109023	262.05							
R0982	Xstrata	28976	786773	7109157	242.18							
R0983	Xstrata	28976	786876	7109539	237.43							
R0984	Xstrata	28977	787219	7109504	239.19							
R0985	Xstrata	28978	787597	7109440	239.4							
R0986	Xstrata	28978	787926	7108991	247.97							
R0988	Xstrata	28979	785667	7104474	248.75							
R0989	Xstrata	28979	784900	7104617	247.48							
R0990	Xstrata	28980	784505	7104674	248.14							
R0991	Xstrata	28983	785375	7107764	244.12							
R0992	Xstrata	29005	785841	7108090	243.43							
R0993	Xstrata	29005	786232	7108030	242.53							
R0995	Xstrata	29006	786558	7107568	242.28							
R0996	Xstrata	29007	787423	7107870	241.27							
R0998	Xstrata	29008	787145	7108712	240.34							
R0999	Xstrata	29008	787522	7108655	239.09							
R1000	Xstrata	28972	785488	7105725	246.88							
R1001	Xstrata	28973	785526	7106116	246.46							
R1002	Xstrata	28974	785404	7105337	246.41							
R1003	Xstrata	28974	785040	7105383	247.26							
R1004	Xstrata	28975	784648	7105459	247.6							
R1019	Xstrata	29112	784972	7107522	264.03							
R1011	Xstrata	27504	789876	7104258	290.71							
R1022	Xstrata	29119	784740	7105874	246.36							
R1024	Xstrata	29120	783978	7105942	252.83							
R1028	Xstrata	29193	783829	7105536	251.29							
R1029	Xstrata	29194	784244	7105455	249.62							
R1030	Xstrata	29182	785316	7109901	239.42							
R1031	Xstrata	29195	784317	7105864	249.19							
R1032	Xstrata	29199	788855	7107230	264.89							
R1033	Xstrata	29199	789107	7107581	260.75							
R1034	Xstrata	29199	788581	7107691	262.29							
R1035	Xstrata	29201	788268	7107786	255.35							
R1036	Xstrata	29201	788102	7107965	259							
R1037	Xstrata	29201	788720	7108540	253.62							
R1038	Xstrata	29202	789842	7107821	278.64							
R1039	Xstrata	29202	789472	7107556	265.34							
R1040	Xstrata	29203	784888	7104302	248.18							
R1041	Xstrata	29204	786652	7104063	264.85							
R1042	Xstrata	29204	791801	7107190	274.4							
R1043	Xstrata	29235	789294	7112214	254.5							
R1045	Xstrata	29235	790365	7112665	245.15							
R1046	Xstrata	29235	790526	7113017	242.17							
R1047	Xstrata	29235	790214	7113162	239.05							
R1048	Xstrata	29236	790900	7112864	242.48							
R1049	Xstrata	29236	792629	7112235	243.01							
R1050	Xstrata	29236	792202	7112291	252.42							
R1051	Xstrata	29236	791108	7112301	253.56							
R1052	Xstrata	29237	789638	7112958	249.43							
R1053	Xstrata	29237	789785	7113341	240.54							
R1054	Xstrata	29237	789175	7113149	253.95							
R1055	Xstrata	29237	790710	7108101	285.2							
R1056	Xstrata	29238	791112	7108025	278.2							
R1057	Xstrata	29238	791311	7107411	283.7							
R1058	Xstrata	29238	791071	7107059	291.61							
R1059	Xstrata	29238	788628	7107950	262.28							
R1090	Xstrata	29239	788446	7108314	249.86							
R1091	Xstrata	29239	788269	7108535	253.05							
R1092	Xstrata	29245	784800	7106282	249.8							
R1093	Xstrata	29247	783492	7106034	255.21							
R1094	Xstrata	29247	783456	7105635	255.94							
R1095	Xstrata	29248	783887	7104838	249.99							
R1096	Xstrata	29249	784261	7105049	248.99							
R1098	Xstrata	29250	783971	7106349	251							
R1099	Xstrata	29250	784348	7106302	247.5							
R1100	Xstrata	29251	784209	7104762	249.2							
R1101	Xstrata	29251	786255	7110161	238.32							
R1103	Xstrata	29081	791105	7110695	273.8							
R1108	Xstrata	29082	791206	7110924	265.9							
R1344	Xstrata	29416	792019	7108558	263							
R1345	Xstrata	29416	791954	7105243	255							
R1348	Xstrata	29418	792759	7106393	249.8							
R1349	Xstrata	29418	792644	7105713	253							
R1350	Xstrata	29418	792724	7105123	254.9							
R1351	Xstrata	29418	793529	7104993	260.44							
R1352	Xstrata	29419	794404	7104853	284.6							
R1368	Xstrata		776596	7120613	273.42							
R1748	Xstrata	29859	794900	7105393	272							
R1752	Xstrata	29836	794305	7110778	251.9							
R1754	Xstrata	29837	794229	7111158	250.2							
R1756	Xstrata	29853	793734	7109045	247.5							
R1757	Xstrata	29854	793274	7108609	241							
R1760	Xstrata	29857	792935	7109433	244							
R1761	Xstrata	29857	792612	7109594	248.8							
R1762	Xstrata	29858	792229	7108913	261							
R1763	Xstrata	29858	792109	7107923	265							
R1764	Xstrata	29858	792890	7107863	246							
R1765	Xstrata	29858	792059	7106716	268.2							
R1767	Xstrata	29858	795769	7106274	277.4							
R1768	Xstrata	29859	794959	7108636	274.4							
R1769	Xstrata	29859	794883	7108295	279.6							
R1770	Xstrata	29859	794802	7109357	264							
R1771	Xstrata	29859	795544	7109375	262.2							
R1772	Xstrata	29859	795871	7109929	262.1							

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R1773	Xstrata	29809	794571	7109763	258.5							
R1774	Xstrata	29809	794219	7109473	256.9							
R1775	Xstrata	29809	793615	7111164	242.4							
R1776	Xstrata	29819	793514	7111583	242.41							
R1777	Xstrata	29819	793135	7111983	233.9							
R1778	Xstrata	29819	792432	7111873	250.4							
R1779	Xstrata	29829	792460	7111382	246.2							
R1780	Xstrata	29829	792148	7110476	258.2							
R1874	Xstrata	29811	783282	7114213	257.9							
R2131	Xstrata	29882	790674	7110708	280.3							
R2132	Xstrata	29882	789460	7110950	265.88							
R2133	Xstrata	29883	794412	7105463	268.9							
R2134	Xstrata	29883	793980	7105640	264.4							
R2135	Xstrata	29883	793958	7104943	269.1							
R2136	Xstrata	29883	793328	7105991	260.1							
R2238J	Xstrata	36526	783461	7104081	250.34							
R2239J	Xstrata	36526	785611	7103271	256.42							
R2240J	Xstrata	36526	784559	7103231	252.34							
R2547	Xstrata	30278	795929	7109398	262							
R4002	Xstrata	30851	793214	7107103	247							
R4003	Xstrata	30852	792669	7106963	249.73							
R4004	Xstrata	36526	789261	7109965	270							
R4005	Xstrata	30849	789014	7111883	260.8							
R4006	Xstrata	30852	787894	7110923	255							
R4007	Xstrata	30853	795464	7106613	279							
R4008	Xstrata	30853	795234	7105958	285							
R4009	Xstrata	30853	794624	7106633	271.41							
R4010	Xstrata	30853	794324	7106108	266							
R4011	Xstrata	30853	793784	7106633	262							
R4012	Xstrata	30853	794564	7108708	267							
R4013	Xstrata	30854	794684	7107758	278.2							
R4014	Xstrata	30854	794054	7108623	256							
R4016	Xstrata	30854	794384	7107318	262.79							
R4017	Xstrata	30854	793654	7107843	251.91							
R4018	Xstrata	30855	793204	7107593	244							
R4019	Xstrata	30855	792139	7107388	264							
R4020	Xstrata	30855	792729	7107418	248.73							
R4021	Xstrata	30855	793074	7108273	242.4							
R4022	Xstrata	30856	789289	7105143	277							
R4023	Xstrata	30856	789907	7105814	286.11							
R4025	Xstrata	37174	790744	7106073	280							
R4026	Xstrata	30857	789734	7107073	276							
R4027	Xstrata	30857	789384	7108143	263							
R4028	Xstrata	30858	789614	7108513	270.7							
R4029	Xstrata	30858	788534	7109433	257							
R4030	Xstrata	30858	792074	7109643	256							
R4031	Xstrata	30858	790644	7109113	270							
R4032	Xstrata	30860	792564	7107913	256							
R4033	Xstrata	30860	792544	7108393	253							
R4034	Xstrata	30860	792339	7105878	252.27							
R4035	Xstrata	30860	790414	7110108	280							
R4036	Xstrata	30860	789944	7111353	261							
R4037	Xstrata	30861	788624	7112853	252							
R4038	Xstrata	30861	789704	7112658	247							
R4039	Xstrata	30861	791834	7110753	257							
R4041	Xstrata	30944	788729	7111473	252.4							
R4044	Xstrata	30947	791684	7111503	260							
R5002	Xstrata	33668	790233	7111485	267.9							
R5007	Xstrata	33670	790730	7110697	280.8							
R5008	Xstrata	33670	790750	7110694	280.7							
R5009	Xstrata	33670	790779	7110690	280.25							
R5010	Xstrata	33670	790819	7110682	279.5							
R5011	Xstrata	33670	790868	7110674	277.75							
R5012	Xstrata	33670	790928	7110664	275.29							
R5013	Xstrata	33670	790997	7110653	273.75							
R5014	Xstrata	33670	791085	7110634	275.55							
R6237	Xstrata	38729	789642	7112222	247.43							
R6238	Xstrata	38729	789298	7112974	249.75							
R6239	Xstrata	38730	790057	7113031	240.71							
R6240	Xstrata	38731	788876	7109380	267.26							
R6241	Xstrata	38732	788274	7108588	266.01							
R6242	Xstrata	38732	790085	7109010	280.27							
R6243	Xstrata	38732	787703	7107019	244.56							
R6244	Xstrata	38758	793325	7106180	255							
R6245	Xstrata	38759	793300	7105380	263.4							
R6246	Xstrata	38759	791680	7106628	277.18							
R6247	Xstrata	38760	790081	7105002	287.52							
R6248	Xstrata	38760	790877	7104996	272.86							
R6249	Xstrata	38761	793683	7109816	240.92							
R6250	Xstrata	38761	793690	7110604	239.38							
R6251	Xstrata	38762	791708	7110225	258.93							
R6252	Xstrata	38763	791693	7108996	256.28							
R6253	Xstrata	38763	791696	7108190	274.25							
R6259	Xstrata	38787	794081	7105404	270.09							
R6261	Xstrata	38788	794516	7107000	270.45							
R6265	Xstrata	38791	789281	7111394	259.59							
R6267	Xstrata	38792	791692	7111417	260.9							
R6269	Xstrata	38792	790513	7110593	278.14							
R6271	Xstrata	38793	790073	7106607	285.77							
R6360	Xstrata	38944	794497	7110193	257.29							
R6361	Xstrata	38946	792899	7109815	242.02							
R6362	Xstrata	38945	792916	7110585	241.24							
R6363	Xstrata	38946	792897	7111389	235.89							
R6364	Xstrata	38947	791731	7104987	256.8							
R6365	Xstrata	38947	792507	7105387	257.97							
R6366	Xstrata	38948	791743	7105729	261							
R6367	Xstrata	38947	790947	7108563	269.06							
R6368	Xstrata	38948	790889	7107790	284.07							
R6369	Xstrata	38949	791289	7109416	264.82							
R6394	Xstrata	39114	793415	7110381	238.267							
R6396	Xstrata	39115	792613	7110372	248.807							
R6398	Xstrata	39115	791813	7111183	258.92							
R6399	Xstrata	39115	791811	7113182	236.717							
R6400	Xstrata	39116	792615	7111185	246.887							
R6401	Xstrata	39115	791416	7112780	250.887							
R6402	Xstrata	39116	789009	7111182	264.357							
R6403	Xstrata	39116	792212	7112781	236.457							
R6404	Xstrata	39117	788094	7112835	236.437							
R6405	Xstrata	39116	792599	7112797	233.237							
R6406	Xstrata	39117	788611	7112383	249.397							
R6408	Xstrata	39117	789028	7112766	255.227							
R6409	Xstrata	39117	791814	7112379	243.627							
R6410	Xstrata	39118	787410	7112381	235.307							
R6411	Xstrata	39117	791808	7112004	251.247							
R6412	Xstrata	39118	788628	7111534	257.307							
R6413	Xstrata	39117	791410	7111981	258.15							
R6414	Xstrata	39120	787753	7111512	252.077							
R6415	Xstrata	39118	791011	7112386	253.067							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R6416	Xstrata	39121	788595	7110403	263.5							
R6417	Xstrata	39118	793013	7111986	234.377							
R6418	Xstrata	39121	789012	7109983	273.607							
R6419	Xstrata	39118	793014	7111979	234.427							
R6420	Xstrata	39122	787831	7110378	250.327							
R6421	Xstrata	39120	793379	7111144	237.077							
R6422	Xstrata	39122	789014	7113581	255.427							
R6423	Xstrata	39121	795010	7109181	269.467							
R6424	Xstrata	39123	791412	7107981	275.387							
R6425	Xstrata	39121	794612	7109182	267.407							
R6426	Xstrata	39124	791831	7107587	268.29							
R6427	Xstrata	39121	794199	7109203	258.267							
R6428	Xstrata	39124	792611	7108383	252.407							
R6429	Xstrata	39121	794578	7108388	271.947							
R6430	Xstrata	39124	791811	7108784	263.467							
R6431	Xstrata	39123	794249	7107440	268.647							
R6432	Xstrata	39125	791801	7109980	257.127							
R6433	Xstrata	39122	788634	7106761	258.62							
R6434	Xstrata	39125	793411	7108380	245.007							
R6435	Xstrata	39123	789408	7105582	284.647							
R6436	Xstrata	39125	793810	7108781	253.237							
R6437	Xstrata	39125	786185	7104650	252.59							
R6438	Xstrata	39135	790613	7111179	281.567							
R6439	Xstrata	39125	787813	7104787	262.86							
R6440	Xstrata	39136	789476	7110387	264.977							
R6441	Xstrata	39125	792610	7108783	257.27							
R6442	Xstrata	39136	790211	7110386	274.057							
R6443	Xstrata	39134	792214	7108382	259.2							
R6444	Xstrata	39136	791011	7110383	276.167							
R6445	Xstrata	39135	789800	7111175	263.247							
R6446	Xstrata	39137	790614	7109983	285.457							
R6448	Xstrata	39137	789419	7110795	261.577							
R6449	Xstrata	39157	789706	7111809	253.347							
R6450	Xstrata	39138	789738	7111595	255.737							
R6451	Xstrata	39157	791303	7111400	265.837							
R6452	Xstrata	39138	790213	7111186	269.357							
R6453	Xstrata	39158	789301	7111802	260.107							
R6454	Xstrata	39139	790613	7111584	272.807							
R6455	Xstrata	39158	791678	7113808	230.997							
R6456	Xstrata	39139	791412	7111182	266.917							
R6457	Xstrata	39160	793701	7109403	243.427							
R6458	Xstrata	39140	789408	7112787	253.507							
R6459	Xstrata	39161	792876	7107403	245.827							
R6461	Xstrata	39161	793088	7108176	243.617							
R6464	Xstrata	39141	790228	7112396	249.407							
R6465	Xstrata	39166	786903	7104207	269.3							
R6466	Xstrata	39142	790368	7112251	251.367							
R6467	Xstrata	39166	786491	7102599	254.03							
R6468	Xstrata	39143	790099	7112503	245.927							
R6469	Xstrata	39167	789801	7102612	271.8							
R6470	Xstrata	39144	790564	7112616	246.167							
R6471	Xstrata	39167	790882	7105407	270.507							
R6472	Xstrata	39145	790898	7113305	240.797							
R6473	Xstrata	39168	792893	7105839	252.2							
R6474	Xstrata	39146	790503	7113397	239							
R6475	Xstrata	39168	792905	7105393	253.7							
R6476	Xstrata	39146	790509	7113408	239.057							
R6477	Xstrata	39168	792895	7106200	250.36							
R6478	Xstrata	39156	790898	7113798	239							
R6479	Xstrata	39171	794499	7105804	266.91							
R6480	Xstrata	39157	790904	7113801	238.507							
R6481	Xstrata	39172	788547	7104246	265.17							
R6482	Xstrata	39158	791315	7113387	236.417							
R6484	Xstrata	39160	793091	7108356	243.387							
R6486	Xstrata	39161	793314	7109000	241.767							
R6488	Xstrata	39162	793299	7109398	241.447							
R6489	Xstrata	39196	786492	7104196	261.62							
R6490	Xstrata	39166	793710	7107397	254.077							
R6491X	Xstrata	39204	775632	7118809	285.8							
R6492	Xstrata	39183	790107	7108599	278.427							
R6493	Xstrata	39204	776006	7118809	268.68							
R6494	Xstrata	39183	790533	7108012	272.577							
R6495	Xstrata	39204	776016	7118017	263							
R6496	Xstrata	39184	790499	7109404	279.357							
R6497	Xstrata	39204	775210	7118411	300.84							
R6498	Xstrata	39184	791297	7110197	265.28							
R6499	Xstrata	39205	775596	7118116	285.18							
R6500	Xstrata	39185	789304	7106202	273.287							
R6501	Xstrata	39205	775998	7117604	276.64							
R6502	Xstrata	39185	788509	7105847	258.837							
R6503	Xstrata	39205	776406	7117197	262.62							
R6504	Xstrata	39186	792104	7106979	265.267							
R6505	Xstrata	39205	776404	7117610	265.48							
R6506	Xstrata	39187	792116	7106223	257.227							
R6507	Xstrata	39206	774793	7118409	299.14							
R6508	Xstrata	39187	792498	7104998	260.82							
R6509	Xstrata	39206	774402	7118394	282.47							
R6510	Xstrata	39188	794112	7107007	271.38							
R6511A	Xstrata	39207	774006	7118398	273.65							
R6512	Xstrata	39188	794929	7107403	274.607							
R6513	Xstrata	39207	774401	7117602	284.21							
R6514	Xstrata	39188	795276	7108612	266.087							
R6515	Xstrata	39207	774787	7117089	282.79							
R6516	Xstrata	39189	795701	7109011	266.247							
R6517	Xstrata	39208	774781	7116378	273.31							
R6518	Xstrata	39189	795298	7109798	259.87							
R6519	Xstrata	39208	774047	7118782	277.33							
R6520	Xstrata	39189	795700	7109799	261.13							
R6521	Xstrata	39209	775596	7116795	267.25							
R6523	Xstrata	39208	774396	7115979	268.74							
R6524	Xstrata	39190	789304	7105802	276.07							
R6525	Xstrata	39208	775206	7116796	276.34							
R6526	Xstrata	39191	788500	7105400	262.29							
R6527	Xstrata	39209	775641	7116423	260.9							
R6528	Xstrata	39191	788903	7105801	265.64							
R6529	Xstrata	39209	776023	7119614	276.56							
R6530	Xstrata	39191	790507	7106601	293.19							
R6531	Xstrata	39210	770414	7119201	277.21							
R6532	Xstrata	39193	789301	7103393	276.12							
R6533	Xstrata	39211	769603	7119207	298.96							
R6534	Xstrata	39192	790100	7105401	284.25							
R6535	Xstrata	39211	768809	7119203	278.38							
R6536	Xstrata	39192	790894	7105803	277.08							
R6537	Xstrata	39212	767928	7119912	265.76							
R6538	Xstrata	39193	791303	7105403	268.78							
R6539	Xstrata	39213	768404	7119502	269.68							
R6540	Xstrata	39194	791303	7106182	281.9							
R6541	Xstrata	39212	768832	7120393	292.99							

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R6542	Xstrata	39194	788901	7103808	270.89							
R6543	Xstrata	39213	789205	7119597	296.61							
R6544	Xstrata	39195	788102	7103000	263.17							
R6545	Xstrata	39213	770804	7120401	269.01							
R6546	Xstrata	39194	788511	7108985	264.56							
R6547	Xstrata	39214	771592	7120400	250.2							
R6548	Xstrata	39195	789304	7109000	269.41							
R6549	Xstrata	39214	770001	7119595	285.49							
R6550	Xstrata	39195	789702	7109002	277.95							
R6551	Xstrata	39214	771210	7120797	261.23							
R6552	Xstrata	39195	789327	7104665	275.82							
R6554	Xstrata	39195	788523	7108296	248.94							
R6556	Xstrata	39196	788214	7105185	257.22							
R6558	Xstrata	39196	789278	7107403	268.6							
R6560	Xstrata	39204	776004	7118402	269.15							
R6561	Xstrata	39226	772001	7118399	249.78							
R6562	Xstrata	39205	775603	7118400	277.98							
R6563	Xstrata	39226	771589	7118006	246.72							
R6564	Xstrata	39205	775512	7117602	283.62							
R6565	Xstrata	39226	772002	7118001	259.92							
R6566	Xstrata	39226	775201	7118002	287.48							
R6567	Xstrata	39228	773582	7117990	270.39							
R6568	Xstrata	39205	775202	7117600	274.34							
R6569	Xstrata	39229	773982	7117586	283.08							
R6570	Xstrata	39206	775194	7118795	301.29							
R6571	Xstrata	39229	773253	7117619	255.86							
R6572	Xstrata	39206	774798	7118002	289.16							
R6573	Xstrata	39230	773604	7117199	267.5							
R6574	Xstrata	39206	774797	7118783	292.88							
R6575	Xstrata	39231	773615	7116786	266.93							
R6576	Xstrata	39206	774405	7118012	283.24							
R6577	Xstrata	39231	773601	7116407	277.85							
R6578	Xstrata	39207	774006	7118002	264.16							
R6579	Xstrata	39231	774387	7117243	292.41							
R6580	Xstrata	39207	774386	7118778	281.76							
R6581	Xstrata	39234	780810	7114394	280.23							
R6582	Xstrata	39207	774767	7117569	289.03							
R6583	Xstrata	39234	781590	7115211	280.59							
R6584	Xstrata	39208	776081	7116024	268.83							
R6585	Xstrata	39234	782014	7114765	271.19							
R6586	Xstrata	39209	776070	7116478	256.68							
R6587	Xstrata	39235	781981	7114021	272.32							
R6588	Xstrata	39210	776008	7119186	275.92							
R6589	Xstrata	39235	778811	7114010	254.4							
R6590	Xstrata	39210	775199	7120404	291.48							
R6591	Xstrata	39235	778433	7114413	250							
R6592	Xstrata	39210	775588	7120401	277.29							
R6593	Xstrata	39236	777599	7114061	262.82							
R6594	Xstrata	39211	774689	7120795	267.28							
R6595	Xstrata	39236	778809	7113207	270.66							
R6596	Xstrata	39211	775129	7119205	301.09							
R6597	Xstrata	39236	777601	7113663	255.41							
R6598	Xstrata	39211	774419	7120014	269.4							
R6599	Xstrata	39236	780412	7112791	283.31							
R6600	Xstrata	39212	774881	7119587	295.56							
R6601	Xstrata	39237	781200	7116400	291.21							
R6602	Xstrata	39213	769230	7120806	273.5							
R6603	Xstrata	39237	780800	7116005	280.17							
R6604	Xstrata	39213	769014	7121158	267.58							
R6605	Xstrata	39237	780799	7116397	282.13							
R6606	Xstrata	39213	767203	7120399	254.86							
R6607	Xstrata	39237	780403	7116397	275.01							
R6608	Xstrata	39214	769197	7120004	296.02							
R6609	Xstrata	39237	780000	7116006	264.03							
R6610	Xstrata	39214	769203	7120398	278.6							
R6611	Xstrata	39237	780007	7116399	262.46							
R6612	Xstrata	39216	769596	7120396	275.79							
R6613	Xstrata	39238	779653	7116467	257.47							
R6614	Xstrata	39215	771200	7121199	252.62							
R6615	Xstrata	39238	780001	7116795	266.3							
R6616	Xstrata	39215	770804	7119599	278.74							
R6617	Xstrata	39247	780399	7116800	280.64							
R6618	Xstrata	39216	772053	7118886	241.28							
R6619	Xstrata	39247	779206	7116401	266.04							
R6620	Xstrata	39216	772389	7119595	240.63							
R6621	Xstrata	39247	779216	7116773	255.12							
R6622	Xstrata	39216	772820	7118819	245.49							
R6623	Xstrata	39248	780398	7115228	272.41							
R6624	Xstrata	39217	771987	7119977	240.85							
R6625	Xstrata	39248	778799	7116396	272.9							
R6626	Xstrata	39227	772785	7117176	281.56							
R6627	Xstrata	39248	778798	7116792	265.29							
R6628	Xstrata	39227	773215	7117168	263.91							
R6629	Xstrata	39248	780805	7115202	285.17							
R6630	Xstrata	39227	772868	7117957	258.74							
R6631	Xstrata	39248	781603	7115605	292.07							
R6633	Xstrata	39248	778459	7115221	254.39							
R6634	Xstrata	39254	767363	7120813	257.88							
R6635	Xstrata	39249	781604	7116003	300.4							
R6636	Xstrata	39255	767598	7121214	254.73							
R6637	Xstrata	39249	781587	7116407	288.7							
R6638	Xstrata	39255	769599	7121608	255.06							
R6639	Xstrata	39250	778364	7115608	253.97							
R6641	Xstrata	39249	783203	7116790	286.09							
R6642	Xstrata	39256	766393	7122406	256.66							
R6643	Xstrata	39249	783197	7116403	294.83							
R6644	Xstrata	39256	772513	7120700	233.56							
R6645	Xstrata	39250	782798	7116402	281.91							
R6646	Xstrata	39256	774799	7121204	261.01							
R6647	Xstrata	39250	782401	7116407	279.67							
R6648	Xstrata	39257	775202	7121201	266.02							
R6649	Xstrata	39250	782401	7115998	288.12							
R6650	Xstrata	39256	769002	7122605	255.19							
R6651	Xstrata	39251	782002	7116354	286.06							
R6652	Xstrata	39275	776794	7116114	242.66							
R6652B	Xstrata	39281	776859	7115931	244.58							
R6653	Xstrata	39252	782800	7114806	270.46							
R6655	Xstrata	39251	782431	7115636	291.78							
R6657	Xstrata	39252	782839	7113973	259.14							
R6659	Xstrata	39253	783177	7115075	264.83							
R6661	Xstrata	39253	783633	7114575	254							
R6663	Xstrata	39253	780911	7117186	275.89							
R6665	Xstrata	39254	770806	7118403	252.05							
R6667	Xstrata	39254	771548	7120781	253.66							
R6669	Xstrata	39254	767563	7118802	268.21							
R6671	Xstrata	39254	771993	7120415	246.3							
R6672	Xstrata	39279	777202	7119198	243.5							
R6673	Xstrata	39255	768536	7121612	260.01							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R6675	Xstrata	39257	773203	7120449	249.68							
R6676	Xstrata	39281	776801	7115605	251.27							
R6676A	Xstrata	39282	776780	7115598	251.19							
R6677	Xstrata	39257	773605	7120807	246.87							
R6678	Xstrata	39282	776407	7115600	246.53							
R6679	Xstrata	39257	774870	7114847	259.62							
R6680	Xstrata	39282	776803	7115206	262.26							
R6681	Xstrata	39257	775606	7114808	270.32							
R6682	Xstrata	39283	777601	7115199	249.46							
R6683	Xstrata	39257	774815	7114394	259.93							
R6684	Xstrata	39284	777554	7115208	251.79							
R6685	Xstrata	39285	776799	7114806	261.12							
R6686	Xstrata	39285	776407	7115996	251							
R6687	Xstrata	39258	776804	7117607	254.93							
R6689	Xstrata	39258	776751	7116851	245.98							
R6689A	Xstrata	39274	776743	7116855	246.4							
R6691	Xstrata	39278	777599	7117500	240.14							
R6692	Xstrata	39295	771197	7119597	259.29							
R6693	Xstrata	39279	777596	7117492	240.27							
R6695	Xstrata	39280	777604	7117203	241.77							
R6697	Xstrata	39281	778023	7117166	247.13							
R6699	Xstrata	39281	778398	7117205	256.15							
R6701	Xstrata	39282	778400	7116814	261.73							
R6703	Xstrata	39284	778404	7116404	264.53							
R6705	Xstrata	39285	777994	7116813	249.32							
R6715	Xstrata	39287	786906	7110994	236.47							
R6716	Xstrata	39355	787705	7103786	267.64							
R6717	Xstrata	39287	786906	7110984	236.47							
R6718	Xstrata	39355	788383	7103298	270.77							
R6720	Xstrata	39356	788569	7104059	264.92							
R6725	Xstrata	39357	786092	7110205	237.49							
R6727	Xstrata	39378	785299	7103788	249.55							
R6729	Xstrata	39379	784516	7103782	250.7							
R6731	Xstrata	39380	783686	7103010	252.57							
R6731A	Xstrata	39385	783692	7103008	252.57							
R6733	Xstrata	39380	786911	7105810	264.1							
R6735	Xstrata	39382	785708	7106993	244.57							
R6737	Xstrata	39383	785369	7107023	244.62							
R6739	Xstrata	39384	784498	7104680	248.69							
R6741	Xstrata	39395	783952	7105933	251.59							
R6743	Xstrata	39395	784495	7105426	247.81							
R6745	Xstrata	39396	785301	7105373	247.31							
R6747	Xstrata	39397	785299	7106197	245.62							
R6749	Xstrata	39398	784946	7106617	244.47							
R6751	Xstrata	39398	784898	7105398	247.38							
R6753	Xstrata	39399	789299	7113779	247.72							
R6755	Xstrata	39399	789503	7113605	249.05							
R6757	Xstrata	39399	789302	7113399	247.29							
R6759	Xstrata	39400	789498	7113205	246.88							
R6761	Xstrata	39400	789704	7113398	240.84							
R6763	Xstrata	39401	790101	7113406	238.42							
R6764	Xstrata	39401	789895	7113202	243.09							
R6765	Xstrata	39401	789714	7113015	248.37							
R6766	Xstrata	39402	790497	7113012	242.54							
R6767	Xstrata	39403	788939	7113802	255.25							
R6768	Xstrata	39403	788902	7113359	246.92							
R6769	Xstrata	39403	788937	7113080	252.58							
R6770	Xstrata	39404	783713	7107013	248.93							
R6771	Xstrata	39404	785301	7108601	264.21							
R6772	Xstrata	39405	786098	7108606	252.86							
R6773	Xstrata	39405	786832	7108633	241.24							
R6774	Xstrata	39405	783681	7109402	245.96							
R6775	Xstrata	39406	786478	7108147	241.92							
R6776	Xstrata	39406	784507	7109419	245.45							
R6777	Xstrata	39407	785299	7109400	252.5							
R6778	Xstrata	39407	785315	7111796	264.66							
R6779	Xstrata	39408	786155	7110983	240.2							
R6780	Xstrata	39409	786854	7109446	239.53							
R6781	Xstrata	39410	786499	7107401	243.84							
R6782	Xstrata	39500	787908	7106200	248.42							
R6784	Xstrata	39501	787900	7106298	248.49							
R6785	Xstrata	39501	787901	7106353	250.51							
R6786	Xstrata	39501	787900	7106400	250.74							
R6787	Xstrata	39500	787897	7106254	248.1							
R6788	Xstrata	39502	787899	7106449	249.63							
R6789	Xstrata	39502	787900	7106496	247.46							
R6790	Xstrata	39502	787903	7106549	246.73							
R6791	Xstrata	39503	787903	7106593	246.74							
R6792	Xstrata	39503	787903	7106652	246.52							
R6793	Xstrata	39514	787902	7106705	246.46							
R6794	Xstrata	39514	787903	7106755	247.19							
R6795	Xstrata	39514	787903	7106801	248.09							
R6796	Xstrata	39515	787901	7106853	247.95							
R6797	Xstrata	39515	787904	7106903	247.74							
R6798	Xstrata	39516	787895	7106936	247.43							
R6799	Xstrata	39516	787896	7107004	248.44							
R6800	Xstrata	39516	787948	7106803	250.6							
R6801	Xstrata	39516	788012	7106802	253.21							
R6802	Xstrata	39517	788050	7106804	254.21							
R6803	Xstrata	39517	788100	7106802	254.67							
R6804	Xstrata	39518	788151	7106801	255.32							
R6805	Xstrata	39518	788197	7106801	255.79							
R6806	Xstrata	39518	788248	7106803	256.1							
R6807	Xstrata	39519	788302	7106803	256.17							
R6808	Xstrata	39519	787656	7106791	244.7							
R6809	Xstrata	39519	787706	7106811	244.39							
R6810	Xstrata	39520	787761	7106799	245.04							
R6811	Xstrata	39520	787804	7106803	245.72							
R6812	Xstrata	39521	787853	7106808	246							
R6813	Xstrata	39521	787892	7107041	251.12							
R6814	Xstrata	39521	787901	7107102	255.01							
R6815	Xstrata	39522	787887	7107137	253.63							
R6816	Xstrata	39522	787498	7106767	245.07							
R6817	Xstrata	39522	787603	7106768	244.44							
R6818	Xstrata	39523	787559	7106744	245							
R6819	Xstrata	39523	790301	7109199	275.24							
R6820	Xstrata	39524	790297	7109149	276.48							
R6821	Xstrata	39524	790298	7109100	277.76							
R6822	Xstrata	39524	790298	7109251	275.81							
R6823	Xstrata	39524	790297	7109298	276.7							
R6824	Xstrata	39524	790295	7109349	279							
R6825	Xstrata	39524	790296	7109403	278.95							
R6826	Xstrata	39524	790295	7109444	280.41							
R6827	Xstrata	39525	790301	7109495	282.14							
R6828	Xstrata	39525	790299	7109552	283.57							
R6829	Xstrata	39525	788698	7111188	258.99							
R6830	Xstrata	39526	788950	7111005	265.77							
R6831	Xstrata	39557	796500	7105400								

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R6832	Xstrata	39557	788498	7113367	241.22							
R6833	Xstrata	39558	788590	7113793	247.25							
R6834	Xstrata	39558	790884	7111512	272.61							
R6835	Xstrata	39558	790969	7111500	272.3							
R6836	Xstrata	39558	790819	7111497	275.1							
R6837	Xstrata	39559	790813	7111549	274.11							
R6838	Xstrata	39559	790729	7111604	272.56							
R6839	Xstrata	39559	790689	7111509	276.71							
R6840	Xstrata	39559	790661	7111552	274.97							
R6841	Xstrata	39559	790567	7111539	271.08							
R6842	Xstrata	39559	790655	7111449	277.97							
R6843	Xstrata	39560	790753	7111438	278.39							
R6844	Xstrata	39561	769029	7118768	297.53							
R6845	Xstrata	39561	769307	7118604	291.9							
R6846	Xstrata	39562	770142	7118335	266.34							
R6847	Xstrata	39562	770789	7117246	274.53							
R6848	Xstrata	39563	771590	7117201	256.59							
R6849	Xstrata	39563	771610	7116391	257.71							
R6850	Xstrata	39564	772474	7118132	266.5							
R6851	Xstrata	39564	772803	7117597	272.07							
R6852	Xstrata	39565	772395	7114819	268.14							
R6853	Xstrata	39565	773196	7116158	275.95							
R6854	Xstrata	39565	772604	7116801	283.47							
R6855	Xstrata	39566	784752	7115669	251.63							
R6856	Xstrata	39566	784019	7116012	264.36							
R6857	Xstrata	39567	784809	7116406	253.5							
R6858	Xstrata	39567	784399	7116401	263.95							
R6859	Xstrata	39567	783606	7117595	276.22							
R6860	Xstrata	39568	784400	7116600								
R6861	Xstrata	39576	785196	7116902	255.37							
R6862	Xstrata	39576	780810	7118782	255.15							
R6863	Xstrata	39576	779596	7117993	261.76							
R6864	Xstrata	39577	779206	7118789	246.53							
R6865	Xstrata	39577	780004	7118815	252.16							
R6866	Xstrata	39578	779197	7119599	233.11							
R6867	Xstrata	39578	778791	7117586	250.96							
R6868	Xstrata	39579	778409	7118807	236.33							
R6869	Xstrata	39579	774402	7122002	251.27							
R6870	Xstrata	39580	774590	7122402	262.16							
R6871	Xstrata	39580	775194	7122805	263.6							
R6872	Xstrata	39581	775722	7122655	275.69							
R7000	Xstrata	39295	786875	7110201	239.34							
R7001	Xstrata	39296	785254	7111008	260.55							
R7002	Xstrata	39297	786153	7111788	247.32							
R7003	Xstrata	39297	784483	7110169	251.87							
R7004	Xstrata	39298	785330	7110149	242.55							
R7043	Xstrata	39388	784506	7106998	254.15							
R7044	Xstrata	39394	792458	7111828	250.12							
R7045	Xstrata	39395	795305	7105396	283.73							
R7046	Xstrata	39364	793638	7104661	267.69							
R7047	Xstrata	39396	793229	7104941	258.14							
R7048	Xstrata	39396	792893	7104602	256.81							
R7049	Xstrata	39396	796026	7105860	276.15							
R7051	Xstrata	39398	795324	7107795	281.8							
R7052	Xstrata	39398	791310	7111805	262.92							
R7053	Xstrata	39399	795288	7106204	289.68							
R7054	Xstrata	39400	795303	7106972	283.8							
R7055	Xstrata	39401	793714	7106276	257.54							
R7056	Xstrata	39401	793321	7106607	250.3							
R7060	Xstrata	39404	794516	7105191	284.6							
R7061	Xstrata	39405	793787	7105792	260.37							
R7062	Xstrata	39405	794702	7106761	273.71							
R7063	Xstrata	39405	794882	7107027	277.49							
R7064	Xstrata	39406	794965	7106169	276.61							
R7067	Xstrata	39423	787698	7109393	239.94							
R7068	Xstrata	39422	790678	7110778	279.87							
R7069	Xstrata	39423	786908	7104619	268.76							
R7070	Xstrata	39423	790461	7107379	286.54							
R7071	Xstrata	39424	786228	7105462	263.44							
R7072	Xstrata	39423	783684	7103813	251.36							
R7073	Xstrata	39425	786902	7107802	242.46							
R7074	Xstrata	39424	785261	7104204	249.84							
R7075	Xstrata	39426	787679	7108587	241.01							
R7076	Xstrata	39424	785398	7107776	244.3							
R7077	Xstrata	39455	787816	7107732	242.82							
R7087	Xstrata	39498	785765	7108010	243.72							
R7088	Xstrata	39517	789908	7107733	283.29							
R7089	Xstrata	39517	790099	7107001	285.57							
R7090	Xstrata	39518	789860	7106844	282.49							
R7091	Xstrata	39518	789708	7106825	278.74							
R7092	Xstrata	39518	789708	7106689	280.81							
R7093	Xstrata	39518	789499	7106800	281.5							
R7094	Xstrata	39518	789499	7106630	278.43							
R7095	Xstrata	39519	789903	7106517	282.27							
R7096	Xstrata	39519	789509	7106476	271.86							
R7097	Xstrata	39519	789702	7106499	277.36							
R7098	Xstrata	39519	789910	7106656	285.77							
R7099	Xstrata	39520	789901	7106199	282.06							
R7100	Xstrata	39520	790502	7105402	277.82							
R7101	Xstrata	39520	790601	7106351	286.24							
R7102	Xstrata	39521	790951	7106352	287.38							
R7103	Xstrata	39521	791098	7106799	284.58							
R7104	Xstrata	39521	788452	7106607	261.46							
R7105	Xstrata	39521	788113	7106998	251							
R7106	Xstrata	39522	788900	7106204	268							
R7107	Xstrata	39522	790900	7111700	269							
R7108	Xstrata	39522	790900	7111796	264.17							
R7109	Xstrata	39522	790887	7111992	258.14							
R7110	Xstrata	39522	790899	7112102	255							
R7111	Xstrata	39523	790304	7107999	285.01							
R7112	Xstrata	39523	790900	7107950	280.6							
R7113	Xstrata	39523	791107	7107595	281.76							
R7114	Xstrata	39524	793704	7108204	250.14							
R7115	Xstrata	39524	794416	7108203	274.58							
R7116	Xstrata	39524	794121	7107814	264.36							
R7117	Xstrata	39524	794272	7108951	266.56							
R7126	Xstrata	39555	786498	7110604	236.78							
R7127	Xstrata	39555	786499	7109807	238.2							
R7128	Xstrata	39556	787260	7109866	238.41							
R7129	Xstrata	39556	784897	7110611	255.18							
R7130	Xstrata	39557	785663	7110567	247.17							
R7131	Xstrata	39557	789717	7104991	283.31							
R7134	Xstrata	39558	788119	7102396	263.8							
R7135	Xstrata	39559	781182	7111955	278.97							
R7136	Xstrata	39559	776395	7118000	264.07							
R7137	Xstrata	39560	773225	7118807	263.71							
R7138	Xstrata	39560	773602	7118400	260.04							
R7139	Xstrata	39560	774979	7115887	261.03							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R7140	Xstrata	39561	775563	7115827	257.41							
R7141	Xstrata	39562	775967	7115968	272.26							
R7142	Xstrata	39562	773245	7114387	257.82							
R7143	Xstrata	39563	774005	7114396	253.36							
R7144	Xstrata	39563	773206	7113610	266.78							
R7145	Xstrata	39564	772412	7113605	271.09							
R7146	Xstrata	39564	776333	7114371	271.63							
R7147	Xstrata	39565	775573	7114047	266.48							
R7148	Xstrata	39565	783599	7115210	262.08							
R7149	Xstrata	39566	783994	7115194	253.02							
R7150	Xstrata	39576	780815	7114793	284.69							
R7151	Xstrata	39576	779477	7115009	283.91							
R7152	Xstrata	39577	779192	7115990	273.82							
R7153	Xstrata	39577	778997	7117192	252.38							
R7154	Xstrata	39578	779299	7117245	249.77							
R7155	Xstrata	39597	767602	7121602	253							
R7156	Xstrata	39597	768450	7120700								
R7157	Xstrata	39615	775846	7120000	274							
R7158	Xstrata	39615	775490	7119493	297							
R7159	Xstrata	39615	776817	7120036	249							
R7160	Xstrata	39616	774408	7119561	271							
R7161	Xstrata	39615	767750	7119500								
R7163	Xstrata	39616	770000	7120100								
R7164	Xstrata	39616	770000	7121200								
R7165	Xstrata	39616	770800	7120800								
R7166	Xstrata	39617	772000	7121200								
R7167	Xstrata	39618	769443	7122804								
R7168	Xstrata	39618	769607	7122409								
R7169	Xstrata	39618	769600	7122001								
R7170	Xstrata	39618	768796	7122813								
R7171	Xstrata	39619	770000	7121481								
R7172	Xstrata	39620	772801	7120002								
R7173	Xstrata	39620	773566	7119961								
R7174	Xstrata	39620	780591	7112212	288							
R7175	Xstrata	39620	781997	7111996	294							
R7176	Xstrata	39621	782391	7113204	271							
R7177	Xstrata	39621	782420	7113802	250							
R7178	Xstrata	39622	782360	7114351	266							
R7179	Xstrata	39622	783994	7114763	256							
R7180	Xstrata	39623	783577	7112053	300							
R7181	Xstrata	39623	782791	7111579	287							
R7182	Xstrata	39623	779104	7112456	264							
R7183	Xstrata	39624	778422	7112409	272							
R7184	Xstrata	39624	783191	7117205	274							
R7185	Xstrata	39624	782755	7117623	263							
R7186	Xstrata	39626	784426	7118834	249							
R7187	Xstrata	39626	784004	7118431	264							
R8003	Xstrata	39394	784488	7105429	247.82							
R8007	Xstrata	39404	784500	7107802	264.86							
R8008	Xstrata	39404	783700	7107804	257.25							
R8009	Xstrata	39405	784114	7108483	266.12							
R8011	Xstrata	39435	786188	7106534	244.96							
R8012	Xstrata	39435	787298	7106967	243.88							
R8013	Xstrata	39436	783686	7103010	252.6							
R9000	Xstrata	39375	787303	7102599	263.4							
R9001	Xstrata	39376	786898	7103394	259.05							
R9002	Xstrata	39380	786107	7103773	252.02							
R9003	Xstrata	39377	785719	7102986	263.34							
R9005	Xstrata	39406	786097	7109404	252.11							
R9006	Xstrata	39407	784503	7111023	268.17							
R9007	Xstrata	39407	783719	7110224	262.96							
R9008	Xstrata	39408	790114	7107406	285.16							
R9009	Xstrata	39408	788501	7107393	252.7							
R9010	Xstrata	39409	786917	7104632	269							
R9014	Xstrata	39480	789300	7110200	268.25							
R9015	Xstrata	39480	789443	7110253	266.29							
R9016	Xstrata	39480	789453	7110331	265.38							
R9017	Xstrata	39480	789428	7110382	265.1							
R9018	Xstrata	39481	789445	7110435	264.49							
R9019	Xstrata	39481	789453	7110511	263.93							
R9020	Xstrata	39481	789299	7110595	263.65							
R9021	Xstrata	39482	789099	7110399	269.63							
R9022	Xstrata	39482	789301	7110402	265.93							
R9023	Xstrata	39482	790921	7110873	275.62							
R9024	Xstrata	39483	790099	7110796	269.51							
R9025	Xstrata	39494	790626	7111102	280.44							
R9026	Xstrata	39494	790754	7111154	278.62							
R9027	Xstrata	39494	790753	7111255	279.6							
R9028	Xstrata	39494	790897	7111304	277.63							
R9029	Xstrata	39495	791103	7111502	271.29							
R9030	Xstrata	39495	790884	7111511	272.66							
R9031	Xstrata	39495	790932	7111601	269.95							
R9032	Xstrata	39495	790758	7111705	267.84							
R9033	Xstrata	39496	790624	7111704	269.98							
R9034	Xstrata	39496	790380	7111802	259.04							
R9035	Xstrata	39496	790245	7111797	259.21							
R9036	Xstrata	39496	790099	7111800	263.4							
R9037	Xstrata	39497	789905	7111801	260.19							
R9038	Xstrata	39497	790249	7111602	263.54							
R9039	Xstrata	39497	790377	7111600	261.73							
R9040	Xstrata	39497	790376	7111492	266.05							
R9041	Xstrata	39498	790506	7111498	269.18							
R9042	Xstrata	39498	790626	7111502	275.43							
R9043	Xstrata	39498	790749	7111498	276.67							
R9044	Xstrata	39498	790710	7111400	280							
R9045	Xstrata	39498	790627	7111303	280.19							
R9046	Xstrata	39498	790500	7111180	277.45							
R9047	Xstrata	39499	789901	7109995	270.12							
R9048	Xstrata	39499	789953	7109950	271.26							
R9049	Xstrata	39500	790000	7109902	272.89							
R9050	Xstrata	39500	789997	7109698	276							
R9051	Xstrata	39500	789949	7109651	275.01							
R9052	Xstrata	39501	789903	7109597	275.69							
R9053	Xstrata	39501	789846	7109598	276.43							
R9054	Xstrata	39501	789796	7109599	276.29							
R9055	Xstrata	39501	789747	7109600	275.75							
R9056	Xstrata	39502	790042	7109748	276.33							
R9057	Xstrata	39502	790050	7109852	274.65							
R9058	Xstrata	39502	790150	7109854	275.97							
R9059	Xstrata	39531	790201	7109904	274.85							
R9060	Xstrata	39503	790249	7109955	276.2							
R9061	Xstrata	39510	790299	7110008	277.61							
R9062	Xstrata	39510	790197	7109700	281.25							
R9063	Xstrata	39510	790250	7109654	283.29							
R9064	Xstrata	39510	790295	7109611	283.95							
R9065	Xstrata	39514	790166	7109753	279.03							
R9066	Xstrata	39515	790092	7109795	276.53							
R9067	Xstrata	39514	789703	7109609	275.25							

RN	INFO SOURCE	DRILLED_DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
R9068	Xstrata	39515	790729	7111604	272.6							
R9069	Xstrata	39514	790110	7111960	260.26							
R9070	Xstrata	39515	789249	7111000	262.22							
R9071	Xstrata	39515	789099	7111605	265.56							
R9072	Xstrata	39515	789699	7109798	271.28							
R9073	Xstrata	39520	788705	7113686	250.67							
R9074	Xstrata	39524	790297	7112797	243.75							
R9075	Xstrata	39524	790302	7113003	239.76							
R9076	Xstrata	39525	790501	7113201	241.38							
R9077	Xstrata	39525	790305	7113226	238.12							
R9078	Xstrata	39525	789700	7113523	241.15							
R9079	Xstrata	39526	789900	7113407	239.65							
R9087	Xstrata	39540	788495	7106300	260.43							
R9088	Xstrata	39540	788503	7107003	260.11							
R9089	Xstrata	39540	788896	7106987	267.63							
R9090	Xstrata	39541	794340	7108714	266							
R9091	Xstrata	39541	794910	7107728	282.83							
R9092	Xstrata	39541	791697	7111810	255.76							
R9093	Xstrata	39542	791520	7112143	257.94							
R9094	Xstrata	39542	793900	7109231	249.82							
R9095	Xstrata	39542	786920	7106176	258.95							
R9096	Xstrata		786921	7106177								
R9097	Xstrata	39547	786934	7106173	258.95							
R9098	Xstrata	39569	789989	7132209								
R9106	Xstrata	39543	793910	7108506	254.2							
R9107	Xstrata	39543	790900	7106973	293.56							
R9108	Xstrata	39543	790499	7104997	282.96							
R9109	Xstrata	39543	787320	7106031	260.48							
R9110	Xstrata	39544	789347	7107047	276.91							
R9111	Xstrata	39544	789002	7106547	267.41							
R9112	Xstrata	39544	789259	7106484	269.14							
R9113	Xstrata	39545	789707	7107411	272.2							
R9114	Xstrata	39545	790509	7107821	287.74							
R9115	Xstrata	39545	790777	7107588	280.75							
R9116	Xstrata	39546	793371	7107930	244.41							
R9117	Xstrata	39547	790163	7106412	286.31							
R9118	Xstrata	39547	789694	7105813	282.72							
SHC0131	Xstrata	27492	774712	7117594	290.7							
SHC0133	Xstrata	27478	775230	7116116	277.99							
SHC0134	Xstrata	27478	774942	7118273	290.33							
SHC0139	Xstrata	29458	774330	7119288	277.56							
SHC0140	Xstrata	27489	774426	7118583	295.14							
SHC0141	Xstrata	27490	776046	7117975	283.61							
SHC0145	Xstrata	27491	772910	7117428	278.34							
SHC0218	Xstrata	28763	772790	7118386	249.64							
SHC0222	Xstrata	27824	775258	7119147	308.64							
SHC0227	Xstrata	27807	773529	7117353	262.92							
SHC0229	Xstrata	27807	773800	7116246	281.83							
SHC0234	Xstrata	27808	775516	7117628	283.35							
SHC0235	Xstrata	28927	776520	7117448	266.8							
SHC0236	Xstrata	27825	775596	7118073	288.22							
SHC0241	Xstrata	27826	775121	7118742	303.17							
SHC0242	Xstrata	27827	774459	7117112	292.89							
SHC0243	Xstrata	27827	774167	7117515	289.04							
SHC0857	Xstrata	28924	775489	7121566	275.91							
SHC0888	Xstrata	29452	775059	7120752	280.34							
SHC0892	Xstrata	29450	776033	7121857	292.82							
SHC0894	Xstrata	29450	776381	7121347	286.05							
SHC0896	Xstrata	29452	775609	7122256	279.75							
SHC0899	Xstrata	29453	775266	7121938	264.46							
SHC0904	Xstrata	29453	774290	7120891	258.68							
SHC0906	Xstrata	29454	774984	7120039	295.48							
SHC0916	Xstrata	29458	775405	7117094	265.21							
SHC0952	Xstrata	29458	772937	7116562	276.59							
SHC0959	Xstrata	29458	774857	7116724	276.6							
SHC0963	Xstrata	29458	776099	7116612	250.87							
SHC0964	Xstrata	29459	775695	7116250	268.63							
SHC130R	Xstrata	27477	774340	7116617	285.26							
SHC1367	Xstrata	29448	774498	7119264	284.76							
SHC1371	Xstrata	29447	775528	7119858	278.73							
SHC1372	Xstrata	29450	776502	7122493	281.29							
SHC1376	Xstrata	29451	775129	7122519	265.25							
SHC1384	Xstrata	29463	774805	7121601	258.98							
SHC1386	Xstrata	29453	775987	7120859	302.13							
SHC1392	Xstrata	29455	773869	7116928	271.15							
SHC1568	Xstrata	29466	775974	7117285	265.38							
SHF1527	Xstrata	29725	776231	7114979	259.89							
SHL0140	Xstrata	29627	774423	7118581	295.14							
SHL0243	Xstrata	29626	774164	7117513	289.04							
SHL0916	Xstrata	29627	775403	7117092	265.21							
SHL131A	Xstrata	28019	774709	7117591	0							
SHL131B	Xstrata	28022	774709	7117591	0							
SHL1386	Xstrata	29628	775984	7120857	302.13							
SHR0002	Xstrata	27191	772749	7115001	265.99							
SHR0009	Xstrata	27198	773367	7119434	255.24							
SHR0109	Xstrata	27464	772409	7114198	269.41							
SHR0126	Xstrata	27472	773340	7115958	277.91							
SHR0128	Xstrata	27477	774965	7114840	263.11							
SHR0129	Xstrata	27477	773898	7114925	255.18							
SHR0132	Xstrata	27478	775731	7116831	262.57							
SHR0135	Xstrata	27478	773876	7117824	275.97							
SHR0138	Xstrata	27488	773202	7118797	263.74							
SHR0142	Xstrata	27490	776204	7119426	288.69							
SHR0143	Xstrata	27490	777115	7118469	270.39							
SHR0144	Xstrata	27491	772410	7118014	269.67							
SHR0220	Xstrata	27805	773855	7119368	265.19							
SHR0224	Xstrata	27805	776510	7118982	256.5							
SHR0226	Xstrata	27805	775167	7119420	303.28							
SHR0228	Xstrata	27806	772621	7116989	282.92							
SHR0230	Xstrata	27806	773268	7118013	253.12							
SHR0232	Xstrata	27806	773462	7116844	268.11							
SHR0233	Xstrata		775188	7117276	270.56							
SHR0237	Xstrata	27809	776453	7118363	264.08							
SHR0238	Xstrata	27809	775891	7118624	275.51							
SHR0239	Xstrata	27809	773709	7118703	273							
SHR0240	Xstrata	27809	774274	7118198	271							
SHR0244	Xstrata	27810	775260	7118186	297.75							
SHR0245	Xstrata	27810	777169	7118140	248.8							
SHR0410	Xstrata	28216	776098	7120773	299.36							
SHR0594	Xstrata	28594	777836	7120346	274.61							
SHR0595	Xstrata	28595	777149	7121089	284.58							
SHR0856	Xstrata	28923	774742	7122629	266.77							
SHR0858	Xstrata	28925	776402	7121972	289.26							
SHR0859	Xstrata	28925	776981	7122607	287.66							
SHR0864	Xstrata	28927	775254	7120093	296.36							
SHR0865	Xstrata	28927	775325	7120680	294.19							
SHR0882	Xstrata	28938	775652	7119100	283.5							
SHR0883	Xstrata	28938	774832	7119204	285.19							

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SHR0884	Xstrata	28939	774070	7119323	271.11							
SHR0885	Xstrata	28939	775713	7119507	268.83							
SHR0886	Xstrata	28939	775429	7120311	282.81							
SHR0887	Xstrata	28939	775031	7120372	280.74							
SHR0889	Xstrata	28939	775883	7121019	290.2							
SHR0890	Xstrata	28940	775539	7121081	275.76							
SHR0891	Xstrata	28940	775649	7121869	274.93							
SHR0893	Xstrata	28940	775965	7121415	279.66							
SHR0895	Xstrata	28940	776727	7121272	280.64							
SHR0897	Xstrata	28941	775313	7122342	267.13							
SHR0898	Xstrata	28941	774964	7122432	261.16							
SHR0900	Xstrata	28941	775211	7121544	266.99							
SHR0901	Xstrata	28941	775153	7121147	266.66							
SHR0902	Xstrata	28942	774737	7121219	259.81							
SHR0903	Xstrata	28942	774679	7120810	266.49							
SHR0905	Xstrata	28942	774596	7120417	267.82							
SHR0907	Xstrata	28949	774577	7120109	273.26							
SHR0908	Xstrata	28949	774908	7119627	296.73							
SHR0909	Xstrata	28949	774532	7119693	280.45							
SHR0910	Xstrata	28950	775780	7119861	276.37							
SHR0911	Xstrata	28950	775851	7120269	271.51							
SHR0912	Xstrata	28950	775901	7120667	289.16							
SHR0913	Xstrata	28950	775545	7118706	293.77							
SHR0914	Xstrata	28950	774741	7118037	293.44							
SHR0915	Xstrata	28950	774968	7117524	278.77							
SHR0920	Xstrata	28952	775835	7117035	257.54							
SHR0921	Xstrata	28952	775817	7117442	265.83							
SHR0922	Xstrata	28952	775053	7117914	283.22							
SHR0923	Xstrata	28952	776211	7117436	270.1							
SHR0924	Xstrata	28952	776210	7116985	255.92							
SHR0925	Xstrata	28953	776513	7116944	250.3							
SHR0926	Xstrata	28953	776649	7117744	255.58							
SHR0927	Xstrata	28953	777083	7117689	245.12							
SHR0928	Xstrata	28953	776269	7117812	264.28							
SHR0929	Xstrata	28953	775894	7118215	271.71							
SHR0930	Xstrata	28954	776718	7118164	253.02							
SHR0931	Xstrata	28954	776805	7118474	262.4							
SHR0932	Xstrata	28954	776411	7118542	258.82							
SHR0933	Xstrata	28954	775506	7118270	284.8							
SHR0934	Xstrata	28589	774770	7118789	292.71							
SHR0935	Xstrata	28954	774402	7118855	277.62							
SHR0936	Xstrata	28954	773898	7118694	277.24							
SHR0937	Xstrata	28955	773949	7118468	275.24							
SHR0938	Xstrata	28955	773997	7118222	265.17							
SHR0939	Xstrata	28955	773488	7118200	256.73							
SHR0940	Xstrata	28955	773443	7117797	261.75							
SHR0941	Xstrata	28955	773042	7117832	258.19							
SHR0942	Xstrata	28955	772647	7117898	258.73							
SHR0943	Xstrata	28955	772573	7117460	265.61							
SHR0944	Xstrata	28956	772871	7116966	279.14							
SHR0945	Xstrata	28956	773719	7117287	274.79							
SHR0946	Xstrata	28956	774177	7117247	285.6							
SHR0947	Xstrata	28956	774041	7116844	280.54							
SHR0948	Xstrata	28956	773644	7116514	277.33							
SHR0949	Xstrata	28964	773228	7116198	274.85							
SHR0950	Xstrata	28964	773205	7115834	275.74							
SHR0951	Xstrata	28964	772864	7116232	281.98							
SHR0953	Xstrata	28965	773235	7116563	268.63							
SHR0954	Xstrata	28965	772524	7116725	282.65							
SHR0955	Xstrata	28965	772434	7116330	283.37							
SHR0956	Xstrata	28966	772014	7116363	258.53							
SHR0957	Xstrata	28966	772109	7116760	262.07							
SHR0958	Xstrata	28966	774535	7116790	283.3							
SHR0960	Xstrata	28967	774863	7116376	271.34							
SHR0961	Xstrata	28967	775270	7116334	266.64							
SHR0962	Xstrata	28967	775301	7116692	268.38							
SHR0965	Xstrata	28969	776060	7116205	263.11							
SHR0966	Xstrata	28969	776439	7116542	247.51							
SHR0967	Xstrata	28969	775648	7115794	253.08							
SHR0968	Xstrata	28970	774828	7116019	270.91							
SHR0969	Xstrata	28970	774436	7116153	272.38							
SHR0970	Xstrata	28970	774099	7116097	274.75							
SHR1366	Xstrata	29447	775233	7119884	294.18							
SHR1369	Xstrata	29449	776039	7122127	280.3							
SHR1370	Xstrata	29449	776053	7122519	279.71							
SHR1373	Xstrata		776266	7121025	281.78							
SHR1374	Xstrata	29451	777099	7120914	274.11							
SHR1375	Xstrata	29451	776639	7120956	274.6							
SHR1383	Xstrata	29453	774888	7121984	257.25							
SHR1385	Xstrata	29453	774392	7121470	253.99							
SHR1387	Xstrata	29453	777032	7120556	265.85							
SHR1388	Xstrata	29455	773279	7119176	253.1							
SHR1389	Xstrata	29455	773572	7118923	262.18							
SHR1390	Xstrata	29455	773160	7118352	251.01							
SHR1391	Xstrata	29455	774092	7116502	280.27							
SHR1393	Xstrata	29456	772298	7117068	279.77							
SHR1394	Xstrata	29456	772257	7117550	268.13							
SHR1395	Xstrata	29456	772763	7115445	268.62							
SHR1396	Xstrata	29456	772877	7115822	277.76							
SHR1397	Xstrata	29456	772391	7115523	266.03							
SHR1398	Xstrata	29456	772493	7115930	277.63							
SHR1399	Xstrata	29459	776017	7115825	249.09							
SHR1400	Xstrata	29459	776532	7116197	245.33							
SHR1521	Xstrata	29460	776918	7116466	242.06							
SHR1522	Xstrata	29460	775887	7115368	259.87							
SHR1523	Xstrata	29460	775510	7115428	250.73							
SHR1524	Xstrata	29460	775107	7115513	248.31							
SHR1525	Xstrata	29460	774746	7115580	254.55							
SHR1526	Xstrata	29460	776330	7115261	254.65							
SHR1528	Xstrata	29461	775865	7115045	270.39							
SHR1529	Xstrata	29461	775593	7115106	267.75							
SHR1530	Xstrata	29462	775089	7115181	261.56							
SHR1531	Xstrata	29462	774726	7115269	249.28							
SHR1532	Xstrata	29462	774387	7115343	253.4							
SHR1533	Xstrata	29463	773920	7115303	262.53							
SHR1534	Xstrata	29463	773673	7115716	270.8							
SHR1535	Xstrata	29463	774437	7115696	265.6							
SHR1536	Xstrata	29463	774047	7115731	266.03							
SHR1537	Xstrata	29464	773208	7115389	266.1							
SHR1538	Xstrata	29464	773548	7115347	263.31							
SHR1566	Xstrata	29466	777384	7118413	248							
SHR1567	Xstrata	29466	777018	7117264	245.03							
SHR1816	Xstrata	29797	772324	7118443	260							
SHR1845	Xstrata	29803	772064	7115693	266							
THC0216	Xstrata	27803	768503	7120772	287							
THC0265	Xstrata	27855	768587	7121620	259							
THC0404	Xstrata	28214	770022	7120784	276							
THC0407	Xstrata	28927	769902	7119895	285							

RN	INFO SOURCE	DRILLED DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
THC0408	Xstrata	28927	770527	7118725	260							
THC0425	Xstrata	28936	771132	7120226	260							
THC0483	Xstrata	28937	768786	7119804	276							
THC0518	Xstrata		767576	7119508	260							
THR0107	Xstrata	27463	769265	7118901	295							
THR0262	Xstrata	27855	771956	7119187	240							
THR0263	Xstrata	27855	769107	7119991	292							
THR0264	Xstrata	27855	767537	7121708	258							
THR0403	Xstrata	28214	770642	7119488	287							
THR0405	Xstrata	28214	770809	7120624	262							
THR0406	Xstrata	28215	769205	7120871	273							
THR0409	Xstrata	28216	768805	7122664	253							
THR0420	Xstrata	28235	770932	7118596	255							
THR0421	Xstrata	28235	771032	7119432	262							
THR0422	Xstrata	28235	770672	7119878	279							
THR0423	Xstrata	28236	769543	7120447	274							
THR0424	Xstrata	28236	771238	7121016	253							
THR0426	Xstrata	28237	770496	7121494	255							
THR0427	Xstrata	28237	769323	7121630	262							
THR0428	Xstrata	28237	768122	7121836	251							
THR0429	Xstrata	28238	769652	7121225	255							
THR0430	Xstrata	28238	768841	7121340	267							
THR0431	Xstrata	28238	769139	7120487	281							
THR0432	Xstrata	28239	769818	7119584	295							
THR0433	Xstrata	28239	768242	7119805	271							
THR0434	Xstrata	28239	770467	7118271	258							
THR0475	Xstrata	28382	770608	7119116	268							
THR0476	Xstrata	28383	770230	7119162	286							
THR0477	Xstrata	28383	769839	7119208	294							
THR0478	Xstrata	28383	769354	7119311	294							
THR0479	Xstrata	28384	768994	7119313	278							
THR0480	Xstrata	28384	769119	7119708	290							
THR0481	Xstrata	28384	769510	7119655	295							
THR0482	Xstrata	28385	770286	7119546	278							
THR0484	Xstrata		768791	7120145	284							
THR0516	Xstrata	28398	768844	7120529	282							
THR0517	Xstrata	28317	767916	7119478	261							
THR0519	Xstrata	28317	767978	7119866	263							
THR1593	Xstrata	29778	770214	7118743	266							
THR1594	Xstrata	29778	769634	7118833	276							
THR1595	Xstrata	29779	769044	7118903	295							
THR1596	Xstrata	29779	768654	7118963	283							
THR1597	Xstrata	29779	767874	7119083	275							
THR1598	Xstrata	29779	767154	7119183	254							
THR1599	Xstrata	29779	768254	7119063	280							
THR1600	Xstrata	29811	768644	7119783	279							
THR1661	Xstrata	29780	768434	7120253	271							
THR1662	Xstrata	29780	767994	7120353	278							
THR1664	Xstrata	29780	767294	7120083	260							
THR1665	Xstrata	29781	768544	7121213	268							
THR1666	Xstrata	29781	768914	7120893	273							
THR1667	Xstrata	29781	769014	7121583	262							
THR1668	Xstrata	29781	770584	7121383	253							
THR1669	Xstrata	29781	769394	7121103	261							
THR1670	Xstrata	29782	769734	7120773	267							
THR1671	Xstrata	29782	770094	7120473	275							
THR1672	Xstrata	29782	770534	7120703	261							
THR1673	Xstrata	29782	770454	7119863	275							
THR1674	Xstrata	29782	769634	7119913	288							
THR1675	Xstrata	29782	770814	7117973	252							
THR1676	Xstrata	29783	770404	7117803	256							
THR1677	Xstrata	29783	769674	7118163	281							
THR1678	Xstrata	29784	768884	7118533	294							
THR1817	Xstrata	29797	771657	7118543	242.5							
THR1818	Xstrata	29798	771044	7119083	258							
THR1819	Xstrata	29829	771374	7119383	254							
THR1820	Xstrata	29829	771764	7119313	245							
THR1821	Xstrata	29798	771334	7118893	250							
THR1822	Xstrata	29829	771084	7119813	265							
THR1823	Xstrata	29799	771504	7119783	255							
THR1824	Xstrata	29799	771824	7119773	246							
THR1825	Xstrata	29799	768884	7122003	264							
THR1826	Xstrata	29799	768854	7122303	262							
THR1827	Xstrata	29800	769214	7122263	250							
THR1828	Xstrata	29800	769184	7121943	260							
THR1829	Xstrata	29800	768664	7122033	261							
THR1830	Xstrata	29800	768724	7122323	256							
THR1831	Xstrata	29800	768224	7121753	252							
THR1832	Xstrata	29801	768104	7120633	275							
THR1833	Xstrata	29801	768174	7121013	265							
THR1834	Xstrata	29801	768234	7121303	258							
THR1835	Xstrata	29802	767764	7120683	262							
THR1836	Xstrata	29802	767704	7120383	270							
THR1837	Xstrata	29802	767664	7120123	264							
THR1838	Xstrata	29802	767614	7119813	252							
THR1839	Xstrata	29802	767154	7119493	251							
THR1840	Xstrata	29802	767534	7119113	265							
THR1841	Xstrata	29803	767004	7119543	248							
THR1842	Xstrata	29803	767224	7119823	254							
W0005	Xstrata	26328	792721	7112434	233							
W0006	Xstrata	26328	794333	7109902	256							
W0007	Xstrata	26328	794285	7109256	264							
W0008	Xstrata	26328	794708	7108045	282							
W0010	Xstrata	36526	792586	7106431	251							
W0011	Xstrata	36526	793845	7106772	269							
W0012	Xstrata	36526	794679	7106753	274							
W0012A	Xstrata	36526	794942	7107302	274							
W0012B	Xstrata	36526	795096	7106744	279							
W0012R	Xstrata	36526	795011	7107031	279							
W0013	Xstrata	36526	794404	7105651	263							
W0013A	Xstrata	36526	794311	7104981	283							
W0017	Xstrata	36526	796073	7105705	270							
W4024	Xstrata	30857	790021	7106581	284.76							
WUC0417	Xstrata	28395	796102	7105120	277.85							
WUR0371	Xstrata	28051	795813	7105280	272.78							
WUR0430	Xstrata	28395	796146	7105453	272.32							
WUR1741	Xstrata	29833	795583	7105032	285.9							
WUR1742	Xstrata	29833	794980	7104713	287.9							

RN	INFO SOURCE	DRILLED DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
4461	DNRW (not found)	6/10/1942	782982	7105731	240							
8428	DNRW (not found)	1/01/2100	790854	7103432	250							
8432	DNRW	12/12/1940	217313	7117749	370							
8437	DNRW	1/01/1940	215712	7124830	285							
8438	DNRW	1/01/1948	217321	7122524	285							
8439	DNRW	1/01/1940	211544	7126987	285							
8444	DNRW	1/01/1950	204004	7130392	290							
10372	DNRW	12/12/1944	787859	7128971	250		BIRKHEAD FORMATION	18.3				
10458	DNRW	1/01/2100	793021	7089860	350							
10459	DNRW (not found)	1/04/1956	781317	7104597	302							
10460	DNRW	12/12/1949	790693	7119884	250							
10463	DNRW	12/12/1937	207293	7115372	333							
10464	DNRW	18/12/1975	215424	7111240	354							
10466	DNRW	12/12/1942	203879	7124844	350							
10471	DNRW	12/12/1940	793971	7128312	250		BIRKHEAD FORMATION	0				
10479	DNRW (not found)	12/12/1945	797350	7106704	243.6	598	EUROMBAH FORMATION	12.19		32		
10546	DNRW	22/09/1945	797802	7128965	450			24.4	25.6			
10585	DNRW	1/02/1975	216256	7117757	356							
10587	DNRW	12/12/1945	215342	7095992	375							
10588	DNRW	1/01/1945	212610	7093899	348							
10596	DNRW	12/12/1940	788879	7127224	251		BIRKHEAD FORMATION	0				
10662	DNRW	24/06/1946	765947	7088383	375							
10663	DNRW	24/06/1946	767065	7090115	375							
10722	DNRW	6/07/1949	202881	7123405	262	295	HUTTON FORMATION	207	212			
10807	DNRW	12/12/1946	215733	7116206	373	85	INJUNECKGP	82	85			
10808	DNRW	12/12/1946	205620	7117984	315							
10809	DNRW	20/03/1946	209128	7101768	300	187	INJUNE CREEK GROUP	129	129			
10810	DNRW	1/01/1947	218287	7098520	250							
10848	DNRW	24/12/1947	204895	7081465	420	62	ORALLO FORMATION	55	62			
10886	DNRW	24/07/1947	208056	7106180	338	324	BIRKHEAD FORMATION	298	306			
10994	DNRW	26/05/1948	799430	7083644	350							
11064	DNRW	30/09/1947	200470	7102341	450	100	INJUNE CREEK GROUP	12	25			
11175	DNRW	22/08/1948	215295	7123558	365	270	BIRKHEAD FORMATION					
11176	DNRW	1/01/1948	214837	7125396	365							
11425	DNRW	1/01/1948	796710	7123784	257			19.8				
11434	DNRW	16/05/1949	792099	7128015	250		BIRKHEAD FORMATION	21				
11491	DNRW	28/03/1949	797054	7082929	350	199	ORALLO FORMATION	180	199			
11560	DNRW	31/12/1950	789508	7117908	255	611	HUTTON SANDSTONE	606	611			
11575	DNRW	24/03/1950	215668	7101389	350	149		145	149			
11600	DNRW	6/09/1949	791179	7083310	355	97	ORALLO FORMATION	85	97			
11605	DNRW	30/12/1949	208487	7117987	315	213	HUTTON SANDSTONE	28	28			
12072	DNRW	10/10/1952	795033	7085594	342.8	112.5	DONCASTER MEMBER	111.3	112.5			
12118	DNRW	1/11/1952	209229	7122131	285	350		344	350			
12382	DNRW	18/08/1953	202699	7121645	290	148	INJUNE CREEK GROUP	140	148			
12550	DNRW	1/11/1953	766241	7083819	398	78	MOOGA	69	78			
12627	DNRW	11/05/1954	797789	7127178	257	256	BIRKHEAD FORMATION	72.5	73.4			
12712	DNRW	20/03/1954	787050	7093598	300	228	INJUNE CREEK GROUP	219	228			
12713	DNRW	5/08/1949	788675	7092977	300	99	INJUNE CREEK GROUP	94	99			
12763	DNRW (verified, relocated)	7/09/1954	795570	7105451	350	134	INJUNE CREEK GROUP	101	106			
12904	DNRW	10/11/1955	782007	7086502	300	32	GUBBAMUNDA	25	32			
13041	DNRW	1/01/1955	798595	7124634	237	276.7	BIRKHEAD FORMATION	37.8	38.1			
13060	DNRW	30/11/1955	794166	7124580	242	271.5	BIRKHEAD FORMATION	25	28			
13218	DNRW	30/08/1956	798377	7078925	400							
13831	DNRW	15/12/1958	202159	7102626	286	24	INJUNE CREEK GROUP	21	24			
13856	DNRW	8/07/1958	795476	7109889	250							
13884	DNRW	2/06/1958	783785	7097952	350	166		162	166			
14192	DNRW	1/07/1960	785760	7088021	300							
14193	DNRW	1/07/1960	787364	7087739	300							
14247	DNRW	1/08/1960	208442	7119988	310							
14248	DNRW	1/06/1953	212810	7121347	300	297	HUTTON FORMATION	195	224			
14249	DNRW	1/01/1956	210028	7122549	300							
14250	DNRW	2/11/1958	209823	7117955	300	67	INJUNE CREEK GROUP	45	48			
14454	DNRW	18/08/1960	763237	7090255	350	103	GUBBAMUNDA	48	49			
14455	DNRW	1/11/1960	762977	7092509	300							
14456	DNRW	1/11/1960	764870	7091392	350							
14538	DNRW	1/01/1961	206946	7130889	250							
14539	DNRW	5/03/1961	762165	7086705	250	94	ORALLO FORMATION	92	94			
14596	DNRW	15/11/1960	762910	7122166	253		BIRKHEAD FORMATION	0				
14631	DNRW	1/01/1961	763861	7118297	250							
14632	DNRW	1/01/1961	762190	7115406	250							
14652	DNRW	11/03/1961	798169	7114509	300							
14654	DNRW	2/05/1961	208960	7116734	300	189	HUTTON	24	48			
14743	DNRW (not found)	17/07/1957	784054	7109003	250	30	INJUNE CREEK GROUP	25	30			
14744	DNRW	31/07/1958	783781	7113044	250	73	INJUNE CREEK GROUP	67	73			
14889	DNRW	1/01/1937	767668	7127551	345		BIRKHEAD FORMATION	0				
14986	DNRW	2/11/1961	205145	7129216	280	30	INJUNE CREEK GROUP	29	30			
15117	DNRW	17/10/1962	769078	7088133	550	91	ORALLO	86	91			
15189	DNRW	21/06/1962	792672	7087958	350	26	ORALLO	17	26			
15371	DNRW	16/11/1962	790952	7084332	350	172	ORALLO	164	172			
15487	DNRW	5/03/1963	201820	7127200	350	599	HUTTON	544	599			
15498	DNRW	20/02/1963	772099	7094507	350	82	GUBBAMUNDA	60	82			
15499	DNRW	4/03/1963	769071	7095771	350	67	GUBBAMUNDA	51	67			
15500	DNRW	29/11/1962	785119	7084123	350	85	GUBBERAMUNDA SANDSTONE	45	48			
15501	DNRW	18/12/1962	786283	7085329	350	75	ORALLOFMN	67	75			
15508	DNRW	17/05/1963	209305	7092624	300	539	HUTTON SANDSTONE	137	140			
15558	DNRW	14/03/1963	769500	7092374	350	100	GUBBAMUNDA	86	100			
15560	DNRW	1/01/1946	216052	7092712	350							
15561	DNRW	1/01/1946	216337	7092410	350							
15565	DNRW	1/01/1956	215572	7101942	350							
15568	DNRW	1/01/1955	213317	7097087	350							
15674	DNRW	7/11/1963	217180	7113650	300	195	INJUNE CREEK GROUP	184	195			
15711	DNRW	15/01/1964	784344	7123566	248		BIRKHEAD FORMATION	32				
15722	DNRW	1/01/1964	215664	7109151	360							
15761	DNRW	5/03/1964	777189	7115681	250	36	INJUNE CREEK GROUP	33	36			
15765	DNRW	5/02/1964	786111	7125437	250	85.3	BIRKHEAD FORMATION	62.5	67.1		8130	
15779	DNRW	22/12/1963	777937	7123395	270		BIRKHEAD FORMATION	165.2				
15780	DNRW	5/01/1964	776854	7124835	255		BIRKHEAD FORMATION	103.6			2420	
15781	DNRW	29/01/1964	781086	7124837	250	140.2	BIRKHEAD FORMATION	54.9				
15785	DNRW	10/03/1964	214106	7115524	340	157	HUTTON	27	30			
15793	DNRW (not found)	27/01/1965	796077	7106979	270	674	HUTTON SANDSTONE	56.4	57.9			
15802	DNRW	29/04/1964	793428	7116496	200							
15828	DNRW	4/04/1964	783805	7112859	300	125	INJUNE CREEK GROUP	122	125			
15831	DNRW	18/02/1964	781592	7122455	250	170.6	BIRKHEAD FORMATION	117.3	120.3			
15835	DNRW	1/04/1964	797584	7091450	350	164	INJUNE CREEK GROUP	160	164			
15836	DNRW	23/02/1964	787079	7122613	250	196.6	BIRKHEAD FORMATION	88.4	91.4			
15838	DNRW	26/04/1964	770384	7122937	250	147	BIRKHEAD FORMATION	102	103			
15854	DNRW	1/05/1964	776103	7122202	250	164.6	BIRKHEAD FORMATION	160.9	164.6			
15855	DNRW	1/05/1964	783315	7112069	250	132	INJUNE CREEK GROUP	129	132			
15856	DNRW	1/05/1964	769816	7110261	300	243	INJUNE CREEK GROUP	239	243			
15857	DNRW	1/05/1964	786529	7124195	250	110.4	BIRKHEAD FORMATION	106.7	110.4			
15888	DNRW	1/03/1964	796116	7096505	350	1163	PRECIPICE	1118	1163			
15889	DNRW	1/03/1964	796989	7094575	350	133	INJUNE CREEK GROUP	128	133			
15892	DNRW	30/09/1964	778990	7114041	250	15	INJUNE CREEK GROUP	10	15			
15967	DNRW	28/07/1964	760184	7099956	300	109	INJUNE CREEK GROUP	108	109			
16040	DNRW	2/11/1964	77388									

16135	DNRW	30/06/1964	764241	7105479	300	152	INJUNE CREEK GROUP	146	152		
16191	DNRW	9/02/1965	774489	7118263	250	21	INJUNE CREEK GROUP	18	21		
16285	DNRW	10/06/1965	209156	7098041	320	104	INJUNE CREEK GROUP	102	104		
16296	DNRW	7/06/1965	766590	7110235	300	90	SPRINGBOK FORMATION	87	90		
16312	DNRW	1/09/1965	190831	7118006	250	1415	CLEMATIS				
16537	DNRW	16/12/1967	771838	7104583	300			1354	1375		
16661	DNRW	22/09/1966	200495	7124275	300	305	HUTTON FORMATION	164	166		
16789	DNRW	26/12/1966	768973	7108492	350	205	INJUNE CREEK GROUP	203	205		
16791	DNRW	4/12/1965	767921	7101985	350						
16882	DNRW (not found)	1/04/1965	779489	7104913	300	277	INJUNE CREEK GROUP	253	277		
17110	DNRW	28/02/1967	214594	7117382	370	372	HUTTON FORMATION	103	109		
17306	DNRW	16/09/1967	210092	7108381	360	411	HUTTON FORMATION	151	158		
17456	DNRW	2/07/1967	772271	7092101	350	65	ALLUVIUM	63	65		
17457	DNRW	5/07/1967	775961	7089374	350	78	GUBBERAMUNDA SANDSTONE	74	78		
17461	DNRW	8/07/1967	205205	7093393	350	47	INJUNE CREEK GROUP	42	47		
17462	DNRW	3/07/1967	205072	7090679	330	96	INJUNE CREEK GROUP	93	96		
17579	DNRW	29/06/1967	796753	7091562	300						
17580	DNRW	29/07/1967	797927	7093075	300						
17594	DNRW	10/08/1967	201159	7092961							
17595	DNRW	9/08/1967	201160	7092931							
17716	DNRW	29/06/1967	206253	7091261	330						
17717	DNRW	29/06/1967	207168	7088910	330						
17753	DNRW	13/11/1967	769829	7122980	250		BIRKHEAD FORMATION	54.9	55.8		
17799	DNRW (not found)	15/12/1967	786377	7121057	250	21	INJUNE CREEK GROUP	19	21		
17800	DNRW	25/01/1968	785695	7121719	250	65	INJUNE CK GROUP	63	65		
18061	DNRW (not found)	29/07/1968	784465	7109980	250	199	INJUNE CK GROUP	198	199		
18138	DNRW	18/11/1968	767063	7083309	400	130	ORALLO FORMATION	128	130		
18197	DNRW	15/03/1969	778951	7129164	250	125.3	BIRKHEAD FORMATION	53.3	53.9		
18239	DNRW	1/05/1964	204131	7102702	300						
18392	DNRW	8/12/1971	200726	7080506	350						
19025	DNRW	1/01/1934	207081	7092727	303						
19048	DNRW	1/01/1949	210258	7116095	300	237.8	INJUNE CREEK GROUP	237	237.8		
22117	DNRW (verified, relocated)	21/06/1962	789805	7101840	292						
22126	DNRW	6/10/1962	207660	7121223	327.5						
22343	DNRW	30/09/1964	794266	7079872	442.2						
22371	DNRW	24/11/1964	204097	7110486	302.2						
22392	DNRW	6/01/1965	791732	7091882	338.5						
22541	DNRW	19/06/1966	211885	7105116	317.8						
22654	DNRW	14/11/1969	770964	7087934	395.5						
23147	DNRW	17/11/1983	206872	7130542	340						
23172	DNRW	25/01/1982	791321	7091860	341.7						
23177	DNRW	9/02/1983	207646	7126834	300.5						
23509	DNRW	27/11/1985	791257	7098668	300						
24934	DNRW	1/01/1939	770470	7094972	300						
26292	DNRW	1/01/1964	792183	7125549	250						
26300	DNRW	7/04/1973	769512	7106325	350						
26371	DNRW	1/01/1965	778140	7119849	400						
26385	DNRW	1/01/1967	204618	7089899	330						
26386	DNRW	1/01/1967	206023	7091625	330						
26398	DNRW (not found)	1/01/1965	797794	7102997	350						
26429	DNRW	1/01/1964	776605	7126165	300						
26482	DNRW		791541	7084596	340						
30553	DNRW	30/08/1969	763805	7099052	450	35	WALLOON CM	2	35		
30650	DNRW	21/11/1969	217692	7116988	300	181	INJUNE CK GROUP	170	181		
30681	DNRW	5/07/1970	208536	7113403	300	413	HUTTON FORMATION	42	61		
31331	DNRW (not found)	1/03/1969	784432	7108471	300	26	INJUNE CK GROUP	25	26		
32880	DNRW	7/08/1969	786183	7093340	350	63	GUBBERAMUN	14	25		9900
33286	DNRW	28/08/1969	766208	7094321	300	66	WALLOON CM	44	66		
33435	DNRW	8/09/1969	761713	7105561	250	85	INJUNE CK GROUP	78	85		
33438	DNRW	1/09/1969	218272	7109454	350						
33443	DNRW	30/09/1969	787076	7089778	300	99	ORALLO FM	98	99		
33486	DNRW	23/05/1971	200988	7081190	350	101	INJUNE CK	29	30		
33567	DNRW	17/08/1969	790025	7090020	300	208	INJUNE CK	205	208		
33807	DNRW	18/04/1972	775961	7119433	250						
34542	DNRW	22/02/1971	777971	7084741	350	125	MOOGA SST	117	125		
34581	DNRW	20/07/1970	781061	7094069	300						
34708	DNRW	14/01/1970	766592	7110327	350	167	BIRKHEAD FORMATION	132	132		
34709	DNRW	10/01/1970	767306	7108527	300	137	INJUNE CK GROUP	135	137		
34718	DNRW (verified, relocated)	7/02/1970	773331	7109479	300	62	INJUNE CK GROUP	62	62		
34823	DNRW	21/02/1970	792589	7087960	340	70	GUBBAMUNDA	42	45		
34929	DNRW (verified, relocated)	30/01/1970	770047	7112012	300	57	INJUNE CK	51	57		
34951	DNRW	2/02/1970	766223	7122253	250	0	BIRKHEAD FORMATION				
35051	DNRW	13/05/1970	791537	7085674	340	19	GUBBAMUNDA	18	19		
35600	DNRW	25/07/1970	778412	7080728	400	114	SANDSTONE	103	114		
35842	DNRW	14/07/1970	763565	7100904	300	36	WALLOON CM	35	36		
35966	DNRW	15/07/1970	782230	7089115	300	48	BIRKHEAD FORMATION	47	48		
36342	DNRW	16/07/1973	765205	7113220	250						
36363	DNRW	28/09/1970	765357	7093476	300	86	GUBBAMUNDA	44	57		
36731	DNRW	13/04/1971	204632	7103915	300						
37479	DNRW	16/05/1973	763605	7102905	400	90	WALLOON CM	76	90		
37555	DNRW	18/12/1971	212879	7089315	350	82.9	INJUNE CREEK GROUP	82.3	82.9		
37611	DNRW	1/01/1970	205169	7092530	300	4	ALLUVIUM	3	4		
38337	DNRW	30/06/1972	205440	7129716	300	89	HUTTON FORMATION	41	57		
38573	DNRW	10/11/1972	217677	7097152	350	19	INJUNE CK GROUP	18	19		
43069	DNRW	18/05/1973	766471	7080211	400	335	GUBBAMUNDA	111	117		
43339	DNRW		793913	7085158	350	58	BUNGIL	52	58		
43380	DNRW	8/12/1972	772057	7121733	250		BIRKHEAD FORMATION	0			
43482	DNRW	6/03/1973	778359	7094989	300	25	GUBBERAMUNDA SANDSTO	21	25		
43483	DNRW	8/03/1973	786757	7079189	350	85	INJUNE CK GROUP	82	85		
43507	DNRW	5/03/1973	772550	7090863	300	115	GUBBAMUNDA	59	68		
43540	DNRW	30/04/1973	203587	7088828	350	8	ALLUVIUM	3	8		
43772	DNRW (verified, relocated)	3/05/1973	798263	7100460	300	61	INJUNE CK GROUP	57	61		
43802	DNRW	18/05/1973	765856	7081301	400						
43869	DNRW	3/08/1973	786180	7083176	300	102	GUBBERAMUNDA SANDSTONE	100	102		
43870	DNRW	7/05/1973	205718	7091618	300	11	ALLUVIUM	4	11		
43986	DNRW	24/07/1973	789603	7086056	350	87	GUBBERAMUNDA SANDST.	61	69		
44000	DNRW	2/08/1973	792581	7099912	350						
44001	DNRW	10/10/1973	786936	7083467	350	56	ORALLO FORMATION	54	56		
44006	DNRW	29/07/1951	783996	7092403	300						
44040	DNRW	26/07/1973	785822	7090822	300	73	ORALLO FORMATION	71	73		
44041	DNRW	25/07/1973	788226	7090276	300	51	ORALLO FORMATION	42	51		
44042	DNRW	18/07/1973	778337	7090124	350	131	GUBBAMUNDA	125	131		
44044	DNRW	7/08/1973	200992	7102600	300	47	INJUNE CK GROUP	45	47		
44097	DNRW (verified, relocated)	1/01/1973	796993	7100798	300	64	INJUNE CK GROUP	61	64		
44168	DNRW	1/10/1973	789633	7087411	300	67	GUBBERAMUNDA SANDST.	57	67		
44214	DNRW	1/01/1920	204849	7094371	350						
44215	DNRW	9/08/1973	207182	7089495	350						
44216	DNRW	9/08/1973	208317	7088443	350						
44217	DNRW	9/08/1973	207196	7088879	350						
44246	DNRW	7/10/1973	764476	7117053	250	19	INJUNE CK GROUP	18	19		
44270	DNRW	1/01/1934	206155	7091936	350						
44277	DNRW	4/08/1973	783920	7088924	300	58	ORALLO FORMATION	57	58		
44278	DNRW	1/11/1973	785786	7087959	300	50	ORALLO FORMATION	43	50		
44279	DNRW	8/08/1973	779694	7089940	400	77	GUBBAMUNDA	52	77		

44280	DNRW	1/11/1973	780798	7088376	350	106	GUBBMUNDA	45	106				
44324	DNRW	1/03/1974	782393	7085138	300	25	MOOGA SST	24	25				
44572	DNRW	1/12/1973	779097	7086719	300								
44573	DNRW	1/12/1973	781282	7086364	300								
44574	DNRW	1/12/1973	781242	7083284	300								
44605	DNRW	1/12/1973	786313	7113012	250	78	INJUNE CK	72	78				
44677	DNRW	1/02/1974	779049	7084533	350								
44699	DNRW	26/04/1974	770463	7098606	350	66	INJUNE CK	60	66				
44708	DNRW	1/01/1974	206037	7091009	300								
44709	DNRW	1/01/1974	206537	7089789	300								
44712	DNRW	22/03/1974	790293	7090815	350								
44713	DNRW	24/07/1973	789418	7088956	300								
48806	DNRW	22/04/1974	765903	7099748	350	140	SPRINGBOK SANDSTONE	134	140				
48807	DNRW	1/12/1973	208327	7087981	350	5	ALLUVIUM	2	5				
48811	DNRW	11/05/1974	779984	7127971	250	194.1	BIRKHEAD FORMATION	35.1	35.7				
48813	DNRW	18/09/1973	206025	7091533	300	5	ALLUVIUM	3	5				
48814	DNRW	7/03/1974	206281	7091261	300	5	ALLUVIUM	3	5				
48815	DNRW	1/01/1968	206683	7089484	300	5	ALLUVIUM	3	5				
48817	DNRW	29/03/1974	789022	7089889	300	65	ORALLO FORMATION	61	65				
48818	DNRW	28/03/1974	784332	7089993	300	26	ALLUVIUM	22	26				
48835	DNRW	14/01/1975	786208	7081943	350	137	GUBBERAMUN	102	137				
48836	DNRW	31/08/1945	786709	7084519	350	91	GUBBERAMUN	48	50				
48837	DNRW	15/03/1945	786831	7086241	350	40	GUBBERAMUN	30	40				
48841	DNRW (verified, relocated)	1/03/1950	789688	7124804	250		BIRKHEAD FORMATION	0					
48848	DNRW	1/01/1975	767405	7086413	400								
48852	DNRW	8/01/1976	205185	7082118	350	704	HUTTON SANDSTONE	370	377				
48855	DNRW	1/10/1975	769987	7083833	400								
48861	DNRW	14/10/1975	204628	7093134	300	7	ALLUVIUM	6	7				
48863	DNRW	11/02/1976	212619	7101014	350	817	CLEMATIS	780	817				
48914	DNRW	1/01/1962	205644	7121896	300								
48942	DNRW	15/01/1980	781003	7123576	400								
48944	DNRW	1/02/1979	763784	7084455	400								
48950	DNRW	14/09/1979	207257	7087402	350	633	HUTTON FORMATION	510	513				
48958	DNRW	21/11/1979	765803	7088170	400								
48965	DNRW	1/01/1979	765930	7105167	400	201	INJUNE CK	200	201				
48995	DNRW	1/12/1950	770157	7090605	350								
48996	DNRW	1/12/1950	774425	7090238	300								
48997	DNRW	1/12/1950	776909	7090832	300								
48998	DNRW	1/12/1950	771091	7088799	350								
48999	DNRW	31/12/1980	761254	7096578	300	91	BLYTHDALE	70	91				
58005	DNRW	31/05/1981	778387	7130161	250	164	BIRKHEAD FORMATION	59	68				
58006	DNRW	30/07/1980	778818	7086664	300	67	ORALLO FORMATION	66	67				
58007	DNRW	1/03/1973	792650	7084540	350	37	BUNGIL	35	37				
58009	DNRW	1/06/1980	775800	7100064	373	11	ALLUVIUM	9	11				
58010	DNRW	1/01/1980	795950	7080798	350								
58011	DNRW	1/01/1980	793878	7083618	350								
58020	DNRW	1/01/1964	200068	7104119	300								
58024	DNRW	1/11/1981	214897	7103559	355	376	HUTTON FORMATION	113	114				
58028	DNRW		783143	7081395	350								
58063	DNRW		201219	7093979									
58064	DNRW	4/04/1982	765955	7122751	250	51	INJUNE CK GROUP	49	51				
58075	DNRW		793729	7088058	350								
58079	DNRW	9/06/1982	768179	7115838	250	58	INJUNE CK GROUP	52	58				
58128	DNRW	2/06/1983	208174	7088594	350	11	ALLUVIUM	6	11				
58129	DNRW (verified, relocated)	6/02/1983	783 710	7 109 458	300	17	INJUNE CK GROUP	15	17				
58133	DNRW	6/07/1983	782141	7111871	250	670	HUTTON FORMATION	611	619				
58135	DNRW	1/01/1965	773557	7087300	350								
58145	DNRW	1/01/1959	774895	7084961	350								
58157	DNRW	12/12/1954	776064	7081210	300								
58213	DNRW	8/10/1985	203734	7114060	340	426.8	HUTTON FORMATION	268	426.8				
58216	DNRW	22/10/1985	798905	7129710	450	196	BIRKHEAD FORMATION	82	196				
58217	DNRW	5/09/1985	204920	7102227	300								
58232	DNRW	19/04/1986	797553	7114339	300	555.7	HUTTON FORMATION	161.6	167.7				
58234	DNRW	27/03/1986	216695	7105262	400	260	EUROMBAH FORMATION	254	260				
58244	DNRW	23/05/1986	782467	7087262	300	11	ORALLO FORMATION	10	11				
58252	DNRW	16/08/1986	770642	7080678	350	85.4	COREENA	61.9	65.6				
58259	DNRW (not found)	16/07/1986	792867	7106436	350	81	BIRKHEAD FORMATION	32	37				
58266	DNRW	14/11/1987	799011	7120928	250	312.9	HUTTON	61	62.2				
58274	DNRW	14/11/2003	797731	7082414									
58276	DNRW	17/11/2003	790844	7082024									
58294	DNRW	10/04/1987	787085	7093936	300	313.9	BIRKHEAD FORMATION	182.9	185.9				
58297	DNRW	7/04/1987	769957	7115709	250	146	BIRKHEAD FORMATION	35.9	36.6				
58300	DNRW	7/04/1987	217993	7091615	300	108	BIRKHEAD FORMATION	54	56				
58302	DNRW	30/03/1987	768587	7126208	350	66	INJUNE CREEK GROU	65	66				
58306	DNRW	30/08/1987	761758	7131366	245	474	BIRKHEAD FORMATION	86	96				
58307	DNRW	24/05/1987	781819	7081732	300	131	WALLOON COAL	87.5	131				
58309	DNRW	7/06/1987	765351	7093169	300	41.4	INJUNE CK GROUP	35.3	41.4				
58313	DNRW	4/07/1987	218035	7092494	300	353	HUTTON FORMATION	56	66				
58316	DNRW		206137	7091474	350								
58317	DNRW	2/05/1987	787086	7121658	250	11	ALLUVIUM	8	11				
58318	DNRW		204186	7086963	330	8.5	ALLUVIUM						
58319	DNRW	8/10/1987	206248	7091476	350			6.4	8.5				
58326	DNRW	1/01/1988	206617	7089944	350								
58335	DNRW	17/02/1988	218512	7089439	355	422	HUTTON SANDSTONE	288	422				
58372	DNRW	1/01/1989	761259	7083089	400								
58377	DNRW	10/08/1989	795328	7116854	300	670	HUTTON SANDSTONE	104					
58409	DNRW	30/09/1989	202127	7098005	250								
58462	DNRW	15/08/1991	761763	7121881	240	620	EUROMBAH	608	620				
58473	DNRW	13/11/1991	760595	7091418	330	131	GUBBERAMUNDA	45	50			1860	
58484	DNRW	3/04/1992	776963	7123416	310	775	HUTTON SANDSTONE	62	71				
58486	DNRW	31/07/1991	207456	7126773		240	SPRINGBOK	221	240				
58491	DNRW	2/02/1993	786350	7127464	250	33	INJUNE CREEK GROUP	28	33			2880	
58495	DNRW	1/01/2100	788461	7083433	380								
58519	DNRW	14/10/1992	205006	7093604	290								
58536	DNRW	1/02/1993	208432	7110500	350	218	INJUNE CREEK GROUP	204	218			3570	
58537	DNRW	13/02/1993	765297	7117745	250	124	BIRKHEAD FORMATION	120	124			5950	
58548	DNRW		204858	7094001	350								
58609	DNRW		778002	7100356	300	24.7	INJUNE CREEK	24.4	24.7			9700	
58679	DNRW (not found)		796218	7107038									
58693	DNRW		793739	7083621	350								
58786	DNRW		783996	7092403		670	PRECIPICE SANDSTONE	600	670				
58827	DNRW	25/05/2000	217013	7116133									
58836	DNRW	13/08/2000	772327	7088189									
58842	DNRW	6/03/2001	783631	7083355									
58850	DNRW (verified, relocated)	20/05/2001	770996	7117535			PRECIPICE SANDSTONE	1200		27			
58910	DNRW (not found)	15/11/2001	789028	7100167									
58929	DNRW	7/02/2002	205390	7092566									
58967	DNRW	19/12/1977	762121	7105091	300								
58969	DNRW		796090	7086864	325								
58970	DNRW		771121	7103520	295								
58973	DNRW		772614	7108416	300								
58974	DNRW		772866	7107179	300								
58987	DNRW (not found)		779596	7109870									
58990	DNRW		780968	7128412	250			</					

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C4076	Xstrata	31230	789152	7106050	271.18					
C4077	Xstrata	31231	790807	7106538	290.81					
C4078	Xstrata	31231	794524	7108907	267.36					
C5004	Xstrata	33674	791008	7110464	277.2					
C5016	Xstrata	33686	790081	7111414	265.1					
C5017	Xstrata	33671	791171	7111155	266.4					
C5018	Xstrata	33672	790686	7110925	278.65					
C5020	Xstrata	33694	790705	7111325	281.35					
C5021	Xstrata	33822	790794	7109973	282					
C5022	Xstrata	33823	790014	7109393	281					
C5023	Xstrata	33824	789299	7111343	258					
C6001	Xstrata	37637	790184	7111203	268.11	102				
C6002	Xstrata	37636	790083	7109552	280.85	162.36				
C6002A	Xstrata	37656	790082	7109551	280.85					
C6003	Xstrata	37639	786360	7106389	247.23	180				
C6004	Xstrata	37640	789265	7106768	275.29	132				
C6005	Xstrata	37650	792878	7108560	248.29	96				
C6006	Xstrata	37642	794249	7106576	267.1	102				
C6239	Xstrata	39145	790050	7113027	241.327					
C6239A	Xstrata	39145	790052	7113027	241.33					
C6248	Xstrata	39385	790879	7104998	273					
C6253	Xstrata	39165	791698	7108187	274.397					
C6254	Xstrata	38765	790916	7111407	275.87	102.12				
C6255	Xstrata	38767	787723	7106190	248.44					
C6256	Xstrata	38774	790083	7105795	291.35	102.01				
C6257	Xstrata	38785	793297	7105380	263.39	102.03				
C6258	Xstrata	38786	793324	7106177	255.03	102.11				
C6260	Xstrata	38787	794087	7105403	270.28					
C6262	Xstrata	38788	794514	7107000	270.41	102.02				
C6263	Xstrata	38789	790081	7109014	280.51					
C6263_R	Xstrata	38789	790083	7109014	280.51	102.04				
C6264	Xstrata	38790	789639	7112218	247.4	102				
C6266	Xstrata	38791	789287	7111396	259.39	102.05				
C6268	Xstrata	38792	791696	7111416	260.88	102				
C6270	Xstrata	38793	790515	7110597	278.07	102				
C6272	Xstrata	38794	790085	7106603	285.47	102.15				
C6273	Xstrata	38795	787704	7107023	244.47	102				
C6361	Xstrata	39379	792897	7109806	241.73	102				
C6362	Xstrata	39356	792910	7110585	241.15	102.12				
C6365	Xstrata	39380	792505	7105388	257.56					
C6425	Xstrata	39171	794609	7109180	267.227	102				
C6425A	Xstrata	39171	794611	7109180	267.227	60				
C6428	Xstrata	39162	792616	7108385	252.527	102.08				
C6429	Xstrata	39168	794575	7108389	271.917	66				
C6429A	Xstrata	39169	794577	7108389	271.917	42				
C6429B	Xstrata	39170	794573	7108389	271.917	96.15				
C6431	Xstrata	39171	794253	7107444	268.967	42				
C6431A	Xstrata	39170	794253	7107444	268.967	72.17				
C6434	Xstrata	39186	793411	7108376	244.967	72				
C6435	Xstrata	39190	789410	7105582	284.647	66				
C6436	Xstrata	39172	793816	7108785	253.297	60				
C6437	Xstrata	39387	786107	7104547	255.84	36				
C6437A	Xstrata	39395	786109	7104547	255.84	72				
C6438	Xstrata	39138	790626	7111181	281.747	55.23				
C6439	Xstrata	39193	787813	7104793	262.92					
C6440	Xstrata	39139	789473	7110382	265.077					
C6442	Xstrata	39139	790207	7110383	274.047					
C6444	Xstrata	39140	791016	7110379	275.937					
C6445	Xstrata	39137	789804	7111189	262.967	102				
C6445A	Xstrata	39137	789803	7111189	262.967	102.21				
C6447	Xstrata	39157	790498	7111801	262.817	102.05				
C6453	Xstrata	39518	789302	7111805	259.64	102				
C6457	Xstrata	39172	793706	7109403	243.417	54				
C6458	Xstrata	39141	789403	7112794	253.587	66.01				
C6463	Xstrata	39162	792132	7108996	256.797					
C6464	Xstrata	39156	790234	7112398	249.297	102				
C6465	Xstrata	39406	786909	7104213	269.26	102				
C6471	Xstrata	39387	790901	7105400	270.5	129				
C6473	Xstrata	39171	792888	7105859	252.13	123				
C6481	Xstrata	39356	788545	7104245	264.88	123				
C6481A	Xstrata	39404	788541	7104248	264.76	123				
C6483	Xstrata	39188	790903	7109398	271.257	123				
C6485	Xstrata	39190	791285	7109810	263.21	123				
C6486	Xstrata	39185	793311	7109002	241.817	123				
C6487	Xstrata	39181	788497	7105000	264.52	123				
C6491	Xstrata	39193	786940	7104974	267.99	123				
C6491X	Xstrata	39238	775632	7118809	285.8					
C6496	Xstrata	39542	790601	7109550	278.88					
C6497	Xstrata	39303	775208	7118408	300.81	124				
C6500	Xstrata	39195	789306	7106202	273.287	123				
C6502	Xstrata	39195	788511	7105847	258.837	123				
C6505	Xstrata	39206	776401	7117604	265.92	123				
C6523	Xstrata	39235	774403	7115977	268.46	123				
C6525	Xstrata	39567	775200	7116801	276.69	123				
C6531	Xstrata	39301	770411	7119199	277.31	123				
C6537	Xstrata	39348	767928	7119914	265.68	123				
C6541	Xstrata	39347	768833	7120390	292.89	123				
C6545	Xstrata	39589	770748	7120397						
C6548	Xstrata	39456	789210	7108819	268.39	123				
C6558	Xstrata	39540	789284	7107399	268.88	123				
C6567	Xstrata	39374	773591	7117988	270.6	124				
C6576	Xstrata	39231	774407	7118016	283.41	123				
C6580	Xstrata	39228	774391	7118780	281.65	123				
C6580A	Xstrata	39229	774393	7118780	281.65	123				
C6582	Xstrata	39232	774767	7117574	289.03	124				
C6590A	Xstrata	39306	775207	7120420	291.64	148				
C6590B	Xstrata	39307	775218	7120390	291.02	123				
C6591	Xstrata	39250	778433	7114413	250	123				
C6602	Xstrata	39346	769232	7120819	273.44	153				
C6603	Xstrata	39586	780805	7116017	280.34	153				
C6621	Xstrata	39578	779224	7116763	255.68	153				
C6628	Xstrata	39566	773197	7117134	265.61	153				
C6630	Xstrata	39308	772868	7117957	258.68	123				
C6631	Xstrata	39625	781610	7115604	292	123				
C6632	Xstrata	39256	779194	7114403	268.35	123				
C6632A	Xstrata	39280	779197	7114413	268.96	123				
C6638	Xstrata	39305	769599	7121608	255.04					
C6640	Xstrata	39257	778377	7113614	255.48	123				
C6640A	Xstrata	39258	778380	7113615	255.65	123				
C6648	Xstrata	39356	775203	7121196	266	123				
C6648A	Xstrata	39356	775207	7121198	266.12	123				
C6651	Xstrata	39314	782000	7116354	285.99	123				
C6673	Xstrata	39588	768536	7121612		123				
C6674	Xstrata	39284	779945	7113632	276.41	123				
C6688	Xstrata	39287	779207	7113609	267.53					
C6690	Xstrata	39306	770378	7120012	270.95	123				
C6692	Xstrata	39299	771200	7119601	259.29	123				
C6694	Xstrata	39302	770479	7120800	260.79	123				
C6696	Xstrata	39299	769602	7120005	288.13	123				
C6698	Xstrata	39302	768093	7119213	272.17	123				
C6700	Xstrata	39303	771199	7118802	252.93	123				

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MCC0460	Xstrata	28392	782124	7115972	285.69	120
MCC0461	Xstrata	28923	783283	7116847	281.6	120
MCC0465	Xstrata	28343	782178	7114927	281.01	122
MCC0470	Xstrata	29462	781812	7116713	280.29	120
MCC0472	Xstrata	28346	781255	7115425	287.05	122
MCC1378	Xstrata	29454	780233	7115990	270.62	128
MCC1379	Xstrata	29454	779998	7115323	276.94	122
MCC1520	Xstrata	29522	778791	7115672	276.01	122
MCC1609	Xstrata	29522	779032	7115089	266.83	120
MCC1610	Xstrata	29453	780575	7115502	280.86	120
MCF1592	Xstrata	29722	780445	7114219	289	127
MCR0007	Xstrata	27197	778977	7114129	255.75	120
MCR0008	Xstrata	27198	781833	7118146	274.31	120
MCR0102	Xstrata	27451	780539	7112208	285.02	96
MCR0125	Xstrata	27472	780709	7114566	285.57	120
MCR0202	Xstrata	27798	782585	7116016	292.73	120
MCR0207	Xstrata	27800	780464	7115254	274.55	126
MCR0213	Xstrata	27802	781770	7115887	297.93	120
MCR0215	Xstrata	27802	782297	7115263	286.81	122
MCR0261	Xstrata	27853	777171	7116670	241.02	97
MCR0411	Xstrata	28216	778975	7118618	241.56	
MCR0412	Xstrata	28217	784290	7116477	268.38	121
MCR0413	Xstrata	28217	784322	7118683	272.55	
MCR0418	Xstrata	28219	779125	7117745	244.81	
MCR0419	Xstrata	28220	780814	7117078	276	120
MCR0437	Xstrata	28243	782160	7115635	284.52	85
MCR0440	Xstrata	28335	783015	7116551	279.75	
MCR0441	Xstrata	28336	783413	7116473	291.65	
MCR0442	Xstrata	28336	783169	7116181	294.53	
MCR0445	Xstrata	28337	782491	7115740	295.38	
MCR0449	Xstrata	28339	781610	7115375	284.23	
MCR0451	Xstrata	28339	782239	7116684	273.5	
MCR0453	Xstrata	28340	782366	7116290	279.75	
MCR0455	Xstrata	28341	781979	7116348	286.83	120
MCR0456	Xstrata	28341	781504	7115680	288.95	
MCR0457	Xstrata	28341	782818	7114426	261.39	
MCR0458	Xstrata	28342	782554	7114853	278.54	108
MCR0462	Xstrata	28343	783576	7116087	281.83	114
MCR0463	Xstrata	28343	783605	7116252	287.37	121
MCR0464	Xstrata	28343	783342	7115969	288.15	120
MCR0466	Xstrata	28344	781934	7114599	267.81	121
MCR0467	Xstrata	28344	782294	7114545	268.69	
MCR0468	Xstrata	28344	781767	7115005	275.83	120
MCR0469	Xstrata	28345	781384	7115060	281.19	
MCR0471	Xstrata	28346	781575	7116393	289.32	126
MCR0577	Xstrata	28587	778627	7113753	267.91	120
MCR0578	Xstrata	28587	777735	7114160	263.36	120
MCR0579	Xstrata	28587	779612	7114626	287.23	121
MCR0581	Xstrata	28589	776047	7114443	277.53	120
MCR0582	Xstrata	28589	775631	7115157	269.99	122
MCR0583	Xstrata	28590	776794	7113515	264.7	120
MCR0584	Xstrata	28590	776989	7114794	252.76	109
MCR0588	Xstrata	28592	779298	7112665	266.65	121
MCR0589	Xstrata	28593	778912	7115535	285.09	103
MCR0590	Xstrata	28593	778613	7115808	271.29	121
MCR0591	Xstrata	28593	779449	7115198	284.92	127
MCR0592	Xstrata	28594	778569	7116656	267.74	127
MCR0593	Xstrata	28594	779278	7116294	263.3	
MCR0848	Xstrata	28920	783781	7117951	267.23	121
MCR0849	Xstrata	28920	781763	7117632	283.14	121
MCR0850	Xstrata	28921	779801	7118523	255.02	121
MCR0862	Xstrata	28926	778258	7118361	236.8	111
MCR0863	Xstrata	28926	778048	7117559	241.12	121
MCR0866	Xstrata	28927	777782	7116771	244.21	121
MCR0867	Xstrata	28928	777332	7116018	243.99	67
MCR0868	Xstrata	28928	777259	7115370	253.68	127
MCR0869	Xstrata	28929	776719	7115442	252.02	121
MCR0870	Xstrata	28929	778740	7117351	251.53	121
MCR0871	Xstrata	28935	780417	7116863	282.09	61
MCR0872	Xstrata	28935	779334	7117162	250.14	121
MCR0873	Xstrata	28935	779830	7116272	260	
MCR0874	Xstrata	28935	779675	7113795	273.1	
MCR0875	Xstrata	28936	778789	7114877	264.34	
MCR0876	Xstrata	28936	778323	7113395	254.17	
MCR0877	Xstrata	28936	778084	7115073	248.58	
MCR0878	Xstrata	28937	780854	7113450	280.98	
MCR0879	Xstrata	28937	780629	7115950	271.97	
MCR0880	Xstrata	28938	780449	7117681	269.92	
MCR0881	Xstrata	28938	779563	7117991	261.63	
MCR0917	Xstrata	28951	777002	7114116	257.2	
MCR0918	Xstrata	28951	778985	7113174	269.47	
MCR0919	Xstrata	28951	779904	7112832	276.37	
MCR1364	Xstrata	29453	781096	7115329	287.2	
MCR1365	Xstrata	29453	780921	7114979	282.3	
MCR1377	Xstrata	29453	781182	7115772	283.28	
MCR1501	Xstrata	29454	780336	7114751	280.31	
MCR1502	Xstrata	29454	779666	7115823	266.01	
MCR1503	Xstrata	29455	778900	7115994	279.54	
MCR1504	Xstrata	29455	779167	7115491	280.25	
MCR1505	Xstrata	29456	780667	7113440	285.07	
MCR1506	Xstrata	29456	780165	7113203	277.2	
MCR1507	Xstrata	29456	779701	7112901	275.83	
MCR1508	Xstrata	29456	779434	7113487	275.27	
MCR1509	Xstrata	29457	779135	7113926	257.98	
MCR1510	Xstrata	29457	779662	7114142	269.48	
MCR1511	Xstrata	29457	779341	7114626	274	
MCR1512	Xstrata	29458	778860	7114365	259.05	
MCR1513	Xstrata	29458	778605	7114886	256.12	
MCR1514	Xstrata	29460	780075	7115714	266.03	
MCR1515	Xstrata	29460	779929	7114937	285.66	
MCR1516	Xstrata	29460	779546	7115399	277.92	
MCR1517	Xstrata	29460	779310	7115898	270.44	
MCR1518	Xstrata	29460	779054	7116433	263.73	
MCR1519	Xstrata	29460	778561	7116134	265.56	
MCR1539	Xstrata	29464	777626	7115838	245.54	
MCR1540	Xstrata	29464	777564	7115621	246.96	
MCR1541	Xstrata	29460	780120	7114478	287.74	
MCR1542	Xstrata	29460	780528	7113890	289.14	
MCR1543	Xstrata	29461	780000	7113694	278.3	
MCR1544	Xstrata	29461	779999	7114063	273.63	
MCR1545	Xstrata	29461	784822	7117595	270.22	
MCR1546	Xstrata	29461	781593	7117260	285.6	
MCR1547	Xstrata	29462	781931	7117381	275.78	
MCR1548	Xstrata	29462	782069	7117098	276.1	
MCR1549	Xstrata	29462	782335	7117315	270.42	
MCR1550	Xstrata	29463	780278	7113615	277.41	
MCR1551	Xstrata	29463	780353	7113188	279.05	
MCR1552	Xstrata	29463	779816	7113224	272.24	
MCR1553	Xstrata	29464	778985	7113530	266.44	
MCR1554	Xstrata	29464	779309	7113071	267.74	
MCR1555	Xstrata	29464	778426	7114042	250.55	

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R0974	Xstrata	28972	784588	7105058	247.78
R0975	Xstrata	28973	784579	7107857	266.4
R0976	Xstrata	28973	784858	7106990	261.57
R0978	Xstrata	28974	785198	7106580	244.84
R0979	Xstrata	28974	784803	7106619	243.63
R0980	Xstrata	28975	785139	7108946	262.76
R0981	Xstrata	28975	784740	7109023	262.05
R0982	Xstrata	28976	786773	7109157	242.18
R0983	Xstrata	28976	786876	7109539	237.43
R0984	Xstrata	28977	787219	7109504	239.19
R0985	Xstrata	28978	787597	7109440	239.4
R0986	Xstrata	28978	787926	7108991	247.97
R0988	Xstrata	28979	785667	7104474	248.75
R0989	Xstrata	28979	784900	7104617	247.48
R0990	Xstrata	28980	784505	7104674	248.14
R0991	Xstrata	28983	785375	7107764	244.12
R0992	Xstrata	29005	785841	7108090	243.43
R0993	Xstrata	29005	786232	7108030	242.53
R0995	Xstrata	29006	786558	7107568	242.28
R0996	Xstrata	29007	787423	7107870	241.27
R0998	Xstrata	29008	787145	7108712	240.34
R0999	Xstrata	29008	787522	7108655	239.09
R1000	Xstrata	28972	785488	7105725	246.88
R1001	Xstrata	28973	785526	7106116	246.46
R1002	Xstrata	28974	785404	7105337	246.41
R1003	Xstrata	28974	785040	7105383	247.26
R1004	Xstrata	28975	784648	7105459	247.6
R1019	Xstrata	29112	784972	7107522	264.03
R101L	Xstrata	27504	789876	7104258	290.71
R1022	Xstrata	29119	784740	7105874	248.36
R1024	Xstrata	29120	783878	7105942	252.83
R1028	Xstrata	29193	783829	7105536	251.29
R1029	Xstrata	29194	784244	7105455	249.62
R1030	Xstrata	29182	785316	7109901	239.42
R1031	Xstrata	29195	784317	7105864	249.19
R1032	Xstrata	29199	788855	7107230	264.89
R1033	Xstrata	29199	789107	7107581	260.75
R1034	Xstrata	29199	788581	7107691	262.29
R1035	Xstrata	29201	788268	7107786	255.35
R1036	Xstrata	29201	788102	7107965	259
R1037	Xstrata	29201	788720	7108540	253.82
R1038	Xstrata	29202	789842	7107821	278.64
R1039	Xstrata	29202	789472	7107556	265.34
R1040	Xstrata	29203	784888	7104302	248.18
R1041	Xstrata	29204	786652	7104063	264.85
R1042	Xstrata	29204	791801	7107190	274.4
R1043	Xstrata	29235	789294	7112214	254.5
R1045	Xstrata	29235	790365	7112665	245.15
R1046	Xstrata	29235	790526	7113017	242.17
R1047	Xstrata	29235	790214	7113162	239.05
R1048	Xstrata	29236	790900	7112864	242.48
R1049	Xstrata	29236	792629	7112235	243.01
R1050	Xstrata	29236	792202	7112291	252.42
R1051	Xstrata	29236	791108	7112301	253.56
R1052	Xstrata	29237	789638	7112958	249.43
R1053	Xstrata	29237	789785	7113341	240.54
R1054	Xstrata	29237	789175	7113149	253.95
R1055	Xstrata	29237	790710	7108101	285.2
R1056	Xstrata	29238	791112	7108025	278.2
R1057	Xstrata	29238	791311	7107411	283.7
R1058	Xstrata	29238	791071	7107059	291.61
R1059	Xstrata	29238	788628	7107950	262.28
R1060	Xstrata	29239	788446	7108314	249.86
R1061	Xstrata	29239	788269	7108535	253.05
R1092	Xstrata	29245	784800	7106282	249.8
R1093	Xstrata	29247	783492	7106034	255.21
R1094	Xstrata	29247	783456	7105635	255.94
R1095	Xstrata	29248	783887	7104838	249.99
R1096	Xstrata	29249	784261	7105049	248.99
R1098	Xstrata	29250	783971	7106349	251
R1099	Xstrata	29250	784348	7106302	247.5
R1100	Xstrata	29251	784209	7104762	249.2
R1101	Xstrata	29251	786255	7110161	238.32
R1103	Xstrata	29081	791105	7110695	273.8
R1108	Xstrata	29082	791206	7110924	265.9
R1344	Xstrata	29416	792019	7108558	263
R1345	Xstrata	29416	791954	7105243	255
R1348	Xstrata	29418	792759	7106393	249.8
R1349	Xstrata	29418	792644	7105713	253
R1350	Xstrata	29418	792724	7105123	254.9
R1351	Xstrata	29418	793529	7104993	260.44
R1352	Xstrata	29419	794404	7104853	284.6
R1368	Xstrata		776596	7120613	273.42
R1748	Xstrata	29859	794900	7105393	272
R1752	Xstrata	29836	794305	7110778	251.9
R1754	Xstrata	29837	794229	7111158	250.2
R1756	Xstrata	29853	793734	7109045	247.5
R1757	Xstrata	29854	793274	7108609	241
R1760	Xstrata	29857	792935	7109433	244
R1761	Xstrata	29857	792612	7109594	248.8
R1762	Xstrata	29858	792229	7108913	261
R1763	Xstrata	29858	792109	7107923	265
R1764	Xstrata	29858	792890	7107863	246
R1765	Xstrata	29858	792059	7106716	268.2
R1767	Xstrata	29858	795769	7106274	277.4
R1768	Xstrata	29859	794959	7108636	274.4
R1769	Xstrata	29859	794883	7108295	279.6
R1770	Xstrata	29859	794802	7109357	264
R1771	Xstrata	29859	795544	7109375	262.2
R1772	Xstrata	29859	795871	7109929	262.1
R1773	Xstrata	29809	794571	7109763	258.5
R1774	Xstrata	29809	794219	7109473	256.9
R1775	Xstrata	29809	793615	7111164	242.4
R1776	Xstrata	29819	793514	7111583	242.41
R1777	Xstrata	29819	793135	7111983	233.9
R1778	Xstrata	29819	792432	7111873	250.4
R1779	Xstrata	29829	792460	7111382	246.2
R1780	Xstrata	29829	792148	7110476	258.2
R1874	Xstrata	29811	783282	7114213	257.9
R2131	Xstrata	29882	790674	7110708	280.3
R2132	Xstrata	29882	789460	7110950	265.88
R2133	Xstrata	29883	794412	7105463	268.9
R2134	Xstrata	29883	793980	7105640	264.4
R2135	Xstrata	29883	793958	7104943	269.1
R2136	Xstrata	29883	793328	7105991	260.1
R2238J	Xstrata	36526	783461	7104081	250.34
R2239J	Xstrata	36526	785611	7103271	256.42
R2240J	Xstrata	36526	784559	7103231	252.34
R2547	Xstrata	30278	795929	7109398	262
R4002	Xstrata	30851	793214	7107103	247
R4003	Xstrata	30852	792669	7106963	249.73

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R6440	Xstrata	39136	789476	7110387	264.977						
R6441	Xstrata	39125	792610	7108783	257.27						
R6442	Xstrata	39136	790211	7110386	274.057						
R6443	Xstrata	39134	792214	7108382	259.2						
R6444	Xstrata	39136	791011	7110383	276.167						
R6445	Xstrata	39135	789800	7111175	263.247						
R6446	Xstrata	39137	790614	7109983	285.457						
R6448	Xstrata	39137	789419	7110795	261.577						
R6449	Xstrata	39157	789706	7111809	253.347						
R6450	Xstrata	39138	789738	7111595	255.737						
R6451	Xstrata	39157	791303	7111400	265.837						
R6452	Xstrata	39138	790213	7111186	269.357						
R6453	Xstrata	39158	789301	7111802	260.107						
R6454	Xstrata	39139	790613	7111584	272.807						
R6455	Xstrata	39158	791678	7113808	230.997						
R6456	Xstrata	39139	791412	7111182	266.917						
R6457	Xstrata	39160	793701	7109403	243.427						
R6458	Xstrata	39140	789408	7112787	253.507						
R6459	Xstrata	39161	792876	7107403	245.827						
R6461	Xstrata	39161	793088	7108176	243.617						
R6464	Xstrata	39141	790228	7112396	249.407						
R6465	Xstrata	39166	786903	7104207	269.3						
R6466	Xstrata	39142	790368	7112251	251.367						
R6467	Xstrata	39166	786491	7102599	254.03						
R6468	Xstrata	39143	790099	7112603	245.927						
R6469	Xstrata	39167	788991	7102612	271.8						
R6470	Xstrata	39144	790564	7112616	246.167						
R6471	Xstrata	39167	790882	7105407	270.507						
R6472	Xstrata	39145	790898	7113005	240.797						
R6473	Xstrata	39168	792893	7105839	252.2						
R6474	Xstrata	39146	790503	7113397	239						
R6475	Xstrata	39168	792905	7105393	253.7						
R6476	Xstrata	39146	790509	7113408	239.057						
R6477	Xstrata	39168	792895	7106200	250.36						
R6478	Xstrata	39156	790898	7113798	239						
R6479	Xstrata	39171	794499	7105804	266.91						
R6480	Xstrata	39157	790904	7113801	238.507						
R6481	Xstrata	39172	788547	7104246	265.17						
R6482	Xstrata	39158	791315	7113387	236.417						
R6484	Xstrata	39160	793091	7108356	243.387						
R6486	Xstrata	39161	793314	7109000	241.767						
R6488	Xstrata	39162	793299	7109398	241.447						
R6489	Xstrata	39196	786492	7104196	261.62						
R6490	Xstrata	39166	793710	7107397	254.077						
R6491X	Xstrata	39204	775632	7118809	285.8						
R6492	Xstrata	39183	790107	7108599	278.427						
R6493	Xstrata	39204	776006	7118809	268.68						
R6494	Xstrata	39183	790533	7109012	272.577						
R6495	Xstrata	39204	776016	7118017	283						
R6496	Xstrata	39184	790499	7109404	279.357						
R6497	Xstrata	39204	775210	7118411	300.84						
R6498	Xstrata	39184	791297	7110197	265.28						
R6499	Xstrata	39205	775596	7118116	285.18						
R6500	Xstrata	39185	789304	7106202	273.287						
R6501	Xstrata	39205	775998	7117604	276.64						
R6502	Xstrata	39185	788509	7105847	258.837						
R6503	Xstrata	39205	776406	7117197	262.62						
R6504	Xstrata	39186	792104	7106979	265.267						
R6505	Xstrata	39205	776404	7117610	265.48						
R6506	Xstrata	39187	792116	7106223	257.227						
R6507	Xstrata	39206	774793	7118409	299.14						
R6508	Xstrata	39187	792498	7104998	260.82						
R6509	Xstrata	39206	774402	7118394	282.47						
R6510	Xstrata	39188	794112	7107007	271.38						
R6511A	Xstrata	39207	774006	7118398	273.65						
R6512	Xstrata	39188	794929	7107403	274.607						
R6513	Xstrata	39207	774401	7117602	284.21						
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R6520	Xstrata	39189	795700	7109799	261.13						
R6521	Xstrata	39209	775596	7116795	267.25						
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R6524	Xstrata	39190	789304	7105802	276.07						
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R6526	Xstrata	39191	788500	7105400	262.29						
R6527	Xstrata	39209	775641	7116423	260.9						
R6528	Xstrata	39191	788903	7105801	265.64						
R6529	Xstrata	39209	776023	7119614	276.56						
R6530	Xstrata	39191	790507	7106601	293.19						
R6531	Xstrata	39210	770414	7119201	277.21						
R6532	Xstrata	39193	789301	7103393	276.12						
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R6537	Xstrata	39212	767928	7119912	265.76						
R6538	Xstrata	39193	791303	7105403	268.78						
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R6543	Xstrata	39213	769205	7119597	296.61						
R6544	Xstrata	39195	788102	7103000	263.17						
R6545	Xstrata	39213	770804	7120401	269.01						
R6546	Xstrata	39194	788511	7108985	264.56						
R6547	Xstrata	39214	771592	7120400	250.2						
R6548	Xstrata	39195	789304	7109000	269.41						
R6549	Xstrata	39214	770001	7119595	285.49						
R6550	Xstrata	39195	789702	7109002	277.95						
R6551	Xstrata	39214	771210	7120797	261.23						
R6552	Xstrata	39195	789327	7104665	275.82						
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R6556	Xstrata	39196	788214	7105185	257.22						
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R6560	Xstrata	39204	776004	7118402	269.15						
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R6563	Xstrata	39226	771589	7118006	246.72						
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R6570	Xstrata	39206	775194	7118795	301.29						
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SHC0134	Xstrata	27478	774942	7118273	290.33
SHC0139	Xstrata	29458	774330	717298	277.56
SHC0140	Xstrata	7489	774426	7118583	295.14
SHC0141	Xstrata	7490	776046	7117975	283.61
SHC0145	Xstrata	7491	772910	7117428	278.34
SHC0218	Xstrata	28763	772790	7118386	249.64
SHC0222	Xstrata	78224	775258	7119147	308.64
SHC0227	Xstrata	7807	773529	7117353	262.92
SHC0229	Xstrata	7807	773800	7116246	281.83
SHC0234	Xstrata	7808	775516	7117628	283.35
SHC0235	Xstrata	7827	776520	7117448	266.8
SHC0236	Xstrata	28925	775596	7118073	288.22
SHC0241	Xstrata	7826	775121	7118742	303.17
SHC0242	Xstrata	7827	774459	7117112	292.89
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SHC0857	Xstrata	28924	775489	7121566	275.91
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SHC0899	Xstrata	29453	775266	7121938	264.46
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SHF1527	Xstrata	29725	776231	7114979	259.89
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SHR0931	Xstrata	28954	776805	7118474	262.4
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SHR1816	Xstrata	29797	772324	7118443	260
SHR1845	Xstrata	29803	772064	7115693	266
THC0216	Xstrata	27803	768503	7120772	287
THC0265	Xstrata	27855	768587	7121620	259
THC0404	Xstrata	28214	770022	7120784	276
THC0407	Xstrata	28927	769902	7119895	285
THC0408	Xstrata	28927	770527	7118725	260
THC0425	Xstrata	28936	771132	7120226	260
THC0483	Xstrata	28937	768786	7119804	276
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THR0406	Xstrata	28215	769205	7120871	273
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THR0430	Xstrata	28238	768841	7121340	267
THR0431	Xstrata	28238	769139	7120487	281
THR0432	Xstrata	28239	769818	7119584	295
THR0433	Xstrata	28239	768242	7119805	271
THR0434	Xstrata	28239	770467	7118271	258
THR0475	Xstrata	28382	770608	7119116	268
THR0476	Xstrata	28383	770230	7119162	286
THR0477	Xstrata	28383	769839	7119208	294
THR0478	Xstrata	28383	769354	7119311	294
THR0479	Xstrata	28384	768994	7119313	278
THR0480	Xstrata	28384	769119	7119708	290
THR0481	Xstrata	28384	769510	7119655	295
THR0482	Xstrata	28385	770286	7119546	278
THR0484	Xstrata		768791	7120145	284
THR0516	Xstrata	28398	768844	7120529	282
THR0517	Xstrata	28317	767916	7119478	261
THR0519	Xstrata	28317	767978	7119866	263
THR1593	Xstrata	29778	770214	7118743	266
THR1594	Xstrata	29778	769634	7118833	276
THR1595	Xstrata	29779	769044	7118903	295
THR1596	Xstrata	29779	768654	7118963	283
THR1597	Xstrata	29779	767874	7119083	275
THR1598	Xstrata	29779	767154	7119183	254
THR1599	Xstrata	29779	768254	7119063	280

THR1600	Xstrata	29811	768644	7119783	279						
THR1661	Xstrata	29780	768434	7120253	271						
THR1662	Xstrata	29780	767994	7120353	278						
THR1664	Xstrata	29780	767294	7120063	260						
THR1665	Xstrata	29781	768544	7121213	268						
THR1666	Xstrata	29781	768914	7120893	273						
THR1667	Xstrata	29781	769014	7121583	262						
THR1668	Xstrata	29781	770584	7121383	253						
THR1669	Xstrata	29781	768394	7121103	261						
THR1670	Xstrata	29782	769734	7120773	267						
THR1671	Xstrata	29782	770094	7120473	275						
THR1672	Xstrata	29782	770534	7120703	261						
THR1673	Xstrata	29782	770454	7119863	275						
THR1674	Xstrata	29782	769634	7119913	288						
THR1675	Xstrata	29782	770814	7117973	252						
THR1676	Xstrata	29783	770404	7117803	256						
THR1677	Xstrata	29783	769674	7118163	281						
THR1678	Xstrata	29784	768884	7118533	294						
THR1817	Xstrata	29797	771657	7118543	242.5						
THR1818	Xstrata	29798	771044	7119083	258						
THR1819	Xstrata	29829	771374	7119383	254						
THR1820	Xstrata	29829	771764	7119313	245						
THR1821	Xstrata	29798	771334	7118893	250						
THR1822	Xstrata	29829	771084	7119813	265						
THR1823	Xstrata	29799	771504	7119783	255						
THR1824	Xstrata	29799	771824	7119773	246						
THR1825	Xstrata	29799	768884	7122003	264						
THR1826	Xstrata	29799	768854	7122303	262						
THR1827	Xstrata	29800	769214	7122263	250						
THR1828	Xstrata	29800	769184	7121943	260						
THR1829	Xstrata	29800	768664	7122033	261						
THR1830	Xstrata	29800	768724	7122323	256						
THR1831	Xstrata	29800	768224	7121753	252						
THR1832	Xstrata	29801	768104	7120633	275						
THR1833	Xstrata	29801	768174	7121013	265						
THR1834	Xstrata	29801	768234	7121303	258						
THR1835	Xstrata	29802	767764	7120683	262						
THR1836	Xstrata	29802	767704	7120383	270						
THR1837	Xstrata	29802	767664	7120123	264						
THR1838	Xstrata	29802	767614	7119813	252						
THR1839	Xstrata	29802	767154	7119493	251						
THR1840	Xstrata	29802	767534	7119113	265						
THR1841	Xstrata	29803	767004	7119543	248						
THR1842	Xstrata	29803	767224	7119823	254						
W0005	Xstrata	26328	792721	7112434	233						
W0006	Xstrata	26328	794333	7109902	256						
W0007	Xstrata	26328	794285	7109256	264						
W0008	Xstrata	26328	794708	7108045	282						
W0010	Xstrata	36526	792586	7106431	251						
W0011	Xstrata	36526	793845	7106772	269						
W0012	Xstrata	36526	794679	7106753	274						
W0012A	Xstrata	36526	794942	7107302	274						
W0012B	Xstrata	36526	795096	7106744	279						
W0012R	Xstrata	36526	795011	7107031	279						
W0013	Xstrata	36526	794404	7105651	263						
W0013A	Xstrata	36526	794311	7104981	283						
W0017	Xstrata	36526	796073	7105705	270						
W4024	Xstrata	30857	790021	7106581	284.76						
WUC0417	Xstrata	28395	796102	7105120	277.85						
WUR0371	Xstrata	28051	795813	7105280	272.78						
WUR0430	Xstrata	28395	796146	7105453	272.32						
WUR1741	Xstrata	29833	795583	7105032	285.9						
WUR1742	Xstrata	29833	794980	7104713	287.9						

RN	INFO SOURCE	DRILLED DATE	EASTING	NORTHING	ELEVATION	TOTAL DEPTH	MAIN GEOLOGY	TOP WATER STRIKE	BOTTOM WATER STRIKE	SWL	CONDUCTIVITY	PH
4461	DNRW (not found)	6/10/1942	782982	7105731	240							
8428	DNRW (not found)	1/01/2100	790854	7103432	250							
8432	DNRW	12/12/1940	217313	7117749	370							
8437	DNRW	1/01/1940	215712	7124830	285							
8438	DNRW	1/01/1948	217321	7122524	285							
8439	DNRW	1/01/1940	211544	7126987	285							
8444	DNRW	1/01/1950	204004	7130392	290							
10372	DNRW	12/12/1944	787859	7128971	250		BIRKHEAD FORMATION	18.3				
10458	DNRW	1/01/2100	793021	7089860	350							
10459	DNRW (not found)	1/04/1956	781317	7104597	302							
10460	DNRW	12/12/1949	790693	7119884	250							
10463	DNRW	12/12/1937	207293	7115372	333							
10464	DNRW	18/12/1975	215424	7111240	354							
10466	DNRW	12/12/1942	203879	7124844	350							
10471	DNRW	12/12/1940	793971	7128312	250		BIRKHEAD FORMATION	0				
10479	DNRW (not found)	12/12/1945	797350	7106704	243.6	598	EUROMBAH FORMATION	12.19		32		
10546	DNRW	22/09/1945	797802	7128965	450			24.4	25.6			
10585	DNRW	1/02/1975	216256	7117757	356							
10587	DNRW	12/12/1945	215342	7095992	375							
10588	DNRW	1/01/1945	212610	7093899	348							
10596	DNRW	12/12/1940	788879	7127224	251		BIRKHEAD FORMATION	0				
10662	DNRW	24/06/1946	765947	7088383	375							
10663	DNRW	24/06/1946	767065	7090115	375							
10722	DNRW	6/07/1949	202881	7123405	262	295	HUTTON FORMATION	207	212			
10807	DNRW	12/12/1946	215733	7116206	373	85	INJUNECKGP	82	85			
10808	DNRW	12/12/1946	205620	7117984	315							
10809	DNRW	20/03/1946	209128	7101768	300	187	INJUNE CREEK GROUP	129	129			
10810	DNRW	1/01/1947	218287	7098520	250							
10848	DNRW	24/12/1947	204895	7081465	420	62	ORALLO FORMATION	55	62			
10886	DNRW	24/07/1947	208056	7106180	338	324	BIRKHEAD FORMATION	298	306			
10994	DNRW	26/05/1948	799430	7083644	350							
11064	DNRW	30/09/1947	200470	7102341	450	100	INJUNE CREEK GROUP	12	25			
11175	DNRW	22/08/1948	215295	7123558	365	270	BIRKHEAD FORMATION					
11176	DNRW	1/01/1948	214837	7125396	365							
11425	DNRW	1/01/1948	796710	7123784	257			19.8				
11434	DNRW	16/05/1949	792099	7128015	250		BIRKHEAD FORMATION	21				
11491	DNRW	28/03/1949	797054	7082929	350	199	ORALLO FORMATION	180	199			
11560	DNRW	31/12/1950	789508	7117908	255	611	HUTTON SANDSTONE	606	611			
11575	DNRW	24/03/1950	215668	7101389	350	149		145	149			
11600	DNRW	6/09/1949	791179	7083310	355	97	ORALLO FORMATION	85	97			
11605	DNRW	30/12/1949	208487	7117987	315	213	HUTTON SANDSTONE	28	28			
12072	DNRW	10/10/1952	795033	7085594	342.8	112.5	DONCASTER MEMBER	111.3	112.5			
12118	DNRW	1/11/1952	209229	7122131	285	350		344	350			
12382	DNRW	18/08/1953	202699	7121645	290	148	INJUNE CREEK GROUP	140	148			
12550	DNRW	1/11/1953	766241	7083819	398	78	MOOGA	69	78			
12627	DNRW	11/05/1954	797789	7127178	257	256	BIRKHEAD FORMATION	72.5	73.4			
12712	DNRW	20/03/1954	787050	7093598	300	228	INJUNE CREEK GROUP	219	228			
12713	DNRW	5/08/1949	788675	7092977	300	99	INJUNE CREEK GROUP	94	99			
12763	DNRW (verified, relocated)	7/09/1954	795570	7105451	350	134	INJUNE CREEK GROUP	101	106			
12904	DNRW	10/11/1955	782007	7086502	300	32	GUBBAMUNDA	25	32			
13041	DNRW	1/01/1955	798595	7124634	237	276.7	BIRKHEAD FORMATION	37.8	38.1			
13060	DNRW	30/11/1955	794166	7124580	242	271.5	BIRKHEAD FORMATION	25	28			
13218	DNRW	30/08/1956	798377	7078925	400							
13831	DNRW	15/12/1958	202159	7102626	286	24	INJUNE CREEK GROUP	21	24			
13856	DNRW	8/07/1958	795476	7109889	250							
13884	DNRW	2/06/1958	783785	7097952	350	166		162	166			
14192	DNRW	1/07/1960	785760	7088021	300							
14193	DNRW	1/07/1960	787364	7087739	300							
14247	DNRW	1/08/1960	208442	7119988	310							
14248	DNRW	1/06/1953	212810	7121347	300	297	HUTTON FORMATION	195	224			
14249	DNRW	1/01/1956	210028	7122549	300							
14250	DNRW	2/11/1958	209823	7117955	300	67	INJUNE CREEK GROUP	45	48			
14454	DNRW	18/08/1960	763237	7090255	350	103	GUBBAMUNDA	48	49			
14455	DNRW	1/11/1960	762977	7092509	300							
14456	DNRW	1/11/1960	764870	7091392	350							
14538	DNRW	1/01/1961	206946	7130889	250							
14539	DNRW	5/03/1961	762165	7086705	250	94	ORALLO FORMATION	92	94			
14596	DNRW	15/11/1960	762910	7122166	253		BIRKHEAD FORMATION	0				
14631	DNRW	1/01/1961	763861	7118297	250							
14632	DNRW	1/01/1961	762190	7115406	250							
14652	DNRW	11/03/1961	798169	7114509	300							
14654	DNRW	2/05/1961	208960	7116734	300	189	HUTTON	24	48			
14743	DNRW (not found)	17/07/1957	784054	7109003	250	30	INJUNE CREEK GROUP	25	30			
14744	DNRW	31/07/1958	783781	7113044	250	73	INJUNE CREEK GROUP	67	73			
14889	DNRW	1/01/1937	767668	7127551	345		BIRKHEAD FORMATION	0				
14986	DNRW	2/11/1961	205145	7129216	280	30	INJUNE CREEK GROUP	29	30			
15117	DNRW	17/10/1962	769078	7088133	550	91	ORALLO	86	91			
15189	DNRW	21/06/1962	792672	7087958	350	26	ORALLO	17	26			
15371	DNRW	16/11/1962	790952	7084332	350	172	ORALLO	164	172			
15487	DNRW	5/03/1963	201820	7127200	350	599	HUTTON	544	599			
15498	DNRW	20/02/1963	772099	7094507	350	82	GUBBAMUNDA	60	82			
15499	DNRW	4/03/1963	769071	7095771	350	67	GUBBAMUNDA	51	67			
15500	DNRW	29/11/1962	785119	7084123	350	85	GUBBERAMUNDA SANDSTONE	45	48			
15501	DNRW	18/12/1962	786283	7085329	350	75	ORALLOFMN	67	75			
15508	DNRW	17/05/1963	209305	7092624	300	539	HUTTON SANDSTONE	137	140			
15558	DNRW	14/03/1963	769500	7092374	350	100	GUBBAMUNDA	86	100			
15560	DNRW	1/01/1946	216052	7092712	350							
15561	DNRW	1/01/1946	216337	7092410	350							
15565	DNRW	1/01/1956	215572	7101942	350							
15568	DNRW	1/01/1955	213317	7097087	350							
15674	DNRW	7/11/1963	217180	7113650	300	195	INJUNE CREEK GROUP	184	195			
15711	DNRW	15/01/1964	784344	7123566	248		BIRKHEAD FORMATION	32				
15722	DNRW	1/01/1964	215664	7109151	360							
15761	DNRW	5/03/1964	777189	7115681	250	36	INJUNE CREEK GROUP	33	36			
15765	DNRW	5/02/1964	786111	7125437	250	85.3	BIRKHEAD FORMATION	62.5	67.1		8130	
15779	DNRW	22/12/1963	777937	7123395	270		BIRKHEAD FORMATION	165.2				
15780	DNRW	5/01/1964	776854	7124835	255		BIRKHEAD FORMATION	103.6			2420	
15781	DNRW	29/01/1964	781086	7124837	250	140.2	BIRKHEAD FORMATION	54.9				
15785	DNRW	10/03/1964	214106	7115524	340	157	HUTTON	27	30			
15793	DNRW (not found)	27/01/1965	796077	7106979	270	674	HUTTON SANDSTONE	56.4	57.9			
15802	DNRW	29/04/1964	793428	7116496	200							
15828	DNRW	4/04/1964	783805	7112859	300	125	INJUNE CREEK GROUP	122	125			
15831	DNRW	18/02/1964	781592	7122455	250	170.6	BIRKHEAD FORMATION	117.3	120.3			
15835	DNRW	1/04/1964	797584	7091450	350	164	INJUNE CREEK GROUP	160	164			
15836	DNRW	23/02/1964	787079	7122613	250	196.6	BIRKHEAD FORMATION	88.4	91.4			
15838	DNRW	26/04/1964	770384	7122937	250	147	BIRKHEAD FORMATION	102	103			
15854	DNRW	1/05/1964	776103	7122202	250	164.6	BIRKHEAD FORMATION	160.9	164.6			
15855	DNRW	1/05/1964	783315	7112069	250	132	INJUNE CREEK GROUP	129	132			
15856	DNRW	1/05/1964	769816	7110261	300	243	INJUNE CREEK GROUP	239	243			
15857	DNRW	1/05/1964	786529	7124195	250	110.4	BIRKHEAD FORMATION	106.7	110.4			
15888	DNRW	1/03/1964	796116	7096505	350	1163	PRECIPICE	1118	1163			
15889	DNRW	1/03/1964	796989	7094575	350	133	INJUNE CREEK GROUP	128	133			
15892	DNRW	30/09/1964	778990	7114041	250	15	INJUNE CREEK GROUP	10	15			
15967	DNRW	28/07/1964	760184	7099956	300	109	INJUNE CREEK GROUP	108	109			
16040	DNRW	2/11/1964	77388									

16135	DNRW	30/06/1964	764241	7105479	300	152	INJUNE CREEK GROUP	146	152		
16191	DNRW	9/02/1965	774489	7118263	250	21	INJUNE CREEK GROUP	18	21		
16285	DNRW	10/06/1965	209156	7098041	320	104	INJUNE CREEK GROUP	102	104		
16298	DNRW	7/06/1965	766590	7110235	300	90	SPRINGBOK FORMATION	87	90		
16312	DNRW	1/09/1965	190831	7118006	250	1415	CLEMATIS	1354	1375		
16537	DNRW	16/12/1967	771838	7104583	300						
16661	DNRW	22/09/1966	200495	7124275	300	305	HUTTON FORMATION	164	166		
16789	DNRW	26/12/1966	768973	7108492	350	205	INJUNE CREEK GROUP	203	205		
16791	DNRW	4/12/1965	767921	7101985	350						
16882	DNRW (not found)	1/04/1965	779489	7104913	300	277	INJUNE CREEK GROUP	253	277		
17110	DNRW	28/02/1967	214594	7117382	370	372	HUTTON FORMATION	103	109		
17306	DNRW	16/09/1967	210092	7108381	360	411	HUTTON FORMATION	151	158		
17456	DNRW	2/07/1967	772271	7092101	350	65	ALLUVIUM	63	65		
17457	DNRW	5/07/1967	775961	7089374	350	78	GUBBERAMUNDA SANDSTONE	74	78		
17461	DNRW	8/07/1967	205205	7093393	350	47	INJUNE CREEK GROUP	42	47		
17462	DNRW	3/07/1967	205072	7090679	330	96	INJUNE CREEK GROUP	93	96		
17579	DNRW	29/06/1967	796753	7091562	300						
17580	DNRW	29/07/1967	797927	7093075	300						
17594	DNRW	10/08/1967	201159	7092961							
17595	DNRW	9/08/1967	201160	7092931							
17716	DNRW	29/06/1967	206253	7091261	330						
17717	DNRW	29/06/1967	207168	7088910	330						
17753	DNRW	13/11/1967	769829	7122980	250		BIRKHEAD FORMATION	54.9	55.8		
17799	DNRW (not found)	15/12/1967	786377	7121057	250	21	INJUNE CREEK GROUP	19	21		
17800	DNRW	25/01/1968	785695	7121719	250	65	INJUNE CK GROUP	63	65		
18061	DNRW (not found)	29/07/1968	784465	7109980	250	199	INJUNE CK GROUP	198	199		
18138	DNRW	18/11/1968	767063	7083309	400	130	ORALLO FORMATION	128	130		
18197	DNRW	15/03/1969	778951	7129164	250	125.3	BIRKHEAD FORMATION	53.3	53.9		
18239	DNRW	1/05/1964	204131	7102702	300						
18392	DNRW	8/12/1971	200726	7080506	350						
19025	DNRW	1/01/1934	207081	7092727	303						
19048	DNRW	1/01/1949	210258	7116095	300	237.8	INJUNE CREEK GROUP	237	237.8		
22117	DNRW (verified, relocated)	21/06/1962	789805	7101840	292						
22126	DNRW	6/10/1962	207660	7121223	327.5						
22343	DNRW	30/09/1964	794266	7079872	442.2						
22371	DNRW	24/11/1964	204097	7110486	302.2						
22392	DNRW	6/01/1965	791732	7091882	338.5						
22541	DNRW	19/06/1966	211885	7105116	317.8						
22654	DNRW	14/11/1969	770964	7087934	395.5						
23147	DNRW	17/11/1983	206872	7130542	340						
23172	DNRW	25/01/1982	791321	7091860	341.7						
23177	DNRW	9/02/1983	207646	7126834	300.5						
23509	DNRW	27/11/1985	791257	7098668	300						
24934	DNRW	1/01/1939	770470	7094972	300						
26292	DNRW	1/01/1964	792183	7125549	250						
26300	DNRW	7/04/1973	769512	7106325	350						
26371	DNRW	1/01/1965	778140	7119849	400						
26385	DNRW	1/01/1967	204618	7089899	330						
26386	DNRW	1/01/1967	206023	7091625	330						
26398	DNRW (not found)	1/01/1965	797794	7102997	350						
26429	DNRW	1/01/1964	776605	7126165	300						
26482	DNRW		791541	7084596	340						
30553	DNRW	30/08/1969	763805	7099052	450	35	WALLOON CM	2	35		
30650	DNRW	21/11/1969	217692	7116988	300	181	INJUNE CK GROUP	170	181		
30681	DNRW	5/07/1970	208536	7113403	300	413	HUTTON FORMATION	42	61		
31331	DNRW (not found)	1/03/1969	784432	7108471	300	26	INJUNE CK GROUP	25	26		9900
32880	DNRW	7/08/1969	786183	7093340	350	63	GUBBERAMUN	14	25		
33286	DNRW	28/08/1969	766208	7094321	300	66	WALLOON CM	44	66		
33435	DNRW	8/09/1969	761713	7105561	250	85	INJUNE CK GROUP	78	85		
33438	DNRW	1/09/1969	218272	7109454	350						
33443	DNRW	30/09/1969	787076	7089778	300	99	ORALLO FM	98	99		
33486	DNRW	23/05/1971	200988	7081190	350	101	INJUNE CK	29	30		
33567	DNRW	17/08/1969	790025	7090020	300	208	INJUNE CK	205	208		
33807	DNRW	18/04/1972	775961	7119433	250						
34542	DNRW	22/02/1971	777971	7084741	350	125	MOOGA SST	117	125		
34581	DNRW	20/07/1970	781061	7094069	300						
34708	DNRW	14/01/1970	766592	7110327	350	167	BIRKHEAD FORMATION	132	132		
34709	DNRW	10/01/1970	767306	7108527	300	137	INJUNE CK GROUP	135	137		
34718	DNRW (verified, relocated)	7/02/1970	773331	7109479	300	62	INJUNE CK GROUP	62	62		
34823	DNRW	21/02/1970	792589	7087960	340	70	GUBBAMUNDA	42	45		
34929	DNRW (verified, relocated)	30/01/1970	770047	7112012	300	57	INJUNE CK	51	57		
34951	DNRW	21/02/1970	766223	7122253	250		BIRKHEAD FORMATION	0			
35051	DNRW	13/05/1970	791537	7085674	340	19	GUBBAMUNDA	18	19		
35600	DNRW	25/07/1970	778412	7080728	400	114	SANDSTONE	103	114		
35842	DNRW	14/07/1970	763565	7100904	300	36	WALLOON CM	35	36		
35966	DNRW	15/07/1970	782230	7089115	300	48	BIRKHEAD FORMATION	47	48		
36342	DNRW	16/07/1973	765205	7113220	250						
36363	DNRW	28/09/1970	765357	7093476	300	86	GUBBAMUNDA	44	57		
36731	DNRW	13/04/1971	204632	7103915	300						
37479	DNRW	16/05/1973	763605	7102905	400	90	WALLOON CM	76	90		
37555	DNRW	18/12/1971	212879	7089315	350	82.9	INJUNE CREEK GROUP	82.3	82.9		
37611	DNRW	1/01/1970	205169	7092530	300	4	ALLUVIUM	3	4		
38337	DNRW	30/06/1972	205440	7129716	300	89	HUTTON FORMATION	41	57		
38573	DNRW	10/11/1972	217677	7097152	350	19	INJUNE CK GROUP	18	19		
43069	DNRW	18/05/1973	766471	7080211	400	335	GUBBAMUNDA	111	117		
43339	DNRW		793913	7085158	350	58	BUNGIL	52	58		
43380	DNRW	8/12/1972	772057	7121733	250		BIRKHEAD FORMATION	0			
43482	DNRW	6/03/1973	778359	7094989	300	25	GUBBERAMUNDA SANDSTO	21	25		
43483	DNRW	8/03/1973	786757	7079189	350	85	INJUNE CK GROUP	82	85		
43507	DNRW	5/03/1973	772550	7090863	300	115	GUBBAMUNDA	59	68		
43540	DNRW	30/04/1973	203587	7088828	350	8	ALLUVIUM	3	8		
43772	DNRW (verified, relocated)	3/05/1973	798263	7100460	300	61	INJUNE CK GROUP	57	61		
43802	DNRW	18/05/1973	765856	7081301	400						
43869	DNRW	3/08/1973	786180	7083176	300	102	GUBBERAMUNDA SANDSTONE	100	102		
43870	DNRW	7/05/1973	205718	7091618	300	11	ALLUVIUM	4	11		
43986	DNRW	24/07/1973	789603	7086056	350	87	GUBBERAMUNDA SANDST.	61	69		
44000	DNRW	2/08/1973	792581	7099912	350						
44001	DNRW	10/10/1973	786936	7083467	350	56	ORALLO FORMATION	54	56		
44006	DNRW	29/07/1951	783996	7092403	300						
44040	DNRW	26/07/1973	785822	7090822	300	73	ORALLO FORMATION	71	73		
44041	DNRW	25/07/1973	788226	7090276	300	51	ORALLO FORMATION	42	51		
44042	DNRW	18/07/1973	778337	7090124	350	131	GUBBAMUNDA	125	131		
44044	DNRW	7/08/1973	200992	7102600	300	47	INJUNE CK GROUP	45	47		
44097	DNRW (verified, relocated)	1/01/1973	796993	7100798	300	64	INJUNE CK GROUP	61	64		
44168	DNRW	1/10/1973	789633	7087411	300	67	GUBBERAMUNDA SANDST.	57	67		
44214	DNRW	1/01/1920	204849	7094371	350						
44215	DNRW	9/08/1973	207182	7089495	350						
44216	DNRW	9/08/1973	208317	7088443	350						
44217	DNRW	9/08/1973	207196	7088879	350						
44246	DNRW	7/10/1973	764476	7117053	250	19	INJUNE CK GROUP	18	19		
44270	DNRW	1/01/1934	206155	7091936	350						
44277	DNRW	4/08/1973	783920	7088924	300	58	ORALLO FORMATION	57	58		
44278	DNRW	1/11/1973	785786	7087959	300	50	ORALLO FORMATION	43	50		
44279	DNRW	8/08/1973	779694	7089940	400	77	GUBBAMUNDA	52	77		

44280	DNRW	1/11/1973	780798	7088376	350	106	GUBBMUNDA	45	106				
44324	DNRW	1/03/1974	782393	7085138	300	25	MOOGA SST	24	25				
44572	DNRW	1/12/1973	779097	7086719	300								
44573	DNRW	1/12/1973	781282	7086364	300								
44574	DNRW	1/12/1973	781242	7083284	300								
44605	DNRW	1/12/1973	786313	7113012	250	78	INJUNE CK	72	78				
44677	DNRW	1/02/1974	779049	7084533	350								
44699	DNRW	26/04/1974	770463	7098606	350	66	INJUNE CK	60	66				
44708	DNRW	1/01/1974	206037	7091009	300								
44709	DNRW	1/01/1974	206537	7089789	300								
44712	DNRW	22/03/1974	790293	7090815	350								
44713	DNRW	24/07/1973	789418	7088956	300								
48806	DNRW	22/04/1974	765903	7099748	350	140	SPRINGBOK SANDSTONE	134	140				
48807	DNRW	1/12/1973	208327	7087981	350	5	ALLUVIUM	2	5				
48811	DNRW	11/05/1974	779984	7127971	250	194.1	BIRKHEAD FORMATION	35.1	35.7				
48813	DNRW	18/09/1973	206025	7091533	300	5	ALLUVIUM	3	5				
48814	DNRW	7/03/1974	206281	7091261	300	5	ALLUVIUM	3	5				
48815	DNRW	1/01/1968	206683	7089484	300	5	ALLUVIUM	3	5				
48817	DNRW	29/03/1974	789022	7089889	300	65	ORALLO FORMATION	61	65				
48818	DNRW	28/03/1974	784332	7089993	300	26	ALLUVIUM	22	26				
48835	DNRW	14/01/1975	786208	7081943	350	137	GUBBERAMUN	102	137				
48836	DNRW	31/08/1945	786709	7084519	350	91	GUBBERAMUN	48	50				
48837	DNRW	15/03/1945	786831	7086241	350	40	GUBBERAMUN	30	40				
48841	DNRW (verified, relocated)	1/03/1950	789688	7124804	250		BIRKHEAD FORMATION	0					
48848	DNRW	1/01/1975	767405	7086413	400								
48852	DNRW	8/01/1976	205185	7082118	350	704	HUTTON SANDSTONE	370	377				
48855	DNRW	1/10/1975	769987	7083833	400								
48861	DNRW	14/10/1975	204628	7093134	300	7	ALLUVIUM	6	7				
48863	DNRW	11/02/1976	212619	7101014	350	817	CLEMATIS	780	817				
48914	DNRW	1/01/1962	205644	7121896	300								
48942	DNRW	15/01/1980	781003	7123576	400								
48944	DNRW	1/02/1979	763784	7084455	400								
48950	DNRW	14/09/1979	207257	7087402	350	633	HUTTON FORMATION	510	513				
48958	DNRW	21/11/1979	765803	7088170	400								
48965	DNRW	1/01/1979	765930	7105167	400	201	INJUNE CK	200	201				
48995	DNRW	1/12/1950	770157	7090605	350								
48996	DNRW	1/12/1950	774425	7090238	300								
48997	DNRW	1/12/1950	776909	7090832	300								
48998	DNRW	1/12/1950	771091	7088799	350								
48999	DNRW	31/12/1980	761254	7096578	300	91	BLYTHDALE	70	91				
58005	DNRW	31/05/1981	778387	7130161	250	164	BIRKHEAD FORMATION	59	68				
58006	DNRW	30/07/1980	778818	7086664	300	67	ORALLO FORMATION	66	67				
58007	DNRW	1/03/1973	792650	7084540	350	37	BUNGIL	35	37				
58009	DNRW	1/06/1980	775800	7100064	373	11	ALLUVIUM	9	11				
58010	DNRW	1/01/1980	795950	7080798	350								
58011	DNRW	1/01/1980	793878	7083618	350								
58020	DNRW	1/01/1964	200068	7104119	300								
58024	DNRW	1/11/1981	214897	7103559	355	376	HUTTON FORMATION	113	114				
58028	DNRW		783143	7081395	350								
58063	DNRW		201219	7093979									
58064	DNRW	4/04/1982	765955	7122751	250	51	INJUNE CK GROUP	49	51				
58075	DNRW		793729	7088058	350								
58079	DNRW	9/06/1982	768179	7115838	250	58	INJUNE CK GROUP	52	58				
58128	DNRW	2/06/1983	208174	7088594	350	11	ALLUVIUM	6	11				
58129	DNRW (verified, relocated)	6/02/1983	783 710	7 109 458	300	17	INJUNE CK GROUP	15	17				
58133	DNRW	6/07/1983	782141	7111871	250	670	HUTTON FORMATION	611	619				
58135	DNRW	1/01/1965	773557	7087300	350								
58145	DNRW	1/01/1959	774895	7084961	350								
58157	DNRW	12/12/1954	776064	7081210	300								
58213	DNRW	8/10/1985	203734	7114060	340	426.8	HUTTON FORMATION	268	426.8				
58216	DNRW	22/10/1985	798905	7129710	450	196	BIRKHEAD FORMATION	82	196				
58217	DNRW	5/09/1985	204920	7102227	300								
58232	DNRW	19/04/1986	797553	7114339	300	555.7	HUTTON FORMATION	161.6	167.7				
58234	DNRW	27/03/1986	216695	7105262	400	260	EUROMBAH FORMATION	254	260				
58244	DNRW	23/05/1986	782467	7087262	300	11	ORALLO FORMATION	10	11				
58252	DNRW	16/08/1986	770642	7080678	350	85.4	COREENA	61.9	65.6				
58259	DNRW (not found)	16/07/1986	792867	7106436	350	81	BIRKHEAD FORMATION	32	37				
58266	DNRW	14/11/1987	799011	7120928	250	312.9	HUTTON	61	62.2				
58274	DNRW	14/11/2003	797731	7082414									
58276	DNRW	17/11/2003	790844	7082024									
58294	DNRW	10/04/1987	787085	7093936	300	313.9	BIRKHEAD FORMATION	182.9	185.9				
58297	DNRW	7/04/1987	769957	7115709	250	146	BIRKHEAD FORMATION	35.9	36.6				
58300	DNRW	7/04/1987	217993	7091615	300	108	BIRKHEAD FORMATION	54	56				
58302	DNRW	30/03/1987	768587	7126208	350	66	INJUNE CREEK GROU	65	66				
58306	DNRW	30/08/1987	761758	7131366	245	474	BIRKHEAD FORMATION	86	96				
58307	DNRW	24/05/1987	781819	7081732	300	131	WALLOON COAL	87.5	131				
58309	DNRW	7/06/1987	765351	7093169	300	41.4	INJUNE CK GROUP	35.3	41.4				
58313	DNRW	4/07/1987	218035	7092494	300	353	HUTTON FORMATION	56	66				
58316	DNRW		206137	7091474	350								
58317	DNRW	2/05/1987	787086	7121658	250	11	ALLUVIUM	8	11				
58318	DNRW		204186	7086963	330	8.5	ALLUVIUM						
58319	DNRW	8/10/1987	206248	7091476	350			6.4	8.5				
58326	DNRW	1/01/1988	206617	7089944	350								
58335	DNRW	17/02/1988	218512	7089439	355	422	HUTTON SANDSTONE	288	422				
58372	DNRW	1/01/1989	761259	7083089	400								
58377	DNRW	10/08/1989	795328	7116854	300	670	HUTTON SANDSTONE	104					
58409	DNRW	30/09/1989	202127	7098005	250								
58462	DNRW	15/08/1991	761763	7121881	240	620	EUROMBAH	608	620				
58473	DNRW	13/11/1991	760595	7091418	330	131	GUBBERAMUNDA	45	50			1860	
58484	DNRW	3/04/1992	776963	7123416	310	775	HUTTON SANDSTONE	62	71				
58486	DNRW	31/07/1991	207456	7126773		240	SPRINGBOK	221	240				
58491	DNRW	2/02/1993	786350	7127464	250	33	INJUNE CREEK GROUP	28	33			2880	
58495	DNRW	1/01/2100	788461	7083433	380								
58519	DNRW	14/10/1992	205006	7093604	290								
58536	DNRW	1/02/1993	208432	7110500	350	218	INJUNE CREEK GROUP	204	218			3570	
58537	DNRW	13/02/1993	765297	7117745	250	124	BIRKHEAD FORMATION	120	124			5950	
58548	DNRW		204858	7094001	350								
58609	DNRW		778002	7100356	300	24.7	INJUNE CREEK	24.4	24.7			9700	
58679	DNRW (not found)		796218	7107038									
58693	DNRW		793739	7083621	350								
58786	DNRW		783996	7092403		670	PRECIPICE SANDSTONE	600	670				
58827	DNRW	25/05/2000	217013	7116133									
58836	DNRW	13/08/2000	772327	7088189									
58842	DNRW	6/03/2001	783631	7083355									
58850	DNRW (verified, relocated)	20/05/2001	770996	7117535			PRECIPICE SANDSTONE	1200		27			
58910	DNRW (not found)	15/11/2001	789028	7100167									
58929	DNRW	7/02/2002	205390	7092566									
58967	DNRW	19/12/1977	762121	7105091	300								
58969	DNRW		796090	7086864	325								
58970	DNRW		771121	7103520	295								
58973	DNRW		772614	7108416	300								
58974	DNRW		772866	7107179	300								
58987	DNRW (not found)		779596	7109870									
58990	DNRW		780968	7128412	250			</					

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C4076	Xstrata	31230	789152	7106050	271.18						
C4077	Xstrata	31231	790807	7106538	290.81						
C4078	Xstrata	31231	794524	7108907	267.36						
C5004	Xstrata	33674	791008	7110464	277.2						
C5016	Xstrata	33686	790081	7111414	265.1						
C5017	Xstrata	33671	791171	7111155	266.4						
C5018	Xstrata	33672	790686	7110925	278.65						
C5020	Xstrata	33694	790705	7111325	281.35						
C5021	Xstrata	33822	790794	7109973	282						
C5022	Xstrata	33823	790014	7109393	281						
C5023	Xstrata	33824	789299	7111343	258						
C6001	Xstrata	37637	790184	7111203	268.11	102					
C6002	Xstrata	37636	790083	7109552	280.85	162.36					
C6002A	Xstrata	37656	790082	7109551	280.85						
C6003	Xstrata	37639	786360	7106389	247.23	180					
C6004	Xstrata	37640	789265	7106768	275.29	132					
C6005	Xstrata	37650	792878	7108560	248.29	96					
C6006	Xstrata	37642	794249	7106576	267.1	102					
C6239	Xstrata	39145	790050	7113027	241.327						
C6239A	Xstrata	39145	790052	7113027	241.33						
C6248	Xstrata	39385	790879	7104998	273						
C6253	Xstrata	39165	791698	7108187	274.397						
C6254	Xstrata	38765	790916	7111407	275.87	102.12					
C6255	Xstrata	38767	787723	7106190	248.44						
C6256	Xstrata	38774	790083	7105795	291.35	102.01					
C6257	Xstrata	38785	793297	7105380	263.39	102.03					
C6258	Xstrata	38786	793324	7106177	255.03	102.11					
C6260	Xstrata	38787	794087	7105403	270.28						
C6262	Xstrata	38788	794514	7107000	270.41	102.02					
C6263	Xstrata	38789	790081	7109014	280.51						
C6263_R	Xstrata	38789	790083	7109014	280.51	102.04					
C6264	Xstrata	38790	789639	7112218	247.4	102					
C6266	Xstrata	38791	789287	7111396	259.39	102.05					
C6268	Xstrata	38792	791696	7111416	260.88	102					
C6270	Xstrata	38793	790515	7110597	278.07	102					
C6272	Xstrata	38794	790085	7106603	285.47	102.15					
C6273	Xstrata	38795	787704	7107023	244.47	102					
C6361	Xstrata	39379	792897	7109806	241.73	102					
C6362	Xstrata	39356	792910	7110585	241.15	102.12					
C6365	Xstrata	39380	792505	7105388	257.56						
C6425	Xstrata	39171	794609	7109180	267.227	102					
C6425A	Xstrata	39171	794611	7109180	267.227	60					
C6428	Xstrata	39162	792616	7108385	252.527	102.08					
C6429	Xstrata	39168	794575	7108389	271.917	66					
C6429A	Xstrata	39169	794577	7108389	271.917	42					
C6429B	Xstrata	39170	794573	7108389	271.917	96.15					
C6431	Xstrata	39171	794253	7107444	268.967	42					
C6431A	Xstrata	39170	794253	7107444	268.967	72.17					
C6434	Xstrata	39186	793411	7108376	244.967	72					
C6435	Xstrata	39190	789410	7105582	284.647	66					
C6436	Xstrata	39172	793816	7108785	253.297	60					
C6437	Xstrata	39387	786107	7104547	255.84	36					
C6437A	Xstrata	39395	786109	7104547	255.84	72					
C6438	Xstrata	39138	790626	7111181	281.747	55.23					
C6439	Xstrata	39193	787813	7104793	262.92						
C6440	Xstrata	39139	789473	7110382	265.077						
C6442	Xstrata	39139	790207	7110383	274.047						
C6444	Xstrata	39140	791016	7110379	275.937						
C6445	Xstrata	39137	789804	7111189	262.967	102					
C6445A	Xstrata	39137	789803	7111189	262.967	102.21					
C6447	Xstrata	39157	790498	7111801	262.817	102.05					
C6453	Xstrata	39518	789302	7111805	259.64	102					
C6457	Xstrata	39172	793706	7109403	243.417	54					
C6458	Xstrata	39141	789403	7112794	253.587	66.01					
C6463	Xstrata	39162	792132	7108996	256.797						
C6464	Xstrata	39156	790234	7112398	249.297	102					
C6465	Xstrata	39406	786909	7104213	269.26	102					
C6471	Xstrata	39387	790901	7105400	270.5	129					
C6473	Xstrata	39171	792888	7105859	252.13	123					
C6481	Xstrata	39356	788545	7104245	264.88	123					
C6481A	Xstrata	39404	788541	7104248	264.76	123					
C6483	Xstrata	39188	790903	7109398	271.257	123					
C6485	Xstrata	39190	791285	7109810	263.21	123					
C6486	Xstrata	39185	793311	7109002	241.817	123					
C6487	Xstrata	39181	788497	7105000	264.52	123					
C6491	Xstrata	39193	786940	7104974	267.99	123					
C6491X	Xstrata	39238	775632	7118809	285.8						
C6496	Xstrata	39542	790601	7109550	278.88						
C6497	Xstrata	39303	775208	7118408	300.81	124					
C6500	Xstrata	39195	789306	7106202	273.287	123					
C6502	Xstrata	39195	788511	7105847	258.837	123					
C6505	Xstrata	39206	776401	7117604	265.92	123					
C6523	Xstrata	39235	774403	7115977	268.46	123					
C6525	Xstrata	39567	775200	7116801	276.69	123					
C6531	Xstrata	39301	770411	7119199	277.31	123					
C6537	Xstrata	39348	767928	7119914	265.68	123					
C6541	Xstrata	39347	768833	7120390	292.89	123					
C6545	Xstrata	39589	770748	7120397							
C6548	Xstrata	39456	789210	7108819	268.39	123					
C6558	Xstrata	39540	789284	7107399	268.88	123					
C6567	Xstrata	39374	773591	7117988	270.6	124					
C6576	Xstrata	39231	774407	7118016	283.41	123					
C6580	Xstrata	39228	774391	7118780	281.65	123					
C6580A	Xstrata	39229	774393	7118780	281.65	123					
C6582	Xstrata	39232	774767	7117574	289.03	124					
C6590A	Xstrata	39306	775207	7120420	291.64	148					
C6590B	Xstrata	39307	775218	7120390	291.02	123					
C6591	Xstrata	39250	778433	7114413	250	123					
C6602	Xstrata	39346	769232	7120819	273.44	153					
C6603	Xstrata	39586	780805	7116017	280.34	153					
C6621	Xstrata	39578	779224	7116763	255.68	153					
C6628	Xstrata	39566	773197	7117134	265.61	153					
C6630	Xstrata	39308	772868	7117957	258.68	123					
C6631	Xstrata	39625	781610	7115604	292	123					
C6632	Xstrata	39256	779194	7114403	268.35	123					
C6632A	Xstrata	39280	779197	7114413	268.96	123					
C6638	Xstrata	39305	769599	7121608	255.04						
C6640	Xstrata	39257	778377	7113614	255.48	123					
C6640A	Xstrata	39258	778380	7113615	255.65	123					
C6648	Xstrata	39356	775203	7121196	266	123					
C6648A	Xstrata	39356	775207	7121198	266.12	123					
C6651	Xstrata	39314	782000	7116354	285.99	123					
C6673	Xstrata	39588	768536	7121612		123					
C6674	Xstrata	39284	779945	7113632	276.41	123					
C6688	Xstrata	39287	779207	7113609	267.53						
C6690	Xstrata	39306	770378	7120012	270.95	123					
C6692	Xstrata	39299	771200	7119601	259.29	123					
C6694	Xstrata	39302	770479	7120800	260.79	123					
C6696	Xstrata	39299	769602	7120005	288.13	123					
C6698	Xstrata	39302	768093	7119213	272.17	123					
C6700	Xstrata	39303	771199	7118802	252.93	123					

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MCC0460	Xstrata	28392	782124	7115972	285.69	120
MCC0461	Xstrata	28923	783283	7116847	281.6	120
MCC0465	Xstrata	28343	782178	7114927	281.01	122
MCC0470	Xstrata	29462	781812	7116713	280.29	120
MCC0472	Xstrata	28346	781255	7115425	287.05	122
MCC1378	Xstrata	29454	780233	7115990	270.62	128
MCC1379	Xstrata	29454	779998	7115323	276.94	122
MCC1520	Xstrata	29522	778791	7115672	276.01	122
MCC1609	Xstrata	29522	779032	7115089	266.83	120
MCC1610	Xstrata	29453	780575	7115502	280.86	120
MCF1592	Xstrata	29722	780445	7114219	289	127
MCR0007	Xstrata	27197	778977	7114129	255.75	120
MCR0008	Xstrata	27198	781833	7118146	274.31	120
MCR0102	Xstrata	27451	780539	7112208	285.02	96
MCR0125	Xstrata	27472	780709	7114566	285.57	120
MCR0202	Xstrata	27798	782585	7116016	292.73	120
MCR0207	Xstrata	27800	780464	7115254	274.55	126
MCR0213	Xstrata	27802	781770	7115887	297.93	120
MCR0215	Xstrata	27802	782297	7115263	286.81	122
MCR0261	Xstrata	27853	777171	7116670	241.02	97
MCR0411	Xstrata	28216	778975	7118618	241.56	
MCR0412	Xstrata	28217	784290	7116477	268.38	121
MCR0413	Xstrata	28217	784322	7118683	272.55	
MCR0418	Xstrata	28219	779125	7117745	244.81	
MCR0419	Xstrata	28220	780814	7117078	276	120
MCR0437	Xstrata	28243	782160	7115635	284.52	85
MCR0440	Xstrata	28335	783015	7116551	279.75	
MCR0441	Xstrata	28336	783413	7116473	291.65	
MCR0442	Xstrata	28336	783169	7116181	294.53	
MCR0445	Xstrata	28337	782491	7115740	295.38	
MCR0449	Xstrata	28339	781610	7115375	284.23	
MCR0451	Xstrata	28339	782239	7116684	273.5	
MCR0453	Xstrata	28340	782366	7116290	279.75	
MCR0455	Xstrata	28341	781979	7116348	286.83	120
MCR0456	Xstrata	28341	781504	7115680	288.95	
MCR0457	Xstrata	28341	782818	7114426	261.39	
MCR0458	Xstrata	28342	782554	7114853	278.54	108
MCR0462	Xstrata	28343	783576	7116087	281.83	114
MCR0463	Xstrata	28343	783605	7116252	287.37	121
MCR0464	Xstrata	28343	783342	7115969	288.15	120
MCR0466	Xstrata	28344	781934	7114599	267.81	121
MCR0467	Xstrata	28344	782294	7114545	268.69	
MCR0468	Xstrata	28344	781767	7115005	275.83	120
MCR0469	Xstrata	28345	781384	7115060	281.19	
MCR0471	Xstrata	28346	781575	7116393	289.32	126
MCR0577	Xstrata	28587	778627	7113753	267.91	120
MCR0578	Xstrata	28587	777735	7114160	263.36	120
MCR0579	Xstrata	28587	779612	7114626	287.23	121
MCR0581	Xstrata	28589	776047	7114443	277.53	120
MCR0582	Xstrata	28589	775631	7115157	269.99	122
MCR0583	Xstrata	28590	776794	7113515	264.7	120
MCR0584	Xstrata	28590	776989	7114794	252.76	109
MCR0588	Xstrata	28592	779298	7112665	266.65	121
MCR0589	Xstrata	28593	778912	7115535	285.09	103
MCR0590	Xstrata	28593	778613	7115808	271.29	121
MCR0591	Xstrata	28593	779449	7115198	284.92	127
MCR0592	Xstrata	28594	778569	7116656	267.74	127
MCR0593	Xstrata	28594	779278	7116294	263.3	
MCR0848	Xstrata	28920	783781	7117951	267.23	121
MCR0849	Xstrata	28920	781763	7117632	283.14	121
MCR0850	Xstrata	28921	779801	7118523	255.02	121
MCR0862	Xstrata	28926	778258	7118361	236.8	111
MCR0863	Xstrata	28926	778048	7117559	241.12	121
MCR0866	Xstrata	28927	777782	7116771	244.21	121
MCR0867	Xstrata	28928	777332	7116018	243.99	67
MCR0868	Xstrata	28928	777259	7115370	253.68	127
MCR0869	Xstrata	28929	776719	7115442	252.02	121
MCR0870	Xstrata	28929	778740	7117351	251.53	121
MCR0871	Xstrata	28935	780417	7116863	282.09	61
MCR0872	Xstrata	28935	779334	7117162	250.14	121
MCR0873	Xstrata	28935	779830	7116272	260	
MCR0874	Xstrata	28935	779675	7113795	273.1	
MCR0875	Xstrata	28936	778789	7114877	264.34	
MCR0876	Xstrata	28936	778323	7113395	254.17	
MCR0877	Xstrata	28936	778084	7115073	248.58	
MCR0878	Xstrata	28937	780854	7113450	280.98	
MCR0879	Xstrata	28937	780629	7115950	271.97	
MCR0880	Xstrata	28938	780449	7117681	269.92	
MCR0881	Xstrata	28938	779563	7117991	261.63	
MCR0917	Xstrata	28951	777002	7114116	257.2	
MCR0918	Xstrata	28951	778985	7113174	269.47	
MCR0919	Xstrata	28951	779904	7112832	276.37	
MCR1364	Xstrata	29453	781096	7115329	287.2	
MCR1365	Xstrata	29453	780921	7114979	282.3	
MCR1377	Xstrata	29453	781182	7115772	283.28	
MCR1501	Xstrata	29454	780336	7114751	280.31	
MCR1502	Xstrata	29454	779666	7115823	266.01	
MCR1503	Xstrata	29455	778900	7115994	279.54	
MCR1504	Xstrata	29455	779167	7115491	280.25	
MCR1505	Xstrata	29456	780667	7113440	285.07	
MCR1506	Xstrata	29456	780165	7113203	277.2	
MCR1507	Xstrata	29456	779701	7112901	275.83	
MCR1508	Xstrata	29456	779434	7113487	275.27	
MCR1509	Xstrata	29457	779135	7113926	257.98	
MCR1510	Xstrata	29457	779662	7114142	269.48	
MCR1511	Xstrata	29457	779341	7114626	274	
MCR1512	Xstrata	29458	778860	7114365	259.05	
MCR1513	Xstrata	29458	778605	7114886	256.12	
MCR1514	Xstrata	29460	780075	7115714	266.03	
MCR1515	Xstrata	29460	779929	7114937	285.66	
MCR1516	Xstrata	29460	779546	7115399	277.92	
MCR1517	Xstrata	29460	779310	7115898	270.44	
MCR1518	Xstrata	29460	779054	7116433	263.73	
MCR1519	Xstrata	29460	778561	7116134	265.56	
MCR1539	Xstrata	29464	777626	7115838	245.54	
MCR1540	Xstrata	29464	777564	7115621	246.96	
MCR1541	Xstrata	29460	780120	7114478	287.74	
MCR1542	Xstrata	29460	780528	7113890	289.14	
MCR1543	Xstrata	29461	780000	7113694	278.3	
MCR1544	Xstrata	29461	779999	7114063	273.63	
MCR1545	Xstrata	29461	784822	7117595	270.22	
MCR1546	Xstrata	29461	781593	7117260	285.6	
MCR1547	Xstrata	29462	781931	7117381	275.78	
MCR1548	Xstrata	29462	782069	7117098	276.1	
MCR1549	Xstrata	29462	782335	7117315	270.42	
MCR1550	Xstrata	29463	780278	7113615	277.41	
MCR1551	Xstrata	29463	780353	7113188	279.05	
MCR1552	Xstrata	29463	779816	7113224	272.24	
MCR1553	Xstrata	29464	778985	7113530	266.44	
MCR1554	Xstrata	29464	779309	7113071	267.74	
MCR1555	Xstrata	29464	778426	7114042	250.55	

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R4004	Xstrata	36526	789261	7109965	270
R4005	Xstrata	30849	789014	7111883	260.8
R4006	Xstrata	30852	787894	7110923	255
R4007	Xstrata	30853	795464	7106613	279
R4008	Xstrata	30853	795234	7105958	285
R4009	Xstrata	30853	794624	7106633	271.41
R4010	Xstrata	30853	794324	7106108	266
R4011	Xstrata	30853	793784	7106633	262
R4012	Xstrata	30853	794564	7108708	267
R4013	Xstrata	30854	794684	7107758	278.2
R4014	Xstrata	30854	794054	7108623	256
R4016	Xstrata	30854	794384	7107318	262.79
R4017	Xstrata	30854	793654	7107843	251.91
R4018	Xstrata	30855	793204	7107593	244
R4019	Xstrata	30855	792139	7107388	264
R4020	Xstrata	30855	792729	7107418	248.73
R4021	Xstrata	30855	793074	7108273	242.4
R4022	Xstrata	30856	789289	7105143	277
R4023	Xstrata	30856	789907	7105814	286.11
R4025	Xstrata	37174	790744	7106073	280
R4026	Xstrata	30857	789734	7107073	276
R4027	Xstrata	30857	789384	7108143	263
R4028	Xstrata	30858	789614	7108513	270.7
R4029	Xstrata	30858	788534	7109433	257
R4030	Xstrata	30858	792074	7109643	256
R4031	Xstrata	30858	790644	7109113	270
R4032	Xstrata	30860	792564	7107913	256
R4033	Xstrata	30860	792544	7108393	253
R4034	Xstrata	30860	792339	7105878	252.27
R4035	Xstrata	30860	790414	7110108	280
R4036	Xstrata	30860	789944	7111353	261
R4037	Xstrata	30861	788624	7112853	252
R4038	Xstrata	30861	789704	7112658	247
R4039	Xstrata	30861	791834	7110753	257
R4041	Xstrata	30944	788729	7111473	252.4
R4044	Xstrata	30947	791684	7111503	260
R5002	Xstrata	33668	790233	7111485	267.9
R5007	Xstrata	33670	790730	7110697	280.8
R5008	Xstrata	33670	790750	7110694	280.7
R5009	Xstrata	33670	790779	7110690	280.25
R5010	Xstrata	33670	790819	7110682	279.5
R5011	Xstrata	33670	790868	7110674	277.75
R5012	Xstrata	33670	790928	7110664	275.29
R5013	Xstrata	33670	790997	7110653	273.75
R5014	Xstrata	33670	791085	7110634	275.55
R6237	Xstrata	38729	789642	7112222	247.43
R6238	Xstrata	38729	789298	7112974	249.75
R6239	Xstrata	38730	790057	7113031	240.71
R6240	Xstrata	38731	788876	7109380	267.26
R6241	Xstrata	38732	789274	7108588	266.01
R6242	Xstrata	38732	790085	7109010	280.27
R6243	Xstrata	38732	787703	7107019	244.56
R6244	Xstrata	38758	793325	7106180	255
R6245	Xstrata	38759	793300	7105380	263.4
R6246	Xstrata	38759	791680	7106628	277.18
R6247	Xstrata	38760	790081	7105002	287.52
R6248	Xstrata	38760	790877	7104996	272.86
R6249	Xstrata	38761	793683	7109816	240.92
R6250	Xstrata	38761	793690	7110604	239.38
R6251	Xstrata	38762	791708	7110225	258.93
R6252	Xstrata	38763	791693	7108996	256.28
R6253	Xstrata	38763	791696	7108190	274.25
R6259	Xstrata	38787	794081	7105404	270.09
R6261	Xstrata	38788	794516	7107000	270.45
R6265	Xstrata	38791	789281	7111394	259.59
R6267	Xstrata	38792	791692	7111417	260.9
R6269	Xstrata	38792	790513	7110593	278.14
R6271	Xstrata	38793	790073	7106607	285.77
R6360	Xstrata	38944	794497	7110193	257.29
R6361	Xstrata	38946	792899	7109815	242.02
R6362	Xstrata	38945	792916	7110585	241.24
R6363	Xstrata	38946	792897	7111389	235.89
R6364	Xstrata	38947	791731	7104987	256.8
R6365	Xstrata	38947	792507	7105387	257.97
R6366	Xstrata	38948	791743	7105729	261
R6367	Xstrata	38947	790947	7108583	269.06
R6368	Xstrata	38948	790889	7107790	284.07
R6369	Xstrata	38949	791289	7109416	264.82
R6394	Xstrata	39114	793415	7110381	238.267
R6396	Xstrata	39115	792613	7110372	248.807
R6398	Xstrata	39115	791813	7111183	258.92
R6399	Xstrata	39115	791811	7113182	236.717
R6400	Xstrata	39116	792615	7111185	246.887
R6401	Xstrata	39115	791416	7112780	250.887
R6402	Xstrata	39116	789009	7111182	264.357
R6403	Xstrata	39116	792212	7112781	236.457
R6404	Xstrata	39117	786094	7112365	236.437
R6405	Xstrata	39116	792599	7112797	233.237
R6406	Xstrata	39117	788611	7112383	249.397
R6408	Xstrata	39117	789028	7112766	255.227
R6409	Xstrata	39117	791814	7112379	243.627
R6410	Xstrata	39118	787410	7112381	235.307
R6411	Xstrata	39117	791808	7112004	251.247
R6412	Xstrata	39118	788628	7111534	257.307
R6413	Xstrata	39117	791410	7111981	258.15
R6414	Xstrata	39120	787753	7111512	252.077
R6415	Xstrata	39118	791011	7112386	253.067
R6416	Xstrata	39121	788595	7110403	263.5
R6417	Xstrata	39118	793013	7111986	234.377
R6418	Xstrata	39121	789012	7109983	273.607
R6419	Xstrata	39118	793014	7111979	234.427
R6420	Xstrata	39122	787831	7110378	250.327
R6421	Xstrata	39120	793379	7111144	237.077
R6422	Xstrata	39122	789014	7113581	255.427
R6423	Xstrata	39121	795010	7109181	269.467
R6424	Xstrata	39123	791412	7107981	275.387
R6425	Xstrata	39121	794612	7109182	267.407
R6426	Xstrata	39124	791831	7107587	268.29
R6427	Xstrata	39121	794199	7109203	258.267
R6428	Xstrata	39124	792611	7108363	252.407
R6429	Xstrata	39121	794578	7108368	271.947
R6430	Xstrata	39124	791811	7108784	263.467
R6431	Xstrata	39123	794249	7107440	268.647
R6432	Xstrata	39125	791801	7109980	257.127
R6433	Xstrata	39122	788634	7106761	258.62
R6434	Xstrata	39125	793411	7108380	245.007
R6435	Xstrata	39123	789408	7105582	284.647
R6436	Xstrata	39125	793810	7108781	253.237
R6437	Xstrata	39125	786185	7104650	252.59
R6438	Xstrata	39135	790613	7111179	281.567
R6439	Xstrata	39125	787813	7104787	262.86

R6440	Xstrata	39136	789476	7110387	264.977
R6441	Xstrata	39125	792610	7108783	257.27
R6442	Xstrata	39136	790211	7110386	274.057
R6443	Xstrata	39134	792214	7108382	259.2
R6444	Xstrata	39136	791011	7110383	276.167
R6445	Xstrata	39135	789800	7111175	263.247
R6446	Xstrata	39137	790614	7109983	285.457
R6448	Xstrata	39137	789419	7110795	261.577
R6449	Xstrata	39157	789706	7111809	253.347
R6450	Xstrata	39138	789738	7111595	255.737
R6451	Xstrata	39157	791303	7111400	265.837
R6452	Xstrata	39138	790213	7111186	269.357
R6453	Xstrata	39158	789301	7111802	260.107
R6454	Xstrata	39139	790613	7111584	272.807
R6455	Xstrata	39158	791678	7113808	230.997
R6456	Xstrata	39139	791412	7111182	266.917
R6457	Xstrata	39169	793701	7108403	243.427
R6458	Xstrata	39140	789408	7112787	253.507
R6459	Xstrata	39161	792876	7107403	245.827
R6461	Xstrata	39161	793088	7108176	243.617
R6464	Xstrata	39141	790228	7112396	249.407
R6465	Xstrata	39166	786903	7104207	269.3
R6466	Xstrata	39142	790368	7112251	251.367
R6467	Xstrata	39166	786491	7102599	254.03
R6468	Xstrata	39143	790099	7112603	245.927
R6469	Xstrata	39167	788901	7102612	271.8
R6470	Xstrata	39144	790564	7112616	246.167
R6471	Xstrata	39167	790882	7105407	270.507
R6472	Xstrata	39145	790898	7113005	240.797
R6473	Xstrata	39168	792893	7105839	252.2
R6474	Xstrata	39146	790503	7113397	239
R6475	Xstrata	39168	792905	7105393	253.7
R6476	Xstrata	39146	790509	7113408	239.057
R6477	Xstrata	39168	792895	7106200	250.36
R6478	Xstrata	39156	790898	7113798	239
R6479	Xstrata	39171	794499	7105804	266.91
R6480	Xstrata	39157	790904	7113801	238.507
R6481	Xstrata	39172	788547	7104246	265.17
R6482	Xstrata	39158	791315	7113387	236.417
R6484	Xstrata	39160	793091	7108356	243.387
R6486	Xstrata	39161	793314	7109000	241.767
R6488	Xstrata	39162	793299	7108398	241.447
R6489	Xstrata	39196	786492	7104196	261.62
R6490	Xstrata	39166	793710	7107397	254.077
R6491X	Xstrata	39204	775632	7118809	285.8
R6492	Xstrata	39183	790107	7108599	278.427
R6493	Xstrata	39204	776006	7118809	268.68
R6494	Xstrata	39183	790533	7109012	272.577
R6495	Xstrata	39204	776016	7118017	283
R6496	Xstrata	39184	790499	7109404	279.357
R6497	Xstrata	39204	775210	7118411	300.84
R6498	Xstrata	39184	791297	7110197	265.28
R6499	Xstrata	39205	775596	7118116	285.18
R6500	Xstrata	39185	789304	7106202	273.287
R6501	Xstrata	39205	775998	7117604	276.64
R6502	Xstrata	39185	788509	7105847	258.837
R6503	Xstrata	39205	776406	7117197	262.62
R6504	Xstrata	39186	792104	7106979	265.267
R6505	Xstrata	39205	776404	7117610	265.48
R6506	Xstrata	39187	792116	7106223	257.227
R6507	Xstrata	39206	774793	7118409	299.14
R6508	Xstrata	39187	792498	7104998	260.82
R6509	Xstrata	39206	774402	7118384	282.47
R6510	Xstrata	39188	794112	7107007	271.38
R6511A	Xstrata	39207	774006	7118398	273.65
R6512	Xstrata	39188	794929	7107403	274.607
R6513	Xstrata	39207	774401	7117602	284.21
R6514	Xstrata	39188	795276	7108612	266.087
R6515	Xstrata	39207	774787	7117089	282.79
R6516	Xstrata	39189	795701	7109011	266.247
R6517	Xstrata	39208	774781	7116378	273.31
R6518	Xstrata	39189	795298	7109798	259.87
R6519	Xstrata	39208	774047	7118782	277.33
R6520	Xstrata	39189	795700	7109799	261.13
R6521	Xstrata	39209	775596	7116795	267.25
R6523	Xstrata	39208	774396	7115979	268.74
R6524	Xstrata	39190	789304	7105802	276.07
R6525	Xstrata	39208	775206	7116796	276.34
R6526	Xstrata	39191	788500	7105400	262.29
R6527	Xstrata	39209	775641	7116423	260.9
R6528	Xstrata	39191	788903	7105801	265.64
R6529	Xstrata	39209	776023	7119614	276.56
R6530	Xstrata	39191	790507	7106601	293.19
R6531	Xstrata	39210	770414	7119201	277.21
R6532	Xstrata	39193	789301	7103393	276.12
R6533	Xstrata	39211	769603	7119207	289.96
R6534	Xstrata	39192	790100	7105401	284.25
R6535	Xstrata	39211	768809	7118203	278.38
R6536	Xstrata	39192	790894	7105803	277.08
R6537	Xstrata	39212	767928	7119912	265.76
R6538	Xstrata	39193	791303	7105403	268.78
R6539	Xstrata	39213	768404	7119502	269.68
R6540	Xstrata	39194	791303	7106182	281.9
R6541	Xstrata	39212	768832	7120393	292.99
R6542	Xstrata	39194	788901	7103808	270.89
R6543	Xstrata	39213	769205	7119597	296.61
R6544	Xstrata	39195	788102	7103000	263.17
R6545	Xstrata	39213	770804	7120401	269.01
R6546	Xstrata	39194	788511	7108985	264.56
R6547	Xstrata	39214	771592	7120400	250.2
R6548	Xstrata	39195	789304	7109000	269.41
R6549	Xstrata	39214	770001	7119595	285.49
R6550	Xstrata	39195	789702	7109002	277.95
R6551	Xstrata	39214	771210	7120797	261.23
R6552	Xstrata	39195	789327	7104665	275.82
R6554	Xstrata	39195	788523	7108296	248.94
R6556	Xstrata	39196	788214	7105185	257.22
R6558	Xstrata	39196	789278	7107403	268.6
R6560	Xstrata	39204	776004	7118402	269.15
R6561	Xstrata	39226	772001	7118399	249.78
R6562	Xstrata	39205	775603	7118400	277.98
R6563	Xstrata	39226	771589	7118006	246.72
R6564	Xstrata	39205	775512	7117602	283.62
R6565	Xstrata	39226	772002	7118001	259.92
R6566	Xstrata	39226	775201	7118002	287.48
R6567	Xstrata	39228	773582	7117990	270.39
R6568	Xstrata	39205	775202	7117600	274.34
R6569	Xstrata	39229	773982	7117586	283.08
R6570	Xstrata	39206	775194	7118795	301.29
R6571	Xstrata	39229	773253	7117619	255.86
R6572	Xstrata	39206	774798	7118002	289.16

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R6865	Xstrata	39577	780004	7118815	252.16				
R6866	Xstrata	39578	779197	7119599	233.11				
R6867	Xstrata	39578	778791	7117586	250.96				
R6868	Xstrata	39579	778409	7118807	236.33				
R6869	Xstrata	39579	774402	7122002	251.27				
R6870	Xstrata	39580	774590	7122402	262.16				
R6871	Xstrata	39580	775194	7122805	263.6				
R6872	Xstrata	39581	775722	7122655	275.69				
R7000	Xstrata	39295	786875	7110201	239.34				
R7001	Xstrata	39296	785254	7111008	260.55				
R7002	Xstrata	39297	786153	7111788	247.32				
R7003	Xstrata	39297	784483	7110169	251.87				
R7004	Xstrata	39298	785330	7110149	242.55				
R7043	Xstrata	39388	784506	7106998	254.15				
R7044	Xstrata	39394	792458	7111828	250.12				
R7045	Xstrata	39395	795305	7105396	283.73				
R7046	Xstrata	39364	793638	7104661	267.69				
R7047	Xstrata	39396	793229	7104941	258.14				
R7048	Xstrata	39396	792893	7104602	256.81				
R7049	Xstrata	39396	796026	7105860	276.15				
R7051	Xstrata	39398	795324	7107795	281.8				
R7052	Xstrata	39398	791310	7111805	262.92				
R7053	Xstrata	39399	795298	7106204	289.68				
R7054	Xstrata	39400	795303	7106972	283.8				
R7055	Xstrata	39401	793714	7106276	257.54				
R7056	Xstrata	39401	793321	7106607	250.3				
R7060	Xstrata	39404	794516	7105191	284.6				
R7061	Xstrata	39405	793787	7105792	260.37				
R7062	Xstrata	39405	794702	7106761	273.71				
R7063	Xstrata	39405	794882	7107027	277.49				
R7064	Xstrata	39406	794965	7106169	276.61				
R7067	Xstrata	39423	787698	7109393	239.94				
R7068	Xstrata	39422	790678	7110778	279.87				
R7069	Xstrata	39423	786908	7104619	268.76				
R7070	Xstrata	39423	790461	7107379	286.54				
R7071	Xstrata	39424	786228	7105462	263.44				
R7072	Xstrata	39423	783684	7103813	251.36				
R7073	Xstrata	39425	786902	7107802	242.46				
R7074	Xstrata	39424	785261	7104204	249.84				
R7075	Xstrata	39426	787679	7108587	241.01				
R7076	Xstrata	39424	785398	7107776	244.3				
R7077	Xstrata	39455	787816	7107732	242.82				
R7087	Xstrata	39498	785765	7108010	243.72				
R7088	Xstrata	39517	789908	7107733	283.29				
R7089	Xstrata	39517	790099	7107001	285.57				
R7090	Xstrata	39518	789860	7106844	282.49				
R7091	Xstrata	39518	789708	7106825	278.74				
R7092	Xstrata	39518	789708	7106689	280.81				
R7093	Xstrata	39518	789499	7106800	281.5				
R7094	Xstrata	39518	789499	7106630	278.43				
R7095	Xstrata	39519	789903	7106517	282.27				
R7096	Xstrata	39519	789509	7106476	271.86				
R7097	Xstrata	39519	789702	7106499	277.36				
R7098	Xstrata	39519	789910	7106656	285.77				
R7099	Xstrata	39520	789901	7106199	282.06				
R7100	Xstrata	39520	790502	7105402	277.82				
R7101	Xstrata	39520	790601	7106351	286.24				
R7102	Xstrata	39521	790951	7106352	287.38				
R7103	Xstrata	39521	791098	7106799	284.58				
R7104	Xstrata	39521	788452	7106607	261.46				
R7105	Xstrata	39521	788113	7106998	251				
R7106	Xstrata	39522	788900	7106204	268				
R7107	Xstrata	39522	790900	7111700	269				
R7108	Xstrata	39522	790900	7111796	264.17				
R7109	Xstrata	39522	790887	7111992	258.14				
R7110	Xstrata	39522	790899	7112102	255				
R7111	Xstrata	39523	790304	7107999	285.01				
R7112	Xstrata	39523	790900	7107950	280.6				
R7113	Xstrata	39523	791107	7107595	281.76				
R7114	Xstrata	39524	793704	7108204	250.14				
R7115	Xstrata	39524	794416	7108203	274.58				
R7116	Xstrata	39524	794121	7107814	264.36				
R7117	Xstrata	39524	794272	7108951	266.56				
R7126	Xstrata	39555	786498	7110604	236.78				
R7127	Xstrata	39555	786499	7109807	238.2				
R7128	Xstrata	39556	787260	7109866	238.41				
R7129	Xstrata	39556	784897	7110611	255.18				
R7130	Xstrata	39557	785663	7110567	247.17				
R7131	Xstrata	39557	789717	7104991	283.31				
R7134	Xstrata	39558	788119	7102396	263.8				
R7135	Xstrata	39559	781182	7111955	278.97				
R7136	Xstrata	39559	776395	7118000	264.07				
R7137	Xstrata	39560	773225	7118807	263.71				
R7138	Xstrata	39560	773602	7118400	260.04				
R7139	Xstrata	39560	774979	7115887	261.03				
R7140	Xstrata	39561	775563	7115827	257.41				
R7141	Xstrata	39562	773967	7115968	272.82				
R7142	Xstrata	39562	773245	7114387	257.82				
R7143	Xstrata	39563	774005	7114396	253.36				
R7144	Xstrata	39563	773206	7113610	266.78				
R7145	Xstrata	39564	772412	7113605	271.09				
R7146	Xstrata	39564	776333	7114371	271.63				
R7147	Xstrata	39565	775573	7114047	266.48				
R7148	Xstrata	39565	783599	7115210	262.08				
R7149	Xstrata	39566	783994	7115194	253.02				
R7150	Xstrata	39576	780815	7114793	284.69				
R7151	Xstrata	39576	779477	7115009	283.91				
R7152	Xstrata	39577	779192	7115990	273.82				
R7153	Xstrata	39577	778997	7117192	252.38				
R7154	Xstrata	39578	779299	7117245	249.77				
R7155	Xstrata	39597	767602	7121602	253				
R7156	Xstrata	39597	768450	7120700					
R7157	Xstrata	39615	775846	7120000	274				
R7158	Xstrata	39615	775490	7119493	297				
R7159	Xstrata	39615	776817	7120036	249				
R7160	Xstrata	39616	774408	7119561	271				
R7161	Xstrata	39615	767750	7119500					
R7163	Xstrata	39616	770000	7120100					
R7164	Xstrata	39616	770000	7121200					
R7165	Xstrata	39616	770800	7120800					
R7166	Xstrata	39617	772000	7121200					
R7167	Xstrata	39618	769443	7122804					
R7168	Xstrata	39618	769607	7122409					
R7169	Xstrata	39618	769600	7122001					
R7170	Xstrata	39618	768796	7122813					
R7171	Xstrata	39619	770000	7121481					
R7172	Xstrata	39620	772801	7120002					
R7173	Xstrata	39620	773566	7119961					
R7174	Xstrata	39620	780591	7112212	288				
R7175	Xstrata	39620	781997	7111996	294				
R7176	Xstrata	39621	782391	7113204	271				

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THR1600	Xstrata	29811	768644	7119783	279						
THR1661	Xstrata	29780	768434	7120253	271						
THR1662	Xstrata	29780	767994	7120353	278						
THR1664	Xstrata	29780	767294	7120083	260						
THR1665	Xstrata	29781	768544	7121213	268						
THR1666	Xstrata	29781	768914	7120893	273						
THR1667	Xstrata	29781	769014	7121583	262						
THR1668	Xstrata	29781	770584	7121383	253						
THR1669	Xstrata	29781	768394	7121103	261						
THR1670	Xstrata	29782	769734	7120773	267						
THR1671	Xstrata	29782	770094	7120473	275						
THR1672	Xstrata	29782	770534	7120703	261						
THR1673	Xstrata	29782	770454	7119863	275						
THR1674	Xstrata	29782	769634	7119913	288						
THR1675	Xstrata	29782	770814	7117973	252						
THR1676	Xstrata	29783	770404	7117803	256						
THR1677	Xstrata	29783	769674	7118163	281						
THR1678	Xstrata	29784	768884	7118533	294						
THR1817	Xstrata	29797	771657	7118543	242.5						
THR1818	Xstrata	29798	771044	7119083	258						
THR1819	Xstrata	29829	771374	7119383	254						
THR1820	Xstrata	29829	771764	7119313	245						
THR1821	Xstrata	29798	771334	7118893	250						
THR1822	Xstrata	29829	771084	7119813	265						
THR1823	Xstrata	29799	771504	7119783	255						
THR1824	Xstrata	29799	771824	7119773	246						
THR1825	Xstrata	29799	768884	7122003	264						
THR1826	Xstrata	29799	768854	7122303	262						
THR1827	Xstrata	29800	769214	7122263	250						
THR1828	Xstrata	29800	769184	7121943	260						
THR1829	Xstrata	29800	768664	7122033	261						
THR1830	Xstrata	29800	768724	7122323	256						
THR1831	Xstrata	29800	768224	7121753	252						
THR1832	Xstrata	29801	768104	7120633	275						
THR1833	Xstrata	29801	768174	7121013	265						
THR1834	Xstrata	29801	768234	7121303	258						
THR1835	Xstrata	29802	767764	7120683	262						
THR1836	Xstrata	29802	767704	7120383	270						
THR1837	Xstrata	29802	767664	7120123	264						
THR1838	Xstrata	29802	767614	7119813	252						
THR1839	Xstrata	29802	767154	7119493	251						
THR1840	Xstrata	29802	767534	7119113	265						
THR1841	Xstrata	29803	767004	7119543	248						
THR1842	Xstrata	29803	767224	7119823	254						
W0005	Xstrata	26328	792721	7112434	233						
W0006	Xstrata	26328	794333	7109902	256						
W0007	Xstrata	26328	794285	7109256	264						
W0008	Xstrata	26328	794708	7108045	282						
W0010	Xstrata	36526	792586	7106431	251						
W0011	Xstrata	36526	793845	7106772	269						
W0012	Xstrata	36526	794679	7106753	274						
W0012A	Xstrata	36526	794942	7107302	274						
W0012B	Xstrata	36526	795096	7106744	279						
W0012R	Xstrata	36526	795011	7107031	279						
W0013	Xstrata	36526	794404	7105651	263						
W0013A	Xstrata	36526	794311	7104981	283						
W0017	Xstrata	36526	796073	7105705	270						
W4024	Xstrata	30857	790021	7106581	284.76						
WUC0417	Xstrata	28395	796102	7105120	277.85						
WUR0371	Xstrata	28051	795813	7105280	272.78						
WUR0430	Xstrata	28395	796146	7105453	272.32						
WUR1741	Xstrata	29833	795583	7105032	285.9						
WUR1742	Xstrata	29833	794980	7104713	287.9						

Attachment E

Detailed hydrological logs and
construction details for
augmentation of monitoring network



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

221_07_W221 - 07-W1

SHEET 1 OF 2

Client: Xstrata Coal
Project: Wandoan Prefeasibility Feasibility
Borehole Location: MDL221 Xstrata Land
Project Number: 2133006A

Date Commenced: 6/12/07
Date Completed: 6/12/07
Recorded By: M.Retief
Log Checked By: S.Bish

Drill Model/Mounting:
Borehole Diameter: 171 mm

Driller:
Driller Lic No:

Surface RL: 277 m
Co-ords: E 790674 N 7110776

Borehole Information							Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	12	13		
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
RAB				276	1					SANDSTONE: yellow-orange, fine to medium grained, soft, poorly consolidated.				
				275	2									
				274	3									
				273	4									
				272	5									
				271	6									
				270	7									
				269	8									
				268	9									
				267	10									
				266	11									
				265	12.00	12					SANDSTONE: light grey, fine grained, poorly consolidated.			
				264	13									
				263	14									
				262	15.00	15					SILTSTONE: light brown, soft.			
				261	16.00	16								
				260		17					SANDSTONE: light grey to white, fine grained, alternating carbonaceous siltstone bands.			
				259		18								
				258		19								
				257		20								
				256		21								
				255		22								
				254		23								
				253		24								
				252		25								
				251	26.00	26						COAL: black, Mc Alister seam.		
				250		27								
				249		28								
				248		29								
				247		30								
				246		31								
				245		32								
				244	33.00	33								
				243	34.00	34					SANDSTONE: grey-white, fine grained, light brown siltstone bands. COAL: black, Mc Alister seam.			
				242		35								
				241		36					COAL: black, Mc Alister seam with black siltstone bands.			
				240	37.00	37								
				239		38								
				238	39.00	39					SILTSTONE: grey-brown and poorly developed.			
				237		40								
				236		41								
				235	42.00	42					SILTSTONE: dark grey to black.			
				234	43.00	43								
				233	44.00	44					SILTSTONE: light grey to brown, poorly developed.			
				232	45.00	45								
				231		46					SILTSTONE: dark brown to black, poorly developed coal with grey siltstone bands. SANDSTONE: grey-white, fine grained soft.			
				230		47								
				229		48								
				228	49.00	49					SHALE: black with minor poorly			

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

221_07_W221 - 07-W1

SHEET 2 OF 2

Client: Xstrata Coal
Project: Wandoan Prefeasibility Feasibility
Borehole Location: MDL221 Xstrata Land
Project Number: 2133006A

Date Commenced: 6/12/07
Date Completed: 6/12/07
Recorded By: M.Retief
Log Checked By: S.Bish

Drill Model/Mounting:
Borehole Diameter: 171 mm

Driller:
Driller Lic No:

Surface RL: 277 m
Co-ords: E 790674 N 7110776

Borehole Information							Field Material Description					
1	2	3	4	5	6	7	8	9	10	11	12	13
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	STRUCTURE AND ADDITIONAL OBSERVATIONS
VS	FB	VL	MD	VS	FB	VL	MD	VS	FB	VL	MD	VS
RAB				50.00	26					developed coal bands.		
				51.05	25					SILTSTONE: grey-white.		
					52					SILTSTONE: grey-white with sandstone, dark grey, fine grained.		
					53							
					54							
					55							
					56							
					57							
					58							
					59							
					60							
					61							
					62							
					63							
					64							
					65							
					66							
					67							
					68							
					69							
					70							
					71							
				72.00	72					SILTSTONE: grey-white with coaly wisps.		
				73.00	73					SANDSTONE: grey-white, fine to medium grained, dry.		
				75.00	75					COAL: black, W10 (Wambo Top).		
				76.00	76					SILTSTONE: dark grey.		
				77								
				78.00	78					END OF BOREHOLE AT 78.00 m		
					79							
					80							
					81							
					82							
					83							
					84							
					85							
					86							
					87							
					88							
					89							
					90							
					91							
					92							
					93							
					94							
					95							
					96							
					97							
					98							
					99							

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

R9095

SHEET 1 OF 2

Client: **Xstrata Coal**
Project: **Wandoan Prefeasibility Feasibility**
Borehole Location: **Ward's Land 'Pecos Valley' property**
Project Number: **2133006A**

Date Commenced: **2/4/08**
Date Completed: **3/5/08**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **280 mm**

Driller: **Rick Darr**
Driller Lic No: **2836**

Surface RL: **E 786937.75 N 7106175**
Co-ords:

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
											VS FS SL VL JND ST VD H		
RAB			Cement		1.00-1					SANDY SILT: Brown			
					2.00-2					SANDY SILT: Light brown			
					3					SANDY SILT: Cream			
					4								
					5.00-5								
			Backfill		6					SAND: Cream to yellow, fine grained with ironstone band near base			
					7								
					8.00-8					SILTSTONE: Light to medium grey, soft			
					9								
					10								
					11								
					12.00-12					SILTSTONE: Light to medium grey, soft, minor carbonaceous			
					13								
					14								
					14.50-15					COAL: Black, dull to bright, weak/brittle			
					16								
					16.50-17					SILTSTONE: Grey, soft to firm, carbonaceous,			
					17.50-18					SILTSTONE: Grey, trace carbonaceous and sand			
					19								
					20								
					21								
					22								
					23								
					24								
					25								
					26								
					27.00-27					COAL: Black, dull with grey and brown siltstone.			Slight water inflow commenced.
					28.00-28								
					29.00-29					SANDSTONE: Fine grained, grey, soft			
					30					SILTSTONE: Grey and brown, soft to brittle, some carbonaceous			
					31.00-31					SILTSTONE: Grey and brown, soft to brittle, with some carbonaceous and trace coal			
					32.00-32								
					33.00-33					COAL: Black, dull with trace grey and brown, brittle siltstone			
					34.00-34					SANDSTONE: Fine grained, grey			
					35					SILTSTONE: Grey, firm with very fine grained sandstone bands			
					36.00-36					SANDSTONE: Fine grained, grey, firm with trace siltstone bands			
					37								
					38								
					39.00-39					SANDSTONE: Fine grained, grey, firm with trace siltstone bands and increasing brown siltstone			
			Bentonite		40.00-40								V-notch 90 degrees 25mm = 0.135L/s
					41.00-41					SILTSTONE: Brown, soft to firm			
					42.00-42					COAL: Black, firm to hard			
					43					SILTSTONE: Dark brown, soft to brittle			
					44								
					45								
			Gravel Pack 4mm		46.00-46					SILTSTONE: Light brown, hard with coal/organic inclusions.			50-50% SILTSTONE-COAL
					47.00-47								
			Manually slotted (grinder)		48.00-48					SILTSTONE: Grey and brown, firm to hard with trace black, hard coal			
					49.00-49					COAL: Black, hard to brittle with trace			

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

R9096

SHEET 1 OF 2

Client: **Xstrata Coal**
Project: **Wandoan Prefeasibility Feasibility**
Borehole Location: **Ward's Land 'Pecos Valley' property**
Project Number: **2133006A**

Date Commenced: **3/4/08**
Date Completed: **3/5/08**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **203 mm**

Driller: **Rick Darr**
Driller Lic No: **2836**

Surface RL: **E 786921 N 7106176.5**

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
RAB											VS FB VL JL MD ST VST H		
			Cement		1.00	1				SANDY SILT: Brown			
					2.00	2				SANDY SILT: Light brown			
					3.00	3				SANDY SILT: Cream			
					4.00	4							
					5.00	5				SILT: fine grained, cream to light grey			
			Backfill		6.00	6							
					7.00	7				SAND: fine grained, cream to light grey with ironstone band at base			
					8.00	8				SILTSTONE: Light to dark grey, soft			
					9.00	9							
					10.00	10							
					11.00	11							
					12.00	12							
					13.00	13							
					14.00	14							
					14.50	15				COAL: Black, dull, soft and brittle			
					16.00	16							
					17.00	17							
					18.00	18				SILTSTONE: Grey, soft			
					19.00	19							
					20.00	20							
					21.00	21							
					21.90	22				COAL: Black, dull, soft			
					22.00	23				SILTSTONE: Grey, soft			Water intersected at 25.5 m and increased at approx 29 m.
			Bentonite		24.00	24							
					25.00	25							
			Gravel pack 4mm		26.00	26				SILTSTONE: Grey, soft with trace coal and sand.			
			Machine slotted		27.00	27							
					28.00	28							
					29.00	29							
					30.00	30							
					31.00	31				COAL: Black, firm			
					32.00	32				SILTSTONE: Grey, soft to firm			
					33.00	33				COAL: Black, firm			
			Bentonite		34.00	34				SILTSTONE: Grey, soft to firm, with fine grained grey sandstone			V-notch 90 degrees 20mm = 0.077L/s
					35.00	35							
			Backfill		36.00	36							
					37.00	37							
					38.00	38				SANDSTONE: Grey, fine grained, firm with trace grey, firm to hard siltstone			
					39.00	39							
					40.00	40							
					41.00	41							V-notch 90 degrees 20mm = 0.077L/s
					42.00	42				COAL: Black, firm to hard			
			Bentonite		43.00	43				SILTSTONE: Grey, firm to hard with grey, fine grained firm to hard sandstone			
					44.00	44							
			Gravel pack 4mm		45.00	45							
			Machine slotted		46.00	46							
					47.00	47				COAL: Black, hard with cream and grey hard siltstone bands			V-notch 90 degrees 40mm = 0.44L/s
					48.00	48							
					49.00	49				COAL: Black, hard with trace brown firm to hard siltstone bands			

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

R9097

SHEET 1 OF 3

Client: **Xstrata Coal**
Project: **Wandoan Feasibility Feasibility**
Borehole Location: **Westman's Property**
Project Number: **2133006A**

Date Commenced: **7/4/08**
Date Completed: **3/5/08**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **172 mm**

Driller: **Rick Darr** Surface RL:
Driller Lic No: **2836** Co-ords: **E 795005.1 N 7105981**

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
RAB													

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

R9097

SHEET 2 OF 3

Client: **Xstrata Coal**
Project: **Wandoan Prefeasibility Feasibility**
Borehole Location: **Westman's Property**
Project Number: **2133006A**

Date Commenced: **7/4/08**
Date Completed: **3/5/08**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **172 mm**

Driller: **Rick Darr**
Driller Lic No: **2836**

Surface RL: **E 795005.1 N 7105981**
Co-ords:

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
RAB											VS	FB	
											VL	MD	
											ST	VD	
				51						SILTSTONE: grey, carbonaceous siltstone, very fine grained sandstone (continued)			
				52.0									
				53						SANDSTONE: fine grained, grey, some carbonaceous, soft to firm with trace coal bands			
				54									
				55									
				56									
				57									
				58									
				59.0									
				60.0						COAL: black, firm to hard with 40% dark grey to black, soft to firm carbonaceous siltstone			
				61									
				62						SILTSTONE: Dark grey, carbonaceous, soft to firm			
				63.0									
				64.0						SILTSTONE: Dark grey, carbonaceous, soft to firm with approx 20% dark brown to black coal			
				65.0						SILTSTONE: Dark grey, soft to firm			
				66.0						SILTSTONE: Dark grey, soft to firm with approx 30% dark grey to black, soft to firm coal			
				67.0						SILTSTONE: Dark brown and grey, soft			
				68.0						SANDSTONE: Fine grained, grey, carbonaceous			
				69									
				70.0						SILTSTONE: Grey, soft with minor grey / very fine grained sandstone and trace coal			
				71.0									
				72.0						SILTSTONE: Grey, soft with minor black, hard coal			
				73.0						COAL: Black, firm to hard with trace siltstone			
				74									
				75						COAL: black firm, hard and 50% siltstone, grey, carbonaceous			
				76.0						SILTSTONE: Grey to dark grey, soft to firm, some carbonaceous			
				77						SILTSTONE: Grey to dark grey, soft to firm, some carbonaceous			
				78									
				79									
				80									
				81									
				82									
				83									
				84.0						SANDSTONE: Fine grained, grey with minor grey, soft siltstone			
				85									
				86									
				87									
				88.0						SILTSTONE: Grey, soft			
				89.0						SILTSTONE: Grey, soft with minor grey very fine grained sandstone			
				90.0						SANDSTONE: fine grained, grey, soft to hard with trace siltstone			
				91									
				92									
				93									
				94									
				95									
				96									
				97									
				98.0						SANDSTONE: grey, soft to firm with 50% grey, soft siltstone			
				99									

V-notch 90 degrees
20mm = 0.077L/s

V-notch 90 degrees
20mm = 0.077L/s

V-notch 90 degrees
15mm = 0.038L/s

V-notch 90 degrees
20mm = 0.077L/s



BOREHOLE ENVIRONMENTAL LOG

BOREHOLE NO.

R9098

SHEET 1 OF 3

Client: **Xstrata Coal**
Project: **Wandoan Prefeasibility Feasibility**
Borehole Location: **MDL221 Xstrata Land**
Project Number: **2133006A**

Date Commenced: **30/4/08**
Date Completed: **3/5/08**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **172 mm**

Driller:
Driller Lic No:

Surface RL:
Co-ords: **E 789500 N 7110006**

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
											VS 		

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.



GROUNDWATER BOREHOLE LOG

BOREHOLE NO.

R9098

SHEET 1 OF 1

Client: **Xstrata Coal**
Project: **Wandoan Prefeasibility Feasibility**
Borehole Location: **MDL221 Xstrata Land**
Project Number: **2133006A**

PB Borehole No.: **WMB3 - D 808** Date Commenced: **30.04.2008**
Date Completed: **03.05.2008**
Recorded By: **R. Bain**
Log Checked By: **S. Bish**

Drill Model/Mounting: **Midway 1400 Kelly Drive**
Borehole Diameter: **172 mm**

Driller: **Rick Darr**
Driller Lic No: **2836**
TOC (RL):

Surface RL: **E 789500 N 7110006**
Co-ords: **E 789500 N 7110006**
Local Co-ords:

Borehole Information							Field Material Description						
1	2	3	4	5	6	7	8	9	10	11	12	13	
METHOD	SUPPORT	WATER	WELL CONSTRUCTION	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	DRILLING TIME (mins)	STRUCTURE AND ADDITIONAL OBSERVATIONS
			50mm								5 to 31		
RAB			Cement	1.00	2.00					SILT: Dark brown			
				2.00	3.00					SILT: Cream			
				3.00	4.00					SILT: Light brown and grey			
				5.00	6.00					SILT: Cream-yellow-grey			
					8.00					SILT: Grey			
					10.00								
			Backfill	11.00	12.00					SHALE: Grey, firm to hard			
				12.00	13.00					SILT: Light grey to cream			
					14.00					SILTSTONE: Grey to dark grey, generally soft with some hard bands, carbonaceous			
					16.00								
					18.00								
					20.00								
					22.00					SANDSTONE: Grey, soft, very fine grained, carbonaceous, decreasing siltstone			
					24.00					SANDSTONE: Grey, soft, very fine grained, carbonaceous			
					26.00					SANDSTONE: As above with increasing grey siltstone with some hard sandstone bands			
					28.00					SANDSTONE: Grey, soft to firm, very fine grained with minor dark grey siltstone			
					29.00								
					30.00								
					32.00								
					33.00								
					34.00								
					35.00								
					36.00								
					38.00								
					40.00								
					42.00								
					44.00								
					46.00								
					47.00								
					48.00								
					49.00								
					50.00								
					52.00								
					54.00								
					56.00								
					58.00								
					60.00								
					62.00								
					64.00								
					66.00								
					68.00								
					70.00								
					72.00								
					74.00								
					76.00								
					78.00								
					80.00								
					82.00								
					84.00								
					86.00								
					88.00								
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					92.00								
					94.00								
					96.00								
					98.00								
					100.00								
					102.00								
					104.00								
					106.00								
					108.00								
					110.00								
					112.00								
					114.00								
		116.00											
		118.00											
		120.00											
		122.00											
		124.00											
		126.00											
		128.00											
		130.00											
		132.00											
		134.00											
		136.00											
		138.00											

Drilling ceased at 52 m on 30/4/08. Hole made 30-40 L of water overnight. Small water inflow at 55-56 m

No increase in water. Too dirty/thick/insufficient water for v-notch

No increase in water at end of drill rod

Insufficient flow for v-notch (maybe 5mm on weir?)

Drilling ceased at 52 m on 30/4/08. Hole made 30-40 L of water overnight.
Small water inflow at 55-56 m
No increase in water. Too dirty/thick/insufficient water for v-notch
No increase in water at end of drill rod

Insufficient flow for v-notch (maybe 5mm on weir?)

This borehole log should be read in conjunction with Parsons Brinckerhoff's accompanying standard notes.

Attachment F

Strata descriptions of Coal Seams of Wandoan

Attachment E: Strata Column with Descriptors of Coal Seams at Wandoan

(source Xstrata, 2007)

MDL221 WANDOAN									
Representative Coal Column									
Old Seam Codes			SEAM		THICKNESS				
FC	Woll	Aust	Name	Ply	Avg	Range			
						Min	Max		
A1			Kogan*	K10	0.85	0.12	1.61		
A2				K20	0.83	0.00	2.32		
A3				K30	1.43	0.00	3.83		
A4				K40	0.45	0.00	2.73		
B1				K50	0.30	0.00	1.32		
B2				K60	0.61	0.00	2.68		
X01	B3	A10	Macalister Upper	MU10	0.98	0.00	3.04		
X02	B4	A20		MU20	1.03	0.00	3.69		
X11	B5	A30		MU30	1.01	0.00	4.52		
X12	B6	A40		MU40	0.93	0.00	4.00		
X21	C1	B10	Macalister Lower	ML11	0.32	0.00	2.39		
X22	C2			ML12	0.54	0.00	1.98		
X30	C3			ML13	0.64	0.00	3.28		
X41	C4			ML21	0.83	0.00	3.41		
X42	C5			ML22	0.60	0.00	3.27		
X51	C6	C10	Wambo	W10	0.78	0.00	3.66		
X52		C20		W20	1.06	0.00	4.17		
X53		C30		W30	0.74	0.11	2.47		

Not to Scale - based on avg thk partings are shown as 1/10 avg thk

*only in Woleebee

Thicknesses from Model Grids

Attachment G

Cross sections showing the stratigraphic profile of the coal seams



[illegible]

Parsons Brinckerhoff Australia

Wandoan Project

Regional Cross Sections

Section A - A'

Scale:1:25000

Date:08-Aug-2008

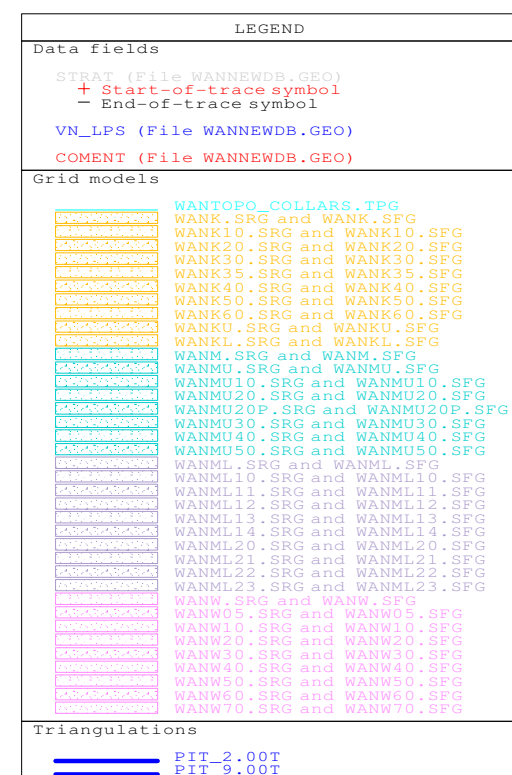
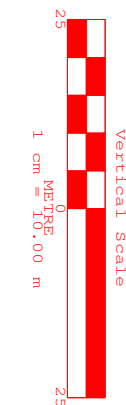
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Drawn By: Maptek

Checked:

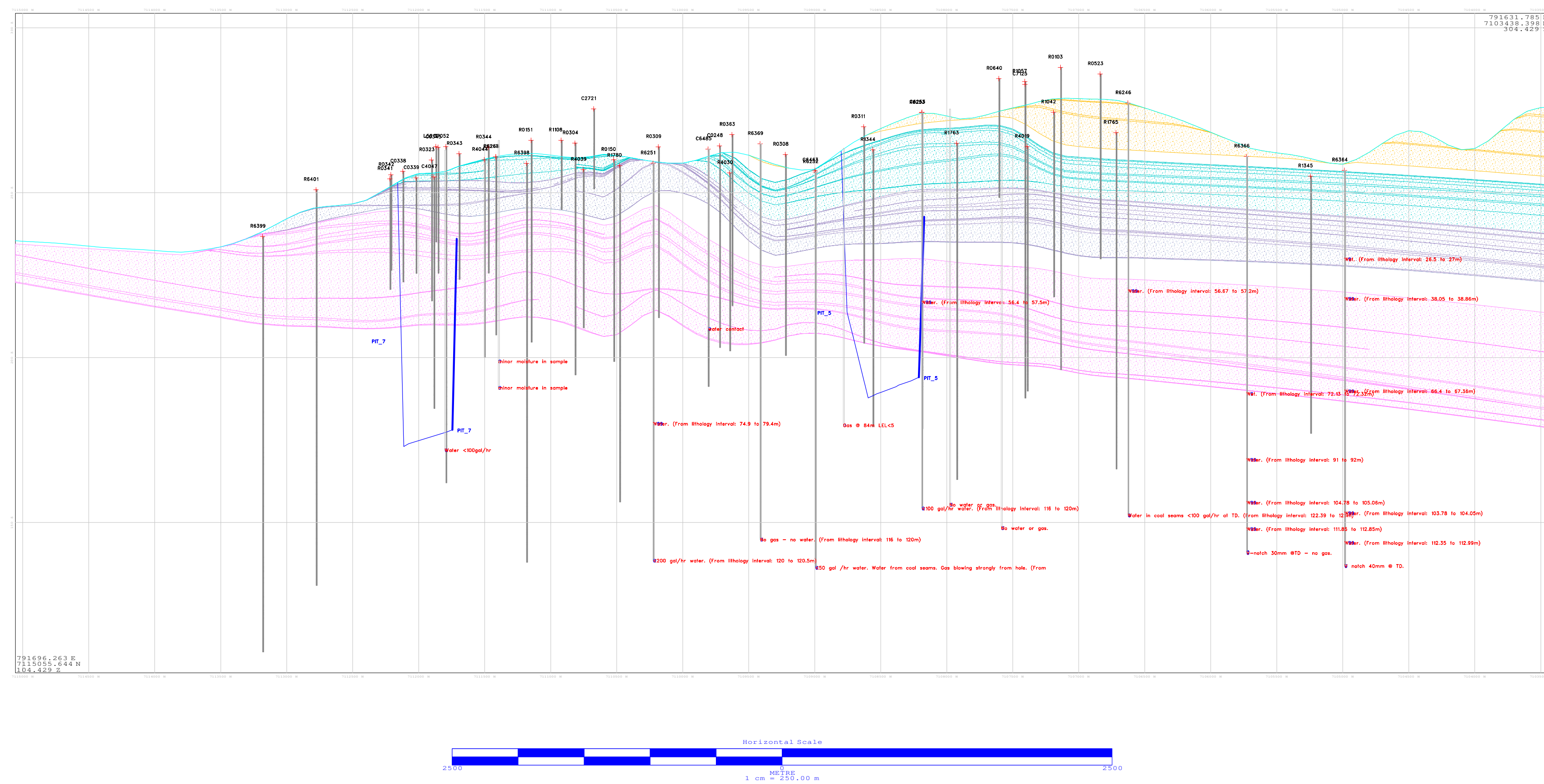
Approved:
Expenditure No.

Drawing No.

	1
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2

[illegible]

Parsons Brinckerhoff Australia

Wandoan Project

Regional Cross Sections

Section C - C'

Scale:1:25000

Date:05-Aug-2008

Project:WAN

Drawn By:Maptek

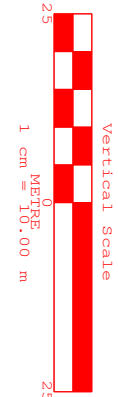
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Approved:

Approved:
Drawing No.

Drawing NO.

3



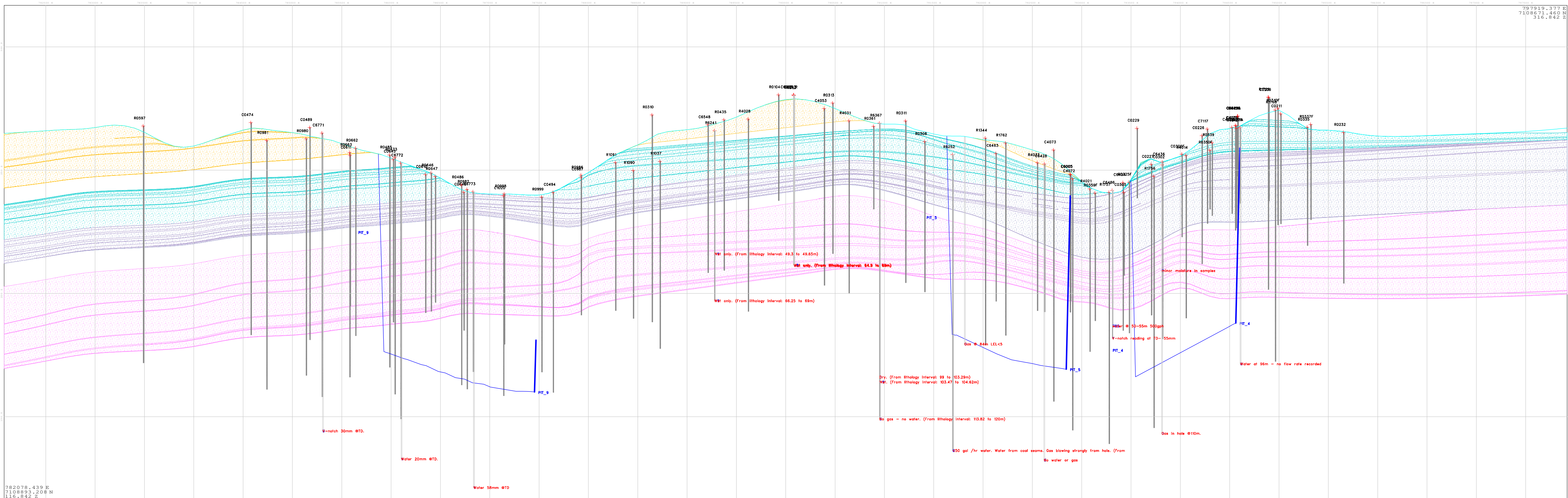
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Triangulations
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PIT_3.00T
PIT_4.00T

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Scale:1:25000
Date:08-Aug-2008
Project:WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
4



LEGEND	
DOVE FACTS	
1. Start of line segment	
2. End of line segment	
3. Start of line segment	
4. End of line segment	
5. Start of line segment	
6. End of line segment	
7. Start of line segment	
8. End of line segment	
9. Start of line segment	
10. End of line segment	
11. Start of line segment	
12. End of line segment	
13. Start of line segment	
14. End of line segment	
15. Start of line segment	
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35. Start of line segment	
36. End of line segment	
37. Start of line segment	
38. End of line segment	
39. Start of line segment	
40. End of line segment	
41. Start of line segment	
42. End of line segment	
43. Start of line segment	
44. End of line segment	
45. Start of line segment	
46. End of line segment	
47. Start of line segment	
48. End of line segment	
49. Start of line segment	
50. End of line segment	
51. Start of line segment	
52. End of line segment	
53. Start of line segment	
54. End of line segment	
55. Start of line segment	
56. End of line segment	
57. Start of line segment	
58. End of line segment	
59. Start of line segment	
60. End of line segment	
61. Start of line segment	
62. End of line segment	
63. Start of line segment	
64. End of line segment	
65. Start of line segment	
66. End of line segment	
67. Start of line segment	
68. End of line segment	
69. Start of line segment	
70. End of line segment	
71. Start of line segment	
72. End of line segment	
73. Start of line segment	
74. End of line segment	
75. Start of line segment	
76. End of line segment	
77. Start of line segment	
78. End of line segment	
79. Start of line segment	
80. End of line segment	
81. Start of line segment	
82. End of line segment	
83. Start of line segment	
84. End of line segment	
85. Start of line segment	
86. End of line segment	
87. Start of line segment	
88. End of line segment	
89. Start of line segment	
90. End of line segment	
91. Start of line segment	
92. End of line segment	
93. Start of line segment	
94. End of line segment	
95. Start of line segment	
96. End of line segment	
97. Start of line segment	
98. End of line segment	
99. Start of line segment	
100. End of line segment	

Parsons Brinckerhoff Australia

Wandoan Project
Regional Cross Sections
Section E - E'

Scale: 1:25000

Date: 05-Aug-2008

Project: WAN

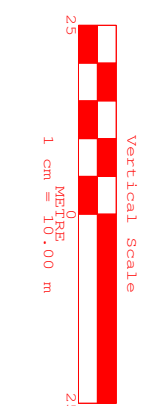
Drawn By: Maptek

Checked:

Approved:

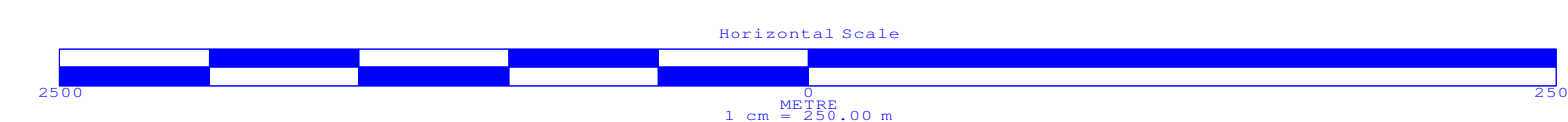
Drawing No.

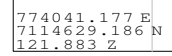
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Section F - F'

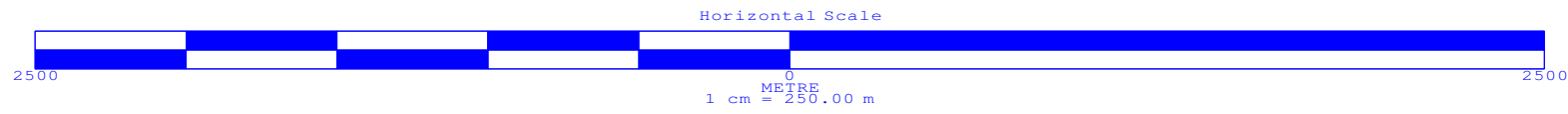
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Date:08-Aug-2008
Project:WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
6



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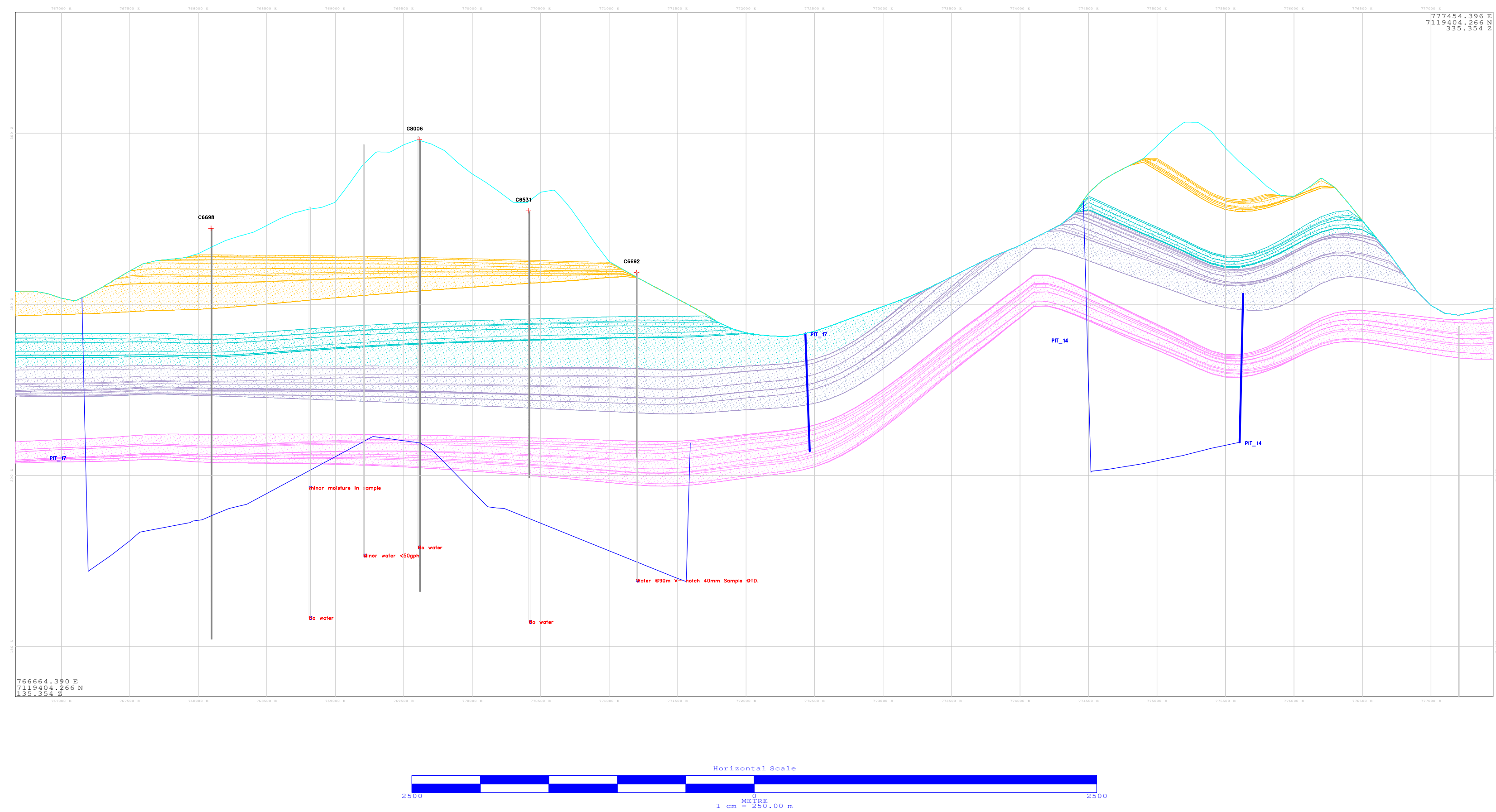
Wandoan Project
Regional Cross Sections
Section H - H'

Scale:1:25000
Date:05-Aug-2008
Project :WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
8

[illegible]

Wandoan Project
Regional Cross Sections
Section I - I'

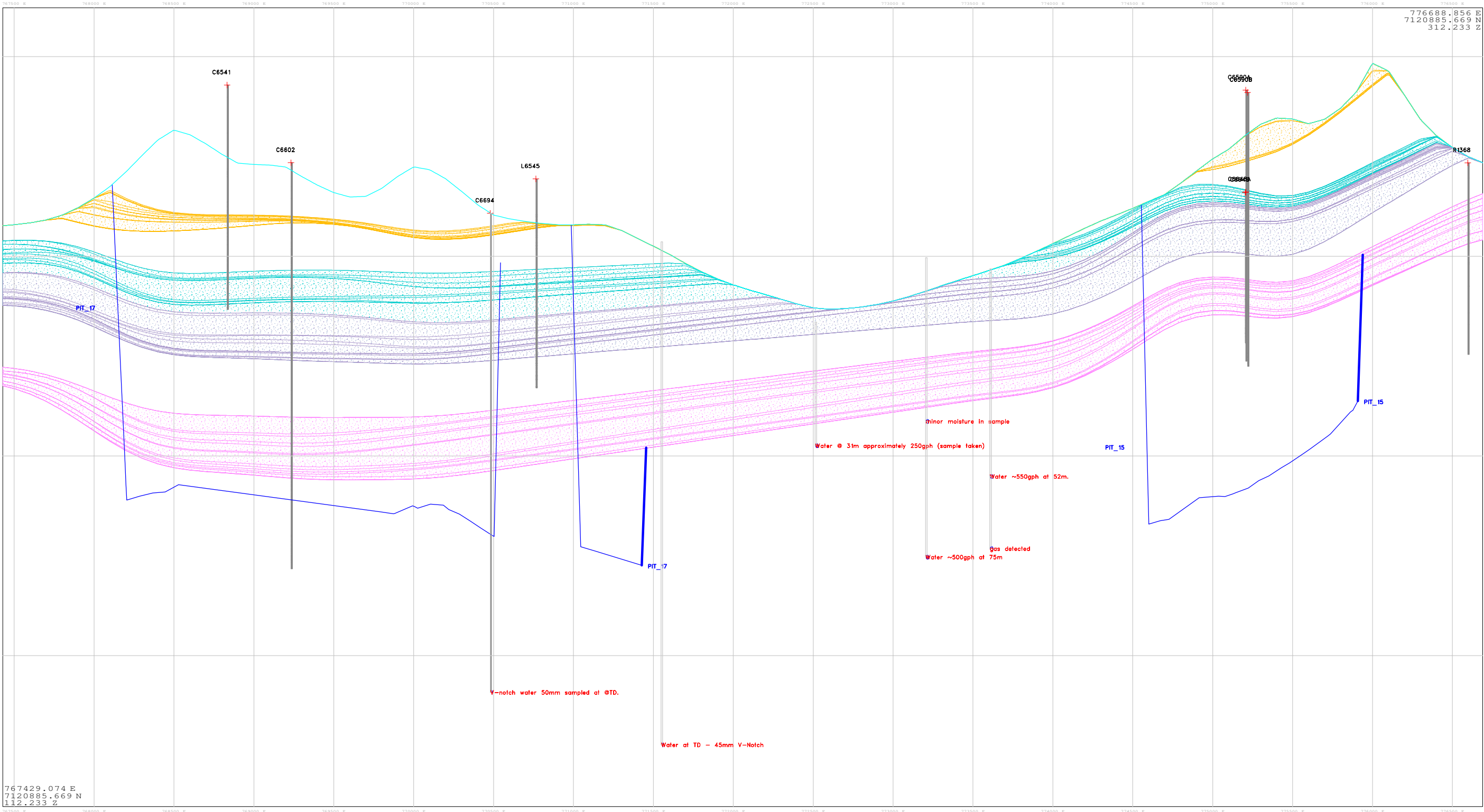
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Date:05-Aug-2008
Project:WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
9

[illegible]

Parsons Brinckerhoff Australia

Wandoan Project
Regional Cross Sections
Section J - J'

Scale:1:25000
Date:05-Aug-2008
Project:WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
10



LEGEND	
Data fields	
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End-of-trace symbol	-
VN_LPS (File WANNEWDB.GEO)	
COMMENT (File WANNEWDB.GEO)	
Grid models	
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WANK10.SRG and WANK10.SFG	
WANK20.SRG and WANK20.SFG	
WANK30.SRG and WANK30.SFG	
WANK35.SRG and WANK35.SFG	
WANK40.SRG and WANK40.SFG	
WANK50.SRG and WANK50.SFG	
WANK60.SRG and WANK60.SFG	
WANKU.SRG and WANKU.SFG	
WANKL.SRG and WANKL.SFG	
WANM.SRG and WANM.SFG	
WANMU.SRG and WANMU.SFG	
WANML10.SRG and WANML10.SFG	
WANML20.SRG and WANML20.SFG	
WANML20P.SRG and WANML20P.SFG	
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WANML40.SRG and WANML40.SFG	
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WANW50.SRG and WANW50.SFG	
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WANW70.SRG and WANW70.SFG	
Triangulations	
PIT_17.00T	
PIT_15.00T	

Parsons Brinckerhoff Australia

Wandoan Project Regional Cross Sections Section K - K'	Scale:1:25000
	Date:05-Aug-2008
	Project:WAN
	Drawn By:Maptek
	Checked:
	Approved:
Drawing No.	
11	



```

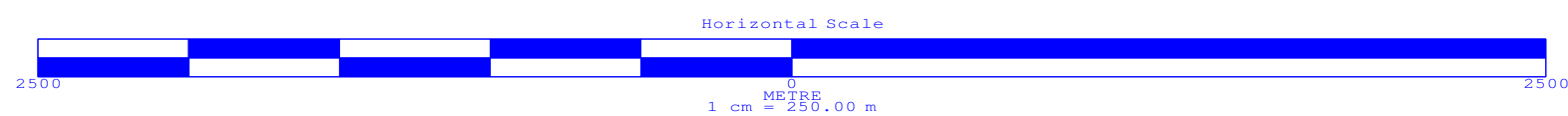
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VN_LPS (File WANNWEBD.GEO)
COMMENT (File WANNWEBD.GEO)

Grid models

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WANK10_SRG and WANK10_SRG
WANK20_SRG and WANK20_SRG
WANK30_SRG and WANK30_SRG
WANK35_SRG and WANK35_SRG
WANK40_SRG and WANK40_SRG
WANK50_SRG and WANK50_SRG
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WANK90_SRG and WANK90_SRG
WANN_SRG and WANN_SRG
WANN10_SRG and WANN10_SRG
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WANN40_SRG and WANN40_SRG
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WANN40_SRG and WANN40_SRG
WANN50_SRG and WANN50_SRG
WANN60_SRG and WANN60_SRG
WANN70_SRG and WANN70_SRG
WANN80_SRG and WANN80_SRG
WANN90_SRG and WANN90_SRG

Triangulations
  PIT 11.00T
  PIT 12.00T

```



Wandoan Project
Regional Cross Sections
Section L - L'

Scale:1:25000
Date:05-Aug-2008
Project:WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
12



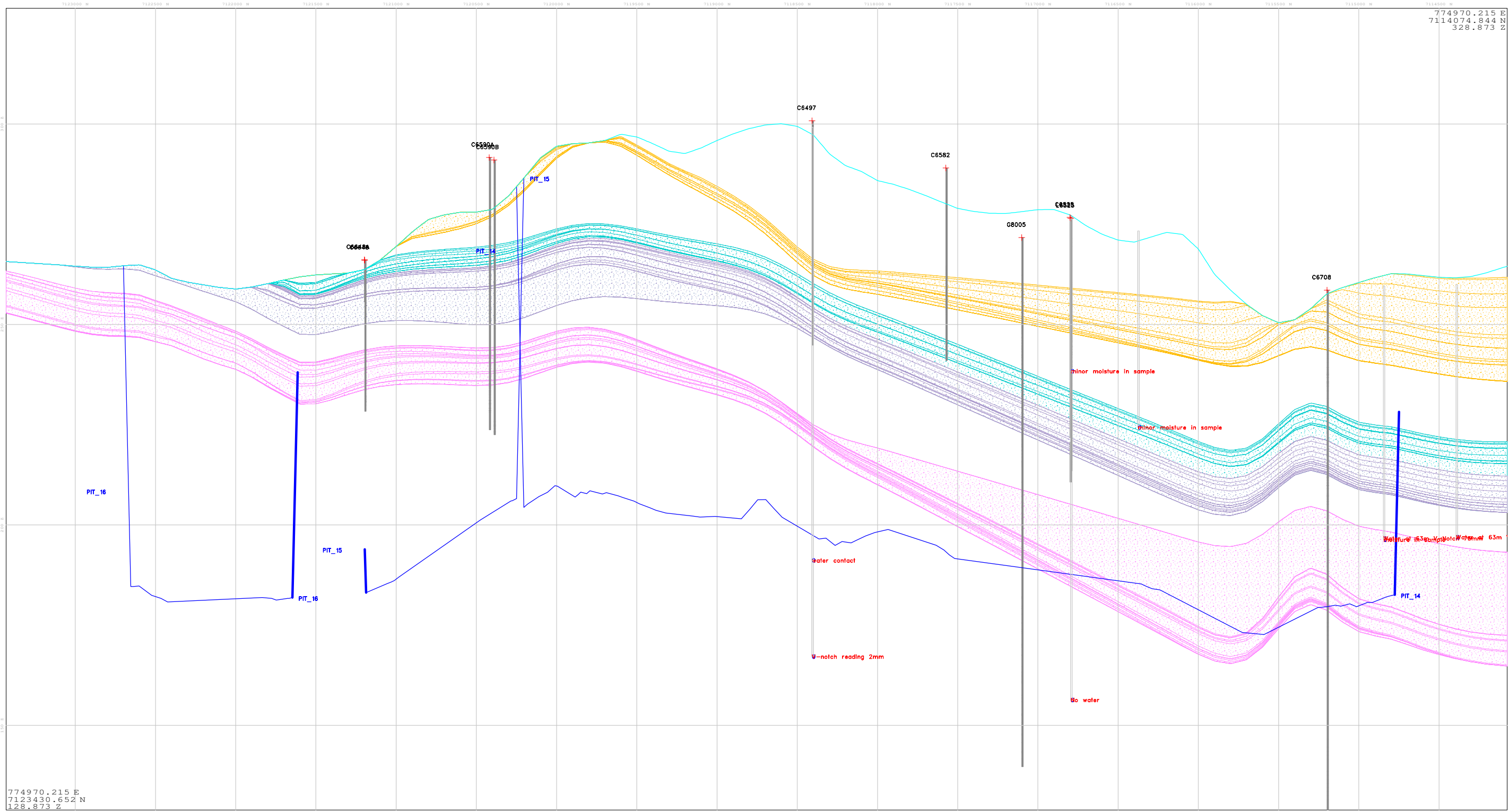
Horizontal Scale

2500 METRE 2500

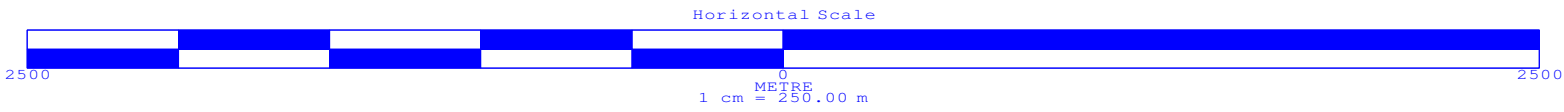
1 cm = 250.00 m

Section M - M'

Scale:1:25000
Date:05-Aug-2008
Project :WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
13

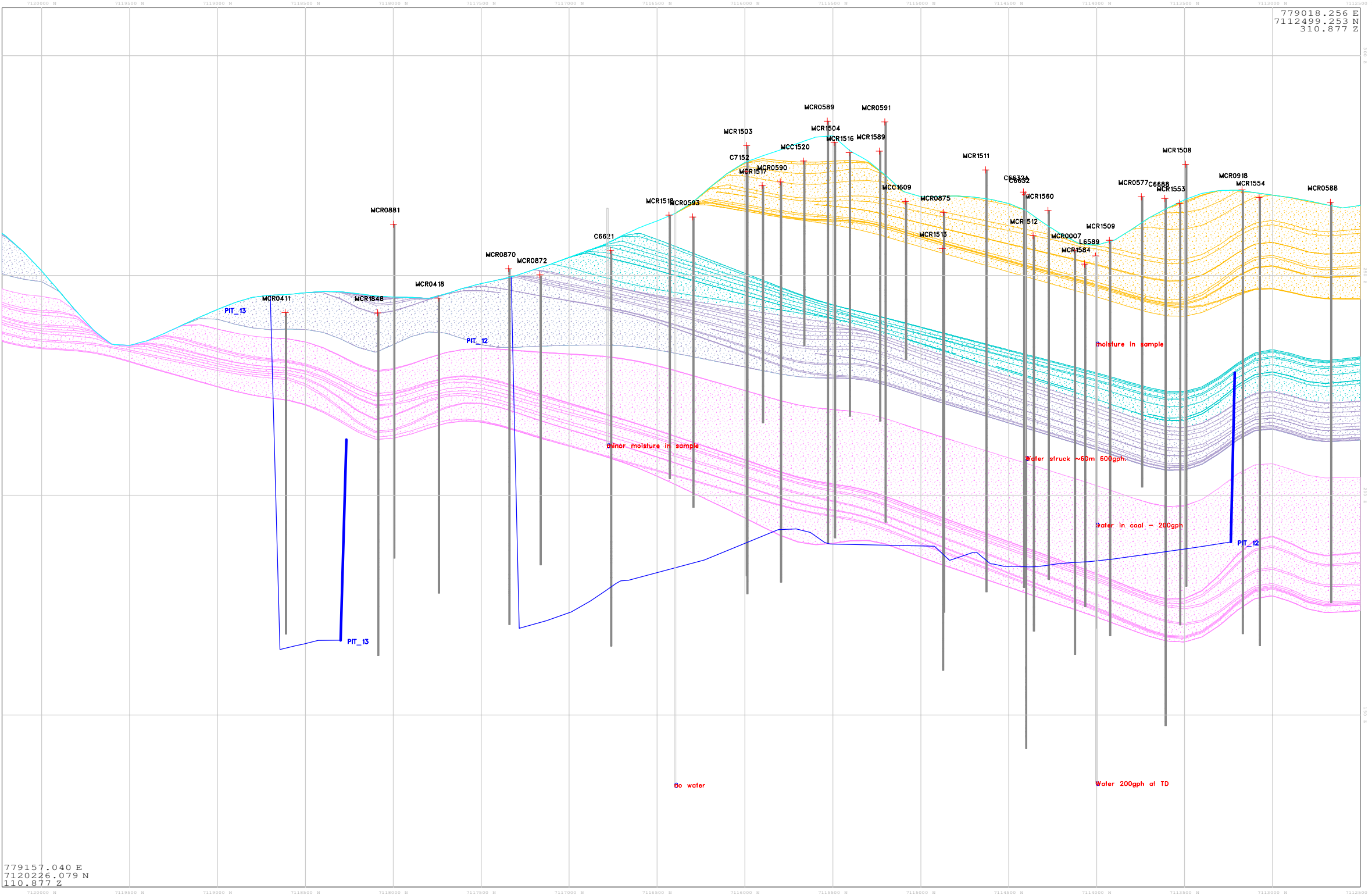


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Grid models	
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WANK10.SRG and WANK10.SFG	
WANK20.SRG and WANK20.SFG	
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WANKU.SRG and WANKU.SFG	
WANKL.SRG and WANKL.SFG	
WANM.SRG and WANM.SFG	
WANMU.SRG and WANMU.SFG	
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Triangulations	
PIT_14.00T	
PIT_15.00T	
PIT_16.00T	

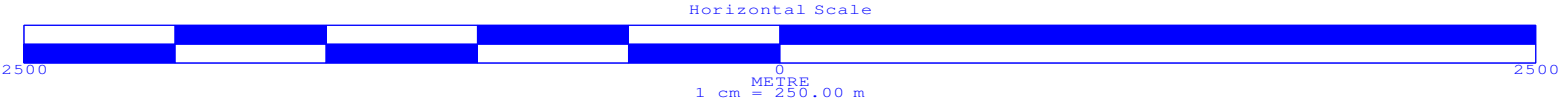


Parsons Brinckerhoff Australia

Wandoan Project Regional Cross Sections Section N - N'	Scale:1:25000
	Date:05-Aug-2008
	Project :WAN
	Drawn By:Maptek
	Checked:
	Approved:
Drawing No.	
14	

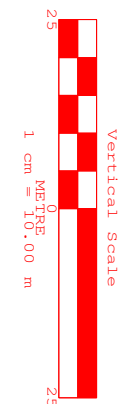


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Start-of-trace symbol	
End-of-trace symbol	
VN_LPS (File WANNEWDB.GEO)	
COMMENT (File WANNEWDB.GEO)	
Grid models	
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WANK10.SRG and WANK10.SFG	
WANK20.SRG and WANK20.SFG	
WANK30.SRG and WANK30.SFG	
WANK35.SRG and WANK35.SFG	
WANK40.SRG and WANK40.SFG	
WANK50.SRG and WANK50.SFG	
WANK60.SRG and WANK60.SFG	
WANKU.SRG and WANKU.SFG	
WANKL.SRG and WANKL.SFG	
WANN.SRG and WANN.SFG	
WANNU.SRG and WANNU.SFG	
WANNM.SRG and WANNM.SFG	
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Triangulations	
PIT_12.00T	
PIT_15.00T	



Parsons Brinckerhoff Australia

Wandoan Project Regional Cross Sections Section O - O'	Scale:1:25000
	Date:05-Aug-2008
	Project:WAN
	Drawn By:Maptek
	Checked:
	Approved:
	Drawing No.
15	



Data fields	LEGEND
S = Start of WANMU	
+ = Start-of-trace symbol	
- = End-of-trace symbol	
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COMMENT (File WANNEWDB.GEO)	
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WANK20 .SRG and WANK20 .SFG	
WANK30 .SRG and WANK30 .SFG	
WANK35 .SRG and WANK35 .SFG	
WANK40 .SRG and WANK40 .SFG	
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WANK70 .SRG and WANK70 .SFG	
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WANKM .SRG and WANKM .SFG	
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WANMU10 .SRG and WANMU10 .SFG	
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WANML10 .SRG and WANML10 .SFG	
WANML11 .SRG and WANML11 .SFG	
WANML12 .SRG and WANML12 .SFG	
WANML13 .SRG and WANML13 .SFG	
WANML14 .SRG and WANML14 .SFG	
WANML15 .SRG and WANML15 .SFG	
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WANK10 .SRG and WANK10 .SFG	
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WANK70 .SRG and WANK70 .SFG	
Triangulations	
PIT 12.00T	

Wandoan Project
Regional Cross Sections
Section P - P'

Scale:1:25000
Date:05-Aug-2008
Project :WAN
Drawn By:Maptek
Checked:
Approved:
Drawing No.
16

Attachment H

Water quality chain of custody and
water quality results



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0807008	Page	: 1 of 6
Client	: STREAMLINE HYDRO	Laboratory	: Environmental Division Brisbane
Contact	: MR RODERICK BAIN	Contact	: Tim Kilmister
Address	: PO BOX 77 CLEVELAND QLD,AUSTRALIA 4163	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: cash.sale@alsenviro.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 31029301	Facsimile	: +61-7-3243 7218
Project	: 2008001001	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 28-MAY-2008
C-O-C number	: ----	Issue Date	: 06-JUN-2008
Sampler	: R.BAIN	No. of samples received	: 4
Site	: Wondoon	No. of samples analysed	: 4
Quote number	: ----		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Analyst	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics
Stephen Hislop	Senior Inorganic Chemist	Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				C4057-1	C4057-2	WPB1-1	WPB1-2	
				25-MAY-2008 09:25	27-MAY-2008 07:10	25-MAY-2008 14:02	26-MAY-2008 13:05	
Compound	CAS Number	LOR	Unit	EB0807008-001	EB0807008-002	EB0807008-003	EB0807008-004	
EA005: pH								
pH Value	----	0.01	pH Unit	7.93	8.01	8.08	7.92	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	11600	11300	11700	15400	----
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	8	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	358	346	465	351	----
Total Alkalinity as CaCO3	----	1	mg/L	358	354	465	351	----
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	2	<1	11	4	----
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	4090	4090	3990	5730	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	35	34	40	71	----
Magnesium	7439-95-4	1	mg/L	16	15	17	31	----
Sodium	7440-23-5	1	mg/L	2600	2630	2680	3640	----
Potassium	7440-09-7	1	mg/L	12	11	12	17	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.006	0.007	----
Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0001	0.0002	0.0002	----
EK057: Nitrite as N								
Nitrite as N	----	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----
EK058: Nitrate as N								
^ Nitrate as N	14797-55-8	0.010	mg/L	<0.010	<0.010	0.014	<0.010	----
EK059: Nitrite plus Nitrate as N (NOx)								
Nitrite + Nitrate as N	----	0.010	mg/L	<0.010	<0.010	0.014	<0.010	----
EK067: Total Phosphorus as P								
Total Phosphorus as P	----	0.01	mg/L	0.15	0.22	<0.01	0.03	----
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	122	122	122	169	----
^ Total Cations	----	0.01	meq/L	116	118	120	165	----
^ Ionic Balance	----	0.01	%	2.55	2.01	0.77	1.15	----
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen	----	0.1	mg/L	3.9	2.9	2.8	3.0	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	5	µg/L	<5	<5	<5	<5	----



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				C4057-1	C4057-2	WPB1-1	WPB1-2	----
				25-MAY-2008 09:25	27-MAY-2008 07:10	25-MAY-2008 14:02	26-MAY-2008 13:05	----
Compound	CAS Number	LOR	Unit	EB0807008-001	EB0807008-002	EB0807008-003	EB0807008-004	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	99.6	102	103	97.6	----
Toluene-D8	2037-26-5	0.1	%	104	105	102	98.2	----
4-Bromofluorobenzene	460-00-4	0.1	%	95.2	98.6	94.6	93.9	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

CLIENT: STREAMLINE HYDRO
ADDRESS / OFFICE: PO Box 77 Cleveland Qld 4163
PROJECT MANAGER (PM): Roderick Bain
PROJECT ID: 2007001001
SITE: Wendorn P.O. NO.:

SAMPLER:	R. BAIN
MOBILE:	0416 049 431
PHONE	

EMAIL REPORT TO: rbain@streamlinehydro.com.au
EMAIL INVOICE TO: (if different to report)



Australian Laboratory Services Pty Ltd

RESULTS REQUIRED (Date): 6/6/08 QUOTE NO.: BN/248/08

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

COOLER SEAL (circle appropriate)

Intact:	Yes	No	N/A
---------	-----	----	-----

SAMPLE TEMPERATURE

CHILLED: Yes No

Notes: e.g. Highly contaminated samples,
Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)

CONTAINER INFORMATION

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
--------	-----------	--------	------	------	-------------	---------------

1	C4057-1	25/5	09:25	5
2	C4057-2	27/5	07:10	5
3	WPB 1-1	25/5	14:02	5
4	WPB 1-2	26/5	13:05	5

Refer attached Quote

Environmental Division
Brisbane

Work Order

EB0807008



Telephone : + 61-7-3243 7222

RELINQUISHED BY:

Name: <u>Roderick Bain</u>	Date: <u>28/5/08</u>
Of: <u>Streamline Hydro</u>	Time: <u>10am</u>

Name:	Date:
Of:	Time:

RECEIVED BY _____

Name: 	Date: 28/10/20
Of: ALS	Time: 1140

Name:	Date:
Of:	Time:

METHOD OF SHIPMENT

Con' Note No:

Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;

V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Environmental



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0807008	Page	: 1 of 7
Client	: STREAMLINE HYDRO	Laboratory	: Environmental Division Brisbane
Contact	: MR RODERICK BAIN	Contact	: Tim Kilmister
Address	: PO BOX 77 CLEVELAND QLD,AUSTRALIA 4163	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: cash.sale@alsenviro.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 31029301	Facsimile	: +61-7-3243 7218
Project	: 2008001001	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Wondoon	Date Samples Received	: 28-MAY-2008
C-O-C number	: ----	Issue Date	: 06-JUN-2008
Sampler	: R.BAIN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4
Quote number	: ----		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Analyst	Organics
Phillip Kennedy	2IC Environmental Laboratory	Inorganics
Stephen Hislop	Senior Inorganic Chemist	Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, 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.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005: pH (QC Lot: 668916)									
EB0806935-021	Anonymous	EA005: pH Value	----	0.01	pH Unit	8.93	8.96	0.3	0% - 20%
EB0807020-001	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.87	7.87	0.0	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 673342)									
EB0807008-001	C4057-1	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	11600	11600	0.09	0% - 20%
EB0807026-006	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1970	1970	0.1	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 673341)									
EB0807008-001	C4057-1	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	358	357	0.3	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	358	357	0.3	0% - 20%
EB0807026-012	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	30	30	0.0	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	201	199	1.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	231	229	0.9	0% - 20%
ED040F: Dissolved Major Anions (QC Lot: 668881)									
EB0806990-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	931	916	1.7	0% - 20%
EB0806996-002	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	35	34	0.0	0% - 20%
ED040F: Dissolved Major Anions (QC Lot: 668883)									
EB0807008-002	C4057-2	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
EB0807017-003	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	12	13	0.0	0% - 50%
ED045P: Chloride by PC Titrator (QC Lot: 673340)									
EB0807008-001	C4057-1	ED045-P: Chloride	16887-00-6	1	mg/L	4090	4090	0.0	0% - 20%
EB0807026-012	Anonymous	ED045-P: Chloride	16887-00-6	1	mg/L	412	407	1.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 668882)									
EB0806990-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	299	295	1.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	339	336	0.9	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	2420	2440	1.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	237	233	1.8	0% - 20%
EB0806996-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	536	528	1.4	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	457	451	1.3	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	3290	3260	1.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	10	10	0.0	0% - 50%
ED093F: Dissolved Major Cations (QC Lot: 668884)									
EB0807008-002	C4057-2	ED093F: Calcium	7440-70-2	1	mg/L	34	35	0.0	0% - 20%

Page : 4 of 7
 Work Order : EB0807008
 Client : STREAMLINE HYDRO
 Project : 2008001001



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
ED093F: Dissolved Major Cations (QC Lot: 668884) - continued									
EB0807008-002	C4057-2	ED093F: Magnesium	7439-95-4	1	mg/L	15	15	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	2390	2430	1.5	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	11	11	0.0	0% - 50%
EB0807017-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	9	9	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	13	13	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	43	44	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 669087)									
EB0806995-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.001	0.0	No Limit
EB0807008-002	C4057-2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.006	22.0	No Limit
EK057: Nitrite as N (QC Lot: 669442)									
EB0807008-002	C4057-2	EK057: Nitrite as N	----	0.010	mg/L	<0.010	<0.010	0.0	No Limit
EB0807040-004	Anonymous	EK057: Nitrite as N	----	0.010	mg/L	0.051	0.050	0.0	No Limit
EK059: Nitrite plus Nitrate as N (NOx) (QC Lot: 669441)									
EB0807008-002	C4057-2	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	<0.010	<0.010	0.0	No Limit
EB0807017-004	Anonymous	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	0.093	0.090	3.2	No Limit
EK067: Total Phosphorus as P (QC Lot: 669736)									
EB0806974-001	Anonymous	EK067: Total Phosphorus as P	----	0.01	mg/L	5.51	5.47	0.7	0% - 20%
EB0807008-003	WPB1-1	EK067: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 673688)									
EB0807059-001	Anonymous	EP074: Benzene	71-43-2	5	µg/L	<5	<5	0.0	No Limit
EB0807231-003	Anonymous	EP074: Benzene	71-43-2	5	µg/L	<5	<5	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low
EA005: pH (QCLot: 668916)								
EA005: pH Value	----	0.01	pH Unit	----	7.00 pH Unit	100	98.3	118
EA010P: Conductivity by PC Titrator (QCLot: 673342)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	90.3	108
ED037P: Alkalinity by PC Titrator (QCLot: 673341)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	500 mg/L	99.2	77.5	112
ED040F: Dissolved Major Anions (QCLot: 668881)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	----	----	----	----
ED040F: Dissolved Major Anions (QCLot: 668883)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	----	----	----	----
ED045P: Chloride by PC Titrator (QCLot: 673340)								
ED045-P: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	103	88.4	110
ED093F: Dissolved Major Cations (QCLot: 668882)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	----	----	----	----
ED093F: Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
ED093F: Sodium	7440-23-5	1	mg/L	<1	----	----	----	----
ED093F: Potassium	7440-09-7	1	mg/L	<1	----	----	----	----
ED093F: Dissolved Major Cations (QCLot: 668884)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	----	----	----	----
ED093F: Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
ED093F: Sodium	7440-23-5	1	mg/L	<1	----	----	----	----
ED093F: Potassium	7440-09-7	1	mg/L	<1	----	----	----	----
EG020F: Dissolved Metals by ICP-MS (QCLot: 669087)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	106	70	130
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	107	70	130
EK057: Nitrite as N (QCLot: 669442)								
EK057: Nitrite as N	----	0.01	mg/L	----	0.5 mg/L	105	95.4	119
		0.010	mg/L	<0.010	----	----	----	----
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669441)								
EK059: Nitrite + Nitrate as N	----	0.01	mg/L	----	0.5 mg/L	97.1	85.5	118
		0.010	mg/L	<0.010	----	----	----	----
EK067: Total Phosphorus as P (QCLot: 669736)								
EK067: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	87.9	70.4	100
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 673688)								



Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 673688) - continued								
EP074: Benzene	71-43-2	5	µg/L	<5	10 µg/L	83.6	76.7	122



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) LowHigh	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
ED045P: Chloride by PC Titrator (QCLot: 673340)							
EB0807008-001	C4057-1	ED045-P: Chloride	16887-00-6	2000 mg/L	103	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 669087)							
EB0806995-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.100 mg/L	110	70	130
		EG020A-F: Cadmium	7440-43-9	0.100 mg/L	110	70	130
EK057: Nitrite as N (QCLot: 669442)							
EB0807008-001	C4057-1	EK057: Nitrite as N	----	0.4 mg/L	101	70	130
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669441)							
EB0807008-001	C4057-1	EK059: Nitrite + Nitrate as N	----	0.4 mg/L	106	70	130
EK067: Total Phosphorus as P (QCLot: 669736)							
EB0806995-001	Anonymous	EK067: Total Phosphorus as P	----	1 mg/L	93.5	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 673688)							
EB0807123-007	Anonymous	EP074: Benzene	71-43-2	10 µg/L	92.6	70	130



SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : EB0807008

Client	: STREAMLINE HYDRO	Laboratory	: Environmental Division Brisbane
Contact	: MR RODERICK BAIN	Contact	: Tim Kilmister
Address	: PO BOX 77 CLEVELAND QLD,AUSTRALIA 4163	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: cash.sale@alsenviro.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 31029301	Facsimile	: +61-7-3243 7218
Project	: 2008001001	Page	: 1 of 2
Order number	: ----	Quote number	: ----
C-O-C number	: ----		
Site	: Wondoon		
Sampler	: R.BAIN	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 28-MAY-2008	Issue Date	: 28-MAY-2008 16:21
Client Requested Due Date	: 06-JUN-2008	Scheduled Reporting Date	: 06-JUN-2008

Delivery Details

Mode of Delivery	: Client Drop off	Temperature	: 5.3 C, 3.7 C - Ice bricks present
No. of coolers/boxes	: 2 MEDIUM	No. of samples received	: 4
Security Seal	: Intact.	No. of samples analysed	: 4

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Breaches in recommended extraction / analysis holding times may occur.**
- **pH holding time is six hours after sampling.**
- **Ideally dissolved oxygen +/- free chlorine should be field tested.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Maggie Kahi.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005: pH	WATER - EA010P Conductivity (PC)	WATER - EG020A-F Dissolved Metals by ICPMS - Suite A	WATER - EK058 Nitrate as N (Incl. Nitrite as N)	WATER - EK067 Total Phosphorus as P	WATER - EN055 Ionic Balance	WATER - EP025 Dissolved Oxygen (DO)	WATER - EP074A VOC - MAH's
EB0807008-001	25-MAY-2008 09:25	C4057-1	✓	✓	✓	✓	✓	✓	✓	✓
EB0807008-002	27-MAY-2008 07:10	C4057-2	✓	✓	✓	✓	✓	✓	✓	✓
EB0807008-003	25-MAY-2008 14:02	WPB1-1	✓	✓	✓	✓	✓	✓	✓	✓
EB0807008-004	26-MAY-2008 13:05	WPB1-2	✓	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - Major Anions Cl, SO ₄ , Alkalinity PCT	WATER - Major Cations Ca, Mg, Na, K
EB0807008-001	25-MAY-2008 09:25	C4057-1	✓	✓
EB0807008-002	27-MAY-2008 07:10	C4057-2	✓	✓
EB0807008-003	25-MAY-2008 14:02	WPB1-1	✓	✓
EB0807008-004	26-MAY-2008 13:05	WPB1-2	✓	✓

Requested Deliverables

MR RODERICK BAIN

- *AU Certificate of Analysis - NATA
- *AU QC Report & DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- A4 - AU Tax Invoice
- Default - Chain of Custody
- EDI Format - ENMRG
- EDI Format - XTab

Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0807010	Page	: 1 of 5
Client	: STREAMLINE HYDRO	Laboratory	: Environmental Division Brisbane
Contact	: MR RODERICK BAIN	Contact	: Tim Kilmister
Address	: PO BOX 77 CLEVELAND QLD,AUSTRALIA 4163	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: cash.sale@alsenviro.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 31029301	Facsimile	: +61-7-3243 7218
Project	: 2008001001	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 28-MAY-2008
C-O-C number	: ----	Issue Date	: 06-JUN-2008
Sampler	: R.BAIN	No. of samples received	: 4
Site	: Wondoon	No. of samples analysed	: 4
Quote number	: ----		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Analyst	Organics

Environmental Division Brisbane

Part of the **ALS Laboratory Group**

32 Shand Street Stafford QLD Australia 4053
Tel. +61-7-3243 7222 Fax. +61-7-3243 7218 www.alsglobal.com

A Campbell Brothers Limited Company



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				WMB 1-D-1	WMB 1-D-2	WMB 1-S-1	WMB 1-S-2	----
				25-MAY-2008 10:50	27-MAY-2008 13:05	25-MAY-2008 12:30	27-MAY-2008 12:38	----
Compound	CAS Number	LOR	Unit	EB0807010-001	EB0807010-002	EB0807010-003	EB0807010-004	----
EA005: pH								
pH Value	----	0.01	pH Unit	7.74	7.84	7.06	6.95	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	17500	17600	23100	23000	----
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	300	298	525	610	----
Total Alkalinity as CaCO3	----	1	mg/L	300	298	525	610	----
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	4	6	133	132	----
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	6410	6370	9480	9380	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	98	102	770	783	----
Magnesium	7439-95-4	1	mg/L	41	43	334	332	----
Sodium	7440-23-5	1	mg/L	3780	3740	4530	4510	----
Potassium	7440-09-7	1	mg/L	20	20	44	42	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.005	0.004	0.002	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0002	0.0005	0.0003	----
EK057: Nitrite as N								
Nitrite as N	----	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----
EK058: Nitrate as N								
^ Nitrate as N	14797-55-8	0.010	mg/L	<0.010	0.011	0.011	<0.010	----
EK059: Nitrite plus Nitrate as N (NOx)								
Nitrite + Nitrate as N	----	0.010	mg/L	<0.010	0.011	0.011	<0.010	----
EK067: Total Phosphorus as P								
Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.11	0.02	----
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	187	186	280	280	----
^ Total Cations	----	0.01	meq/L	173	172	264	264	----
^ Ionic Balance	----	0.01	%	3.86	3.87	3.01	2.96	----
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen	----	0.1	mg/L	3.1	2.9	3.0	2.2	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	5	µg/L	<5	<5	<5	<5	----



Analytical Results

Sub-Matrix: WATER

Client sample ID

Client sampling date / time

				WMB 1-D-1	WMB 1-D-2	WMB 1-S-1	WMB 1-S-2	----
				25-MAY-2008 10:50	27-MAY-2008 13:05	25-MAY-2008 12:30	27-MAY-2008 12:38	----
Compound	CAS Number	LOR	Unit	EB0807010-001	EB0807010-002	EB0807010-003	EB0807010-004	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	106	108	109	----
Toluene-D8	2037-26-5	0.1	%	101	104	102	104	----
4-Bromofluorobenzene	460-00-4	0.1	%	90.1	103	101	100	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

[illegible]

Australian Laboratory Services Pty Ltd

Environmental Division
Brisbane
Work Order
EB02

Work Order
EB0807010



Telephone : + 61-7-3243 722



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0807010	Page	: 1 of 7
Client	: STREAMLINE HYDRO	Laboratory	: Environmental Division Brisbane
Contact	: MR RODERICK BAIN	Contact	: Tim Kilmister
Address	: PO BOX 77 CLEVELAND QLD,AUSTRALIA 4163	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: cash.sale@alsenviro.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 31029301	Facsimile	: +61-7-3243 7218
Project	: 2008001001	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Wondoon	Date Samples Received	: 28-MAY-2008
C-O-C number	: ----	Issue Date	: 06-JUN-2008
Sampler	: R.BAIN	No. of samples received	: 4
Order number	: ----	No. of samples analysed	: 4
Quote number	: ----		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matthew Goodwin	Senior Analyst	Organics

Environmental Division Brisbane

Part of the **ALS Laboratory Group**

32 Shand Street Stafford QLD Australia 4053
Tel. +61-7-3243 7222 Fax. +61-7-3243 7218 www.alsglobal.com

A Campbell Brothers Limited Company



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, 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.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005: pH (QC Lot: 668916)									
EB0806935-021	Anonymous	EA005: pH Value	----	0.01	pH Unit	8.93	8.96	0.3	0% - 20%
EB0807020-001	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.87	7.87	0.0	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 672262)									
EB0807010-001	WMB 1-D-1	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	17500	17500	0.1	0% - 20%
EB0807070-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	2950	2940	0.3	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 672261)									
EB0807010-001	WMB 1-D-1	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	300	249	18.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	300	249	18.6	0% - 20%
EB0807070-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	447	465	3.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	447	465	3.9	0% - 20%
ED040F: Dissolved Major Anions (QC Lot: 668883)									
EB0807008-002	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
EB0807017-003	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	12	13	0.0	0% - 50%
ED045P: Chloride by PC Titrator (QC Lot: 672263)									
EB0807010-001	WMB 1-D-1	ED045-P: Chloride	16887-00-6	1	mg/L	6410	6370	0.7	0% - 20%
EB0807070-002	Anonymous	ED045-P: Chloride	16887-00-6	1	mg/L	368	373	1.3	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 668884)									
EB0807008-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	34	35	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	15	15	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	2390	2430	1.5	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	11	11	0.0	0% - 50%
EB0807017-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	9	9	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	13	13	0.0	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	43	44	0.0	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 669087)									
EB0806995-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.001	0.0	No Limit
EB0807008-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.006	22.0	No Limit

Page : 4 of 7
 Work Order : EB0807010
 Client : STREAMLINE HYDRO
 Project : 2008001001



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EK057: Nitrite as N (QC Lot: 669158)									
EB0806990-001	Anonymous	EK057: Nitrite as N	----	0.010	mg/L	1.92	1.95	1.6	0% - 20%
EB0806995-002	Anonymous	EK057: Nitrite as N	----	0.010	mg/L	<0.010	<0.010	0.0	No Limit
EK057: Nitrite as N (QC Lot: 669161)									
EB0807010-003	WMB 1-S-1	EK057: Nitrite as N	----	0.010	mg/L	<0.010	<0.010	0.0	No Limit
EB0807026-014	Anonymous	EK057: Nitrite as N	----	0.010	mg/L	<0.010	<0.010	0.0	No Limit
EK059: Nitrite plus Nitrate as N (NOx) (QC Lot: 669159)									
EB0806990-001	Anonymous	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	26.5	26.1	1.5	0% - 20%
EB0806995-002	Anonymous	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	0.196	0.196	0.0	0% - 50%
EK059: Nitrite plus Nitrate as N (NOx) (QC Lot: 669162)									
EB0807010-003	WMB 1-S-1	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	0.011	0.011	0.0	No Limit
EB0807026-014	Anonymous	EK059: Nitrite + Nitrate as N	----	0.010	mg/L	0.015	0.017	11.4	No Limit
EK067: Total Phosphorus as P (QC Lot: 669736)									
EB0806974-001	Anonymous	EK067: Total Phosphorus as P	----	0.01	mg/L	5.51	5.47	0.7	0% - 20%
EB0807008-003	Anonymous	EK067: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 671376)									
EB0807105-020	Anonymous	EP074: Benzene	71-43-2	5	µg/L	<5	<5	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EA005: pH (QCLot: 668916)								
EA005: pH Value	----	0.01	pH Unit	----	7.00 pH Unit	100	98.3	118
EA010P: Conductivity by PC Titrator (QCLot: 672262)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	90.3	108
ED037P: Alkalinity by PC Titrator (QCLot: 672261)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	500 mg/L	85.2	77.5	112
ED040F: Dissolved Major Anions (QCLot: 668883)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	----	----	----	----
ED045P: Chloride by PC Titrator (QCLot: 672263)								
ED045-P: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	97.2	88.4	110
ED093F: Dissolved Major Cations (QCLot: 668884)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	----	----	----	----
ED093F: Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
ED093F: Sodium	7440-23-5	1	mg/L	<1	----	----	----	----
ED093F: Potassium	7440-09-7	1	mg/L	<1	----	----	----	----
EG020F: Dissolved Metals by ICP-MS (QCLot: 669087)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	106	70	130
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	107	70	130
EK057: Nitrite as N (QCLot: 669158)								
EK057: Nitrite as N	----	0.01	mg/L	----	0.5 mg/L	106	95.4	119
		0.010	mg/L	<0.010	----	----	----	----
EK057: Nitrite as N (QCLot: 669161)								
EK057: Nitrite as N	----	0.01	mg/L	----	0.5 mg/L	109	95.4	119
		0.010	mg/L	<0.010	----	----	----	----
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669159)								
EK059: Nitrite + Nitrate as N	----	0.01	mg/L	----	0.5 mg/L	93.7	85.5	118
		0.010	mg/L	<0.010	----	----	----	----
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669162)								
EK059: Nitrite + Nitrate as N	----	0.01	mg/L	----	0.5 mg/L	97.6	85.5	118
		0.010	mg/L	<0.010	----	----	----	----
EK067: Total Phosphorus as P (QCLot: 669736)								
EK067: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	87.9	70.4	100
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 671376)								
EP074: Benzene	71-43-2	5	µg/L	<5	10 µg/L	102	76.7	122



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
ED045P: Chloride by PC Titrator (QCLot: 672263)							
EB0807010-002	WMB 1-D-2	ED045-P: Chloride	16887-00-6	4000 mg/L	96.9	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 669087)							
EB0806995-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.100 mg/L	110	70	130
		EG020A-F: Cadmium	7440-43-9	0.100 mg/L	110	70	130
EK057: Nitrite as N (QCLot: 669158)							
EB0806990-001	Anonymous	EK057: Nitrite as N	----	20 mg/L	108	70	130
EK057: Nitrite as N (QCLot: 669161)							
EB0807010-002	WMB 1-D-2	EK057: Nitrite as N	----	0.4 mg/L	108	70	130
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669159)							
EB0806935-021	Anonymous	EK059: Nitrite + Nitrate as N	----	0.4 mg/L	95.0	70	130
EK059: Nitrite plus Nitrate as N (NOx) (QCLot: 669162)							
EB0807010-002	WMB 1-D-2	EK059: Nitrite + Nitrate as N	----	0.4 mg/L	103	70	130
EK067: Total Phosphorus as P (QCLot: 669736)							
EB0806995-001	Anonymous	EK067: Total Phosphorus as P	----	1 mg/L	93.5	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 671376)							
EB0807105-021	Anonymous	EP074: Benzene	71-43-2	10 µg/L	106	70	130



SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : EB0807010

Client : STREAMLINE HYDRO
Contact : MR RODERICK BAIN
Address : PO BOX 77
CLEVELAND QLD, AUSTRALIA 4163

Laboratory : Environmental Division Brisbane
Contact : Tim Kilmister
Address : 32 Shand Street Stafford QLD Australia
4053

E-mail : cash.sale@alsenviro.com
Telephone : ----
Facsimile : +61 07 31029301

E-mail : Services.Brisbane@alsenviro.com
Telephone : +61-7-3243 7222
Facsimile : +61-7-3243 7218

Project : 2008001001
Order number : ----
C-O-C number : ----
Site : Wondoon
Sampler : R.BAIN

Page : 1 of 2
Quote number : ----
QC Level : NEPM 1999 Schedule B(3) and ALS
QCS3 requirement

Dates

Date Samples Received : 28-MAY-2008
Client Requested Due Date : 05-JUN-2008

Issue Date : 28-MAY-2008 16:12
Scheduled Reporting Date : 05-JUN-2008

Delivery Details

Mode of Delivery : Client Drop off
No. of coolers/boxes : 2 MEDIUM
Security Seal : Intact.

Temperature : 5.3 C, 3.7 C - Ice bricks present
No. of samples received : 4
No. of samples analysed : 4

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Breaches in recommended extraction / analysis holding times may occur.**
- **pH holding time is six hours after sampling.**
- **Ideally dissolved oxygen +/- free chlorine should be field tested.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Maggie Kahi.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005: pH	WATER - EA010P Conductivity (PC)	WATER - EG020A-F Dissolved Metals by ICPMS - Suite A	WATER - EK058 Nitrate as N (Incl. Nitrite as N)	WATER - EK067 Total Phosphorus as P	WATER - EN055 Ionic Balance	WATER - EP025 Dissolved Oxygen (DO)	WATER - EP074A VOC - MAH's
EB0807010-001	25-MAY-2008 10:50	WMB 1-D-1	✓	✓	✓	✓	✓	✓	✓	✓
EB0807010-002	27-MAY-2008 13:05	WMB 1-D-2	✓	✓	✓	✓	✓	✓	✓	✓
EB0807010-003	25-MAY-2008 12:30	WMB 1-S-1	✓	✓	✓	✓	✓	✓	✓	✓
EB0807010-004	27-MAY-2008 12:38	WMB 1-S-2	✓	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - Major Anions Cl, SO ₄ , Alkalinity PCT	WATER - Major Cations Ca, Mg, Na, K
EB0807010-001	25-MAY-2008 10:50	WMB 1-D-1	✓	✓
EB0807010-002	27-MAY-2008 13:05	WMB 1-D-2	✓	✓
EB0807010-003	25-MAY-2008 12:30	WMB 1-S-1	✓	✓
EB0807010-004	27-MAY-2008 12:38	WMB 1-S-2	✓	✓

Requested Deliverables

MR RODERICK BAIN

- *AU Certificate of Analysis - NATA
- *AU QC Report & DEFAULT (Anon QC Rep) - NATA
- A4 - AU Sample Receipt Notification - Environmental
- A4 - AU Tax Invoice
- Default - Chain of Custody
- EDI Format - ENMRG
- EDI Format - XTab

Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com
Email	cash.sale@alsenviro.com



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Accredited for compliance with ISO/IEC 17025

Accreditation Number: 14356



Certificate of Analysis

Streamline Hydro
PO BOX 77
Cleveland QLD 4163
Australia

Attention: Roderick Bain

Project 08ENBR0013679
Client Reference 2008001001
Wandoon
Received Date 28/05/2008 01:40:00 PM

Customer Sample ID	QC01
Amdel Sample Number	1019223
Date Sampled	25/05/2008

VOC

Test/Reference	PQL	Unit
----------------	-----	------

1100 BTEX in Water by P&T

4-Bromofluorobenzene - Surrogate	-	%	100
Benzene	0.5	µg/L	<0.5
Toluene	1	µg/L	<1
Ethylbenzene	1	µg/L	<1
Meta- & Para- Xylene	2	µg/L	<2
Ortho-Xylene	1	µg/L	<1
Total Xylenes	3	µg/L	<3

Metals

Test/Reference	PQL	Unit
----------------	-----	------

3300 Dissolved Metals in Water by GFAAS

Arsenic	1	µg/L	1.8
Cadmium	0.1	µg/L	<1.0

3200 Diss. Metals in Water by ICP-AES

Magnesium	50	µg/L	17000
Phosphorus	20	µg/L	<20
Potassium	50	µg/L	14000
Sodium	50	µg/L	2700000

4575 Total Sulphate in Water by ICP-AES

Sulphate	0.15	mg/L	10.2
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Inorganics

Test/Reference	PQL	Unit
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4550 Alkalinity in Water

Total Alkalinity as CaCO ₃	20	mg/L	493
Bicarbonate as CaCO ₃	10	mg/L	492.6
Carbonate as CaCO ₃	10	mg/L	<10
Hydroxide as CaCO ₃	10	mg/L	<10

4500 Anions in Water by Titration

Chloride	1	mg/L	3900
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4020 Dissolved Oxygen in Water

Dissolved Oxygen*	0.1	mg/L	¹⁰⁸ 6.7
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4010 Conductivity in Water

Electrical Conductivity	20	µS/cm	11900
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4705 Nitrates in Water by FIA

Nitrate as N	0.01	mg/L	<0.01
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4000 pH in Water

pH	0.1	pH	8.1
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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Extracted	Analysed
1100 BTEX in Water by P&T		02/06/2008
3200 Diss. Metals in Water by ICP-AES	30/05/2008	02/06/2008
3300 Dissolved Metals in Water by GFAAS	30/05/2008	02/06/2008
4000 pH in Water	03/06/2008	03/06/2008
4010 Conductivity in Water	03/06/2008	03/06/2008
4020 Dissolved Oxygen in Water		04/06/2008
4500 Anions in Water by Titration	04/06/2008	04/06/2008
4550 Alkalinity in Water	03/06/2008	03/06/2008
4575 Total Sulphate in Water by ICP-AES		02/06/2008
4705 Nitrates in Water by FIA	04/06/2008	04/06/2008

Test Description

4000 pH in Water

Ideally pH should be determined in the field, therefore this test will not be measured for compliance to Holding Times

Amdel Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Amdel QC Acceptance/Rejection criteria are available on request.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quotes PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (Form LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitability qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT an RPD

Quality Control Results

Laboratory: EN_METALS

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1020486 [Method Blank]							
3200 Diss. Metals in Water by ICP-AES							
Magnesium	µg/L	<50			< 50	T	
Phosphorus	µg/L	<20			< 20	T	
Potassium	µg/L	<50			< 50	T	
Sodium	µg/L	<50			< 50	T	
1020500 [Method Blank]							
3300 Dissolved Metals in Water by GFAAS							
Arsenic	µg/L	<1			< 1	T	
Cadmium	µg/L	<0.1			< 0.1	T	
1020487 [Laboratory Control Sample]							
3200 Diss. Metals in Water by ICP-AES							
			Expected Value	Percent Recovery			
Magnesium	µg/L	10000	10000.0	100	80-120 %	T	
Phosphorus	µg/L	1000	1000.0	102	80-120 %	T	
Potassium	µg/L	9800	10000.0	98	80-120 %	T	
Sodium	µg/L	9300	10000.0	93	80-120 %	T	
1020501 [Laboratory Control Sample]							
3300 Dissolved Metals in Water by GFAAS							
			Expected Value	Percent Recovery			
Arsenic	µg/L	10	10.0	103	80-120 %	T	
Cadmium	µg/L	1.9	2.0	97	80-120 %	T	

Laboratory: EN_VOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
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Laboratory: EN_VOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1020144 [Method Blank]							
1100 BTEX & (C6-C9) in Water by P&T							
Benzene	µg/L	<0.5			< 0.5	T	
C6-C9 Fraction	µg/L	<20			< 20	T	
Ethylbenzene	µg/L	<1			< 1	T	
Meta- & Para- Xylene	µg/L	<2			< 2	T	
Ortho-Xylene	µg/L	<1			< 1	T	
Toluene	µg/L	<1			< 1	T	
Total Xylenes	µg/L	<3			< 3	T	
4-Bromofluorobenzene - Surrogate	%	98			70-130 %	T	
1020145 [Laboratory Control Sample]							
1100 BTEX & (C6-C9) in Water by P&T							
			Expected Value	Percent Recovery			
Benzene	µg/L	9.6	10.0	96	70-130 %	T	
C6-C9 Fraction	µg/L	110	140.0	80	70-130 %	T	
Ethylbenzene	µg/L	10	10.0	100	70-130 %	T	
Meta- & Para- Xylene	µg/L	20	20.0	98	70-130 %	T	
Ortho-Xylene	µg/L	10	10.0	104	70-130 %	T	
Toluene	µg/L	11	10.0	110	70-130 %	T	
Total Xylenes	µg/L	30	N/A	N/A	N/A	N/A	
4-Bromofluorobenzene - Surrogate	%	98			70-130 %	T	

Laboratory: EN_WATERS

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1022745 [Method Blank]							
4500 Anions in Water by Titration							
Chloride	mg/L	<1			< 1	T	
Fluoride	mg/L	<0.1			< 0.1	T	
1022760 [Method Blank]							
4550 Alkalinity in Water							
Bicarbonate as CaCO3	mg/L	<10			< 10	T	
Carbonate as CaCO3	mg/L	<10			< 10	T	
Hydroxide as CaCO3	mg/L	<10			< 10	T	
Total Alkalinity as CaCO3	mg/L	<20			< 20	T	
1022746 [Laboratory Control Sample]							
4500 Anions in Water by Titration							
			Expected Value	Percent Recovery			
Chloride	mg/L	52	50.0	103	80-120 %	T	
Fluoride	mg/L	1.0	1.0	99	80-120 %	T	
1022756 [Laboratory Control Sample]							
4550 Alkalinity in Water							
			Expected Value	Percent Recovery			
Bicarbonate as CaCO3	mg/L	61.3	60.0	102	90-110 %	T	
Total Alkalinity as CaCO3	mg/L	61	60.0	102	90-110 %	T	
1022758 [Laboratory Control Sample]							
4010 Conductivity in Water							
			Expected Value	Percent Recovery			
Electrical Conductivity	µS/cm	1420	1413.0	101	95-105 %	T	
1022759 [Laboratory Control Sample]							
4000 pH in Water							
			Expected Value	Percent Recovery			
pH	pH	7.5	7.4	101	95-105 %	T	

Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code Description

- I08 Dissolved Oxygen is not analysed in the lab. The lab result will vary from the original field value depending on temperature change and the degree of agitation since it has arrived at the lab. This test MUST be performed on site.
- Q02 The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause.

Authorised By

Elizabeth Button
Michael Mowle

Senior Analyst - Environmental
Team Leader - Environmental

Accreditation Number: 14356
Accreditation Number: 14356

Laboratory Manager

Michael Mowle

Team Leader - Environmental



Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

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The samples were not collected by Amdel staff.

CLIENT:	Streamline Hydro	
ADDRESS / OFFICE:	PO Box 77 Cleveland Qld 4163	
PROJECT MANAGER (PM):	Roderick Ban	
PROJECT ID:	2008001001	
SITE:	Wandoo	P.O. NO.:
RESULTS REQUIRED (Date):	6/6/08	QUOTE NO.:

SAMPLER:	R. Bain
MOBILE:	0416 049 431
PHONE	
EMAIL REPORT TO:	rbain@streamlinehydro.com.au
EMAIL INVOICE TO: (if different to report)	
ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite	



CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

Notes: e.g. Highly contaminated samples,
Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)

CONTAINER INFORMATION

[illegible]

As per attached

RELINQUISHED BY:

Name: <u>Roderick Bain</u>	Date: <u>28/5/08</u>
Of: <u>Streamline Hydro</u>	Time: <u>10 am</u>
Name:	Date:
Of:	Time:

RECEIVED BY

RECEIVED BY	
Name: <i>Nick Emblow</i>	Date: <i>28/5/08</i>
Of: <i>Labmark</i>	Time: <i>1:40pm</i>
Name:	Date:
Of:	Time:

METHOD OF SHIPMENT

Con' Note No:	
Transport Co:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bad for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Environmental

ENFM (204/4)

6.50

Groundwater analysis:

EC ✓
pH ✓
DO ✓
Temperature ✓
Chloride ✓
Sulphate ✓
Magnesium ✓
Bicarbonate ✓
Sodium ✓
Potassium ✓
Benzene ✓
Arsenic ✓
Cadmium ✓
Nitrate ✓
Phosphorous ✓

Roderick Bain RPEQ

Director

PO Box 77 Cleveland

QLD 4163 Australia

M. 0416 049 431

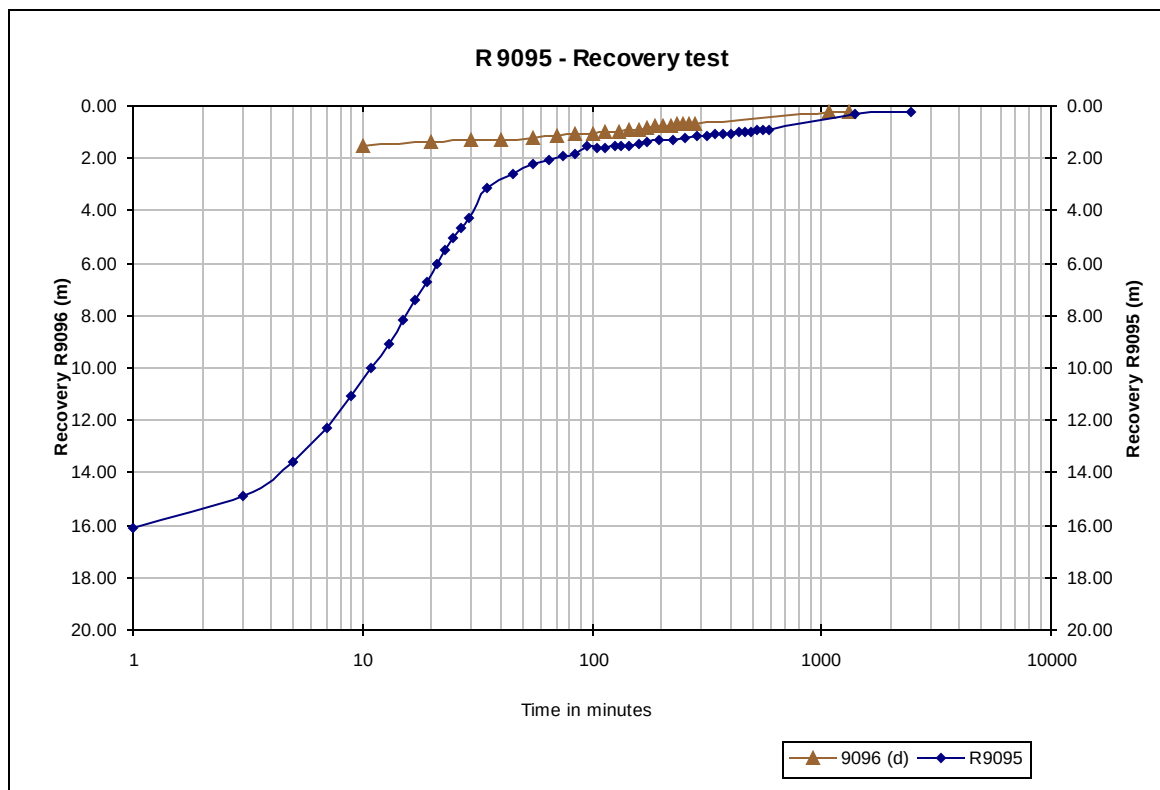
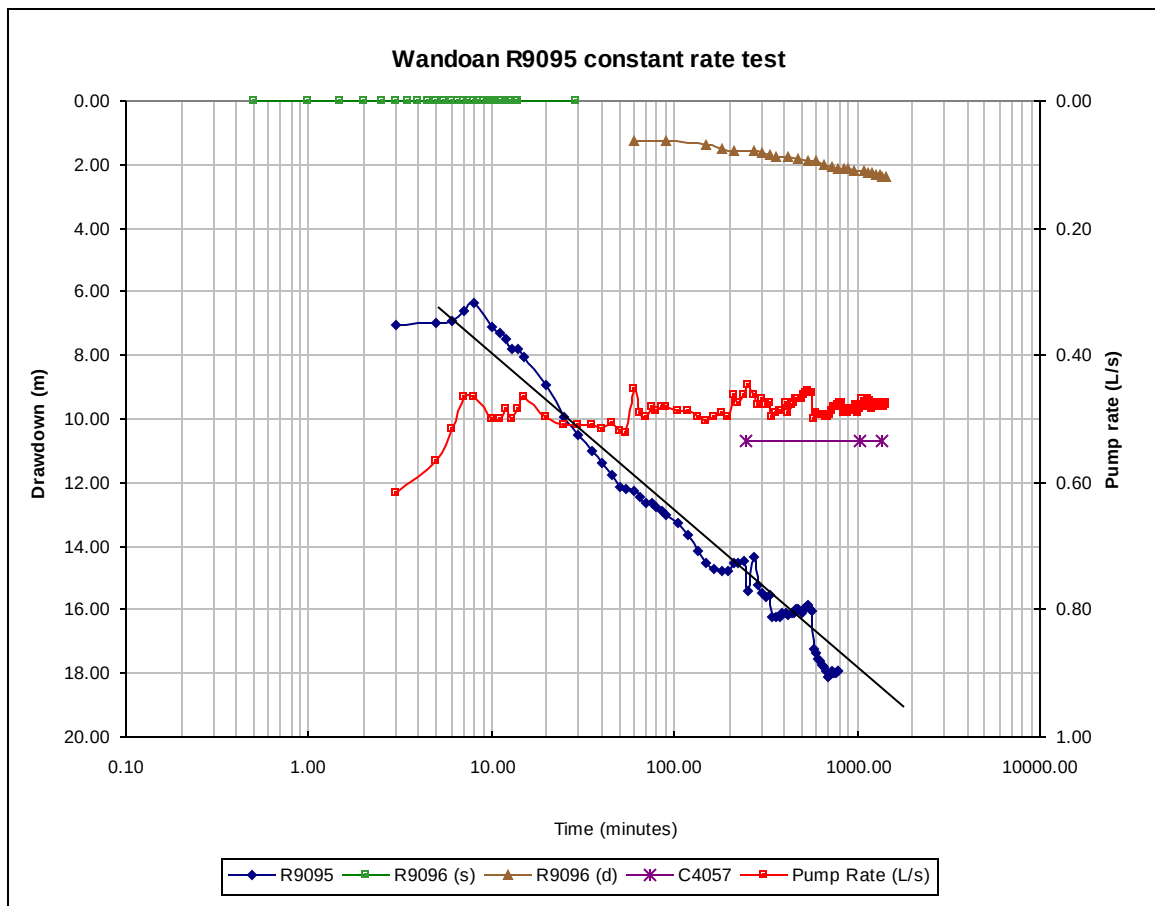
F. +61 7 3102 9301

E. rbain@streamlinehydro.com.au

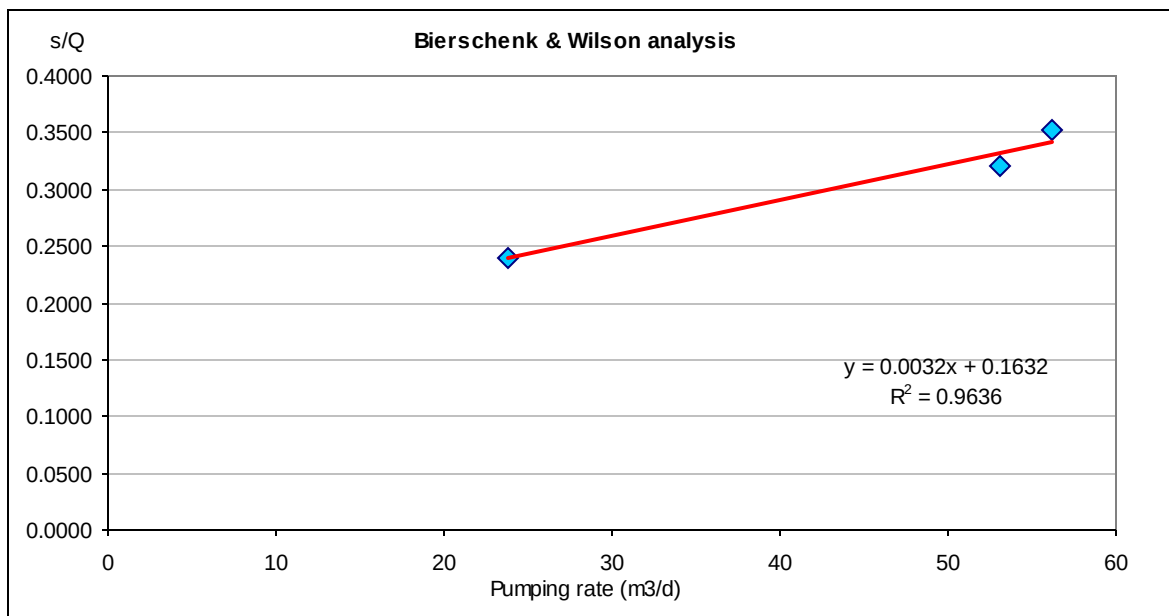
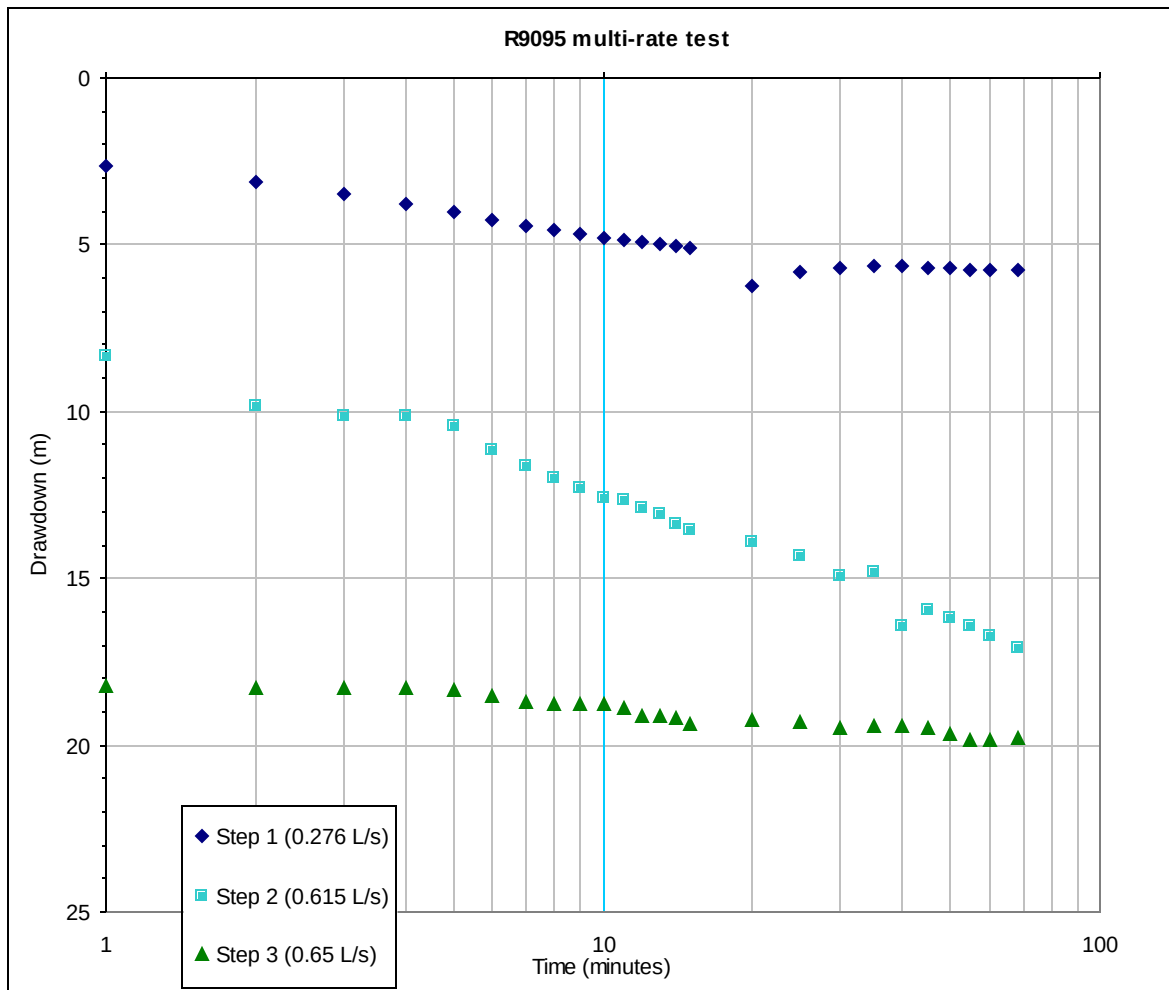
A/NZ 1 7 3102 9301

Attachment I

Pumping test



	Location:	Ward Property	Static WL (mbtoc):	22.43
	Client:	Xstrata	Job number:	21330060
	Bore Identity:	R9095	Date of test:	25/05/2008



Location:	Ward Property	Static WL (mbtoc):	22.43
Client:	Xstrata	Job number:	21330060
Bore Identity:	R9095	Date of test:	24/05/2008